

OPERATIONAL ENVIRONMENTAL MANAGEMENT PLAN



MAYFIELD WEST

July 2018

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1 INTRODUCTION

1.1 OVERVIEW

Benedict Recycling Pty Ltd is the operator of the Mayfield West Recycling Facility (MWRF) located at 1A McIntosh Drive, Mayfield West.

The MWRF has been developed to provide a range of services to the demolition and construction industries including:

- Receival of waste;
- Sorting of waste;
- Processing of waste;
- Recovery of recyclables;
- Export of recovered recyclables; and
- Transfer and disposal of residuals.

Resource recovery activities limited to 90 000 tonnes per year of general solid waste (non-putrescible) were approved on the site by consent DA2015/0291 on 8 March 2016.

Project approval SSD 7698 (SDD approval) on 13 March 2018 allows increased processing capacity to 315 000 tonnes per year of general solid waste (non-putrescible) including construction, demolition, commercial and industrial waste.

The site currently operates under the regulation of Environment Protection Licence (EPL) 20771.

Condition C4 of the SSD approval requires the preparation of an Operational Environmental Management Plan (OEMP). Accordingly the existing Environmental Management Plan for the site has been revised to address the requirements of C4 and other relevant provisions of the SSD approval.

The OEMP is the environmental management tool for the operation of the MWRF and includes detailed supplementary plans.

The OEMP is a live document. The management strategies and control measures detailed within this document and the supplementary Environmental Plans would be reviewed and updated where necessary to reflect changes introduced by the MWRF operational team, site specific outcomes, non-conformances and recommendations arising out of inspections, meetings and audits.

1.2 LOCATION

The facility is located at 1A McIntosh Drive, Mayfield NSW and is within the local government area of Newcastle City Council. The SSD approved site occupies part of Lot 1 in DP 874109 totalling approximately 4.9 ha.

Figure 1 shows the site layout. The site is bounded by:

- The Hunter River (South Arm) to the north;
- Tourle Street to the east;
- Ausgrid Mayfield West Substation to the south; and
- Light industrial buildings to the west.

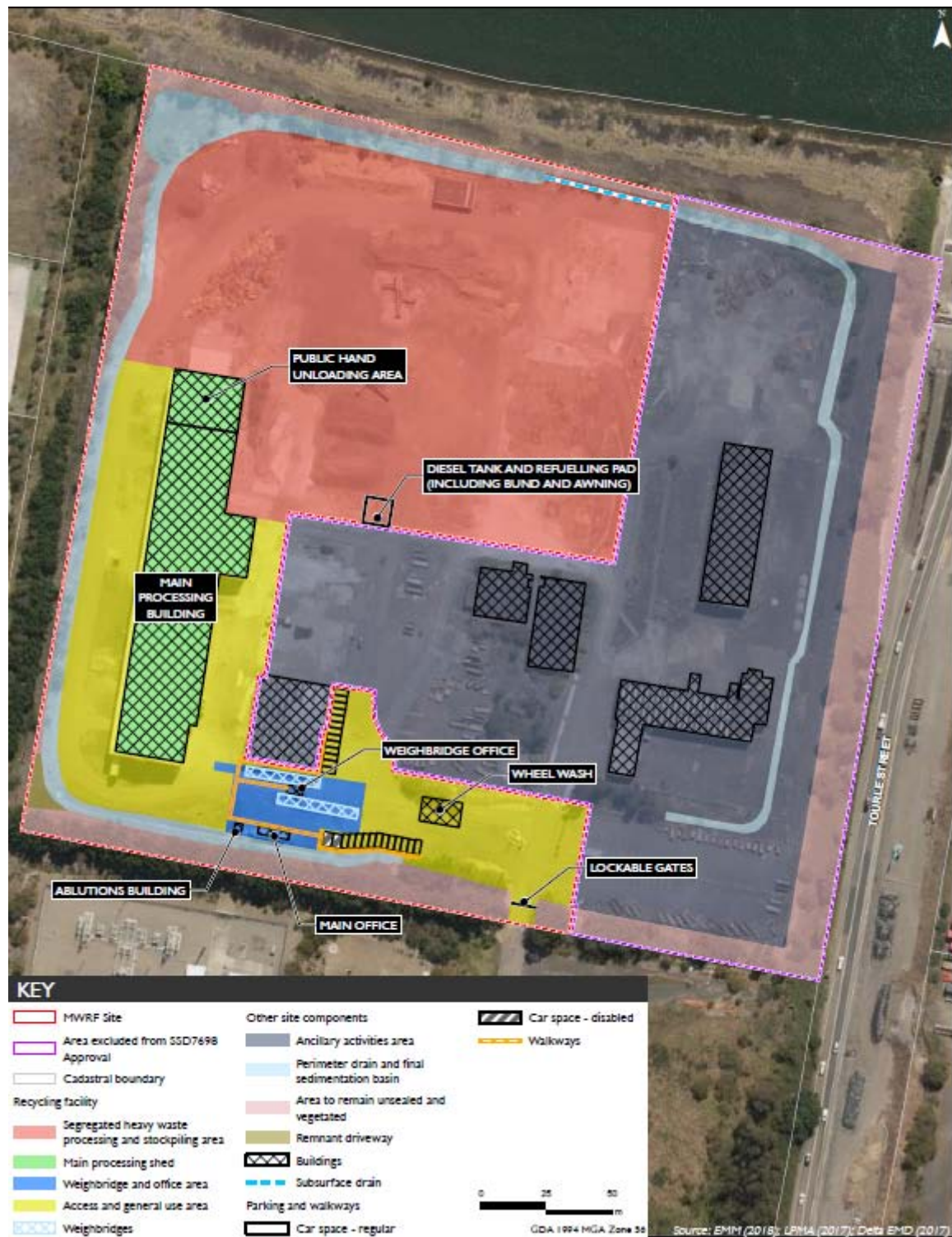


Figure 1 – Site Layout

1.3 SCOPE AND OBJECTIVES

The purpose of this OEMP is to provide an overview of potential environmental impacts of the MWRF during its operational phase and describe the management and mitigation measures to protect the environment and sensitive receivers, and minimise potential adverse impacts on the environment.

The operation of the expanded operations must be carried out in accordance with this OEMP as approved by the Department of Planning and Environment.

The objectives of this OEMP are to:

- Describe the relevant legislation, policies, guidelines and standards which apply to the operation of the facility and influence the environmental management principles and procedures to be used on the site;
- Identify key environmental management issues relating to the operation of the facility;
- Provide a working environmental management tool to follow during the operational stage of the MWRF;
- Define roles and responsibilities of the MWRF facility;
- Provide a guide for the interaction with relevant government authorities and other relevant stakeholders including the community during the operational phase of the MWRF;
- Provide standard operating procedures for the management of the site and key environmental issues; and
- Provide a basis for monitoring, reporting and maintaining compliance.

1.4 SUPPORTING ENVIRONMENTAL MANAGEMENT PLANS

A series of environmental management plans have been developed to support this OEMP. These plans are provided in the appendices of this OEMP and are as follows:

- Waste Management Plan (Appendix D);
- Surface Water Characterisation and Mitigation Plan (Appendix E);
- Air Quality Management Plan (Appendix F);
- Operational Traffic and Pedestrian Management Plan (Appendix G); and
- Conceptual Decommissioning Management Plan (Appendix I).
- Emergency Response Plan (Appendix K)

Also included in this OEMP are existing plans as follows:

- Site Management Plan for Subsurface Disturbance Activities (AECOM 2009) contained in Appendix H; and
- Landscape Plan (Terres Landscape Architects 2015) contained in Appendix J.

2 STATUTORY CONSIDERATIONS

This section provides an overview of the environmental planning and statutory context for the operations of the MWRF.

2.1 ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

The EP&A Act and the NSW Environmental Planning and Assessment Regulation 2000 (EP&A Regulation) provide the assessment and approvals framework in NSW. They are administered by Department of Planning and Environment. Original consent for the MWRF was granted by

Newcastle City Council under Part 4 of the EP&A Act (DA2015/0291) which allowed for processing of up to 90 000 tonnes of waste per year.

The modification to increase processing capacity of the MWRF was classified as State Significant Development (SSD) under Clause 23(3) of Schedule 1 in the State Environmental Planning Policy (State and Regional Development 2011 (SRD SEPP) because it involves the development for the purposes of a resource recycling facility which handles more than 100 000 tonnes per annum of waste. Consequently the SSD application was approved by the NSW Minister for Planning under Section 4.38 of the EP&A Act on 13 March 2018.

Key SSD consent conditions relating to the operation of the MWRF are presented in Table 2.1 and a full compliance register is contained in Appendix A.

Table 2.1 SSD Approval key consent conditions

Condition	Requirement	Where addressed in OEMP
A6	The Applicant must not receive or process on site more than 315,000 tonnes per year of general solid waste (non-putrescible).	Section 3.1, Appendix D
A7	The Applicant must not: (a) crush more than 71,000 tonnes per year of waste; and (b) shred more than 5,400 tonnes per year of timber.	Section 3.1, Section 4.2 and Appendix D
A8	The amount of waste stored on site at any one time must not exceed 53,733 tonnes.	Section 3.1, Section 4.2 and Appendix D
A11	Stockpiles of waste and recycled product on-site must not be more than seven (7) metres in height when measured from the finished ground level of the site.	Section 3.1, Section 4.2 and Appendix D
C4	The Applicant must prepare an Operational Environmental Management Plan (OEMP) to the satisfaction of the Secretary. The OEMP must: (a) be approved by the Secretary prior to the commencement of operations; (b) be prepared by a suitably qualified and experienced expert; (c) provide the strategic framework for environmental management of the Development; (d) identify the statutory approvals that apply to the Development; (e) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the Development; (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 and provide an Emergency Response Plan;	This document a) b) Document co authored by Operations Planning Support Manager (Benedict) and Senior Environmental Planner (EMM Consulting) c) Section 2 d) Section 2.5 e) Section 5.1 f)i) Section 5.3 f)ii) Section 5.3 f)iii) Sections 5.1 and 5.3 f)iv) Sections 5.4 and 6 f)v) Section 5.5 and Appendix K

	(g) include the following environmental management plans: (i) Waste Management Plan; (ii) Surface Water Characterisation and Mitigation Plan; (iii) Operational Traffic and Pedestrian Management Plan; (iv) Air Quality Management Plan; and (v) Conceptual Decommissioning Management Plan (see Condition B84).	Appendix D Appendix E Appendix G Appendix F Appendix I
C7	The Applicant must carry out the construction of the Development in accordance with the OEMP approved by the Secretary (and as revised and approved by the Secretary from time to time), unless otherwise agreed by the Secretary.	Section 1.3

2.2 PROTECTION OF THE ENVIRONMENT OPERATIONS ACT 1997 (POEO Act)

The POEO Act relates to the management of pollution in NSW and is administered by the EPA. Under Section 48 of the POEO Act, premise-based scheduled activities (as defined in Schedule 1 of the POEO Act) require an Environment Protection Licence (EPL). The operation of the MWRF is considered a premise based scheduled activity as a result of the following scheduled activities being carried out on site:

- Schedule 1 Clause 34 (Resource Recovery) as operation of the facility involves having on site at any one time more than 2 500 tonnes or 2 500 cubic metres of waste or involves processing more than 12 000 tonnes of waste per year; and
- Schedule 1 Clause 42 Waste Storage as operation of the facility involves receiving more than 12 000 tonnes of waste per annum from off site.

The Development must also comply with Section 120 of the POEO Act, which prohibits the pollution of waters, except as expressly provided in an EPL.

2.3 WASTE AVOIDANCE AND RESOURCE RECOVERY ACT 2001

The Waste Avoidance and Resource Recovery Act 2001 (WARR Act) is the result of a major overhaul of waste policy objectives and forms the basis of a framework for waste management in NSW. The WARR Act establishes a hierarchy to minimise the consumption of natural resources and final disposal of waste by encouraging waste avoidance, reuse and recycling.

The WARR Act promotes integrated waste and resource management planning, programs and service delivery on a state-wide basis to ensure that waste is managed to reduce environmental harm in accordance with the principles of ecologically sustainable development and the objectives of the POEO Act.

The MWRF Facility delivers an alternative waste management technology solution and beneficial environmental outcome compared to land filling. Wastes are to be managed against the waste hierarchy of avoidance, resource recovery and then disposal.

2.4 WORK HEALTH AND SAFETY ACT

The main object of the *Work Health and Safety Act 2011* (WHS Act) is to provide for a balanced and nationally consistent framework to secure the health and safety of workers and workplaces.

The WHS Act requires that workers and other persons should be given the highest level of protection against harm to their health, safety and welfare from hazards and risks arising from work or from specified types of substances or plant as is reasonably practicable.

2.5 GUIDELINES

The facility design and the operating procedures documented have due regard to relevant guidelines and codes of practice including:

- Waste Classification Guidelines – Part 1: Classifying Waste, EPA, 2014;
- AS1940-2004 The Storage and Handling of Flammable and Combustible Liquids;
- NSW EPA Guidelines on Resource Recovery Orders and Resource Recovery Exemptions under Protection of the Environment Operations (Waste) Regulations 2014 (Clause 93); and
- EPA developed exemption structure 'The Recovered Aggregate Order 2014'.

2.6 ENVIRONMENTAL APPROVALS

The relevant environmental approvals in place for the MWRF are summarised in Table 2.2.

Table 2.2 Environmental Approvals

Approval	Approval Authority	Description	Date
SSD Approval SSD 7698	Department of Planning and Environment	SSD Approval under Section 4.38 of the EP&A Act	13 March 2018
EPL 20771	Environment Protection Agency	Environment Protection Licence	Issued

3 RESOURCE RECOVERY FACILITY

The Resource Recovery Facility features include:

- Buildings including site office and staff amenities;
- Covered processing area;
- Outdoor material sorting and storage area;
- Weighbridge;
- Surface water management system;
- Dust management systems;
- Staff parking.

3.1 OVERVIEW OF OPERATIONS

Waste is transported by waste contractors to the site via the entry gate located at the southern end of the site off McIntosh Drive. Vehicles proceed to a weighbridge where they are weighed. The weighbridge is fitted with CCTV capability which monitors the front and rear of vehicles and their load characteristics.

The truck registration, weight, type and size of materials are recorded. The incoming material is classified as rubbish, mixed or clean waste. Weighbridge dockets are issued recording material weight and charges.

Entering vehicles then proceed to the either the covered hand unloading area or the outside sorting/storage area where an excavator spreads and segregates the material, accompanied by further examinations of material types.

The segregated materials are available for reuse/recycling or further processing. The wastes that cannot be reused or recycled by the site are taken to either landfill or other recycling facilities for further processing.

Empty vehicles entering the site to load recovered materials can be CCTV monitored; their registration recorded prior to proceeding to loading.

Vehicles exiting the site may pass through a wheel “wash/clean” based on a monitoring procedure to prevent material being tracked off site.

Acceptable waste to be received at the Facility is limited by the Environment Protection Licence (EPL 20771) and SSD Approval and is inclusive of both co-mingled and segregated building and demolition waste as well as selected commercial and industrial waste.

Table 3.1 below lists the acceptable waste materials and limits detailed in EPL 20771 (attached as Appendix C).

Table 3.1 Acceptable waste and EPL/SSD Approval limits

Waste	Other Limits	Activity
Basic Oxygen Slag	Must not contain any contaminant levels exceeding the limits for General Solid Waste stated in the EPA’s Waste Classification Guidelines Part 1: Classifying Waste.	Resource recovery Waste Storage
Electric Arc Furnace Slag		
Electric Arc Ladle Slag		
Granulated Blast Furnace Slag		
Rail Ballast		
Excavated Natural Material		
Soils that meet the CT1 thresholds for General Solid Waste in Table 1 of the Waste Classification Guidelines as in force from time to time with the exception of the thresholds in the ‘Other Limits’ column.	Arsenic: 40mg/kg; Cadmium: 2mg/kg; Copper 200mg/kg; Mercury: 1.5mg/kg; Zinc: 600mg/kg; Petroleum Hydrocarbons C6-C9: 150mg/kg; Petroleum Hydrocarbons C10-C36: 1600mg/kg; Polycyclic Aromatic Hydrocarbons: 80mg/kg; Polychlorinated biphenyls (individual): 1mg/kg; No acid sulphate soil is to be received at the premises.	Resource recovery Waste Storage
Grit, sediment, litter and gross pollutants collected in, and removed from, stormwater treatment devices and/or stormwater management systems.	Dewatered so that they do not contain liquids.	Resource recovery Waste Storage
Biosolids	Categorised as unrestricted use, or restricted	Resource recovery

	use 1, 2 or 3.	Waste Storage
Household waste from municipal clean-up.	Does not contain putrescible waste.	Resource recovery Waste Storage
Cement Fibre Board		Resource recovery Waste Storage
Paper or cardboard		Resource recovery Waste Storage
Concrete batch plant waste		Resource recovery Waste Storage
Glass, plastics, rubber, plasterboard, ceramics, brick, concrete or metal.	Loads predominantly containing glass are not permitted to be crushed at the site	Resource recovery Waste Storage
Wood waste	No more than 5 400 tonnes per year of timber may be shredded;	Resource recovery Waste Storage
Garden waste		Resource recovery Waste Storage
Asphalt waste		Resource recovery Waste Storage
Virgin Excavated Natural Material		Resource recovery Waste Storage
Building and demolition waste		Resource recovery Waste Storage

3.2 BUILDING STRUCTURES

The only permanent structure within the SSD approved site is the main processing shed.

Portable building structures are located towards the south-western corner of the site. The buildings provide the following:

- Offices;
- Staff amenities (lunchroom, change room, toilets, showers); and
- Weighbridge.

Other structures within the SSD approved site are the 2 stage pit and holding tanks, above ground bunded diesel tank including awning, wheel wash and meteorological station. An unused truck wash is also located adjacent to the holding tanks.

3.3 SEALED/HARDSTAND MATERIAL SORTING AND STORAGE AREA

All access roads within the operational areas of the site are sealed. Similarly the outdoor potentially contaminating wastes unloading storage area is sealed and bunded, providing both an impervious layer and hard stand for handling, storage, loading and sorting of segregated waste materials and associated traffic movements.

The remaining areas of the site are to be progressively sealed apart from areas to remain unsealed and vegetated as identified in the Landscape Plan (Appendix J). These landscaped areas are to be maintained for the duration of the development.

3.4 SURFACE WATER SYSTEMS

The site is sloped so that runoff flows from the centre to the perimeter channel around the boundary of the site. The asphalt lined, v shaped perimeter channel varies in depth from 0 to 2 m and is 3 to 10 m wide. The perimeter drain has been divided into seven basins as a part of the SSD approved construction works through the installation of 8 rock bunds along the channel. The channel drains into a final sedimentation basin in the north-west corner of the site. The basin drains to an invert of the outlet chamber which has controlled discharge to the Hunter River. Runoff from external areas is directed away from the site by the presence of a bund wall along the southern site boundary and adjacent land levels.

The soil and water management strategy for the site is based on *Managing Urban Stormwater: Soils & Construction* (Landcom 2004) (the “Blue Book”).

The Blue Book defines a required storage volume based on the storage and treatment of runoff over the 5 days following the design storm. This allows 5 days for the treatment and discharge of water to provide an empty system to accommodate runoff from the next storm.

The final sedimentation basin has a storage volume of approximately 1400m³ to the invert of the outlet chamber and 2100m³ up to the lip of the outlet weir. The weir is an asphalt and rock protected structure. A visible marker has been installed as required by the SSD approval in the sediment detention basin in a position that shows the freeboard in the basin that equates to the volume required to contain all rainfall and runoff in the catchment from a 90th percentile rainfall event over any consecutive 5-day period.

The approximate storage volume in the perimeter channel is 3080m³. There is no runoff onto the site from external areas.

3.4.1 SURFACE WATER MANAGEMENT SYSTEM FOR POTENTIALLY CONTAMINATING WASTES AREA

The water management system captures water from external stockpiles containing ‘potentially contaminating wastes’ within a separately bunded area (5,200 m²). This water flows to the two-stage pit and is then pumped to storage tanks. For a less than 90th-percentile five-day rain event, this water is be captured, treated, tested, stored (pending analytical results) and discharged to sewer if it does not meet water quality criteria. If water quality criteria are achieved, water is discharged to the perimeter drain (and ultimately to the Hunter River if it is not reused on site or evaporate).

The surface water management system is discussed in detail in the Surface Water Characterisation and Management Plan appended as Appendix E.

3.5 OPERATING TIMES

SSD Approval Condition B62 outlines the approved hours of work as detailed in Table 3.2.

Table 3.2 SSD Approval Condition B62 Approved hours of work

Activity	Day	Time
Construction	Monday to Friday	7 am to 6 pm
	Saturday	8 am to 1 pm
	Sunday and Public Holidays	Not Permitted
Waste Receival	Monday to Friday	6 am to 6 pm
	Saturday	6 am to 5 pm
	Sunday and Public Holidays	7 am to 3 pm
Waste Processing	Monday to Friday	6 am to 6 pm
	Saturday	6 am to 5 pm
	Sunday and Public Holidays	Not Permitted
Waste Dispatch	Monday to Friday	6 am to 6 pm
	Saturday	6 am to 5 pm
	Sunday and Public Holidays	Not Permitted

Conditions 63 to 66 of the SSD Approval outline the circumstances and requirements wherein operations may be conducted outside of the hours specified in Table 5 summarised as follows:

- The works are inaudible at the nearest sensitive receivers;
- For the delivery or dispatch of materials as requested by the NSW Police Force or other public authorities for safety reasons; or
- Where it is required in an emergency to avoid the loss of lives, property or to prevent environmental harm.

Waste receival is permitted on a 24-hour per day basis on limited occasions to facilitate major infrastructure projects. Limited occasions is defined as no greater than six times per year; and only for a period of less than two weeks in length for each occasion. On each occasion the following conditions must be met:

- The Secretary, Council and all adjacent landowners must be notified no later than 48 hours prior to the 24-hour waste receival period along with a description of the major infrastructure projects which necessitate the 24-hour operations; and
- During the 24-hour waste receival period, the number of heavy vehicles accessing the site from 6 pm to 6 am must not exceed 12.

3.6 SITE STAFFING

The Site Leading Hand/Supervisor and the Site Manager (or their delegated representatives) are to be present and on the site during operating hours of the facility.

4 ENVIRONMENTAL MANAGEMENT OPERATIONAL PROCEDURES

Environmental management procedures have been developed for all key environmental management issues. These procedures form an integral part of each site activity.

4.1 SITE MANAGEMENT

SITE MANAGEMENT		OP 1
Primary Environmental Goal	<ul style="list-style-type: none">Clearly identified primary activities and controls that assure environmentally responsible operation of the facility.	
Related Environmental Goals	<ul style="list-style-type: none">Ensure compliance with SSD Approval and EPL;Preventing unauthorised entry;Assuring quality of operations;Preventing degradation of local amenity;Adequate staffing and training; andProviding and maintaining a safe work environment.	
Primary Activities	<p>Primary activities carried out on the site shall include:</p> <ul style="list-style-type: none">Receival and storage of construction and demolition waste;Retrieval of recyclable resources & their redistribution;The processing, storage and transfer of received waste;Monitoring of waste movement & maintenance of records of that movement;The control of site aspects that may affect the environment in accordance with this EMP; andManagement of the facility to ensure the safety of public, the operators and the environment.	
PROCEDURES		
OP 1.1	Traffic Control	<p>The Site Operator is empowered to direct the movement of vehicular and pedestrian traffic to ensure their safety. This is noted as a condition of entry on the gate signage.</p> <p>Traffic control signage has been erected as directed by the Site Leading Hand/Supervisor. The signage includes:</p> <ul style="list-style-type: none">Conditions of entry;Hours of operation;Acceptable and prohibited wastes signage;Speed restriction signage;Directional signage; andMaterial drop off points signage.
OP 1.2	Public and Staff Safety	<p>The safety of the public and staff is a prime consideration in all aspects of the facility.</p> <p>Operational plant and equipment will be operated in such a way as to minimise risks to persons delivering, sorting, processing or loading recovered materials and waste for transfer.</p> <p>All visitors and contractors on site will be inducted. All visitors will be</p>

		<p>accompanied by a Benedict representative at all times.</p> <p>All information and directional signs and their locations will be subject to approval of the Site Leading Hand/Supervisor.</p>
OP 1.3	Scavenging	<p>There are to be no scavenging arrangements.</p> <p>All resource recovery shall be undertaken by MWRF.</p>
OP 1.4	Vehicle Washing	<p>Waste heavy vehicles exiting the facility will be subject to wheel washing.</p>
OP 1.5	Monitoring	<p>Monitoring of day to day operations is to be undertaken by the Site Leading Hand/Supervisor.</p> <p>Overall monitoring of the site is to be undertaken by the Site Manager.</p>

4.2 WASTE MANGEMENT

A Waste Management Plan (WMP) has been prepared as required under Condition B13 of the SSD Approval. The WMP is contained in Appendix D. Key elements of this plan have informed the procedure below for waste acceptance, processing, storage and transfer.

Waste Acceptance, Processing and Transfer		OP 2
Primary Environmental Goal	<ul style="list-style-type: none"> The receipt, sorting, processing & transfer of waste and recyclables are managed and monitored to ensure environmentally responsible operation of the facility 	
Related Environmental Goals	<ul style="list-style-type: none"> Ensure compliance with SSD Approval and EPL; Conduct operations in accordance with the Waste Management Plan (refer Appendix D); The wastes and recyclables received by the facility are identified, not hazardous & recorded assuring quality of incoming waste; Maximising of recycling and reuse; Adequate staffing and training; and Providing and maintaining a safe work environment. 	
Compliance	<p>Key SSD Approval and EPL conditions relevant to Waste acceptance, sorting and processing are as follows:</p> <ul style="list-style-type: none"> The MRF must not receive or process on site more than 315,000 tonnes per year of general solid waste (non-putrescible). The MRF must not crush more than 71,000 tonnes per year of waste; and shred more than 5,400 tonnes per year of timber. The amount of waste stored on site at any one time must not exceed 53,733 tonnes. Stockpiles of waste and recycled product on-site must not be more than seven (7) metres in height when measured from the finished ground level of the site. The Applicant shall aim to achieve a recycling rate of 95% of all waste and a disposal rate of not more than 5% to landfill. All waste materials removed from the site must only be directed to a waste management facility or premises lawfully permitted to accept the materials. Waste generated outside the site must not be received at the site for storage, treatment, processing, reprocessing, or disposal, except as expressly permitted by an EPL; The amount of waste received at the site must be recorded on a daily basis; All sampling and waste classification data must be retained for the life of the development; No biochar production or storage is allowed on site; Loads predominately containing glass are not permitted to be crushed at the site; All liquid and non-liquid wastes to be taken off site in accordance with the EPA's Waste Classification Guidelines Part 1: Classifying Waste, November 2014; and All waste must be stored wholly within the designated waste stockpile areas and loaded and unloaded within the designated loading and unloading areas. 	

PROCEDURES		
OP 2.1	Control, Monitoring & Recording of Incoming Waste	<ul style="list-style-type: none"> MWRF's Site Leading Hand/Supervisor is to monitor the receipt of waste to ensure it is inspected, not hazardous and recorded.
OP 2.2	Inspection of Waste Received	<ul style="list-style-type: none"> Each load presented at the facility is to be inspected prior to the material being deposited on site.
OP 2.3	Prohibited and Unacceptable Waste	<ul style="list-style-type: none"> Waste material that is unacceptable or specified prohibited from entering the site (see EPL contained in Appendix C) will be refused entry and diverted when possible to the appropriate facility.
OP 2.4	Recording of Waste	<ul style="list-style-type: none"> All waste accepted at the facility shall be recorded on MWRF's weighbridge system and a customer docket/receipt produced (see Appendix D). All weighbridge records as required by the POEO (Waste) Regulation must be retained for the life of the MRF. The weighbridge records must be made immediately available on request by the Secretary and/or the EPA.
OP 2.5	Storage of Waste	<ul style="list-style-type: none"> Each load presented at the facility is to be directed to the appropriate storage area by the Site Leading Hand/Supervisor. Wherever possible raw materials are to be sorted at the source and directed into segregated stockpiles on-site. Unsorted materials are to be spread on the ground on-site, sorted into the various categories and formed into segregated stockpiles. All sampling and waste classification data are to be retained for the life of the Development in accordance with the requirements of the EPA. No biochar production or storage is approved under the terms of the SSD approval consent. All waste unloaded at the public hand unloading area must be unloaded and stockpiled within the main processing building. All waste must be stored wholly within the designated waste stockpile areas and loaded and unloaded within the designated loading and unloading areas.
OP 2.6	Processing of Waste	<ul style="list-style-type: none"> The sorted waste material may be subject to processing depending on its category and presentation. The processing may include screening, grinding and crushing as preparation aspects. The processed material is to be stockpiled into its various processed categories for return to the market as product(s). Stockpiling of processed material shall not exceed 7 metres The crusher and shredder are only permitted to be operated in the segregated heavy waste processing and stockpiling area, no further south than 130 m from the northern site boundary The mobile screens in the segregated heavy waste processing and stockpiling area must not be operated simultaneously with the crusher or shredder.
OP 2.7	Despatch of waste	<ul style="list-style-type: none"> All waste materials removed from the site must only be directed to a waste management facility or premises lawfully permitted to

		<p>accept the materials.</p> <ul style="list-style-type: none">• The Applicant must assess and classify all liquid and non-liquid wastes to be taken off site in accordance with the EPA's Waste Classification Guidelines Part 1: Classifying Waste, November 2014, and dispose of all wastes to a facility that may lawfully accept the waste.
OP.2.8	Records	<ul style="list-style-type: none">• Sampling and waste classification date is to be kept for the life of the MRF in accordance with EPA requirements.
OP 2.9	Monitoring	The Waste Management Plan contained in Appendix D details the Waste Monitoring Program that will be implemented during operations.

4.3 HAZARDOUS WASTE PREVENTION AND RESPONSE

Management of hazardous waste is detailed in the WMP. Key measures to manage hazardous waste are detailed in the procedure below.

HAZARDOUS WASTE PREVENTION AND RESPONSE		OP 3
Primary Environmental Goal		<ul style="list-style-type: none"> Ensuring no hazardous waste is present at the facility
Related Environmental Goals		<ul style="list-style-type: none"> Ensure compliance with SSD Approval and EPL; Assuring quality of operations; Preventing degradation of local amenity; Adequate staffing and training; and Providing and maintaining a safe work environment.
Compliance		<p>Key SSD Approval and EPL conditions relevant to hazardous waste prevention are as follows:</p> <ul style="list-style-type: none"> MRF must implement auditable procedures to ensure the site does not accept wastes that are prohibited; and screen incoming waste loads. MRF must ensure that all waste types that are controlled under a tracking system have the appropriate documentation prior to acceptance at the site; all waste received at the site must be recorded in accordance with clause 27 of the POEO (Waste) Regulation. Details of the quantity, type and source of wastes received on the site must be provided to the EPA and the Secretary when requested. Staff are to receive adequate training in order to be able to recognise and handle any hazardous or other prohibited waste including asbestos.
PROCEDURES		
OP 3.1	Hazardous Waste Management	<p>Incoming waste is monitored and any hazardous waste detected is diverted in accordance with this procedure.</p> <p>Hazardous waste found on site shall be reported and managed as an environmental or safety incident.</p>
OP 3.2	Waste Acceptance	<ul style="list-style-type: none"> Gates are locked and fences secure on days when the facility is not open to the public. Each load presenting at the facility is to be inspected for hazardous waste prior to the material being deposited on site. Waste material specifically prohibited from entering the site (see EPL contained in Appendix C) will be refused entry and diverted where possible to the appropriate facility or alternatively directed to contact the EPA for advice (ph. 02 9995 5000). Waste that is refused entry shall be recorded in a register. The information recorded shall include: <ol style="list-style-type: none"> Date; Carrier organisation; Registration number of the vehicle; and Type of waste.
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OP 3.3	Identification of Prohibited Waste	<p>Waste material listed in Appendix C as prohibited waste found to have been deposited on the site will cause:</p> <ul style="list-style-type: none"> • The receival area to be fenced off/isolated and closed to the public; • The Site Leading Hand/Supervisor and the Site Manager to be notified immediately; and • The site is to be closed should the Site Supervisor or Site Leading Hand/Supervisor deem the hazard to be such as to warrant such action.
OP 3.4	Management of Prohibited Wastes	<p>The EPA is to be advised of any incident that poses a threat to the environment as soon as practical after the incident occurs.</p> <p>The incident is to be reported by telephoning:</p> <ul style="list-style-type: none"> • EPA Newcastle office: 02 4908 6800 • EPA Pollution Hotline: 131 555 <p>Wastes identified as hazardous in Appendix C are to be managed in accordance with <i>"The Environmental Guidelines: Assessment, Classification and Management of Liquid and Non-Liquid Waste."</i></p> <p>Arrangements are to be made for the removal of the waste to an appropriate facility.</p>
OP 3.5	Incident Reports	<p>Any incident relating to the identification of a prohibited waste on the site shall be reported in accordance with <i>"OP 16- Incident Reporting"</i> (refer Section 5.4)</p>

4.4 PRODUCT CONTROL, MONITORING AND MANAGEMENT

PRODUCT CONTROL, MONITORING AND MANAGEMENT			OP 4
Primary Environmental Goal		<ul style="list-style-type: none">Recovered material produced by the facility shall not adversely affect the environment.	
Related Environmental Goals		<ul style="list-style-type: none">Ensure compliance with SSD Approval and EPL;Assuring quality of product;Assuring quality of operations; andAdequate staffing and training.	
PROCEDURES			
OP 4.1	Regulatory Control	<p>This operating procedure gives effect to and should be read in conjunction with the EPA developed exemption structure ‘<i>The Recovered Aggregate Order 2014</i>’.</p> <p>In accordance with those requirements MWRF activities are defined as a “continuous process”.</p>	
OP 4.2	Incoming Waste	<ul style="list-style-type: none">Waste receipt, management and prohibited material exclusion is to be in accordance with OP 2 OP 3 and the WMP.	
OP 4.3	Waste Selection	<p>The following wastes are included for acceptance & processing:</p> <ul style="list-style-type: none">Brick and concrete;Tiles and ceramics;Asphalt (as engineered material but not containing coal tar);Natural rock;Vegetation and wood;Glass (as co mingled with other waste);Rubber;Sand, soil, clay excluding contaminated soil;Excavated natural material (ENM);Virgin excavated natural material (VENM); andCommercial & industrial.	
OP 4.4	Product Sampling	<p>Post processing, the material is to be sampled to testing. The samples are to be selected from the processed stockpiles in accordance with Australian Standard 1141.</p> <p>The custody chain is to formed and records maintained indicating:</p> <ul style="list-style-type: none">Testing organisation;Date;Type of test;Type of material; andBatch number allocation.	
OP 4.5	Monitoring	<p>Product quality and control will be monitored by:</p> <ul style="list-style-type: none">Routine and Characterisation testing in line with EPA requirements; andProduct export details recording, declared use by consumer, quantity (m³ or tonnes) and registration number of vehicle.	
OP 4.6	Records	<p>Records of product characterisation and routine testing and quantity of product and registration number of vehicles used to transport the product are to be kept in MWRF’s record system for four (4) years.</p>	
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4.5 SURFACE WATER MANAGEMENT

A Surface Water Characterisation and Management Plan (SWCMP), as required under Condition B33 of the SSD Approval, is contained in Appendix E. Key elements of this plan have informed the procedure below for Surface Water Management.

SURFACE WATER MANAGEMENT			OP 5
Primary Environmental Goal		<ul style="list-style-type: none">Stormwater gathered by the facility shall not adversely affect the site or its surrounds.	
Related Environmental Goals		<ul style="list-style-type: none">Ensure compliance with SSD Approval and EPL;Assuring quality of operations;Preventing degradation of local amenity;Adequate staffing and training; andImplementation of the most recent version of the Surface Water Characterisation and Management Plan as approved by DPE.	
Compliance		<p>Key SSD Approval and EPL conditions relevant to surface water management</p> <ul style="list-style-type: none">Overland flow from the Development must be contained within the sealed areas of the site.Any spills must be contained and disposed of at a licensed facility.Any servicing or repair work on motor vehicles or mobile plant is to be carried out within a sealed area that has environmental controls appropriate for servicing or repair work. This must include bunding where there this work could result in liquids being spilled.All excess water from the wheel wash is to be discharged into suitable holding tanks and removed from the facility for treatment at an appropriately licensed facility or via trade waste.The surface water management system must be operated and maintained for the duration of the Development.The surface water management system is to be maintained to minimise the infiltration of surface water to groundwater including a monthly inspection for cracks and vegetation breakthrough. Any maintenance of the surface water management system must be undertaken by a suitably qualified and experienced person and record of works retained for the duration of the development;The surface water detention basins on site are to be maintained with a minimum capacity to contain the 90th percentile rainfall over any consecutive 5-day period.The Applicant must comply with any amended surface water quality criteria and discharge limits identified in the EPL.	
PROCEDURES			
OP 5.1	Surface Water	Stormwater gathered on site shall be managed to ensure it is not contaminated and limiting in sediment.	
OP 5.2	Surface Water Management	Surface Water Management is detailed in the Surface Water Characterisation and Management Plan (SWCMP) (refer Appendix E). Key measures include:	

		<ul style="list-style-type: none"> • Maintaining the surface water management system as approved including maintaining the sealed surfaces to minimise the potential for surface water to infiltrate to ground water; • Flocculation of stored water in the basins as necessary; • Only commercially available non-toxic flocculants will be used at the site; • Water is used for dust suppression but is not used for product processing; • There are to be no significant excavations within the site; • Removal of sediment from the sedimentation basins when the sediment depth is greater than 200 mm; • Recycling of sediment if of appropriate quality or disposal to a facility approved to accept contaminated sediment; • Water in the final sedimentation basin is tested before a controlled discharge and, unless it overflows, is only be discharged if it meets water quality trigger values; • Water in the sedimentation basins is used for dust suppression to minimise the mains water required; • Groundwater is not used; • Surface water is only be discharged from the location specified in the EPL; • Overland flow from the facility is contained within the sealed areas of the site; • All excess water from the wheel wash is discharged into suitable holding tanks and removed from the facility for treatment at an appropriately licensed facility or via trade waste; • All waste unloaded at the public hand unloading area must be unloaded and stockpiled within the main processing building; • Ensuring the stormwater isolation valve remains in a closed position to contain chemical spills or fire water until manually opened following disposal of contaminated water to either trade waste or to a licensed facility; and • Ensuring all works carried out on the site that involve the disturbance of (or contact with) soil or groundwater are carried out in accordance with the requirements of the report titled Site Management Plan (AECOM 2009) refer Appendix H.
OP 5.3	Monitoring	<p>A surface water monitoring program will be implemented to provide ongoing validation of the effectiveness of the management measures contained in the SWCMP.</p> <p>Details of the monitoring program are contained in the SWCMP.</p>
OP 5.4	Recording	<p>The Surface Water Monitoring results and the SWCMP will be published on Benedict's website.</p> <p>Records of surface water complaints are to be kept in MWRF's record system for at least four years.</p>

4.6 TRAFFIC MANAGEMENT

The Operational Traffic and Pedestrian Management Plan (OTPMMP), required under SSD Approval Condition B50, is contained in Appendix G. Key compliance considerations have informed the below procedure.

TRAFFIC MANAGEMENT		OP 6
Primary Environmental Goal	<ul style="list-style-type: none"> Traffic is controlled to minimise any adverse affects caused by traffic entering, circulating & leaving the facility. 	
Related Environmental Goals	<ul style="list-style-type: none"> Ensure compliance with SSD Approval; Prevent degradation of local amenity; Adequate staffing and training; Provide and maintain a safe work environment; and Adherence to the most recent version of the OTPMP approved by DPE. 	
Compliance	<p>Key SSD Approval conditions include:</p> <ul style="list-style-type: none"> All vehicular movement to and from the site must be in a forward direction; Internal roads, driveways and parking (including grades, turn paths, sight distance requirements, aisle widths, aisle lengths and parking bay dimensions) associated with the Development are maintained in accordance with the latest version of Australian Standard 2890.1 and Australian Standard 2890.2. Operations must not result in any vehicles queuing on the public road network or along the sites access road owned known as 1 McIntosh Drive, Mayfield West (Lot 16 in DP 270249) which is subject to a right of carriageway. Pedestrian access paths are clearly marked and interactions between pedestrians and vehicles must be minimised. Different activities such as unloading (public and contractor), processing and stockpiling areas at the site are clearly marked and separated by physical barriers to ensure safety is maintained; Loading and unloading of vehicles is conducted only within the boundaries of the facility within designated areas; Only light vehicles and trailers are permitted within the public unloading area, no heavy vehicles are permitted within the public unloading area. Heavy vehicles are not permitted to access Werribi Street. Customers are not permitted to leave their vehicles anywhere on the site other than the public unloading area and to access the pedestrian walkways between marked car parking spaces and the weighbridge and office area. Parking is only permitted within the designated parking spaces. Heavy vehicles and bins associated with the Development are not to be parked on local roads or footpaths in the vicinity of the site. Vehicle manoeuvring areas must always be kept clear of any obstacles, including parked cars. Vehicles accessing the development are not to queue on the public road network or along the sites access road. 	

		<ul style="list-style-type: none"> All reasonable and feasible measures are to be implemented to minimise the impact on the site's access road and any impacts on 1 McIntosh Drive, Mayfield West (Lot 16 in DP 270249).
PROCEDURES		
OP 6.1	Traffic Management	Traffic Management for the following are outlined in the OTPMP: <ul style="list-style-type: none"> Approved heavy vehicle routes; Internal traffic management; Driver code of conduct; Refuelling procedures; and NSW Oversize Overmass Loads.
OP 6.2	Traffic Control Signage	<ul style="list-style-type: none"> Hours of operation; "Conditions of Entry" including the Site Operators authority to direct traffic and pedestrian movement within the facility; Speed instruction signage (10km/h max.); and Directional signage.
OP 6.3	Monitoring	The OTPMP outlines monitoring that is to be conducted to review the effectiveness of onsite traffic management measures and driver behaviour.
OP 6.4	Recording	Any traffic incidents with actual or potential significant offsite impacts are to be reported to DPE within 7 days. Records of traffic complaints are to be kept in MWRF's record system for at least four years.

4.7 AIR QUALITY

The Air Quality Management Plan (AQMP), required under Condition B57 of the SSD Approval, is contained in Appendix F of this OEMP. Key compliance considerations have informed the below procedure.

Air Quality		OP 7
Primary Environmental Goal	<ul style="list-style-type: none"> Dust generated by the facility shall not adversely affect the site or its surrounds 	
Related Environmental Goals	<ul style="list-style-type: none"> Ensure compliance with SSD Approval; Adherence to the most recent version of the Air Quality Management Plan approved by DPE; Assuring quality of operations; Adequate staffing and training; and Providing and maintaining a safe work environment. 	
Compliance	<p>Key SSD Approval and EPL conditions relevant to Air Quality management on the site are as follows:</p> <ul style="list-style-type: none"> The AQMP must be implemented for the duration of the development. The meteorological station installed during the construction phase must be maintained to the satisfaction of the EPA for the life of the development. All reasonable steps must be taken to minimise dust generated during all works authorised by this consent. All on-site roads and car parking areas are sealed with concrete or asphalt. All operating, storage, unloading and loading areas must be sealed with concrete, asphalt or other impervious barrier(s) of the same or greater quality. Water sprinklers at the crushing and screening plant must be utilised at all time when the plant is operational. Dust suppressants must be used to prevent particulate emissions from stockpiles and other dust generating sources. Trucks and vehicles entering and leaving the Development that are carrying loads of dust generating materials must have their loads covered at all times, except during loading and unloading. Crushing occurs for no more than 46 days per year in total. Crushing does not occur during adverse meteorological conditions. All operations and activities occurring at the Development must be carried out in a manner that minimises the emissions of air pollutants from the Development. Trucks associated with the Development do not track dirt onto the public road network. Public roads used by these trucks are kept clean. Any works are carried out progressively on site to minimise exposed surfaces. Air Quality Monitoring and Reporting of the Development is to be undertaken for the first three crushing events following the commencement of expanded operations and the report 	

		<p>forwarded to the DPE within three months.</p> <ul style="list-style-type: none"> The facility must not cause or permit the emission of any offensive odour.
PROCEDURES		
OP 7.1	Air Quality Management	<p>Key measures from the AQMP include:</p> <ul style="list-style-type: none"> All existing sealed/hardstand areas will be retained; Water sprays will be used over any other bare or unsealed surfaces that have not yet been sealed and have the potential to generate unacceptable amounts of dust; All vehicle movements will be restricted to designated routes marked out by appropriate signage and fencing using sealed internal roads; Access to unsealed areas will be prevented; Restricting stockpile height to 7m, as per the conditions contained within EPL 20771; Water sprays will be used at stockpiles, crushing and screening plants and during material handling as necessary; Ceasing or reducing processing operations and the loading/unloading of stockpiles during strong wind conditions; Cleaning hardstand /roads by street sweeper; Machinery will be serviced regularly, operated efficiently and turned off when not in use (ie avoid idling) to reduce emissions; and A wheel wash will be used if required to clean truck tyres to prevent mud or sediment being carried to and deposited on the access road (and public roads).
OP 7.2	Monitoring	<p>Dust generation will be monitored by:</p> <ul style="list-style-type: none"> Regular site monitoring by the Site Leading Hand/Supervisor; Dust complaints received; and Weekly inspection of wheel wash. <p>Any dust complaints received are to be referred to the Site Leading Hand/Supervisor and to the Site Manager.</p>
OP 7.3	Recording	<p>Records of air quality complaints are to be kept in MWRF's record system for at least four years.</p>

4.8 NOISE AND VIBRATION

Noise limits as specified in the EPL and SSD Approval are presented in Table 4.1 below. Conditions concerning approved hours of operation are detailed in Section 3.15

Table 4.1 EPL and SSD Approval Noise Limits

Receiver	Day LAeq (15 minute)	Evening LAeq (15 minute)	Night LAeq (15 minute)	Night LAMax
R1 Kerr Street	48	40	40	51
R2 Woodstock Street North East	49	41	41	52
R3 Woodstock Street North West	47	39	39	51
R4 Simpson Court	47	39	39	50
R5 Shelley Close	50	42	42	53
R6 Groongal Street East	48	41	41	51
R7 Groongal Street	48	41	41	52
R8 Groongal Street	48	40	40	52
R9 Gregson Avenue	49	42	42	52
R10 Gregson Avenue	49	41	41	51
R11 80 Gregson Avenue	49	42	42	52
R12 Terry Street	42	41	41	48
R13 Olearia Crescent	40	36	36	47
Mayfield West Primary School	Internal 35 dB(A) – Noisiest 1 hr period (when in use)			
Church of Christ	Internal 40 dB(A) LAeq, period (when in use)			
Scout Hall	External 55 dB(A) Leq, period (when in use)			

The noise limits above, apply in all meteorological conditions except the following:

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

NOISE AND VIBRATION CONTROL		OP 8
Primary Environmental Goal	<ul style="list-style-type: none"> • Noise generated by the facility shall not adversely affect the site or its surrounds. 	
Related Environmental Goals	<ul style="list-style-type: none"> • Ensure compliance with EPL and SSD Approval; • Assuring quality of operations; • Preventing degradation of local amenity; • Adequate staffing and training; and • Providing and maintaining a safe working environment. 	
Compliance	Key SSD Approval and EPL conditions relevant to noise and vibration management on the site are as follows:	

		<p>Key SSD Approval and EPL conditions relevant to noise and vibration on the site are as follows:</p> <ul style="list-style-type: none"> • Ensure noise limits do not exceed those prescribed in the EPL (refer Table 4 above). • The crusher and shredder are only permitted to be operated in the segregated heavy waste processing and stockpiling area, no further south than 130 m from the northern site boundary. • The mobile screens in the segregated heavy waste processing and stockpiling area must not be operated simultaneously with the crusher or shredder. • Best practice must be implemented, including all reasonable and feasible noise management and mitigation measures to minimise operational, low frequency and traffic noise generated by the Development. • Minimise the noise impacts of the Development during adverse meteorological conditions. • Maintain the effectiveness of any noise suppression equipment on plant at all times and ensure defective plant is not used operationally until fully repaired. • Ensure all plant and equipment used on site are maintained and operated in a proper and efficient manner to minimise the likelihood of noise impacts associated with defective machinery. • Regularly assess noise emissions and relocate, modify and/or stop operations to ensure compliance with the relevant conditions of this consent. • Vibration caused by construction at any residence or structure outside the site must be limited to: for structural damage, German Standard DIN 4150 Part 3 Structural Vibration in Buildings. Effects on Structures; and for human exposure, the acceptable vibration values set out in the Environmental Noise Management Assessing Vibration: A Technical Guideline (Department of Environment and Conservation, 2006).
PROCEDURES		
OP 8.1	Noise Management	<p>Noise will be controlled by:</p> <ul style="list-style-type: none"> • Limiting the hours and types of operation to that which is approved; • Using stockpiles placed between machinery and boundaries as noise barriers; • Ensuring that plant and equipment are operated such that the noise centre is no higher than the solid boundary fences or stockpiles; • Limiting machinery used to that which meets noise generation guidelines for this type of operation; • The correct operation and maintenance of machinery; • Plant and equipment with high noise emissions to be located on the northern side of the site, furthest away from potentially noise affected neighbours; • Plant and equipment will be regularly maintained and serviced; • Broadband reversing alarms (growlers) will be used; • A site layout that minimises the need for mobile plant to reverse;
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		<ul style="list-style-type: none">• Plant and equipment will be switched off when not in use;• Any vehicle queuing will be on site rather than public roads;• Material drop heights will be minimised and dragging materials along the ground will be minimised;• Site contact details will be provided on a board at the front of the site; and• Any noise-related complaints will be handled promptly.
OP 8.2	Monitoring	<p>The site is monitored regularly by the Site Leading Hand/Supervisor for noise generation during unloading, processing and loading operations with control activities implemented as required.</p> <p>Monitoring will be accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the NSW Industrial Noise Policy.</p>
OP 8.3	Recording	Records of noise complaints are to be kept in MWRF's record system for at least four years.

4.9 PEST, VERMIN AND NOXIOUS WEEDS CONTROL

PEST AND VERMIN CONTROL			OP 9
Primary Environmental Goal		<ul style="list-style-type: none">• Pests and vermin attracted by the facility shall not adversely affect the site or its surrounds.• Ensure weed species managed under the Biosecurity Act 2015 are controlled on site.	
Related Environmental Goals		<ul style="list-style-type: none">• Ensure compliance with SSD Approval and EPL;• Assuring quality of operations;• Adequate staffing and training; and• Providing and maintaining a safe working environment.	
Compliance		<ul style="list-style-type: none">• MRF must implement suitable measures to manage pests, vermin and declared noxious weeds on the site; and inspect the site on a regular basis to ensure that these measures are working effectively, and that pests, vermin or noxious weeds are not present on site in sufficient numbers to pose an environmental hazard, or cause the loss of amenity in the surrounding area.	
PROCEDURES			
OP 9.1	Pest and Vermin Control	The site is monitored for pest and vermin and control activities implemented as required.	
OP 9.2	Pest and Vermin Management	<p>Pests, vermin will be controlled by:</p> <ul style="list-style-type: none">• Removal of residual waste in a timely fashion;• Regular cleaning of the waste receival, stockpiling and processing areas;• Weeds controlled under the Biosecurity Act 2015 will be manually removed (to avoid impact on surface water) and disposed at a facility licensed to accept general putrescible waste;• Litter control and removal by fencing and by patrolling fencing lines and removing litter for disposal;• Surface drainage minimising ponding on the site; and• Populations being controlled as appropriate.	
OP 9.3	Monitoring	The presence of pests and vermin will be monitored by visual inspections on a weekly basis.	
OP 9.4	Recording	Records of eradication programs undertaken are to be kept in MWRF’s Record System for at least four years.	

4.10 LITTER CONTROL

LITTER CONTROL		OP 10
Primary Environmental Goal	<ul style="list-style-type: none">Litter generated by the facility shall not adversely affect the site or its surrounds.	
Related Environmental Goals	<ul style="list-style-type: none">Ensure compliance with SSD Approval and EPL;Assuring quality of operations;Preventing unauthorised entry; and	
PROCEDURES		
OP 10.1	Litter Control	The site is monitored for litter and control activities implemented as required.
OP 10.2	Litter Management	Litter will be controlled by: <ul style="list-style-type: none">Removing processed material and residual waste regularly;Patrolling litter fences and fence lines on a weekly basis; andVisually inspecting adjacent properties for litter and by organising its collection and disposal.
OP 10.3	Monitoring	Litter will be monitored by: <ul style="list-style-type: none">Regular site monitoring by the Site Leading Hand/Supervisor and Site Operator; andLitter complaints received.
OP 10.4	Recording	Records of litter complaints are to be kept in MWRF's Record System for at least four years.

4.11 SECURITY OF SITE

SITE SECURITY		OP 11
Primary Environmental Goal	<ul style="list-style-type: none">Preventing unauthorised entry to the facility.	
Related Environmental Goals	<ul style="list-style-type: none">Ensure compliance with SSD Approval;Assuring quality of incoming waste;Preventing degradation of local amenity; andProviding and maintaining a safe work environment.	
Compliance	<p>The key SSD Approval conditions relevant to security on the site are as follows:</p> <ul style="list-style-type: none">The 1.8 m perimeter fence and security gates on the site must be maintained in accordance with Council’s requirements; andEnsure the security gates are locked whenever the site is not in operation or is unattended.	
PROCEDURES		
OP 11.1	Site Security Management	Access to the facility and its operations is managed to ensure there is no unauthorised entry or dumping at the facility or in its vicinity.
OP 11.2	Site Security	<p>Site security will be maintained on the site by ensuring:</p> <ul style="list-style-type: none">All fences, gates and facilities are maintained and locked when the facility is not open; andCommunication systems are available for staff working on site.

4.12 FIRE MANAGEMENT

The site's emergency response plan is contained

FIRE MANAGEMENT		OP 12
Primary Environmental Goal		<ul style="list-style-type: none"> Minimising the risk of fire damage to the facility and its surrounds.
Related Environmental Goals		<ul style="list-style-type: none"> Ensure compliance with SSD Approval; Assuring quality of operations; Preventing unauthorised entry; Preventing degradation of local amenity; Adequate staffing and training; and Providing and maintaining a safe working environment.
		<p>Key SSD Approval and EPL conditions relevant to Fire Management on the site are as follows:</p> <ul style="list-style-type: none"> The emergency response plan must be kept on the premises at all times. The emergency response plan must document systems and procedures to deal with all types of incidents (e.g. spills, explosions or fire). In accordance with Clauses E1.10 and E2.3 of Vol. 1 of the National Construction Code (NCC) the site must be maintained in a manner which meets the operational requirements of FRNSW. The stockpile storage within any building and/or open yard storage on the allotment be limited in size and volume and arranged to minimise fire spread. The arrangement of stockpiles of combustible material, stored externally, on the allotment be sufficiently separated to permit FRNSW vehicle access between stockpiles. The site must be serviced by a fire hydrant system that has a minimum water supply capable to extinguishing the sites largest fire load stockpile. Buildings which store recyclable material must include a smoke hazard system that facilitates FRNSW fire fighting operation. The containment on-site of fire water run-off.
PROCEDURES		
OP 12.1	Fire Management	<p>The facility is assessed for fire risk levels and preventative/minimisation activities implemented as required.</p> <p>A fire safety compliance certificate for the site will be obtained annually. The current certificate (issued 22/06/2018) certifies that the site is compliant to the relevant clauses of the NCC including E2.3. This certificate is appended to this OEMP as Appendix L. It is also included in the ERP (refer Appendix K).</p>
OP 12.2	Fire Prevention	<p>The potential for fires will be minimised by:</p> <ul style="list-style-type: none"> Managing the site in accordance with the relevant clauses of the NCC Part E1 Fire Fighting Equipment and E2 Smoke hazard management. Provisions for special hazards due to the nature of material
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		<p>stored onsite include;</p> <ul style="list-style-type: none"> • maintaining multiple accesses for fire fighting vehicles into and out of the main processing shed; • provision of three fire hydrants down the western side of the main processing shed; • maintaining sufficient separation between stockpiles to permit FRNSW vehicle access between stockpiles; and • Stockpiles of combustible material (namely timber) to be suitable segregated from potential ignition sources. <ul style="list-style-type: none"> • Access gates being locked at all times outside opening hours; • Maintenance of boundary fences; • Maintenance of lockable gates; • Accepting only permitted wastes; • Regularly removing residual waste from the site; • Conducting regular litter patrols; • Maintaining machinery in good working order to minimise the risk of sparks; • Maintenance of fire fighting equipment; • Consultation with the NSW Fire Brigade; and • Maintaining the quantities of dangerous goods stored and handled at the site below the threshold quantities listed in the Department of Planning's Hazardous and Offensive Development Application Guidelines – Applying SEPP 33 at all times.
OP 12.3	Fire Fighting	<p>Fire fighting shall be undertaken in association with the NSW Fire Brigade:</p> <p style="text-align: center;">Telephone: Emergency 000 and ask for Fire Brigade</p> <p>Small fires are to be extinguished utilising the fire hoses and sprinkler systems provided on site in the first instance.</p>
OP 12.4	Recording	<p>Following containment of the fire the Site Manager in conjunction with the Site Leading Hand/Supervisor is responsible for preparing an Incident Report Form as per the procedure contained in OP13 (Section 5.4). This report is to be recorded on MWRF's records system and is to include:</p> <ul style="list-style-type: none"> • Time and date of the start of the fire; • Cause of the fire (if known); • Time and date the fire was extinguished; • Location of the fire; • Weather conditions at the time of the fire; • Details and observation of the directions and dispersion rate of the smoke from the fire; • Details of any complaints from the public regarding the smoke; and • Actions that could be taken to prevent recurrence.

4.13 SPILL MANAGEMENT

SPILL MANAGEMENT		OP 13
Primary Environmental Goal	<ul style="list-style-type: none"> Stop any spillage of substances from affecting the site and its surrounds. 	
Related Environmental Goals	<ul style="list-style-type: none"> Ensure compliance with SSD Approval; Assuring quality of operations; Preventing unauthorised entry; Preventing degradation of local amenity; Adequate staffing and training; and Providing and maintaining a safe working environment. 	
Compliance	<p>Key SSD Approval conditions relevant to Spill Management on the site are as follows:</p> <ul style="list-style-type: none"> Any spills must be contained and disposed of at a licensed facility. Any servicing and repair work on motor vehicles or mobile plant is to be carried out within a sealed area that has environmental controls appropriate for servicing or repair work. This must include bunding where the work could result in liquids being spilled. A diesel spill kit must be stored in the refuelling area and deployed in the event of a spill. Overfilling of the onsite diesel tank must be prevented through gauging and monitoring of the tank's contents. Hoses used for transfer of diesel must be inspected weekly. In an emergency, flow of liquid from the storage tank to a consuming device must be immediately shut off. The stormwater isolation valve must be closed at all times unless stormwater is being discharged and its closure must be monitored weekly. During an incident, the stormwater isolation valve must remain in the closed position until manually opened upon confirmation that stormwater isolation is no longer required or once any contaminated water is disposed via trade waste or at a site that can lawfully receive the waste. The quantities of dangerous goods stored and handled at the site must be below the threshold quantities listed in the Department of Planning's Hazardous and Offensive Development Application Guidelines – Applying SEPP 33 at all times. All fuels, chemicals and oils on site will be stored in appropriately bunded areas in accordance with the relevant Australian Standards, and the EPA's Storing and Handling of Liquids: Environmental Protection – Participants Manual (DECC, 2007). To ensure that chemical spills and fire water are contained on site, during an incident, Benedict must insure the stormwater valve remains in a closed position until manually opened upon confirmation that stormwater isolation is no longer required. 	
PROCEDURES		

OP 13.1	Spill Management	<p>The facility is regularly assessed to determine the level of risk of materials spill that may adversely affect the site and its surrounds.</p> <p>The stormwater isolation valve will remain in a closed position at all times unless a controlled discharge is occurring.</p> <p>The location of the stormwater isolation valve is shown on the site's emergency evacuation plan contained in the Emergency Response Plan (Appendix K).</p>
OP 13.2	Spill Prevention	<p>The potential for spills will be minimised by:</p> <ul style="list-style-type: none"> • Inspecting incoming waste for liquids; • Re-fuelling operations of plant to be undertaken by suitably trained personnel; • Provision of spill kits and training of personnel in their use; • Storage of oils, chemicals and fuels in appropriately bunded areas; • Consultation with the NSW Fire Brigade; and • Compliance with the relevant SSD Approval conditions.
OP 13.3	Monitoring	<ul style="list-style-type: none"> • The stormwater valve will be checked on a weekly basis to ensure it remains in a closed position; and • Diesel hoses must be monitored weekly.
OP 13.4	Incident Reporting	All spills that occur on the site shall be reported using MWRF's Incident Reporting System OP 16

4.14 DECOMMISSIONING

A Conceptual Decommissioning Management Plan (CDMP), as required by Condition B84 of the SSD Approval is contained in Appendix I. The CDMP must be reviewed 12 months prior to the closure of the facility to the satisfaction of DPE.

SSD Approval Condition A13, requires that the date of closure of the facility and commencement of decommissioning activities must be notified to the Department of Planning and Environment at least one month prior to the respective development phases.

5 IMPLEMENTATION OF OEMP

5.1 ROLES AND RESPONSIBILITIES

5.1.1 SITE MANAGER

The MRF Site Manager is responsible for the following:

- Ensure the MRF complies with all relevant licences, approvals and applicable legislation;
- Approve and implement the OEMP;
- Allocate project resources to manage environmental issues on site;
- Take action to resolve non compliances;
- Ensure site personnel receive appropriate environmental awareness training and support site personnel to comply with EPL and SSD Approval conditions;
- Review the OEMP and sub plans as required; and
- Report to senior management on the performance of the OEMP, environmental incidents/non compliances and improvement opportunities.

5.1.2 SITE SUPERVISOR

The MRF Site Supervisor is responsible for the following:

- Ensure that the site complies with relevant licences, acts and regulations;
- Ensure that the site complies with relevant licences, acts and regulations;
- Identify non-conformances and notify the Site Manager;
- Undertake and/or co-ordinate environmental monitoring requirements specified within the EPL; and
- Deliver environmental awareness training.

5.1.2 ALL PERSONNEL

All site personnel are responsible for the following:

- Comply with relevant Acts, Regulations and Standards;
- Comply with Benedict policies and procedures;
- Comply with management / supervisory directions;
- Promptly report any non-conformances and/or breaches to management; and
- Participate in induction and training as directed.

5.2 TRAINING

All MRF employees and subcontractors (as necessary) receive environmental training, to ensure they are of aware of their responsibilities and have the necessary knowledge and skills to carry out their work.

Environmental requirements are explained to employees as part of Benedict corporate and site inductions. Training is ongoing as required. All inductions and ongoing training is to be recorded.

Employees and contractors are to receive training in the following areas:

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- OEMP including sub plans;
- EPL and SSD Approval compliance;
- Significant environmental risks, impacts and controls;
- Pollution Incident Response Management Plan;
- Emergency Management Plan; and
- Understanding their legal obligations.

STAFF TRAINING REQUIREMENTS		OP 14
Primary Environmental Goals	<ul style="list-style-type: none">• Staff are trained in these and referenced procedures to ensure the protection of the environment; and• Staff and contractors (and their sub-contractors) are made aware of, and are instructed to comply with, the conditions of SSD Approval relevant to activities they carry out on site.	
Related Environmental Goals	<ul style="list-style-type: none">• Assuring quality of operation;• Adequate fire fighting capacity; and• Providing and maintaining a safe working environment.	
PROCEDURES		
OP 14.1	Staff Training	<p>All staff to undertake training to enable them to competently and safely carry out their assigned duties. Specifically:</p> <ul style="list-style-type: none">• All staff employed at the facility are to be trained in the requirements and operational procedures of the OEMP;• Operators of equipment must be trained and skilled at undertaking the task allocated to them; and• Staff must be capable of identifying wastes that are not permitted to be disposed of at the facility.
OP 14.2	Monitoring	<p>Staff competency will be monitored through:</p> <ul style="list-style-type: none">• Site audits;• Annual staff competency assessments;• Customer complaints received; and• Incident reports.
OP 14.3	Responsibility	<p>Site Operator is responsible for:</p> <ul style="list-style-type: none">• Carrying out tasks in a safe manner and in accordance with the procedures in which he/she have been trained. <p>Site Leading Hand/Supervisor is responsible for:</p> <ul style="list-style-type: none">• Carrying out tasks in a safe manner and in accordance with the procedures in which he/she has been trained. <p>Site Manager is responsible for:</p> <ul style="list-style-type: none">• Implementing this procedure;• Arranging for staff competency assessments and training to ensure that all staff working at the facility are able to perform their duties in a safe and competent manner; and• Ensuring that the nominated officers have been trained in the requirements of this procedure.

5.3 COMMUNITY CONSULTATION AND COMPLAINTS HANDLING

COMMUNITY CONSULTATION AND COMPLAINTS HANDLING			OP 15
Primary Environmental Goals		<ul style="list-style-type: none"> Notifying stakeholders regarding key aspects of the operations on site; and Environmental problems identified complaints are investigated and acted upon if required. 	
Related Environmental Goals		<ul style="list-style-type: none"> To understand any concerns of local community groups; Preventing degradation of local amenity; and Adequate staffing and training. 	
Compliance		<p>Key SSD Approval conditions relevant to Community consultation and complaints handling on the site are as follows:</p> <ul style="list-style-type: none"> Requirement to consult with the community regularly throughout the Development; Regular reporting on the environmental performance of the Development is to be included on the Benedict website; and Lighting associated with the Development is to comply with the AS 4282 (INT) Control of Obtrusive Effects of Outdoor Lighting; and be mounted, screened and directed in such a manner that it does not create a nuisance to surrounding properties or the public road network including at night. 	
PROCEDURES			
OP15.1	Consultation	<p>Community consultation activities include:</p> <ul style="list-style-type: none"> A dedicated Benedict webpage; A community telephone line to provide a central point of contact for community enquiries; and Newsletters sent to adjacent landholders, sensitive receivers and relevant regulatory authorities to notify of a 24 hour waste receival period along with a description of the major infrastructure projects which necessitate the 24-hour operations. 	
OP15.2	Website	<p>The following are to be published on the website:</p> <ul style="list-style-type: none"> All current statutory approvals for the Development; The OEMP, including subplans; Summary of the monitoring results; Complaints register updated on a monthly basis; and Annual reviews and independent environmental audits. 	
OP 15.3	Complaints reporting	Complaints received from an outside party shall be reported immediately to the Site Leading Hand/Supervisor and the Site Manager	
OP 15.4	Investigations	<p>Any complaint received will be investigated including:</p> <ul style="list-style-type: none"> The cause of the complaint; The climatic conditions at the time of the incident which is the cause of the complaint; If known, the date and time the incident took place; The occurrence of similar complaints in the past; and 	
OP 15.5	Recording	Details of the complaint received, investigations and actions taken are to be recorded on MWRF's corporate records system. Records of complaints are to be kept for at least four years.	
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5.4 INCIDENT REPORTING

INCIDENT REPORTING		OP 16
Primary Environmental Goal	<ul style="list-style-type: none">Reporting incidents so that potential environmental hazards are identified.	
Related Environmental Goals	<ul style="list-style-type: none">Ensure compliance with SSD Approval;Preventing pollution of water;Management of stormwater;Management of wastewater;Prevention of degradation of local amenity;Preventing unauthorised entry;Adequate fire fighting capacity;Adequate staffing and training; andProviding and maintaining a safe working environment.	
PROCEDURES		
OP 16.1	Internal Reporting	In all cases where an incident or accident occurs which has the potential to harm the environment the incident is to be reported immediately to the Site Leading Hand/Supervisor.
OP 16.2	External Reporting	<p>Any incident or potential incident with actual or potential significant off-site impacts on people or the biophysical environment associated with the MWRF must be immediately reported to the EPA and DPE as soon as Benedict becomes aware of the incident.</p> <p>The incident is also to be immediately reported by telephoning:</p> <ul style="list-style-type: none">EPA Newcastle office: 02 4908 6800EPA Pollution Hotline: 131 555 <p>Formal written advice of the incident is to be forwarded toDPE and EPA within 7 days of the incident.</p> <p>NOTE: The external reporting requirement does not apply when the harm or potential for harm is permitted for the site.</p>
OP 16.3	Reportable Incidents	<p>Reportable incidents include:</p> <ul style="list-style-type: none">Dumping of a prohibited waste on siteFailure of the sediment pondAny other incident or observation that could pose an immediate environmental hazard that is not characteristic of the normal operations of the facility.
OP 16.4	Incident Reports	<p>Following containment and/or amelioration of the incident, an Incident Report is prepared. This report is to be recorded on MWRF’s record system and should include:</p> <ul style="list-style-type: none">Time and date the incident occurredParty recording the incidentNature, details, location and cause of the incidentDuration of the incidentActions to be taken to contain and/or ameliorate the effects of the incidentName, addresses and telephone numbers of witnesses to the
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		incident <ul style="list-style-type: none"> • Actions that could be taken to minimise the risk of such incident recurring Records of the incident are to be kept for at least four years.
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5.5 EMERGENCY RESPONSE MANAGEMENT

The following priorities are adopted when facing an emergency situation at the MRF:

- Protection of human life and welfare;
- Protection of the environment; and
- Protection of Veolia's assets.

An Emergency Management Plan has been developed by Benedict as a means of identifying potential emergency situations and identifying the appropriate response that should be followed when dealing with an emergency. The Emergency Management Plan is appended to the OEMP as Appendix K and includes:

- Emergency Control Organisation;
- Fire Safety Equipment and Systems;
- Evacuation Plan;
- Fire Hydrant Block Plan;
- Fire Sprinkler Block Plan;
- Emergency Procedures for:
 - Fire or explosion;
 - Medical Emergency;
 - Phone threat;
 - Severe storm;
 - Gas leak and airborne contaminants;
 - Civil disturbance; and
 - Stockpile fire management.

5.6 DOCUMENT CONTROL

To ensure the OEMP and sub plans are updated on a regular basis and to incorporate additional management measures (as required), the OEMP is to be reviewed and revised if necessary within three months of the following:

- DPE Approval of an Annual Review;
- Approval of a modification;
- Submission of an incident report;
- Completion of an audit; and
- Fire Safety Equipment and Systems.

All revisions to the OEMP are to be approved by DPE prior to implementation.

The OEMP is to be distributed to all appropriate staff involved in the operation and management of the facility. Revised and updated versions of the OEMP and sub plans, once approved, supersede earlier versions must be issued to all registered holders of the OEMP with a memo summarising the changes.

A register is to be maintained detailing the new version number and the date of issue.

6 COMPLIANCE REPORTING

Compliance reporting is required to provide a systematic review of the environmental performance of the MRF in accordance with legislative requirements. The reports required are summarised in Table 6.1.

Table 6.1 Required reporting

Type of Report	Frequency	Distribution	Report Inclusions
Incident reporting	Notify immediately and report within 7 days	DPE and EPA	Written report detailing the date, time, nature, cause of the incident and preventative /corrective actions.
Annual Review	Yearly	DPE	Written report including, the following: <ul style="list-style-type: none"> • Conditions compliance report; • Review of complaints; • Review of monitoring results including a comparison of these against the relevant statutory requirements; • Detail and provide evidence for the number of days crushing has occurred and of 24-hour waste receival operations; • Identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance; • Identify any trends in the monitoring data over the life of the Development; • Identify any discrepancies between the predicted and actual impacts of the Development, and analyse the potential cause of any significant discrepancies; and • Describe what measures will be implemented over the next year to improve the environmental performance of the Development.
Annual Return	Yearly	EPA	Online form submission
Independent Environmental Audit	Within 1 year of commencement of expanded operations and every 3 years thereafter	DPE	This audit must be conducted by an independent party endorsed by DPE and include: <ul style="list-style-type: none"> • Consultation with relevant agencies; • An assessment of the environmental performance of the development and compliance with relevant approvals; and • Recommend measures or actions to improve performance.

APPENDIX A – COMPLIANCE REGISTER

Condition	Requirement	Where Addressed in OEMP
A1	In addition to meeting the specific performance measures and criteria in this consent, all reasonable and feasible measures must be implemented to prevent, and if prevention is not reasonable and feasible, minimise, any material harm to the environment that may result from the construction and operation of the development, and any rehabilitation required under this consent.	Management Measures documented in Chapter 6 of this OEMP
A2	The Development may only be carried out: (a) in compliance with the conditions of this consent; (b) in accordance with the directions of the Secretary; (c) in accordance with the EIS, RTS and Amended Application; (d) in accordance with development layout plans and drawings in the RTS and Amended Application (see Appendix A); and (e) in accordance with the management and mitigation measures (see Appendix B).	Compliant OEMP addresses compliance of all conditions of consent. Management measures of RTS included in Chapter 6.
A3	Consistent with the requirements in this consent, the Secretary may make written directions to the Applicant in relation to: (a) the content of any strategy, study, system, plan, program, review, audit, notification, report or correspondence submitted under or otherwise made in relation to this consent, including those that are required to be, and have been, approved by the Secretary; and (b) the implementation of any actions or measures contained in any such document referred to in (a) above.	Noted
A4	The conditions of this consent and directions of the Secretary prevail to the extent of any inconsistency, ambiguity or conflict between them and a document listed in condition A2(c), A2(d) and A2(e). In the event of an inconsistency, ambiguity or conflict between any of the documents listed in condition A2(c), A2(d) and A2(e) the most recent document prevails to the extent of the inconsistency, ambiguity or conflict. Note: For the purposes of this condition, there will be an inconsistency between documents if it is not possible to comply with both documents, or in the case of a condition of consent or direction of the Secretary, and a document, if it is not possible to comply with both the condition or direction, and the document.	Noted
A5	This consent lapses five years after the date from which it operates, unless the Development has physically commenced on the land to which the consent applies before that date.	Noted
A6	The Applicant must not receive or process on site more than 315,000 tonnes per year of general solid waste (non-putrescible).	Section 3.1 and Appendix D
A7	A7. The Applicant must not: (a) crush more than 71,000 tonnes per year of waste; and (b) shred more than	Section 3.1and Appendix D

	5,400 tonnes per year of timber.	
A8	The amount of waste stored on site at any one time must not exceed 53,733 tonnes.	Section 3.1 and Appendix D
A9	This consent does not permit any areas of the site to be leased to third parties for storage purposes or approval of any portion of the site as a storage premises.	Noted
A10	The Applicant shall aim to achieve a recycling rate of 95% of all waste and a disposal rate of not more than 5% to landfill	Appendix D
A11	Stockpiles of waste and recycled product on-site must not be more than seven (7) metres in height when measured from the finished ground level of the site.	Section 3.1 and Appendix D
A12	Heavy vehicles are not permitted to access Werribi Street.	Section 4.6 and Appendix G
A13	The date of commencement of each of the following phases of the Development must be notified to the Department in writing, at least one month before that date: (a) construction; NSW Government 2 Mayfield West Resource Recovery Facility Department of Planning and Environment (SSD 7698) (b) operation; (c) cessation of operations; and (d) decommissioning.	Section 4.14 and Appendix I
A14	If the construction or operation or decommissioning of the Development is to be staged, the Department must be notified in writing at least one month before the commencement of each stage, of the date of commencement and the Development to be carried out in that stage.	Noted
A15	With the approval of the Secretary, the Applicant may: (a) prepare and submit any strategy, plan or program required by this consent on a staged basis (if a clear description is provided as to the specific stage and scope of the Development to which the strategy, plan or program applies, the relationship of the stage to any future stages and the trigger for updating the strategy, plan or program); (b) combine any strategy, plan or program required by this consent (if a clear relationship is demonstrated between the strategies, plans or programs that are proposed to be combined); and (c) update any strategy, plan or program required by this consent (to ensure the strategies, plans and programs required under this consent are updated on a regular basis and incorporate additional measures or amendments to improve the environmental performance of the Development).	Noted
A16	If the Secretary agrees, a strategy, plan or program may be staged or updated without consultation being undertaken with all parties required to be consulted in the relevant condition in this consent.	Noted
A17	If approved by the Secretary, updated strategies, plans or programs supersede the previous versions of them and must be implemented in accordance with the condition that requires the strategy, plan or program.	Section 5.6
A18	The Applicant must retain all weighbridge records as required by the POEO (Waste) Regulation and for the life of the Development. The weighbridge records must be made immediately available on request by the Secretary and/or the EPA.	Section 4.2

A19	The Applicant must retain waste classification records for all wastes received on the site and waste disposed from the site for the life of the Development. The waste classification records must be made immediately available on request by the EPA and/or the Secretary.	Section 4.2 and Appendix D
A20	Where conditions of this consent require consultation with an identified party, the Applicant must: (a) consult with the relevant party prior to submitting the subject document to the Secretary for approval; and (b) provide details of the consultation undertaken including: (i) a description of how matters raised by those consulted have been resolved to the satisfaction of both the Applicant and the party consulted; and (ii) details of any disagreement remaining between the party consulted and the Applicant and how the Applicant has addressed the matters not resolved.	Consultation documented as required in OTPMP (Appendix G) and SWCMP (Appendix E)
A21	The Applicant must ensure that all licences, permits and approval/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 approval/consents.	Section 2
A22	All new buildings and structures, and any alterations or additions to existing buildings and structures, that are part of the Development, must be constructed in accordance with the relevant requirements of the BCA.	N/A to operations
A23	Prior to the commencement of the operations, the Applicant must obtain a Building Information Certificate from Council in accordance with Division 6.7 of the Environmental Planning and Assessment Act 1979. Note: • Under Part 4A of the EP&A Act, the Applicant is required to obtain construction and occupation certificates for the proposed building works. • Part 8 of the EP&A Regulation sets out the requirements for the certification of the Development.	N/A to operations
A24	Prior to the construction of any utility works associated with the Development, the Applicant must obtain relevant approvals from service providers	N/A to operations
A25	Before the commencement of construction, the Applicant must: (a) consult with the relevant owner and provider of services that are likely to be affected by the Development to make suitable arrangements for access to, diversion, protection and support of the affected infrastructure; (b) prepare a dilapidation report identifying the condition of all public infrastructure in the vicinity of the site (including roads, gutters and footpaths); and (c) submit a copy of the dilapidation report to the Secretary and Council.	N/A to operations
A26	Unless the Applicant and the applicable authority agree otherwise, the Applicant must: (a) repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by carrying out the Development; and (b) relocate, or pay the full costs associated with relocating any infrastructure that needs to be relocated as a result of the Development.	Noted
A27	The Applicant must ensure that all of its employees, contractors (and their sub-contractors) are made	Section 5.2

	aware of, and are instructed to comply with, the conditions of this consent relevant to activities they carry out in respect of the Development.	
A28	Prior to the commencement of the operations, a contribution must be paid to Council in accordance with Section 7.12 of the EP&A Act, in particular the City of Newcastle Section 94A Development Contributions Plan 2009 (Updated July 2017) (adjusted on a quarterly basis (from the date of this consent), to account for movements in the Australian Bureau of Statistics Consumer Price Index – Building Construction (NSW)). A receipt for the payment to Council of the Section 7.12 Levy Contributions must be submitted to the Secretary prior to the commencement of the operations. Note: The Section 7.12 Levy as determined at the date of this consent is \$3938.69	N/A to operations
A29	All plant and equipment used on site, or to monitor the performance of the development must be: (a) maintained in a proper and efficient condition; and (b) operated in a proper and efficient manner	Sections 4.7, 4.8 & 4.13 and relevant sub plans.
A30	Prior to the commencement of operations and 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 must modify DA2015/0291 (described in Table 1) pursuant to Section 4.17(1)(b) of the Environmental Planning and Assessment Act 1979 and Clause 97 of the Environmental Planning and Assessment Regulation 2000 such that the recycling facility including acceptance of up to 90,000 tonnes per annum of waste (pre-classified general solid wastes (non-putrescible waste)) is removed from the development consent.	N/A to operations
B1	All waste materials removed from the site must only be directed to a waste management facility or premises lawfully permitted to accept the materials.	Section 4.2 and Appendix D
B2	Waste generated outside the site must not be received at the site for storage, treatment, processing, reprocessing, or disposal, except as expressly permitted by an EPL.	Section 4.2 and Appendix D
B3	The Applicant must record the amount of waste (in tonnes) received at the site on a daily basis.	Section 4.2 and Appendix D
B4	The Applicant must retain all sampling and waste classification data for the life of the Development in accordance with the requirements of the EPA.	Sections 4.2 & 4.3 and Appendix D
B5	No biochar production or storage is approved under the terms of this consent	Section 4.2 and Appendix D
B6	The Applicant must only receive waste on site that is authorised for receipt by an EPL.	Sections 4.2 & 4.3 and Appendix D
B7	The Applicant must ensure any waste generated on the site during construction and from general office activities is classified in accordance with the EPA's Waste Classification Guidelines, 2014 or its latest version, and disposed of to a facility that may lawfully accept the waste.	Section 4.2 and Appendix D
B8	Loads predominantly containing glass are not permitted to be crushed at the site.	Section 4.2 and Appendix D
B9	The Applicant must: (a) implement auditable procedures to: (i) ensure the site does not accept wastes that are prohibited; and (ii) screen incoming waste loads. (b) ensure that: (i) all waste types that are controlled	Section 4.2 and Appendix D

	under a tracking system have the appropriate documentation prior to acceptance at the site; (ii) all waste received at the site must be recorded in accordance with clause 27 of the POEO (Waste) Regulation; (iii) details of the quantity, type and source of wastes received on the site must be provided to the EPA and the Secretary when requested; and (iv) staff receive adequate training in order to be able to recognise and handle any hazardous or other prohibited waste including asbestos.	
B10	The Applicant must assess and classify all liquid and non-liquid wastes to be taken off site in accordance with the EPA's Waste Classification Guidelines Part 1: Classifying Waste, November 2014, or its latest version and dispose of all wastes to a facility that may lawfully accept the waste.	Sections 4.2 & 4.3 and Appendix D
B11	All waste must be: (a) stored wholly within the designated waste stockpile areas. (b) loaded and unloaded within the designated loading and unloading areas.	Section 4.2 and Appendix D
B12	From the commencement of operations, the Applicant must implement a Waste Monitoring Program for the Development. The program must: (a) be prepared by a suitably qualified and experienced person(s) prior to the commencement of operations; (b) include suitable provision to monitor the: (i) quantity, type and source of waste received on site; (ii) type of waste and the material crushed and shredded on site; (iii) quantity, type and quality of the outputs produced on site; and (iv) number of days crushing has occurred per calendar year. (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 to be able to recognise and handle any hazardous or other prohibited waste including asbestos.	Sections 4.2 & 4.3 and Appendix D
B13	Prior to the commencement of operations, the Applicant must prepare a Waste Management Plan (WMP) for the Development to the satisfaction of the Secretary. The WMP must form part of the OEMP required by Condition C4 and be prepared in accordance with Condition C7. The WMP must: (a) detail the type and quantity of waste to be received during operation of the Development; (b) include details of stockpile limits in the incoming waste receival area and waste storage areas; (c) include procedures for ensuring no build-up of waste will occur in the incoming waste receival area during unexpected machinery breakdown and 24-hour waste receival for major infrastructure projects; and (d) details the requirements for non-conforming waste handling and removal.	Appendix D
B14	The Applicant must: (a) not commence the operations until the Waste Management Plan required by Condition B13 is approved by the Secretary; and (b) implement the most recent version of the Waste	Noted

	Management Plan approved by the Secretary	
B15	The Applicant must: (a) implement suitable measures to manage pests, vermin and declared noxious weeds on the site; and (b) inspect the site on a regular basis to ensure that these measures are working effectively, and that pests, vermin or noxious weeds are not present on site in sufficient numbers to pose an environmental hazard, or cause the loss of amenity in the surrounding area. Note: For the purposes of this condition, noxious weeds are those species subject to an order declared under the Noxious Weed Act 1993.	Section 4.9
B16	Prior to the commencement of construction, the Applicant must install and maintain suitable erosion and sediment control measures on-site, in accordance with the relevant requirements in the latest version of the Managing Urban Stormwater: Soils and Construction Guideline and the Erosion and Sediment Control Plan included in the CEMP required by Condition C1.	N/A Construction
B17	The Development must comply with Section 120 of the POEO Act, which prohibits the pollution of waters, except as expressly provided in an EPL.	Section 2.2
B18	Any discharge or water quality criteria specified under the EPL must be complied with.	Section 4.5 and Appendix E
B19	Surface water must only be discharged from the location specified in the EPL.	Section 4.5 and Appendix E
B20	Overland flow from the Development must be contained within the sealed areas of the site.	Section 4.5 and Appendix E
B21	Any spills must be contained and disposed of at a licenced facility.	Section 4.5 and Appendix E
B22	Any servicing or repair work on motor vehicles or mobile plant is to be carried out within a sealed area that has environmental controls appropriate for servicing or repair work. This must include bunding where there this work could result in liquids being spilled.	Section 4.5 and Appendix E
B23	The floor of the truck wash is to be suitably graded and or bunded across the external door openings to prevent the escape of stored materials, process water or spilt liquids.	N/A Construction
B24	All excess water from the truck wash and wheel wash is to be discharged into suitable holding tanks and removed from the facility for treatment at an appropriately licensed facility or via trade waste.	Section 4.5 and Appendix E
B25	Prior to the commencement of operations, the Applicant must design, install and operate a surface water management system for the Development. The system must: (a) be designed and constructed by a suitably qualified and experienced person(s) endorsed by the Secretary; NSW Government 6 Mayfield West Resource Recovery Facility Department of Planning and Environment (SSD 7698) (b) be generally in accordance with the conceptual design in the RTS, the letter titled Mayfield West Recycling Facility (SSD 7698) – Water Assessment, dated 8 September 2017 prepared by EMM and applicable Australian Standards;	N/A Construction

	<p>(c) ensure that the system capacity has been designed in accordance with Australian Rainfall and Runoff (Engineers Australia, 2016) and Managing Urban Stormwater: Council Handbook (EPA, 1997);</p> <p>(d) include detention basins with a minimum capacity to contain the 90th percentile rainfall over any consecutive 5 day period in accordance with Managing Urban Stormwater - Soils and Construction Vol. 2B: Waste landfills (Department of Environment and Climate Change NSW, 2008). The wet weather capture capacity requirements of the sediment basins and water treatment system may be modified by the EPL subject to the required surface water characterisation (Condition B33);</p> <p>(e) ensure vegetation within the sediment basin and perimeter drain has been removed and the surface water infrastructure has been sealed to prevent surface water infiltration to groundwater; and</p> <p>(f) bund any potentially contaminating waste, any surface water leaving this area must be directed to the three-stage pit or equivalent for treatment, the water must then be directed to holding tanks for testing and depending on its quality either discharged to the perimeter drain or sewer as trade waste see Appendix A.</p>	
B26	The Applicant must provide a Compliance Certificate to the Secretary prior to the commencement of operations, that confirms the surface water management system has been designed and installed as per the requirements of Condition B25 and the alterations will not impede or divert natural surface water runoff so as to cause a nuisance to adjoining properties.	N/A to operations
B27	Prior to the commencement of operations, works-as-executed drawings signed by a registered surveyor must be submitted to the certifying authority demonstrating that the stormwater drainage and finished ground levels have been constructed as approved.	N/A to operations
B28	The surface water management system must be operated and maintained for the duration of the Development.	Section 4.5 and Appendix E
B29	The Applicant must maintain the surface water management system to minimise the infiltration of surface water to groundwater. This includes inspecting the infrastructure monthly for cracking and vegetation break through, removing the vegetation and sealing the infrastructure. Any maintenance on the surface water management system must be undertaken by a suitably qualified and experienced person(s), a record of these works must be kept for the life of the Development.	Section 4.5 and Appendix E
B30	The Applicant must maintain the surface water detention basins on site with a minimum capacity to contain the 90th percentile rainfall over any consecutive 5-day period in accordance with Managing Urban Stormwater - Soils and Construction Vol. 2B: Waste landfills. The Managing Urban Stormwater series of document relate to clean sediment and therefore the wet weather capture and storage capacity requirements of the sediment basins and treatment systems may be modified by the EPL based on the required surface water characterisation (Condition B33).	Section 4.5 and Appendix E

B31	The Applicant must ensure that a visible marker is installed in the sediment detention basin in a position that shows the freeboard in the basin that equates to the volume required to contain all rainfall and runoff in the catchment from a 90th percentile rainfall event over any consecutive 5-day period.	Section 4.5 and Appendix E
B32	All waste unloaded at the public hand unloading area must be unloaded and stockpiled underneath the public unloading awning or within the main processing building.	Sections 4.2 and 4.5 and Appendix E
B33	<p>B33. Prior to the commencement of operations, the Applicant must prepare a Surface Water Characterisation and Mitigation Plan (SWCMP) to the satisfaction of the Secretary to characterise the surface water and implement a mitigation plan, the SWCMP must form part of the OEMP required by Condition C4 and be prepared in accordance with Condition C7. The SWCMP must:</p> <ul style="list-style-type: none"> (a) be carried out by a suitably qualified and experienced person(s) whose appointment has been endorsed by the Secretary; (b) be prepared in consultation with the EPA; (c) detail the triggers of when the pump which transfers surface water from the three-stage pit to the holding tanks would be activated; (d) detail the type and size of the bunding around the potentially contaminating waste area; (e) detail the frequency of overflows from the three-stage pit and sediment basin; (f) collect representative samples, including a minimum of four surface water samples from the sediment basin and the three-stage pit. The surface water samples must be analysed for the analytical suite identified in Table 3.16 of the RTS; (g) characterise the surface water for the entire development and detail the potential impact of discharges on receiving surface waters with reference to ANZECC (2000) assessment criteria; NSW Government 7 Mayfield West Resource Recovery Facility Department of Planning and Environment (SSD 7698) (h) be based on the results of the surface water characterisation, investigate all practical alternatives to discharge and whether sediment basin sizing, at-source pollution controls, tertiary water treatment, water treatment plants and other treatment and reuse options are appropriate; (i) provide the Secretary with a timeframe for and implement the measures identified in sub-clause (h); (j) consider the human health risks associated with the surface water reuse process at the site; (k) include details of the maintenance procedures of the sediment basins and surface water infrastructure; (l) describe the procedures for maintaining vegetation along the perimeter drain and sediment basin; (m) establish an ongoing surface water monitoring program to validate the proposed mitigation measures. The surface water monitoring program must provide monitoring details of surface water flows, quality, storage and discharge limits; (n) identify measures for managing pollutant exceedances; and (o) identify contingency options to account for any mitigation measures that do not adequately address 	Appendix E

	the site water pollution risks.	
B34	B34. The Applicant must: (a) not commence the operations until the SWCMP required by Condition B33 is approved by the Secretary; and (b) implement the most recent version of the SWCMP approved by the Secretary for the duration of the development.	Noted
B35	Within six months of the commencement of operations and following the management measures being implemented as per SWCMP (Condition B33), the Applicant must provide a Surface Water Validation Report (SWVR) to the satisfaction of the Secretary. The SWVR must: (a) be carried out by a suitably qualified and experienced expert whose appointment has been endorsed by the Secretary; (b) be prepared in consultation with the EPA; (c) collect a minimum of four surface water samples from the sediment basin and four from the three-stage pit system; (d) characterise the surface water data (samples) and detail the potential impact of discharges on receiving surface waters with reference to ANZECC (2000) assessment criteria; (e) compare the results with the surface water characterisation in the SWCMP (Condition B33); (f) ensure surface water is being managed in accordance the EPL; (g) provide an assessment of the effectiveness of implemented mitigation measures; (h) if necessary, provide additional mitigation measures to control and/or treat all pollutants to ensure the ANZECC (2000) assessment criteria can be met including further storage or the installation of a water treatment plant; and (i) update the SWCMP to reflect any changes to the surface water management system.	Noted in Appendix E
B36	Any alterations to the surface water management system identified in the SWVR must be implemented prior to any further controlled discharges occurring to the satisfaction of the Secretary.	Noted in Appendix E
B37	The Applicant must comply with any amended surface water quality criteria and discharge limits identified in the EPL	Noted in Appendix E
B38	Within 18 months of the commencement of operations, the Applicant must commission an independent Surface Water Audit of the Development to the satisfaction of the Secretary. The audit must: (a) be carried out by a suitably qualified and experienced expert whose appointment has been endorsed by the Secretary; (b) be conducted in consultation with the EPA; (c) audit the Development whilst it is in operation; (d) validate the development against the SWCMP required by Condition B33; (e) include a summary of any EPL water quality exceedances; (f) review the design and management practices of the Development against industry best practice for surface water; (g) include an action plan that identifies and	Noted in Appendix E

	prioritises additional surface water mitigation measures and/or treatment options that may be necessary to reduce surface water impacts; and (h) provide a further program of monitoring to address water quality issues that may emerge over time.	
B39	Within three months of commissioning this audit, the Applicant must submit a copy of the audit report to the Secretary, together with its response to any recommendations contained in the audit report. The Applicant must comply with any reasonable requirement(s) of the Secretary arising from the Surface Water Audit.	Noted in Appendix E
B40	Within 12 months of the commencement of operations the Applicant must conduct a Groundwater Monitoring Program to the satisfaction of the Secretary. The program must: (a) be carried out by a suitably qualified and experienced expert in consultation with the EPA; (b) ascertain the potential for leakage of the sediment basin and perimeter drain to groundwater; (c) detail baseline data, groundwater levels and groundwater quality against the relevant criteria; (d) provide mitigation and contingency measures to prevent the sediment basins from leaking; and (e) identify a program for ongoing groundwater monitoring and reporting.	Noted
B41	Within three months of the completion of the Groundwater Monitoring Program, the Applicant must submit a copy of the Groundwater Monitoring Program as identified in Condition B40 to the Secretary and the EPA.	Noted
B42	As a minimum, the Applicant must ensure the 40,000 litre self-bunded diesel tank is managed as follows: (a) the tank must be installed in the centre of the site in accordance with Figure 3.1 of the RTS; (b) the tank must be installed in accordance with the relevant Australian Standards, must be above ground and be protected against impact from heavy vehicles; (c) the refuelling area must be covered with an awning to minimise dirty water run-off; (d) overfilling of the tank must be prevented through gauging and monitoring of the tank's contents; (e) hoses used for transfer of diesel must be inspected weekly; (f) in an emergency, flow of liquid from the storage tank to a consuming device must be immediately shut off; (g) the shut off valve must comply with the relevant Australian Standard and be fire resistant; (h) the diesel tank and re-fuelling area must be bunded within an area of impervious hardstand; and (i) a diesel spill kit must be stored in the refuelling area and deployed in the event of a spill.	Sections 4.5 & 4.13
B43	To ensure that chemical spills and fire-water are contained on-site, prior to the commencement of operations and to the satisfaction of FRNSW, the Applicant must ensure: (a) a stormwater isolation valve is installed, the stormwater isolation valve must be closed at all times unless stormwater is being discharged and its closure must be monitored weekly; (b) during an incident, the stormwater isolation valve must remain in the closed position until manually	Sections 4.12 & 4.13 and Appendix K

	opened upon confirmation that stormwater isolation is no longer required or once any contaminated water is disposed via trade waste or at a site that can lawfully receive the waste; and (c) the location of the stormwater isolation valve and any associated controls must be clearly identified on the site's fire hydrant block plan, fire sprinkler block plan and the site plan located within the site's Emergency Response Plan prepared as part of the OEMP as required by Condition C7.	
B44	The Applicant must implement all reasonable and feasible measures to minimise the impact on the site's access road and any impacts on 1 McIntosh Drive, Mayfield West (Lot 16 in DP 270249).	Section 4.6 and Appendix G
B45	Prior to the commencement of operations, the vehicular entrance and exit driveways and the direction of traffic movement within the site are to be permanently marked on the pavement surface.	Section 4.6 and Appendix G
B46	All customers are not permitted to leave their vehicles anywhere on the site other than the public unloading area and to access the pedestrian walkways between marked car parking spaces and the weighbridge and office area.	Section 4.6 and Appendix G
B47	Prior to the commencement of operations, the Applicant must provide and mark 25 on-site parking spaces (including two accessible spaces) for staff and visitors to ensure that traffic associated with the Development does not utilise public and residential streets or public parking facilities. Parking areas are to be constructed in accordance with the latest version of Australian Standard 2890. All parking associated with the Development must be contained on site.	Section 4.6 and Appendix G
B48	Parking is only permitted within the designated parking spaces	Section 4.6 and Appendix G
B49	The Applicant must ensure: (a) all vehicular movement to and from the site must be in a forward direction; (b) internal roads, driveways and parking (including grades, turn paths, sight distance requirements, aisle widths, aisle lengths and parking bay dimensions) associated with the Development are maintained in accordance with the latest version of Australian Standard 2890.1 and Australian Standard 2890.2; (c) the swept path of the longest vehicle entering and exiting the site, as well as manoeuvrability through the site, is in accordance with the relevant AUSTROADS guidelines; (d) the Development does not result in any vehicles queuing on the public road network or along the sites access road owned known as 1 McIntosh Drive, Mayfield West (Lot 16 in DP 270249) which is subject to a right of carriageway; (e) heavy vehicles and bins associated with the Development are not to be parked on local roads or footpaths in the vicinity of the site; (f) only light vehicles and trailers are permitted within the public unloading area, no heavy vehicles are permitted within the public unloading area; (g) all vehicles are wholly contained on site before being required to stop; (h) all loading and unloading of materials is carried out on-site in designated areas; (i) the different activities such as unloading (public and contractor), processing and stockpiling areas at the site are clearly marked and separated by physical barriers to ensure safety is maintained; (j) signage must be erected to direct the public and contractors to the designated unloading and loading areas; (k) public	Section 4.6 and Appendix G

	and contractor unloading areas are kept separate; (l) pedestrian access paths are clearly marked and interactions between pedestrians and vehicles must be minimised; (m) an outbound wheel wash must be installed behind the exit weighbridge as per Figure 3.9 of the RTS; (n) signage is erected and vehicles at the site do not exceed a speed of 20 km/h; (o) vehicle manoeuvring areas must always be kept clear of any obstacles, including parked cars; and (p) the turning areas in the car park are kept clear of any obstacles, including parked cars, at all times.	
B50	Prior to the commencement of operations, the Applicant must prepare an Operational Traffic and Pedestrian Management Plan (OTPM) for the Development to the satisfaction of the Secretary. The plan must form part of the OEMP required by Condition C4 and be prepared in accordance with Condition C7. The OTPM must: (a) be prepared by a suitably qualified and experienced person(s); (b) be prepared in consultation with Council; (c) detail the measures that would be implemented to ensure road safety and network efficiency during operation; (d) detail measures to ensure public safety is maintained at all times including marking pedestrian access ways and signage to direct the public to the public unloading area; (e) detail how the public unloading area will be barricaded from the contractor unloading areas and processing areas to ensure safety is maintained; (f) detail how traffic exiting the main processing building will give way to traffic exiting the segregated heavy waste processing and stockpiling area to ensure vehicles safely exit the site; (g) detail heavy vehicle routes, access and parking arrangements; (h) include a Driver Code of Conduct to: (i) minimise the impact on the local and regional road network; (ii) minimise conflicts with other road users; (iii) minimise road traffic noise; and (iv) ensure truck drivers use Steel River Boulevard and McIntosh Drive (the use of Murray Dwyer Circuit is not permitted); (v) ensure truck drivers use specified routes (i) include a program to monitor the effectiveness of these measures; and (j) if necessary, detail procedures for notifying residents and the community (including local schools), of any potential disruptions to routes.	Appendix G
B51	The Applicant must: (a) not commence the operations until the OTPM required by Condition B50 is approved by the Secretary; and (b) implement the most recent version of the OTPM approved by the Secretary for the duration of the development.	Noted
B52	Before the commencement of the operations, the Applicant must install a suitable meteorological station on the site that complies with the requirements in the EPA's Approved Methods for Sampling of Air Pollutants in New South Wales.	N/A Construction
B53	The Applicant must maintain the meteorological station to the satisfaction of the EPA for the life of the development.	Section 4.7 and Appendix F
B54	All reasonable steps must be taken to minimise dust generated during all works authorised by this consent.	Section 4.7 and Appendix F

B55	<p>The Applicant must ensure that:</p> <ul style="list-style-type: none"> (a) all on-site roads and car parking areas are sealed with concrete or asphalt; (b) all operating, storage, unloading and loading areas must be sealed with concrete, asphalt or other impervious barrier(s) of the same or greater quality; (c) water sprinklers at the crushing and screening plant must be utilised at all time when the plant is operational; (d) dust suppressants must be used to prevent particulate emissions from stockpiles and other dust generating sources; (e) trucks and vehicles entering and leaving the Development that are carrying loads of dust generating materials must have their loads covered at all times, except during loading and unloading; (f) crushing occurs for no more than 46 days per year in total; (g) crushing does not occur during adverse meteorological conditions; (h) all operations and activities occurring at the Development must be carried out in a manner that minimises the emissions of air pollutants from the Development; (i) trucks associated with the Development do not track dirt onto the public road network; (j) public roads used by these trucks are kept clean; and (k) any works are carried out progressively on site to minimise exposed surfaces. 	Section 4.7 and Appendix F
B56	Equipment must be installed and operated in accordance with best practice to ensure that the development complies with all load limits, air quality criteria, air emission limits and air quality monitoring requirements as specified in the EPL applicable to the site.	Section 4.7 and Appendix F
B57	<p>Prior to the commencement of operations, the Applicant must prepare an Air Quality Management Plan (AQMP) to the satisfaction of the Secretary. The AQMP must form part of the OEMP required by Condition C4 and be prepared in accordance with Condition C7. The AQMP must:</p> <ul style="list-style-type: none"> (a) be prepared by a suitably qualified and experienced person(s); (b) be prepared in consultation with the EPA; (c) detail and rank all emissions from all sources of the Development, including particulate emissions and odour; (d) describe the measures that will be implemented to minimise the potential risks to adverse air quality in the area including: <ul style="list-style-type: none"> (i) the management and mitigation measures to be employed at the site; (ii) plant and equipment being maintained to ensure that it is in good order; (iii) how the air quality impacts of the development will be minimised during adverse meteorological conditions or extraordinary events; (iv) identification of high emission generating operational activities, including proposed times when these works will be carried out (including respite periods if required) and mitigation measures to minimise adverse impacts from these activities; (v) compliance with the relevant conditions of this consent; (e) identify the control measures that will be implemented for each emission source; and (f) define what constitutes an air quality incident and includes a protocol for identifying and notifying the Department and relevant stakeholders of any air quality incidents. 	Appendix F

B58	The Applicant must: (a) not commence the operations until the AQMP required by Condition B57 is approved by the Secretary; and (b) implement the most recent version of the AQMP approved by the Secretary for the duration of the development.	Noted
B59	The Applicant must carry out Air Quality Monitoring and Reporting of the Development for the first three crushing events following the commencement of the operations to the satisfaction of the Secretary. The monitoring and reporting must: (a) be carried out by a suitably qualified and experienced person(s) whose appointment has been endorsed by the Secretary; (b) monitor the dust emissions whilst the Development is in operation and crushing (as described section 3.5 of the RTS) is occurring; (c) include a summary of air emission related complaints and any actions that were carried out to address the complaints; (d) validate the Development against air quality predictions in the RTS; (e) review design and management practices of the Development against industry best practice for dust emissions; and (f) include an action plan that identifies and prioritises additional dust mitigation measures that may be necessary to reduce emissions.	Noted in Appendix F
B60	Within three months of each monitoring event, the Applicant must submit a copy of the Air Quality Monitoring Report (Condition B59) to the Secretary, together with its response to any recommendations.	Noted
B61	The Applicant must ensure the Development does not cause or permit the emission of any offensive odour (as defined in the POEO Act).	Section 4.7 Appendix F

B62	<p>The Applicant must comply with the hours detailed in Table 2.</p> <p>Table 2: Hours of Work</p> <table border="1"> <thead> <tr> <th>Activity</th><th>Day</th><th>Time</th></tr> </thead> <tbody> <tr> <td rowspan="3">Construction</td><td>Monday to Friday</td><td>7 am to 6 pm</td></tr> <tr> <td>Saturday</td><td>8 am to 1 pm</td></tr> <tr> <td>Sunday and Public Holidays</td><td>Not Permitted</td></tr> <tr> <td rowspan="3">Waste Receival</td><td>Monday to Friday</td><td>6 am to 6 pm</td></tr> <tr> <td>Saturday</td><td>6 am to 5 pm</td></tr> <tr> <td>Sunday and Public Holidays</td><td>7 am to 3 pm</td></tr> <tr> <td rowspan="3">Waste Processing</td><td>Monday to Friday</td><td>6 am to 6 pm</td></tr> <tr> <td>Saturday</td><td>6 am to 5 pm</td></tr> <tr> <td>Sunday and Public Holidays</td><td>Not Permitted</td></tr> <tr> <td rowspan="3">Waste Dispatch</td><td>Monday to Friday</td><td>6 am to 6 pm</td></tr> <tr> <td>Saturday</td><td>6 am to 5 pm</td></tr> <tr> <td>Sunday and Public Holidays</td><td>Not Permitted</td></tr> </tbody> </table>	Activity	Day	Time	Construction	Monday to Friday	7 am to 6 pm	Saturday	8 am to 1 pm	Sunday and Public Holidays	Not Permitted	Waste Receival	Monday to Friday	6 am to 6 pm	Saturday	6 am to 5 pm	Sunday and Public Holidays	7 am to 3 pm	Waste Processing	Monday to Friday	6 am to 6 pm	Saturday	6 am to 5 pm	Sunday and Public Holidays	Not Permitted	Waste Dispatch	Monday to Friday	6 am to 6 pm	Saturday	6 am to 5 pm	Sunday and Public Holidays	Not Permitted	Section 3.5
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B63	<p>Works outside of the hours identified in Condition B62 may be undertaken in the following circumstances: (a) the works are inaudible at the nearest sensitive receivers; (b) for the delivery or dispatch of materials as requested by the NSW Police Force or other public authorities for safety reasons; or (c) where it is required in an emergency to avoid the loss of lives, property or to prevent environmental harm.</p>	Section 3.5																															
B64	<p>Waste receival is permitted on a 24-hour per day basis on limited occasions to facilitate major infrastructure projects. Limited occasions is defined as: (a) no greater than six times per year; and (b) only for a period of less than two weeks in length for each occasion.</p>	Section 3.5																															
B65	<p>The Secretary, Council and all adjacent landowners must be notified no later than 48 hours prior to each of the 24-hour waste receival periods referred to in Condition B64 along with a description of the major infrastructure projects which necessitate the 24-hour operations.</p>	Section 3.5																															
B66	<p>During the 24-hour waste receival period (as stipulated in Condition B64), the number of heavy vehicles accessing the site from 6 pm to 6 am must not exceed 12.</p>	Section 3.5																															
B67	<p>The crusher and shredder are only permitted to be operated in the segregated heavy waste processing and stockpiling area, no further south than 130 m from the northern site boundary (see Appendix A).</p>	Section 4.8																															

B68	The mobile screens in the segregated heavy waste processing and stockpiling area must not be operated simultaneously with the crusher or shredder.	Section 4.8																																																																																					
B69	The Applicant must: (a) implement best practice, including all reasonable and feasible noise management and mitigation measures to 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 emissions and relocate, modify and/or stop operations to ensure compliance with the relevant conditions of this consent.	Section 4.8																																																																																					
B70	<div><div>The Applicant must ensure that noise generated by operation of the Development does not exceed the noise limits in Table 3.</div><table><thead><tr><th></th><th>Day LAeq (15 minute)</th><th>Evening LAeq (15 minute)</th><th>Night LAeq (15 minute)</th><th>Night LAMax</th></tr></thead><tbody><tr><td>R1</td><td>48</td><td>40</td><td>40</td><td>51</td></tr><tr><td>R2</td><td>49</td><td>41</td><td>41</td><td>52</td></tr><tr><td>R3</td><td>47</td><td>39</td><td>39</td><td>51</td></tr><tr><td>R4</td><td>47</td><td>39</td><td>39</td><td>50</td></tr><tr><td>R5</td><td>50</td><td>42</td><td>42</td><td>53</td></tr><tr><td>R6</td><td>48</td><td>41</td><td>41</td><td>51</td></tr><tr><td>R7</td><td>48</td><td>41</td><td>41</td><td>52</td></tr><tr><td>R8</td><td>48</td><td>40</td><td>40</td><td>52</td></tr><tr><td>R9</td><td>49</td><td>42</td><td>42</td><td>52</td></tr><tr><td>R10</td><td>49</td><td>41</td><td>41</td><td>51</td></tr><tr><td>R11</td><td>49</td><td>42</td><td>42</td><td>52</td></tr><tr><td>R12</td><td>42</td><td>41</td><td>41</td><td>48</td></tr><tr><td>R13</td><td>40</td><td>36</td><td>36</td><td>47</td></tr><tr><td>Mayfield West Primary School</td><td colspan="4">Internal 35 dB(A) – Noisiest 1 hr period (when in use)</td></tr><tr><td>Church of Christ</td><td colspan="4">Internal 40 dB(A) LAeq, period (when in use)</td></tr><tr><td>Scout Hall</td><td colspan="4">External 55 dB(A) Leq, period (when in use)</td></tr></tbody></table><div><div>Table 3: Noise Limits dB(A)</div><div>Note: Noise generated by the Development is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the NSW Industrial Noise Policy. Refer to the plan in Appendix A for the location of residential sensitive receivers.</div></div></div>		Day LAeq (15 minute)	Evening LAeq (15 minute)	Night LAeq (15 minute)	Night LAMax	R1	48	40	40	51	R2	49	41	41	52	R3	47	39	39	51	R4	47	39	39	50	R5	50	42	42	53	R6	48	41	41	51	R7	48	41	41	52	R8	48	40	40	52	R9	49	42	42	52	R10	49	41	41	51	R11	49	42	42	52	R12	42	41	41	48	R13	40	36	36	47	Mayfield West Primary School	Internal 35 dB(A) – Noisiest 1 hr period (when in use)				Church of Christ	Internal 40 dB(A) LAeq, period (when in use)				Scout Hall	External 55 dB(A) Leq, period (when in use)				Section 4.8
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Scout Hall	External 55 dB(A) Leq, period (when in use)																																																																																						
B71	Vibration caused by construction at any residence or structure outside the site must be limited to: (a) for structural damage, German Standard DIN 4150 Part 3 Structural Vibration in Buildings. Effects on Structures; and (b) for human exposure, the acceptable vibration values set out in the Environmental Noise Management Assessing Vibration: A Technical Guideline (Department of Environment and Conservation, 2006).	Section 4.8																																																																																					

B72	Prior to the commencement of operations, the final design of the development must be finalised in consultation with and to the satisfaction of the Secretary and include suitable additional provisions for special hazards by specifically addressing Clauses E1.10 and E2.3 of Volume One of the National Construction Code (NCC) Series. In particular, the following matters must be addressed: (a) Clauses E1.10 and E2.3 of Volume One of the NCC be complied with to the meet the operational requirements of FRNSW; (b) the stockpile storage within any building and/or open yard storage on the allotment be limited in size and volume and arranged to minimise fire spread; (c) the arrangement of stockpiles of combustible material, stored externally, on the allotment be sufficiently separated to permit FRNSW vehicle access between stockpiles; (d) the site must be serviced by a fire hydrant system that has a minimum water supply capable to extinguishing the sites largest fire load stockpile; (e) buildings which store recyclable material must include a smoke hazard system that facilitates FRNSW firefighting operations; (f) if deemed necessary by the Secretary, by virtue of applying Clauses E1.10 and E2.3 to the Development, that any significant building used to process recyclable material is provided with an appropriate fire suppression system; and (g) the containment on-site of fire water run-off.	Section 4.12, Appendix K and Appendix L
B73	If Aboriginal objects are uncovered during construction work in the immediate area, work must stop and the Regional Operations Group of the OEH, Council and the Registered Aboriginal Parties are to be consulted.	N/A Construction
B74	The quantities of dangerous goods stored and handled at the site must be below the threshold quantities listed in the Department of Planning's Hazardous and Offensive Development Application Guidelines – Applying SEPP 33 at all times.	Sections 4.13 and 4.12
B75	Dangerous goods, as defined by the Australian Dangerous Goods Code, must be stored and handled strictly in accordance with: (a) all relevant Australian Standards; (b) for liquids, a minimum bund volume requirement of 110% of the volume of the largest single stored volume within the bund; and (c) the Environment Protection Manual for Authorised Officers: Bunding and Spill Management, technical bulletin (EPA,1997). In the event of an inconsistency between the requirements listed from a) to c) above, the most stringent requirement must prevail to the extent of the inconsistency.	Sections 4.13 and 4.12
B76	The Applicant must store all chemicals, fuels and oils used on-site in appropriately bunded areas in accordance with the requirements of all relevant Australian Standards, and EPA's Storing and Handling of Liquids: Environmental Protection – Participants Manual (DECC, 2007) (as may be updated or replaced from time to time).	Sections 4.13

B77	Any works carried out on the site that involve the disturbance of (or contact with) soil or groundwater are to be carried out in accordance with the requirements of the report titled Site Management Plan for Subsurface Disturbance Activities, McIntosh Drive Mayfield NSW. Ref: N4113204_SMP_Rev4_2Oct09, prepared by AECOM Pty Ltd, dated 2 October 2009.	Section 4.5
B78	Prior to the commencement of operations, the main processing building and segregated heavy waste processing and stockpiling area must be sealed with either asphalt or concrete to minimise infiltration of surface water to groundwater.	N/A Construction
B79	Prior to the commencement of construction, the Applicant must prepare an unexpected finds protocol to ensure that potentially contaminated material is appropriately managed. The protocol must form part of the CEMP NSW Government 14 Mayfield West Resource Recovery Facility Department of Planning and Environment (SSD 7698) required by Condition C1 and must ensure any material identified as contaminated must be disposed off-site, with the disposal location and results of testing submitted to Council, prior to its removal from the site.	N/A Construction
B80	The Applicant must maintain the landscaping and vegetation on the site in accordance with the approved Landscape Plan prepared by Terras Landscape Architects dated 9 September 2015 in Appendix A.	Section 3.3 and Appendix J
B81	The Applicant must ensure the lighting associated with the Development: (a) complies with the latest version of AS 4282 (INT) - Control of Obtrusive Effects of Outdoor Lighting; (b) is mounted, screened and directed in such a manner that it does not create a nuisance to surrounding properties or the public road network including at night; and (c) is not installed on the exterior of the Development and does not flash, chase or scintillate or contain promotional material of a visually intrusive nature.	Section 5.3
B82	The Applicant must: (a) maintain the 1.8 m perimeter fence and security gates on the site in accordance with Council's requirements; and (b) ensure the security gates are locked whenever the site is not in operation or unattended.	Section 4.11
B83	The Applicant must consult with the community regularly throughout the Development, including consultation with the nearby, adjacent landowners, sensitive receivers, relevant regulatory authorities, Registered Aboriginal Parties and other interested stakeholders.	Section 5.3
B84	Prior to the commencement of operations, the Applicant must prepare a Conceptual Decommissioning Management Plan (CDMP) for the Development to the satisfaction of the Secretary. The plan must form part of the OEMP required by Condition C4. The CDMP must: (a) include a schedule for the decommissioning of the Development; (b) detail how the following would be achieved: (i) ensure the site is left in a safe, stable and non-polluting manner; (ii) removal of all waste from the site in a lawful manner; (iii) restoration of the site so that the contamination status is no worse than that described in the Site Audit Report -Former EMD Facility Mayfield West, prepared for Delta EMD, prepared by Environ Australia Pty Ltd, November 2009; and (iv) ensure public safety is maintained. (c) include procedures for notification	Appendix I

	of the surrounding landowners; (d) include procedures for safe removal of any machinery and structures; (e) include measures to mitigate any environmental impacts associated with the removal of the Development; (f) include details of monitoring that would be undertaken during the decommissioning of the Development; and (g) be reviewed 12 months prior to the closure of the site to the satisfaction of the Secretary.	
C1	The Applicant must prepare a Construction Environmental Management Plan (CEMP) to the satisfaction of the Secretary. The CEMP must: (a) be approved by the Secretary prior to the commencement of construction; (b) identify the statutory approvals that apply to the Development; (c) describe all activities to be undertaken on the site during construction of the Development, including a clear indication of construction stages in particular how the sealing works will be staged and any associated impacts on operation, construction of surface water infrastructure must also be addressed; (d) outline all environmental management practices and procedures to be followed during construction works associated with the Development; (e) detail how unexpected finds, traffic, erosion and sedimentation and noise will be managed; (f) include a complaints handling procedure; (g) detail how the environmental performance of the construction works will be monitored, and what actions will be taken to address identified adverse environmental impacts; and (h) describe the roles and responsibilities for all relevant employees involved in construction works associated with the Development.	N/A Construction
C2	As part of the CEMP required under Condition C1 of this consent, the Applicant must include the following: (a) Erosion and Sediment Control Plan (see Condition B16); (b) Unexpected Finds Protocol (see Condition B79).	N/A Construction
C3	The Applicant must carry out the construction of the Development in accordance with the CEMP approved by the Secretary (and as revised and approved by the Secretary from time to time), unless otherwise agreed by the Secretary.	N/A Construction
C4	The Applicant must prepare an Operational Environmental Management Plan (OEMP) to the satisfaction of the Secretary. The OEMP must: (a) be approved by the Secretary prior to the commencement of operations; (b) be prepared by a suitably qualified and experienced expert; (c) provide the strategic framework for environmental management of the Development; (d) identify the statutory approvals that apply to the Development; (e) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the Development;	a) b) Prepared by EMM Consulting and Benedict Recycling Operations Planning Support Manager c)Section 2 d) Section 2 e) Section 5.1

	<p>(f) describe the procedures that would be implemented to:</p> <p>(i) keep the local community and relevant agencies informed about the operation and environmental performance of the Development;</p> <p>(ii) receive, handle, respond to, and record complaints;</p> <p>(iii) resolve any disputes that may arise;</p> <p>(iv) respond to any non-compliance; and</p> <p>(v) respond to emergencies and provide an Emergency Response Plan;</p> <p>(g) include the following environmental management plans:</p> <p>(i) Waste Management Plan (see Condition B13);</p> <p>(ii) Surface Water Characterisation and Mitigation Plan (see Condition B33);</p> <p>(iii) Operational Traffic and Pedestrian Management Plan (see Condition B50);</p> <p>(iv) Air Quality Management Plan (see Condition B57); and</p> <p>(v) Conceptual Decommissioning Management Plan (see Condition B84).</p>	<p>f) Section 5</p> <p>g) Appendices D-G & I</p>
C5	The Applicant must carry out the construction of the Development in accordance with the OEMP approved by the Secretary (and as revised and approved by the Secretary from time to time), unless otherwise agreed by the Secretary.	This OEMP and sub plans
C6	C6. The Applicant must submit a Compliance Register Table to the Secretary with any Environmental Management Plans, which details where the relevant conditions have been addressed within the Environmental Management Plan.	Appendix A
C7	<p>The Applicant must ensure that the environmental management plans required under Condition C4 of this consent are prepared by a suitably qualified person or persons in accordance with best practice and include:</p> <p>(a) detailed baseline data; NSW Government 16 Mayfield West Resource Recovery Facility Department of Planning and Environment (SSD 7698)</p> <p>(b) a description of:</p> <p>(i) the relevant statutory requirements (including any relevant approval, licence or lease conditions);</p> <p>(ii) any relevant limits or performance measures/criteria; and</p> <p>(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;</p> <p>(c) a description of the management measures that would be implemented to comply with the relevant statutory requirements, limits or performance measures/criteria;</p> <p>(d) a program to monitor and report on the:</p> <p>(i) impacts and environmental performance of the Development; and</p> <p>(ii) effectiveness of any management measures (see (c) above)</p>	Appendices D-G & I

	<p>(e) a contingency plan to manage any unpredicted impacts and their consequences;</p> <p>(f) a program to investigate and implement ways to improve the environmental performance of the Development over time;</p> <p>(g) a protocol for managing and reporting any:</p> <p>(i) incidents;</p> <p>(ii) complaints;</p> <p>(iii) non-compliances with statutory requirements; and</p> <p>(iv) exceedances of the impact assessment criteria and/or performance criteria; and</p> <p>(h) a protocol for periodic review of the plan.</p>	
C8	<p>Within three months of:</p> <p>(a) approval of a modification;</p> <p>(b) approval of an annual review under Condition C9; (c) submissions of an incident report under Condition C11; or</p> <p>(d) completion of an audit under Condition C13.</p> <p>the Applicant must review, and if necessary revise, the strategies, plans, and programs required under this consent to the satisfaction of the Secretary.</p> <p>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.</p>	Section 6
C9	<p>Each year, the Applicant must review the environmental performance of the Development to the satisfaction of the Secretary. This review must:</p> <p>(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;</p> <p>(b) provide a conditions compliance report which tracks the compliance of the development with the conditions of this approval;</p> <p>(c) include a comprehensive review of the monitoring results and complaints records of the Development over the previous calendar year, which includes a comparison of these results against the:</p> <p>(i) the relevant statutory requirements, limits or performance measures/criteria;</p> <p>(ii) requirements of any plan or program required under this consent;</p> <p>(iii) the monitoring results of previous years; and</p> <p>(iv) the relevant predictions in the EIS;</p> <p>(d) detail and provide evidence for the number of days crushing and the 24-hour waste receipt operations has occurred;</p>	Section 6

	<p>(e) identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;</p> <p>(f) identify any trends in the monitoring data over the life of the Development;</p> <p>(g) identify any discrepancies between the predicted and actual impacts of the Development, and analyse the potential cause of any significant discrepancies; and</p> <p>(h) describe what measures will be implemented over the next year to improve the environmental performance of the Development.</p>	
C10	The Applicant must notify the Secretary and any other relevant agencies of any incident or potential incident with actual or potential significant off-site impacts on people or the biophysical environment associated with the Development immediately after the Applicant becomes aware of the incident.	Section 5.4 and Section 6
C11	Within seven days of the date of this incident, the Proponent must provide the Secretary and any relevant agencies with a detailed report on the incident.	Section 6
C12	The Applicant must 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.	Section 5.3
C13	<p>Within one year of the commencement of operations, and every three years thereafter, unless the Secretary directs otherwise, the Applicant must 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) include consultation with the relevant agencies; (c) assess the environmental performance of the Development and assess whether it is complying with the requirements in this consent, and any other relevant approvals, relevant EPL(s) (including any assessment, plan or program required under these approvals); (d) review the adequacy of any approved strategy, plan or program required under the abovementioned consents; and (e) recommend measures or actions to improve the environmental performance of the Development, and/or any strategy, plan or program required under these consents. Note: This audit team must be led by a suitably qualified auditor, and include relevant experts in any other fields specified by the Secretary.</p>	Section 6
C14	Within three months of commissioning this audit, or as otherwise agreed by the Secretary, the Applicant must submit a copy of the audit report to the Secretary, together with its response to any recommendations contained in the audit report.	Section 6
C15	<p>The Applicant must:</p> <p>(a) make copies of the following publicly available on its website:</p> <p>(i) the documents referred to in Condition A2;</p> <p>(ii) all current statutory approvals for the Development;</p>	Section 6

	<p>(iii) all approved strategies, plans and programs required under the conditions of this consent;</p> <p>(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;</p> <p>(v) a complaints register updated on a monthly basis; (vi) the annual reviews of the Development;</p> <p>(vii) any independent environmental audit of the Development and the Applicant's response to the recommendations in any audit; and</p> <p>(viii) any other matter required by the Secretary</p> <p>(b) keep this information up to date, to the satisfaction of the Secretary</p>	
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APPENDIX B – SSD APPROVAL

Development Consent

Section 4.38 of the *Environmental Planning and Assessment Act 1979*

As delegate of the Minister for Planning under delegation executed on 11 October 2017, I approve the Development Application referred to in Schedule 1, subject to the conditions specified in Schedule 2.

These conditions are required to:

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



Anthea Sargeant
Executive Director
Key Sites and Industry Assessments

Sydney

13 March,

2018

SCHEDULE 1

Application No:

SSD 7698

Applicant:

Benedict Recycling Pty Ltd

Consent Authority:

Minister for Planning

Land:

Lot 1 DP 874109

1a McIntosh Drive, Mayfield West

Development:

Increase in processing capacity of an existing resource recovery facility to 315,000 tonnes per year of general solid waste (non-putrescible) including construction and demolition waste and commercial and industrial waste.

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DEFINITIONS

Applicant	Benedict Recycling Pty Ltd or any other person carrying out any development to which this consent applies
Amended Application	Mayfield West Recycling Facility SSD 7698 - Development Application Amendment letter, dated 24 August 2017, prepared by EMM
ANZECC (2000)	Australian and New Zealand Guidelines for Fresh and Marine Water Quality, prepared by Australian and New Zealand Environment and Conservation Council 2000
AS	Australian Standard
BCA	Building Code of Australia
CEMP	Construction Environmental Management Plan
Certifying Authority	A person who is authorised by or under Section 6.17 of the EP&A Act to issue Part 4A certificates
Conditions of this consent	The conditions contained in Schedule 2 of this document
Construction	The demolition and removal of buildings or works, the carrying out of works for the purpose of the Development, including earthworks, and erection of buildings and other infrastructure permitted by this consent (including sealing the site and installation of the 40,000 L diesel tank)
Council	Newcastle City Council
Day	The period from 7 am to 6 pm on Monday to Saturday, and 8 am to 6 pm on Sundays and Public Holidays
Decommissioning	The controlled process of safely retiring a facility from service, including decontamination, dismantling and disposal after the cessation of operations
Department	Department of Planning and Environment
Development	The development as described in the EIS and RTS and Amended Application and as generally depicted in Appendix A including the works and activities comprising resource recovery of waste, as modified by the conditions of this consent
DPI	NSW Department of Primary Industries
Earthworks	Bulk earthworks, site levelling, import and compaction of fill material, excavation for installation of drainage and services, to prepare the site for construction
EIS	The Environmental Impact Statement titled Environmental Impact Statement, Mayfield West Recycling Facility, prepared by EMM, dated 11 October 2016 submitted with the application for consent for the development, including any additional information provided by the Applicant in support of the application
EPA	NSW Environment Protection Authority
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EP&A Regulation	<i>Environmental Planning and Assessment Regulation 2000</i>
EPL	Environment Protection Licence issued by the EPA under the POEO Act
Evening	The period from 6 pm to 10 pm
Feasible	Relates to engineering considerations and what is practical to build
FRNSW	Fire and Rescue NSW
General solid waste (non-putrescible)	As defined in Part 3 Schedule 1 of the POEO Act
Heavy vehicle	Any vehicle with a gross vehicle mass of five tonnes or more
Heritage	Encompasses both Aboriginal and historic heritage including sites that predate European settlement, and a shared history since European settlement
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 causing or threatening material harm to the environment, and/or an exceedance of the limits or performance criteria in this consent
kL	Kilolitre
Land	In general, the definition of land is consistent with the definition in the EP&A Act
Limited Occasions	No greater than six times per year and only for a period of less than two weeks in length for each occasion
Management & Mitigation Measures	The management and mitigation measures set out in Appendix B
Material harm	Is harm that:

	<ul style="list-style-type: none"> involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding \$10,000, (such loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment).
Minister	Minister for Planning (or delegate)
Mitigation	Activities associated with reducing the impacts of the Development prior to or during those impacts occurring
NCC	National Construction Code
Night	The period from 10 pm to 7 am on Monday to Saturday, and 10 pm to 8 am on Sundays and Public Holidays
OEH	Office of Environment and Heritage
OEMP	Operational Environmental Management Plan
Operation	The receipt, removal or processing of waste, upon the completion of construction
PCA	Principal Certifying Authority authorised under Section 6.17 of the EP&A Act
POEO Act	<i>Protection of the Environment Operations Act 1997</i>
POEO (Waste) Regulation	<i>Protection of the Environment Operations (Waste) Regulation 2014</i>
Rehabilitation	The restoration of land disturbed by the development to a good condition, to ensure it is safe, stable and non-polluting
Reasonable	Relates to the application of judgment in arriving at a decision, taking into account: mitigation benefits, costs of mitigation versus benefits provided, community views, and the nature and extent of potential improvements
RRF	Resource Recovery Facility
Registered Aboriginal Parties	Means the Aboriginal persons identified in accordance with the document entitled "Aboriginal cultural heritage consultation requirements for proponents 2010" (DECCW)
RTS	The Applicant's response to issues raised in submissions received in relation to the application for consent for the development under the EP&A Act, titled Mayfield West Recycling Facility Response to Submissions, prepared by EMM, dated 20 July 2017
Secretary	Secretary of the Department, or nominee
Sensitive Receivers	A location where people are likely to work, occupy or reside, including a dwelling, school, hospital, office or public recreational area
Site	The land listed in Schedule 1
SSD 7698	The Development as described in Schedule 1, the EIS and the RTS and the Amended Application
Waste	Has the same meaning as the definition of the term in the dictionary to the POEO Act
Year	A period of 12 consecutive months

SCHEDULE 2

PART A: ADMINISTRATIVE CONDITIONS

OBLIGATION TO MINIMISE HARM TO THE ENVIRONMENT

- A1. In addition to meeting the specific performance measures and criteria in this consent, all reasonable and feasible measures must be implemented to prevent, and if prevention is not reasonable and feasible, minimise, any material harm to the environment that may result from the construction and operation of the development, and any rehabilitation required under this consent.

TERMS OF CONSENT

- A2. The Development may only be carried out:
- (a) in compliance with the conditions of this consent;
 - (b) in accordance with the directions of the Secretary;
 - (c) in accordance with the EIS, RTS and Amended Application;
 - (d) in accordance with development layout plans and drawings in the RTS and Amended Application (see Appendix A); and
 - (e) in accordance with the management and mitigation measures (see Appendix B).
- A3. Consistent with the requirements in this consent, the Secretary may make written directions to the Applicant in relation to:
- (a) the content of any strategy, study, system, plan, program, review, audit, notification, report or correspondence submitted under or otherwise made in relation to this consent, including those that are required to be, and have been, approved by the Secretary; and
 - (b) the implementation of any actions or measures contained in any such document referred to in (a) above.
- A4. The conditions of this consent and directions of the Secretary prevail to the extent of any inconsistency, ambiguity or conflict between them and a document listed in condition A2(c), A2(d) and A2(e). In the event of an inconsistency, ambiguity or conflict between any of the documents listed in condition A2(c), A2(d) and A2(e) the most recent document prevails to the extent of the inconsistency, ambiguity or conflict.

Note: For the purposes of this condition, there will be an inconsistency between documents if it is not possible to comply with both documents, or in the case of a condition of consent or direction of the Secretary, and a document, if it is not possible to comply with both the condition or direction, and the document.

LIMITS OF CONSENT

- A5. This consent lapses five years after the date from which it operates, unless the Development has physically commenced on the land to which the consent applies before that date.
- A6. The Applicant must not receive or process on site more than 315,000 tonnes per year of general solid waste (non-putrescible).
- A7. The Applicant must not:
- (a) crush more than 71,000 tonnes per year of waste; and
 - (b) shred more than 5,400 tonnes per year of timber.
- A8. The amount of waste stored on site at any one time must not exceed 53,733 tonnes.
- A9. This consent does not permit any areas of the site to be leased to third parties for storage purposes or approval of any portion of the site as a storage premises.
- A10. The Applicant shall aim to achieve a recycling rate of 95% of all waste and a disposal rate of not more than 5% to landfill.
- A11. Stockpiles of waste and recycled product on-site must not be more than seven (7) metres in height when measured from the finished ground level of the site.
- A12. Heavy vehicles are not permitted to access Werribi Street.

NOTIFICATION OF COMMENCEMENT

- A13. The date of commencement of each of the following phases of the Development must be notified to the Department in writing, at least one month before that date:
- (a) construction;

- (b) operation;
- (c) cessation of operations; and
- (d) decommissioning.

A14. If the construction or operation or decommissioning of the Development is to be staged, the Department must be notified in writing at least one month before the commencement of each stage, of the date of commencement and the Development to be carried out in that stage.

STAGING, COMBINING AND UPDATING STRATEGIES, PLANS OR PROGRAMS

- A15. With the approval of the Secretary, the Applicant may:
- (a) prepare and submit any strategy, plan or program required by this consent on a staged basis (if a clear description is provided as to the specific stage and scope of the Development to which the strategy, plan or program applies, the relationship of the stage to any future stages and the trigger for updating the strategy, plan or program);
 - (b) combine any strategy, plan or program required by this consent (if a clear relationship is demonstrated between the strategies, plans or programs that are proposed to be combined); and
 - (c) update any strategy, plan or program required by this consent (to ensure the strategies, plans and programs required under this consent are updated on a regular basis and incorporate additional measures or amendments to improve the environmental performance of the Development).
- A16. If the Secretary agrees, a strategy, plan or program may be staged or updated without consultation being undertaken with all parties required to be consulted in the relevant condition in this consent.
- A17. If approved by the Secretary, updated strategies, plans or programs supersede the previous versions of them and must be implemented in accordance with the condition that requires the strategy, plan or program.

REQUEST FOR INFORMATION

- A18. The Applicant must retain all weighbridge records as required by the POEO (Waste) Regulation and for the life of the Development. The weighbridge records must be made immediately available on request by the Secretary and/or the EPA.
- A19. The Applicant must retain waste classification records for all wastes received on the site and waste disposed from the site for the life of the Development. The waste classification records must be made immediately available on request by the EPA and/or the Secretary.

EVIDENCE OF CONSULTATION

- A20. Where conditions of this consent require consultation with an identified party, the Applicant must:
- (a) consult with the relevant party prior to submitting the subject document to the Secretary for approval; and
 - (b) provide details of the consultation undertaken including:
 - (i) a description of how matters raised by those consulted have been resolved to the satisfaction of both the Applicant and the party consulted; and
 - (ii) details of any disagreement remaining between the party consulted and the Applicant and how the Applicant has addressed the matters not resolved.

STATUTORY REQUIREMENTS

- A21. The Applicant must ensure that all licences, permits and approval/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 approval/consents.

STRUCTURAL ADEQUACY

- A22. All new buildings and structures, and any alterations or additions to existing buildings and structures, that are part of the Development, must be constructed in accordance with the relevant requirements of the BCA.
- A23. Prior to the commencement of the operations, the Applicant must obtain a Building Information Certificate from Council in accordance with Division 6.7 of the *Environmental Planning and Assessment Act 1979*.

Note:

- Under Part 4A of the EP&A Act, the Applicant is required to obtain construction and occupation certificates for the proposed building works.
- Part 8 of the EP&A Regulation sets out the requirements for the certification of the Development.

UTILITIES AND SERVICES

- A24. Prior to the construction of any utility works associated with the Development, the Applicant must obtain relevant approvals from service providers.

PROTECTION OF PUBLIC INFRASTRUCTURE

- A25. Before the commencement of construction, the Applicant must:
- consult with the relevant owner and provider of services that are likely to be affected by the Development to make suitable arrangements for access to, diversion, protection and support of the affected infrastructure;
 - prepare a dilapidation report identifying the condition of all public infrastructure in the vicinity of the site (including roads, gutters and footpaths); and
 - submit a copy of the dilapidation report to the Secretary and Council.
- A26. Unless the Applicant and the applicable authority agree otherwise, the Applicant must:
- repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by carrying out the Development; and
 - relocate, or pay the full costs associated with relocating any infrastructure that needs to be relocated as a result of the Development.

COMPLIANCE

- A27. The Applicant must ensure that all of its employees, contractors (and their sub-contractors) are made aware of, and are instructed to comply with, the conditions of this consent relevant to activities they carry out in respect of the Development.

SECTION 7.12 CONTRIBUTIONS TO COUNCIL

- A28. Prior to the commencement of the operations, a contribution must be paid to Council in accordance with Section 7.12 of the EP&A Act, in particular the *City of Newcastle Section 94A Development Contributions Plan 2009 (Updated July 2017)* (adjusted on a quarterly basis (from the date of this consent), to account for movements in the Australian Bureau of Statistics Consumer Price Index – Building Construction (NSW)). A receipt for the payment to Council of the Section 7.12 Levy Contributions must be submitted to the Secretary prior to the commencement of the operations.

Note: The Section 7.12 Levy as determined at the date of this consent is \$3938.69

OPERATION OF PLANT AND EQUIPMENT

- A29. All plant and equipment used on site, or to monitor the performance of the development must be:
- maintained in a proper and efficient condition; and
 - operated in a proper and efficient manner.

MODIFICATION OF CONSENT

- A30. Prior to the commencement of operations and 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 must modify DA2015/0291 (described in **Table 1**) pursuant to Section 4.17(1)(b) of the *Environmental Planning and Assessment Act 1979* and Clause 97 of the *Environmental Planning and Assessment Regulation 2000* such that the recycling facility including acceptance of up to 90,000 tonnes per annum of waste (pre-classified general solid wastes (non-putrescible waste)) is removed from the development consent.

Table 1: Consent to be Modified

Determination Date	DA Number	Details
8 March 2016	DA2015/0291	Recycling facility involving: <ul style="list-style-type: none">acceptance of up to 90,000 tonnes per annum of waste (pre-classified general solid wastes (non-putrescible waste)) such as construction and demolition wastesancillary waste activitiesconstruction of truck wash facilitiesassociated site works.

PART B: ENVIRONMENTAL PERFORMANCE AND MANAGEMENT

WASTE MANAGEMENT

Statutory Requirements

- B1. All waste materials removed from the site must only be directed to a waste management facility or premises lawfully permitted to accept the materials.
- B2. Waste generated outside the site must not be received at the site for storage, treatment, processing, reprocessing, or disposal, except as expressly permitted by an EPL.
- B3. The Applicant must record the amount of waste (in tonnes) received at the site on a daily basis.
- B4. The Applicant must retain all sampling and waste classification data for the life of the Development in accordance with the requirements of the EPA.
- B5. No biochar production or storage is approved under the terms of this consent.

Receipt, Storage & Handling of Waste

- B6. The Applicant must only receive waste on site that is authorised for receipt by an EPL.
- B7. The Applicant must ensure any waste generated on the site during construction and from general office activities is classified in accordance with the EPA's *Waste Classification Guidelines, 2014* or its latest version, and disposed of to a facility that may lawfully accept the waste.
- B8. Loads predominantly containing glass are not permitted to be crushed at the site.
- B9. The Applicant must:
 - (a) implement auditable procedures to:
 - (i) ensure the site does not accept wastes that are prohibited; and
 - (ii) screen incoming waste loads.
 - (b) ensure that:
 - (i) all waste types that are controlled under a tracking system have the appropriate documentation prior to acceptance at the site;
 - (ii) all waste received at the site must be recorded in accordance with clause 27 of the POEO (Waste) Regulation;
 - (iii) details of the quantity, type and source of wastes received on the site must be provided to the EPA and the Secretary when requested; and
 - (iv) staff receive adequate training in order to be able to recognise and handle any hazardous or other prohibited waste including asbestos.
- B10. The Applicant must assess and classify all liquid and non-liquid wastes to be taken off site in accordance with the EPA's *Waste Classification Guidelines Part 1: Classifying Waste, November 2014*, or its latest version and dispose of all wastes to a facility that may lawfully accept the waste.
- B11. All waste must be:
 - (a) stored wholly within the designated waste stockpile areas.
 - (b) loaded and unloaded within the designated loading and unloading areas.

Waste Monitoring Program

- B12. From the commencement of operations, the Applicant must implement a Waste Monitoring Program for the Development. The program must:
 - (a) be prepared by a suitably qualified and experienced person(s) prior to the commencement of operations;
 - (b) include suitable provision to monitor the:
 - (i) quantity, type and source of waste received on site;
 - (ii) type of waste and the material crushed and shredded on site;
 - (iii) quantity, type and quality of the outputs produced on site; and
 - (iv) number of days crushing has occurred per calendar year.
 - (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 to be able to recognise and handle any hazardous or other prohibited waste including asbestos.

Waste Management Plan

- B13. Prior to the commencement of operations, the Applicant must prepare a Waste Management Plan (WMP) for the Development to the satisfaction of the Secretary. The WMP must form part of the OEMP required by Condition C4 and be prepared in accordance with Condition C7. The WMP must:
- (a) detail the type and quantity of waste to be received during operation of the Development;
 - (b) include details of stockpile limits in the incoming waste receipt area and waste storage areas;
 - (c) include procedures for ensuring no build-up of waste will occur in the incoming waste receipt area during unexpected machinery breakdown and 24-hour waste receipt for major infrastructure projects; and
 - (d) details the requirements for non-conforming waste handling and removal.
- B14. The Applicant must:
- (a) not commence the operations until the Waste Management Plan required by Condition B13 is approved by the Secretary; and
 - (b) implement the most recent version of the Waste Management Plan approved by the Secretary.

Pests, Vermin and Noxious Weed Management

- B15. The Applicant must:
- (a) implement suitable measures to manage pests, vermin and declared noxious weeds on the site; and
 - (b) inspect the site on a regular basis to ensure that these measures are working effectively, and that pests, vermin or noxious weeds are not present on site in sufficient numbers to pose an environmental hazard, or cause the loss of amenity in the surrounding area.

Note: For the purposes of this condition, noxious weeds are those species subject to an order declared under the *Noxious Weed Act 1993*.

SOILS, WATER QUALITY AND HYDROLOGY

Erosion and Sediment Control

- B16. Prior to the commencement of construction, the Applicant must install and maintain suitable erosion and sediment control measures on-site, in accordance with the relevant requirements in the latest version of the *Managing Urban Stormwater: Soils and Construction Guideline* and the Erosion and Sediment Control Plan included in the CEMP required by Condition C1.

Pollution of Waters

- B17. The Development must comply with Section 120 of the *POEO Act*, which prohibits the pollution of waters, except as expressly provided in an EPL.
- B18. Any discharge or water quality criteria specified under the EPL must be complied with.
- B19. Surface water must only be discharged from the location specified in the EPL.
- B20. Overland flow from the Development must be contained within the sealed areas of the site.
- B21. Any spills must be contained and disposed of at a licenced facility.
- B22. Any servicing or repair work on motor vehicles or mobile plant is to be carried out within a sealed area that has environmental controls appropriate for servicing or repair work. This must include bunding where there this work could result in liquids being spilled.

Truck and Wheel Wash

- B23. The floor of the truck wash is to be suitably graded and or bunded across the external door openings to prevent the escape of stored materials, process water or spilt liquids.
- B24. All excess water from the truck wash and wheel wash is to be discharged into suitable holding tanks and removed from the facility for treatment at an appropriately licensed facility or via trade waste.

Surface Water Management System

- B25. Prior to the commencement of operations, the Applicant must design, install and operate a surface water management system for the Development. The system must:
- (a) be designed and constructed by a suitably qualified and experienced person(s) endorsed by the Secretary;

- (b) be generally in accordance with the conceptual design in the RTS, the letter titled Mayfield West Recycling Facility (SSD 7698) – Water Assessment, dated 8 September 2017 prepared by EMM and applicable Australian Standards;
 - (c) ensure that the system capacity has been designed in accordance with Australian Rainfall and Runoff (Engineers Australia, 2016) and Managing Urban Stormwater: Council Handbook (EPA, 1997);
 - (d) include detention basins with a minimum capacity to contain the 90th percentile rainfall over any consecutive 5 day period in accordance with *Managing Urban Stormwater - Soils and Construction Vol. 2B: Waste landfills* (Department of Environment and Climate Change NSW, 2008). The wet weather capture capacity requirements of the sediment basins and water treatment system may be modified by the EPL subject to the required surface water characterisation (Condition B33);
 - (e) ensure vegetation within the sediment basin and perimeter drain has been removed and the surface water infrastructure has been sealed to prevent surface water infiltration to groundwater; and
 - (f) bund any potentially contaminating waste, any surface water leaving this area must be directed to the three-stage pit or equivalent for treatment, the water must then be directed to holding tanks for testing and depending on its quality either discharged to the perimeter drain or sewer as trade waste see Appendix A.
- B26. The Applicant must provide a Compliance Certificate to the Secretary prior to the commencement of operations, that confirms the surface water management system has been designed and installed as per the requirements of Condition B25 and the alterations will not impede or divert natural surface water runoff so as to cause a nuisance to adjoining properties.
- B27. Prior to the commencement of operations, works-as-executed drawings signed by a registered surveyor must be submitted to the certifying authority demonstrating that the stormwater drainage and finished ground levels have been constructed as approved.
- B28. The surface water management system must be operated and maintained for the duration of the Development.
- B29. The Applicant must maintain the surface water management system to minimise the infiltration of surface water to groundwater. This includes inspecting the infrastructure monthly for cracking and vegetation break through, removing the vegetation and sealing the infrastructure. Any maintenance on the surface water management system must be undertaken by a suitably qualified and experienced person(s), a record of these works must be kept for the life of the Development.
- B30. The Applicant must maintain the surface water detention basins on site with a minimum capacity to contain the 90th percentile rainfall over any consecutive 5-day period in accordance with *Managing Urban Stormwater - Soils and Construction Vol. 2B: Waste landfills*. The *Managing Urban Stormwater* series of document relate to clean sediment and therefore the wet weather capture and storage capacity requirements of the sediment basins and treatment systems may be modified by the EPL based on the required surface water characterisation (Condition B33).
- B31. The Applicant must ensure that a visible marker is installed in the sediment detention basin in a position that shows the freeboard in the basin that equates to the volume required to contain all rainfall and runoff in the catchment from a 90th percentile rainfall event over any consecutive 5-day period.
- B32. All waste unloaded at the public hand unloading area must be unloaded and stockpiled underneath the public unloading awning or within the main processing building.

Surface Water Characterisation and Mitigation Plan

- B33. Prior to the commencement of operations, the Applicant must prepare a Surface Water Characterisation and Mitigation Plan (SWCMP) to the satisfaction of the Secretary to characterise the surface water and implement a mitigation plan, the SWCMP must form part of the OEMP required by Condition C4 and be prepared in accordance with Condition C7. The SWCMP must:
- (a) be carried out by a suitably qualified and experienced person(s) whose appointment has been endorsed by the Secretary;
 - (b) be prepared in consultation with the EPA;
 - (c) detail the triggers of when the pump which transfers surface water from the three-stage pit to the holding tanks would be activated;
 - (d) detail the type and size of the bunding around the potentially contaminating waste area;
 - (e) detail the frequency of overflows from the three-stage pit and sediment basin;
 - (f) collect representative samples, including a minimum of four surface water samples from the sediment basin and the three-stage pit. The surface water samples must be analysed for the analytical suite identified in Table 3.16 of the RTS;
 - (g) characterise the surface water for the entire development and detail the potential impact of discharges on receiving surface waters with reference to ANZECC (2000) assessment criteria;

- (h) be based on the results of the surface water characterisation, investigate all practical alternatives to discharge and whether sediment basin sizing, at-source pollution controls, tertiary water treatment, water treatment plants and other treatment and reuse options are appropriate;
- (i) provide the Secretary with a timeframe for and implement the measures identified in sub-clause (h);
- (j) consider the human health risks associated with the surface water reuse process at the site;
- (k) include details of the maintenance procedures of the sediment basins and surface water infrastructure;
- (l) describe the procedures for maintaining vegetation along the perimeter drain and sediment basin;
- (m) establish an ongoing surface water monitoring program to validate the proposed mitigation measures. The surface water monitoring program must provide monitoring details of surface water flows, quality, storage and discharge limits;
- (n) identify measures for managing pollutant exceedances; and
- (o) identify contingency options to account for any mitigation measures that do not adequately address the site water pollution risks.

B34. The Applicant must:

- (a) not commence the operations until the SWCMP required by Condition B33 is approved by the Secretary; and
- (b) implement the most recent version of the SWCMP approved by the Secretary for the duration of the development.

Water Quality Validation

B35. Within six months of the commencement of operations and following the management measures being implemented as per SWCMP (Condition B33), the Applicant must provide a Surface Water Validation Report (SWVR) to the satisfaction of the Secretary. The SWVR must:

- (a) be carried out by a suitably qualified and experienced expert whose appointment has been endorsed by the Secretary;
- (b) be prepared in consultation with the EPA;
- (c) collect a minimum of four surface water samples from the sediment basin and four from the three-stage pit system;
- (d) characterise the surface water data (samples) and detail the potential impact of discharges on receiving surface waters with reference to ANZECC (2000) assessment criteria;
- (e) compare the results with the surface water characterisation in the SWCMP (Condition B33);
- (f) ensure surface water is being managed in accordance the EPL;
- (g) provide an assessment of the effectiveness of implemented mitigation measures;
- (h) if necessary, provide additional mitigation measures to control and/or treat all pollutants to ensure the ANZECC (2000) assessment criteria can be met including further storage or the installation of a water treatment plant; and
- (i) update the SWCMP to reflect any changes to the surface water management system.

B36. Any alterations to the surface water management system identified in the SWVR must be implemented prior to any further controlled discharges occurring to the satisfaction of the Secretary.

B37. The Applicant must comply with any amended surface water quality criteria and discharge limits identified in the EPL.

Surface Water Audit

B38. Within 18 months of the commencement of operations, the Applicant must commission an independent Surface Water Audit of the Development to the satisfaction of the Secretary. The audit must:

- (a) be carried out by a suitably qualified and experienced expert whose appointment has been endorsed by the Secretary;
- (b) be conducted in consultation with the EPA;
- (c) audit the Development whilst it is in operation;
- (d) validate the development against the SWCMP required by Condition B33;
- (e) include a summary of any EPL water quality exceedances;
- (f) review the design and management practices of the Development against industry best practice for surface water;
- (g) include an action plan that identifies and prioritises additional surface water mitigation measures and/or treatment options that may be necessary to reduce surface water impacts; and
- (h) provide a further program of monitoring to address water quality issues that may emerge over time.

B39. Within three months of commissioning this audit, the Applicant must submit a copy of the audit report to the Secretary, together with its response to any recommendations contained in the audit report. The Applicant must comply with any reasonable requirement(s) of the Secretary arising from the Surface Water Audit.

Groundwater

- B40. Within 12 months of the commencement of operations the Applicant must conduct a Groundwater Monitoring Program to the satisfaction of the Secretary. The program must:
- (a) be carried out by a suitably qualified and experienced expert in consultation with the EPA;
 - (b) ascertain the potential for leakage of the sediment basin and perimeter drain to groundwater;
 - (c) detail baseline data, groundwater levels and groundwater quality against the relevant criteria;
 - (d) provide mitigation and contingency measures to prevent the sediment basins from leaking; and
 - (e) identify a program for ongoing groundwater monitoring and reporting.
- B41. Within three months of the completion of the Groundwater Monitoring Program, the Applicant must submit a copy of the Groundwater Monitoring Program as identified in Condition B40 to the Secretary and the EPA.

Diesel Tank Management

- B42. As a minimum, the Applicant must ensure the 40,000 litre self-bunded diesel tank is managed as follows:
- (a) the tank must be installed in the centre of the site in accordance with Figure 3.1 of the RTS;
 - (b) the tank must be installed in accordance with the relevant Australian Standards, must be above ground and be protected against impact from heavy vehicles;
 - (c) the refuelling area must be covered with an awning to minimise dirty water run-off;
 - (d) overfilling of the tank must be prevented through gauging and monitoring of the tank's contents;
 - (e) hoses used for transfer of diesel must be inspected weekly;
 - (f) in an emergency, flow of liquid from the storage tank to a consuming device must be immediately shut off;
 - (g) the shut off valve must comply with the relevant Australian Standard and be fire resistant;
 - (h) the diesel tank and re-fuelling area must be bunded within an area of impervious hardstand; and
 - (i) a diesel spill kit must be stored in the refuelling area and deployed in the event of a spill.

Chemical Spills and Fire Water Containment

- B43. To ensure that chemical spills and fire-water are contained on-site, prior to the commencement of operations and to the satisfaction of FRNSW, the Applicant must ensure:
- (a) a stormwater isolation valve is installed, the stormwater isolation valve must be closed at all times unless stormwater is being discharged and its closure must be monitored weekly;
 - (b) during an incident, the stormwater isolation valve must remain in the closed position until manually opened upon confirmation that stormwater isolation is no longer required or once any contaminated water is disposed via trade waste or at a site that can lawfully receive the waste; and
 - (c) the location of the stormwater isolation valve and any associated controls must be clearly identified on the site's fire hydrant block plan, fire sprinkler block plan and the site plan located within the site's Emergency Response Plan prepared as part of the OEMP as required by Condition C7.

TRAFFIC AND ACCESS

Traffic and Access

- B44. The Applicant must implement all reasonable and feasible measures to minimise the impact on the site's access road and any impacts on 1 McIntosh Drive, Mayfield West (Lot 16 in DP 270249).
- B45. Prior to the commencement of operations, the vehicular entrance and exit driveways and the direction of traffic movement within the site are to be permanently marked on the pavement surface.
- B46. All customers are not permitted to leave their vehicles anywhere on the site other than the public unloading area and to access the pedestrian walkways between marked car parking spaces and the weighbridge and office area.

Parking

- B47. Prior to the commencement of operations, the Applicant must provide and mark 25 on-site parking spaces (including two accessible spaces) for staff and visitors to ensure that traffic associated with the Development does not utilise public and residential streets or public parking facilities. Parking areas are to be constructed in accordance with the latest version of Australian Standard 2890. All parking associated with the Development must be contained on site.
- B48. Parking is only permitted within the designated parking spaces.

Operating Conditions

B49. The Applicant must ensure:

- (a) all vehicular movement to and from the site must be in a forward direction;
- (b) internal roads, driveways and parking (including grades, turn paths, sight distance requirements, aisle widths, aisle lengths and parking bay dimensions) associated with the Development are maintained in accordance with the latest version of Australian Standard 2890.1 and Australian Standard 2890.2;
- (c) the swept path of the longest vehicle entering and exiting the site, as well as manoeuvrability through the site, is in accordance with the relevant AUSTROADS guidelines;
- (d) the Development does not result in any vehicles queuing on the public road network or along the sites access road owned known as 1 McIntosh Drive, Mayfield West (Lot 16 in DP 270249) which is subject to a right of carriageway;
- (e) heavy vehicles and bins associated with the Development are not to be parked on local roads or footpaths in the vicinity of the site;
- (f) only light vehicles and trailers are permitted within the public unloading area, no heavy vehicles are permitted within the public unloading area;
- (g) all vehicles are wholly contained on site before being required to stop;
- (h) all loading and unloading of materials is carried out on-site in designated areas;
- (i) the different activities such as unloading (public and contractor), processing and stockpiling areas at the site are clearly marked and separated by physical barriers to ensure safety is maintained;
- (j) signage must be erected to direct the public and contractors to the designated unloading and loading areas;
- (k) public and contractor unloading areas are kept separate;
- (l) pedestrian access paths are clearly marked and interactions between pedestrians and vehicles must be minimised;
- (m) an outbound wheel wash must be installed behind the exit weighbridge as per Figure 3.9 of the RTS;
- (n) signage is erected and vehicles at the site do not exceed a speed of 20 km/h;
- (o) vehicle manoeuvring areas must always be kept clear of any obstacles, including parked cars; and
- (p) the turning areas in the car park are kept clear of any obstacles, including parked cars, at all times.

Operational Traffic and Pedestrian Management Plan

B50. Prior to the commencement of operations, the Applicant must prepare an Operational Traffic and Pedestrian Management Plan (OTPM) for the Development to the satisfaction of the Secretary. The plan must form part of the OEMP required by Condition C4 and be prepared in accordance with Condition C7. The OTPM must:

- (a) be prepared by a suitably qualified and experienced person(s);
- (b) be prepared in consultation with Council;
- (c) detail the measures that would be implemented to ensure road safety and network efficiency during operation;
- (d) detail measures to ensure public safety is maintained at all times including marking pedestrian access ways and signage to direct the public to the public unloading area;
- (e) detail how the public unloading area will be barricaded from the contractor unloading areas and processing areas to ensure safety is maintained;
- (f) detail how traffic exiting the main processing building will give way to traffic exiting the segregated heavy waste processing and stockpiling area to ensure vehicles safely exit the site;
- (g) detail heavy vehicle routes, access and parking arrangements;
- (h) include a Driver Code of Conduct to:
 - (i) minimise the impact on the local and regional road network;
 - (ii) minimise conflicts with other road users;
 - (iii) minimise road traffic noise; and
 - (iv) ensure truck drivers use Steel River Boulevard and McIntosh Drive (the use of Murray Dwyer Circuit is not permitted);
 - (v) ensure truck drivers use specified routes
- (i) include a program to monitor the effectiveness of these measures; and
- (j) if necessary, detail procedures for notifying residents and the community (including local schools), of any potential disruptions to routes.

B51. The Applicant must:

- (a) not commence the operations until the OTPM required by Condition B50 is approved by the Secretary; and
- (b) implement the most recent version of the OTPM approved by the Secretary for the duration of the development.

AIR QUALITY

Meteorological Station

- B52. Before the commencement of the operations, the Applicant must install a suitable meteorological station on the site that complies with the requirements in the EPA's *Approved Methods for Sampling of Air Pollutants in New South Wales*.
- B53. The Applicant must maintain the meteorological station to the satisfaction of the EPA for the life of the development.

Dust Minimisation

- B54. All reasonable steps must be taken to minimise dust generated during all works authorised by this consent.
- B55. The Applicant must ensure that:
- (a) all on-site roads and car parking areas are sealed with concrete or asphalt;
 - (b) all operating, storage, unloading and loading areas must be sealed with concrete, asphalt or other impervious barrier(s) of the same or greater quality;
 - (c) water sprinklers at the crushing and screening plant must be utilised at all time when the plant is operational;
 - (d) dust suppressants must be used to prevent particulate emissions from stockpiles and other dust generating sources;
 - (e) trucks and vehicles entering and leaving the Development that are carrying loads of dust generating materials must have their loads covered at all times, except during loading and unloading;
 - (f) crushing occurs for no more than 46 days per year in total;
 - (g) crushing does not occur during adverse meteorological conditions;
 - (h) all operations and activities occurring at the Development must be carried out in a manner that minimises the emissions of air pollutants from the Development;
 - (i) trucks associated with the Development do not track dirt onto the public road network;
 - (j) public roads used by these trucks are kept clean; and
 - (k) any works are carried out progressively on site to minimise exposed surfaces.

Air Quality Discharges

- B56. Equipment must be installed and operated in accordance with best practice to ensure that the development complies with all load limits, air quality criteria, air emission limits and air quality monitoring requirements as specified in the EPL applicable to the site.

Air Quality Management Plan

- B57. Prior to the commencement of operations, the Applicant must prepare an Air Quality Management Plan (AQMP) to the satisfaction of the Secretary. The AQMP must form part of the OEMP required by Condition C4 and be prepared in accordance with Condition C7. The AQMP must:
- (a) be prepared by a suitably qualified and experienced person(s);
 - (b) be prepared in consultation with the EPA;
 - (c) detail and rank all emissions from all sources of the Development, including particulate emissions and odour;
 - (d) describe the measures that will be implemented to minimise the potential risks to adverse air quality in the area including:
 - (i) the management and mitigation measures to be employed at the site;
 - (ii) plant and equipment being maintained to ensure that it is in good order;
 - (iii) how the air quality impacts of the development will be minimised during adverse meteorological conditions or extraordinary events;
 - (iv) identification of high emission generating operational activities, including proposed times when these works will be carried out (including respite periods if required) and mitigation measures to minimise adverse impacts from these activities;
 - (v) compliance with the relevant conditions of this consent;
 - (e) identify the control measures that will be implemented for each emission source; and
 - (f) define what constitutes an air quality incident and includes a protocol for identifying and notifying the Department and relevant stakeholders of any air quality incidents.
- B58. The Applicant must:
- (a) not commence the operations until the AQMP required by Condition B57 is approved by the Secretary; and
 - (b) implement the most recent version of the AQMP approved by the Secretary for the duration of the development.

Air Quality Monitoring and Reporting

- B59. The Applicant must carry out Air Quality Monitoring and Reporting of the Development for the first three crushing events following the commencement of the operations to the satisfaction of the Secretary. The monitoring and reporting must:
- be carried out by a suitably qualified and experienced person(s) whose appointment has been endorsed by the Secretary;
 - monitor the dust emissions whilst the Development is in operation and crushing (as described section 3.5 of the RTS) is occurring;
 - include a summary of air emission related complaints and any actions that were carried out to address the complaints;
 - validate the Development against air quality predictions in the RTS;
 - review design and management practices of the Development against industry best practice for dust emissions; and
 - include an action plan that identifies and prioritises additional dust mitigation measures that may be necessary to reduce emissions.
- B60. Within three months of each monitoring event, the Applicant must submit a copy of the Air Quality Monitoring Report (Condition B59) to the Secretary, together with its response to any recommendations.

Odour

- B61. The Applicant must ensure the Development does not cause or permit the emission of any offensive odour (as defined in the POEO Act).

NOISE

Hours of Work

- B62. The Applicant must comply with the hours detailed in **Table 2**.

Table 2: Hours of Work

Activity	Day	Time
Construction	Monday to Friday	7 am to 6 pm
	Saturday	8 am to 1 pm
	Sunday and Public Holidays	Not Permitted
Waste Receival	Monday to Friday	6 am to 6 pm
	Saturday	6 am to 5 pm
	Sundays and Public Holidays	7 am to 3 pm
Waste Processing	Monday to Friday	6 am to 6 pm
	Saturday	6 am to 5 pm
	Sundays and Public Holidays	Not Permitted
Waste Dispatch	Monday to Friday	6 am to 6 pm
	Saturday	6 am to 5 pm
	Sunday and Public Holidays	Not Permitted

- B63. Works outside of the hours identified in Condition B62 may be undertaken in the following circumstances:
- the works are inaudible at the nearest sensitive receivers;
 - for the delivery or dispatch of materials as requested by the NSW Police Force or other public authorities for safety reasons; or
 - where it is required in an emergency to avoid the loss of lives, property or to prevent environmental harm.
- B64. Waste receival is permitted on a 24-hour per day basis on limited occasions to facilitate major infrastructure projects. Limited occasions is defined as:
- no greater than six times per year; and
 - only for a period of less than two weeks in length for each occasion.
- B65. The Secretary, Council and all adjacent landowners must be notified no later than 48 hours prior to each of the 24-hour waste receival periods referred to in Condition B64 along with a description of the major infrastructure projects which necessitate the 24-hour operations.
- B66. During the 24-hour waste receival period (as stipulated in Condition B64), the number of heavy vehicles accessing the site from 6 pm to 6 am must not exceed 12.

Noise Management

- B67. The crusher and shredder are only permitted to be operated in the segregated heavy waste processing and stockpiling area, no further south than 130 m from the northern site boundary (see Appendix A).
- B68. The mobile screens in the segregated heavy waste processing and stockpiling area must not be operated simultaneously with the crusher or shredder.
- B69. The Applicant must:
- implement best practice, including all reasonable and feasible noise management and mitigation measures to minimise operational, low frequency and traffic noise generated by the Development;
 - minimise the noise impacts of the Development during adverse meteorological conditions;
 - 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
 - regularly assess noise emissions and relocate, modify and/or stop operations to ensure compliance with the relevant conditions of this consent.

Operational Noise Limits

- B70. The Applicant must ensure that noise generated by operation of the Development does not exceed the noise limits in **Table 3**.

Table 3: Noise Limits dB(A)

Location	Day L _{Aeq} (15 minute)	Evening L _{Aeq} (15 minute)	Night L _{Aeq} (15 minute)	Night L _{AMax}
R1	48	40	40	51
R2	49	41	41	52
R3	47	39	39	51
R4	47	39	39	50
R5	50	42	42	53
R6	48	41	41	51
R7	48	41	41	52
R8	48	40	40	52
R9	49	42	42	52
R10	49	41	41	51
R11	49	42	42	52
R12	42	41	41	48
R13	40	36	36	47
Mayfield West Primary School	Internal 35 dB(A) – Noisiest 1 hr period (when in use)			
Church of Christ	Internal 40 dB(A) L _{Aeq} , period (when in use)			
Scout Hall	External 55 dB(A) L _{eq} , period (when in use)			

Note: Noise generated by the Development is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the NSW Industrial Noise Policy. Refer to the plan in Appendix A for the location of residential sensitive receivers.

VIBRATION

Vibration Criteria

- B71. Vibration caused by construction at any residence or structure outside the site must be limited to:
- for structural damage, German Standard DIN 4150 Part 3 Structural Vibration in Buildings. Effects on Structures; and
 - for human exposure, the acceptable vibration values set out in the Environmental Noise Management Assessing Vibration: A Technical Guideline (Department of Environment and Conservation, 2006).

FIRE MANAGEMENT

- B72. Prior to the commencement of operations, the final design of the development must be finalised in consultation with and to the satisfaction of the Secretary and include suitable additional provisions for special hazards by specifically addressing Clauses E1.10 and E2.3 of Volume One of the *National Construction Code (NCC) Series*. In particular, the following matters must be addressed:
- (a) Clauses E1.10 and E2.3 of Volume One of the NCC be complied with to meet the operational requirements of FRNSW;
 - (b) the stockpile storage within any building and/or open yard storage on the allotment be limited in size and volume and arranged to minimise fire spread;
 - (c) the arrangement of stockpiles of combustible material, stored externally, on the allotment be sufficiently separated to permit FRNSW vehicle access between stockpiles;
 - (d) the site must be serviced by a fire hydrant system that has a minimum water supply capable to extinguishing the sites largest fire load stockpile;
 - (e) buildings which store recyclable material must include a smoke hazard system that facilitates FRNSW firefighting operations;
 - (f) if deemed necessary by the Secretary, by virtue of applying Clauses E1.10 and E2.3 to the Development, that any significant building used to process recyclable material is provided with an appropriate fire suppression system; and
 - (g) the containment on-site of fire water run-off.

ABORIGINAL HERITAGE

Unexpected Finds Protocol

- B73. If Aboriginal objects are uncovered during construction work in the immediate area, work must stop and the Regional Operations Group of the OEH, Council and the Registered Aboriginal Parties are to be consulted.

HAZARDS AND RISK

Dangerous Goods

- B74. The quantities of dangerous goods stored and handled at the site must be below the threshold quantities listed in the Department of Planning's *Hazardous and Offensive Development Application Guidelines – Applying SEPP 33* at all times.
- B75. Dangerous goods, as defined by the *Australian Dangerous Goods Code*, must be stored and handled strictly in accordance with:
- (a) all relevant Australian Standards;
 - (b) for liquids, a minimum bund volume requirement of 110% of the volume of the largest single stored volume within the bund; and
 - (c) the Environment Protection Manual for Authorised Officers: Bunding and Spill Management, technical bulletin (EPA,1997).

In the event of an inconsistency between the requirements listed from a) to c) above, the most stringent requirement must prevail to the extent of the inconsistency.

Bunding

- B76. The Applicant must store all chemicals, fuels and oils used on-site in appropriately banded areas in accordance with the requirements of all relevant Australian Standards, and EPA's *Storing and Handling of Liquids: Environmental Protection – Participants Manual* (DECC, 2007) (as may be updated or replaced from time to time).

CONTAMINATION

- B77. Any works carried out on the site that involve the disturbance of (or contact with) soil or groundwater are to be carried out in accordance with the requirements of the report titled *Site Management Plan for Subsurface Disturbance Activities, McIntosh Drive Mayfield NSW. Ref: N4113204_SMP_Rev4_2Oct09*, prepared by AECOM Pty Ltd, dated 2 October 2009.
- B78. Prior to the commencement of operations, the main processing building and segregated heavy waste processing and stockpiling area must be sealed with either asphalt or concrete to minimise infiltration of surface water to groundwater.
- B79. Prior to the commencement of construction, the Applicant must prepare an unexpected finds protocol to ensure that potentially contaminated material is appropriately managed. The protocol must form part of the CEMP

required by Condition C1 and must ensure any material identified as contaminated must be disposed off-site, with the disposal location and results of testing submitted to Council, prior to its removal from the site.

VISUAL AMENITY

Landscaping

B80. The Applicant must maintain the landscaping and vegetation on the site in accordance with the approved Landscape Plan prepared by Terras Landscape Architects dated 9 September 2015 in Appendix A.

Lighting

B81. The Applicant must ensure the lighting associated with the Development:

- (a) complies with the latest version of AS 4282 (INT) - *Control of Obtrusive Effects of Outdoor Lighting*;
- (b) is mounted, screened and directed in such a manner that it does not create a nuisance to surrounding properties or the public road network including at night; and
- (c) is not installed on the exterior of the Development and does not flash, chase or scintillate or contain promotional material of a visually intrusive nature.

SITE SECURITY

B82. The Applicant must:

- (a) maintain the 1.8 m perimeter fence and security gates on the site in accordance with Council's requirements; and
- (b) ensure the security gates are locked whenever the site is not in operation or unattended.

COMMUNITY ENGAGEMENT

B83. The Applicant must consult with the community regularly throughout the Development, including consultation with the nearby, adjacent landowners, sensitive receivers, relevant regulatory authorities, Registered Aboriginal Parties and other interested stakeholders.

CONCEPTUAL DECOMMISSIONING PLAN

B84. Prior to the commencement of operations, the Applicant must prepare a Conceptual Decommissioning Management Plan (CDMP) for the Development to the satisfaction of the Secretary. The plan must form part of the OEMP required by Condition C4. The CDMP must:

- (a) include a schedule for the decommissioning of the Development;
- (b) detail how the following would be achieved:
 - (i) ensure the site is left in a safe, stable and non-polluting manner;
 - (ii) removal of all waste from the site in a lawful manner;
 - (iii) restoration of the site so that the contamination status is no worse than that described in the Site Audit Report -Former EMD Facility Mayfield West, prepared for Delta EMD, prepared by Environ Australia Pty Ltd, November 2009; and
 - (iv) ensure public safety is maintained.
- (c) include procedures for notification of the surrounding landowners;
- (d) include procedures for safe removal of any machinery and structures;
- (e) include measures to mitigate any environmental impacts associated with the removal of the Development;
- (f) include details of monitoring that would be undertaken during the decommissioning of the Development; and
- (g) be reviewed 12 months prior to the closure of the site to the satisfaction of the Secretary.

PART C: ENVIRONMENTAL MANAGEMENT, REPORTING AND AUDITING

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

- C1. The Applicant must prepare a Construction Environmental Management Plan (CEMP) to the satisfaction of the Secretary. The CEMP must:
- (a) be approved by the Secretary prior to the commencement of construction;
 - (b) identify the statutory approvals that apply to the Development;
 - (c) describe all activities to be undertaken on the site during construction of the Development, including a clear indication of construction stages in particular how the sealing works will be staged and any associated impacts on operation, construction of surface water infrastructure must also be addressed;
 - (d) outline all environmental management practices and procedures to be followed during construction works associated with the Development;
 - (e) detail how unexpected finds, traffic, erosion and sedimentation and noise will be managed;
 - (f) include a complaints handling procedure;
 - (g) detail how the environmental performance of the construction works will be monitored, and what actions will be taken to address identified adverse environmental impacts; and
 - (h) describe the roles and responsibilities for all relevant employees involved in construction works associated with the Development.
- C2. As part of the CEMP required under Condition C1 of this consent, the Applicant must include the following:
- (a) Erosion and Sediment Control Plan (see Condition B16);
 - (b) Unexpected Finds Protocol (see Condition B79).
- C3. The Applicant must carry out the construction of the Development in accordance with the CEMP approved by the Secretary (and as revised and approved by the Secretary from time to time), unless otherwise agreed by the Secretary.

OPERATIONAL ENVIRONMENTAL MANAGEMENT PLAN

- C4. The Applicant must prepare an Operational Environmental Management Plan (OEMP) to the satisfaction of the Secretary. The OEMP must:
- (a) be approved by the Secretary prior to the commencement of operations;
 - (b) be prepared by a suitably qualified and experienced expert;
 - (c) provide the strategic framework for environmental management of the Development;
 - (d) identify the statutory approvals that apply to the Development;
 - (e) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the Development;
 - (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 and provide an Emergency Response Plan;
 - (g) include the following environmental management plans:
 - (i) Waste Management Plan (see Condition B13);
 - (ii) Surface Water Characterisation and Mitigation Plan (see Condition B33);
 - (iii) Operational Traffic and Pedestrian Management Plan (see Condition B50);
 - (iv) Air Quality Management Plan (see Condition B57); and
 - (v) Conceptual Decommissioning Management Plan (see Condition B84).
- C5. The Applicant must carry out the construction of the Development in accordance with the OEMP approved by the Secretary (and as revised and approved by the Secretary from time to time), unless otherwise agreed by the Secretary.

COMPLIANCE REGISTER TABLE

- C6. The Applicant must submit a Compliance Register Table to the Secretary with any Environmental Management Plans, which details where the relevant conditions have been addressed within the Environmental Management Plan.

MANAGEMENT PLAN REQUIREMENTS

- C7. The Applicant must ensure that the environmental management plans required under Condition C4 of this consent are prepared by a suitably qualified person or persons in accordance with best practice 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; and
 - (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;
- (c) a description of the management measures that would be implemented to comply with the relevant statutory requirements, limits or performance measures/criteria;
- (d) a program to monitor and report on the:
 - (i) impacts and environmental performance of the Development; and
 - (ii) effectiveness of any management measures (see (c) above)
- (e) a contingency plan to manage any unpredicted impacts and their consequences;
- (f) a program to investigate and implement ways to improve the environmental performance of the Development over time;
- (g) 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
- (h) a protocol for periodic review of the plan.

Revision of Strategies, Plans and Programs

- C8. Within three months of:
- (a) approval of a modification;
 - (b) approval of an annual review under Condition C9;
 - (c) submissions of an incident report under Condition C11; or
 - (d) completion of an audit under Condition C13.

the Applicant must review, and if necessary revise, the strategies, plans, and programs required under this consent to the satisfaction of the Secretary.

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.*

ANNUAL REVIEW

- C9. Each year, the Applicant must review the environmental performance of the Development to the satisfaction of the Secretary. 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) provide a conditions compliance report which tracks the compliance of the development with the conditions of this approval;
 - (c) include a comprehensive review of the monitoring results and complaints records of the Development over the previous calendar year, which includes a comparison of these 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;
 - (d) detail and provide evidence for the number of days crushing and the 24-hour waste receipt operations has occurred;
 - (e) identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;
 - (f) identify any trends in the monitoring data over the life of the Development;
 - (g) identify any discrepancies between the predicted and actual impacts of the Development, and analyse the potential cause of any significant discrepancies; and
 - (h) describe what measures will be implemented over the next year to improve the environmental performance of the Development.

REPORTING

Incident Reporting

- C10. The Applicant must notify the Secretary and any other relevant agencies of any incident or potential incident with actual or potential significant off-site impacts on people or the biophysical environment associated with the Development immediately after the Applicant becomes aware of the incident.
- C11. Within seven days of the date of this incident, the Proponent must provide the Secretary and any relevant agencies with a detailed report on the incident.

Regular Reporting

- C12. The Applicant must 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.

AUDITING

Independent Environmental Audit

- C13. Within one year of the commencement of operations, and every three years thereafter, unless the Secretary directs otherwise, the Applicant must 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) include consultation with the relevant agencies;
 - (c) assess the environmental performance of the Development and assess whether it is complying with the requirements in this consent, and any other relevant approvals, relevant EPL(s) (including any assessment, plan or program required under these approvals);
 - (d) review the adequacy of any approved strategy, plan or program required under the abovementioned consents; and
 - (e) recommend measures or actions to improve the environmental performance of the Development, and/or any strategy, plan or program required under these consents.

Note: *This audit team must be led by a suitably qualified auditor, and include relevant experts in any other fields specified by the Secretary.*

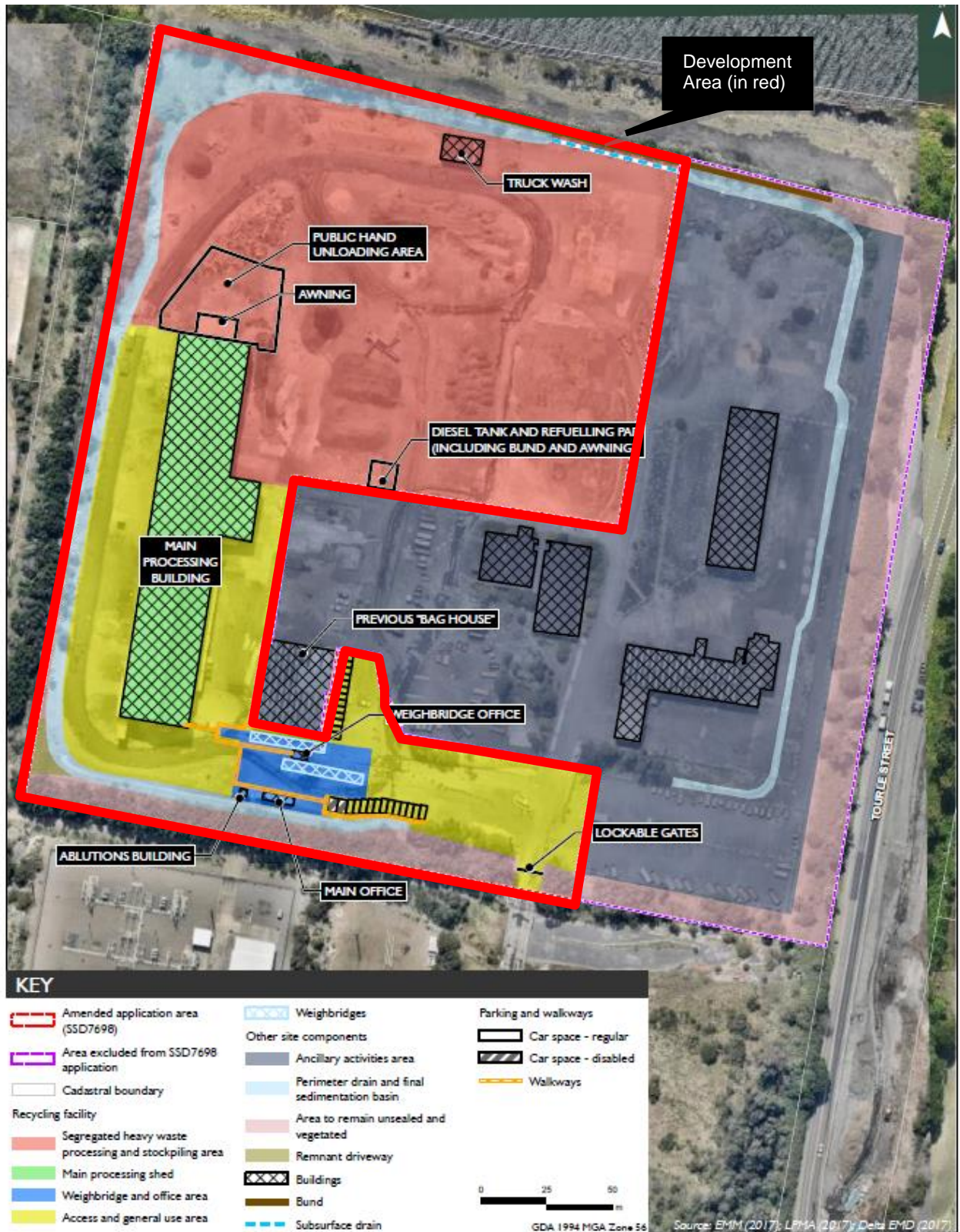
- C14. Within three months of commissioning this audit, or as otherwise agreed by the Secretary, the Applicant must submit a copy of the audit report to the Secretary, together with its response to any recommendations contained in the audit report.

ACCESS TO INFORMATION

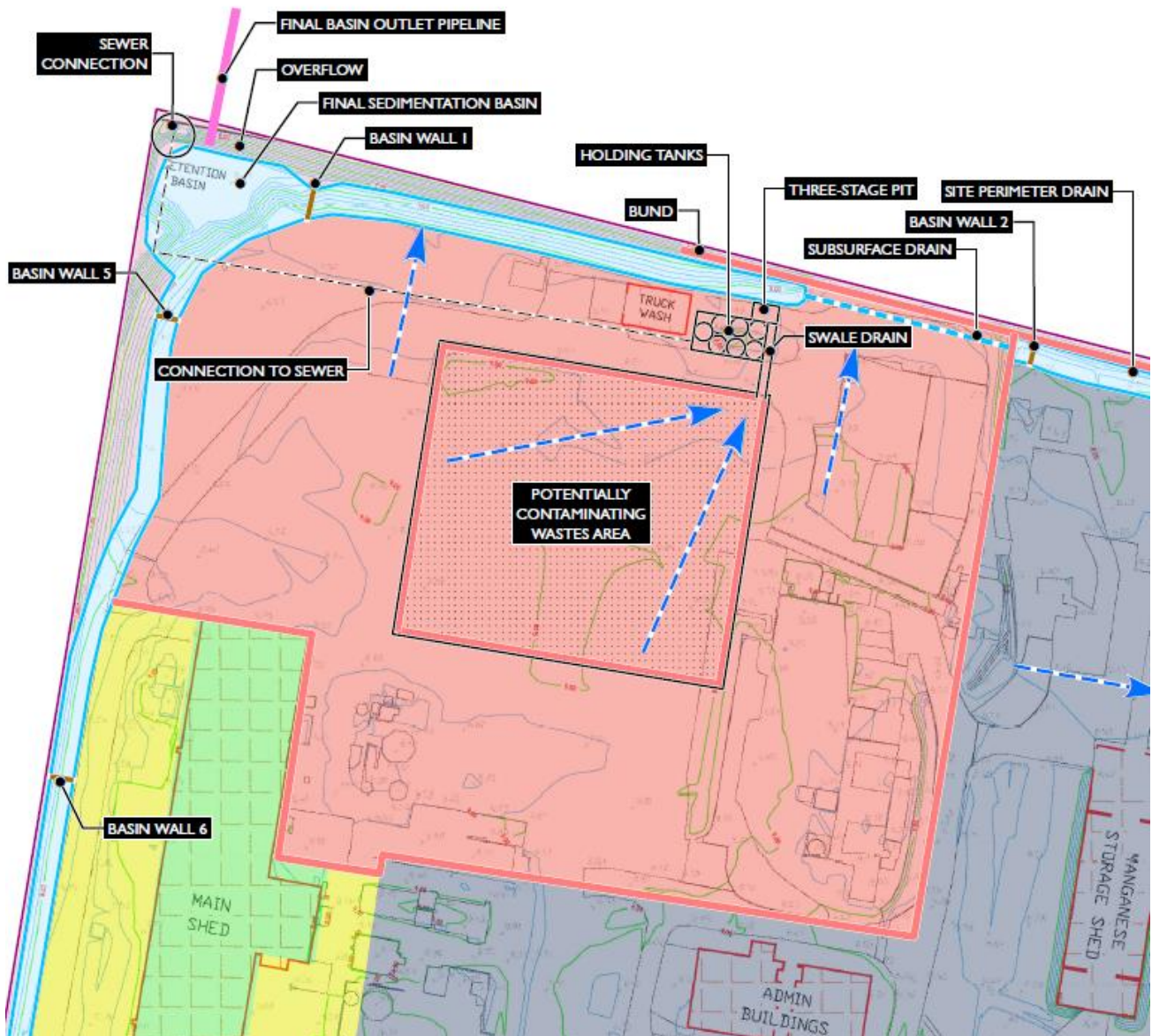
- C15. The Applicant must:
- (a) make copies of the following publicly available on its website:
 - (i) the documents referred to in Condition A2;
 - (ii) all current statutory approvals for the Development;
 - (iii) all approved strategies, plans and programs required under the conditions of this consent;
 - (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
 - (b) keep this information up to date, to the satisfaction of the Secretary

APPENDIX A PLANS

Development Layout Plan



Location of Surface Water Management Infrastructure



Location of Crusher, Shredder and Screens



Sensitive Receiver Locations



Landscape Plan

http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=7698

APPENDIX B

APPLICANT'S MANAGEMENT AND MITIGATION MEASURES

Key issue	Management measure
General	<p>A public hand unloading area has been established outside of the northern end of the main processing shed to separate contactor and public tipping for safety reasons. Only light vehicles and trailers are permitted in the public hand unloading area. No heavy vehicles are permitted in this area.</p> <p>Currently unsealed areas within the site that are not part of the 'Area to remain unsealed and vegetated' will be progressively sealed with concrete or asphalt.</p> <p>Trucks delivering or picking up stored items will access the storage compounds on sealed access roads.</p> <p>Lighting in the southern car park will be designed to comply with AS 1158.</p>
Rubbish and light waste	<p>All light waste (including light waste within co-mingled waste) will be tipped inside the main processing shed.</p> <p>The access road between McIntosh Drive and the recycling facility site will be inspected daily to ensure that there is no rubbish is left along the access road (most likely food and beverage waste from drivers).</p> <p>The site boundary fences will be inspected daily and any wind-blown light waste within the site will be removed and sent to the main processing shed.</p> <p>Any rubbish found along the access road between McIntosh Drive and the recycling facility site will be removed promptly.</p>
Security	<p>The site's security measures will continue to be implemented, including deployment of guards when the site is not operating (including at night), use of remotely accessed security cameras and maintenance of fences and gates.</p>
Air quality	<p>The following management measures will continue to be implemented to minimise air quality impacts:</p> <ul style="list-style-type: none"> all existing sealed/hardstand areas will be retained; water sprays will be used over any other bare or unsealed surfaces that have not yet been sealed and have the potential to generate unacceptable amounts of dust; all vehicle movements will be restricted to designated routes marked out by appropriate signage and fencing using sealed internal roads; access to unsealed areas will be prevented; water sprays will be used at stockpiles, crushing and screening plants and during material handling as necessary; a wheel wash in the weighbridge area will be used if required to clean truck tyres to prevent mud or sediment being carried to and deposited on the access road (and public roads); and existing sheds will be used to undertake particulate generating activities where possible. <p>Irrigation sprays will only used when the surface of a stockpile is dry and irrigation will be ceased when the surface is wet.</p> <p>Dust and odour control procedures, including current monitoring requirements, are detailed in the EMP (see EIS Appendix D).</p>
Greenhouse gases	<p>The following management measures will continue to be implemented to minimise greenhouse gases emissions:</p> <ul style="list-style-type: none"> on-site equipment will be regularly maintained and serviced to maximise fuel efficiency; vehicle kilometres travelled on-site will be minimised; energy efficiency will be progressively reviewed and, where necessary, changes will continue to be implemented throughout the life of the operations.
Noise	<p>The following management measures will continue to be implemented to minimise noise emissions:</p> <ul style="list-style-type: none"> operations will be limited to the hours and types of operation approved; and machinery will be correctly operated and maintained. <p>Regular noise monitoring is conducted by the Site Leading Hand/Supervisor and any noise complaints received are referred to the Site Leading Hand/Supervisor and to the Site Manager.</p> <p>The two mobile screens in the segregated heavy waste processing and stockpiling area, the crusher/screen and the shredder will be operated no further south than 130 m from the northern site boundary.</p> <p>The two mobile screens in the segregated heavy waste processing and stockpiling area will not be operated simultaneously with the crusher/screen and shredder.</p>

Key issue	Management measure
Traffic	<p>Site generated traffic will continue to be formally directed to continue to travel only via Steel River Boulevard and McIntosh Drive when travelling within the Steel River estate.</p> <p>Benedict Recycling will continue to maintain the access road between McIntosh Drive and the Recycling Facility site in a fit and proper condition and to a suitable standard, repairing it when required at no cost to Ausgrid. This will include repairing any minor areas of surface rutting using 50 mm hot mix asphalt.</p> <p>Trucks will not be allowed to queue on the access road between McIntosh Drive and the Recycling Facility site.</p>
Water	<p>The perimeter drain, installed prior to Benedict Recycling occupying the site, captures runoff from all active areas of the site.</p> <p>The site soil and water management system includes:</p> <ul style="list-style-type: none"> • prevention of runoff from external areas discharging across the site; • a perimeter drain with seven sedimentation basins; • a final sedimentation basin with outlet controls; • sock filters treating runoff prior to discharge into the perimeter drain; • flocculation of stored water in the basins as necessary; and • pumping water in the final sedimentation basin, after testing, to the discharge chamber to reduce water levels in the basin prior to forecast rain if required. <p>Only commercially available non-toxic flocculants will be used at the site.</p> <p>Actions that will continue to be implemented to prevent impacts to water include:</p> <ul style="list-style-type: none"> • water is used for dust suppression but is not used for product processing; • there are no significant excavations within the site; • regularly maintaining sock filters; • removal of sediment from the sedimentation basins when the sediment depth is greater than 200 mm; • recycling of sediment if of appropriate quality or disposal to a facility approved to accept contaminated sediment; • water in the final sedimentation basin is tested before a controlled discharge and, unless it overflows, is only be discharged if it meets water quality trigger values; and • water in the sedimentation basins is used for dust suppression to minimise the mains water required; • groundwater is not used. <p>The following actions will be taken as part of the proposal:</p> <ul style="list-style-type: none"> • the trees will be removed from the perimeter drain and the perimeter drain will be sealed; • the final sedimentation basin will be sealed; • additional storage volume will be provided as part of the works to seal the drain and final sedimentation basin volume; • the sedimentation basins in the perimeter drain will be upgraded. Poorly graded rock (50–150 mm diameter) will be used to form the sedimentation basin dams in the perimeter drain. The top of each dam will be approximately 0.5 to 1.0 m wide with the crest level approximately 0.3 m below the top of the perimeter drain to allow overflow into the next basin when the storage capacity is exceeded; • the sealed perimeter drain and final sedimentation basin will be inspected monthly to ensure that vegetation is not growing through the seal. If vegetation is found to be growing through the sides of the drain or basin, it will be removed and the seal repaired; • the segregated heavy waste processing and stockpiling area will be sealed with concrete or asphalt with the sealed area extending to the perimeter drain; • a bund will be erected around the segregated heavy waste processing and stockpiling area directing all runoff from the area to the perimeter drain; • any material in the sealed segregated heavy waste processing and stockpiling area that is not in a stockpile will be removed using a front end loader bucket; • the sealed segregated heavy waste processing and stockpiling area will be routinely swept using a sweeper; • bunds will be erected to direct surface runoff away from unsealed areas; and • concrete will be applied to the floor of the main processing shed where liquids may infiltrate to groundwater, eg through cracks.

Key issue	Management measure
Soils and contamination	<p>The following actions will be taken in respect to water discharge:</p> <ul style="list-style-type: none"> • If water levels are between about 2 m and 3 m from the base of the sedimentation basin and meets water quality trigger values, water will be manually discharged from the final sedimentation basin using the outlet valve to maintain a freeboard in the final sedimentation basin. • Water in the final sedimentation basin will be tested before a controlled discharge and unless it overflows, it will only be discharged if it meets water quality trigger values. • When the basin is discharging, daily samples of the discharging water will be collected from the final basin outlet pipe and will be analysed in accordance with the discharge monitoring program. • A water level gauge will be installed in the final sedimentation basin. <p>A Surface Water Monitoring and Mitigation Plan will be prepared that details:</p> <ul style="list-style-type: none"> • meteorological monitoring; • water level monitoring; • validation monitoring; • routine monitoring; and • sediment monitoring. <p>It will provide trigger values and responses, including treatment of site runoff prior to discharge and contingency measures.</p>
	<p>No further ground excavation is anticipated so contaminated soil will not be disturbed. However, should excavation be required, the SMP for Subsurface Disturbance Activities (EIS Appendix E) will be implemented. The following measures will be implemented to prevent site activities exacerbating contamination of the site:</p> <ul style="list-style-type: none"> • plant and equipment will be maintained to prevent hydrocarbon leaks; • plant maintenance will only occur in sealed areas where spills, should they occur, will be contained and cleaned up immediately using a spill response kit; • a spill response kit will be deployed next to maintenance activities; • vehicles parked in the storage compounds will be parked on sealed areas; and • maintenance activities that may result in the loss of fluids will be conducted within a shed with a sealed floor and at least 5 m from the nearest open doorway. <p>The diesel tank will be installed in accordance with Australian Standards and will incorporate the following measures:</p> <ul style="list-style-type: none"> • Prevention: <ul style="list-style-type: none"> – overfilling of tanks will be prevented through gauging or monitoring of the tank's contents; – hoses used for transfer of diesel will be regularly inspected; – tanks, vents and fittings will be inspected regularly and valves will be regularly overhauled (at periods not exceeding 10 years); and – there will be regular inspections of the tank and surrounds and any liquid inside the bunded areas will be removed as soon as practicable following established procedures. • Protection: <ul style="list-style-type: none"> – the diesel tank will be self-bunded (with a capacity of 10% more than the tank's capacity); – the bund will be large enough to contain a spillage in accordance with the requirement of AS1940 para 5.8; – the bund drain valve will be kept closed and locked except during supervised drainage, and a sign will be placed to display the need to keep the drain valve closed and locked; – the tank will be enclosed by colourbond (or similar) walls to prevent leaks in the site of the tank spraying outside of the bund; – diesel pumps will be designed such that the discharge pressure cannot exceed design limit of pump or piping in the case of dead heading (shut-off at the pump discharge); – an emergency shut-off device will be provided on each pump;

Key issue	Management measure
	<ul style="list-style-type: none"> – provision will be made to quickly shut off the flow of liquid from the storage tank to a consuming device in an emergency. The shut off valve will comply with para 6.3.3 in AS1940, including resistance in a fire; and – diesel pumps will be designed such that the discharge pressure cannot exceed design limit of pump or piping in the case of dead heading (shut-off at the pump discharge). • Refuelling: <ul style="list-style-type: none"> – mobile plant will be refuelling within a bunded area with runoff from within the bund reporting to a oil-water separator; – the refuelling area will be covered by an awning so that rainwater does not enter the refuelling area; – there will be a diesel spill kit stored at the bowser; and – in the case of a spill, used absorbent material will be disposed at an appropriately licensed waste facility.
Visual	<p>As part of the construction of the recycling facility, the following management measures were implemented to minimise potential visual impacts to the surrounding area:</p> <ul style="list-style-type: none"> • <i>Casuarina sp.</i> were planted along the northern boundary and the northern section of the western boundary of the site to mitigate visual impacts from viewpoints to the north, north-east and west; and • rubbish from around the site boundaries was removed. • Litter is removed from the site on a regular basis and a number of litter control measures are listed within the EMP (EIS Appendix D). • Irrigation pipes have been installed and screening vegetation will be watered if required to maintain healthy growth. • Screening vegetation will be visually inspected and additional trees will be planted to ensure effective screening if required.

APPENDIX C - EPL

Environment Protection Licence



Licence - 20771

Licence Details	
Number:	20771
Anniversary Date:	25-May

Licensee
BENEDICT RECYCLING PTY LIMITED
PO BOX 431
FRENCHS FOREST NSW 1640

Premises
BENEDICT RECYCLING MAYFIELD WEST
1A MCINTOSH DRIVE
MAYFIELD WEST NSW 2304

Scheduled Activity
Resource recovery
Waste storage

Fee Based Activity	Scale
Recovery of general waste	Any general waste recovered
Waste storage - other types of waste	Any other types of waste stored

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 - 20771

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Environment Protection Licence

Licence - 20771



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Environment Protection Licence

Licence - 20771



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).

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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:

BENEDICT RECYCLING PTY LIMITED
PO BOX 431
FRENCHS FOREST NSW 1640

subject to the conditions which follow.

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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
Resource recovery	Recovery of general waste	Any general waste recovered
Waste storage	Waste storage - other types of waste	Any other types of waste stored

A2 Premises or plant to which this licence applies

A2.1 The licence applies to the following premises:

Premises Details
BENEDICT RECYCLING MAYFIELD WEST
1A MCINTOSH DRIVE
MAYFIELD WEST
NSW 2304
LOT 1 DP 874109

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

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P1 Location of monitoring/discharge points and areas

- P1.1 The following utilisation areas referred to in the table below are identified in this licence for the purposes of the monitoring and/or the setting of limits for any application of solids or liquids to the utilisation area.
- P1.2 The following points referred to in the table are identified in this licence for the purposes of the monitoring and/or the setting of limits for discharges of pollutants to water from the point.

Water and land

EPA Identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
1	Final Basin Outlet Pipe	Final Basin Outlet Pipe	Valve controlled outlet chamber and pipeline located within sedimentation pond in north-western corner of the site. (See Figure 2.1 in DOC15/0291).

- P1.3 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
2	Noise monitoring	R1 - Kerr Street
3	Noise monitoring	R2 - Woodstock Street - north/east
4	Noise monitoring	R3 - Woodstock Street - north/west
5	Noise monitoring	R4 - Simpson Court
6	Noise monitoring	R5 - Shelley Close
7	Noise monitoring	R6 - Groongal Street - East
8	Noise monitoring	R7 - Groongal Street
9	Noise monitoring	R8 - Groongal Street
10	Noise monitoring	R9 - Gregson Avenue
11	Noise monitoring	R10 - Gregson Avenue
12	Noise monitoring	R11 - 80 Gregson Avenue
13	Noise monitoring	R12 - Terry Street
14	Noise monitoring	R13 - Olearia Crescent
15	Noise monitoring	Mayfield West Primary School
16	Noise monitoring	Church of Christ
17	Noise monitoring	Scout Hall

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18	Meteorological Station – to determine meteorological conditions for noise monitoring	Newcastle University (station no. 061390)
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Note: Locations referred to in the table above are consistent with the Noise Assessment Benedict Recycling Facility, 80 Tourle Street, Mayfield West by EMGA Mitchell McLennan (Report J14152RP1) dated 26 March 2015.

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\ 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 Where a pH quality limit is specified in the table, the specified percentage of samples must be within the specified ranges.

L2.3 To avoid any doubt, this condition does not authorise the pollution of waters by any pollutant other than those specified in the table\.

L2.4 Water and/or Land Concentration Limits

POINT 1

Pollutant	Units of Measure	50 Percentile concentration limit	90 Percentile concentration limit	3DGM concentration limit	100 percentile concentration limit
Oil and Grease	milligrams per litre				10
pH	pH				6.5-8.5
Total suspended solids	milligrams per litre				50

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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	General solid waste (non-putrescible)	Basic Oxygen Slag Electric Arc Furnace Slag Electric Arc Ladle Slag Granulated Blast Furnace Slag Rail Ballast	Resource recovery Waste storage	These waste types can only be received at the premises if the waste does not contain any contaminant levels exceeding the limits for General Solid Waste stated in the EPA's Waste Classification Guidelines Part 1: Classifying Waste.
NA	General solid waste (non-putrescible)	Excavated Natural Material	Resource recovery Waste storage	These waste types can only be received at the premises if the waste does not contain any contaminant levels exceeding the limits for General Solid Waste stated in the EPA's Waste Classification Guidelines Part 1: Classifying Waste.
NA	General solid waste (non-putrescible)	Soils that meet the CT1 thresholds for General Solid Waste in Table 1 of the Waste Classification Guidelines as in force from time to time with the exception of the	Resource recovery Waste storage	Arsenic: 40mg/kg Cadmium: 2mg/kg Copper: 200mg/kg Mercury 1.5mg/kg Zinc: 600mg/kg

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		maximum threshold values for contaminants specified in the 'Other Limits' column	Petroleum Hydrocarbons C6-C9: 150mg/kg Petroleum Hydrocarbons C10-C36: 1600mg/kg Polycyclic aromatic hydrocarbons: 80mg/kg Polychlorinated biphenyls (individual): 1mg/kg No acid sulphate soil is to be received at the premises.
NA	General solid waste (non-putrescible)	Grit, sediment, litter and gross pollutants collected in, and removed from, stormwater treatment devices and/or stormwater management systems, that has been dewatered so that they do not contain free liquids.	Resource recovery Waste storage
NA	General solid waste (non-putrescible)	Biosolids categorised as unrestricted use, or restricted use 1,2 or 3.	Resource recovery Waste storage
NA	General solid waste (non-putrescible)	Household waste from municipal clean-up that does not contain putrescible waste.	Resource recovery Waste storage
NA	General solid waste (non-putrescible)	Cement Fibre Board	Resource recovery Waste storage
NA	General solid waste (non-putrescible)	Concrete Batch Plant Waste	Resource recovery Waste storage
NA	General solid waste (non-putrescible)	Paper or cardboard	Resource recovery Waste storage
NA	General solid waste (non-putrescible)	Glass, plastics, rubber, plasterboard, ceramics, brick, concrete or metal	Resource recovery Waste storage
NA	General solid waste (non-putrescible)	Wood waste	Resource recovery Waste storage
NA	General solid waste (non-putrescible)	Garden waste	Resource recovery Waste storage
NA	General solid waste (non-putrescible)	Asphalt Waste	Resource recovery Waste storage
NA	General solid waste	Virgin Excavated	Resource recovery

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	(non-putrescible)	Natural Material	Waste storage
NA	General solid waste (non-putrescible)	Building and demolition waste	Resource recovery Waste storage

L3.2 The premises may accept up to 90,000 tonnes of general solid waste (non-putrescible) per annum

Authorised Amount

L3.3 Notwithstanding any limit specified in the above table, the licensee shall not exceed the authorised amount specified in this licence. Where the authorised amount is less than the total of all wastes listed above, the authorised amount will take precedent.

L3.4 The authorised amount of waste permitted on the premises cannot exceed 53,733 tonnes at any one time.

L3.5 All waste stockpiles occurring as part of the operation at the premises must be no greater than 7.0 metres in height.

L4 Noise limits

L4.1 Noise limits

LOCALITY	DAY LAeq (15 minutes)	Evening LAeq (15 minutes)	Night LAeq (15 minutes)	Night Amax
R1	48	40	40	51
R2	50	41	41	52
R3	47	39	39	51
R4	47	39	39	50
R5	50	42	42	53
R6	48	41	41	51
R7	48	41	41	52
R8	48	40	40	52
R9	49	42	42	52
R10	48	41	41	51
R11	48	42	42	52
R12	42	41	41	48
R13	40	36	36	47
Mayfield West Primary School	Internal 35 dB(A) - Noisiest 1 hour period (when in use)	Internal 35 dB(A) - Noisiest 1 hour period (when in use)	Internal 35 dB(A) - Noisiest 1 hour period (when in use)	n/a

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Church of Christ	Internal 40 dB(A) - Noisiest 1 hour period (when in use)	Internal 40 dB(A) - Noisiest 1 hour period (when in use)	Internal 40 dB(A) - Noisiest 1 hour period (when in use)	n/a
Scout Hall	External 55 dB(A) - (when in use)	External 55 dB(A) - (when in use)	External 55 dB(A) - (when in use)	n/a

- L4.2 Waste despatch and deliveries are permitted 6:00am to 6:00pm Monday to Saturday and between 7:00am to 3:00pm on Sundays.
Campaign waste deliveries on a 24 hour basis as pre-approved by the EPA in writing and subject to consent requirements.
- L4.3 Waste processing is permitted between 7:00am and 6:00pm Monday to Saturday, with no waste processing on Sundays or Public Holidays.
- L4.4 For the purpose of condition L4.1:
- Day is defined as the period from 7am to 6pm Monday to Saturday and 8am to 6pm Sunday and Public Holidays.
 - Evening is defined as the period 6pm to 10pm.
 - Night is defined from 10pm to 7am Monday to Saturday and 10pm to 8am Sunday and Public Holidays.
- L4.5 Construction activity is permitted between the hours of 7:00am to 6:00pm Monday to Friday and Saturday 8:00am to 1:00pm, with no construction activity on Sundays and Public Holidays.
- L4.6 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; or
 - 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.
- L4.7 To determine compliance:
- a) the Leq(15 minute) noise limits in condition L4.1, the noise measurement equipment must be located:
 - approximately on the property, 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 3 metres, 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 Nature Reserve.
 - b) with any L_{Amax} in condition L4.1, the noise measurement equipment must be located within 1 metre of a dwelling façade.
 - c) with the noise limits in condition L4.1, the noise measurement equipment 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 L4.7(a) or L4.7(b).
- L4.8 A non-compliance of conditions 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 L4.7(a) and L4.7(b); and/or
 - at a point other than the most affected point at a location.

Note: 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

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noise monitoring equipment.

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.

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 Activities occurring in or on the premises must be carried out in a manner that will minimise the generation, or emission from the premises, of wind-blown or traffic generated dust.

O3.2 Trucks entering and leaving the premises that are carrying loads of dust generating materials must have their loads covered at all times, except during loading and unloading.

O4 Emergency response

O4.1 The licensee must maintain, and implement as necessary, a current emergency response plan for the premises. The licensee must keep the emergency response plan on the premises at all times. The emergency response plan must document systems and procedures to deal with all types of incidents (e.g. spills, explosions or fire) that may occur at the premises or that may be associated with activities that occur at the premises and which are likely to cause harm to the environment. If a current emergency response plan does not exist at the date on which this condition is attached to the licence, the licensee must develop an emergency response plan within three months of that date.

O5 Processes and management

O5.1 The licensee must implement a litter management program, which includes litter patrol to ensure that the local amenity is not degraded.

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O6 Waste management

- O6.1 All above ground tanks containing material that is likely to cause environmental harm must be bunded or have alternative spill containment systems in place.
- O6.2 All putrescible waste received at the premises must be:
 - a) stored in an enclosed vessel; and
 - b) disposed of, to a place that can lawfully receive that waste, within 24 hours of receipt.
- O6.3 Waste collected at the premises that is unable to be recycled, must not be stored at the premises and must be taken to a lawful waste facility at least once a week.
- O6.4 The licensee must comply with the conditions as specified in this licence or where no specific conditions outlined in this licence, this licensee must comply with the Protection of the Environment Operations (Waste) Regulation 2005.
- O6.5 All co-mingled waste (to include but not limited to metals, shredded wood products, glass and non-recyclable residues) received at the Premises must be unloaded, processed and stockpiled within an enclosed processing shed.

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.
- 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

- 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 Water and/ or Land Monitoring Requirements

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POINT 1

Pollutant	Units of measure	Frequency	Sampling Method
Oil and Grease	milligrams per litre	Daily during any discharge	Grab sample
pH	pH	Daily during any discharge	Grab sample
Total suspended solids	milligrams per litre	Daily during any discharge	Grab sample

M3 Testing methods - concentration limits

- M3.1 Subject to any express provision to the contrary in this licence, monitoring for the concentration of a pollutant discharged to waters or applied to a utilisation area must be done in accordance with the Approved Methods Publication unless another method has been approved by the EPA in writing before any tests are conducted.

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 18

Parameter	Sampling method	Units of measure	Averaging period	Frequency
Temperature at 2 metres	AM-4	degrees Celsius	1 hour	Continuous
Temperature at 10 metres	AM-4	degrees Celsius	1 hour	Continuous
Wind Direction at 10 metres	AM-2 & AM-4	Degrees	15 minutes	Continuous
Wind speed	AM-2 & AM-4	metres per second	15 minutes	Continuous
Sigma theta	AM-2 & AM-4	Degrees	15 minutes	Continuous
Rainfall	AM-4	millimetres	15 minutes	Continuous
Relative humidity	AM-4	percent	1 hour	Continuous

M5 Recording of pollution complaints

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- 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.
- M6.3** The preceding two conditions do not apply until one month after the date of the issue of this licence.

M7 Noise monitoring

- M7.1** To assess compliance with the noise limits specified within this licence, the licensee must undertake operator attended noise monitoring at each specified noise monitoring point in accordance with the table below.

POINT 5,9,12

Assessment period	Minimum frequency in a reporting period	Minimum duration within assessment period	Minimum number of assessment period
Day	Quarterly	15 minutes	1 operation day
Evening	Quarterly	15 minutes	1 operation day
Night	Quarterly	15 minutes	1 operation day

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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.

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.

- 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.

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

- 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.

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R2 Notification of environmental harm

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

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.

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.

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

Noise Monitoring Report

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- R4.1 A noise compliance assessment report must be submitted to the EPA within 30 days of the completion of the quarterly monitoring. The assessment must be prepared by a suitably qualified and experienced acoustical consultant and include:
- a) as assessment of compliance with noise limits for R5,R9 and R12; and
 - b) an outline of any management actions taken within the monitoring period to address any exceedences of the noise limits for R5, R9 and R12.

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 Financial Assurance

- E1.1 A financial assurance in the form of an unconditional and irrevocable and on demand guarantee from a bank, building society or credit union operating in Australia as “Authorised Deposit-taking Institutions” under the *Banking Act 1959* of the Commonwealth of Australia and supervised by the Australian Prudential regulatory Authority (APRA) must be provided to the EPA prior to the issue of the licence. The financial assurance must be in favour of the EPA in the amount of three hundred and thousand dollars (\$300,000). The financial assurance is required to secure or guarantee funding for works or programs required by or under this licence.

The licensee must provide to the EPA an initial financial assurance in favour of the EPA the amount of one hundred thousand dollars (\$100,000) within one (1) month of the issue of this licence.

An additional one hundred thousand dollars (\$100,000) must be provided in favour of the EPA to the EPA within 12 months from the licence issue dates.

A final one hundred thousand dollars (\$100,000) must be provided in favour of the EPA to the EPA within 24 months from the licence issue date.

- E1.2 The licensee must provide to the EPA, along with the original counterpart guarantee, confirmation in writing that the financial institution providing the guarantee is subject to supervision by the Australian Prudential Regulatory Authority (APRA).
- E1.3 The financial assurance must contain a term that provides that any money claimed can be paid to the EPA or, at the direction of the EPA, to any other person.
- E1.4 The financial assurance must be maintained during the operation of the facility, and thereafter, until such

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time as the EPA is satisfied the premises is environmentally secure.

- E1.5 The financial assurance must be replenished by the full amount claimed or realised if the EPA has claimed on or realised the financial assurance or any part of it to undertake a work or program required to be carried out by the licence which has not been undertaken by the licence holder.
- E1.6 The EPA may require an increase in the amount of the financial assurance at any time as a result of reassessment of the total likely costs and expenses of rehabilitation of the premises.
- E1.7 The licensee must provide to the EPA the original counterpart guarantee within five working days of the issue of:
 - a) the financial assurance required by condition E1.1, and
 - b) the adjusted financial assurance as required by condition E1.x and E1.x
- E1.8 The EPA may claim on a financial assurance under s303 of the POEO Act if a licensee fails to carry out any work or program required to comply with the conditions of this licence.

E2 Environmental Obligations of Licensee

- E2.1 While the licensee's premises are being used for the purpose to which the licence relates, the licensee must:
 - a) Clean up any spill, leak or other discharge of any waste(s) or other material(s) as soon as practicable after it becomes known to the licensee or to one of the licensee's employees or agents.
 - b) In the event(s) that any liquid and non-liquid waste(s) is unlawfully deposited on the premises, such waste(s) must be removed and lawfully disposed of as soon as practicable or in accordance with any direction given by the EPA.
 - c) Provide all monitoring data as required by the conditions of this licence or as directed by the EPA.
- E2.2 In the event of an earthquake, storm, fire, flood or any other event where it is reasonable to suspect that a pollution incident has occurred, is occurring or is likely to occur, the licensee (whether or not the premises continue to be used for the purposes to which the licence relates) must:
 - a) make all efforts to contain all firewater on the licensee's premises,
 - b) make all efforts to control air pollution from the licensee's premises,
 - c) make all efforts to contain any discharge, spill or run-off from the licensee's premises,
 - d) make all efforts to prevent flood water entering the licensee's premises,
 - e) remediate and rehabilitate any exposed areas of soil and/or waste,
 - f) lawfully dispose of all liquid and solid waste(s) stored on the premises that is not already securely disposed of,
 - g) at the request of the EPA monitor groundwater beneath the licensee's premises and its potential to migrate from the licensee's premises,
 - h) at the request of the EPA monitor surface water leaving the licensee's premises; and
 - i) ensure the licensee's premises is secure.
- E2.3 After the licensee's premises cease to be used for the purpose to which the licence relates or in the event that the licensee ceases to carry out the activity that is the subject of this licence, that licensee must:

Environment Protection Licence

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a) remove and lawfully dispose of all liquid and non-liquid waste stored on the licensee's premises; and
b) rehabilitate the site so that its contamination status is no worse than that described in the Site Audit Report - Former EMD Facility Mayfield West, prepared for Delta EMD, prepared by ENVIRON Australia Pty Ltd, November 2009, Audit Number: GN 397.

E3 EPA may claim on financial assurance

E3.1 The EPA may claim on a financial assurance under s303 of the POEO Act if a licensee fails to carry out any work or program required to comply with the conditions of this licence or clean up notice issued under section 91 of the POEO Act.

Environment Protection Licence

Licence - 20771



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 <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .
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 <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .
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

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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 Environment 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 described 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 months. 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 <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .

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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 Jenny Lange

Environment Protection Authority

(By Delegation)

Date of this edition: 25-May-2016

End Notes
2 Licence varied by notice 1544732 issued on 11-Oct-2016

APPENDIX D – WASTE MANAGEMENT PLAN

WASTE MANAGEMENT PLAN



MAYFIELD WEST

May 2018

Document Control				
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01	07/02/2018	Draft	MH	ED
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04	25/05/2018	Revised per DPE comments	JK	PT

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1. INTRODUCTION

1.1 BACKGROUND

Benedict Recycling Pty Ltd (Benedict) is the operator of the Mayfield West Recycling Facility (MWRF) located at 1A McIntosh Drive, Mayfield West.

Resource recovery activities limited to 90,000 tonnes per year of General Solid Waste (non-putrescible) were approved on the site by consent DA2015/0291 on 8 March 2016. The site currently operates under the regulation of Environment Protection Licence (EPL) 20771.

Development Consent granted under application SSD 7698 on 13 March 2018 permits an increase in processing capacity of the existing resource recovery facility to 315,000 tonnes per year of general solid waste (non-putrescible).

Condition B13 of the development consent for SSD 7698 approving the increased processing capacity stipulates that a Waste Monitoring Plan be prepared detailing the following:

- type and quantity of waste received and details of stockpile limits;
- procedures for avoiding build-up of waste if unexpected machinery breakdown occurs; and
- requirement for non-conforming waste handling and removal

1.2 LOCATION

The facility is located at 1A McIntosh Drive, Mayfield NSW within the local government area of Newcastle City Council. The approved site is approximately 4.9 ha and is part of Lot 1 in DP 874109.

Figure 1.1 shows the location of the site. The site is bounded by:

- the Hunter River (South Arm) to the north
- Tourle Street to the east
- Ausgrid Mayfield West Substation to the south; and
- light industrial buildings to the west

1.3 PURPOSE OF THE WASTE MANAGEMENT PLAN

The purpose of the Waste Management Plan (WMP) is to describe the principles, procedures and management of waste generated by and received at the site.

In particular, this WMP:

- Details the type and quantity of waste to be received during operation of the site;
- Includes details of stockpile limits in the incoming waste receival area and waste storage areas;
- Includes procedures for ensuring no build-up of waste will occur in the incoming waste receival area during unexpected machinery breakdown; and
- Details the requirements for non-conforming waste handling and removal.

In addition to meeting the requirements of development consent condition B13, the WMP addresses the requirements of other relevant conditions of the development consent as summarised in Table 1.1 Compliance Register.

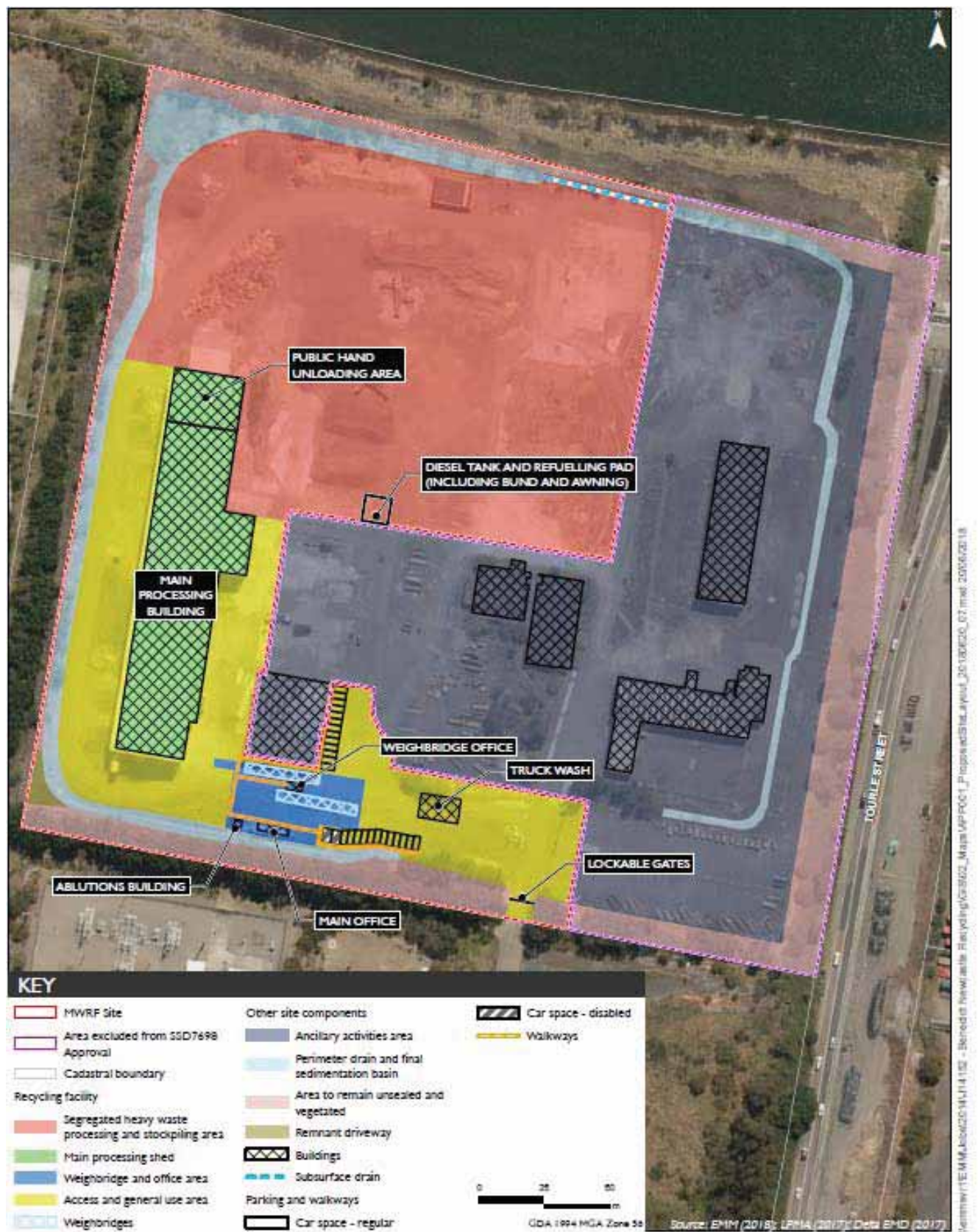


Figure 1.1 – Site Location Map

Condition	Requirement	Where Addressed in WMP
A6	The Applicant must not receive or process on site more than 315,000 tonnes per year of general solid waste (non-putrescible).	Section 2.2
A7	The Applicant must not: (a) Crush more than 71,000 tonnes per year of waste; and (b) Shred more than 5,400 tonnes per year of timber.	Section 5.4
A8	The amount of waste stored on site at any one time must not exceed 53,733 tonnes.	Section 2.2
A10	The Applicant shall aim to achieve a recycling rate of 95% of all waste and a disposal rate of not more than 5% to landfill.	Section 2.2
A11	Stockpiles of waste and recycled product on-site must not be more than seven (7) metres in height when measured from the finished ground level to access Werribi Street.	Section 2.3
B1	All waste materials removed from the site must only be directed to a waste management facility or premises lawfully permitted to accept the materials.	Section 5.2
B2	Waste generated outside the site must not be received at the site for storage, treatment, processing, reprocessing, or disposal, except as expressly permitted by an EPL.	Section 2
B3	The Applicant must record the amount of waste (in tonnes) received at the site on a daily basis.	Section 5.1
B4	The Applicant must retain all sampling and waste classification data for the life of the Development in accordance with the requirements of the EPA.	Section 5.3
B5	No biochar production or storage is approved under the terms of this consent.	Section 2
B6	The Applicant must only receive waste on site that is authorised for receipt by an EPL.	Section 2
B7	The Applicant must ensure any waste generated on the site during construction and from general office activities is classified in accordance with the EPA's Waste Classification Guidelines, 2014 or its latest version, and disposed of to a facility that may lawfully accept the waste.	Section 3
B8	Loads predominantly containing glass are not	Section 2

	permitted to be crushed at the site.	
B9	<p>The Applicant must:</p> <p>(a) implement auditable procedures to:(i) ensure the site does not accept wastes that are prohibited; and(ii) screen incoming waste loads.</p> <p>(b) ensure that: (i) all waste types that are controlled under a tracking system have the appropriate documentation prior to acceptance at the site; (ii) all waste received at the site must be recorded in accordance with clause 27 of the POEO (Waste) Regulation; (iii) details of the quantity, type and source of wastes received on the site must be provided to the EPA and the Secretary when requested; and (iv) staff receive adequate training in order to be able to recognise and handle any hazardous or other prohibited waste including asbestos.</p>	Section 5 and Section 4
B10	The Applicant must assess and classify all liquid and non-liquid wastes to be taken off site in accordance with the EPA's Waste Classification Guidelines Part 1: Classifying Waste, November 2014, or its latest version and dispose of all wastes to a facility that may lawfully accept the waste.	Section 5.2
B11	All waste must be: (a) stored wholly within the designated waste stockpile areas. (b) loaded and unloaded within the designated loading and unloading areas.	Section 3
B12	<p>From the commencement of operations, the Applicant must implement a Waste Monitoring Program for the Development. The program must:</p> <p>(a) be prepared by a suitably qualified and experienced person(s) prior to the commencement of operations;</p> <p>(b) include suitable provision to monitor the: (i) quantity, type and source of waste received on site; (ii) type of waste and the material crushed and shredded on site; (iii) quantity, type and quality of the outputs produced on site; and (iv) number of days crushing has occurred per calendar year.</p> <p>(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 to be</p>	Section 5 and Section 4

	able to recognise and handle any hazardous or other prohibited waste including asbestos.	
B13	<p>Prior to the commencement of operations, the Applicant must prepare a Waste Management Plan (WMP) for the Development to the satisfaction of the Secretary. The WMP must form part of the OEMP required by Condition C4 and be prepared in accordance with Condition C7. The WMP must:</p> <p>(a) detail the type and quantity of waste to be received during operation of the Development;</p> <p>(b) include details of stockpile limits in the incoming waste receival area and waste storage areas;</p> <p>(c) include procedures for ensuring no build-up of waste will occur in the incoming waste receival area during unexpected machinery breakdown and 24-hour waste receival for major infrastructure projects; and</p> <p>(d) details the requirements for non-conforming waste handling and removal.</p>	<p>This document</p> <p>Section 2</p> <p>Section 2.3</p> <p>Section 2.3 and 3.1</p> <p>Section 4</p>
B24	All excess water from the truck wash and wheel wash is to be discharged into suitable holding tanks and removed from the facility for treatment at an appropriately licensed facility or via trade waste.	Section 2.4
B32	All waste unloaded at the public hand unloading area must be unloaded and stockpiled underneath the public unloading awning or within the main processing building.	

Table 1.1 – Compliance Register

2. WASTE TYPES AND QUANTITIES

The operation of the Mayfield West Recycling Facility (MWRF) is licensed to accept a range of wastes as detailed in the Environment Protection Licence (EPL) 20771 and listed in Table 2.1 below.

Waste	Other Limits	Activity
Basic Oxygen Slag	Must not contain any contaminant levels exceeding the limits for General Solid Waste stated in the EPA's Waste Classification Guidelines Part 1: Classifying Waste.	Resource recovery Waste Storage
Electric Arc Furnace Slag		
Electric Arc Ladle Slag		
Granulated Blast Furnace Slag		
Rail Ballast		
Excavated Natural Material		

Soils that meet the CT1 thresholds for General Solid Waste in Table 1 of the Waste Classification Guidelines as in force from time to time with the exception of the thresholds in the 'Other Limits' column.	Arsenic: 40mg/kg; Cadmium: 2mg/kg; Copper 200mg/kg; Mercury: 1.5mg/kg; Zinc: 600mg/kg; Petroleum Hydrocarbons C6-C9: 150mg/kg; Petroleum Hydrocarbons C10-C36: 1600mg/kg; Polycyclic Aromatic Hydrocarbons: 80mg/kg; Polychlorinated biphenyls (individual): 1mg/kg; No acid sulphate soil is to be received at the premises.	Resource recovery Waste Storage
Grit, sediment, litter and gross pollutants collected in, and removed from, stormwater treatment devices and/or stormwater management systems.	Has been dewatered so that they do not contain liquids.	Resource recovery Waste Storage
Biosolids	Categorised as unrestricted use, or restricted use 1, 2 or 3.	Resource recovery Waste Storage
Household waste from municipal clean-up.	Does not contain putrescible waste.	Resource recovery Waste Storage
Cement Fibre Board		Resource recovery Waste Storage
Paper or cardboard		Resource recovery Waste Storage
Glass, plastics, rubber, plasterboard, ceramics, brick, concrete or metal.	<i>Loads predominantly containing glass are not permitted to be crushed at the site (as per Condition B8 of consent)</i>	Resource recovery Waste Storage
Wood waste		Resource recovery Waste Storage
Garden waste		Resource recovery Waste Storage
Asphalt waste		Resource recovery Waste Storage
Virgin Excavated Natural Material		Resource recovery Waste Storage
Building and demolition waste		Resource recovery Waste Storage

Table 2.1 – Accepted Waste Types

Wastes accepted at MWRF are limited by the EPL to those within the category of *General Solid Waste (non-putrescible)* as defined by the Environment Protection Authority (EPA). Putrescible waste as well as waste classified as *Hazardous, Restricted, or Special* is not accepted for receipt at MWRF. In accordance with condition B5 of the development consent for SSD 7698, no biochar production or storage is approved on site.

2.1 SITE BASED WASTE ACTIVITIES

The NSW Protection of the Environment Operations Act 1997 (POEO Act) requires companies or organisations carrying out activities that have a potential to affect the environment to obtain an Environmental Protection Licence (EPL) from the Environmental Protection Authority (EPA). Benedict Recycling was issued EPL 20771 by the EPA on 25 May 2016.

The POEO Act 1997 Schedule 1, Part 1, Activities Premises Based, defines:

WASTE STORAGE

- (1) *This clause applies to waste storage, meaning the receiving from off site and storing (including storage for transfer) of waste.*
- (2) *However, this clause does not apply to any of the following:*
 - (a) *the storage of stormwater,*
 - (b) *the storage of up to 60 tonnes at any time of any of the following kinds of waste (but not when accompanied by any other kind of waste)*
 - (i) *drilling mud*
 - (ii) *grease trap waste*
 - (iii) *waste lead acid batteries*
 - (iv) *waste oil*
 - (c) *the storage of sewage within a sewage treatment system,*
 - (d) *the storage and transfer of liquid waste that is generated and treated on site prior to sewer discharge, or lawful discharge to waters.*
- (3) *The activity to which this clause is declared to be a scheduled activity if:*
 - (a) *more than 5 tonnes of hazardous waste, restricted solid waste, liquid waste or special waste (other than waste tyres) is stored on the premises at any time, or*
 - (b) *more than 5 tonnes of waste tyres or 500 waste tyres is stored on the premises at any time (other than in or in a vehicle used to transport the tyres to or from the premises), or*
 - (c) *more than the following amounts of waste (other than waste referred to in paragraph (a) or (b)) are stored on the premises at any time:*
 - (i) *in the case of premises in the regulated area – more than 1,000 tonnes or 1,000 cubic metres,*
 - (ii) *in the case of premises outside the regulated area – more than 2,500 tonnes or 2,500 cubic metres, or*
 - (d) *more than the following amounts of waste (other than waste referred to in paragraph (a) or (b)) is received per year from off site:*
 - (i) *in the case of premises in the regulated area – 6,000 tonnes*
 - (ii) *in the case of premises outside the regulated area – 12,000 tonnes.*
- (4) *For the purposes of this clause, 1 litre of waste is taken to weigh 1 kilogram*

RESOURCE RECOVERY

- (1) *This clause applies to the following activities:*
 - recovery of general waste**, *meaning the receiving of waste (other than hazardous waste, restricted solid waste, liquid waste or special waste) from off site and its processing otherwise than for the recovery of energy*
 - recovery of hazardous and other waste**, *meaning the receiving of hazardous waste, restricted solid waste or special waste (other than asbestos waste or*

waste tyres) from off site and its processing, otherwise than for the recovery of energy

recovery of waste oil, meaning the receiving of waste oil from off site and its processing, otherwise than for the recovery of energy

recovery of waste tyres, meaning the receiving of waste tyres from off site and their processing, otherwise than for the recovery of energy.

- (2) However, this clause does not apply to the recovery of stormwater or the processing of any of the following:
- (a) contaminated soil,
 - (b) contaminated groundwater,
 - (c) sewage within a sewage treatment system (whether or not that system is licensed).
- (3) Each activity referred to in Column 1 of the Table to this clause is declared to be a scheduled activity if:
- (a) it meets the criteria set out in Column 2 of that Table, and
 - (b) either
 - (i) less than 50% by weight of the waste received per year requires disposal after processing, or
 - (ii) an exemption granted under Part 9 of the Protection of the Environment Operations (Waste) Regulation 2014 exempts the person carrying out the activity from the requirements of section 48 (2) as they apply to waste disposal (application to land), waste disposal (thermal treatment), waste processing (non-thermal treatment) and waste storage

Table

Column 1		Column 2
ACTIVITY		CRITERIA
recovery of general waste		<p>if the premises are in regulated area:</p> <ul style="list-style-type: none"> (a) involves having on site at any time more than 1,000 tonnes or 1,000 cubic metres of waste, or (b) involves processing more than 6,000 tonnes of waste per year <p>if the premises are outside the regulated area:</p> <ul style="list-style-type: none"> (a) involves having on site at any time more than 2,500 tonnes or 2,500 cubic metres, or (b) involves processing more than 12,000 tonnes of waste per year
recovery of hazardous and		involves having on site at any time

<i>other waste</i>		<i>more than 200 kilograms of waste</i>
<i>recovery of waste oil</i>		<i>involves processing more than 20 tonnes of waste oil per year or having on site at any one time more than 2,000 litres of oil.</i>
<i>recovery of waste tyres</i>		<i>involves having on site at any time (other than in or on a vehicle used to transport the tyres to or from the premises) more than 5 tonnes of tyres or 500 waste tyres, or involves processing more than 5,000 tonnes of waste tyres per year.</i>

2.2 QUANTITY OF WASTE TO BE RECEIVED/STORED

Following the approval of development consent for SSD 7698, the annual processing capacity of the site has increased from 90,000 tonnes to 315,000 tonnes. This limit applies to all waste types received on site and does not prescribe specific limits to individual waste types.

As far as storage limits are concerned, condition L3.4 of EPL 20771 stipulates that the authorised amount of waste permitted on the premises cannot exceed 53,733 tonnes at any one time. This storage limit is also required by condition A8 of the development consent for SSD 7698.

Given the restriction on the amount of waste permitted on site at any one time, it is critical that a high recycling rate is maintained. To this end, the aspirational target recycling rate for the site is set at 95% of all waste received (i.e. not more than 5% disposal to landfill).

2.3 STOCKPILE LIMITS

Condition L3.5 of the EPL specifies that all waste stockpiles occurring as part of the operation at the premises must be no greater than 7.0 metres in height. Typically, the equipment used on site to stockpile material is generally capable of stockpiling to a height of approximately 3.5 to 4 metres.

In the case of incoming loads of mixed waste, a sorting process is necessary to separate the various recyclable materials. Given the variable pattern of incoming waste traffic, the primary focus of the operation is to complete this sorting process as efficiently as possible, to avoid a backlog of trucks and a larger than necessary stockpile in the incoming waste receival area.

2.4 OTHER WASTE STREAMS

Other waste streams on site are associated with the following:

- Disposal of truck wash water and sediment;
- Sediment removed from sediment basins and two stage pit that is not of appropriate quality to be reused on site; and
- Waste associated with office activities.

In accordance with Condition B24 all excess water from the truck wash and wheel wash is to be discharged into suitable holding tanks and removed from the facility for treatment at an appropriately licensed facility or via trade waste.

Sediment that is not of specified quality of soil (as detailed in Table 2.1) is to be disposed to a facility licensed to accept contaminated sediment.

In addition to waste received on site, waste generated on site both during construction works and resulting from general office activities is classified in accordance with the EPA's *Waste Classification Guidelines 2014* (or its latest version). This is in keeping with the requirement of condition B7 of the development consent for SSD 7698.

3 WASTE HANDLING/MANAGEMENT

Each load presented at the facility is to be inspected and classified prior to the material being deposited on site. The methodology for waste load inspections is detailed and illustrated in the *Tip Inspecting Safe Work Procedure* attached in Appendix A.

All waste accepted at the facility shall be recorded on MWRF's weighbridge system and a customer docket/receipt produced (see Appendix B).

The information recorded shall include:

- Date
- Registration number of vehicle
- Type and weight of waste being delivered

Waste material that is unacceptable or specified prohibited from entering the site (see Appendix C) shall be refused entry and diverted when possible to an appropriately licensed facility.

Each load presented at the facility is to be directed to the appropriate storage area by the site staff. All waste on site is to be loaded and unloaded within the designated loading and unloading areas and be stored wholly within the designated waste stockpile areas in keeping with condition B11 of the development consent. Wherever possible raw materials are to be sorted at the source and directed into segregated stockpiles on-site.

Unsorted materials are to be spread on the ground on-site, sorted into the various categories and formed into segregated stockpiles. The sorted waste material may be subject to processing depending on its category and presentation.

In accordance with Condition B32, all waste unloaded at the public hand unloading area must be unloaded and stockpiled within the main processing building.

Processing on site may include screening, grinding and crushing as preparation aspects. The processed material is to be stockpiled into its various processed categories for return to the market as product(s).

3.1 EQUIPMENT BREAKDOWNS

Unexpected machinery breakdown has the potential to result in waste processing delays and hence build-up of incoming waste. To avoid such a situation, all equipment on site is regularly serviced and maintained (usually by the original equipment manufacturer) and the Benedict fleet of mobile equipment (HME) is typically replaced after approximately 10,000 hours of service. As such, equipment reliability is high and major breakdowns typically minimising the potential for excessive build-up of incoming waste on site.

Nevertheless, should an unexpected breakdown of equipment occur in the incoming waste receival area, replacement equipment will be deployed when necessary to ensure that stockpile limits are not compromised due to a build-up of waste. This replacement equipment may be redeployed from another part of the site, hired or sourced from another Benedict site.

In the event that mobile equipment (HME) is unavailable for more than 48 hours due to breakdown, contractual arrangements are in place whereby the original equipment manufacturer is bound to make available replacement equipment for use until such time as the repairs are completed.

Where high volumes of incoming waste traffic coincide with an equipment breakdown event and a build-up of waste is anticipated, the volume and types of waste received are managed accordingly to ensure that stockpile limits can continue to be met. This may include but not be limited to diverting customers to other facilities.

4. NON-CONFORMING WASTE

Each incoming load of waste presenting at the facility is to be inspected for hazardous and other waste which is not permitted prior to the material being deposited on site.

All staff directly involved in the inspection and classification of waste must be capable of identifying wastes that are not permitted to be disposed of at the facility. As such, basic internal training is carried out as required together with asbestos awareness training conducted by an external party which is scheduled annually as well as ad-hoc from time to time should there be any significant turnover of site staff.

Where waste is deemed to be non-conforming, the load is either rejected or re-loaded for removal from the site.

Waste material specifically prohibited from entering the site (see Appendix C) shall be refused entry and diverted where possible to the appropriate facility or alternatively directed to contact the EPA for advice (ph. 02 9995 5000).

Details of any non-conforming waste loads are captured on a *Notification of Non Conforming Waste Form* (see Appendix D) which is sent to the customer and filed on site.

The information recorded in the form and register includes the following:

- Date
- Carrier organisation/company
- Registration number of the vehicle
- Type of waste

A log of all non-conforming loads is maintained in a central register.

Non-conforming waste material that is found to have been deposited on the site and is listed in Appendix C as prohibited waste shall cause:

- the prohibited waste to be isolated and the area closed to public access;
- the site Leading Hand/Supervisor and the Site Manager to be notified immediately;
- the site is to be closed should the Site Manager or delegate deem the hazard to be such as to warrant such action.

Should an incident occur in relation to a non-conforming waste, which poses a threat to the environment, the EPA is to be advised as soon as practical after the incident occurs.

The incident is to be reported by telephoning:

- EPA Newcastle office: 02 4908 6800
- EPA Pollution Hotline: 131 555

Wastes identified as hazardous in Appendix C are to be managed in accordance with “The Environmental Guidelines: Assessment, Classification and Management of Liquid and Non-Liquid Waste.”

Arrangements are to be made for the removal of the waste for disposal at an appropriate facility.

5. WASTE MONITORING PROGRAM

MWRF is committed to minimising the risks associated with the waste received and the products despatched from the site.

5.1 INCOMING WASTE RECEIVALS

The monitoring of the quantity, type and source of the waste received at the MWRF operation will be recorded by the weighbridge software/system on a daily basis in accordance with consent conditions B3 and B12. An example of the information captured by the weighbridge software/system is shown in figure 5.1 below.

The screenshot shows a software interface for editing a docket. Key sections include:

- SYSTEM DETAILS:** Site Prefix (N), Outgoing Load (checkbox).
- TRUCK DETAILS:** Registration No, Driver Name, Hnd unload grp (GOOGLE).
- DATE DETAILS:** Date In (01/02/2018), Date Out (01/02/2018).
- CUSTOMER DETAILS:** Customer Code (XODEF0), Customer Name (COD EFPOS B RECYCLING****CO), Customer Order No (GOOGLE), Customer Address (****COD ONLY****).
- PRODUCT DETAILS:** Product Code (DEMOT), Product Name (MIXED LIGHT BUILDING & DEMOLITION), Product Rate, Bin Size (m3 Den 0.00).
- CARTAGE DETAILS:** Cartage (Fixed 0, Per tonne 0).
- EXTRAS DETAILS:** Extra Code, Extra Name, Extra Rate, Quantity, Extra table.
- JOB DETAILS:** Job No, Job Comments.
- CONTRACTOR DETAILS:** Contractor Code, Contractor Name, Instructions (HAND UNLOAD, MAYFIELD).
- WEIGHTS:** Tare (1.78), Gross (1.88), MIN Net (0.10).
- COSTS:** Product, Cartage (0.00), Extras (0.00), GST, Total.

Figure 5.1 – Weighbridge Information Capture

Whilst the 'Customer Details', 'Truck Details', 'Contractor Details' information is entered on arrival, the specific information relating to waste type is confirmed when the incoming load is inspected and classified using the 'Load Classification' form as shown in Appendix B. All necessary sampling and waste classification records will be kept in -line with EPA requirements and condition B4 of the development consent. Each incoming load is assigned a 'Product Code' which has an associated 'Product Name'.

5.2 OUTGOING PRODUCTS AND WASTE FOR DESPATCH

Materials leaving the site include recycled products for re-use (compliant with Resource Recovery Orders); residual wastes to be further processed/lawfully recovered at a licensed waste facility; and residual wastes for disposal at a licensed waste facility. The quantity, type and quality of the outputs produced on site are recorded by the same the weighbridge software/system as that used to record incoming waste materials.

Recycled products for re-use are only approved for sale from MWRF pending compliance with a variety of conditions as per specific Resource Recovery Orders issued by the Environment Protection Authority (EPA) under clause 93 of the 2014 Waste Regulation.

All liquid and non liquid wastes despatched from the site, are to be classified in accordance with the EPA's *Waste Classification Guidelines Part 1: Classifying Waste, November 2014*.

5.3 MONTHLY EPA REPORTING

Under the *Protection of the Environment Operations Act 1997 (POEO Act)*, all licence holders of levy liable waste facilities (ie. landfills, waste recycling facilities, waste storage, and waste transfer facilities) must submit a Waste Contribution Monthly Report (WCMR). This report is submitted monthly on-line via the EPA's Waste and Resource Reporting Portal (WARRP),

ensuring that there is suitable provision to monitor movement of waste to and from the premises.

The WCMR submitted via the WARRP system details the quantity, type and source of waste received by a site as well as the quantity, type and quality of waste transported from the site.

All sampling and waste classification data is to be retained for the life of the MRF in accordance with EPA requirements.

Figure 5.3 below shows typical screenshots of the WARRP system being currently used to report waste material movements to and from the site.

The screenshot displays the 'WCMR: Facility ABC' interface. At the top, it shows the 'Reporting Period Ending: September 2015' and 'Due: 25 November 2015'. A message states: 'No waste has been received, processed or removed from site during this period.' Below this, a red-bordered box highlights the 'Waste Received' section, which is currently set to 'Metropolitan Levy Area'. The interface is divided into four categories: 'Municipal', 'Commercial and Industrial', 'Construction and Demolition', and 'Unknown waste stream'. Each category has a 'Received/Source' field with an 'Add New Source' button, a 'Waste Type' field, and a 'Quantity (tonnes)' field. At the bottom right, a red-bordered box highlights a button labeled 'I retained waste from MFA...'. The bottom of the screen features 'Cancel', 'Save', and 'Next >' buttons.

WCMR: Facility XYZ v1

Reporting Period Ending: September 2015 Due: 25 November 2015

Deductions - Waste transported from site

Please note the proximity principle offence commenced on 1 November 2014. This makes it an offence to transport waste generated in NSW beyond 150km from its point of generation, with limited exceptions.

Waste transported from site for disposal at a licenced waste facility

Facility	Waste Type	Rate Paid	Quantity
<input type="button" value="Add another Facility"/>			

Waste transported from site for lawful recovery at a licenced waste facility

Facility	Waste Type	Rate Paid	Quantity
<input type="button" value="Add another Facility"/>			

Waste transported from site under a Resource Recovery Order

RRO	Waste Type	Rate Paid	Quantity
<input type="button" value="Add another RRO"/>			

Waste transported from site for lawful recovery (not a licenced waste facility)

Destination	Waste Type	Rate Paid	Quantity
<input type="button" value="Add another Destination"/>			

WCMR: Facility ABC v1

Reporting Period Ending: August 2015 Due: 14 September 2015

Summary details

Current position

	Tonnes
Waste Received - MLA	500.00
Waste Received - RLA	400.00
Deductions - Waste transported from site	300.00
Net position for reporting period	600.00

Authorised Amount

Authorised Amount	9,999,999.00
Opening Stock	3,510.00
Net change to stockpile tonnage	600.00
Closing Stock	4,110.00 tonnes - 0.04%

Certification statement

I John Doe certify that the information contained in the report in respect of scheduled waste facility Facility ABC (licence number: L838343) located at Kentucky Road for the reporting period August 2015 is true and correct.

I further certify that all deductions claimed in this report are valid and correct and that the occupier of the scheduled waste facility has kept the necessary records to substantiate these claims as required by clauses 26 to 33 of the Protection of the Environment Operations (Waste) Regulation 2014.

I understand that all information contained within this report, records maintained in support of this report, and any claims for exemptions and deductions may be subject to EPA audit inspection.

Please select the option that applies to you:

Click the E-Certify button to complete e-certification. You will receive a return email confirming that the report has been successfully submitted to the EPA. Please email waste.levydata@epa.nsw.gov.au if you do not receive this confirmation.

Figure 5.3 – WARRP Screenshots






5.4 TRACKING OF CRUSHED AND SHREDDED TONNES

Limits of consent noted in condition A7 of the development consent for SSD 7698 specify annual limits for both crushing and shredding on site. As such, it is essential that suitable provisions are made to monitor both the tonnes crushed and shredded.




Daily production statistics are maintained to track equipment performance and feed into the financial accounts so that informed business decisions can be made based on real data. Accordingly, the run time and production of both crushing equipment and shredding equipment will be recorded daily and reported weekly for inclusion in the business financial accounts.

APPENDIX A




Tip Inspecting Safe Work Procedure (page 1 of 8)

SWP 5.4		BENEDICT BENEDICT	
Tip Inspecting			
Purpose:	To provide a detailed and illustrated methodology for tip inspecting.		
Applications:	Business Units	Benedict Recycling	
	Department	Operations	
	Plant	N/A	
Exemptions:	N/A		
Documentation: Including permits, notifications and forms	Load Classification Form		
Specific Competency Requirement:	<i>Position</i>	<i>Requirement</i>	
	Tip Inspector	Trained in this SWP	
		Trained in Waste Identification	
		Trained in Asbestos Awareness	
		Trained in Site Traffic Management Plan	
		Trained in Site Communication Protocols	
		Trained in Site PPE requirements	
		Trained in Overloaded Heavy Vehicle Procedure	
		Completed Tip Inspector Competency	
Specialised Primary Equipment/ Plant/ Tooling	<i>Description</i>	<i>Note</i>	
Personal Protective Equipment required during the entire activity:	    		
	(When Required)		



Tip Inspecting Safe Work Procedure (page 2 of 8)

SWP 5.4		BENEDICT			ILLUSTRATIONS	
Tip Inspecting						
STEP	TASK	ACTIVITY	POTENTIAL HAZARDS	CONTROLS/ PRECAUTIONS		
1	Customer to stop at designated stop point	<p>Weightbridge to notify to tip inspector when large numbers of pickups and tip offs are entering the site</p> <p>Weightbridge to notify tip inspector of driver with no access to UHF radio</p> <p>Check truck/ vehicle condition</p> <p>Check drivers ticket for initial classification and verify</p> <p>Tip inspector to check for visible contaminants</p> <p>Indicate to driver where to tip load</p>	<p>Unfamiliar with site</p> <p>Collision</p> <p>Dust</p> <p>Slips, trips and falls</p> <p>Lack of communication</p> <p>Driver on mobile phone</p> <p>Contaminated load</p>	<p>Driver Induction.</p> <p>Traffic management signage.</p> <p>Stop point area is to be kept clean at all times.</p> <p>Appropriate PPE to be worn.</p> <p>Dust suppression system to be periodically used when required.</p> <p>Trucks to untarp before entering tipping area.</p> <p>Verbal and visual contact made with customer driver and directions to tipping area given.</p> <p>Stop vehicle until driver is off the phone.</p> <p>If load is deemed to be contaminated, report to supervisor/manager immediately.</p> <p>Collect ticket from driver. Do not allow any vehicle to enter the tipping area unless approved by a Benedict employee.</p>	  	




Tip Inspecting Safe Work Procedure (page 3 of 8)

SWP 5.4		BENEDICT	
Tip Inspecting			
2	Customer tip off	Vehicle driving through tip off area Vehicle tipping off Inspect for contaminants Inspect for flammables Spread load when required	Too many vehicles/plant in tip area Collision Lack of communication Falling/ Rolling objects Vehicle tip over Dust Smouldering material/ Fire Crushing Unstable Vehicle Overloaded Vehicle Contaminated material
		<p>Tip Inspector must communicate to machine operators in tip off area that the incoming vehicle is entering the area.</p> <p>Tip Inspector is not to let a vehicle enter the tip off area until responses from the area machine operators have been received.</p> <p>Ensure traffic management speed limits are followed.</p> <p>Limit vehicles in tipping area</p> <p>Signal driver to be positioned in areas of poor visibility, if required.</p> <p>Wear appropriate PPE – Gloves, dust mask, Hi Vis, Steel capped shoes, hearing protection, eye protection, sun protection and hard hat when required</p> <p>Ensure drivers tipping off are wearing appropriate PPE for the tipping area when out of their vehicle.</p> <p>Ground should be level and clear of debris.</p> <p>Spray down material with hose if dust is generated, or activate dust suppression system if available.</p> <p>No smoking in tip off area</p> <p>Use the appropriate firefighting equipment to extinguish a fire. If unable to control fire, notify warden of emergency.</p> <p>Stand well clear of falling objects. DO NOT stand immediately next to/ behind the skip bin/ tipping body during the tipping process, in case of vehicle roll over and/ or flying objects rolling out at speed.</p> <p>Do not inspect load whilst driver is tipping. Wait for bin to be back in travel position or a safe distance away from load on ground.</p>	  




Tip Inspecting Safe Work Procedure (page 4 of 8)

<div>SWP 5.4</div> <div>BENEDICT</div> <div>Tip Inspecting</div>				
3	Customer Hand Unload (where applicable)	Customer unloading vehicle/ trailer/ light truck Benedict employee assisting in unloading vehicle/ trailer/ light truck Benedict employee supervising customer unloading Inspect for contaminants	<p>Too many vehicles/ plant in unload area</p> <p>Collision</p> <p>Lack of communication</p> <p>Falling/Rolling objects</p> <p>Flying objects</p> <p>Needles</p> <p>Sharp Objects</p> <p>Slips, Trips and Falls</p>	<p>For all skip bin trucks, ensure they have their stabilising legs down prior to tipping. Follow overloaded heavy vehicle procedure</p> <p>Do not allow drivers to tip on top of previously tipped loads, in case of potential reloading.</p> <p>For all Front lift trucks, waste is to be unloaded in a separate bay from all other waste streams. Material in this bay is to be lightly wet down on a regular basis after inspecting. Access to this area is to remain clear, as this material is removed off site on a First In, First Out basis.</p> <p>If contamination is present, report to supervisor/ manager immediately.</p>
				
				
				<p>Tip Inspector is not to let a vehicle enter the tip off area until area is free and clear of mobile plant.</p> <p>Customer vehicles are to wait in stop area until tip Inspector directs them to enter tip off area.</p> <p>Ensure traffic management speed limits are followed.</p> <p>Verbal and visual contact made with customer driver and directions to tipping area consulted.</p> <p>Stand well clear of falling objects. DO NOT stand immediately next to/ behind the tipping body during the tipping process, in case of objects becoming airborne or rolling out at speed.</p> <p>Dust suppression system to be utilised periodically and when dust levels are elevated.</p> <p>Waste bays and access roads to be regularly maintained to ensure area is free and clear of debris and dust.</p> <p>DO NOT stand on waste stockpiles.</p>

Tip Inspecting Safe Work Procedure (page 5 of 8)

SWP 5.4		BENEDICT	
Tip Inspecting			
		<p>Lifting of Heavy/ Awkward objects</p> <p>Cuts/ Abrasions</p> <p>Dust inhalation</p> <p>Eye Irritation</p> <p>Noise</p> <p>Needles</p> <p>Contaminated material</p> <p>Driver Frustration</p> <p>Smouldering material/ Fire</p>	<p>Wear appropriate PPE – Dust mask, Hi Vis, Steel capped shoes, hearing protection, eye protection, sun protection and hard hat when required. Gloves to be worn whenever handling waste materials.</p> <p>Provide assistance where customer is attempting to unload a heavy/ awkward object. Where object is found to be too difficult/ heavy to unload, use available mechanical aids to assist.</p> <p>Customers are to wear enclosed footwear.</p> <p>Customer to wear hi visibility shirt/ vest.</p> <p>Where customer does not have appropriate PPE, where possible, provide assistance to customer to minimise exposure to potential hazards.</p> <p>No smoking in tip off area</p> <p>Use the appropriate firefighting equipment to extinguish a fire. If unable to control fire, notify warden of emergency.</p> <p>If contamination is present, report to supervisor/ manager immediately.</p>
4	Tip Inspector to inspect load	Assessing and Classifying load	   <p>All relevant staff to attend asbestos awareness training.</p> <p>Tip inspectors trained in material classifications and identification.</p> <p>Tip Inspector to keep hydrated during the course of the shift.</p> <p>Wear appropriate PPE – Dust mask, Hi Vis, Steel capped shoes, hearing protection, eye protection, sun protection and hard hat when required. Gloves to be worn whenever handling waste materials.</p> <p>Dust suppression system/ water cart to be used when necessary.</p>

Tip Inspecting Safe Work Procedure (page 6 of 8)

SWP 5.4		BENEDICT	
Tip Inspecting			
			  
	Flying objects	<p>Watch where you're walking – looking out for sharp objects.</p> <p>Do not attempt to remove, touch or handle syringes. Cease inspection in the vicinity of any evidence of hazardous medical waste. Report incident to supervisor immediately.</p> <p>Tip inspector in control of traffic management.</p> <p>Be aware of position of excavators and loaders.</p> <p>Maintain positive radio/ visual communication with drivers/ operators in the area.</p> <p>Wait for truck to completely stop and make reciprocated visual or radio contact with the vehicle driver prior to inspecting load on the vehicle.</p> <p>Do not climb on top of stockpiles.</p> <p>Extra attention is required when loads appear to be from an older building OR waste loads from a Front lift truck.</p> <p>If paints, oil, fuel, chemicals, food or putrescibles are detected or suspected, instruct material to be reloaded onto truck/vehicle. Use precautions to not allow uncontrolled release of liquids during the reloading process. Wet down area when complete.</p> <p>Photos taken of all non-recyclable/ contaminated loads sent to weighbridge for processing.</p> <p>Load to be classified on the spot – driver told – and paperwork given.</p> <p>If contamination is present, report to supervisor/ manager immediately.</p> <p>Any disagreements on classification of waste with customer, tip inspector to escalate to site supervisor/ manager.</p>	
	Noise		
	Cuts/ abrasions		
	Sharp Objects		
	Needles		
	Slips, trips, falls		
	Collision		
	Contaminated material		
	Driver Frustration		
	Smouldering material/ Fire		

Tip Inspecting Safe Work Procedure (page 7 of 8)

SWP 5.4		BENEDICT	
Tip Inspecting			
5	Finding Contaminated Material	Bonded Asbestos Contaminated Material (ACM) found Report to supervisor/manager immediately	Dust Inhalation
		No smoking in tip off area Use the appropriate firefighting equipment to extinguish a fire. If unable to control fire, notify warden of emergency.	
		Notify your supervisor/ manager immediately. If found immediately after tipping, instruct material to be reloaded onto truck. Use precautions to not allow dust to be generated during the reloading process. If found in stockpile, load is to be isolated, spread out and checked. Dust to be suppressed as outlined in asbestos awareness training. Asbestos handling material to be worn – e.g. P2 respirator and gloves if required. Asbestos material is to be double bagged in an approved asbestos bag and tied in a 'goose neck' position. Bags to be placed into an isolated area, to be sent away to a licenced waste facility.	
		Friable ACM found Report to supervisor/manager immediately	Dust Inhalation
		Notify your supervisor/ manager immediately. Gloves and P2 dust mask to be worn Cordon off area. E.g. Bollards and tape, Cones, Barriers etc. Wet down material.	





Tip Inspecting Safe Work Procedure (page 8 of 8)

SWP 5.4

BENEDICT

Tip Inspecting

		Finding flammable material Report to supervisor/manager immediately	Smouldering material/ Fire	<p>If flammable waste material is found, it is to be removed from the waste pile immediately and segregated from all other stockpiles.</p> <p>Wet down stockpiles where flammable materials were found</p> <p>Periodically wet down segregated flammable materials until removed from site.</p>	
6	Releasing customer from tipping area		Impatient Driver Collision	<p>No vehicle is to leave the tipping area unless the tip inspector has signed and returned the classification docket to the driver.</p> <p>UHF radio communication between tip inspector and Benedict ground staff to inform of customer movements in shared yard areas.</p>	

APPENDIX B

Load Classification and Customer Docket/Receipt

BENEDICT RECYCLING PTY LTD **BENEDICT**

LOAD CLASSIFICATION

DATE: 4 AUG TIME: 12:30 RECD: BV93JB

☐ BELMORE ☐ BANKSMEADOW ☐ CHIPPING NORTON

QTY	LOAD	BIN SIZE
<input checked="" type="checkbox"/>	DEMOLITION	1.5m
<input type="checkbox"/>	BRICK / CONCRETE	
<input type="checkbox"/>	CONCRETE - 500	ROSEBAY
<input type="checkbox"/>	CONCRETE + 500	
<input type="checkbox"/>	CLEAN FILL	
<input type="checkbox"/>	RUBBLE	
<input type="checkbox"/>	SAND (2.60)	11
<input type="checkbox"/>	SANDSTONE	
<input type="checkbox"/>	STEEL	
<input type="checkbox"/>	OTHER	

NON CONFORMING WASTE CHARGE ☐ YES ☐ NO

STAFF SIGNATURE: [Signature]

PRINT NAME: [Signature]

139601

WEIGHBRIDGE DOCKET

BENEDICT RECYCLING
BANKSMEADOW
ABN: 71123154507
38 MCPHERSON ST
BANKSMEADOW
PH: 02 9316 6333

W-104922

04 Aug 2018 12:30 PM

TRUCK ID: 118
CUSTOMER CODE: LDCH60
LOD: BENEDICT PTY LTD

SOURCE: PG BOX 1272
PDTS POINT
ORDER NO: ROSEBAY
JOB NO:

AMOUNT	ITEM	RATE
0.08t	L. WENG	

METRES: 1.5

GROSS: 2.60 t TARE: 2.50 t

NET: 0.03 t

Driver Signature: [Signature]

I hereby certify that the docket details are correct and I have not exceeded my gross vehicle mass weight.

I hereby certify that this load does not contain any contaminated, hazardous, liquid, putrescibles or asbestos materials.

I have read and understood the conditions of entry.

Part of our tipping fees contains the \$133.10 EPA waste tax for every tonne that is stockpiled on site.

APPENDIX C

Prohibited Wastes

The following waste types as defined by the Environmental Protection Authority NSW Waste Classification Guidelines Part 1: Classifying Waste (November 2014), will be excluded from the Facility:

a) Hazardous Waste

- Containers, having previously contained a substance of Class 1, 3, 4, 5 or 8 within the meaning of the Transport of Dangerous Goods Code, or a substance to which Division 6.1 of the Transport of Dangerous Goods Code applies, from which residues have not been removed by washing or vacuuming
- Coal tar or coal tar pitch waste (being the tarry residue from the heating, processing or burning of coal or coke) comprising of more than 1% (by weight) of coal tar or coal tar pitch waste
- Lead-acid or nickel-cadmium batteries (being waste generated or separately collected by activities carried out for business, commercial or community services purposes)
- Lead paint waste arising otherwise than from residential premises or educational or child care institutions
- Any mixture of the wastes referred to above

b) Special Waste

- Clinical and related waste
 - Clinical waste – any waste resulting from medical, nursing, dental, pharmaceutical, skin penetration or other related clinical activity
 - Cytotoxic waste
 - Pharmaceutical, drug or medicine waste
 - Sharps waste (for cutting, piercing or penetrating the skin) – any waste from the use of sharps from human health care, medical research, veterinary care or skin penetration, injection of drugs, or other substances
- Asbestos waste
- Waste Tyres

c) Liquid waste of any description

- Any waste (other than Special Waste) that:
 - Has an angle of repose of less than 5 degrees above horizontal
 - Becomes free flowing at or below 60 degrees Celsius or when it is transported
 - Is generally not capable of being picked up by a spade or shovel
 - Is classified as liquid waste under an EPA gazettal notice.

Notification of Non Conforming Waste Form

Form 72.5

BENEDICT BENEDICT

Notification of Non Conforming Waste Form

This form is to be completed by the Weighbridge Operator, Waste Controller or other authorised Benedict employee who identifies non conforming waste on site.

Date:			
Driver Name:			
Company:			
Company Contact:		Phone #:	
Address Collection of Waste:			
Docket #:			
Time of Delivery:			
Time of Notification:			
Registration:			
Reason for Rejection:			

This notification is to inform customers of BENEDICT Recycling about non conforming waste occurrences. BENEDICT Recycling only accepts Mixed Demo Waste and recyclable material, as classified by Environmental Guidelines: Assessment, Classification & Management of Liquid and Non-Liquid Wastes (EPA, 1999). The above vehicle was identified as bringing in non conforming waste at the following location:

☐ Belrose
 ☐ Other

☐ Chipping Norton
☐ Newcastle
☐ Unanderra

Identification Location – please tick

☐ Weighbridge
☐ Waste sorting / inspection area before unloading
☐ Waste sorting / inspection area during examination after unloading

It is requested that you undertake the following action immediately. If action is not taken on the same day of this notification further charges will be incurred.

Action Taken – please tick

☐ Non complying load isolated
☐ Removal of waste from site
☐ Reloading into truck or suitable waste bins as supplied by you the customer. Please be advised that a reloading fee will be charged
☐ Reclassification and price change. Reload fee docket number or docket attached
☐ None

☐ Emailed to Group by
☐ Save copy under J:Benedict Recycling/Form 72

For any further clarification please contact Gay Willis on 0427 087 897

APPENDIX E - SURFACE WATER CHARACTERISATION AND MANAGEMENT PLAN

APPENDIX F – AIR QUALITY MANAGEMENT PLAN



Intended for
Benedict Recycling Pty Limited

Document type
Report

Date
May 2018

MAYFIELD WEST RECYCLING FACILITY AIR QUALITY MANAGEMENT PLAN

MAYFIELD WEST RECYCLING FACILITY AIR QUALITY MANAGEMENT PLAN

Revision	Date	Made by	Checked by	Approved by	Signed
Final	17/04/2018	S. Fishwick	R. Kellaghan	S. Fishwick	
Rev 1	11/05/2018	S. Fishwick	R. Kellaghan	S. Fishwick	

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1. INTRODUCTION

Benedict Recycling Pty Ltd (Benedict Recycling) operate the Mayfield West Recycling Facility, a waste recovery facility at 1a McIntosh Drive, Mayfield West, NSW (the facility). The facility operates under an Environment Protection Licence (EPL) (number 20771), issued by the NSW Environment Protection Authority (NSW EPA).

Approval was granted by the NSW Department of Planning and Environment to Benedict Recycling in March 2018 to increase the to increase the annual volume of material received at the recycling facility from 90,000 tpa to 315,000 tpa.

Condition B57 of the conditions of consent for the SSD Approval 7698 (the SSD Approval) (dated 13 March 2018) requires that an Air Quality Management Plan (AQMP) is prepared for the facility describing the methods used to minimise dust emissions. Specifically, condition B57 states the following:

Prior to the commencement of operations, the Applicant must prepare an Air Quality Management Plan (AQMP) to the satisfaction of the Secretary. The AQMP must form part of the OEMP required by Condition C4 and be prepared in accordance with Condition C7. The AQMP must:

- (a) be prepared by a suitably qualified and experienced person(s);*
- (b) be prepared in consultation with the EPA;*
- (c) detail and rank all emissions from all sources of the Development, including particulate emissions and odour;*
- (d) describe the measures that will be implemented to minimise the potential risks to adverse air quality in the area including:*
 - (i) the management and mitigation measures to be employed at the site;*
 - (ii) plant and equipment being maintained to ensure that it is in good order;*
 - (iii) how the air quality impacts of the development will be minimised during adverse meteorological conditions or extraordinary events;*
 - (iv) identification of high emission generating operational activities, including proposed times when these works will be carried out (including respite periods if required) and mitigation measures to minimise adverse impacts from these activities;*
 - (v) compliance with the relevant conditions of this consent;*
- (e) identify the control measures that will be implemented for each emission source; and*
- (f) define what constitutes an air quality incident and includes a protocol for identifying and notifying the Department and relevant stakeholders of any air quality incidents.*

Condition B58 of the SSD Approval requires that the most recent version of the AQMP approved by the Secretary be implemented for the duration of the development.

Ramboll Australia Pty Ltd (Ramboll) has been commissioned by EMM Consulting Pty Ltd (EMM) on behalf of Benedict Recycling to prepare the required AQMP for the facility. **Table 1-1** provides a summary of where the above requirements and other consent conditions relevant to air quality are addressed in the AQMP.

Table 1-1 Air Quality Approval Conditions	
Condition	Relevant section of AQMP
B53 The Applicant must maintain the meteorological station to the satisfaction of the EPA for the life of the development.	Section 3.3
B54 All reasonable steps must be taken to minimise dust generated during all works authorised by this consent	Section 2.3
<p>B55 The Applicant must ensure that:</p> <p>(a) all on-site roads and car parking areas are sealed with concrete or asphalt;</p> <p>(b) all operating, storage, unloading and loading areas must be sealed with concrete, asphalt or other impervious barrier(s) of the same or greater quality;</p> <p>(c) water sprinklers at the crushing and screening plant must be utilised at all time when the plant is operational;</p> <p>(d) dust suppressants must be used to prevent particulate emissions from stockpiles and other dust generating sources;</p> <p>(e) trucks and vehicles entering and leaving the Development that are carrying loads of dust generating materials must have their loads covered at all times, except during loading and unloading;</p> <p>(f) crushing occurs for no more than 46 days per year in total;</p> <p>(g) crushing does not occur during adverse meteorological conditions;</p> <p>(h) all operations and activities occurring at the Development must be carried out in a manner that minimises the emissions of air pollutants from the Development;</p> <p>(i) trucks associated with the Development do not track dirt onto the public road network;</p> <p>(j) public roads used by these trucks are kept clean; and</p> <p>(k) any works are carried out progressively on site to minimise exposed surfaces.</p>	Section 2.3
B56 Equipment must be installed and operated in accordance with best practice to ensure that the development complies with all load limits, air quality criteria, air emission limits and air quality monitoring requirements as specified in the EPL applicable to the site.	Section 2.5
<p>B57 Prior to the commencement of operations, the Applicant must prepare an Air Quality Management Plan (AQMP) to the satisfaction of the secretary. The AQMP must form part of the OEMP required by Condition C4 and be</p> <p>(a) be prepared by a suitably qualified and experienced person</p> <p>(b) be prepared in consultation with the EPA</p> <p>(c) Detail and rank all emissions from all sources of the</p>	<p>Section 1</p> <p>Section 1.1</p>

Development, including particulate emissions and odour	
(d) Describe the measures that will be implemented to minimise the potential risks to adverse air quality in the area including:	Section 2.2 and 2.6
i) the management and mitigation measures to be employed on site;	Section 2.3
ii) plant and equipment being maintained to ensure that it is in good order;	Section 2.3
iii) how the air quality impacts of the development will be minimised during adverse meteorological conditions or extraordinary events;	Section 2.5
iv) identification of high emission generating operational activities, including proposed times when these works will be carried out (including respite periods if required) and mitigation measures to minimise adverse impacts from these activities;	Section 2.4
v) compliance with the relevant conditions of this consent;	Sections 2.2, 2.3, 2.4, 2.5 and 2.6
(e) identify the control measures that will be implemented for each emission source; and	Table 1.1
(f) define what constitutes an air quality incident and includes a protocol for identifying and notifying the Department and relevant stakeholders of any relevant air quality incidents:	Table 2.2
	Section 3.5
B58 (b) The Applicant must implement the most recent version of the AQMP approved by the Secretary for the duration of the development.	Sections 1
B59 The Applicant must carry out Air Quality Monitoring and Reporting of the Development for the first three crushing events following the commencement of the operations to the satisfaction of the Secretary	Section 3.3.1
B60 Within three months of each monitoring event, the Applicant must submit a copy of the Air Quality Monitoring Report (Condition B59) to the Secretary, together with its response to any recommendations	Section 3.3.1
B61 The Applicant must ensure the Development does not cause or permit the emission of any offensive odour (as defined in the POEO Act).	Section 2.6

1.1 Consultation with Environmental Protection Authority

Benedict have provided the AQMP to the NSW EPA for their comment. Comments received are presented in Table 1-2 and addressed in the AQMP.

Table 1-2 NSW EPA Consultation and Response	
Comment	Where addressed in AQMP
TO BE COMPLETED FOLLOWING RECEIPT OF COMMENTS	

2. EMISSION SOURCES AND MITIGATION MEASURES

2.1 Facility operations

The facility has two main components:

- The main recycling facility on the west of the site, accepting and processing co-mingled inert waste;
- ancillary activities on the east of the site that may include temporary storage, including for light and heavy vehicles.

The facility features include:

- Buildings including site office, ancillary sheds and staff amenities
- Covered processing area
- Sealed/hardstand material sorting and storage area
- Weighbridge and gate house
- Surface water management system
- Dust management systems
- Staff and visitor parking

The recycling facility is approved to accept up to 315,000 tpa of 'Pre-classified general solid waste (non-putrescible)' as defined by EPA (2014). This mainly consists of the following wastes:

- co-mingled and segregated building and demolition waste—soils, bricks, concrete, paper/cardboard, cloth, plastics, rubber, plasterboard, ceramics, glass, metal and wood;
- vegetation and uncontaminated soils;
- tiles, asphalt, suitable slags and concrete batching waste;
- excavated natural materials (ENMs) including virgin natural excavated material (VNEM) such as sand and sandstone which are generated during bulk earthworks and road and infrastructure repair; and
- rail ballast and spoils.

Waste is transported by waste contractors to the site via the entry gate located at the southern end of the site off McIntosh Drive. Vehicles proceed to a weighbridge/gate house complex where they are weighed. The gate house will be fitted with CCTV capability which monitors the front and rear of vehicles and their load characteristics.

The truck registration, weight, type and size of materials are recorded. The incoming material is classified as rubbish, mixed or clean waste. Weighbridge dockets are issued recording material weight and charges.

Entering vehicles then proceed to the either the covered waste sorting area or the hardstand sorting/storage area where an excavator spreads and segregates the material, accompanied by further examinations of material types. The segregated materials are available for reuse/recycling

or further processing. The wastes that cannot be reused or recycled by the site are taken to either landfill or other recycling facilities for further processing.

Empty vehicles entering the site to load recovered materials will be CCTV monitored; their registration recorded and then proceed for loading. Vehicles exiting the site may pass through a wheel "wash/clean" device based on a monitoring procedure to prevent material being tracked off site.

No special, hazardous restricted solid waste (including asbestos) is accepted at the site.

The recycled materials able to be produced include soils, mulches, road-base, metals and drypaper/cardboard. These products meet recycled material specifications while recovering a range of materials that may otherwise be disposed to landfill. All of the materials brought onto the site are taken from the site as products or as rejects for disposal at a licensed landfill. No materials are land-filled or otherwise disposed anywhere within the site.

The facility is approved for the following operating hours:

- Waste processing - 6am to 6pm Monday to Friday and 6am to 5pm Saturday;
- Waste recieval - 6am to 6pm Monday to Friday, 6am to 5pm Saturday and 7am to 3pm Sunday;
- Waste dispatch - 6am to 6pm Monday to Friday and 6am to 5pm Saturday;

Crushing operations will occur for no more than a total of 46 days in a single year. The number of crushing days will be logged and reported to the Department in the annual report for the facility (**Section 3**).

The facility is also approved to receive waste material on a 24-hour per day basis on limited occasions to facilitate major infrastructure projects, but only for six occasions per year and for no longer than two weeks in duration.

2.2 Particulate matter emissions sources

Air quality impact assessment (AQIA) reports were completed by Ramboll Environ in 2016 and 2017 for the facility and involved the quantification of dust emissions from onsite operations at a rate of 315,000tpa. Potential sources of particulate matter emissions were identified as the following:

- Vehicle entrainment of particulate matter due to the haulage of material along the sealed roads in the recycling facility;
- Unloading of material to the raw material storage areas within the main shed and in the external yard;
- Crushing and screening of larger material in the external yard;
- Transport of broken materials to the main shed for processing;
- Crushing and screening plant operations within the main shed;
- Loading and transfer of crushed material to stockpiles;
- Loading of product to truck for dispatch;
- Diesel fuel combustion by on-site plant and equipment; and
- Wind erosion associated with stockpiles and exposed surfaces in the external yard.

In the AQIA reports, particulate matter emissions from these sources were quantified for three size fractions, namely:

- Total Suspended Particulates (TSP);
- particulate matter with an equivalent aerodynamic diameter of 10 microns (PM₁₀); and
- particulate matter with an equivalent aerodynamic diameter of 2.5 microns (PM_{2.5}).

Individual emissions sources at the facility were grouped into the following primary source categories:

- Truck and mobile equipment movements (wheel generated dust on paved roads and diesel combustion);
- External material handling (truck unloading, handling by mobile plant, loading to trucks and diesel fuel combustion);
- External crushing and screening (including diesel fuel combustion);
- Material handling inside shed (truck unloading, handling by mobile plant, loading to trucks and diesel fuel combustion);
- Material screening inside shed (including diesel fuel combustion); and
- Wind erosion of stockpiles and exposed surfaces.

The total TSP, PM₁₀ and PM_{2.5} emissions from each category are ranked in **Table 2-1**, while the contribution to annual emissions by particle size fraction is illustrated in **Figure 2-1**. From the source category ranking, the material handling and processing in the external yard and the movement of trucks and mobile equipment about site are the largest particulate matter emission sources at the facility.

Material handling activities in the external yard, including truck unloading and loading activities and handling of material by mobile plant, possess the highest emission potential of operational emission sources at the facility. As detailed in **Section 2.1**, routine material receipt is only permitted between the hours of 6am to 6pm Monday to Friday, 6am to 5pm Saturday and 7am to 3pm Sunday, while processing and dispatch activities are only permitted to occur between 6am to 6pm Monday to Friday and 6am to 5pm Saturday.

Material crushing operations are also a key emissions source. These activities will occur for no more than a total of 46 days in a single year. The number of crushing days will be logged and reported to the Department in the annual report for the facility (**Section 3**).

These periods represent the hours of peak potential emissions from the facility. Mitigation measures for the material handling activities are presented in **Table 2-2**. Visual monitoring of dust emissions during periods of peak material handling activities will be conducted by the Site Leading Hand/Supervisor (as per **Section 3.2**). In the event of visual dust emissions leaving site boundary, dust mitigation measures will be focused on the identified dust emissions source(s) or a temporary restriction and/or cessation of the activity will be implemented.

The mitigation measures for each of the primary source categories are presented in **Table 2-2**.

Table 2-1 Emission source ranking			
Emission source category	Rank of emission source by particulate matter size fraction		
	TSP	PM₁₀	PM_{2.5}
External crushing and screening	3	2	3
Material handling in external yard	1	1	1
Material handling inside shed	4	4	2
Screening inside shed	6	6	4
Truck movements	2	3	5
Wind erosion	5	5	6

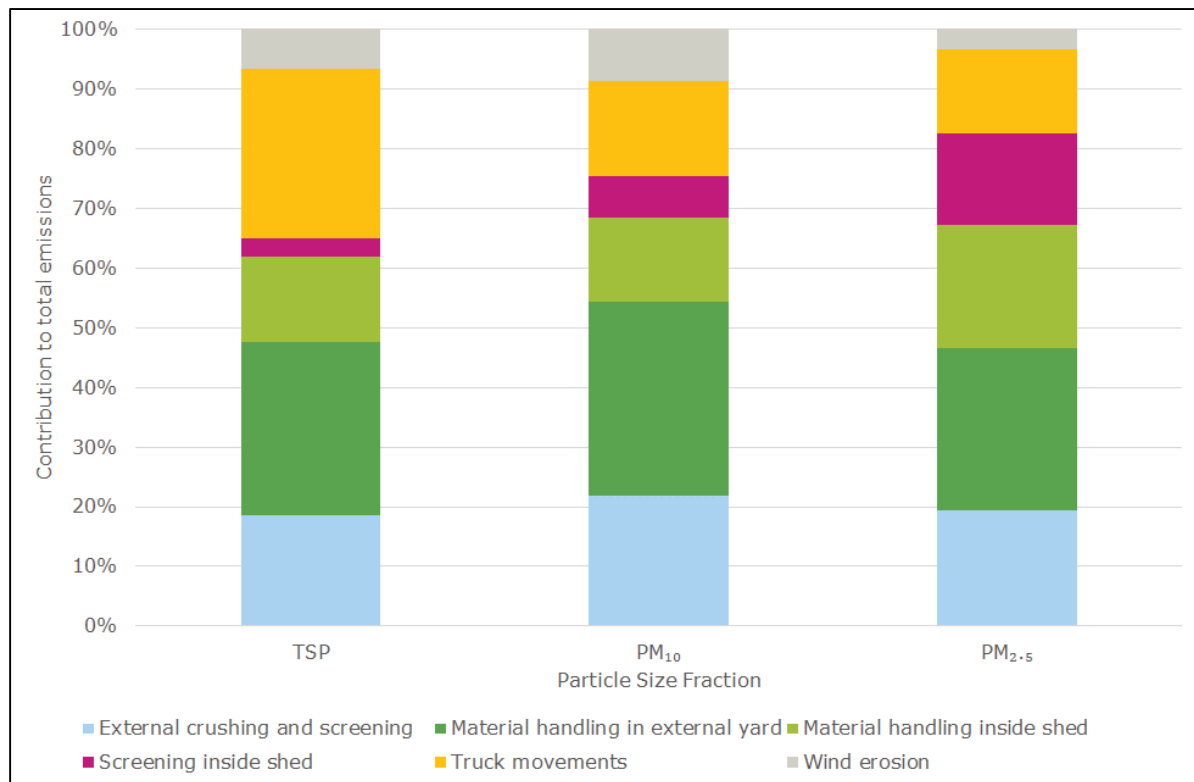


Figure 2-1: Source contribution to annual particulate matter emissions

2.3 Dust mitigation measures

Condition B54 and B55 of the conditions of consent for the project modification relate to dust minimisation.

B54. All reasonable steps must be taken to minimise dust generated during all works authorised by this consent.

B55. The Applicant must ensure that:

- (a) all on-site roads and car parking areas are sealed with concrete or asphalt;*
- (b) all operating, storage, unloading and loading areas must be sealed with concrete, asphalt or other impervious barrier(s) of the same or greater quality;*
- (c) water sprinklers at the crushing and screening plant must be utilised at all time when the plant is operational;*
- (d) dust suppressants must be used to prevent particulate emissions from stockpiles and other dust generating sources;*
- (e) trucks and vehicles entering and leaving the Development that are carrying loads of dust generating materials must have their loads covered at all times, except during loading and unloading;*
- (f) crushing occurs for no more than 46 days per year in total;*
- (g) crushing does not occur during adverse meteorological conditions;*

(h) all operations and activities occurring at the Development must be carried out in a manner that minimises the emissions of air pollutants from the Development;

(i) trucks associated with the Development do not track dirt onto the public road network;

(j) public roads used by these trucks are kept clean; and

(k) any works are carried out progressively on site to minimise exposed surfaces.

Further, EPL 20771 states the following in Section O3 relating to dust:

O3.1 - Activities occurring in or on the premises must be carried out in a manner that will minimise the generation, or emission from the premises, of wind-blown or traffic generated dust.

O3.2 - Trucks entering and leaving the premises that are carrying loads of dust generating materials must have their loads covered at all times, except during loading and unloading.

In order to meet these requirements, the following management measures are currently in place at the facility and will continue to be implemented to minimise air quality impacts (as per Appendix B of the conditions of consent):

- all existing sealed/hardstand areas will be retained;
- water sprays will be used over any other bare or unsealed surfaces that have not yet been sealed and have the potential to generate unacceptable amounts of dust;
- all vehicle movements will be restricted to designated routes marked out by appropriate signage and fencing using sealed internal roads;
- access to unsealed areas will be prevented;
- restricting stockpile height to 7m, as per the conditions contained within EPL 20771;
- water sprays will be used at stockpiles, crushing and screening plants and during material handling as necessary;
- ceasing or reducing processing operations and the loading/unloading of stockpiles during strong wind conditions;
- cleaning hardstand /roads by street sweeper;
- a wheel wash in the weighbridge area will be used if required to clean truck tyres to prevent mud or sediment being carried to and deposited on the access road (and public roads);
- irrigation sprays will only used when the surface of a stockpile is dry and irrigation will be ceased when the surface is wet;
- on-site equipment will be regularly maintained and serviced to maximise fuel efficiency;
- vehicle kilometres travelled on-site will be minimised;
- a public hand unloading area has been established outside of the northern end of the main processing shed to separate contractor and public tipping for safety reasons. Only light vehicles and trailers are permitted in the public hand unloading area. No heavy vehicles are permitted in this area;
- currently unsealed areas within the site that are not part of the 'Area to remain unsealed and vegetated' will be progressively sealed with concrete or asphalt;
- trucks delivering or picking up stored items will access the storage compounds on sealed access roads;
- all light waste (including light waste within co-mingled waste) will be tipped inside the main processing shed;
- the site boundary fences will be inspected daily and any wind-blown light waste within the site will be removed and sent to the main processing shed; and

- all parts of the ancillary activities area that are sealed will be regularly swept to prevent the build-up.

Emission source mitigation measures are listed in **Table 2-2**. The water spray system installed at the facility for the external yard operations is illustrated in **Figure 2-2**.



Figure 2-2: External yard water spray system

Source: EMM (2018)

Table 2-2 Emission source mitigation measures	
Emission source category	Mitigation measures in place at the facility
External yard crushing and screening	<ul style="list-style-type: none"> • Processing plant water sprinkler system to be in operation whenever the crushing and screening plant is operational. • The use of water sprays in external yard and at crushing/screening plant increases the moisture content of material being crushed. • Crushing and screening activities are reduced or ceased during strong wind conditions
Material handling in external yard (including truck unloading, material handling and storing by front end loader and excavator, truck loading)	<ul style="list-style-type: none"> • The use of water sprays in external yard increases the moisture content of material being unloaded, transferred and loaded to trucks. • Material handling activities are reduced or ceased during strong wind conditions
Material handling inside shed (including truck unloading, material handling and storing by front end loader and excavator, truck loading)	<ul style="list-style-type: none"> • The use of water sprays increases the moisture content of material being unloaded, transferred and loaded to trucks. • Truck unloading within the shed provides wind breaks.
Material processing inside shed	<ul style="list-style-type: none"> • Shed provides partial enclosure of the material screen • Water misting system to increase material moisture levels through the inside screening process. • Conveyor belts and transfer points will be routinely cleaned of overspill.
Truck movements	<ul style="list-style-type: none"> • Trucks will only move along paved surfaces. • Paved surfaces are regularly swept to reduce surface dust loading. Travel speeds along all unpaved roads within the facility are limited to 20km/hr. Reduction in vehicle travel speed minimises dust generation. • All loads leaving the site are covered. External customer's loads entering the site are predominantly covered and all customers are encouraged to cover their loads.
Wind erosion of external stockpiles	<ul style="list-style-type: none"> • Majority of facility area is concreted. • Stockpile heights are limited to 7m in external yard. • Water cannon system is used to dampen all external stockpiles areas. • Paved surfaces are regularly swept to reduce surface dust loading. • All trucks pass through wheel wash on exit of the facility.

2.4 Mitigation during adverse weather conditions

From the perspective of dust emissions from the facility, adverse meteorological conditions are considered to be sustained periods of hot and dry weather and/or high wind speeds. A key environmental management responsibility of facility personnel, led by the facility foreman, is the

visual monitoring of dust emissions (**Section 3.2** presents air quality emission management responsibilities).

In the event of adverse weather conditions, the facility foreman is required to maintain vigilance for visual dust emissions leaving facility boundary and implement appropriate additional mitigation strategies. Additional mitigation measures will include the targeted use of water sprays at site to the identified dust emissions sources or the temporary restriction and/or cessation of the activity until adverse weather conditions have eased. In accordance with Condition B55(g) crushing is not to occur during adverse weather conditions.

2.5 Plant and equipment emission mitigation measures

All mobile plant and equipment owned and operated by Benedict Recycling at the facility will be routinely serviced to ensure that fuel combustion emissions meet manufacturer emissions specifications on an ongoing basis. At a minimum, all Benedict Recycling mobile plant and equipment will be serviced on an annual basis, with more frequent servicing conducted if required (e.g. occurrence of excessive smoky exhaust). Further, engine idling will be minimised wherever practicable. A register of all servicing to plant and equipment conducted will be established and maintained by Benedict Recycling.

In accordance with Condition B56 of the conditions of consent, equipment must be installed and operated in accordance with best practice to ensure that the development complies with all load limits, air quality criteria, air emission limits and air quality monitoring requirements as specified in the EPL applicable to the site.

It is noted that the existing EPL for the facility (20771) contains no emission load limits, air quality criteria, air emission limits or air quality monitoring requirements.

2.6 Odour emissions sources

The majority of material received by the facility would be inert building waste and therefore the potential for odour emissions arising is low. The facility is licensed to receive greenwaste material and glass. The facility is not approved to undertake composting on site nor receive putrescible waste.

Storage of potentially odorous material, such as greenwaste, will only occur within the shed and for a limited period of time, reducing the potential for odorous emissions impacting the surrounding area.

Current measures currently implemented at the facility to reduce odour emissions from stockpiled materials include

- Regular monitoring of odour levels in the facility by site personnel;
- Cleaning of the waste storage/processing areas;
- Ensuring the removal or residual waste on a timely basis;
- Use of odour neutralising sprays as required.

3. MONITORING AND INCIDENT REPORTING

3.1 EPL Operating conditions

Condition O3 of the EPL 20771 for the existing operations at the facility outlines the requirements of dust management, as follows:

O3.1 Activities must be carried out in a manner that minimises the generation of dust.

O3.2 Trucks entering and leaving the premises that are carrying loads must be covered at all times, except during loading and unloading.

3.2 Dust mitigation performance monitoring and responsibilities

Facility personnel are responsible for monitoring the performance of onsite air quality (dust and odour) mitigation measures on a day to day basis. Responsibilities for air quality emission management are as set as follows:

The Site Operator is responsible for:

- managing vehicle speed movements;
- restricting operations during periods of strong wind;
- utilising spray systems when required for receipt, stockpiling and processing activities;
- arranging or street sweeping of hardstand/roads when required;
- maintain effectiveness of wheel wash by monitoring water levels and the removal of sedimentation when necessary;
- arranging for watering of the pavement to reduce dust when appropriate
- Regular monitoring of odour levels in the facility;
- Cleaning of the waste storage/processing areas;
- Arranging the removal of residual waste; and
- Reducing odours by the use of portable odour neutralising sprays when appropriate.

The Site Leading Hand/Supervisor is responsible for:

- regular visual monitoring of the dust levels at the facility;
- completion of a complaint form if dust or odour complaint is received; and
- coordinating with the Site Manager to ensure the complaint is investigated.

The Site Manager is responsible for:

- implementing this procedure
- auditing the site on a regular basis to ensure compliance with the OEMP for air and odour emissions;
- coordinating investigation of the dust or odour complaints with the Site Leading Hand/Supervisor
- documenting the results of the investigation and actions taken;
- maintaining the records of the dust and odour complaints;
- liaison with the complainant regarding the steps to be taken to minimise further air pollution emissions where appropriate; and
- ensuring that the nominated officers have been trained in the requirements of this procedure.

3.3 Ambient air quality monitoring

There is currently no EPL or condition of consent requirement for routine ambient air quality monitoring at the facility.

Condition B52 and B53 of the conditions of consent require that Benedict Recycling maintain a suitable meteorological monitoring station that complies with the *NSW EPA Approved Methods for Sampling of Air Pollutants in NSW*. The station must be maintained to the satisfaction of the NSW EPA for the life of the facility operations. A meteorological station is scheduled to be installed at the facility in late May 2018.

3.3.1 Air Quality Monitoring and Reporting of the Development study (Condition B59)

Condition B59 requires Benedict Recycling to commission an Air Quality Monitoring and Reporting of the Development study for the first three crushing events. The monitoring study is to be conducted by a suitably qualified and experienced person whose appointment is endorsed by the Secretary.

The monitoring and reporting study must:

- monitor the dust emissions whilst the Development is in operation and crushing (as described section 3.5 of the RTS) is occurring;

- include a summary of air emission related complaints and any actions that were carried out to address the complaints;
- validate the Development against air quality predictions in the RTS;
- review design and management practices of the Development against industry best practice for dust emissions; and
- include an action plan that identifies and prioritises additional dust mitigation measures that may be necessary to reduce emissions.

Each monitoring report must be submitted to the Secretary within three months of each monitoring event.

3.4 Complaints reporting

Any complaint received by Benedict Recycling regarding dust or odour impacts from the facility will be acted on within 24-hours in the following manner:

- Details of the complaint (date, time, specifics, complainants contact details) will be noted;
- Activities occurring during the complaint period to be investigated;
- Log findings of operations during the complaint period in the complaints register. Review relevant management practices as necessary;
- Respond to complainant with findings of the review.

The details of any dust or odour related complaint will be logged in an appropriate register, with investigation findings and actions noted. The record of a complaint must be kept for at least 4 years after the complaint was made. The record must be produced to any authorised officer of the EPA who asks to see them

All complaints received will be listed in the EPL Annual Return. A verified complaint would be treated as an air quality incident which would be directly reported to the DPE.

3.5 Air quality incident definition and response

As stated previously, a verified complaint that is deemed to be the direct result of operational emissions from the facility will be classified as an air quality incident. Within 24-hours of an air quality incident, an initial letter report outlining basic details of the incident will be sent to the Department. Within 14 days of an incident, a detailed report will be prepared and submitted to the Department documenting incident investigation findings, causes of the incident and additional mitigation measures proposed to prevent a reoccurrence.

A register of verified incidents will be maintained by Benedict Recycling and made available for review on request.

3.6 Review of AQMP

This AQMP will be reviewed and revised as necessary within three months of the following:

- approval of a modification to site operations;
- approval of an annual review under Condition C9 of the conditions of consent;
- submissions of an incident report under Condition C11 of the conditions of consent; or
- completion of an audit under Condition C13 of the conditions of consent.

APPENDIX G – OPERATIONAL TRAFFIC AND PEDESTRIAN MANAGEMENT PLAN



Operational Traffic And Pedestrian Management Plan

Mayfield West Recycling Facility

1A MCINTOSH DRIVE, MAYFIELD WEST NSW 2304
LOT 1 DP 874109

DEVELOPMENT NO. SSD 7698

REV 1.2

Prepared by Kyle Fieg
The Traffic Planner

Prepared for
Benedict Recycling Pty Ltd
Mayfield West Recycling Facility

Document History and Quality Record					
Version	Date	Modifications to content	Prepared By	Approved by	Signature
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1.2	30/7/2018	Final issue	Kyle Fieg	Kyle Fieg	K.Fieg

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1 Introduction

1.1 Overview

Benedict Recycling Pty Ltd (Benedict Recycling) operates a recycling facility at 1a McIntosh Drive, Mayfield West. Benedict Recycling has established this Traffic Management Plan (TMP) as a part of its Operational Environmental Management Plan (OEMP).

The Operational Traffic and Pedestrian Management Plan (OTPMP), has been prepared by 'The Traffic Planner' and addresses the overarching vehicle movement planning requirements in accordance with the contract, relevant standards and Management Procedures. This plan will ensure vehicular and pedestrian traffic will not be exposed to any additional hazards as a result of operations at the facility and associated traffic. It will also provide that personnel are not exposed to risks associated with operational traffic and public vehicular traffic.

The objectives of the Operational Traffic and Pedestrian Management Plan are:

- Ensuring the facility activities do not interfere with other operations on the road network;
- Guaranteeing all operational and associated traffic complies with contract requirements;
- Ensure that traffic management complies with local and state road authority requirements;
- Guaranteeing operational traffic management considers local road peak-hour volume and roadworks; and
- Ensuring the safety of all other road users.

The Plan shall address, but not be limited to, the following matters:

- Public Safety and the Safety of all persons accessing the facility;
- Vehicle routes of site ingress and egress;
- Loading and unloading of vehicles;
- Predicted vehicular traffic volumes on the local road network, types and routes;
- Marshalling and queuing of trucks on public roads;
- Parking Arrangements;
- Use of Overmass / Oversized vehicles (if applicable);
- Pedestrian and traffic management methods, and
- Pedestrian and traffic volumes;
- Impact to public transportation and cyclists;
- Local Traffic calming measures; and
- Heavy vehicles are not permitted to access Werribi Street.

This plan can potentially affect the following stakeholders:

- Road users;
- Businesses;
- Residents;
- Pedestrians;
- Cyclists;
- Emergency Services;
- Heavy vehicle operators; and
- Public transport.

1.2 Council Consultation and Outcome

This OTPMP has been submitted to Newcastle City Council for review and comment. A council principal planner and traffic engineer reviewed the OTPMP and found it to be satisfactory. Evidence of this consultation and comment is contained in Appendix 7.

1.3 Abbreviations and Terminology

The following terms, acronyms and definition are used in this plan:

Terms	Explanation
OTPMP	Operational Traffic and Pedestrian Management Plan
RMS	Roads and Maritime Services

1.4 Document Amendment and Distribution

This document shall be reviewed as follows (with reference to SSD Approval conditions outlined):

(C8) Within three months of:

- (a) approval of a modification;
- (b) approval of an annual review under Condition C9;
- (c) submissions of an incident report under Condition C11; or
- (d) completion of an audit under Condition C13

the Applicant (Benedict Recycling) must review, and if necessary revise, the strategies, plans, and programs required under this consent to the satisfaction of the Secretary.

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.

In addition to the above, the OTPMP will be reviewed:

- As requested by Management Review;
- When there is a change of method and technology that may affect the accuracy of this document; or
- When there has been a significant event to which this document was relevant; or
- As a result of a Non-Conformance resulting from an audit;

In accordance with Condition B51, Benedict must:

- not commence the operations until the OTPMP required by Condition B50 is approved by the Secretary; and
- implement the most recent version of the OTPMP approved by the Secretary for the duration of the development.

This OTPMP and all associated planning documents must be available for view on site at all times.

2 Legislative Requirements

In accordance with SSD 7698, an operational traffic and pedestrian management plan (OTPMP) prepared by a suitably qualified traffic consultant is required to be submitted to the secretary prior to the commencement of expanded operations.

Operational Traffic and Pedestrian Management Plan

B50. Prior to the commencement of operations, the Applicant must prepare an Operational Traffic and Pedestrian Management Plan (OTPMP) for the Development to the satisfaction of the Secretary. The plan must form part of the OEMP required by Condition C4 and be prepared in accordance with Condition C7.

The Development may only be carried out in accordance with the management and mitigation measures (see Appendix B of SSD 7698 Development Consent).

Management measures:

- *Site generated traffic will continue to be formally directed to continue to travel only via Steel River Boulevard and McIntosh Drive when travelling within the Steel River estate.*
- *Benedict Recycling will continue to maintain the access road between McIntosh Drive and the Recycling Facility site in a fit and proper condition and to a suitable standard, repairing it when required at no cost to Ausgrid. This will include repairing any minor areas of surface rutting using 50 mm hot mix asphalt.*
- *Trucks will not be allowed to queue on the access road between McIntosh Drive and the Recycling Facility site.*

The OTPMP must:

- a) be prepared by a suitably qualified and experienced person(s);
- b) be developed in consultation with Council;
- c) detail the measures that would be implemented to ensure road safety and network efficiency during operation;
- d) detail measures to ensure public safety is maintained at all times including marking pedestrian access ways and signage to direct the public to the public unloading area;
- e) detail how the public unloading area will be barricaded from the contractor unloading areas and processing areas to ensure safety is maintained;
- f) feature how traffic exiting the main processing building will give way to traffic exiting the segregated heavy waste processing and stockpiling area to ensure vehicles safely exit the site;
- g) detail heavy vehicle routes, access and parking arrangements;
- h) include a Driver Code of Conduct to:
 - i. minimise the impact on the local and regional road network;
 - ii. reduce conflicts with other road users;
 - iii. minimise road traffic noise; and
 - iv. ensure truck drivers use Steel River Boulevard and McIntosh Drive (the use of Murray Dwyer Circuit is not permitted);
 - v. ensure truck drivers use specified routes
- i) include a program to monitor the effectiveness of these measures; and
- j) if necessary, detail procedures for notifying residents and the community (including local schools), of any potential disruptions to routes.

Please note that the provision of any information in this OTPMP will not exempt Benedict from correctly fulfilling all other conditions relevant to the SSD Approval for the above site.

Compliance reference table:

Condition	Relevant Section of OTPMP
A12 Heavy vehicles are not permitted to access Werribi Street.	Sections 1.1, 3.2 and 8.1
B44 The Applicant must implement all reasonable and feasible measures to minimise the impact on the site's access road and any impacts on 1 McIntosh Drive, Mayfield West (Lot 16 in DP 270249).	Sections 5.1 and 5.3
B45 Prior to the commencement of operations, the vehicular entrance and exit driveways and the direction of traffic movement within the site are to be permanently marked on the pavement surface.	Section 5.3
B46 All customers are not permitted to leave their vehicles anywhere on the site other than the public unloading area and to access the pedestrian walkways between marked car parking spaces and the weighbridge and office area.	Sections 5.4 and 5.5
B47 Prior to the commencement of operations, the Applicant must provide and mark 25 on-site parking spaces (including two accessible spaces) for staff and visitors to ensure that traffic associated with the Development does not utilise public and residential streets or public parking facilities. Parking areas are to be constructed in accordance with the latest version of Australian Standard 2890. All parking associated with the Development must be contained on site.	Section 7
B48 Parking is only permitted within the designated parking spaces.	Section 7
B49 The Applicant must ensure: (a) all vehicular movement to and from the site must be in a forward direction; (b) internal roads, driveways and parking (including grades, turn paths, sight distance requirements, aisle widths, aisle lengths and parking bay dimensions) associated with the Development are maintained in accordance with the latest version of Australian Standard 2890.1 and Australian Standard 2890.2; (c) the swept path of the longest vehicle entering and exiting the site, as well as manoeuvrability through the site, is in accordance with the relevant AUSTROADS guidelines; (d) the Development does not result in any vehicles queuing on the public road network or along the sites access road owned known as 1 McIntosh Drive, Mayfield West (Lot 16 in DP 270249) which is subject to a right of carriageway; (e) heavy vehicles and bins associated with the Development are not to be parked on local roads or footpaths in the vicinity of the site; (f) only light vehicles and trailers are permitted within the public unloading area, no heavy vehicles are permitted within the public unloading area; (g) all vehicles are wholly contained on site before being required to stop; (h) all loading and unloading of materials is carried out on-site in designated areas; (i) the different activities such as unloading (public and contractor), processing and stockpiling areas at the site are clearly marked and separated by physical barriers to ensure safety is maintained; (j) signage must be erected to direct the public and contractors to the designated unloading and loading areas; (k) public and contractor unloading areas are kept separate; (l) pedestrian access paths are clearly marked and interactions between pedestrians and vehicles must be minimised; (m) an outbound wheel wash must be installed behind the exit weighbridge as per Figure 3.9 of the RTS; (n) signage is erected and vehicles at the site do not exceed a speed of 20	<p>Section 4</p> <p>Sections 5.4 and 7</p> <p>Section 5.1</p> <p>Section 6.5</p> <p>Section 8.1</p> <p>Section 5.5</p> <p>Section 5.3</p> <p>Section 5.5</p> <p>Section 5.4</p> <p>Section 5.4</p> <p>Sections 5.4 and 5.5</p> <p>Section 10.1</p> <p>Section 8.3</p> <p>Section 5.4</p>

km/h; (o) vehicle manoeuvring areas must always be kept clear of any obstacles, including parked cars; and (p) the turning areas in the car park are kept clear of any obstacles, including parked cars, at all times.	Section 4 Section 7
<p>B50 Prior to the commencement of operations, the Applicant must prepare an Operational Traffic and Pedestrian Management Plan (OTPMP) for the Development to the satisfaction of the Secretary. The plan must form part of the OEMP required by Condition C4 and be prepared in accordance with Condition C7. The OTPMP must:</p> <p>(a) be prepared by a suitably qualified and experienced person(s); (b) be prepared in consultation with Council; (c) detail the measures that would be implemented to ensure road safety and network efficiency during operation; (d) detail measures to ensure public safety is maintained at all times including marking pedestrian access ways and signage to direct the public to the public unloading area; (e) detail how the public unloading area will be barricaded from the contractor unloading areas and processing areas to ensure safety is maintained; (f) detail how traffic exiting the main processing building will give way to traffic exiting the segregated heavy waste processing and stockpiling area to ensure vehicles safely exit the site; (g) detail heavy vehicle routes, access and parking arrangements; (h) include a Driver Code of Conduct to: (i) minimise the impact on the local and regional road network; (ii) minimise conflicts with other road users; (iii) minimise road traffic noise; and (iv) ensure truck drivers use Steel River Boulevard and McIntosh Drive (the use of Murray Dwyer Circuit is not permitted); (v) ensure truck drivers use specified routes (i) include a program to monitor the effectiveness of these measures; and (j) if necessary, detail procedures for notifying residents and the community (including local schools), of any potential disruptions to routes.</p>	<p>Section 1.1 Section 1.2, Appendix 7 Sections 6</p> <p>Sections 5.3, 5.4 & 10.1</p> <p>Section 5.5</p> <p>Section 5.4.</p> <p>Sections 5 and 6</p> <p>Section 8.1</p> <p>Section 11</p> <p>Section 12.2</p>
B51(b) The Applicant must: implement the most recent version of the OTPMP approved by the secretary for the duration of the development	Section 1.4
<p>C8 Within three months of:</p> <p>(a) approval of a modification; (b) approval of an annual review under Condition C9; (c) submissions of an incident report under Condition C11; or (d) completion of an audit under Condition C13.</p> <p>the Applicant must review, and if necessary revise, the strategies, plans, and programs required under this consent to the satisfaction of the Secretary.</p>	Section 1.4

3 Specific Project Assessment and Risks

Location: 1a McIntosh Drive, Mayfield West 2304 (LOT 1 DP 874109)

SSD Approval No: SSD 7698

Local Government Area: Newcastle City Council

Resource recovery activities limited to 90,000 tonnes per year of general solid waste (non-putrescible) were approved on the site by consent DA2015/0291 on 8 March 2016.

Project Approval SSD 7698 allows increased processing capacity to 315,000 tonnes per year of general solid waste including construction and demolition waste and commercial and industrial waste.

3.1 Site Aerial View



3.2 Existing Road Network Conditions

The site is surrounded by:

- the Hunter River (South Arm) to the north;
- Tourle Street to the east;
- Ausgrid Mayfield West Substation to the south; and
- light industrial buildings to the west.

At the time of developing this OTPMP, there are no existing developments, works or events that have been identified in the area that will affect the plans detailed in this OTPMP.

3.3 Risk Assessment

A detailed risk assessment and associated control methods must be identified and documented for all high risk works as per the Workplace Health and Safety Act 2011 and Regulation 2011. This Operational Traffic and Pedestrian Management Plan must be taken into consideration when

developing these documents. All conditions in this document must be adhered to and carried out diligently and in a safe manner.

3.4 Speed Zoning

Speed limit within the facility is 10km/hr.

Street Frontage	Current Speed Limit	Proposed Speed Limit
McIntosh Drive	50km/hour	50km/hour
Steel River Boulevard	50km/hour	50km/hour
Industrial Drive	80km/hour	80km/hour

3.5 Residents and Neighbouring Properties

Access to neighbouring properties will be maintained at all times. Neighbouring property occupants and local stakeholders will be notified of the timeframes for completion of any out of the ordinary works that impact the local surrounds.

Vehicles must be parked/stopped in a position that does not block access to the neighbouring properties.

3.6 Impact on Local Businesses

This project is not expected to have any significant impact local business. Existing access arrangements be maintained comparable to the existing situation. Stakeholder consultation will occur throughout the project should this change.

3.7 Transport Management for Service, Delivery, and Garbage Vehicles

No impact on existing services is expected during the works. Stakeholder consultation will occur throughout the project should this change.

3.8 Impacts on Public Transport

This project is not expected to have any significant effect on public transport timetables.

Existing access arrangements and services will be maintained comparable to the existing conditions.

4 Operating conditions

The following measures must be undertaken:

- a) all vehicular movement to and from the site must be in a forward direction;
- b) internal roads, driveways and parking (including grades, turn paths, sight distance requirements, aisle widths, aisle lengths and parking bay dimensions) associated with the Development are maintained in accordance with the latest version of Australian Standard 2890.1 and Australian Standard 2890.2;
- c) the swept path of the longest vehicle entering and exiting the site, as well as maneuverability through the site, is in accordance with the relevant AUSTROADS guidelines;
- d) the Development does not result in any vehicles queuing on the public road network or along the sites access road owned known as 1 McIntosh Drive, Mayfield West (Lot 16 in DP 270249) which is subject to a right of carriageway;
- e) heavy vehicles and bins associated with the Development are not to be parked on local roads or footpaths in the vicinity of the site;
- f) only light vehicles and trailers are permitted within the public unloading area; no heavy vehicles are permitted within the public unloading area;
- g) all vehicles are wholly contained on site before being required to stop;
- h) all loading and unloading of materials is carried out on-site in designated areas;
- i) the different activities such as unloading (public and contractor), processing and stockpiling areas at the site are clearly marked and separated by physical barriers to ensure safety is maintained;
- j) signage must be erected to direct the public and contractors to the designated unloading and loading areas;
- k) public and contractor unloading areas are kept separate;
- l) pedestrian access paths are clearly marked, and interactions between pedestrians and vehicles must be minimised;
- m) an outbound wheel wash must be installed behind the exit
- n) signage is erected, and vehicles at the site do not exceed a speed of 10km/h;
- o) vehicle maneuvering areas must always be kept clear of any obstacles, including parked cars; and
- p) the turning areas in the car park are kept clear of any obstacles, including parked cars, at all times.

5 Site Traffic Management and Control

5.1 Site Entry/Exit

The proposed entry and exit routes aim to provide the shortest distances to arterial roads and avoid the use of local roads by trucks. Entry to the site will be via McIntosh Drive. Refer to Appendix 2 for detailed Haulage Routes and Site Access.

Benedict Recycling will continue to maintain the access road between McIntosh Drive and the Recycling Facility site in a fit and proper condition and to a suitable standard, repairing it when required at no cost to Ausgrid. This will include improving any minor areas of surface rutting using 50 mm hot mix asphalt.

All vehicles will be wholly contained on site before being required to stop.

5.2 Access Signage and Infrastructure

Signposting has been installed at the entry point to the facility on McIntosh Drive.

This sign details the following:

- Opening Hours
- Site Address
- Accepted Waste Types
- Not Accepted Waste Types



Photo 1 - Site Entry Signage

Additional signage has been erected within the facility (refer Section 5.4) such speed limit signage, as speed limit in the site is 10 km/h. These signs comply with AS1742.3.

5.3 Access Management

The site is accessed via an existing access road off McIntosh Drive which is a cul-de-sac road servicing the Steel River Industrial Estate. The site's access runs through a portion of land owned by Ausgrid. As such, access to the site is facilitated through a Right of Carriageway which connects to McIntosh Drive.

Benedict Recycling will continue to maintain the access road between McIntosh Drive and the Recycling Facility site in a fit and proper condition and to a suitable standard, repairing it when

required at no cost to Ausgrid. This will include improving any minor areas of surface rutting using 50 mm hot mix asphalt.

The largest vehicle accessing the site is a 25 metre B-double heavy vehicle. Swept path analysis shown in Appendix 4, demonstrates that a 25 metre B double can access the site via the proposed access way, enter the incoming weigh bridge, turn around either through or around the main processing shed and exit via the outgoing weighbridge.

The proposed access arrangements are deemed acceptable and will operate satisfactorily.

Internal roads, site entry and parking will be maintained in accordance with the latest version of Australian Standard 2890.1 and Australian Standard 2890.2.

Before the commencement of operations, the vehicular entrance and exit driveways and the direction of traffic movement within site will be permanently marked on the pavement surface.

5.4 Internal Traffic Management

All members of the public, contractors and other visitors to the site undergo a site induction on arriving at the entry weighbridge. The induction outlines site traffic controls and management measures. The visitor and members of the public induction outlines that visitors are to be accompanied by a Benedict representative at all times. The inductions are contained in Appendix 8.

Heavy vehicle and light vehicle traffic exiting the main processing building from either the main processing area or hand unloading area will give way to traffic travelling south-bound towards the weighbridge area to ensure vehicles safely exit the site. Stop signs have been installed at all exit points of the processing shed.

Examples of traffic management signage on site are shown in the photos below.



Photo 2: Entry sign directing all vehicles to weighbridge and outlining speed limit and UHF channel

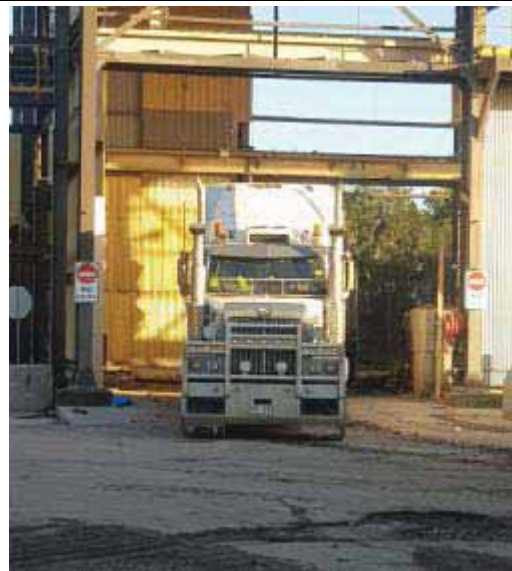


Photo: 3 no entry signs on exit to main processing shed



Photo 4 Signage located at south western corner of main processing shed directing light vehicles to hand unloading area



Photo 5: Signage directing light vehicles to stop before proceeding to entrance to hand unloading area



Photo 56 Heavy vehicle entrance to main processing shed

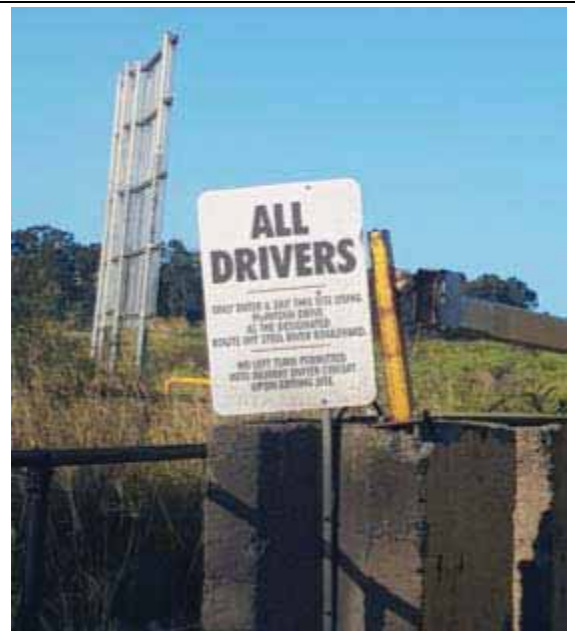


Photo 7: Sign on site exit directing vehicles to access site via McIntosh Drive and Steel River Boulevard.

5.5 Loading / Unloading Zones

A hand unloading area has been established within the northern end of the main processing shed to separate heavy vehicle tipping and hand unloading for safety reasons. Only light vehicles and trailers are permitted in the hand unloading area. No heavy vehicles are permitted in this area.

Within the shed, the hand unloading area is clearly marked and partially segregated from the remaining processing area with concrete barriers. A Benedict employee (a "spotter") is present at all times within the hand unloading area to direct light vehicles and to inspect loads.

Safety within the hand unloading area will be ensured through the visitor induction process, appropriate signage, physical concrete barriers and the presence of a Benedict employee within the hand unloading area to direct and assist members of the public.

Customers using the site, including contractors or members of the public, and are not permitted to leave their vehicles anywhere other than in the hand loading area, weighbridges or designated car parking area.

The entire segregated heavy waste unloading/loading and stockpiling area will be sealed prior to the commencement of expanded operations. Remaining unsealed areas within the site that are not part of the 'Area to remain unsealed and vegetated' will be progressively sealed with concrete or asphalt. Trucks delivering or picking up material will access the storage compounds on sealed access roads.



Figure 2: Public unloading area within main processing shed.

5.6 Material, Plant and Spoil Bin Storage Areas

Heavy vehicles and bins associated with the Development are not to be parked on local roads or footpaths in the vicinity of the site. These areas will be allocated within the facility. No storage of materials, plant or spoil will be allowed on public land or public roads.

It is noted the Contractor must obtain a permit from the City's Traffic Engineering Department regarding the placing of any material, plant or spoil bins on public ways, should this ever be required.

6.1 Approved Operating Hours

Waste Receival	Waste Processing	Waste Dispatch
<ul style="list-style-type: none"> - Monday to Friday, 6 am to 6 pm - Saturday, 6 am to 5 pm - Sunday and public holidays, 7 am to 3 pm 	<ul style="list-style-type: none"> - Monday to Friday, 6 am to 6 pm - Saturday, 6 am to 5 pm - Sunday and public holidays, not permitted 	<ul style="list-style-type: none"> - Monday to Friday, 6 am to 6 pm - Saturday, 6 am to 5 pm - Sunday and public holidays, not permitted

Works outside of the hours identified may be undertaken in the following circumstances:

- the actions are inaudible at the nearest sensitive receivers;
- for the delivery or dispatch of materials as requested by the NSW Police Force or other public authorities for safety reasons; or
- where it is required in an emergency to avoid the loss of lives, property or to prevent environmental harm.

It is noted to facilitate large infrastructure projects the facility currently has the approval to accept waste (not process) on a 24-hour basis, no greater than six times per year and only for a period of up to two weeks in length for each occasion. Council and all adjacent landowners must be notified no later than 48 hours before each of the 24-hour waste receival periods along with a description of the principal infrastructure projects which necessitate the 24-hour operations.

During the 24-hour waste receival period, the number of heavy vehicles accessing the site from 6 pm to 6 am must not exceed 12.

6.2 Traffic Generation and network efficiency

The facility operation would receive waste and deliver recycled products throughout the Newcastle and Lower Hunter Region of NSW. The flow of traffic from the site consists of:

- approximately 60% of the development's traffic would travel to and from the site from the east along Industrial Drive.
- approximately 40% of the development's traffic would travel to and from the site from the west along Industrial Drive which connects to the Pacific Highway.

The site has excellent access to:

- Tourle Street which is a major arterial road which provides access to Kooragang Island, Stockton, Williamtown, Nelson Bay, Port Stephens and surrounds
- Industrial Drive which is a four to six lane dual carriageway arterial road which provides access to the Pacific Highway and also services some industrial sites.

The waste would be delivered to the facility from businesses and the general public by light vehicles such as utes with box trailers, heavy vehicles and skip bins (from building sites and households). The waste would be dispatched from the site via heavy vehicles including semi-trailers, truck-and-dog combinations and B-Doubles. Also, employees would access the site via light vehicles.

The increase in heavy vehicle and light vehicle arising from the expanded operations is expected to contribute 0.9% of total daily traffic volumes along Steel River Boulevard and 0.2% along Industrial Drive. Council and RMS did not raise any concerns with the operating capacity of the surrounding road network.

6.3 Haulage Routes

Traffic Management measures will be implemented on and around the site to ensure the safe use of the roadway and surrounding areas.

The approved truck haulage route plan shall form part of the contract and must be distributed to all truck drivers. The approved heavy vehicle haulage routes make use of the arterial road network as much as possible with use of local streets only when required.

To further manage the traffic impacts of the facility operations, the following measures have been committed to:

- ensuring vehicles continue to use McIntosh Drive when travelling within the Steel River Industrial Estate
- maintaining the right of carriageway (Right of Carriageway) at no cost to Ausgrid
- prohibiting queuing along the access road between the Resource Recovery Facility and McIntosh Drive

Site generated traffic will continue to be formally directed to continue to travel only via Steel River Boulevard and McIntosh Drive when travelling on the Steel River estate.

- **It is noted the use of Murray Dwyer Circuit for Heavy Vehicles is not permitted.**
- **It is noted the use of Werribi Street for Heavy Vehicles is not permitted.**

Refer to Appendix 2 for detailed Haulage Route plan.

It is noted that all reasonable and feasible measures must be implemented to minimise the impact on the site's access road and any impacts on 1 McIntosh Drive, Mayfield West (Lot 16 in DP 270249).

6.4 Peak Traffic Movements

The proposed increase in production capacity at the facility would generate additional traffic movements to and from the site through the delivery and dispatch of waste which has the potential to impact on the safety and efficiency of the surrounding road network. See below table for estimated peak traffic movements.

Light Vehicles	Heavy Vehicles
270 per day	276 per day

The following times have been identified as peak times for local traffic movements on the surrounding road network:

Day	AM	PM
Monday	7:30am to 9:30am	4:30pm to 6:00pm
Tuesday	7:30am to 9:30am	4:30pm to 6:00pm
Wednesday	7:30am to 9:30am	4:30pm to 6:00pm
Thursday	7:30am to 9:30am	4:30pm to 6:00pm
Friday	7:30am to 9:30am	4:30pm to 6:00pm
Saturday	8:30am to 9:30am	
Sunday	9:30am to 10:30am	

6.5 Vehicle Queueing

No queuing or marshalling of trucks is permitted on any public road surrounding the site. Specifically, Trucks will not be allowed to queue on the access road between McIntosh Drive and the Recycling Facility site.

As part of the site induction, drivers of heavy vehicles will be notified that queuing or parking on McIntosh Drive or the access road to the site is to be avoided.

If there are not adequate space on-site trucks must be turned away and must not queue in the surrounding areas.

7 Parking

There will be 25 marked parking spaces provided, including two spaces for people with a disability. Parking is only permitted within the designated parking spaces. All parking associated with the Development must be contained on site. The parking space dimensions meet the Australian Standard (Parking Facilities, Part 1: Off-street car parking, AS/NZS 2890.1:2004).

Parking spaces are allocated along the southern part of the perimeter drain, east of the weighbridge and office area. The following measures are to be put in place to ensure safe access:

- there will be approximately 5 m of clear space between the parking spaces and the main access road;
- there are clear sight lines from the car spaces along the access road;
- the speed limit on the site is 10km/h;
- turning areas in the car park will be kept clear of any obstacles, including parked cars, at all times; and
- lighting in the southern car park will be installed and designed to comply with AS 1158.

The parking spaces closest to the site office will be designated as two disabled parking spaces and three visitor spaces. The other parking spaces will be used by site employees who have a high level of awareness of the dangers of vehicles and mobile plant.

The location of the parking spaces is detailed in Appendix 1 and 3.

8 Heavy Vehicles

The majority of waste being brought onto the site from the increase in processing capacity is expected to be mainly from commercial customers (heavy vehicles) not the general public (light vehicles). The commercial customers would use larger capacity trucks such as multiple-axle combination heavy vehicles to transport excavated materials to and from the site, thereby reducing the number of trucks accessing the site. One truck and dog deliver the equivalent tonnage as 40 small loads.

8.1 Driver Professional Conduct

All heavy vehicle contractors will be inducted into the "Driver Code of Conduct". Refer to Appendix 6. In addition, it is expected that all Commercial and Municipal Heavy Vehicle Drivers must maintain a high level of professional conduct, and as a minimum:

- Adhere to posted speed limits and road signs;
- Use of the horn only as a warning device;
- Road noise impacts are minimised through measures such as driver training for limiting truck compression braking and avoiding the use of engine brakes in residential areas;
- All vehicles to be wholly contained on site before being required to stop;
- All loads are to be covered when leaving the site;
- All vehicles are loaded and unloaded only on-site;
- Allow enough room between vehicles;
- Will not park or queue along McIntosh Drive;
- Respect and be watchful for pedestrians and other drivers on the dedicated transport routes; and
- Follow instructions given by Police, RMS and other authorities.

It is noted the use of Murray Dwyer Circuit for Heavy Vehicles is not permitted.

It is noted the use of Werribi Street for Heavy Vehicles is not permitted.

8.2 Refuelling

The following is noted:

- the mobile plant will be refuelling within a bunted area with runoff from within the bund reporting to an oil-water separator;
- the refuelling area will be covered by an awning so that rainwater does not enter the refuelling area;
- there will be a diesel spill kit stored at the bowser; and
- in the case of a spill, used absorbent material will be disposed at an appropriately licensed waste facility.

8.3 Truck Wheel Wash

A truck wheel wash has been installed after the exit weighbridge to assist in dust and dirt debris minimisation (refer Photo 7 below).



Photo 7 Outbound truck wheel wash

All excess water from the truck wash and wheel wash are to be discharged into suitable holding tanks and removed from the facility for treatment at an appropriately licensed facility or via trade waste.

8.4 Dust Minimisation

All reasonable steps must be taken to minimise dust generated during all works authorised by this consent. The following measures will be undertaken to reduce dust generation:

- a) all on-site roads and car parking areas are sealed with concrete or asphalt;
- b) all operating, storage, unloading and loading areas must be sealed with concrete, asphalt or another impervious barrier (s) of the same or higher quality;
- c) water sprinklers at the crushing and screening plant must be utilised at all time when the plant is operational;
- d) dust suppressants must be used to prevent particulate emissions from stockpiles and other dust generating sources;
- e) trucks and vehicles entering and leaving the Development that are carrying loads of dust generating materials must have their loads covered at all times, except during loading and unloading;
- f) crushing occurs for no more than 46 days per year in total;
- g) crushing does not occur during adverse meteorological conditions;
- h) all operations and activities occurring at the Development must be carried out in a manner that minimises the emissions of air pollutants from the Development;
- i) trucks associated with the Development do not track dirt onto the public road network;
- j) public roads used by these trucks are kept clean; and
- k) any works are carried out progressively on site to minimise exposed surfaces.

9 Abnormal and Oversize/Overmass Loads

Oversize and over-mass vehicles are not allowed to travel on Local Roads (unless approval for a one-off occasion is obtained from the City's Traffic Operations Unit).

Requests to use these vehicles must be submitted to the City 28 days prior to the vehicle's scheduled travel date. Specific Traffic Control Plans will be developed for each abnormal movement and will be submitted for assessment to the relevant local and regulatory authorities on a case by case basis.

For more information, please contact the National Heavy Vehicle Regulator (NHVR) on 1300 696 487 or www.nhvr.gov.au.

9.1 NSW Oversize Overmass Load Carrying Vehicles Network



9.2 Abnormal Loads Permit Requirements

- Traffic Control Plan
- RMS Road Occupancy Licence
- Newcastle City Council approval
- Transport Management Plan (High Risk)

- ✓ NSW Oversize Overmass Load Carrying Vehicles Network Approved Roads
- ✓ Exception Routes (not approved)
- ✓ Limited Access Locations

10 Pedestrian Traffic Management and Control

It is noted that McIntosh Drive does not have dedicated pedestrian footpaths. There will be no changes to the conditions surrounding the facility relating to pedestrian movements.

10.1 Pedestrian Paths and Guidance

It is a requirement that the facility provides designated pedestrian pathways, clear of vehicle traffic, from the car park to site buildings, office and amenities. Pedestrian paths are shown in the site plan contained in Appendix 1.

It should be noted that, any pedestrian accessing the site beyond the office, amenities and weighbridges will be either site employee, inducted contractor or an inducted visitor. Visitors will be accompanied at all times by a Benedict representative.

All customers are not permitted to leave their vehicles anywhere on the site other than the public unloading area and to access the pedestrian walkways between marked car parking spaces and the weighbridge and office area.

10.2 Cyclist Management and Control

No Cyclist access will be permitted within the facility.

Cyclists will be subject to the same Traffic Management Controls as registered road users on the surrounding road network. Adequate provision for cyclists will be made for current movements along all frontages and intersecting streets.

11 Monitoring, Measurement and Review

The purpose of Monitoring and Measurement is to ensure that all construction works, including subcontracted activities, are being performed in accordance with the contract requirements, statutory requirement and in a controlled and safe environment. Ongoing monitoring and audit of Traffic Management procedures and the worksite implementation of traffic control shall be conducted.

Audits of the Traffic Control measures under differing operating conditions are to be carried out including during overcast and rainy weather, at night or at any other restrictive times where conditions may change in accordance with the requirements of AS1742.3.

Results of audits, inspections and improvements are to be reported in the reporting cycle of the contract to enable assessment of the adequacy of the implementation of the Traffic Control within contract performance and system review meetings.

11.1 Monitoring Program

The measures detailed in the table below are employed to monitor and record the movement of vehicles accessing the site and adherence to the code of conduct:

TMP Monitoring Program

Parameter	Monitoring Required	Frequency	Criteria/ Performance Measure/Trigger	Response
Onsite Truck routes	Spot Monitoring	Weekly	Onsite blockages or disturbance	Follow up with driver Review of procedures
Traffic Flow	Congestion	As Required	Complaints Detection	Respond according to result.
Driver Management	Spot Monitoring	Ongoing on a case by case basis	Complaints Detection	Review of procedures and operations Follow up with driver

11.2 Control of rubbish and light waste

All light waste (including light waste within co-mingled waste) will be tipped inside the main processing shed. The access road between McIntosh Drive and the recycling facility site will be inspected daily to ensure that there is no rubbish is left along the access road (most likely food and beverage waste from drivers).

The site boundary fences will be inspected daily, and any wind-blown light waste within site will be removed and sent to the main processing shed.

Any rubbish found along the access road between McIntosh Drive and the recycling facility site will be removed promptly.

12 Communications Strategy

12.1 Worksite Communications

There will be two-way communications, such as mobile phone devices or two-way radio, throughout the worksite to assist with traffic management of vehicles travelling into, through and/or around the worksite.

12.2 Stakeholder Works Notifications

Local community notification and consultation processes will be undertaken with all stakeholders prior to any changes to or impact on the road network, including consultation with the nearby, adjacent landowners, sensitive receivers, relevant regulatory authorities, Registered Aboriginal Parties and other interested stakeholders.

Notifications will be provided to all impacted stakeholders at least 7 days prior to any change to the road network conditions. Refer to Appendix 5 for example of community notification letter.

12.3 Emergency Services Notification

Emergency Services will be informed in a timely manner of relevant activities proposed within this OTPMP that affect the use of the surrounding road network. Regular updates will be provided to emergency services, including changes to road network configurations, changes to road conditions and worksite access locations.

13 Contact Details

13.1 Key Contacts

Name	Position	Contact #
Newcastle City Council	Compliance	(02) 4974 2000
Department of Planning and Environment	Compliance	1300 305 695
EPA	Newcastle region	(02) 4908 6800

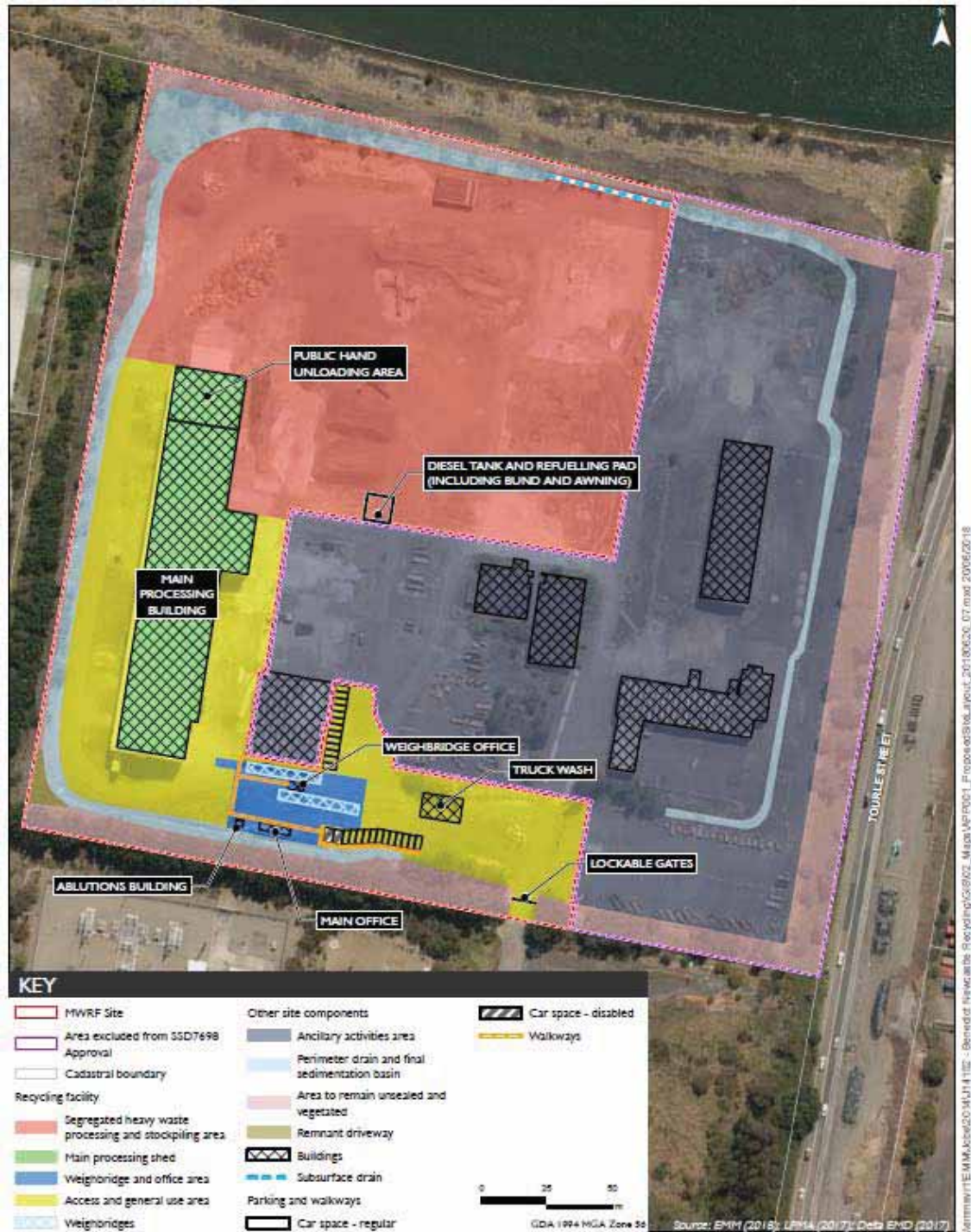
13.2 Emergency Contacts

Name	Location	Contact #
Warratah Police Station	30 Harriet St, Waratah	(02) 4926 6599
Mayfield Medical Centre	278 Maitland Rd, Mayfield	(02) 4967 4446
John Hunter Hospital	Lookout Rd, New Lambton Heights	(02) 4921 3000
NSW Fire and Rescue	Industrial Drive Mayfield West	(02) 4967 7550

14 Appendix 1 - Vehicular Traffic and Pedestrian Control Plans











EXAMPLE OF A TEMPORARY ROAD CLOSURE NOTIFICATION LETTER

The notification letter is to be distributed at least seven (7) days before the closure.

ON COMPANY'S LETTERHEAD

Temporary Road Closure of McIntosh Drive, Mayfield West on Sunday, 9 November 2018 from 7am to 7pm

McIntosh Drive will be temporarily closed to traffic from Steel River Boulevard on Sunday, 9 November 2018 from 7am to 7pm. The road is closed to enable a mobile crane to lift air-conditioning unit on to [Building address].

During the closure, traffic controllers will be in attendance at Steel River Boulevard and McIntosh Drive corners to provide local access. Through traffic will be diverted via alternative routes

If these works do not proceed on the above date, the back-up date for these works is Sunday, 16 November 2018.

For any concerns on the day of the works please contact the Site Supervisor on [Contact Mobile Number].

If you would like any further details please contact [Contact Name], [Position Title] on [Contact Phone Number].

[Contact Name]
[Position Title]

DRIVER CODE OF CONDUCT



MAYFIELD WEST

FEBRUARY 2018

Disclaimer: Whilst Benedict will make every effort in good faith to communicate the contents of this document to heavy vehicle drivers frequenting the Mayfield West Recycling Facility (MWRF), it cannot guarantee enforcement of nor compliance with any specific elements of the document for heavy vehicles which are beyond the MWRF site boundary.

Document Control				
Rev No	Date	Revision Details	Author	Reviewer
01	13/02/2018	Draft	MH	IC
02	12/03/2018	Revised Draft	MH	IC
03	28/03/2018	Final	MH	IC

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1. INTRODUCTION

1.1 BACKGROUND

Benedict Recycling Pty Ltd (Benedict) is the operator of the Mayfield West Recycling Facility (MWRF) located at 1A McIntosh Drive, Mayfield West.

Resource recovery activities limited to 90,000 tonnes per year of General Solid Waste (non-putrescible) were approved on the site by consent DA2015/0291 on 8 March 2016. The site currently operates under the regulation of Environment Protection Licence (EPL) 20771.

Application SSD 7698 proposed to increase the processing capacity of the existing resource recovery facility to 315,000 tonnes per year of general solid waste (non-putrescible) including construction and demolition waste and commercial and industrial waste.

Condition B51 (h) of the development consent for SSD 7698 approving the increased processing capacity stipulates that a Driver Code of Conduct be developed as a component of the *Operational Traffic and Pedestrian Management Plan*.

The purpose of this document is to minimise the impact of heavy vehicle traffic associated with MWRF on both the local road network, other road users and on the community.

1.2 LOCATION

The facility is located at 1A McIntosh Drive, Mayfield NSW and is within the local government area of Newcastle City Council. The site occupies Lot 1 in DP 874109, with a total land area of approximately 8.9 ha.

Figure 1.1 shows the location of the site and the main arterial routes used to access the site. The site is bounded by:

- the Hunter River (South Arm) to the north
- Tourle Street to the east
- Ausgrid Mayfield West Substation to the south; and
- light industrial buildings to the west

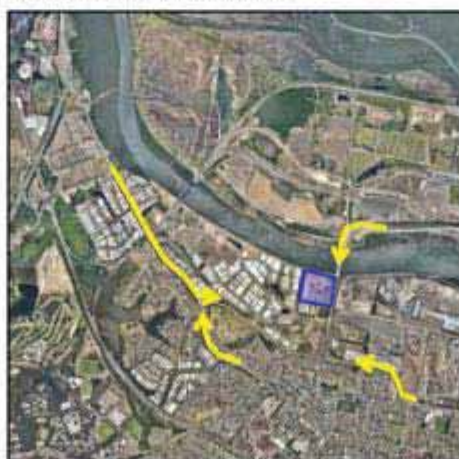


Figure 1.1 – Site Location Map

1.3 HEAVY VEHICLE TRAFFIC ROUTE

When travelling to MWRF heavy vehicles will turn off Industrial Drive into Steel River Boulevard, then turn right at the roundabout into McIntosh Drive before turning left into the right of way to the site. This main haulage route to and from the site is shown below in Figure 1.2.

The use of Murray Dwyer Circuit for Heavy Vehicles is not permitted.

The use of Werribi Street for Heavy Vehicles is not permitted.



Figure 1.2 – Traffic Routes

2. DRIVER CODE OF CONDUCT

Benedict Recycling will implement all reasonable and feasible measures to minimise the impact of traffic generated by the operations of MWRF on the efficient and safe operation of the local road network, in particular Steel River Boulevard and McIntosh Drive. All traffic generated by the MWRF operations is, to the maximum extent practical, be limited to Steel River Boulevard and McIntosh Drive. As part of their site induction, drivers of heavy vehicles associated with MWRF operations will be notified that the use of Murray Dwyer Circuit and/or Werribi Street is not permitted.

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All heavy vehicles hauling to and from the MWRF site must:

- i. Have undertaken a site induction carried out by an approved member of the MWRF staff or suitably qualified person under the direction of the MWRF management;
- ii. Hold a valid driver's licence for the class of vehicle that they operate;
- iii. Operate the vehicle in a safe manner within and external to the MWRF site;
- iv. Comply with the direction of authorised site personnel when within the site.

A single page document detailing the *Site Access Traffic Route* and summarising other key aspects of heavy vehicle related compliance will be kept at the site weighbridge for reference purposes. A sample of this document can be found in Appendix A.

2.1 HEAVY VEHICLE SPEED

Increased speed means not only an increased risk of collision but also increased severity if an accident does occur. A study undertaken for the Australian Transport Safety Bureau found that travelling 10km/h faster than the average traffic speed can more than double the risk of involvement in a casualty accident (source: Roads and Maritime Services).

There are two (2) types of speeding:

1. Where a heavy vehicle travels faster than the posted speed limit; and
2. Where a driver travels within the speed limit but due to road conditions (e.g. fog or rain) this speed is inappropriate (source: Roads and Maritime Services).

Drivers and truck operators are to be aware of the 'Three Strikes Scheme' introduced by the Roads and Maritime Services (RMS) which applies to all vehicles over 4.5 tonnes. When a heavy vehicle is detected travelling at 15km/h or more over the posted or relevant heavy vehicle speed limit by a mobile Police unit or fixed speed camera, the RMS will record a strike against that vehicle. If three strikes are recorded within a three (3) year period, the RMS will act to suspend the registration of that vehicle (up to three months).

More information is available from the Roads and Maritime Services (RMS) website.

Vehicle speed on public roads is enforced by the NSW Police Service.

The speed limit within the MWRF site is 10 km/h which is to be strictly maintained.

All heavy vehicle drivers associated with Mayfield West Recycling operations are to observe the posted speed limits, with speed adjusted appropriately to suit the road environment and prevailing weather conditions, to comply with the Australian Road Rules. The vehicle speed must be appropriate to ensure the safe movements of the vehicle based on the vehicle configuration.

2.2 HEAVY VEHICLES DRIVER FATIGUE

Fatigue is one of the biggest causes of accidents for heavy vehicle drivers. The Heavy Vehicle Driver Fatigue Reform was therefore developed by the National Transport Commission (NTC) and approved by Ministers from all States and Territories in February 2007.

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The Heavy Vehicle Driver Fatigue Law commenced in NSW on 28 September 2008 and applies to trucks and truck combinations over 12 tonne GVM (however there are Ministerial Exemption Notices that can apply).

Under the law, industry has the choice of operating under three (3) fatigue management schemes:

- Standard Hours of Operation
- Basic Fatigue Management (BFM)
- Advanced Fatigue Management (AFM)

All heavy vehicle drivers associated with Mayfield West Recycling operations are to be aware of their adopted fatigue management scheme and operate within its requirements.

2.3 HEAVY VEHICLES COMPRESSION BRAKING

Compression braking by heavy vehicles is a source of irritation to the community generating many complaints especially at night when residents are especially sensitive to noise.

In some instances, compression braking is required for safety reasons however when passing through or adjacent to residential areas a reduction in the speed of the vehicle is recommended to reduce the instances and severity of compression braking.

2.4 HEAVY VEHICLE NOISE

The operating hours for transportation of materials to and from MWRF are:

Monday to Friday	6:00am to 6:00pm
Saturday	6:00am to 5:00pm
Sundays & Public Holidays	7:00am to 3:00pm (receptions only)

Condition B64 of the development consent stipulates that on limited occasions (i.e no greater than six times per year and only for a period of less than two (2) weeks in length for each occasion), the receipt of waste is permitted on a 24 hours per day basis to allow for the waste to be generated by major infrastructure projects that require waste disposal at night to access the facility.

During the 24 hour infrastructure waste receipt periods described above, the number of heavy vehicles accessing the site from 6:00pm to 6:00am must not exceed 12 on any given night. In such circumstances, Newcastle City Council must be notified in writing prior to the 24 hour waste infrastructure period.

2.5 LOAD COVERING

Loose material on the road surface has the potential to cause road crashes and vehicle damage.

All heavy vehicles arriving at or departing from the Mayfield West Recycling Facility that are carrying loads of dust generating material must have their loads covered at all times, except during loading and unloading.

All care is to be taken to ensure that all loose debris from the vehicle body and wheels is removed prior to leaving the site.

Drivers must ensure that following tipping, the vehicle tailgate is locked before leaving the site.

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2.6 VEHICLE DEPARTURE AND ARRIVAL

Heavy vehicles travelling in close proximity on a single lane public road can be of concern to light vehicle drivers as well as increasing noise through or adjacent to residential areas. Outgoing traffic leaving the site via the weighbridge is typically separated by a minimum of approximately two (2) minute intervals whilst weighbridge dockets are generated and/or payment is processed.

2.7 INCIDENT REPORTING

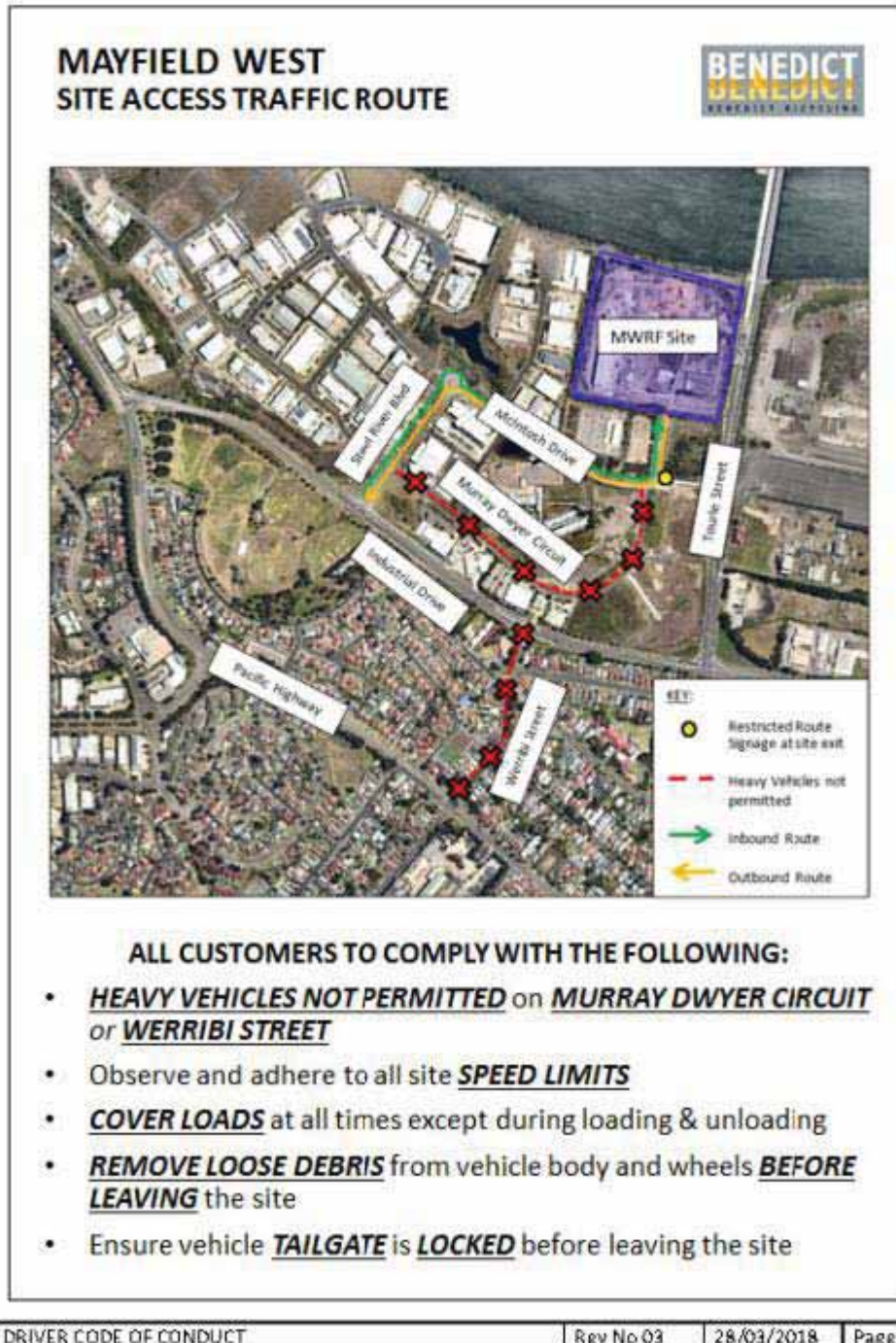
To assist in the orderly resolution of complaints, site management will keep a register itemising all reported incidents relating to complaints in regard to heavy vehicle driver conduct external to the site.

Information to be logged is to include (where possible):

- i. Date
- ii. Location/s
- iii. Driver/heavy vehicle details
- iv. Contact details of person lodging the complaint;
- v. What/when actions were taken to resolve the issue; and
- vi. The response made to the complainant.

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Site Access Traffic Route



Janet Krick

From: Geof Mansfield [gmansfield@ncc.nsw.gov.au]
Sent: Friday, 11 May 2018 2:23 PM
To: Janet Krick
Subject: FW: Attention: Geof Mansfield, Benedict Recycling - Mayfield Recycling Facility - Operational Traffic and Pedestrian Management Plan

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Janet,

Council traffic officers have reviewed the OT&PMP submitted for the Benedict Recycling Facility and advised it is satisfactory.

Regards

Geof Mansfield | Principal Planner (Development)
 Development and Building Services | Planning and Regulatory
 Newcastle City Council
 Phone: +61 2 4974 2767 | Fax: +61 2 4974 2701 | Mobile: 0407 286 899
 Email: gmansfield@ncc.nsw.gov.au
 Web: www.newcastle.nsw.gov.au
 Our Corporate Values: Cooperation | Respect | Excellence | Wellbeing

From: Janet Krick [mailto:jkrick@emmconsulting.com.au]
Sent: Friday, 4 May 2018 2:22 PM
To: Geof Mansfield
Cc: Phil Towler; Kyle Fieg; David Ryner
Subject: RE: Attention: Geof Mansfield, Benedict Recycling - Mayfield Recycling Facility - Operational Traffic and Pedestrian Management Plan

Hi Geoff and David,

Following up on the below request for comment submitted to Council on the 16 April. Could you please review and provide comment on the Operational Traffic and Pedestrian Management Plan for the Benedict Mayfield West Recycling Facility at your earliest convenience.

Many thanks and kind regards

Janet Krick | Senior Environmental Planner

T 02 4907 4800 | D 02 4907 4815 | M 0456 884 212 | F 02 4907 4899
www.emmconsulting.com.au

From: Geof Mansfield [mailto:gmansfield@ncc.nsw.gov.au]
Sent: Monday, 23 April 2018 1:46 PM
To: Janet Krick; Official Mail
Cc: Phil Towler; Kyle Fieg; David Ryner
Subject: RE: Attention: Geof Mansfield, Benedict Recycling - Mayfield Recycling Facility - Operational Traffic and Pedestrian Management Plan

Hi Janet,

A copy of the OTPMP has been forwarded to an officer in our traffic section for consideration. A response will be forwarded in approximately two weeks, sooner if possible.

Regards

Geof Mansfield | Principal Planner (Development)
Development and Building Services | Planning and Regulatory
Newcastle City Council
Phone: +61 2 4974 2767 | **Fax:** +61 2 4974 2701 | **Mobile:** 0407 286 899
Email: gmansfield@ncc.nsw.gov.au
Web: www.newcastle.nsw.gov.au
Our Corporate Values: Cooperation | Respect | Excellence | Wellbeing

From: Janet Krick [<mailto:jkrick@emmiconsulting.com.au>]
Sent: Monday, 16 April 2018 4:04 PM
To: Official Mail
Cc: Geof Mansfield; Phil Towler; Kyle Fieg
Subject: Attention: Geof Mansfield, Benedict Recycling - Mayfield Reycling Facility - Operational Traffic and Pedestrian Management Plan

Hi Geof,

Thank you for your time just now. As discussed, Benedict Recycling recently received SSD Approval to expand their existing operations at 1A McIntosh Drive, Mayfield West NSW 2304. Condition 50 of the approval requires the preparation of an Operational Traffic and Pedestrian Management Plan (OTPMP) in consultation with Council. Accordingly a Draft OTPMP has been prepared by "The Traffic Planner" for Council comment.

As discussed, it would be greatly appreciated if you could provide a timeframe to provide feedback. Please do not hesitate to contact me on the details below if you require further information.

Many thanks and kind regards

Janet Krick | Senior Environmental Planner

T 02 4907 4800 | **D** 02 4907 4815 | **M** 0456 664 212 | **F** 02 4907 4899

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Form 255

BENEDICT

Visitor Induction

Inductee:	Company:
Site:	Induction Date:

Your Benedict representative will cover the following important points. Please tick the boxes as they are explained.

Location of Amenities	<input type="checkbox"/>	First Aid Location	<input type="checkbox"/>
PPE Requirements	<input type="checkbox"/>	Emergency Evacuation Point	<input type="checkbox"/>
Speed Limit	<input type="checkbox"/>	Reporting of Site Hazards/ Incidents	<input type="checkbox"/>
Sign In/ Out Requirement	<input type="checkbox"/>	No Smoking in Work Areas	<input type="checkbox"/>

Other: _____

Please read the following information relating to site health and safety.

GENERAL

- All visitors are to be accompanied by a Benedict Representative at all times.
- Do not enter areas outside your intended scope.
- Company vehicles and mobile plant have right of way.
- Give way to oncoming traffic when entering or exiting site.
- Follow site signage and directional markings. Every sign displayed carries the same authority as a direct instruction from a Benedict representative and must be complied with at all times.
- ALWAYS watch for moving plant.
- Do not walk in vehicle/ mobile plant blind spots.
- Do not use your mobile phone when commuting around facility.
- Abusive behaviour, harassment or discriminative language will not be tolerated.
- DO NOT obstruct emergency exit points and emergency equipment.
- Park vehicle in designated areas. DO NOT obstruct access roads/ work areas.
- RMS Mobile Phone and Seat Belt road rules are to be adhered to when driving around site.
- DO NOT litter.
- Attend site in a condition in which you are able to carry out your duties without risk to yourself and others.

EMERGENCY

- If an emergency occurs on site, you are to STOP immediately and proceed DIRECTLY to the emergency assembly point. No visitor is to go back onto site unless the ALL CLEAR is given by the Chief Warden

INDUCTION RECORD

I agree to comply with all aspects listed in this induction and Benedict Industries instructions at all times.

Signed: _____

Location: BeneHub/ Document Control	Created by: Safety	Date Created: 28.07.15	Page 1 of 1
Section: Induction/ Forms	Approved by: Peter Murococa	Next Review Date: 28.07.18	Version #1



Driver Induction

Inductee:		Company:	
Site: MAYFIELD WEST	Induction Date:	Rego:	

Your Benedict representative will cover the following important points. Please tick the boxes as they are explained.

UHF Channel	<input type="checkbox"/>	First Aid Location	<input type="checkbox"/>
Communication Protocol	<input type="checkbox"/>	Emergency Evacuation Point	<input type="checkbox"/>
Speed Limit	<input type="checkbox"/>	Reporting of Site Hazards/Incidents	<input type="checkbox"/>
PPE Requirements	<input type="checkbox"/>	No Smoking in Work Areas	<input type="checkbox"/>

Other:

QUEUING OUTSIDE SITE IS NOT PERMITTED. UHF CHANNEL #9. AVOID USING MURRAY DWYER CLOSE. NO CLIMBING ON TRUCK BINS PERMITTED.

Please read the following information relating to site health and safety.

GENERAL

- Company vehicles and mobile plant have right of way.
- Give way to oncoming traffic when entering or exiting site.
- Follow site signage and directional markings. Every sign displayed carries the same authority as a direct instruction from a Benedict representative and must be complied with at all times.
- Children and pets are prohibited on site.
- Incoming overloaded vehicles will require assessment before entering site.
- Before exiting cab ALWAYS engage park/ trailer brake.
- Use three points of contact when entering or exiting your truck and make sure your footing is secure before releasing your grip on handles and railings - DO NOT jump from truck.
- Loads must be covered and uncovered from ground level or protected areas.
- Before entering loading/ tipping areas, load covers are to be opened and tail gates securely fastened.
- Hazardous materials are not accepted. If found, Benedict reserve the right to reject the load.
- DO NOT stop directly behind any vehicle and/ or mobile plant.
- Under no circumstances must you enter the tipping body.
- Abusive behaviour, harassment or discriminative language will not be tolerated.
- DO NOT obstruct emergency exit points and emergency equipment.
- RMS Chain of Responsibility, Mobile Phone, Drug and Alcohol and Seat Belt rules are to be adhered to.
- In the event of an emergency, STOP and turn off your vehicle and proceed DIRECTLY to the emergency assembly point. No driver is to go back onto site unless the ALL CLEAR is given by the Chief Warden
- Do not litter

LOADING

- Remain in truck whilst being loaded.
- Ensure load is appropriately loaded for truck configuration.
- Never give instruction to overload your vehicle.
- Maintain positive communication with the operator via site UHF channel.

SKIP BINS

- If unable to un-tarp from ground level or protected areas, skip bins must be placed on the ground to un-tarp.
- DO NOT drive with skip bin suspended in the air.
- Bin/s must be secure on truck when travelling.
- Storage of skip bins are in designated areas only.
- Truck must be stationary when raising, lowering and tipping skip bin.

TIPPING

- Visually inspect tipping area to ensure access and safety for tipping – check for any risks/ hazards e.g. overhead power lines, tree limbs, building eaves, uneven ground etc.
- Notify supervisor/ spotter if unsafe to tip and wait for alternative instructions
- Check that all vehicles and personnel are clear from tipping area before tipping/ engaging gear
- Clearance on both sides of body from other vehicles/ people should be at least 1.5 times the height of the tipping body when fully extended.
- Ensure tipping body is down, draw bars and side rails are clear of excess material and tail gate/s are secured before exiting tipping area.

WASHING OUT (quarry sites only)

- Only to be performed in designated areas. DO NOT park on haul road.
- Fully raise tipper body and ensure tailgate is open and unobstructed.
- Firmly hold hose nozzle when turning water on.
- Stand well clear of truck when washing out.
- DO NOT stand between tailgate and truck body.
- Hose from ground level only.
- Lower tipping body before exiting area.
- Do not leave hose on haul road.

INDUCTION RECORD

I agree to comply with all aspects listed in this induction and Benedict Industries instructions at all times.

Signed: _____

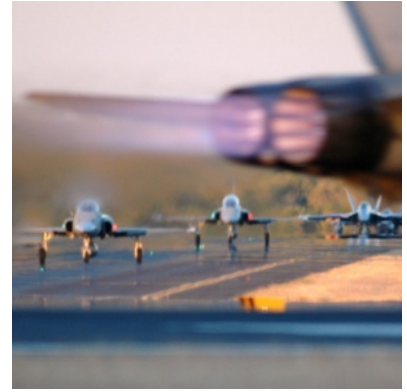
APPENDIX H – SITE MANAGEMENT PLAN FOR SUBSURFACE DISTURBANCE

Prepared for:

Delta EMD Australia Pty Ltd

PO Box 249

Mayfield NSW 2304



Site Management Plan for Subsurface Disturbance Activities

Delta EMD Australia Pty Ltd
McIntosh Drive, Mayfield, NSW

AECOM

2 October 2009

Document No.: N4113204_SMP_Rev4_2Oct09.doc

Distribution

Site Management Plan for Subsurface Disturbance Activities
Delta EMD Australia Pty Ltd
McIntosh Drive, Mayfield, NSW

2 October 2009

Copies	Recipient	Copies	Recipient
1 pdf	Warwick Baguley Environment Managet Delta EMD Australia Pty Ltd PO Box 249 Mayfield NSW 2304	1	AECOM File Copy

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By

ENSR Australia Pty Ltd (trading as AECOM)

ABN: 34 060 204 702



17 Warabrook Boulevard Warabrook NSW 2304

PO Box 73 Hunter Region MC NSW 2310

Ph: +61 2 4911 4900 Fax: +61 2 4911 4999

Technical Peer Reviewer:

Date:

 Sarah Dorward Senior Environmental Scientist	 for Beth Toivonen Principal Environmental Scientist
---	--

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Commercial in Confidence

Site Management Plan for Subsurface
 Disturbance Activities

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Environment

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Commercial in Confidence

Site Management Plan for Subsurface
Disturbance Activities

N4113204_SMP_Rev4_2Oct09.doc

Environment

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Glossary of Terms

General Terms	
ACM	Asbestos containing material(s)
ANZECC	Australian and New Zealand Environment and Conservation Council
AHD	Australian Height Datum
APHA	American Public Health Association
ASS	Acid Sulfate Soil
AST	Above ground Storage Tank
BaP	Benzo(a)pyrene (a PAH)
BTEX	Benzene, toluene, ethylbenzene and xylenes
CCA	Copper chrome arsenate
DECC	NSW Department of Environment and Climate Change
DQOs	Data Quality Objectives
DQIs	Data Quality Indicators
EIL	Ecological Investigation Level
EPA	New South Wales Environment Protection Authority
EMP	Environmental Management Plan
EMD	Electrolytic Manganese Dioxide
EPL	Environment Protection Licence
ESA	Environmental Site Assessment
HASP	Health and Safety Plan
HRA	Health Risk Assessment
Heavy metals	Generally, arsenic (a metalloid), cadmium, chromium, copper, mercury, nickel, lead and zinc
HIL	Health Investigation Level
LOR	Level of reporting
NEHF	National Environmental Health Forum
NEPC	National Environment Protect Council
NEPM	National Environmental Protection Measure
NSW EPA	New South Wales Environment Protection Authority
Occupier	Occupier for the time being of the Site
OCPs	Organochlorine pesticides
OH&S	Occupational Health & Safety
OPPs	Organophosphorus pesticides
Owner	Registered proprietor for the time being of the Site
PAHs	Polynuclear Aromatic Hydrocarbons
PASS	Potential Acid Sulphate Soils
PCBs	Polychlorinated biphenyls
PID	Photoionisation detector
PQL	Practical quantitation level (or limit)
PSH	Phase Separated Hydrocarbon
QA/QC	Quality Assurance/Quality Control
RAP	Remedial Action Plan
RPD	Relative Percent Difference
SAQP	Sampling, Analytical and Quality Plan

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SMP	Soil or Site Management Plan			
SVOC	Semi-volatile Organic Compound			
SWL	Standing Water level			
TPH	Total petroleum hydrocarbons			
UCL	Upper Confidence Limit (on mean)			
USEPA	United States Environment Protection Agency			
UST	Underground Storage Tank			
VOC	Volatile Organic Compound			
Units				
ha	hectare		µg/kg	micrograms/kilogram
km	kilometre		µg/L	micrograms/litre
m	metre		ppb	parts per billion
m ²	metres squared		ppm	parts per million
m bgl	metres below ground level			
mg/kg	milligrams/kilogram		t	tonne
mg/L	milligrams/litre			

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1.0 Introduction

1.1 General Introduction

ENSR Australia Pty Ltd, trading as AECOM and referred to hereafter as AECOM, has prepared this Site Management Plan (SMP) for subsurface disturbance activities for the former Electrolytic Manganese Dioxide (EMD) Facility located at 1 McIntosh Drive, Mayfield, NSW 2304 (the Site). The Site is identified as Lot 1 in Deposited Plan 874109 in the local government area of Newcastle City Council and is currently zoned Zone 4b Port and Industry under Newcastle City Council Local Environment Plan (LEP).

Site inspections conducted in 2009 showed that the Site is relatively flat, with the ground level approximately 8 m above the Southern Arm of the Hunter River, located approximately 20 m north of the Site. The Site is built upon reclaimed land and is underlain by fill materials associated with former BHP steel works activities. An open, asphalt-lined drain surrounds the majority of the Site (apart from the Site entrance), which diverts stormwater run-off to the surface water pond located in the north western corner of the Site. The surface cover of the Site is approximately 50 % open ground, 20 % infrastructure and 30 % hardstand. The hardstand comprises bitumen and concrete roadways and a carpark, located in the south eastern corner of the Site.

Previous environmental works undertaken at the Site identified the presence of elevated concentrations of a number of inorganic and organic compounds within soil (fill) and groundwater beneath the Site, primarily manganese associated with the former EMD operations and organics (total petroleum hydrocarbons and polycyclic aromatic hydrocarbons) associated with reclaimed steel works materials previously used to fill the Site. The previous environmental works and details on the Site contamination are further detailed in **Section 5.0** and **Appendix A** of this SMP.

The purpose of this SMP is to provide a manual for use by the Site owner and operational staff at the Site during subsurface disturbance activities. The SMP is also intended to form an advisory document to regulatory agencies and identified stakeholders.

1.2 Purpose of SMP

The purpose of the SMP is to provide guidance for any work that involves disturbance of the subsurface (soil and groundwater) on the Site. The SMP will be incorporated into the standard operating procedures and quality plans used at the Site by:

- Site owner/s.
- Site occupier, including Site Management.
- Works Supervisor.
- Operational staff, also including contractors and sub-contractors.

1.3 SMP Objectives

The objectives of the SMP are to:

- Summarise background environmental information and current conditions at the Site.
- Outline contaminants of concern present on the Site.
- Provide guidance for management of excavation works or disturbance of soil at the Site.
- Outline safety controls.

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- Outline methods to prevent any adverse effects on the environment and human health.
- Management and effective containment of contaminants of concern.
- Outline procedures for routine or emergency maintenance works at the Site.

1.4 SMP Structure

The SMP is presented in the following sections:

- Section 2.0: Site Identification.
- Section 3.0: SMP Application and Responsibilities.
- Section 4.0: Statutory Requirements.
- Section 5.0: Summary of Contamination.
- Section 6.0: Future Works Methodology.
- Section 7.0: Environmental Management Plan.
- Section 8.0: Emergency Response.
- Section 9.0: General Health and Safety.
- Section 10: Contingency Plans.
- Section 11: SMP Record Keeping.
- Section 12: SMP Auditing

2.0 Site Identification

The Site is identified in **Table 1** below.

Table 1: Site Identification

Current Site Owner (July 2009)	Delta EMD Australia Pty Ltd
Site Address	1 McIntosh Drive, Mayfield, NSW, 2304
Local Government Authority	Newcastle City Council
Lot and DP Numbers	Lot 1 DP 874109
Current Zoning	Zone 4b Port and Industry
Distance from nearest CBD (approximate)	6km (Newcastle)
Area (approximate)	89 500 m ²
Elevation (approximate)	9 m AHD
Locality Map	Refer to Figure F1
Site Layout	Refer to Figure F2

Notes: CBD - Central Business District, m AHD - metres above Australian Height Datum.

A summary of Site background information, including a summary of the Site history, Site setting and a review of previous environmental investigations is provided in **Appendix A**.

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3.0 SMP Application and Responsibilities

3.1 Introduction

The following subsections outline details of the application of, and responsibilities for, the SMP.

3.2 Application of the SMP

This SMP is to be applied through the Owner/Occupiers management system. The management system will implement the SMP through, but not be limited to, site health and safety inductions, permit to work, excavation clearances, job safety analyses and standard operating procedures.

This SMP is required to be referred to, and implemented prior to disturbance of the Site's subsurface, in particular during (but not limited to) the following activities:

- Trenching for service installation, such as gas, electricity, stormwater, surface drainage, telephone, cabling and water supply.
- Maintenance of underground services.
- Excavation of soils for the construction of building footprints.
- Disturbance of soil for the construction of building foundations.
- Installation of equipment that may require excavation of soils for placement of footings.
- Construction of internal roads.
- Development of landscaping areas.
- Geotechnical works or other subsurface/intrusive testing.

It is further noted that surfaces (sealed, gravel and grass) across the Site should be retained and maintained, where practicable, to prevent the generation of dust, direct exposure to underlying soil and groundwater, and also to reduce the volume of surface water infiltration into the underlying groundwater.

Where the above activities are required, all other statutory requirements (see **Section 4**) and other site specific approvals (e.g. workplans, health and safety plans, site specific management plans etc) will be required to be adhered to. It is noted that preparation of any such additional Site-specific documents should include reference to this SMP and confirm that all works must be undertaken in accordance with the requirements of the SMP.

3.3 Document Revision

This SMP is to be reviewed and updated, as necessary. Therefore, it is the responsibility of the reader of this document to ensure they have the current version of the SMP. The master document, with the up-to-date version of the SMP will be available from the Site Owner.

3.4 Responsibilities

Site Management and/or the Works Supervisor is responsible for managing the works associated with Site, including management of any disturbance of surface soil, dust mitigation and suppression, surface water run-off, erosion and sedimentation control and all monitoring requirements outlined in this SMP.

The Owner of the Site and/or its representative is responsible for ensuring that all Site personnel including Site Management, Works Supervisor and Operational Staff undertake the appropriate environmental management measures during any Site works. The Works Supervisor is responsible for ensuring that any sub-contractors employed during any Site works conduct their operations in accordance with the environmental management principles contained in this plan and relevant statutory requirements.

General responsibilities during any of the works listed in **Section 3.2** are outlined in **Table 2** below.

Table 2: SMP Responsibilities

Position and Company	Responsibilities
Site Owner	<ul style="list-style-type: none"> • Approve and update the SMP, as required (e.g. prior to and following development / submission to Council, etc). • Ensure that the SMP is included as part of all preliminary OHS and Site induction discussions, which must occur prior to the completion of all subsurface/intrusive works. All subsurface/intrusive works must be documented in the Register of Intrusive works. • Ensure appropriate consents and licences are obtained for works. • Ensure all contractors comply with statutory and licence requirements. • Oversee subsurface/intrusive works and overall implementation of SMP. • Undertake monitoring and inspections of the Site as required.
Occupier (Site Management)	<ul style="list-style-type: none"> • Implement the SMP at Site level. • Ensure appropriate consents and licences are obtained for works. • Ensure all contractors comply with statutory and licence requirements. • Oversee subsurface/intrusive works and overall implementation of SMP. • Undertake monitoring and inspections of the Site as required.
Works Supervisor	<ul style="list-style-type: none"> • Implement the SMP at Site level, ensuring all Operational Staff, including contractors and sub-contractors are inducted in the requirements of this SMP. • Comply with the relevant conditions of any statutory approvals. • Complete all necessary registers, databases and records as required in the SMP. • Ensure access restrictions are in place (e.g. fencing / signage / site attendance register) and written approval received from Site owner prior to commencing.

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Position and Company	Responsibilities
	<ul style="list-style-type: none"> • Conduct all site operations in a safe and environmentally responsible manner on a day-to-day basis. • Meet all OH&S regulatory requirements. • Ensure that all environmental protection measures are in place and are functioning correctly. • Notify Site Owner if visually contaminated or unusual material is encountered or strong odours are noted during works. • Undertake daily Site inspections (OH&S and environmental) during any works and record and report as appropriate (see Section 11.0). • Complete non-conformance and corrective action reports as required and undertake follow up corrective actions, as required (see Section 11.0). • Complete incident reports and complaint reports, as required, and follow up as required (see Section 11.0). • Provide adequate training of all employees and contractors during Site induction, and as required on an ongoing basis during the works. • Conduct monitoring as required in the SMP. • Undertake audits of the project activities in accordance with the requirements of the SMP. The frequency of the audits will depend on the duration of the works. • Ensure all non-conformance and/or complaints are reported to the Site Owner/Occupier (see Section 11.0). • Undertake corrective actions in response to requests made by the Site Owner/Occupier regarding specific environmental or safety issues (see Section 11.0). • Ensure all works comply with relevant regulatory requirements. • Ensure all sub-contractors comply with statutory and licence requirements and conditions of the SMP. • Monitor to ensure that all subsurface/intrusive works are carried out in an environmentally responsible manner through Site inspections and monitoring, as required. • Monitor to ensure that the environmental protection measures put in place are appropriate and functioning correctly. • Sample and analyse any visually contaminated or unusual material uncovered during any excavation work.
Operational Staff, including contractors and sub-contractors	<ul style="list-style-type: none"> • Ensure all works are undertaken in compliance with the requirements of the SMP, as set out in a Site induction prior to start of any subsurface/intrusive works. • Complete any of the tasks listed above, as delegated to/from the Works Supervisor.

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Position and Company	Responsibilities
Environmental Professional	<ul style="list-style-type: none">• As required, inspect the condition of the site surface. Notify the Site Owner/Occupier of any significant issues identified during inspections.• Provide advice to Site Owner/Occupier, as required.

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4.0 Statutory Requirements

4.1 Licences and Approvals Requirements

The Site Management and Works Supervisor will be responsible for ensuring all necessary approvals and licences are obtained prior to the commencement of any subsurface/intrusive works that require an approval or licence. All Operational Staff (including contractors and any sub-contractors) must comply with the terms and conditions of all approvals and licences obtained, including relevant Consent Conditions from the appropriate regulatory authorities.

4.2 Regulatory Requirements

During the course of future subsurface/intrusive works, all Operational Staff working on the Site are to consider the applicable environmental regulatory requirements, which include but are not limited to:

- Contaminated Land Management Act, 1997; as amended 2008.
- Environmental Planning and Assessment Act, 1979 (State Environmental Planning Policy No 55 – Remediation of Land).
- Environmental Planning and Assessment Regulation, 2000.
- Protection of the Environment Operations Act, 1997 and Regulations.
- Occupational Health and Safety Act 2000 and Occupational Health and Safety Regulation 2001.
- Environmentally Hazardous Chemicals Act, 1985.
- NSW DECC 2008, Waste Classification Guidelines, April 2008.
- Traffic Act 1909 and regulations.
- Relevant NSW DECC guidelines.

In addition, all Operational Staff will abide by any directions or procedures provided by the Site Management and/or Works Supervisor.

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5.0 Summary of Contamination

5.1 Introduction

AECOM has undertaken the following environmental works at the Site:

- Site Closure Strategy for Site and Kooragang Island Facility, dated 26 September 2008 (reference N4094601_26Sept08) (ENSR 2008a).
- Data Gap Analysis, Site, dated 29 September 2008 (reference N409460201_29Sept08) (ENSR 2008b).
- Phase 2 Environmental Site Assessment, dated 29 September 2008 (reference N4094604_RPT_29Sept08) (ENSR 2008c).
- Phase 2 ESA Summary, Site, dated 22 October 2008 (reference N4108501_RPT_22Oct08) (ENSR 2008d).
- Data Interpretation and Outline Remediation Strategy, dated 15 May 2009 (reference N4113201_Rpt_15May09.doc) (AECOM 2009a).
- Human Health and Ecological Screening Risk Assessment - Former Electrolytic Manganese Dioxide Plant, McIntosh Drive, Mayfield, NSW, dated TBA (reference TBA) (AECOM 2009b).

A review of each of the above documents is presented in **Appendix A**, although a summary of the key findings in relation to soil and groundwater conditions beneath the Site is presented in the following subsections.

5.2 Soil (Fill)

The key sources of soil contamination at the Site have been identified as:

- Manganese in the shallow subsurface (upper 0.5 m) associated with the former EMD operations, and at depth, associated with underlying fill materials. Lead was also identified at two isolated locations between 1 m and 2 m below ground level associated with underlying fill materials.
- Organic compounds including total petroleum hydrocarbons (TPH) and polycyclic aromatic hydrocarbons (PAHs), generally associated with the underlying fill materials and localised shallow usage at the Site's surface.

5.2.1 Inorganics

Results from ENSR (2008c) identified concentrations of manganese above the adopted Investigation Level (IL) of 7500 mg/kg (protective of industrial / commercial workers) across the entire Site. The highest concentrations were identified in the shallow subsurface in unsealed areas of the Site (predominantly in the north eastern corner of the Site in the vicinity of the Ore Shed and Kiln). Results of the AECOM risk assessment (AECOM 2009b) confirmed that whilst marginal risks were identified from manganese at the Site (noting the highest concentration of 180 000 mg/kg was used in the risk assessment), remediation of the shallow soils (fill) impacted was not necessary, subject to the implementation of an SMP.

The results for inorganics analysis in soil from ENSR (2008c) are presented in the **Tables** section of this report, and the locations of the site investigation locations are presented in the **Figures** section of this report. A summary of the distribution of manganese concentrations is also presented in ENSR (2008c).

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Statistical analysis of manganese concentrations in soil was presented in ENSR (2008d), which identified that manganese concentrations were generally more elevated in the upper 0.5 m of the subsurface and associated with the former EMD operations and deeper manganese impacts were generally associated with the buried steelworks materials.

5.2.2 Organics

In comparison to the widespread nature of elevated manganese concentrations above the adopted IL, concentrations of organic compounds above the respective adopted ILs were limited in extent across the Site, and exceedences of the ILs were less significant. The key organic compounds, which exceeded the criteria at only eight of 76 samples scheduled for organic analysis included benzo(a)pyrene ((B(a)P), a PAH compound), Total PAHs and TPH (C₁₀-C₃₆).

The results for organic analyses in soil from ENSR (2008c) are presented in the **Tables** section of this report, and the locations of the site investigation locations are presented in the **Figures** section of this report, noting a summary of the spread of organics concentrations across the Site are also presented.

5.3 Groundwater

Previous investigations have identified that groundwater beneath the Site exists as two key aquifers: a shallow Fill Aquifer within the underlying fill materials and a deeper Estuarine Aquifer in the estuarine sediments which underlie the fill. Shallow perched water was identified in ENSR (2008c) at a depth of 1m to 1.5m below ground level (m bgl) at two locations only, both in the vicinity of the leachate tanks in the north western corner of the Site. A summary of the contamination status of the groundwater beneath the Site is presented below, noting that exceedences of ILs generally related to the key environmental receptor (the Hunter River), and not human health receptors, although direct contact with the groundwater should be avoided.

With respect to the SMP, any subsurface works are unlikely to extend to the interface with the Fill Aquifer and any future groundwater management is likely to be associated with perched water which exists at shallower depths across the Site.

5.3.1 Perched Water

ENSR (2008c) reported elevated manganese (46.4 mg/L and 112 mg/L) were reported in test pits TP18 and TP37, respectively, in the vicinity of the leachate tanks in the north western corner of the Site. It is possible that shallow perched water containing elevated concentrations of manganese may exist at other locations across the Site, although it was not encountered elsewhere during the ENSR (2008c) investigations.

Total PAHs and TPH were also reported in the perched water encountered at TP18 and TP37, at maximum concentrations of 96.9 µg/L (total PAHs in TP18) and 915 µg/L (TPH in TP37) respectively.

It is noted that no groundwater ILs were available for manganese, total PAHs and TPH (however ILs were available for individual PAH compounds).

5.3.2 Fill Aquifer

Groundwater in the Fill Aquifer was generally identified between 5 and 6 m bgl during ENSR 2008c investigations. Conditions in relation to manganese and organics are summarised below:

- Manganese concentrations ranged between 0.003 mg/L (MW13) and 0.849 mg/L (MW102).
- Napthalene in MW10 (128 µg/L), MW11 (181 µg/L) and MW13 (888 µg/L) exceeded the IL of 70 µg/L, with concentrations less than the IL ranging from less than the laboratory limit of reporting (LOR) to 55 µg/L (MW7).

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- Total PAHs ranged from 2.1 µg/L to 1072 µg/L, noting no IL exists for Total PAHs in groundwater.
- TPH (C₆-C₉) ranged from <LOR to 110 µg/L.
- TPH (C₁₀-C₃₆) ranged from 430 µg/L to 3480 µg/L.
- Benzene was less than the laboratory LOR or IL, and with exception of minor toluene, ethylbenzene and xylenes (total) (TEX) concentrations reported in MW7, TEX concentrations were less than the LOR.

5.3.3 Estuarine Aquifer

The Estuarine Aquifer is present within the underlying estuarine sediments some 10 m bgl and it is unlikely that any subsurface works would extend to this depth. The analytical results from the ENSR (2008c) investigation are, however, summarised below:

- Manganese concentrations ranged between 0.013 mg/L (MW2) and 6.66 mg/L (MW204).
- Napthalene was not reported at concentrations greater than the IL in any sample.
- Total PAHs ranged from <LOR to 43.2 µg/L.
- TPH C₆-C₉ was not reported at concentrations greater than the LOR.
- TPH C₁₀-C₃₆ ranged from 780 µg/L to 1980 µg/L.
- Benzene was less than the LOR and/or IL, and TEX concentrations were all less than the LOR.

5.4 Exposure Pathways

The key exposure pathways for impacted soil (particularly shallow manganese impacted soils) and groundwater are considered to be inhalation, incidental ingestion of soil and direct dermal contact with soil and groundwater.

To limit the exposure pathways and further to **Section 3.2**, the SMP requires the retention and maintenance of sealed, gravel and grassed surfaces across the Site, where practicable. Consequently, prescribed measures are to be implemented for any works carried out which disturb any of the sealed, gravel or grassed surfaces.

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6.0 Future Works Methodology

6.1 Introduction

The following management procedures/controls are required to be implemented at the Site as part of any future works conducted at the Site.

6.2 Site Establishment

- The Site Management and/or the Works Supervisor will obtain all necessary approvals and licences required by the regulatory authorities prior to the commencement of the works. A record of these permits/approvals and licenses should be maintained.
- The Owner, Site Management, Works Supervisor and all other parties conducting subsurface/intrusive work on the Site will review the SMP and be familiar with management requirements for any areas that will be disturbed.
- A site specific Occupational Health and Safety (OH&S) Plan will be prepared prior to any subsurface/intrusive works and all Site personal will be inducted in accordance with the OH&S Plan. Section 11 of this document provides minimum OHS requirements for the Site.
- All Site personnel will be inducted into the requirements of this SMP, and acknowledge acceptance and compliance of the procedures by signing the attached log (**Appendix B**).
- Appropriate signage will be erected around the work area in accordance with Clause 78H of the EP&A Regulation (1998), informing of the construction works and any site-specific requirements.
- Bunding and siltation fences will be constructed around the perimeter of the work area.
- Guards and fences will be established around all excavation works in accordance with the relevant standards.
- Sediment control structures will be appropriately placed (ie. silt fencing and/or hay bales) down-slope of the construction area and on the up-slope of any stormwater collection channels.
- The Works Supervisor will designate a hardstand area within the Site for the stockpiling of excavated material, taking care to allow for separate stockpiling of imported fill, potentially contaminated soil and other excavated soil material. The Works Supervisor will ensure that the area is appropriately bunded to prevent any surface run-off from entering adjacent areas. Sediment control measures will be strategically placed down-slope of the stockpile area and on the up-slope side of any stormwater collection channels in accordance with *Managing Urban Stormwater: Soils and Construction* (DOH, 2004).
- Dust screening fences and noise mitigation measures will be established in accordance with this SMP (refer to **Section 7.0**).

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6.3 Earthworks

- All subsurface/intrusive works will be undertaken during dry weather (where possible), and in accordance with contractors operating procedures and any contract requirements.
- Stockpiles of material excavated from the Site are required to be segregated from other materials (refer to **Section 7.3**).
- Excavations and any stockpiled material will be inspected by the Works Supervisor and/or a suitably qualified Environmental Professional for any obvious signs of contamination.
- In the event that any 'unknown' or 'unexpected' materials are uncovered, the spoil excavated will be managed in accordance with the Soil Management Plan outlined in **Section 7.3**.
- Any fill material used for backfilling will comply with the requirements for the Site, which include determining that the material is suitable for commercial / industrial land use.
- During subsurface/intrusive works, the Works Supervisor will undertake daily Site inspections. An inspection report (or similar), refer to **Appendix C** should be completed during the Site inspections. The following are required to be inspected:
 - Soil stockpiles;
 - Excavation voids;
 - Erosion and sediment control measures;
 - Drainage lines;
 - Surface water levels and conditions; and
 - Dust and odour levels.

Photographs are required to be taken, as required, as a record of Site conditions and the location of the area depicted in the photographs shall be identified on a site map. The photographs will be retained on the Site file for reference. Sampling of soil, fill and water will be undertaken by an appropriately qualified Environmental Professional, as required.

6.4 Reinstatement

Any area that is disturbed as part of the works will be reinstated with similar material, to minimise exposure to underlying fill.

Any excavated soil not used at the Site will need to be sampled and analysed (by a suitably qualified Environmental Professional) to be classified and disposed to an appropriately licensed landfill in accordance with NSW DECC (2008) Waste Guidelines.

The Site Management and/or the Works Supervisor will keep detailed records of the works and relevant contamination issues.

Where practicable, areas of hardstand and grassed and/or gravel surfaces in unpaved areas of the site must be retained and maintained, to minimise direct access to underlying soil and groundwater.

6.5 Use of Groundwater

The Site is located in an industrial area and serviced by reticulated, potable water, therefore groundwater is unlikely to be used for potable uses in the vicinity of the Site. Groundwater must not be extracted from Site for potable or irrigation use and may only be used for industrial purposes, subject to appropriate approvals.

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7.0 Environmental Management Plan

7.1 Introduction

The purpose of this Site-specific Environmental Management Plan (EMP) is to ensure that environmental risks are properly managed during subsurface/intrusive works at the Site. In general, best practice procedures will be followed throughout any subsurface/intrusive works to protect the environment within and around the Site and include:

- Surface water management.
- Soil management.
- Groundwater management.
- Traffic and access.
- Protection of vegetation.
- Odour control measures.
- Dust control measures.
- Noise and vibration control measures.
- Equipment cleaning and operation.

7.2 Water Management Plan

The Site Management and/or Works Supervisor shall implement a soil and water management plan or erosion and sediment control plan in accordance with *Managing Urban Stormwater - Soils and Construction* (DOH, 2004). At a minimum, the following stormwater controls must be implemented:

- Run-off from excavated fill or soil stockpile surfaces will not be allowed to enter stormwater. In the event that run off may occur, such run-off will be prevented to enter stormwater by either covering the excavated material or containing any run-off on-site for appropriate treatment in a collection system (if required) prior to reuse or disposal. Prior to any discharge to sewer or stormwater, a license will be obtained from the relevant authority.
- Measures as outlined in the Soil Management Plan (below in **Section 7.3**) should be included to minimise the sediment load if a run-off event is likely to enter the stormwater collection system.
- Under no circumstances shall any activities (including run-off or dewatering procedures) be undertaken which may involve a threat of pollution to any nearby water body, particularly to the Southern Arm of the Hunter River.
- All pollution control devices shall be regularly maintained.
- Run-off detention basins shall be used if a large volume of water is to be used during construction works. These basins should be constructed in the downslope areas of the work area in accordance with DOH (2004).

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7.3 Soil Management Plan

Sediment control measures (i.e. silt fencing and/or hay bales) in accordance with DOH (2004) will be strategically placed at the following locations:

- Up-slope of stockpiles to redirect water.
- Down-slope of stockpiles and slopes.
- Up-slope side of the stormwater collection channels.
- Around temporary stockpiles.
- Down-gradient of stormwater channels as contingency against overflow.

Should stockpiling of imported fill materials be required, they will be placed in an area designated by the Works Supervisor. The imported fill stockpiling area will be prepared by removing rubbish, rubble and vegetation, then by trimming and grading so that any depressions or mounds are removed. Imported fill stockpiles will be numbered and logged in the materials tracking forms for identification, and must be certified as meeting the landuse criteria for commercial / industrial landuse prior to use on-site.

Spoil resulting from any disturbance of the subsurface (e.g. excavations, drilling, piling activities or similar) must be stockpiled on hardstand surface and bunded surface, separate to other soil stockpiles. All subsurface disturbance activities must be undertaken with the involvement of an appropriately qualified Environmental Professional, responsible for the sampling and analysis of the resulting spoil.

7.4 Traffic and Access

All heavy vehicle access and egress must follow a designated heavy vehicle route specified by the Works Supervisor, which complies with local Council requirements. As a minimum, the following traffic control measures will be implemented:

- All streets along the designated heavy vehicle route will be kept free from detritus material sourced from the Site during the course of the project. A representative of the contractor will, on a daily basis, monitor the roadways leading to and from the Site, and take steps to clean any adversely impacted pavements.
- Vehicles travelling along the designated heavy vehicle route shall adhere to the RTA speed limits.

Where necessary, fencing will be erected around the defined work area and appropriate signage will be put in place. Only authorised personnel are to enter the work area and written approval to proceed with the work from the Site Management is required. All personnel working in the work area will be required to sign an attendance register.

7.5 Odour Control

Given that the key contaminant of concern is manganese, it is unlikely that odours will be generated from excavations. There is the potential for isolated hot spots of organic contamination to be encountered which may generate odours. However, all activities conducted at the Site will be conducted using equipment designed and operated to control the emission of smoke, fumes and vapour into the atmosphere. Any possible odours arising from the excavation or stockpiled material are to be controlled, including odours in deep excavations. Control measures may include:

- Maintenance of construction equipment so that exhaust emissions comply with the Clean Air Regulations issued under the Protection of the Environment Operations Act.

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- Use of appropriate vapour ventilation equipment.
- Cleared vegetation, demolition materials and other combustible waste will not be burned onsite.
- Use of covers (i.e. HDPE) or water/odour suppressant sprays.

All practicable measures will be taken to ensure that fugitive emissions emanating from the Site are minimised so that associated odours do not constitute a nuisance and that the ambient air quality is not adversely impacted.

7.6 Dust Control Measures

All practicable measures will be taken to ensure that dust emanating from the Site is restricted / minimised, including the following:

- Use of water sprays over unsealed or bare surfaces, which have the potential to generate unacceptable amounts of dust.
- Covering of excavation faces and stockpiles, where necessary (if unacceptable amounts of dust are generated or if strong winds are predicted or occur).
- Establishing dust screens consisting of a minimum of 2 metre high shade cloth or similar material secured to a chain wire fence.
- Maintenance of all dust control measures to ensure good operating condition.
- All vehicles having accessed unpaved or contaminated areas of the Site shall exit via wheel cleaning facility (refer to **Section 7.8**) to prevent mud and sediment from being deposited on Council roadways.

7.7 Noise and Vibration Control

The noise and vibration associated with construction will be controlled by the following means:

- Ensuring that no vehicles, machinery or equipment generate noise levels beyond applicable guidelines.
- Approved silencing measures shall be provided and maintained on all power-operated plant used in construction works.
- Restricting the activities generating high noise and vibration levels to Council's sanctioned working hours.
- All construction vehicles will enter and leave the Site in accordance with the Site entry requirements.
- Use of suitable construction techniques.

All practicable measures will be taken to minimise the generation of noise and vibrations to acceptable levels. In the event that short-term noisy operations are necessary, and where these are likely to affect on-site workers and neighbours, notification will be provided to the Site Owner and neighbours, specifying the expected timing and duration, and monitoring will be undertaken at the direction of the Site Owner/Occupier and/or its representative.

7.8 Vehicle/Equipment Cleaning and Operation

The following controls will be placed on operation and movement of equipment:

- Equipment working within an excavation area will be washed inside the area. Wash water will run into the excavation. The wash water will be allowed to evaporate / infiltrate.
- The surface of internal access roads carrying vehicular traffic will be kept clean;
- All equipment will be operated by suitably qualified operators.
- All equipment will be maintained at optimum operating conditions and any servicing of equipment will be undertaken in areas specified by the Works Supervisor. It is recommended that such activities be undertaken on concrete or bitumen surfaces to prevent impact to surface soils by oils, fuels or cleaning agents.
- Any fuel stored onsite will be held in an area designated by the Works Supervisor. The area will be appropriately bunded to contain any potential spillages and/or leaks.
- Vehicles carrying spoil or rubble from the Site must at all times be covered with an “enviro-tarp” or similar impervious cover to prevent the escape of dust or other material.
- A log of all trucks removing soil from the Site or importing soil to the Site will be kept in a Truck Log book.
- All heavy vehicle access and egress to and from the Site shall be via the route designated by the Works Supervisor.
- The wheels and wheel arches of all vehicles having had access to unpaved areas will be cleaned by the use of a broom or water spray to prevent mud and sediment from being deposited on Council roadways.
- After wheel and wheel arch cleaning, vehicles shall be inspected for the presence of rocks between tyres and sediment within the undercarriage of the vehicle. If detected, this shall be removed and placed at a designated point within the Site.

7.9 Materials Management

To ensure that no inappropriate disposal and/or reuse of stockpiled material occurs the following management controls will be used:

- All stockpiles will be sign posted as to their source location and uniquely numbered and recorded.
- A field sketch of stockpiles will be recorded in the field log/site diary at the end of each day.

No material will be reused on Site or taken offsite without first obtaining approval from the Site Management and/or Works supervisor. The Site will be secured at night to prevent the potential for any illegal dumping.

All material handled on the site (including imported fill) will be tracked by the use of the Materials Tracking Register (**Appendix D**) and location drawn on field logs or diary.

7.10 Waste Management and Minimisation

Waste minimisation and recycling practices and programmes will be employed to meet the requirements of the NSW DECC. The aim will be to:

- Minimise products used.
- Maximise the use of recycled materials, maximise recycling (paper, PET, glass, plastics, etc.).
- Reduce waste generation (litter/garbage).

The waste management hierarchy (in order of preference) in accordance with Waste Avoidance and Resource Recovery Act (2001) will be:

- Avoid.
- Reduce.
- Reuse/recycle.
- Treat.
- Dispose.

Containers will be made available on Site by the Works Supervisor to allow segregation of the above materials, if practical, and necessary.

Waste management activities related to the works shall be undertaken in accordance with any relevant Councils Waste Development Control Plans.

All waste materials resulting from works should be inspected by the Works Supervisor and/or a suitably qualified Environmental Professional prior to disposal or reuse. The inspection will evaluate whether the material is contaminated (visually or through testing).

Should asbestos be encountered, asbestos materials management during removal of asbestos from buildings shall be undertaken in accordance with relevant legislation and WorkCover guidance, and by using appropriately licensed contractors.

All waste disposal activities should be undertaken in accordance with the NSW DECC (2008) Waste Guidelines.

All waste management activities should be undertaken with the involvement of an appropriately qualified Environmental Professional.

7.11 Material Safety Data Sheets (MSDS)

Material Safety Data Sheets (MSDS) for chemicals/materials on the Site and for chemicals/materials brought to the Site for use during works associated with construction will be kept by Site Management and/or Works Supervisor. These will be referred to by Operational Staff and/or contractors as required.

7.12 Community Consultation

Any consultation with surrounding landowners and occupants of the nearby properties will be undertaken by the Site Owner and/or Site Management.

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8.0 Emergency Response

In the event of any incident, the first priority shall be the safety of all personnel and the community in the immediate vicinity. Following this, all practical steps should be taken to minimise the risk of further environmental damage as soon as possible after the event. The situation should be stabilised following the appropriate incident management or contingency plan procedures. The appropriate staff should be notified and emergency procedures enacted.

Typical first response actions may include:

- Containment of any pollution using booms, silt fences, absorbents, bunding or interception pits.
- Temporary repair or isolation of failed plant/equipment component.
- Sampling of impacted Site media, be it soil and/or surface water.

Follow up action will include the development of a work plan to remediate the impacted Site media. Such a work plan would detail any sampling and analysis requirements to define the nature and extent of impact, methods for the recovery, handling, storage and treatment of impacted material, disposal and/or reuse options for impacted material and personal protective equipment requirements.

In the event of a serious emergency at the Site, the following procedure will be followed:

- 1 Stop work.
- 2 All personnel shall leave the work zone via established entry/exit routes.
- 3 Leave the Site and assemble at the emergency assembly area (to be designated by Site Management).
- 4 Await further instructions from Site Management.

No project personnel or visitors are to leave the assembly area unless advised to do so by Site Management.

The on-Site manager will notify the relevant services as to the details regarding any emergency:

- Fire Brigade (phone: 000)
- Ambulance (phone: 000)
- Police (phone: 000)
- NSW DECC
- Council
- Other service providers (Telstra, etc)

Records will be kept of any incidents, accidents, hazardous situations, unusual events and unsafe health exposures and the corrective action taken. The Site Management will investigate the cause of any emergency so that necessary changes in work practices can be made to prevent the incident recurring.

Emergency procedures and contact telephone numbers are required to be displayed in a prominent position during Site works by the Works Supervisor.

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9.0 General Health and Safety

9.1 Introduction

A Site Specific Safety Plan has not been developed for the Site. However, the following general OH&S requirements of the Occupational Health and Safety Regulation 2001 under the Occupational Health and Safety Act 2000 should be followed:

- Evaluation of onsite hazards and potential risks associated with these hazards.
- Particular risk control measures (including provisions regarding lighting, noise, atmosphere, electricity, confined spaces and manual handling).
- Definition of personal protection standards.
- Classification of onsite personnel and work zones.
- Details on work practices and restrictions, assessment of anticipated protection levels, controls on access to work zones and decontamination.
- The use of plant at places of work.
- Supervision of work practices and medical surveillance.
- The notification of accidents and other matters.
- Environmental monitoring protocols.
- Emergency information.
- Risk assessment methods.

9.2 General

All workers and visitors to the work area must attend the Health and Safety Induction before entry to the work area is allowed.

9.3 Personal Protective Equipment

At a minimum, the following PPE will be worn by all Site personnel working in areas of surface soil/pavement disturbance: long trousers and long sleeved shirt or overalls, steel toe capped boots, hard hat, latex gloves and safety glasses. The Works Supervisor should ensure that face masks are available and worn during excavation and manual handling soils, if dusty conditions develop. PPE must meet the requirements of Australian Standards.

9.4 Potential Hazards and Prevention

In addition to the regulatory OH&S requirements, the following prevention practices will be employed (as a minimum) for the Site during times of subsurface disturbance activities as listed in **Section 3.2**.

Table 3: Potential Hazards and Prevention

Hazard	Prevention
Dermal Contact - Contaminated soil and groundwater (perched) coming into contact with skin.	Personal protective equipment as defined in Section 9.3 will include long trousers and long sleeved shirt or overalls, steel toe capped boots, hard hat, latex gloves and safety glasses shall be provided for the duties of each on-site individual.
Dust inhalation / ingestion – there is the potential for exposure to contaminants (particularly manganese) via inhalation as a result of dust creation during any excavation works.	<ul style="list-style-type: none"> • Dust Prevention <ul style="list-style-type: none"> ○ Use of water sprays over unsealed or bare surfaces, which have the potential to generate dust. ○ Covering of excavation faces and stockpiles, where necessary. ○ Establishing dust screens consisting of a minimum of 2 metre high shade cloth or similar material secured to a chain wire fence, where necessary. ○ Maintenance of all dust control measures to ensure good operating condition. • Dust masks will be made available and worn on Site by all Site personnel in the work area during excavation and ground disturbance activities, and at other times when dusty conditions are visible. • No eating, drinking or smoking is to occur in the work area. • No eating, drinking or smoking is to occur outside the work area until all PPE has been removed and appropriate personal decontamination (i.e. hand and face washing) has occurred.

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10.0 Contingency Plans

10.1 Introduction

The purpose of the contingency plan is to identify unexpected situations that could occur, and specify procedures that can be implemented to manage such situations and prevent adverse impacts to the environment and human health.

Site Management and/or Works Supervisor will be notified of any incidents and/or complaints, depending on the severity of the incident, other government agencies including the NSW DECC may be notified. The Site Management and/or Works Supervisor will be able to request that works cease, if unacceptable conditions arise.

Details of the procedures are defined in the following sections.

10.2 Disturbance of the Surface

In the event that any surface (i.e. barrier to materials that may be contaminated, comprising floor slabs, pavements, grassed areas and/or gravel surfaces) is disturbed, the surface will be reinstated as soon as practicable with similar material to minimise exposure to fill materials that remain on the site. Where practicable, current areas of hardstand should be maintained to minimise the amount of infiltration through underlying fill and into perched and shallow groundwater.

10.3 Dust Generation

Where possible, all subsurface works will be undertaken in such a manner as to reduce / restrict dust generation at the Site. All works that generate dust will require all personnel in the work area to wear a dust mask in addition to PPE set out in **Sections 9.3 and 9.4**. In the event that prevention of significant quantities of dust is not possible, all works will stop until dusty conditions cease, or until alternative measures are put in place (e.g. covering over of stockpiles, water spray over the work area, etc).

10.4 Potential Acid Sulfate Soils

Given the significant thickness of fill materials underlying the Site, the potential for acid sulfate soils is not considered to be an issue at the Site.

10.5 Uncover Contaminated or Unknown Materials

In the event that any significant unknown type of material (including contaminated material) is identified during future subsurface/intrusive works, the material will be inspected by the Works Supervisor and a suitably qualified Environmental Professional. Any action required will be coordinated by the Works Supervisor, with advice from the Environmental Professional, and records must be kept in relation to the nature, location and management of the particular material.

10.6 Encountering Groundwater

In the event that groundwater is encountered during subsurface works, advice from a suitably qualified Environmental Professional should be sought for appropriate assessment, and potential off-Site disposal via a licensed contractor. PPE, as defined in **Section 9.3** is required to be worn. Assessment of groundwater may include:

- Estimation of volumes of water present.
- Collection of water samples for laboratory analysis.

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- Following receipt of laboratory data, assessment of appropriate water disposal options.

10.7 Spills and Leaks

Plant and vehicles used during future redevelopment works will be stored, refuelled and maintained in a designated section of the Site. Spill response procedures shall be made available to all employees and covered during induction training.

If spills or leaks of hydraulic fluids, lubricants or fuel from vehicles/plant occurs in the work areas, the following measures will be considered for use as appropriate:

- Treatment with an absorbent material specifically designed for such situations.
- Construction of retention basins, diversion drains.

10.8 Excessive Rain

During major rain events, significant earthworks shall cease. Sediment control measures and bunding will be regularly inspected and maintained. The frequency of the sediment control monitoring will be increased during heavy rain events.

10.9 Equipment Failure

In the event that any equipment fails, equipment and associated operations will be shut down until repairs are made. The Works Supervisor and equipment operator should ensure that spare equipment parts and/or rental options are available as appropriate.

10.10 Surface Water Protection Measures Fail

In the event that any surface water protection measures (i.e. bunding, hay bails, etc) fail, the Site Management and/or Works Supervisor should ensure that they are repaired and/or supplemented immediately.

11.0 SMP Record Keeping

The following internal record keeping will be undertaken, independent of any external reporting requirements of the Environment Protection Licence (EPL) that the Site Management is required to undertake.

Non-conformances (relating to the SMP) reported to Site Management and/or Works Supervisor will be recorded in a Non-Conformance and Corrective Action Report. A copy of the Non-Conformance Report is provided in **Appendix E**. Details of the non-conformance, including any immediate corrective actions undertaken, are to be recorded by Site Management and/or Works Supervisor.

It is the responsibility of Site Management and/or Works Supervisor to immediately initiate corrective actions, if required. Once completed, the Site Management and/or Works Supervisor will provide details of the actions undertaken on the Non-conformance Report and sign, date and place the report in the Site. The Site Management and/or Works Supervisor will monitor feedback and response to prevent future occurrences.

Records will be kept of any environmental incidents, accidents, hazardous situations, unusual events and unsafe health exposures and the corrective action taken. A representative of Site Management will investigate the cause of any emergency so that necessary changes in work practices can be made to prevent the incident recurring.

Site Management will be required to maintain a register of complaints from local neighbours, which will include a record of any action taken with respect to the complaints. Site Management will be notified immediately should any incident affecting the environment or the surrounding community occur.

Details of the complaint are to be documented by Site Management in the Site's Complaints Register in **Appendix F**.

If a complaint identifies a non-conformance, a Non-Conformance and Corrective Action report is to be initiated **Appendix E**.

All subsurface/intrusive works undertaken are to be logged on the Intrusive Works Register in **Appendix G**, which should detail dates and duration of all subsurface/intrusive works, with observation relating to surface conditions, subsurface conditions (i.e. observed contamination) and comments relating to reinstatement activities. Compliance with the SMP should also be noted.

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12.0 SMP Auditing

Site Management (with the Works Supervisor) shall conduct weekly (or other appropriate schedule, depending on the work being undertaken) audits of any subsurface/intrusive works. These will involve reviewing all environmental documents, records and monitoring results to ensure compliance with the requirements of the SMP and conditions of any regulatory approvals. If any deficiency is detected, the Site Management and/or Works Supervisor shall initiate a Non-Conformance Report and initiate the appropriate corrective action. The Site Owner will be informed of any non-conformances. Other issues to be covered by the audit may include, but not be limited to, the following:

- Relevant environmental legislation;
- Reporting procedures;
- Complaint management;
- General Site issues;
- Traffic and access;
- Noise and vibration;
- Water quality, erosion and sedimentation;
- Air quality and dust;
- Hazards, risks and safety;
- Waste disposal and recycling; and
- Emergency response procedures.

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Tables - from ENSR (2008)c

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Environment

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Environment

Table T2: Soil Results - Inorganics

Analyte	Units	LOR	NEPM HIL F	TP01_0.2	TP01_1.0	TP02_0.2	TP02_1.0	TP03_0.2	TP03_1.3	TP04_0.2	TP04_0.9	TP05_0.5	TP05_2.1	TP06_0.5	TP07_0.5	TP07_2.0	TP08_0.2	DUP02-TP
				27-June-2008	27-June-2008	27-June-2008	27-June-2008	27-June-2008	27-June-2008	27-June-2008	27-June-2008	04-July-2008	07-July-2008	30-June-2008	01-July-2008	01-July-2008	27-June-2008	27-June-2008
pH (Lab)	pH_Units	0.1	NV	13.1	13.8	11.5	12.6	11.6	12.5	11.4	13.8	13	12.5	13.3	13.5	13.5	11.2	10.9
Sulphate	mg/kg	100	NV	1,470	2,830	1,640	1,650	1,620	1,490	1,810	3,330	2,430	6,210	4,240	3,230	2,720	1,550	1,760
Total Sulphur	%	0.01	NV	0.1	0.13	0.15	0.13	0.14	0.14	0.12	0.13	0.68	0.12	0.19	0.15	0.16	0.12	0.16
Sulphide as S	%	0.01	NV	0.05	0.04	0.1	0.08	0.08	0.09	0.06	0.02	0.47	0.04	0.05	0.04	0.07	0.07	0.1
Aluminium	mg/kg	50	NV	1,980	4,130	13,000	7,070	17,100	6,220	13,300	11,900	6,310	54,900	3,900	7,170	8,020	18,600	12,100
Arsenic	mg/kg	5	500	10	6	28	11	34	9	20	7	8	<5	6	5	7	16	9
Barium	mg/kg	10	NV	100	140	2,780	170	2,520	300	4,870	200	320	410	80	140	130	1,920	900
Cadmium	mg/kg	1	100	2	<1	1	2	<1	1	<1	<1	2	<1	2	1	1	1	<1
Chromium (total)	mg/kg	2	NV	330	464	1070	316	146	280	177	466	455	53	513	507	414	126	417
Cobalt	mg/kg	2	500	4	2	26	9	29	5	27	2	<2	<2	<2	<2	<2	12	9
Copper	mg/kg	5	5,000	61	44	82	121	113	30	29	42	41	8	40	44	43	51	35
Iron	mg/kg	50	NV	170,000	104,000	79,800	89,400	38,300	92,000	40,700	110,000	90,900	25,200	118,000	109,000	125,000	54,600	66,600
Lead	mg/kg	5	1,500	107	56	59	2,310	39	89	86	37	89	8	18	53	57	83	50
Manganese	mg/kg	5	7,500	24,200	31,400	132,000	16,200	163,000	21,400	180,000	25,700	32,400	5,890	31,000	25,000	25,000	156,000	80,000
Mercury	mg/kg	0.1	75	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Molybdenum	mg/kg	2	NV	3	3	19	39	12	10	11	3	4	<2	<2	2	5	7	4
Zinc	mg/kg	5	35,000	242	148	624	1720	111	112	154	80	244	29	50	132	268	213	152

Notes

TP06 Soil Sample Location
 TP06_0.5 Sample Identity
 30/06/2008 Date Sample Collected
1,100 Indicates Exceedence of Assessment
 LOR Laboratory Limit of Reporting
 nv No value exists
 NEPM HIL F National Environment Protection
 RPD % Relative percentage difference, used
 Dup1 (BH59_0.1- It is noted that this sample was a
 0.2) duplicate of BH59_0.1-0.2, however,
 Where a duplicate is reported, it is a duplicate of the
 preceding sample (i.e. Dup02-TP is a duplicate of
 TP08_0.2)

Table T2: Soil Results - Inorganics

Analyte	Units	LOR	NEPM HIL F	TP08_0.8	BH9_0.1-0.2	BH9_0.9-1.0	TP10_0.5	DUP05-TP	TP10_1.4	TP11_0.1	TP11_0.5	TP11_1.4	TP12_0.5	TP13_0.1	TP13_0.5	TP14_0.1	TP14_1.8	BH16_0.2-0.3
				27-June-2008	03-July-2008	03-July-2008	30-June-2008	30-June-2008	30-June-2008	02-July-2008	02-July-2008	02-July-2008	30-June-2008	30-June-2008	30-June-2008	02-July-2008	02-July-2008	14-July-2008
pH (Lab)	pH_Units	0.1	NV	13.6	12.4	12.3	12.7	13.3	12.8	11	12	12.9	12.7	10.4	12.3	8.8	12.7	11.7
Sulphate	mg/kg	100	NV	2,760	6,100	4,290	3,410	2,290	2,190	3,570	3,290	6,080	890	2100	1490	2,040	2,900	3,930
Total Sulphur	%	0.01	NV	0.14	0.22	0.6	0.11	0.14	0.15	0.13	0.18	0.38	0.1	0.13	0.06	0.13	0.12	0.18
Sulphide as S	%	0.01	NV	0.05	0.02	0.46	<0.01	0.06	0.08	0.01	0.07	0.18	0.07	0.06	0.01	0.06	0.02	0.05
Aluminium	mg/kg	50	NV	4,340	41,900	54,400	4,190	3,820	4,020	15,800	23,600	17,200	4,830	12,200	3,870	17,600	9,780	16,400
Arsenic	mg/kg	5	500	8	7	<5	8	6	10	8	10	8	6	22	5	<5	6	8
Barium	mg/kg	10	NV	120	830	460	130	140	140	720	430	280	100	970	170	190	90	250
Cadmium	mg/kg	1	100	1	<1	<1	2	2	2	<1	1	1	1	<1	<1	<1	1	1
Chromium (total)	mg/kg	2	NV	476	221	160	407	461	390	525	267	412	376	300	355	167	271	265
Cobalt	mg/kg	2	500	<2	4	<2	<2	<2	3	12	4	2	<2	38	<2	4	<2	4
Copper	mg/kg	5	5,000	30	5	15	35	36	60	336	74	62	46	1780	63	40	37	76
Iron	mg/kg	50	NV	153,000	29,900	22,600	143,000	122,000	151,000	74,400	72,500	99,000	106,000	54,100	59,100	24,600	97,400	62,800
Lead	mg/kg	5	1,500	18	14	7	23	22	52	40	68	65	104	50	74	27	111	261
Manganese	mg/kg	5	7,500	28,100	26,700	12,100	26,900	29,500	25,600	30,000	20200	24,900	19,400	130,000	19,600	10,600	16,300	19000
Mercury	mg/kg	0.1	75	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	0.3	0.3
Molybdenum	mg/kg	2	NV	3	3	<2	2	3	2	10	<2	3	24	14	4	<2	<2	5
Zinc	mg/kg	5	35,000	84	22	15	62	44	175	305	572	311	277	222	116	125	222	630

Notes

TP06 Soil Sample Location
 TP06_0.5 Sample Identity
 30/06/2008 Date Sample Collected
 1,100 Indicates Exceedence of Assessment
 LOR Laboratory Limit of Reporting
 nv No value exists
 NEPM HIL F National Environment Protection
 RPD % Relative percentage difference, used
 Dup1 (BH59_0.1-0.2) It is noted that this sample was a duplicate of BH59_0.1-0.2, however, Where a duplicate is reported, it is a duplicate of the preceding sample (i.e. Dup02-TP is a duplicate of TP08_0.2)

Table T2: Soil Results - Inorganics

Analyte	Units	LOR	NEPM HIL F	BH16_0.4-0.5 14-July-2008	DUP17 14-July-2008	BH17_0.2-0.3 14-July-2008	BH17_1.9-2.0 14-July-2008	TP18_0.5 30-June-2008	TP18_1.0 30-June-2008	BH19_0.1-0.2 26-June-2008	BH20_0.1-0.2 30-June-2008	BH20_1.9-2.0 30-June-2008	BH21_0.2-0.3 15-July-2008	BH21_1.9-2.0 15-July-2008	TP22_0.1 02-July-2008	TP22_1.3 02-July-2008	BH22_3.4-3.5 15-July-2008	DUP20 15-July-2008
pH (Lab)	pH_Units	0.1	NV	12.1	12.3	9.7	10.6	12.5	12.4	10.6	5.8	11.4	12.1	12.1	13.2	12.8	10.5	11
Sulphate	mg/kg	100	NV	3,620	3,380	890	430	3,470	1,980	<100	6,080	1050	3,250	2,260	4,210	5040	950	220
Total Sulphur	%	0.01	NV	0.22	0.2	0.17	0.36	0.22	0.48	0.01	0.23	0.44	0.22	0.12	0.11	0.6	0.26	0.3
Sulphide as S	%	0.01	NV	0.1	0.09	0.14	0.34	0.1	0.41	0.01	0.03	0.4	0.11	0.04	<0.01	0.43	0.23	0.29
Aluminium	mg/kg	50	NV	13,100	14,400	9,110	10,700	10,300	63,100	4,980	6,010	28,300	15,200	9,050	9,080	14,300	4,860	4,180
Arsenic	mg/kg	5	500	8	7	30	10	7	<5	<5	<5	12	6	7	<5	<5	15	20
Barium	mg/kg	10	NV	230	210	2,550	240	160	630	20	110	360	320	200	160	270	210	280
Cadmium	mg/kg	1	100	1	<1	<1	<1	1	<1	<1	<1	<1	1	1	2	<1	<1	<1
Chromium (total)	mg/kg	2	NV	377	385	560	98	382	125	9	25	108	513	266	623	320	5	19
Cobalt	mg/kg	2	500	5	4	77	<2	<2	<2	4	5	6	7	2	<2	<2	3	3
Copper	mg/kg	5	5,000	60	58	62	24	52	13	7	14	138	32	40	70	53	19	31
Iron	mg/kg	50	NV	102,000	83,100	56,300	67,600	119,000	26,100	14,200	15,600	51,300	97,700	108,000	110,000	73,200	15,700	56,600
Lead	mg/kg	5	1,500	212	180	40	125	258	31	7	9	137	36	111	24	293	145	1100
Manganese	mg/kg	5	7,500	24,900	24,400	154,000	7,110	29,400	12,000	845	6,630	5,100	33,600	17,800	23,300	17,900	465	1170
Mercury	mg/kg	0.1	75	0.2	0.1	0.1	0.2	<0.1	<0.1	<0.1	<0.1	0.3	<0.1	0.1	<0.1	<0.1	0.2	0.1
Molybdenum	mg/kg	2	NV	4	5	15	<2	2	<2	<2	6	<2	4	3	3	2	<2	<2
Zinc	mg/kg	5	35,000	452	366	118	175	162	64	40	44	1,100	93	908	135	158	75	96

Notes

TP06 Soil Sample Location
 TP06_0.5 Sample Identity
 30/06/2008 Date Sample Collected
1,100 Indicates Exceedence of Assessment
 LOR Laboratory Limit of Reporting
 nv No value exists
 NEPM HIL F National Environment Protection
 RPD % Relative percentage difference, used
 Dup1 (BH59_0.1-0.2) It is noted that this sample was a duplicate of BH59_0.1-0.2, however,
 Where a duplicate is reported, it is a duplicate of the preceding sample (i.e. Dup02-TP is a duplicate of TP08_0.2)

Table T2: Soil Results - Inorganics

Analyte	Units	LOR	NEPM HIL F	BH22_5.4-5.5 15-July-2008	BH23_0.1-0.2 07-July-2008	DUP 11 07-July-2008	BH23_1.9-2.0 07-July-2008	BH23_5.9-6.0 07-July-2008	BH24_1.4-1.5 15-July-2008	TP24-0.1 04-July-2008	TP24-0.5 04-July-2008	TP25-0.1 04-July-2008	TP25-0.4 04-July-2008	TP26-0.1 03-July-2008	TP26-1.3 03-July-2008	TP27-0.5 03-July-2008	TP27-1.5 03-July-2008	TP28-0.5 03-July-2008
pH (Lab)	pH_Units	0.1	NV	11.1	11.9	12.2	12.5	11.6	13.1	11	11.7	11	11.9	11.3	11.4	12.1	12.8	12
Sulphate	mg/kg	100	NV	170	3060	2670	8,110	<100	3,190	3,570	4,020	3,020	1,940	2,140	1,660	4,590	3,570	9,480
Total Sulphur	%	0.01	NV	0.27	0.17	0.19	0.47	0.18	0.22	0.15	0.25	0.16	0.14	0.12	0.13	0.47	0.16	0.38
Sulphide as S	%	0.01	NV	0.26	0.07	0.1	0.2	0.18	0.11	0.03	0.12	0.06	0.08	0.05	0.07	0.32	0.04	0.06
Aluminium	mg/kg	50	NV	4,060	35,800	44600	19,500	4,700	14,800	27,400	11,100	14,000	13,400	16,600	14,600	9,230	5,620	8,930
Arsenic	mg/kg	5	500	13	<5	<5	6	18	7	6	5	<5	<5	<5	<5	<5	<5	7
Barium	mg/kg	10	NV	160	370	360	230	230	260	520	240	200	240	380	200	130	80	180
Cadmium	mg/kg	1	100	<1	<1	<1	1	<1	1	6	1	<1	1	1	<1	4	1	2
Chromium (total)	mg/kg	2	NV	4	78	65	177	4	458	1,290	908	272	765	1,410	1,030	42	380	266
Cobalt	mg/kg	2	500	6	14	<2	5	3	<2	<2	<2	<2	<2	<2	17	<2	<2	3
Copper	mg/kg	5	5,000	17	106	46	1160	18	48	281	113	83	98	364	30	36	28	70
Iron	mg/kg	50	NV	19,600	15,900	12,100	54,800	20,500	105,000	83,300	82,500	15,500	71,300	76,500	44,300	22,300	85,600	68,900
Lead	mg/kg	5	1,500	122	26	11	3,790	40	74	46	49	15	77	27	48	183	115	83
Manganese	mg/kg	5	7,500	469	11,200	9,460	7,970	465	35,600	76,100	21,200	10,200	24,200	18,100	10,500	3,260	25,900	38,200
Mercury	mg/kg	0.1	75	0.1	<0.1	<0.1	0.2	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	0.2
Molybdenum	mg/kg	2	NV	<2	<2	<2	8	<2	3	9	6	<2	2	9	<2	<2	4	<2
Zinc	mg/kg	5	35,000	48	230	63	782	64	200	1320	276	78	143	224	170	186	130	356

Notes

TP06 Soil Sample Location
 TP06_0.5 Sample Identity
 30/06/2008 Date Sample Collected
1,100 Indicates Exceedence of Assessment
LOR Laboratory Limit of Reporting
 nv No value exists
 NEPM HIL F National Environment Protection
 RPD % Relative percentage difference, used
 Dup1 (BH59_0.1-0.2) It is noted that this sample was a duplicate of BH59_0.1-0.2, however, Where a duplicate is reported, it is a duplicate of the preceding sample (i.e. Dup02-TP is a duplicate of TP08_0.2)

Table T2: Soil Results - Inorganics

Analyte	Units	LOR	NEPM HIL F	TP28-1.3	TP29-0.1	BH30_0.1-0.2	BH30_0.9-1.0	TP31-0.25	BH32_0.1-0.2	BH32_0.9-1.0	TP33-0.1	TP33-0.5	TP33-1.8	BH34_0.1-0.2	BH34_1.9-2.0	BH35_0.1-0.2	BH35_0.9-1.0
				03-July-2008	03-July-2008	15-July-2008	15-July-2008	04-July-2008	15-July-2008	15-July-2008	04-July-2008	04-July-2008	07-July-2008	15-July-2008	15-July-2008	02-July-2008	02-July-2008
pH (Lab)	pH_Units	0.1	NV	12.4	11.8	12.3	11.5	11.9	13.1	12.2	10.6	12.1	13.2	12.8	11.8	12.3	12.9
Sulphate	mg/kg	100	NV	3,310	1,600	6,490	2,070	3,920	2,130	3,510	2,400	4,540	4,640	2,070	2,520	2,710	2,750
Total Sulphur	%	0.01	NV	0.2	0.09	0.36	0.35	0.22	0.13	0.38	0.12	0.19	0.21	0.24	0.29	0.31	0.19
Sulphide as S	%	0.01	NV	0.09	0.04	0.14	0.28	0.09	0.06	0.26	0.04	0.04	0.06	0.17	0.21	0.22	0.1
Aluminium	mg/kg	50	NV	6,520	5,750	59,800	40,400	48,200	16,200	54,200	9,340	15,900	3,380	22,100	10,300	27,000	10,800
Arsenic	mg/kg	5	500	6	<5	<5	8	<5	6	5	5	<5	<5	<5	6	7	11
Barium	mg/kg	10	NV	100	40	540	510	690	260	650	300	230	80	270	160	400	360
Cadmium	mg/kg	1	100	1	<1	<1	<1	<1	1	<1	2	1	1	<1	1	<1	1
Chromium (total)	mg/kg	2	NV	285	8	26	240	78	486	198	798	402	402	534	447	205	426
Cobalt	mg/kg	2	500	3	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	6	3	3
Copper	mg/kg	5	5,000	39	9	<5	22	8	48	28	107	23	37	8	67	54	38
Iron	mg/kg	50	NV	90,000	6180	9,050	51,200	10,100	109,000	48,800	77,400	71,800	79,400	88,800	75,800	93,000	78,500
Lead	mg/kg	5	1,500	76	12	8	49	13	24	33	38	58	41	6	104	288	322
Manganese	mg/kg	5	7,500	22,200	796	5,650	18,100	31,200	32,300	19,500	66,000	20,600	25,000	19,200	22,600	33,100	33,300
Mercury	mg/kg	0.1	75	<0.1	<0.1	<0.1	0.1	<0.1	0.1	<0.1	<0.1	<0.1	0.3	<0.1	1.5	<0.1	0.1
Molybdenum	mg/kg	2	NV	<2	<2	<2	<2	<2	2	<2	8	<2	<2	4	2	3	2
Zinc	mg/kg	5	35,000	159	53	30	100	55	85	122	359	180	109	<5	334	662	932

Notes

TP06 Soil Sample Location
 TP06_0.5 Sample Identity
 30/06/2008 Date Sample Collected
1,100 Indicates Exceedence of Assessment
 LOR Laboratory Limit of Reporting
 nv No value exists
 NEPM HIL F National Environment Protection
 RPD % Relative percentage difference, used
 Dup1 (BH59_0.1-0.2) It is noted that this sample was a duplicate of BH59_0.1-0.2, however,
 Where a duplicate is reported, it is a duplicate of the preceding sample (i.e. Dup02-TP is a duplicate of TP08_0.2)

Table T2: Soil Results - Inorganics

Analyte	Units	LOR	NEPM HIL F	TP36-0.1	DUP_TP2	TP36-0.9	TP37_1.0	TP37-2.0	BH38_0.2-0.3	BH38_0.4-0.5	TP39_0.2	TP39_0.7	BH40_0.1-0.2	BH40_0.4-0.5	DUP12	BH41_0.1-0.2	BH41_1.9-2.0	BH42_0.1-0.2
				04-July-2008	04-July-2008	04-July-2008	30-June-2008	07-July-2008	14-July-2008	14-July-2008	27-June-2008	27-June-2008	14-July-2008	14-July-2008	14-July-2008	26-June-2008	26-June-2008	14-July-2008
pH (Lab)	pH_Units	0.1	NV	11.5	11.6	12.1	10.8	11	12.5	12.2	12	13.2	10.6	12.4	12.5	10.8	12.6	11.8
Sulphate	mg/kg	100	NV	3,190	5,550	6,720	850	400	1,640	2,180	2,660	2,320	1,530	1,720	2,400	130	2,730	670
Total Sulphur	%	0.01	NV	0.26	0.26	0.47	0.09	0.2	0.12	0.13	0.24	0.12	0.09	0.13	0.17	0.02	0.17	0.03
Sulphide as S	%	0.01	NV	0.15	0.07	0.24	0.06	0.19	0.06	0.06	0.15	0.04	0.04	0.07	0.09	0.02	0.08	<0.01
Aluminium	mg/kg	50	NV	50,000	47,800	57,500	14,600	5,220	10,700	8,350	49,900	6,320	9,650	11,200	18,700	3,650	25,800	8,040
Arsenic	mg/kg	5	500	<5	<5	<5	12	44	7	5	<5	7	24	9	6	<5	<5	<5
Barium	mg/kg	10	NV	960	790	450	180	220	210	180	680	120	2,070	310	450	20	350	50
Cadmium	mg/kg	1	100	<1	<1	<1	2	<1	1	<1	<1	<1	1	1	<1	<1	<1	<1
Chromium (total)	mg/kg	2	NV	11	14	12	142	10	488	599	9	381	341	769	558	15	353	92
Cobalt	mg/kg	2	500	2	<2	<2	5	2	14	<2	3	5	32	12	11	4	<2	6
Copper	mg/kg	5	5,000	14	14	13	482	15	60	45	43	32	455	51	39	15	21	12
Iron	mg/kg	50	NV	4,960	5,230	3,690	56,400	16,100	105,000	99,000	7,030	108,000	47,000	116,000	72,800	11,200	81,000	28,400
Lead	mg/kg	5	1,500	10	9	28	647	46	107	74	13	110	102	66	73	9	19	24
Manganese	mg/kg	5	7,500	16,200	13,100	3,450	5,250	2,070	33,100	33,300	8,910	24,600	108,000	21,500	26,900	421	19,400	6,440
Mercury	mg/kg	0.1	75	<0.1	<0.1	<0.1	0.5	0.3	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Molybdenum	mg/kg	2	NV	2	<2	<2	18	<2	4	4	<2	4	9	4	7	4	<2	<2
Zinc	mg/kg	5	35,000	36	44	161	1,220	151	181	101	65	277	620	476	212	36	103	84

Notes

TP06 Soil Sample Location
 TP06_0.5 Sample Identity
 30/06/2008 Date Sample Collected
1,100 Indicates Exceedence of Assessment
 LOR Laboratory Limit of Reporting
 nv No value exists
 NEPM HIL F National Environment Protection
 RPD % Relative percentage difference, used
 Dup1 (BH59_0.1-0.2) It is noted that this sample was a duplicate of BH59_0.1-0.2, however,
 Where a duplicate is reported, it is a duplicate of the preceding sample (i.e. Dup02-TP is a duplicate of TP08_0.2)

Table T2: Soil Results - Inorganics

Analyte	Units	LOR	NEPM HIL F	BH42_0.9-1.0	DUP13	TP43_0.2	TP43_1.0	TP44_0.2	DUP04-TP	TP44_0.9	TP45_0.1	TP45_1.0	BH46_0.1-0.2	BH46_0.9-1.0	DUP15	BH47_0.4-0.5	DUP 5	BH47_0.9-1.0
				14-July-2008	14-July-2008	27-June-2008	27-June-2008	27-June-2008	27-June-2008	27-June-2008	01-July-2008	01-July-2008	14-July-2008	14-July-2008	14-July-2008	02-July-2008	02-July-2008	02-July-2008
pH (Lab)	pH_Units	0.1	NV	12.3	12.5	13	13.6	10.4	10.4	11.1	9.4	13.5	11.6	13.1	13	12.3	12.4	12.5
Sulphate	mg/kg	100	NV	3480	3,300	1,670	1,760	11,200	6,930	7,850	1,550	4,220	1,520	2,450	2,370	3,980	4,200	1,680
Total Sulphur	%	0.01	NV	0.19	0.19	0.1	0.11	0.39	0.4	0.4	0.25	0.17	0.11	0.17	0.16	0.24	0.22	0.51
Sulphide as S	%	0.01	NV	0.07	0.08	0.04	0.05	0.02	0.17	0.14	0.2	0.03	0.06	0.09	0.08	0.11	0.08	0.45
Aluminium	mg/kg	50	NV	28,600	32,000	6,480	3,610	32,100	25,000	37,000	14,100	4,320	9,090	12,600	12,200	16,000	11,100	8,980
Arsenic	mg/kg	5	500	6	76	27	14	22	56	12	<5	<5	7	6	<5	8	6	7
Barium	mg/kg	10	NV	490	500	2,210	840	800	890	670	530	100	170	220	170	400	500	180
Cadmium	mg/kg	1	100	<1	<1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2	1	1
Chromium (total)	mg/kg	2	NV	364	220	304	301	55	130	111	563	521	322	244	152	580	355	396
Cobalt	mg/kg	2	500	<2	4	17	8	13	14	12	3	<2	3	<2	<2	<2	3	<2
Copper	mg/kg	5	5,000	24	76	77	55	67	123	108	198	19	41	23	22	54	31	50
Iron	mg/kg	50	NV	69,100	63,800	101,000	104,000	31,200	45,600	46,800	91,100	74,600	63,500	59,900	44,600	83,800	76,900	102,000
Lead	mg/kg	5	1,500	25	36	83	71	70	80	62	15	14	94	40	33	117	116	134
Manganese	mg/kg	5	7,500	22,000	20,500	111,000	53,000	72,400	90,200	46,000	29,200	29,000	21,200	15,000	10,500	27,900	32,400	27,600
Mercury	mg/kg	0.1	75	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	0.8	0.1
Molybdenum	mg/kg	2	NV	2	<2	31	17	4	7	6	10	2	3	<2	<2	28	3	36
Zinc	mg/kg	5	35,000	95	114	226	195	627	211	194	39	37	163	111	93	245	194	200

Notes

TP06 Soil Sample Location
 TP06_0.5 Sample Identity
 30/06/2008 Date Sample Collected
1,100 Indicates Exceedence of Assessment
 LOR Laboratory Limit of Reporting
 nv No value exists
 NEPM HIL F National Environment Protection
 RPD % Relative percentage difference, used
 Dup1 (BH59_0.1-0.2) It is noted that this sample was a duplicate of BH59_0.1-0.2, however,
 Where a duplicate is reported, it is a duplicate of the preceding sample (i.e. Dup02-TP is a duplicate of TP08_0.2)

Table T2: Soil Results - Inorganics

Analyte	Units	LOR	NEPM HIL F	TP48-0.1	TP48-1.0	TP49_0.1	TP49_1.9	BH49_3.9-4.0	BH49_5.9-6.0	TP50_0.3	TP50_1.0
				04-July-2008	04-July-2008	02-July-2008	02-July-2008	15-July-2008	15-July-2008	27-June-2008	27-June-2008
pH (Lab)	pH_Units	0.1	NV	11.6	11.4	11.4	12.6	11.5	10.8	13	13.8
Sulphate	mg/kg	100	NV	2,910	2,560	4,400	3,990	230	150	1,030	2,000
Total Sulphur	%	0.01	NV	0.17	0.17	0.29	0.63	0.25	0.33	0.13	0.15
Sulphide as S	%	0.01	NV	0.07	0.08	0.14	0.5	0.24	0.32	0.1	0.08
Aluminium	mg/kg	50	NV	22,000	8,130	11,300	25,100	4,460	4,800	3,100	3,580
Arsenic	mg/kg	5	500	8	7	5	5	11	28	21	8
Barium	mg/kg	10	NV	490	240	260	330	210	230	2,910	1,020
Cadmium	mg/kg	1	100	1	1	2	<1	<1	<1	<1	1
Chromium (total)	mg/kg	2	NV	298	176	777	279	4	5	139	443
Cobalt	mg/kg	2	500	8	4	<2	<2	2	20	28	5
Copper	mg/kg	5	5,000	544	168	90	20	21	16	83	37
Iron	mg/kg	50	NV	49,700	63,600	90,800	96,200	20,200	24,000	66,100	110,000
Lead	mg/kg	5	1,500	353	425	62	33	26	32	75	54
Manganese	mg/kg	5	7,500	24,100	14,200	57,600	22,800	807	689	145,000	39,600
Mercury	mg/kg	0.1	75	<0.1	0.2	<0.1	0.1	0.2	0.2	<0.1	<0.1
Molybdenum	mg/kg	2	NV	3	11	6	<2	<2	3	12	4
Zinc	mg/kg	5	35,000	190	551	522	134	47	57	195	124

Notes

TP06 Soil Sample Location
 TP06_0.5 Sample Identity
 30/06/2008 Date Sample Collected
1,100 Indicates Exceedence of Assessment
 LOR Laboratory Limit of Reporting
 nv No value exists
 NEPM HIL F National Environment Protection
 RPD % Relative percentage difference, used
 Dup1 (BH59_0.1-0.2) It is noted that this sample was a duplicate of BH59_0.1-0.2, however,
 Where a duplicate is reported, it is a duplicate of the preceding sample (i.e. Dup02-TP is a duplicate of TP08_0.2)

Table T2: Soil Results - Inorganics

Analyte	Units	LOR	NEPM HIL F	BH52_0.1-0.2 26-June-2008	BH52_1.9-2.0 26-June-2008	TP53_0.5 01-July-2008	TP53_1.9 01-July-2008	BH55_0.4-0.5 14-July-2008	DUP16 14-July-2008	BH55_0.9-1.0 14-July-2008	BH56_0.1-0.2 15-July-2008	BH56_0.4-0.5 15-July-2008	TP57_0.2M 26-June-2008	TP57_1.2M 26-June-2008	TP58-0.2 04-July-2008	DUP_TP1 04-July-2008	TP58-1.4 04-July-2008	DUP1 (BH59_0.1-0.2) 26-June-2008
pH (Lab)	pH_Units	0.1	NV	10.6	11.3	13.5	12.6	12.5	12.5	12.1	12.3	12.8	10.9	12.8	13.4	13.4	13.3	12.8
Sulphate	mg/kg	100	NV	16,900	440	1,870	2,450	1,730	1,760	1,760	1,210	1,070	850	2,200	5,570	3,720	4,170	1,180
Total Sulphur	%	0.01	NV	0.74	0.52	0.17	0.2	0.21	0.2	0.15	0.21	0.12	0.12	0.15	0.17	0.18	0.15	0.13
Sulphide as S	%	0.01	NV	0.18	0.5	0.11	0.12	0.17	0.14	0.08	0.15	0.09	0.09	0.08	<0.01	0.06	0.01	0.09
Aluminium	mg/kg	50	NV	51,000	4,590	11,400	8,400	21,200	18,200	13,000	4,830	3,960	3,290	10,100	3,630	3,360	5,540	4,460
Arsenic	mg/kg	5	500	5	26	232	9	7	6	8	8	8	7	<5	6	<5	<5	8
Barium	mg/kg	10	NV	180	310	450	140	390	300	240	130	120	140	160	80	80	80	100
Cadmium	mg/kg	1	100	<1	<1	2	2	1	<1	<1	1	2	1	<1	2	1	2	2
Chromium (total)	mg/kg	2	NV	40	65	495	557	370	355	375	378	470	269	289	371	392	352	448
Cobalt	mg/kg	2	500	5	3	9	2	<2	<2	5	<2	<2	3	<2	<2	<2	<2	3
Copper	mg/kg	5	5,000	23	15	304	38	44	123	84	59	69	44	24	42	37	24	60
Iron	mg/kg	50	NV	10,900	25,700	105,000	120,000	79,800	91,300	100,000	113,000	146,000	124,000	89,800	118,000	93,600	107,000	125,000
Lead	mg/kg	5	1,500	16	38	154	99	145	170	91	115	98	66	46	62	46	47	192
Manganese	mg/kg	5	7,500	55,800	1,810	37,900	23,500	27,000	28,200	23,800	42,400	40,900	20,700	23,500	25,800	30,900	30,200	21,500
Mercury	mg/kg	0.1	75	<0.1	0.4	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1
Molybdenum	mg/kg	2	NV	2	<2	4	45	9	8	70	6	4	3	<2	<2	2	3	4
Zinc	mg/kg	5	35,000	54	85	1670	1,250	245	335	323	310	215	213	108	113	110	212	490

Notes

TP06 Soil Sample Location
 TP06_0.5 Sample Identity
 30/06/2008 Date Sample Collected
1,100 Indicates Exceedence of Assessment
 LOR Laboratory Limit of Reporting
 nv No value exists
 NEPM HIL F National Environment Protection
 RPD % Relative percentage difference, used
 Dup1 (BH59_0.1-0.2) It is noted that this sample was a duplicate of BH59_0.1-0.2, however,
 Where a duplicate is reported, it is a duplicate of the preceding sample (i.e. Dup02-TP is a duplicate of TP08_0.2)

Table T2: Soil Results - Inorganics

Analyte	Units	LOR	NEPM HIL F	BH59_0.4-0.5	BH59_1.9-2.0	BH60_0.1-0.2	BH60_0.9-1.0	DUP 10
				27-June-2008	27-June-2008	07-July-2008	07-July-2008	07-July-2008
pH (Lab)	pH_Units	0.1	NV	12.6	12.9	12.7	12.7	13
Sulphate	mg/kg	100	NV	1,060	2,140	1,330	1,420	1540
Total Sulphur	%	0.01	NV	0.1	0.13	0.1	0.39	0.34
Sulphide as S	%	0.01	NV	0.06	0.06	0.06	0.34	0.29
Aluminium	mg/kg	50	NV	5,900	8,620	3,120	35,900	48,000
Arsenic	mg/kg	5	500	10	<5	8	7	<5
Barium	mg/kg	10	NV	120	140	90	500	620
Cadmium	mg/kg	1	100	2	<1	2	<1	<1
Chromium (total)	mg/kg	2	NV	471	508	455	201	140
Cobalt	mg/kg	2	500	4	<2	<2	<2	<2
Copper	mg/kg	5	5,000	69	26	65	29	19
Iron	mg/kg	50	NV	123,000	100,000	133,000	39,400	33,400
Lead	mg/kg	5	1,500	190	52	66	28	19
Manganese	mg/kg	5	7,500	24,200	29,900	24,000	11,900	10,500
Mercury	mg/kg	0.1	75	<0.1	<0.1	<0.1	<0.1	<0.1
Molybdenum	mg/kg	2	NV	5	2	2	<2	<2
Zinc	mg/kg	5	35,000	690	169	211	134	72

Notes

TP06 Soil Sample Location
 TP06_0.5 Sample Identity
 30/06/2008 Date Sample Collected
1,100 Indicates Exceedence of Assessment
 LOR Laboratory Limit of Reporting
 nv No value exists
 NEPM HIL F National Environment Protection
 RPD % Relative percentage difference, used
 Dup1 (BH59_0.1-0.2) It is noted that this sample was a duplicate of BH59_0.1-0.2, however,
 Where a duplicate is reported, it is a duplicate of the preceding sample (i.e. Dup02-TP is a duplicate of TP08_0.2)

Table T2: Soil Results - Inorganics

Analyte	Units	LOR	NEPM HIL F	TP61_0.1 02-July-2008	TP61_1.6 02-July-2008	BH62_0.1-0.2 07-July-2008	BH62_0.9-1.0 07-July-2008	BH63_0.4-0.5 30-June-2008	TP64-0.1 04-July-2008	TP64-0.7 04-July-2008	BH65_0.1-0.2 01-July-2008	BH65_1.9-2.0 01-July-2008	TP66-0.1 07-July-2008	TP66-2.3 07-July-2008	TP67_0.1 30-June-2008	TP67_1.2 30-June-2008	BH68_0.1-0.2 02-July-2008	BH68_1.9-2.0 02-July-2008
pH (Lab)	pH_Units	0.1	NV	10.8	11.3	12.4	12.7	12.7	10.8	12.2	11.7	11.9	11.6	11.6	12.7	13.6	13.1	11.5
Sulphate	mg/kg	100	NV	2,200	540	3,740	2,030	2,540	1,770	2,740	440	280	2,680	120	1,890	3,260	2,010	<100
Total Sulphur	%	0.01	NV	0.2	0.15	0.16	0.11	0.54	0.12	0.23	0.03	0.25	0.16	0.26	0.3	0.15	0.2	0.24
Sulphide as S	%	0.01	NV	0.13	0.13	0.04	0.04	0.46	0.06	0.14	0.02	0.24	0.07	0.26	0.24	0.04	0.13	0.24
Aluminium	mg/kg	50	NV	42,200	5,890	9,010	9,510	57,600	17,100	7,820	2,820	7,210	29,200	4,540	3,960	12,900	22,400	3,530
Arsenic	mg/kg	5	500	8	14	6	8	<5	<5	6	<5	22	5	18	<5	<5	<5	15
Barium	mg/kg	10	NV	700	170	150	150	600	550	150	40	190	400	200	80	190	240	170
Cadmium	mg/kg	1	100	1	<1	1	1	<1	2	<1	<1	<1	2	<1	1	<1	<1	<1
Chromium (total)	mg/kg	2	NV	56	47	348	405	102	889	232	1,430	142	217	3	620	401	436	<2
Cobalt	mg/kg	2	500	4	<2	<2	<2	<2	3	<2	32	4	<2	<2	<2	<2	<2	2
Copper	mg/kg	5	5,000	80	16	38	57	10	141	21	11	23	36	12	43	5	8	9
Iron	mg/kg	50	NV	68,500	27,900	86,600	91,200	31,000	83,700	70,600	21,500	48,200	43,800	19,800	97,200	48,100	62,300	13,800
Lead	mg/kg	5	1,500	54	28	58	71	17	38	79	12	36	102	34	926	7	6	20
Manganese	mg/kg	5	7,500	16,500	3,390	28,400	23,400	13,100	24,500	18,000	4,180	3,740	19,600	403	23,300	15,600	18,200	431
Mercury	mg/kg	0.1	75	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	0.2	<0.1	<0.1	0.5	0.2
Molybdenum	mg/kg	2	NV	<2	<2	<2	2	<2	5	2	<2	2	<2	<2	3	<2	4	<2
Zinc	mg/kg	5	35,000	290	80	126	244	83	309	158	89	88	163	52	183	18	5	56

Notes

TP06 Soil Sample Location
 TP06_0.5 Sample Identity
 30/06/2008 Date Sample Collected
1,100 Indicates Exceedence of Assessment
 LOR Laboratory Limit of Reporting
 nv No value exists
 NEPM HIL F National Environment Protection
 RPD % Relative percentage difference, used
 Dup1 (BH59_0.1-0.2) It is noted that this sample was a duplicate of BH59_0.1-0.2, however,
 Where a duplicate is reported, it is a duplicate of the preceding sample (i.e. Dup02-TP is a duplicate of TP08_0.2)

Table T2: Soil Results - Inorganics

Analyte	Units	LOR	NEPM HIL F	TP06_0.5	TP70_0.1M	TP70_2.0M	BH71_0.1-0.2	BH71_0.9-1.0
				30-June-2008	27-June-2008	27-June-2008	15-July-2008	15-July-2008
pH (Lab)	pH_Units	0.1	NV	12.9	10.8	13.1	12.2	13.2
Sulphate	mg/kg	100	NV	1,670	670	1,750	1,180	2,350
Total Sulphur	%	0.01	NV	0.11	0.23	0.12	0.07	0.11
Sulphide as S	%	0.01	NV	0.05	0.21	0.06	0.03	0.03
Aluminium	mg/kg	50	NV	3,770	28,900	9630	8,690	6,090
Arsenic	mg/kg	5	500	8	26	10	<5	<5
Barium	mg/kg	10	NV	70	490	130	110	80
Cadmium	mg/kg	1	100	2	<1	3	<1	<1
Chromium (total)	mg/kg	2	NV	362	6	367	183	513
Cobalt	mg/kg	2	500	<2	4	3	<2	<2
Copper	mg/kg	5	5,000	220	16	42	14	22
Iron	mg/kg	50	NV	128,000	12,000	128,000	46,800	76,600
Lead	mg/kg	5	1,500	369	16	52	34	16
Manganese	mg/kg	5	7,500	21,000	1,020	23,600	13,700	33,600
Mercury	mg/kg	0.1	75	<0.1	0.2	<0.1	<0.1	<0.1
Molybdenum	mg/kg	2	NV	17	<2	5	<2	<2
Zinc	mg/kg	5	35,000	306	47	235	92	60

Notes

TP06 Soil Sample Location
 TP06_0.5 Sample Identity
 30/06/2008 Date Sample Collected
1,100 Indicates Exceedence of Assessment
 LOR Laboratory Limit of Reporting
 nv No value exists
 NEPM HIL F National Environment Protection
 RPD % Relative percentage difference, used
 Dup1 (BH59_0.1-0.2) It is noted that this sample was a duplicate of BH59_0.1-0.2, however, Where a duplicate is reported, it is a duplicate of the preceding sample (i.e. Dup02-TP is a duplicate of TP08_0.2)

Table T2: Soil Results - Inorganics

Analyte	Units	LOR	NEPM HIL F	BH72_0.1-0.2 14-July-2008	BH72_0.4-0.5 14-July-2008	TP73_0.5 30-June-2008	TP73_2.0 30-June-2008	TP74_0.2M 26-June-2008	DUP01-TP 26-June-2008	TP74_1.2M 26-June-2008	TP75_0.2M 26-June-2008	TP75_0.9M 26-June-2008	TP76_0.2 27-June-2008	TP76_0.9 27-June-2008	TP77-0.1 04-July-2008	TP77-0.6 04-July-2008	TP78_0.1 30-June-2008	DUP06-TP 30-June-2008
pH (Lab)	pH_Units	0.1	NV	13	12.8	13.2	12.5	12.4	12.5	12.3	12.8	13.5	13.3	13.5	11.4	12.7	10.8	10.3
Sulphate	mg/kg	100	NV	2,320	2,040	2510	2200	3,780	4,420	2,430	2,540	2,440	2,100	2,440	2,840	4,450	4,370	4,470
Total Sulphur	%	0.01	NV	0.16	0.19	0.17	0.16	0.39	0.51	0.4	0.15	0.13	0.11	0.14	0.24	0.19	0.17	0.24
Sulphide as S	%	0.01	NV	0.08	0.12	0.09	0.09	0.26	0.36	0.32	0.06	0.05	0.04	0.06	0.14	0.04	0.02	0.09
Aluminium	mg/kg	50	NV	24,900	10,100	8,540	6,560	41,300	46,500	26,200	4,870	2,410	3,110	4,240	42,400	7,180	12,500	12,100
Arsenic	mg/kg	5	500	<5	12	<5	8	5	<5	8	7	6	8	<5	<5	6	8	10
Barium	mg/kg	10	NV	300	200	100	100	620	680	640	160	80	210	160	420	80	510	690
Cadmium	mg/kg	1	100	<1	<1	<1	1	<1	<1	<1	1	<1	1	<1	<1	2	<1	<1
Chromium (total)	mg/kg	2	NV	484	454	430	389	146	125	285	451	583	457	574	5	529	373	316
Cobalt	mg/kg	2	500	<2	2	<2	<2	2	<2	3	4	<2	2	<2	<2	3	4	6
Copper	mg/kg	5	5,000	10	48	22	62	23	12	30	42	25	461	166	6	42	53	47
Iron	mg/kg	50	NV	69,800	113,000	81,500	107,000	76,600	33,100	60,100	123,000	98,100	134,000	111,000	2,320	91,300	59,000	48,400
Lead	mg/kg	5	1,500	11	57	.	18	19	21	50	248	178	59	39	41	137	32	37
Manganese	mg/kg	5	7,500	22,000	29,000	23,600	25,600	13,800	13,800	25,200	30,900	28,200	36,900	34,100	17,000	19,600	89,400	89,200
Mercury	mg/kg	0.1	75	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	0.2
Molybdenum	mg/kg	2	NV	4	3	2	8	<2	<2	3	3	3	5	3	<2	6	11	5
Zinc	mg/kg	5	35,000	22	202	153	83	64	64	139	639	562	175	128	345	678	184	200

Notes

TP06 Soil Sample Location
 TP06_0.5 Sample Identity
 30/06/2008 Date Sample Collected
1,100 Indicates Exceedence of Assessment
 LOR Laboratory Limit of Reporting
 nv No value exists
 NEPM HIL F National Environment Protection
 RPD % Relative percentage difference, used
 Dup1 (BH59_0.1-0.2) It is noted that this sample was a duplicate of BH59_0.1-0.2, however, Where a duplicate is reported, it is a duplicate of the preceding sample (i.e. Dup02-TP is a duplicate of TP08_0.2)

Table T2: Soil Results - Inorganics

Analyte	Units	LOR	NEPM HIL F	TP78_0.5	TP79_0.1
				30-June-2008	01-July-2008
pH (Lab)	pH_Units	0.1	NV	12.4	11.4
Sulphate	mg/kg	100	NV	3,030	1,270
Total Sulphur	%	0.01	NV	0.17	0.05
Sulphide as S	%	0.01	NV	0.07	<0.01
Aluminium	mg/kg	50	NV	15,200	16,600
Arsenic	mg/kg	5	500	7	8
Barium	mg/kg	10	NV	250	610
Cadmium	mg/kg	1	100	1	<1
Chromium (total)	mg/kg	2	NV	369	271
Cobalt	mg/kg	2	500	<2	6
Copper	mg/kg	5	5,000	38	40
Iron	mg/kg	50	NV	96,400	70,400
Lead	mg/kg	5	1,500	57	54
Manganese	mg/kg	5	7,500	27,700	25,900
Mercury	mg/kg	0.1	75	<0.1	<0.1
Molybdenum	mg/kg	2	NV	<2	2
Zinc	mg/kg	5	35,000	141	100

Notes

TP06 Soil Sample Location
 TP06_0.5 Sample Identity
 30/06/2008 Date Sample Collected
1,100 Indicates Exceedence of Assessment
 LOR Laboratory Limit of Reporting
 nv No value exists
 NEPM HIL F National Environment Protection
 RPD % Relative percentage difference, used
 Dup1 (BH59_0.1-0.2) It is noted that this sample was a duplicate of BH59_0.1-0.2, however, Where a duplicate is reported, it is a duplicate of the preceding sample (i.e. Dup02-TP is a duplicate of TP08_0.2)

Table T3: Soil Results - Organics

	Analyte	Units	LOR	NEPM 1999 HIL F	SSG	TP08_0.2	DUP02-TP	BH9_0.1-0.2	BH9_0.9-1.0	BH9_2.9-3.0	BH16_0.4-0.5	DUP17	BH16_2.9-3.0	BH20_2.9-3.0	BH21_1.9-2.0	TP22_0.1	BH22_3.4-3.5	DUP20	BH23_0.4-0.5	BH23_3.9-4.0
						27-June-2008	27-June-2008	03-July-2008	03-July-2008	03-July-2008	14-July-2008	14-July-2008	14-July-2008	30-June-2008	15-July-2008	02-July-2008	15-July-2008	15-July-2008	07-July-2008	07-July-2008
PAHS	Acenaphthene	mg/kg	0.05	NV	NV	<0.05	<0.05	<0.05	0.22	0.28	0.2	0.18	0.3	<0.05	2.44	<0.05	0.44	<0.05	0.62	0.18
	Acenaphthylene	mg/kg	0.05	NV	NV	0.08	0.06	<0.05	0.07	0.12	0.23	0.19	0.11	<0.05	8.41	<0.05	<0.05	<0.05	0.34	0.07
	Anthracene	mg/kg	0.05	NV	NV	0.14	0.1	0.24	0.85	0.59	0.91	0.72	0.59	0.7	10.1	<0.05	0.63	0.87	1.01	0.16
	Benz(a)anthracene	mg/kg	0.05	NV	NV	0.63	0.36	1.42	2.85	3.34	4.81	3.43	2.28	1.06	9.65	0.08	1.68	2.18	3.88	0.23
	Benzo(a) pyrene	mg/kg	0.05	5	1 *	0.52	0.26	1.22	2.19	2.88	4.65	3.29	1.96	0.67	8.06	0.07	1.43	2.14	3.85	0.14
	Benzo(b)fluoranthene	mg/kg	0.05	NV	NV	1.07	0.61	1.8	3.42	4.77	7.74	4.63	2.94	0.97	11.4	0.11	1.75	2.27	5.13	0.15
	Benzo(g,h)perylene	mg/kg	0.05	NV	NV	0.47	0.21	1.07	2.22	3.53	3.81	2.29	1.58	0.29	4.62	<0.05	0.68	1.03	4.03	0.08
	Benzo(k)fluoranthene	mg/kg	0.05	NV	NV	0.38	0.18	0.6	1	2.07	1.77	1.38	1.25	0.32	3.24	0.05	0.7	0.79	2.43	0.06
	Chrysene	mg/kg	0.05	NV	NV	0.56	0.35	1.31	2.74	3.61	4.52	3.6	2.09	0.88	8.39	0.08	1.46	1.87	3.75	0.21
	Dibenz(a,h)anthracene	mg/kg	0.05	NV	NV	0.08	<0.05	0.24	0.6	0.71	0.63	0.39	0.3	0.08	0.82	<0.05	0.15	0.19	0.83	<0.05
	Fluoranthene	mg/kg	0.05	NV	NV	1.47	0.74	3.61	6.44	5.65	9.09	7.06	4.8	2.53	29.8	0.12	3.03	4.17	5.76	0.42
	Fluorene	mg/kg	0.05	NV	NV	<0.05	<0.05	<0.05	0.09	0.07	0.13	<0.05	0.16	<0.05	7.59	<0.05	0.48	<0.05	0.4	0.2
	Indeno(1,2,3-c,d)pyrene	mg/kg	0.05	NV	NV	0.33	0.16	0.93	1.83	2.81	3	1.84	1.29	0.24	4	<0.05	0.61	0.86	3.28	<0.05
	Naphthalene	mg/kg	0.05	NV	NV	0.11	5.07	<0.05	<0.05	0.36	2.97	3.23	1.73	1.56	16.3	0.13	4.58	4.28	8.58	1.11
	Phenanthrene	mg/kg	0.05	NV	NV	0.55	0.4	1.33	3.02	2.42	3.29	2.76	2.12	3.77	27.9	0.07	3.23	4.44	3.3	1.09
	Pyrene	mg/kg	0.05	NV	NV	1.45	0.96	3.18	5.89	6.35	10.7	7.93	4.73	3.1	24.9	0.12	3.08	4.33	6.48	0.42
	Total	mg/kg		100	20 *	7.84	9.46	16.95	33.43	39.56	58.45	42.92	28.23	16.17	177.62	0.83	23.93	29.42	53.67	4.52
TPH	TPH C 6 - C 9 Fraction	mg/kg	10	NV	65	<10	<10	<10	<10	<10	<10	<10	<10	12	<10	<10	<10	<10	<10	13
	TPH C10 - C14 Fraction	mg/kg	50	NV	NV	<50	<50	<50	<50	<50	<50	<50	<50	60	200	<50	<50	<50	<50	<50
	TPH C15 - C28 Fraction	mg/kg	100	NV	NV	100	<100	<100	<100	160	230	190	140	550	1330	<100	300	210	<100	<100
	TPH C29-C36 Fraction	mg/kg	100	NV	NV	120	130	<100	<100	160	200	200	<100	270	530	<100	170	180	130	<100
	TPH+C10 - C36 (Sum of total)	mg/kg	-	NV	1,000	245	205	<250	<250	345	455	415	215	880	2,060	<250	495	415	130	<250
BTEX	Benzene	mg/kg	0.2	NV	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.4	<0.2	<0.2	<0.2	<0.2	<0.2
	Ethylbenzene	mg/kg	0.5	NV	50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Toluene	mg/kg	0.5	NV	130	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Xylene (m & p)	mg/kg	0.5	NV	NV	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	0.6	<0.5	<0.5	<0.5	<0.5	0.8
	Xylene (o)	mg/kg	0.5	NV	NV	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Xylene Total	mg/kg	-	NV	25	<1	<1	<1	<1	<1	<1	<1	<1	0.6	0.6	<1	<1	<1	<1	<250

Notes

PAHs Polycyclic Aromatic Hydrocarbons

TPH Total Petroleum Hydrocarbons

BTEX Benzene, toluene, ethylbenzene, xylene

TP06 Soil Sample Location

TP06_0.5 Sample Identity

30/06/2008 Date Sample Collected

L100 Indicates Exceedence of Assessment Criteria

LOR Laboratory Limit of Reporting

nv No value exists

NEPM HIL F National Environment Protection (Assessment of Contamination) Measure 1999

SSG Guidelines for Assessing Service Station Sites, NSW EPA December 1994 (note

Note that the benzo (a) pyrene) and Total PAH value for the SSG assumes

Dup_TP2 It is noted that this sample was a duplicate of TP36_0.1, however, the original

(TP36_0.1) sample was not analysed and DUP_TP2 presents conditions at TP36 at 0.1m

DUP1 (TP74 m)

Where a duplicate is reported, it is a duplicate of the preceding sample (i.e. Dup02-TP is a duplicate of TP08_0.2)

Table T3: Soil Results - Organics

Analyte		Units	LOR	NEPM 1999 HIL F	SSG	TP27-0.1 03-July-2008	TP27-1.5 03-July-2008	BH30_0.1-0.2 15-July-2008	BH30_0.9-1.0 15-July-2008	TP33-0.1 04-July-2008	TP33-1.8 07-July-2008	BH34_0.1-0.2 15-July-2008	BH34_1.9-2.0 15-July-2008	BH35_2.9-3.0 02-July-2008	DUP 6 02-July-2008	DUP_TP2 (TP36_0.1) 04-July-2008	TP36-0.5 04-July-2008	TP37_1.0 30-June-2008	TP37-2.0 07-July-2008	BH38_0.2-0.3 14-July-2008
PAHS	Acenaphthene	mg/kg	0.05	NV	NV	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.09	<0.05	0.29	<0.05	<0.05	0.17	0.08	0.07
	Acenaphthylene	mg/kg	0.05	NV	NV	0.1	<0.05	<0.05	0.05	<0.05	0.06	<0.05	0.42	<0.05	0.12	<0.05	<0.05	0.1	0.46	0.05
	Anthracene	mg/kg	0.05	NV	NV	0.13	0.06	<0.05	0.12	<0.05	0.21	<0.05	0.68	0.24	0.25	<0.05	<0.05	0.94	0.54	0.28
	Benz(a)anthracene	mg/kg	0.05	NV	NV	0.55	0.33	0.12	0.32	<0.05	1.41	<0.05	2.57	0.47	0.68	<0.05	<0.05	8.08	1.81	1.97
	Benzo(a) pyrene	mg/kg	0.05	5	1 *	0.6	0.27	0.08	0.29	<0.05	1.04	<0.05	2.56	0.25	0.4	<0.05	<0.05	9.63	2.29	1.76
	Benzo(b)fluoranthene	mg/kg	0.05	NV	NV	0.97	0.6	0.16	0.58	0.06	2.42	<0.05	3.31	0.18	0.59	0.06	<0.05	16	2.95	3.16
	Benzo(g,h)perylene	mg/kg	0.05	NV	NV	0.72	0.4	0.06	0.25	<0.05	1.12	<0.05	2.45	0.07	0.22	<0.05	<0.05	4.65	2.08	1.94
	Benzo(k)fluoranthene	mg/kg	0.05	NV	NV	0.41	0.3	0.09	0.19	<0.05	0.74	<0.05	1.45	0.13	0.16	<0.05	<0.05	3.16	0.76	1.04
	Chrysene	mg/kg	0.05	NV	NV	0.68	0.58	0.22	0.4	0.05	2.16	<0.05	2.37	0.42	0.68	0.05	<0.05	7.81	1.54	1.96
	Dibenz(a,h)anthracene	mg/kg	0.05	NV	NV	0.15	0.08	<0.05	0.05	<0.05	0.27	<0.05	0.34	<0.05	0.06	<0.05	<0.05	1.05	0.34	0.35
	Fluoranthene	mg/kg	0.05	NV	NV	0.96	1.19	0.67	0.84	0.08	4.45	0.1	6.35	0.52	1.01	0.09	0.06	13.1	4.46	3.89
	Fluorene	mg/kg	0.05	NV	NV	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.1	<0.05	0.37	<0.05	<0.05	0.09	0.12	<0.05
	Indeno(1,2,3-c,d)pyrene	mg/kg	0.05	NV	NV	0.59	0.32	0.05	0.23	<0.05	1	<0.05	1.76	<0.05	0.19	<0.05	<0.05	4.33	1.48	1.53
	Naphthalene	mg/kg	0.05	NV	NV	0.39	0.06	0.2	0.2	<0.05	0.12	0.05	1.58	2.58	2.06	<0.05	<0.05	0.13	0.68	0.18
	Phenanthrene	mg/kg	0.05	NV	NV	0.78	0.58	4.27	0.59	0.06	2.29	0.08	3.19	2.36	2.5	0.05	<0.05	3.08	1.55	1.66
	Pyrene	mg/kg	0.05	NV	NV	0.93	1.02	1.06	0.64	0.07	3.43	0.1	6.04	0.95	1.17	0.09	<0.05	13.2	4.09	3.62
	Total	mg/kg		100	20 *	7.96	5.79	6.98	4.75	0.32	20.72	0.33	35.26	8.17	10.75	0.34	0.06	85.52	25.23	23.46
TPH	TPH C 6 - C 9 Fraction	mg/kg	10	NV	65	<10	<10	<10	<10	<10	<10	<10	<10	10	12	<10	<10	<10	<10	<10
	TPH C10 - C14 Fraction	mg/kg	50	NV	NV	<50	<50	610	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
	TPH C15 - C28 Fraction	mg/kg	100	NV	NV	<100	<100	3460	<100	<100	180	<100	<100	<100	<100	<100	<100	250	140	120
	TPH C29-C36 Fraction	mg/kg	100	NV	NV	<100	<100	450	<100	<100	190	<100	<100	<100	<100	<100	<100	260	<100	100
	TPH+C10 - C36 (Sum of total)	mg/kg	-	NV	1,000	<250	<250	4,520	<250	<250	395	<250	<250	<250	<250	<250	<250	535	215	245
BTEX	Benzene	mg/kg	0.2	NV	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
	Ethylbenzene	mg/kg	0.5	NV	50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Toluene	mg/kg	0.5	NV	130	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Xylene (m & p)	mg/kg	0.5	NV	NV	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.1	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Xylene (o)	mg/kg	0.5	NV	NV	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Xylene Total	mg/kg	-	NV	25	<1	<1	<1	<1	<1	<1	<1	<1	1.1	0.5	<1	<1	<1	<1	<1

Notes

PAHs Polycyclic Aromatic Hydrocarbons

TPH Total Petroleum Hydrocarbons

BTEX Benzene, toluene, ethylbenzene, xylene

TP06 Soil Sample Location

TP06_0.5 Sample Identity

30/06/2008 Date Sample Collected

11.100 Indicates Exceedence of Assessment Criteria

LOR Laboratory Limit of Reporting

nv No value exists

NEPM HIL F National Environment Protection (Assessment of Contamination) Measure 1999

SSG Guidelines for Assessing Service Station Sites, NSW EPA December 1994 (note

Note that the benzo (a) pyrene) and Total PAH value for the SSG assumes

Dup_TP2 It is noted that this sample was a duplicate of TP36_0.1, however, the original

(TP36_0.1) sample was not analysed and DUP_TP2 presents conditions at TP36 at 0.1m

DUP1 (TP74 m)

Where a duplicate is reported, it is a duplicate of the preceding sample (i.e. Dup02-TP is a duplicate of TP08_0.2)

Table T3: Soil Results - Organics

	Analyte	Units	LOR	NEPM 1999 HIL F	SSG	TP39_0.7	BH42_0.1-0.2	BH42_0.9-1.0	TP44_0.2	DUP04-TP	TP44_0.9	TP45_0.5	TP45_1.0	BH46_0.1-0.2	BH46_0.9-1.0	BH47_0.4-0.5	DUP 5	BH47_3.9-4.0	TP48-0.1	BH49_5.9-6.0
						27-June-2008	14-July-2008	14-July-2008	27-June-2008	27-June-2008	27-June-2008	01-July-2008	01-July-2008	14-July-2008	14-July-2008	02-July-2008	02-July-2008	02-July-2008	04-July-2008	15-July-2008
PAHS	Acenaphthene	mg/kg	0.05	NV	NV	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.13	0.14	<0.05	<0.05	<0.05
	Acenaphthylene	mg/kg	0.05	NV	NV	<0.05	0.05	<0.05	0.16	0.42	<0.05	0.15	<0.05	<0.05	<0.05	0.16	0.23	<0.05	0.08	<0.05
	Anthracene	mg/kg	0.05	NV	NV	0.15	0.11	0.06	0.17	0.62	0.06	0.3	0.05	0.2	0.51	0.86	0.94	0.24	0.14	0.22
	Benz(a)anthracene	mg/kg	0.05	NV	NV	0.68	0.46	0.31	0.63	1.89	0.32	1.52	0.16	1.32	2.82	2.66	3.36	0.45	0.84	0.39
	Benzo(a) pyrene	mg/kg	0.05	5	1 *	0.47	0.42	0.24	0.53	1.51	0.29	1.25	0.17	1	1.98	2.48	3.03	0.19	0.75	0.18
	Benzo(b)fluoranthene	mg/kg	0.05	NV	NV	1.2	0.77	0.53	1.08	2.64	0.65	2.69	0.29	1.93	6.33	3.34	4.58	<0.05	1.37	0.15
	Benzo(g,h,i)perylene	mg/kg	0.05	NV	NV	0.49	0.42	0.29	0.4	0.86	0.31	0.83	0.13	0.93	2.88	1.3	2.68	<0.05	0.89	0.08
	Benzo(k)fluoranthene	mg/kg	0.05	NV	NV	0.37	0.25	0.18	0.36	0.79	0.2	0.78	0.09	0.63	1.52	1.04	1.55	<0.05	0.62	0.12
	Chrysene	mg/kg	0.05	NV	NV	0.76	0.53	0.4	0.56	1.48	0.31	1.94	0.19	1.47	4.91	2.57	3.29	0.32	1.05	0.35
	Dibenz(a,h)anthracene	mg/kg	0.05	NV	NV	0.08	0.08	<0.05	0.07	0.17	<0.05	0.19	<0.05	0.18	0.55	0.28	0.61	<0.05	0.18	<0.05
	Fluoranthene	mg/kg	0.05	NV	NV	2	0.9	0.85	1.25	4.7	0.51	2.63	0.26	3.01	9.19	7.51	6.51	0.41	1.42	0.41
	Fluorene	mg/kg	0.05	NV	NV	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.18	0.22	<0.05	<0.05	<0.05
	Indeno(1,2,3-c,d)pyrene	mg/kg	0.05	NV	NV	0.36	0.33	0.23	0.31	0.7	0.21	0.75	0.11	0.75	1.93	1.18	2.26	<0.05	0.74	<0.05
	Naphthalene	mg/kg	0.05	NV	NV	0.19	0.68	0.13	0.25	0.46	0.1	0.42	0.19	0.34	0.81	0.76	1.2	1.03	0.22	1.81
	Phenanthrene	mg/kg	0.05	NV	NV	0.94	0.39	0.32	0.69	2	0.27	1.04	0.09	1.44	5.54	3.39	3.37	1.86	0.53	2.34
	Pyrene	mg/kg	0.05	NV	NV	1.88	1	0.74	1.5	4.87	0.5	2.6	0.43	2.39	7.65	6.54	6.12	0.97	1.88	0.58
	Total	mg/kg			20 *	9.57	6.39	4.28	7.96	23.11	3.73	17.09	2.16	15.59	15.93	34.38	40.09	5.47	10.71	6.63
TPH	TPH C 6 - C 9 Fraction	mg/kg	10	NV	65	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
	TPH C10 - C14 Fraction	mg/kg	50	NV	NV	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	50	<50	<50
	TPH C15 - C28 Fraction	mg/kg	100	NV	NV	<100	<100	<100	120	180	120	160	<100	120	220	190	200	510	<100	150
	TPH C29-C36 Fraction	mg/kg	100	NV	NV	<100	<100	<100	140	140	160	170	<100	140	180	160	180	250	<100	<100
	TPH+C10 - C36 (Sum of total)	mg/kg	-	NV	1,000	<250	<250	<250	285	345	305	355	<250	285	425	375	405	810	<250	225
BTEX	Benzene	mg/kg	0.2	NV	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
	Ethylbenzene	mg/kg	0.5	NV	50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Toluene	mg/kg	0.5	NV	130	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Xylene (m & p)	mg/kg	0.5	NV	NV	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	<0.5	<0.5
	Xylene (o)	mg/kg	0.5	NV	NV	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Xylene Total	mg/kg	-	NV	25	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.5	<1	<1

Notes

PAHs Polycyclic Aromatic Hydrocarbons

TPH Total Petroleum Hydrocarbons

BTEX Benzene, toluene, ethylbenzene, xylene

TP06 Soil Sample Location

TP06_0.5 Sample Identity

30/06/2008 Date Sample Collected

11/00 Indicates Exceedence of Assessment Criteria

LOR Laboratory Limit of Reporting

nv No value exists

NEPM HIL F National Environment Protection (Assessment of Contamination) Measure 1999

SSG Guidelines for Assessing Service Station Sites, NSW EPA December 1994 (note

- Note that the benzo (a) pyrene) and Total PAH value for the SSG assumes

Dup_TP2 It is noted that this sample was a duplicate of TP36_0.1, however, the original

(TP36_0.1) sample was not analysed and DUP_TP2 presents conditions at TP36 at 0.1m

DUP1 (TP74 m)

Where a duplicate is reported, it is a duplicate of the preceding sample (i.e. Dup02-TP is a duplicate of TP08_0.2)

Table T3: Soil Results - Organics

Analyte		Units	LOR	NEPM 1999 HIL F	SSG	TP53_0.5 01-July-2008	TP58-0.2 04-July-2008	TP58-1.4 04-July-2008	BH59_0.4-0.5 27-June-2008	BH59_2.9-3.0 26-June-2008	BH60_0.1-0.2 07-July-2008	BH60_0.9-1.0 07-July-2008	DUP 10 07-July-2008	TP61_3.0 02-July-2008	BH62_3.9-4.0 07-July-2008	BH63_0.4-0.5 30-June-2008	BH63_2.9-3.0 30-June-2008	BH65_0.4-0.5 01-July-2008	BH65_3.9-4.0 01-July-2008	TP66-0.6 07-July-2008
PAHS	Acenaphthene	mg/kg	0.05	NV	NV	<0.05	<0.05	<0.05	0.18	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	Acenaphthylene	mg/kg	0.05	NV	NV	<0.05	<0.05	<0.05	0.08	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05
	Anthracene	mg/kg	0.05	NV	NV	0.13	0.11	<0.05	0.62	0.6	0.06	0.09	0.06	<0.05	<0.05	0.19	0.19	0.27	0.38	0.17
	Benz(a)anthracene	mg/kg	0.05	NV	NV	0.53	0.47	0.17	3.26	1.4	0.5	0.31	0.24	0.65	<0.05	2.52	0.42	1.68	0.6	1.51
	Benzo(a) pyrene	mg/kg	0.05	5	1 *	0.43	0.45	0.11	2.52	1.09	0.55	0.27	0.19	0.28	<0.05	1.42	0.19	1.64	0.27	0.97
	Benzo(b)fluoranthene	mg/kg	0.05	NV	NV	0.98	1.18	0.33	5.32	2.23	1.15	0.44	0.4	<0.05	<0.05	3.1	0.13	2.69	0.14	2.43
	Benzo(g,h)perylene	mg/kg	0.05	NV	NV	0.36	0.68	0.2	1.87	0.96	0.79	0.32	0.16	<0.05	<0.05	0.87	0.05	1.19	<0.05	1.19
	Benzo(k)fluoranthene	mg/kg	0.05	NV	NV	0.37	0.39	0.17	1.26	0.65	0.34	0.22	0.12	<0.05	<0.05	0.8	0.08	1.1	0.12	0.93
	Chrysene	mg/kg	0.05	NV	NV	0.86	1.09	0.35	2.82	1.24	0.84	0.42	0.36	0.46	<0.05	2.75	0.34	2.04	0.51	2.3
	Dibenz(a,h)anthracene	mg/kg	0.05	NV	NV	0.07	0.14	<0.05	0.3	0.14	0.13	0.06	<0.05	<0.05	<0.05	0.19	<0.05	0.22	<0.05	0.22
	Fluoranthene	mg/kg	0.05	NV	NV	2.04	3.13	0.78	7.27	3.15	1.2	0.8	0.58	0.68	<0.05	4.54	0.39	4.27	0.58	9.35
	Fluorene	mg/kg	0.05	NV	NV	<0.05	<0.05	<0.05	0.06	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	Indeno(1,2,3-c,d)pyrene	mg/kg	0.05	NV	NV	0.32	0.55	0.16	1.45	0.7	0.61	0.25	0.14	<0.05	<0.05	0.78	<0.05	1.02	<0.05	0.92
	Naphthalene	mg/kg	0.05	NV	NV	<0.05	0.08	<0.05	0.35	0.23	0.18	0.4	0.21	0.46	<0.05	<0.05	2.33	0.11	1.13	0.24
	Phenanthrene	mg/kg	0.05	NV	NV	0.89	1.62	0.27	2.92	1.37	0.34	0.48	0.37	2.5	<0.05	0.4	2.04	1.12	2.51	5.52
	Pyrene	mg/kg	0.05	NV	NV	1.45	1.94	0.6	8.58	3.25	1.12	0.71	0.52	1.61	<0.05	8.49	0.79	4.46	1.49	6.08
	Total	mg/kg		100	20 *	8.43	11.83	3.14	38.86	17.21	7.81	4.77	3.35	6.64		26.05	6.95	21.81	7.73	31.88
TPH	TPH C 6 - C 9 Fraction	mg/kg	10	NV	65	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	14	<10	10	<10
	TPH C10 - C14 Fraction	mg/kg	50	NV	NV	<50	<50	<50	<50	<50	<50	<50	<50	70	<50	<50	60	<50	90	<50
	TPH C15 - C28 Fraction	mg/kg	100	NV	NV	<100	120	<100	270	120	<100	<100	<100	680	<100	160	460	110	730	220
	TPH C29-C36 Fraction	mg/kg	100	NV	NV	110	<100	<100	280	120	110	<100	<100	350	<100	120	240	110	350	220
	TPH+C10 - C36 (Sum of total)	mg/kg	-	NV	1,000	185	195	<250	575	265	185	<250	<250	1,100	<250	305	760	245	1,170	465
BTEX	Benzene	mg/kg	0.2	NV	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
	Ethylbenzene	mg/kg	0.5	NV	50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Toluene	mg/kg	0.5	NV	130	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Xylene (m & p)	mg/kg	0.5	NV	NV	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5
	Xylene (o)	mg/kg	0.5	NV	NV	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Xylene Total	mg/kg	-	NV	25	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.6	<1	<1	<1

Notes

PAHs Polycyclic Aromatic Hydrocarbons

TPH Total Petroleum Hydrocarbons

BTEX Benzene, toluene, ethylbenzene, xylene

TP06 Soil Sample Location

TP06_0.5 Sample Identity

30/06/2008 Date Sample Collected

1:100 Indicates Exceedence of Assessment Criteria

LOR Laboratory Limit of Reporting

nv No value exists

NEPM HIL F National Environment Protection (Assessment of Contamination) Measure 1999

SSG Guidelines for Assessing Service Station Sites, NSW EPA December 1994 (note

Note that the benzo (a) pyrene) and Total PAH value for the SSG assumes

Dup_TP2 It is noted that this sample was a duplicate of TP36_0.1, however, the original

(TP36_0.1) sample was not analysed and DUP_TP2 presents conditions at TP36 at 0.1m

DUP1 (TP74 m)

Where a duplicate is reported, it is a duplicate of the preceding sample (i.e. Dup02-TP is a duplicate of TP08_0.2)

Table T3: Soil Results - Organics

Analyte		Units	LOR	NEPM 1999 HIL F	SSG	TP66-1.5 07-July-2008	BH68_0.1-0.2 02-July-2008	BH68_3.9-4.0 02-July-2008	BH72_0.4-0.5 14-July-2008	TP73_2.8 30-June-2008	DUP1 (TP74 0.2m) 26-June-2008	TP75_0.9M 26-June-2008	TP79_0.8 01-July-2008	TP79_3.0 01-July-2008
PAHS	Acenaphthene	mg/kg	0.05	NV	NV	<0.05	<0.05	<0.05	<0.4	<0.05	0.06	<0.05	<0.05	0.47
	Acenaphthylene	mg/kg	0.05	NV	NV	0.06	<0.05	<0.05	13.1	<0.05	0.05	<0.05	<0.05	0.43
	Anthracene	mg/kg	0.05	NV	NV	0.32	<0.05	0.35	14.3	0.31	0.38	<0.05	<0.05	1.86
	Benz(a)anthracene	mg/kg	0.05	NV	NV	1.63	<0.05	0.73	14.9	1.06	1.6	0.22	0.15	5.2
	Benzo(a) pyrene	mg/kg	0.05	5	1 *	1.22	<0.05	0.31	13.8	0.71	1.21	0.21	0.14	5.07
	Benzo(b)fluoranthene	mg/kg	0.05	NV	NV	2.25	<0.05	<0.05	17.9	1.4	2.64	0.54	0.18	6.14
	Benzo(g,h,i)perylene	mg/kg	0.05	NV	NV	1.08	<0.05	<0.05	9.1	0.4	0.89	0.26	0.08	2.33
	Benzo(k)fluoranthene	mg/kg	0.05	NV	NV	0.83	<0.05	<0.05	6.25	0.5	0.88	0.24	0.09	1.58
	Chrysene	mg/kg	0.05	NV	NV	1.85	<0.05	0.55	13.7	1.38	1.52	0.31	0.16	4.81
	Dibenz(a,h)anthracene	mg/kg	0.05	NV	NV	0.21	<0.05	<0.05	1.53	0.09	0.16	<0.05	<0.05	0.5
	Fluoranthene	mg/kg	0.05	NV	NV	4.24	<0.05	0.73	50.4	3.72	3.7	0.61	0.28	13.8
	Fluorene	mg/kg	0.05	NV	NV	<0.05	<0.05	<0.05	7.14	<0.05	<0.05	<0.05	<0.05	0.62
	Indeno(1,2,3-c,d)pyrene	mg/kg	0.05	NV	NV	0.84	<0.05	<0.05	7.89	0.28	0.7	0.19	0.07	2.18
	Naphthalene	mg/kg	0.05	NV	NV	0.12	0.74	0.88	45.5	0.55	0.27	0.1	<0.05	0.46
	Phenanthrene	mg/kg	0.05	NV	NV	1.56	<0.05	3.47	49.6	2.1	1.51	0.17	0.06	8.83
	Pyrene	mg/kg	0.05	NV	NV	4.02	<0.05	2.08	43.1	3.48	4.24	0.5	0.23	13.1
	Total	mg/kg		100	20 *	20.23	0.74	9.1	308.21	15.98	19.81	3.35	1.44	67.38
TPH	TPH C 6 - C 9 Fraction	mg/kg	10	NV	65	<10	<10	15	<10	<10	<10	<10	<10	<10
	TPH C10 - C14 Fraction	mg/kg	50	NV	NV	<50	<50	80	90	<50	<50	<50	<50	<50
	TPH C15 - C28 Fraction	mg/kg	100	NV	NV	300	<100	850	1220	330	260	<100	<100	330
	TPH C29-C36 Fraction	mg/kg	100	NV	NV	230	<100	430	1020	180	280	<100	<100	220
	TPH+C10 - C36 (Sum of total)	mg/kg	-	NV	1,000	555	<250	1360	2,330	535	565	<250	<250	575
BTEX	Benzene	mg/kg	0.2	NV	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
	Ethylbenzene	mg/kg	0.5	NV	50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Toluene	mg/kg	0.5	NV	130	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Xylene (m & p)	mg/kg	0.5	NV	NV	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Xylene (o)	mg/kg	0.5	NV	NV	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Xylene Total	mg/kg	-	NV	25	<1	<1	<1	<1	<1	<1	<1	<1	<1

Notes

PAHs Polycyclic Aromatic Hydrocarbons

TPH Total Petroleum Hydrocarbons

BTEX Benzene, toluene, ethylbenzene, xylene

TP06 Soil Sample Location

TP06_0.5 Sample Identity

30/06/2008 Date Sample Collected

13.100 Indicates Exceedence of Assessment Criteria

LOR Laboratory Limit of Reporting

nv No value exists

NEPM HIL F National Environment Protection (Assessment of Contamination) Measure 1999

SSG Guidelines for Assessing Service Station Sites, NSW EPA December 1994 (note

Note that the benzo (a) pyrene) and Total PAH value for the SSG assumes

Dup_TP2 It is noted that this sample was a duplicate of TP36_0.1, however, the original

(TP36_0.1) sample was not analysed and DUP_TP2 presents conditions at TP36 at 0.1m

DUP1 (TP74 m)

Where a duplicate is reported, it is a duplicate of the preceding sample (i.e. Dup02-TP is a duplicate of TP08_0.2)

Table T4: Soil Results -OC/OP & PCB's

Analyte	Units	LOR	NEPM HIL F	TP03_0.2 27-June-2008	TP10_0.2 30-June-2008	BH30_0.1-0.2 15-July-2008	BH34_0.1-0.2 15-July-2008	BH63_0.1-0.2 30-June-2008	BH65_0.1-0.2 01-July-2008	BH72_0.1-0.2 14-July-2008	TP73_0.1 30-June-2008	TP74_0.2M 26-June-2008	DUP01-TP 26-June-2008	TP76_0.2 27-June-2008	TP78_0.1 30-June-2008
Pesticides															
a-BHC	mg/kg	0.05	NV	<0.05	<0.05	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	mg/kg	0.05	NV	<0.05	<0.05	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Azinophos methyl	mg/kg	0.05	NV	<0.05	<0.05	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
b-BHC	mg/kg	0.05	NV	<0.05	<0.05	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos	mg/kg	0.05	NV	<0.05	<0.05	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	mg/kg	0.05	NV	<0.05	<0.05	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chlordane (cis)	mg/kg	0.05	NV	<0.05	<0.05	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chlordane (trans)	mg/kg	0.05	NV	<0.05	<0.05	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	mg/kg	0.05	NV	<0.05	<0.05	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	mg/kg	0.05	NV	<0.05	<0.05	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	mg/kg	0.05	NV	<0.05	<0.05	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
d-BHC	mg/kg	0.05	NV	<0.05	<0.05	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
DDD	mg/kg	0.05	NV	<0.05	<0.05	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
DDT	mg/kg	0.2	NV	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Demeton-S-methyl	mg/kg	0.05	NV	<0.05	<0.05	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	mg/kg	0.05	NV	<0.05	<0.05	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dichlorvos	mg/kg	0.05	NV	<0.05	<0.05	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	mg/kg	0.05	NV	<0.05	<0.05	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dimethoate	mg/kg	0.05	NV	<0.05	<0.05	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan I	mg/kg	0.05	NV	<0.05	<0.05	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan II	mg/kg	0.05	NV	<0.05	<0.05	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulphate	mg/kg	0.05	NV	<0.05	<0.05	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	mg/kg	0.05	NV	<0.05	<0.05	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	mg/kg	0.05	NV	<0.05	<0.05	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin ketone	mg/kg	0.05	NV	<0.05	<0.05	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	mg/kg	0.05	NV	<0.05	<0.05	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	mg/kg	0.05	NV	<0.05	<0.05	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	mg/kg	0.05	NV	<0.05	<0.05	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
g-BHC (Lindane)	mg/kg	0.05	NV	<0.05	<0.05	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	mg/kg	0.05	50	<0.05	<0.05	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	mg/kg	0.05	NV	<0.05	<0.05	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene	mg/kg	0.05	NV	<0.05	<0.05	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Malathion	mg/kg	0.05	NV	<0.05	<0.05	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	mg/kg	0.2	NV	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methyl parathion	mg/kg	0.2	NV	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Monocrotophos	mg/kg	0.2	NV	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Parathion	mg/kg	0.2	NV	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Primphos-ethyl	mg/kg	0.05	NV	<0.05	<0.05	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	mg/kg	0.05	NV	<0.05	<0.05	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin + Dieldrin	mg/kg		50	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
DDT+DDE+DDD	mg/kg		1000	<0.3	<0.3	<3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
4,4-DDE	mg/kg	0.05	NV	<0.05	<0.05	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
PCB's	mg/kg	0.1	50	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Notes

TP06 Soil Sample Location
 TP06_0.5 Sample Identity
 30/06/2008 Date Sample Collected
 LOR Laboratory Limit of Reporting
 nv No value exists
 NEPM HIL F Measure 1999 Health Investigation Level 'F' for Commercial / Industrial Proj

Table T5: Groundwater Elevations & Wellhead Parameter Measurements

Aquifer	MW	Easting	Northing	RL (mAHD)	TDW (mbtoc)	SWL (mbtoc)	SWL (mAHD)	Purged Volume (L)	DO (mg/l)	pH	Redox (mV)	Temp (°C)	Date Sampled	Comments
Fill Aquifer	MW101	381192.468	6361319.584	8.508	8.470	6.040	2.468	5	1.79	10.4	81.0	20.3	13/8/2008	Purged dry after 5L (15L required), well left to recharge prior to sampling. Water clear on top, murky brown at depth, tar odour, no sheen.
	MW102	381231.974	6361328.703	8.340	8.400	6.180	2.160	14	2.00	8.0	42.0	21.1	13/8/2008	Water brown, turbid, estuarine odour, no sheen.
	MW103	381201.434	6361288.046	8.515	8.260	6.000	2.515	5	1.80	11.5	-205.0	22.4	13/8/2008	Purged dry after 5L (10.44L required). Water brown, turbid, no odour/sheen.
	MW104	381236.202	6361216.015	8.524	8.260	4.920	3.604	20	1.76	9.1	-27.0	22.1	15/8/2008	Water brown. Required volume purged.
	MW105	381153.869	6361232.465	8.186	8.5	3.4	4.786	31	1.92	9.5	110.0	21.4	13/8/2008	Water brown, turbid, no odour/sheen. Required volume purged.
	MW106	381296.402	6361192.586	8.885	8.760	5.790	3.095	7	2.28	11.3	-190.0	20.0	15/8/2008	Purged dry after 7L (18L required), well left to recharge prior to sampling. Water grey-brown, turbid, no odour/sheen.
	MW107	381266.550	6361069.142	8.801	8.92	3.9	4.901	30	4.01	9.9	181.0	18.1	13/8/2008	Water dark brown, turbid, no odour/sheen. Required volume purged.
	MW108	381124.324	6361093.492	8.826	8.750	5.585	3.241	19	0.54	7.5	-12.0	22.3	13/8/2008	Water brown, turbid, lots of silt at depth, no odour/sheen. Required volume purged.
	BH13	381408.677	6361074.005	9.601	11.680	7.440	2.161	13	3.00	11.1	-180.0	22.3	15/8/2008	Purged dry after 13L (21.84L required), well left to recharge prior to sampling. Water clear, strong organic odour.
	BH12	381225.001	6361181.368	8.820	8.72	5.37	3.45	21	2.38	11.6	-5.0	20.7	15/8/2008	Water clear, black suspended solids, no odour. Inside of well stained from product entering the well. Required volume purged.
	BH11	381268.003	6361249.525	9.004	8.700	6.200	2.804	18	2.36	8.6	68.0	22.2	14/8/2008	Required volume purged. No odours or sheen.
	BH10	381336.720	6361323.457	8.517	8.300	6.540	1.977	11	2.75	7.4	-82.0	18.0	14/8/2008	Water clear, some suspended solids, no odour/sheen. Required volume purged.
	BH9	381414.261	6361291.809	8.299	9.530	6.580	1.719	10	6.48	12.4	-311.0	22.6	14/8/2008	Purged dry after 10L. Water clear, no odour/sheen. Required volume purged.
	BH8	381411.019	6361216.296	8.948	11.560	6.660	2.288	22	3.48	10.0	-147.0	21.2	15/8/2008	Purged dry after 22L (30L required), well left to recharge prior to sampling. Water clear, black suspended solids, no odour.
	BH7	381402.784	6361165.621	8.771	12.020	6.520	2.251	33	3.13	11.4	-185.0	19.0	14/8/2008	Water clear, tar odour, no sheen. Required volume purged.
Estuarine Sediments	BH2	381225.074	6361082.610	9.738	13.7	7.07	2.668	23	1.87	9.1	-10.0	20.2	14/8/2008	Purged dry after 15L, further 8L purged following day (42L required). Water clear, no sheen, estuarine odour.
	MW201	381237.007	6361214.705	8.521	13.220	5.150	3.371	48	3.00	8.9	-12.8	21.3	15/8/2008	Required volume purged.
	MW202	381193.111	6361321.467	8.542	13.470	8.290	0.252	31	1.89	7.2	-37.0	19.4	13/8/2008	Faint organic odour. Required volume purged.
	MW203	381342.550	6361322.186	8.512	13.900	7.600	0.912	37	1.44	8.6	-178.0	21.4	13/8/2008	Required volume purged. No odours or sheen.
	MW204	381410.306	6361195.569	8.633	13.750	7.800	0.833	36	0.94	6.8	-82.0	19.9	14/8/2008	Water brown/black, turbid, estuarine odour, no sheen. Required volume purged.

Notes

RL (mAHD)	Relative level of the top of the well casing in relation to metres above Australian Height Datum (m AHD)
TDW (m btoC)	Total Depth of Well (metres below top of well casing)
SWL (mbtoc)	Standing Water Level (metres below top of well casing)
SWL (mAHD)	Standing Water Level (metres above Australian Height Datum)
DO (mg/l)	Dissolved Oxygen
Temp (°C)	Temperature

Table T6: Groundwater Results - Inorganics

Analyte	Units	LOR	ANZECC 2000 95% Marine (mg/L)	Shallow Fill Aquifer											
				MW7	MW8	MW9	MW10	MW11	MW12	MW13	MW101	MW102	MW103	MW104	MW105
				14-August-2008	15-August-2008	14-August-2008	14-August-2008	14-August-2008	15-August-2008	15-August-2008	13-August-2008	13-August-2008	13-August-2008	15-August-2008	13-August-2008
pH (Lab)	pH_Units	0.01	7.0-8.5 *	11.6	9.53	12.7	8.72	8.61	11.4	10.8	10.3	8.01	11.9	9.32	9.67
Sulphate	mg/L	1	NV	128	23	7	113	1180	191	174	351	784	49	557	14
Sulphide	mg/L	0.1	NV	0.3	0.3	1.4	<0.1	<0.1	<0.1	0.9	<0.1	<0.1	<0.1	<0.1	<0.1
Aluminium	mg/L	0.01	NV	0.74	2.05	0.66	0.02	0.02	1.31	0.68	0.11	0.02	2.64	26.8	0.17
Barium	mg/L	0.001	NV	0.036	0.213	0.743	0.089	0.008	0.096	0.035	0.021	0.072	0.027	0.342	0.029
Cadmium	mg/L	0.0001	0.0055	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	mg/L	0.001	0.0274**	0.002	0.005	<0.001	<0.001	0.012	0.015	0.004	<0.001	<0.001	<0.001	0.006	<0.001
Cobalt	mg/L	0.001	0.001	<0.001	0.002	<0.001	<0.001	<0.001	0.002	<0.001	<0.001	<0.001	<0.001	0.003	<0.001
Copper	mg/L	0.001	0.0013	<0.001	0.088	<0.001	0.001	0.002	0.029	0.007	0.003	<0.001	<0.001	0.012	<0.001
Iron	mg/L	0.05	NV	<0.05	2.36	<0.5	<0.05	<0.05	3.31	1.15	0.14	0.17	<0.05	9.36	<0.05
Lead	mg/L	0.001	0.0044	0.001	0.142	<0.001	<0.001	<0.001	0.006	0.01	<0.001	<0.001	0.002	0.117	<0.001
Manganese	mg/L	0.001	NV	0.012	0.058 *	0.002	0.395	0.033	0.027 *	0.003 *	0.014	0.849	0.004	0.178	0.006
Molybdenum	mg/L	0.001	NV	0.031	0.098	0.148	0.041	0.011	0.008	0.053	0.236	0.069	0.116	0.037	0.028
Nickel	mg/L	0.001	0.07	<0.001	0.008	<0.005	<0.001	<0.001	0.006	0.002	0.008	<0.001	0.001	0.006	<0.001
Zinc	mg/L	0.005	0.015	<0.005	0.271	<0.005	<0.005	<0.005	0.27	0.058	<0.005	<0.005	<0.005	0.029	<0.005
Mercury	mg/L	0.0001	0.0004	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0452	0.009	0.0002	<0.0001	0.0002

Notes

MW07 Sample location / identity
 30/06/2008 Date Sample Collected
 LOR Laboratory Limit of Reporting
 nv No value exists
 ANZECC 2000 95% ANZECC (2000) *Guidelines for Fresh and Marine Water Quality*
 Marine
128 Indicates an exceedence of the ANZECC 2000
 * Note MW8, MW12, MW13 and MW106 were re-sampled on 11 September 2008 and analysed for manganese, and the results presented above are from the September 11 sampling event

Table T6: Groundwater Results - Inorganics

Analyte	Units	LOR	ANZECC 2000 95% Marine (mg/L)	Shallow Fill Aquifer			
				MW106 15-August-2008	MW107 13-August-2008	DUP01 13-August-2008	MW108 13-August-2008
pH (Lab)	pH_Units	0.01	7.0-8.5 *	11.3	10	10	7.87
Sulphate	mg/L	1	NV	749	<50	68	368
Sulphide	mg/L	0.1	NV	<0.1	<0.1	<0.1	<0.1
Aluminium	mg/L	0.01	NV	27.3	0.13	0.17	0.1
Barium	mg/L	0.001	NV	1.24	0.046	0.044	0.475
Cadmium	mg/L	0.0001	0.0055	0.001	0.0002	0.0004	<0.0001
Chromium	mg/L	0.001	0.0274**	0.036	<0.001	<0.001	<0.001
Cobalt	mg/L	0.001	0.001	0.025	<0.001	<0.001	<0.001
Copper	mg/L	0.001	0.0013	0.071	<0.001	0.001	0.028
Iron	mg/L	0.05	NV	30.6	<0.05	0.05	0.12
Lead	mg/L	0.001	0.0044	0.807	<0.001	0.004	0.001
Manganese	mg/L	0.001	NV	0.003 *	0.006	0.013	0.122
Molybdenum	mg/L	0.001	NV	0.167	0.037	0.039	0.052
Nickel	mg/L	0.001	0.07	0.04	<0.001	<0.001	<0.001
Zinc	mg/L	0.005	0.015	0.714	<0.005	<0.005	<0.005
Mercury	mg/L	0.0001	0.0004	0.0003	0.0004	-	0.0001

Notes

MW07 Sample location / identity
 30/06/2008 Date Sample Collected
 LOR Laboratory Limit of Reporting
 nv No value exists
 ANZECC 2000 95% ANZECC (2000) *Guidelines for Fresh and Marine Water Quality*
 Marine
128 Indicates an exceedence of the ANZECC 2000
 * Note MW8, MW12, MW13 and MW106 were re-sampled on 11 September 2008 and analysed for manganese, and the results presented above are from the September 11 sampling event

Table T6: Groundwater Results - Inorganics

Analyte	Units	LOR	ANZECC 2000 95% Marine (mg/L)	Deeper Estuarine Aquifer								Perched Test Pit Water	
				MW2	MW201	MW202	DUP02	MW203	MW204	DUP03	Trip02	TP18	TP37
				14-August-2008	15-August-2008	13-August-2008	13-August-2008	13-August-2008	14-August-2008	14-August-2008	14/08/08	09-July-2008	09-July-2008
pH (Lab)	pH_Units	0.01	7.0-8.5 *	10	9.05	7.31	7.13	8.68	7.15	7.16	7.0	11.4	9.85
Sulphate	mg/L	1	NV	150	37	1410	1960	66	711	722	624.0	52	102
Sulphide	mg/L	0.1	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aluminium	mg/L	0.01	NV	0.02	24.5	<0.1	<0.1	0.06	<0.1	<0.1	<0.01	-	-
Barium	mg/L	0.001	NV	0.021	0.841	0.086	0.102	0.014	1.04	0.8	0.789	1.1	2.3
Cadmium	mg/L	0.0001	0.0055	0.001	<0.0001	<0.001	<0.001	<0.0001	<0.001	<0.001	0.001	<0.005	0.007
Chromium	mg/L	0.001	0.0274**	<0.001	0.027	<0.01	<0.01	0.002	<0.01	<0.01	<0.005	0.17	0.73
Cobalt	mg/L	0.001	0.001	<0.001	0.008	<0.01	<0.01	<0.001	0.011	<0.01	0.01	-	-
Copper	mg/L	0.001	0.0013	<0.001	0.017	<0.02	<0.02	<0.001	<0.02	<0.02	<0.002	0.32	0.86
Iron	mg/L	0.05	NV	<0.05	21	10.6	14.5	<0.05	23.8	9.97	0.1	-	-
Lead	mg/L	0.001	0.0044	0.001	0.049	0.037	0.02	0.006	0.014	0.026	<0.001	0.54	2.43
Manganese	mg/L	0.001	NV	0.013	0.337	2.04	2.8	0.103	6.66	4.68	10.8	46.4	112
Molybdenum	mg/L	0.001	NV	0.048	0.037	<0.01	<0.01	0.077	<0.01	<0.01	0.003	-	-
Nickel	mg/L	0.001	0.07	<0.001	0.019	<0.01	<0.01	<0.001	<0.01	<0.01	<0.005	-	-
Zinc	mg/L	0.005	0.015	<0.005	0.056	<0.05	<0.05	<0.005	<0.05	<0.05	0.017	0.9	6.27
Mercury	mg/L	0.0001	0.0004	<0.0001	<0.0001	0.0007	-	<0.0001	-	-	-	<0.0001	<0.0001

Notes

MW07 Sample location / identity
 30/06/2008 Date Sample Collected
 LOR Laboratory Limit of Reporting
 nv No value exists
 ANZECC 2000 95% ANZECC (2000) *Guidelines for Fresh and Marine Water Quality*
 Marine
128 Indicates an exceedence of the ANZECC 2000
 * Note MW8, MW12, MW13 and MW106 were re-sampled on 11 September 2008 and analysed for manganese, and the results presented above are from the September 11 sampling event

Table T7: Groundwater Results - Organics

Analyte		Units	LOR	ANZECC 2000 95% Marine	Shallow Fill Aquifer												
					MW7	MW8	MW9	MW10	MW11	MW12	MW13	MW101	MW102	MW103	MW104	MW105	MW106
					14-August-2008	15-August-2008	14-August-2008	14-August-2008	14-August-2008	15-August-2008	15-August-2008	13-August-2008	13-August-2008	13-August-2008	15-August-2008	13-August-2008	15-August-2008
PAHs	Acenaphthene	µg/L	1	NV	3	<1	1.5	63.3	<1	<1	6.6	34.4	<1	1.3	<1	<1	<1
	Acenaphthylene	µg/L	1	NV	<1	<1	<1	2.3	21.4	<1	26.5	3.6	<1	<1	<1	<1	<1
	Anthracene	µg/L	1	NV	<1	<1	<1	1.6	2.3	<1	8.7	14.2	3.7	<1	<1	<1	<1
	Benz(a)anthracene	µg/L	1	NV	<1	<1	<1	<1	<1	<1	1	11.9	8.2	1.2	<1	<1	<1
	Benzo(a) pyrene	µg/L	0.5	NV	<0.5	0.6	<0.5	<1	<1	<0.5	<1	10.5	8.5	1.4	<0.5	<0.5	<0.5
	Benzo(b)fluoranthene	µg/L	1	NV	<1	<1	<1	<1	<1	<1	<1	12.9	10	1.6	<1	<1	<1
	Benzo(g,h,i)perylene	µg/L	1	NV	<1	<1	<1	<1	<1	<1	<1	8.8	6.7	1.1	<1	<1	<1
	Benzo(k)fluoranthene	µg/L	1	NV	<1	<1	<1	<1	<1	<1	<1	5.8	5.4	<1	<1	<1	<1
	Chrysene	µg/L	1	NV	<1	<1	<1	<1	<1	<1	<1	10.5	7.6	1.1	<1	<1	<1
	Dibenz(a,h)anthracene	µg/L	1	NV	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Fluoranthene	µg/L	1	NV	<1	2	<1	1.4	1.8	<1	16.4	29.9	14.6	3	<1	<1	<1
	Fluorene	µg/L	1	NV	<1	1	<1	18.8	9.4	<1	30.4	21.9	<1	<1	<1	<1	<1
	Indeno(1,2,3-c,d)pyrene	µg/L	1	NV	<1	<1	<1	<1	<1	<1	<1	7	5.5	<1	<1	<1	<1
	Naphthalene	µg/L	1	70	55.4	7	11.8	128	181	2.1	888	22.4	<1	33.5	<1	<1	<1
TPH	Phenanthrene	µg/L	1	NV	1.3	3.6	1.8	13.6	10.7	<1	82.4	58.7	5.9	1.8	<1	<1	<1
	Pyrene	µg/L	1	NV	<1	1.8	<1	<1	1.1	<1	12	24.6	13.3	2.7	<1	<1	<1
	Total PAHs	-	-	NV	59.7	16.0	15.1	229.0	227.7	2.1	1,072.0	277.1	89.4	48.7	-	-	-
	TPH C 6 - C 9 Fraction	µg/L	20	NV	110	<20	<20	<20	40	<20	50	<20	<20	<20	<20	<20	<20
	TPH C10 - C14 Fraction	µg/L	50	NV	440	220	850	460	370	110	1,580	360	110	900	160	110	750
BTEx	TPH C15 - C28 Fraction	µg/L	100	NV	800	1,300	2,300	600	600	300	800	1,900	400	1,100	200	400	600
	TPH C29-C36 Fraction	µg/L	50	NV	210	380	280	160	140	100	80	1,220	220	360	70	100	140
	TPH+C10 - C36 (Sum of total)	µg/L	-	NV	1,450	1,900	3,430	1,220	1,110	510	2,460	3,480	730	2,360	430	610	1,490
	Benzene	µg/L	1	700	77	<1	<1	<1	20	8	39	<1	<1	<1	<1	<1	<1
	Ethylbenzene	µg/L	2	NV	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
BTEx	Toluene	µg/L	2	NV	12	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
	Xylene (m & p)	µg/L	2	NV	5	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene (o)	µg/L	2	NV	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene Total	µg/L	-	NV	7	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4

Notes

PAHs Polycyclic Aromatic Hydrocarbons
 TPH Total Petroleum Hydrocarbons
 BTEx Benzene, toluene, ethylbenzene, xylene
 MW07 Sample location / identity
 30/06/2008 Date Sample Collected
 LOR Laboratory Limit of Reporting
 nv No value exists
 ANZECC 2000 ANZECC (2000) Guidelines for Fresh and Marine Water Quality
 95% Marine

128 Indicates an exceedence of the ANZECC 2000 95%

Table T7:

	Shallow Fill Aquifer			Deeper Estuarine Aquifer								Perched Test Pit Water	
	MW107	DUP01	MW108	MW2	MW201	MW202	DUP02	MW203	MW204	DUP03	Trip02	TP18	TP37
	13-August-2008	13-August-2008	13-August-2008	14-August-2008	15-August-2008	13-August-2008	13-August-2008	13-August-2008	14-August-2008	14-August-2008	14/08/08	09-July-2008	09-July-2008
PAHS	3.9	2.7	1.4	<1	<1	20.7	20.6	<1	<1	<1	<1	<1	<1
	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1.8	1.8
	1.2	<1	1.1	<1	<1	<1	<1	<1	<1	<1	<1	9	7.3
	1.1	0.6	0.9	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	2.3	6.9
	1.3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	12.6	11.1
	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	5.1	6.1
	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	3	3.4
	1.1	<1	1.1	<1	<1	<1	<1	<1	<1	<1	<1	8.7	6.6
	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1.3	1.2
	3.4	2.2	2	<1	<1	2.3	1.7	<1	<1	1.1	<1	20.2	13.4
	<1	<1	<1	<1	<1	6.5	7	<1	<1	<1	<1	<1	<1
	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	5	4.8
	23.7	15	4.5	<1	<1	4.3	4.9	<1	2.5	1.7	<1	1.2	5.6
	3	2	4.5	<1	<1	7.7	8.1	<1	1.2	1.3	<1	10.1	5.9
TPH	2.8	1.8	2.1	<1	<1	1.7	1.1	<1	<1	<1	<1	16.6	14.9
	41.5	24.3	17.6	-	-	43.2	43.4	-	3.7	4.1	-	96.9	89.0
	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<50	<20	<20
	490	440	450	140	610	1,000	180	530	1240	990	**390	<50	<50
	700	700	1700	500	400	400	300	500	600	600	<200	400	500
BTEX	340	250	910	140	160	200	<50	230	140	180	<50	220	390
	1,530	1,390	3,060	780	1,170	1,600	505	1,260	1,980	1,770	390	645	915
	4	<1	<1	2	<1	<1	<1	<1	<1	<1	<1	<1	<1
	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<1	<2	<2
	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	3.0	<5	<5
	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	4.0	<2	<2
	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	2.0	<2	<2
	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	6.0	<4	<4

Notes

PAHs
TPH
BTEX
MW07
30/06/2008
LOR
nv
ANZECC 2000
95% Marine

Figures from ENSR (2008)c

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Environment



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— Site boundary

Figure F1 | Site Location
Delta EMD Australia Pty Ltd
Data Interpretation and Outline Remediation Strategy
McIntosh Drive, Mayfield NSW





AECOM



- Site boundary
- Site perimeter drainage
- Operational areas/buildings
- Hardstand (asphalt/concrete)
- Open ground

Figure F3 Site Surface Covering
Delta EMD Australia Pty Ltd
Data Interpretation and Outline Remediation Strategy
 McIntosh Drive, Mayfield NSW



AECOM

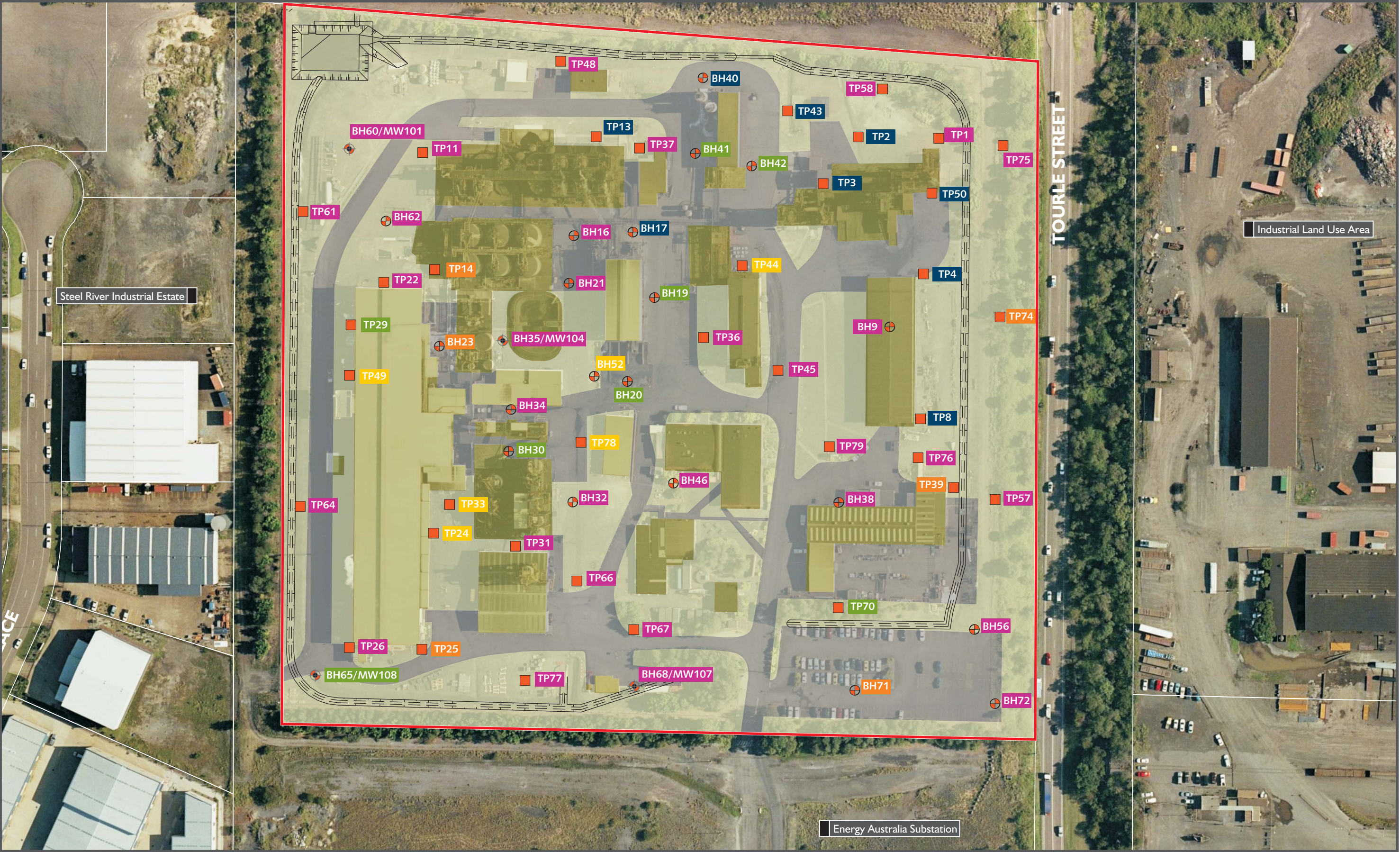
0 50m

Site boundary
Site perimeter drainage
Operational areas/buildings
Hardstand (asphalt/concrete)
Open ground

Borehole location (ENSR, 2008)
Test pit location (ENSR, 2008)
Monitoring well location (ENSR, 2008)
Sample location not drilled due to H&S concerns (15, 51 & 54)

Note: TP22, TP24 & TP49 were drilled deeper for soil samples and are referred to as BH22, BH24 and BH49 for reporting purposes

Figure F4 Site Layout and Sampling Locations
Delta EMD Australia Pty Ltd
Data Interpretation and Outline Remediation Strategy
McIntosh Drive, Mayfield NSW



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- Site boundary
- Site perimeter drainage
- Operational areas/buildings
- Hardstand (asphalt/concrete)
- Open ground

- Borehole location (ENSR, 2008)
- Test pit location (ENSR, 2008)
- Borehole/Monitoring well location (ENSR, 2008)
- Sample location not drilled due to H&S concerns (15, 51 & 54)

Note: TP22, TP24 & TP49 were drilled deeper for soil samples and are referred to as BH22, BH24 and BH49 for reporting purposes

- SAMPLE ID <7,500 mg/kg
- SAMPLE ID 7,500 - 15,000 mg/kg
- SAMPLE ID 15,000 - 50,000 mg/kg
- SAMPLE ID 50,000 - 100,000 mg/kg
- SAMPLE ID > 100,000 mg/kg

Figure F5 Manganese Concentrations (mg/kg) in Soil (Fill) from 0.0- 0.3m Depth, ENSR 2008
Delta EMD Australia Pty Ltd
Data Interpretation and Outline Remediation Strategy
McIntosh Drive, Mayfield NSW



- Site boundary
- Site perimeter drainage
- Operational areas/buildings
- Hardstand (asphalt/concrete)
- Open ground

- Borehole location (ENSR, 2008)
- Test pit location (ENSR, 2008)
- Borehole/Monitoring well location (ENSR, 2008)
- Sample location not drilled due to H&S concerns (15, 51 & 54)

Note: TP22, TP24 & TP49 were drilled deeper for soil samples and are referred to as BH22, BH24 and BH49 for reporting purposes

SAMPLE ID	<7,500 mg/kg
SAMPLE ID	7,500 - 15,000 mg/kg
SAMPLE ID	15,000 - 50,000 mg/kg
SAMPLE ID	50,000 - 100,000 mg/kg
SAMPLE ID	> 100,000 mg/kg

Figure F6 Manganese Concentrations (mg/kg) in Soil (Fill) from 0.3 - 0.5m Depth, ENSR 2008

Delta EMD Australia Pty Ltd

Data Interpretation and Outline Remediation Strategy

McIntosh Drive, Mayfield NSW



Figure F7 Manganese Concentrations (mg/kg) in Soil (Fill) from 0.5 - 2.0m Depth, ENSR 2008

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Data Interpretation and Outline Remediation Strategy

McIntosh Drive, Mayfield NSW



0 50m

Site boundary

Site perimeter drainage

Operational areas/buildings

Hardstand (asphalt/concrete)

Open ground

Borehole location (ENSR, 2008)

Test pit location (ENSR, 2008)

Borehole/Monitoring well location (ENSR, 2008)

Sample location not drilled due to H&S concerns (15, 51 & 54)

SAMPLE ID

<7,500 mg/kg

SAMPLE ID

7,500 - 15,000 mg/kg

SAMPLE ID

15,000 - 50,000 mg/kg

SAMPLE ID

50,000 - 100,000 mg/kg

SAMPLE ID

> 100,000 mg/kg

Note: TP22, TP24 & TP49 were drilled deeper for soil samples and are referred to as BH22, BH24 and BH49 for reporting purposes

Figure F8

Manganese Concentrations (mg/kg) in Soil (Fill) greater than 2.0m Depth, ENSR 2008

Delta EMD Australia Pty Ltd

Data Interpretation and Outline Remediation Strategy

McIntosh Drive, Mayfield NSW

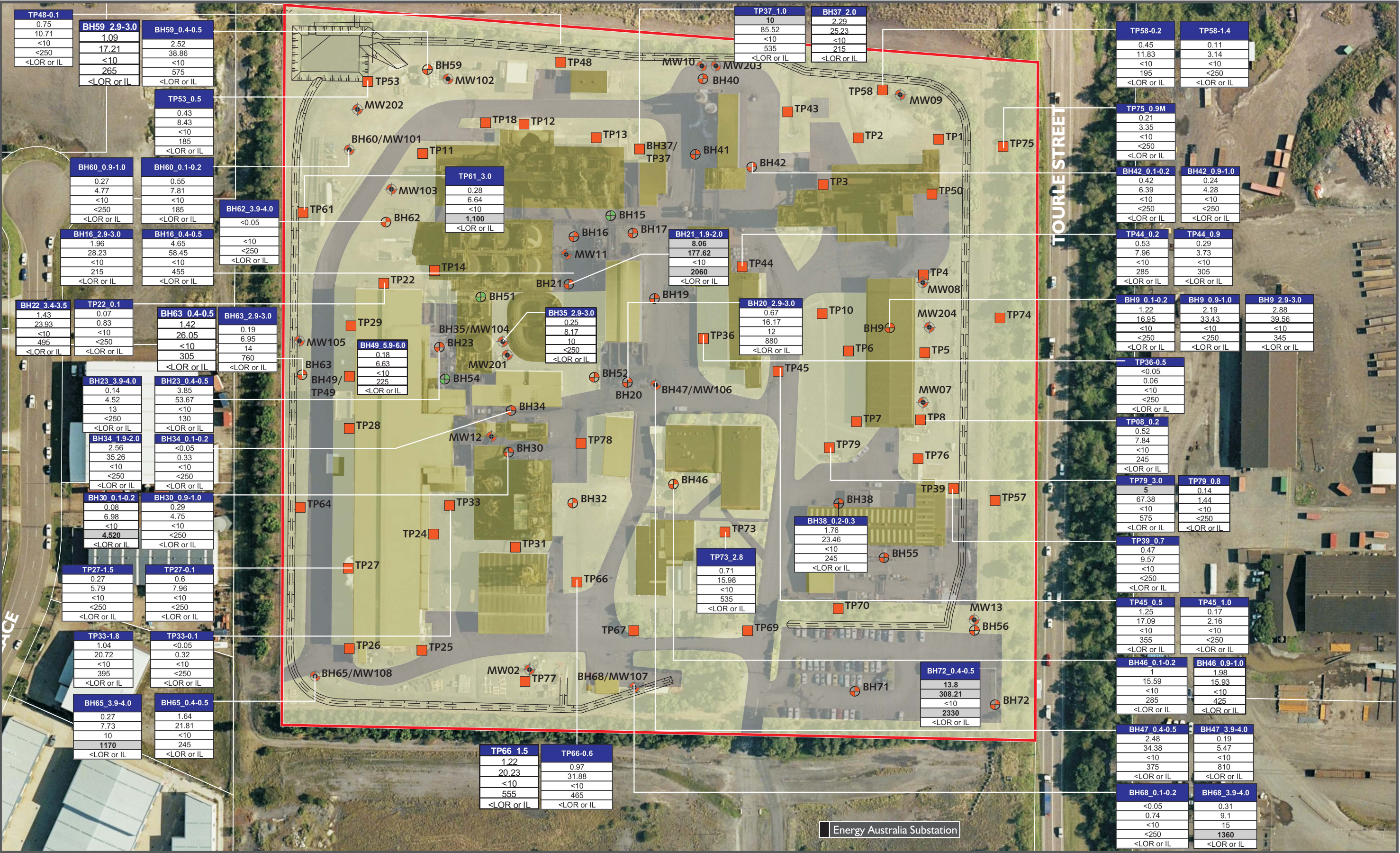




Figure F10 Manganese Concentrations (mg/L) in Shallow Fill Aquifer, ENSR 2008
Delta EMD Australia Pty Ltd
Data Interpretation and Outline Remediation Strategy
 McIntosh Drive, Mayfield NSW



AECOM



Figure F11 Manganese Concentrations (mg/L) in Deeper Estuarine Aquifer, ENSR 2008
Delta EMD Australia Pty Ltd
Data Interpretation and Outline Remediation Strategy
 McIntosh Drive, Mayfield NSW



AECOM

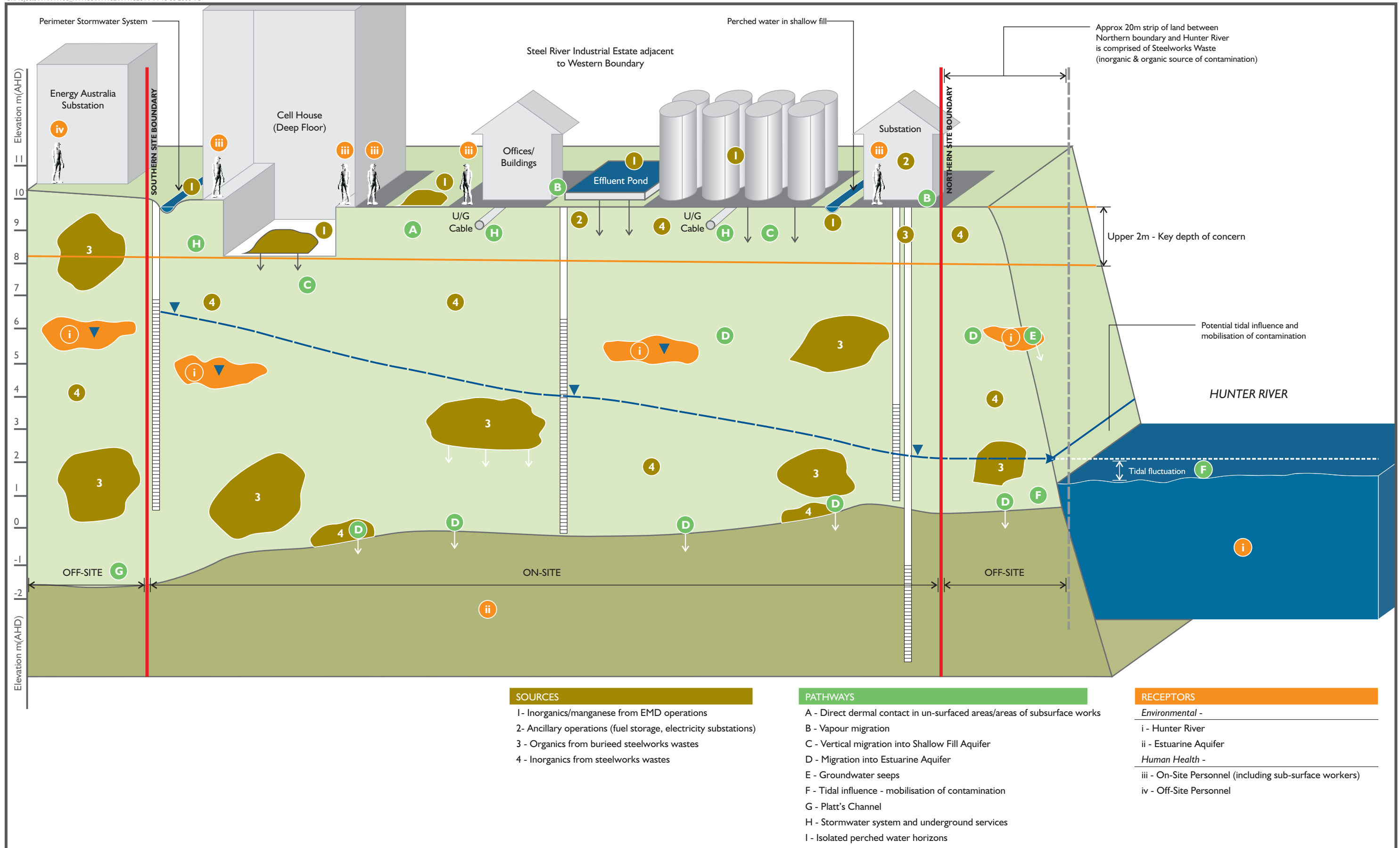
Figure F13 Organic Compound Concentrations (ug/L) in Deep Estuarine Aquifer, ENSR 2008

Delta EMD Australia Pty Ltd

Remedial Strategy

McIntosh Drive, Mayfield NSW

Note: TP22, TP24 & TP49 were drilled deeper for soil samples and are referred to as BH22, BH24 and BH49 for reporting purposes



Appendix A

Site Background Information

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Environment

A.1 Site Setting

A.1.1 Site Description

Site inspections conducted in 2009 showed that the Site is relatively flat, with the ground level approximately 8 m above the Southern Arm of the Hunter River, located approximately 20 m north of the Site. The Site is built upon reclaimed land and is underlain by fill materials associated with former BHP steel works activities. An open, asphalt-lined drain surrounds the majority of the Site (apart from the Site entrance), which diverts stormwater run-off to the surface water pond located in the north western corner of the Site. The surface cover of the Site is approximately 50 % open ground, 20 % infrastructure and 30 % hardstand. The hardstand comprises bitumen and concrete roadways and a carpark, located in the south eastern corner of the Site.

A.1.2 Surrounding Land Uses

The surrounding land uses, at the time this report was prepared, are summarised below:

- **North:** The Southern Arm of the Hunter River was located approximately 20 m from the northern site boundary which flows in a south easterly direction towards Newcastle Harbour. The strip of vacant land located between the Site and the Hunter River was also reclaimed land comprising of steel works wastes.
- **South:** The land adjacent to the southern site boundary was being developed by Energy Australia as an electrical substation.
- **East:** Tourle Street bounded the eastern site boundary, beyond which heavy industry was located.
- **West:** Steel River Industrial Estate with light industrial facilities was located immediately to the west and south west

A.1.3 Topography and Drainage

The Site is relatively flat with an elevation of approximately 9 mAHD. As discussed above, an open asphalt-lined drain surrounds the majority of the Site (apart from the Site entrance), which diverts stormwater run off to a surface water pond located in the north western corner of the Site. All Site Stormwater is anticipated is run to this stormwater pond.

A.2 Geology

The Geological conditions beneath the Site and the immediate Site surroundings are summarised below:

- **Fill:** Fill materials associated with historical emplacement of steelworks wastes was encountered at all investigation locations beneath the Site during the ENSR (2008c) investigation. The full thickness of the fill was penetrated at all locations installed as monitoring wells during ENSR 2008c (MW101-MW106, MW108 and MW201 to MW204), with the exception of BH68/MW107 which met refusal at a depth of 10 m below ground surface (bgs) (noting that this is in the area of the Site which is understood to have been filled on top of Platt's channel). Fill thicknesses ranged from 8.5 m to 10.1 m. Other general wastes (rubbish) were observed in TP13, TP14 and TP53 which are located in the north western portion of the Site.

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- **Estuarine Sediments:** Estuarine sediments are present beneath the Fill, encountered as a dark brown and grey clay with low plasticity, from depths ranging from 8.5 m. It is noted that a layer of medium grained, dark grey sand was encountered beneath silty clay adjacent to the eastern Site boundary, and also a silty sandy clay containing many shell fragments was observed in MW203, located adjacent to the northern Site boundary. The base of the estuarine sediments was not encountered in any boreholes.
- **Bedrock:** Bedrock was not encountered during the investigation works although the underlying bedrock is considered to be the Tomago Coal Measures, which is comprised of interbedded sandstones, siltstones and shales.

A.3 Hydrogeology

The hydrogeological conditions encountered during the ENSR (2008c) are summarised below:

- **Fill Aquifer:** Perched water within the Fill Aquifer was encountered at a slightly higher level adjacent to the eastern, south eastern and southern site boundaries and also in the centre of the Site. Given the varied nature of the fill beneath the Site (particularly in the southern portion of the Site in the area of the former Platt's Channel) it is difficult to determine a groundwater flow regime as the system is dynamic and subject to change, however at the time the groundwater levels were monitored on 11 August 2008 the groundwater levels indicated that, perched water was lowest adjacent to the northern Site boundary, indicating perched water is generally flowing in a northerly direction towards the Southern Arm of the Hunter River.
- **Estuarine Aquifer:** Standing water levels measured in all deeper monitoring wells indicated that the underlying estuarine clay is a semi-confined aquifer (standing water levels had stabilised above the top of the screened section of the well). Water levels in MW2 (adjacent to southern boundary) and MW201 (centre of Site) were considerably higher, indicating that these locations may be under higher pressure than the other locations, although it is noted that the higher level in MW2 may be associated with the contribution of perched water from the Fill Aquifer at this location, based on the well construction.
- Based on the groundwater elevations in both the Fill Aquifer and underlying Estuarine Aquifer, groundwater is inferred to flow generally in a northerly direction towards the Southern Arm of the Hunter River.

A.4 Previous Investigations

A.4.1 Introduction

A summary of the objectives, scope of works and key findings of the previous investigations outlined in **Section 5.0** are presented in the following sections.

A.4.2 ENSR (2008a)

Site Closure Strategy for Site and Kooragang Island Facility, dated 26 September 2008 (reference N4094601_26Sept08)	
Item	Discussion
Objectives	<ul style="list-style-type: none"> This document was a proposal document outlining ENSR's proposed approach to assessing the environmental conditions of the Site to allow divestment under the Zoning of the Site.
Scope of Works	<ul style="list-style-type: none"> The document outlined the environmental Obligations and Regulatory Framework required to be adhered to in preparing the Site for divestment, and also provided a discussion on the Site closure process in regards to planning and potential remediation requirements. A preliminary Conceptual Site Model (CSM) for the Site was identified outlining identified potential sources, pathways and receptors for Site derived contamination. The document presented a proposal to undertake a data gap analysis and a preliminary estimate of works required to fill the data gaps.
Key Findings	<ul style="list-style-type: none"> Not applicable as this was a proposal document.

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A.4.3 ENSR (2008b)

Data Gap Analysis, Site, dated 29 September 2008 Reference N409460201_29Sept08	
Item	Discussion
Objectives	<ul style="list-style-type: none"> • Provide an updated understanding of the CSM for the Site and to identify any data gaps which may have required further addressing. • Provide recommendations on an appropriate scope of works to close out any identified data gaps.
Scope of Works	<p>Provided a review of the following documentation which existed for the Site:</p> <ul style="list-style-type: none"> • BHP Engineering, 1998. Environmental Impact Statement Electrolytic Manganese Dioxide Plant, dated May, • Environmental and Earth Sciences, 1990. The Installation of a Groundwater Network, report ref 9013, dated June. • Woodward Clyde, 1997. Site Characterisation & Data Review BHP Manganese, ref A8601117/1 (R001-B.Doc), dated April. • Woodward Clyde April. Site Characterisation & Data Review – BHP Manganese, dated April. • Woodward Clyde May 1997. Steel River Project Remedial Action Plan and Environmental Impact Statement, ref. A8600246, dated May. • Woodward Clyde 1997. Steel River Project Environmental Review and Operational Guidelines, ref. A8601162, dated July. • CMPS & F Environmental, 1997. Australian Manganese Co. Pty Ltd Environmental Due Diligence Audit for Delta S.A (Pty) Ltd, dated August. • CMPS & F Environmental, November 1997. Australian Manganese Co. Pty Ltd Environmental Site Investigation for Delta S.A (Pty) Ltd (ref. VA0087/RP02), dated November. • RCA Australia, 2007. Groundwater and Surface Water Report January 2006 – June 2007, Delta EMD Australia Pty Ltd (ref. 2798E-002/2), dated November. • Raw data provided by Delta relating to groundwater monitoring (including groundwater gauging and analytical results), and groundwater conditions prior to and since Delta's purchase of the Site.
Key Findings	<ul style="list-style-type: none"> • The status of soil (fill) conditions beneath the Site in relation to inorganic contaminants of concern relating to recent and historical EMD and potential organic contamination associated with historical fill materials beneath the Site were not understood. It was identified that there was the potential for shallow soil/fill contamination associated with recent and historical site activities.

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Data Gap Analysis, Site, dated 29 September 2008 Reference N409460201_29Sept08	
Item	Discussion
Key Findings (continued)	<ul style="list-style-type: none"> The data gap analysis identified insufficient monitoring well coverage across the Site with respect to establishing conditions of groundwater quality within the Fill and Estuarine Aquifers. It was identified that any new wells should be installed to isolate the two aquifers. It was recommended that monitoring of a number of wells (BH3A, BH3B, BH4A, BH5A, BH5B and BH6) be discontinued. Additional shallow and deep wells were recommended to further assess groundwater flow and groundwater quality within the underlying aquifers. Groundwater samples to be collected from the Fill Aquifer and Estuarine Aquifer to determine conditions of both aquifers across the Site.
Recommendations	<ul style="list-style-type: none"> ENSR recommended that a Phase 2 Environmental Site Assessment be undertaken to assess the identified data gaps.

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A.4.4 ENSR (2008c)

Phase 2 Environmental Site Assessment, dated 29 September 2008 Reference N4094604_RPT_29Sept08	
Item	Discussion
Objectives	<ul style="list-style-type: none"> Characterise soil and groundwater conditions beneath the Site (in accessible areas) in relation to the potential contaminants of concern identified within ENSR (2008b). To prepare a report detailing the scope of works and findings of the Phase 2 ESA.
Scope of Works	<ul style="list-style-type: none"> Collection of soil samples from 76 locations across the Site via test pits and boreholes. Analysis of soil samples from all locations for inorganic compounds (pH, sulphate, sulphide, total sulphur, aluminium, arsenic, barium, cadmium, chromium, cobalt, copper, iron, lead, manganese, mercury, molybdenum and zinc). Analysis of soil samples from 35 locations for organic compounds (TPH, BTEX and PAHs). Samples for PCBs and OC/OP pesticides analysis were collected from 11 locations across the Site. Installation of eight additional shallow monitoring wells in the Fill Aquifer, and four deeper monitoring wells in the Estuarine Aquifer. Collection of groundwater samples from 15 shallow and five deeper monitoring wells for laboratory analysis of inorganic and organic compounds. Perched water from two test pits were also collected for analysis of inorganic and organic compounds. A monitoring well survey was also completed to enable an understanding of groundwater flow conditions beneath the Site. Assessment of the soil and groundwater analytical results against nominated, NSW DECC endorsed assessment criteria.
Key Findings	<ul style="list-style-type: none"> Elevated levels of manganese, greater than nominated assessment criteria of 7500 mg/kg was identified at 69 of the 76 locations tested. Lead was the only other inorganic compound to exceed its nominated criteria of 1500 mg/kg but only from two locations of the 76 tested. Exceedances of nominated assessment criteria for organic compounds in soil were limited in extent. Benzo(a)pyrene exceeded its nominated assessment criteria at only three of 35 locations. Total PAH exceeded its nominated assessment criteria at only two locations (same locations as benzo(a)pyrene). TPH C₆-C₉ and BTEX compounds were reported at concentrations less than the nominated assessment criteria in all samples tested. TPH C₁₀-C₃₆ was reported at concentrations greater than the nominated assessment criteria at six locations.

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Phase 2 Environmental Site Assessment, dated 29 September 2008 Reference N4094604_RPT_29Sept08	
Item	Discussion
Key Findings (continued)	<ul style="list-style-type: none"> For the Fill Aquifer (including perched water from 2 test pits): <ul style="list-style-type: none"> Concentrations of chromium, cobalt, copper, lead and zinc exceeded their nominated assessment criteria, noting that assessment criteria was not available for all inorganic compounds analysed. pH values ranged from 7.87 to 11.6 and pH values from 14 wells and 2 test pits were outside the nominated assessment range of pH 7 to pH 8.5. Naphthalene exceeded its nominated assessment criterion at 3 shallow monitoring well locations. No assessment criteria were nominated for TPH, toluene, ethylbenzene and xylene. For the Estuarine Aquifer: <ul style="list-style-type: none"> Concentrations of chromium, cobalt, copper, lead and zinc exceeded their nominated assessment criteria, noting that assessment criteria was not available for all inorganic compounds analysed pH values from 3 locations were outside the nominated assessment criteria range of pH 7 – pH 8.5. Naphthalene exceeded its nominated assessment criteria at 3 shallow monitoring well locations. Where available, the nominated assessment criteria for organic compounds were not exceeded in the Estuarine Aquifer.
Recommendations	This report did not provide any recommendations as it was a factual report.

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A.4.5 ENSR (2008d)

Phase 2 ESA Summary, Site, dated 22 October 2008 Reference N4108501_RPT_22Oct08	
Item	Discussion
Objectives	<ul style="list-style-type: none"> Provide a comparison of soil and groundwater conditions in relation to inorganic and organic compounds of concern analysed during 1997 and 2008 and assess potential contribution of contamination by Deltas EMD activities. Provide a discussion on the environmental setting of the Site and provide further discussion on the nature of the steel works fill which underlies the Site and provide a discussion on the typical composition of steel works fill anticipated beneath the Site and its surrounding areas.
Scope of Works	<ul style="list-style-type: none"> Compilation of relevant 1997 and 2008 data (inorganic and organic results for soil and groundwater). Statistical analysis of the 1997 and 2008 datasets, including assessment of the following parameters: maximum, minimum and average (arithmetic mean) concentrations and the 95 % Upper Confidence Limit (UCL) calculation for identified relevant compounds in soil. Compilation of typical steel works fill composition and comparison to the 1997 and 2008 datasets. Qualitative assessment on subsurface conditions beneath the Site, including a discussion and presentation on the scopes of works completed during each of the 1997 and 2008 investigations. Preparation of a report, detailing the findings of the above and providing conclusions on the 2008 dataset compared to the 1997 dataset.
Key Findings	<ul style="list-style-type: none"> Conditions encountered during 2008 were generally consistent with the 1997 baseline conditions, although due to the higher density sampling strategy, it is considered that the 2008 assessment was more representative of subsurface conditions at the Site compared to the 1997 investigation, as a larger number of soil sample locations, depth ranges and groundwater locations were assessed. Manganese was the key contaminant of concern associated with the EMD processes and a summary of manganese conditions in soil across Site indicated: <ul style="list-style-type: none"> at shallow depths, whilst manganese was elevated, a comparison to the 1997 results indicated that shallow concentrations of manganese had not significantly changed as a result of Delta's operations at the Site between 1997 and 2008. at depth (> 0.5 m); manganese was generally attributed to the underlying Steel Works fill. Manganese was present at depth (> 2 m), at lower concentrations compared to the shallower subsurface, although concentrations still exceeded the nominated assessment criterion.

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Phase 2 ESA Summary, Site, dated 22 October 2008 Reference N4108501_RPT_22Oct08	
Item	Discussion
Key Findings (continued)	<ul style="list-style-type: none"> • Manganese concentrations at depth were considered to be associated with the steel works wastes. The arithmetic mean concentrations measured during the 2008 Phase 2 ESA were consistent with the typical compositions of steel works wastes present beneath the Site and in the Steel River industrial estate which immediately borders the Site, noting that remediation of deeper soils in the Steel River Industrial Estate had not been undertaken. • With regards to other inorganics in soil: <ul style="list-style-type: none"> - Elevated concentrations of aluminium and iron present in the subsurface (Fill) were considered to be associated with the steel works fill. - The lead assessment criterion was exceeded at two locations across the Site and all other concentrations were significantly less than the assessment criterion of 1500 mg/kg. • Manganese concentrations with respect to groundwater: <ul style="list-style-type: none"> - Manganese concentrations in the Fill Aquifer ranged from 0.002 mg/L to 0.849 mg/L; noting that the maximum reported manganese concentration was significantly less than the maximum concentration reported during 1997, and other manganese concentrations were generally less than the 1997 concentrations indicating Deltas EMD processes had not significantly affected groundwater conditions in the Fill Aquifer. - Manganese concentrations in groundwater beneath the Site were consistent with concentrations reported at the Site over the last approximately 20 years as collected by Delta. - With regard to the deeper groundwater within the Estuarine Aquifer, concentrations of manganese were generally greater than those found in the Fill Aquifer, although it was noted that regionally, manganese concentrations in the Estuarine Aquifer were greater indicating conditions beneath the Site may be similar to the adjoining properties. • With regards to other inorganics, conditions were considered to be representative of groundwater conditions in the vicinity of the Site based on the environmental setting of the property and given the surrounding land is comprised of similar steel works wastes. • The CMPS&F (1997) report did not provide sufficient coverage of organic concentrations and given the larger dataset for organic compounds in the subsurface, the 2008 dataset was considered to be more representative of conditions in relation to organic compounds in the subsurface:

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Phase 2 ESA Summary, Site, dated 22 October 2008 Reference N4108501_RPT_22Oct08	
Item	Discussion
Key Findings (continued)	<ul style="list-style-type: none"> - Total TPH (C₁₀-C₃₆) was identified as exceeding the criterion value of 1000 mg/kg in the shallow subsurface at six of 68 samples collected across the Site. Statistical analysis, however, indicated that the 95% UCL for each of the different depth intervals assessed were below the assessment criterion of 1000 mg/kg indicating the areas of elevated TPH concentrations were localised. - Total PAH were identified as exceeding the criterion value of 100 mg/kg in only two of 68 samples collected across the Site. Statistical analysis however indicated that the 95% UCL for each of the different depth intervals assessed was below the assessment criterion of 100 mg/kg, indicating the two assessment criterion exceedences represented localised areas of PAH impact. - Benzo (a) pyrene exceeded its assessment criterion of 5 mg/kg at four of 68 samples collected across the Site at depths ranging from 1 m to 2 m bgl. For the depth intervals 0-0.1 m, 0.5 – 2 m and 2 – 10 m, the 95 % UCL's are below the guideline value of 5 mg/kg. The 95 % UCL for the depth interval 0.2-0.5 m is calculated as 5.1 mg/kg was approximately equivalent to the guideline value of 5 mg/kg. • Elevated concentrations of TPH and BTEX were observed in the Fill and Estuarine Aquifers in 2008. Delta's use of organic compounds on the Site was restricted to only a few locations and potential impacts would have been limited to the shallow subsurface. Based on this, and the fact that the underlying fill represents a potential source of organic contamination, ENSR considered organic impacts to groundwater to be associated with historical fill materials. It is also considered likely that impacted groundwater may be migrating onto the Site from up-gradient waste fill locations.
Recommendations	This factual report did not provide any recommendations.

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A.4.6 AECOM 2009a

Data Interpretation and Outline Remediation Strategy, dated 15 May 2009 Reference N4113201_Rpt_15May09.doc	
Item	Discussion
Objectives	Provide Delta with an Outline Remediation Strategy (ORS) for the Site, with a view to best managing previously identified subsurface contamination at the Site to enable divestment under the current Site zoning, with a non-statutory site audit statement (SAS) from an Auditor for ongoing industrial/commercial land use.
Scope of Works	<ul style="list-style-type: none"> • Identification of Environmental Obligations and Regulatory Framework. • Interpretation of ENSR's 2008 documentation, to assess the soil and groundwater results in the context of the objectives for the Site. • Assessment of the potential significance of analytes identified at elevated concentrations in ENSR (2008b), and preparation of the Conceptual Site Model (CSM). • Provision of a preliminary discussion on potential risks from the Site. • Preparation of an outline remediation strategy for the Site.
Key Findings	<ul style="list-style-type: none"> • Most analytes in soil and groundwater on the Site were less than the nominated soil investigation levels or were present in a small number of isolated locations (for example PAH and TPH). • Manganese however, was identified as the key contaminant of concern in soil as it is present at concentrations in excess of the nominated investigation level (IL) of 7500 mg/kg. Aluminium, barium, iron and sulphate were also identified at elevated concentrations, although no ILs were established for these compounds. • Manganese concentrations were also elevated in groundwater from the Estuarine and Fill Aquifers, and some TPH and PAHs were also reported in groundwater. • In relation to potential contaminants of concern analytes in groundwater, a preliminary qualitative risk assessment and consideration of the CSM indicated a relatively low risk to environmental and human health receptors. For the purposes of remediation strategy development it was not anticipated that groundwater remediation would be required, although this was to be determined through further risk assessment (i.e. this document). • Of the analytes present in the soil (fill), manganese represented the limiting factor for remediation of the Site, mainly given the large concentrations in the subsurface. • A preliminary remedial strategy was devised, but a final strategy would be subject to completion of this current risk assessment document.

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A.4.7 AECOM (2009b)

Human Health and Ecological Screening Risk Assessment, dated TBA Former Electrolytic Manganese Dioxide Plant, McIntosh Drive, Mayfield, NSW	
Item	Discussion
Key objectives	<ul style="list-style-type: none"> Assess whether identified contamination present in Site soil and groundwater posed an unacceptable risk to the health of occupants of the current Site office and future Site industrial users or to the off-site environment (the key receptor being the Southern Arm of the Hunter River). Provide recommendations with respect to areas of the Site which may pose an unacceptable risk to human health or local ecology, in order to assist with the planning and/or design of further assessment or remediation works at the Site (if necessary).
Scope of Works	<ul style="list-style-type: none"> Undertake a human health risk assessment based on soil and groundwater chemical monitoring data. Undertake a screening ecological risk assessment using soil and groundwater monitoring data.
Key Findings	<ul style="list-style-type: none"> Using the maximum concentrations reported during ENSR (2008c), marginal exceedences of the risk acceptability criterion for potential Site industrial and commercial worker exposures to manganese and other CoPC (TPH and PAHs), were identified. This was however considered to be a conservative assessment and remediation of soils was not considered to be necessary. To further support this conclusion, a sensitivity analysis was conducted for the on-Site receptors, using the 95%UCL (mg/kg) for concentrations of manganese (ENSR, 2008c). Surface concentrations of 50,218 mg/kg and subsurface concentration of 24,002mg/kg derived a lower Chronic Hazard Index for Maintenance Worker 1 (average exposure) of 0.24 and for Maintenance Worker 2 (reasonable maximum exposure) of 0.45. For Adult Commercial Worker 1(average exposure) the Chronic Hazard Index was reduced to 1.5 and for Maintenance Worker 2 (reasonable maximum exposure) the Chronic Hazard Index was 2.1. A review of groundwater seepage results for the river bank down gradient of the Site indicated that whilst recent monitoring has not occurred, previous monitoring of manganese between 1996 and 2004 indicated that in general, with the exception of 3 minor exceedences, manganese concentrations were below 0.15 mg/L. The value of 0.15 mg/L was the EPL trigger requirement for manganese, for Site discharge to the Hunter River. Seepage results from June 2009 indicated manganese seepage concentrations of 0.015 mg/L in to the river, and a low concentration of PAH, with no TPH or BTEX compounds reported above the LOR. Given groundwater conditions in respect to manganese, and other inorganic and key organic compounds of concern (PAHs and TPH) had remained stable over a longer monitoring period, seepage results would be considered to be stable also.

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Disturbance Activities

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Human Health and Ecological Screening Risk Assessment, dated TBA Former Electrolytic Manganese Dioxide Plant, McIntosh Drive, Mayfield, NSW	
Item	Discussion
Key Findings (continued)	<ul style="list-style-type: none"> The Southern Arm of the Hunter River was identified as the key ecological receptor for Site derived contamination. Whilst concentrations of manganese PAHs and TPH are elevated in groundwater beneath the Site, it was noted that with respect to potential impact on the Hunter River, groundwater exiting the Site is required to migrate through a strip of land located between the northern Site boundary and the river, which was considered to be a potential source of similar inorganic and organic contaminants of concern as those identified for the Site.
	<ul style="list-style-type: none"> Future management of the Site's soil and groundwater contamination was identified to be via a Site Management Plan (SMP).

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Appendix B

SMP Acknowledgement Record

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PROJECT PERSONNEL LIST AND SMP PLAN ACKNOWLEDGMENT RECORD

Project staff must sign the master copy of this document, indicating they have read and understand it. The employee's signature indicates acceptance and compliance with the requirements of the Site Management Plan (SMP). Copies of this document must be made available for their review and readily available at the job site.

LOG OF PROJECT PERSONNEL

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Appendix C

Site Inspection Report (During Intrusive Works)

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Environment

SITE INSPECTION REPORT FOR SUBSURFACE WORKS

Report Distribution	
Site / Area:	Date:
Reported By (print): (sign):	Time:
Weather Conditions:	Wind Speed:

Site Inspection Record	
Item	Comments (Include any immediate corrective actions undertaken)
Have all persons on site received induction and environmental training?	
Are all erosion control measures in place?	
Are sedimentation basins in good condition?	
Are filter fences in good condition?	
Are all drains and bunds clear?	
Is the quality of water leaving the site good?	
Water quality and erosion control comments:	
Are dusty conditions observed? If yes, what operations are creating dust?	
Are odorous conditions observed? If yes, what operations are creating odour?	
Are internal and external roads free of dust and tracking marks?	
Are all trucks entering and leaving the site covered?	
Are all stockpiles moist and/or covered and/or protected and/or bunded?	

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Site Inspection Record	
Item	Comments (Include any immediate corrective actions undertaken)
Dust control comments:	
Are any adverse noise conditions occurring on site? Noise Comments:	
Are all fuels and chemicals stored correctly and in appropriately bunded areas?	
Are bunds free of stormwater, and are gate valves locked?	
Is spill kit adequately stocked?	
Are any spills/leaky drums or plant noted?	
Other Issues / General comments:	

Note: If immediate corrective action could not be undertaken to remedy situation, please initiate Non-Conformance and Corrective Action Report.

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Appendix D

Materials Tracking Register

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MATERIALS TRACKING REGISTER

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Appendix E

Non-conformance and Corrective Action Reports

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Disturbance Activities

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NON-CONFORMANCE AND CORRECTIVE ACTION REPORT

Report Distribution	
Date:	
Time:	
Reporter Name:	
Report Signature:	
Site / Area:	
Non-Conformation Details	
Non Conformance:	
Cause:	
Report to (Site Owner / Occupier (Name)):	:
Corrective Action:	
Signed by Operational Staff upon completion:	
Feedback Response to Prevent Future Occurrences	
Date:	

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Appendix F

Complaints and Environmental Incidences Register

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COMPLAINTS AND ENVIRONMENTAL INCIDENTS REGISTER**Report Distribution:**

Date	Time	Type of communication	Name, address contact ph of complainant	Nature of complaint	Response/ Corrective Action	Date of Response	Date Complainant Notified of Response Taken	Signature/ Position

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Site Management Plan for Subsurface Disturbance Activities

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Date	Time	Type of communication	Name, address contact ph of complainant	Nature of complaint	Response/ Corrective Action	Date of Response	Date Complainant Notified of Response Taken	Signature/ Position

Note: Should a complaint or incident identify a non-conformance that is not able to be immediately rectified, please initiate a Non-Conformance and Corrective Action Report.

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Site Management Plan for Subsurface Disturbance Activities

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Appendix G

Register of Intrusive/Subsurface Works

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Disturbance Activities

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Disturbance Activities

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Environment

REGISTER OF INTRUSIVE WORKS

Report Distribution	
Date works started and time:	
Reporter Name (Supervisor):	
Nature of works	
Surface Conditions at Start	
Depth of Intrusive Works	
Details on any encountered visual soil or groundwater contamination.	
Details on reinstatement methods and observations	
Requirement for environmental Professionals – details.	
Compliance with SMP met?	
Date works completed and time:	
Reporter Signature:	

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Worldwide Locations

Australia	+61-2-8484-8999
Azerbaijan	+994 12 4975881
Belgium	+32-3-540-95-86
Bolivia	+591-3-354-8564
Brazil	+55-21-3526-8160
China	+86-20-8130-3737
England	+44 1928-726006
France	+33(0)1 48 42 59 53
Germany	+49-631-341-13-62
Ireland	+353 1631 9356
Italy	+39-02-3180 77 1
Japan	+813-3541 5926
Malaysia	+603-7725-0380
Netherlands	+31 10 2120 744
Philippines	+632 910 6226
Scotland	+44 (0) 1224-624624
Singapore	+65 6295 5752
Thailand	+662 642 6161
Turkey	+90-312-428-3667
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Venezuela	+58-212-762-63 39

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APPENDIX I – CONCEPTUAL DECOMMISSIONING MANAGEMENT PLAN



Conceptual Decommissioning Management Plan

Mayfield West Resource Recycling Facility

Prepared for Benedict Recycling | 3 May 2018





Conceptual Decommissioning Management Plan

Mayfield West Resource Recycling Facility

Prepared for Benedict Recycling | 3 May 2018

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Conceptual Decommissioning Management Plan

Final

Report J14152RP1 | Prepared for Benedict Recycling | 3 May 2018

Prepared by **Janet Krick**

Approved by **Phil Towler**

Position Senior Environmental Planner

Position Associate Director

Signature



Signature



Date 3 May 2018

Date 3 May 2018

This report has been prepared in accordance with the brief provided by the client and has relied upon the information collected at the time and under the conditions specified in the report. All findings, conclusions or recommendations contained in the report are based on the aforementioned circumstances. The report is for the use of the client and no responsibility will be taken for its use by other parties. The client may, at its discretion, use the report to inform regulators and the public.

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Document Control

Version	Date	Prepared by	Reviewed by
V1	20 April 2018	Janet Krick	Phil Towler
V2	3 May 2018	Janet Krick	Phil Towler



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1 Introduction

1.1 Background

Benedict Recycling Pty Ltd (Benedict Recycling) is the operator of the Mayfield West Recycling Facility (MWRF) located at 1A McIntosh Drive, Mayfield West. Project approval SSD 7698 allows resource recovery processing activities to 315, 000 tonnes per year of general solid waste (non-putrescible) including construction and demolition waste, and commercial and industrial waste.

Condition B84 of the project approval consent stipulates that a Conceptual Decommissioning Management Plan (CDMP) for the facility be prepared.

1.2 Location

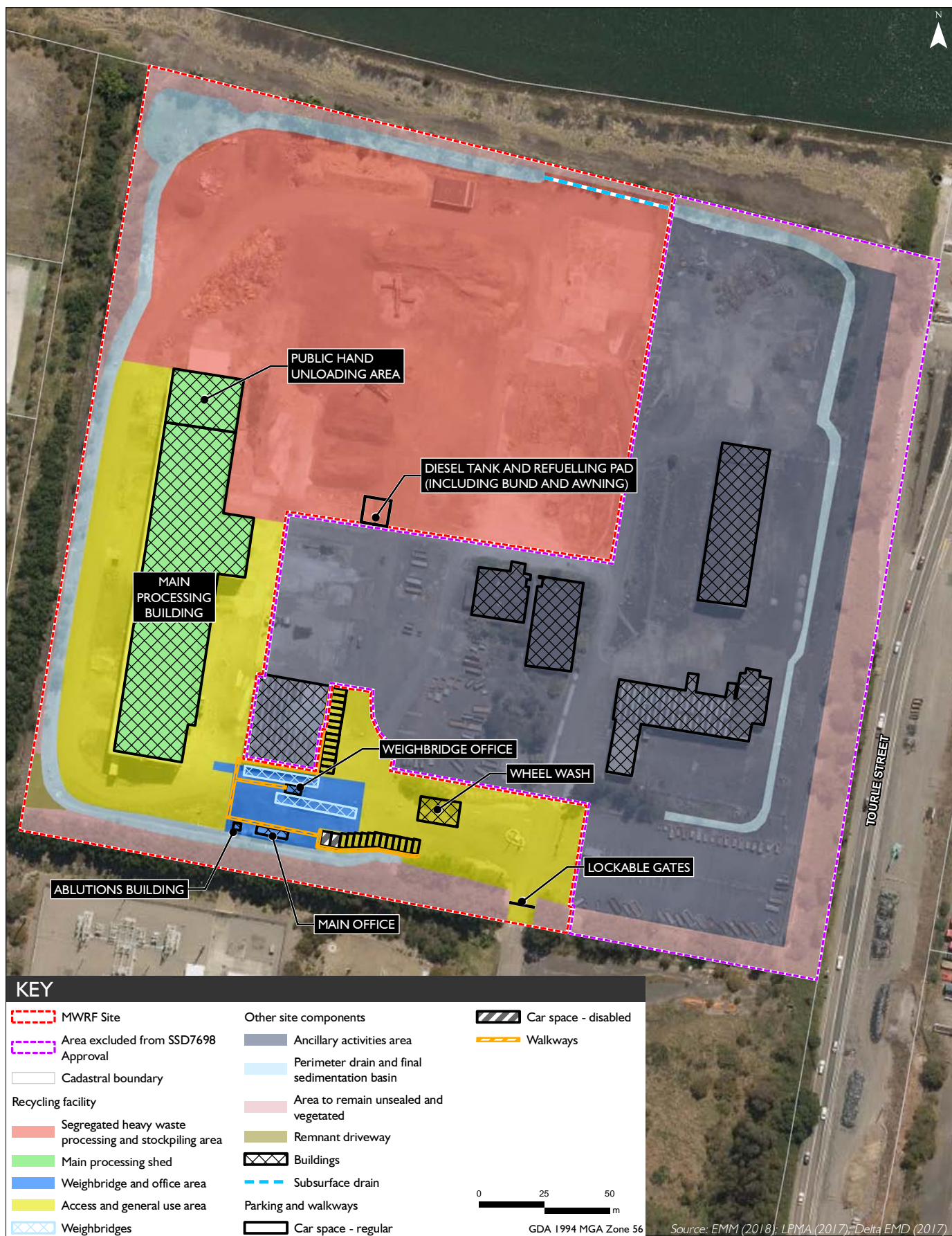
The facility is located at 1A McIntosh Drive, Mayfield, NSW and is within the Newcastle City Council local government area. The site occupies part of Lot 1 DP874109 and is approximately 4.9 ha. The Lot is bounded by the Hunter River (South Arm) to the north, Tourle Street to the east, Ausgrid Mayfield West Substation to the south and light industrial buildings to the west. Figure 1 shows the layout of the MWRF.

1.3 Purpose of the Conceptual Decommissioning Management Plan

The purpose of the CDMP is to provide a structured approach to the management of the future decommissioning of the facility. This will ensure the appropriate management of environmental issues during decommissioning and ensure that unprocessed or processed waste is not left on the site.

This CDMP provides:

- the relevant statutory considerations pertaining to the decommissioning of the facility;
- a schedule for the decommissioning of the facility;
- a description of decommissioning activities;
- a description of site validation activities to ensure that the contamination status of the site is no worse than that described in the Site Audit Report-Former EMD Facility Mayfield West, prepared for Delta EMD, prepared by Environ Australia Pty Ltd, November 2009;
- notification procedures of the surrounding land owners and provisions to ensure public safety;
- the monitoring activities to be carried out during decommissioning; and
- minimum mitigation measures and controls that would be applied during decommissioning to avoid or minimise negative environmental impacts.



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2 Statutory considerations

2.1 Development Consent SSD 7698

The facility is approved to operate under Development Consent SSD 7698 pursuant to Section 4.38 of the *Environmental Planning and Assessment Act 1979*. The CDMP has been prepared to address consent condition B84 which requires the preparation of a CDMP for inclusion in the Operational Environment Management Plan (OEMP). The CDMP must include:

Table 2.1 Development consent requirements

Condition	Requirement	Location
B84	Prior to the commencement of operations, the Applicant must prepare a Conceptual Decommissioning Management Plan (CDMP) for the Development to the satisfaction of the Secretary. The plan must form part of the OEMP required by Condition C4.	This document
B84(a)	Include a schedule for the decommissioning of the Development.	Section 3.1
B84(b)	Detail how the following would be achieved: (i) ensure the site is left in a safe, stable and non-polluting manner; (ii) removal of all waste from the site in a lawful manner; (iii) restoration of the site so that the contamination status is no worse than that described in the Site Audit Report -Former EMD Facility Mayfield West, prepared for Delta EMD, prepared by Environ Australia Pty Ltd, November 2009; and (iv) ensure public safety is maintained.	Section 3.2 Section 3.2 Section 3.2.1 Section 4.1
B84(c)	Include procedures for notification of the surrounding landowners.	Section 4.2
B84(d)	Include procedures for safe removal of any machinery and structures.	Section 3.2
B84(e)	Include measures to mitigate any environmental impacts associated with the removal of the Development.	Section 6
B84(f)	Include details of monitoring that would be undertaken during the decommissioning of the Development.	Section 5
B84(g)	Be reviewed 12 months prior to the closure of the site to the satisfaction of the Secretary.	

Notes: Adapted from development consent for application No SSD7698 dated 13 March 2018.

2.2 Environment Protection Licence

The MWRF operates under Environment Protection Licence (EPL) number 20771. The EPL may be surrendered with the written approval of the EPA, once scheduled activities cease on site.

Standard operational measures as outlined in the OEMP will continue to be applied during decommissioning. These include:

- removal of wastes from the site during decommissioning activities, will be in accordance with licensed specified operating times for despatch of waste being: 6:00 am to 6:00 pm Monday to Saturday. Removal of waste would not be carried out on Sundays;
- decommissioning activities will be undertaken so they comply with the noise limits prescribed in the EPL;

- decommissioning activities will be undertaken so that they minimise the generation or emission from the premises of wind-blown or traffic generated dust with all trucks entering and leaving the premises to have their loads covered at all times, except during loading activities;
- monitoring requirements of the EPL will continue met during decommissioning activities until written approval from the EPA accepts the surrender of the EPL; and
- the complaints line required by the EPL will maintained during decommissioning activities.

2.3 Newcastle Local Environmental Plan 2012

Pursuant to Clause 2.7 of the *Newcastle Local Environmental Plan 2012* (Newcastle LEP) demolition of a building or work may be carried out only with development consent. It is intended to leave the existing buildings and structures in place following decommission the MWRF with only the above ground fuel tank, demountable offices, wheel wash and water tanks being removed from the site.

In the event, demolition of existing buildings is proposed, development consent under Part 4 of the EP&A Act would be required and accordingly a Development Application would be prepared and submitted to Newcastle City Council.

3 Site decommissioning

3.1 Indicative decommissioning schedule

An indicative decommissioning schedule is provided in Table 3.1.

Table 3.1 Indicative decommissioning schedule

	Task	Timing
1	Decision to close the MWRF and subsequent review of this CDMP	2 weeks
2	Secretary's review of the reviewed CDMP	2 weeks
3	Closure of MWRF and commencement of site decommissioning	12 months from item 2
4	Removal of waste	Up to 1 months
5	Restoration of the site	1 month
6	Site validation	1 month

3.2 Decommissioning activities

3.2.1 Removal of waste

During twelve month lead up to closure of the facility, the Site Operational Manager will endeavour to reduce the amount of unprocessed and processed waste stored on site. Nevertheless an estimate of required time to remove all unprocessed and processed waste from the site has been based on a worst case scenario of 53, 733 tonnes of material being on site at the time of closure.

Processed waste that could not be sold, as well as unprocessed waste, would be transported to an appropriately licensed waste facility. Removal of waste will require up to 1,791 dispatches of truck and dog loads (each carrying a load of 30 tonnes). Approximately 30 to 100 loads will be dispatched per day with removal of waste activities taking up to one to three months. These truck movements are less than the number of truck movements assessed for operations.

Removal of waste will be carried out during approved hours of waste dispatch, being 6:00 am to 6:00 pm Monday to Friday and 6:00 am to 5:00 pm Saturday. No waste will be removed on Sundays. Waste would be removed from site in accordance with the Operational Environment Management Plan (OEMP) and relevant sub plans, in particular the Operational Traffic and Pedestrian Management Plan, Air Quality Management Plan and the Waste Management Plan. Waste will also be removed in accordance with relevant EPL conditions.

3.2.2 Site restoration and validation

Site restoration activities include:

- ensuring all waste material is removed from site;
- removal of 40,000 L diesel tank;
- removal of weighbridge;
- removal of truck wheel wash;

- removal of demountable site offices and ablutions;
- removal of three stage pit and holding tanks; and
- removal of sediment from perimeter drain and sedimentation basin.

The diesel tank will be drained, with fuel not suitable for reuse removed by a licensed oil recycler. The tank would either be transported appropriately to another facility for reuse or disposed of at a waste facility licensed to accept above ground fuel tanks in accordance with Australian Standards.

Removed sediment will be dewatered on site, tested for reuse or disposed of to an appropriately licensed facility.

The three stage pit and holding tanks excavation will be back-filled with material complying with the requirements of the *Site Management Plan for Subsurface Disturbance Activities, McIntosh Drive Mayfield NSW* (AECOM 2009) which include determining that the material is suitable for commercial/industrial land use.

Any demolition works of the main processing shed or other structures will require a development application being lodged with council prior to demolition works proceeding.

3.2.3 Site validation

Site validation activities would include validation sampling to confirm contamination of the site is no worse than the contamination documented in the *Site Audit Report -Former EMD Facility Mayfield West, prepared for Delta EMD*, prepared by Environ Australia Pty Ltd, November 2009.

The methodology for the site validation sampling will be determined in consultation with the EPA and may include sampling from the sediment basin, groundwater samples and/or soil samples taken from the three stage pit excavation. Any subsurface monitoring would be conducted in accordance with *Site Management Plan for Subsurface Disturbance Activities, McIntosh Drive Mayfield NSW* (AECOM 2009) including implementation of the following measures:

- site manager and all other parties involved in the site validation sampling will review the SMP and be familiar with management requirements for any areas that will be disturbed by monitoring activities;
- all subsurface sampling will be carried out during dry weather and in accordance with the OEMP and relevant sub plans;
- sediment control measures will be strategically placed around sampling locations; and
- excavated material not back-filled immediately will be stockpiled on a sealed and bunded surface.

Any required remediation will be directed by the Site Manager with supervision from a qualified Environmental Consultant depending on the type and extent of contamination.

4 Public safety and community notification

4.1 Public safety

The decommissioning works would be carried out in accordance with the OEMP, relevant sub plans and the EPL thereby ensuring public safety. Following closure of the site, Benedict Recycling will maintain the existing security fencing on the site up until sale or leasing of the site.

4.2 Community notification

Benedict Recycling would notify adjacent land owners, sensitive receivers, relevant regulatory authorities and other interested stakeholders of the MWRF closure. Community consultation activities carried out prior to the commencement of and during decommissioning activities will include:

- Notification of the closure of the site and status updates during decommissioning activities will be posted on the Benedict website; and
- Written notification will be provided to adjacent landowners, sensitive receivers, relevant regulatory authorities prior to the start of decommissioning activities and following the conclusion of decommissioning activities. Notification leaflets will provide email, telephone contact details and Benedict website address.

The community telephone line complaints line required to be maintained by the current EPL will be maintained during decommissioning activities. The complaints handling procedure documented in the OEMP would be maintained until decommissioning has concluded. This procedure is identified in Table 4.1.

Table 4.1 Complaints procedure

Procedure		
1	Reporting	Complaints received from an outside party will be reported immediately to the Site Leading Hand/Supervisor and the Site Manager.
2	Investigations	Any complaint received will be investigated including: <ul style="list-style-type: none">• the cause of the complaint;• the climatic conditions at the time of the incident which is the cause of the complaint;• if known, the date and time the incident took place;• the occurrence of similar complaints in the past; and• actions taken in the past to overcome future complaints.
3	Recording	Details of the complaint received, investigations and actions taken will be recorded on MWRF's complaints register, updated on a monthly basis and published on the company website. Records of complaints are to be kept for at least four (4) years.

5 Monitoring

Monitoring requirements of the SSD approval will be met during decommissioning activities and maintained until the MWRF is decommissioned. Monitoring requirements of the OEMP and relevant sub plans will also be maintained until the site is fully decommissioned.

Site validation monitoring will be carried out as detailed in Section 3.2.2 to ensure operation of the MWRF has not resulted in further contamination of the site to that documented in Environ Australia Pty Ltd, November 2009 Site Audit Report – Former EMD Facility Mayfield West prepared for Delta EMD.

6 Management measures

Management and mitigation measures documented in the OEMP would also apply to the decommissioning of the site. Relevant measures are presented in Table 6.1 below:

Table 6.1 Management measures

Key issue	Management measure
Security	The site's security measures will continue to be implemented, including deployment of guards when the site is not operating (including at night), use of remotely accessed security cameras and maintenance of fences and gates.
Air quality	<p>The following management measures will continue to be implemented to minimise air quality impacts:</p> <ul style="list-style-type: none">• all existing sealed/hardstand areas will be retained;• water sprays will be used over any other bare or unsealed surfaces that have not yet been sealed and have the potential to generate unacceptable amounts of dust;• all vehicle movements will be restricted to designated routes marked out by appropriate signage and fencing using sealed internal roads;• access to unsealed areas will be prevented;• water sprays will be used at stockpiles, crushing and screening plants and during material handling as necessary;• a wheel wash in the weighbridge area will be used during waste removal activities to clean truck tyres to prevent mud or sediment being carried to and deposited on the access road (and public roads);• irrigation sprays will only used when the surface of a stockpile is dry and irrigation will be ceased when the surface is wet; and• dust and odour control procedures, including current monitoring requirements, will continue as detailed in the Air Quality Management Plan.

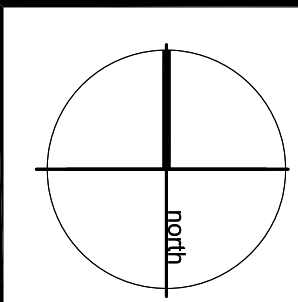
Table 6.1 **Management measures**

Key issue	Management measure
Greenhouse gases	<p>The following management measures will continue to be implemented to minimise greenhouse gases emissions:</p> <ul style="list-style-type: none"> • on-site equipment will be regularly maintained and serviced to maximise fuel efficiency; and • vehicle kilometres travelled on-site will be minimised.
Noise	<p>The following management measures will continue to be implemented to minimise noise emissions:</p> <ul style="list-style-type: none"> • operations will be limited to the hours and types of operations approved; • machinery will be correctly operated and maintained; • regular noise monitoring is conducted by the Site Leading Hand/Supervisor and any noise complaints received will be referred to the Site Leading Hand/Supervisor and to the Site Manager; and • the two mobile screens in the segregated heavy waste processing and stockpiling area, the crusher/screen and the shredder will be operated no further south than 130 m from the northern site boundary.
Traffic	<ul style="list-style-type: none"> • site generated traffic will continue to be formally directed to continue to travel only via Steel River Boulevard and McIntosh Drive when travelling within the Steel River estate; • no heavy vehicle access to Werribi Street will continue during decommissioning activities; • Benedict Recycling will continue to maintain the access road between McIntosh Drive and the Recycling Facility site in a fit and proper condition and to a suitable standard, repairing it when required at no cost to Ausgrid. This will include repairing any minor areas of surface rutting using 50 mm hot mix asphalt; and • Trucks will not be allowed to queue on the access road between McIntosh Drive and the Recycling Facility site.

Table 6.1 Management measures

Key issue	Management measure
Water	<p>The following surface water management measures will be implemented:</p> <ul style="list-style-type: none"> • surface water on site will continue to be managed in accordance with the OEMP and Surface Water Characterisation and mitigation plan; • flocculation of stored water in the basins as necessary; • only commercially available non-toxic flocculants will be used at the site; • actions that will continue to be implemented to prevent impacts to water include; • removal of sediment from the sedimentation basins when the sediment depth is greater than 200 mm; • recycling of sediment if of appropriate quality or disposal to a facility approved to accept contaminated sediment; • water in the sedimentation basins will be used for dust suppression to minimise the mains water required; and • groundwater will not be used. <p>The following actions will be taken in respect to water discharge:</p> <ul style="list-style-type: none"> • if water levels are between about 2 m and 3 m from the base of the sedimentation basin and meets water quality trigger values, water will be manually discharged from the final sedimentation basin using the outlet valve to maintain a freeboard in the final sedimentation basin; and • when the basin is discharging, daily samples of the discharging water will be collected from the final basin outlet pipe and will be analysed in accordance with the discharge monitoring program.
Soils and contamination	<p>The following soil and contamination management measures will be implemented:</p> <ul style="list-style-type: none"> • soil validation work would be conducted in accordance with the OEMP and Site Management Plan for Subsurface Disturbance Activities, McIntosh Drive Mayfield NSW (AECOM 2009); • site manager and all other parties involved in the site validation sampling will review the Site Management Plan for Subsurface Disturbance Activities, McIntosh Drive Mayfield NSW (AECOM 2009) prior to validation sampling; • all subsurface sampling will be carried out during dry weather and in accordance with the OEMP and relevant sub plans; • sediment control measures will be strategically placed around sampling locations; • excavated material not backfilled immediately will be stockpiled on a sealed and bunded surface; • any required remediation will be directed by the Site Manager with supervision from a qualified Environmental Consultant depending on the type and extent of contamination; • material used to backfill void after removal of the three stage pit will be suitable for commercial / industrial land use; • plant and equipment will be maintained to prevent hydrocarbon leaks; • plant maintenance will only occur in sealed areas where spills, should they occur, will be contained and cleaned up immediately using a spill response kit; • a spill response kit will be deployed next to maintenance activities; • vehicles parked in the storage compounds will be parked on sealed areas; and • maintenance activities that may result in the loss of fluids will be conducted within a shed with a sealed floor and at least 5 m from the nearest open doorway.

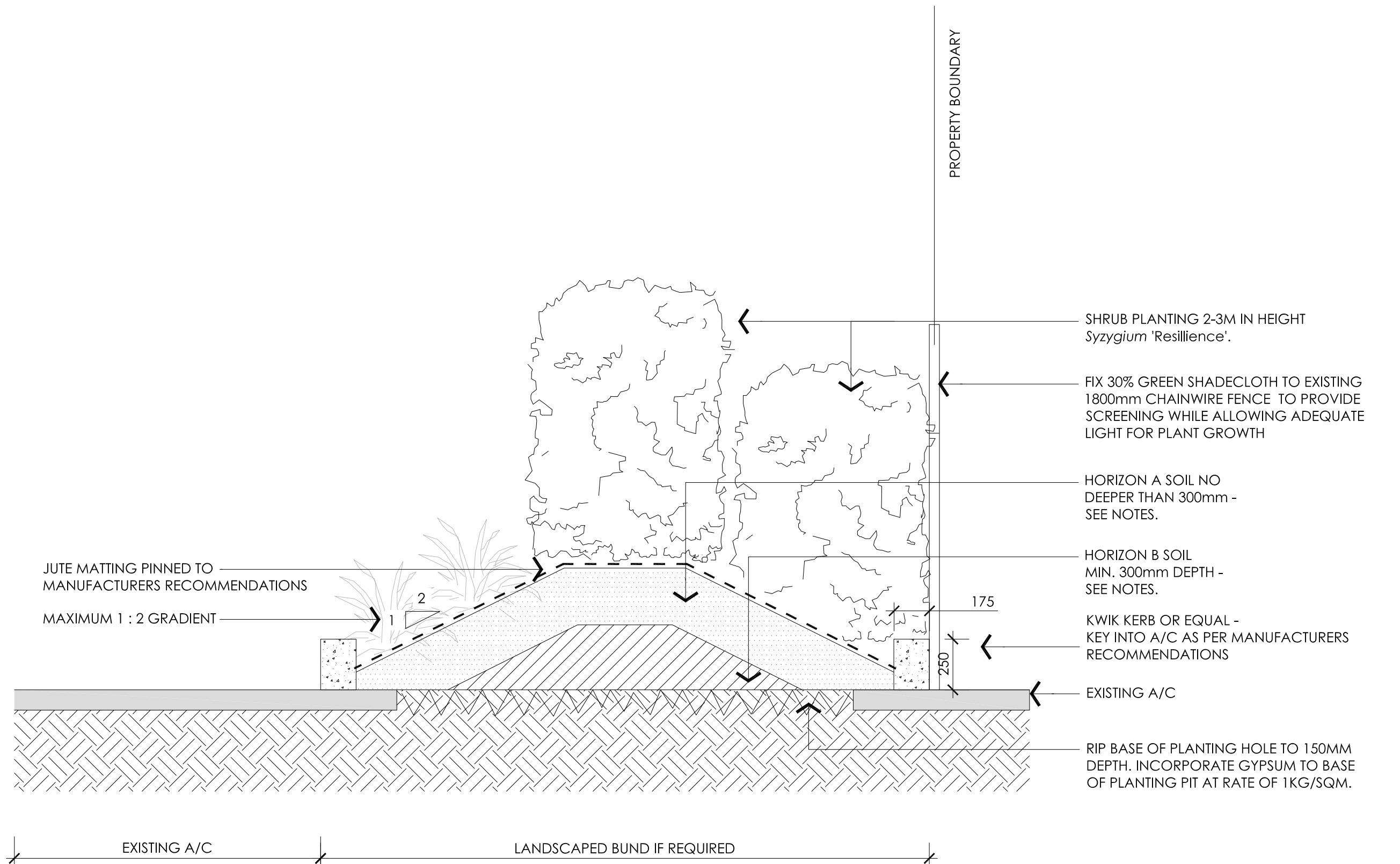
APPENDIX J – LANDSCAPE PLAN



D	09.09.15	CC	GF	PW					
C	31.07.15	DRAFT	GF	PW					
B	31.07.15	DRAFT	GF	PW					
A	24.07.15	DRAFT	GF	PW					
rev no:	date:	comments:	by:	verified:	rev no:	date:	comments:	by:	verified:

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drawn:	scale:	no in set:	date:
GF	1:750@A1	1/3	09.09.15
phase:	project no:	DWG no:	revision no:
CC	10944.5	L01	D



NORTHERN BOUNDARY PLANTING

Section A-A
Scale 1:20

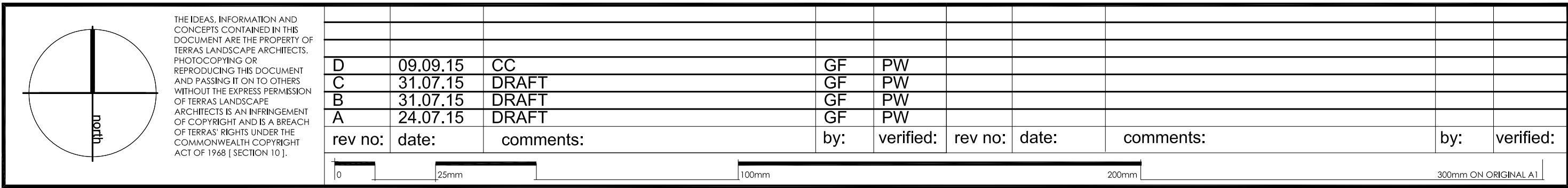
EASTERN BOUNDARY PLANTING

Section B-B
Scale 1:20

All trees supplied are to comply with NATSPEC's "Specifying Trees a guide to assessment of tree quality"

ABV	BOTANICAL NAME	COMMON NAME	HEIGHT	POT SIZE	SPACING	C
	TREES					
At	<i>Allocasurina torulosa</i>	Forest She-Oak	10-20m	45L	2m cts	
Cg	<i>Casuarina glauca</i>	Swamp She-Oak	15m	45L	2m cts	
	SHRUBS					
Sr	<i>Syzygium 'Resilience'</i>	Resilience	2-3m	25L	1m cts	
	SUPPLEMENTARY PLANTING					
Ca	<i>Carex appressa</i>	Tall Sedge	0.8m	2.5 Litre	6/m ²	
Fn	<i>Ficinia nodosa</i>	Knobby Blub-Rush	0.5-1m	2.5 Litre	6/m ²	
Lf	<i>Lomandra longifolia</i>	Mat Rush	1m	2.5 Litre	3/m ²	
Pa	<i>Pennisetum alopecuroides</i>	Swamp Foxtail	0.8m	2.5 Litre	4/m ²	

This schedule shall be read in conjunction with the landscape plans. Refer to the written specification for further information. The contractor shall check the schedule with the quantities shown on the drawing. Quantities shown in the plant schedule shall take precedence over quantities shown on the drawing. Refer all discrepancies, should they exist, to the superintendent before planting works commences. Order plants as soon as the head contract for the works has been let. Do not make substitutions unless approved in writing.



PROJECT:
MAYFIELD WEST RECYCLING FACILITY

CLIENT:
BENEDICT

SITE:
80 TOURLE STREET MAYFIELD WEST

DRAWING:
LANDSCAPE DETAILS

address: 412 king street newcastle nsw 2300 ph: 49 294 926 fax: 49 263 069 www.terras.com.au



WORK TO FIGURED DIMENSIONS IN PREFERENCE TO SCALE. CHECK DIMENSIONS, LEVELS ON SITE PRIOR TO ORDERING MATERIALS OR COMPLETION OF WORKSHOP DRAWINGS.			
drawn: GF	scale: 1:20@A1	no in set: 2/3	date: 09.09.15
phase: CC	project no: 10944.5	DWG no: L02	revision no: D

All landscape works shall be carried out by a person or business eligible for membership with the Landscape Contractor Association of NSW or comparable trade organisation. The Contractor shall allow for all restriction to his operations caused as a result of other contractors, likely damage to existing structures, fences, retaining walls, pavements, services or other improvements either within or outside the site. The Contractor shall be responsible for ensuring that full and adequate protection from damage shall be provided to all finished surfaces and material subject to staining or other disfigurement, and shall be responsible for making good all damages and disfigurement.

Check with engineers drawings when available to see extent of earthwork, drainage, changes in and location of services, coordinated works as required.

REQUIREMENT: Within 14 days of the date of acceptance of tender, furnish proof of ordering the required materials, and advise immediately if any supply difficulties are encountered. Ensure Substitutions shall not be approved unless accepted in writing by the supervisor. The plant schedule shall be the accepted document for plant quantities and sizes to be used for the project. Where discrepancies arise between the drawings and the plant schedule seek clarification from the supervisor as soon as practicable.

PROTECTION: Protect trees to be retained from damage. Take necessary precautions. Do not store or otherwise place bulk materials and harmful materials under or near trees. Do not place spoil from excavations against tree trunks, even for short periods. Prevent damage to tree bark. Do not attach stays, guys and the like to trees. Avoid compaction of the ground under trees.

WORK UNDER TREES: Do not add or remove topsoil within the drip line, use hand methods such that root systems are preserved intact and undamaged. Open up excavations under tree canopies for as short a period as possible.

ROOTS: Where it is necessary to cut tree roots, use means such that the cutting does not unduly disturb the remaining root system.

DAMAGES: Any damage to trees to be retained will be attended to by a qualified arborist who will prepare a report covering rectification works. Submit report to supervisor for approval. Conduct remedial works as required including removal and replacement if so recommended. All costs to be borne by the contractor.

NOTICE: Give minimum two (2) days notice unless otherwise indicated so that inspection may be made of the following, as applicable:

- Plants available on site for natspec compliance inspection prior to planting.
- Subgrades cultivated and/or prepared prior to placing topsoil.
- Plant material set out before planting.
- Completion of planting establishment work.

REFERENCED DOCUMENTS:

- AS 4419 Soils for landscaping and garden use. - 1998
- AS 4454 Composts, soil conditioners and mulches - 1997
- AS 4373 Pruning of amenity trees - 1996
- AS 2303 Tree stock for landscape use - 2015.

PLANTS: All plants shall be made available for inspection on site or at local nursery. The entire material represented may be rejected, except of plants with a correctable defect subject to satisfactory treatment.

TREES SHALL COMPLY WITH AS 2303:2015 Tree stock for landscape use.

BULK MATERIALS: 2 kg sample of each type specified. Submit bulk material samples, not less than 2 working days before bulk deliveries.

INSPECTION OF TREES:

Timing: Trees may be inspected before shipment.

Partial sampling: Expose a small section of the rootball, by washing, sufficient to permit inspection of root development from the stem to the outer extremity. After inspection, carefully replace soil.

Root systems: Root systems may be inspected using partial sampling at the following rates:

- <20 trees: 1 tree sampled
- 21 - 50 trees: 2 trees sampled
- >51 trees: 4%.

Forward order contracts: Submit regular reports in writing to the contract administrator. Include checks against specification requirements, and current photographs.

- Inspection frequency: 3 months
- Report frequency: 3 months.

Compliance

General: Non-compliance may lead to rejection of the entire batch.

Substitution: If non-complying trees are proposed, submit proposal in writing to the contract administrator. Only written approvals of substitution are recognised. Submit a copy of the written approval of substitution with the non-complying trees.

General: Submit proposals in writing to the contract administrator for proposed methods for holding trees beyond specified dates so that trees will continue to comply.

Shipment

Responsibility: Landscape Contractor.

Eradicate weeds by environmentally acceptable methods using a non-residual glyphosate herbicide at the manufacturer's recommended rates. Regularly remove, by hand, rubbish and weed growth that may occur or recur throughout grassed, planted and mulched areas. Continue eradication throughout the course of the works and during the Planting Establishment Period so that a weed free area is established at completion of the establishment period..

Existing services on site may include but not limited to storm water drainage, water, and associated power service conduits. Locations of all services should be established prior to excavation and cultivation of planting beds and installation of trees etc. Do not excavate by machine within 1m of existing underground services without prior approval or identification of service locations. Services locations where shown are approximate only, the true location of actual in ground services must be determined by the contractor on site.

Critical design dimensions shall be obtained by the landscape contractor by survey before commencing work. Check engineers drawings where available to determine extent of earthworks, structures.

Sampling: As recommended in AS 4419 (2003) Appendix A.

- For each test, take six samples of each soil type. These should be taken from various locations. Each sample should be approximately one spade full in quantity.
- For each soil type, thoroughly mix the six samples together to obtain an 'average' sample. Ensure that mixing is carried out in a clean mixing container, with no impurities such as cement residue or imported soil etc present. Extract 1kg (approximately a 2L ice-cream container) final samples from each of the three mixed batches.
- Package and forward to the soil laboratory for testing, together with a site plan locating sources of soil samples and a record of any relevant details about the site and source locations.
- Type of Soil Test Required: Soil testing shall be undertaken in accordance with S&S&L specifications, for the purpose of analysing the characteristics and recommendations for use as a landscaping topsoil for a mixture of native species, exotic species, and turfing.
- Lead time: Allow a minimum of five full working days for completion of soil testing, and check with laboratory to ensure testing will not delay landscaping works. Supply soil tests to Company Representative once available.

- USGA PSA Sieve & Hydrometer
- HC3 Hydraulic Conductivity @ 3 pts (8,16,32 drops)
- LP_4419 Large Particles by 4419
- TOC_DC Total Organic Carbon (Dumas C)
- Wett_4419 Wettability by 4419
- Disp_4419 Dispersibility by 4419
- ECEC_NH4Cl Exchangeable Cations & Soluble correction (was CECAC SOL)
- EC_Sol Electrical Conductivity 1:5 Ratio
- P_M3 Phosphorus in M3 by ICP I
- NO3_Sol Soluble Nitrate

CULTIVATION: Cultivate bases or planting holes and beds 150mm, do not use augers unless followed with cultivation of sides and base. Do not disturb services or free roots; if necessary cultivate these areas by hand. Cultivate manually within 300 mm of paths or structures. Remove stones exceeding 25 mm, clods of earth exceeding 50 mm, and any weeds, rubbish or other deleterious material brought to the surface during cultivation. Trim the surface to the required design levels after cultivation.

ADDITIVES: Apply required additives to stockpiled site topsoil as required by soil tests.
Topsoil:

Where topsoil is to be stockpiled for reuse, incorporate additives as recommended in soil testing by cultivating through the topsoil. For excavated garden beds or backfill to planting holes, incorporate additives into stockpiled topsoil prior to placement.

Subsoil:
incorporate additives as recommended in soil testing by cultivating through the subsoil.

DEFINITIONS: [From AS 4419 - 1998, Soils for landscaping and garden use]

■TYPE 01	General purpose soil: A soil which is suitable for the growing of domestic plants.
■TYPE 02	Premium garden soil: A general purpose soil that contains additional organic matter [min 10% OM]
■TYPE 03	Topsoil: The original surface layer of soil from grassland, bushland or cultivated land.

Soil for the landscape works shall be free from weeds including but not limited to, onion weed, nut grass, clover, wandering jew, bindii and oxalis. The landscape contractor shall obtain a certificate from the soil supplier that the soil provided for the project is weed free and be made available to the client if requested. Soil shall be assumed to be placed to all mass planting bed areas and individual tree planting locations. The landscape contractor is responsible for the removal and/or disposal of all spoil or excess soil excavated in the process of implementing the landscape works. Soils shall comply with the texture classification 'Medium - (sandy Loam)' or 'Coarse - (sandy soil)'

Finished soil levels shall allow turf or mulch to be finished level to the top of timber edging, paving or concrete footpaths or as otherwise shown on drawings.

PLACING: Place the approved soil on the prepared subsoil. Spread and grade evenly, making the necessary allowances so that the required finished levels and contours may be achieved after light compaction. Prevent areas of excess compaction being caused by constructional plant. Avoid differential subsidence and produce a finished soil surface which is:

at design levels;

- smooth and free from stones or lumps of soil;
- graded to drain freely, without ponding, to catchment points;
- graded evenly into adjoining ground surfaces; and
- ready for planting.

GENERALLY

DESCRIPTION: Well rotted vegetative material or animal manure, or other approved material, free from harmful chemicals, grass and weed growth, and with a neutral Ph value.

REQUIREMENT: Provide proprietary fertilisers, delivered to the site in sealed bags marked to show manufacturer or vendor, weight, fertiliser type, N:P:K ratio, recommended uses and application rates. Use in accordance with the manufacturer's recommendations.

- Supply plants to the following quality:
 - are vigorous, well established, free from disease and pests, of good foliage, have large healthy root systems, with no evidence of root curl, restriction or damage;
 - are hardened off, not soft or forced, and suitable for planting in the natural climatic conditions prevailing at the site.
 - do not require staking to stand upright other than staking to control damage from strong winds or local conditions.
 - Staking should then be as detailed on the drawings and provide free movement with support only to protect from excessive movement.

SUBSTITUTIONS: Make no substitutions.

LABELLING: Label at least one plant of each species or variety in a batch with a readable tag.

REPLACEMENTS: Using plants of the same type, quality and size, replace any plants which are damaged whilst being transported to the site or during the work under the Contract, or which fail or are rejected. Trees which are vandalised are to be replaced using the same type, quality and size.

STORAGE: Deliver plant material to the site on a day to day basis, and plant immediately after delivery. If this is not possible, keep the plants in good condition on the site, adequately protected from frost, wind, sun and vermin by appropriate storage methods, including an on-site nursery of sufficient size, with provision for watering the stock.

POTTING-ON: Do not carry out potting-on unless authorised.

PERIOD: The Planting Establishment Period commences at the date of issue of a written certificate of practical completion from the superintendent.

PROGRAM: Furnish a proposed planting maintenance program with the tender

LOG BOOK: Keep a log book recording when and what maintenance work has been done and what materials, including toxic materials, have been used. Make the log book available for inspection on request.

RECURRENT WORKS: Throughout the Planting Establishment Period, continue to carry out recurrent works of a maintenance nature including, but not limited to, watering, mowing, weeding, rubbish removal, fertilising, pest and disease control, staking and tying, replanting, cultivating, pruning and keeping the site neat and tidy.

REPLACEMENTS: Continue to replace failed, damaged or stolen plants for the extent of the Planting Establishment Period.

MULCHED SURFACES: Maintain the surface in a clean and tidy condition and reinstate the mulch as necessary.

SITE WATER: The contractor shall be responsible for sourcing, checking availability and if required importing water to maintain the plants during the plant establishment period as required under this specification.

GENERALLY: Use mulch as scheduled which is free of deleterious and extraneous matter such as soil, weeds and sticks. Use organic mulches which are free of stones AND COMPLY WITH AUSTRALIAN STANDARDS SPECIFYING LESS THAN 5% FINES. Use first well rotted mulch chipped on site, chip to match ANL 'Forest Blend' 20-40mm mulch. Additional mulch ANL 'Forest Blend' or equivalent.

APPLICATION: Place mulch to the required depth, clear of plant stems, and rake to an even surface flush with the surrounding finished levels.

NOTE: Use proprietary items as specified below or similar item equal in workmanship, materials and design if approved by the Superintendent.

If requested by the superintendent a basic soil test shall be carried out at the contractors expense to ascertain the physical and chemical properties of the proposed imported soil where no certificate of soil type is provided.

LOCATION	DEPTH	SOIL TYPE
Tree / Mass Planting	Top 300mm	Imported premium garden soil [10% Compost] Or site topsoil ameliorated as per soil test recommendations.
Tree / Mass Planting	Below 300mm	General purpose soil - sandy loam Or site topsoil ameliorated as per soil test recommendations.

NOTE:
WHERE TREES ARE PROPOSED A MINIMUM OF 600mm SOIL IS TO BE PROVIDED

Landscape contractor shall provide superintendent notification of Checks on progress of the works required and obtain approval to proceed following checking at hold points below.

NOTE:
Landscape inspection to be undertaken 3 months after practical completion to determine the retention of existing trees within ZONE 1 should these trees require removal additional *Casuarinas* are to be planted as replacement.

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APPENDIX K – EMERGENCY MANAGEMENT PLAN



EMERGENCY MANAGEMENT PLAN

**BENEDICT
RECYCLING
NEWCASTLE**



**Emergency Management Plan –
Newcastle**

Document Control				
Rev No	Date	Revision Details	Author	Reviewer
01	27/04/2016	Submitted NCC	DS	IC
02	20/7/2018	Revised in accordance with SSD approval	JK	DS

Emergency Management Plan – Newcastle

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Emergency Management Plan – Newcastle

1. INTRODUCTION

In the interests of the health and safety of all staff, contractors, customers and visitors on site, it is important that we establish procedures to be followed in an emergency. This is known as the Emergency Management Plan for the site. During normal business hours, staff and contractors are to contact the Chief Warden/Site Manager in relation to any security/emergency matters

All staff and contractors on site outside of business hours should report their presence to the Site Manager. If a staff member or contractor is concerned for their personal safety whilst on site at these times, they should contact the Site Manager.

Please take the time to read this document thoroughly and become familiar with what action you need to take in an emergency. Your knowledge of the site and how to contact the Chief Warden or the Site Manager could save lives or minimise damage and loss of property.

2. SITE LOCATION

Benedict Recycling – Newcastle

1a McIntosh Drive, Mayfield West NSW 2304

Directions

Turn into Steel River Boulevard from Industrial Drive, then drive to the end of the road, toward the roundabout. Turn right at the roundabout onto McIntosh Drive and proceed toward the end of the road. As you approach the end of McIntosh Drive, turn left into the Benedict Recycling driveway, then take the first left turn and proceed to the Weighbridge Office.

GPS Coordinates: 32°53'00.6" South 151°43'51.4" East

3. COMPANY CONTACTS

Dayne Steggles – Site Manager	Mob: 0409 404 352
Ian Collier – Recycling General Manager	Mob: 0431 379 669
Peter Murdocca – WHS Manager	Mob: 0448 268 395
Chief Warden Clint Fish – Plant Operator	Mob: 0413 271 658
Weighbridge	Landline: 0438 461 530
Dayne Steggles – Site Manager	Mob: 0409 404 352

Emergency Management Plan – Newcastle

4. EMERGENCY CONTACTS

Service	Phone	Service	Phone
Police	000 or 112	State Emergency Service	132 500
Fire	000 or 112	Telstra	132 000
Ambulance	000 or 112	Bush Fire Information Line:	1800 679 737
John Hunter Hospital	(02) 4921 3000	Fire & Rescue NSW	(02) 4967 7550
Poisons Information	13 11 26	EPA Pollution Hotline	131 555
WIRES	1300 094 737	SafeWork NSW	13 10 50
Tenant	Phone	Tenant	Phone
Veolia Site contact - David Gater	0467 813 093	Novacastrian Demolition Services Site contact - Lincoln Tucker	0455 900 096
JR Richards & Sons Site contact - John Roddenby	0447 502 019	East Coast Recycling Site contact - Mick Francis	0408 123 555
TippExc Civil Site contact - Anthony Barrett	0434 395 809		
Neighbour	Phone	Neighbour	Phone
Ausgrid Site contact - Paul McDonald	(02) 4951 9325 0412 558 437	Fuji Xerox Site contact - Roz Taylor	(02) 4968 8100 0414 211 8
Grace Information & Storage Site contact - Thomas Dora	(02) 4960 7607 0400 390 899	Recall Australia Site contact - Tony Condello	(02) 9311 0677

Emergency Management Plan – Newcastle

5. EMERGENCY CONTROL ORGANISATION

An Emergency Control Organisation (ECO) has been established for the site. The ECO for Benedict Recycling Newcastle is:

Chief Warden	Red Cap <i>labelled 'Chief Warden'</i>	Clint Fish
Area Warden	White Cap <i>Labelled 'Warden'</i>	Ashley Eijkenboom Stuart White
Weighbridge	n/a	Noelene Atkins Kylie Alexander Megan Caple

The ECO has responsibility for:

- Ensuring the ECO is suitably staffed by persons who can carry out the duties of wardens on site. As far as possible, each area of site should be represented by trained wardens to provide safety for the staff of their area. Staff are invited to participate in the ECO by the Site Manager
- Participating in periodic meetings of the ECO. These meetings are convened to discuss improvements to site in the event of an emergency situation.
- Co-ordinating a full evacuation exercise which is held annually for the ECO, staff, contractors, customers and visitors on site to practise the emergency procedures. All staff members are expected to participate in the exercise so that they are familiar with the emergency procedures.

The list of current wardens are located in prominent areas of site, i.e. weighbridge, lunchroom (refer Appendix 4).

Emergency events include (but are not restricted to):

- Fire (General)
- Medical emergency
- Phone Threat (Bomb or substance)
- Severe Storm/Flood
- Gas leak and Airborne Contaminants
- Chemical/Fuel Spill
- Discovery of Ordinance
- Civil disturbance
- Armed hold up/ Aggressive intruder
- Bushfire
- Stockpile Fire

Emergency Management Plan – Newcastle

Benedict Recycling Newcastle outsources its emergency control training and compliance to Elite Fire Training.

The training is usually conducted in three phases:

- Phase 1: Chief Warden training and roles and responsibilities training for the ECO
- Phase 2: Use of emergency equipment. E.g. portable extinguishers, blankets
- Phase 3: Annual building evacuation exercise – Emergency Drill evacuation report is contained in Appendix 3.

6. RAISING AN ALARM

During business hours	Alert Emergency Services Dial 000 Inform the Chief Warden/ Site Manager Dial 0409 404 352
Out of hours	Alert Emergency Services Dial 000 Inform the Site Manager Dial 0409 404 352

Emergency Management Plan – Newcastle

7. EMERGENCY CONTROL POINT

The Emergency Control Point is the location on site where the Chief Warden will control the emergency response. It is also the point where the Emergency Services will go to when they arrive on site. This point is shown on the main processing shed Evacuation Map below.

This will be from the entry point of site, off McIntosh Drive.

Arrangements for assisting emergency services include:

- i) Access to site and escort
 - Access via main entrance
 - Weighbridge personnel at site entrance will arrange escort or provide directions
- ii) Equipment available (details in Resources and Equipment section)
 - First aid equipment
 - Firefighting equipment
 - Mobile plant
- iii) Trained personnel

Site Personnel with Emergency Training

Name	Training	Location
Heath Nowlan	First Aid	Operations
Noelene Atkins		Weighbridge
Clint Fish		Operations
Clint Fish	Emergency Warden	Operations
Ashley Eijkenboom		
Stuart White		

- iv) Numbers of Trained personnel required:
The numbers of trained personnel required are as follows:

- First Aid – 1 person (minimum)
- Wardens x 3
- Fire extinguisher (all – staggered over 2 years)

BENEDICT

Benedict Recycling Newcastle

Emergency Evacuation Map – Main Shed



Exit Point

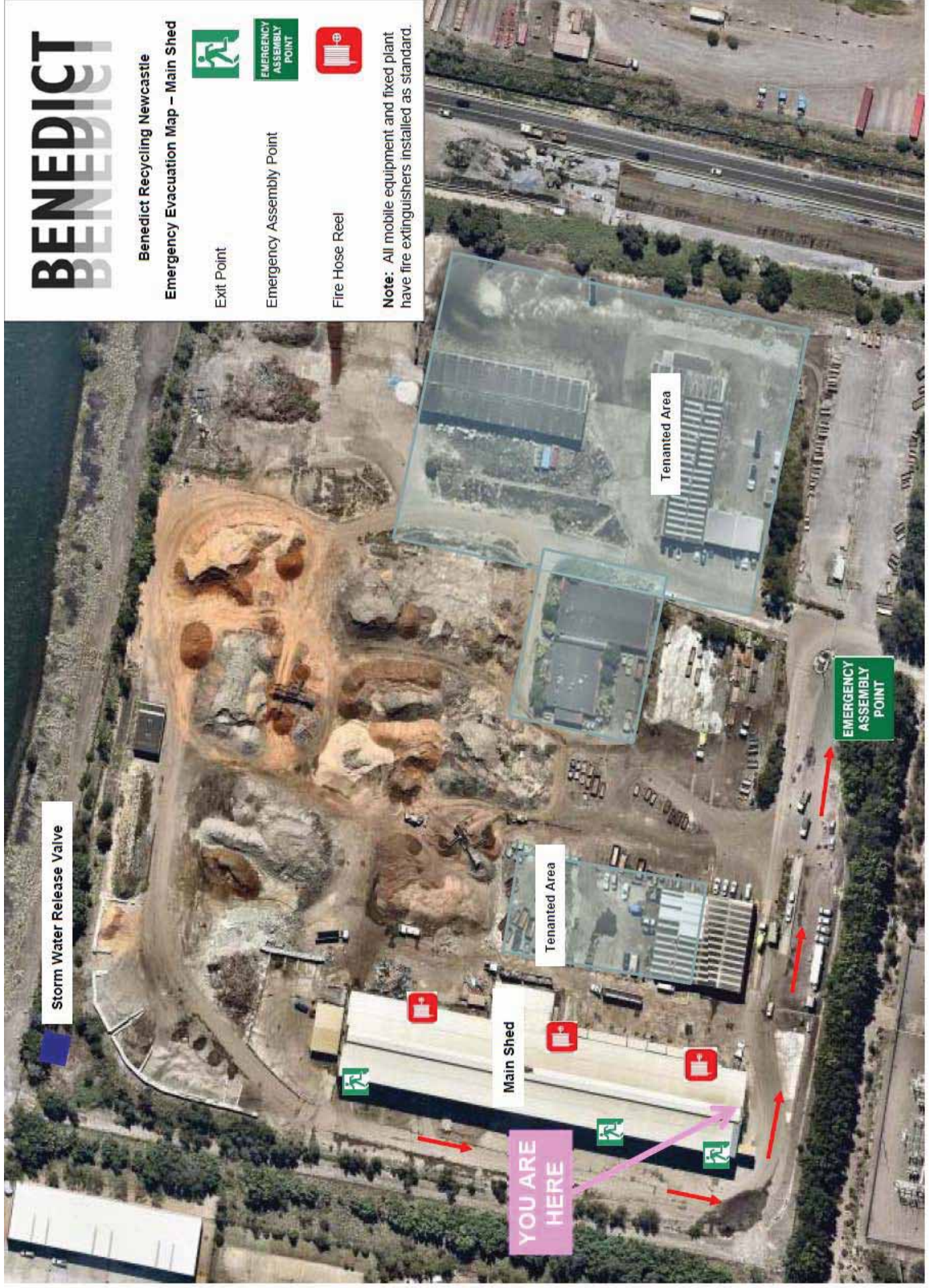


Emergency Assembly Point



Fire Hose Reel

Note: All mobile equipment and fixed plant have fire extinguishers installed as standard.



Emergency Management Plan – Newcastle

8. FIRE SAFETY EQUIPMENT AND SYSTEMS

The site is fitted with the following equipment and to ensure the safety of all persons on site. All are checked and maintained on a regular basis by external contractors. A Fire Equipment Register (Service provider book on site). In addition, a fire safety certificate certifying the fire safety measures on site is obtained on an annual basis (refer Appendix 1).

- Fire blankets
- Portable fire extinguishers
- Fire Hose Reels
- Fire hydrants
- Emergency lighting
- Emergency Exit signs

In addition to the above equipment, the main processing shed has been designed to have natural smoke venting in accordance with Table E2.2a of the National Construction Code (NCC) and the site has perimeter access for emergency vehicles in accordance with C2.4 of the NCC.




Whilst there are portable firefighting equipment throughout the site to minimise property damage, the main objective in any emergency is the safe and orderly evacuation of all staff, contractors, customers and visitors from the site. Efforts to extinguish fires should only be undertaken if the fire is minor and it is safe to do so

Fire hydrant and emergency exit bloc plans are included as Appendix 1 of this ERP.

A storm water valve has been installed on site in the discharge chamber of the final sediment basin in the north-western corner of the site. This storm water valve is to be maintained in a closed position to ensure any fire water or spills are retained on site. Following a fire or spill, this stormwater valve is to remain closed until any contaminated water has been disposed off site (if required). The stormwater valve is shown on the emergency evacuation plan above and in site drawings contained in Appendix 1 of this ERP.

Emergency Management Plan – Newcastle

9. FIRE EXTINGUISHERS – WHICH TO USE

Type	Description	Used For
Class ABE 	<p>The powder fire extinguisher ABE, distinguished by a white coloured band around the top of the cylinder, is the most widely used type of fire extinguisher suited for fires occurring in the house, office, boat, garage, car or caravan.</p> <p>They discharge a fine powder that absorbs fuel molecules, depriving the fire of a fuel source. These extinguishers are located throughout the site.</p>	<p>Powder fire extinguishers ABE are suitable for the following types of fire:</p> <p>Class A – Paper, textiles, wood, most plastics & rubber</p> <p>Class B – Flammable liquids</p> <p>Class C – Combustible gases</p> <p>Class E – Electrically energised equipment</p>
Type	Description	Used For
Class A 	<p>Water fire extinguishers are completely red with no coloured band</p> <p>Water fire extinguishers discharge a stream of water onto the fire, lowering the temperature of the burning material to below ignition point.</p>	<p>Water extinguishers A are suitable for the following types of fire:</p> <p>Class A – Paper, textiles, wood, most plastics and rubber</p>
Class AF 	<p>Wet chemical fire extinguishers, marked by an oatmeal coloured band, are effective against fires involving cooking oils and fats.</p> <p>They employ an agent that reacts with burning cooking oil or fat to form a suds-like blanket across the fuel surface, cutting off the fire's air supply and preventing the release of flammable vapours.</p>	<p>Wet chemical fire extinguishers are suitable for the following types of fires:</p> <p>Class A – Paper, textiles, wood, most plastics and rubber</p> <p>Class F – Cooking oils or fats</p>

Emergency Management Plan – Newcastle

10. WATER PUMP

The site has access to a multipurpose water pump facility located on the site water cart. The water cart may be used in the event of a fire if safe to do so.

11. WHAT TO DO WHEN HEARING AN EMERGENCY ALERT OVER UHF RADIO

Inform the Chief Warden / Site Manager over the site 2-way radio (Channel 9). If unsuccessful phone 0409 404 352.

EMERGENCY call has been made over UHF Radio		
Chief Warden and/or Deputy Chief Warden	Area Wardens	All other persons
Determine safe evacuation paths if required Determine if light vehicles are required for evacuation Determine Assembly Point if changed Make announcement to affected area(s) or entire site Receive emergency services advise status Receive radio calls from wardens to advise when zones are evacuated Assist emergency services Emergency services alone gives the all clear	Area warden remains in radio contact with all wardens Area wardens commence zone check When zone clear, report via UHF radio to Chief Warden, advising of status Report to the Chief/Deputy Warden when complete	Remain calm Evacuate using nearest SAFE exit, leave bulky items behind Weighbridge staff to bring visitor register and portable first aid kit to evacuation point Close doors as you leave room/building/vehicles

12. PEOPLE WITH A DISABILITY

Assist people with a disability to the assembly point. Ensure that the Chief Warden is informed that there is a person with a disability receiving assistance on site. Never attempt to carry another person.

Emergency Management Plan – Newcastle



13. FIRST AID

The site has a number of trained first aiders on site, trained to the 'Apply first aid' standard.

The list of current first aiders are located in prominent areas of site, i.e. weighbridge, lunchroom.

A portable first aid kit from one of the site vehicles is to be brought to the assembly point in an emergency event.

14. EMERGENCY PLANS

14.1 – FIRE/ EXPLOSION

1. Rescue persons from immediate danger/ within the vicinity of the fire, if SAFE to do so
2. Call the Chief Warden/ Deputy Warden and advise the following:
 - a. Name
 - b. Location of fire
 - c. What is on fire – are there any chemical/ gases nearby? If so, what are they?
 - d. Are any persons injured or trapped? If so, give location/s
3. If SAFE to do so, contain the smoke and fire – close doors and windows, but ensure you have a safe exit path
4. Follow instructions from the Chief Warden and Area Wardens
5. Leave the building/site via the safest, closest exit
6. Assemble at the Emergency Assembly Area
7. Report to your supervisor for a physical count
8. DO NOT go back into any building/site until instructed by the Chief Warden

Emergency Management Plan – Newcastle



14.2 – MEDICAL EMERGENCY

1. Move the person if they are in immediate danger and if it is SAFE to do so.
2. Call the Ambulance – 000 (112 as a secondary option for mobile phone users)
3. Notify a First Aid Officer
4. Give all details of the situation to the Ambulance Service:
 - a. Your name and phone number
 - b. Injured persons details – age, sex, description of injury
 - c. Address and location of injured
5. First Aid Officer provides care based on training and/or instructions given by the Ambulance service
6. Notify supervisor/manager of incident
7. Warden/nominated employee to go to gate to direct Ambulance once onsite
8. Once injured worker is attended to by the Ambulance service, when appropriate, incident area is to be preserved
9. Nominated employee to go with injured person to doctor's surgery/hospital.
10. Incident Notification is to be completed
11. Report the incident to WHS

Emergency Management Plan – Newcastle

14.3 – PHONE THREAT (Bomb, Substance, Device etc)

1. Take all calls seriously

2. **DO NOT HANG-UP**

3. Remain calm and composed

4. Where possible obtain attention of another staff member

5. Record time and date:

6. Exact words of the caller:

7. Enquire on the nature of the threat:

- a. When is the going to explode? _____
- b. Where did you put the bomb? _____
- c. When did you put it there? _____
- d. What does the bomb look like? _____
- e. What will make the bomb explode? _____
- f. Did you place the bomb? _____
- g. Why did you place the bomb? _____
- h. What is your name? _____
- i. What is your address? _____

8. Note if possible:

- a. Gender and estimated age _____
- b. Background noises (callers side) _____
- c. Callers accent or speech indicators _____
- d. Did you recognise the voice? _____
- e. If so who do you think it was? _____
- f. Was the caller familiar with the area? _____
- g. Manner of caller (calm, emotional etc.) _____
- h. Was the call taped? _____
- i. Duration of the call _____

9. When the call is finished, **DO NOT HANG-UP** (this may assist in tracing the call)

10. Response:

- a. Contact Chief Warden with details of the threat
- b. The Chief Warden will ascertain the threat, risk level and areas affected
- c. The Chief Warden will contact the emergency services. On advice, the Chief Warden may declare an evacuation
- d. Where applicable, the Chief Warden will engage a search of the threat

Emergency Management Plan – Newcastle

14.4 – SEVERE STORM / FLOOD

Chief Warden/Site Manager to assess local weather conditions, site conditions and weather forecasts prior to calling a severe storm/flood event. In the event of a severe storm/flood event, please follow the below

1. Plant Areas/ Workshop

- Turn off all gas and water supply
- Turn off electricity supply
- Place all parts/ machinery into buildings where possible
- Secure parts/ machinery that cannot be moved
- Batten down all loose fixings
- Close bins

2. Offices

- Place all computers onto the desk
- Unplug power cords
- Elevate printers, scanners etc. where possible
- Close all windows and blinds

3. Follow instructions given by Chief Warden/Site Management

4. Upon return to work, a risk assessment may need to be undertaken of the workplace to assess for damage

5. Do not use any electrical equipment until instructed

Emergency Management Plan – Newcastle

14.5– GAS LEAK AND AIRBOURNE CONTAMINANTS

If you detect a gas leak or can smell gas or other airborne contaminant:

- Immediately extinguish any naked flames in the vicinity or check for hot works being undertaken
- Turn off gas outlet/cylinder supply if possible
- Move anyone in immediate danger if it is safe for you to do so
- Contact the Chief Warden and advise them of the situation
- Chief warden to assess situation
- Isolate the area and ask all people to remove themselves from the immediate area
- Open windows and doors to disperse the gas
- Do not operate light or power switches – the sparking of a switch may ignite the gas

If the leak is serious (broken gas line, very strong smell of gas):

- Report what you have seen and done to the Chief Warden immediately
- Chief warden to assess situation
- If possible, Chief warden to shut off the gas supply to the site
- Chief warden to announce a full evacuation of the site.
- Chief warden to Call 000
- Chief warden to advise when it is safe to return to site

Emergency Management Plan – Newcastle

14.6– CHEMICAL/FUEL SPILL

- Contain any liquid or solid spills if safe to do so
- Refer to SDS for information regarding cleaning procedures
- Due to risk of fire/ explosion ensure all ignition sources are switched off in the vicinity of spill
- Contact Site Manager to notify them of the spill
- In the event of a fire notify Chief Warden immediately
- Chief warden to assess situation
- Evacuate if necessary
- If required, notify the EPA

14.7– DISCOVERY OF ORDNANCE

- Contact Chief Warden/ Site Manager with details of the ordnance found. **DO NOT HANDLE.**
- The Chief Warden/ Site Manager will cordon off affected area.
- The Chief Warden/ Site Manager is to contact the police and supply a photo of what has been found and wait for further instruction.
- If Police deem further action is required, the Chief Warden/ Site Manager is to implement the instructions given and wait for their arrival to site.
- Once on site, Police along with supporting military personnel, will handle the removal of item found and deem the area safe to reopen.

Emergency Management Plan – Newcastle

14.8– CIVIL DISTURBANCE

- Do NOT intervene
- Notify Chief Warden who will notify Police
- Assist injured if SAFE to do so
- If injured persons contact Ambulance Service
- Assist with withdrawal of staff, locking up the offices, securing records, files, cash and other valuable property
- Evacuate if necessary

14.9– ARMED HOLD UP/ AGGRESSIVE INTRUDER

- Always consider your safety as your number one priority
- Observe the offender (height, weight, age, clothing, speech, disabilities, accent, etc.)
- Hand over cash if asked
- Once it is safe to do so, contact the Chief Warden and advise of the situation
- If they cannot be contacted, dial 000 and request Police assistance
- Secure your area by locking doors and do not allow anyone else into the area until the Police have advised to do so
- Complete the Phone Threat Form to capture observations before you forget
- Ensure someone remains to brief Police on arrival
- Incidents such as an armed hold up can be extremely disturbing. It is highly recommended that counselling be sought after the event. Benedict staff can access the Employee Assistance Program (EAP)

Emergency Management Plan – Newcastle

14.10– BUSHFIRE

Watch for Triggers

- Bushfire Alerts
- High Fire Danger Warnings
- Smoke or Fire Nearby

NOTIFY CHIEF WARDEN/SITE MANGER OF ABOVE TRIGGER/S

Monitor

- Fires Near Me App or Rural Fire Service (RFS) web page www.rfs.nsw.gov.au
- Bush Fire Information Line: 1800 679 737
- Fire & Rescue NSW: (02) 4967 7550
- Local radio, local ABC/emergency broadcaster frequency, TV, newspapers
- www.facebook.com/nswrfs
- www.twitter.com/nswrfs
- Live Traffic updates on NSW Transport web page <https://www.livetraffic.com/>

BE AWARE OF THE BUSH FIRE ALERT LEVEL - www.rfs.nsw.gov.au/fdr

Response - Leave Early

- Text message warning comes through advising to leave now (Read message carefully as it will give direction as to where to go)
- Check roads are open (via Live Traffic website)
- Once Safest route is decided on, pick a safe meeting point, travel together once at meeting point sign off.

Response – Stay and Defend

- Notify RFS that you plan to stay and defend give them location and number of people on site
- Notify Family that you will be staying
- Grab Fire blankets, dust masks, gloves, glasses or goggles, bag of rags, water and first aid kit
- Drink lots of water
- Move items away from boundary into centre of site away from where personnel are assembled (If water cart is available fill and move to assembly area)

After fire has passed

- Notify RFS of updated situation and ask if safe to leave
- Check Workers condition (fatigue, shock, hydrated, injuries etc.) if in doubt call 000 for medical help
- Check site for spot fires and burning embers
- Notify Manager when you reach home

Emergency Management Plan – Newcastle

14.11– STOCKPILE FIRE MANAGEMENT

Mitigation Measures

- Waste stockpile area is designated as a **NO SMOKING** zone and exclusion zone for flammable and combustible liquids or hazardous wastes.
- Maintenance and **activities that can produce sparks** such as welding or cutting, are to be conducted away from waste stockpile areas.
 - If emergency maintenance is required near waste stockpiles, a hot works permit is to be completed and surrounding work areas to be watered down before, during and after works
 - Monitor work area for 30mins after hot works have been completed.
- **Waste stockpiles** to be typically 3 – 5 metres in height and <150 tonnes.
- Manage stockpiles in a 'first in first out' manner to **minimise residency time** of stock on ground. (excluding compacted material utilised in loading zone)
- Regular **stockpile observations** (as part of day-to-day stockpile management).
- **Water cart** in regular use on site daily.

Fire Management

- In the event of a fire, **Smother material** by applying a soil/sand based product AND/OR water (via Front End Loader/Excavator bucket/Fire equipment) over the affected and surrounding stockpile area.
- After sufficiently smothering the material, utilise the Front-end loader/Excavator to **'deconstruct' the stockpile**, spreading the affected material into an approximately 300mm thick layer, away from the original stockpile.
- Use the site Water cart/Fire equipment to **soak the affected material** by applying a high volume of water over the spread stockpile.
- Keep the **fire affected material isolated** until such time as any subsequent fire risk has been eliminated.
- **Continued regular observation** after extinguishing, to ensure no further flare-up occurs.
- **If safe to do so**, ensure the stormwater valve is in a closed position to retain fire water onsite

Emergency Management Plan – Newcastle

15. ADDITIONAL EMERGENCY RESPONSES

The first priority in an emergency is to obtain medical assistance for the injured person. Any staff that are skilled in first aid should be called to the scene, and the injured person should be transported to a medical clinic or hospital if required.

Handling an Emergency: (DRSABCDR)

Danger: check danger to you, to others, to the casualty.

Response: check for response: Tap on the shoulder and say "can you hear me?"

Send for help: call triple zero (000) for an ambulance.

Airway: look in mouth for foreign material. Tilt head back, lift chin.

Breathing: look, listen and feel for normal breathing.

If casualty is not breathing normally and not responsive, commence CPR.

CPR: place your hands in the centre of chest. Pushing down hard compress chest (1/3 depth of chest). Continue compressions until help arrives

Defibrillation: apply a defibrillator and follow voice prompts. (if available)

Recovery position: place casualty in the recovery position.

15.1 - VEHICLE ACCIDENT

1. If a vehicle accident occurs, proceed to the accident site and if required determine what emergency services will be needed.
2. Staff should wear reflective safety vests and act to control traffic around the accident until vehicles can be moved or emergency services arrive.
3. Render first aid to any injured persons and follow the D.R.S.A.B.C.D.R. action plan as written in the Australian first aid manual.
4. Contact emergency services on 000 or 112 on a mobile
 - Describe the nature of emergency
 - Give location of emergency - notify if 4WD ambulances will be needed
 - Give the Company name
 - Give your name
5. If it involved a vehicle rollover or vehicle falling over a high wall, determine what equipment will be the most appropriate for recovering the vehicle and obtain the site managers approval before proceeding.

Emergency Management Plan – Newcastle

15.2 - PERSONS/ VEHICLES SUBMERGED IN WATER

1. If a person has fallen into water or silt, provide assistance where possible. Assess if emergency services will be required, if required remain until emergency services arrive.
2. If the employee/contractor or visitor has been recovered, carry out first aid following the D.R.S.A.B.C.D.R. action plan as written in the Australian first aid manual.
3. Contact base and get them to call 000 if further assistance is required. Inform emergency services if a 4WD ambulance or Rescue Helicopter is required.
4. Once area is isolated and all persons are clear or removed from danger, if plant has also fallen into or sunk into the pond or dam, the Site Manager must conduct a full risk assessment of the proposed recovery method. The Site Manager must give approval of the method of recovery and also determine whether the Operation's Manager's approval is also required.

15.3 - ON DISCOVERY OF ELECTROCUTION OR ELECTRICAL EMERGENCY

1. Raise alarm by shouting loud enough or by calling on two way radio/ mobile phone to gain attention.
2. Check danger to yourself, others and the casualty.
3. **Do not become a casualty yourself.** Assess the area before attempting any actions.
4. Never approach the area and remain at minimum 8 metres from the electrically affected area.
5. Switch power supply off at the mains if safe to do so.
6. If safe to do so, follow the D.R.S.A.B.C.D.R. action plan as written in the Australian first aid manual.
7. Instruct someone to get help and call emergency services on 000.
8. Isolate and barricade off area, minimum 8 metre circumference of power source of energy. Only authorised personnel are to be permitted in the area.
9. Continue providing first aid until ambulance arrives or relieved by supervisor or another first aid officer.
10. If any employee, contractor or visitor receives an electric shock they **MUST** seek medical attention. They **MUST** be driven to a medical centre for a check-up (electrocardiogram & blood analysis). They **MUST** inform the doctor that they need a blood test and 12 lead ECG.

15.4 - ON DISCOVERY OF POWER LINES COMING DOWN

1. Raise alarm on 2-way radio. Tell all personnel to remain where they are until further notice. Account for all staff on site.
2. Barricade area off, remain at minimum 8 metres from power lines and ensure no persons/vehicles can get close to fallen power lines.
3. Contact Energy Provider. Call 000 if there are any injuries.
4. If injuries are sustained, follow emergency plan E3 (on discovery of electrocution or electrical emergency).
5. A site employee is to remain outside the barricaded area to ensure nobody enters the area until the Energy Provider arrives.
6. Barricades are only to be removed after the Energy Provider has rectified the problem, declared the area safe, and the site Supervisor/ Manager has given approval.

Emergency Management Plan – Newcastle

15.5 - FAILURE OF UTILITIES/ PLANT

1. Stop what you are doing
2. Push emergency stop buttons and/ or lanyards or turn off equipment
3. Check surroundings for danger to yourself and others
4. Notify your site supervisor/manager that maintenance is required to check equipment and make the necessary adjustments
5. Follow any lawful direction from your site supervisor/manager
6. Always follow Isolation Procedures and all electrical work to be conducted by Qualified Competent Electrician

15.6 - STRUCTURAL FATIGUE OR COLLAPSE

1. Stop what you are doing
2. Check the surroundings for danger to yourself and others
3. Turn off fixed/mobile equipment (if possible)
4. Notify supervisor/manager immediately
5. If emergency evacuation is announced, follow emergency evacuation procedure to emergency assembly area
6. Move in an orderly manner by the safest and most direct route to your emergency assembly area
7. Report to your area warden/supervisor at the assembly point
8. Remain at the assembly point and await further instructions
9. Wardens are to conduct a head count, to ensure that all personnel have vacated the area. Check the sign in book to see which visitors have entered the site
10. Do not re-enter the facility until assessed safe to return by the Chief Warden
11. Contact emergency services 000 or 112 on a mobile or S.E.S if necessary
 - Describe the nature of emergency
 - Give location of emergency
 - Give the Company name
 - Give your name

15.7 - ALLERGIC REACTION

1. DRSABCDR
2. Administer adrenaline via an auto injector (eg EpiPen/ Anapen)
3. Call (000) or (112) for an ambulance
4. Keep casualty in a position of comfort
5. Administer oxygen and/ or asthma reliever medication if necessary
6. Repeat administration or adrenaline if no improvement after five minutes
7. Monitor casualty's responsiveness and prepare to give CPR if necessary

15.8 - ASTHMA ATTACK

1. Ensure casualty is comfortable and encourage casualty to take slow, deep breaths
2. Give casualty 4 puffs of a blue reliever inhaler - casualty takes a breath with each puff
3. Use a spacer if available; give 4 puffs, once at a time - casualty takes 4 breaths after each puff
4. Wait 4 minutes
5. If no improvement, give another 4 puffs
6. If attack continues: Call (000) and keep giving children 4 puffs every 4 minutes and Adults 6-8 puffs every 5 minutes.

Emergency Management Plan – Newcastle

15.9 - ANIMAL BITES

1. DRSABCD
2. Control bleeding - use direct pressure and elevation
3. Apply dressing and bandage firmly
4. Immobilise if bite on a limb
5. Seek medical aid

15.10 - SNAKE BITES

1. DRSABCD
2. Calm casualty and lie casualty down
3. DO NOT attempt to suck the venom out of affected area. DO NOT wash the bite.
4. If bite is on a limb, apply broad pressure bandage over the bite site as soon as possible.
5. Apply pressure immobilisation bandages. Apply a firm roller bandage starting just above the fingers and toes and moving up the limb as far as can be reached.
6. Immobilise casualty: Apply a splint to immobilise bitten limb. Check circulation in fingers and toes. Ensure casualty does not move
7. Call (000) for an ambulance

15.11 - BURNS

1. DRSABCD
2. If fire is involved encourage casualty to STOP, DROP and ROLL
3. Wrap in fire blanket or similar
4. Roll casualty along ground until flames extinguished
5. Cool burnt area under cold running water for 20 minutes (30 mins for bitumen burn)
6. If burn to eye, flush eye with water for 20 minutes
7. Remove clothing and jewellery from burnt area (unless sticking to the burn). Don't touch the injured areas or burst blisters
8. Place sterile, non-stick dressing over burn
9. Calm casualty - manage for shock if burn is large or deep
10. Call (000) for an ambulance

15.12 - CHEST PAIN

1. Advise casualty to stop activity, and sit or lie down to rest
2. Assist the casualty to take any prescribed medication they have for angina or chest pain
3. If symptoms last 10 minutes, get worse or are severe, call (000) for an ambulance immediately
4. Give a 300mg tablet of aspirin. Do not give aspirin: If allergic or on anticoagulant medication (eg warfarin)
5. Stay with the casualty to monitor consciousness and breathing.

Emergency Management Plan – Newcastle

15.13 - CHOKING

1. Encourage casualty to relax and breathe deeply - ask casualty to cough to remove object
2. If coughing does not remove the blockage: Call (000) for an ambulance
3. Bend casualty well forward and give 5 sharp upward blows with the heel of your hand. Reassess after each blow.
4. If not cleared after 5 back blows: Give 5 chest thrusts. Re-assess after each chest thrust.
5. Continue alternating 5 back blows with 5 chest thrusts until medical aid arrives.
6. If casualty becomes unresponsive: Remove any visible obstructions from mouth and commence CPR

15.14 - DIABETIC EMERGENCY

1. DRSABCD
2. Give sweet food or drink (not diet or sugar free drinks) every 15 minutes.
3. If no improvement call (000) for an ambulance

15.15 - FRACTURES

1. DRSABCD
2. Control any bleeding and cover any wounds
3. Check for fractures: open, closed or complicated
4. Instruct casualty not to move injured part
5. Immobilise fracture using broad bandages and a padded splint or sling
6. Every 15 minutes check the bandages are not too tight
7. Watch for signs of loss of circulation to hand or foot
8. Call (000) for an ambulance

15.16 - RECOVERY POSITION

1. Kneel beside casualty
2. Place farther arm at right angle to body
3. Place nearer arm across chest
4. Lift nearer leg at knee so it is fully bent upwards
5. Roll casualty away from you on to side while supporting head and neck
6. Keep leg at right angle with knee touching ground to prevent casualty rolling onto face

15.17 - SEVERE BLEEDING

1. Remove or cut casualty's clothing to expose wound
2. Apply direct pressure over wound
3. Lie casualty down and raise injured part above level of heart
4. Apply a bandage over wound ensuring pad remains in position
5. If bleeding persists, leave initial pad in place and apply a second pad - secure with bandage
6. Check circulation below wound
7. If severe bleeding persists, give nothing by mouth - Call (000) for an ambulance
8. Treat for shock

Emergency Management Plan – Newcastle

15.18 - SHOCK

1. DRSABCDR
2. Manage injuries such as bleeding and burns
3. Call (000) for an ambulance
4. Raise legs above level of heart (unless fractured or a snake bite)
5. Treat any other injuries (e.g. fractures or minor wounds)
6. Loosen tight clothing around the neck, chest and waist
7. Maintain body warmth
8. Monitor and record breathing and pulse
9. If casualty becomes unresponsive, place in the recovery position

15.19 - SPRAINS AND STRAINS

1. DRSABCD
2. Advise casualty to rest
3. Place ice pack on the injured area
4. Apply a compression bandage to the injured area
5. If possible, elevate the injured area
6. Seek medical aid.

Emergency Management Plan – Newcastle



APPENDIX 1 – FIRE SAFETY CERTIFICATE

Final / Interim Fire Safety Certificate

Certificate No. IT.1005

**Type of Certificate**

Type of Certificate issued

☐ Interim☒ Final**Details of Certificate**Name of Owner/Agent I, Chris WilliamsonAddress of SASFiRE – Specialised Alarm Solutions

certify that:

(a) each of the essential fire measures listed below:

- has been assessed by a person (chosen by me) who was properly qualified to do so; and
- was found, when it was assessed to have been properly implemented and to be capable of performing and installed to the design provided and not less than the standard or measure detailed below.

(b) the information contained in this certificate is, to the best of my knowledge and belief, true and accurate.

Identification of the BuildingHouse / Unit number, Street & Suburb 1a McIntosh Dr, Mayfield West NSW 2304Description of the building (whole or part) Whole**Date of Assessment**Date of assessment 22/06/2018**Essential Fire Safety Measures**

Fire Safety Measure	Standard	BCA Clause(s)
Emergency lighting	AS/NZS 2293.1 – 2005	E4.2, E4.4
Exit signs	AS/NZS 2293.1 – 2005	E4.5, NSW E4.6 & E4.8
Fire hydrant systems	AS 2419.1 – 2005	E1.3
Portable fire extinguishers & fire blankets	AS 2444 – 2001	E1.6
Fire hose reel systems	AS 2441 – 2005	E1.4
Perimeter vehicle access for emergency vehicles	-	C2.4
Natural Smoke Venting to Table E2.2a (building subject to C2.3)		BCA Table E2.2a

Date of CertificateDate of this certificate 22/06/18**Signature**

Name & Signature: Chris Williamson - Fire Services Representative

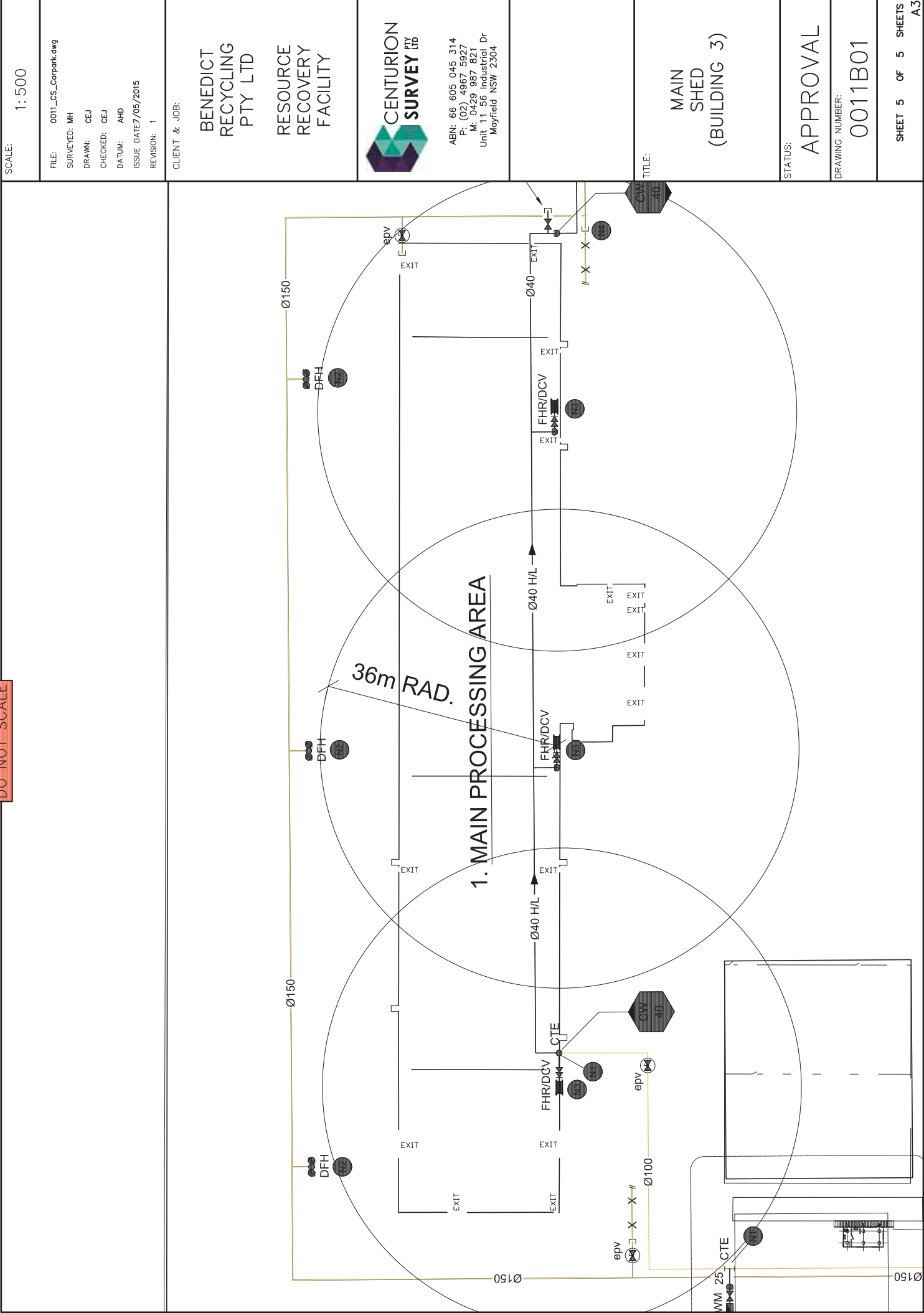
Capacity: Service Manager

Emergency Management Plan – Newcastle



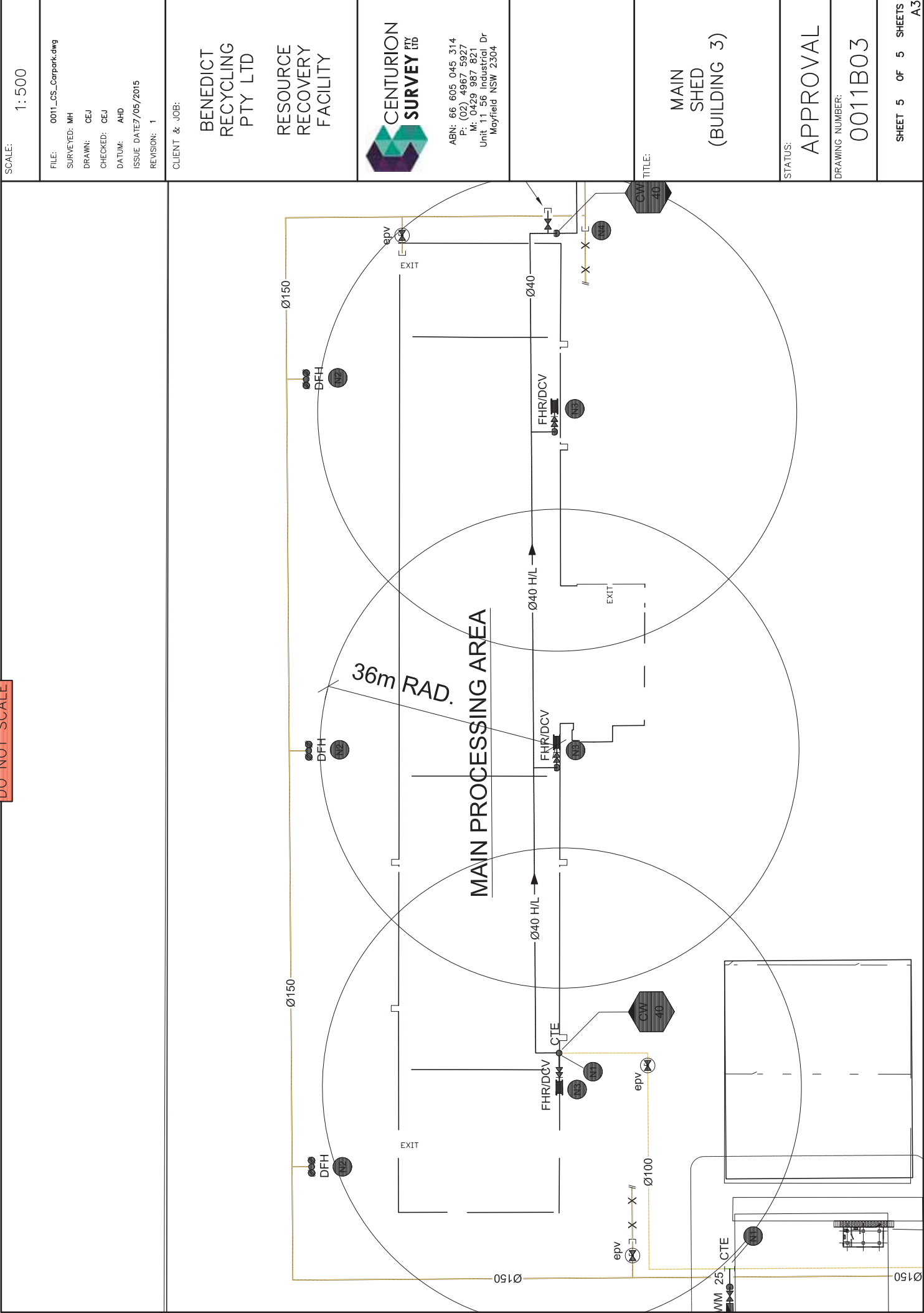
APPENDIX 2 – SITE PLANS

DO NOT SCALE



SCALE: 1:500	FILE: 0011_CS_Carpark.dwg SURVEYED: MH DRAWN: CEJ CHECKED: CEJ DATUM: AHD ISSUE DATE: 7/05/2015 REVISION: 1	CLIENT & JOB: BENEDICT RECYCLING PTY LTD RESOURCE RECOVERY FACILITY	CENTURION SURVEY PTY LTD ABN: 66 605 045 314 P: (02) 4967 5927 M: 0429 987 821 Unit 11 56 Industrial Dr Meyfield NSW 2304	TITLE: MAIN SHED (BUILDING 3)	STATUS: APPROVAL	DRAWING NUMBER: 0011B01	SHEET 5 OF 5 SHEETS A3
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DO NOT SCALE



SCALE: 1:500	FILE: 0011_CS_Carpark.dwg SURVEYED: MH DRAWN: CEJ CHECKED: CEJ DATUM: AHD ISSUE DATE: 7/05/2015 REVISION: 1	CLIENT & JOB: BENEDICT RECYCLING PTY LTD RESOURCE RECOVERY FACILITY	CENTURION SURVEY PTY LTD ABN: 66 605 045 314 P: (02) 4967 5927 M: 0429 987 821 Unit 11 56 Industrial Dr Meyfield NSW 2304	TITLE: MAIN SHED (BUILDING 3)	STATUS: APPROVAL	DRAWING NUMBER: 0011B03	SHEET 5 OF 5 SHEETS A3
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Emergency Management Plan – Newcastle



APPENDIX 3 – EMERGENCY EVACUATION DRILL REPORT

Emergency Drill Report

Site:		Date & time of drill:		Time evacuation took:	
# of persons on site:		Person completing report:			
Description of drill. Emergency and tasks of individuals at time of drill: (including task being carried out)					
Who was responsible for Visitors Register (Form 39)?					
Were site procedures followed?					
Does everyone know where emergency siren switches are?					
Access to fire hydrant clear?					
Was everyone accounted for?					
What was done regarding entry to site by non employees?					

Was there a certified first aider on site?	
What could be done better?	
What worked well?	
Who called emergency services?	
Signatures:	

Emergency Management Plan – Newcastle



APPENDIX 4 – EMERGENCY WARDENS

EMERGENCY WARDENS



CHIEF WARDEN



Clint Fish

AREA WARDENS



Stuart White



Ashley Eijkenboom



APPENDIX L – FINAL SAFETY CERTIFICATE 2018

Final / Interim Fire Safety Certificate

Certificate No. IT.1005

**Type of Certificate**

Type of Certificate issued

☐ Interim☒ Final**Details of Certificate**

Name of Owner/Agent I, Chris Williamson

Address of SASFiRE – Specialised Alarm Solutions

certify that:

(a) each of the essential fire measures listed below:

- has been assessed by a person (chosen by me) who was properly qualified to do so; and
- was found, when it was assessed to have been properly implemented and to be capable of performing and installed to the design provided and not less than the standard or measure detailed below.

(b) the information contained in this certificate is, to the best of my knowledge and belief, true and accurate.

Identification of the Building

House / Unit number, Street & Suburb 1a McIntosh Dr, Mayfield West NSW 2304

Description of the building (whole or part) Whole

Date of Assessment

Date of assessment 22/06/2018

Essential Fire Safety Measures

Fire Safety Measure	Standard	BCA Clause(s)
Emergency lighting	AS/NZS 2293.1 – 2005	E4.2, E4.4
Exit signs	AS/NZS 2293.1 – 2005	E4.5, NSW E4.6 & E4.8
Fire hydrant systems	AS 2419.1 – 2005	E1.3
Portable fire extinguishers & fire blankets	AS 2444 – 2001	E1.6
Fire hose reel systems	AS 2441 – 2005	E1.4
Perimeter vehicle access for emergency vehicles	-	C2.4
Natural Smoke Venting to Table E2.2a (building subject to C2.3)		BCA Table E2.2a

Date of Certificate

Date of this certificate 22/06/18

Signature

Name & Signature: Chris Williamson - Fire Services Representative

Capacity: Service Manager