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16 December 2021

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ORANGE WASTE PROJECT - OPERATIONAL ENVIRONMENTAL MANAGEMENT PLAN UPDATES

Please find below a summary of updates to the Orange Waste Project Operational Environmental Management Plan (OEMP):

- Selected documents forming the OEMP have been updated to reflect current operations, contact details and site layouts, including:
  - Section 5.1 (Training – Staff Training) – 'Environmental Monitoring Contractors' added to Project Site Safety Management Procedures Induction (Section 5.1.1)
  - Section 9.5 (ERRRC Five-Year Works Action Plan) – Document added to OEMP
  - Section 9.7 (ORRRC PIRMP) – Document testing for 2021/22 updated
  - Section 9.9 (ERRRC PIRMP) – Document testing for 2021/22 updated
  - SOP 8 (Handling and Disposal of Asbestos) – Updated hyperlinks to asbestos guidance docum
  - SOP 21 (Document Control) – OEMP Register – Added Version 7 (Dec-2021) to distribution list
  - SOP 21 (Document Control) – OEMP Updates Register – Added notes for updates 226 to 256
  - WAP 001 (Dust Prevention On Site) – Updated version
  - WAP 002 (Bin Closure / Servicing) – Updated version
  - WAP 003 (Load Mulch / Compost) – Updated version
  - WAP 004 (Transfer Oil) – Updated version
  - WAP 006 (Tyre Stockpiling) – Updated version
  - WAP 007 (Litter Collection) – Updated version
  - WAP 009 (Landfill Waste Disposal) – Updated version
  - WAP 010 (Beekeeping Equipment and Honey Containers) – Updated version
  - WAP 011 (Weighbridge Procedures) – Updated version
  - WAP 012 (ERRRC Traffic Management) – Updated version
  - WAP 013 (ORRRC Traffic Management) – Updated version
  - WAP 014 (Handling Contaminated Soil at ORRRC) – Updated version

- WAP 015 (Plant – Routine Maintenance) – Updated version
- WAP 016 (Community Recycling Centre Household Hazardous Waste Receipt and Management) – Updated version
- WAP 017 (Manual Handling) – Updated version
- SWMS ERRRC_001 (Working Within the Leachate Holding Tank Exclusion Zone) – Updated version
- SWMS RRC_001 (Asbestos Disposal) – Updated version
- SWMS RRC_002 (Lone Worker) – Updated version

- Update SOP 21 (Document Control) with amendments recorded in the 'OEMP Updates Register'.
- Update all applicable OEMP sections with a footer of Version 7, December 2021

Yours sincerely

BRENDAN STUART
Senior Environmental Scientist

OPERATIONAL ENVIRONMENTAL MANAGEMENT PLAN

ORANGE WASTE PROJECT

ORANGE CITY COUNCIL

December 2021

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OEMP VOLUME 1 – TOC

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Foreword

This Operational Environmental Management Plan (OEMP) is a living document and sections of it will be periodically updated. This OEMP has been produced in an effort to combine all of the documentation required as per the Project Approval, as well as all of the Operating Procedures necessary for safe and efficient operation of the Orange Waste Project into one all-encompassing document.

Sections of this OEMP will periodically require updating as new initiatives are implemented and new procedures and responsibilities emerge.

For these reasons, document control is an important part of the environmental management system. It is critical that it is always known who has copies of the OEMP (or individual sections of it), and that only the latest version is in use. Details on the version and the date of issue are recorded on each page of the OEMP in the bottom left hand corner.

Revised and updated versions of the OEMP will always be issued with a covering memo summarising the changes. When a new insert is received, the old version is to be replaced.

In summary, this OEMP is a functional document; it is designed to help personnel involved with the Orange Waste Project undertake their tasks with minimal environmental risk and understand their environmental responsibilities.

Through using this OEMP, it will be possible to improve, monitor and demonstrate the environmental performance of the waste management. If you have any suggestions for amendments, additions or improvements, please discuss these with your supervisor.

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Orange City Council
Manager Waste Services and Technical Support

Date: 14 / 12 / 2021

Abbreviations

90%ile	90th percentile
AHD	Australian Height Datum
AS	Australian Standard
am	ante meridiem
C°	Degrees Celsius
CBD	Central Business District
C&D	Construction and Demolition
C&I	Commercial and Industrial
DECCW	Department of Environment and Climate Change and Water
DP	Deposited Plan
DPIW	Department of Primary Industries and Water
EA	Environmental Assessment
EPA	Environment Protection Authority
EPL	Environment Protection Licence
ERRRC	Euchareena Road Resource Recovery Centre
GAP	Groundwater Assessment Plan
ha	Hectare
HDPE	High Density Poly Ethylene
kg	kilograms
kL	kilo litres
L	Litres
LCRS	Leachate Collection and Removal System
LEMP	Landfill Environmental Management Plan
LGA	Local Government Area
LLDPE	Linear Low Density Polyethylene
m	metres
m^3	Metres Cubed
MGB	Mobile Garbage Bin

mg/L	milligrams per litre
ML	Mega Litres
mm	millimetre
m/s	metres per second
MTF	Material Transfer Facility
OCC	Orange City Council
OEH	Office of Environment and Heritage
OEMP	Operational Environmental Management Plan
ORRRC	Ophir Road Resource Recovery Centre
OWP	Orange Waste Project
PA	Project Approval
PIRMP	Pollution Incident Response Management
pm	post meridiem
RMS	Roads and Maritime Services
RTA	Road and Traffic Authority
s	seconds
SOP	Standard Operating Procedure
STP	Sewage Treatment Plant
SWAP	Surface Water Assessment Plan
SWMS	Safe Work Method Statement
t	Tonne
TOC	Table of Contents
VEM	Virgin Excavated Material
V/V %	Volume Percent Concentration [(volume of solute)/(volume of solution)] x 100%
WAP	Work Activity Procedure
WRRMP	Waste and Resource Recovery Monitoring Program
WWTP	Waste Water Treatment Plant

Section 1

ENVIRONMENTAL MANAGEMENT

Environmental Management

1.1 OEMP PURPOSE AND OBJECTIVES

The purpose of this OEMP is to ensure that appropriate environmental practices are followed during operation of the Ophir Road Resource Recovery Centre (ORRRC) and the Euchareena Road Resource Recovery Centre (ERRRC), as well as the transportation of products between the two facilities (collectively known as the Orange Waste Project - OWP).

The OEMP is a document that consolidates a number of smaller reports and management plans that were developed during the fulfilment of the conditions of the Project Approval (PA).

The OEMP has been developed to provide a clear direction on the selection and implementation of appropriate environmental management and monitoring techniques during the operational life of both the ERRRC, and the ORRRC.

1.2 MANAGEMENT STRUCTURE

The management structure of the OWP is detailed in **Figure 1.1**. Responsibilities are referenced throughout the OEMP, with each responsibility assigned to one of the roles displayed in **Figure 1.1**.

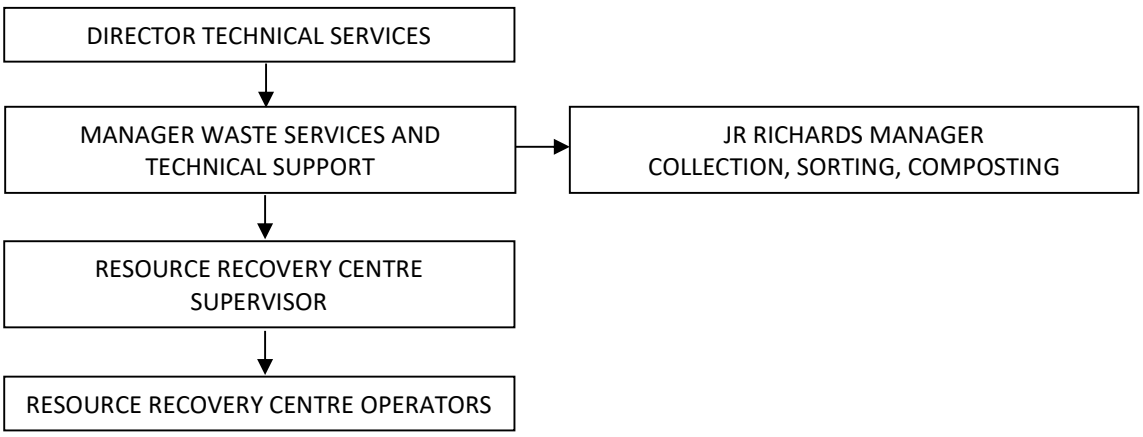

Figure 1.1: Management Structure for the operation of the OWP

1.3 OPERATIONS EXCLUDED FROM THE MANAGEMENT PLAN

There are some aspects of the OWP not covered directly by this OEMP. These include the operations carried out by external contractor JR Richards, namely: all composting activities carried out on Lot 101 in DP 1183238, all Mobile Garbage Bin (MGB) collection services within the Orange Local Government Area (LGA), recycling within the Material Transfer Facility (MTF)

(converted from the previous Material Recovery Facility [MRF) as of July 2015 at the ORRRC, and waste processing within the sorting and baling shed at the ORRRC.

JR Richards have an OEMP that encompasses all of their operations and procedures. This document is reviewed annually by Orange City Council (OCC) to ensure compliance with the PA (refer **Section 6.5**).

1.4 SCOPE AND STRUCTURE OF THE OEMP

The format of this OEMP is as follows:

VOLUME 1 – Management plans and documentation for the appropriate environmental practices for operation of the OWP.

- **Section 1** provides an introduction to the environmental management of the OWP, the purpose and objectives of the OEMP, and the management structure of the project.
- **Section 2** details the project background in terms of site features and operations for the entire waste project.
- **Section 3** details the Operational Controls of the ORRRC Landfill Environmental Management Plan (LEMP), including cross references to the appropriate Standard Operating Procedures (SOPs) and Work Activity Procedures (WAPs).
- **Section 4** details the Operational Controls of the ERRRC Landfill Environmental Management Plan (LEMP), including cross references to the appropriate Standard Operating Procedures (SOPs) and Work Activity Procedures (WAPs).
- **Section 5** details the staff training requirements for staff and contractors.
- **Section 6** details the consultation and reporting requirements for the project.
- **Section 7** Includes the Site Management Plans.
- **Section 8** includes the approvals required for operation of the project.
- **Section 9** includes supporting documents.

VOLUME 2 – Daily procedures to be followed for adhering to the appropriate environmental practices identified in Volume 1.

- **Standard Operating Procedures** (SOPs) and supporting **Forms** for the safe and efficient operation of the Orange Waste Project.
- **Work Activity Procedures** (WAPs) and supporting Forms for the safe and efficient completion of work activities associated with the Orange Waste Project.
- **Safe Work Method Statement** (SWMS).

Section 2

OPERATIONS OVERVIEW

Operations

2.1 ORANGE WASTE PROJECT OVERVIEW

The Orange Waste Project (OWP) is an integrated plan for improved resource recovery and residual waste management for the Orange LGA, and to address the current situation where the landfill space at the ORRRC has reached its capacity. The operations at the ERRRC and ORRRC sites together create an integrated resource recovery and waste management strategy, which will improve the diversion from landfill from 18%-20% to approximately 58%.

The OWP includes operations at two separate sites owned by OCC:

- The existing ORRRC located approximately 5 kilometres north east of the Orange CBD; and
- The new ERRRC located approximately 44 kilometres from Orange and 5 kilometres northeast of Molong.

2.2 OPHIR ROAD RESOURCE RECOVERY CENTRE

2.2.1 ACTIVITIES UNDERTAKEN AT THE SITE

The ORRRC is used primarily as a waste transfer station. The primary activities undertaken at the ORRRC include:

- Receipt of municipal collection, commercial, industrial and public delivery waste, including virgin excavated material and green waste;
- Processing, compaction and baling of mixed residual waste;
- Sorting of recyclable materials and re-saleable items;
- Temporary storage of household hazardous items and e-waste;
- Shredding of food/garden organics from the municipal sector;
- Landfilling of residual solid wastes (asbestos and dead animal waste);
- Progressive remediation and closure of the active landfill cell; and
- Operation of the Community Recycling Centre (CRC).

2.2.2 OPERATIONS OVERVIEW

Operation of the ORRRC facility is undertaken in accordance with all requirements of the PA and all conditions specified by the Environment Protection Authority (EPA) in Environment Protection Licence (EPL) No. 5956. The licence requires that the total quantity of waste disposed at the premises must not exceed 65,000 tonnes per annum, including no more than 10 tonnes per annum of clinical waste. The licence also requires that no more than 50

tonnes of waste tyres are stored at the premises at any one time. Waste which is to be stored at the Community Recycling Centre (CRC) does not contribute towards the total waste volumes allowed.

As a condition of the licence, a LEMP was prepared, the details and procedures of which are included in **Section 3** of this OEMP.

From mid-2013 the ORRRC is primarily used as a waste transfer station. The sorted, compacted and baled waste destined for landfill is taken to the ERRRC. The asbestos and dead animal waste disposal cells will remain active at ORRRC to avoid double handling of these waste types.

Facilities necessary for the shredding of organic waste and baling of mixed waste for transfer to the ERRRC have been constructed on the south eastern portion of the ORRRC site (refer to **Figure 2.1**).

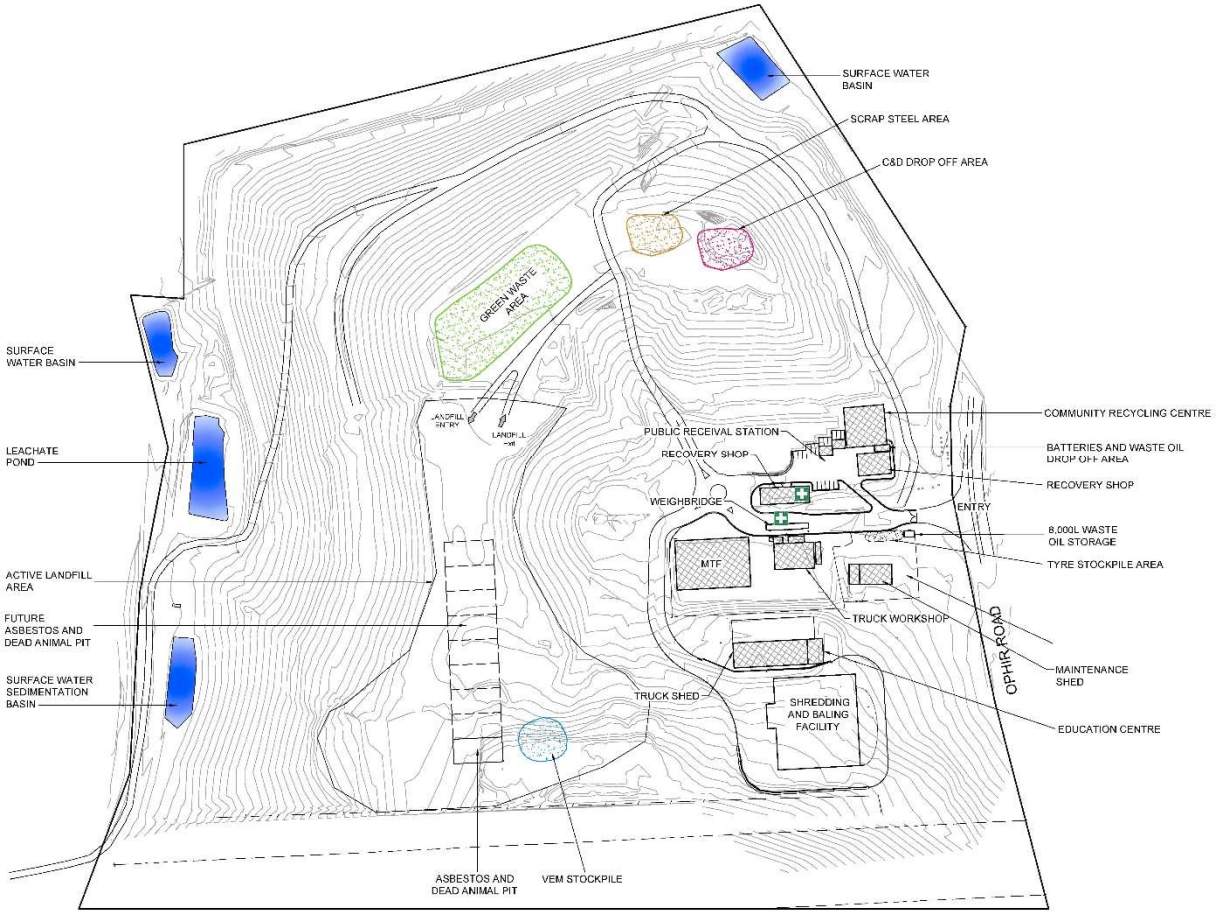

Figure 2.1: ORRRC Site Layout

Activities undertaken at the ORRRC which form part of the overall strategy for resource recovery and waste management for the OWP include:

- **Residential organics waste collection service** – a kerbside collection service is provided to all households to capture domestic food and garden organics in a

designated MGB. This organic waste is diverted from landfill. Organic waste is also collected from the Commercial and Industrial (C&I) sector, and delivered to the ORRRC by self haul;

- **Pre-processing of food/garden organics** – food and garden organics are shredded at the ORRRC and delivered in enclosed bins to the ERRRC for composting;
- **Recovery of dry recyclable materials** – existing kerbside recycling is improved by securing beneficial use of a proportion of recovered recyclables from the waste stream and diverted to the Material Transfer Facility (MTF);
- **Resource recovery** – through the separation of resalable materials and operation of the Recovery Shop;
- **Management of other wastes** – including household hazardous wastes, e-wastes, tyres, recycled oil and batteries;
- **Recovery from construction and demolition waste stream** – construction and demolition (C&D) waste is sorted with residual waste transferred as inert waste to the ERRRC landfill;
- **Virgin Excavated Material (VEM)** – this is received and used beneficially as final landfill cover material;
- **Baling of mixed residual waste at the ORRRC** – mixed residual waste (municipal, C&I and residual C&D) is delivered to the baling shed for consolidation, primary sorting and recovery of recyclable materials. The primary non-recoverable sorted waste is then compacted, baled and wrapped for transport to the ERRRC landfill;
- **Landfilling of specific waste types** – this would include asbestos, dead animals, street sweepings, and apiary products; and
- **Community Recycling Centre** (CRC) – the CRC temporarily stores materials that can be hazardous to the environment or to public health. Materials are safely stored in the CRC until they can be recycled or disposed of appropriately.

2.3 EUCHAREENA ROAD RESOURCE RECOVERY CENTRE

2.3.1 ACTIVITIES UNDERTAKEN AT THE SITE

The main activities that are undertaken at the ERRRC include:

- Receipt and landfilling of baled mixed residual waste generated from the municipal and C&I sector;
- Receipt and landfilling of non-putrescible consolidated C&I, and C&D dry mixed waste;
- Receipt of shredded food/garden organics from the municipal sector for processing within the enclosed tunnel composting facility operated by JR Richards; and
- Progressive remediation and closure of the landfill site.

2.3.2 OPERATIONS OVERVIEW

Operation of the ERRRC landfill is undertaken in accordance with all requirements of the PA and all conditions specified by the EPA in EPL No. 20104 (refer **Section 8.2**).

Infrastructure at the ERRRC in addition to the landfill includes an enclosed tunnel composting plant for separately collected food and garden organics with a bio-filter, associated roads, outdoor compost maturation and refining areas, site amenities, and vehicle parking areas.

Landfilling is planned to be undertaken in eight separate stages (landfill cells), with each stage occupying approximately 1.5 ha. The total site landfill capacity (total space required minus volume consumed by capping and lining) is approximately 1.64 million m^3. At the estimated 32,000 m^3 of waste and capping material applied per year, and airspace utilisation of 1 t/m^3, the site is expected to be able to accept waste up until approximately 2052-53.

Activities that form part of the overall strategy for resource recovery and waste management for the OWP include:

- **Processing of food/garden organics at the ERRRC** – food and garden organics are shredded at the ORRRC and delivered to the ERRRC and composted using an enclosed tunnel composting system facility to produce high grade compost. This processing takes place on Lot 101 DP 1183238 (refer to **Figure 2.2**) in the enclosed tunnel composting plant, operated by JR & EG Richards.
- **Receival of waste baled at the ORRRC** – Mixed residual waste (with most of the food and garden organics removed) is sorted at the ORRRC with recovery of recyclable materials, the non-recoverable sorted waste is then compacted, baled, wrapped and transported to the ERRRC landfill, where it is directly disposed of in the active landfill cell.
- **Disposal of mixed residual waste at ERRRC** - the baled and wrapped general solid waste (putrescible) delivered to the ERRRC is disposed of in a specially designed landfill. Bulky, general solid waste (non-putrescible) from the C&I and C&D sectors which is unsuited to baling is separately transported to the ERRRC in skip bins for direct landfill disposal.

Figure 2.2: ERRRC Site Layout

2.3.3 ERRRC SITE LAYOUT AND DESIGN

The ERRRC site layout is displayed in **Figure 2.2**. The features identified include:

- **Site entrance and site access road:** the site entrance is positioned in the southeast corner of the operational area. Both the site entrance and access road are designed to meet requirements of the RTA (1999) road design guide;
- **The landfill area:** the landfill area is located in the central northern portion of the site and encompasses eight individual landfill cells;
- **The internal road network:** the internal road network includes a number of fair weather and all weather access tracks that are positioned to minimise disturbance and provide direct access, wherever possible to all site components, in accordance with the latest versions of *AS 2890.1* and *AS 2890.2*;

- **Visual amenity bunds and landscaped areas**: the site includes a northern visual bund which shields views of the ERRRC activities from Shades Creek Road, and a further two bunds running the length of the eastern boundary of the operating site to obscure views from Euchareena Road;

  A landscaped area has been developed south of the landfilling operations, adjacent to Euchareena Road, which provides further screening from Euchareena Road. The visual bunds and landscaped areas are being revegetated and managed as per the *Conservation Management Plan* (refer **Section 9.4**);

- **A stock movement corridor**: the 15 metre wide stock movement corridor will provide a north-south access across the Euchareena Road side of the site to enable local landholders to safely move stock and farm equipment outside the Euchareena Road reserve;

- **A Conservation Agreement Area:** This includes two retained remnant woodland areas and a rehabilitation corridor. The two woodland areas are recognised to have considerable ecological value given the ongoing widespread removal of similar vegetation; this area will be further enhanced with plantings of whitebox. In addition, a rehabilitation corridor would be provided to ultimately join the two existing woodland areas and improve nature conservation across the site. Management of these areas is detailed in the **Conservation Agreement** (refer **Section 8.5**), the **Conservation Management Plan** (refer **Section 9.4**) and the **ERRRC 5-Year Works Action Plan** (refer **Section 9.5**); and

- **A remnant farming area**: This includes the sparsely wooded area to the south of the landfilling operations (refer **Figure 2.2**).

Section 3

ORRRC LANDFILL ENVIRONMENTAL MANAGEMENT PLAN

ORRRC LEMP – TOC

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3.5 WASTE RECEIVAL

3.6 WASTE DISPOSAL

3.7 SURFACE WATER AND LEACHATE MANAGEMENT

3.8 GROUNDWATER MANAGEMENT

3.9 LANDFILL GAS MANAGEMENT

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3.11 DUST CONTROL

3.12 LITTER CONTROL

3.13 NOISE CONTROL

3.14 PEST VERMIN AND NOXIOUS WEED CONTROL

3.15 FIRE MANAGEMENT

3.16 PROGRESSIVE REHABILITATION

3.17 LANDFILL CLOSURE

3.18 REFERENCES

3.1 INTRODUCTION

3.1.1 MINIMUM STANDARDS

In order to address each of the environmental goals identified in the EPA's *'Environmental Guidelines: Solid Waste Landfills*' (The Guidelines), minimum standards have been developed as per The Guidelines to provide solutions for effectively achieving these environmental goals. **Table 3.1.1** lists the primary environmental goals and the minimum standards designed to achieve each goal. It also lists whether the minimum standard has been adopted for operation of the ORRRC, and which 'Operational Control' incorporates the technique.

Numbering in **Table 3.1.1** and in the Operational Controls reflects the numbering contained in The Guidelines.

Table 3.1.1 – Environmental Goals and Minimum Standards

Environmental Goal	Minimum Standard	Adopted	Operational Control (Section)
1. Minimum impacts to water	1. Leachate Barrier System 2. Leachate Collection System 3. Stormwater Management 4. Water Quality Monitoring	Yes Yes Yes Yes	3.7 3.7 3.7 3.7, 3.8
2. Minimum impacts to air	5. Landfill Gas Management and Monitoring 8. Covering of Waste 9. Final Capping and Revegetation 10. Closure	Yes Yes Yes Yes Yes	3.9 3.6 3.16 3.17
3. Stabilisation and rehabilitation of land	8. Covering of Waste 9. Final Capping and Revegetation 10. Closure 11. Quality Assurance	Yes Yes Yes Yes	3.4, 3.6 3.16 3.17 All
4. Prevention of hazards and preservation of amenity	6. Amenity Issues: Odour, Dust, Noise, Litter and Fire Control 7. Waste Acceptance and Site Security 11. Quality Assurance	Yes Yes Yes	3.10, 3.11, 3.12, 3.13, 3.14, 3.15 3.2, 3.5 All

Source: EPA (1996) Environmental Guidelines: Solid Waste Landfills

3.1.2 STANDARD OPERATING PROCEDURES (SOP)

A number of SOPs have been developed to facilitate achieving the environmental goals and minimum standards identified in The Guidelines. These SOPs are referenced throughout the LEMP, and are found in **Volume 2** of this OEMP.

3.1.3 WORK ACTIVITY PROCEDURES (WAP)

A number of WAPs have been developed to facilitate achieving the environmental goals and minimum standards identified in The Guidelines. WAPs are provided in **Volume 2** of this OEMP.

3.1.4 SAFE WORK METHOD STATEMENT (SWMS)

A Safe Work Method Statement (SWMS 001 – Asbestos Disposal) is provided in **Volume 2** to ensure asbestos disposal is carried out correctly and safely.

3.1.5 OPERATIONAL CONTROLS

The Operational Controls in the following sections (**Section 3.2 – Section 3.17**) are designed to provide guidance for the day-to-day operation and management of the ORRRC. They have been formulated to meet the specified environmental goals identified in The Guidelines.

3.2 SITE SUPERVISION AND CONTROL

3.2.1 PROCEDURES

3.2.1.1 Staff Inductions

All staff and regular contractors must undergo a detailed induction prior to commencing any work or activities on the site. The detailed induction is further detailed in Section 5.1 – Staff Training.

3.2.1.2 Visitor Inductions

All persons within the property boundary (other than those visiting the recovery shop storage/display areas, scrap steel storage or green waste area) must be either fully inducted in accordance with **SOP 02 – Site Inductions**, or accompanied by inducted personnel who have undergone a full induction, as per **Section 5.1 – Staff Training**.

If you see anyone on site who may not be inducted, please ask them if they have been inducted. If they have not been, they must be inducted or escorted, depending on the reason for them being on site.

If you are required to escort a visitor on site, ensure that:

- They are issued with appropriate personal protective equipment (PPE) and know how to use it; and
- They remain with you and well away from potential hazards.

Any difficulties encountered in getting visitors to comply should be reported immediately to the Manager Waste Services and Technical Support or Resource Recovery Centre Supervisor.

3.2.1.3 Site Supervision

The ORRRC is supervised when open for the receival of wastes. The facility is staffed by qualified and experienced personnel. These include a Resource Recovery Centre Supervisor and up to three Resource Recovery Centre Operators. A minimum of one Resource Recovery Centre Operator will generally be present during receival of waste and landfilling operations.

The Supervisor and Operators will conduct themselves in a courteous and inoffensive manner at all times.

3.2.1.4 Traffic Control

Council maintains the sealed access road from the facility entry to the Waste Receival Station. Council staff are responsible for internal traffic control.

All light vehicles, trailers and up to two tonne loads are directed to disposal skips in the Public Receival Station. Larger loads of mixed waste (i.e. in excess of two tonne with tipping capability) are, after being weighed on the weighbridge, directed to the baling shed. Other waste streams such as green waste, scrap steel and recyclables are directed to the

appropriate area on the site. Procedures for directing traffic to the appropriate location within the facility is detailed in **SOP 07 – Weighbridge Procedures** and **WAP 011 – Weighbridge Procedures**.

SOP 23 – ORRRC Traffic Management and **WAP 013 – ORRRC Traffic Management** provides procedures for traffic management at the ORRRC. SOP 23 includes a **Traffic Management Plan** (Drawing 217358_01C-C01).

3.2.1.5 Safety

Landfill equipment used in the movement, spreading, compaction and covering of wastes is operated in such a way as to minimise the risks to persons disposing of waste or vehicles delivering waste.

Signs are placed and maintained in order to meet the above requirements at all times.

3.2.1.6 Scavenging

No members of the public are permitted to scavenge at the active tip face. Recovery of recyclable and reusable materials for the Recovery Shop is performed by Council staff or under the direct supervision of Council staff i.e. Wangarang employees.

3.2.1.7 Opening Hours

All operational activities at the premises will only be conducted during the following operating hours:

7.00am to 7.00pm, Monday to Friday; and

7.00am to 5.00pm Saturday, Sunday and Public Holidays

Access to the site outside these hours (e.g. for special circumstances and emergency waste disposal) is subject to the approval of the Manager Waste Services and Technical Support. Any variation in the hours of operation of the facility is recorded on the **ORRRC Daily Checklist – SOP 15.**

3.2.1.8 Site Security

All access gates are locked outside the specified opening hours except for special circumstances. The ORRRC entry and exit protocol is detailed in **SOP 03 – ORRRC Entry/Exit Protocol**.

3.2.1.9 Tipping Fees

The staff at the ORRRC collect tipping fees from vehicles required to pay for depositing waste, this is further detailed in **SOP 07 – Weighbridge Procedures and WAP 011 – Weighbridge Procedures**.

3.2.2 RESPONSIBILITIES

Manager Waste Services and Technical Support

Responsible for:

- Ensuring that sufficient staff are employed to meet the requirements of this OEMP;
- Ensuring that all staff are familiar with the requirements and operational procedures described in the OEMP and are adequately trained and competent to carry out the assigned duties;
- Undertaking periodic site inspections and audits to determine compliance with the procedures specified within the OEMP; and
- Ensuring all staff conduct themselves in an appropriate manner.

Resource Recovery Centre Supervisor

Responsible for:

- Monitoring daily operations to ensure compliance with the OEMP;
- Completion of daily checklist;
- Collection of fees from vehicles required to pay tipping charges;
- Maintaining site security;
- Traffic control and safety within the approved waste disposal area; and
- Ensuring that variations to operational hours are approved in advance.

Resource Recovery Centre Operators

Responsible for:

- Undertaking all duties in accordance with the procedures identified within this OEMP, and in accordance with instructions issued by the Supervisor.

3.3 DAILY CHECKLIST

3.3.1 PROCEDURES

The standard operating procedure for completing the daily checklist is detailed in **SOP 15 – ORRRC Daily Checklist**. Each day the Resource Recovery Centre Supervisor is required to complete the daily checklist form, which is then forwarded to the Manager Waste Services and Technical Support on a weekly basis.

3.3.2 RESPONSIBILITIES

Manager Waste Services and Technical Support

- Undertaking periodic site inspections and audits to determine compliance with the procedures specified within the OEMP.

Resource Recovery Centre Supervisor

- Complete Daily Checklist as per **SOP 15 – ORRRC**.

3.4 LANDFILL STAGING

3.4.1 PROCEDURES

The ORRRC landfill has been progressively staged and is currently operating Stage 3 as the final stage. Upon commencing the bale landfilling at the ERRRC, the ORRRC landfill only operates for landfilling of residual waste that is not diverted for recovery or recycling or transported to the ERRRC for landfilling.

The residual waste management involves the landfilling of asbestos, dead animals, waste generated from bee keeping activities, reject material that is not suitable for baling or transport to the ERRRC landfill, and any residual waste generated through a breakdown of the baling or shredding facility. This residual waste is landfilled using trenches. These waste streams are landfilled at the ORRRC to avoid double handling for delivery and disposal at the ERRRC.

Procedures for waste disposal are provided in **WAP 009 – Landfill Waste Disposal** for the ORRRC.

The completed landfill Stages 2 and 3 will continue to be capped and rehabilitated as per **Section 3.16 – Progressive Rehabilitation**.

3.4.1.1 Volume

It is expected that between 500 m^3 and 10,000 m^3 will be used each year for residual waste management. This is sufficient to provide residual waste management for the life of the ERRRC landfill (expected to be 40 years).

3.4.1.2 Filling Plan

The filling plan for the landfilling of residual waste is shown on **Figure 3.4.1**. This identifies:

- The locations for storage of green waste, scrap steel and temporary excluded waste;
- The location and progression of residual waste trenches;
- Management of soil stockpiles;
- The location of building facilities; and
- Surface water and leachate collection ponds.

3.4.1.3 Final Levels

Final contour levels of Stage 3 are shown on **Figure 3.4.2**.

3.4.1.4 Capping

All Stage 2 and Stage 3 areas will be progressively capped using the phytocapping system.

The phytocapping system involves trees being established on a layer of soil cap (capping depth can range from 500 mm – 2500 mm, averaging 1300 mm) placed over the refuse. The soil cover acts as rainfall storage while the trees act as bio-pumps and filters to remove rainfall before it reaches the buried waste.

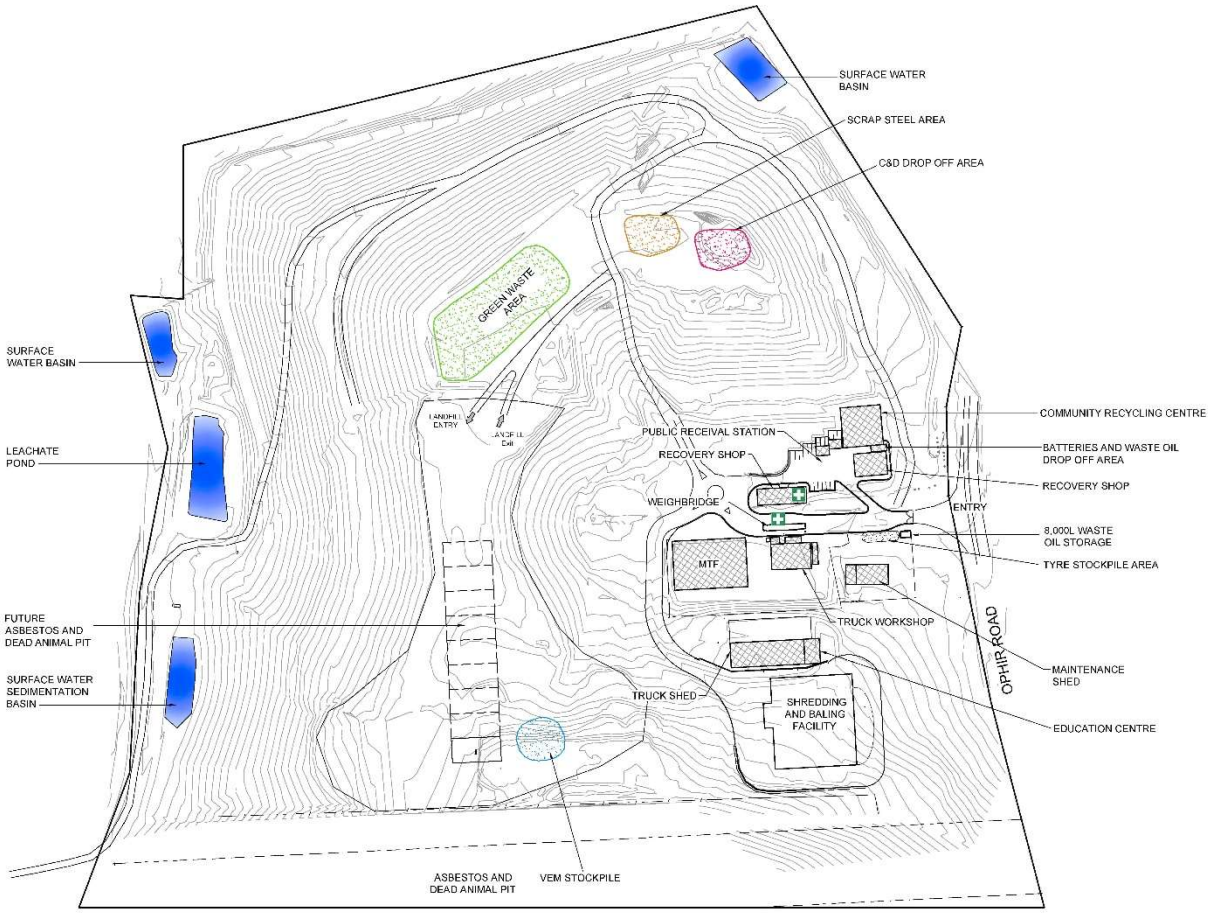


Figure 3.4.1: Filling Plan for Residual Waste (Stage 3)

An average phytocapping depth of 1.3 m is advised based on the following:

- Hydrologic modelling with inputs from soil analysis, available meteorological data, and known vegetation uptake parameters to calculate the likely infiltration rate of the phytocap area
- Proposed depth minimises excessive plant competition by providing adequate access to soil nutrients;
- Proposed depth allows for root growth of shallow and deep rooted species for maximum transpiration efficiency; and
  - Depth is in accordance with current trials being conducted by leading scientists in the field of phytocapping.

Revegetation of the site will involve trees and grasses (grasses can be planted as seeds or seedlings) being planted into the newly capped areas. A key requirement of this process is to ensure that revegetation of the newly capped areas is implemented a soon as possible, to reduce the risk of soil erosion and any potential compromise of the capping structure.

General cover details are described in **Section 3.16 – Progressive Rehabilitation**.

3.4.1.5 Surface Water Controls

Surface water controls will be continued as outlined in **Section 3.7 – Surface Water and Leachate Management**.

3.4.1.6 Progressive Rehabilitation

Completed areas will be progressively rehabilitated once final design levels have been reached as described in **Section 3.16 – Progressive Rehabilitation**.

3.4.1.7 Final Landform

The final landform at the completion of Stage 3 is shown on **Figure 3.4.2**.

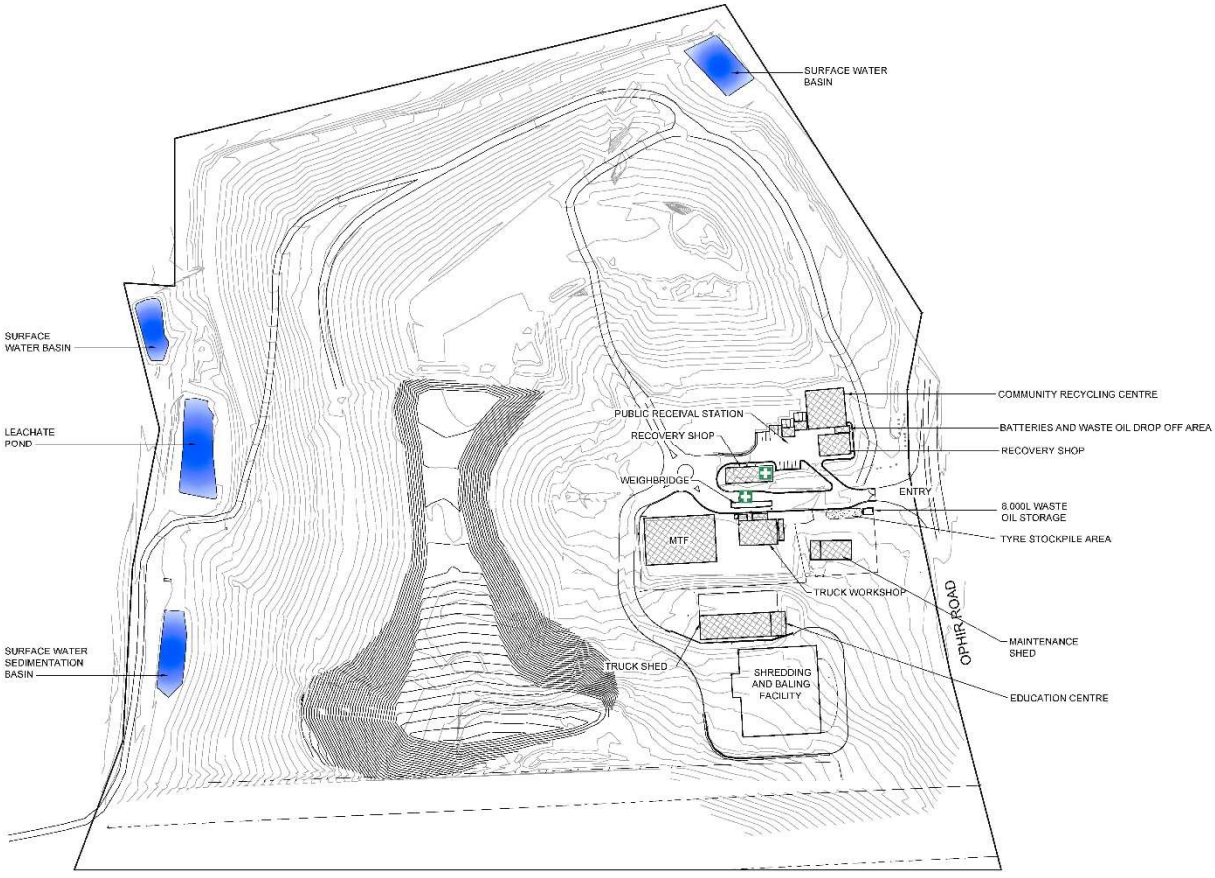


Figure 3.4.2: Final Landform

3.4.2 MONITORING

3.4.2.1 Adherence to Staging and Filling Plan

The resource Recovery Centre Supervisor will undertake daily monitoring to ensure adherence to the filling plan.

3.4.2.2 Annual Survey

An annual filling plan survey will be conducted by a Registered Surveyor to:

- Determine the progress of filling;
- Confirm the volume of landfill space used in the past 12 months; and
- Update calculations relating to remaining capacity.

3.4.3 RESPONSIBILITIES

Manager Waste Services and Technical Support

- Responsible for annual survey, calculations and preparation of filling plans for each stage.
- Resource Recovery Centre Supervisor:
- Responsible for daily visual monitoring to ensure adherence to the staging and filling plan.

3.5 WASTE RECEIVAL

3.5.1 PROCEDURES

3.5.1.1 Waste Delivery and Receival

Waste is delivered to the ORRRC by:

- Collection service vehicles;
- Residents;
- Other waste service providers;
- Some major industries; and
- Commercial/industrial businesses.

3.5.1.2 Waste Limit

As per EPL No. 5956, the total tonnage of solid waste disposed at the facility must not exceed 65,000 tonnes per year, which includes no more than 10 tonnes of clinical waste, and no more than 50 tonnes of waste tyres being stored at the premises at any one time. Exceedance of this limit must be reported to the EPA in the Annual Report (refer **Section 6.3 – Annual Returns**).

In a letter from the EPA dated September 2001, it was clarified that the Virgin Excavated Material (VEM) component is not required to be included in the calculations for total waste.

3.5.1.3 Permitted Wastes

The ORRRC operates under EPL No. 5956 for "Waste Disposal (application to land), Waste Processing (non-thermal treatment), Contaminated Soil Treatment and Waste Storage".

Wastes permitted at the ORRRC are defined in EPL No. 5956, as per **Table 3.5.1**.

Table 3.5.1 – Wastes Accepted at the ORRRC

Waste	Description	Activity	Other Limits
Liquid Waste	To be stored at the premises as part of the on-site Community Recycling Centre	Waste Storage	Total quantity stored at the premises must not exceed the storage capacity of liquid waste at the Community Recycling Centre
Restricted Solid Waste	To be stored at the premises as part of the on-site Community Recycling Centre	Waste Storage	Total quantity stored at the premises must not exceed the storage capacity of restricted solid waste at the Community Recycling Centre
Hazardous Waste	To be stored at the premises as part of the on-site Community Recycling Centre	Waste Storage	Total quantity stored at the premises must not exceed the storage capacity of hazardous waste at the Community Recycling Centre
Petroleum hydrocarbon contaminated soil	As defined by Schedule 1 of the Protection of the Environment Act 1997, as in force from time to time	Contaminated soil treatment	The total amount of wastes disposed of at the premises must not exceed 65,000 tonnes per annum. Only soils contaminated with petroleum hydrocarbons can be treated at the premises.
General solid waste (putrescible)	As defined by Schedule 1 of the Protection of the Environment Act 1997, as in force from time to time	Waste disposal (application to land) Waste-processing (non-thermal treatment) Waste storage	The total amount of wastes disposed of at the premises must not exceed 65,000 tonnes per annum
General solid waste (non-putrescible)	As defined by Schedule 1 of the Protection of the Environment Act 1997, as in force from time to time	Waste disposal (application to land) Waste-processing (non-thermal treatment) Waste storage	The total amount of wastes disposed of at the premises must not exceed 65,000 tonnes per annum
Tyres	As defined by Schedule 1 of the Protection of the Environment Act 1997, as in force from time to time	Waste disposal (application to land) Waste storage Waste processing (non-thermal treatment	The total amount of wastes disposed of at the premises must not exceed 65,000 tonnes per annum. No more than 50 tonnes of waste tyres being stored at the premises at any one time.
Asbestos	As defined by Schedule 1 of the Protection of the Environment Act 1997, as in force from time to time	Waste disposal (application to land)	The total amount of wastes disposed of at the premises must not exceed 65,000 tonnes per annum
Clinical and related waste	As defined by Schedule 1 of the Protection of the Environment Act 1997, as in force from time to time	Waste disposal (application to land)	The total amount of wastes disposed of at the premises must not exceed 65,000 tonnes per annum, including no more than 10 tonnes per annum of clinical waste

Source: EPL 5956

3.5.1.4 Screening of Received Wastes

Wastes permitted at the ORRRC are defined in EPL No. 5956. These wastes are sorted, consolidated, weighed and baled (where appropriate) for transport and landfilling at ERRRC.

The following practices apply to screening of incoming wastes.

- Public access is only permitted during opening hours;
- Drivers are asked to describe the type of waste to be deposited on entry to the facility;
- Inspections of waste loads are made as required;
- If required, drivers are directed to scan the QR2id plate at the ORRRC weighbridge for asbestos and tyre waste (refer – **Section 3.5.1.19**).
- Drivers are directed to the correct area of the facility for disposal of specific loads (*eg*. builder's wastes, greens, whitegoods, tyres, derelict cars, *etc*.).
- Wastes are monitored and inspected as they are being discharged to ensure excluded non-approved wastes are not being disposed.
- Wastes are monitored and inspected during sorting, consolidation and baling.
- The screening procedure is further detailed in **SOP 07 – Weighbridge Procedures** and **WAP 011 – Weighbridge Procedures**.

3.5.1.5 Waste Receival

Waste types and where they are received at the facility are summarised in **Table 3.5.2**. Operational areas are shown on **Figure 3.4.1** with waste flows diagrammatically depicted in **Figure 3.5.1**.

Table 3.5.2 – Waste Receival

Waste Type/Source	Where Delivered
Municipal – kerbside collected	Baling shed
Municipal – cars, utes, trailers	Public receival station
Municipal – large loads without tipping capability	Public receival station
Municipal – large loads with tipping capability	Baling shed
Commercial and industrial – utes, vans, trailers	Public receival station
Commercial and industrial – large loads without tipping capability	Public receival station
Commercial and industrial – large loads with tipping capability	Baling shed
Construction and demolition – utes, vans, trailers	Public receival station (except for dedicated loads of bricks, masonry etc product which goes to the dedicated stockpile area on the scrap steel pad)
Construction and demolition – large loads	Baling shed
Green waste – utes, vans trailers	Green waste drop off
Green waste – large loads	Green waste drop off
Asbestos	Landfill cell

Table 3.5.2 – Waste Receival

Waste Type/Source	Where Delivered
Dead animals	Landfill cell
Reject from baling/unsuitable material	ERRRC
VEM	Landfill stockpile
Hydrocarbon contaminated soil	Landfill stockpile
Reject from MTF	Baling shed
Scrap steel	Scrap steel stockpile
Oil including motor oil, cooking and heating	Bunded battery storage area at the Community Recycling Centre (CRC) then to the waste oil storage tank
Batteries including household, lead acid and lithium ion	Bunded battery storage at the Community Recycling Centre (CRC)
Fluorescent tubes/bulbs and Fittings	Community Recycling Centre (CRC)
Gas Cylinders (including LPG and Propane)	Community Recycling Centre (CRC)
Fire Extinguishers	Community Recycling Centre (CRC)
Smoke Detectors	Community Recycling Centre (CRC)
Tyres	Workshop area
e-waste	Community Recycling Centre (CRC)

At this stage, only waste originating from the ORRRC will be accepted at the ERRRC. This will include:

- Baled mixed waste;
- Inert (non-putrescible) mixed waste; or
- Shredded organics.

Baled waste and inert waste will be disposed to landfill.

Shredded organics will be further processed through composting with the finished compost exported off-site.

Due to the sorting and shredding of organic waste at the ORRRC, it is envisaged that there will be no reject material from the composting facility at the ERRRC.

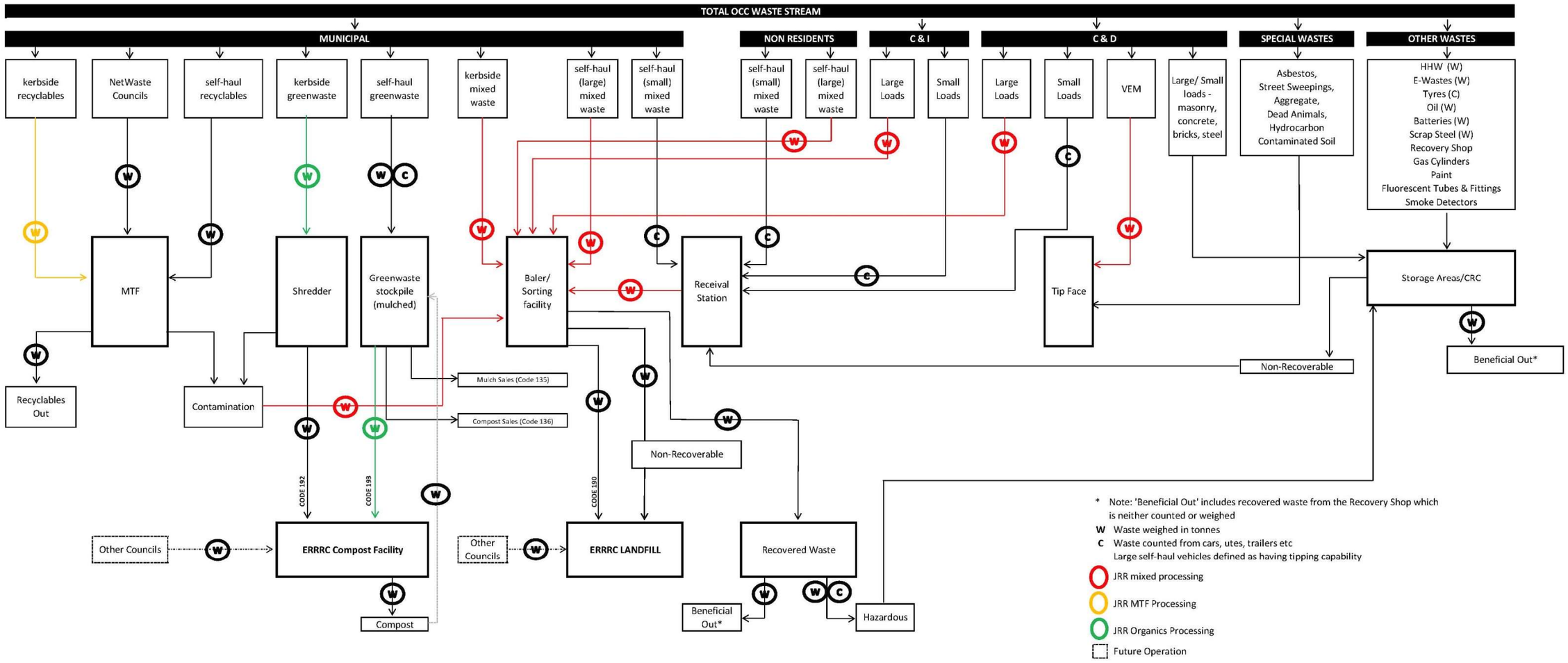


Figure 3.5.1: Waste Stream Flow Diagram

3.5.1.6 Excluded Wastes

The ORRRC does not accept the following types of wastes:

- Liquid wastes of any description (other than commercial grease trap wastes, septic tank pump out waste, cement batching plant effluent, stone cutting slurry waste).
- Radioactive material; sharps, cytotoxic waste, bulk blood, body fluids, recognisable body parts, infectious waste, microbiological and pathological wastes, laboratory chemicals, poisons and pharmaceutical waste.
- Any inflammable liquid material derived from grease, oil, tar, petroleum, shale or coal.
- Any sludge or material (unless proven to be innocuous or harmless) being the refuse from any industrial process carried on in:
  - any tanning or leather processing plant
  - any petroleum or petrochemical plant
  - any chemical plant
  - any metal treatment plant
  - any vegetable oil or mineral oil plant
  - any paint-manufacturing plant.
- Any material containing arsenic, cyanide or sulphide.
- Any toxic soluble salt of:
  - barium
  - boron
  - cadmium
  - chromium
  - copper
  - lead
  - manganese
  - mercury
  - selenium
  - silver
  - zinc
- Any pesticide or weedicide and in particular:
  - chlorinated hydrocarbons (organochlorines)
  - fluorinated hydrocarbons
  - organophosphates
  - phenols
- Any soluble acid or alkali, acidic or basic compounds.

Any of the above wastes may only be disposed of at the facility after the approval of the EPA has been obtained.

Signs defining excluded wastes and penalties for the deposition of excluded wastes are prominently displayed at the point of entry to the facility.

If an excluded waste was to be discovered on the ERRRC site from a bale, the baled waste would be returned to the ORRRC immediately, as per **SOP 09 – Rejected Bales from ERRRC**. The Manager Waste Services and Technical Support would be notified immediately and the EPA then consulted for advice.

The incident will be reported as described in **SOP 13 – Pollution Incident Response Management**.

3.5.1.7 Identification and Management of Apiculture Products

The Identification and Management of beekeeping (apiculture products), and timber containing evidence of bee activity is detailed in **SOP 06 – Bee Keeping Equipment and Honey Containers** and **WAP 010 – Beekeeping Equipment**. It is important to follow this SOP to ensure no beekeeping products, or honey related products are transported to the ERRRC, which could adversely affect the beekeeping industry in the vicinity of the ERRRC.

3.5.1.8 Handling and Disposal of Asbestos Waste

The management, handling, and disposal of asbestos waste is detailed in **Section 3.6 – Waste Disposal**, and **SOP 08 – Handling and Disposal of Asbestos** and **SWMS 001 – Asbestos Disposal**. It is important to follow this SOP and associated SWMS to ensure that asbestos waste disposed of at the ORRRC does not present a potential health hazard to Resource Recovery Centre staff and contractors and the general public utilising the facility.

If required, drivers are directed to scan the QR2id plate at the ORRRC weighbridge for asbestos waste (refer – **Section 3.5.1.19**).

3.5.1.9 Suspected Excluded Wastes

The following steps are undertaken for vehicles suspected of containing excluded wastes:

- The vehicle is refused permission to deposit waste until the waste is verified as being acceptable; and
- If necessary, the Resource Recovery Centre Supervisor will obtain evidence from the Driver (*i.e.* test certificate) that the waste does not include excluded substances.

3.5.1.10 Identified Excluded Wastes

The following steps are undertaken if excluded wastes are identified.

If identified **at the point of entry** the vehicle is refused entry and the driver advised to contact the EPA for advice on the proper disposal of the excluded waste. The incident will be reported as described in **Section 3.5.1.10**.

If identified **during waste deposition** the Resource Recovery Centre Operators immediately advise the Resource Recovery Centre Supervisor. The supervisor advises the driver that the waste is not acceptable and organises for the waste to be loaded back onto the vehicle, where practicable and safe to do so. The Supervisor then escorts the load off-site and advises the driver to contact the EPA for advice on the proper disposal of the excluded waste. The incident is then reported as described in **SOP 13 – Pollution Incident Response Management**.

If identified **during waste spreading and compaction** the Resource Recovery Centre Operators will immediately notify the Resource Recovery Centre Supervisor. The Supervisor will make all practicable efforts to identify the source of the waste (e.g. labelling, waste type).

If identified **during the deposition of waste** in the baling shed the operators immediately advises the Resource Recovery Centre Supervisor. The supervisor advises the driver that the waste is not acceptable and organises for the waste to be loaded back onto the vehicle, where practicable and safe to do so. The Supervisor then escorts the load off-site and advises the driver to contact the EPA for advice on the proper disposal of the excluded waste. The incident is then reported as described in **SOP 13 – Pollution Incident Response Management**.

If identified **during sorting or waste in the baling shed or during the baling** the operators will immediately notify the Resource Recovery Centre Supervisor. The Supervisor will make all practicable efforts to identify the source of the waste (e.g. labelling, waste type).

The Supervisor is responsible for then contacting the EPA for advice on the proper disposal of the excluded waste and will dispose of the excluded waste in accordance with the EPA's requirements. In the event that the EPA cannot be contacted, the wastes will be relocated to the nominated area (refer to **Figure 3.4.1**). The incident will be reported as described in **SOP 13 – Pollution Incident Response Management**.

3.5.1.11 Reporting Excluded Wastes

- The incident will be recorded on the Daily Checklist with reference to an Incident Report Number (refer to **Section 3.3** and **SOP 15 – ORRRC Daily Checklist**);
- A full Incident Report will be prepared as per **SOP 13 – Pollution Incident Response Management**. including details of the type of waste, the source of the waste and vehicle and driver identification; and
- The Manager Waste Services and Technical Support will be notified immediately.

3.5.1.12 Receipt of Tyres

Receipt of tyres at the facility is controlled by EPL No. 5956. The landfill will not accept tyres which:

- Have a diameter of more than 1.2 metres;
- Are delivered at the premises in a load containing more than 5 whole tyres; and
- Became waste in the Sydney Metropolitan Area.

This does not apply where:

- The tyres received comply with the EPA Tyre Disposal Specifications; or
- The premises has the capacity, at the time of unloading the tyres, to comply with the EPA Tyre Disposal Specifications; or
- The premises has the capacity, at the time of unloading the tyres, to recycle or reprocess the tyres into a saleable product, including retreading the tyres.

If required, drivers are directed to scan the QR2id plate at the ORRRC weighbridge for tyre waste (refer – **Section 3.5.1.19**).

3.5.1.13 Stockpiling of Tyres

Tyres will be temporarily stockpiled in the lock-up storage yard. Stockpiling of tyres at the facility is controlled by EPL No. 5956.

Tyres stockpiled on the premises must:

- Not exceed fifty tonnes of tyres at any one time;
- Be located in a clearly defined area away from the tipping face;
- Be free of vermin; and
- Be stored and managed so as not to cause or be likely to cause fire in the stockpile.

Procedures for tyre management at the ORRRC are detailed in **SOP 22 – ORRRC Tyre Management** and **WAP 006 – Tyre Stockpiling**.

3.5.1.14 Recycling

All recyclable material is sorted and processed at the ORRRC. Household recyclables are diverted to the MTF Bins for recyclables (plastic, glass, aluminium and steel cans, and cardboard) are serviced by JR Richards & Sons (Waste and Recycling Contractor).

The following types of waste are directed to the appropriate area or removed from the landfill and stored in designated recycling areas as shown on the filling plan.

- Tyres;
- Whitegoods, car bodies and scrap metal;
- Salvaged goods for the Recovery Shop;
- Gas cylinders (LPG and propane);
- Paint (including water and oil based);
- Oil (including heating, cooking and motor);
- Batteries (including lead acid, household and lithium ion);
- Smoke detectors;
- Fire extinguishers;

- Fluorescent tubes/ bulbs and fittings;
- E-waste;
- Construction and demolition waste; and
- Self-haul green waste/garden waste.

The Resource Recovery Centre Supervisor is responsible for arranging the removal of tyres and sump oil by an appropriate contractor as required.

The Resource Recovery Centre Supervisor is responsible for advising the Manager Waste Services and Technical Support to arrange removal by contractor of tyres, scrap metal, car bodies, wire, household hazardous waste and e-waste.

The existing Orange City and regional kerbside recycling system is to be maintained and improved by extending the application of event-based recycling.

3.5.1.15 Organics Management

Kerbside collected food and garden waste is delivered directly to the shredding/baling shed for processing. The organic waste stream will be screened for recyclables and unsuitable materials recovered and removed. The screened and shredded organics will be transferred to the composting facility at the ERRRC.

Self-haul municipal and C&I green waste will be directed to the green waste stockpile area. This material will be transferred to the shredding shed by the contractor for processing and ultimate transfer to the ERRRC composting facility.

3.5.1.16 C&D Recovery

C&D material is currently being deposited at the tipping face, the baling shed and dedicated loads of bricks/masonry/tiles/concrete/etc is being stockpiled in an area adjacent to the scrap steel stockpile. Large vehicles with tipping capacity are directed to the baling shed where waste is sorted and recyclables recovered. Small loads from utes, trailers, vans etc are directed to the tipping face for disposal. Disposal at the tipping face will continue to form the cell walls for the disposal of special wastes. Upon reaching the nominated height of the cells required for Stage 3 of landfilling at the ORRRC, waste disposal of all C&D material will be at the baling shed.

Residual C&D waste is placed in skips for transport to the ERRRC landfill as inert waste.

3.5.1.17 Measurement of Received Wastes

The weighbridge is used to record the quantity of wastes delivered by heavy vehicles on a weigh on tare off basis. The number of small vehicles (cars, station wagons, vans, utilities and trailers) is recorded and EPA weight factors applied.

The weighbridge will be operational at all times. Should the weighbridge be inoperative, the Manager Waste Services and Technical Support will advise the EPA and ensure that it is

repaired as soon as practicable. While the weighbridge is inoperable, all vehicles will be recorded and tonnages calculated from the EPA weight factors.

The weighbridge at the ORRRC will continue to be used to record the wastes delivered to the ERRRC. Outbound heavy vehicles on route to the ERRRC will use the weighbridge on a weigh on tare off basis.

All baled waste leaving the ORRRC destined for the ERRRC landfill will be weighed and recorded. All shredded organic waste destined for the ERRRC composting facility will be weighed and recorded. Weighbridge procedures are detailed in **SOP 07 – Weighbridge Procedures** and **WAP 011 – Weighbridge Procedures**.

The weighbridge will have a valid Calibration Certificate issued by the Department of Consumer Affairs at all times.

3.5.1.18 Waste Recording

Every vehicle entering the facility is recorded by the weighbridge operators. Records include:

- Date/time;
- Vehicle type;
- Waste type;
- Waste source; and
- Weight (or vehicle type where applicable).

Computer records are maintained.

3.5.1.19 Waste Location Tracking and Reporting Requirements

The Protection of the Environment Operations (Waste) Regulation 2014 requires the transport of waste tyres or asbestos waste in NSW to be recorded from the place of generation to its final destination.

The asbestos and tyre waste tracking and reporting requirement only applies to loads that are transported within NSW of:

- Waste tyres greater than 200 kilograms or more than 20 waste tyres, whichever weighs less.
- More than 100 kilograms of asbestos waste or more than 10 square metres of asbestos sheeting.

A unique QR2id plate is displayed at the ORRRC weighbridge.

QR2id plates must be used by transporters of asbestos and tyre waste to record the movement of that waste in the EPA's WasteLocate system. The QR2id plate can be scanned by the waste transporter at the ORRRC weighbridge using a smart phone or tablet.

The procedure for using the WasteLocate system is provided in **SOP 26 – WasteLocate Tracking**.

A monthly record must be provided to the EPA that contains the registration number of all vehicles that fail to scan the QR2id plate at ORRRC and ERRRC.

Form 26.01 and **Form 26.02** is provided in **SOP 26 – WasteLocate Tracking** for recording vehicles that fail to scan the QR2id plates.

3.5.1.20 Waste and Resource Recovery Monitoring Program

A Waste and Resource Recovery Monitoring Program (WRRMP) is included **Section 9.3** of this OEMP. This program:

- Provides an outline of the resource recovery program that will be implemented and monitored from the commencement of the Project;
- Details how each waste stream will be monitored, recorded and reported; and
- Presents the methodology for calculating the resource recovery effectiveness.

3.5.1.21 Reporting Waste Quantities

At the end of each financial quarter the weighbridge operator forwards a summary of all waste movements to the Manager Waste Services and Technical Support. In addition to the quarterly summaries, the weighbridge operator forwards the annual waste facility return to the Manager Waste Services and Technical Support. This information is used to inform the WRRMP.

The Manager Waste Services and Technical Support must provide the EPA with information on the quantity of wastes received at the waste facility and the quantity of waste transported from the facility annually. The information is to be provided on the approved EPA form and must be received by the EPA within 60 days of the end of the EPL reporting period.

Waste Reporting and Consultation is detailed in **Section 6** of this OEMP.

3.5.2 MONITORING

- Wastes entering the facility are monitored by the Resource Recovery Centre Supervisor and the Resource Recovery Centre plant and weighbridge Operators;
- Waste deposited in the shredding/baling shed will be screened and monitored by the contractor;
- Records of waste entering the facility are kept as described above;
- Waste disposal in the vicinity of the active tipping area is monitored by Resource Recovery Centre Operators at all times; and
- Annual surveys monitor the volume of landfill used.

3.5.3 RESPONSIBILITIES

Manager Waste Services and Technical Support

- Approving access to the facility outside normal hours;
- Approving operation of earthmoving and landfilling equipment outside normal hours;
- Arranging contractors for processing of green waste, scrap metal, wire and car bodies;
- Advising the EPA if the weighbridge is inoperable;
- Organising annual survey, calculations and submission of annual waste returns to the EPA;
- Ensuring that monthly records are sent to the EPA of vehicle registration numbers that fail to scan the QR2id plate when directed by Resource Recovery Centre Operators; and
- Securing permission from the EPA to dispose of small quantities of excluded wastes (if required).

Resource Recovery Centre Supervisor

- Ensuring wastes are deposited in correct areas (baled, non-baled, organics and recyclables);
- Monitoring and inspecting wastes as they are being delivered, to ensure excluded non-approved wastes are not being disposed;
- Locking main access gate (and any other gates if required) outside operating hours;
- Identifying, segregating and storing excluded wastes;
- Ensuring waste staff are present in the vicinity of the public receival area at all times;
- Ensuring recyclable wastes are deposited in the correct areas;
- Maintaining a log of all variations in the hours of operation of the facility;
- Refusing permission to deposit waste until the waste is verified as being acceptable (if necessary);
- Obtaining evidence from the driver (*i.e.* test certificate) that the waste does not include excluded substances (if necessary);
- Refusing excluded waste and advising the driver to contact the EPA for advice on the proper disposal of these wastes;
- Obtaining evidence from the driver (*i.e.* test certificate) that the waste does not include excluded substances (if necessary);
- Refusing excluded waste and advising the driver to contact the EPA for advice on the proper disposal of these wastes;
- Monitoring of wastes at the point of entry;
- Ensuring the weighbridge is properly calibrated and functioning;

- Completing incident reports;
- In the event that excluded wastes have been identified during deposition - advising the driver that waste is not acceptable and supervising loading of waste back onto the vehicle, escorting the load off-site and advising the driver to contact the EPA for advice on the proper disposal of the excluded waste, and reporting the incident as described in **Section 3.5.1.9**;
- In the event that excluded wastes have been identified during sorting, consolidation, baling or deposition, make all practicable efforts to identify the source of the waste (e.g. labelling, waste type), contacting the EPA for advice on the proper disposal, or in the event that the EPA cannot be contacted, relocating wastes to the nominated area, and reporting the incident as described in **Section 3.5.1.9**;
- Reporting occurrence of excluded wastes in accordance with **Section 3.5.1.10**;
- Ensuring that monthly records are sent to the EPA of vehicle registration numbers that fail to scan the QR2id plate when directed by Resource Recovery Centre Operators;
- Ensuring tyres and sump oil are removed as required from the landfill by a contractor;
- Advising the Manager Waste Services and Technical Support to arrange removal by contractor of scrap metal, car bodies, wire and green waste;
- Recording the number of vehicles entering the facility, obtaining Calibration Certificate for weighbridge, and advising the Manager Waste Services and Technical Support if the weighbridge is inoperable (recording all vehicles while the weighbridge is inoperable); and
- Ensuring signs defining excluded wastes and penalties for the deposition of excluded wastes are prominently displayed.

Resource Recovery Centre Operators

- Asking drivers to describe the type of waste to be deposited on entry to the facility;
- Refusing permission to deposit waste until the waste is verified as being acceptable (if necessary);
- Obtaining evidence from the driver (*ie* test certificate) that the waste does not include excluded substances (if necessary);
- Refusing excluded waste and advising the driver to contact the EPA for advice on the proper disposal of these wastes;
- Monitoring wastes at the point of entry;
- Recording all number of vehicles entering the facility;
- Directing vehicles to the appropriate area;
- Immediately reporting all incidents to the Supervisor;
- Maintaining records of waste delivered;

- In the event that excluded wastes have been identified during sorting, consolidation, baling or deposition – immediately advising the Facility Supervisor;
- Ensuring all vehicles entering the facility have their load suitably covered;
- Ensuring all wastes are deposited in the correct areas;
- Monitoring and inspecting wastes as they are being deposited to ensure excluded non-approved wastes are not being disposed;
- Loading excluded wastes back onto vehicles or relocating excluded wastes to the nominated area, if so directed by the Facility Supervisor;
- Identifying, segregating and storing excluded wastes;
- Locking gates and securing facility;
- Ensuring that where required, drivers are directed to scan the QR2id plate for tyre and asbestos waste;
- Maintaining a record of vehicle registration numbers who fail to scan the QR2id plate
- Ensuring that emails of completed Form 26.02 is sent monthly to the NSW Environment Protection Authority Waste Operations Section, and copied to the Manager Waste Services and Technical Support; and
- Ensuring recyclable wastes are deposited in the correct areas.

3.6 WASTE DISPOSAL

3.6.1 PROCEDURES

3.6.1.1 Overview

The Stage 3 landfill is designed to be used for the disposal of:

- Asbestos (appropriately managed with cover material and/or wrapping);
- Dead animals;
- Waste generated from bee keeping activities;
- Reject material that is not suitable for baling or transport to the ERRRC landfill;
- Any residual waste generated through a breakdown of the baling or shredding facility, or as may occur from time to time; and
- The cell walls and finished grades of the east and west betters of Stage 3 of landfilling will be formed using non-recoverable C&D and C&I waste. Upon reaching the nominated heights as per the filling plan, all non-recoverable C&D and C&I waste will be transported to the ERRRC via the baling shed.

A stockpile of VEM will be maintained to allow immediate cover of asbestos and dead animals.

3.6.1.2 Cell Construction

Waste disposal cells (trenches) will be excavated in the top of the Stage 3 landform. Spoil material will be placed on the upslope side to minimise the entry of surface water.

The location and progression of the trenches is shown on **Figure 3.4.1** in **Section 3.4 – Landfill Staging** of this OEMP.

3.6.1.3 Waste Placement and Compaction

Wastes will be placed into the trench and covered with VEM (where required). Landfill equipment will be used to compact the waste. An average compaction rate of not less than 650 kg per cubic metre must be achieved for all waste disposed of at the premises.

3.6.1.4 Asbestos

Asbestos material shall be:

- Only accepted at the weighbridge if appropriately contained (refer **SOP 08 – Handling and Disposal of Asbestos** and **SWMS 001 – Asbestos Disposal**);
- If required, asbestos waste will be recorded by waste transporters using the WasteLocate system at the weighbridge by scanning the QR2id plate (refer – **SOP 26 – WasteLocate Tracking**);

- Handled in a manner to minimise the chance of damage to the wrapping, breakage and/or dust generation;
- Immediately placed in the active cell following receipt through the weighbridge; and
- Immediately covered with a minimum of 300 mm VEM.

Legal Requirements for Managing Asbestos Waste

The storage, disposal and transport of asbestos waste at non-worksites is regulated by the Environment Protection Authority and local councils where they are the appropriate regulatory authority – such as the Orange City Council in this circumstance, under the Protection of the Environment Operations (Waste) Regulation 2014 as follows:

- Waste must be stored on the premises in an environmentally safe manner;
- Bonded asbestos material must be securely packaged at all times;
- Friable asbestos material must be kept in a sealed container;
- Asbestos contaminated soils must be wetted down;
- All asbestos waste must be transported in a covered, leak-proof vehicle;
- Asbestos waste must be disposed of at a landfill site that can lawfully receive the waste;
- It is illegal to dispose of asbestos waste in domestic garbage bins; and
- It is illegal to re-use, recycle, or illegally dump asbestos products.

Note: 'Bonded asbestos material' means any material (other than friable asbestos material) that contains asbestos. 'Friable asbestos material' means any material that contains asbestos and is in the form of a powder or can be crumbled, pulverised or reduced to powder by hand pressure when dry.

Asbestos Waste Location Tracking and Reporting Requirements

The Protection of the Environment Operations (Waste) Regulation 2014 requires the transport of asbestos waste in NSW to be recorded from the place of generation to its final destination.

The asbestos waste tracking and reporting requirement only applies to loads that are transported within NSW of more than 100 kilograms of asbestos waste or more than 10 square metres of asbestos sheeting.

A unique QR2id plate is displayed at the ORRRC weighbridge.

QR2id plates must be used by transporters of asbestos waste to record the movement of that waste in the EPA's WasteLocate system. The QR2id plate can be scanned by the waste transporter at the ORRRC weighbridge using a smart phone or tablet.

The procedure for using the WasteLocate system is provided in **SOP 26 – WasteLocate Tracking**.

3.6.1.5 Dead Animals

Dead animal waste shall be:

- Handled in a manner to minimise double handling of the waste;
- Immediately placed in the active landfill cell following receipt through the weighbridge; and
- Immediately covered with a minimum of 300 mm VEM.

3.6.1.6 Cover Material

All waste in trenches or cells must be compacted and covered at least once every 7 (seven) days with waste that causes strong or offensive odours being covered daily; the licensee may use processed (chipped) green and/or wood waste as daily and/or weekly cover as required.

Immediate cover will be applied to asbestos waste and dead animals. A VEM stockpile will be maintained on site for this purpose.

Other waste disposed shall be covered as required following compaction to minimise litter generation and vermin interaction.

3.6.1.7 Capping

- Completed areas will be capped as soon as practicable after reaching the final design level. The details of the final landform and capping profile are detailed in **Section 3.4 – Landfill Staging**.

Final capping must comprise the following:

- a phytocapping layer of no less than 1000mm in depth; and
- the establishment of appropriate vegetation within this phytocapping layer.

The phytocap will be sown with a mixture of grasses, and be fertilised to assist establishment. The grass mix and application rates are detailed in **Section 3.16 – Progressive Rehabilitation**.

3.6.2 MONITORING

Resource Recovery Centre Operational staff will be responsible for the correct placement of waste in the active landfill area, the Resource Recovery Centre Supervisor will continuously monitor the placement of waste to ensure compliance with the staging plans as detailed in **Section 3.4 – Landfill Staging**.

Density of the compacted waste will be monitored by calculation, from records of wastes received and airspace used.

Rehabilitation areas will be monitored to ensure effectiveness of revegetation and drainage structures.

3.6.3 RESPONSIBILITIES

Manager Waste Services and Technical Support

- Coordinating implementation of the final rehabilitation; and
- Arranging revegetation with a suitable grass/fertiliser and tree mix on completed areas.

Resource Recovery Centre Supervisor/Operator

- Excavating operational trenches;
- Placing residual waste in the landfill and covering as required;
- Progressive rehabilitation of completed areas;
- Inspection of revegetation success on a monthly basis;
- Reporting any unsuccessful revegetation to Supervisor;
- Capping as soon as possible after reaching final design level;
- Sourcing cover material and maintaining a two week supply;
- Co-ordinating revegetation of unsuccessful areas; and
- Documentation of various landfilling and covering techniques.

3.7 SURFACE WATER & LEACHATE MANAGEMENT

3.7.1 PROCEDURES

3.7.1.1 Preventing Pollution

Surface water will be managed at the active landfill area by diverting clean runoff where practicable.

3.7.1.2 Surface Water and Leachate Management

Surface runoff and leachate is controlled by constructed drains and control ponds.

Surface water and leachate collection ponds are shown on **Figure 3.7.1**. Leachate collected in the Leachate Collection Pond is pumped to the sewage treatment plant (STP).

3.7.1.3 Authorised Surface Water and Leachate Discharge Point

Stormwater and leachate may overflow during and for a period immediately after a storm event of 1 in 20 year recurrence interval of 24 hour duration from Surface Water Ponds 3 and 4 (shown on **Figure 3.7.1** as SW3 and SW4).

3.7.1.4 Daily Inspection of Ponds

Inspection of the surface water collection and leachate collection ponds is undertaken daily (refer **SOP 15 – ORRRC Daily Checklist**) to ensure the ponds have a freeboard of at least one (1) metre.

The leachate pumps are operated as necessary to discharge leachate to the sewage treatment plant.

If any spill occurs from Surface Water Pond 3 or 4, it is noted on the Daily Checklist (refer **Section 3.3** and **SOP 15 – ORRRC Daily Checklist**) and recorded as an incident (refer to **SOP 13 – Pollution Incident Response Management**).

A monthly discharge sample is required to be collected under EPL No. 5956, refer **Section 3.7.1.5** for further detail.

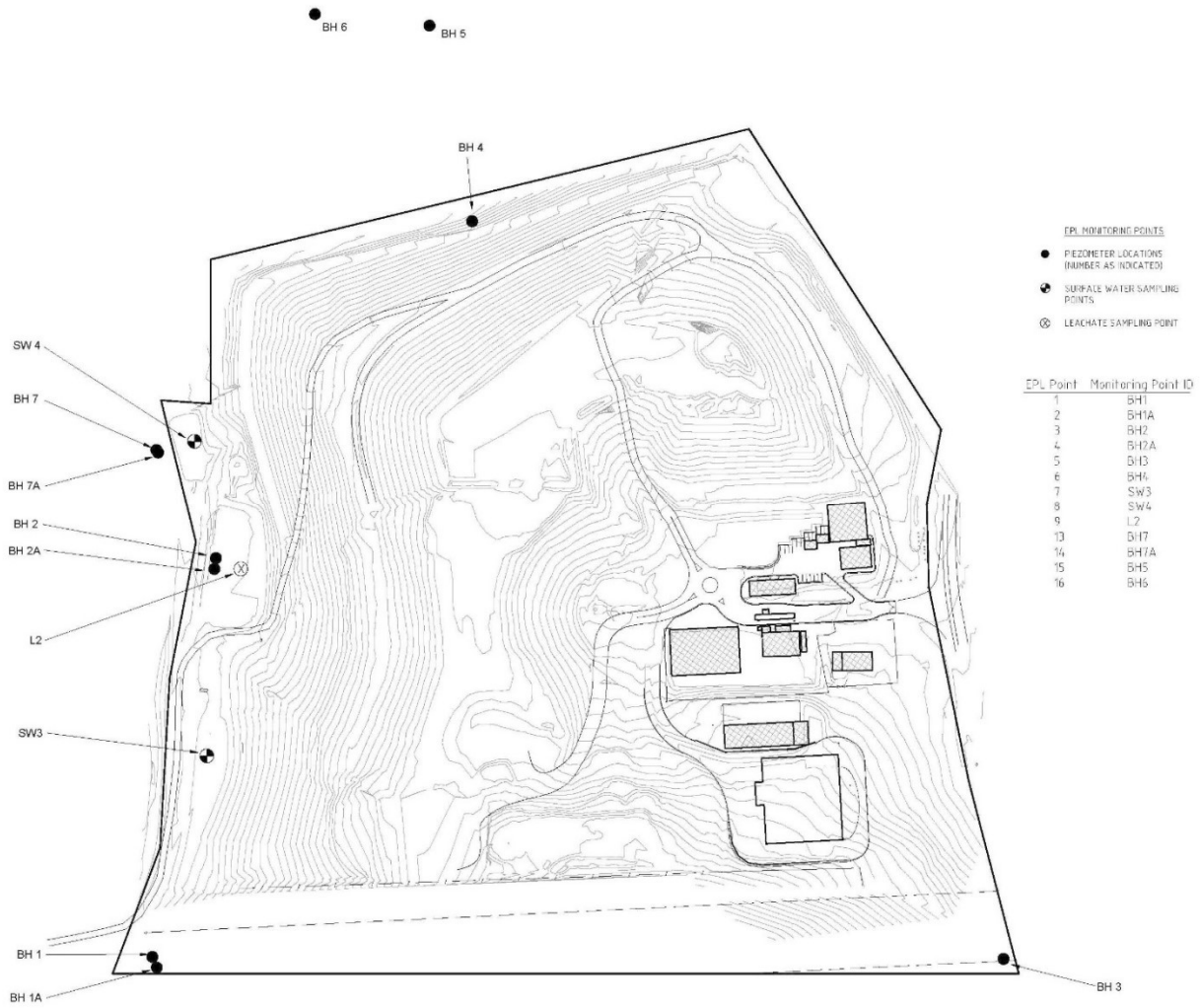


Figure 3.7.1: Environmental Monitoring Stations

3.7.1.5 Surface Water and Leachate Monitoring Program

Monitoring Points

Surface water and leachate monitoring points are shown on **Figure 3.7.1** and include:

- SW3 - Surface Water Collection Pond 3;
- SW4 - Surface Water Collection Pond 4 (previously L1); and
- L2 - Leachate Collection Pond 2.

Monitoring Schedule

Surface water samples are required to be collected monthly during discharge. Leachate quality is monitored biannually. Leachate volume is recorded monthly.

Parameters for Quality Analysis

Parameters for surface water and leachate quality analysis, the frequency of analysis and provisional limits for validation sampling are contained in **Table 3.7.1** and **Table 3.7.2.**

Table 3.7.1 – Surface Water Quality Parameters

Parameter	Frequency	Provisional Limit (1)
pH	Monthly during discharge	see note (1)
Conductivity	Monthly during discharge	see note (1)
Alkalinity (as calcium carbonate)	Monthly during discharge	see note (1)
Sodium	Monthly during discharge	see note (1)
Potassium	Monthly during discharge	see note (1)
Calcium	Monthly during discharge	see note (1)
Magnesium	Monthly during discharge	see note (1)
Boron	Monthly during discharge	see note (1)
Chloride	Monthly during discharge	see note (1)
Sulfate	Monthly during discharge	see note (1)
Fluoride	Monthly during discharge	see note (1)
Iron	Monthly during discharge	see note (1)
Manganese	Monthly during discharge	see note (1)
Ammonia	Monthly during discharge	1
Nitrate	Monthly during discharge	10
Total Organic Carbon	Monthly during discharge	see note (1)
Total Phenolics	Monthly during discharge	0.1
Total petroleum hydrocarbons (TPH)	Monthly during discharge	see note (1)
Total recoverable hydrocarbons (TRH)	Monthly during discharge	see note (1)

(1) These analytes are used to characterise surface water on the basis of typical ranges and trends. Assessment would be triggered by significant deviation from the established range.

Table 3.7.2 – Leachate Quality Parameters

Parameter	Frequency	Provisional Limit (1)
pH	Biannually	see note (1)
Conductivity	Biannually	see note (1)
Alkalinity (as calcium carbonate)	Biannually	see note (1)
Sodium	Biannually	see note (1)
Potassium	Biannually	see note (1)
Calcium	Biannually	see note (1)
Magnesium	Biannually	see note (1)
Boron	Biannually	see note (1)
Chloride	Biannually	see note (1)
Sulfate	Biannually	see note (1)
Fluoride	Biannually	see note (1)
Iron	Biannually	see note (1)
Manganese	Biannually	see note (1)
Ammonia	Biannually	1
Nitrate	Biannually	10
Total Organic Carbon	Biannually	see note (1)
Total Phenolics	Biannually	0.1
Total petroleum hydrocarbons (TPH)	Biannually	see note (1)
Total recoverable hydrocarbons (TRH)	Biannually	see note (1)

(1) These analytes are used to characterise leachate on the basis of typical ranges and trends. Assessment would be triggered by significant deviation from the established range.

Recording Leachate Volume

A record of the leachate volume pumped to the STP is maintained by recording the reading on the leachate flow meter at the end of each month. This data is maintained by the STP operational staff for trade waste purposes.

3.7.1.6 Validation Sampling

Note: This procedure is only implemented if routine sampling detects quality parameters that exceed the limits in Table 3.7.2.

If monitoring indicates significant deviation from historical results and it is deemed there is likelihood of overflow and subsequent off-site impact, surface water and leachate will be sampled and tested again as soon as possible to confirm the results. If re-sampling confirms

the anomaly, the EPA will be notified immediately after it becomes known, in accordance with the **SOP 13 – Pollution Incident Response Management.**

3.7.1.7 Surface Water Assessment Plan

Note: This procedure only implemented if validation sampling confirms surface water pollution.

If the EPA has been advised of an anomaly in surface water quality in accordance with **Section 3.7.2.6**, a Surface Water Assessment Plan will be prepared within 28 days of the notification.

The Surface Water Assessment Plan will:

- identify the specific surface water contaminants;
- establish the extent of the pollution;
- provide a justified list of proposed analytes for evaluation;
- assess the impacts of the surface water pollution; and
- outline a proposed sampling plan to obtain sufficient information to prepare a Surface Water Contamination Remediation Plan.

Figure 3.7.2 shows the relationship between routine sampling, validation testing and the Surface Water Assessment Plan.

3.7.1.8 Surface Water Contamination Remediation Plan

Note: This procedure only implemented following development of a Surface Water Assessment Plan.

A Surface Water Contamination Remediation Plan will be prepared based on the results of the Surface Water Assessment Plan. The plan will describe the process to protect surface water resources from further pollution and, if necessary, nominate a method to return surface water to the original quality downstream of the landfill. This plan will be submitted to the EPA for approval prior to implementation.

Figure 3.7.2 shows the relationship between the Surface Water Assessment Plan and Surface Water Contamination Remediation Plan.

3.7.2 MONITORING

Surface water and leachate quality will be monitored in accordance with **Section 3.7.2.5**.

The volume of leachate transferred to the sewage treatment plant will be recorded monthly.

3.7.3 RESPONSIBILITIES

Manager Waste Services and Technical Support

- Co-ordinating and implementing the Surface Water and Leachate Monitoring Program.

Resource Recovery Centre Supervisor

- Inspection and coordination of maintenance of all stormwater drainage works in proper functioning order so as to prevent contaminated runoff leaving the site; and
- Recording the leachate volume each month.

Resource Recovery Centre Operators

- Implementing procedures detailed in this OEMP so as to minimise the risk of water pollution, including diverting clean runoff around the active cell and away from contaminated water collection points.

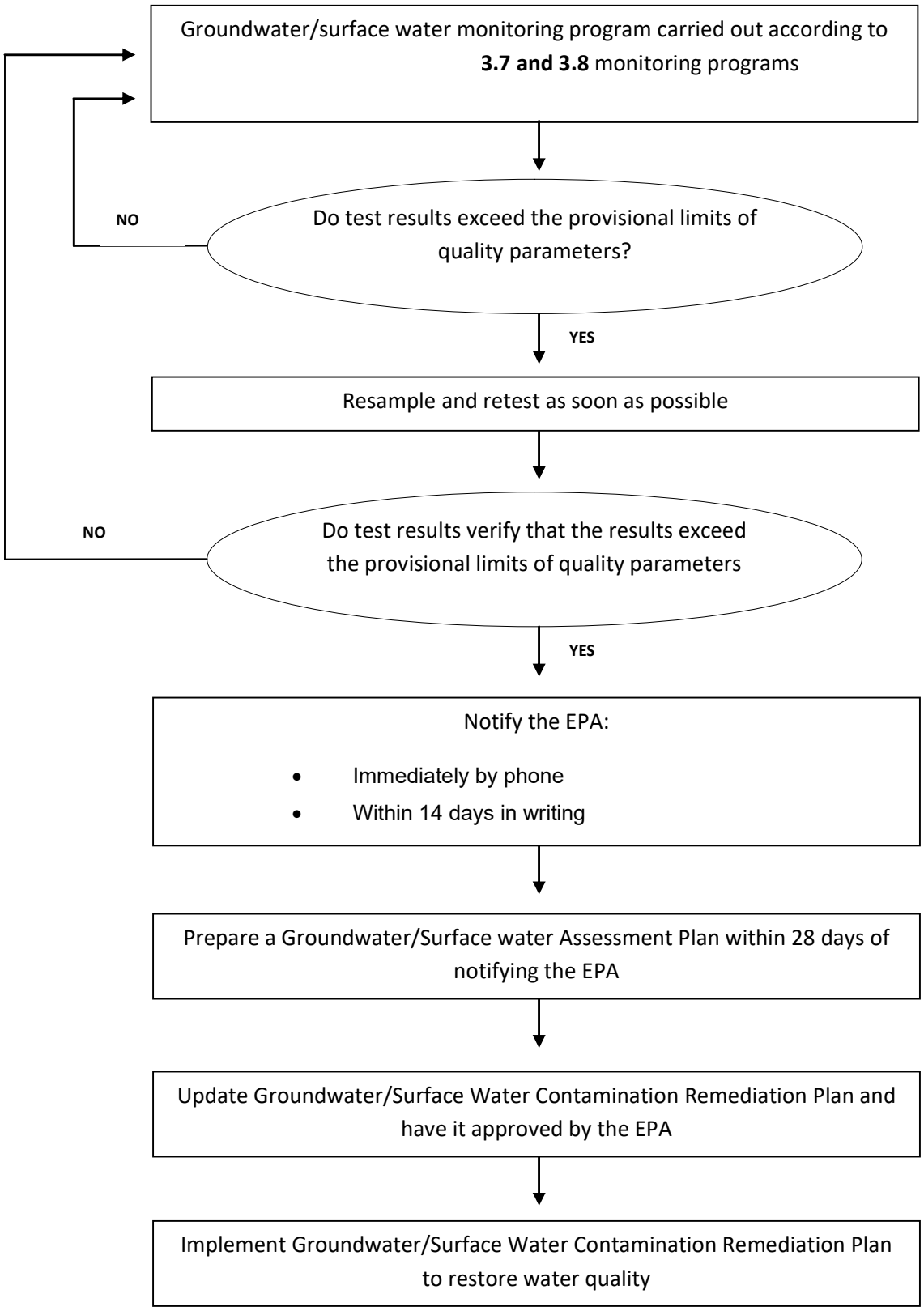


Figure 3.7.2: Groundwater and Surface Water Assessment and Remediation

3.8 GROUNDWATER MANAGEMENT

3.8.1 PROCEDURES

3.8.1.1 Preventing Pollution

The landfill will be operated so as to minimise the risk of groundwater pollution by leachate. This will be achieved by:

- Implementing leachate and surface water controls (**Section 3.7 – Surface Water and Leachate Management**);
- Ensuring adequate compaction of residual deposited wastes and cover material (**Section 3.6 – Waste Disposal**);
- Phytocapping completed cells (**Section 3.6 – Waste Disposal and Section 3.16 – Progressive Rehabilitation**);
- Progressively rehabilitating disturbed areas (**Section 3.16 – Progressive Rehabilitation**); and
- Ensuring adequate revegetation of completed cells (**Section 3.16 – Progressive Rehabilitation**).

3.8.1.2 Groundwater Monitoring Program

Monitoring Network

The groundwater monitoring network is shown on **Figure 3.7.1**. It comprises ten piezometers at seven locations which are used to monitor groundwater quality and levels.

Monitoring Schedule

The groundwater monitoring program as required by EPL No. 5956 is detailed in **Table 3.8.1.**

- Groundwater levels and quality will be monitored biannually where liquid is present.

Table 3.8.1 - Groundwater Monitoring Program

Parameter	Frequency	Provisional Limit (mg/L)
pH	Biannually	see note (1)
Conductivity	Biannually	see note (1)
Total Dissolved Solids	Biannually	see note (1)
Sodium	Biannually	see note (1)
Potassium	Biannually	see note (1)
Calcium	Biannually	see note (1)
Boron	Biannually	see note (1)
Magnesium	Biannually	see note (1)
Chloride	Biannually	see note (1)

Table 3.8.1 - Groundwater Monitoring Program

Sulfate	Biannually	see note (1)
Manganese	Biannually	see note (1)
Iron	Biannually	see note (1)
Fluoride	Biannually	see note (1)
Alkalinity (as calcium carbonate)	Biannually	see note (1)
Ammonia	Biannually	1
Nitrate	Biannually	10
Total Organic Carbon	Biannually	see note (1)
Total Phenolics	Biannually	0.1
Total Petroleum Hydrocarbons (TPH)	Biannually	0.1
Total Recoverable Hydrocarbons (TRH)	Biannually	see note (1)
Copper	Biannually	0.015
Aluminium	Biannually	See note (1)
Phosphate	Biannually	3
Zinc	Biannually	See note (1)
Standing Water Level	Biannually	See note (1)

(1) These analytes are used to characterise leachate on the basis of typical ranges and trends. Assessment would be triggered by significant deviation from the established range.

3.8.1.3 Validation Sampling

Note: This procedure is only implemented if routine sampling detects quality parameters that exceed the provisional limits.

If monitoring indicates pollution, groundwater in the affected piezometer or bore will be sampled and tested again as soon as possible to confirm the results. If re-sampling confirms the anomaly, the EPA will be notified immediately by telephone and in writing within 14 days of confirmation.

Refer to **SOP 13 – Pollution Incident Response Management for methods of EPA notification.**

3.8.1.4 Groundwater Assessment Plan

Note: This procedure only implemented if validation sampling confirms groundwater pollution.

If the EPA has been advised of an anomaly in groundwater quality in accordance with **Section 3.8.1.3**, a Groundwater Assessment Plan (GAP) will be prepared within 28 days of the notification.

The GAP details:

- The specific groundwater contaminants;

- The known extent of the contaminants;
- A justified list of proposed anolytes for evaluation;
- The impacts of the groundwater pollution; and
- A proposed sampling plan to obtain sufficient information to prepare a *Groundwater Contamination Remediation Plan*.

Figure 3.7.2 shows the relationship between routine sampling, validation testing and the Groundwater Assessment Plan.

3.8.1.5 Groundwater Contamination Remediation Plan

Note: This procedure only implemented following development of a Groundwater Assessment Plan.

If a *Groundwater Contamination Remediation Plan* is required, as determined by the GAP, it is required to describe the process to protect the groundwater resource from further contamination, and nominate a means to return the resources to the original quality down hydraulic gradient from the landfill. The *Groundwater Contamination Remediation Plan* (if required) is submitted to the EPA for approval prior to implementation.

Figure 3.7.2 shows the relationship between the Groundwater Assessment Plan and Groundwater Contamination Remediation Plan.

3.8.2 MONITORING

Standing water levels and groundwater quality are monitored in accordance with **Section 3.8.1.2**.

3.8.3 RESPONSIBILITIES

Manager Waste Services and Technical Support

- Coordinating and implementing the groundwater monitoring program;
- Coordinating re-sampling of piezometers, and development of the Groundwater Assessment Plan if groundwater contamination is identified; and
- Notifying, and communicating with the EPA in regards to the Groundwater Assessment Plan and the Groundwater Contamination Remediation Plan.

Resource Recovery Centre Supervisor/operator

- Implement procedures identified in this OEMP so as to minimise the risk of groundwater pollution.

3.9 LANDFILL GAS MANAGEMENT

3.9.1 PROCEDURES

3.9.1.1 Preventing Emissions

Landfill gas generation is controlled by a number of environmental goals, including the leachate barrier system (refer to **Section 3.7 – Surface Water and Leachate Management**) and progressive capping and shallow rooted revegetation of completed landfill areas (**Sections 3.4 – Landfill Staging** and **3.16 – Progressive Rehabilitation**), which acts to limit the amount of water entering the active landfill area.

As organic waste is now diverted from ORRRC to the composting facility on the ERRRC site, landfill gas emissions are expected to be minimal.

Fire prevention (**Section 3.15 – Fire Management** and **Section 7.1 – ORRRC Fire Management Plan**), is also an important environmental goal in managing landfill gas.

3.9.1.2 Accumulated Gas Monitoring

Buildings on the landfill are monitored monthly for gas accumulation. The threshold level for closer investigation and potential action is 12,500 parts per million (1.25 % v/v) of methane in any building on the facility or within 250 m of landfilled areas.

If methane is detected above this limit, daily testing is required until ventilation or other measures have controlled the methane concentration.

3.9.1.3 Notification of Gas Emissions

The EPA is notified within 24 hours if the accumulated gas monitoring detects methane concentration exceeding the threshold level.

Refer to **SOP 13 – Pollution Incident Response Management** for methods of EPA notification.

A written assessment of the emissions and management controls implemented or proposed to be implemented to prevent further emissions is provided to the EPA within 14 days of the incident.

3.9.2 RESPONSIBILITIES

Manager Waste Services and Technical Support

- Ensuring the gas monitoring program is implemented as identified in this OEMP.

Resource Recovery Centre Supervisors/Operators

- Implementing the procedures identified in this OEMP so as to minimise the generation of landfill gas.

3.10 ODOUR CONTROL

3.10.1 PROCEDURES

Landfilling operations must not cause or permit the emission of offensive odour beyond the boundary of the premises.

3.10.1.1 Waste Covering

Odour generation is controlled by immediate covering of the residual wastes landfilled at the ORRRC, which are likely to produce offensive odours (refer to **Section 3.6 – Waste Disposal**).

3.10.1.2 Surface Water and Leachate Ponds

The surface water and leachate collection ponds will be maintained in a condition that minimises the production of offensive odours.

3.10.1.3 Reducing Odour

If required, proprietary products are used to reduce odour emissions.

3.10.2 MONITORING

Potential odour sources are inspected daily.

Odours are monitored by recording any odour complaint received. Procedures for handling complaints are to follow **SOP 14 – Complaints Handling**. The record of a complaint will be kept for at least four years after the complaint was made. Complaints are followed up and the odour generation mitigated.

3.10.3 RESPONSIBILITIES

Manager Waste Services and Technical Support

- Responsible for maintaining records of odour complaints.

Resource Recovery Centre Supervisors/Operators

- Implementation of procedures identified within this OEMP to minimise the generation of landfill odour; and
- Completion of complaint forms as per **SOP 14 – Complaints Handling** and forwarding to *Manager Waste Services and Technical Support*.

3.11 DUST CONTROL

3.11.1 PROCEDURES

Dust generation on the site is controlled by:

- Maintaining gravel seals on access roads;
- The posting of speed restrictions within the site;
- Minimising exposed areas; and
- Watering unsealed roads as necessary.

Procedures for dust prevention are provided in **WAP 001 – Dust Prevention on Site**.

3.11.2 MONITORING

Dust is monitored by recording dust complaints received. Records are kept for at least four (4) years. The procedure for complaints handling is identified in **SOP 14 – Complaints Handling**.

3.11.3 RESPONSIBILITIES

Manager Waste Services and Technical Support

- Responsible for investigating all dust complaints and maintaining written records.

Resource Recovery Centre Supervisors/Operators:

- Maintaining gravel seals on access roads;
- Minimising exposed areas;
- Watering unsealed access roads as necessary; and
- Restricting vehicular access to formed roads and tracks.

3.12 LITTER CONTROL

3.12.1 PROCEDURES

The compaction and baling of non-putrescible waste minimises the occurrence of litter at the site. Public vehicle access to the active landfill area is restricted. Residual landfilled waste is controlled by adequate compaction and daily covering of waste. Other means of litter control include maintenance of litter fences at strategic points throughout the site and daily litter patrols by Resource Recovery Centre Operational staff on-site and along Ophir Road in the vicinity of the landfill.

Procedures for litter collection are provided in **WAP 007 – Litter Collection**.

3.12.2 MONITORING

Litter is monitored by recording complaints received and spot audits by the Manager Waste Services and Technical Support. Records of litter complaints are kept for at least four years, as per **SOP 14 – Complaints Handling**.

3.12.3 RESPONSIBILITIES

Manager Waste Services and Technical Support

- Responsible for undertaking spot audits.

Resource Recovery Centre Supervisor/Operators

- Ensuring wastes are adequately compacted and covered;
- Maintaining litter fencing (excluding security fencing) as required;
- Undertaking litter patrols; and
- Maintaining records of litter complaints, as per **SOP 14 – Complaints Handling**.

3.13 NOISE CONTROL

3.13.1.1 Noise Limits

As defined by EPL 5956 Condition L3.2, noise from the premises must not exceed:

- An $L_{Aeq\ (15\ minute)}$ noise emission criterion of 45 dB(A) during the operating hours stipulated by condition L3.1 (listed below) at any noise sensitive receiver (land use) as defined by the NSW Industrial Noise Policy (EPA, 2000/2001).
  - 7.00am to 7.00pm, Monday to Friday; and
  - 7.00am to 5.00pm Saturday, Sunday and Public Holidays.

To determine compliance with condition L3.2:

- Noise from the premises is to be measured at the most affected point within the sensitive receiver boundary, or at the most affected point within 30 metres of the sensitive receiver boundary where the residence/building is more than 30 metres from the sensitive receiver boundary.
- The modification factors in Section 4 of the NSW Industrial Noise Policy (EPA, 2000/2001) must be applied, as appropriate, to the noise levels measured by any noise monitoring equipment.

The noise limits stipulated by condition L3.2 apply under all meteorological conditions except for the following:

- Wind speeds greater than 3 metres per second at ground level; and
- Temperature inversions as outlined in Section 5 of the NSW Industrial Noise Policy (EPA, 2000/2001).

3.13.2 MONITORING

Noise is monitored by the recording of complaints received. Records of noise complaints will be kept on-site for at least four years, and procedures identified in **SOP 14 – Complaints Handling** are to be followed for complaints handling. In the event that a noise complaint is received more than once, field monitoring is undertaken to quantify off-site impacts.

3.13.3 RESPONSIBILITIES

Manager Waste Services and Technical Support

- Responsible for arranging field monitoring of noise if required; and
- Responsible for investigating all noise complaints and maintaining written records.

Resource Recovery Centre Supervisor:

- Correct maintenance and operation of machinery; and
- Keeping records of noise complaints received as per **SOP 14 – Complaints Handling**.

3.14 PEST, VERMIN AND NOXIOUS WEED CONTROL

3.14.1 PROCEDURES

Pests, vermin and noxious weeds will be controlled by ensuring that:

- Odorous wastes are covered immediately;
- Wastes are adequately compacted and covered;
- The security fence is maintained to prevent access by larger animals;
- Surface drainage prevents ponding on the site; and
- Noxious weeds are reported to Council for control.

3.14.2 MONITORING

Pests, vermin and noxious weeds will be monitored on an ongoing basis.

3.14.3 RESPONSIBILITIES

Supervisor/Operators

- Monitoring pests, vermin and noxious weeds; and
- Controlling and if necessary, destroying pests, and for reporting the presence of vermin and noxious weeds to the Manager Waste Services and Technical Support.

3.15 FIRE MANAGEMENT

3.15.1 PROCEDURES

All procedures pertaining to fire management are identified in the **ORRRC Fire Management Plan – Section 7.1** and relevant **ORRRRC Emergency Procedures Manual** - **Section 7.9**

3.15.1.1 Fire Prevention

The potential for fires to occur at the site will be controlled by:

- A 1.8 m high security fence to prevent unauthorised access;
- Maintaining machinery in good working order to minimise risk of sparks;
- Adequately compacting and covering waste;
- Regular litter patrols;
- Ensuring fire breaks are maintained around any temporary stockpile of combustibles;
- Access to on-site fire fighting equipment;
- Accepting only permitted wastes;
- All fuels or flammable solvents for operational use are stored in a bunded area which is appropriately ventilated and secure; and
- No controlled burning to be undertaken at the ORRRC, unless under consultation with the EPA and the Rural Fire Brigade.

In addition to the above preventative measures, operators at the facility maintain fire fighting equipment to ensure that the on-site fire fighting capability is maintained. Specifically, this involves:

- Ensuring that the water tanker permanently located at the facility is full at all times and that it is positioned in a readily accessible location; and
- Weekly testing of the tanker pump and checks that the motor is topped with fuel and oil.

3.15.1.2 Responding to a Fire

Full details for responding to a fire are included in **Section 7.1 – ORRRC Fire Management Plan and Section 7.9 – ORRRC Emergency Procedures Manual.**

After a fire has been contained, the Supervisor is responsible for preparing an Incident Report, as per **SOP 13 – Pollution Incident Response Management**, and filling out **Form 13.01– Incident Register**, and **Form 13.02 – Incident Report Form** accordingly.

The Incident Report must include the following information:

- The time and date that the fire was deliberately started or reported;
- The cause of the fire (if known);
- The time and date that the fire was either burnt out or extinguished;

- The location of the fire;
- Prevailing weather conditions;
- Any complaints of smoke nuisance from the public or local residents; and
- Observations made in regard to smoke direction and dispersion.

3.15.2 MONITORING

The facility will be continually monitored for fire.

Fire records will be maintained through incident reports.

3.15.3 RESPONSIBILITIES

Manager Waste Services and Technical Support

- Emergency contact; and
- Review of reports and actions.

Resource Recovery Centre Supervisor

- In the event of a fire, making an on the spot determination as to whether the fire can be effectively contained by Operators with no threat to their safety.

Supervisor/Operator

- Ensuring that the water tanker permanently located at the facility is full at all times, and that it is positioned in a readily accessible location;
- Weekly testing of the tanker pump and checks that the motor is topped with fuel and oil;
- Maintaining machinery in good working order to minimise risk of sparks;
- Adequate compaction and covering of waste;
- Regular litter controls;
- Access to on-site fire fighting equipment;
- Ensure fire breaks are maintained around any temporary stockpile of combustibles;
- Accepting only permitted wastes;
- Reporting any fire to the Manager Enterprise Services immediately;
- If determined to be a safe option, smother fire by covering with soil;
- If required, call 000;
- Readying for the arrival of, and acting on any instructions issued by the Fire Service;
- Evacuating the public from the facility, expediting an efficient and safe exit, and diverting any further public from entering the facility; and
- Preparing an Incident Report, as per **SOP 13 – Pollution Incident Response Management.**

3.16 PROGRESSIVE REHABILITATION

3.16.1 PROCEDURES

3.16.1.1 Final Landform

Final contour levels of Stage 3 are shown on **Figure 3.16.2**.

3.16.1.2 Revegetation and Capping

A program of revegetation has been undertaken from the commencement of the site establishment stage through the progressive completion of the landfill.

All Stage 2 and Stage 3 areas will be progressively capped using the phytocapping system. A typical capping profile (as opposed to a compacted clay cap) is shown in **Figure 3.16.1**

The phytocapping system involves trees being established on a layer of soil cap placed over the refuse. The soil cover acts as rainfall storage while the trees act as bio-pumps and filters to remove rainfall before it reaches the buried waste.

Capping will be undertaken in accordance with EPL 5956; this includes:

- EPL Condition O6.14: All waste in trenches or cells must be compacted and covered at least once every 7 (seven) days with waste that causes strong or offensive odours being covered daily.
- EPL Condition O6.15: The licensee may use processed (chipped) green and/or wood waste as daily and/or weekly cover as required by condition O6.14.
- EPL Condition O6.16: Final capping must comprise the following:
  - a) a phytocapping layer of no less than 1000mm in depth; and
  - b) the establishment of appropriate vegetation within this phytocapping layer.

A phytocapping depth of 1 metre is advised based on the following:

- Minimises excessive plant competition by providing adequate access to soil nutrients;
- Allows for root growth of shallow and deep rooted species for maximum transpiration efficiency; and
- Depth is in accordance with current trials being conducted by leading scientists in the field of phytocapping.
- Phytocaps employ natural water balance principles for hydraulic control, while using diffusion and oxidation to control fugitive anaerobic gas emissions. Precipitation entering the soil layer is stored until it is evaporated or transpired and that is in excess of the water holding capacity of the soil enters the waste zone as drainage from the cap. This mechanism for managing the water balance relies on an integrated system consisting of the soil, the plants and the atmosphere. Examples of two basic phytocap designs are shown in **Figure 3.16.1**. The monolithic phytocap includes one vegetated

soil layer over the interim cover. In practice, this may include more than one layer, depending on the materials available. As an alternative, a course layer may be placed at the bottom of the soil layer to act as a capillary break. The advantage of this layer is that it can increase the moisture holding capacity of the overlying soil and thus reduce the potential for drainage to occur. Capillary breaks are sometimes used in conventional (clay compacted) cover designs.

Revegetation of the site will involve trees and grasses (grasses can be planted as seeds or seedlings) being planted into the newly capped areas, suitable plant species are listed in **Table 3.16.1** and **Table 3.16.3**. A key requirement of this process is to ensure that revegetation of the newly capped areas is implemented a soon as possible, to reduce the risk of soil erosion and any potential compromise of the capping structure.

The grass mix and application rates are listed in **Table 3.16.1**. Suitable tree species are listed in **Table 3.16.2**.

The grass seed mix is applied with a balanced fertiliser (Starter Fos or similar) at a rate of 400 kg/ha.

Table 3.16.1 – Revegetation Grass Mix

Sowing Period	Species	Ratio Kg/ha
Autumn/Winter	Rye com	15
	Victorian Perennial Ryegrass	8
	Demeta Fescue	8
	Phalaris	7
	Currie Cox Foot	7
	White Clover (1)	6
	Sub Clover (1)	4
	Starter Fos (fertiliser)	400
Spring/Summer	Japanese Millet	15
	Victorian Perennial Ryegrass	12
	Hulled Couch	8
	Phalaris	8
	White Clover (1)	6
	Sub Clover (1)	4
	Starter Fos (fertiliser)	400

(1) Clover to be inoculated and lime pelleted and spread within 10 days of inoculation

Table 3.16.2 - Tree Species for Phytocap

Species	Habitat/Suitability
Trees	
Casuarina cunninghamiana (River Oak)	Fresh water streams and swamp areas. Prevents erosion and stabilises stream banks. Known as suitable phytocap species.
Casuarina glauca (Grey (Swamp) She-oak)	Saline swamp flats, streams and swap areas. Known as suitable phytocap species.
Eucalyptus grandis (Flooded Gum)	Suitable for saline sites. Fast growing. Known as suitable phytocap species.
Eucalyptus stellulata (Black Sally)	Poorly drained flats and frost pockets.
Eucalyptus dalrympleana (Mountain Gum)	Subalpine forests on deep soils.

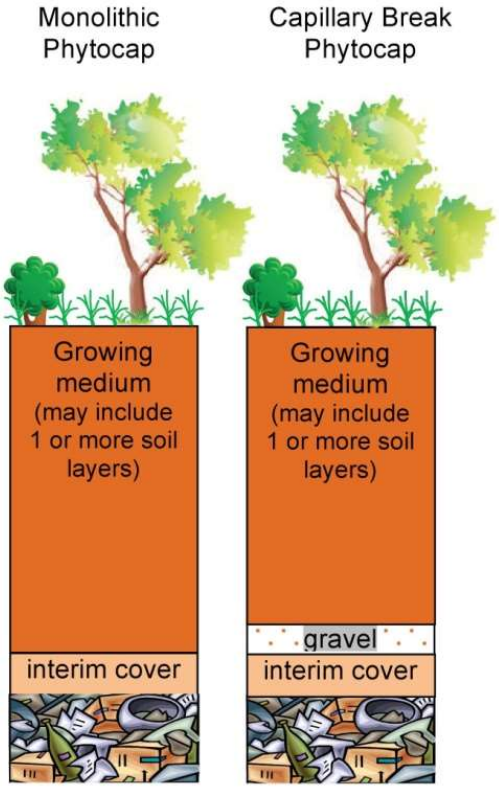


Figure 3.16.1: Examples of Basic Phytocap Designs (Source: WMAA, 2011)

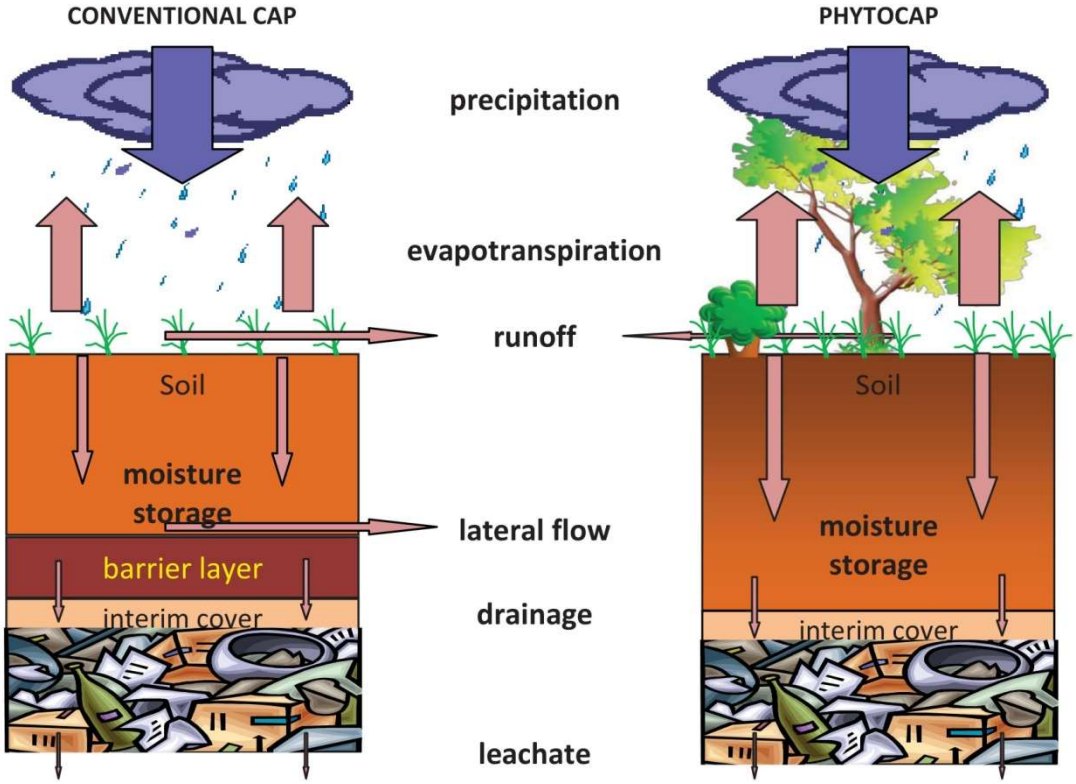


Figure 3.16.2: Schematic of Water Balance in Conventional Cap and Phytocap. Arrows indicate the relative proportion of each water balance component

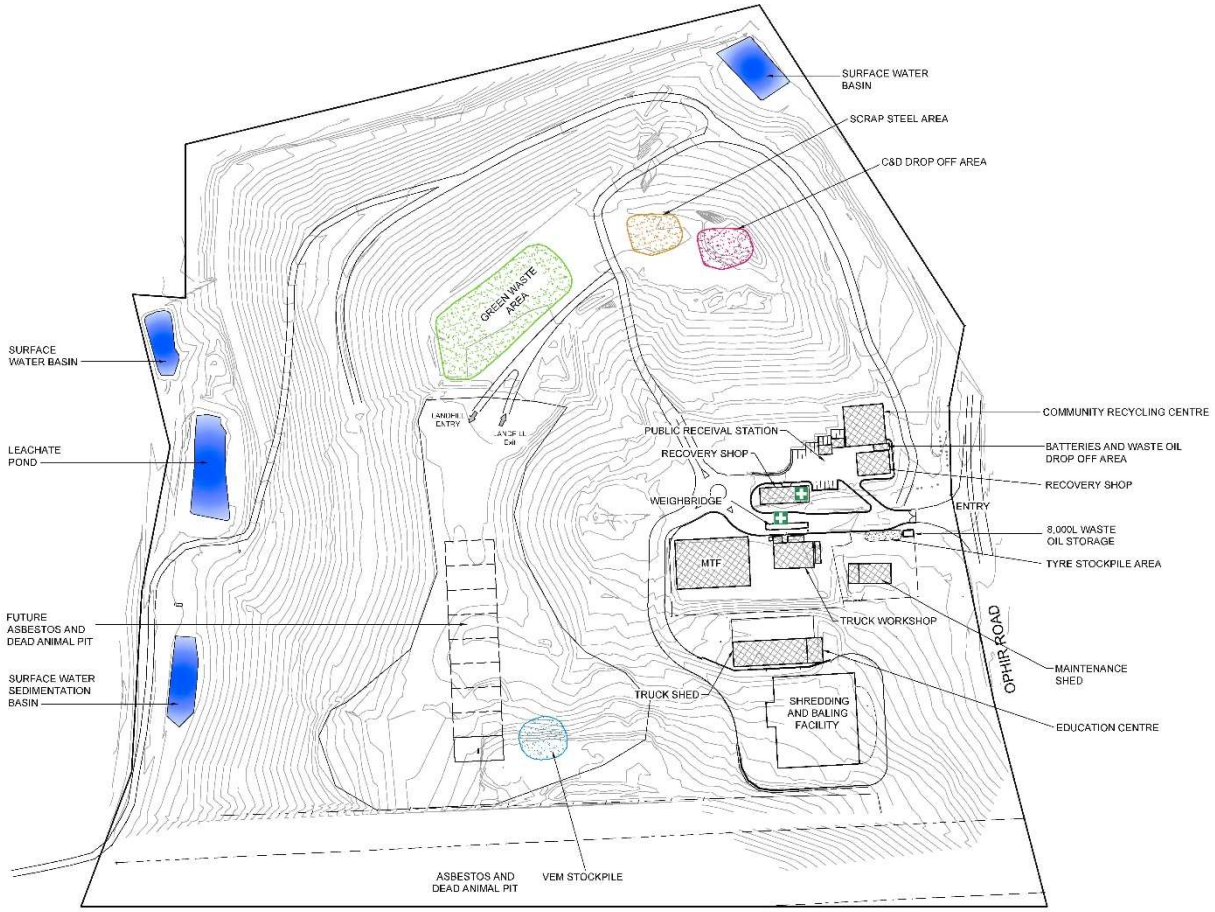


Figure 3.16.3: Stage 3 Final Landform

3.17 LANDFILL CLOSURE

3.17.1 PROCEDURES

3.17.1.1 Closure Plan

A written Closure Plan will be submitted to the EPA for approval within twelve months of the proposed closure of the landfill. The plan will include a post-closure monitoring and maintenance program to ensure the long-term integrity of the landfill. Detailed costing of the site rehabilitation and post-closure care, as well as Council's assurance to fund will be included in the Closure Plan. Specifically the plan will:

- Specify the steps taken or to be taken in closing and stabilising premises concerned and the time frame for doing so;
- Ensure that all leachate collection, gas collection and stormwater sediment controls, monitoring and reporting practices, are maintained at a standard equivalent to that employed during the operational life of the landfill;
- Ensure the neighbouring residents are advised of contact persons to discuss any problems (e.g. odour emissions). Records of these complaints should be kept in the same manner as approved during operation; and
- Ensure that waste materials are not received for disposal by the facility after landfill operations cease. Waste materials that are intended for use in the remediation should be documented and reported in the same manner as for an operating facility.

3.17.1.2 Final Landform

The final landform is planned to result in a sloping profile comparable with the existing topography. The final landform is shown in **Figure 3.4.2**. Emphasis will be placed on adequate capping of the landfill, revegetation and leaving a stable site, suitable for the designated final land use with minimal, if any, maintenance requirements.

It is proposed that the final land use for those areas disturbed during the life of the ORRRC will be open space.

3.17.1.3 Site Decommissioning

At the conclusion of operational life of the ORRRC, the site will be decommissioned as follows:

- All buildings, services and structures not required for any ongoing purpose/activity will be removed. The materials from these buildings or structures will be recycled where possible or transported to ERRRC for landfilling;
- All sealed or hardstand areas not required for any ongoing purpose/activity will be ripped, removed and transported to ERRRC for landfilling; and

- All areas where any form of contamination may have occurred throughout the life of the facility will be remediated e.g. waste oil collection area, battery storage etc. The contaminated material will either be remediated on-site or removed off-site to a facility approved to receive such materials.

The remainder of the activities in decommissioning the site are more appropriately associated with the creation of the final landform.

3.17.2 RESPONSIBILITIES

Manager Waste Services and Technical Support

- Responsible for the preparation, submission and implementation of the Closure Plan.

3.18 REFERENCES

DECC (2008) *Managing Urban Stormwater: Soils and Construction – Volume 2B – Waste Landfills*

Environmental Guidelines: Solid Waste Landfills, January 2016 – Second Edition, prepared by NSW Environment Protection Authority

Guideline: Pollution Incident Response Management Plans, March 2020 – prepared by NSW Environment Protection Authority

Environment Protection Licence 5956, 30 May 2019 – prepared by NSW Environment Protection Authority

Ophir Road Resource Recovery Centre Landfill Environmental Management Plan (Version 5), August 2012 - prepared by Geolyse Pty Ltd

Orange Local Environmental Plan 2011, February 2012 - prepared by Orange City Council

Guidelines for the assessment, design, construction and maintenance of phytocaps as final covers for landfills, October 2011 – prepared by Waste Management Association of Australia.

Section 4

ERRRC LANDFILL ENVIRONMENTAL MANAGEMENT PLAN

ERRRC LEMP – TOC

4.1 INTRODUCTION

4.2 SITE SUPERVISION AND CONTROL

4.3 DAILY CHECKLIST

4.4 LANDFILL STAGING

4.5 WASTE RECEIVAL

4.6 WASTE DISPOSAL

4.7 LEACHATE MANAGEMENT

4.8 SURFACE WATER MANAGEMENT

4.9 GROUNDWATER MANAGEMENT

4.10 LANDFILL GAS MANAGEMENT

4.11 ODOUR CONTROL

4.12 DUST CONTROL

4.13 LITTER CONTROL

4.14 NOISE CONTROL

4.15 PEST VERMIN AND NOXIOUS WEED CONTROL

4.16 FIRE MANAGEMENT

4.17 PROGRESSIVE REHABILITATION

4.18 LANDFILL CLOSURE

4.19 REFERENCES

4.1 INTRODUCTION

4.1.1 MINIMUM STANDARDS

In order to address each of the environmental goals identified in the EPA's *'Environmental Guidelines: Solid Waste Landfills*' (The Guidelines), minimum standards have been developed as per The Guidelines to provide solutions for effectively achieving these environmental goals. **Table 3.1.1** lists the primary environmental goals and the minimum standards designed to achieve each goal. It also lists whether the minimum standard has been adopted for operation of the ERRRC, and which 'Operational Control' incorporates the technique.

Numbering in **Table 4.1.1** and in Operational Controls reflects the numbering contained in The Guidelines.

Table 4.1.1 – Environmental Goals and Minimum Standards

Environmental Goal	Minimum Standard	Adopted	Operational Control (Section)
1. Minimum impacts to water	1. Leachate Barrier System	Yes	4.7
	2. Leachate Collection System	Yes	4.7
	3. Stormwater Management	Yes	4.8
	4. Water Quality Monitoring	Yes	4.7, 4.8, 4.9
2. Minimum impacts to air	5. Landfill Gas Management and Monitoring	Yes	4.10
	8. Covering of Waste	Yes	4.6
	9. Final Capping and Revegetation	Yes	4.17
	10. Closure	Yes	4.18
		Yes	
3. Stabilisation and rehabilitation of land	8. Covering of Waste	Yes	4.4, 4.6
	9. Final Capping and Revegetation	Yes	4.17
	10. Closure	Yes	4.18
	11. Quality Assurance	Yes	All
4. Prevention of hazards and preservation of amenity	6. Amenity Issues: Odour, Dust, Noise, Litter and Fire Control	Yes	4.11, 4.12, 4.13, 4.14, 4.15, 4.16
	7. Waste Acceptance and Site Security	Yes	4.2, 4.5
	11. Quality Assurance	Yes	All

Source: EPA (1996) Environmental Guidelines: Solid Waste Landfills

4.1.2 STANDARD OPERATING PROCEDURES

A number of SOPs have been developed to facilitate achieving the environmental goals and minimum standards identified in The Guidelines. These SOPs are referenced throughout the OEMP, and are found in **Volume 2** of this OEMP.

4.1.3 WORK ACTIVITY PROCEDURES

A number of WAPs have been developed to facilitate achieving the environmental goals and minimum standards identified in The Guidelines. These WAPs provided in **Volume 2** of this OEMP.

4.1.4 SAFE WORK METHOD STATEMENT (SWMS)

The following Safe Work Method Statements are provided in **Volume 2** to ensure applicable activities are carried out correctly and safely

- SWMS 001 – Asbestos Disposal
- SWMS 002 – Lone Worker
- SWMS ERRRC-001 – Leachate Tank Exclusion Zone.

4.1.5 OPERATIONAL CONTROLS

The Operational Controls in the following sections (**Section 4.2 – 4.18**) are designed to provide guidance for the day to day operation and management of the ERRRC. They have been formulated to meet the specified environmental goals identified in the Guidelines.

4.2 SITE SUPERVISION AND CONTROL

4.2.1 PROCEDURES

4.2.1.1 Staff Inductions

All staff and regular contractors must undergo a detailed induction prior to commencing any work or activities on the site. The detailed induction is further detailed in Section 5.1 – Staff Training.

4.2.1.2 Visitor Inductions

All visitors to the site must undergo a visitors site induction, this procedure is detailed in **SOP 02 – Site Inductions**.

4.2.1.3 Site Supervision

The ERRRC will be supervised when open for the receival of wastes. The facility will be staffed by qualified and experienced personnel. These will include a Resource Recovery Centre Supervisor and one Resource Recovery Centre Operator. A minimum of one Resource Recovery Centre Operator will generally be present during receival of waste and landfilling operations.

4.2.1.4 Traffic Control

Council maintains the sealed access road from the facility entry to the Waste Receival Station. Council staff are responsible for internal traffic control.

Waste transfer trucks will be directed to the appropriate area for disposal, including:

- Green waste – directed to the composting plant facility;
- Baled general solid waste (putrescible) – directed to the active landfill area, for placement with a specially modified loader; and
- Non-baled general solid waste (non-putrescible) – directed to the active landfill area.

Procedures for traffic management at the ERRRC at provided in **WAP 012 – ERRRC Traffic Management**.

4.2.1.5 Safety

Landfill equipment used in the movement, spreading, compaction and covering of wastes is operated in such a way as to minimise the risks to persons disposing of waste or vehicles delivering waste.

4.2.1.6 Operating Hours

Hours of operation during the construction phase are restricted to the following hours:

- Monday to Friday: 7 am to 6 pm;
- Saturday: 7 am to 1 pm; and
- At no time on Sundays and Public Holidays.

Hours of operation during the active landfilling are restricted to the following hours:

- Monday to Sunday: 7 am to 5 pm; and
- At no time on Good Friday or Christmas Day.

Some processing activities will occur 24 hours per day, seven days per week.

4.2.1.7 Site Security

The ERRRC operational area is surrounded by a 1.8 metre high security fence, with an automatic lockable security gate in place at the access point to the facility. All gates will be locked outside the specified opening hours except for when approved by the Manager Enterprise Services in special circumstances. Authorised staff will access the site through the locked gate using a 'fob' or security pin system. Keys are issued to staff members and contractors as per **SOP 05 – Allocation of Keys to ERRRC**.

The ERRRC entry and exit protocol is detailed in **SOP 04 – ERRRC Entry/Exit Protocols**.

4.2.2 MONITORING

Monitoring of daily operations is undertaken by the Resource Recovery Centre Supervisor. A daily checklist is completed by the Resource Recovery Centre Supervisor each morning, and throughout the day as tasks are completed, refer **SOP 16 – ERRRC Daily Checklist**.

Completed daily logs are kept on site for a minimum of three (3) years and are made available to the EPA on request.

4.2.3 RESPONSIBILITIES

Manager Waste Services and Technical Support

- Ensuring that sufficient staff are employed to meet the requirements of this OEMP;
- Ensuring that all staff are familiar with the requirements and operational procedures described in the LEMP and are adequately trained and competent to carry out the assigned duties; and
- Undertaking periodic site inspections and audits to determine compliance with the procedures specified within the LEMP.

Resource Recovery Centre Supervisor

- Monitoring daily operations to ensure compliance with the OEMP;
- Completion of daily checklist;
- Maintaining site security;
- Ensure security gate is shut before and after waste transfer vehicles enter the site;
- Traffic control and safety within the approved waste disposal area; and
- Ensuring that variations to operational hours are approved in advance.

Resource Recovery Centre Operators

- Undertaking all duties in accordance with the procedures identified within this LEMP, and in accordance with instructions issued by the Resource Recovery Centre Supervisor.

4.3 DAILY CHECKLIST

4.3.1 PROCEDURES

The standard operating procedure for completing the daily checklist is detailed in SOP 16 – ERRRC Daily Checklist. Each day the Resource Recovery Centre Supervisor is required to complete the daily checklist form, which is then forwarded to the Manager Waste Services and Technical Support on a weekly basis.

4.3.2 RESPONSIBILITIES

Manager Waste Services and Technical Support

- Undertaking periodic site inspections and audits to determine compliance with the procedures specified within the OEMP.

Resource Recovery Centre Supervisor

- Complete Daily Checklist as per **SOP 16 – ERRRC Daily Checklist**.

4.4 LANDFILL STAGING

4.4.1 PROCEDURES

The landfill will be developed using a cellular system to enable the gradual development of the landfill site, minimising the active footprint of the landfill and consequently minimising any potential impacts on the environment, and allowing progressive rehabilitation throughout the life of the landfill.

There will be eight landfill cells, rectangular in shape; with stages 1-4 to the north of 5-8 (refer to **Figure 4.4.1 – General Landfill Layout**). Staging is in accordance with the arrangement developed for the project Environmental Assessment (EA) and contained in the PA.

The first four stages of landfilling will be filled to the final contour levels shown in **Figures 4.4.2** to **4.4.5** and capped as described in **Section 4.4.1.5 - Capping**. Further detail regarding landfill stages 5 to 8 will be provided in successive revisions of the OEMP. An updated version of the OEMP is to be prepared, detailing the staging plan and final contour levels of Stages 5 to 8 within six months of reaching the final contour level in Stage 4.

4.4.1.1 Stage 1 and 2

Development of the site and landfilling Stage 1 & 2 included:

- Construction of the site entrance and associated facilities including the tanker loading area;
- Construction of the internal access roads;
- Construction of stormwater drainage and diversion works including Stormwater Management Dams A and B and associated drainage measures;
- Progressive clearing of existing vegetation in the Stage 1 & 2 area, including the area designated for the Surface Water Management Dams and Screening Bunds;
- Earthworks to construct the Stage 1 and 2 waste disposal cells;
- Construction of Screening Bunds 1, 2 and 3;
- Stockpiling of excavated material in designated area; and
- Installation of leachate barrier system, leachate collection and removal system (LCRS) and the associated section of the LCRS piping.

Excavated rock/soil was separated and used in the construction of the three screening bunds, or stockpiled on the area designated, for later use as landfill cover material or other beneficial use.

Stormwater collection drains were constructed along the south-western, southern and northern perimeters of the waste cell. Diversion drains extend along the top of the eastern perimeter of the waste cell.

Drainage infrastructure is constructed around the designated stockpile area.

Construction of the Stage 1 & 2 leachate barrier and LCRS after excavation of the waste cell.

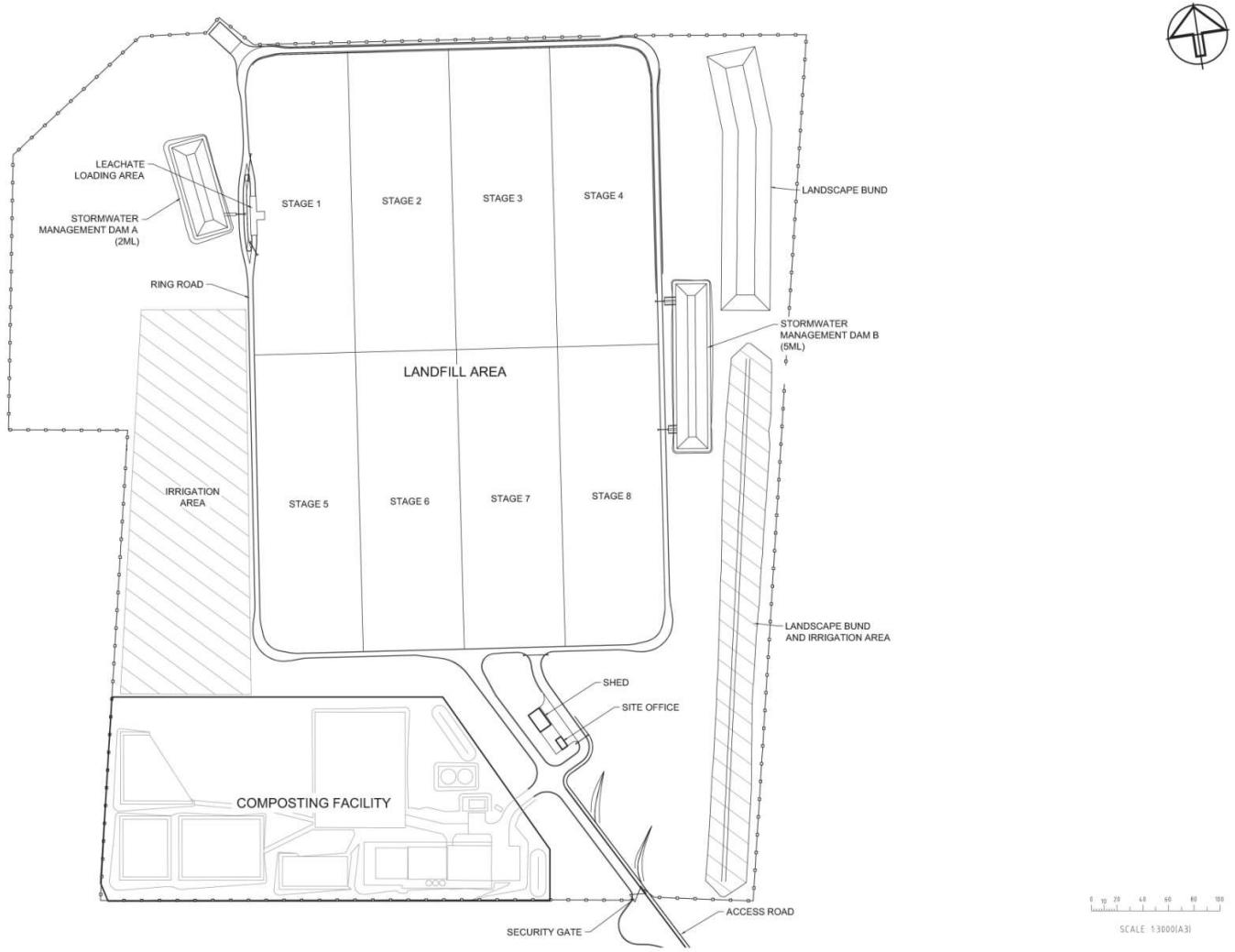


Figure 4.4.1: General Landfill layout

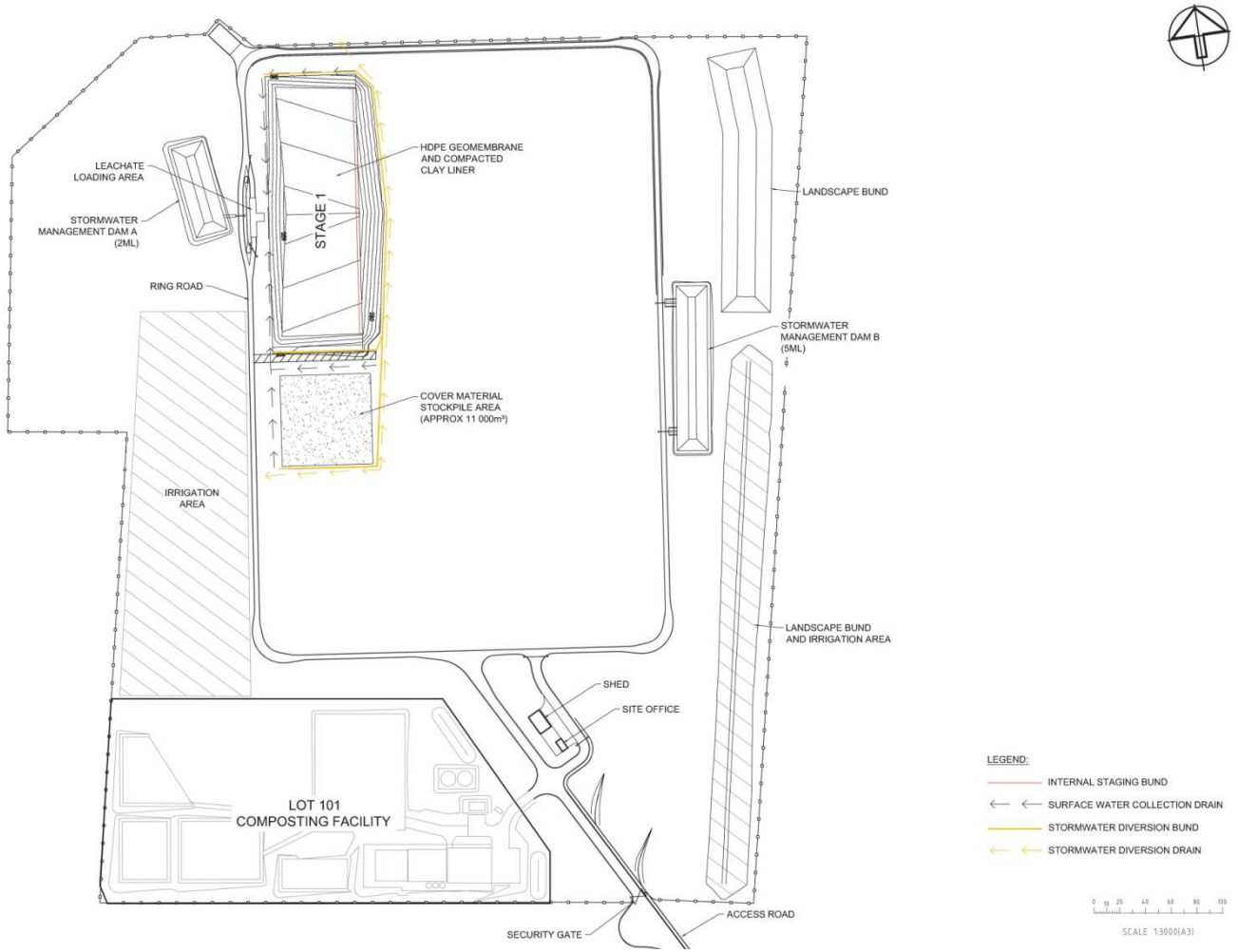


Figure 4.4.2: Stage 1 of Landfill Operations

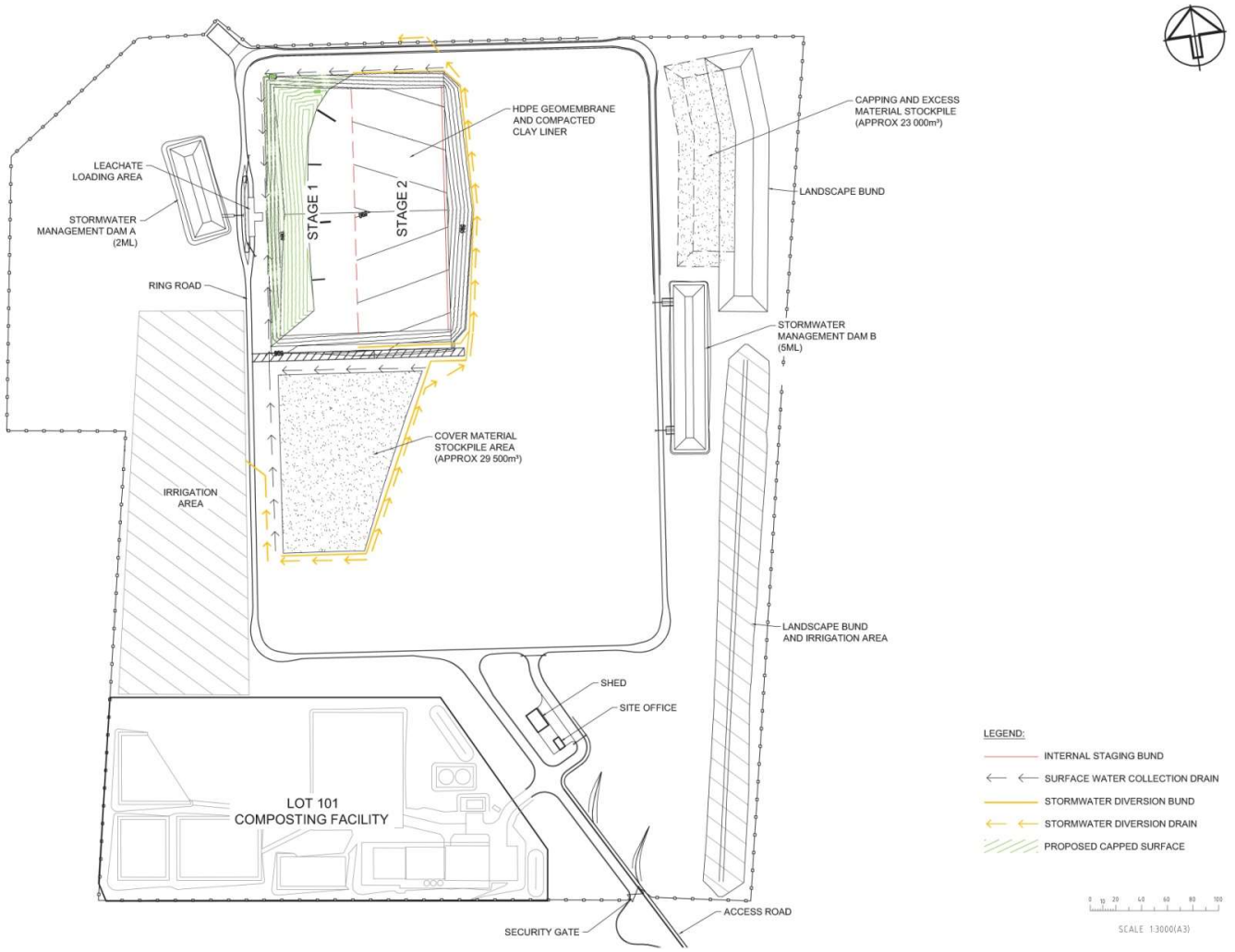


Figure 4.4.3: Stage 2 of Landfill Operations

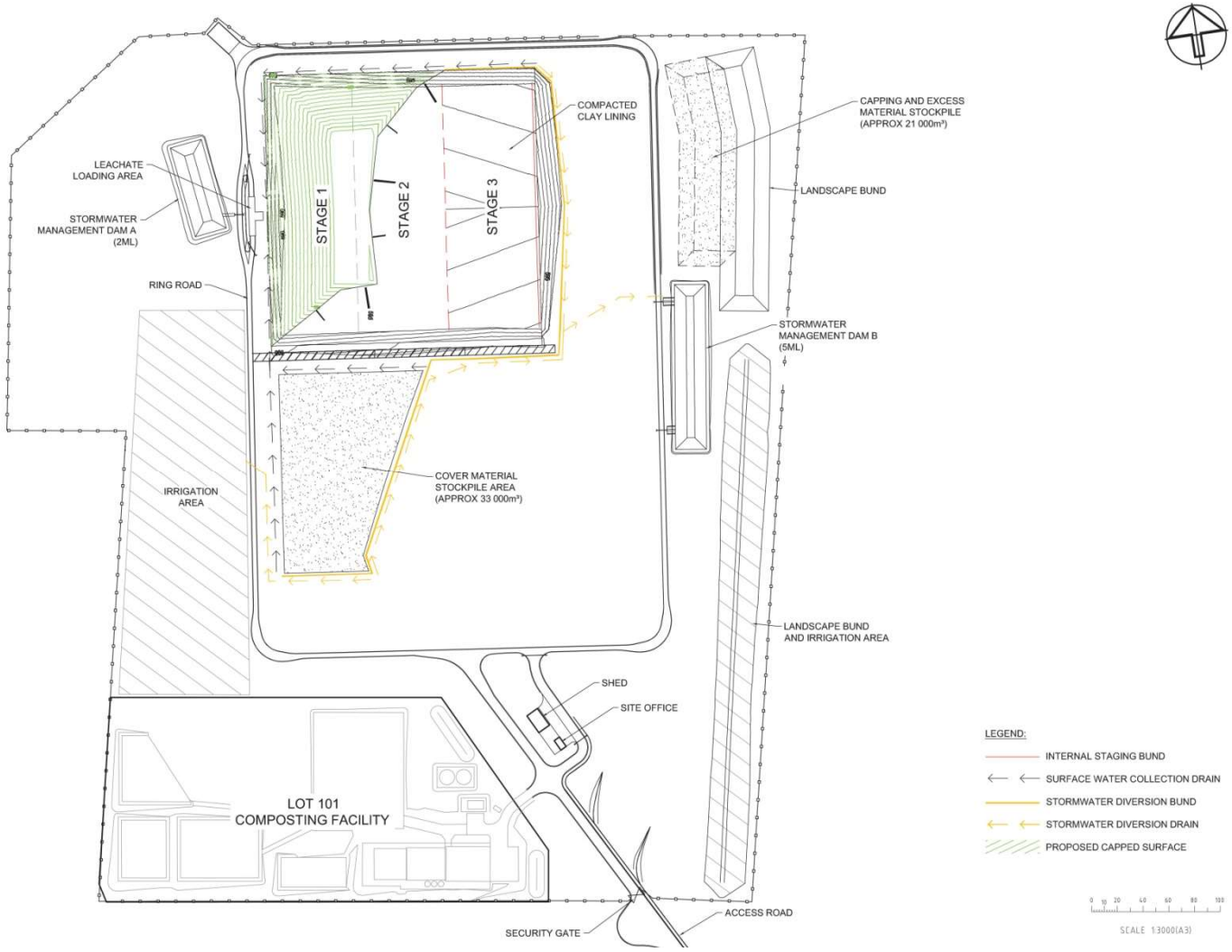


Figure 4.4.4: Stage 3 of Landfill Operations

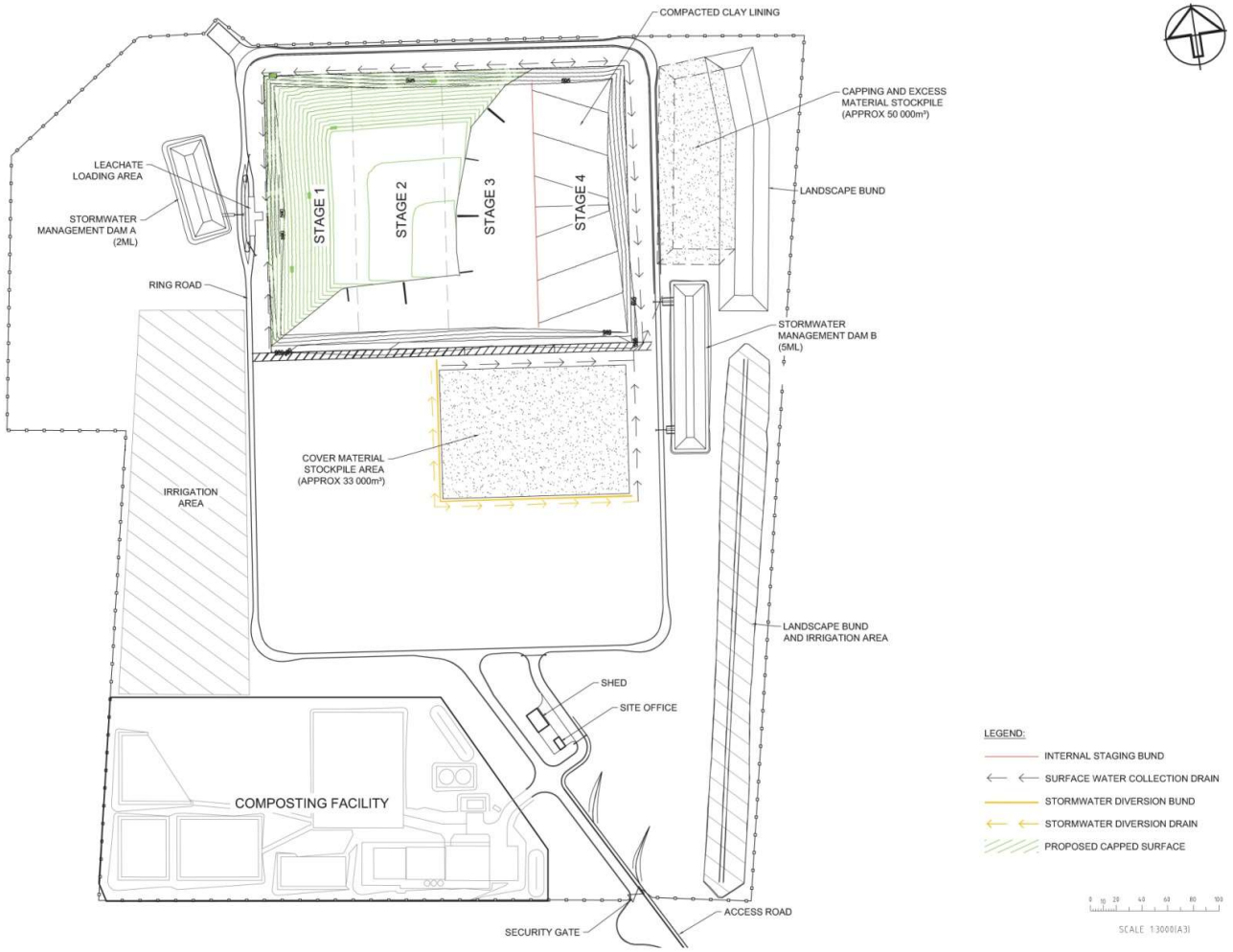


Figure 4.4.5: Stage 4 of Landfill Operations

4.4.1.2 Stage 1 and 2 Filling Plan

Filling of landfill cells will be a two staged process. There are two distinct landfill cells which are separated with a bund. The bund, coupled with a separate drainage system, effectively reduces the area of landfill which generates leachate (i.e. waste will only be placed downstream of the bund during the first stage of filling).

Baled waste will be placed in a brick-like pattern, commencing on the far western side (refer to **Figure 4.4.6** for an indicative filling pattern in section). Non-putrescible waste unsuitable for baling (predominantly from the C&I and C&D sectors) will be placed immediately beneath the final capping profile, filling the space between the bales and the capping layer, as depicted in **Figure 4.4.6**. The non-putrescible waste will also be used together with bales and stockpiled soil to develop a ramp into the first six to seven layers where the base of the landfill is lower than the access road.

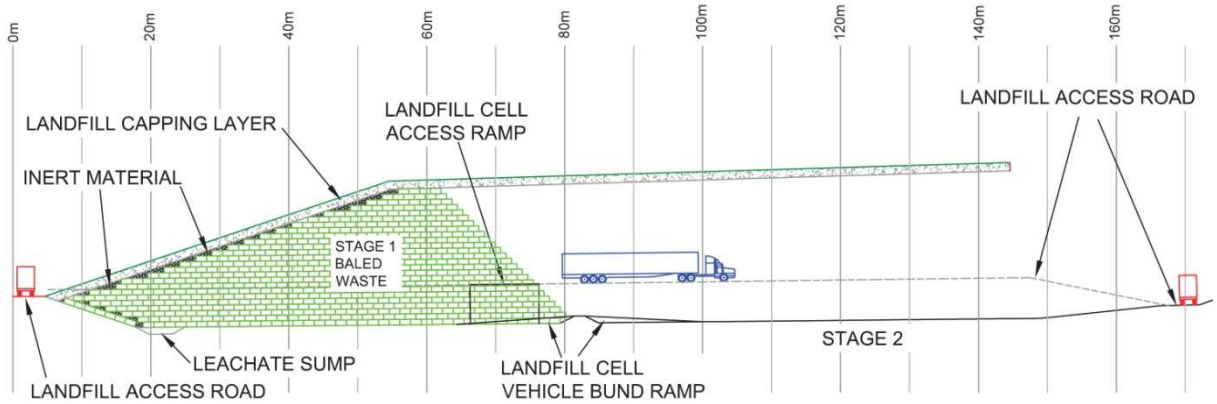


Figure 4.4.6: Cross Section of Indicative Waste Filling

Figures 4.4.7 to **4.4.9** show the progressive filling of Stage 1. Once the lower bale layers were in place, filling commenced at the northern end and progressed in a southerly direction. Ramps are used to access each layer of bales. The maximum grade of access ramps is 5:1 (H:V). Bales are used to form temporary barriers near access ramps.

Bales are stepped in about 2.4m (2 bales) to achieve the external batter grades.

Cover material is placed every second layer to provide a trafficable surface.

Stage 2 filling commenced when the filling pattern reached the extent shown in **Figure 4.4.9**.

Final filling of Stages 1 and 2 is shown on **Figure 4.4.10**. The Stage 3 cell is ready for placement and is operational.

The filling activities will be visually monitored daily to ensure compliance with the filling plan, and an annual filling plan survey is to be conducted by a registered surveyor to ensure compliance. At the completion of each stage the filling plan is to be reviewed and updated accordingly.

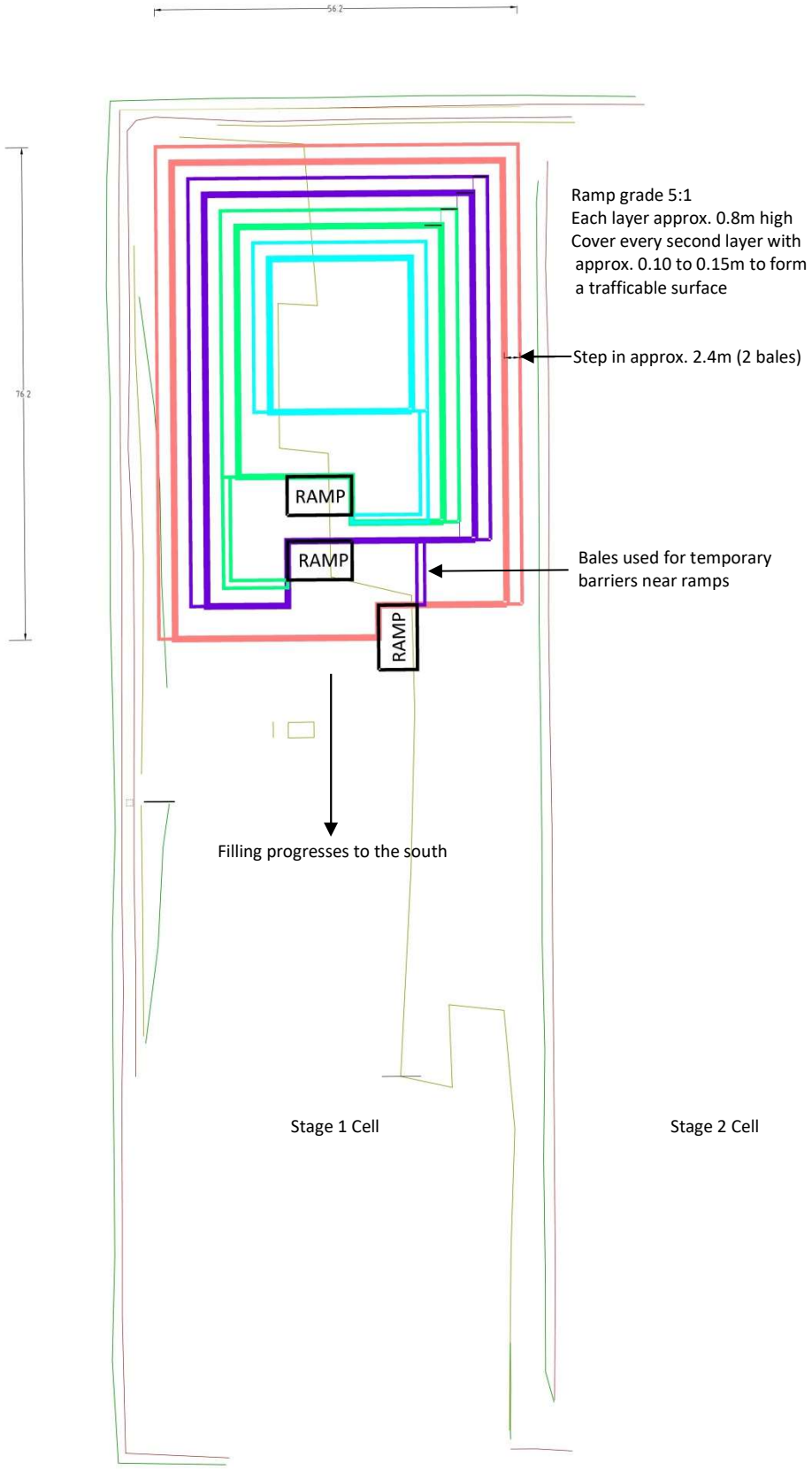


Figure 4.4.7: Stage 1 Progressive Filling – Part 1

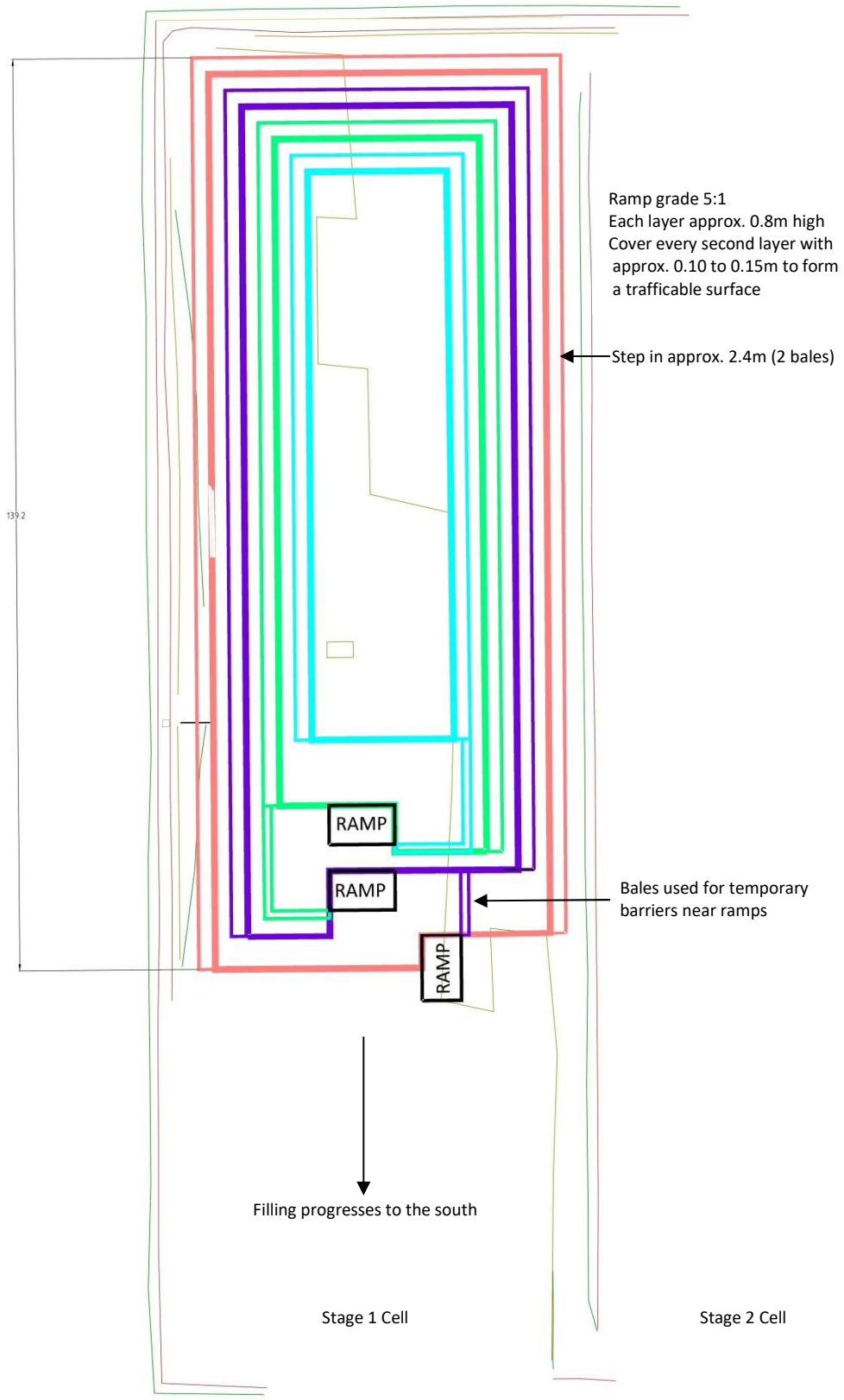


Figure 4.4.8: Stage 1 Progressive Filling – Part 2

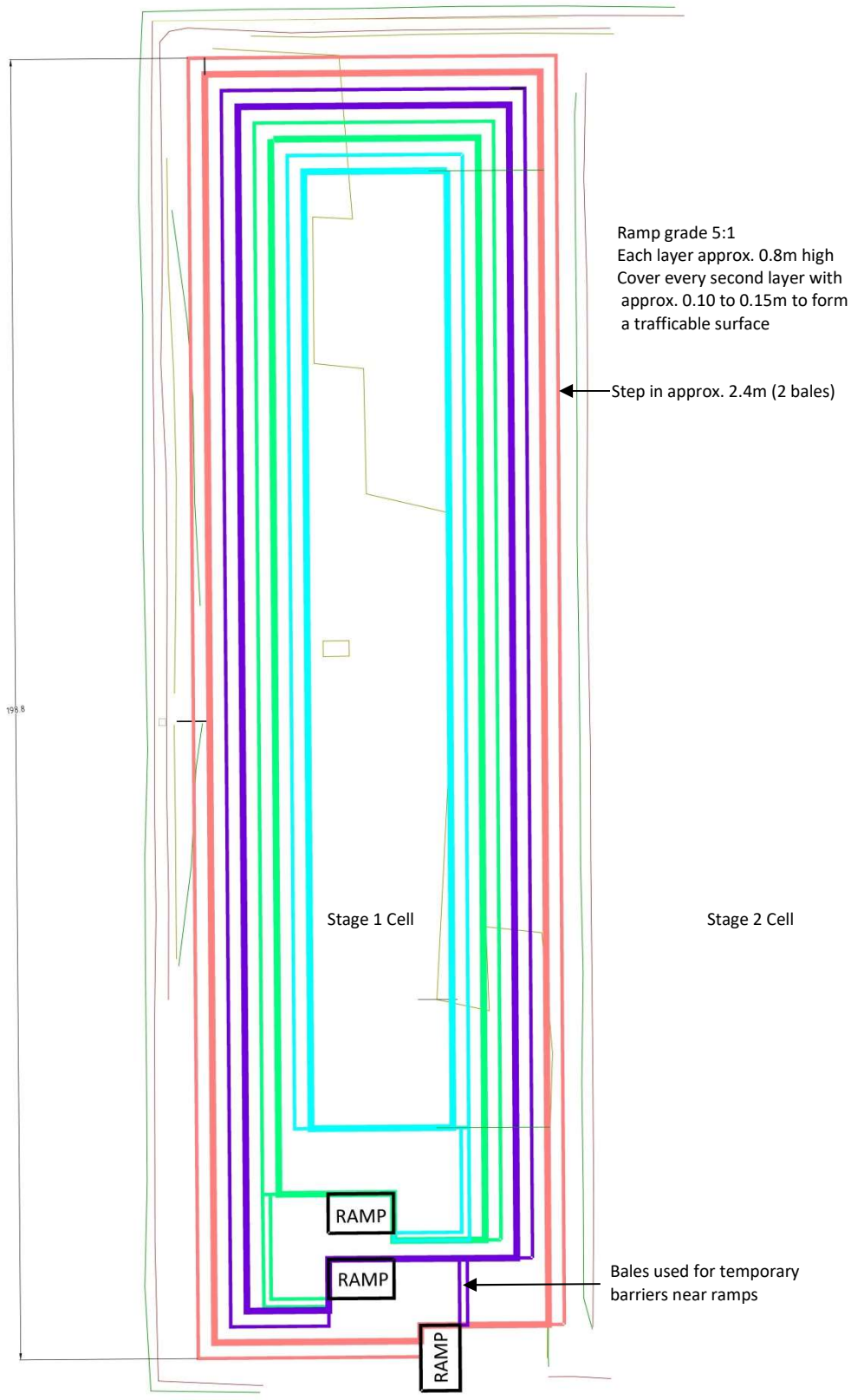


Figure 4.4.9: Stage 1 Progressive Filling – Finished Stage 1

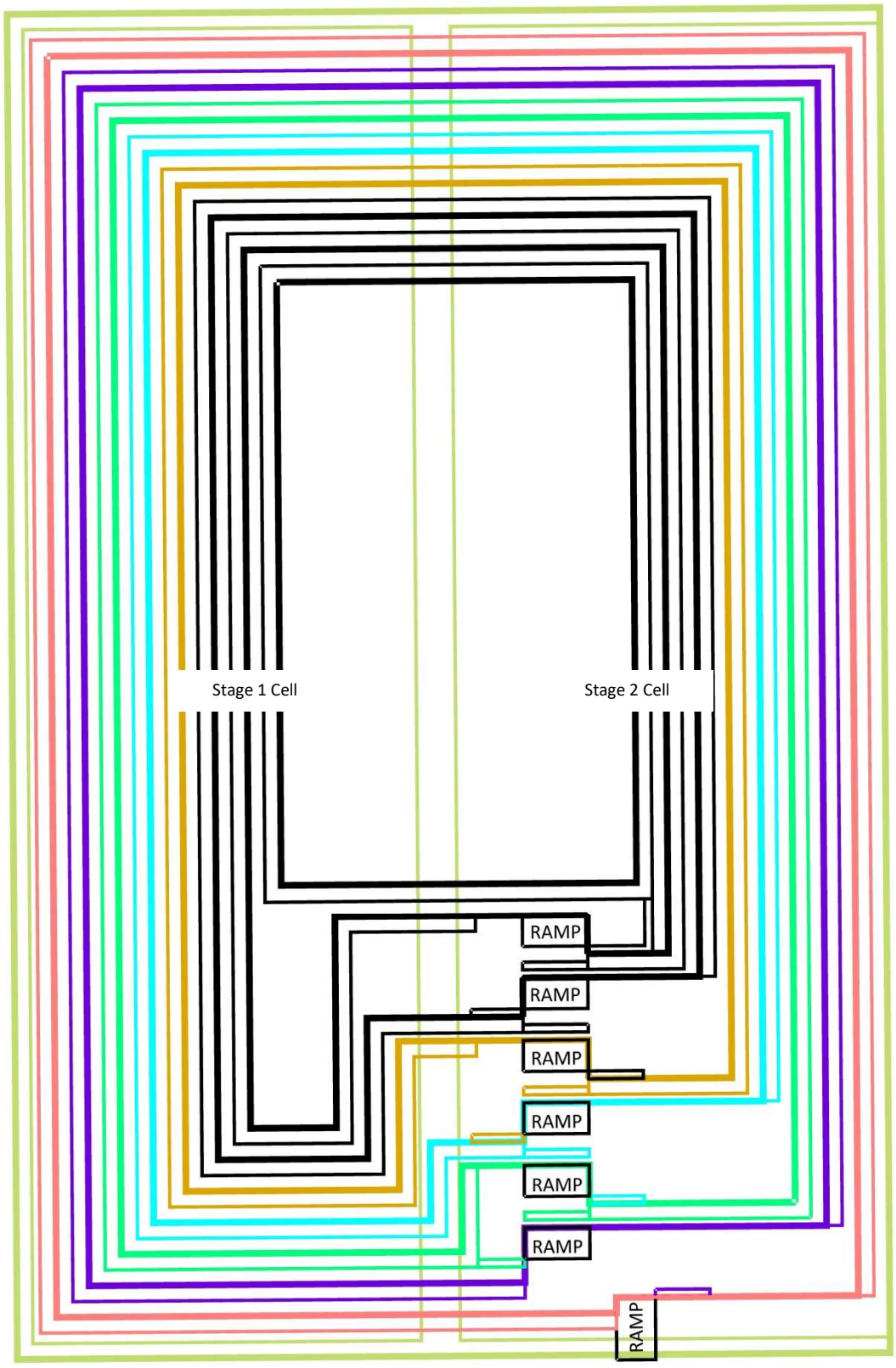


Figure 4.4.10: Stage 1 and 2 Finished Filling Plan

Non-putrescible (inert) waste may be stockpiled in the far south east corner of the Stage 2 cell (refer **Figure 4.4.11**) if there is limited provision for placing the waste directly into the landfill in the designated space (ie directly beneath the capping layer once the layer is nearing its final landform level).

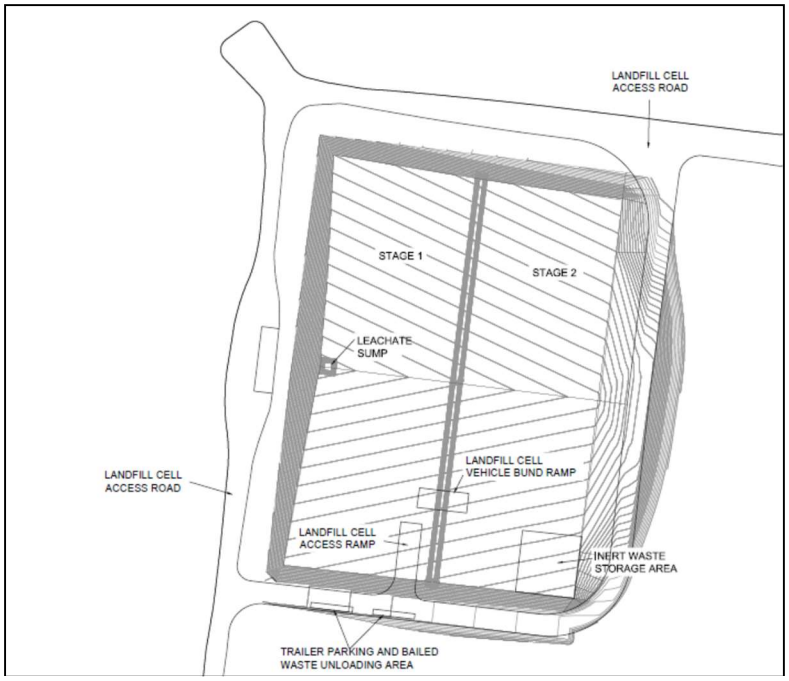


Figure 4.4.11: Waste Transfer Vehicle Access and Inert (non-putrescible) Stockpile

4.4.1.3 Stage 3 and 4

The construction phase of Stage 3 & 4 of the ERRRC landfill involved:

- Progressive clearing of existing vegetation in the Stage 3 & 4 area;
- Maintenance of existing (Stage 1 and 2) stormwater drainage and diversion works and extension of these works to accommodate Stage 3 & 4;
- Earthworks to construct the waste cell; and
- Installation of leachate barrier system, LCRS and the associated section of the LCRS conveyance piping.

Excavated rock/soil will be stockpiled on the area designated, for later use as landfill cover material or other beneficial use. If insufficient area is available for stockpiling, alternative areas will be utilised.

During the construction phase of the Stage 3 & 4 waste cell, the stormwater collection drains and access tracks previously constructed for Stage 1 and 2 were extended as required.

Runoff intercepted by the internal staging bund between Stage 2 and 3 is pumped out of the landfill from temporary stormwater sumps and directed to the stormwater management dams via the stormwater collection drains (refer **SOP 12 – ERRRC Cell Surface Water Management**).

Drainage measures constructed during the works for Stage 1 and 2, such as the stormwater drains and diversion drains, shall be maintained during the construction and operational phases of Stage 3 & 4 in order to minimise the intrusion of stormwater into the partially filled Stage 2 waste cell and completed Stage 1 cell.

Silt fences shall be installed immediately down-gradient of all stormwater collection drains during their construction. The soil and erosion control measures installed around all temporary stockpiles will remain until such time as each stockpile has been exhausted.

Construction of the Stage 3 leachate barrier and LCRS shall occur immediately after excavation of the cell. Sediment and erosion control measures will be maintained during the construction and operational phases of Stage 3 & 4.

4.4.1.4 Stage 5 to 8

Similarly to Stage 1 to 4, the construction phases of Stage 5 to 8 of the ERRRC landfill will involve:

- Progressive clearing of existing vegetation in each area;
- Maintenance of existing stormwater drainage and diversion works implemented in previous stages and the progressive extension of these works to accommodate each of the four remaining stages;
- Earthworks to construct each of the waste cells; and
- Installation of leachate barrier system, LCRS and the associated section of the LCRS conveyance piping.

From Stage 5 to 8, excavated rock/soil will be stockpiled for later use as landfill cover material or other beneficial use.

During the construction phases of each of the waste cells for Stage 5 to 8, the stormwater collection drains previously constructed for Stage 1 to 4 will be progressively extended and new drains constructed as required at the perimeters of the waste cells. Similarly, the access road and diversion drains will be extended and constructed.

For all remaining stages, drainage measures constructed during the works for all previous stages, such as stormwater drains and diversion drains, shall be maintained during the construction and operational phases of each subsequent stage in order to minimise the intrusion of stormwater into previously partially filled or completed waste cells.

Silt fences are recommended immediately down-gradient of all stormwater collection drains during their construction. The soil and erosion control measures installed around all temporary stockpiles will remain until such time as each stockpile has been exhausted.

Construction of the leachate barrier and LCRS in Stage 5 to 8 shall occur immediately after excavation of each cell. Sediment and erosion control measures constructed during all previous stages will be maintained during the construction and operational phases of all subsequent stages.

4.4.1.5 Capping

Capping of each completed landfill cell is to commence within 30 days of completion of landfilling (weather permitting). As the waste reaches its final levels, it is to be capped as per the project EA and PA. The final cap profile is displayed in **Figure 4.4.12**, and is proposed to include (top to bottom):

- 150 mm topsoil;
- 850 mm revegetation layer;
- Protection geotextile;
- Linear low density polyethylene (LLDPE) geomembrane;
- Protection geotextile (if required); and
- 300 mm seal bearing layer.

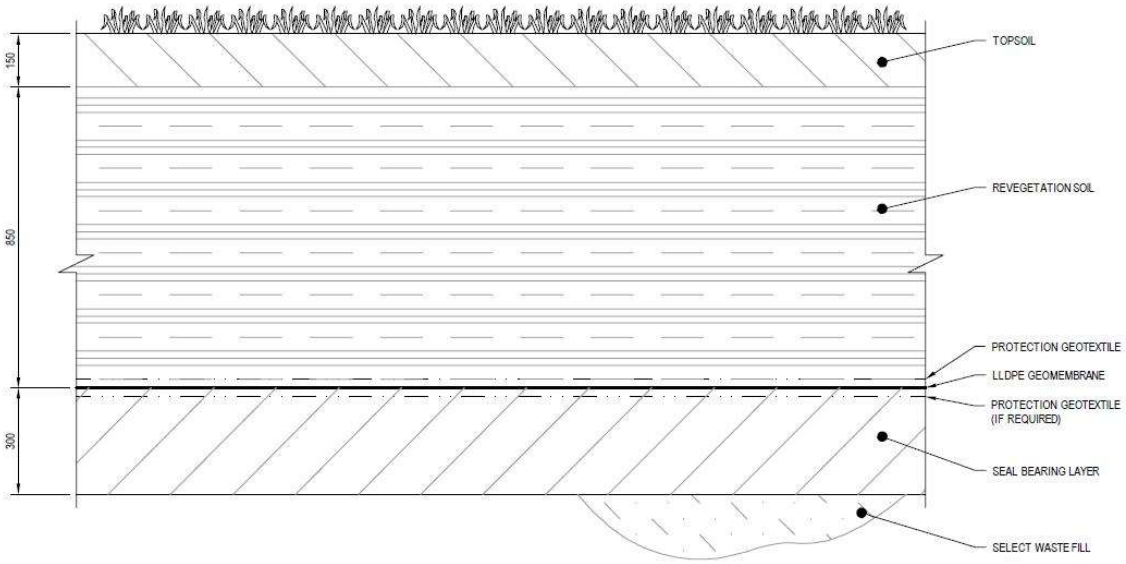


Figure 4.4.12: Typical Capping Profile

4.4.1.6 Surface Water Controls

Surface water controls will be installed as outlined in **Section 4.8 – Surface Water Management**.

4.4.1.7 Rehabilitation

Completed stages will be progressively rehabilitated as per **Section 4.17 – Progressive Rehabilitation**.

4.4.1.8 Final Landform

The final landform at the completion of landfilling is shown on **Figure 4.4.13**.

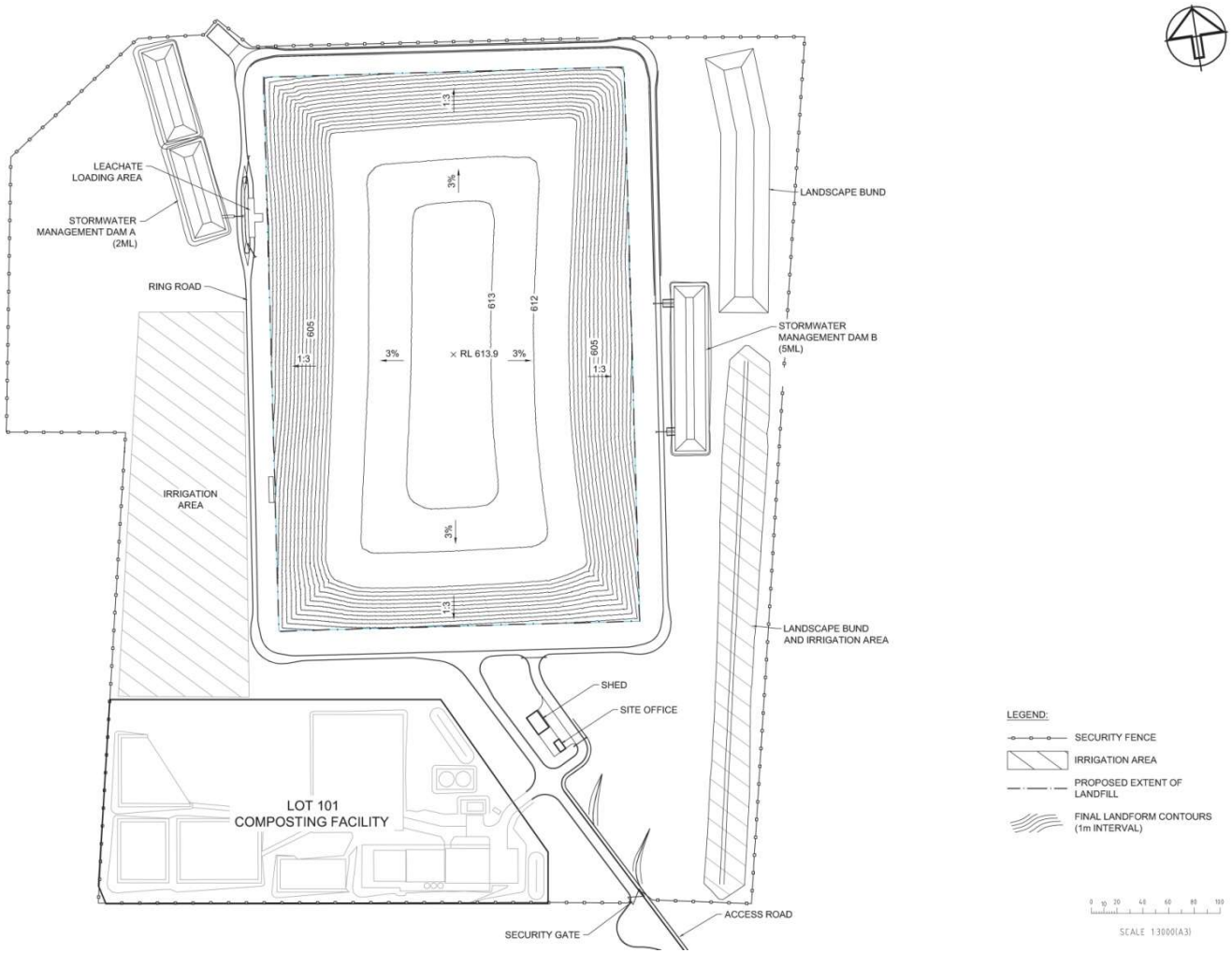


Figure 4.4.13: Final Landform

4.4.2 MONITORING

The Resource Recovery Centre Supervisor will undertake daily visual monitoring to ensure adherence to the staging and filling plan. An annual filling plan survey will be conducted by a Registered Surveyor to:

- Determine to progress of filling;
- Confirm the volume of landfill space used in the past 12 months; and
- Update calculations relating to remaining capacity.
- At the completion of each stage, the filling plan will be revised and updated as required.

4.4.3 RESPONSIBILITIES

Manager Waste Services and Technical Support

- Responsible for annual survey, calculations and preparation of filling plans for each stage.

Resource Recovery Centre Supervisor

- Responsible for daily visual monitoring to ensure adherence to the staging and filling plan.

4.5 WASTE RECEIVAL

4.5.1 PROCEDURES

4.5.1.1 Waste Delivery and Receival

Only waste originating from the ORRRC will be accepted for disposal within the ERRRC facility, unless a waste contract agreement has been developed by the Manager Waste Services and Technical Support.

4.5.1.2 Waste Limit

As per the EPA licence No. 20104, the total tonnage of solid waste disposed at the facility must not exceed 45,000 tonnes per year. This includes up to 25,000 tonnes of putrescible waste, and 20,000 tonnes of non-putrescible waste. If these limits are exceeded, it must be reported to the EPA in the Annual Report (refer **Section 6.3 – Annual Return**).

4.5.1.3 Permitted Wastes

The ERRRC operates under Licence No. 20104 for "Waste disposal (application to land)". Wastes permitted at the ERRRC are defined in Licence No. 20104, as per **Table 4.5.1**.

Table 4.5.1 – Wastes Accepted at the ERRRC

Waste	Description	Other Limits
General or specific exempted waste	Waste that meets all the requirements of a resource recovery exemption under Clause 51A of the Protection of the Environment Operations (Waste) Regulation 2014.	N/A
General solid waste (putrescible)	As defined by Schedule 1 of the Protection of the Environment Act 1997 as enforce from time to time.	No more than 25,000 tonnes of General solid waste (putrescible) at the premises per annum
General solid waste (non-putrescible)	As defined by Schedule 1 of the Protection of the Environment Act 1997 as enforce from time to time.	No more than 20,000 tonnes of General solid waste (non-putrescible) at the premises per annum
Building and demolition waste	As defined by Schedule 1 of the Protection of the Environment Act 1997 as enforce from time to time.	N/A
Animal Waste	As defined by Schedule 1 of the Protection of the Environment Act 1997 as enforce from time to time.	N/A

Source: EPA, Environmental Protection Licence No. 20104

4.5.1.4 Screening of Received Wastes

All waste will be screened, weighed and baled (if capable of being baled) at the ORRRC and therefore it is highly unlikely that excluded waste will be unloaded at the ERRRC. Screening of waste will continue at the ORRRC as per the ORRRC LEMP, refer **Section 3.5 – Waste Receival**, **SOP 07 – Weighbridge Procedures**, and **WAP 011 – Weighbridge Procedures**.

Screening at the ERRRC will involve visually assessing the integrity of the baled waste, such that if the integrity of the bale wrapping is compromised it is to be returned to the ORRRC for re-baling.

The following practices will apply to screening of incoming wastes:

- Public access will not be permitted to the Facility;
- Waste transfer drivers will be asked to describe the type of waste to be deposited on entry to the facility, and they will be directed to the correct area of the facility for disposal of specific loads; and
- Non-baled general solid waste (non-putrescible) will be monitored and inspected during spreading, compaction and covering to ensure no excluded wastes have incorrectly been received.

4.5.1.5 Identified Excluded Wastes

It will not be possible to identify excluded wastes in the baled and wrapped putrescible waste that is delivered to the ERRRC unless the bale is somehow compromised. Bulky general solid waste (non-putrescible) that is not suitable for baling is also screened and sorted at the ORRRC; therefore there is limited potential for excluded waste to be delivered to the ERRRC landfill. However, if excluded waste is discovered when placing the bales, the facility will not accept the following types of pre-baled waste from the ORRRC:

- Liquid wastes of any description (other than commercial grease trap wastes, septic tank pump out waste, cement batching plant effluent, stone cutting slurry waste);
- Radioactive material; sharps, cytotoxic waste, bulk blood, body fluids, recognisable body parts, infectious waste, microbiological and pathological wastes, laboratory chemicals, poisons and pharmaceutical waste;
- Any inflammable liquid material derived from grease, oil, tar, petroleum, shale or coal;
- Any sludge or material (unless proven to be innocuous or harmless) being the refuse from any industrial process carried out in any tanning or leather processing plant, any petroleum or petrochemical plant, any chemical plant, any metal treatment plant, any paint-manufacturing plant;
- Any material containing arsenic, cyanide or sulphide;
- Any toxic soluble salt of barium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, silver, zinc;
- Any pesticide or herbicide and in particular chlorinated hydrocarbons (organochlorins), fluorinated hydrocarbons, organophosphates, phenols; and
- Any soluble acid or alkali, acidic or basic compounds.

If an excluded waste is identified in the non-baled waste during the disposal in the landfill (including apiary equipment and apiary products which include but are not limited to beeswax, honey, cut comb honey, comb sections, honey dew, bee collected pollen, propolis or royal jelly), refer to **SOP 06 – Bee Keeping Equipment and Honey Containers** and **WAP**

010 – Beekeeping Equipment, the Operators will immediately notify the Supervisor. The Supervisor will make all practical efforts to identify the source of the waste (e.g. labelling, waste type), and remove the excluded waste from the site, (ie return the waste to the ORRRC for subsequent appropriate disposal).

If an excluded waste was to be discovered on the ERRRC site from a bale, the baled waste would be returned to the ORRRC immediately, as per **SOP 09 – Rejected Bales from ERRRC**. The Manager Waste Services and Technical Support would be notified immediately and the EPA then consulted for advice.

The incident will be reported as described in **SOP 13 – Pollution Incident Response Management**.

4.5.1.6 Identification and Management of Apiculture Products

The Identification and Management of beekeeping (apiculture products), and timber containing evidence of bee activity is detailed in **SOP 06 – Bee Keeping Equipment and Honey Containers** and **WAP 010 – Beekeeping Equipment**. It is important to follow this SOP to ensure no beekeeping products, or honey related products are transported to the ERRRC, which could adversely affect the beekeeping industry in the vicinity of the ERRRC.

4.5.1.7 Reporting Excluded Wastes

- The incident will be recorded on the Daily Checklist with reference to an Incident Report Number (refer to **Section 4.3** and **SOP 16 – ERRRC Daily Checklist**), and as per **SOP 13 – Pollution Incident Response Management**;
- An Incident Report will be prepared as per **SOP 13 – Pollution Incident Response Management** including details of the type of waste, the source of the waste and vehicle and driver identification; and
- The Manager Waste Services and Technical Support will be notified immediately.

4.5.1.8 Recycling

Typically all recyclable material will be sorted and processed at the ORRRC. The procedure for directing recoverable waste from the landfill stream (including household recyclables, tyres, whitegoods, car bodies, scrap metal, sump oil and organic waste) is detailed in the ORRRC LEMP.

The existing Orange City and regional kerbside recycling system would be maintained and improved by extending the application of event-based recycling.

Streamed recyclable C&I and C&D materials would be consolidated and stored according to material type pending aggregation of sufficient quantities for efficient transport to markets.

4.5.1.9 Measurement of Received Wastes

The weighbridge at the ORRRC will continue to be used to record the wastes delivered to the ERRRC. Outbound heavy vehicles on route to the ERRRC will use the weighbridge on a weigh on tare off basis.

The weighbridge will have a valid Calibration Certificate issued by the Department of Consumer Affairs at all times.

The measurement of received wastes is detailed in the ORRRC LEMP.

4.5.1.10 Waste Recording

Record keeping of wastes received is undertaken at the ORRRC facility. Waste recording is detailed in the ORRRC LEMP.

4.5.1.11 Reporting Waste Quantities

Each month the ERRRC supervisor will submit a waste facility return to the Manager Waste Services and Technical Support. This will detail the amount, type and source (where possible) of waste received for the month. Documentation supporting the waste facility returns will be kept at the ORRRC.

The Manager Waste Services and Technical Support must provide the EPA with information on the quantity of wastes received at the facility and the quantity of waste transported from the facility annually. The ORRRC LEMP includes further detail on reporting waste quantities.

4.5.1.12 Waste and Resource Recovery Monitoring Program

A Waste and Resource Recovery Monitoring Program (WRRMP) is included in **Section 9.3**. This program:

- Provides an outline of the resource recovery program that will be implemented and monitored from the commencement of the Project;
- Details how each waste stream will be monitored, recorded and reported; and
- Presents the methodology for calculating the resource recovery effectiveness.

4.5.2 MONITORING

- Wastes entering the facility will be monitored by the Resource Recovery Centre Supervisor and the Operators;
- Records of waste entering the facility will be kept for a minimum of four years;
- Waste disposal in the vicinity of the active tipping area will be monitored by Resource Recovery Operators at all times; and
- Annual surveys will monitor the volume of landfill used.

4.5.3 RESPONSIBILITIES

Manager Waste Services and Technical Support

- Approving access to the facility outside of normal hours;
- Approving operating of earthmoving and landfilling equipment outside of normal hours; and
- Organising an annual survey, calculations and submission of annual reports.

Resource Recovery Centre Supervisor

- Ensuring wastes are deposited in correct areas (baled, non-baled, and organics);
- Monitoring and inspecting wastes as they are discharged, spread and compacted, to ensure excluded apiary waste or produce are being disposed;
- Locking main access gate (and any other gates if required) outside of operating hours; and
- Submitting monthly waste returns to Manager Waste Services and Technical Support.

Resource Recovery Centre Operators

- Maintaining records of waste delivered;
- Immediately reporting any incidents to the Resource Recovery Centre Supervisor;
- Recording all number of heavy vehicles entering the facility; and
- Locking gates etc.

4.6 WASTE DISPOSAL

4.6.1 PROCEDURES

Procedures are detailed below and in **WAP 009 – Landfill Waste Disposal**.

4.6.1.1 Receival of Bales

Prior to disposal of baled putrescible waste in the landfill, the integrity of the bale must be inspected, and if the integrity of the bale wrapping is found to be compromised, the details are to be recorded as per **SOP 09 – Rejected Bales from ERRRC.**

The placement and cover of compromised bales is discussed below in **Sections 4.6.1.2** and **4.6.1.3**

4.6.1.2 Waste Placement and Compaction

Compaction and baling technology will be used to process residual waste into highly compacted bales of waste suitable for transport. The baling plant will be accommodated at the new waste baling and organics pre-processing building at the ORRRC site. The baler would produce up to 80 bales of waste daily, each weighing approximately 1.1 tonne, and having a density of approximately 0.79 t/m^3 (indicative value from 2013-2104 Annual Return). Bales of waste delivered to the landfill will be unloaded using a loader with a specially modified clamp. Once unloaded, the bales will be placed in the landfill cell in a brick like pattern with an excavator.

Bulky, general solid waste (non-putrescible) that is not suitable for baling – dominantly from the C&D and C&I sector, will be loaded into two 30 m^3 skip bins after delivery to the ORRRC site and packed down using an excavator or similar. This waste will be transported to the ERRRC landfill site and unloaded from trucks into specific areas designated for non-baled waste between the bale structures.

Non-baled waste will be screened and sorted at the ORRRC (refer to **Section 3.5**) prior to delivery at the ERRRC, with all recoverable material removed.

An average compaction rate of not less than 650 kg per cubic metre must be achieved for all waste disposed of at the premises.

If broken bale is received at ERRRC, it may be placed in the landfill in accordance with the conditions specified in O6.7 of EPL 20104, including:

a) Baled waste (including the sides of those outwards facing bales at the perimeter of the landfilling area) and Non Baled Inert Waste must be covered within seven (7) days after being land applied;

b) Broken bales must be covered on the same day they are land applied;

c) Any waste that causes strong or offensive odour must be covered on the same day the waste is land applies;

d) At least 2 weeks cover material must be available at the premises under all weather conditions. This material may be won on site, or alternatively a cover stockpile must be maintained adjacent to the tip face.

4.6.1.3 Cover Material

Given that all putrescible waste will be baled, there is limited potential for odour, litter, and vermin to become a problem at the site.

Baled waste (including the sides of those outwards facing bales at the perimeter of the landfilling area) and Non Baled Inert Waste must be covered within seven (7) days after being land applied. Any waste that causes strong or offensive odour must be covered on the same day the waste is land applied.

In accordance with the Project Approval, cover material should be at least 150 millimetres.

If a broken bale is placed in the landfill, it must be covered on the same day it was placed in the landfill.

Cover material would be drawn from a stockpile positioned adjacent to the active waste placement area (refer to **Figures 4.4.2** to **4.4.5**). At least 2 weeks cover material must be available at the premises under all weather conditions.

Processed (chipped) green and/or wood waste may be used as daily and or weekly cover as required by Condition O6.8 of EPL 20104.

Intermediate cover will be applied to areas that will not be used for more than 90 days. The intermediate cover layer will comprise 300 millimetres of compacted cover material and will be graded to promote runoff. The cover material will be drawn from a stockpile positioned close to the active waste placement area (refer to **Figures 4.4.2** to **4.4.5** for the location of stockpiled topsoil throughout Stages 1 to 4 of landfilling).

4.6.1.4 Capping

Completed areas will be capped as soon as practicable after reaching the final design level. The details of the final landform and capping profile are detailed in **Section 4.4 – Landfill Staging**.

The topsoil will be sown with a mixture of grasses, and be fertilised to assist establishment. The grass mix and application rates are detailed in **Section 4.17 – Progressive Rehabilitation**.

4.6.2 MONITORING

Resource Recovery Centre Operation staff will be responsible for the correct placement of waste in the active landfill area, the Resource Recovery Centre Supervisor will continuously

monitor the placement of waste to ensure compliance with the staging plans as detailed in **Section 4.4 – Landfill Staging**.

Density of the compacted waste will be monitored by calculation, from records of wastes received and airspace used.

Rehabilitation areas will be monitored to ensure effectiveness of revegetation and drainage structures.

4.6.3 RESPONSIBILITIES

Manager Waste Services and Technical Support

- Coordinating implementation of the final rehabilitation, including sourcing suitable top soil; and
- Arranging revegetation with a suitable grass/fertiliser mix on completed areas; and
- Determining best practice method for placing the baled and un-baled waste in the landfill, and the capping procedure to be adopted.

Resource Recovery Centre Supervisor/Operator

- Placing baled and unbaled waste in the landfill, trial and document best techniques to achieve the highest density as efficiently as possible ;
- Inspect revegetation success on a monthly basis;
- Report any unsuccessful revegetation to supervisor;
- Capping as soon as possible after reaching final design level;
- Sourcing cover material and maintaining a two week supply;
- Coordinating revegetation of unsuccessful areas; and
- Document various landfilling and covering techniques.

4.7 LEACHATE MANAGEMENT

4.7.1 PROCEDURES

4.7.1.1 Leachate Barrier System

Unlike conventional landfill designs with surface leachate storage ponds, the ERRRC will store the leachate within the landfill cells. This approach has been used at the ERRRC to avoid potential contact between the leachate and bees associated with the local apiary activities.

Leachate will be contained in landfill cells 1, 2, 5 and 6 (as each cell is progressively developed). Stage 1 & 2 provide approximately 1,500 kL of storage, this exceeds the storage requirement for the 90th percentile wet year (approximately 1,390 kL when Stage 1-4 are in operation). This same quantity of storage would also be available in Stages 5 and 6.

The PA requires that the leachate barrier system has a re-compacted or modified soil layer of at least 90 centimetres thick with an in-situ coefficient of permeability of less than 1x10^{-9} m/s, in accordance with the Guidelines.

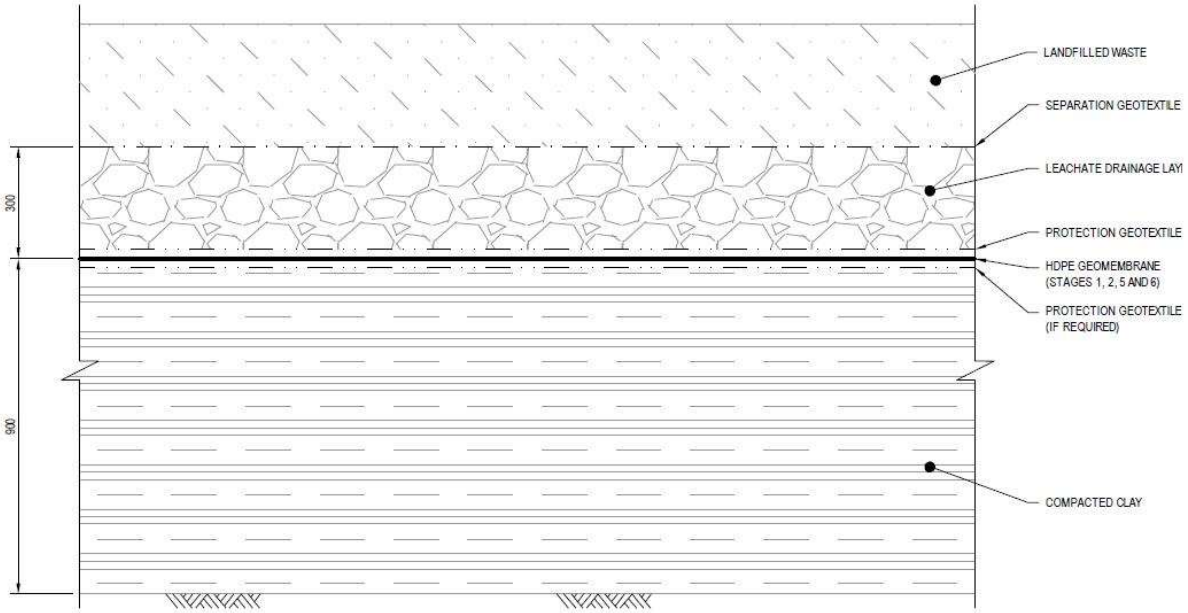
To achieve this requirement the leachate barrier system design consists of the following elements (from top to bottom), as shown in **Figure 4.7.1**:

- Soil protection layer (on sidewalls only);
- Sacrificial woven geotextile protection layer;
- Non-woven geotextile protection layer;
- 2 mm thick high density polyethylene (HDPE) geomembrane liner (where required; smooth on base, single side textured on sidewalls – cells 1,2,5 and 6 only);
- 900 mm compacted clay; and
- Prepared sub grade.

The landfill leachate barrier system will be installed in the base of the excavated landfill cells including over internal staging bunds, and sidewalls of the excavated landfill cells.

The cells prepared to withstand storage of the leachate incorporate a 2.0 mm thick HDPE liner, protected by a non-woven geotextile protection layer. The cells of the landfill not in current operation then incorporate a sacrificial woven geotextile protection layer on all sidewall and internal staging bunds (to protect the critical protection layer and liner layers from potentially being degraded while exposed to the elements). The barrier system is complete with a soil protection layer on the sidewalls of the cells.

The HDPE liner is anchored to the top of the sidewalls using an anchor system designed to fail (by pulling out) before the HDPE tears. This is achieved by constructing a 500 x 500 mm trench and backfilling over the liner with compacted select fill material.



Source: GHD, 2011: Drawing 20-20011-C030, Rev C.

Figure 4.7.1: Typical Landfill Lining Profile in Leachate Storage Zone.

4.7.1.2 Leachate Collection and Removal System

A leachate collection and removal system (LCRS) has been designed as a conventional drainage system comprising of a network of trenches and polyethylene pipes constructed over the base of the landfill (refer to **Figure 4.7.2**). The leachate drainage system drains to a leachate drainage extraction sump located at the base of the western batter of Stage 1 (for stages 1 to 4) and at the base of the western end of Stage 5 (for stages 5 to 8), as displayed on **Figure 4.7.2**.

The LCRS comprises a 300 mm thick gravel drainage layer encapsulated by two geotextiles and will also serve as bedding material for the LCRS piping. The separation geotextile (above the gravel drainage layer) which is designed to minimise clogging (by fines from the overlying waste) consists of a non-woven geotextile. The aggregate is to be constructed from granular material meeting EPA guidelines and of sufficient permeability to convey leachate to the collection pipes and sump and is to be placed on the non-woven geotextile protection layer of the leachate barrier system.

Initially the leachate collection systems contained in Stage 1 will not be connected to the leachate collection system of Stage 2, and likewise for Stage 2 being connected to future Stage 3. Prior to commissioning of each stage, the leachate pipe for that stage will be connected, the temporary stormwater sump removed, any temporary stormwater pumping pipe work removed and the bund infill removed.

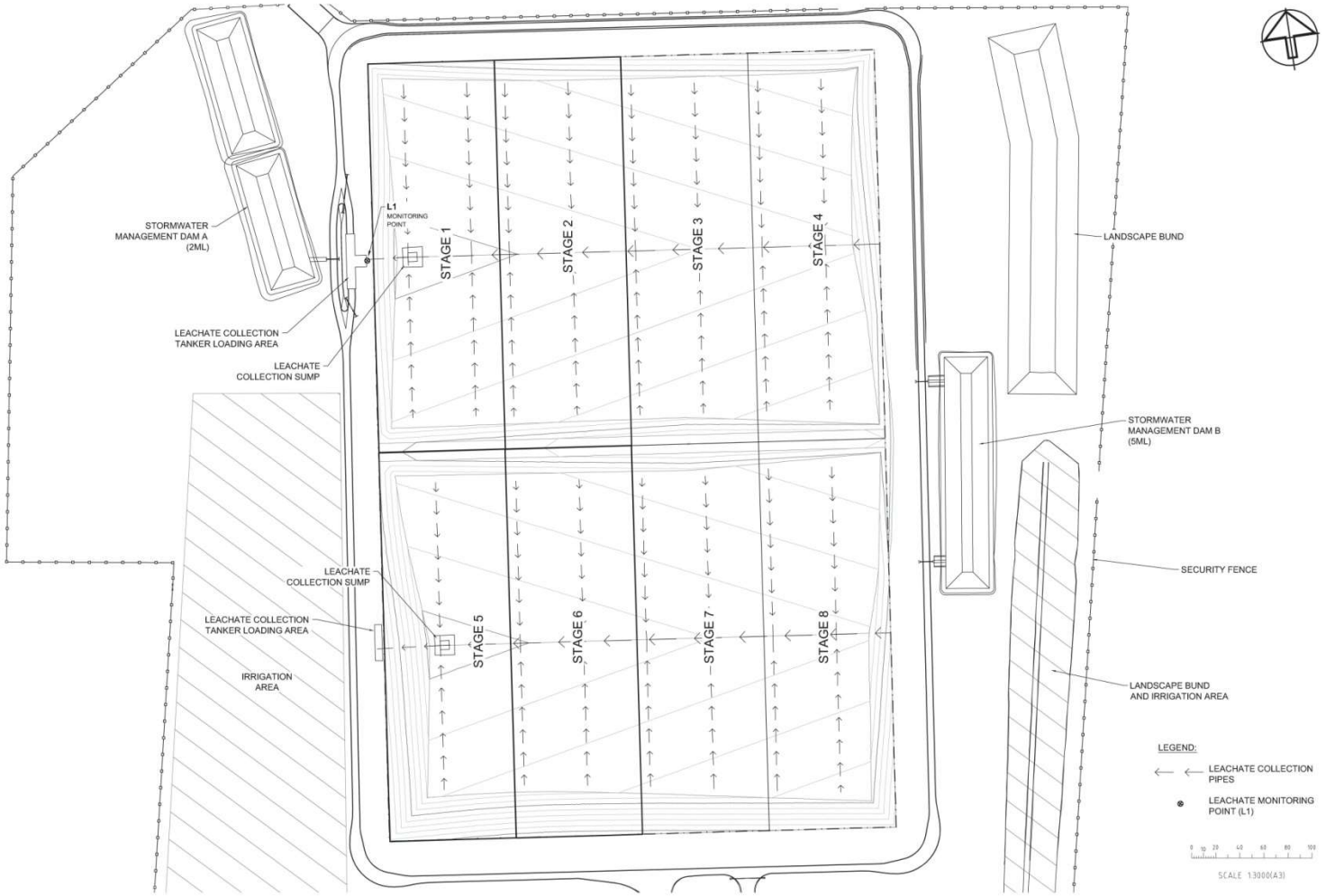


Figure 4.7.2: Leachate Collection and Removal System

A submersible pump is used to extract leachate from the leachate sump to a leachate storage tank contained within a bunded tanker loading area. This is located at the western boundary of the landfill area and allows leachate to be tankered to Orange Waste Water Treatment Plant (WWTP) for treatment. The tanker loading and tank area includes 500 mm bund walls for emergency containment of leachate spills. The sump of the tanker loading area contains a sump that drains to the stormwater collection drainage system through a valve pit. The leachate tanker loading area is detailed in **Figure 4.7.2**.

Operation of the leachate pump within the leachate tanker loading area is as per **SOP 10 – Operation of ERRRC Leachate Pumps**.

4.7.1.3 Leachate Management

Leachate would be extracted and disposed of from the landfill on a five day basis (or as required), with a maximum 80 tanker loads per month during wet periods (in accordance with the PA). The level in the leachate tank is to be checked daily, as per the requirements of **Section 4.3** and arrangements made accordingly if leachate removal is required. The operating procedure for extracting and removing leachate from the site is detailed in **SOP 10 – Operation of ERRRC Leachate Pumps**.

Recording Leachate Volume

A record of the leachate volume pumped from the sump and transported to the Orange WWTP will be maintained by recording the reading on the leachate flow meter after each truck movement to the Orange WWTP as per the procedures identified in **SOP 10 – Operation of ERRRC Leachate Pumps.** Leachate volume will also be recorded at the end of each month.

4.7.1.4 Leachate Monitoring

Monitoring Network

The leachate monitoring network is shown on **Figure 4.7.2**. It includes:

- L1 – the Leachate Storage Tank.

Monitoring Schedule

The Leachate Storage Tank will be inspected every 6 months by an independent contractor and a sample collected for analysis when liquid is present.

Monitoring Parameters

The leachate monitoring parameters are listed in **Table 4.7.1**.

Table 4.7.1 – Leachate Monitoring Parameters

Routine Sampling – Biannual	
Alkalinity (as calcium carbonate), mg/L	Total Suspended Solids, mg/L
Ammonia, mg/L	Total Phenolics, mg/L
Calcium, mg/L	Turbidity, NTU
Chloride, mg/L	Total Petroleum Hydrocarbons, mg/L
Chemical Oxygen Demand, mg/L	Oil and Grease, mg/L
Conductivity, µS/cm	BTEX, mg/L
Fluoride, mg/L	PAH, mg/L
Iron, mg/L	OC/OP pesticides, mg/L
Magnesium, mg/L	Arsenic, mg/L
Manganese, mg/L	Cadmium, mg/L
Nitrate, mg/L	Chromium, mg/L
pH	Copper, mg/L
Potassium, mg/L	Nickel, mg/L
Sodium, mg/L	Lead, mg/L
Sulfate, mg/L	Zinc, mg/L
Mercury mg/L	

4.7.2 MONITORING

Leachate will be monitored as detailed in **Section 4.7.1.4**.

4.7.3 RESPONSIBILITIES

Manager Waste Services and Technical Support

- Coordinate progressive implementation of leachate barrier works; and
- Coordinating and implementing leachate monitoring program.

Resource Recovery Centre Supervisor/Operator

- Inspect anchor system on a regular basis for signs of failure;
- Implement procedures in this OEMP so as to minimise the risk of water pollution;
- Record volume of leachate generated as per **SOP 10 – Operation of ERRRC Leachate Pumps**; and
- Coordinate disposal of leachate to the Orange WWTP as required; Provide training and supervision of operating staff in using the pump controls, switches and level alarms for the pumps.

4.8 SURFACE WATER MANAGEMENT

4.8.1 PROCEDURES

4.8.1.1 Preventing Pollution

All practicable measures would be taken to reduce the amount of surface water entering the active landfilling area, thereby generating leachate. This includes:

- Diverting upstream, clean stormwater runoff around the landfilling operation;
- Staging the landfilling operations into eight separate stages;
- The construction of two stormwater management dams (Refer to **Figure 4.4.1, Table 4.8.1**) as per the recommendations of the water and surface water assessment prepared for the project EA (GHD, 2009), and the Soil and Water Management Plan, refer to **Section 9.2**. The two dams provide water storage and sediment control for a 90th percentile 5 day rainfall event for type D/F soils;
- Internal staging bunds;
- Surface water collection drains;
- Stormwater diversion bunds;
- Stormwater diversion drains;
- Covering of the landfilling area, in addition to baling and wrapping of putrescible waste;
- Grading filled landfill cells to direct surface water runoff away from the active waste landfilling area; and
- Progressive capping and rehabilitation of landfilled areas.

All drainage works are designed and constructed in accordance with the requirements of the NSW EPA, including the requirements specified in the NSW Department of Housing – Managing Urban Stormwater – Soils and Construction Guidebook (2004) and its recent 'Waste Landfills' update (2008).

Surface water collected in the stormwater management dams will be used on site for irrigation and dust suppression. After a storm or rain event, the water is allowed a minimum of five days for any settling required, before it is used on site.

Table 4.8.1 – Stormwater Management Dam Design Criteria

Design parameter	Dam A	Dam B
Overall capacity (ML)	2	5
Configuration (L:W)	3:1	6:1
Sediment settlement zone (m^3)	1400	3200
Water storage zone (m^3)	600	1800
Overflow frequency (days/year)	2-4	2-4

Source: Soil and Water Management Plan

4.8.1.2 Surface Water Monitoring

The surface water monitoring points listed in this section (refer to **Figure 4.8.1**) will be monitored using the monitoring schedule defined in **Table 4.8.2**, and surface water parameters listed in **Table 4.8.3**.

Monitoring Network

The landfill surface water monitoring network includes five surface water monitoring locations, as displayed on **Figure 4.8.1**. It includes[1]:

- SWA – Stormwater Management Dam A;
- SWB – Stormwater Management Dam B;
- SW1 – Dam 1;
- SW2 – Dam 2; and
- SW3 – Dam 3.

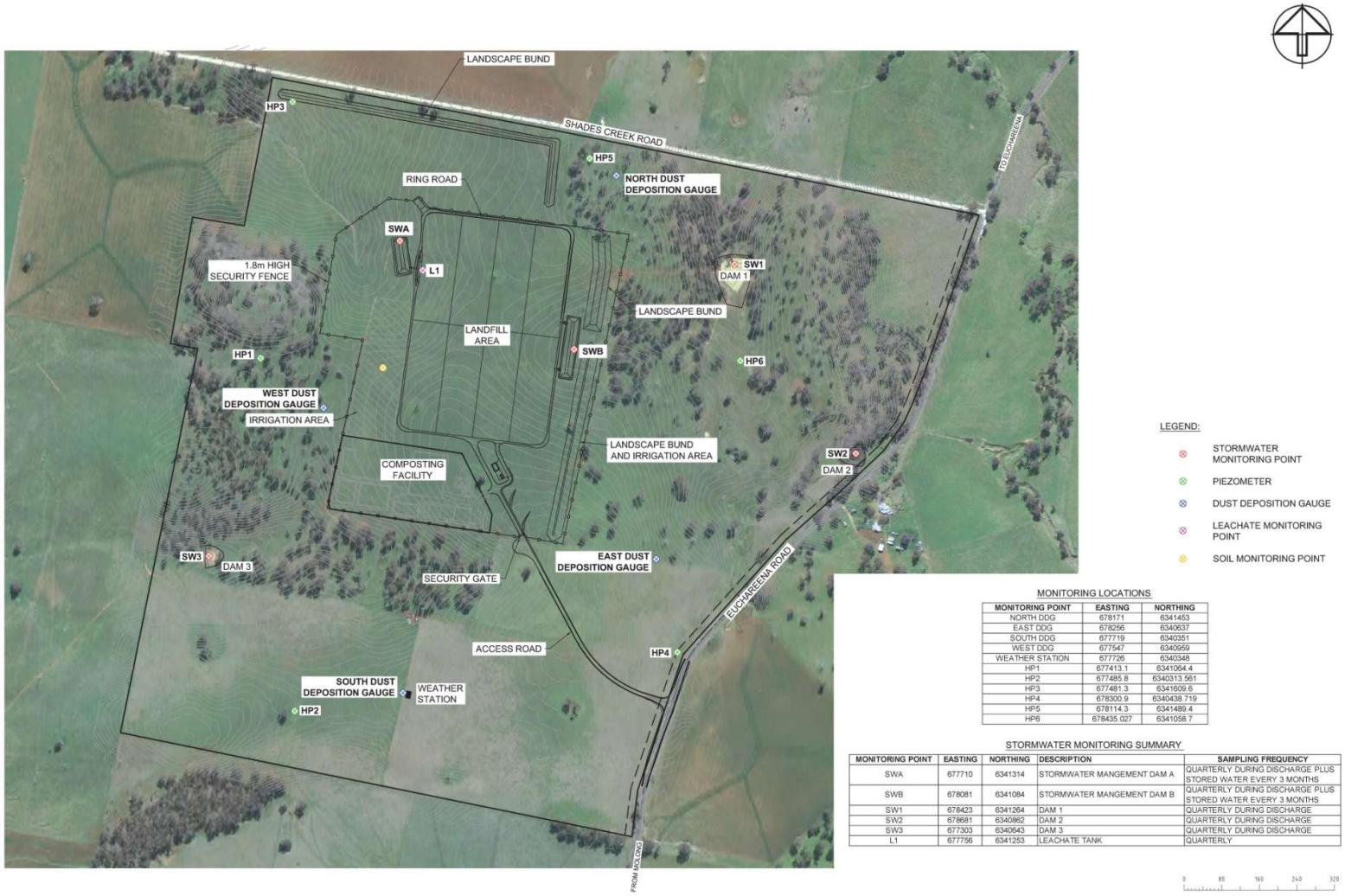
Monitoring Schedule

Surface water monitoring will be undertaken by an independent contractor. The surface water monitoring program as detailed in **Table 4.8.2** and **4.8.3** will be implemented.

Table 4.8.2 – Landfill Surface Water Monitoring Schedule

Point	Discharge Sampling
SWA	Monthly during discharge (wet-weather only)
SWB	Monthly during discharge (wet-weather only)
SW1	Monthly during discharge
SW2	Monthly during discharge
SW3	Monthly during discharge

[1] The EA identified additional surface water monitoring points in Bell River and Molong Creek. Through negotiation with the EPA (M Corradin pers com) it was agreed that these points are not suitable. The EPA is more concerned about the quality of surface water leaving the site; the points are too remote to provide definitive data with regards to the potential interaction of the site operations within the broader surface water catchments. That is, it would be difficult to link changes in water quality at these remote points to the site operations given the large catchment areas.



MONITORING LOCATIONS

MONITORING POINT	EASTING	NORTHING
NORTH DDG	678171	6341453
EAST DDG	678256	6340637
SOUTH DDG	677719	6340351
WEST DDG	677547	6340959
WEATHER STATION	677726	6340348
HP1	677413.1	6341064.4
HP2	677485.8	6340313.561
HP3	677481.3	6341609.6
HP4	678300.9	6340438.719
HP5	678114.3	6341489.4
HP6	678435.027	6341058.7

STORMWATER MONITORING SUMMARY

MONITORING POINT	EASTING	NORTHING	DESCRIPTION	SAMPLING FREQUENCY
SWA	677710	6341314	STORMWATER MANGEMENT DAM A	QUARTERLY DURING DISCHARGE PLUS STORED WATER EVERY 3 MONTHS
SWB	678081	6341084	STORMWATER MANGEMENT DAM B	QUARTERLY DURING DISCHARGE PLUS STORED WATER EVERY 3 MONTHS
SW1	678423	6341264	DAM 1	QUARTERLY DURING DISCHARGE
SW2	678681	6340862	DAM 2	QUARTERLY DURING DISCHARGE
SW3	677303	6340843	DAM 3	QUARTERLY DURING DISCHARGE
L1	677756	6341253	LEACHATE TANK	QUARTERLY

Figure 4.8.1: Overall site and monitoring points

This monitoring program would continue until the end of the project, with the analytes and frequency of monitoring re-evaluated periodically. An appropriate ongoing monitoring program would also be established as part of the Site Closure Plan, for continued monitoring after completion of the project and closure of the ERRRC (refer to **Section 4.18 – Landfill Closure**).

Table 4.8.3 – Surface Water Monitoring Parameters

Discharge Sampling (All Surface Water Monitoring Points)	
Alkalinity (as calcium carbonate), mg/L	Total Suspended Solids, mg/L
Ammonia, mg/L	Total Phenolics, mg/L
Calcium, mg/L	Turbidity, NTU
Chloride, mg/L	Zinc, mg/L
Fluoride, mg/L	Arsenic, mg/L
Iron, mg/L	Cadmium, mg/L
Magnesium, mg/L	Chromium, mg/L
Manganese, mg/L	Copper, mg/L
Nitrate, mg/L	Lead, mg/L
Oil and grease, mg/L	Mercury, mg/L
pH	Nickel, mg/L
Potassium, mg/L	Oil and Grease, mg/L
Sodium, mg/L	OC/OP pesticides, mg/L
Sulfate, mg/L	PAH, mg/L

4.8.1.3 Validation Sampling

Note: This procedure only implemented if routine sampling detects quality parameters that exceed the defined provisional limits.

If monitoring indicates pollution, surface water will be sampled and tested again as soon as possible to confirm the results. If re-sampling confirms the anomaly, the EPA will be notified as soon as practicable after it becomes known, by telephone and in writing within 14 days of confirmation.

Refer to **SOP 13 – Pollution Incident Response Management** for EPA notification methods.

4.8.1.4 Provisional Limits

The provisional limits will be defined following the first 12 months of collecting background data through the routine monitoring detailed in **Section 4.8.1.2**. The OEMP will be updated accordingly with these defined provisional limits.

4.8.1.5 Surface Water Assessment Plan

Note: This procedure only implemented if validation sampling confirms surface water

pollution.

If the EPA has been advised of an anomaly in surface water quality in accordance with **Section 4.8.3**, a Surface Water Assessment Plan will be prepared within 28 days of the notification.

The Surface Water Assessment Plan will:

- identify the specific surface water contaminants;
- establish the extent of the pollution;
- provide a justified list of proposed analytes for evaluation;
- assess the impacts of the surface water pollution; and
- outline a proposed sampling plan to obtain sufficient information to prepare a Surface Water Contamination Remediation Plan.

4.8.1.6 Surface Water Contamination Remediation Plan

Note: This procedure only implemented following development of a Surface Water Assessment Plan.

A Surface Water Contamination Remediation Plan will be prepared based on the results of the Surface Water Assessment Plan. The plan will describe the process to protect surface water resources from further pollution and, if necessary, nominate a method to return surface water to the original quality downstream of the landfill. This plan will be submitted to the EPA for approval prior to implementation.

4.8.2 MONITORING

Surface water will be monitored as detailed in **Section 4.8.1.2**. The procedures for undergoing the groundwater monitoring are detailed in **SOP 20 – ERRRC Environmental Monitoring**.

4.8.3 RESPONSIBILITIES

- Manager Waste Services and Technical Support:
- Coordinating and implementing the Surface Water Monitoring Program; and
- Contact EPA if monitoring indicates surface water pollution.

Resource Recovery Centre Supervisor

- Inspecting and coordinating the maintenance of all stormwater drainage works in proper functioning order so as to prevent contaminated runoff leaving the site; and
- Coordinating construction of surface runoff drains and control ponds.

Resource Recovery Centre Operators

- Diverting clean runoff around the active cell and away from contaminated water collection points.

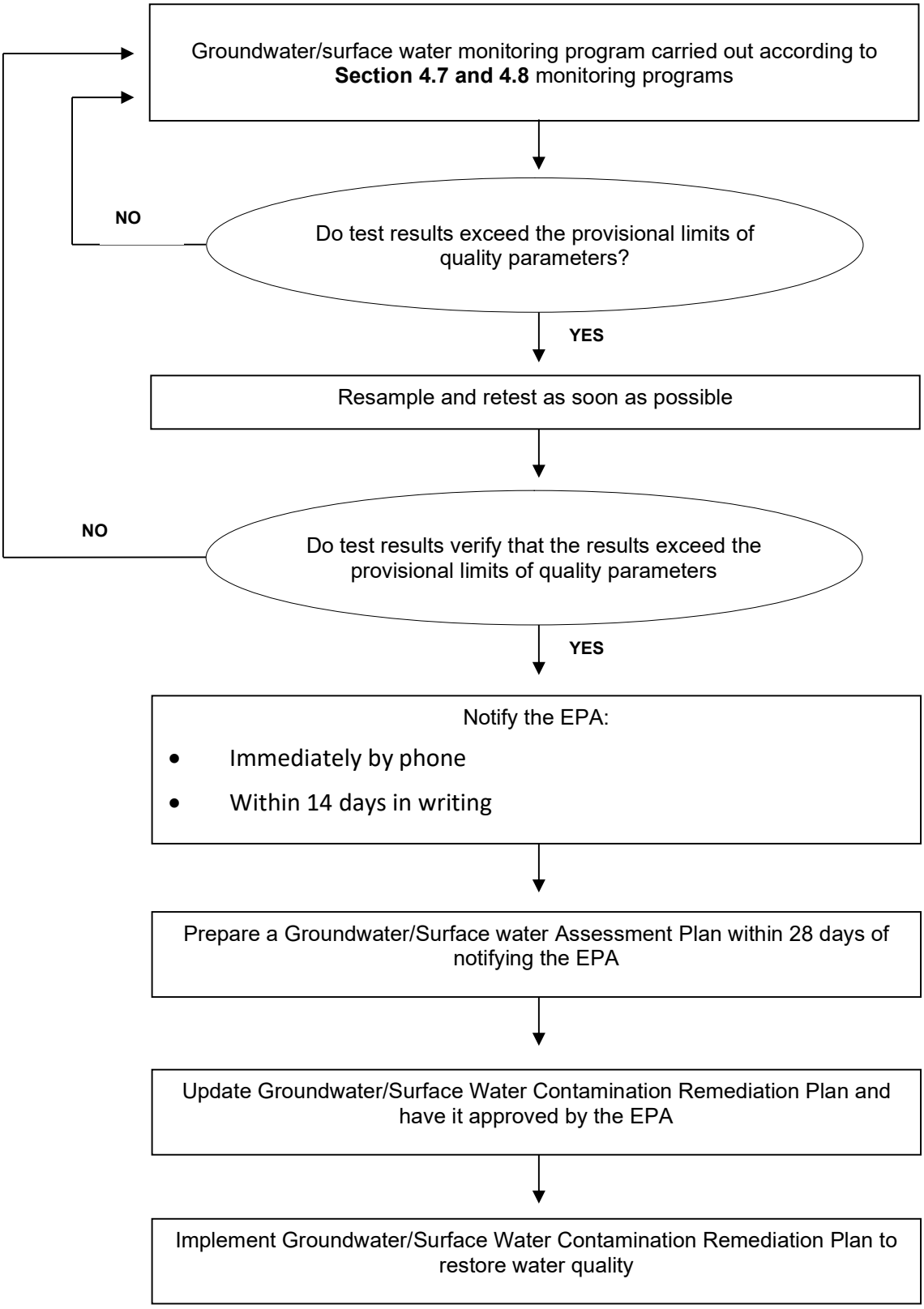


Figure 4.8.2: Groundwater and Surface Water, Assessment and Remediation

4.9 GROUNDWATER MANAGEMENT

4.9.1 PROCEDURES

4.9.1.1 Preventing Pollution

The landfill will be operated so as to minimise the risk of groundwater pollution by leachate. This will be achieved by:

- Implementing leachate and surface water controls identified in **Section 4.7 – Leachate Management and 4.8 – Surface Water Management**);
- Installing a leachate barrier system (**Section 4.7**) to the EPAs requirements;
- Installing a leachate collection system (**Section 4.7**);
- Ensuring adequate compaction of deposited wastes and cover material (**Section 4.6 – Waste Disposal**);
- Capping completed cells (**Section 4.6**);
- Progressively rehabilitating disturbed areas (**Section 4.17 – Progressive Rehabilitation**); and
- Ensuring adequate revegetation of completed cells (**Section 4.17**).

4.9.1.2 Groundwater Monitoring Program

Monitoring Network

The site includes six piezometer bores on the site, HP1 – HP6 (refer to **Figure 4.8.1**) that will be used for the groundwater monitoring program.

Monitoring Schedule

The groundwater monitoring program as detailed in **Table 4.9.1** will be implemented, as per the requirements of the EPL No. 20104.

This monitoring program would continue until the end of the project although the analytes and frequency of monitoring would be re-evaluated periodically to ensure only meaningful data is being collected. An appropriate ongoing monitoring program would also be established as part of the Site Closure Plan, for continued monitoring after completion of the project and closure of the ERRRC. This would likely comprise annual water levels and annual water quality sampling of a selected set of screening parameters (refer to **Section 4.18 – Landfill Closure**).

Table 4.9.1 – Groundwater Monitoring Program

Pollutant	Units of Measure	Frequency	Sampling Method
Alkalinity (as calcium carbonate)	Milligrams per litre	Special Frequency 1*	Grab sample**
Ammonia	Milligrams per litre	Special Frequency 1*	Grab sample**
Calcium	Milligrams per litre	Special Frequency 1*	Grab sample**
Chloride	Milligrams per litre	Special Frequency 1*	Grab sample**
Conductivity	Microsiemens per centimetre	Special Frequency 1*	Grab sample**
Fluoride	Milligrams per litre	Special Frequency 1*	Grab sample**
Iron	Milligrams per litre	Special Frequency 1*	Grab sample**
Magnesium	Milligrams per litre	Special Frequency 1*	Grab sample**
Manganese	Milligrams per litre	Special Frequency 1*	Grab sample**
Nitrate	Milligrams per litre	Special Frequency 1*	Grab sample**
pH	pH	Special Frequency 1*	Grab sample**
Potassium	Milligrams per litre	Special Frequency 1*	Grab sample**
Sodium	Milligrams per litre	Special Frequency 1*	Grab sample**
Standing Water Level	As Appropriate	Special Frequency 1*	Grab sample**
Sulfate	Milligrams per litre	Special Frequency 1*	Grab sample**
Total Organic Carbon	Milligrams per litre	Special Frequency 1*	Grab sample**
Total Phenolics	Milligrams per litre	Special Frequency 1*	Grab sample**

* bi-annually
** A single sample taken at a single point in time

4.9.1.3 Validation Sampling

Note: This procedure only implemented if routine sampling detects quality parameters that exceed the provisional limits.

If monitoring indicates pollution, groundwater in the affected piezometer or bore will be sampled and tested again as soon as possible to confirm the results. If re-sampling confirms the anomaly, the EPA will be notified immediately by telephone and in writing within 14 days of confirmation.

Refer to **SOP 13 – Pollution Incident Response Management** for methods of EPA notification.

4.9.1.4 Provisional Limits

The provisional limits will be defined following the first 12 months of collecting background data through the routine monitoring detailed in **Section 4.9.1.2**. The OEMP will be updated accordingly with these defined provisional limits.

4.9.1.5 Groundwater Assessment Plan

Note: This procedure only implemented if validation sampling confirms groundwater pollution.

If the groundwater monitoring program detects a possible failure of the leachate containment system, a groundwater assessment program is required to establish the extent of the failure.

If routine sampling of the six piezometer bores exceeds acceptable levels, the piezometers should be re-sampled as soon as practicable to verify the presence of contaminants in the groundwater. If anomalous groundwater results are verified through re-sampling, the EPA should be notified immediately by phone, and in writing within 14 days.

Further, if the on-site monitoring network detected groundwater anomalies, off-site sampling would be incorporated into the groundwater assessment plan if deemed necessary. In this scenario, the five (5) off-site down gradient bores/wells identified in the EA Groundwater Assessment (*Aquaterra Consulting, September 2009*) would be sampled.

Within 28 days of the notification, the occupier should prepare a Groundwater Assessment Plan (GAP) which identifies the specific contaminants and extent of the pollution to the groundwater.

The GAP details:

- The specific groundwater contaminants;
- The known extent of the contaminants;
- A justified list of proposed anolytes for evaluation;
- The impacts of the groundwater pollution; and
- A proposed sampling plan to obtain sufficient information to prepare a *Groundwater Contamination Remediation Plan*.

Figure 4.8.2 shows the relationship between routine sampling, validation testing and the Groundwater Assessment Plan.

4.9.1.6 Groundwater Contamination Remediation Plan

Note: This procedure only implemented following development of a Groundwater Assessment Plan.

If a *Groundwater Contamination Remediation Plan* is required, as determined by the GAP, it will need to describe the process to protect the groundwater resource from further contamination, and nominate a means to return the resources to the original quality down hydraulic gradient from the landfill. The *Groundwater Contamination Remediation Plan* (if required) is to be submitted to the EPA for approval prior to implementation.

Figure 4.8.2 shows the relationship between the Groundwater Assessment Plan and Groundwater Contamination Remediation Plan.

4.9.2 MONITORING

Groundwater will be monitored as detailed in **Section 4.9.1.2**. The procedures for undergoing the groundwater monitoring are detailed in **SOP 20 – ERRRC Environmental Monitoring**.

4.9.3 RESPONSIBILITIES

Manager Waste Services and Technical Support

- Coordinating and implementing the groundwater monitoring program;
- Co-ordinating re-sampling of piezometers, and development of Groundwater Assessment Plan if groundwater contamination is identified; and
- Notifying, and communicating with EPA in regards to the Groundwater Assessment Plan and the Groundwater Contamination Remediation Plan.

Resource Recovery Centre Supervisor/operator

- Implement procedures identified in this OEMP so as to minimise the risk of groundwater pollution.

4.10 LANDFILL GAS MANAGEMENT

4.10.1 PROCEDURES

4.10.1.1 Preventing Emissions

Landfill gas generation will be controlled by a number of environmental goals, including having a leachate barrier in place (refer to **Section 4.7**), progressive capping and revegetation of completed landfill stages (**Section 4.6 and 4.17**), and covering of the active landfill cell (**Section 4.6**).

The ERRRC landfilling operations are forecast to produce limited landfill gas emissions due to the diversion of organic waste from landfill into the onsite enclosed tunnel composting plant, and the baling and wrapping of all putrescible waste received from the ORRRC. While waste is baled at the ORRRC, it is not guaranteed that the bales are airtight, and organic waste in the landfill that failed to be diverted (due to poor sorting of waste, or putrescible wastes that are not suitable for composting) is however expected to produce landfill gas, which must therefore be contained.

Fire prevention (**Section 4.16**), is also an important environmental goal in managing landfill gas.

Modelling of landfill gas generation at the ERRRC site was undertaken using the United States Environment Protection Agency (USEPA) 'LandGEM' – Landfill Gas Emissions Model, (Version 3.02, 2005) with inputs from landfilled waste and cover material quantities (recorded and projected), available climate data, and known parameters applicable to methane generating anaerobic decomposition of landfilled waste. Landfill gas generation modelling indicates that based on projected volumes of waste landfilling, the peak methane generation would occur in 2024. The average rate of methane generation (in 2024) was projected to range from 0.0 T/day in July to 3.26 T/day in January, with a maximum calculated rate of 3.42 T/day.

The projected rate of methane generation throughout the lifespan of the Stage 1 cell at ERRRC (peak generation of 3.42 T/day) was considered to be amenable to management by passive biofiltration and oxidation.

The management actions identified in the ERRRC *Landfill Gas Management Plan* (**Section 7.7** of this OEMP) must be adhered to in order to limit emissions from the site.

4.10.1.2 Gas Monitoring

Routine gas monitoring including: surface gas monitoring, gas accumulation monitoring, and sub-surface gas monitoring is not currently a requirement of the EPL No. 20104. This will be implemented following installation of biofilter infrastructure in accordance with the ERRRC *Landfill Gas Management Plan* (**Section 7.7** of this OEMP).

4.10.2 RESPONSIBILITIES

Manager Waste Services and Technical Support

- Developing gas monitoring program (if required).

Resource Recovery Centre Supervisors/Operators

- Implementing the procedures identified in this OEMP so as to minimise the generation of landfill gas.

4.11 ODOUR CONTROL

4.11.1 PROCEDURES

Landfilling operations must not cause or permit the emission of offensive odour beyond the boundary of the premises. Odour generated at the ERRRC site will be minimal due to the nature of the landfilled waste, i.e., baled and wrapped putrescible waste covered and infilled with non-putrescible waste from the C&D and C&I sectors. If a bale of putrescible waste arrives at the site damaged, it will be transported back to the ORRRC site for re-baling, following **SOP 09 – Rejected Bales from ERRRC**.

4.11.1.1 Waste Covering

Odour generation will be controlled by covering of wastes and immediate covering of wastes likely to produce offensive odours (refer to **Section 4.6 – Waste Disposal**).

4.11.1.2 Surface Water and Leachate Ponds

The ERRRC site will not have any leachate collection ponds that may generate offensive odours.

4.11.1.3 Reducing Odour

If required, proprietary products will be used to reduce odour emissions.

4.11.2 MONITORING

Potential odour sources will be inspected daily.

Odour will be monitored by recording any odour complaint received. The record of a complaint will be kept for at least four years after the complaint was made. Complaints will be followed up and the odour generation mitigated, as per **SOP 14 – Complaints Handling**.

4.11.3 RESPONSIBILITIES

Manager Waste Services and Technical Support

- Responsible for maintaining records of odour complaints.

Resource Recovery Centre Supervisors/Operators

- Undertake all duties in accordance with the procedures identified within this OEMP, and in accordance with instructions issued by the supervisor; and
- Complete complaint forms and forwarding to Manager Waste Services and Technical Support.

4.12 DUST CONTROL

4.12.1 PROCEDURES

Dust generation on the site will be controlled by:

- Maintaining gravel seals on access roads;
- Posting speed restrictions within the site if site conditions warrant (e.g. dry and windy conditions);
- Minimising exposed areas; and
- Watering internal unsealed roads as necessary, using water from stormwater management dams (refer to **Section 4.8 – Surface Water Management**).

Procedures for dust control are provided in **WAP 001 – Dust Prevention on Site**.

4.12.2 MONITORING

Monitoring Network

Four air quality monitoring points (dust deposition gauges) have been located about the ERRRC site, as identified in **Figure 4.8.1** and **Table 4.12.1.**

Section 7.6 – **ERRRC Air Monitoring Program** of this OEMP further details the Air Monitoring Program at the site.

Table 4.12.1 – Dust Deposition Monitoring Network

EPA Identification Number (Licence No. 20104)	Type of Monitoring Point	Pollutant	Units	Location Description
1	Air Quality Monitoring	Particulates – Deposited matter	g/m^2/month	North Dust Deposition Gauge as Identified on **Figure 4.8.1**
2	Air Quality Monitoring	Particulates – Deposited matter	g/m^2/month	East Dust Deposition Gauge as Identified on **Figure 4.8.1**
3	Air Quality Monitoring	Particulates – Deposited matter	g/m^2/month	South Dust Deposition Gauge as Identified on **Figure 4.8.1**
4	Air Quality Monitoring	Particulates – Deposited matter	g/m^2/month	West Dust Deposition Gauge as Identified on **Figure 4.8.1**

Source: EPA Licence No.20104

Monitoring Schedule

As a requirement of the EPA licence, dust, which is measured as particulates – deposited matter, is measured per square metre per month, and monitored monthly as per *AS3580.10.1-2003.*

Dust will also be monitored by recording dust complaints received, as per **SOP 14 – Complaints Handling**. Records will be kept for at least four years.

4.12.3 RESPONSIBILITIES

Manager Waste Services and Technical Support

- Responsible for investigating all dust complaints and maintaining written records.

Resource Recovery Centre Supervisors/Operators

- Maintaining gravel seals on access roads;
- Minimising exposed areas;
- Watering unsealed access roads as necessary; and
- Restricting vehicular access to formed roads and tracks.

4.13 LITTER CONTROL

4.13.1 PROCEDURES

The compaction and baling of non-putrescible waste will minimise the occurrence of litter at the site. The bales will also be covered with compacted inert waste on a daily basis. Daily litter patrols will be undertaken by the Resource Recovery Centre Operational staff.

There is limited potential for vehicles to inadvertently collect mud and litter on the wheels as they proceed to and from the active landfilling area. Only heavy machinery used for stacking bales and placing and spreading bulky waste will enter the active landfilling area. Therefore no operational controls for the cleaning of vehicles have been adopted.

Procedures for litter collection are provided in **WAP 007 – Litter Collection**.

4.13.2 MONITORING

Litter will be monitored by recording complaints received and spot audits by the Manager Waste Services and Technical Support. Records of litter complaints will be kept for at least four years as per **SOP 14 – Complaints Handling**.

4.13.3 RESPONSIBILITIES

Manager Waste Services and Technical Support

- Responsible for undertaking spot audits.

Resource Recovery Centre Supervisor/Operators

- Ensure baled waste delivered to the ERRRC is not broken;
- Undertaking litter patrols; and
- Maintain records of litter complaints.

4.14 NOISE CONTROL

4.14.1 PROCEDURES

4.14.1.1 Noise Control

Noise generated at the ERRRC will be controlled by restricting operations to approved times, and correct maintenance and use of machinery. The EPA licence (No. 20104) nominates the hours of operation during the construction and operational phases, and the noise limits that must not be exceeded.

Hours of operation during the construction phase are restricted to the following hours:

- Monday to Friday: 7 am to 6 pm;
- Saturday: 7 am to 1 pm; and
- At no time on Sundays and Public Holidays.

Hours of operation during the active landfilling are restricted to the following hours:

- Monday to Sunday: 7 am to 5 pm; and
- At no time on Good Friday or Christmas Day.

The closest sensitive received (residence) to the operations is 'The Shades', located 820 m from the landfill (Refer to **Figure 4.14.1**).

4.14.1.2 Noise Limits

Noise limits as defined by the EPA's licence No, 20104 during construction at the premises must not exceed:

- An $L_{Aeq\ (15\ minute)}$ noise emission criterion of 40 dB (A).

Noise limits during the operational activities at the premises must not exceed:

- An $L_{Aeq\ (15\ minute)}$ noise emission criterion of 35 dB (A).

The noise emission limits identified at conditions L3.2 and L3.4 apply under meteorological conditions of:

- wind speeds up to 3 m/s at 10 metres above ground level; and/or
- temperature inversion conditions of up to 3° C/100 metres.

4.14.2 MONITORING

Noise will be monitored by recording complaints received, as per **SOP 14 – Complaints Handling**. In the event that a noise complaint is received more than once, then field monitoring will be undertaken to quantify off-site impacts. The procedures identified in the 'Noise Monitoring Program' – refer **Section 7.5 – ERRRC Noise Monitoring Program**, must be adhered to**.**

Figure 4.14.1: Nearest Sensitive Receivers

4.14.3 RESPONSIBILITIES

Manager Waste Services and Technical Support

- Responsible for arranging field monitoring of noise if required; and
- Responsible for investigating all noise complaints and maintaining written records.

Resource Recovery Centre Supervisor

- Correct maintenance and operation of machinery; and
- Keeping records of noise complaints received.

4.15 PEST, VERMIN AND NOXIOUS WEED CONTROL

4.15.1 PROCEDURES

Pests, vermin and noxious weeds will be controlled by ensuring that:

- The 'ERRRC Weed Management Plan' – refer **Section 7.2** is adhered to;
- The 'ERRRC Pest Management Plan' – refer **Section 7.3** is adhered to;
- Odorous wastes are covered immediately – refer **Section 7.6** is adhered to;
- Procedures outlined in **Section 4.5– Waste Receival**, are adhered to, to ensure that only non-putrescible wastes are land filled without being baled;
- Procedures outlined in **Section 4.6 – Waste Disposal**, and **SOP 09 – Rejected Bales from ERRRC** are adhered to, to ensure that any compromised bales are dealt with accordingly;
- Wastes are adequately compacted and covered regularly;
- The security fence is maintained to prevent access by larger animals;
- Surface drainage prevents ponding on the site; and
- Noxious weeds are reported to Council for control.

4.15.2 MONITORING

Pests, vermin and noxious weeds will be monitored on an ongoing basis.

4.15.3 RESPONSIBILITIES

Supervisor/Operators

- Monitoring pests, vermin and noxious weeds; and
- Controlling and, if necessary, destroying pests, and for reporting the presence of vermin and noxious weeds to the Manager Waste Services and Technical Support.

4.16 FIRE MANAGEMENT

4.16.1 PROCEDURES

All procedures pertaining to fire management are identified in the **ERRRC Fire Management Plan – Section 7.4 and ERRRC Emergency Procedures Manual – Section 7.10**.

4.16.1.1 Fire Prevention

The potential for fires to occur at the site will be controlled by:

- a 1.8 m high security fence to prevent unauthorised access;
- maintaining machinery in good working order to minimise risk of sparks;
- adequately compacting and covering waste;
- regular litter patrols;
- ensuring fire breaks are maintained around any temporary stockpile of combustibles;
- access to on-site fire fighting equipment;
- accepting only permitted wastes;
- all fuels or flammable solvents for operational use will be stored in a bunded area which will be appropriately ventilated and secure. A bund should be placed around the flammable liquids storage area with a 110% capacity of the volume of the flammable liquids, therefore any release of raw or burning fuel would not cause a fire in the landfill; and
- no controlled burning to be undertaken at the ERRRC, unless under consultation with the EPA and the Rural Fire Brigade.

In addition to the above preventative measures, operators at the facility will maintain fire fighting equipment to ensure that the on-site fire fighting capability is maintained. Specifically, this will involve:

- ensuring that the water tanker permanently located at the facility is full, at all times, and that it is positioned in a readily accessible location; and
- weekly testing of the tanker pump and checks that the motor is topped with fuel and oil.

4.16.1.2 Responding to a Fire

Full details for responding to a fire are included in **Section 7.4 – ERRRC Fire Management Plan and Section 7.10 - ERRRC Emergency Response Procedures Manual.**

After a fire has been contained, the Supervisor is responsible for preparing an Incident Report, as per **SOP 13 – Pollution Incident Response Management**, and filling out **Form 13.01 – Incident Register**, and **Form 13.02 – Incident Report Form** accordingly.

The Incident Report must include the following information:

- The time and date that the fire was deliberately started or reported;
- The cause of the fire (if known);
- The time and date that the fire was either burnt out or extinguished;
- The location of the fire;
- Prevailing weather conditions;
- Any complaints of smoke nuisance from the public or local residents; and
- Observations made in regard to smoke direction and dispersion.

4.16.2 MONITORING

The facility will be continually monitored for fire.

4.16.3 RESPONSIBILITIES

Manager Waste Services and Technical Support

- Reviewing reports and actions.

Resource Recovery Centre Supervisor

- In the event of a fire, making an on the spot determination as to whether the fire can be effectively contained by council operators with no threat to their safety.

Supervisor/Operator

- Ensuring that the water tanker permanently located at the facility is full at all times, and that it is positioned in a readily accessible location;
- Weekly testing of the tanker pump and checks that the motor is topped with fuel and oil;
- Maintaining machinery in good working order to minimise risk of sparks;
- Adequate compaction and covering of waste;
- Regular litter controls;
- Access to onsite fire fighting equipment;
- Ensure fire breaks are maintained around any temporary stockpile of combustibles;
- Accepting only permitted wastes;
- Reporting any fire to the Manager Enterprise Services as soon as practicable;
- if determined to be a safe option, smother fire by covering with soil;
- if required, call 000;
- readying for the arrival of, and acting on any instructions issued by the fire service;
- evacuating the public from the facility, expediting a quick but safe exit, and diverting any more of the public from entering the facility; and
- preparing an Incident Report, as per **SOP 13 – Pollution Incident Response Management**.

4.17 PROGRESSIVE REHABILITATION

4.17.1 PROCEDURES

4.17.1.1 Final Landforms

The final landform is consistent with the arrangement developed for the project EA and contained in the project PA. It has been designed with batter grades of 1(V):3(H) tapering to 5% to allow for site drainage (refer to **Figure 4.4.9**). The landform has a maximum height of 613.9 mAHD. The final landforms for each of the first four stages are shown on **Figures 4.4.2 to 4.4.5**. Refer to **Section 4.4 – Landfill Staging** for further detail on the final capping and landform.

4.17.1.2 Revegetation

A program of revegetation will be undertaken from the commencement of the site establishment stage through the progressive completion of the landfill. This program will involve seeding with a pasture seed mix (see **Table 4.17.1**) together with fertiliser applied as soon as possible after the ground is disturbed. A number of these activities will be programmed to occur when adequate soil moisture is present to assist germination. In critical areas where revegetation is important, some direct watering may be necessary.

Table 4.17.1 – Revegetation Grass Mix

Sowing Period	Species	Ratio Kg/ha
Autumn/Winter	Rye com	15
	Victorian Perennial Ryegrass	8
	Demeta Fescue	8
	Phalaris	7
	Currie Cox Foot	6
	White Clover (1)	6
	Sub Clover (1)	4
	Starter Fos (fertiliser)	400
Spring/Summer	Japanese Millet	15
	Victorian Perennial Ryegrass	12
	Hulled Couch	8
	Phalaris	8
	White Clover (1)	6
	Sub Clover (1)	4
	Starter Fos (fertiliser)	400

(1) Clover to be inoculated and lime pelleted and spread within 10 days of inoculation

4.17.1.3 Final Landform Revegetation

The final vegetation of the ERRRC landfill area will be consistent with the revegetation conducted throughout the operational life of the ERRRC and reflect the designated final land use of grazing and nature conservation. All those areas disturbed throughout the life of the ERRRC will be retained for grazing, i.e. the majority of the rehabilitated areas will be re-seeded with pasture species.

The Conservation Management Plan prepared for the ERRRC (refer **Section 7.8 – ERRRC Flora and Heritage Monitoring Program** and **Section 9.4 – Conservation Management Plan**) details the management regimes for all areas of the site.

Some paddock/shade trees will be planted throughout the re-established pasture. These species will be the same local, native tree species as currently exist, namely:

- White Box, Eucalyptus albens;
- Blakely's Red Gum, Eucalyptus blakelyi; and
- Yellow Box, Eucalyptus melliodora.

4.17.1.4 Maintenance of Revegetated Areas

Revegetated areas will be inspected as per outlined in **Section 7.8 – ERRRC Flora and Heritage Monitoring Program** to identify areas where revegetation has not been successful. The season following revegetation, any bare areas will be re-seeded with the same grass mix including fertiliser.

Areas where revegetation has been successful, will be fertilised (Grower 11 or similar) at a rate of 200 kg/ha.

4.17.2 MONITORING

Rehabilitation areas will be monitored to ensure effectiveness of groundcover and drainage structures, as per **Section 7.8 – ERRRC Flora and Heritage Monitoring Program**.

4.17.3 RESPONSIBILITIES

Manager Waste Services and Technical Support

- Coordinating and implementing revegetation works;
- Ensuring adequate funds are set aside to cover rehabilitation and closure of the landfill; and
- Preparation of the funding plan.

Resource Recovery Centre Supervisor

- Inspect revegetation success; and
- Coordinate revegetation of unsuccessful areas.

4.18 LANDFILL CLOSURE

4.18.1 PROCEDURES

4.18.1.1 Closure Plan

A written Closure Plan will be submitted to the EPA for approval within twelve months of the proposed closure of the landfill. The plan will include a post-closure monitoring and maintenance program to ensure the long-term integrity of the landfill. Specifically the plan will:

- Specify the steps taken or to be taken in closing and stabilising premises concerned and the time frame for doing so;
- Ensure that all leachate collection, gas collection and stormwater sediment controls, monitoring and reporting practices, are maintained at a standard equivalent to that employed during the operational life of the landfill;
- Ensure the neighbouring residents are advised of contact persons to discuss any problems (e.g. odour emissions). Records of these complaints should be kept in the same manner as approved during operation; and
- Ensure that waste materials are not received for disposal by the facility after landfill operations cease. Waste materials that are intended for use in the remediation should be documented and reported in the same manner as for an operating facility.

4.18.1.2 Final Landform

The final landform is planned to result in a low sloping profile comparable with the existing topography. Emphasis will be placed on adequate capping of the landfill, revegetation and leaving a stable site, suitable for the designated final land use with minimal, if any, maintenance requirements.

It is proposed that the final land use for those areas disturbed during the life of the ERRRC will be grazing, similar to the existing land use, although periodic cropping is not likely in the landfill area. The areas of existing native vegetation which will be enhanced for nature conservation throughout the life of the Facility will be retained for that ongoing use.

4.18.1.3 Site Decommissioning

At the conclusion of operational life of the ERRRC, the site will be decommissioned as follows:

1. All buildings, services and structures not required for any ongoing purpose/activity will be removed. The materials from these buildings or structures will be recycled where possible or placed in the final cell of the landfill area.

2. All sealed or hardstand areas not required for any ongoing purpose/activity will be ripped up and removed, and placed in the final cell of the landfill area.

3. All areas where any form of contamination may have occurred throughout the life of the Facility will be cleaned up e.g. waste oil collection area, battery storage etc. The contaminated material will either be remediated on site or removed off site to a facility approved to receive such materials.

The remainder of the activities in decommissioning the site are more appropriately associated with the creation of the final landform.

4.18.2 RESPONSIBILITIES

Manager Waste Services and Technical Support

- Responsible for the preparation, submission and implementation of the Closure Plan.

4.19 REFERENCES

DECC (2008) *Managing Urban Stormwater: Soils and Construction – Volume 2B – Waste Landfills*

Draft Cabonne Local Environmental Plan 2012, April 2012 - prepared by Cabonne Shire Council

Environmental Guidelines: Solid Waste Landfills, January 2016 – Second Edition, prepared by NSW Environment Protection Authority

Guideline: Pollution Incident Response Management Plans, March 2020 – prepared by NSW Environment Protection Authority

Environment Protection Licence 20104, 16 January 2015 – prepared by Environment Protection Authority

Section 5

TRAINING

Training – TOC

5.1 STAFF TRAINING

5.1 STAFF TRAINING

All employees or contractors of Orange City Council are required to undertake the 'Site safety management procedures induction'. The induction is designed to be complimented by **SOP 13 – Pollution Incident Response Management**.

All staff that have undergone the induction are required to fill out the **'Staff Training Register**', included in **Section 5.1.16**.

5.1.1 ORANGE CITY COUNCIL ORANGE WASTE PROJECT SITE SAFETY MANAGEMENT PROCEDURES INDUCTION

Please read this information and ensure you ask questions if there is anything you need clarified concerning Safety measures at the Resource Recovery Centre.

Keep this information for future reference.

As an employee or contractor of Orange City Council, your safety is extremely important. This document contains general safety information as well as additional information to assist you in carrying out your work effectively.

Work under this project comprises routine activities of the Resource Recovery Centres (RRC), at Ophir Road, Orange, and Euchareena Road, Molong including:

- Orange City Council staff;
- Wangarang Industries (Contractor);
- J R Richards & Sons (Contractor);
- Environmental monitoring contractors; and
- Any other frequent contractors working on the site(s).

The type of work includes, but is not limited to, receival, recycling, recovering of waste materials and burial of waste, monitoring of environmental conditions and revegetating the site.

5.1.2 FITNESS TO BE ON SITE

All employees and contractors must be in a state such that they are not a risk to their own safety or the safety of others. Anyone suspected of being under the influence of drugs or alcohol, or otherwise posing a threat to safety, will not be permitted to enter the work site. It is your responsibility to ensure that you are fit for work and not under the influence of drugs or alcohol. If you are taking any prescription medication that may affect your ability at work, advise your supervisor.

EMPLOYEE ASSISTANCE PROGRAM:

Remember – if you have a problem with drugs or alcohol, or anything else impacting on your work, the Employee Assistance Program (EAP) is there to help. The program is paid for by Orange City Council for Council Staff and confidential assistance can be obtained by calling Converge International on 1300 687 327 for a counselling appointment.

Either yourself or a member of your immediate family can access Employee Assist free of charge for up to 6 hours each year (family members hours are included in the six hours). Your confidentiality is assured and you details will not be passed on to anyone at Council. New marketing material (cards and posters) will be provided shortly and I ask that you remove any of the previous provider (PPC/Optum). Any employee who has already booked counselling sessions with the previous provider will be able to continue with their current sessions until the end of September 2015. If you have any questions on these arrangements please don't hesitate to contact Human Resources.

5.1.3 PROJECT SUPERVISION AND CONTACTS

The following **Table 5.1** indicates the appropriate people to contact with regard to particular issues and their contact details.

Table 5.1 – Contact Details in Regard to Particular Issues

	ISSUES			
Contact Person	**Disposal, recycling, recovery, sales**	**General WHS & Site Safety**	**Environmental**	**Quality Assurance**
Wayne Davis – Manager Waste Services and Technical Support: 6393 8113 or 0419 483 381	✓	✓	✓	✓
RRC Supervisor – Peter Ford: AH 6365 9225 AH 0419 630 891	✓	✓	✓	✓

5.1.4 STANDARD OPERATING PROCEDURES

A total of 27 Standard Operating Procedures (SOPs) have been developed to provide clear, detailed and standardised guidance for carrying out operational tasks at the ORRRC and ERRRC. These SOPs are available in the site offices, and hard copies are available on request.

Staff will be trained in relevant SOPs as listed on the following page.

Standard Operating Procedures	Manager Waste Services and Technical Support	Resource Recovery Centre Supervisors and Operators	Contracted Weighbridge Operators
SOP 01 – Annual Calendar of Activities	✓		
SOP 02 – Site Inductions	✓	✓	
SOP 03 – ORRRC Entry/Exit Protocols	✓	✓	✓
SOP 04 – ERRRC Entry/Exit Protocols	✓	✓	
SOP 05 – Allocation of Keys to ERRRC	✓	✓	
SOP 06 – Bee Keeping Equipment and Honey Containers	✓	✓	✓
SOP 07 – Weighbridge Procedures	✓	✓	✓
SOP 08 – Handling and Disposal of Asbestos	✓	✓	✓
SOP 09 – Compromised Bales Returned to ORRRC	✓	✓	✓
SOP 10 – Operation of ERRRC Leachate Pump	✓	✓	
SOP 11 – Management of ERRRC Surface Water Ponds	✓	✓	
SOP 12 – ERRRC Cell Surface Water Management	✓	✓	
SOP 13 – Pollution Incident Response Management	✓	✓	✓
SOP 14 – Complaints Handling	✓	✓	✓
SOP 15 – ORRRC Daily Checklist	✓	✓	
SOP 16 – ERRRC Daily Checklist	✓	✓	

Standard Operating Procedures	Manager Waste Services and Technical Support	Resource Recovery Centre Supervisors and Operators	Contracted Weighbridge Operators
SOP 17 – Annual OEMP Review	✓		
SOP 18 – Independent Environmental Audit	✓		
SOP 19 – ORRRC Environmental Monitoring	✓		
SOP 20 – ERRRC Environmental Monitoring	✓		
SOP 21 – Document Control	✓		
SOP 22 – ORRRC Tyre Management	✓	✓	✓
SOP 23 – ORRRC Traffic Management	✓	✓	✓
SOP 24 – ERRRC Traffic Management	✓	✓	
SOP 25 – Handling of contaminated soil at ORRRC	✓	✓	✓
SOP 26 – WasteLocate Tracking	✓	✓	✓
SOP 27 – ORRRC Community Recycling Centre	✓	✓	✓

5.1.5 WORK ACTIVITY PROCEDURES

A total of 17 Work Activity Procedures (WAPs) have been developed to provide clear, detailed and standardised guidance for carrying out operational tasks at the ORRRC and ERRRC. These WAPs are available in the site offices, and hard copies are available on request.

Staff will be trained in relevant WAPs as listed on the following page.

Work Activity Procedures	Manager Waste Services and Technical Support	Resource Recovery Centre Supervisors and Operators	Contracted Weighbridge Operators
WAP001 – Dust Prevention on Site	✓	✓	
WAP002 – Bin Closure/ Servicing	✓	✓	✓
WAP003 – Load Mulch	✓	✓	✓
WAP004 – Transfer Oil	✓	✓	✓
WAP005 – Hazardous Household Waste	✓	✓	✓
WAP006 – Tyre Stockpiling	✓	✓	✓
WAP007 – Litter Collection	✓	✓	✓
WAP009 – Landfill Waste Disposal	✓	✓	
WAP010 – Beekeeping Equipment	✓	✓	✓
WAP011 – Weighbridge Procedures	✓	✓	✓
WAP012– ERRRC Traffic Management	✓	✓	
WAP013 – ORRRC Traffic Management	✓	✓	✓
WAP014 – Handling Contaminated Soil at ORRRC	✓	✓	✓
WAP015 – Plant – Routine Maintenance	✓	✓	
WAP016 – Community Recycling Centre Household Hazardous Waste Receipt and Management	✓	✓	
WAP017 – Manual Handling	✓	✓	

5.1.6 SAFE WORK METHOD STATEMENTS

Staff will be trained in three (3) Safe Work Method Statements (SWMSs) as listed below. These SWMSs are available in the site offices, and hard copies are available on request.

Safe Work Method Statement	Manager Waste Services and Technical Support	Resource Recovery Centre Supervisors and Operators	Contracted Weighbridge Operators
SWMS 001 – Asbestos Disposal	✓	✓	✓
SWMS 002 – Lone Worker	✓	✓	✓
SWMS ERRRC-001 – Leachate Tank Exclusion Zone	✓	✓	

5.1.7 VISITORS

All persons within the property boundary (other than those visiting the recovery shop storage/display areas, scrap steel storage or green waste area) must be either fully inducted in accordance with this package or accompanied by inducted personnel.

If you see anyone on site who may not be inducted, please ask them to show their Site Induction Certification. If they do not have one, they must be inducted or escorted, depending on the reason for them being on site.

If you are required to escort a visitor on site, ensure that:

- They are issued with appropriate personal protective equipment (PPE) and know how to use it; and
- They remain with you and well away from potential hazards.

Any difficulties encountered in getting visitors to comply should be reported immediately to the Manager Waste Services and Technical Support or Resource Recovery Centre Supervisor.

The Resource Recovery Centre Supervisor shall induct the visitor/Contractor to the site in accordance with Operational Policy 084 – Work Health and Safety Management Policy Statement. **Form OCCOHS 016** is used for visitors to the site and Form **TDSOHS 001** is used for Contractors performing works at the site. Completed forms are to be returned to the Manager of Waste Services and Technical Support at the end of each month.

These forms are found in Volume 2 of the OEMP as part of **SOP 02 – Site Inductions**. Records are kept with visitors to the ERRRC using **Form 02.01**, visitors to the ORRRC using **Form 02.02** and contractors working on the site using **Form 02.03**.

5.1.8 SAFETY EQUIPMENT

The supervisor's vehicle carries a general purpose fire extinguisher. The location of other fire fighting equipment is shown in the Emergency Evacuation Plan. A water cart is on site to extinguish minor fires. For major fires, reference is made to the Landfill Environmental Management Plan **Section 3.15** (ORRRC) and **Section 4.16** (ERRRC) and Orange City Council Resource Recovery Centre Emergency Procedures Manuals (**Section 7.9** and **Section 7.10**).

The Supervisors vehicle is equipped with a First Aid Kit. Kits are also located in the Recovery Shop. J R Richards vehicles are required to carry first aid equipment as required in the OHS Regulations Chapter 2 Clause 20.

Safety signs are placed for your protection. Follow them. Where indicated by signs, or where indicated in Work Activity Procedures (WAPs) and Safe Work Method Statements (SWMS), PPE must be used properly by all personnel and maintained in effective condition.

5.1.9 WEED MANAGEMENT

There are a number of requirements that all staff and regular contractors on the site are required to follow in order to prevent the spread of noxious weeds within the Orange Waste Project sites. These include:

- Weed hygiene practices would be adopted to prevent the introduction of weeds. This includes ensuring plant and construction equipment arrive weed free, and vehicles only travel on the existing internal road network;
- Excavated top-soil would be stored separately from subsoil and replaced in a manner that replicates the original soil profile as closely as possible to assist rapid revegetation;
- Site stabilisation would be undertaken progressively during works to ensure that soils are stabilised as soon as practical. This would minimise weed infestation and the potential for sedimentation and erosion;
- Declared noxious weeds would be actively managed consistent with requirements of the *Noxious Weeds Act 1993.* The Act imposes obligations on occupiers of land to control noxious weeds declared for their area;
- Weeds that are declared noxious are those weeds that have the potential to cause harm to the community and individuals, can be controlled by reasonable means and most importantly, have the potential to spread within an area to other areas. A weed is declared noxious because its control will provide a benefit to the community over and above the cost of implementing control programs;
- OCC staff at the ERRRC are required to follow the procedures outlined in **Section 7.2 - ERRRC Weed Management Plan**, this includes familiarisation with known weeds in the Cabonne Council area, and ongoing visual monitoring to identify the presence or spread of any of these weeds;

5.1.10 ABORIGINAL HERITAGE MANAGEMENT

5.1.10.1 Responsible Person

The Manager Waste Services and Technical Support is responsible for the protection of Aboriginal sites.

5.1.10.2 Legislative Framework

The primary piece of legislation which protects Aboriginal cultural heritage in NSW is the *National Parks and Wildlife Act 1974* (NPW Act).

Under the NPW Act it is an offence to harm (destroy, deface, or damage) or desecrate an Aboriginal object or Aboriginal place, or in relation to an object, move the object from the land on which is has been situated.

Known Aboriginal objects are recorded on the NSW Office of Environment and Heritage (NSW OEH) Aboriginal Heritage Information Management System (AHIMS). There are two (2) known Aboriginal sites recorded on AHIMS at the ERRRC site (refer – **Section 3.1.10.2**).

The NPW Act requires that if a person finds an Aboriginal object on land and the object is not already recorded on AHIMS, they are legally bound under Section 89A of the NPW Act to notify the NSW OEH as soon as possible of the object's location. This requirement applies to all people and to all situations.

5.1.10.3 Known Aboriginal Sites

There are two Aboriginal Heritage sites recorded within the ERRRC site boundary. The location of these sites is recorded on **Figure 5.1.** The sites include Molong ST1 – a scarred tree, and Molong OS1 – Stone Artefacts. These sites are under no circumstances to be interfered with.

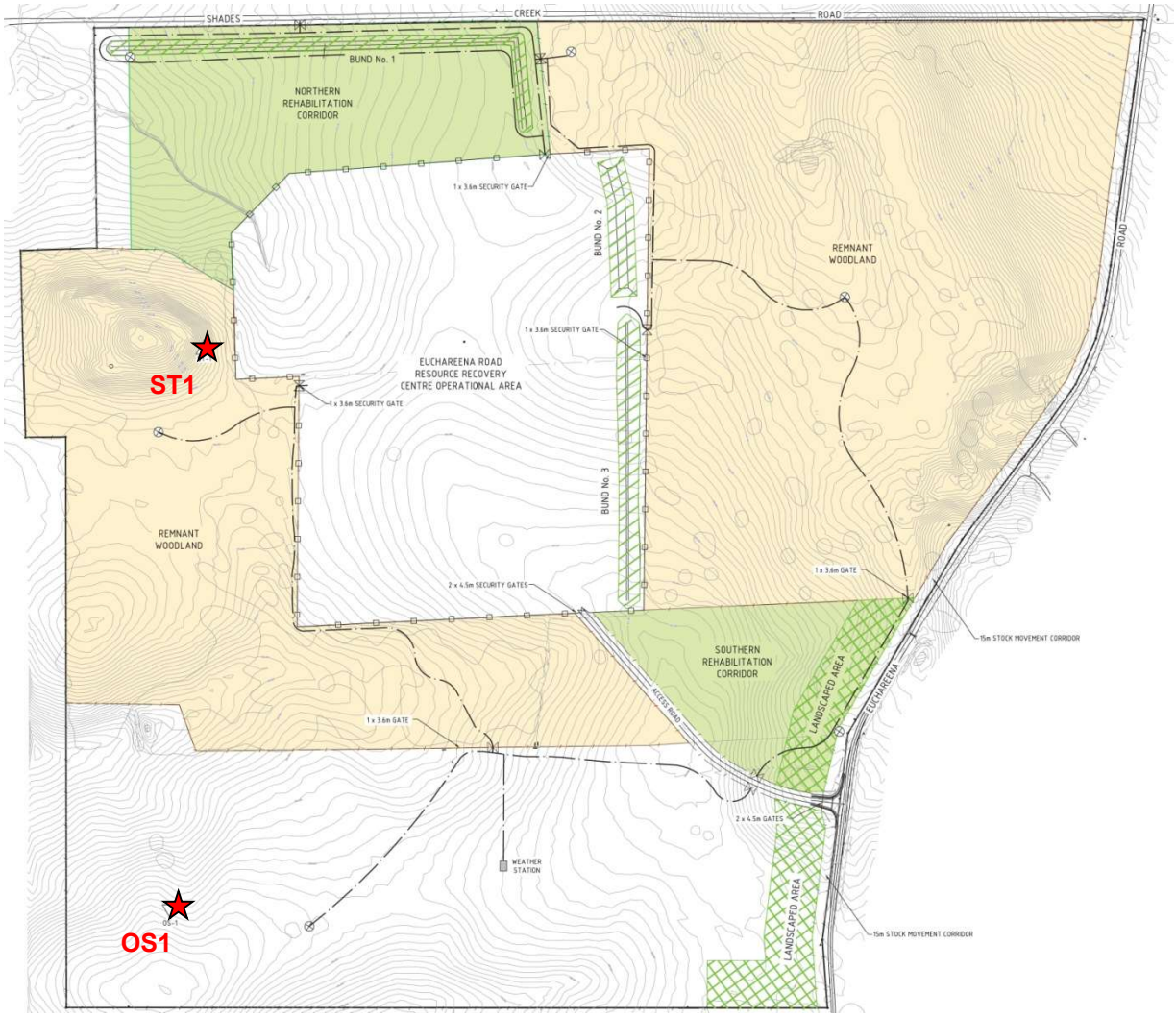


Figure 5.1: Location of Aboriginal Heritage Sites

5.1.10.4 Identifying Aboriginal Objects

Aboriginal objects are physical evidence of the use of an area by Aboriginal people. Aboriginal objects include:

- physical objects, such as stone tools, Aboriginal-built fences and stockyards, scarred trees and the remains of fringe camps.
- material deposited on the land, such as middens.
- the ancestral remains of Aboriginal people.

Examples of Aboriginal objects are provided in **Figure 5.2** on the following page.

Figure 5.2: Example of Aboriginal stone artefacts
(Source: Roads and Maritime Services Standard Management Procedure – Unexpected Heritage Items, March 2015)

5.1.10.5 Procedure for previously undiscovered Aboriginal objects

If a suspected Aboriginal object is discovered, the following actions will be taken:

- Immediately notify all site staff and operators that work must be immediately stopped at the location of the Aboriginal object, and immediately report the location of the Aboriginal object to the Manager Waste Services & Technical Support.
- Do not allow the object to be moved from the location it was discovered.
- The nature and extent of the Aboriginal object must be determined by an appropriately qualified person.
- If the object is determined to be of Aboriginal origin, then the extent of the assessed site area should be cordoned off. The NSW OEH should be notified as soon as practicable.

5.1.10.6 Procedure for dealing with skeletal material

If skeletal material is discovered, the following actions will be taken:

- Immediately notify all site staff and operators that work must be immediately stopped at the location of the skeletal material, and immediately report the location of the skeletal material to the Manager Waste Services & Technical Support.
- The area must be secured to prevent unauthorised access. Do not move skeletal material from the location it was discovered.
- The NSW Police and NSW OEH must be contacted immediately to allow appropriate investigations to be undertaken.

All bones must be treated as potential human skeletal remains until confirmed otherwise by appropriate investigations.

5.1.11 EMERGENCY PROCEDURES

For all emergencies requiring Police, Ambulance or Fire Brigade ring: 000

If no phones are available, contact Orange City Council Depot Office by two-way radio:

Contact Manager Waste Services and Technical Support on 6393 8113 and WH&S Coordinator on 6393 8022.

<u>In all cases assess the situation and clearly inform the operator of:</u>

- Location of incident – road, distance from nearest town, nearest intersection or other feature;
- Type of incident;
- Number and type of vehicles (if motor vehicle accident);
- Number of people injured and severity of injuries;

- If a spill, type of material and quantity; and
- Other details e.g. fire or risk of fire, fallen power lines etc.

This will enable the appropriate emergency services to be dispatched.

While waiting for emergency services:

- Apply first aid if appropriate;
- Control traffic around the incident. Stop traffic if necessary. Be sure to facilitate access for emergency vehicles; and
- Take whatever mitigation measures can be done safely – prevent spread of any spills, extinguish fires etc.

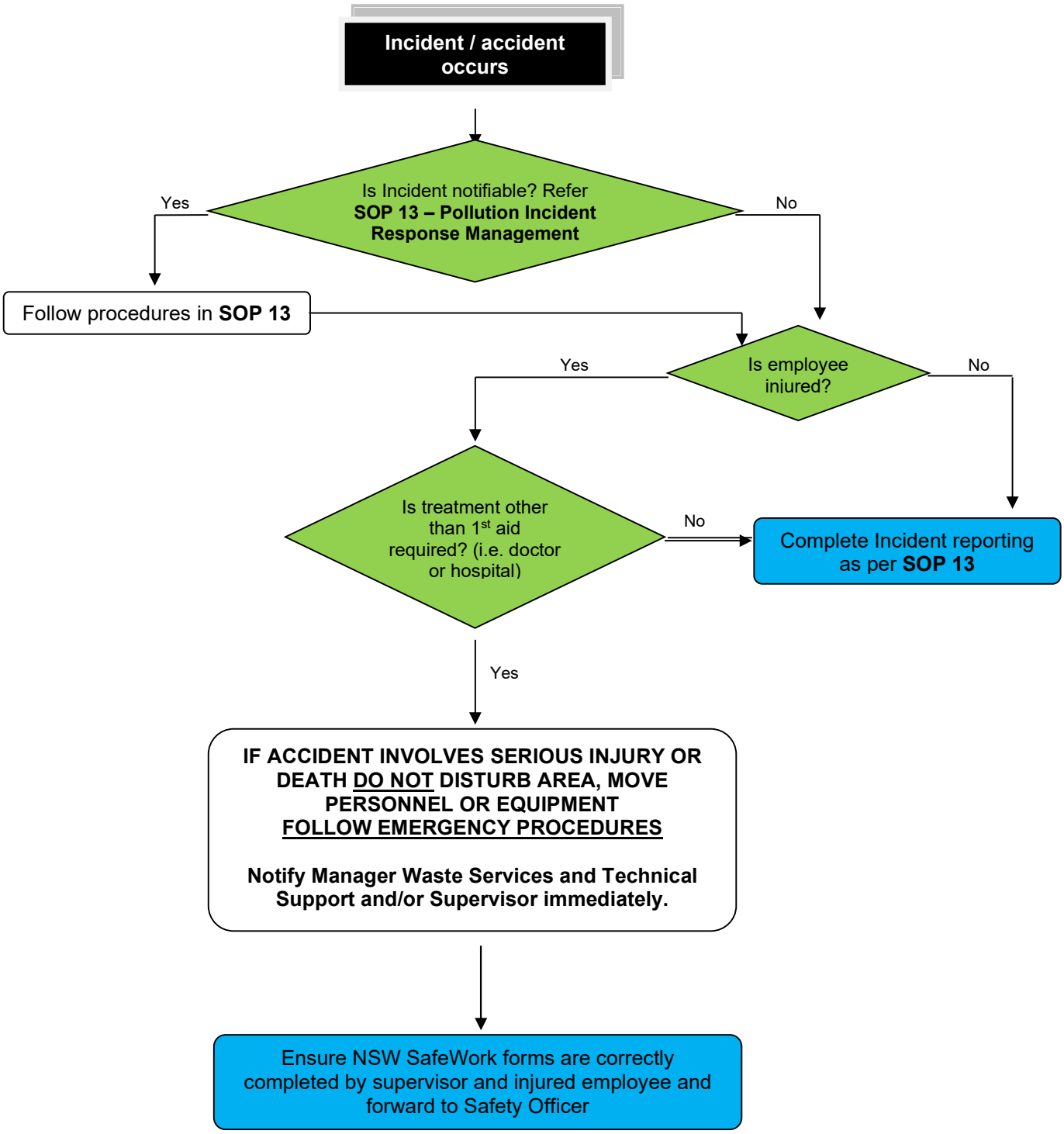
Do not take any actions which will put yourself, other employees or members of the public at greater risk.

When emergency services arrive they will take control of the incident. You will need to:

- Give them details of the incident and any further actions you have taken; and
- Assist as directed with traffic control.

As soon as possible after the incident, while details are still fresh, complete the appropriate incident report, as per **SOP 13 – Pollution Incident Response Management**.

The flowchart on the following page indicates reporting procedures in case of an accident or incident.


Incident / accident occurs
Is Incident notifiable? Refer SOP 13 – Pollution Incident Response Management
Yes
No
Follow procedures in SOP 13
Is employee injured?
Yes
No
Is treatment other than 1st aid required? (i.e. doctor or hospital)
No
Complete Incident reporting as per SOP 13
Yes
IF ACCIDENT INVOLVES SERIOUS INJURY OR DEATH DO NOT DISTURB AREA, MOVE PERSONNEL OR EQUIPMENT
FOLLOW EMERGENCY PROCEDURES
Notify Manager Waste Services and Technical Support and/or Supervisor immediately.
Ensure NSW SafeWork forms are correctly completed by supervisor and injured employee and forward to Safety Officer

5.1.12 REPORTING ACCIDENTS/INCIDENTS

All incidents which result in, or have the potential to result in accidents and/or injury must be reported and investigated, following the procedures in **SOP 13 – Pollution Incident Response Management**. This is to ensure that action can be taken to eliminate or reduce the possibility of further incidents.

If any potentially dangerous situation can be simply rectified without putting yourself or others at risk (such as standing up a sign which has been knocked over), this should be done before reporting the incident to the Manager or Works Supervisor.

All personnel must ensure that they follow safe working procedures and report all accidents or incidents.

5.1.13 WORKING NEAR CONSTRUCTION PLANT

- All personnel must wear a safety vest or other approved high visibility garments and safety footwear;
- Hard hats must be worn in designated hard hat zones. Where applicable, these are clearly marked on site. Hard hats are also required near lifting and slewing plant such as cranes, backhoes and excavators;
- Visibility, especially to the rear of some construction plant is quite limited. Be alert to reversing alarms and move away from the path of these vehicles; and
- If making or receiving phone calls; or anything else which may distract you from plant and vehicle movement, move well away from the work zone and traffic paths.

5.1.14 HAZARD IDENTIFICATION, RISK CONTROL WORK ACTIVITY PROCEDURES (WAP) & SAFE WORK METHOD STATEMENTS (SWMS)

Orange City Council's OP 084 Work Health and Safety Management Policy/ Procedure notes that:

Work Activity Procedures (WAP) will be written for all hazardous tasks performed at the workplace which do not require a SWMS. In general WAPs are needed for:

a) Hazardous tasks;

b) Complicated tasks, so that important steps don't get missed;

c) Less routine tasks, if workers need reminders about the hazards and how to control the risks.

A Safe Work Method Statement (SWMS) will be developed for all high risk tasks associated with work undertaken by or for Council utilising the risk management and methodology outlined in Section 5.1. These tasks may be identified from any toolbox meeting or WHS consultation process, or from a Project Risk Assessment OCCWHS016.

High-risk construction work, as listed in Chapter 6 Clause 291 part 6.1 in the Work Health and Safety Regulation 2011, includes works that involves or is likely to involve the disturbance of asbestos.

Input from all personnel to the development and review of WAP and SWMS, and indeed for all safety and environmental issues, is encouraged.

The Manager Waste Services and Technical Support or Resource Recovery Centre Supervisor will explain and talk through the relevant WAPs and SWMS and ensure that all personnel understand, before commencing any new activity. In order for these controls to be effective, all personnel need to:

- correctly use and maintain all protective and personal protective equipment;
- follow safe work procedures; and
- inform the Supervisor of any risks identified for which no controls have been developed.

Environmental Goals

- Both Resource Recovery Centres have a Landfill Environmental Management Plan (LEMP) that details the site specific Environmental Issues, Controls and Responsibilities including location, land use, topography, climate, geology, groundwater, and flora and fauna management. The single most important way to minimise adverse environmental impact is by ensuring compliance with these plans, which comprise **Section 3** and **Section 4** of the OEMP.
- All staff, contractors, and visitors to the site are restricted to the existing internal access tracks. This will minimise the potential spread of noxious weeds throughout the site.

Plant and Equipment

- All operators and drivers must conduct appropriate pre-start and lockdown checks on plant and vehicles to ensure that there is no leakage of fuel, oil or hydraulic fluid; or excessive noise or smoke;
- Re-fuelling of plant and vehicles must be carried out away from water courses or other environmentally sensitive areas; and
- Trucks transporting quarry and earthworks materials must have tailgates securely closed. Tarpaulin covers must be used to suppress dust where required.

Waste Materials

- All waste materials shall be disposed of appropriately (check with RRC Supervisor if in doubt).
- No materials shall be disposed of by burning.

Operational Environmental Management Plan

Operation of the RRCs will be in accordance with the licences of the waste facilities issued by the EPA. Documents included in the OEMP will not be distributed to all people involved in the operation of the centre, but will be available to anyone who is interested.

Documents that form the OEMP include:

- Landfill Environmental Management Plans for both RRCs;
- Consultation and Reporting documentation;
- Site Management Plans, including:
  - Fire Management Plans
  - Weed and Pest Management Plans
  - Noise, Air, and Flora Monitoring Programs
  - Greenhouse Gas Management Plan; and
- A number of **Standard Operating Procedures** to ensure all tasks are carried out consistently and correctly; and
- A number of **Work Activity Procedures** to ensure all tasks are carried out consistently and correctly.
- A **Safe Work Method Statement (SWMS 001 – Asbestos Disposal)** to ensure asbestos disposal is carried out correctly and safely.

5.1.15 QUALITY SYSTEM

Orange City Council has documented procedures and specific requirements and staff are required to:

- Follow procedures and specific requirements as per the **SOPs**, **WAPs** and **SWMS**;
- Complete forms and checklists accurately and promptly;
- Notify RRC Supervisor or Manager Waste Services and Technical Support of anything that may impact on the quality of the work;
- Only use materials specified by the Manager Waste Services and Technical Support; and
- Verify that the work conforms with the requirements.

Orange City Council Orange Waste Project Management Statement

Orange City Council is committed to delivering to the community a waste disposal service which achieves all the outcomes as required under the Licence and the Waste Avoidance and Resource Recovery Act 2001.

In delivering this service, Orange City Council is further committed to ensure the health, safety and welfare of our own staff, contractors, visitors and the community generally, meeting its requirements under the Work Health and Safety Act 2000 and to eliminate or reduce any adverse environmental impacts.

The management and supervising personnel of Orange City Council will engender this commitment to all centre staff through example, leadership and ongoing training.

ORANGE CITY COUNCIL – ORANGE WASTE PROJECT

SAFETY AND EMERGENCY PROCEDURES INDUCTION

This page is to be filled out and returned to the RRC Supervisor

RECEIPT OF INDUCTION PACKAGE

By completing the information below, I agree that I have read, or have had read to me, the induction package. I also agree that by signing and returning this page I understand my responsibilities as an employee or contractor on this site.

Print Name: _____

Organisation: _____

Date: _____

Signature: _____

ADDITIONAL TICKETS/LICENCES

Type of licence or ticket	Expiry Date	Sighted
OHS Construction Industry Induction (White)		
Work Activity Induction (Blue)		
Other		
Telescopic Handler		
Motor Vehicle Licence		
Backhoe (if used)		
Skid Steer (if used)		
Excavator (if used)		

5.1.16 STAFF TRAINING REGISTER

Completion and signing of the **Staff Training Register** confirms that:

- The trainees have received the appropriate training and have a full understanding of the training provided (i.e. Induction, OEMP, SOPs, WAPs, SWMS, PIRMP).
- The trainees will commit to incorporating their training into daily work practices.
- The trainer has fully trained the trainees in the appropriate inductions/procedures/plans/documents, and is confident that suitable competency has been demonstrated by the trainees.

Date of Training	Trainee Name	Trainer Name	Details of Training Completed	Trainee Signature	Trainer Signature

ORANGE CITY COUNCIL
VISITOR RECORD OF ENTRY
Euchareena Road Resource Recovery Centre

Date	Name	Company	Reason for visit	Responsible OCC Officer	ID No	Time		I have read / been advised of the emergency procedures for this site.	Entry Authorised In/ Out
						In	Out		

EMERGENCY PROCEDURE

In the event of an evacuation, please proceed to the designated muster point as outlined in the sketch opposite and wait for further instructions.

INCIDENT REPORT

In the event of you having an incident, accident or other concern while you are in Council's facility, please immediately advise the staff member with whom you are dealing/meeting.

Enjoy your visit to Orange City Council

ORANGE
CITY COUNCIL

VISITOR WHS INDUCTION CHECKLIST

GENERAL	COMMENT	INITIAL
Health & Safety within all workplaces is important to us		
Visitors have a responsibility to care for their own and others safety		
Movement around the workplace must be authorised by an OCC representative		
Any identified or perceived hazards or risks must be reported immediately to a staff member		
Faulty or equipment in poor or questionable condition must not be used and should be reported immediately		
You must declare any hazardous equipment, materials or substances which you bring onto the work premises		
PPE must be worn at all times where identified or if instructed to do so		
Blocking or obstructing walkways, or access to emergency exits, switchboards or fire extinguishers is strictly prohibited		
EMERGENCY PROCEDURES		
Emergency Evacuation paths, exits and Evacuation point explained (reminding visitor(s) to look for illuminated green exit signage)		
Explained – in the event of an emergency to make way to an emergency exit and follow your instructions or instructions from a Fire Warden. Explain that a Fire Warden will be wearing a red or yellow hard had and vest identifying them.		
Explain – who will take leadership of the workplace in the event of an emergency		
Explain – all injuries or illness sustained whist in the workplace must be reported to a staff member immediately or as soon as possible		
SMOKING, ALCOHOL & OTHER DRUGS		
Smoking is not permitted within any OCC workplace		
Explain – where designated smoking areas are if applicable		
You must not be under the influence of any alcohol or other illegal drugs whist in any OCC workplace		
If you are taking any prescription medication which may impair your judgement or ability to undertake work/duties or put any other person in the workplace at risk, you must discuss this with a OCC representative prior to commencement of work or activities		
ACCEPTABLE CONDUCT		
OCC workplaces do not tolerate verbal or physical aggression to any staff, clients, patrons or others within the workplace. Serious incidents will be reported to senior management and where necessary, local law enforcement may be notified.		
CONFIDENTIALITY		
You must maintain the confidentiality of any information that you become aware of as a consequence of your visit to this OCC workplace		
ADDITIONAL / OTHER		

ORANGE CITY COUNCIL
VISITOR RECORD OF ENTRY
Ophir Road Resource Recovery Centre

Date	Name	Company	Reason for visit	Responsible OCC Officer	ID No	Time		I have read / been advised of the emergency procedures for this site.	Entry Authorised In/ Out
						In	Out		

EMERGENCY PROCEDURE

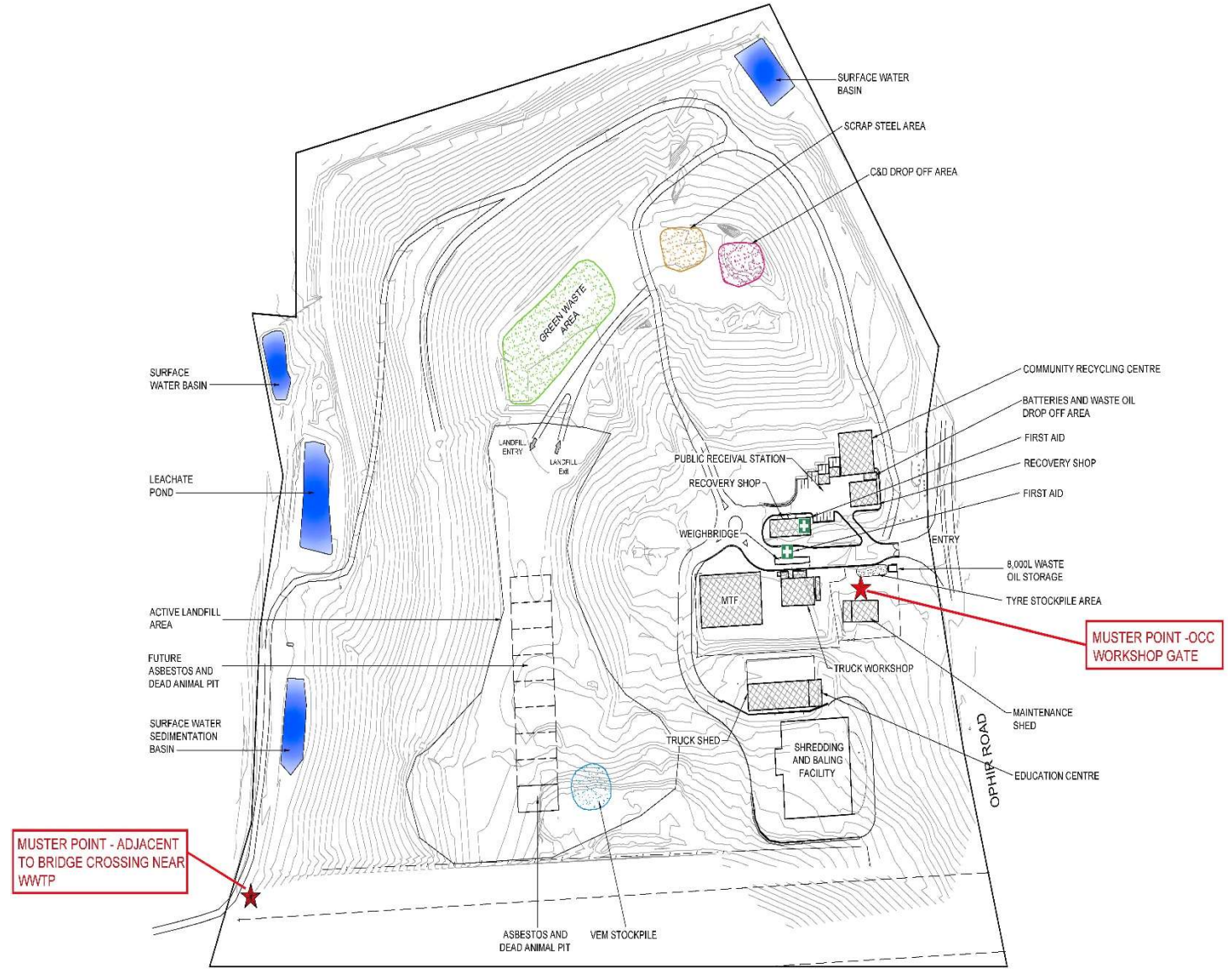
In the event of an evacuation, please proceed to the designated muster point as outlined in the sketch opposite and wait for further instructions.

INCIDENT REPORT

In the event of you having an incident, accident or other concern while you are in Council's facility, please immediately advise the staff member with whom you are dealing/meeting.

Enjoy your visit to Orange City Council

ORANGE
CITY COUNCIL



VISITOR WHS INDUCTION CHECKLIST

GENERAL	COMMENT	INITIAL
Health & Safety within all workplaces is important to us		
Visitors have a responsibility to care for their own and others safety		
Movement around the workplace must be authorised by an OCC representative		
Any identified or perceived hazards or risks must be reported immediately to a staff member		
Faulty or equipment in poor or questionable condition must not be used and should be reported immediately		
You must declare any hazardous equipment, materials or substances which you bring onto the work premises		
PPE must be worn at all times where identified or if instructed to do so		
Blocking or obstructing walkways, or access to emergency exits, switchboards or fire extinguishers is strictly prohibited		
EMERGENCY PROCEDURES		
Emergency Evacuation paths, exits and Evacuation point explained (reminding visitor(s) to look for illuminated green exit signage)		
Explained – in the event of an emergency to make way to an emergency exit and follow your instructions or instructions from a Fire Warden. Explain that a Fire Warden will be wearing a red or yellow hard had and vest identifying them.		
Explain – who will take leadership of the workplace in the event of an emergency		
Explain – all injuries or illness sustained whist in the workplace must be reported to a staff member immediately or as soon as possible		
SMOKING, ALCOHOL & OTHER DRUGS		
Smoking is not permitted within any OCC workplace		
Explain – where designated smoking areas are if applicable		
You must not be under the influence of any alcohol or other illegal drugs whist in any OCC workplace		
If you are taking any prescription medication which may impair your judgement or ability to undertake work/duties or put any other person in the workplace at risk, you must discuss this with a OCC representative prior to commencement of work or activities		
ACCEPTABLE CONDUCT		
OCC workplaces do not tolerate verbal or physical aggression to any staff, clients, patrons or others within the workplace. Serious incidents will be reported to senior management and where necessary, local law enforcement may be notified.		
CONFIDENTIALITY		
You must maintain the confidentiality of any information that you become aware of as a consequence of your visit to this OCC workplace		
ADDITIONAL / OTHER		

Toolbox Meeting Record

Toolbox meetings will be conducted at the commencement of any site works, daily for a PSMP or at the commencement of any new job, and at least once a week for repetitive maintenance works and Council fixed sites. Toolbox meetings may be carried out by any Council staff member, who has been trained in the toolbox meeting procedure, and has been delegated the responsibility for doing so by their Supervisor or Line Manager. OP 084 section 3.5

Workplace/Job Site

Company

Name of person conducting toolbox meeting

Activity description

Name of Supervisor for Works	**Period Covered by Toolbox Talk** (✓) ☐ today only ☐ if longer than one day (dates) - / / to / /
Time /Date am/pm / /	

Executive Management site visit **Signature:** **Date:** ……/……/20…..

Line Manager site visit **Signature:** **Date:** ……/……/20…..

SWMS/ WAPS/SOPs applicable to work being undertaken

CENTROC Induction Card (Contractors Only)

❑ **Yes - Card Sighted**

❑ **No - Company Name & Contact**

Discussion Items	n/a✓	Issues identified / discussed
All staff inducted to the site		
Work to be undertaken		Discuss work activities covered by this toolbox. Does everyone understand what work is to be undertaken?
Traffic/Pedestrian Access		Approved TCP
Other people & crews on site		Location, activities
Weather hazards & night work		Snow, wind, rain, lighting, heat
Utilities		Dial before you dig
PPE Available/First aid on site		First aider, kits, PPE
Plant condition/log books		Pre start checks, log books
Work at heights		Scaffolding, ladders
Excavation trenches		>1.5m bench, batter and shore
Confined spaces		Entry permit, risk assessment
Electrical works		Lockout / Tag out procedure
Noise/dust/environment in workplace		PPE, water cart
Chemicals/Hazardous materials		Safety Data Sheets, chemical storage, chemical records
Manual handling		Lifting equipment
Material storage/gas cylinders		Procedures for storage
Emergency Procedures		Muster point, equipment, first aid, communication
Amenities		Location
Design Changes		Any changes as a result of a WHS design audit
Environmental Controls		e.g. sediment and erosion controls, trees etc.
Asbestos issues		Could the work area contain asbestos

Health Conditions –Please list any known health conditions in the workplace such as allergies and anaphylaxis reactions:

Fatigue Management –Have you a strategy in place to manage fatigue? Please list any control measures to be implemented to avoid fatigue (includes secondary employment)
Have you notified your supervisor if you are exceeding fatigue management guidelines **Yes** ☐ **No** ☐
Detail on timesheet authorisation received

Additional hazards identified not included in the SWMS- Is fatigue management relevant			
Hazard	**Risk Level**	**Control**	**Residual Risk**

Additional points raised/comments –including any recent incidents relating to this activity, changes or updates to legislation, standards, codes of practice or safety alerts are to be discussed here.

I acknowledge I have been involved in/advised of the above discussions and I am confident the safety issues raised have been addressed to ensure as safe workplace as far as reasonably practicable. **Visitors to the site to indicate with a 'V' next to their name. Card number is for contractors - Centroc induction card number**

Card No	Print Name	Signature	Time

Site Characteristics & Environmental Controls

Sketch the site layout highlighting site works, intended environmental controls (such as sediment and erosion controls) and any significant features (i.e. water course, trees etc.)

Note: Sediment and erosion control used on site – insert reference or symbols from "Divert, Cover, Capture and maintain " "Booklet onto the above sketch e.g.

Section 6

CONSULTATION AND REPORTING

Consultation and Reporting TOC

6.1 COMMUNITY EDUCATION AND COMMUNICATIONS STRATEGY

6.2 WASTE REPORTING

6.3 EPL ANNUAL RETURNS

6.4 ANNUAL ENVIRONMENTAL MONITORING REPORTS

6.5 ANNUAL REVIEW AND INDEPENDENT ENVIRONMENTAL AUDIT

6.6 DOCUMENT CONTROL

Section 6.1

COMMUNITY EDUCATION AND COMMUNICATIONS STRATEGY

Orange resource recovery and waste management

Community Education Program and Communications Strategy
February 2011

Manidis Roberts

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Manidis Roberts

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1 Introduction

1.1 About this document

Community engagement and adoption is critical to the success of Orange City Council's (OCC) resource recovery upgrade. This document aims to provide the framework for communications needed to ensure the behavioural changes and community acceptance of the new resource recovery strategy. This document includes communications objectives, supporting key messages and communications tools.

1.2 The project

By combining proven technologies in a new and innovative way OCC is leading the way in sustainable waste management. By introducing an organic waste processing facility that will work in conjunction with the existing recycling and waste systems OCC is ensuring the waste disposal needs of Orange and the surrounding communities continue to be met over the next 40 years. The facility will also serve as an income source for the Council through the selling of compost produced at the site, and through user fees from surrounding Councils.

This project is born out of necessity. The current Ophir Road waste management facility has limited capacity and an alternate, sustainable approach to waste management is needed. OCC identified that 40–60% of household waste in the Orange LGA is organic. By diverting this organic waste from landfill the new strategy will ensure the Ophir Road Resource Recovery Centre has a much longer lifespan.

As part of the new system residents will be given a new bin for garden and food waste. They will continue to use their recycling and red-lidded waste bin in the same way. A new composting facility will be opened on Euchareena Road. The existing Ophir Road waste management facility and Recycle and Recovery Shop will remain, with an access road upgrade.

Collection of general household waste will eventually be reduced from weekly to fortnightly collection. This associated cost savings will help fund the composting facility.

1.3 Strategy summary

The community education program and communications strategy is in three phases:

- Announce and define (launch the brand and inform about the broad organic resource recovery strategy with a mix of new information and by drawing attention to existing information available).
- Build and engage (give details about specific changes to household resource recovery).
- Implement, monitor and feedback (implement changes and feedback to the community about the benefits the new system is having).

Each phase will build on the previous one to enable the brand to gather momentum over the two years leading to the opening of the facility. When the facility opens for operation stakeholders will be very familiar with the brand, the new composting centre and the necessary behavioural changes. The slow and steady approach will also allow plenty of time to address and manage stakeholder concerns in the lead up to the new launch of the new waste management system.

The strategy will be executed using effective and consistent messages across a number of channels to ensure all stakeholders are aware of the new resource recovery system. This strategy aims to stimulate community discussion about the positive aspects of the project in turn encouraging behavioural change. This will also help to reach sceptical or, potentially cynical segments of the population.

1.4 Audience

Primary

- Residents.
- Businesses.
- Community services (schools, hospitals etc).
- Community groups.
- Orange City Council councillors.
- Surrounding local Councils (business partnerships).
- Surrounding communities.

Secondary

- Potential customers.
- Local and state government organisations interested in the project.

1.5 Overall communication objectivess

- To establish the identity and functionality of the new resource recovery system.
- To encourage the Orange community to take ownership for and be proud of the new system.
- Promote the benefits of the new putrescible waste recovery system.
- Educate residents about the changes to household putrescible waste disposal and encourage behavioural change. In doing so reduce waste to landfill and minimise contamination in the recycling stream.
- Ensure residents are aware of construction impacts associated with works to upgrade the existing Ophir Road centre and to build the new Euchareena Road centre.
- Gain understanding and acceptance of the new system from surrounding communities.
- Encourage surrounding Councils to use the new Euchareena Road composting system.
- Help Council to attract customers for the compost produced at the Euchareena Road centre.

1.6 Positioning messages

The key positioning messages will be used throughout each phase of the communications program. All spokespersons should be familiar with the key positioning messages and use them to guide discussion about the new system and recycling putrescible waste.

Key positioning message

Orange City Council is building a new organic waste processing and baled landfill facility at Euchareena Road. The existing Ophir Road Resource Recovery Centre and the Resource Recovery Shop will continue to operate as normal.

The new Euchareena Road site will divert putrescible waste from landfill and reduce greenhouse gas emissions associated with waste management by up to 60%, over 40 years.

Orange City Council is using proven technologies in a new way to set a new standard for best practise in sustainable resource recovery.

Supporting messages

The Ophir Road Resource Recovery Centre has two years of landfill capacity left, at current filling rates, before running out of room.

Orange City Council needs to find an ecologically sustainable way of managing the waste disposal needs of the community.

Orange City Council is committed to reducing waste to landfill, and providing residents with a sustainable, value for money resource recovery service.

Orange City Council is working with surrounding councils to look for partnership opportunities.

2 Phase 1 – announce and define

2.1 Introduction

Phase one is about getting the brand out there and making people aware a change is coming. The focus will be on letting people know the new facility is being built and dealing with potential negativity through consistent and clear messaging. This is a slow burning start to get people talking and asking questions. During this phase we will work to build support through targeted communication with specific community groups.

This phase of the strategy will begin when work at the Euchareena Road site begins and will follow through until a year before it opens.

2.2 Phase one communications objectives

Phase one of the communications strategy has the following objectives:

- Soft launch of new branding to all stakeholders.
- Define new brand as completely separate to The Hub.
- Promote broad benefits of the new system.
- Explain how the composting facility will work.
- Explain why this is the preferred option for waste management/resource recovery.
- Inform impacted residents about construction impacts.
- Ensure stakeholders understand the existing resource recovery centre and shop will remain the same with enhanced organic and residual waste processing facilities constructed at both the Ophir Road and Euchareena Road sites.

2.3 Issues and response

Issue	Response
Stakeholders confusing the new brand with The Hub.	• The (brand) is Orange City Council's new approach to resource management. • (Brand) is part of a completely new approach to resource recovery. A new composting facility and baled landfill will be built at Euchareena Road. This will divert between 40–60% of waste from landfill. • The Ophir Road Resource Recovery Centre and Recovery Shop will remain open to the public for bulk waste drop offs and shopping. Bulk waste dropped off at Ophir Road will be sorted then transported to Euchareena Road. • This new approach will have less truck movements than the previous project, known as the Hub, and will also pose no threat to local bees.
Concern about use of ratepayers money.	• Orange City Council has used existing, proven technologies to develop the technology for the Euchareena Road Resource Recovery Centre. • This project will deliver financial and environmental benefits to the local and regional communities. • If no action is taken the Ophir Road Resource Recovery Centre will run out of capacity in mid-2013. This is an essential project that will benefit the local community and the environment.
Concern about use of potential farmland for waste management.	• The use of this site will provide Orange and surrounding communities with a long-term sustainable waste management strategy. • When the Euchareena Road site is closed, it will be returned to agricultural use. • A significant proportion of the Euchareena site has been dedicated as an enhanced native flora conservation area. There will also be extensive rehabilitation of the native white box grassy woodland. This will have ongoing benefits for the local environment. • To improve agricultural production in the area, compost produced at the site will be available to farmers. • The new facility will reduce household waste going to landfill, minimising the impact on arable land now, and in the future.

Issue	Response
Concern that the facility will contaminate local honey.	• A specialised waste baling technology will be used to prevent local bees from coming into contact with contaminated honey. • The shredded organics will be stored and transported from Ophir Road in enclosed trucks to the compost facility in Euchareena Road, where it will be processed in enclosed tunnels. • Residual waste not suitable for composting will be baled and wrapped in Orange before being transported to the Euchareena Road landfill. This will ensure no contact from bees located near the Euchareena site. • Residents should not put empty honey containers or food scraps with honey on them into the organics bin. This will reduce the risk of contamination to local bees and honey.
Concern that the new facility will threaten local endangered flora.	• Orange City Council is working with the Department of Environment, Climate Change and Water (DECCW) to protect and enhance the remnant Whitebox Woodland. • The Minister for Planning approved an environmental assessment of the proposed Euchareena Road and Ophir Road Resource Recovery Centres in April 2010. • Part of the Euchareena site has been dedicated to improving biodiversity in the area. There will also be extensive rehabilitation of the White box grassy woodland areas. This will have ongoing benefits for the local environment.
Cabonne residents annoyed that the Orange waste management facility is located in the Cabonne LGA	• This site provides the opportunity to nurture an endangered ecological community of Whitebox Woodland. • Part of the Euchareena site has been dedicated to improving biodiversity in the area. There will also be a rehabilitation corridor. This will have ongoing benefits for the local environment. • Local farmers will have access to a supply of compost to help improve productivity. • The facility has the ability to provide an environmentally sustainable resource recovery service for the residents of Cabonne and other surrounding communities. • The new composting centre will provide benefits for the community and local environment. • The Euchareena Road Resource Recovery Centre will be using compost and technology and baled landfill to minimise odour impacts and airborne pollutants.
‘How will this new system affect my family and me?’	• Each household will be provided with a new organics collective service commencing in early 2013. • This new waste strategy will ensure a more sustainable and more environmentally friendly way of managing household resource recovery. • The new system will reduce waste going to landfill, our largest contributor to greenhouse gas emissions. This is a benefit to the environment and all local residents.

2.4 Communications elements

Tool	Function	Audience
OCC Website	The website will have information about how the new composting and baled landfill facility will work, artists impression of what it will look like, where it's located, what the benefits are and why this system was chosen. A downloadable fact sheet will also be available in PDF format.	All stakeholders
OCC Customer Service Line	The customer service line will provide residents with any specific information they require. Customer service representatives will be briefed with relevant, in depth information in line with the information being given through other communications channels. The customer service line should explain information given through other channels – not be a source of new information.	Residents and businesses
Media engagement activities	Media release to unveil the brand and project timeline. Angle will be OCC harnessing the best existing technologies to create best practise resource recovery. Should encourage media to mention the website/social media. Talk back radio should be used to build on knowledge and to encourage useful conversation with stakeholders. Talk back radio should not be used to launch new ideas or concepts. Given OCC has an established talk back radio presence talk back appearance should remain though thorough media briefings will be required before going on air to ensure that negative feedback is easily neutralised with facts about the benefits of the projects.	All stakeholders
Targeted stakeholder meetings	Orange City Council should organise targeted meetings with action groups (eg Hub Action Group) and any other community groups with a specific interest in the project. A representative will run through a presentation explaining the new system and how it is different to the Hub proposal. The presentation should show how the new strategy addresses all of the issues raised by groups opposed to the Hub. There should be adequate time allowed for questions and answer sessions. The aim of the meetings is to get early support from groups who may voice opposition to the project or who might revive arguments relating to the Hub.	Community groups
Newsletter/e-newsletter	A branded newsletter will provide information about the composting and baled landfill facility and OCC's waste management strategy including how it will work and why it is the best solution for OCC waste management needs.	Residents and businesses

Tool	Function	Audience
Display at Council	A public display at Council will show the story of the Orange resource recovery and waste management strategy on boards in the Council foyer. Should show aerials with overlays of the sites and explain in plain English how the facilities will work together, explain the benefits and also have brief information on what the other options were to show why this is the best option. Fact sheet/newsletter should be available on the stand. Display could also be shown at the library and at the ELF.	All stakeholders
Facebook/Twitter	Establish two-way line of communication. Should have information on how the system will work and frequent Twitter updates on work progress and environmental and community benefits of the project. Also back up any media releases, letters and newsletters with a mention on social media mediums.	All stakeholders
Letter to surrounding Councils	Introduction of the brand, also providing information on the timeline of project.	Councils
Door knock and notification to impacted residents (construction)	Letter to notify residents of construction activities. The letter should outline what impacts they can expect and when, a timetable for construction activities and a contact name and number if they have any issues. The newsletter should be included with the letter. Door knocking will aid the delivery of the message. It will be important to minimise complaints about construction so as to reduce the risk of negative comments in the interactive tools (talk back, Facebook and Twitter)	Residents
Schools	Send information packs to schools about the benefits of composting in reducing landfill. Where possible this should tie in with existing composting and permaculture programs at the local schools.	Residents

3 Phase 2 – build and engage

3.1 Introduction

This phase is focussed on starting to educate people about how the new resource recovery and waste management strategy will affect their household waste disposal habits. The focus is on simple behaviour changes for a large environmental benefit.

This phase will be implemented one year to 4 months before the Euchareena Road and Ophir Road facilities are opened.

3.2 Phase two communication objectives

- Gather feedback on project negotiables eg starch bag vs newspaper.
- Keep community informed of progress of construction work.
- Inform and educate residents about changes to household waste collection.
- Further promote environmental benefits.
- Promote potential business benefits of the Euchareena Road Resource Recovery Centre.
- Understand community sentiment about the new resource recovery approach.
- Gain public acceptance of the new approach to resource recovery.

3.3 Issues and response

Issue	Response
The new approach is too expensive	• The new waste facilities will cost ratepayers approximately $1 per week. • The new waste facilities will ensure residents and surrounding communities have a sustainable waste management system for the next 40 years. • Methane gases from landfill are OCC's biggest contributor to greenhouse gas emissions. By reducing landfill we reduce these gases reducing the potential cost of a carbon tax in the future. • By reducing the amount of waste going to landfill we are able to reduce the likelihood of having to pay a waste and environment levy to the Department and Environment, Climate Change and Water. The levy is applied to each tonne of waste going to landfill in some NSW Local Government Areas. • Orange City Council's is able to reduce the cost to ratepayers by selling the compost produced at the new facility. • The Ophir Road Resource Recovery Centre will reach capacity in mid 2013 if a significant change isn't made. This is an essential project to ensure the local community continues to have a reliable recycling and waste collection service.
'Why does it have to be so complicated?'	• Orange City Council will provide residents with a new kerbside collection bin for organic waste. Residents simply put their food scraps and garden waste in the new bin and Council will do the rest. There will be no change to the current recycling waste collection. • Orange City Council will provide kitchen composting bins and a year supply of biodegradable bags to residents who want them. • We are committed to listening to the needs of the community. If you have a suggestion for making sorting your rubbish easier visit our website, Facebook, an information booth or call our customer service centre. • The Ophir Road Resource Recovery Centre will still be open to residents for bulk waste drop offs, recycling and "Recovery Shop" sales.
The environment is in good shape, why change from the current system at Ophir Road?	• The Ophir Road Resource Recovery Centre will reach capacity in mid-2013 without a change to the way we manage waste. An alternative solution was necessary. • Orange City Council looked at a number of alternatives for waste management and resource recovery. The (brand) strategy was selected because it is the most cost effective and environmentally sustainable solution. • Orange City Council audits of household waste have shown that on average the weekly red-lidded bin is between 40% and 60% organic waste. By diverting this from landfill we will reduce greenhouse gasses and also reduce the need to use arable land for landfill in the future.

Issue	Response
'I like the current Ophir Road facility, I don't want things to change.'	• The public will see no difference to services offered, just improvements. The receivable station will remain the same. • The new system will allow the Ophir Road Resource Recovery Centre to stay in business for longer and offer more resource recovery services. • The Ophir Road Resource Recovery Centre and Recovery Shop will operate as normal. • The Ophir Road landfill will reach capacity in mid 2013 without a change to the way we manage waste. An alternative solution was necessary.
'Why isn't the Council encouraging home composting? Surely this is a step backwards in terms of encouraging people to manage their own waste?'	• The take up rates on home composting is low. Our research shows that most people only use and maintain a compost bin for up to five months of the year because of the weather. • This system will allow people to easily compost and make the necessary reduction in landfill needed to maintain the high standard of waste collection and resource recovery we currently have. • Orange City Council has joined up to the 'Love Food, Hate Waste' initiative to help residents make better purchasing choices to minimise the organic waste production. (Brand) is a holistic approach to sustainable resource recovery.

3.4 Communications elements

Tool	Function	Audience
Information booth	Establish information booth at popular public venue eg shopping mall near grocery store. Provide information, biodegradable bag and kitchen bin samples, diagrams of the way the new system works, FAQs, fact sheets. Information should avoid technical jargon/heavy text and use visuals/graphics eg pie chart showing waste composition of average household and how waste to landfill will reduce over time with the new facility. Should also show the impact of reducing landfill on greenhouse gas emissions.	OCC and surrounding residents
Schools	Samples of the new kitchen bins and biodegradable bags should be distributed to schools to be used in classrooms. This can help to encourage school composting programs already in place. A roaming visit to schools to discuss how the new composting facility will work with explanation of the baling technology. Run a competition through local schools encouraging school children to come up with ways of reducing landfill. The most innovative suggestions win vegetable plants for their school. If the school already has a vegetable garden and compost bin the prize can be a seed raising kit and a selection of heritage seeds. Plus gardening	Residents (both OCC and surrounding)

Tool	Function	Audience
	equipment. The individual winner will win a gardening kit eg gloves, hat, branded shirt, seeds and seed raising tray.	
OCC Website	Information on the website should be focussed on the changes to household organics collection and the time line for when the changes will be made. The website should direct people to the information booth and social media where they can give feedback and have their questions answered. A schematic that shows which waste goes into which bin should be available. Eg showing non recyclables into the red-lidded bin, organics into the new bin etc Use website to link to DECCW greenhouse emissions calculators, information about the environment and waste levy.	All stakeholders
OCC Customer Service Line	The primary service of the customer service line will be to explain to customers how the new system will affect them. The focus should be on the simplicity and ease of the new system and the environmental benefits. Customers should leave the conversation feeling like it won't be a very big change but there will be a very big benefit. Customer service reps should be briefed a week before the media release and website changes and have cheat sheets available at all times.	Residents
Media engagement activities	Media release to announce changes to household waste collection. Talk back radio should focus on the simplicity of the change and the reduction in waste to landfill and subsequent environmental benefits. Emphasis will be on simplicity of the new system, '*one new bin but everything else stays the same'.*	All stakeholders
Newsletter/ e-newsletter	Newsletter will provide information about changes to household waste collection and reinforce community and environmental benefits. Newsletter will have photos of how the new system works eg new bins / bags. There will also be a timeline for when the changes will start to take effect. Advertise when information booths will be open.	Residents
Display at Council	Update display to show information about changes to household waste collection. There will also be information about construction progress and significant milestones. There will be a sign up sheet for those wishing to get a new kitchen bin and bags. (If offered) Photos will show changes at the site as well as photos of the new kitchen bin.	All stakeholders

Tool	Function	Audience
Facebook/Twitter	It is essential that Facebook and Twitter are monitored closely during this phase. Negative comments and feedback should be responded to on the day they are made, as soon as possible. Use these mediums to really drive the eco-credentials of the project and also to further support the material going directly to people's homes. Use social media to link to DECCW greenhouse emissions calculators and information about the Environment and Waste levy.	All stakeholders
Notification letter	Keep impacted residents informed about specific construction activities that will impact on them eg days with significantly higher truck movements. If the impact is likely to attract criticism the letter should be accompanied by a door knock.	Residents
Briefing to Chamber of Commerce	A briefing should be offered to the Chamber of Commerce to discuss how the new system will be implemented with businesses e.g. voluntary take-up of the service. Email to Chamber of Commerce following briefing to all members of outcomes/details.	Businesses

4 Phase 3 – implement, monitor and feedback

4.1 Introduction

This phase is centred on ensuring practical information about dates and the new collection service have been made available to all impacted residents. It's also about building excitement and encouraging talk and behavioural change.

The following activities should be implemented in the four months prior to the opening of the new waste facilities. This phase also includes post implementation activities for giving feedback to stakeholders about how the new system is working.

4.2 Phase 3 communication objectives

- Official opening of the new Euchareena Road and Ophir Road Resource Recovery Centre (under the brand banner).
- Provide residents with timeline for bin distribution and when to start using them.
- Ensure residents know what to expect during the change over.
- Feedback to residents about how the new system is working.
- Work with the community to overcome implementation problems.
- Begin building and strengthening business partnerships with potential compost customers.
- Use success of implementation to encourage surrounding Council's to use the new system.

4.3 Issues and response

Issue	Response
Confusion about how to use the new bin	• The new bin is for organic waste only. Simply put your kitchen scraps and garden clippings in the new bin and we'll do the rest. Your recycling and general waste bins will remain the same. • The new bin is for organic material only. It should be used for food scraps and garden clippings.
Threat to local bees and honey	• Residents should avoid putting food into their organics bin if it is covered in honey. • You should thoroughly clean, and replace the lid on any honey containers before you put them into your recycling bin.

Issue	Response
Where do I get my new kitchen bin? (If bins are offered)	• Register your details online, at the Council display or at one of our information booths. We will distribute the kitchen bins (if offered) and a year supply of biodegradable bags in the month prior to the new collection system starting.
Do I have to use the new bins?	• Using the new organics bin will help us to reduce waste going to landfill by between 40–60%. This is critical to ensuring the people of Orange continue to have a reliable and sustainable recycling, resource and waste collection service. • By using the new organics bin you are helping Orange to set best practice in sustainable resource recovery. • When the new system is fully established and people have had time to adjust to the change we will be investigating reducing the weekly kerbside collection of the red-lidded bins to a fortnightly service. Proper use of the organics bin will ensure you always have enough bin capacity for all of your recycling, non-recyclable and organic material. • The kitchen bin is optional. You can choose the best way to collect your kitchen scraps.
Can I use regular plastic bags in the new bin?	• No. Regular plastic bags are not biodegradable and cannot be used in compost. Residents can put food scraps in a biodegradable bag, wrap them in newspaper or put them directly into the new bin. No plastics other than biodegradable bags should go into the new bin. • The biodegradable bags provided by Council are a different colour to the usual white plastic bags. This will make them distinguishable during sorting. Residents continuing to use plastic bags in the new organics bin will be contacted and reminded to use only biodegradable bags or paper to bundle their organics.
Can I bring my garden clippings directly to the new Euchareena Road centre?	• No. The Euchareena Road centre is closed to the public. You can still access the Ophir Road Resource Recovery Centre and Recovery Shop the same way you always have.
Where do I go when I have more waste than I can fit in my bins?	• The Ophir Road Resource Recovery Centre and Recovery Shop will operate as it always has. You can still access the centre to dispose of unwanted recyclable, green waste and non-recyclable material.

4.4 Communications elements

Tool	Function	Audience
Information booth	The information booth should be set up and manned on weekends for the month before and after the opening of the new waste facilities. Information on collection days should be available and photographs of the different way organic waste can be put into the new bin (bio bag, newspaper and unwrapped).	OCC and surrounding residents

Tool	Function	Audience
Newsletter	A newsletter should be distributed to all residents with information about when new bins will be delivered, when collections will start and when the open days will be. Again, the letter should discuss the environmental benefits of the new system. Also discuss milestones and expectations for environmental benefits from reducing landfill in the first year. A separate newsletter targeting businesses only should also be developed and distributed. The newsletter will discuss the system with specific information about collection in the business areas (eg main streets) encouraging participation.	Residents and businesses
Invitation and collection calendar	An invitation to the open day with a calendar showing bin collection days sent to residents. Will also have an info graphic showing how the new system will work and what the residents needs to do.	Residents
Council tours of new facility	Representatives from surrounding councils should be invited to a tour and briefing about the new facility prior to the official opening. It will be an opportunity to run through expected usage figures and nurture potential partnerships and/or customers.	Surrounding councils
Media opportunities	Two months out from start of new bin collection a press release should go out to encourage articles about dates and what people need to do. Local journalists should be invited to tour the new facility and attend an information lunch two weeks before the official opening of the Euchareena new facilities. Invite journalists and photographers to the open day BBQ. Provide press releases with information on uptake to the new system in the months following implementation of the new system. Use talk back radio to promote the open days and announce dates for when the new organics bin will be delivered and when collection will begin.	Media
Advertising	In the two months leading up to the start of collection of the new bin use, paid advertising will be used to publicise the date of the delivery of the organics bin and when the program will commence Use advertising to invite people to the open day/s. Six months to a year after the launch an advertisement should show statistics on success of the new system eg how much compostable waste has been diverted from landfill (based on how much compost has been produced), and the environmental benefits as a result.	Residents and businesses

Tool	Function	Audience
Twitter/Facebook	Announce open days and launch BBQ on Facebook and Twitter first. Invite all 'friends' and Twitter followers to the open days. Upload photos of the events to Facebook. Use Twitter to announce and build energy around the launch eg 'three days until new bins are delivered'. Use Twitter in months following launch to show statistics on how much waste has been diverted from landfill and subsequently how much greenhouse gasses have been reduced. Reinforce what is required of residents eg 'Remember to use your new bin for organics from this week onward;	All stakeholders. Residents
Open days and guided educational tour of new facilities.	An official open day BBQ at the Euchareena Road and Ophir Road sites to launch the new system and show people how the centre will work. Guided tours to people who pre-register. The tours will reinforce what is required of the resident to make the system work. It will also focus on the environmental benefits of the new facilities. Pending interest a number of open days can be held in the first months of operation. Special school tours should be organised on weekdays. The information booth should be set up at the open day with free vegetable and fruit seeds available to the first 50 people through the gates.	All stakeholders
Direct response to community questions	Where possible requests and questions will be responded to through one of the established communication elements eg website, information booth. In some cases, if a particular group of people (eg Senior Citizens Association) need more information special presentations or distribution of targeted information will be arranged.	Specific community groups
Customer Service Centre	It's expected the customer service centre will have most calls about the new system in the months leading up to the commissioning of the new waste facilities The centre should be well prepared with answers to expected questions and should direct customers to the website, newsletter and information booth.	Residents and businesses
Poster display	Six months to a year following the opening of the new facilities a poster display near Coles or Woolworths, at the ELF and at Council should show how much compostable waste has been diverted from landfill. Posters should show potential greenhouse gas emission reductions, and how much waste is diverted from landfill. The posters will also address implementation issues and educate people on elements of the new system that the may not be following correctly eg in the case of widespread use of plastic bags in new organics bin.	All stakeholders

COMMERCIAL IN CONFIDENCE

Appendix A Communications tools

Tool	Function	Audience
OCC Website	The website will have information about how Orange Resource Recovery and Waste Management will work, where it's all located, what the benefits are and why it was chosen. Can also download PDF of fact sheet newsletter The OCC website will need to have up to date information.	All stakeholders
OCC Customer Service Line	The customer service line will provide residents with specific information they require. Customer service representatives will be briefed with relevant, in depth information in line with the information being given through others communications channels. The customer service line should explain information given through other channels – not be a source of new information.	Residents
Media engagement activities	A coordinated cross department approach to ensure accurate and consistent information is available to all types of media in a timely manner. Spokespeople will be available to media, including the talk back radio, to inform stakeholders about (brand) and strategy. Talk back radio should be used to build on knowledge and to encourage useful conversation with stakeholders. Keep media releases simple and straightforward. Only release one at a time and ensure they're written in plain English. Send photos with media releases wherever possible.	All stakeholders
Newsletter	A full colour designed newsletter will be provided to all residents as needed. In addition to providing timely information about the project/facility it will also be an opportunity to provide other sustainable living tips to further position Orange resource recovery and waste management as being eco-friendly. The newsletter should be in plain English, be free of jargon and use plenty of photos and drawings. Where possible pictures should tell the story.	Residents
Display	A public display at Council should have up to date information, photographs, progress reports and take away information available. This will be visible to people paying bills or doing other business at Council.	All stakeholders

Tool	Function	Audience
Facebook/Twitter	Facebook and Twitter can potentially allow good insight to community sentiment. Ensure site names are included on all collateral. Announcements should be made on Facebook and Twitter just before media announcements or to coincide with the media stories. This will give enthusiasts and opportunity to be 'ahead of the news'. These should be used to provide real time updates on milestones, decisions and announcements including informing about media placements (print and broadcast) eg listen to [talkback radio] at 2pm to hear [spokesperson] speak about baled composting technology. All information should be updated to Facebook and Twitter first. Photographs of construction progress and events should be uploaded to the Facebook page. The pages should also be used to provide useful information about waste reuse and recycling at home and in business. This will help establish and cement the eco-credentials of the brand.	All stakeholders
Letters	Addressed letters to targeted stakeholders to inform about a specific topic eg construction notification.	All stakeholders
Information booth	The information booth will be used at special events eg Food Week, Wine Week, Frost Festival and National Field Days to provide general information and answer questions. The booth should be well branded to raise the profile of the brand. The booth is a key community education tool. Fact sheets and newsletters should be available as well as samples of the bins and photographs of the composting centre and baled compost. The information booth can also be used at key times throughout the campaigns to allow face-to-face communication with residents. It should be set up outside Coles or Woolworths or another well-populated location when key information is released via the media, social media and direct communication eg when information about the new bin is made available.	Residents and businesses
Door knock	Residents who will be impacted by the construction will be door knocked at the start of works. This will give people an opportunity to speak to somebody about what they can expect over the coming years eg truck movements. The environmental benefits of the new centre should be promoted.	Residents impacted by construction work

Tool	Function	Audience
Open days	Have public open days leading up to the official opening of the facilities. People must pre register for a guided tour that explains how the facility works. Should include schools only days. Advertise in local newspaper and talk back radio.	All stakeholders
Advertising	Direct, one-way communication. Will get across specific information and help promote brand attributes.	All stakeholders primarily residents and businesses
School information sessions	Information sessions tailored for school aged children. Aimed at reaching residents through their children. Should be fun and interactive.	Residents

6.2 WASTE REPORTING

The waste recording methods for the Orange Waste Project are derived from the Waste and Resource Recovery Monitoring Program (WRRMP) (refer **Section 9.3**).

6.2.1 METHODS

The following methods will be used for waste recording:

- The ORRRC weighbridge will be used to record the quantity of wastes delivered by heavy vehicles on a weigh on tare off basis;
- Small loads (cars, utes, vans, trailers and minimum loads) arriving at the ORRRC will be recorded on a count basis. The weight factors listed in **Appendix A** of the **WRRMP** will be applied to estimate waste tonnes;
- The ORRRC weighbridge will be used to record the quantity of wastes leaving by heavy vehicles on a tare on weigh off basis;
- Small loads (cars, utes, vans, trailers and minimum loads) leaving the ORRRC will be recorded on a count basis. The weight factors listed in **Appendix A** of the **WRRMP** will be applied to estimate waste tonnes;
- The quantity of finished compost product leaving the ERRRC will be recorded for each load. Load cells on the front end loaders will be used to record the weight in each truck; and
- Internal waste movements at the ORRRC will be recorded over the weighbridge.

In addition to the above methods, where required, asbestos and tyre waste will be recorded by waste transporters using the WasteLocate system at the ORRRC weighbridge by scanning the QR2id plate (refer – **SOP26 – WasteLocate Tracking**).

Orange City Council does weigh in/weigh out large loads using the single weighbridge. The items that are counted are cars, utes and trailers, with weight factors applied to these loads. Data for the 2012/2013 financial year indicate counted loads make up about 10% of the total waste stream (in terms of weight).

OCC use the EPA weight factors and has also done some studies to determine weight factors for loads which will then be applied.

There will be a gross check on the tonnes of waste coming into the facility as all waste leaving will be weighed. Further, all small loads will be delivered to the receival station, and the receival station bins will be weighed as they are transferred to the baling shed. It will be possible to use this data to identify any potential errors that may be attributable to using the weight factors.

Council's forward capital works program does not include a second weighbridge at the ORRRC.

It is suggested that OCC use the waste data collected over the next two years and review the need for a second weighbridge if a significant discrepancy is identified in the waste in/waste out data.

Weighbridge procedures are provided in **WAP 011 – Weighbridge Procedures**.

6.2.2 WASTE INTO ORRRC

Every vehicle entering the ORRRC is recorded by the weighbridge operators (Refer to **SOP 07** and **WAP 011 – Weighbridge Procedures**). Records will include:

- Date/time;
- Vehicle type;
- Waste type;
- Waste source; and
- Weight (or vehicle type where applicable).

If required, asbestos and tyre waste will be recorded by waste transporters using the WasteLocate system at the weighbridge by scanning the QR2id plate (refer – **SOP 26 – WasteLocate Tracking**).

A range of waste types, sub-types and vehicle types will be used to describe each waste stream received at the ORRRC. These are listed in **Appendix A** of the **WRRMP**.

Computer records will be maintained. All records will be kept for a minimum of four years.

6.2.3 INTERNAL ORRRC WASTE MOVEMENTS

Internal waste movements will be recorded over the ORRRC weighbridge in accordance with **Table 6.2.1**. Records will include:

- Date/time;
- Waste type;
- Waste Source; and
- Weight (or vehicle type where applicable).

A range of waste types will be used to describe each waste stream moved internally at the ORRRC. These are listed in **Appendix A** of the **WRRMP**.

Computer records will be maintained. All records will be kept for a minimum of four years.

Table 6.2.1 – Internal Waste Movements

Type	Waste Movement		How Measured
	From	To	
Mixed Waste	Receival station bins	Baler/Shredding shed	Weighed
Garden Organics	Green drop off	ERRRC Tunnel Composting Facility	Weighed
C&D Waste	C&D drop off (recyclable bricks/concrete and masonry)	Offsite for processing	Weighed
	C&D drop off (non-recyclable)	Baling facility	Weighed
Recycling	Recovered from mixed waste in bailing shed	MTF	Weighed
Recycling	Recovered from organics in shredding shed	MTF	Weighed
Mixed Waste	Waste from MTF	Baler/Shredding shed	Weighed
Mixed Waste	Contamination from organics	Baler/Shredding shed	Weighed
Mixed Waste	Contamination from mixed waste	Baler/Shredding shed or special waste storage facility	Weighed

Source: Waste and Resource Recovery Monitoring Program

6.2.4 WASTE LEAVING ORRRC

Every vehicle leaving the ORRRC with any waste will be recorded by the weighbridge operators. Records will include:

- Date/time;
- Vehicle type;
- Waste Type;
- Waste Source; and
- Weight (or vehicle type where applicable).

If required, asbestos and tyre waste will be recorded by waste transporters using the WasteLocate system at the weighbridge by scanning the QR2id plate (refer – **SOP 26 – WasteLocate Tracking**).

A range of waste types and sub-types and vehicle types will be used to describe each waste stream leaving the ORRRC. These are listed in **Appendix A** of the **WRRMP**.

Computer records will be maintained. All records will be kept for a minimum of four years.

6.2.5 WASTE INTO ERRRC

At this stage only three waste types will be received at the ERRRC:

- Baled mixed waste to be landfilled;
- Inert waste to be landfilled; and
- Shredded organic waste to be composted.

Each load will be weighed and recorded over the ORRRC weighbridge as it leaves the facility. Computer records will be maintained. All records will be kept for a minimum of four years.

6.2.6 WASTE LEAVING ERRRC

The only waste leaving the ERRRC will be composted organics.

Records for each load will include:

- Date and time;
- Vehicle type;
- Weight (tonnes); and
- Destination.

Load cells on the front end loaders will be used to record the weight in each truck.

JR & EG Richards will provide a financial year annual summary of compost movements out of the ERRRC to Orange City Council. All records will be kept for a minimum of four years.

6.2.7 REPORTING

Yearly waste data reports will be submitted for the ORRRC landfill and ERRRC landfill in accordance with Section 47(5) of the *Protection of the Environment Operations (Waste) Regulation 2014*.

These reports will be provided in the approved form to the EPA within 60 days of the end of each subsequent financial year, refer **Section 6.3 – EPL Annual Returns** for further details.

Full waste reporting including total waste streams, diversion, disposal at ORRRC landfill, transfer to the ERRRC for processing and disposal, and the quantity of finished product exported from the composting facility will be documented in the ORRRC Annual Environmental Monitoring Report as per **Section 6.4 – Annual Environmental Monitoring Report**.

This report will accompany the Annual Return for each EPL.

6.3 EPL ANNUAL RETURNS

OCC must complete and supply to the EPA an Annual Return in the approved form comprising:

- A Statement of Compliance; and
- A Monitoring and Complaints Summary.

The Annual Return must be submitted to the EPA by registered post, within 60 days of the licence anniversary. The licence anniversary for each facility is the 1 July.

- The ORRRC EPL No. 5956 annual return is due no later than August 30 of each year; and
- The ERRRC EPL No. 20104 annual return is due no later than August 30 of each year.

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

In addition to the Annual Return, an administration fee and a load-based fee is required for each premises to be paid annually.

6.3.1 ORRRC MONITORING AND RECORDING CONDITIONS

All monitoring points identified by the EPL No. 5956 are displayed on **Figure 6.3.1**. 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 of **Table 6.3.1**. The sampling method, units of measure, and sample frequency is specified opposite in the other columns.

Table 6.3.1 – ORRRC Monitoring Requirements

Monitoring Point	Pollutant	Units of Measure	Frequency	Sampling Method	Location Description
Point 12	Accumulated gas monitoring (methane)	% by Volume	Monthly	Probe	All buildings within 250m of landfilled areas (and where consent/permission is granted for buildings not owned by the licensee)
Point 1,2,3,4,5,6, 13,14,15,16	Alkalinity (as calcium carbonate)	milligrams per litre	Special Frequency 1	Grab sample	Locations identified on **Figure 6.3.1** as follows: Point 1-BH1, 2-BH1a, 3-BH2, 4-BH2a, 5-BH3, 6-BH4, 13-BH7, 14-BH7a, 15-BH5, 16-BH6.
Point 1,2,3,4,5,6, 13,14,15,16	Aluminium	milligrams per litre	Special Frequency 1	Grab sample	As above
Point 1,2,3,4,5,6, 13,14,15,16	Ammonia	milligrams per litre	Special Frequency 1	Grab sample	As above
Point 1,2,3,4,5,6, 13,14,15,16	Boron	milligrams per litre	Special Frequency 1	Grab sample	As above

Table 6.3.1 – ORRRC Monitoring Requirements

Monitoring Point	Pollutant	Units of Measure	Frequency	Sampling Method	Location Description
Point 1,2,3,4,5,6, 13,14,15,16	Calcium	milligrams per litre	Special Frequency 1	Grab sample	As above
Point 1,2,3,4,5,6, 13,14,15,16	Chloride	milligrams per litre	Special Frequency 1	Grab sample	As above
Point 1,2,3,4,5,6, 13,14,15,16	Conductivity	microsiemens per cm	Special Frequency 1	Grab sample	As above
Point 1,2,3,4,5,6, 13,14,15,16	Copper	milligrams per litre	Special Frequency 1	Grab sample	As above
Point 1,2,3,4,5,6, 13,14,15,16	Fluoride	milligrams per litre	Special Frequency 1	Grab sample	As above
Point 1,2,3,4,5,6, 13,14,15,16	Iron	milligrams per litre	Special Frequency 1	Grab sample	As above
Point 1,2,3,4,5,6, 13,14,15,16	Magnesium	milligrams per litre	Special Frequency 1	Grab sample	As above
Point 1,2,3,4,5,6, 13,14,15,16	Manganese	milligrams per litre	Special Frequency 1	Grab sample	As above
Point 1,2,3,4,5,6, 13,14,15,16	Nitrate	milligrams per litre	Special Frequency 1	Grab sample	As above
Point 1,2,3,4,5,6, 13,14,15,16	pH	pH	Special Frequency 1	Grab sample	As above
Point 1,2,3,4,5,6, 13,14,15,16	Phosphate	milligrams per litre	Special Frequency 1	Grab sample	As above
Point 1,2,3,4,5,6, 13,14,15,16	Potassium	milligrams per litre	Special Frequency 1	Grab sample	As above
Point 1,2,3,4,5,6, 13,14,15,16	Sodium	milligrams per litre	Special Frequency 1	Grab sample	As above
Point 1,2,3,4,5,6, 13,14,15,16	Standing Water Level	As Appropriate	Special Frequency 1	Inspection	As above
Point 1,2,3,4,5,6, 13,14,15,16	Sulfate	milligrams per litre	Special Frequency 1	Grab sample	As above
Point 1,2,3,4,5,6, 13,14,15,16	Total dissolved Solids	milligrams per litre	Special Frequency 1	Grab sample	As above
Point 1,2,3,4,5,6, 13,14,15,16	Total organic carbon	milligrams per litre	Special Frequency 1	Grab sample	As above
Point 1,2,3,4,5,6, 13,14,15,16	Total petroleum hydrocarbons (TPH)	milligrams per litre	Special Frequency 1	Grab sample	As above
Point 1,2,3,4,5,6, 13,14,15,16	Total recoverable hydrocarbons (TRH)	milligrams per litre	Special Frequency 1	Grab sample	As above
Point 1,2,3,4,5,6, 13,14,15,16	Total Phenolics	milligrams per litre	Special Frequency 1	Grab sample	As above
Point 1,2,3,4,5,6, 13,14,15,16	Zinc	milligrams per litre	Special Frequency 1	Grab sample	As above
Point 7,8	Alkalinity (as calcium carbonate)	milligrams per litre	Monthly during discharge	Grab Sample	Locations identified on **Figure 6.3.1** as follows: Point 7-SW3, 8-SW4

Table 6.3.1 – ORRRC Monitoring Requirements

Monitoring Point	Pollutant	Units of Measure	Frequency	Sampling Method	Location Description
Point 7,8	Ammonia	milligrams per litre	Monthly during discharge	Grab Sample	Locations identified on **Figure 6.3.1** as follows: Point 7-SW3, 8-SW4
Point 7,8	Boron	milligrams per litre	Monthly during discharge	Grab Sample	Locations identified on **Figure 6.3.1** as follows: Point 7-SW3, 8-SW4
Point 7,8	Calcium	milligrams per litre	Monthly during discharge	Grab Sample	Locations identified on **Figure 6.3.1** as follows: Point 7-SW3, 8-SW4
Point 7,8	Chloride	milligrams per litre	Monthly during discharge	Grab Sample	Locations identified on **Figure 6.3.1** as follows: Point 7-SW3, 8-SW4
Point 7,8	Conductivity	Microsiemens per cm	Monthly during discharge	Grab Sample	Locations identified on **Figure 6.3.1** as follows: Point 7-SW3, 8-SW4
Point 7,8	Fluoride	milligrams per litre	Monthly during discharge	Grab Sample	Locations identified on **Figure 6.3.1** as follows: Point 7-SW3, 8-SW4
Point 7,8	Iron	milligrams per litre	Monthly during discharge	Grab Sample	Locations identified on **Figure 6.3.1** as follows: Point 7-SW3, 8-SW4
Point 7,8	Magnesium	milligrams per litre	Monthly during discharge	Grab Sample	Locations identified on **Figure 6.3.1** as follows: Point 7-SW3, 8-SW4
Point 7,8	Manganese	milligrams per litre	Monthly during discharge	Grab Sample	Locations identified on **Figure 6.3.1** as follows: Point 7-SW3, 8-SW4
Point 7,8	Nitrate	milligrams per litre	Monthly during discharge	Grab Sample	Locations identified on **Figure 6.3.1** as follows: Point 7-SW3, 8-SW4
Point 7,8	pH	pH	Monthly during discharge	Grab Sample	Locations identified on **Figure 6.3.1** as follows: Point 7-SW3, 8-SW4
Point 7,8	Potassium	milligrams per litre	Monthly during discharge	Grab Sample	Locations identified on **Figure 6.3.1** as follows: Point 7-SW3, 8-SW4
Point 7,8	Sodium	milligrams per litre	Monthly during discharge	Grab Sample	Locations identified on **Figure 6.3.1** as follows: Point 7-SW3, 8-SW4
Point 7,8	Sulfate	milligrams per litre	Monthly during discharge	Grab Sample	Locations identified on **Figure 6.3.1** as follows: Point 7-SW3, 8-SW4
Point 7,8	Total organic carbon	milligrams per litre	Monthly during discharge	Grab Sample	Locations identified on **Figure 6.3.1** as follows: Point 7-SW3, 8-SW4
Point 7,8	Total phenolics	milligrams per litre	Monthly during discharge	Grab Sample	Locations identified on **Figure 6.3.1** as follows: Point 7-SW3, 8-SW4

Table 6.3.1 – ORRRC Monitoring Requirements

Monitoring Point	Pollutant	Units of Measure	Frequency	Sampling Method	Location Description
Point 7,8	Total petroleum hydrocarbons (TPH)	milligrams per litre	Monthly during discharge	Grab Sample	Locations identified on **Figure 6.3.1** as follows: Point 7-SW3, 8-SW4
Point 7,8	Total recoverable hydrocarbons (TRH)	milligrams per litre	Monthly during discharge	Grab Sample	Locations identified on **Figure 6.3.1** as follows: Point 7-SW3, 8-SW4
Point 9	Alkalinity (as calcium carbonate)	milligrams per litre	Special Frequency 1	Grab sample	Location identified as L2 on **Figure 6.3.1**
Point 9	Ammonia	milligrams per litre	Special Frequency 1	Grab sample	Location identified as L2 on **Figure 6.3.1**
Point 9	Boron	milligrams per litre	Special Frequency 1	Grab Sample	Location identified as L2 on **Figure 6.3.1**
Point 9	Calcium	milligrams per litre	Special Frequency 1	Grab sample	Location identified as L2 on **Figure 6.3.1**
Point 9	Chloride	milligrams per litre	Special Frequency 1	Grab sample	Location identified as L2 on **Figure 6.3.1**
Point 9	Conductivity	Microsiemens per cm	Special Frequency 1	Grab sample	Location identified as L2 on **Figure 6.3.1**
Point 9	Fluoride	milligrams per litre	Special Frequency 1	Grab sample	Location identified as L2 on **Figure 6.3.1**
Point 9	Iron	milligrams per litre	Special Frequency 1	Grab sample	Location identified as L2 on **Figure 6.3.1**
Point 9	Magnesium	milligrams per litre	Special Frequency 1	Grab sample	Location identified as L2 on **Figure 6.3.1**
Point 9	Manganese	milligrams per litre	Special Frequency 1	Grab sample	Location identified as L2 on **Figure 6.3.1**
Point 9	Nitrate	milligrams per litre	Special Frequency 1	Grab sample	Location identified as L2 on **Figure 6.3.1**
Point 9	pH	pH	Special Frequency 1	Grab sample	Location identified as L2 on **Figure 6.3.1**
Point 9	Potassium	milligrams per litre	Special Frequency 1	Grab sample	Location identified as L2 on **Figure 6.3.1**
Point 9	Sodium	milligrams per litre	Special Frequency 1	Grab sample	Location identified as L2 on **Figure 6.3.1**
Point 9	Sulfate	milligrams per litre	Special Frequency 1	Grab sample	Location identified as L2 on **Figure 6.3.1**
Point 9	Total organic carbon	milligrams per litre	Special Frequency 1	Grab sample	Location identified as L2 on **Figure 6.3.1**
Point 9	Total phenolics	milligrams per litre	Special Frequency 1	Grab sample	Location identified as L2 on **Figure 6.3.1**
Point 9	Total petroleum hydrocarbons (TPH)	milligrams per litre	Special Frequency 1	Grab sample	Location identified as L2 on **Figure 6.3.1**
Point 9	Total recoverable hydrocarbons (TRH)	milligrams per litre	Special Frequency 1	Grab sample	Location identified as L2 on **Figure 6.3.1**

Source: EPL No. 5956. Note: 'Special Frequency 1' means: inspect every 6 months and sample for analysis where liquid is present

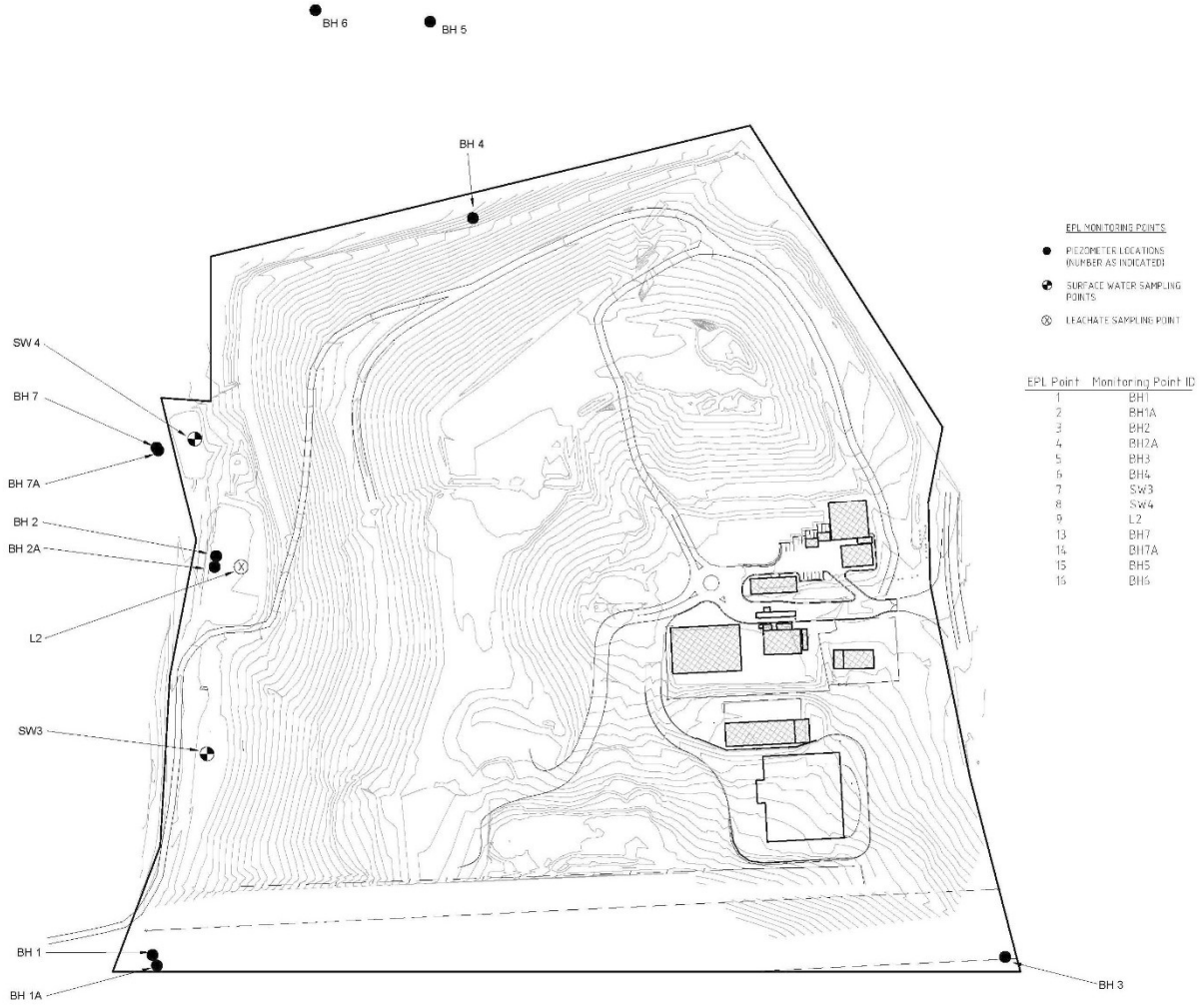

Figure 6.3.1: ORRRC Environmental Monitoring Stations

6.3.2 ERRRC MONITORING AND RECORDING CONDITIONS

For each ERRRC 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 of **Table 6.3.2**. The sampling method, units of measure, and sample frequency is specified opposite in the other columns.

Table 6.3.2 – ERRRC Monitoring Requirements – Dust and Water Monitoring

Monitoring Point	Pollutant	Units of Measure	Frequency	Sampling Method
Point 1,2,3,4	Particulates – Deposited Matter	g/m^2 per month	Monthly	AS3580.10.1-2003
Point 6,7,8,9,10,11	Alkalinity (as calcium carbonate)	milligrams per litre	Special Frequency 1	Grab sample
Point 6,7,8,9,10,11	Ammonia	milligrams per litre	Special Frequency 1	Grab sample
Point 6,7,8,9,10,11	Calcium	milligrams per litre	Special Frequency 1	Grab sample
Point 6,7,8,9,10,11	Chloride	milligrams per litre	Special Frequency 1	Grab sample
Point 6,7,8,9,10,11	Conductivity	microsiemens per cm	Special Frequency 1	Grab sample

Table 6.3.2 – ERRRC Monitoring Requirements – Dust and Water Monitoring

Monitoring Point	Pollutant	Units of Measure	Frequency	Sampling Method
Point 6,7,8,9,10,11	Fluoride	milligrams per litre	Special Frequency 1	Grab sample
Point 6,7,8,9,10,11	Iron	milligrams per litre	Special Frequency 1	Grab sample
Point 6,7,8,9,10,11	Magnesium	milligrams per litre	Special Frequency 1	Grab sample
Point 6,7,8,9,10,11	Manganese	milligrams per litre	Special Frequency 1	Grab sample
Point 6,7,8,9,10,11	Nitrate	milligrams per litre	Special Frequency 1	Grab sample
Point 6,7,8,9,10,11	pH	pH	Special Frequency 1	Grab sample
Point 6,7,8,9,10,11	Potassium	milligrams per litre	Special Frequency 1	Grab sample
Point 6,7,8,9,10,11	Sodium	milligrams per litre	Special Frequency 1	Grab sample
Point 6,7,8,9,10,11	Standing Water Level	As Appropriate	Special Frequency 1	Inspection
Point 6,7,8,9,10,11	Sulfate	milligrams per litre	Special Frequency 1	Grab sample
Point 6,7,8,9,10,11	Total organic carbon	milligrams per litre	Special Frequency 1	Grab sample
Point 6,7,8,9,10,11	Total Phenolics	milligrams per litre	Special Frequency 1	Grab sample
Points 12,13,14,15,16	Alkalinity (as calcium carbonate)	milligrams per litre	Monthly	Grab sample
Points 12,13,14,15,16	Ammonia	milligrams per litre	Monthly	Grab sample
Points 12,13,14,15,16	Arsenic	milligrams per litre	Monthly	Grab sample
Points 12,13,14,15,16	Cadmium	milligrams per litre	Monthly	Grab sample
Points 12,13,14,15,16	Calcium	milligrams per litre	Monthly	Grab sample
Points 12,13,14,15,16	Chromium	milligrams per litre	Monthly	Grab sample
Points 12,13,14,15,16	Conductivity	microsiemens per cm	Monthly	Grab sample
Points 12,13,14,15,16	Copper	milligrams per litre	Monthly	Grab sample
Points 12,13,14,15,16	Fluoride	milligrams per litre	Monthly	Grab sample
Points 12,13,14,15,16	Iron	milligrams per litre	Monthly	Grab sample
Points 12,13,14,15,16	Lead	milligrams per litre	Monthly	Grab sample
Points 12,13,14,15,16	Magnesium	milligrams per litre	Monthly	Grab sample
Points 12,13,14,15,16	Manganese	milligrams per litre	Monthly	Grab sample
Points 12,13,14,15,16	Mercury	milligrams per litre	Monthly	Grab sample
Points 12,13,14,15,16	Nickel	milligrams per litre	Monthly	Grab sample
Points 12,13,14,15,16	Nitrate	milligrams per litre	Monthly	Grab sample
Points 12,13,14,15,16	Oil and Grease	milligrams per litre	Monthly	Grab sample
Points 12,13,14,15,16	Pesticides	milligrams per litre	Monthly	Grab sample
Points 12,13,14,15,16	pH	pH	Monthly	Grab sample
Points 12,13,14,15,16	PAH	milligrams per litre	Monthly	Grab sample
Points 12,13,14,15,16	Potassium	milligrams per litre	Monthly	Grab sample
Points 12,13,14,15,16	Sodium	milligrams per litre	Monthly	Grab sample
Points 12,13,14,15,16	Sulfate	milligrams per litre	Monthly	Grab sample
Points 12,13,14,15,16	Total Phenolics	milligrams per litre	Monthly	Grab sample

Table 6.3.2 – ERRRC Monitoring Requirements – Dust and Water Monitoring

Monitoring Point	Pollutant	Units of Measure	Frequency	Sampling Method
Points 12,13,14,15,16	Total suspended solids	milligrams per litre	Monthly	Grab sample
Points 12,13,14,15,16	Turbidity	NTU	Monthly	Grab sample
Points 12,13,14,15,16	Zinc	milligrams per litre	Monthly	Grab sample
Point 17	Alkalinity (as calcium carbonate)	milligrams per litre	Special Frequency 1	Grab sample
Point 17	Ammonia	milligrams per litre	Special Frequency 1	Grab sample
Point 17	Arsenic	milligrams per litre	Special Frequency 1	Grab sample
Point 17	BTEX	milligrams per litre	Special Frequency 1	Grab sample
Point 17	Cadmium	milligrams per litre	Special Frequency 1	Grab sample
Point 17	Calcium	milligrams per litre	Special Frequency 1	Grab sample
Point 17	Chloride	milligrams per litre	Special Frequency 1	Grab sample
Point 17	Chromium	milligrams per litre	Special Frequency 1	Grab sample
Point 17	Conductivity	microsiemens per cm	Special Frequency 1	Grab sample
Point 17	Copper	milligrams per litre	Special Frequency 1	Grab sample
Point 17	Fluoride	milligrams per litre	Special Frequency 1	Grab sample
Point 17	Iron	milligrams per litre	Special Frequency 1	Grab sample
Point 17	Lead	milligrams per litre	Special Frequency 1	Grab sample
Point 17	Magnesium	milligrams per litre	Special Frequency 1	Grab sample
Point 17	Manganese	milligrams per litre	Special Frequency 1	Grab sample
Point 17	Mercury	milligrams per litre	Special Frequency 1	Grab sample
Point 17	Nickel	milligrams per litre	Special Frequency 1	Grab sample
Point 17	Nitrate	milligrams per litre	Special Frequency 1	Grab sample
Point 17	Oil and Grease	milligrams per litre	Special Frequency 1	Grab sample
Point 17	Pesticides	milligrams per litre	Special Frequency 1	Grab sample
Point 17	pH	pH	Special Frequency 1	Grab sample
Point 17	PAH	milligrams per litre	Special Frequency 1	Grab sample
Point 17	Potassium	milligrams per litre	Special Frequency 1	Grab sample
Point 17	Sodium	milligrams per litre	Special Frequency 1	Grab sample
Point 17	Sulfate	milligrams per litre	Special Frequency 1	Grab sample
Point 17	Total petroleum hydrocarbons	milligrams per litre	Special Frequency 1	Grab sample
Point 17	Total Phenolics	milligrams per litre	Special Frequency 1	Grab sample
Point 17	Total suspended solids	milligrams per litre	Special Frequency 1	Grab sample
Point 17	Turbidity	NTU	Special Frequency 1	Grab sample
Point 17	Zinc	milligrams per litre	Special Frequency 1	Grab sample

Source: EPL No. 20104. Note: 'Special Frequency 1' means: inspect every 6 months and sample for analysis where liquid is present

Weather monitoring is also required on the site at monitoring point 5, using the parameters specified in **Table 6.3.3**.

Table 6.3.3 – ERRRC Weather Monitoring Station – Point 5

Parameter	Units of Measure	Frequency	Averaging Period	Sampling Method
Air temperature	°C	Continuous	1 hour	AM-4
Wind direction	°	Continuous	15 minute	AM-2 & AM-4
Wind speed	m/s	Continuous	15 minute	AM-2 & AM-4
Sigma theta	°	Continuous	15 minute	AM-2 & AM-4
Rainfall	mm	Continuous	15 minute	AM-4
Relative Humidity	%	Continuous	1 hour	AM-4

Source: EPL No. 20104.

6.3.3 RECORDING POLLUTION COMPLAINTS

As per **SOP 14 – Complaints Handling** all complaints (noise, dust, odour, litter) are required to be recorded at each premise. A summary of all pollution complaints is to be submitted as part of the Annual Return to the EPA.

6.3.4 ANNUAL ENVIRONMENTAL MONITORING REPORT

In addition to the Annual Returns submitted to the EPA, an Annual Environmental Monitoring Report (AEMR) is to be collated, detailing all monitoring observations made during the year relating to the effect or potential effect of operations on the environment. This AEMR is discussed in **Section 6.4.**

6.4 ANNUAL ENVIRONMENTAL MONITORING REPORTS

6.4.1 ENVIRONMENTAL GOAL

An Annual Environmental Monitoring Report (AEMR) is submitted to the EPA within 60 days of the EPL anniversary each year.

- The ORRRC operates under EPL No. 5956, with anniversary date 1 July; and
- The ERRRC operates under EPL No. 20104, with anniversary date 1 July.

6.4.2 PROCEDURES

The AEMR must collate and record all monitoring observations made during the year relating to the effect or potential effect of operations on the environment. In particular, the report will include:

- A summary report of the total non-hazardous waste received during the past 12 months (including cover material), its composition, broken down into tonnes of municipal, commercial and industrial, building and demolition waste, and its eventual fate (including recycling markets);
- A report from a registered surveyor or an alternative approved by the EPA of the volume of landfill space consumed in the period for which the report is prepared and the estimate of compaction that this volume represents;
- An estimate of remaining landfill capacity and life based on current and projected waste acceptance rates;
- A hydrogeological report that assesses the changes detected in the groundwater monitoring results over the period of operation, updated for the last 12 months. Any changes in hydraulic gradient or significant variations in contaminant concentrations will be highlighted and discussed;
- A leachate collection report that identifies the quantity and composition of any leachate generated over the past 12 months;
- A summary report of surface water monitoring over the period of operation updated for the past 12 months. Any significant variations in contaminants will be highlighted and discussed;
- The record of odour, litter, dust or other complaints received by the facility in the past 12 months and comments on their correlation with prevailing weather conditions or waste reception circumstances;
- A summary of any incident reports for the 12 months period; and
- Any other specific information requested by the EPA or listed in the EPL.

6.4.3 RESPONSIBILITIES

Manager Waste Services and Technical Support

- Preparing and submitting the AEMR within 60 days of the EPL anniversary each year.

6.5 ANNUAL REVIEW AND INDEPENDENT ENVIRONMENTAL AUDIT

6.5.1 ANNUAL REVIEW

It is a requirement of the PA that after one year of commencing operations (5th August 2013), and annually thereafter, OCC shall review the environmental performance of the project to the satisfaction of the Director General. The review must:

a) Describe the operations that were carried out in the past year;

b) Analyse the monitoring results and complaints record of the Project over the past year, which includes a comparison of these results against the:

- Relevant statutory requirements, limits or performance measures/criteria;
- Monitoring results of previous years; and
- Relevant predictions in the EA.

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

d) trends any trends in the monitoring data over the life of the project; and

e) describe what measure will be implemented over the next year to improve the environmental performance of the Orange Waste Project.

The Annual Review will provide a summary of results provided in the Annual Environmental Monitoring Reports (AEMRs) for ERRRC and ORRRC.

Each year the entire OEMP and related SOPs, WAP's and SWMS will be reviewed and updated accordingly, following the procedures in **SOP 21 – Document Control**.

The JR Richards OEMP covers all composting activities, MGB collection Services, recycling within the MTF and waste processing within the sorting and bailing shed at the ORRRC. This OEMP is to be included in the Annual Review, with updates made accordingly.

6.5.2 INDEPENDENT ENVIRONMENTAL AUDIT

Within a year of the commencement of operations for the project, and every five years thereafter, unless the Director-General directs otherwise, OCC shall commission and pay the full cost of an Independent Environmental Audit of the project. The audit must:

- Be conducted by suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Director-General;
- Include consultation with relevant agencies;
- Assess the environmental performance of the project and assess whether it is complying with the relevant requirements within the Project Approval and the relevant Environmental Protection Licences;

- Review the adequacy of any plans or programs required under these approvals; and, if appropriate; and
- Recommend measures or actions to improve the environmental performance of the project, and/or any plan or program required under these approvals.

Within six weeks of completing the audit, or as otherwise agreed by the Director-General, OCC shall submit a copy of the audit report to the Director-General, together with its response to any recommendations contained in the audit report.

The Independent Environmental Audit encompasses the entire Orange Waste Project, and therefore all relevant management plans and other documentation associated with JR Richards and any other contractors is to be reviewed to ensure compliance with the Project Approval.

6.6 DOCUMENT CONTROL

It is important that relevant parties hold only the latest versions of this OEMP and each of the Standard Operating Procedures (SOPs), Work Activity Procedures (WAPs) and Safe Works Method Statement (SWMS) for the Orange Waste Project. It is important that any updates are disseminated in a controlled manner, and only the latest version of each document is held by the relevant parties.

6.6.1 PROCEDURES

6.6.1.1 Dissemination and Updates

This OEMP, SOPs, WAPs and SWMS are living documents and reviews and updates are expected to ensure accuracy and effectiveness of the environmental management and incident response of the Orange Waste Project, and ensuring compliance with the Project Approval. For these reasons, document control is important.

It is important that the storage locations of these documents are made known to all relevant staff members and that only the latest version is in use.

Each of the documents noted above includes a register that records who holds controlled copies of the document. The process for updating the OEMP, or a section of the OEMP is described in **SOP 21 – Document Control**. Associated with this SOP is a register for recording updates. The register summarises who holds copies of the OEMP.

6.6.1.2 Updates

Details of the update number, new section of the document, new version number and date of issue must be recorded and signed off on the Updates Register for the document updated, and the register in **SOP 21 – Document Control** updated accordingly.

Updated versions of documents must always be issued with a covering memo summarising changes. When a new document is received the old version is to be replaced in its entirety.

All updates must be prepared so that each page of the document details the version number and date of issue, recorded in the bottom left hand corner.

Six copies of any new section of the OEMP, SOPs, WAPs or SWMS will need to be produced. They are to be distributed to the following:

- Manager Waste Services and Technical Support, Orange City Council;
- Ophir Road Resource Recovery Centre Supervisor, Orange City Council;
- Euchareena Road Resource Recovery Centre Supervisor, Orange City Council;
- Manager Administration - Governance, Orange City Council;
- Environment Protection Authority, Bathurst; and
- Premise Australia Pty Ltd, Orange.

Section 7

SITE MANAGEMENT PLANS

Site Management Plans - TOC

7.1 ORRRC FIRE MANAGEMENT PLAN

7.2 ERRRC WEED MANAGEMENT PLAN

7.3 ERRRC PEST MANAGEMENT PLAN

7.4 ERRRC FIRE MANAGEMENT PLAN

7.5 ERRRC NOISE MONITORING PROGRAM

7.6 ERRRC AIR MONITORING PROGRAM

7.7 ERRRC LANDFILL GAS MANAGEMENT PLAN

7.8 ERRRC FLORA AND HERITAGE MONITORING PROGRAM

7.9 ORRRC EMERGENCY PROCEDURES MANUAL

7.10 ERRRC EMERGENCY PROCEDURES MANUAL

7.1 ORRRC FIRE MANAGEMENT PLAN

7.1.1 AIM OF THE PLAN

To control and suppress all fires within the boundaries of the Ophir Road Resource Recovery Centre (ORRRC) in a safe and efficient manner

7.1.2 OBJECTIVES

1) Reduce the threat of loss or damage by fire to life and property.

2) Reduce the risk of any occurring fire incidents from escaping the confines of the ORRRC.

7.1.3 HAZARDS

The ORRRC has many hazards with and without the presence of fire. Various commercial and domestic wastes are compacted into a cell which is subsequently covered with soil. Many of the items within the landfill are unidentified. It is therefore difficult to determine what reaction will occur due to the presence of fire. It is well known that the ORRRC areas contain a substantial amount of paper, plastics, pressure cans, bottles and other domestic and industrial refuse. It therefore could be assumed that there will be the presence of the following gases:

- Hydrogen Cyanide;
- Phosgene;
- Carbon Monoxide;
- Nitrogen Oxides;
- Ammonia;
- Acetic Acids;
- Hydrogen Chlorite; and
- Isocyanides.

These are similar gases which could be experienced in a house fire. The ORRRC has the advantage of being generally in the open; therefore fire fighters can stay away from the direct smoke zone of a fire.

Further major hazards may include exploding pressure cans, bottles, paint containers and fibro.

7.1.4 ORGANISATIONS

- **Primary:** NSW Rural Fire Service, Orange City Council and NSW Ambulance; and
- **Secondary:** NSW Fire Brigade.

7.1.5 EVACUATION PROCEDURE

Should an evacuation of the Resource Recovery Centre be necessary as determined by the ORRRC Supervisor (i.e. incident beyond the control of ORRRC staff resources), the Supervisor will alert the Weighbridge Operator to activate the evacuation warning siren and initiate the communication protocol as listed under "Activation".

The ORRRC Supervisor shall by UHF radio co-ordinate Council personnel and/or contractors on site (Wangarang personnel) to close the entry gates to prevent community access to the site and also patrol all areas of the ORRRC in order to evacuate any patrons/contractors.

The Wangarang Industries Supervisor and J R Richards Manager will conduct a staff head count with the ORRRC Supervisor with all personnel advised to gather at the Evacuation Muster Point(s) following sounding of the evacuation warning siren. There are two muster points at the ORRRC site, as displayed on **Figure 7.1.1**.

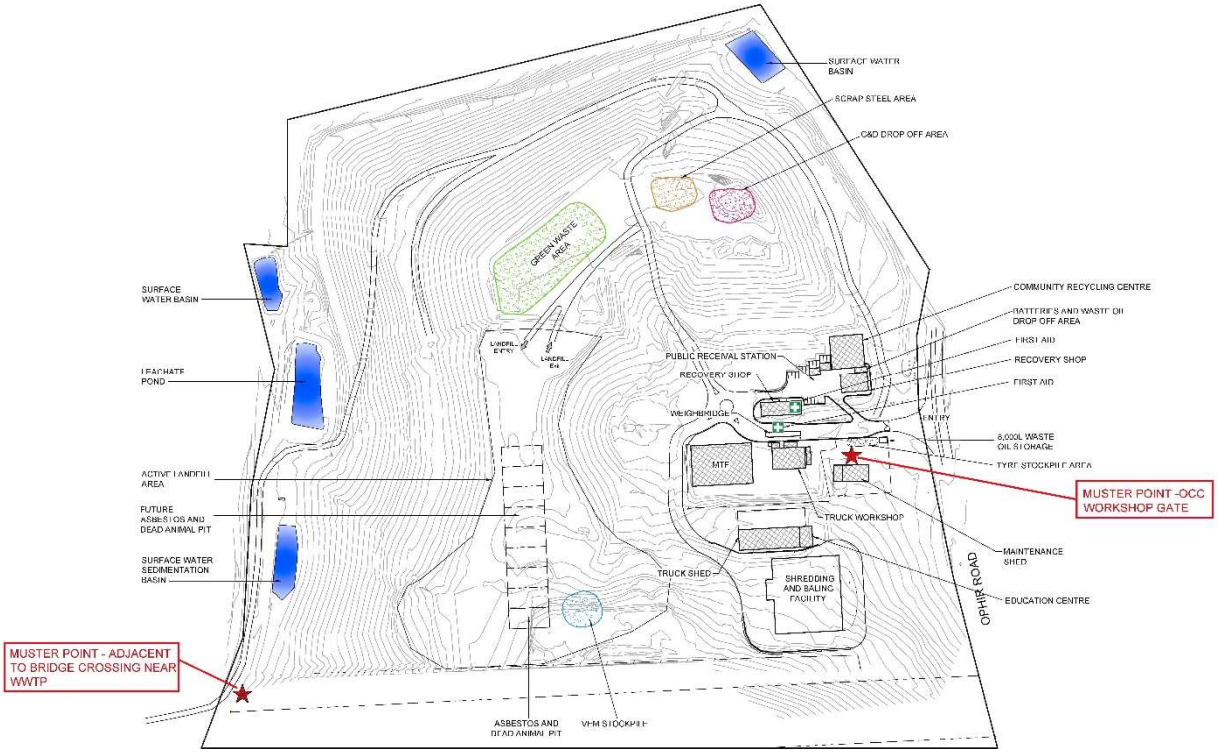

Figure 7.1.1: Evacuation Muster Points at the ORRRC

7.1.6 ACTIVATION

1) Should a fire occur within or near the boundary of the Resource Recovery Centre it should be reported through 000.

2) The appropriate Brigade will be activated. Support, Wangarang Industries Supervisor and J R Richards Manager are to be notified as soon as possible.

3) The officer on duty (Weighbridge Operator) shall inform the Ambulance Service of the fire and ask them to be on standby.

7.1.7 STRATEGY

Rural Fire Service Brigade personnel are to combat the fire with extreme caution and to make every effort to contain the fire within the Centre boundary. Every attempt will be made to reduce risk to individuals by inhalation of smoke and the effects of poisonous gases. Fire fighters will be clothed in full RFS PPE at all times and consideration should be given to utilising Compressed Air Breathing Apparatus (CABA).

7.1.8 METHOD OF COMBAT

1) The officer in charge will obtain relevant information from the ORRRC Supervisor to determine hazardous areas and types of waste after which the Senior Officer will brief the fire fighters.

2) Earth moving equipment shall be made available to assist the Brigade in attendance by Orange City Council.

3) Bulk water shall be made available to assist the Brigade. Council's water tanker is on site. If the overhead filler is not available, there is a hydrant available on the corner of Bulgas Road and Ophir Road.

4) The Ophir Road shall be monitored to ensure smoke does not cause a hazard to traffic. Should this occur, Orange Police will be notified to assist in traffic control.

7.1.9 WEATHER

A weather report should be obtained as soon as possible so the officer in charge can be aware of any wind changes or adverse weather conditions which may affect fire behaviour.

7.1.10 OFFICER IN CHARGE

The Officer in Charge shall be the senior officer of the first arriving appliance, who in turn may defer this role upon the arrival of any other senior officer.

7.1.11 EQUIPMENT REQUIRED

7.1.11.1 Fire appliances

- An initial response of at least two heavy tankers will be required with further fire fighting resources activated subject to the initial situation report provided by the officer in charge.

7.1.11.2 Other appliances

- Earth moving equipment will be supplied by the OCC;
- Tip trucks will be supplied by the OCC to cart soil should it be necessary; and
- Bulk water tanker shall be supplied by OCC.

7.1.12 CONTACT LIST

Ophir Road Resource Recovery Centre

Mr George Wiegold	AH 6361 2098 AH Mob 0423 716 156
Mr Vic Birnie	AH 6362 3505 AH Mob 0439 951 351
Mr Glen Jackson	AH 6362 6638 AH Mob 0412 698 554
JR Richards Central West Regional Manager	BH 02 6362 6353
RRC Supervisor - Mr Peter Ford	AH 6365 9225 AH MOB 0419 630 891
Manager Waste Services and Technical Support Mr Wayne Davis	BH 6393 8113 AH 6365 2455 MOB 0419 483 381
Wangarang Industries Supervisor, Mr Ben Grebens	AH 0402 259 871
Orange City Council Works Manager Mr Wayne Gailey	BH 6393 8502 AH 6360 1632 MOB 0417 676 246
NSW Ambulance NSW Fire Brigade NSW Police	000 000 000

7.1.13 ORRRC FIRE MANAGEMENT PLAN INDUCTION

All employees and regular contractors at the ORRRC are required to undergo the "Orange City Council Resource Recovery Centre Site Safety Management Procedures Induction". This is included in **Section 5.1 – Staff Training** of this OEMP.

7.2 ERRRC WEED MANAGEMENT PLAN

7.2.1 PURPOSE

This Weed Management Plan has been prepared as a requirement of the PA. The plan shall include, but not necessarily be limited to:

- Procedures to minimise disturbance to ground cover not impacted by the development;
- Procedures for the stabilisation, rehabilitation and revegetation of disturbed ground cover;
- Weed management measures to control and prevent the spread of noxious weeds;
- Monitoring methods to assess the impact of the development on the ground cover vegetation; and
- A procedure to review management methods where they are found to be ineffective.

7.2.2 ACTIONS

The nature of the ERRRC could make the site susceptible to the possible infestation of weed species not already present in the area. To combat this, the following would be implemented:

- All seed stock in incoming green waste would be rendered infertile through the enclosed composting process;
- Regular inspections of the Euchareena Road Site in addition to the annual flora monitoring;
- Education of staff with respect to weed identification and control;
- Continual monitoring and control of identified noxious weeds; and
- Investigation into the practicality of sowing crops or competitive improved pastures on sections of the site not required for immediate disturbance as a means of weed control.

The Resource Recovery Centre Operators, and the Resource Recovery Centre Supervisor are required to familiarise themselves with noxious weed identification (refer to **Appendix A – Weed Identification and Control: Cabonne Shire Council**). Staff are required to monitor on an ongoing basis the presence of noxious weeds, and report occurrences to the Resource Recovery Centre Supervisor, who is required to discuss with the Manager Waste Services and Technical Support. A comprehensive list of known weeds within the Cabonne Shire Council area, and the control methods for dealing with each weed is detailed in **Appendix A** of this plan.

Staff and regular contractors will be required to report the presence of noxious weeds to the Resource Recovery Centre Supervisor who will organise for treatment and eradication if required.

The ERRRC site is segregated into five areas for the purpose of vegetation management, weed control, and monitoring (refer to **Figure 7.2.1**). These include:

- The operational area of the Resource Recovery Centre;
- Remnant woodland areas;
- Rehabilitation Corridors;
- Landscaped Bunds; and
- Landscaped Area.

Weed management measures to control and prevent the spread of noxious weeds within the operational area of the Resource Recovery Centre:

- Weed hygiene practices would be adopted to prevent the introduction of weeds. This includes ensuring plant and construction equipment arrive weed free;
- Excavated top-soil would be stored separately from subsoil and replaced in a manner that replicates the original soil profile as closely as possible to assist rapid revegetation;
- Site stabilisation would be undertaken progressively during works to ensure that soils are stabilised as soon as practical. This would minimise weed infestation and the potential for sedimentation and erosion;
- Declared noxious weeds would be actively managed consistent with requirements of the *Noxious Weeds Act 1993.* The Act imposes obligations on occupiers of land to control noxious weeds declared for their area. There are five classes of noxious weeds identified in the Act; and
- Weeds that are declared noxious are those weeds that have the potential to cause harm to the community and individuals, can be controlled by reasonable means and most importantly, have the potential to spread within an area to other areas. A weed is declared noxious because its control will provide a benefit to the community over and above the cost of implementing control programs.

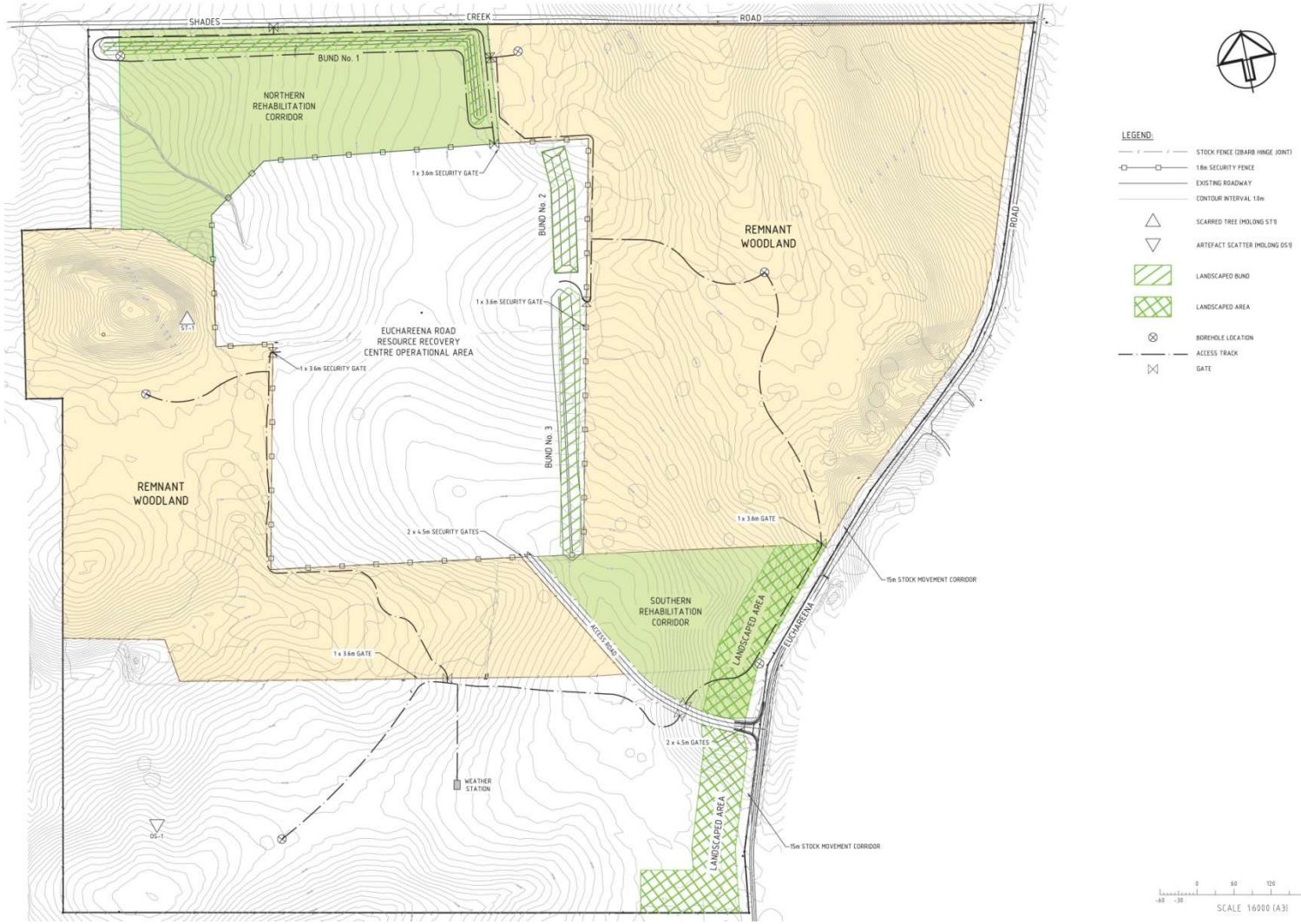

Figure 7.2.1: Vegetation Management Areas

Remnant Woodland Area

Existing access tracks would be maintained, and staff and contractors are not to divert from these tracks when accessing areas for rehabilitation monitoring, groundwater monitoring, and management purposes.

Controlled grazing by livestock to maintain or improve native vegetation values at a low to moderate stocking rate or 'crash grazing'. Grazing is an ecological tool and the aim of crash grazing is to manage the groundcover to ensure that diverse ground layer of native species is encouraged. Grazing regimes will be guided by:

- Appropriate location of grazing;
- Triggers to change grazing regime e.g. changes to abundance of selected key species;
- Triggers for grazing to be excluded e.g. during flowering and seeding of particular species;
- Seasons where grazing may be desirable e.g. reduction in seeding of particular weed species; and
- Exclusion of grazing for a required number of years or until certain outcomes have been achieved.

Management of stock in the remnant woodland should aim to minimise damage to native vegetation and minimise introduction of weeds and disease as follows:

- Ensure stock camps are not established;
- Ensure stock are confined to formed tracks and are under supervision when moving livestock through the conservation area;
- Mustering of livestock with the use of working dogs and horses is permitted;
- Fodder or any stock feed may not be brought into the remnant woodland areas;
- Before introduction of stock into the remnant woodland areas ensure they are held in a relatively weed free area for at least a week immediately prior to their introduction;
- Pasture improvement or fertilisation is not permitted; and
- Exclude stock from any burnt area of the remnant woodland until native vegetation has re-established. Stock should be excluded for at least three years and groundcover should be >70% before grazing recommences.

Any grazing and implementation of grazing regime requires prior written agreement from OEH. The need for the implementation of a grazing regime will arise from the outcomes of the *Annual Flora Monitoring Report;* refer **Section 7.8 – ERRRC Flora and Heritage Monitoring Program**. This report is prepared by a suitably qualified ecologist. Council staff are required to diligently look out for noxious weeds on an ongoing basis, noting any occurrences on the daily checklist.

Rehabilitation Corridors

Two rehabilitation corridors are identified within the ERRRC site; the Northern Rehabilitation Site and the Southern Rehabilitation Site. Weed management of the rehabilitation corridors is as per the requirements of the remnant woodland area, that is, staff and contractors are only to drive on existing tracks, groundcover and weed management will be largely influenced by grazing regimes, and monitoring will be ongoing by staff, and in detail during the *Annual Flora Monitoring Report*.

Landscape Bunds

There are three landscape bunds within this defined area; Bund 1 and Landscape strip, Bund 2 and Bund 3. A permanent monitoring site has been established within Bund 1 which includes one transect, which is to be monitored annually, with the outcomes recorded in the *Flora Monitoring Report*.

The landscaped bunds are formed earthen vegetated bunds that are hydro mulched and have seed applied at a mix and rate as per the ***Conservation Management Plan***. Seed shall be applied at a mix and rate as submitted and approved, being predominantly grasses and groundcovers.

Watering will only be required if it is deemed necessary to either hold the mulch in place or to assist with germination in a particularly dry period. It is expected that this will occur during the peak of summer but it is understood that the native species of seeds will remain viable and dormant within the mulch until favourable growing conditions occur. The mulching process will assist in reducing weed germination, minimise erosion and maintain soil moisture.

OCC staff are required to monitor the bunds for the presence of noxious weeds on an ongoing basis, and report any findings to the Site Supervisor. It is important to minimise weed occurrence on the landscaped bunds to minimise competition with young seedlings for water and light. Spot spraying should be carried out by a suitably qualified person on a regular basis.

Landscaped Area

The Landscaped Area is a vegetated strip acting as a visual barrier to the operational area. Weed control has been ongoing prior to planting the strip, to minimise competition with young seedlings for water and light. Spot spraying should be carried out by a suitably qualified professional on a regular basis.

Procedures to minimise spread of weeds in areas not impacted by the development.

The security fence around the perimeter of the operational area of the site is to be maintained to ensure all operations occur within the confines of the site. Vehicle movements associated with the operation of the site are to be restricted to the existing internal access tracks. These measures will ensure impacts outside the development sites do not occur, and minimise to the minimum extent possible, impacts within the development site.

All staff and regular contractors accessing the site will undertake site training (refer **Section 5.1 – Staff Training**). All individuals undertaking work on the site will undergo an induction, part of which outlines the requirement to stay on the existing internal road network. OCC staff are required to be familiar with **Appendix A – Weed Identification and Control: Cabonne Shire Council** of this weed management plan, which identifies know noxious weeds within the Cabonne Shire Council control area.

Procedures for the stabilisation, rehabilitation and revegetation of disturbed ground cover

The presence of weeds, with the exception of declared noxious weeds that require active management, is not in itself problematic. A weed is defined as a plant environmentally suited to its place in the landscape, but from an agricultural productivity, ecological or aesthetic perspective it is a plant out of place (Department of Primary Industries, *Weed Control for Cropping and Pastures in Central West NSW*). A weed is often defined simply as a plant growing in the wrong place.

Declared noxious weeds would be actively managed consistent with requirements of the *Noxious Weeds Act 1993.* The Act imposes obligations on occupiers of land to control noxious weeds declared for their area. There are five classes of noxious weeds identified in the Act.

Weeds that are declared noxious are those weeds that have the potential to cause harm to the community and individuals, can be controlled by reasonable means and most importantly, have the potential to spread within an area to other areas. A weed is declared noxious because its control will provide a benefit to the community over and above the cost of implementing control programs.

A plant that is not declared noxious, that provides a groundcover over disturbed areas and prevents erosion, is not, by definition, necessarily a weed in the context of the proposed land use.

The procedure for establishing a ground cover over disturbed areas is to therefore allow for and monitor natural revegetation of a groundcover over disturbed areas. The vegetation management of the ERRRC site is described in much detail in **Section 7.8 – ERRRC Flora and Heritage Monitoring Program**, which is derived from the **Conservation Management Plan**, attached in **Section 9.4** of the OEMP. The Five-Year Works Action Plan, attached in **Section 9.5** of the OEMP, takes precedence with regard to vegetation management at the ERRRC in the period 2021-2025.

Noxious weed declarations for Cabonne Shire Council

Appendix B of this weed management plan lists the weeds that are declared noxious in the control area of Cabonne Shire Council.

A copy of all declared noxious weeds is to be held on-site. These come from the Department of Primary Industries website:

https://weeds.dpi.nsw.gov.au/

Appendix B shall be updated every 12 months.

Staff and regular contractors will be required to report the presence of noxious weeds to the Resource Recovery Centre Supervisor who will organise treatment.

Control methods for declarations for Cabonne Shire Council

Appropriate control methods can be located on the Macquarie Valley and Lachlan Valley Weeds Advisory Committee website.

The Cabonne Shire Council declarations are detailed at:

http://www.westernweeds.org/index.php?act=contacts_detail&group=1

Records of weed control shall be maintained as per this weed management plan.

Monitoring methods to assess the impact of the development on the ground cover vegetation

Land within the confines of the security fence at the site is effectively taken out of production. As agricultural production outputs are reduced (protein and nutrients in grazed livestock and/or harvested crops), so too will inputs (fertiliser). The net effect of the ERRRC site operations will therefore be a resting and 'reserving' of the soil resource.

The monitoring regime at the ERRRC is detailed in **Section 7.8 – ERRRC Flora Monitoring Program**. In addition to the *Annual Flora Monitoring* OCC staff are required to inspect the site for weeds. Weeds will be a mix of Summer and Winter growing types. The timing of the inspections will be linked to the Winter, Spring, and Summer seasons. Some tolerance in timing will be exercised to accommodate rainfall patterns, that is, the inspections will not be fixed to the same time each year.

The results from the Winter, Spring, and Summer weed inspection will be reported to the Manager Waste Services and Technical Support, who is responsible for acting on noxious weed eradication if required.

Class 1 and 2 weeds in particular (refer **Appendix A** and **Appendix B**) should be identifiable by the Resource Recovery Centre staff, and reported to the Site Supervisor immediately. The control classes of noxious weeds are listed in **Table 7.2.1** below:

Table 7.2.1 – Control Classes of Noxious Weeds

Control Class	Weed Type	Example control Requirements
Class 1	Plants that pose potentially serious threat to primary production or the environment and are not present in the State or are present only to a limited extent.	The plant must be eradicated from the land and the land must be kept free of the plant. The weeds are also "notifiable" and a range or restrictions on their sale and movement exist.
Class 2	Plants that pose a potentially serious threat to primary production or the environment of a region to which the order applies and are not present in the region or are present only to a limited extent.	The plant must be eradicated from the land and the land must be kept free of the plant. The weeds are also "notifiable" and a range or restrictions on their sale and movement exist.
Class 3	Plants that pose a potentially serious threat to primary production or the environment of a region to which the order applies ,and are not widely distributed in the area and are likely to spread in the area or to another area.	The plant must be fully and continuously suppressed and destroyed.
Class 4	Plants that pose a potentially serious threat to primary production or the environment of a region to which the order applies ,and are not widely distributed in the area and are likely to spread in the area or to another area.	The growth of the plant must be managed in a manner that reduces its numbers spread and incidence and continuously inhibits its reproduction.
Class 5	Plants that are likely, by their sale or the sale of their seeds or movement within the State or an area of the State, to spread in the State or outside the State.	There are no requirements to control existing plants of Class 5 weeds. However, the weeds are "notifiable" and a range of restrictions on their sale and movement exists.

Source: http://www.dpi.nsw.gov.au/agriculture/pests-weeds/weeds/definition

APPENDIX A

Weed Identification and Control – Cabonne Shire Council

This handout is to be given to all staff and regular contractors at the ERRRC. Staff and contractors are required to familiarised themselves with the weeds identified in this handout, and notify the Site Supervisor if they are to identify any on the site.

The following pages identify the declared noxious weeds within the Cabonne Shire Council area, as indicated from the *Macquarie Valley and Lachlan Valley Weeds Advisory Committee*. The top weeds of concern within the Cabonne Shire Council are:

- Serrated Tussock (*Nassella trichotoma*)
- St John's Wort (*Hypericum perforatum*)
- Blackberry (*Rubus fruiticosus*)
- Johnson Grass (*Sorgum halepense*)
- African Boxthorn (*Lycium ferocissimum*)
- Silverleaf Nightshade (*Solanum elaeagnifolium*)

Declared weeds are identified in Classes, with Class 1 having the most severe implications, through to Class 5, which has relatively minor implications on the environment.

For further information visit the Macquarie Valley and Lachlan Valley Weeds Advisory Committee:

www.westernweeds.org

Class 1 Weeds

Parthenium Weed (*Parthenium hysterophorus*)

Landholder Responsibilities:	The plant must be eradicated from the land and the land must be kept free of the plant
Why Is It Bad?:	Parthenium is regarded as one of NSW most serious weed threats. It is a vigorous coloniser of bare ground, degraded pastures and disturbed sites. It is a fast growing annual plant with prolific seed production. Once established, parthenium weed very quickly builds a huge seed bank in the soil that makes eradication difficult and expensive. The weed contains powerful allergens that cause a range of human health problems, including asthma and sever contact dermatitis. The plant is a threat to agriculture because it is unpalatable to livestock and competes with pastures and crops.

Control Methods

Anyone in NSW who suspect they have found Parthenium weed should not attempt to control it themselves. All suspected infestations should be reported to the local council Weeds Officer or NSW DPI to confirm indentification.NDW DPI and Weeds Officers will coordinate and carry out the control work. The initial control costs of notified parthenium weed infestations is covered by a contingency fund allocated by the Minister for Primary Industries. The location of all parthenium weed outbreaks on private property is kept strictly confidential.

Rubber Vine (*Cryptostegia grandiflora*)

Landholder Responsibilities:	The plant must be eradicated from the land and the land must be kept free of the plant
Why Is It Bad?:	Is regarded as one of the worse weeds in Australia because of its invasiveness, potential for spread, and economic impacts. Its main impact on pastoralism is the loss of grazing country. Rubber vine threatens waterways, woodlands and rainforests throughout north-eastern Australia. It also threatens riverine vegetation, and can potentially displace the plants and animals that inhabit riverbanks, thereby affecting the water quality of streams.

Control Methods:

Chemical Use:	Foliar spraying the entire plant from the ground and aerial spraying are most effective on smaller plants (less than 2 m tall, stem diameter less that 35 mm). However leaves infected by the bio-control rust will not take up herbicides. The basal bark technique, which uses spraying around the lowest bark up to a height of 500 mm is effective on plants of stem diameter less than 35 mm at the base. Foliar, aerial and basal bark spraying should only be conducted when rubber vine is actively growing. The cut stump method uses minimal herbicides and is effective at all times but is labour intensive and therefore best suited to scattered infestations. Soil applied residual herbicides are effective when applied before rain. It is highly recommended that advice is obtained from the relevant state/territory weed management agency prior to the use of soil applied herbicides.
Fire:	Fire is an especially valuable part of the integrated control of rubber vine because it kills surface seeds, seedlings and adult plants, yet is relatively inexpensive. If there is sufficient fuel, rubber vine can be burnt while green with good success. The timing of fire is crucial to its success as fires must be hot enough to kill mature rubber vine. It is advisable to burn after first rains as this reduces the risk of prolonged periods of bare earth and erosion.
Slashing & Cutting:	Slashing harms the plant but often does not kill it.
Biological Control:	Two biological control agents have become widespread in QLD since their release in the early 1990's. The rubber vine rust Maravalia cryptostegiae forms on the underside of leaves and causes them to turn yellow and drop. The other agent is the moth Euclasta whalleyi, whose caterpillars feed on rubber vine leaves between March and October. Both agents, especially the rust, cause damage (eg reduced flowering, seed pod production and leaf cover) and occasionally the death of established plants.
Cultivation & Scalping:	Blade or disc ploughs and cutter bars provide reasonable control of rubber vine, but are most often used to penetrate very dense infestations to allow easier access or to open up the canopy.

Water Lettuce *(Pistia stratiotes)*

Landholder Responsibilities:	The plant must be eradicated from the land and the land must be kept free of the plant
Why Is It Bad?:	Water Lettuce is a weed in the sub-tropical areas of the State. It is free-floating and can quickly cover an entire body of water. It can reproduce vegetatively and by seed. It is currently feared that recent floods in Queensland and northern New South Wales will spread Water Lettuce into the Darling River system.

Control Methods

Manual Removal:	Plants must be physically removed from the water and dried. Removed plants should not be within the flood zone or near mud as they may take root.
Chemical Use:	Herbicide use is often less expensive than manual removal. Autumn is considered the best time for application. See the Noxious & Environmental Weed Control Handbook for recommended chemicals and rates. Appropriate safety measure must be considered when using herbicides in or near waterways.
Slashing & Cutting:	NOT RECOMMENDED. Any cutting or slashing of the plant will cause daughter plants to break off and spread to new sites.
Biological Control:	The weevil Neohydronomus affinus is used in Queensland but has not been introduced in NSW.
Monitoring:	Successful treatment programs rely on ongoing monitoring of sites. Missed plants can easily become larger infestations if follow-up treatments are not part of the management program

Class 2 Weeds

Parkinsonia (*Parkinsonia aculeate*)

Landholder Responsibilities:	The plant must be eradicated from the land and the land must be kept free of the plant
Why Is It Bad?:	Is regarded as one of the worst weeds in Australia because of its invasiveness, potential for spread, and economic and environmental impacts. It threatens rangelands and wetlands around Australia. If left untreated it displaces native vegetation and reduces access to land and waterways. Parkensonia provides refuges for feral animals, especially pigs.

Control Methods

Manual Removal:	Small parkensonia plants can be relatively easily removed by manual means (hand pulling or grubbing with a mattock) Larger plants can be bulldozed, stick raked, blade ploughed or chain pulled. The roots must be removed to a depth of about 200 mm to prevent root growth. Mechanical control is more cost effective than chemical control.
Chemical Use:	There is a wide range of herbicides registered for Parkensonia control, with several different application methods. Herbicides are useful for controlling dense high priority infestations but may be too expensive for widespread infestations. Foliar spraying provides effective control for seedlings that are less than 2 m tall and actively growing. Larger trees can be treated with a liquid or granular herbicide applied near the roots just prior to the wet season in northern Australia. Basal bark and cut stump treatments generally provide more effective control than foliar spraying. They are the main methods recommended for use near waterways. When applying the basal bark technique to stems up to 150 mm diameter, drench the herbicide around the trunk to a height of 300 mm above the ground. For larger trees spray up to 1 m above the ground. When using the cut stump technique, be sure to swab the entire cut surface of the stump immediately after cutting as this ensures that the herbicide reaches the roots.
Fire:	Fire kills seedlings and seeds on the surface and is an excellent form of flow up control after mechanical or chemical control. Little is known about the timing or conditions that are required to get good kill rates.
Cultivation & Scalping:	Blade ploughing gives excellent kill rates and is effective in treating large, thick infestations. Chain pulling kills mature trees, but many smaller plants are just bent over and straighten up once the chain has passed over. If the roots are not removed, parkinsonia can reshoot, producing multiple stems for the base. These multi - stemmed plants are actually more resilient and harder to remove.

Mesquite (*Propis sp*)

Landholder Responsibilities:	The plant must be eradicated from the land and the land must be kept free of the plant. Landholders are legally required to control or treat mesquite across all mainland states and the Northern Territory.
Why Is It Bad?:	Is regarded as one of the worst weeds in Australia because of it's invasiveness, potential for spread and economic and environmental impacts. It forms such dense thickets and large thorns that it prevents stock accessing watering holes and makes mustering difficult. It reduces pastoral country by taking over grasslands and using valuable water resources. Mesquite also causes damage to animal hooves and vehicle tyres from thorns, and the poisoning of livestock which consume excessive amounts of seed pods. To view a YouTube video about Mesquite, copy and paste this link into the address bar: http://www.youtube.com/watch?v=3KVbGglSx94

Control Methods

Manual Removal:	The new approach to controlling mesquite involves integrating all control methods together with grazing management systems to minimise impacts over the long term. Integration involves chemical control, mechanical control, fire, grazing control and biological control.

Chemical Use:	The basal bark and cut stump techniques used with an appropriate registered herbicide are effective on mature trees. Basal bark treatment (spraying around the entire stem up to 750 mm from the ground) should be used during the growing season (approximately October to April, depending on species and location.) The cut stump method of applying a herbicide directly onto a horizontally cut stump is effective year round. Seedlings can be controlled by spraying foliar herbicide over the entire plant. This is effective for dealing with actively growing, dense stands of mesquite up to 1.5 m tall.
Fire:	Fire can give good control particularly after mechanical control such as chaining, which can provide enough fuel for it to burn. Fire can reduce seed production by removing vegetation and killing seed lying on the ground surface
Biological Control:	Two insect species from Argentina have been released since a biological control program was initiated by CSIRO Entomology in 1994. A leaf tying moth (Evippe sp.#1) that causes defoliation and a leaf sucking bug (Prosopidopsylla flava) that causes dieback were released in 1998. The first species has established itself and is having an impact on mesquite, particularly in the Pilbara region. The second species is doubtful that it will establish itself.
Grazing:	Grazing management is an important part of the integrated approach to mesquite control for three reasons: * Cattle are mainly responsible for the spread of seeds and therefore infestations. * Grazing may need to be reduced before burning in order to allow the build-up of sufficient fuel. *Grazing should be discouraged after any control efforts, to encourage growth in perennial grasses and help reduce mesquite seedling germination and establishment. Preventing stock during seed drop will reduce the spread and density of mesquite. Stock should be quarantined before being transported to unaffected areas.
Cultivation & Scalping:	Mechanical control techniques, such as blade ploughing, grubbing and chaining are aimed at removing as much of the root system as possible to prevent the tree reshooting. Mechanical control has varying levels of success depending on size and species of plant, but the plant will die if the roots can be removed to a depth of 300mm. Blade ploughing is considered to be the most cost effective form of mechanical control. Mechanical control can assist in the germination and growth of pasture grasses, especially if the area is reseeded following blade ploughing. But mesquite seedling germination will also occur, requiring follow up control. Grubber attachments on bulldozers gained best results in late autumn and winter in a normal wet season year. Chain pulling is the cheapest method but the least effective.
Monitoring:	Preventing the spread of mesqite is the most cost effective management strategy. Quarantining stock before movement into unifested areas is an important way of preventing further spread. Ongoing follow up control is required because there will be large numbers of mesquite seeds remaining in the soil that can survive for many years. In the past, when mesquite control has not been followed up, it has rapidly returned.

Class 3 Weeds

Green Cestrum (*Cestrum parqui*)

Landholder Responsibilities:	The plant must be fully and continuously suppressed and destroyed
Why Is It Bad?:	Infestations would have a serious affect on the livestock industry of the Lachlan Valley. There would be an increase in stock death rates. Substantial decreases in land productivity would occur. There would be a higher risk of contact by humans, and therefore the potential for poisoning and other health problems would increase. Displacement of native flora would increase, leading to low levels of biodiversity. Potential impacts on native fauna such as poisoning would increase. Infestation size and location restricts forms of agriculture from being undertaken.

Control Methods

Manual Removal:	If hand-pulling, plants will often break away from their roots. All roots should be dug up and destroyed.
Chemical Use:	Cut & paint, and foliar spray methods can be used but kill rates are low and follow-up work is necessary to ensure plants are dead. Any cut branches must be destroyed as they still retain toxic qualities.
Slashing & Cutting:	Should not be used as it promotes the spread of Green Cestrum
Grazing:	Green Cestrum is toxic to stock, leading to a quick death.

Competition: Vigorous germination of dormant seed occurs after removal of infestations. Establishing some ground cover will minimise colonisation.

Monitoring: Successful treatment programs rely on ongoing monitoring of sites. Regrowth and new seedlings can easily become larger infestations if follow-up treatments are not part of the management program.

Johnson Grass (*Sorghum halepense*)

Landholder Responsibilities:	The plant must be fully and continuously suppressed and destroyed
Why Is It Bad?:	Decreases in production through increases in pests affecting seed sorghum crops, as Johnson Grass harbours the sorghum midge. Decreases in production through increases in pests affecting sugar cane crops, as Johnson Grass acts as a host for sugar cane mosaic virus. Contamination of seed sorghum crops from Johnson Grass pollen. Increased stock losses as consumption of Johnson Grass can cause hydrocyanic acid poisoning in grazing animals such as sheep or cattle. Increased stock losses as consumption of Johnson Grass rhizomes can cause fatalities in pigs. Decreases in biodiversity, especially on roadsides, as Johnson Grass is a vigorous competitor. Increases in infestation sizes and distributions as Johnson Grass spreads quickly, especially after cultivation or grading. Decline of health of asthma suffers during peak pollen times

Control Methods

Manual Removal:	All parts of the plant must be removed as regrowth occurs easily from fragmented rhizomes
Chemical Use:	Only registered herbicides should be used. Spot spraying is effective selective control. A wick wiper can be used in situations where Johnson Grass is growing taller than desired species.
Cultivation & Scalping:	Not generally recommended as it can cause high levels of root fragmentation. However, crop rotation can help to smother Johnson grass infestations. Tillage should cut and bring rhizomes to the surface for desiccation rather than distributing the fragments throughout the site. Crops should include winter-annual small grains and legume forages to smother and out-compete Johnson Grass.
Monitoring:	Successful treatment programs rely on ongoing monitoring of sites. Regrowth and new seedlings can easily become larger infestations if follow-up treatments are not part of the management program.

Class 4 Weeds

Prickly Pear (*Cylindropuntia & Opuntia sp*)

Landholder Responsibilities:	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority and the plant may not be sold, propagated or knowingly distributed
Why Is It Bad?:	All new plants result from detached segments and the plants are long lived. It is adaptable to areas with annual rainfall from 150 mm to 800 mm.

Control Methods

Chemical Use:	Chemical control is not always effective. It is difficult because much of the weed occurs on steep rocky areas. If patches are treated with chemicals they should be checked for the next 7 years for any regrowth and new plants.
Fire:	Physical removal and burning of plants is the most effective control method, but all dislodged segments and fruit must be destroyed. As the plants have a high water content they do not easily burn and other fuel such as wood should be used to create enough heat to destroy the plants.
Biological Control:	The cochineal insect has been effective on Tiger Pear infestations
Cultivation & Scalping:	As much of the root system as possible should be removed by grubbing or cultivation.

Scotch Broom (*Cytisus scoparius*)

Landholder Responsibilities:	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority
Why Is It Bad?:	In Australia it is an invasive weed of disturbed bushland, roadsides and neglected areas, competing strongly with native species.

Control Methods

Chemical Use:	Spraying in the full leaf stage with picloram and triclopr, either alone of in a mixture, followed by further spraying on regrowth gives good control.
Fire:	Single bushes should be grubbed and burnt though this is impracticable over large areas.
Slashing & Cutting:	Small bushes may be slashed and the area cultivated but this produces a seed bed suitable for the establishment of seedlings. These must be controlled by further cultivations or heavy grazing.
Biological Control:	Attempts have been made at biological control. A stem mining moth, Leucoptera spartifoliella, and a seed feeding weevil, Apion fuscirostre, were introduced from Europe and released in California in 1960 and 1964. the insects are causing some distress to the weed but fall short of providing control.
Cultivation & Scalping:	Dense patches have been eliminated by bull dozing and repeated disc cultivations over 2 years.

Spiny Burrgrass (*Cenchrus incertus & longispinus*)

Landholder Responsibilities:	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority and the plant may not be sold, propagated or knowingly distributed
Why Is It Bad?:	The burrs produced by these species are sharp and easily adhere to wool, fur, clothing, car tyres, and machinery. Burrs can become badly matted in wool, lowering the values of wool clips and making sheep difficult to handle, increasing shearing costs. Burr spines can also penetrate the skin of native animals and livestock, leading to discomfort and stress from the injuries they create. It can also lead to decreased values of hides and increased costs associated with the slaughtering process. The spines can also cause mouth ulcers in grazing animals, leading to overall decreases in health.

Control Methods

Chemical Use: Use of non-selective herbicides can be used to remove established plants but needs to be followed by burning or cultivation to destroy seed heads. This needs to take place over 3-5 years to deplete soil seed banks.

Grazing: Spiny Burrgrass is readily eaten during its active growing period, and heavy grazing pressure will suppress growth and burr production. Grazing cannot be used when burrs are present as livestock will not only suffer from the effects of any burrs that attach themselves to the animals, but also will actively spread the weed.

Cultivation & Scalping: If used, this method must take place before seed set occurs; otherwise viable seed will be spread vastly, dramatically increasing an infestation. Seedlings are easier to turn than larger plants. This method must be used in combination with other methods to ensure soil seed banks are exhausted appropriately. Soil seed banks should be exhausted as much as possible before cropping. A winter crop could be used for a few seasons before a summer crop is sowed.

Competition: Maintaining vigorous perennial pastures will help prevent invasion by Spiny Burrgrass as it does not establish readily where there is strong competition. By ensuring there is sufficient ground cover present during spring and summer, germination and seedling establishment is decreased. Pasture grasses such as Rhodes, Digit and Consol lovegrass (in some areas) species can be used as they grow well in light sandy soils, are palatable to stock, summer growing and drought tolerant perennials.

Monitoring: Successful treatment programs rely on ongoing monitoring of sites. Regrowth and new seedlings can easily become larger infestations if follow-up treatments are not part of the management program.

Sweet Briar Rose (*Rosa rubinginosa*)

Landholder Responsibilities:	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority
Why Is It Bad?:	Sweet briar can reduce the carrying capacity of land, harbour rabbits, restrict vehicle access and restrict stock movements, especially where it occurs in clumps or patches. Sweet briar often invades unimproved grasslands and disturbed bushland. It prefers well drained areas of moderate fertility with little competition and light grazing. The weed can grow on most soil types. Generally it is confined to areas in NSW with an annual rainfall greater than 600 mm. However, in lower rainfall areas, infestation can still occur in moist gullies and protected sites. Infestations are often heaviest in hilly and rocky country around trees on creek banks and along fence lines.

Control Methods

Manual Removal:	Control should be based on the removal of established plants and the prevention of seedling growth. Goats and sheep are effective in destroying whole plants over time.
Chemical Use:	Herbicide control is most effective, please contact your local weeds officer or agronomist for a list of effective herbicides.
Biological Control:	The possibility of biological control has been investigated in New Zealand, several agents have been tested.
Cultivation & Scalping:	Deep ploughing effectively exposes the bulk of the roots, but ploughing is impossible if the clumps are large. After cultivation you will need to harrow the area to expose remaining roots to the sun. Further cultivation will be necessary in autumn to kill seedlings before sowing pasture.

Wild Radish (*Raphanus raphanistrum*)

Landholder Responsibilities:	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority
Why Is It Bad?:	The seeds of wild radish can cause gastroenteritis and kidney disorder in stock. Although the plant is considered to be dangerous there have been few well authenticated cases of poisoning reported in the field.

Control Measures

Manual Removal:	Single plants or small groups should be hand pulled, hoed or spot sprayed before flowering.
Chemical Use:	Control can be obtained by a programme of successive cropping and controlling the weeds which appear in the crop with herbicides. Please contact your local weeds officer or agronomist for a list of suitable herbicides.
Cultivation & Scalping:	Repeated cultivation is useful but many present erosion problems. It is not completely effective in a cropping situation because of the succession of seedlings emerging within the crop.

Noogoora Burr (*Xanthium occidentale*)

Landholder Responsibilities:	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority
Why Is It Bad?:	Noogoora Burr is spread easily because of the burr's hooked spines, which cling firmly to wool or fur of animals, to their tail or mane, to bags and to clothing. Burrs can also spread in flood waters and this accounts for the plants spreading along rivers and streams. Noogoora Burr is toxic to most livestock at the seedling stage. They can cause contact allergy, dermatitis and mechanical injury both to humans and animals. They can also be a major source of vegetable fault in wool, thereby reducing its value.

Control Measures

Manual Removal:	Hand hoeing or chipping is only economical in small areas or sparsely populated situations. It is very labour intensive.
Chemical Use:	Noogoora burrs are susceptible to herbicides suited to a range of situations and regulations. Chemicals are most effective if the plants are young and actively growing. Plants under severe moisture or weather stress are difficult to kill.
Biological Control:	Since 1932 there have been four species introduced for controlling Noogoora burr in Queensland: * Euaresta aequalis (1932 - 40) * Mecas saturnina (1962 - 63) * Nupserha vexator (1964 - 1965; and in NSW - 1971) * Epiblema strenuana a stem galling moth which was introduced in Australia in 1982 for the control of Parthenium weed in Queensland and was found to be also affecting Noogoora burr. These species of insects have had little of no effect in controlling Noogoora burr within NSW.

Grazing: Grazing of Noogoora burr plants is an option, using sheep before flowering and after the cotyledon leaves have dried. A number of researchers and graziers have maintained that adult plants are not easily eaten by livestock, because of the roughness of the leaves and stems. Care needs to be taken with grazing to ensure there are no seedling plants, which could kill animals.

Tiger Pear (*Opuntia aurantiaca*)

Why Is It Bad?:	Tiger pear is considered one of the country's worst weeds. It's remarkably adaptable by the fact that it grows in areas with an annual rainfall of 150 mm to one extreme and 800 mm at the other. It is estimated that 181000 ha occurring on 2100 properties are infested. Infestations generally follow watercourses, indicating the importance of water in dispersing segments of the weed. Dispersal occurs when segments or fruit drop t the ground and take root. The segments and fruit of this species attach to wool and hides of animals, footwear and passing vehicles. Detached segments are carried by flood waters or human movement.

Control Methods

Manual Removal:	Physical removal and burning of plants is the most effective method of control. Because of high water content plants are not easily burnt and combustible materials must be used to fuel the fire.
Chemical Use:	Chemical control is not always effective. It is difficult to control because much of the weed occurs on steep rocky areas. Treated patches should be checked for several years, to check for re-growth.
Biological Control:	The tiger pear cochineal insect, Dactylopius austrinus has been reasonably effective in QLD but not consistent in NSW.
Cultivation & Scalping:	As much of the root system should be removed by grubbing or cultivation.

Hudson Pear (*Cylindropuntia rosea*)

Landholder Responsibilities:	Conduct regular inspections, treatment and removal of plants.
Why Is It Bad?:	Hudson Pear seriously degrades land and ecosystems. If left unchecked and untreated it has the potential to reduce agricultural enterprise and adversely impact native fauna. Hudson Pear has vicious spines which are capable of penetrating footwear and car tyres. The spines are capable of causing serious injury to humans, livestock and working animals such as horses and dogs.

Control Methods

Manual Removal:	Manual removal is not recommended because of the danger of serious injury occurring during the process of removal. Once uprooted plants need to be disposed of correctly to avoid new infestations arising from this material. Disposal methods include burying and burning.
Chemical Use:	When spraying with herbicides, care needs to be taken to ensure total coverage of plants as any missed plants or segments have the capacity to form new infestations, if they have contact with the ground. this is achieved with the addition of a marker dye. Thorough spraying of Hudson Pear with herbicide mixtures that incorporate a spray oil are effective at any time of the year if the plants are growing and not stressed. Plants sprayed during cooler months with take longer to die that those sprayed in warmer months. Two herbicides are currently available for treating Hudson Pear. Spraying with herbicide may not be 100% successful; the site should be monitored for regrowth.
Fire:	Once plants have been burnt carry out routine inspections to make sure that plants have not regenerated.

Slashing & Cutting:	Not recommended, Hudson Pear segments of all sizes should be removed as these are capable of forming new plants/infestations if they come into contact with the ground and form roots.
Biological Control:	Dactylopius tomentosus,a species of cochineal insect introduced to control Rope Pear attacks Hudson Pear, but is not particularly damaging. There are several biotypes of D.tomentosus present in Mexico, at least one of which is likely to be damaging to Hudson Pear.
Grazing:	Not recommended
Monitoring:	It is extremely important that the spread of Hudson pear be limited. Vigilance is the key to preventing spread. Hudson Pear segments of all sizes should be removed as these are capable of forming new plants/infestations if they come into contact with the ground and form roots. When travelling in Hudson Pear infested areas, take care not to leave the road, if you do, check the tyres and under the vehicle for segments and remove before leaving the area. When treating plants always carryout routine inspections on the plant to check for regrowth.

Chilean Needle Grass (*Nassella neesiana*)

Landholder Responsibilities:	Class 4 - The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority and the plant may not be sold, propagated or knowingly distributed
Why Is It Bad?:	Chilean Needle Grass is recognised as one of Australia's top 20 worst weeds as a Weed of National Significance (WoNS). It is unpalatable and can reduce productivity by up to 50%. It is also highly invasive in natural environments such as grassy box woodlands. As such, it reduces biodiversity and out-competes native species. Chilean Needle Grass develops a large, long-lived seed bank and so it is very difficult to eradicate. The seeds can injure stock and degrade the quality of wool and hides. Chilean Needle Grass is also difficult to identify as it has similar traits to some native grass species as well as its relation, Serrated Tussock. Chilean Needle Grass produces 'stem seeds' or cleistogenes as well as panicle seeds. These 'stem seeds' develop at the nodes and bases of stems

Control Measures

Manual Removal:	Plants can be dug out; ensure the crown is included to prevent regrowth. No plant material should be left behind as 'stem seeds' will germinate, creating many new plants. All removed material should be incinerated or buried.
Chemical Use:	Fluproponate is registered for full use on Chilean Needle Grass while glyphosate is only registered for spot-spraying. Spot-spraying, boom-spray, wick wiping and spray topping are considered best practice. Autumn and winter are best for chemical application as these are generally the times when plants are actively growing.

Fire:	Large infestations can be burnt to remove dead matter before treating regrowth with herbicide. This helps to protect any native species from off-target effects of chemical application. Fire alone will not kill Chilean Needle Grass, this method needs to be used in integration with other methods.
Slashing & Cutting:	Mowing with a catcher during flowering can minimise seed production however 'stem seeds' (which account for approximately 1/4 of seed production) will remain. This needs to be repeated when re-flowering occurs. Flowering generally lasts 2 weeks; timing is essential as mowing after flowering will spread seeds greatly increasing infestation sizes. All equipment should be cleaned thoroughly to prevent further spread
Biological Control:	There are currently no biological control agents for Chilean Needle Grass in Australia. The 'Defeating the Weeds Menace' program has invested in research being undertaken in Argentina where three Rust species have been identified as potential agents.
Grazing:	Grazing can be used in the winter months before seed set as feed value is at its highest at this time. Paddocks with infestations should not be grazed during seeding as seeds can cause injuries and also livestock can spread the seeds, creating a bigger infestation.
Cultivation & Scalping:	Cultivation can be used to exhaust the soil seed bank. It MUST be followed by a repeat cultivation of herbicide treatment of seedlings, otherwise this method will only increase infestation sizes. A replacement species such as pasture, native grasses or summer crop must also be planted to compete with Chilean Needle Grass regrowth.
Smothering:	Mulching can help create a barrier to contain Chilean Needle Grass infestations but it cannot be used as a sole control method.
Competition:	Maintaining strong competitive pastures or native plants will help prevent establishment of new Chilean Needle Grass plants, and reduce growth of existing plants.
Monitoring:	Successful treatment programs rely on ongoing monitoring of sites. Regrowth and new seedlings can easily become larger infestations if follow-up treatments are not part of the management program

Serrated Tussock (*Nassella trichotoma*)

Landholder Responsibilities:	Controlling serrated tussock plants as soon as they appear and before they seed will limit the spread of this weed. Early intervention is the best way to avoid heavy production losses and the high cost of control at a later date.
Why Is It Bad?:	Serrated Tussock has a low feed value and a lack of palatability to sheep and cattle, it is hard to identify when not seeding. It is extremely drought tolerant and infests country of both high and low productivity. Serrated tussock seeds prolifically, whole seed heads are carried long distances by wind. It is difficult and costly to control, particularly on non arable land. Serrated Tussock becomes a monoculture threatening the biodiversity and ecology of agricultural and non agricultural systems.

Control Methods

Manual Removal:	Chipping is also a suitable method to control individual plants scattered throughout clean paddocks. Isolated tussocks can be chipped with a mattock all year round, preferably before they seed. When conditions are wet, soil clods should be removed from the roots to prevent survival. Excessive soil disturbance can encourage germination of seeds, the scattering of pasture seed and fertiliser in the disturbed area is an effective means of quickly revegetating to provide competition.

Chemical Use:	A number of herbicides are registered for the control of serrated tussock in NSW and they are available under generic names. The most widely used herbicide contains the active ingredients glyphosate or flupropanate. Herbicide alone cannot be relied upon for long term control. Competitive desirable pasture species should be encouraged to prevent reinvasion by serrated tussock in the longer term.
Fire:	Tussocks chipped in full flower should be removed from the paddock and disposed of by burning.
Grazing:	Small infestations can be kept at bay through improved pasture competition, by regular fertiliser applications and grazing rests, which allow desirable species to increase in size and become more competitive. Serrated tussock seedlings are weak competitors and will only take hold in the absence of other competition.
Competition:	In areas of low soil fertility and low rainfall afforestation can be an effective means of controlling serrated tussock in the long term. Afforestation should be coupled with techniques such as herbicides and or chipping to control serrated tussock spread and seed production prior to effective control by the tree canopy.Flupropanate can be used with minimal damage to juvenile Acacia species or Eucalyptus species. Details of Afforestation can be obtained from Department of Industry and Investment.

Devils Rope Pear (*Cylindropuntia imbricate*)

Landholder Responsibilities:	Growth and spread must be controlled according to the Local Control Authority class 4 management plan. The plant must not be sold, propagated or knowingly distributed.
Why Is It Bad?:	Devils Rope Pear is a tangled perennial succulent growing to 1-3 m in height. It is very thorny and injurious to animals and humans. Segments break off and are spread to new sites via flood waters and wind. New plants will grow from seed and segments. Devils Rope Pear develops into thick stands that prevent human and stock movement and reduces stock carrying capacity.

Control Methods

Manual Removal:	Small infestations can be removed by hand but a high level of care needs to be taken to ensure ALL parts of the plant are removed, otherwise managers risk increasing the infestation size dramatically.
Chemical Use:	Use of herbicides is effective but a wetter needs to be used to penetrate the succulent's outer layer.
Fire:	Fire is an option for small infestations, but needs to be followed by up with regular monitoring and herbicide use.
Slashing & Cutting:	Definitely NOT recommended as this will spread segments, increasing infestations.
Biological Control:	Dactylopious tormentosus is a practical and cost effective agent to use on thick patches in warmer drier areas. The cochineal bug cannot be used as it is host specific.

Cultivation & Scalping:	Not generally recommended as broken segments can easily form new plants. However if done repeatedly, some success has been seen.
Monitoring:	Successful treatment programs rely on ongoing monitoring of sites. Regrowth and new seedlings can easily become larger infestations if follow-up treatments are not part of the management program

Nodding Thistle (*Carduus nutans*)

Landholder Responsibilities:	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority
Why Is It Bad?:	Nodding thistle is a serious pasture weed in NSW tablelands. It has become an invasive, competitive weed in well drained annual pastures where sites have been disturbed at the end of summer. An erect annual or biennial herb growing to 1.6 m high. The presence discourages animals from grazing neighbouring pasture plants, which reduces carrying capacity. The spiny heads contribute to vegetable fault in wool. The plants grow strongly throughout the autumn and winter months at a time when pasture production is at its lowest. Dense patches also harbour pests such as rabbits.

Control Methods.

Manual Removal:	Removal by hand or cultivation is effective if the taproot is cut about 10 cm below the soil surface and the soil removed from the roots.
Chemical Use:	The plant is susceptible to MCPA and 2, 4-D if applied in spring when first buds appear.
Slashing & Cutting:	Mowing or slashing before the heads are developed prevents seed formation but does not kill the plant, because they can reshoot strongly from the buds near the base.
Biological Control:	Overseas attempts have been made to control nodding with biological agents. In Europe the nodding thistle receptacle weevil, Rhinocyllus conicus, feeds on developing seeds in the thistle heads.
Grazing:	Nodding thistle is not usually grazed due to the spiny foliage, although goats will graze the developing buds.
Competition:	The best way to control in most cases is to establish a perennial pasture which provides ground cover in late summer to compete with thistle seedlings.
Monitoring:	After treating plants with chemical or manual removal, constant monitoring of the site is necessary for regrowth.

Bathurst Burr (*Xanthium spinosum*)

Landholder Responsibilities:	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority.
Why Is It Bad?:	Bathurst Burr is a significant pasture weed affecting the overall quality of agricultural produce through pasture competition and fleece contamination. Burrs cannot be removed mechanically from contaminated clips and the wool has to be carbonised with acid, which imposes a high additional cost on wool production.

Control Methods

Manual Removal:	Bathurst Burr can be chipped out manually but care needs to be taken as developing burrs can continue to mature on cut plants. Plants should be destroyed afterwards to ensure seeds do not continue to spread.
Chemical Use:	Herbicides are often the preferred method of control with many options available. Spraying is most effective on actively growing seedlings, but can be used in various situations successfully. It is best to apply chemicals before seed set to help prevent burrs forming.
Slashing & Cutting:	Can be used as a useful control method but must be done before burrs form.

Biological Control:	Research into use of biological control agents sourced from South America is still underway. Some other agents such as the seed-fly and rust are available but are limited in their effectiveness.
Competition:	Competitive pasture species should be introduced after Bathurst Burr plants have been removed to prevent re-establishment.
Monitoring:	Successful treatment programs rely on ongoing monitoring of sites. Regrowth and new seedlings can easily become larger infestations if follow-up treatments are not part of the management program

Blackberry (*Rubus fruticosus*)

Landholder Responsibilities:	Growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority and the plant may not be sold, propagated or knowingly distributed
Why Is It Bad?:	Blackberries increasingly and seriously affect agriculture, horticulture, recreation and tourism. Pasture production is reduced leading to reduced carrying capacity. Control costs in the future will increase dramatically. Feral animal populations increase in proportion to increases in available food and shelter. Bushfires could potentially be more intense as fuel loads are increased by the spread of infestations. The value of native environmental sites would decrease as Blackberry infestations lower biodiversity levels.

Control Methods

Manual Removal:	Physical removal can easily be carried out for smaller plants and seedlings
Chemical Use:	Generally, foliar spray with herbicide is used to control blackberries, as it is the most practical and effective method of control. Often chemical application can be used after the physical removal of large clumps of blackberries to reduce the bulk of the plant. Herbicide can also be used for cut-paint and drill-fill applications on the crown if fresh growth stems are removed

Fire:	The effect of herbicides is enhanced if the dead bushes are burnt several months after treatment. This opens up the area to grazing and competition from other pasture species
Biological Control:	Biological control agents have been tried but with little success, however leaf rust can be used on some taxa in warmer, moist sites
Grazing:	Grazing practices using goats have proved an effective control method as they readily eat the plants and can destroy large bushes by their continuous grazing pressure
Monitoring:	Successful treatment programs rely on ongoing monitoring of sites. Regrowth and new seedlings can easily become larger infestations if follow-up treatments are not part of the management program

African Boxthorn (*Lycium ferocissimum*)

Landholder Responsibilities:	Growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority and the plant may not be sold, propagated or knowingly distributed
Why Is It Bad?:	Dense thickets form if it is not controlled. Dense thickets exclude all other vegetation including pasture species. Dense thickets hinder stock mustering. Dense thickets deny stock access to watering points such as dams and rivers. Feral animals find harbour in African Boxthorn, increasing their potential for breeding. African Boxthorn fruit provide ideal breeding condition for fruit fly and dried fruit beetle, which threaten local fruit and vegetable growers. Thickets reduce available feed for stock and provide no feed value itself. Natural environment values are highly threatened by infestations of African Boxthorn, reducing biodiversity.

Control Methods

Manual Removal:	All parts of the plant must be removed and destroyed as broken root segments can sucker and regrow, and fruit can continue ripening on dead branches
Chemical Use:	Different situations require different methods including foliar spray, basal bark treatment, cut stump treatment, and root application
Competition:	Competition limits African Boxthorn's ability to regenerate. Planting out treated sites with desired species increases competition and therefore increases the potential success of the management program

Monitoring: Successful treatment programs rely on ongoing monitoring of sites. Regrowth and new seedlings can easily become larger infestations if follow-up treatments are not part of the management program

Blue Heliotrope (*Heliotrope amplexicaule*)

Landholder Responsibilities:	Growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority and the plant may not be sold, propagated or knowingly distributed
Why Is It Bad?:	Blue Heliotrope will increasingly and seriously affect agriculture, the natural environment and tourism values. Agricultural production would be severely affected through both pasture and stock health. Infested crops and pastures are of low value and low carrying capacity. If consumed, stock can suffer severe health problems often leading to death. Tourism values of native grasslands and natural riparian environments are reduced due to the obnoxious odour emitted during growing and flowering periods. Reduction of biodiversity levels in sensitive environments such as grasslands will occur when these sites are infested with Blue Heliotrope.

Control Methods

Biological Control:	The leaf beetle (Deuterocampta quadrijuga)
Grazing:	Sheep (especially Merinos) and goats can be used (but not every year) and horses, cattle and pigs should never be used.
Cultivation & Scalping:	This should only be a short term solution but is also capable of increasing the problem as roots fragments can reshoot.
Smothering:	A vigorous perennial pasture needs to be maintained in order to out-compete Blue Heliotrope. It is an effective long term solution.
Monitoring:	Successful treatment programs rely on ongoing monitoring of sites. Regrowth and new seedlings can easily become larger infestations if follow-up treatments are not part of the management program

Golden Dodder (*Cuscuta campestris*)

Landholder Responsibilities:	Growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority and the plant may not be sold, propagated or knowingly distributed
Why Is It Bad?:	Control of Golden Dodder is of high importance in the Lachlan Valley due to the severe impacts it can have on the fodder and cropping industries. It is of particular concern during the drought period Lachlan Valley is currently experiencing as there is increased movement of potentially contaminated fodder in the region. Contaminated crops have significantly lower yields and are of lower monetary value. Golden Dodder is also suspected of poisoning stock, causing intestinal disorders in horses and cattle.

Control Measures

Manual Removal:	Infected host plants are cut off at the base, and burnt. Lucerne plants can survive this and regrow. Careful monitoring should be undertaken to ensure Golden Dodder does not reshoot from the crown.
Chemical Use:	There are no sprays available to selectively control Golden Dodder, host plants will also die (although Lucerne and some other species will regrow from undamaged crowns). Golden Dodder and all host plant material should then be burnt to ensure mature seed is also killed.
Fire:	Infected host plants are cut off at the base, and burnt. Lucerne plants can survive this and regrow. Careful monitoring should be undertaken to ensure Golden Dodder does not reshoot from the crown.
Slashing & Cutting:	Should not be used as it promotes the spread of Golden Dodder

Cultivation & Scalping:	Golden Dodder seed generally will not germinate from a depth greater than 7.5 cm.
Competition:	By planting winter crops or grasses instead of susceptible summer crops, the soil seed bank can be exhausted, reducing the risk of future infestations.
Monitoring:	Successful treatment programs rely on ongoing monitoring of sites. Regrowth and new seedlings can easily become larger infestations if follow-up treatments are not part of the management program

Silverleaf Nightshade (*Solanum elaeagnifolium*)

Landholder Responsibilities:	Growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority and the plant may not be sold, propagated or knowingly distributed
Why Is It Bad?:	Silverleaf Nightshade competes strongly with crops and natural pastures. It significantly affects summer broadleaf crops, reducing yields. It also causes yield losses in winter crops as Silverleaf Nightshade depletes soil nutrients levels over summer. Increased stock losses as consumption of Silverleaf Nightshade can cause health problems in horses or cattle. Decreases in biodiversity, especially on roadsides, as Silverleaf Nightshade is a vigorous competitor. Increases in infestation sizes and distributions as Silverleaf Nightshade spreads quickly, especially after cultivation or grading.

Control Methods

Manual Removal:	All parts of the plant must be removed as regrowth occurs easily from fragmented rhizomes
Chemical Use:	Chemical application should occur when plants are fresh after rainfall. Stressed or dormant plants will not take in chemical. Various chemicals can be used during the plants life cycle that variously exhaust nutrient stores, prevent seed set, and kill root systems. Anecdotal evidence suggests more effective chemical uptake is achieved if herbicides are applied to the underside of leaves.

Slashing & Cutting:	Slashing has no affect as Silverleaf Nightshade readily regrows from basal stems.
Grazing:	Should be avoided as stock easily spread seed as well as suffer from the chemical content in Silverleaf Nightshade.
Cultivation & Scalping:	Should also be avoided as machinery distributes root fragments over vast areas increasing infestation sizes. Good crop maintenance and use of in-crop herbicides will suppress Silverleaf Nightshade. Use of residual herbicides in winter (Eg atrazine or picloram) can reduce seedling and sucker regrowth in spring.
Competition:	Maintain competition levels in pastures. Lucerne or perennial grasses can suppress seedling and sucker emergence.
Monitoring:	Successful treatment programs rely on ongoing monitoring of sites. Regrowth and new seedlings can easily become larger infestations if follow-up treatments are not part of the management program

Scotch Thistle (*Onopordum acanthium*)

Landholder Responsibilities:	Growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority and the plant may not be sold, propagated or knowingly distributed
Why Is It Bad?:	Scotch Thistle has the potential to reduce the viability and production of prime agricultural land in the Lachlan Valley, a critical part of the economy of the region. This species is undesirable in the Lachlan Valley region because it competes well with pastures and it can be difficult to control by traditional pasture improvement techniques, it is rejected by livestock because of dense spines, and if eaten the spines can cause damage to the eyes and mouths of animals. It forms dense stands that compete strongly with pastures and lucerne, and they also exclude livestock and reduce carrying capacity.

Control Methods

Manual Removal:	Single plants can be grubbed, making sure to remove at least 50 mm of the taproot.
Chemical Use:	Chemical use must be applied when plants are actively growing. Difficulties often occur as different mixture rates are required for successful control of different maturity levels of the plant.
Slashing & Cutting:	These techniques are usually not effective because cut plants can regrow from the base and cut flowering stems may still produce fertile seed.
Biological Control:	The Seed-head Weevil (Larinus latus), Stem-boring Weevil (Lixus cardui), and Crown Moth (Eublemma amoena) all affect competitiveness and seed production of Scotch Thistle.
Grazing:	Scotch Thistle is palatable to goats and can be controlled but not eradicated through grazing pressure.
Cultivation & Scalping:	Ploughing is effective in killing young plants providing they are completely turned over. This is best achieved with a mouldboard plough.
Smothering:	Strong, competitive, well-managed pastures are effective in shading thistle seedlings, reducing establishment of the weed during the main germination periods. Careful grazing management is necessary to minimise bare ground, which assists thistle seedling establishment. Contact your local Catchment and Agriculture Services staff for pasture management advice.

Competition: Establishment of a strong perennial grass-based pasture will allow sites to compete well with Scotch Thistle, reducing germinations.

Monitoring: Successful treatment programs rely on ongoing monitoring of sites. Regrowth and new seedlings can easily become larger infestations if follow-up treatments are not part of the management program

St John's Wort (*Hypericum perforatum*)

Landholder Responsibilities:	Class 4 - growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority and the plant may not be sold, propagated or knowingly distributed.
Why Is It Bad?:	St. John's Wort has shown itself to be a significant weed in the group project area by its ability to grow in all climatic and topographical zones. It has also shown itself to become a dominant species, replacing native and improved pastures. St. John's Wort's capacity to replace desirable plant species and its effect on stock health (photosensitization) makes it a threat to agricultural/horticultural production.

Control Methods

Manual Removal:	St John's Wort can reproduce from buds on its roots therefore the entire root structure must be removed.
Chemical Use:	Different situations (e.g., flowering times, chemical choice, surrounding plants) require different methods (e.g. spot spraying, wick wiper).
Fire:	Non-specific, it kills seeds and checks growth.
Biological Control:	Agents include two species of Chrysolina beetles, Agrilus hyperici, Gall midge, Aphic chloris, and the St John's Wort stunt mite.
Grazing:	Practical for steep, inaccessible hill country. Only certain breeds of sheep with enough wool growth or dark coloured cattle should be used.
Competition:	Perennial pastures provide competition that is essential for long term control, particularly during autumn.

Monitoring: Successful treatment programs rely on ongoing monitoring of sites. Regrowth and new seedlings can easily become larger infestations if follow-up treatments are not part of the management program

Harrisia Cactus (*Harrisia sp*)

Landholder Responsibilities:	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority and the plant may not be sold, propagated or knowingly distributed
Why Is It Bad?:	Harrisia Cactus was introduced to Australia in the 1890's as a pot plant by the mining community around Collinsville, Queensland. Recognised as a pest species in 1935, Harrisia has spread south from the original site and now infests large areas of Queensland and New South Wales. Originally from South America, these species form dense impenetrable thickets. These thickets choke out pastures, restrict human and stock movement, limit access to watering points, and interfere with operations such as mustering. The spines are long and inflict serious injury to stock, causing economic losses for landholders. The sharp spines also make pasture unfavourable to stock, they do not like to move among even small infestations.

Control Methods

Manual Removal:	All parts of the plant must be removed (including all tubers) and destroyed by burning as any portion of tuberous root or branch left in the soil will re-sprout.
Chemical Use:	Results are often irregular so follow-up treatment is required. It can take several weeks before effects of herbicide become noticeable.

Biological Control:	Mealy bug (Hypogeococcus festerianus) attacks the tips and buds of the cactus. The bugs spread via wind and human intervention, but are less effective in dryer, cooler areas. In ideal conditions, Mealy bug infestations take 3 seasons to kill a plant. Another biological agent, the Stem-boring Longicorn beetle (Alcidion cereicola) attacks the stems, but is less effective than the Mealy bug.
Cultivation & Scalping:	Harrisia cannot survive on lands under constant cultivation. However, this method should only be approached on a long term basis as seeds and segments will re-sprout if competition is not present.
Monitoring:	Successful treatment programs rely on ongoing monitoring of sites. Regrowth and new seedlings can easily become larger infestations if follow-up treatments are not part of the management program

Lippia (*Phyla canescens*)

Landholder Responsibilities:	The plant must not be sold, propagated or knowingly distributed by any person other than a person involved in hay or lucerne production. The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the Local Control Authority.
Why Is It Bad?:	Lippia forms a dense mat of growth that can dominate floodplains. The solid taproot can destabilise river banks and increase erosion. It is not considered a major threat to cultivation but can easily invade and dominate grazing areas and native pastures. Lippia tolerates frost, drought, flooding and saline soils. It spreads easily during floods as segments break off and form new infestations. Lippia is commonly grown as a low-maintenance lawn species, a practice that should be stopped.

Control Methods

Manual Removal:	Manual removal or ploughing Lippia into soil can achieve short term control, however this is not recommended for riparian situations where erosion risk is high.
Chemical Use:	Multiple herbicide applications within a season can provide effective control; late spring or early summer application followed by a late summer application. Selection of herbicide can be difficult as care must be taken not to pollute waterways or kill non-target species.
Biological Control:	Biological control agents are being investigated by CSIRO. Difficulties have arisen due to the unknown origin of the 2nd Phyla species in Australia, P. nodiflora.
Grazing:	Grazing is not generally used as Lippia is not very palatable to stock. As a ground hugging species, stock are more likely to eat other species present first, decreasing competition for Lippia.
Cultivation & Scalping:	Cultivation and cropping over several years can provide effective control of Lippia. Cultivation of dry soil in hot weather has been found to prevent transplants. When the cropping cycle moves into pasture phase, care must be taken to prevent re-establishment.
Competition:	Competitive and productive pastures prevent rapid re-invasions and are an essential part of long term Lippia control.
Monitoring:	Successful treatment programs rely on ongoing monitoring of sites. Regrowth can easily become larger infestations if follow-up treatments are not part of the management program.

Class 5 Weeds

Bridal Creeper (*Asparagus asparagoides*)

Landholder Responsibilities:	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with
Why Is It Bad?:	Introduced as a garden plant and often used in floral arrangements, Bridal Creeper is now a major weed of native bushland. The foliage smothers surrounding plants and dense mats of tubers prevent root growth and establishment of other plants. Bridal Creeper is considered a major threat to native habitats and as such is one of Australia's top 20 Weeds of National Significance (WoNS).

Control Methods

Manual Removal:	Removal of the entire root mat is necessary for this method to be effective. This mostly must be done with hoes, picks and hand-pulling as mechanical tools are not suitable.
Chemical Use:	Spot spraying plants for several consecutive years can lead to good results. However care needs to be taken as off-target contamination can occur easily when Bridal Creeper entangles itself around other desirable plants.
Fire:	Fire can be used to aid herbicide application as new growth appears quickly, before many native or desirable species. Fire can also kill seeds and affect the tuber mats.

Slashing & Cutting:	Slashing at certain times of the year can prevent fruit production and slowly deplete root reserves, but this will not eradicate the plant.
Biological Control:	The Bridal Creeper leafhopper (Zygina sp.) attacks the leaves, reducing the competitiveness of the plant. Rust fungus (Puccinia myrsiphylli) attacks leaves and stems, reducing plant mass. A leaf beetle (Crioceris sp.) is also available. Due to the slow rate of these biological control agents, several years are required before serious effects can be observed.
Grazing:	Sheep and wallabies are known to graze Bridal Creeper and this could be an option for remnant woodland sites, however this is a difficult control measure to regulate.
Monitoring:	Successful treatment programs rely on ongoing monitoring of sites. Regrowth and new seedlings can easily become larger infestations if follow-up treatments are not part of the management program

Athel Pine (*Tamarix aphylla*)

Landholder Responsibilities:	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with
Why Is It Bad?:	Athel Pine is a Weed of National Significance and has the potential to infest most of inland Australia. It is a notifiable weed across the State. Athel Pine causes severe environmental damage and impacts economically on the pastoral industry. Cultivated plants escape and naturalise easily. It usually infests waterways with dense stands, increasing sedimentation, altering flow patterns and causing overland flooding and bank erosion. These dense stands prevent stock and wildlife from using water sources and makes mustering difficult if not impossible. It's ability to influence local soil salt levels gives it an advantage over less salt-tolerant native and pasture species. Its deep, complex root system consumes large amounts of soil moisture that also results in lesser growth of surrounding plants. It reduces biodiversity. It has been found that areas infested with Athel Pine had ground covers dominated by saltbushes and introduced grasses, whereas areas dominated by native species such as River Red Gum (Eucalyptus camaldulensis) had more varied ground cover species. It is difficult and expensive to control as an integrated management approach is needed. It can quickly re-establish itself if left unchecked. It is fire resistant and can alter natural fire regimes affecting native species regeneration. It can lower water tables and therefore drain water sources reducing the number of stock watering points.

Control Methods

Manual Removal:	Seedlings can be hand-pulled and large infestations can be removed with machinery, however care needs to be taken to remove the roots (to a depth of 1 m) and all debris. Leaving any part of the plant behind is unwise as new plants will easily regrow.
Chemical Use:	There is no registered herbicide for Athel Pine, managers need to use an "off-label permit". Care should be taken when using chemicals near waterways as off-target contamination can occur easily. Herbicides can be used for foliar spray, basal bark or cut-stump treatments.
Fire:	Not recommended as Athel Pine will quickly and easily regrow from root stock.
Slashing & Cutting:	Not recommended as Athel Pine will quickly and easily regrow from root stock.
Biological Control:	There are currently no biological control agents for Athel Pine. Research into a leaf-eating beetle (Diorhabda elongata) has been undertaken in the US but results were not promising for control of Athel Pine in Australia.
Grazing:	Athel Pine is generally unpalatable due to its high salt content.
Competition:	Revegetation is often required to maintain the site as the Pine often grows along waterways. Species must be salt tolerant and ideally local provenance.
Monitoring:	Successful treatment programs rely on ongoing monitoring of sites. Regrowth and new seedlings can easily become larger infestations if follow-up treatments are not part of the management program

7.3 ERRRC PEST MANAGEMENT PLAN

7.3.1 PURPOSE

This Pest Management Plan has been prepared as a requirement of the PA. The plan shall include, but not necessarily be limited to:

i) Procedures for identifying both vertebrate and invertebrate pests within the ERRRC site;

ii) Pest management measures to control and prevent the spread of pests;

iii) Monitoring methods to assess the impact of the development on the spread of pests; and

iv) A Procedure to review management methods where they are found to be ineffective.

7.3.2 ACTIONS

The nature of the ERRRC could make the site susceptible to the possible infestation of pest species not already present in the area. Pests associated with landfilling activities include:

- European Wasps;
- Flies;
- Mice;
- Rats;
- Rabbits;
- Kangaroos;
- Foxes;
- Cats; and
- Birds.

Landfilling operations at the ERRRC are known to be less susceptible to pest infestations than typical landfill environments, resulting from the baled nature of the incoming putrescible waste. Pest management would therefore largely be focussed on the buildings on the site. Notwithstanding the decreased likelihood of pest infestations due to the nature of the landfilling activities, the following would be implemented:

- Education of staff with respect to pest identification and control; and
- Regular inspection of the ERRRC site to identify signs of pests.

Furthermore, the security fence around the perimeter of the operational area of the site significantly limits the occurrence of larger vertebrate pest species.

7.3.2.1 Identification of Pests

A number of the pests identified in **Section 7.3.2** can be identified without visually identifying the pest itself, for example by identifying nests, burrows and other ground disturbance, and scats. Identification of pasts may include, but not be limited to:

European Wasps

European wasps may be identified by either identifying the insect itself, or identification of a nest. Nests may be simple holes in the ground or are sometimes in trees and buildings and are recognised by the wasps entering and exiting. There is usually only one entrance hole but there may be several in large nests. They are often found near a water supply. Nests can sometimes be located by following wasps back to the nest site, especially on dusk. Wasps generally forage in a 250 metre radius from the nest. Wasp nests should be treated with extreme caution as disturbance may provoke wasps to attack and multiple stings can be life threatening (Department of Primary Industries and Water:

www.dpiw.tas.gov.au/inter.nsf/WebPages/CPAS-5Y9793?open).

Mice and Rats

The presence of mice and rats is readily noted through identification of scats in buildings within the site.

Rabbits

Rabbit populations can be identified by either identifying the pest itself, or identification of burrowing or digging activity around the site. Rabbit monitoring is important at the ERRRC, particularly within and around stormwater dam areas where the dam's clay liner could be compromised with rabbit activity.

Daily inspections of the site should include visual inspection for any rabbit activity.

Kangaroos

Kangaroos may only enter the site concurrently with vehicles entering or exiting the site through the security gate. Care should be taken by drivers to monitor their surrounds when entering and exiting the site, and notifying the Resource Recovery Centre Supervisor is a kangaroo enters the site.

Cats

Cats are known to commonly scavenge around landfill sites. The ERRRC landfill is significantly less prone to the presence of scavenging cats, given that putrescible waste arrives baled. Cats may however be deterred by hygienic housekeeping within and around the buildings on the site.

Birds

Typically birds become scavenging pests at landfill sites, with the exposed nature of the garbage disposal. The ERRRC landfill is significantly less prone to birds as pests, given that putrescible waste arrives baled.

Avian pests are more likely to be a potential problem nesting within the buildings on the site. A number of species of birds choose to build their nests around buildings, which can lead to a build up of droppings under the nest.

7.3.2.2 Monitoring

It is the responsibility of the Resource Recovery Centre Supervisor and Operators to familiarise themselves with the likely pests identified in **Section 7.3.2.1**. Staff are required to monitor on an ongoing basis the presence of pest species, and report occurrences to the Resource Recovery Centre Supervisor, who is required to discuss control methods with the Manager Waste Service and Technical Support.

The Resource Recovery Centre Supervisor, in consultation with the Manager Waste Services and Technical support will organise for control and/or eradication of pests if required, in addition to further follow up monitoring.

7.3.2.3 Control of Pests

European Wasp

European wasps can be controlled effectively using either a bait station, or by tracking wasps and destroying nests. Tracking and destroying nests is the most effective way of destroying the population of the wasps, however, this should only be attempted by a pest management contractor.

Bait stations are a feeder containing an insecticide, which is carried back to the nest where it is spread by the insects cleaning themselves. This feeder consists of the bottom half of a well cleaned, empty one or two litre plastic (non-food) container with a hole about 20 mm in diameter, 20 mm up from the bottom on each side (refer **Figure 7.3.1**). A piece of fresh liver (lambs fry) is held near the top with a wire, and insecticidal dust containing permethrin is spread about 3 mm deep over the bottom of the container. Wasps are attracted to the liver, chew off a small piece and then often fly to the bottom of the feeder to adjust their load where they come into contact with the insecticide dust before returning to the nest.

The feeders are hung in sunny areas out of the rain away from paths where people walk.

The bait stations should be set up when wasp numbers begin to increase. The liver bait should be replaced every three days to ensure that it remains attractive to wasps. Similarly the bait should be replaced and moved to a new location if attacked by ants, as the presence of ants will repel wasps.

This type of feeder has the advantage that for nearby nests, the insecticide will be carried back into the nest and many more adult and young wasps killed. The dust should also be checked to make sure enough is present. Any setting up of checking should be done after dusk when wasps are not feeding.

If the wasp population remains present after the installation of the bait station(s), a qualified pest management contractor should be engaged to track and destroy any nests within the area.

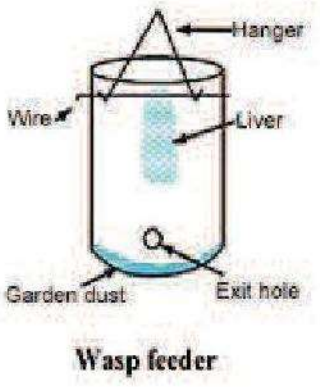

Figure 7.3.1: Wasp Bait Station Set Up (Source: DPIW)

Flies

Files can potentially populate landfill areas in nuisance numbers, leading to complaints from neighbours, and unsavoury working conditions for staff and contractors. Flies numbers can be controlled around buildings on the site if required by:

- Ensuring good housekeeping practices in and around the buildings on the site, this includes sealing any garbage on site in bins with tightly closed lids, and removing garbage from buildings on a regular (ideally daily) basis; and
- Install commercially available fly traps around buildings where flies are noted as particularly abundant; and
- If fly populations persist in large numbers around the buildings or on the site, a suitably qualified pest control contractor should be engaged to control populations using pesticides.

Mice and Rats

Rodent populations are best controlled within and around buildings on site by sanitary housekeeping practices. If populations persist commercial rodent control products are available, including baits and traps. If commercially available products do not reduce rodent populations, a suitable qualified pest management contractor should be engaged.

Rabbits

If rabbits are identified in nuisance numbers, and/or the clay liners in the surface water dams or excavated unlined cells are being compromised eradication measures should be undertaken.

Eradication should be undertaken by a suitably qualified pest management contractor. Control may be undertaken by disease, poisoning, warren destruction, exclusion, or a combination of these.

Kangaroos

In the unlikely event that a kangaroo makes its way through the security gate, staff and contractors should make every effort to guide the kangaroo back out.

Kangaroos have been known to burrow under fences in an effort to access water. Efforts should be made to ensure there is always water available outside of the site, particularly in hot dry conditions.

Cats

If a population of cats is identified within the operational area of the site, a suitably qualified pest management contractor should be engaged.

Birds

If birds are found constructing a nest within or around buildings on the site, the initial response should be to implement a scare tactic (either noise or visual) to deter the birds from establishing a nest. Scare tactics may not however be as effective as removing the nest.

It is difficult to relocate nests without disturbing the birds eggs or hatchlings, it is therefore recommended to either remove the nest before any eggs are laid, or after fledgling shave left the nest. If the birds are still in the process of building the nest then the nest can be destroyed, and the area obstructed to deter further nesting.

7.3.3 RECORD KEEPING

The identification and management of pests is to be noted on the daily checklist in circumstances where:

- Pests are increasing to nuisance numbers, and management actions are required;
- New populations of pests are identified;
- Control measures are proving either effective or ineffective;
- Control measures are changed; and/or
- The pest population is noted as being under control.

7.4 ERRRC FIRE MANAGEMENT PLAN

7.4.1 AIM OF THE PLAN

To control and suppress all fires within the boundaries of the Euchareena Road Resource Recovery Centre (ERRRC) in a safe and efficient manner.

7.4.2 OBJECTIVES

1) Reduce the threat of loss or damage by fire to life and property; and

2) Reduce the risk of any occurring fire incidents from escaping the confines of the ERRRC.

7.4.3 HAZARDS

The ERRRC has many hazards with and without the presence of fire. Various commercial and domestic wastes are compacted into a cell which is subsequently covered with soil. Many of the items within the landfill are unidentified. It is therefore difficult to determine what reaction will occur due to the presence of fire. It is well known that the ERRRC areas contain a substantial amount of paper, plastics, pressure cans, bottles and other domestic and industrial refuse. It therefore could be assumed that there will be the presence of the following gases:

- Hydrogen Cyanide
- Phosgene
- Carbon Monoxide
- Nitrogen Oxides
- Ammonia
- Acetic Acids
- Hydrogen Chlorite
- Isocyanides

These are similar gases which could be experienced in a house fire. The ERRRC has the advantage of being generally in the open; therefore fire fighters can stay away from the direct smoke zone of a fire.

Further major hazards may include exploding pressure cans, bottles, paint containers and fibro.

7.4.4 ORGANISATIONS

Primary: Fire and Rescue NSW – Molong Brigade, Orange City Council and NSW Ambulance.

Secondary: NSW Fire Brigade

7.4.5 EVACUATION PROCEDURE

Should an evacuation of the Resource Recovery Centre be necessary as determined by the ERRRC Supervisor (ie incident beyond the control of ERRRC staff resources), the Supervisor will activate the evacuation warning siren and initiate the communication protocol as listed under "Activation."

The ERRRC Supervisor shall by UHF radio co-ordinate Council personnel and/or contractors on site to close the entry gates to prevent further access to the site and also patrol all areas of the ERRRC in order to evacuate any contractors or visitors.

The J R Richards Manager will conduct a staff head count with the ERRRC Supervisor with all personnel advised to gather at the Evacuation Muster Point following sounding of the evacuation warning siren.

Figure 7.4.1: Evacuation Muster Point at the ERRRC

7.4.6 ACTIVATION

1) Should a fire occur within or near the boundary of the Resource Recovery Centre it should be reported through 000.

2) The appropriate Brigade will be activated (Molong Fire Station).

3) The Manager Waste Services and Technical Support and J R Richards Manager are to be notified as soon as possible.

4) The officer on duty shall inform the Ambulance Service of the fire and ask them to be on standby.

7.4.7 STRATEGY

Fire and Rescue NSW personnel are to combat the fire with extreme caution and to make every effort to contain the fire within the Resource Recovery Centre boundary. Every attempt will be made to reduce risk to individuals by inhalation of smoke and the effects of poisonous gases. Fire fighters will be clothed in full fire fighting PPE at all times and consideration should be given to utilising Compressed Air Breathing Apparatus (CABA).

7.4.8 METHOD OF COMBAT

1) The Brigade officer in charge will obtain relevant information from the ERRRC Supervisor to determine hazardous areas and types of waste after which the Senior Officer will brief the fire fighters.

2) Earth moving equipment shall be made available to assist the Brigade in attendance by Orange City Council.

3) Bulk water shall be made available to assist the Brigade. Council's water tanker is on site.

4) Euchareena Road and Sharps Road shall be monitored to ensure smoke does not cause a hazard to traffic. Should this occur, Molong Police will be notified to assist in traffic control.

7.4.9 WEATHER

A weather report should be obtained as soon as possible so the officer in charge can be aware of any wind changes or adverse weather conditions which may affect fire behaviour.

7.4.10 OFFICER IN CHARGE

The Officer in Charge shall be the senior officer of the first arriving appliance, who in turn may defer this role upon the arrival of any other senior officer.

7.4.11 EQUIPMENT REQUIRED

7.4.11.1 Fire appliances

- An initial response of at least two heavy tankers will be required with further fire fighting resources activated subject to the initial situation report provided by the officer in charge.

7.4.11.2 Other appliances

- Earth moving equipment will be supplied by the OCC
- Tip trucks will be supplied by the OCC to cart soil should it be necessary
- Bulk water tanker shall be supplied by OCC

7.4.12 CONTACT LIST

Euchareena Road Resource Recovery Centre

Mr George Wiegold	AH 6361 2098 AH Mob 0423 716 156
Mr Vic Birnie	AH 6362 3505 AH Mob 0439 951 351
Mr Glen Jackson	AH 6362 6638 AH Mob 0412 698 554
JR Richards Central West Regional Manager	BH 02 6362 6353
RRC Supervisor - Mr Peter Ford	AH 6365 9225 AH MOB 0419 630 891
Manager Waste Services and Technical Support Mr Wayne Davis	BH 6393 8113 AH 6365 2455 MOB 0419 483 381
Wangarang Industries Supervisor, Mr Ben Grebens	AH 0402 259 871
Orange City Council Works Manager Mr Wayne Gailey	BH 6393 8502 AH 6360 1632 MOB 0417 676 246
NSW Ambulance	000
NSW Fire Brigade	000
NSW Police	000

7.4.13 ERRRC FIRE MANAGEMENT PLAN INDUCTION

All employees and regular contractors at the ERRRC are required to undergo the "Orange City Council Resource Recovery Centre Site Safety Management Procedures Induction". This is included in **Section 5.1 – Staff Training** of this OEMP.

Section 7.5

ERRRC NOISE MONITORING PROGRAM

NOISE MONITORING PROGRAM

ORANGE WASTE PROJECT

VERSION 7

DECEMBER 2021

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1.1 BACKGROUND

Condition 28, Schedule 5 – Specific Environmental Conditions – Euchareena Road Site of the Minister's project approval (Application No: 09_0025) for the Orange Waste Project requires:

> ***Monitoring***
>
> *28. The Proponent shall prepare and implement a Noise Monitoring Program for the site to the satisfaction of the Director-General.*

This document has been prepared as the above mentioned Noise Monitoring Program (NMP).

1.2 COMMITMENT

Orange City Council commit to undertake attended monitoring of noise levels in the event that a complaint is received and the mitigation measures implemented to avoid recurrence do not satisfactorily resolve the issue.

1.3 STRUCTURE

Section 2 details the monitoring program proposed during both construction and operations.

1.4 SCOPE

This NMP has been prepared cognizant of all relevant mitigation measures specified in the Statement of Commitments (Appendix 1 of the Project Approval) and regulatory obligations pursuant to the (Draft) Environmental Protection Licence (No: 20104).

1.5 DOCUMENT CONTROL

To facilitate orderly document control the NMP will only ever be issued as a complete copy and as a pdf file.

The latest date of issue and update number will be recorded below.

Table 1.1 – Document Control

Version	Date of Issue
2	26 April 2012

Monitoring

2.1 CONSTRUCTION

2.1.1 CONTRACTOR CEMPS

Construction activity to be undertaken on-site will be subject to protocols and procedures specified within Construction Environmental Management Plans (CEMPs) that require sign-off from the Director General.

Specifically, CEMPs will be submitted for the two key construction tasks:

- Access Road, Landfill Cells, Visual Bund and Surface Water Management System; and
- Alternate Waste Technology.

2.1.2 ATTENDED MONITORING

The Contractor CEMPs include provision for documenting and investigating any complaint received during the construction effort.

Any complaint received regarding noise will be investigated by the Contractor and reported to Council.

If successful resolution between the Contractor undertaking the works and the party making the noise complaint is not possible, Council will arrange for attended monitoring to be carried out.

2.2 OPERATIONS

Condition 6, Schedule 7 –Environmental Management, Reporting and Auditing of the Minister's project approval (Application No: 09_0025) for the Orange Waste Project requires:

Annual Review

6. One year after the commencement of operations, and annually thereafter, the Proponent shall review the environmental performance of the project to the satisfaction of the Director General. The review must:

a) describe the operations that were carried out in the past year;

b) analyse the monitoring results and complaints records of the Protect over the past year, which includes a comparison of these results against the:

- relevant statutory requirements, limits or performance measures/criteria;

- monitoring results of previous years; and

- relevant predictions in the EA;

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

d identify any trends in the monitoring data over the life of the Project; and

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

Consistent with the above the Annual Review will incorporate results from any required noise monitoring.

2.3 MEASUREMENT

Noise from the Orange Waste Project will be measured, if required, at the most affected point on or within the residential property boundary or if that is more than 30 metres from the residence, at the most–affected point within 30 metres of the residence to determine compliance with noise levels specified in the Environment Protection Licence (No:20104).

2.4 MODIFICATION FACTORS

For the purpose of determining the noise level generated from the premises, the modification factors in Section 4 of the *NSW Industrial Noise Policy* (EPA 2000/2001) will be applied, as appropriate, to the noise levels measured by the noise monitoring equipment.

Section 7.6

AIR QUALITY MONITORING PROGRAM

AIR QUALITY MONITORING PROGRAM

ORANGE WASTE PROJECT

VERSION 7

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Introduction

1.1 BACKGROUND

Condition 25, Schedule 5 – Specific Environmental Conditions – Euchareena Road Site of the Minister's project approval (Application No: 09_0025) for the Orange Waste Project requires:

> ***Monitoring***
>
> *25. The Proponent shall prepare and implement an Air Quality Monitoring Program for the site to the satisfaction of the Director-General.*

This document has been prepared as the above mentioned Air Quality Monitoring Program (AQMP).

1.2 STRUCTURE

Section 2 details the monitoring program proposed, during both construction and operations.

Section 3 details the reporting to be undertaken on an ongoing basis to validate the effectiveness of the air quality monitoring program.

Section 4 details the procedures to be undertaken in the event that dust monitoring reveals an exceedance of the licensed criterion.

1.3 SCOPE

This AQMP has been prepared cognizant of all relevant mitigation measures specified in the Statement of Commitments (Appendix 1 of the Project Approval) and regulatory obligations pursuant to the Environmental Protection Licence (No: 20104).

1.4 DOCUMENT CONTROL

To facilitate orderly document control the AQMP will only ever be issued as a complete copy and as a pdf file.

The latest date of issue and update number will be recorded below.

Table 1.1 – Document Control

Version	Date of Issue
1	24 April 2012
2	30 May 2012
3	28 October 2014

Dust Deposition

2.1 INTRODUCTION

Orange Council will monitor dust deposition during construction as well as on an on-going operational basis.

2.2 DUST DEPOSITION GAUGES

Dust Deposition Gauges (DDGs) have been installed and will be maintained at four (4) locations on-site.

The location of these DDGs is shown on **Drawing 49B-EV01** (as attached).

These DDGs will assess deposited matter on a continuous, monthly basis.

DDGs will be exposed for 30 days (+/- 2 days) and will be analysed for Insoluble Solids and Ash Residue.

Equipment and methods, subject to local site constraints, will comply with:

- *AS 3580.10.1-2003 Determination of particulates – Deposited Matters – Gravimetric Methods.*

As appropriate, locations will conform to the requirements of:

- *AS 3580.1.1:2007 – Methods for sampling and analysis of ambient Air – Guide to siting air monitoring equipment*.

The co-ordinates of the four DDGs are:

Table 2.1 – Air Quality Monitoring – Dust Deposition Gauge Locations

ID	Easting	Northing
NORTH	678171	6341453
SOUTH	677719	6340351
EAST	678256	6340637
WEST	677547	6340959

Reporting Compliance

3.1 ANNUAL REVIEW

Condition 6, Schedule 7 –Environmental Management, Reporting and Auditing of the Minister's project approval (Application No: 09_0025) for the Orange Waste Project requires:

Annual Review

6. One year after the commencement of operations, and annually thereafter, the Proponent shall review the environmental performance of the project to the satisfaction of the Director General. The review must:

a) describe the operations that were carried out in the past year;

b) analyse the monitoring results and complaints records of the Protect over the past year, which includes a comparison of these results against the:

- relevant statutory requirements, limits or performance measures/criteria;

- monitoring results of previous years; and

- relevant predictions in the EA;

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

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

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

3.2 COMPLIANCE REPORTING

Consistent with the above, the Annual Review will incorporate specific results from the Air Quality Monitoring Program.

Mitigation Procedures

4.1 INTRODUCTION

This section of the AQMP identifies the procedures and mitigation strategies that would be implemented in the event that monitoring of the dust gauges validates an adverse impact on any sensitive receiver.

4.2 PREVENTATIVE MEASURES

During construction and on-going operations at the site the following preventative measures would be implemented to minimise the potential for wind borne particulate matter:

- Exposed surfaces, including stockpiles unless revegetated or have a stable surface, would be watered;
- The area of exposed surfaces would be minimised;
- Available areas of disturbance would be rapidly and progressively rehabilitated;
- Drop heights of waste placed into the landfill would be minimised; and
- High dust-generating activities would be avoided during adverse wind conditions when blowing directly towards the nearest residences.

4.3 MITIGATION MEASURES

In the event that complaints regarding off site air quality impacts are received and the DDGs show high readings, the following measures will be implemented:

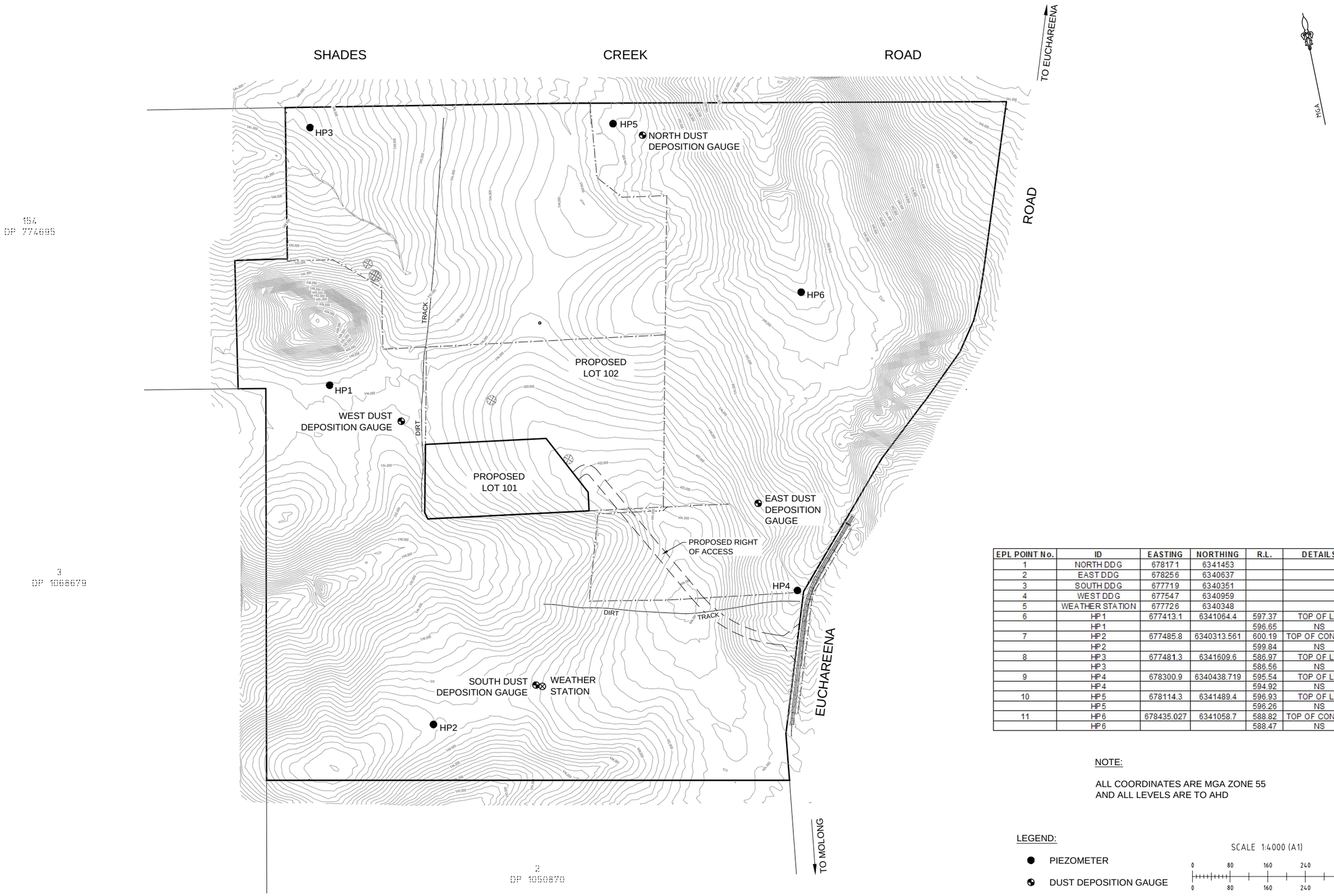
- Dust suppression measures will be enhanced with the use of water carts equipped with sprinkler systems; and
- Excavations and earthwork activities shall promptly cease if watering or covering disturbed areas cannot effectively control dust emissions generated by strong winds.

Work shall not recommence until winds have reduced to a level where dust emissions can be effectively managed.

It is noted that for both the construction and operational phases, all activities undertaken on site will be regulated through adherence to approved, documented environmental management procedures. These procedures will include a requirement to investigate and report on any complaint received concerning air quality.

Such investigation will establish the cause of the issue and document procedures to be undertaken to avoid the potential for recurrence.

Drawings



EPL POINT No.	ID	EASTING	NORTHING	R.L.	DETAILS
1	NORTH DDG	678171	6341453		
2	EAST DDG	678256	6340637		
3	SOUTH DDG	677719	6340351		
4	WEST DDG	677547	6340959		
5	WEATHER STATION	677726	6340348		
6	HP1	677413.1	6341064.4	597.37	TOP OF LID
	HP1			596.65	NS
7	HP2	677485.8	6340313.561	600.19	TOP OF CONDUIT
	HP2			599.84	NS
8	HP3	677481.3	6341609.6	586.97	TOP OF LID
	HP3			586.56	NS
9	HP4	678300.9	6340438.719	595.54	TOP OF LID
	HP4			594.92	NS
10	HP5	678114.3	6341489.4	596.93	TOP OF LID
	HP5			596.26	NS
11	HP6	678435.027	6341058.7	588.82	TOP OF CONDUIT
	HP6			588.47	NS

NOTE:

ALL COORDINATES ARE MGA ZONE 55
AND ALL LEVELS ARE TO AHD

LEGEND:

- PIEZOMETER
- DUST DEPOSITION GAUGE
- WEATHER STATION

SCALE 1:4000 (A1)

0 80 160 240 320

0 80 160 240 320

SCALE 1:8000 (A3)

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No	DATE	DRAFTING CHECK	PM CHECK	DETAILS
A	17/05/12	LRP	KBF	ISSUED TO CLIENT
A	29/05/12	LRP	KBF	EPA POINT Nos UPDATED

PROJECT
EUCHAREENA ROAD RESOURCE RECOVERY CENTRE

FILE REFERENCE: 208212_49B_EV01.dwg

APPROVAL AUTHORITY
ENVIRONMENT PROTECTION AUTHORITY

CLIENT
ORANGE
Australia's Colour City

DRAWING
EPL 20104 MONITORING POINTS
FIGURE 1

PROJECT NUMBER: 208212
DRAWING NUMBER: 49B_EV01
REV. B

SOURCE: INTERNAL

Section 7.7

ERRRC LANDFILL GAS MANAGEMENT PLAN

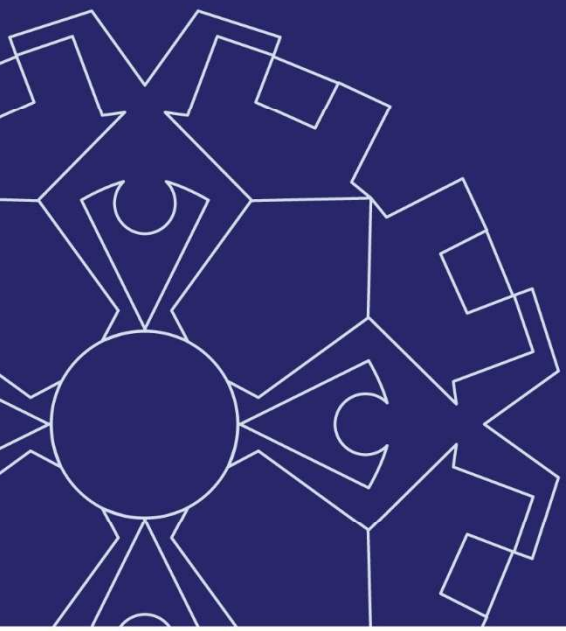
LANDFILL GAS MANAGEMENT PLAN

EUCHAREENA ROAD RESOURCE RECOVERY CENTRE

PREPARED FOR

ORANGE CITY COUNCIL

MARCH 2019



LANDFILL GAS MANAGEMENT PLAN

EUCHAREENA ROAD RESOURCE RECOVERY CENTRE

PREPARED FOR:

ORANGE CITY COUNCIL

MARCH 2019

GEOLYSE

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Report Title:	*Landfill Gas Management Plan*
Project:	*Euchareena Road Resource Recovery Centre*
Client:	*Orange City Council*
Report Ref.:	*208212_LGAS-REP_001E.docx*
Status:	*Final – Ver.4*
Issued:	*March 2019*

Geolyse Pty Ltd and the authors responsible for the preparation and compilation of this report declare that we do not have, nor expect to have a beneficial interest in the study area of this project and will not benefit from any of the recommendations outlined in this report.

The preparation of this report has been in accordance with the project brief provided by the client and has relied upon the information, data and results provided or collected from the sources and under the conditions outlined in the report.

All information contained within this report is prepared for the exclusive use of Orange City Council to accompany this report for the land described herein and are not to be used for any other purpose or by any other person or entity. No reliance should be placed on the information contained in this report for any purposes apart from those stated therein.

Geolyse Pty Ltd accepts no responsibility for any loss, damage suffered or inconveniences arising from, any person or entity using the plans or information in this study for purposes other than those stated above.

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Conceptual Biofilter Design

Project Approval Compliance Table

This Landfill Gas Management Plan (LGMP) has been prepared to address the requirements of Schedule 5 Conditions 9 and 10 of the Project Approval 09_0025 (Project Approval) for the Orange Waste Project (OWP).

Management plans prepared under this project approval are required to comply with the items stipulated in Schedule 7, Condition 5 of the approval, as indicated:

Table PACT_1

Compliance Item	LGMP Document Reference
Inclusion of detailed baseline data	Section 2.2
A description of the relevant statutory requirements (including any relevant approval, licence or lease conditions)	Sections 1.1 to 1.3 • *NSW Environment Protection Authority Environmental Guidelines: Solid Waste Landfills (Second Edition), 2016* • *Environmental Protection Licence 20104, under the 1997 NSW Protection of the Environment Operations Act* • *Project Approval 09_0025 for the Orange Waste Project*
A description of any relevant limits or performance measures / criteria	Section 5.2
A description of the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the Project or any management measures	Sections 5.1 to 5.2
A description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures / criteria	Sections 4.1 to 4.4
A program to monitor and report on the impacts and environmental performance of the Project	Section 5.1
A program to monitor and report on the effectiveness of any management measures	Section 5.1
A contingency plan to manage any unpredicted impacts and their consequences	Section 5.3
A program to investigate and implement ways to improve the environmental performance of the Project over time	Sections 5.1 to 5.6
A protocol for managing and reporting any: • incidents; • complaints; • non-compliances with statutory requirements; and • exceedances of the relevant limits and/or performance measures / criteria	Sections 5.4 to 5.5
A protocol for periodic review of the plan	Section 5.6

Introduction

1.1 PURPOSE

This Landfill Gas Management Plan (LGMP) has been prepared to address the requirements of Schedule 5 Conditions 9 and 10 of the Project Approval 09_0025 (Project Approval) for the Orange Waste Project (OWP).

> ***Greenhouse Gas***
>
> *9. The Proponent shall implement all reasonable and feasible measures to minimise.*
>
> *a) energy use on site; and*
>
> *b) the greenhouse gas emissions produced on site, to the satisfaction of the Director-General.*
>
> *10. The Proponent shall prepare and implement a Greenhouse Gas Management Plan for operations on site to the satisfaction of the Director-General. This plan must be prepared in consultation with DECCW by a suitably qualified and experienced expert, and be submitted to the Director-General for approval prior to the commencement of operations on site.*

The LGMP provides a conceptual proposal for landfill gas management at the Euchareena Road Resource Recovery Centre (ERRRC), operated by Orange City Council (OCC).

The objective of this LGMP is to consider the potential for gas to be generated from landfilled waste at ERRRC, and to outline potential control measures to minimise associated environmental impacts, in general compliance with the broad environmental goals specified in the NSW Environment Protection Authority (EPA) *Environmental Guidelines: Solid Waste Landfills* (Second Edition), 2016 (the SWL Guidelines).

The document '*Greenhouse Gas Management Plan* (GGMP)*, Euchareena Road Resource Recovery Centre*' (Geolyse, March 2013) was prepared prior to waste operations commencing at ERRRC, and was reviewed by the NSW Department of Planning and Infrastructure in April 2013. The GGMP proposed that the detailed design of the landfill gas management system would be deferred to coincide with the design of the final capping layer, six (6) years after commencement of waste receival.

1.2 ENVIRONMENTAL GUIDELINES

This LGMP details the investigations undertaken by Geolyse to develop a conceptual proposal for landfill gas management at the ERRRC in accordance with the relevant environmental issues and goals in landfilling specified in the SWL Guidelines. In the context of this assessment, the relevant broad goals for landfilling in NSW identified in the SWL Guidelines include:

- Landfills should be sited, designed, constructed and operated to cause minimum impacts to the environment, human health and amenity;
- Wherever feasible, resources should be extracted from the waste and beneficially reused;
- Adequate data and other information should be available about any impacts from the site, and remedial strategies should be put in place when necessary; and
- All stakeholders should have confidence that appropriately qualified and experienced personnel are involved in the planning, design and construction of landfills to high standards.

1.3 REGULATORY ASPECTS

The site operates under environmental protection licence (EPL) 20104, under the 1997 NSW Protection of the Environment Operations Act (POEO Act) for the scheduled activity 'Waste Disposal (application to land)'.

The ERRRC is licensed to receive the following waste categories:

Table 1.1 – ERRRC Licensed Waste Categories

Waste Category	Notes
General or Specific exempted waste	Waste that meets all the requirements of a resource recovery exemption under Clause 51A of the Protection of the Environment Operations (Waste) Regulation 2005
General solid waste (putrescible)	Waste Disposal (application to land) No more than 25,000 tonnes annually
General solid waste (non-putrescible)	Waste Disposal (application to land) No more than 20,000 tonnes annually
Building and demolition waste	N/A
Animal waste	N/A

Environmental monitoring requirements of EPL No. 20104 relating to groundwater and surface water are summarised in **Sections 2.2.3** and **2.2.4**. Routine gas monitoring including surface gas monitoring, gas accumulation monitoring, and sub-surface gas monitoring, is not currently a requirement of EPL No. 20104.

This LGMP has been reviewed by the NSW EPA and associated correspondence is attached in **Appendix A**. Whilst the NSW EPA will not endorse or approve management plans, no issues of note were identified when the document was viewed.

The SWL Guidelines prescribe minimum standards for landfills in NSW which "*apply to general solid waste and restricted solid waste landfills*". The SWL Guidelines define a general solid waste landfill as "a landfill licensed under the Protection of the Environment Operations Act 1997 for disposal of wastes classified as general solid waste". Accordingly, the minimum standards for landfill prescribed in the SWL Guidelines, specifically "Landfill gas management and monitoring" directly apply to landfilling operations at the ERRRC.

1.4 LANDFILL AREA CHARACTERISTICS

The ERRRC facility occupies the land title identified as Lot 102 in Deposited Plan (DP) 1183238, and is approximately 187.7 hectares (ha) in area. The area subject to landfilling is approximately 15 ha in area, as shown on **Figure 1**. This area has been subject to filling of baled-putrescible and unbaled-inert waste from the Orange City Council Local Government Area since 2013.

Landfilling at ERRC is being undertaken progressively in eight separate stages (landfill cells), with each stage occupying approximately 1.5 ha. The total site landfill capacity (total space required minus volume consumed by capping and lining) is approximately 1.64 million m^3.

Landfill Cell 1 and Landfill Cell 2 are currently being filled. The construction of Landfill Cell 3 has commenced and completion is anticipated for March / April 2019.

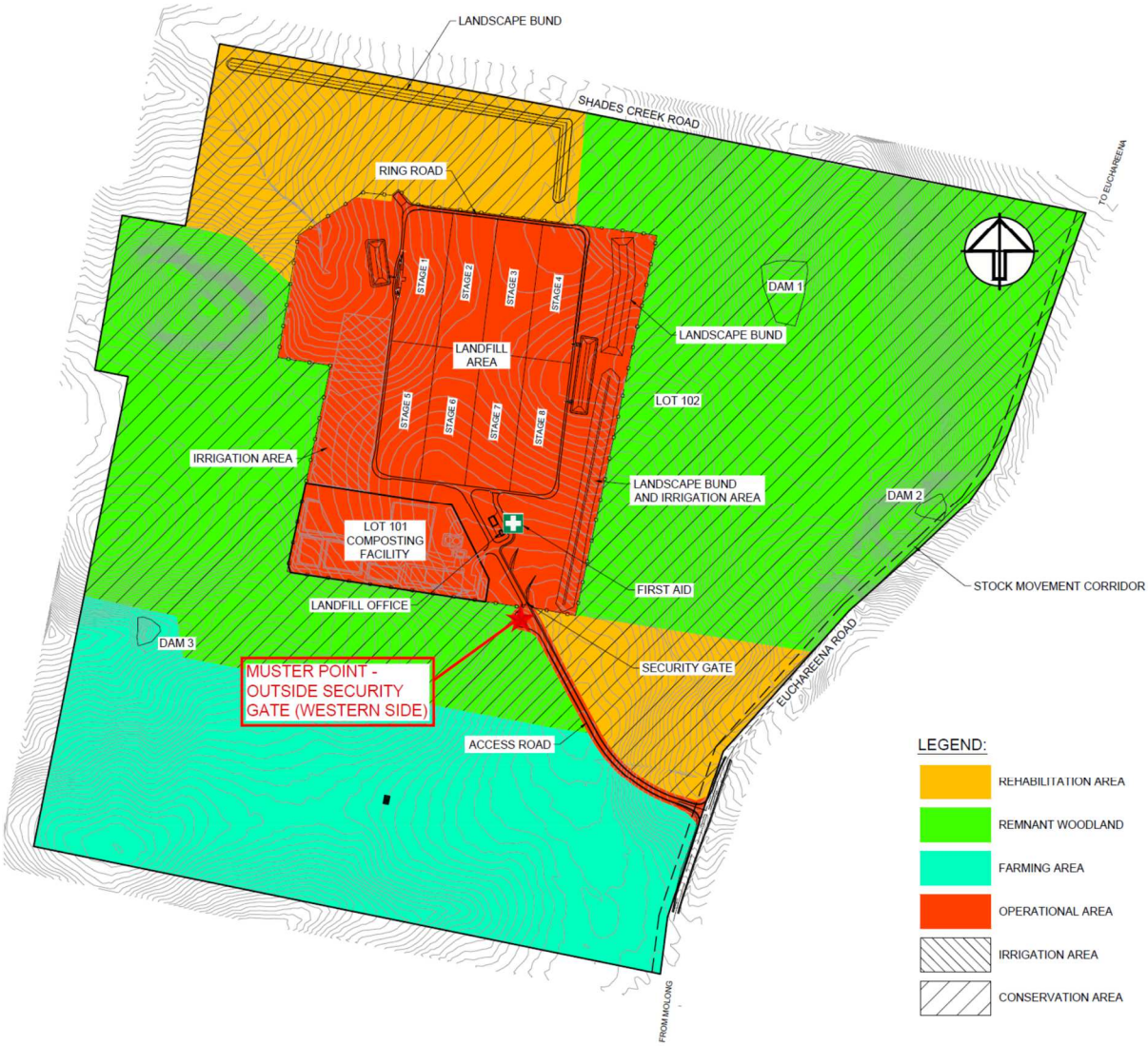

Figure 1: Operational Zones at ERRRC

A leachate barrier system has been installed at Landfill Cell 1 and Landfill Cell 2 as shown in **Figure 2**, consisting of the following elements (from top to bottom):

- Soil protection layer (on sidewalls only);
- Sacrificial woven geotextile protection layer;
- 300 mm aggregate drainage layer;
- Non-woven geotextile protection layer;
- 2 mm thick high density polyethylene (HDPE) geomembrane liner;
- 900 mm compacted clay; and
- Prepared sub grade.

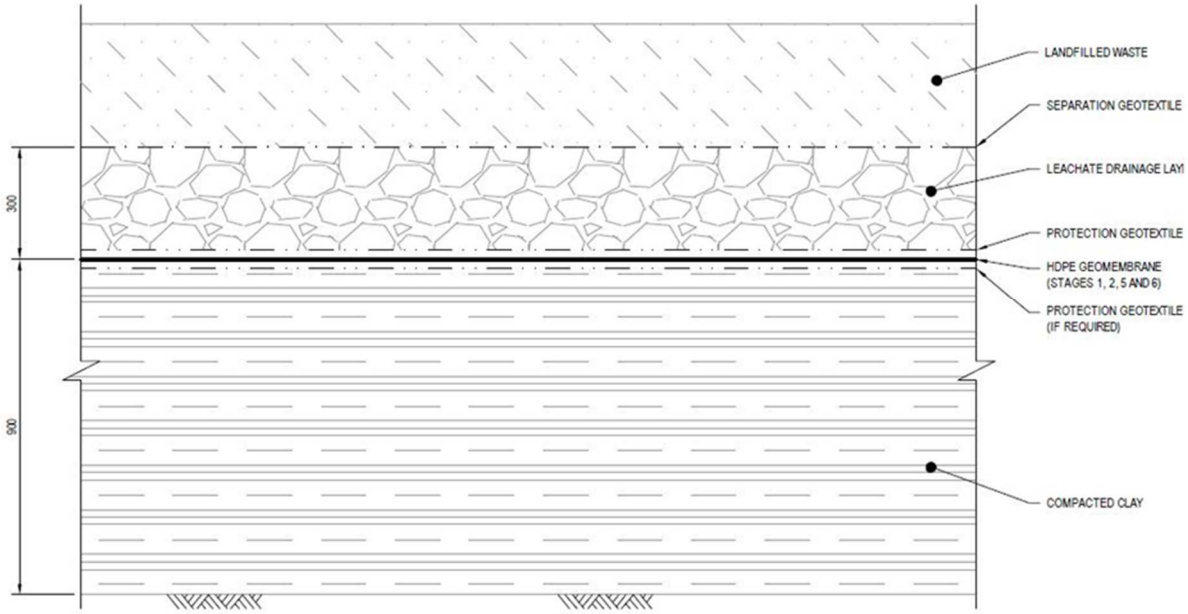

Figure 2: Landfill Lining Profile in Leachate Storage Zone

Site Overview

2.1 BACKGROUND

Commissioned on 5 August 2013, the ERRRC is part of the Orange Waste Project, which is an integrated project for improved resource recovery and residual waste management for the Orange Local Government Area (LGA). The main activities that are undertaken at the ERRRC include:

- Receipt and landfilling of baled mixed residual waste generated from the municipal and commercial and industrial (C&I) sector; and
- Receipt and landfilling of non-putrescible consolidated C&I, and construction and demolition (C&D) dry mixed waste.

Additionally, a 4.97 hectare contractor operated composting facility within the boundaries of the ERRRC site is covered by a separate land title and Environment Protection Licence (EPL).

2.2 ENVIRONMENTAL CHARACTERISTICS

2.2.1 LOCATION AND LAND USE

The 192.6 hectare property of the Euchareena Road Resource Recovery Centre (ERRRC) is located in the Shire of Cabonne Council and is owned by Orange City Council. The site is located approximately 5 km northeast of Molong and comprises Lots 101 and 102 in DP 1183238, Parish of Copper Hill, County of Wellington. The ERRRC Site is bounded by Euchareena Road to the east and Shades Creek Road to the north. The land adjacent to the site is predominantly rural land used for grazing and cropping.

The nearest residence to the ERRRC is located approximately 700 m to the east of the landfill area.

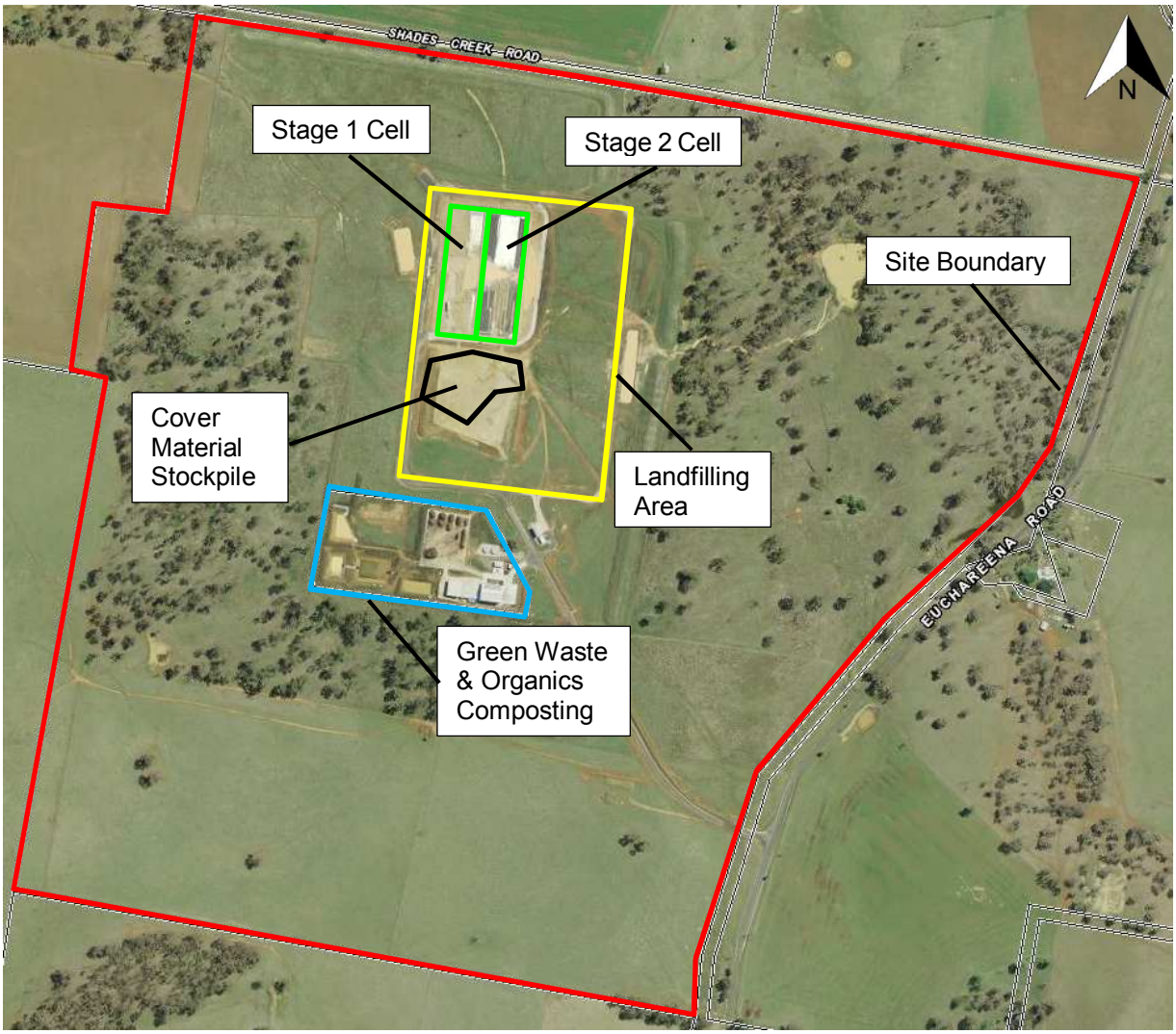

Figure 3: Location Plan of Euchareena Road Resource Recovery Centre

2.2.2 CLIMATE

The Molong district is located within a cool-temperate region that has an oceanic climate, characterised by cool winters and moderate summers (refer **Figure 4**). Temperature data compiled from the Bureau of Meteorology (BOM) Station at Hill Street in Molong (5.3 kilometres south-west of the ERRRC) indicates the mean daily temperatures range from a minimum of -0.1ºC in July through to a maximum of 31.0ºC in January.

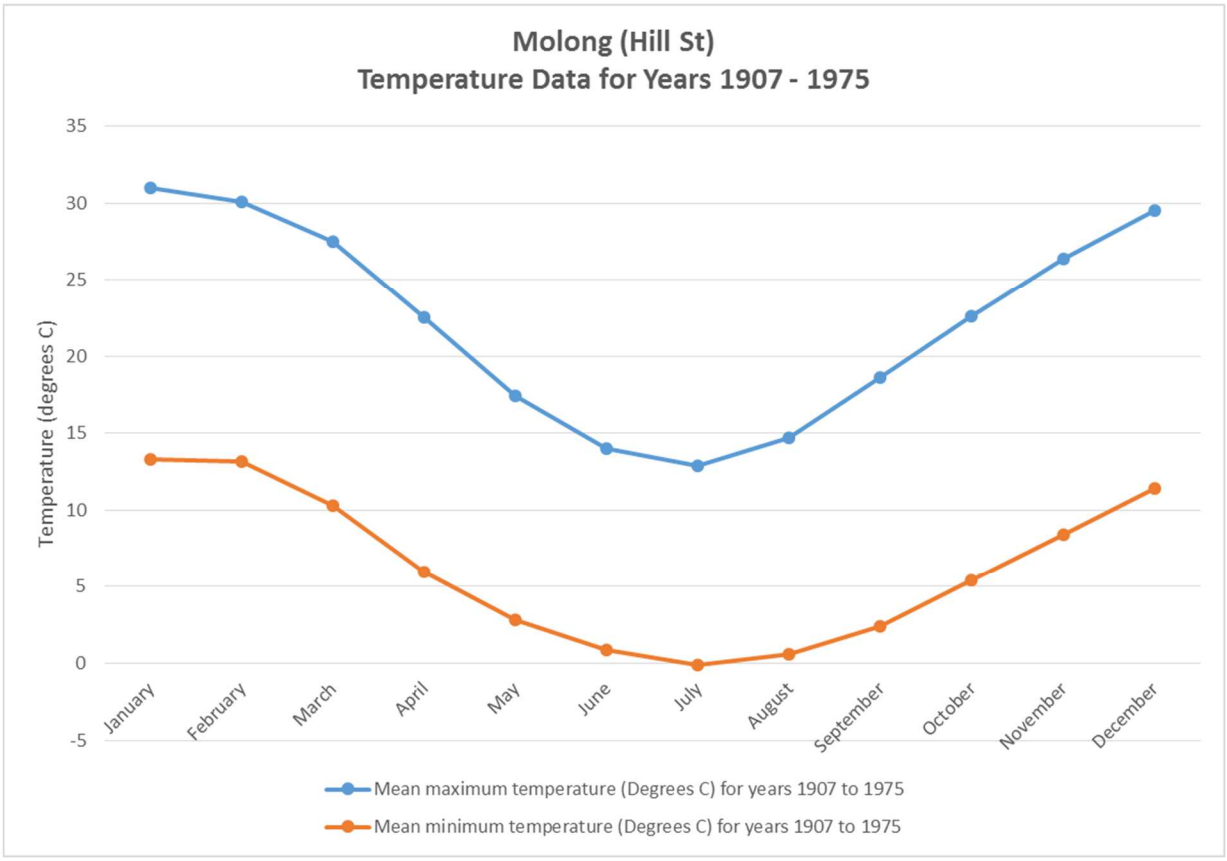

Figure 4: Mean Daily Minimum and Maximum Temperatures (Source: BOM)

Rainfall is low but somewhat variable throughout the year. The wettest month is July, with April being the driest month on average (refer **Figure 5**).

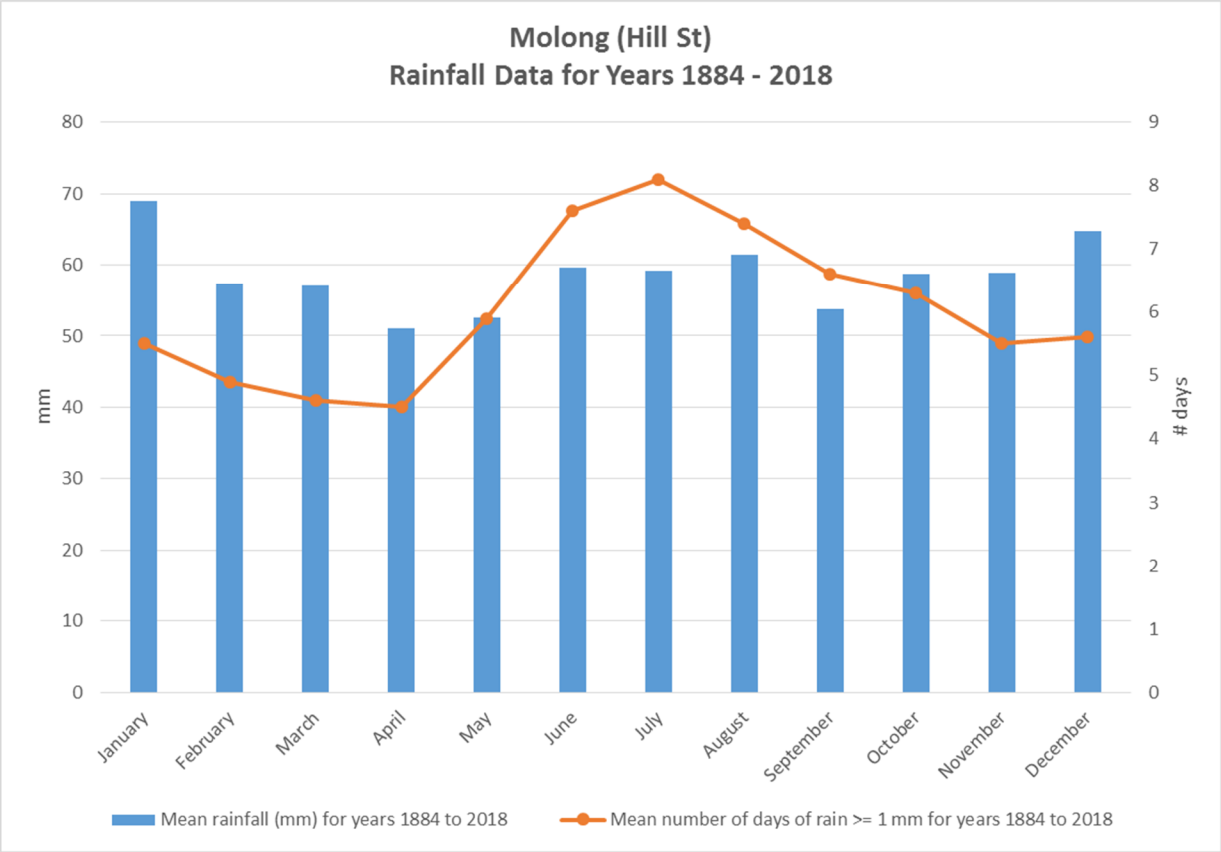

Figure 5: Average Monthly Rainfall and Rain Days (Source: BOM)

Data for evaporation annually averages 1,452 mm (Source: BOM), which is indicative of a significant moisture deficit in the region, with average annual rainfall being recorded at 706 mm.

Morning wind conditions tend to vary in direction and average 7.1 km/hr, whilst afternoon conditions predominantly consist of north-westerlies and south-westerlies, averaging 9.3 km/hr (refer **Figure 6**).

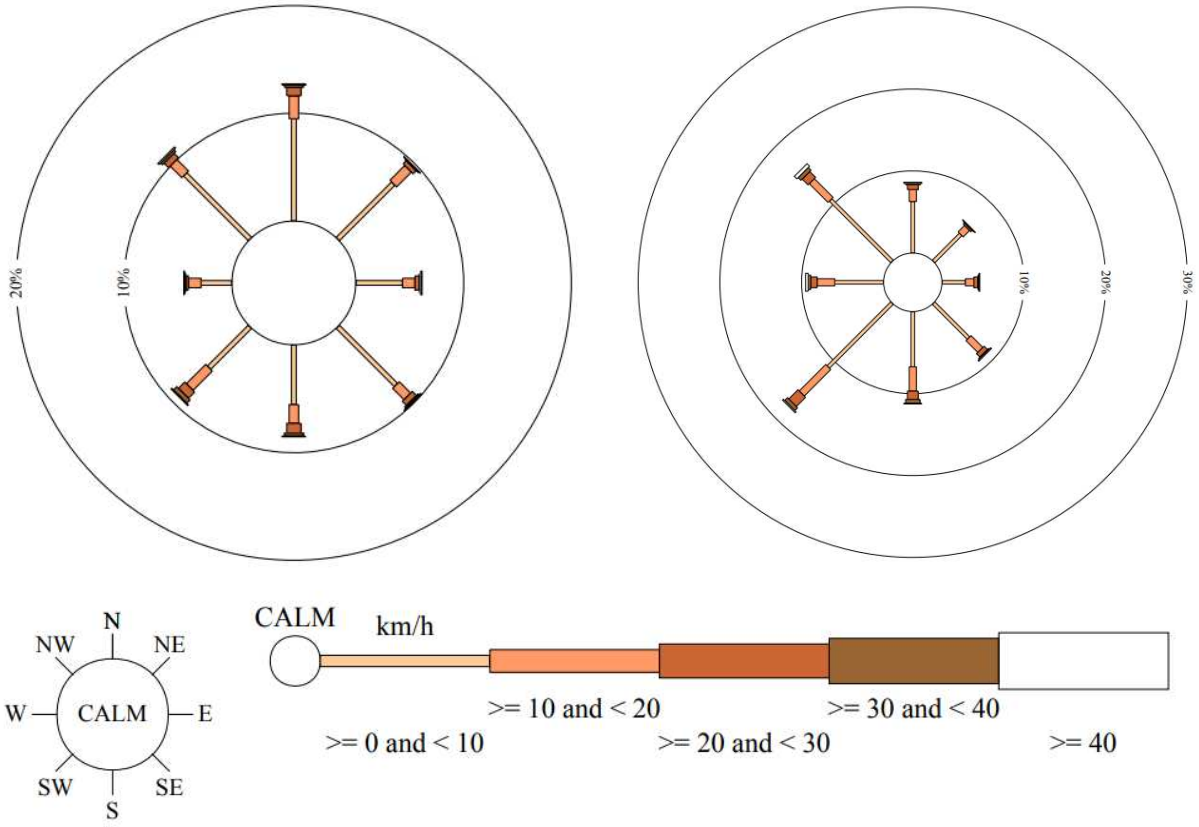

Figure 6: Wind Frequency Analysis, 9 am (left) and 3 pm (right) – (Source: BOM)

2.2.3 SURFACE WATER

There is negligible stormwater draining onto the site from off-site sources due to the topography of hill crests present on the site's southern and western boundaries. The nearest natural watercourse is Shades Creek approximately 1 km east of the landfilling area, however ephemeral drainage channels are present within the site boundary.

Clean water diversion drains have been installed at the site, and a dirty water management system is in place which captures stormwater that has flowed across previously filled areas into one of two retention basins.

A surface water quality monitoring program is currently in place which includes sampling and analysis of the retention basin during discharge events.

2.2.4 GROUNDWATER AND GEOLOGY

The geological units underlying the ERRRC, as indicated in the Molong 1:100 000 Geological Sheet 8631, 1st edition (Geological Survey of New South Wales, 1997), is underlain by Tertiary aged "*pyroxene olivine basalt, plagioclase basalt, alkali basalt, trachybasalt and trachyandesite*".

Six (6) groundwater monitoring bores are located in the vicinity of the site, and are indicative of a water table depth of approximately 15 to 27 metres below ground level (BGL).

Groundwater depth within the region of the landfill cells is anticipated to be greater than 20 mBGL.

2.2.5 FUGITIVE METHANE EMISSIONS

Routine gas monitoring including surface gas monitoring, gas accumulation monitoring, and sub-surface gas monitoring, is not currently a requirement of EPL No. 20104.

Surface landfill gas monitoring using a gas monitoring sensor has been conducted across the surface of the Stage 1 cell on a quarterly basis since September 2017. No methane concentrations have been recorded at greater than the limit of detection of 0.005% (vol/vol).

2.3 SITE FACILITIES AND SERVICES

2.3.1 ACCESS

Access to the ERRRC is off Euchareena Road, which is sealed, approximately 1.2 km south of the intersection with Shades Creek Road. A sealed driveway leads to the weighbridge and landfill site, however no public access is permitted.

2.3.2 FENCING

The ERRRC is fully enclosed with chain mesh security fencing and a security gate at the entrance. Some internal fencing is located external to the operational areas to allow for stock grazing as coordinated with OCC.

2.3.3 SECURITY

Security gates are in place at the entrance to the ERRRC.

Landfill Gas Modelling

3.1 OUTLINE

Geolyse has run landfill gas emission modelling using the United States Environment Protection Agency (USEPA) 'LandGEM' – Landfill Gas Emissions Model, (Version 3.02, 2005) with inputs from landfilled waste and cover material quantities (recorded and projected), available climate data, and known parameters applicable to methane generating anaerobic decomposition of landfilled waste.

The total projected capacity of the ERRRC landfill cells was recorded to be 1.64 million m^3, or 205,000 m^3 per cell.

The objective was to confirm the peak rate of methane generation from the Stage 1 landfill cell, to establish the degree of landfill gas management required at each cell.

3.2 STAGE 1 CELL LANDFILLING

Since the ERRRC commenced accepting waste for landfilling in 2013, a total quantity of 104,542 tonnes (T) has been received at the facility up to 30 June 2018. This waste has been landfilled concurrently in the Stage 1 and Stage 2 cells. For the purposes of modelling landfill gas generation within the Stage 1 cell, the following ratios of waste distribution have been inferred:

Table 3.1 – ERRRC Stage 1 Cell Landfilling

Year	Total Waste Received (T)	Total Waste Volume (m^3)	Cover Material Volume (m^3)	Stage 1 Filling (%)	Volume Stage 1 Filled (m^3)	Stage 1 Waste (T)	Comment
2014	13,451	17,026.6	15,391.0	100%	32,417.6	13,451.0	Recorded
2015	21,250	25,914.6	11,914.0	100%	37,828.6	21,250.0	Recorded
2016	22,501	27,440.2	1,819.0	75%	21,944.4	16,875.8	Recorded
2017	25,311	23,436.1	279.0	75%	17,786.3	18,983.3	Recorded
2018	22,029	29,372.0	8,663.0	50%	19,017.5	11,014.5	Recorded
TOTAL	**104,542**	**123,190**	**38,066**	**-**	**128,995**	**81,574**	**-**
2019	20,908	24,540.4	7,613.2	50%	16,076.8	10,454.2	Projected
2020	20,908	24,540.4	7,613.2	50%	16,076.8	10,454.2	Projected
2021	20,908	24,540.4	7,613.2	50%	16,076.8	10,454.2	Projected
2022	20,908	24,540.4	7,613.2	50%	16,076.8	10,454.2	Projected
2023	20,908	24,540.4	7,613.2	36%	11,698.4	7,607.1	Projected
2024	20,908	24,540.4	7,613.2	0%	0.0	0.0	Projected
TOTAL	**229,992**	**270431.8**	**83745.2**	**-**	**205000**	**130998.4**	**-**

The above annual waste quantities for 2019 to 2024 are based on the average waste quantities recorded for the period from 2014 to 2018. No increasing or decreasing trend is evident for waste quantities in this period. Similarly, waste volumes and cover material volumes for 2019 to 2024 are calculated from averages derived from recorded survey data.

Waste quantities and landfilled volumes (including cover material) are charted below in **Figure 7**:

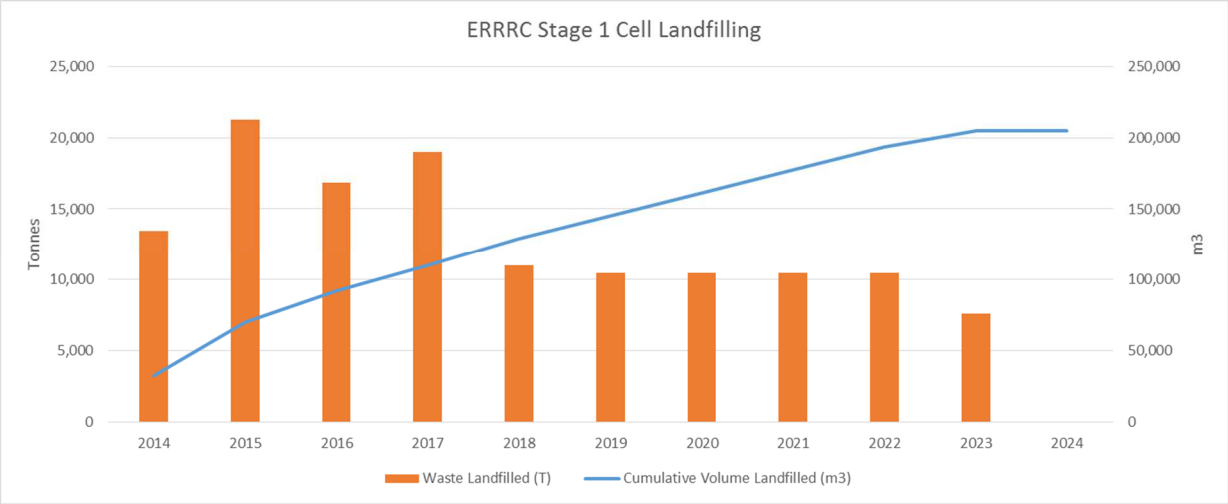

Figure 7: ERRRC Stage 1 Cell Waste Quantities and Landfilled Volumes

3.3 MODELLING RESULTS

The USEPA 'LandGEM' – Landfill Gas Emissions Model, (Version 3.02, 2005) was used to calculate the total volume of methane (CH_4) produced annually throughout filling and rehabilitation timeframes to estimate the peak period and degree of methane production within the Stage 1 cell.

The LandGEM model:

> *"is based on a first-order decomposition rate equation for quantifying emissions from the decomposition of landfilled waste in municipal solid waste (MSW) landfills. The software provides a relatively simple approach to estimating landfill gas emissions. Model defaults are based on empirical data from U.S. landfills".*

The model calculates the total landfill gas produced over the lifespan of the landfill, and infers the proportion of methane, carbon dioxide and nonmethane organic compounds (NMOCs).

The data has been modelled using 'Clean Air Act' default parameters, which are based on US federal regulations for municipal solid waste landfills.

3.3.1 ASSUMPTIONS

The assumptions incorporated into LandGEM modelling are summarised below:

- Future landfill waste volumes are based on projections as outlined in **Section 3.2**.
- The 'methane generation rate constant' has been assumed to be 0.05 / year, based on average values for moisture content, temperature, pH and nutrient availability in a non-arid setting.
- The adopted 'potential methane generation capacity' of 170 m^3/T is based on cellulose content of waste and is considered to be representative of municipal solid waste.
- Landfill gas generated in the LandGEM model is assumed to be 50 percent methane and 50 percent carbon dioxide.

3.3.2 FINDINGS

After modelling the landfill gas generation for the Stage 1 cell at ERRRC with a total landfilled quantity of 130,998 T of waste, and a projected cell completion date of 2023[1], the following results were yielded:

[1] Final completion of Stage 1/2 (engineering of phytocapping layer) is required to be completed in conjunction with Stage 5/6. For the purposes of modelling, a closure date of 2023 has been adopted, however the effective date of capping completion will be subsequent to 2023.

Table 3.2 – ERRRC Stage 1 Cell Projected Landfill Gas Generation

Year	Cumulative Waste In Place (T)	Landfill Gas (T/year)	Methane (T/year)
2014	13,451	0.0	0.0
2015	34,701	279.2	74.6
2016	51,577	706.8	188.8
2017	70,560	1022.6	273.2
2018	81,575	1366.8	365.1
2019	92,029	1528.8	408.4
2020	102,483	1671.3	446.4
2021	112,937	1806.8	482.6
2022	123,391	1935.7	517.1
2023	130,998	2058.4	549.8
2024	130,998	2115.9	565.2
2025	130,998	2012.7	537.6
2026	130,998	1914.5	511.4
2027	130,998	1821.2	486.5
2028	130,998	1732.3	462.7
2029	130,998	1647.9	440.2
2030	130,998	1567.5	418.7
2031	130,998	1491.0	398.3
2032	130,998	1418.3	378.8
2033	130,998	1349.1	360.4
2034	130,998	1283.4	342.8
2035	130,998	1220.8	326.1
2036	130,998	1161.2	310.2
2037	130,998	1104.6	295.0
2038	130,998	1050.7	280.7
2039	130,998	999.5	267.0
2040	130,998	950.7	254.0
≠	≠	≠	≠
2041 - 2050	130,998	729.6 (average)	194.9 (average)
2051 – 2060	130,998	442.5 (average)	118.2 (average)
2061 – 2070	130,998	268.4 (average)	71.7 (average)
2071 – 2080	130,998	162.8 (average)	43.5 (average)
2081 – 2090	130,998	98.7 (average)	26.4 (average)
2091 – 2100	130,998	59.9 (average)	16.0 (average)
TOTAL	**130,998**	**54837.9**	**14647.8**

The following chart in **Figure 8** illustrates the tonnage of waste filled and the generation of landfill gas within the Stage 1 cell at ERRRC, as projected over the lifespan of the cell.

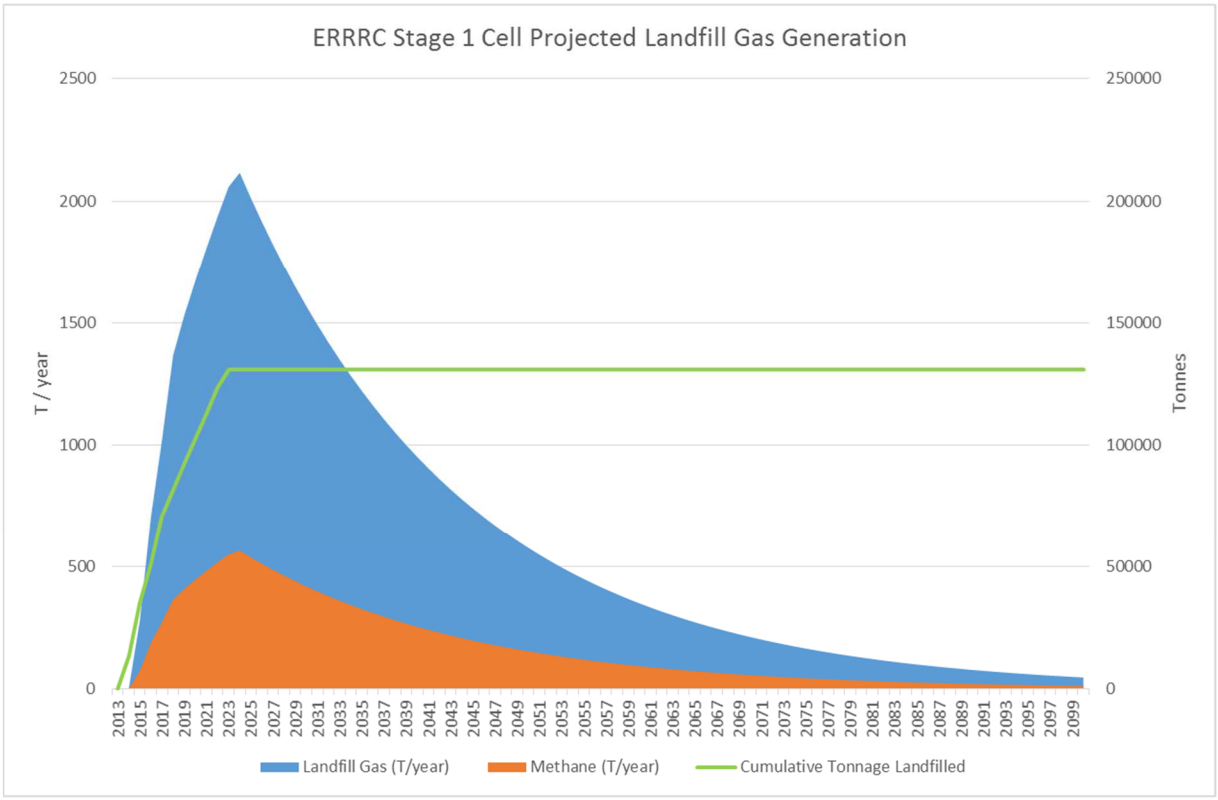

Figure 8: ERRRC Stage 1 Cell Projected Landfill Gas Generation

3.4 DISCUSSION

Landfill gas generation modelling indicates that based on projected volumes of waste landfilling, the peak methane generation would occur in 2024, at 565.2 t/year. This figure is an average across a 12 month period and is required to be corrected for seasonal variation to calculate the maximum daily rate.

The optimum temperature for methanotrophic methane oxidation has been found to be 25 – 40°C (Hanson and Hanson 1996). As the process is exothermic (i.e. generates heat), this process can be sustained at temperatures below this range.

For the purposes of calculating the maximum daily rate of methane generation, methanotrophic methane oxidation is assumed to be inhibited at ambient temperatures of below 15°C. No upper temperature limit has been considered in this calculation as upper-limiting temperatures are considered to be unlikely to be reached at the ERRRC facility.

Based on available temperature data from the BOM weather station at Hill Street, Molong (5.3 kilometres south-west of the ERRRC), the average rate of methane generation (in 2024) is projected to range from 0.0 T/day in July to 3.26 T/day in January, with a maximum calculated rate of **3.42 T/day**, as shown in the below **Figure 9**.

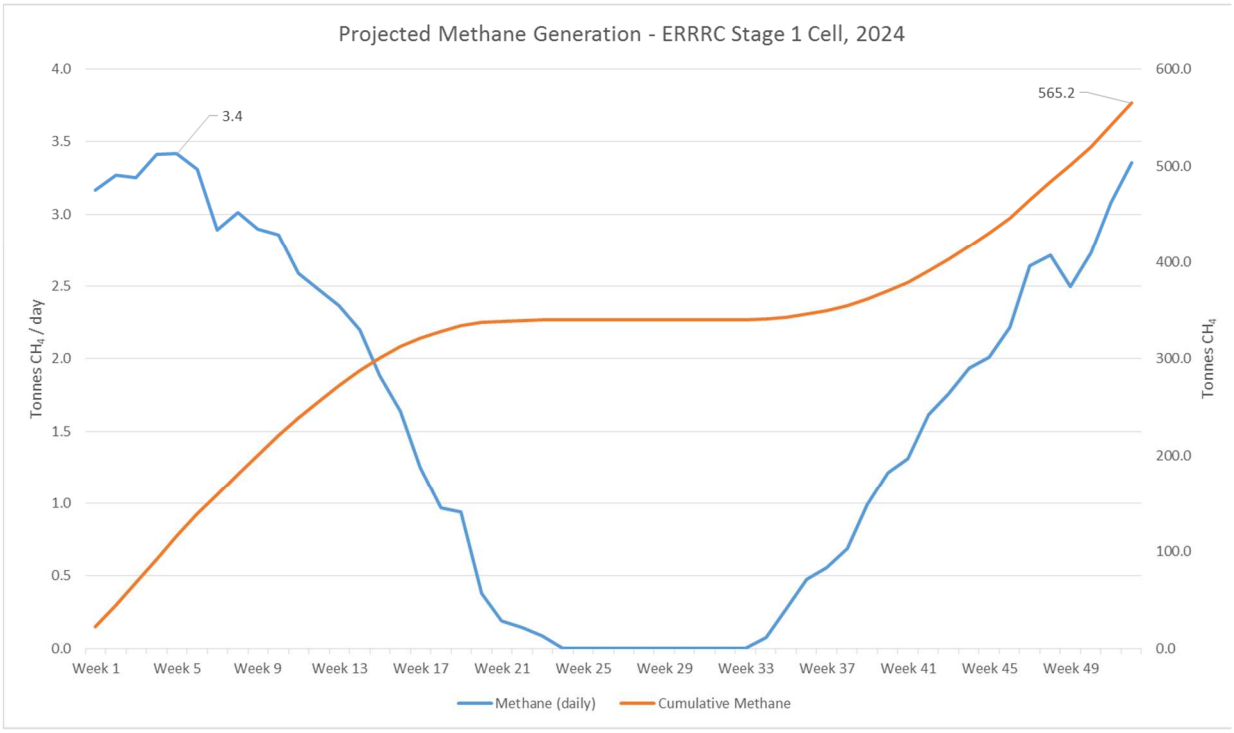

Figure 9: Projected Methane Generation (2024), ERRRC Stage 1 Cell

The Stage 1 cell has an area of 1.5 hectares (15,000 m^2). At the peak landfill gas generation in Summer of 2024, the maximum methane emissions at the Stage 1 cell of 3.42 T/day equates to 9.49 g/m^2/hour.

Based on the projected maximum methane production from the Stage 1 cell, passive biofiltration systems described in the '*Handbook for the design, construction, operation, monitoring and maintenance of a passive landfill gas drainage and biofiltration system*' (NSW Department of Environment, Climate Change and Water, 2010) suggests oxidation of greater than 60% of methane (on average) may be achieved utilising a passive biofilter system.

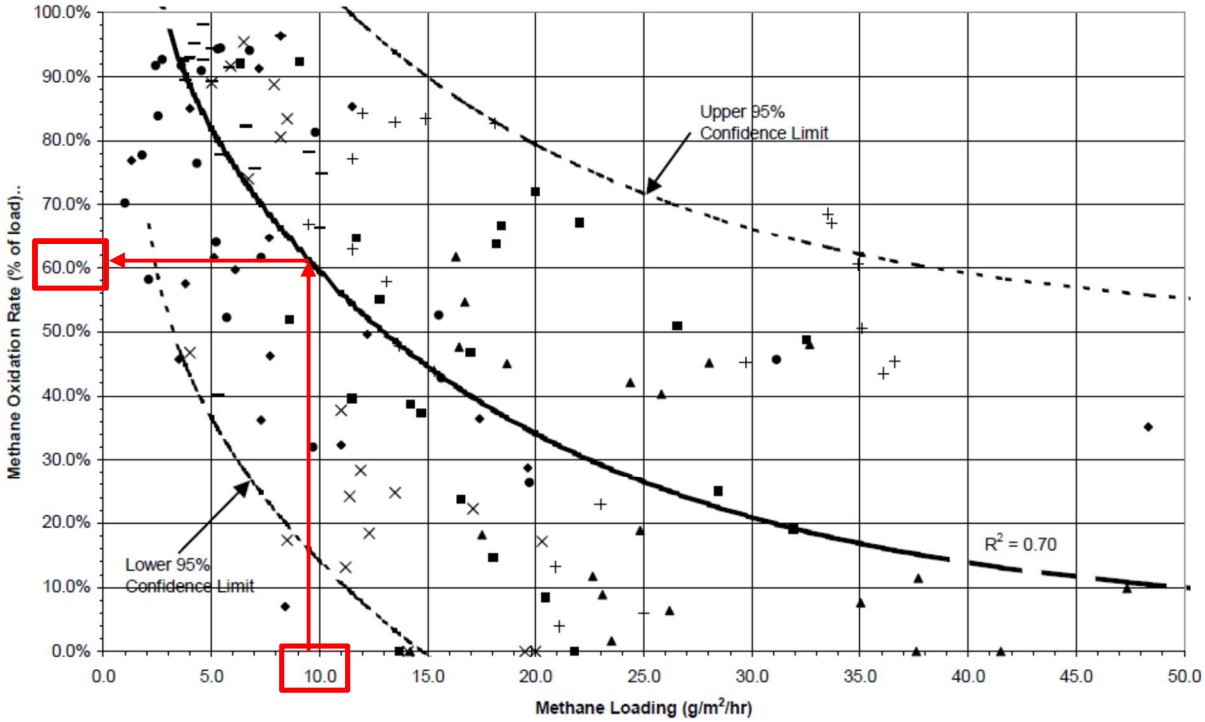

Figure 10: Passive Biofilter Methane Oxidation Rate *(adapted from NSW DECCW, 2010)*

Geolyse considers that the projected rate of methane generation throughout the lifespan of the Stage 1 cell at ERRRC (peak generation of 3.42 T/day) is amenable to management by passive biofiltration and oxidation.

Whilst the assumptions and inputs into the projected landfill gas modelling were inherently conservative, Geolyse has maintained this degree of conservatism when considering biofilter design (**Section 4**) to maximise the rate of methane oxidation achieved from the Stage 1 cell at the ERRRC facility.

Based on a projected Stage 1 cell completion date of 2023 (130,998 tonnes of waste in place) and peak methane generation estimated to occur in 2024 (565.2 t/year), it is proposed that commissioning of the biofiltration system at the Stage 1 cell will occur in the 2022-2023 financial year. The capping installation and engineering is further discussed in **Section 4.1**.

Biofilters for Stages 2 to 7 are proposed to be commissioned approximately every 4 years, through to the 2051-2052 financial year.

Biofilter System Design

4.1 FINAL CAPPING

Capping of each completed landfill cell is to commence within 30 days of completion of landfilling (weather permitting). The final cap profile is displayed in **Figure 11**, and is proposed to include (top to bottom):

- 150 mm topsoil;
- 850 mm revegetation layer;
- Protection geotextile;
- Linear low density polyethylene (LLDPE) geomembrane;
- Protection geotextile (if required);
- 300 mm seal bearing layer.

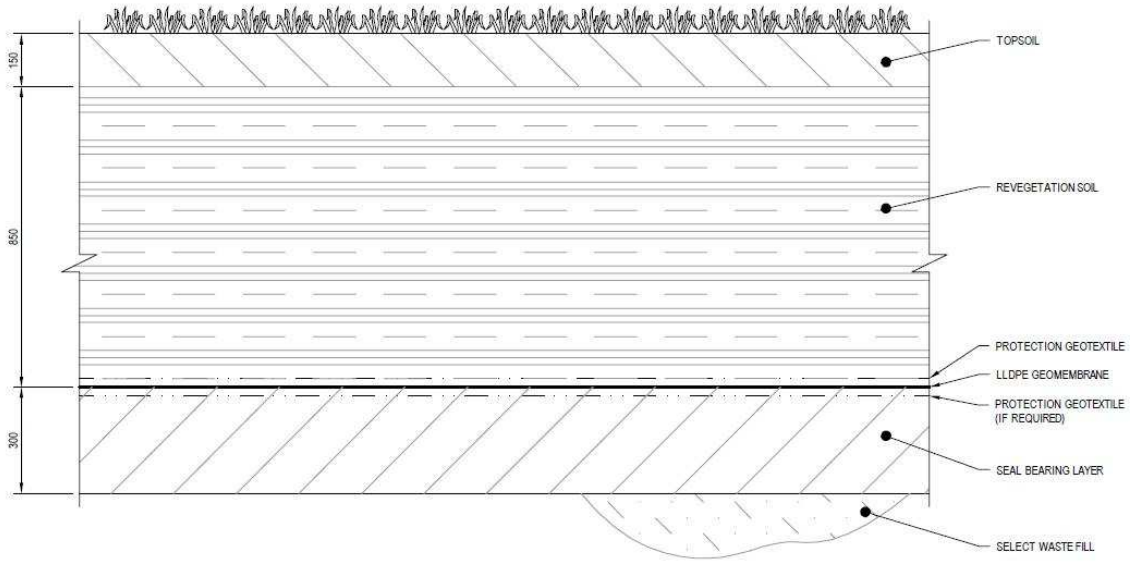

Figure 11: Final Capping Profile

It is proposed that construction of the phytocap would be integrated with installation of the biofiltration system by progressive application of the phytocap once a portion of a landfill cell has achieved its final filling level (e.g. the north-western portion of the Stage 1 cell). The biofilter and drainage paths (refer **Sections 4.2** and **4.3**) would be constructed within the phytocapped portion of the cell, and intermediate cover would be applied to the remainder of the cell to minimise short-circuiting of the intended landfill gas discharge pathway.

4.2 METHANE LOADING, OXIDATION AND SYSTEM SIZING

As discussed in **Section 3**, the peak methane loading of the Stage 1 cell at the ERRRC facility has been modelled to be 9.49 g/m^2/hour. Similar methane loading rates for a passive biofilter in a temperate climate (NSW DECCW, 2010), indicates an oxidation rate of between 50% and 75% may be achieved in this peak period by a biofilter with an area of 9 m^2 (3 m x 3 m) and 1 m of organic media.

For the purposes of increasing the methane oxidation rate achieved, Geolyse proposes a total biofiltration area of 16 m^2, consisting of a network consisting of four (4) biofilters, each with an area of 4 m^2 (2 m x 2 m) and 1 m of organic media. Each biofilter would capture landfill gas from a quarter of

the Stage 1 cell. Biofilters would also be modular to allow for installation of additional adjacent units if the rate of methane oxidation is required to be increased (refer to **Section 5.1**).

An outline of the proposed biofilter network at the Stage 1 cell is presented below in **Figure 12**, and a conceptual design is attached in **Appendix B**.

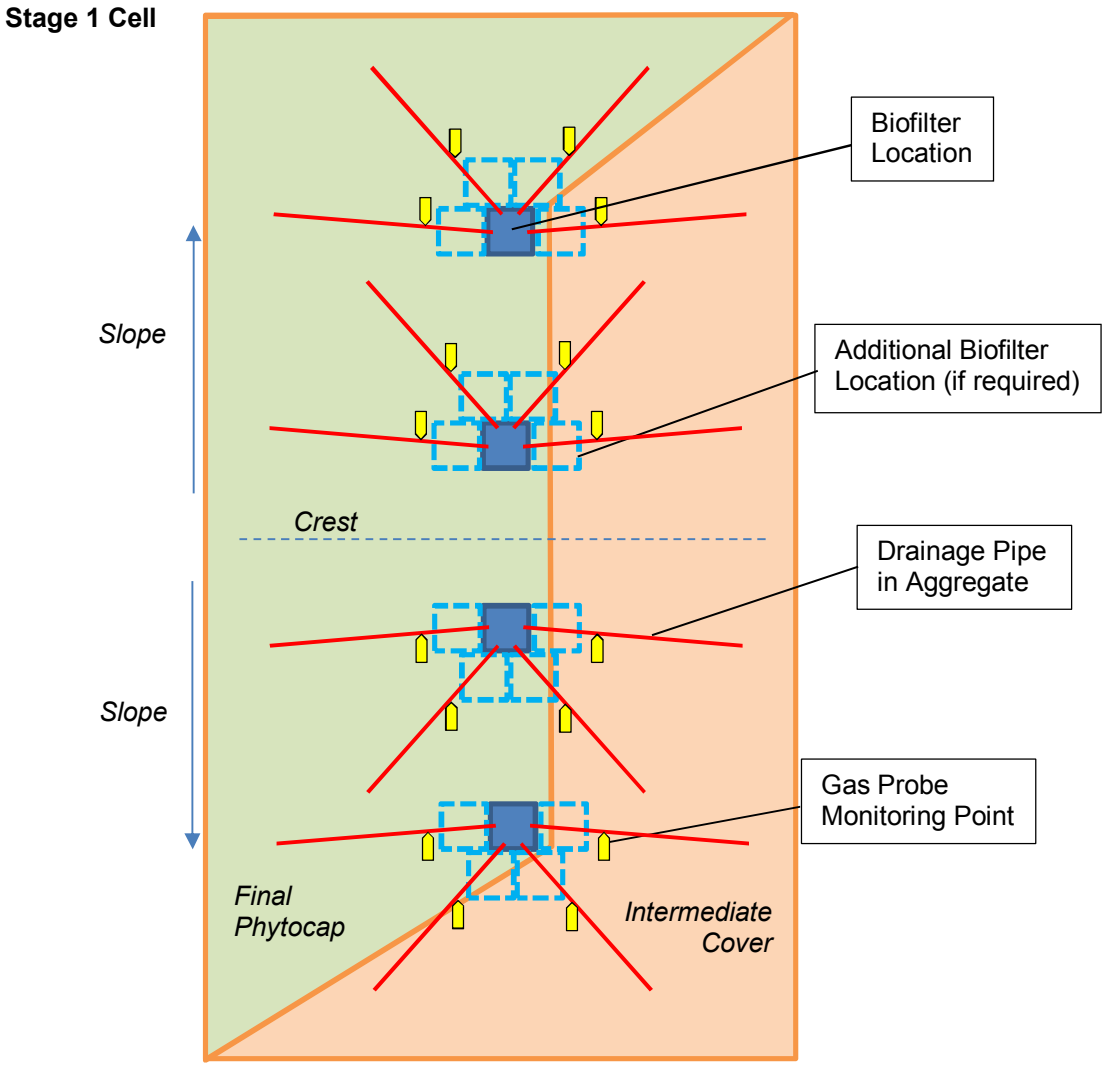

Figure 12: Proposed Biofilter Network – ERRRC Stage 1 Cell

4.3 DRAINAGE AGGREGATE AND INFRASTRUCTURE

The gas drainage system should consist of pipework placed in an aggregate filled-trench, underlying the seal bearing layer. In accordance with NSW DECCW 2010, aggregate should have the following characteristics:

- Large grain size (40 – 50 mm nominal diameter) and high porosity (40 – 50% vol/vol);
- Less than 5% fines (< 1 mm);
- High permeability / gas conductivity ($k > 10^{-3} m.s^{-1}$);
- Physical stability and durability;
- Recycled (crushed) concrete and brick and tile are suitable.

The gas drainage pipework should be a suitable class of polyethylene pipe or pipe made from other materials appropriate for the intended use.

Trench size and pipework diameter are not considered to be capacity limiting in an unpressurised system, however a standardised sizing of 150 mm diameter pipework within a trench of 0.5 m width and 0.5 m depth is considered to be sufficient.

4.4 BIOFILTER MEDIA

In accordance with NSW DECCW 2010, the biofilter media should have the following characteristics:

- High porosity (60 – 70% vol/vol) to allow movement of gases and water, but with sufficient organic fines to hold moisture;
- Moderate gas permeability ($k > 10^{-5} m.s^{-1}$), which necessarily must be less than that of the gas drainage aggregate;
- Biologically stability – Compost based biofilter media should be mature to avoid aerobic degradation of the organic matter in the media competing with methanotrophs for oxygen. A 7 day respiration rate of less than 8 mg O_2/g of biofilter media (dry mass) is recommended;
- A carbon : nitrogen ratio of approximately 15 : 1;
- Water holding capacity ranging from 35 to 45% vol/vol;
- Gas movement through the biofilter should continue even when the biofilter is at water holding capacity;
- Good drainage and/or hydraulic conductivity i.e. permeability $k > 10^{-4} m.s^{-1}$;
- Structural stability – to minimise settlement and/or consolidation and maintaining porosity and gas conductivity of the biofilter media;
- Homogeneity – to minimise 'short circuiting' of landfill gas through the biofilter media layer;
- Low concentrations of substances that may inhibit methanotrophic methane oxidation, e.g.:
  - Ammonia < 350 ppm
  - Nitrite, nil detected
  - Salinity < 6 $mS.cm^{-1}$
  - Copper < 60 $mg.kg^{-1}$

The biofilter media may be derived from composted garden organics available from the JR Richards composting facility at the site, and consist of a combination of composted garden organics and shredded wood.

The moisture content of a compost based biofilter media should be maintained above 10 – 15 % of the water holding capacity to achieve high levels of methane oxidation.

System Performance and Review

5.1 MONITORING

Environment protection licence (EPL) 20104 does not require monitoring of landfill gas concentrations or emissions. Monitoring is recommended to be conducted in accordance with NSW DECCW 2010 to establish rates of methane oxidation.

Rainfall events of 20 mm or greater would trigger monitoring. Monitoring would also be conducted in periods of low rainfall (less than 5 mm rainfall across a two-week period), to check the moisture levels of the biofilter media.

Inspection monitoring of the biofilter would include:

- Odours – strength and description;
- Biofilter media observations, including settlement, formation of a surface crust, scouring, and/or desiccation;
- Moisture content and/or ponding of water on the upper layers of the biofilter media;
- Vegetation growing on the biofilter surface, including weeds / unwanted vegetation;
- Status of surface water management measures.

Quantitative monitoring should also be conducted as follows:

- Landfill gas flow and composition from the passive drainage system(s) to the biofilter(s);
- Emissions / flux from the surface of the biofilter (methane and carbon dioxide);
- Moisture content of the upper layers of the biofilter media, particularly in dry and/or drought conditions;
- Depth of drainage water in the gas distribution layer / biofilter media.

Inspection and quantitative monitoring would be conducted weekly in the initial four (4) weeks of commissioning, then shifting to monthly.

5.2 OXIDATION GOALS AND LIMITS

The oxidation target of the proposed biofiltration system is a minimum rate of 80% of pre-filter methane emissions (vol/vol).

Further investigation and corrective action is recommended where methane emissions are recorded at concentrations greater than 0.05% (vol/vol) at any point on the landfill surface, including proximal to the biofiltration system.

5.3 CONTINGENCY PLANNING

In the event of landfill gas probe monitoring identifying oxidation rates or fugitive methane emissions outside the target range, construction of additional biofilters would be considered following investigation and confirmation of the deviance from the modelled data.

The proposed biofiltration system is of modular design, allowing up to an additional four (4) biofilter units to be installed adjacent to the existing biofilter (refer to conceptual design in **Appendix B**). Probe monitoring conducted at each of the inlet pipes would determine the most suitable location(s) for the additional units.

5.4 POLLUTION INCIDENTS

Pollution incident response procedures are described in Standard Operating Procedure *SOP 13 – Pollution Incident Response Management* of the Orange Waste Project *Operational Environmental Management Plan* (Version 3, December 2018).

Pollution incidents potentially associated with the biofiltration system may include odour, run-off, fire or explosion.

Following adequate response to the pollution incident, SOP 13 Form 13.01 – '*Incident Register'*, and SOP 13 Form 13.02 – '*Incident Report Form'* are required to be completed.

5.5 COMPLAINT HANDLING

Procedures for handling complaints are described in Standard Operating Procedure *SOP 14 – Complaints Handling* of the Orange Waste Project *Operational Environmental Management Plan* (Version 3, December 2018).

The record of a complaint will be kept for at least four years after the complaint was made.

Complaints are followed up and the odour generation mitigated.

5.6 MANAGEMENT PLAN REVIEW

A review of environmental performance of the biofiltration system is required to be completed by OCC every 12 months following its commissioning. The review must:

a) Describe the installation of the biofiltration system;

b) Assess the monitoring results over the previous 12 months and trends in the monitoring data over the life of the project against the predictions of this LGMP;

c) Assess the complaints record over the past 12 months;

d) Identify any non-compliance over past 12 months, and describe what actions were (or are being) taken to ensure compliance;

e) Provide recommendations, as appropriate, to improve the environmental performance of the biofiltration system.

Appendix A

NSW EPA CORRESPONDENCE

From: Jason Scarborough <Jason.Scarborough@epa.nsw.gov.au>
Sent: Tuesday, 12 February 2019 4:18 PM
To: Brendan Stuart
Subject: RE: Euchareena Rd Resource Recovery Centre, Landfill Gas Management Plan

Hi Brendan,

I can confirm that the document in question has been viewed by the EPA. While it is the EPA's policy to not endorse or approve management plans, no issues of note were identified when the document was viewed.

Regards,

Jason Scarborough
Senior Project Officer – EPA Training Unit
NSW Environment Protection Authority
+61 26333 3800
Jason.Scarborough@epa.nsw.gov.au
www.epa.nsw.gov.au @EPA_NSW
Report pollution and environmental incidents 131 555 (NSW only) or +61 2 9995 5555

This email is intended for the addressee(s) named and may contain confidential and/or privileged information.
If you are not the intended recipient, please notify the sender and then delete it immediately.
Any views expressed in this email are those of the individual sender except where the sender expressly and with authority states them to be the views of the Environment Protection Authority.

PLEASE CONSIDER THE ENVIRONMENT BEFORE PRINTING THIS EMAIL

From: Brendan Stuart
Sent: Friday, 21 December 2018 4:08 PM
To: Jason.Scarborough@epa.nsw.gov.au
Cc: Wayne Davis <WDavis@orange.nsw.gov.au>; Kylie Tomlinson <KTomlinson@orange.nsw.gov.au>; Martin Haege <mHaege@geolyse.com>
Subject: Euchareena Rd Resource Recovery Centre, Landfill Gas Management Plan

Jason,

On behalf of Orange City Council, please find attached the Landfill Gas Management Plan for the Euchareena Road Resource Recovery Centre (ERRRC) for EPA review.

If you have any questions, please don't hesitate to get in touch.

Regards,

Brendan Stuart
Environmental Scientist

154 Peisley St
PO Box 1963
Orange NSW 2800
Ph: 02 6393 5000
Mob: 0418 607 830
Email: bstuart@geolyse.com
Web: www.geolyse.com
Facebook | Linkedin

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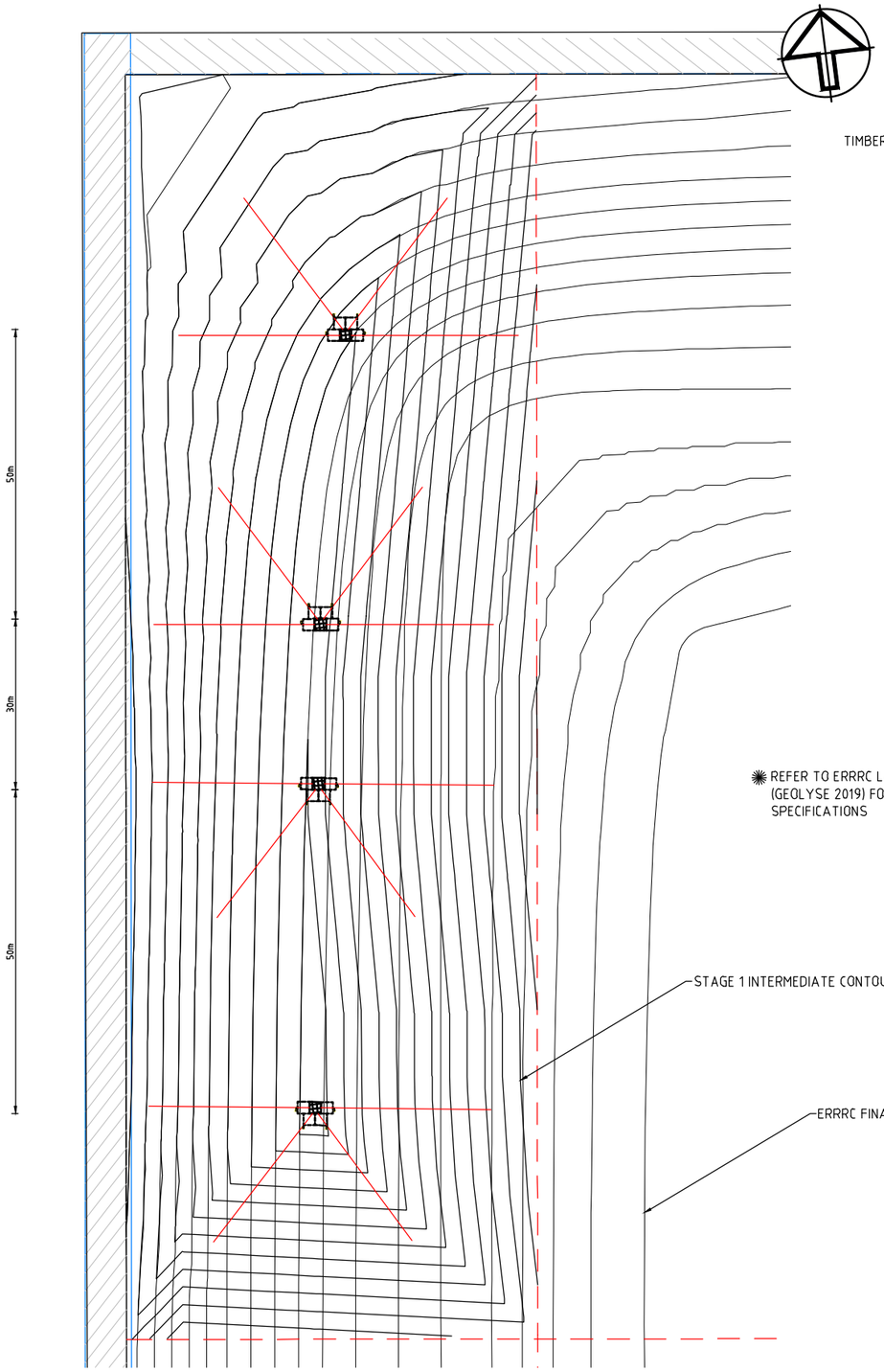
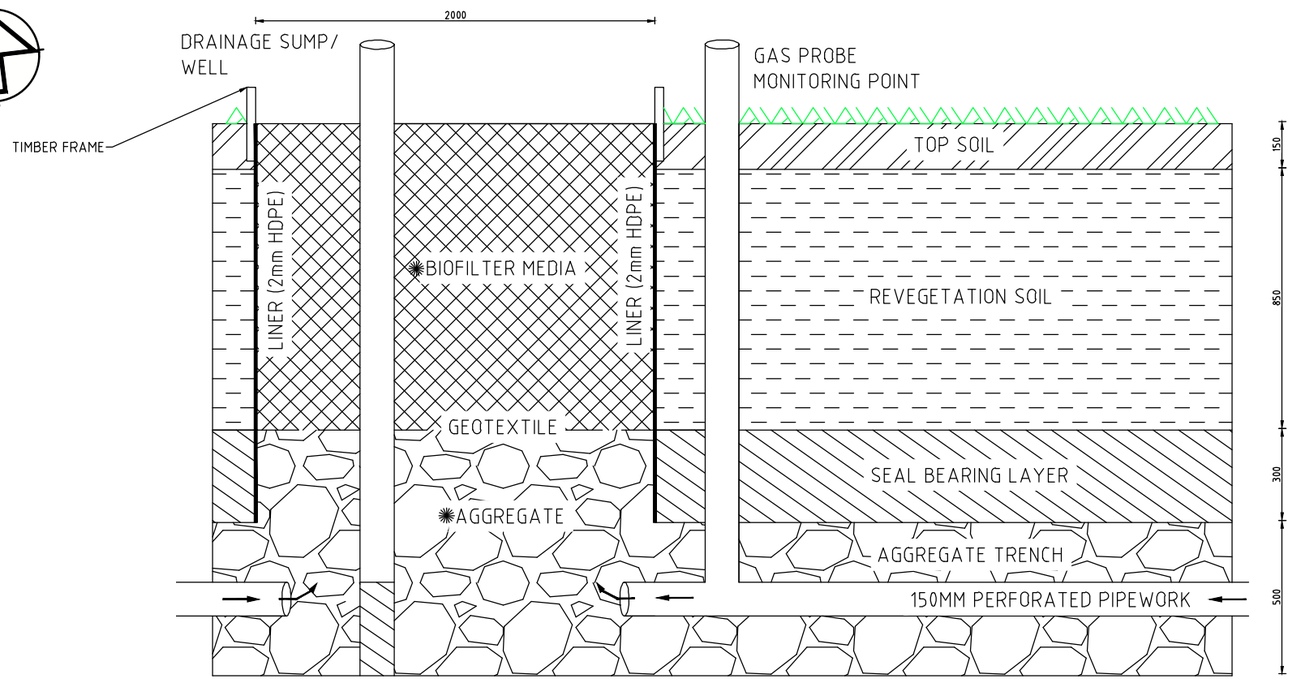
Appendix B

CONCEPTUAL BIOFILTER DESIGN



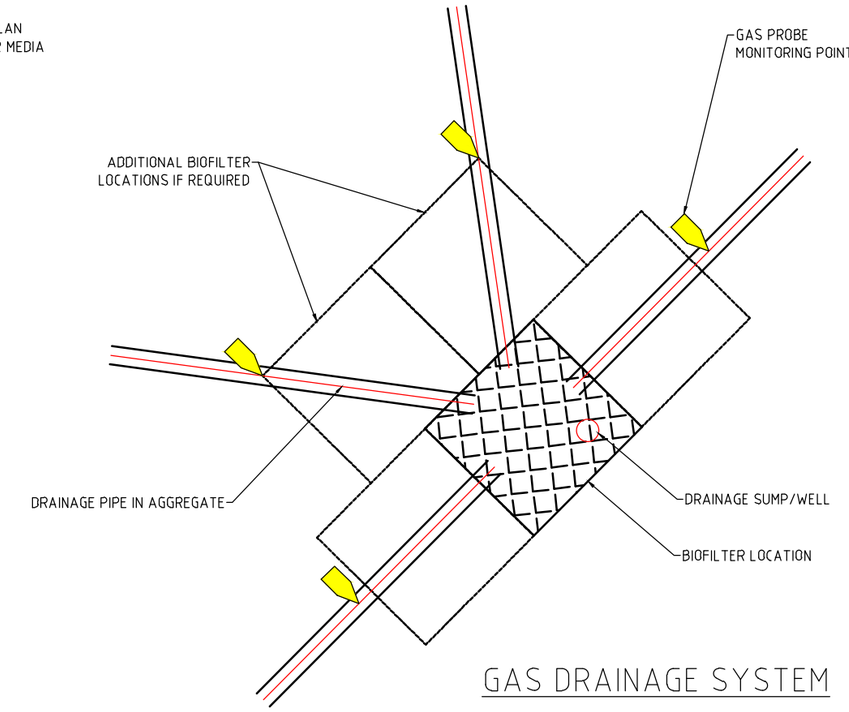
STAGE 1

REFER TO ERRRC LANDFILL GAS MANAGEMENT PLAN (GEOLYSE 2019) FOR AGGREGATE AND BIO FILTER MEDIA SPECIFICATIONS



PROPOSED BIOFILTER SECTION

PROPOSED CAPPING SECTION



GAS DRAINAGE SYSTEM

REV.	DATE	DFTD.	APPD.	DETAILS
A	25/10/2018	AP	-	DRAFT
B	20/02/2019	AH	-	MINOR AMENDMENT

	FILE	INITIALS	DATE
SURVEY	-	-	-
DESIGN	-	-	-
DRAINS/ HEC-RAS MODELLING	-	-	-
ENGINEERING/ SURVEYING APPROVAL		-	-

DRAWING SCALE

SCALE 1:500 (A1)

0 10 20 30 40 50

0 10 20 30 40 50

SCALE 1:1000 (A3)

DO NOT SCALE FROM THESE DRAWINGS. ALL MEASUREMENTS SHALL BE CONFIRMED ON SITE AND WITH GEOLYSE PTY. LTD. PRIOR TO CONSTRUCTION

APPROVAL AUTHORITY -

CLIENT -

PROJECT -

GEOLYSE
ORANGE
154 PEISLEY STREET
P.O. BOX 1963
ORANGE, NSW 2800
orange@geolyse.com
www.geolyse.com
Ph. (02) 6393 5000
Fx. (02) 6393 5060

DRAWING

CONCEPTUAL ERRRC BIOFILTER DESIGN

PROJECT NUMBER 208212	DRAWING FILE 208212_66B_EV01.dwg	ORIGINAL A1
SURVEY MARK -	R.L. - DATUM A.H.D.	
IMAGE SOURCE -		SET 66
STATUS DRAFT	SHEET EV01 OF EV01	

Section 7.8

ERRRC FLORA AND HERITAGE MONITORING PROGRAM

7.8 ERRRC FLORA AND HERITAGE MONITORING PROGRAM

Condition 32, Schedule 5 – Specific Environmental Conditions – Euchareena Road Site of the Minister's Project Approval for the Orange Waste Project requires:

Conservation Management Plan

32. *The Proponent shall prepare and implement a Conservation Management Plan for the project to the satisfaction of the Director-General. This plan must be prepared in Consultation with DECCW by suitably qualified and experienced expert/s whose appointment has been approved by the Director-General, and submitted to the Director-General for approval prior to the commencement of construction on site. It must provide for both the protection of Aboriginal heritage values as well as the enhancement of biodiversity values on the site.*

The Conservation Management Plan (CMP) was prepared as per the requirements of the above condition, and is available in its entirety in **Section 9.4** of this OEMP. The CMP details a number of monitoring requirements in a number of various environmental management zones. The zones include:

- Remnant woodlands;
- Rehabilitation Corridors;
- Landscape Bunds; and
- Landscaped Area.

The Five-Year Works Action Plan, attached in **Section 9.5** of the OEMP, takes precedence with regard to vegetation management at the ERRRC in the period 2021-2025.

There is one identified item of Aboriginal significance, the monitoring of which is also detailed in the CMP.

Orange City Council also entered into a voluntary Conservation Agreement with the Office of Environment and Heritage (refer **Section 8.5** of this OEMP). The Conservation Agreement identifies the need for the monitoring program identified in the CMP to be followed, and stipulates that the standard OEH template (refer **Appendix A**) is to be completed as part of the Annual *Flora and Aboriginal Heritage Monitoring* report.

The monitoring program for each management zone is detailed in the following sections.

7.8.1 REMNANT WOODLANDS

This section relates to the two remnants of the 'White Box Yellow Box Blakely's Red Gum Woodland Community' Ecological Community located on site (refer **Figure 7.8.1**).

As these areas are already established, they will be managed differently to the rehabilitation and landscaped areas of the site. Essentially they would be monitored with plantings provided where deficiencies are found.

7.8.1.1 Monitoring

Two permanent monitoring sites throughout the remnant Box-gum woodland EEC have been established (refer **Figure 7.8.1**), which includes two quadrants (C1 and C2) and one transect (F1). These sites will be monitored annually, and outcomes recorded in the *Flora and Aboriginal Heritage Monitoring* report.

The existing access tracks within the woodland areas would be maintained to provide access to the piezometers for groundwater monitoring purposes. They would also provide for general access to these areas for rehabilitation monitoring and management purposes.

Table 7.8.1 outlines the rehabilitation and management measures to be followed for the two Remnant Woodland Areas.

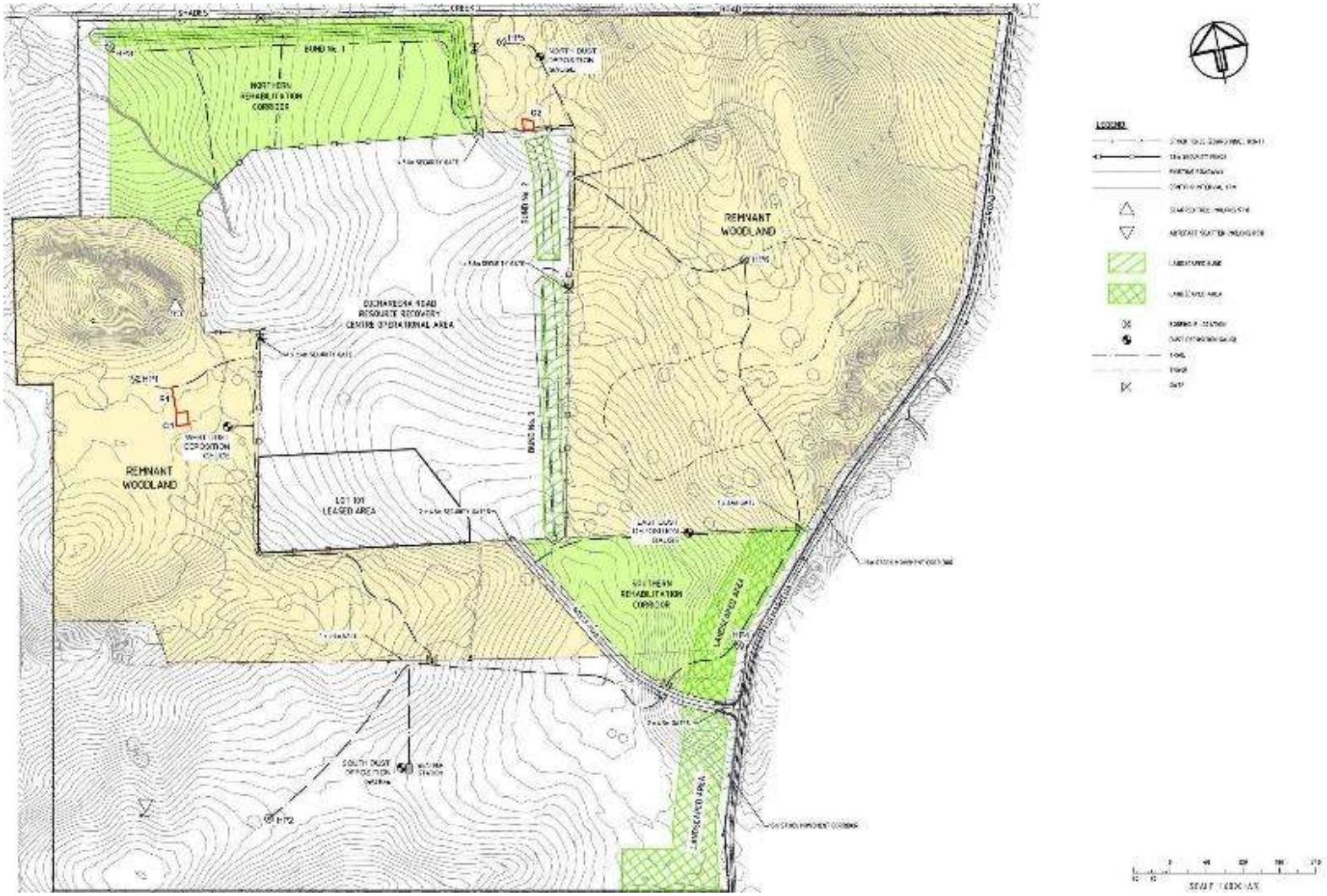


Figure 7.8.1: ERRRC Site Plan Showing Remnant Woodland Monitoring Locations

Table 7.8.1 – Remnant Woodland Rehabilitation and Management Measures

	Category		Task	Responsibility
1	**PRIOR TO CONSTRUCTION WORKS COMMENCING**			
a	Fencing of regeneration areas	i	The two remnant Box Woodland areas are to be fenced off from the remainder of the site, in accordance with the attached plans. The fencing is to be provided outside of the drip line of the trees on the outermost extent of indicated areas. The fencing shall be designed to minimise detrimental impacts on native fauna.	OCC
b	Baseline Information	i	Permanent quadrats/transects shall be established, by a suitably qualified person, across the remnant woodland areas to enable periodic monitoring to record the extent of flora regrowth in these areas.	OCC
		ii	An initial assessment of the woodland areas, by a suitably qualified person and based on the identified quadrats/transects, to identify deficiencies in species diversity.	OCC
		iii	An initial planting program may be developed, by a suitably qualified person, subject to the above initial assessment.	OCC
		iv	Establishment of a monitoring program, by a suitably qualified person, for the remnant woodland areas to monitor and record the extent of flora regrowth.	OCC
c	Stock control	i	Those areas of the site that are not directly affected by the proposed activity shall be de-stocked and remain free of grazing by domestic stock.	OCC
2	**DURING CONSTRUCTION**			
a	Woodland Enhancement	i	Implementation of the initial planting program in the remnant woodland areas.	OCC
3	**PRIOR TO OPERATION OF THE RRC**			
a	Weed & Pest Management	i	A Weed Management Plan shall be prepared, by a suitably qualified person, that incorporates: • Regular inspections of the site; • Education of staff with respect to weed identification and control; and • Continual monitoring and control of identified noxious weeds. This is detailed in **Section 7.2** of the OEMP.	OCC
		ii	A Pest Management Plan shall be formulated, that in particular includes the control of foxes and feral cats and any other invertebrate pest that may be considered a problem. This is detailed in **Section 7.3** of the OEMP.	OCC
4	**DURING OPERATION OF RRC**			
a	Heritage & Biodiversity Awareness	i	A suitably sized copy of **Figure 7.8.1** shall be displayed in the Site Office, where the Site Manager has visual access to it.	OCC
b	Woodland Monitoring	i	Implementation of the woodland monitoring program.	OCC

Table 7.8.1 – Remnant Woodland Rehabilitation and Management Measures

	Category		Task	Responsibility
		ii	Where, during monitoring, species diversity is found to be insufficient, supplementary planting programs may be undertaken in accordance with advice from a suitably qualified person.	OCC
		iii	Any supplementary plantings are to be suitably protected through fencing or suitable tree guards.	OCC
c	Weed & Pest Management	i	Implementation of the Weed Management Plan.	OCC
		ii	Implementation of the Pest Management Plan.	OCC
d	Groundcover Management	i	Groundcover management within the woodland areas is to be undertaken through grazing with cattle, using appropriate stocking rates that reflect seasonal conditions and to ensure an adequate level of groundcover remains at all times. Grazing is to be undertaken in consultation with OEH.	OCC
		ii	• Controlled grazing by livestock to maintain or improve native vegetation values at a low to moderate stocking rate or 'crash grazing'. Grazing is an ecological tool and the aim of crash grazing is to manage the groundcover to ensure that a diverse ground layer of native species is encouraged. • Grazing regimes will be guided by: – Appropriate location of grazing – Triggers to change grazing regime e.g. changes to abundance of selected key species. – Triggers for grazing to be excluded e.g. during flowering and seeding of particular species. – Seasons where grazing may be desirable e.g. reduction in seeding of particular weed species. – Exclusion of grazing for a required number of years or until certain outcomes have been achieved. • Management of stock in the remnant woodland should aim to minimise damage to native vegetation and minimise introduction of weeds and disease as follows: – Ensure stock camps are not established – Ensure stock are confined to formed tracks and are under supervision when moving livestock through the conservation area. – Mustering of livestock with the use of working dogs and horses is permitted. – Fodder or any stock feed may not be brought into the remnant woodland areas. – Before introduction of stock into the remnant woodland areas ensure they are held in a relatively weed free area for at least a week immediately prior to their introduction. – Pasture improvement or fertilisation is not permitted. – Exclude stock from any burnt area of the remnant woodland until native vegetation has re-established. Stock should be excluded for at least three years and groundcover should be >70% before grazing recommences.	OCC
		iii	Any grazing and implementation of grazing regime requires prior written agreement from OEH, subject to monitoring reports.	OCC
		iv	Reducing the population of native grazing animals where grazing pressure is resulting in the degradation of the quality and structure of native vegetation and inhibiting natural regeneration and the owner is granted a licence to cull under Section 121 of the *NPW Act 1974*.	OCC

7.8.2 REHABILITATION CORRIDORS

This section relates to the two areas to the north and south of operational area of the site which will provide for connectivity between the two remnant areas of Box Gum Woodland. These areas are herein referred to as the northern and southern rehabilitation corridors. **Figure 7.8.2** illustrates the location of these areas.

The rehabilitation corridors are proposed on open grassland located to the northern and southern ends of the development site. Adjacent woodlands are comprised of an open Grassy Box-eucalypt community with a tree spacing averaging between 5 and 20 metres. Openings in the existing woodlands span up to 100 metres. Existing trees are predominantly mature with age structure of the community tending to be skewed towards old-mature trees. Recruitment is present but uncommon.

7.8.2.1 Purpose

The purpose of the proposed rehabilitation Corridors is to establish continuity with existing remnants of woodland, to create a greater area of woodland habitat and to form a visual barrier to the Resource Recovery Centre (RRC).

7.8.2.2 Methods

General

Table 7.8.2 provides a list of tree, shrub, and groundcover species suitable for planting for the re-establishment of a Box Woodland concurrent with the existing community, including shrub species suitable for establishing visual barrier or bund stabilisation vegetation.

The listed species in **Table 7.8.2** have been recorded within the Molong area on similar landscapes to that of the subject site. Upper storey trees include White Box, Yellow Box and Blakey's Red Gum. These trees are already present on the site and Orange City Council already possesses seed that has been sourced from the Molong area, this seed should be used in deference to other seed to ensure provenance is maintained. Only tube stock and seed stock of local provenance can be used within the rehabilitation corridors.

Preparation for revegetation on natural surfaces needs to be started as soon as possible through weed removal however maintenance of the existing native grass-cover is important to minimise erosion and maintain soil moisture. Slashing of tall grass could occur periodically to reduce fire risk, but existing native grasses on site should be allowed to mature to seed where possible to encourage colonisation.

Weed control should occur regularly before and after planting to minimise competition with young seedlings for water, and light. Spot spraying should be carried out by a qualified professional to an agreed performance contract, with a minimum of:

- Initial assessment with spot spraying as soon as possible.
- Treatment to an agreed schedule based on the initial assessment (refer ERRRC Weed Management Plan – **Section 7.2**).

- Treatment two weeks prior to planting, as agreed.
- Maintenance treatment as part of the Operational Environmental Management Plan for the life of the project, adjusted according to weather conditions.

Control and management of pest grazing animals (ie rabbits and hares) will be required to minimise impact upon young plants. The landscape management contract should require active and ongoing assessment of the problem and measures for control, should they be required, this will be detailed in the ERRRC Pest Management Plan – **Section 7.3**.

Table 7.8.2 – Recommended Planting Species List – Rehabilitation Corridor

Botanical Name	Common Name	Contractor Seed Available	OCC Seed Available	Provenance
Acacia buxifolia	Box-leaf Wattle		X	Molong/Fern Hill
Acacia decora	Western Golden Wattle	X		Molong/Fern Hill
Acacia leucoclada	Northern Silver Wattle	X		Molong/Fern Hill
Acacia melanoxylon	Blackwood		X	Orange
Acacia vestita	Weeping Boree Wattle		X	Molong/Fern Hill
Allocasuarina verticillata	Drooping She-oak		X	Molong/Fern Hill
Brachychiton populneus	Kurrajong		X	Molong/Fern Hill
Eucalyptus albens	White Box		X	Molong/Belgravia
Eucalyptus blakelyi	Blakely's Red Gum		X	Molong/Orange
Eucalyptus melliodora	Yellow Box		X	Molong/Fernhill
Hardenbergia violacea	False Sarsaparilla	X		Molong/Fernhill
Indigofera australis	Australian Indigo	X		Molong/Fernhill

NOTE: SEEDING OF NATIVE GRASSES MAY ALSO BE REQUIRED WITHIN THE REHABILITATION CORRIDORS, TO BE DETERMINED THROUGH ANNUAL FLORA MONITORING.

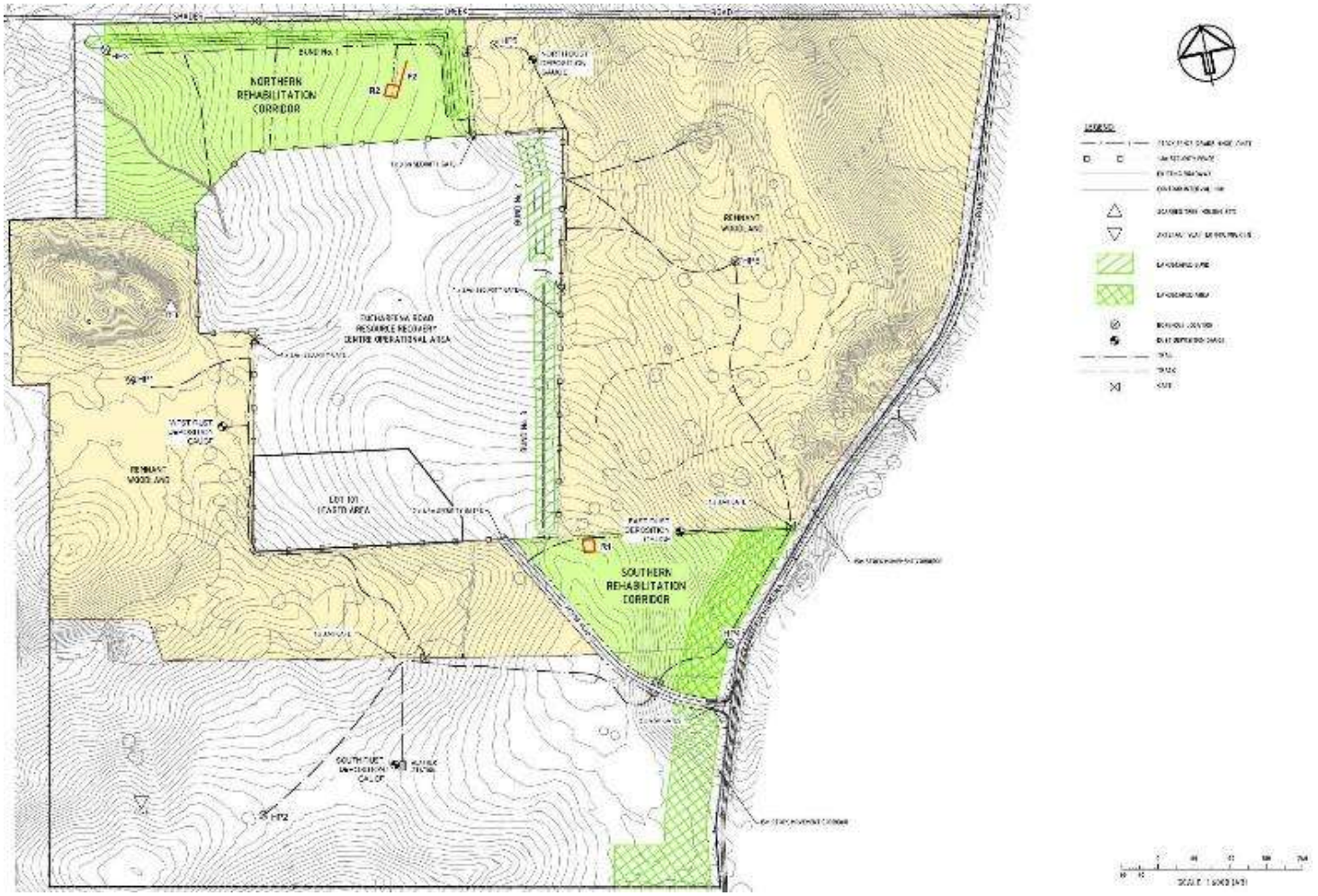


Figure 7.8.2: ERRRC Site Plan Showing Rehabilitation Corridor Monitoring Locations

Northern Rehabilitation Corridor

The aim of the northern rehabilitation corridor is provide connectivity between existing open woodland located to the east and south. It covers an 'L' shaped area measuring approximately 550 metres long.

Revegetation of the rehabilitation corridor needs to retain the structure and species composition of existing woodland areas on the site. The existing woodland structure varies between a closed woodland formation (less than 10 metres between trees) to very open (up to 50 metres between trees).

The planting strategy of this area is to direct drill a mix of seed (to be submitted and approved) from the seed list provided in **Table 7.8.2** at a rate of 400gm per km over the entire area in meandering rows a maximum of 6m apart to achieve a dominance of grass and ground cover species with an average of 3 eucalypts and 6 other trees/shrubs per 10x10 metre square. Planting should occur either just prior to a rain event or not long after a rain event, ensuring practicality with equipment, in March/April.

Success of the planting should be assessed a month after drilling and infill planting occur if deemed necessary. This could be either planting of tube-stock or re-drilling as agreed. Long term maintenance of the area should include further in-fill planting should it be deemed necessary.

Southern Rehabilitation Corridor

The aim of the rehabilitation corridor is provide connectivity between existing open woodland located immediately to the north and west. This site is a triangular shaped area measuring approximately 320 metres long and 300 metres wide at the broadest part. A 70 metre strip (known as the Landscaped Area, refer **Section 7.8.4**) fronting the Euchareena Road and directly connective to the rest of the rehabilitation corridor would act as a visual barrier for the Operational Area of the RRC.

Revegetation of the broader area of rehabilitation corridor needs to retain the structure and species composition of existing woodland areas on the site. The existing woodland structure varies between a closed woodland formation (less than 10 metres between trees) to very open (up to 50 metres between trees).

The planting strategy of this area is equal to that used across the Northern Rehabilitation Area except for the 70m Landscaped Area which is described in **Section 7.8.4**.

7.8.2.3 Rehabilitation, Management Measures and Monitoring

Table 7.8.3 outlines the rehabilitation and management measures to be followed for the two Rehabilitation Corridor Areas.

Two permanent monitoring sites within the rehabilitation corridor have been established (refer to **Figure 7.8.2**), which includes two quadrants (R1 and R2) and one transect (F2). These sites will be monitored annually, and outcomes recorded in the *Flora and Aboriginal Heritage Monitoring* report.

Table 7.8.3 – Rehabilitation Corridors Rehabilitation and Management Measures

	Category		Task	Responsibility
1	**PRIOR TO CONSTRUCTION WORKS COMMENCING**			
a	Baseline Information	i	An initial planting program is to be developed, by a suitably qualified person, based on this methodology.	OCC
		ii	Establishment of a Rehabilitation Area monitoring program, by a suitably qualified person, for the rehabilitation areas to monitor and record the extent of flora growth. This program shall incorporate the principles outlined in this section.	OCC
b	Stock control	i	Those areas of the site that are not directly affected by the proposed activity shall be de-stocked and remain free of grazing by domestic stock (except in accordance with any management plan).	OCC
2	**DURING CONSTRUCTION**			
a	Woodland Enhancement	ii	Implementation of the initial planting program in the rehabilitation corridor.	OCC
3	**PRIOR TO OPERATION OF THE RRC**			
a	Weed & Pest Management	i	Creation of a Weed Management Program, by a suitably qualified person, that includes: • Regular inspections of the site; • Education of staff with respect to weed identification and control; and • Continual monitoring and control of identified noxious weeds. This Weed Management Program is detailed in **Section 7.2** of this OEMP.	OCC
		ii	A Pest Control Plan shall be formulated, that in particular includes the control of foxes and feral cats and any other invertebrate pest that may be considered a problem. This is detailed in **Section 7.3** of the OEMP.	OCC

Table 7.8.3 – Rehabilitation Corridors Rehabilitation and Management Measures

	Category		Task	Responsibility
4	**DURING OPERATION OF RRC**			
b	Woodland Monitoring	i	Implementation of the annual rehabilitation corridor monitoring program.	OCC
		ii	Where, during monitoring, species diversity is found to be insufficient, supplementary planting programs are to be undertaken in accordance with advice from a suitably qualified person.	OCC
		iii	Any supplementary plantings are to be suitably protected through fencing or suitable tree guard, as outlined in this section.	OCC
c	Weed & Pest Management	i	Implementation of the Weed Management Plan.	OCC
		ii	Implementation of the Pest Management Plan.	OCC
d	Groundcover Management	i	Groundcover management within the rehabilitation areas is to be undertaken through grazing with cattle, using appropriate stocking rates that reflect seasonal conditions and to ensure an adequate level of groundcover remains at all times. Trees and shrubs are to be protected from cattle in accordance with the principles outlined in this section.	OCC
		ii	Once established, grazing shall be undertaken in accordance with the measures outlined in the Remnant Woodland Areas (**Section 7.8.1**).	OCC

7.8.3 LANDSCAPE BUNDS

This Section relates to the three landscaped bunds, as illustrated in **Figure 7.8.3**. This Section and associated drawings have been prepared to satisfy Condition 35 in Schedule 5 of the Project Approval.

The purpose of the bunds is to provide visual screening of the site operations. The bunds would be constructed in a staged and evolving manner based on the availability of overburden.

As the bunds will not be able to be constructed until after excavations on site have commenced, a landscape strip is to be established between Bund 1 and the northern property boundary. **Figure 7.8.4** illustrates the cross section of this landscape strip, and typical planting plan. An access track has been provided adjacent to the property boundary/fence, with a 15m wide landscaped strip provided between the access track and the toe of Bund 1.

Again, Bunds 2 and 3 would be constructed when enough overburden is available from the construction stages of the project. These two bunds would be constructed in accordance with **Figure 7.8.5** and **Figure 7.8.6.** During operation of the Resource Recovery Centre (RRC), the rear (inside) of these bunds would operate with a 'working face', enabling overburden from the landfill cells to be stockpiled as needed.

7.8.3.1 Purpose

The purpose of these bunds is to provide for visual screening of the RRC.

7.8.3.2 Methods

General

Table 7.8.4 provides a list of tree, shrub, and groundcover species suitable for planting for the re-establishment of a Box Woodland concurrent with the existing community, including shrub species suitable for establishing visual barrier or bund stabilisation vegetation.

The listed species in **Table 7.8.4** have been recorded within the Molong area on similar landscapes to that of the subject site. Upper storey trees include White Box, Yellow Box, and Blakely's Red Gum. These trees are already present on the site and Orange City Council already possesses seed that has been sourced from the Molong area, this seed should be used in deference to other seed to ensure provenance is maintained. Only tube stock and seed stock of local provenance can be used within the landscape bunds.

Preparation for revegetation on natural surfaces needs to be started as soon as possible through weed removal, however maintenance of the existing native grass-cover is important to minimise erosion and retain soil moisture. Slashing of tall grass could occur periodically to reduce fire risk, but existing native grasses on site should be allowed to mature to seed where possible to encourage colonisation.

Weed control should occur regularly before and after planting to minimise competition with young seedlings for water and light. Spot spraying should be carried out by a qualified professional to an agreed performance contract, with a minimum of:

1) Initial assessment with spot spraying as soon as possible

2) Treatment to an agreed schedule based on the initial assessment (as per **Table 7.8.5**).

3) Treatment two weeks prior to planting as agreed.

4) Maintenance treatment as part of the OEMP for the life of the project, adjusted according to weather conditions.

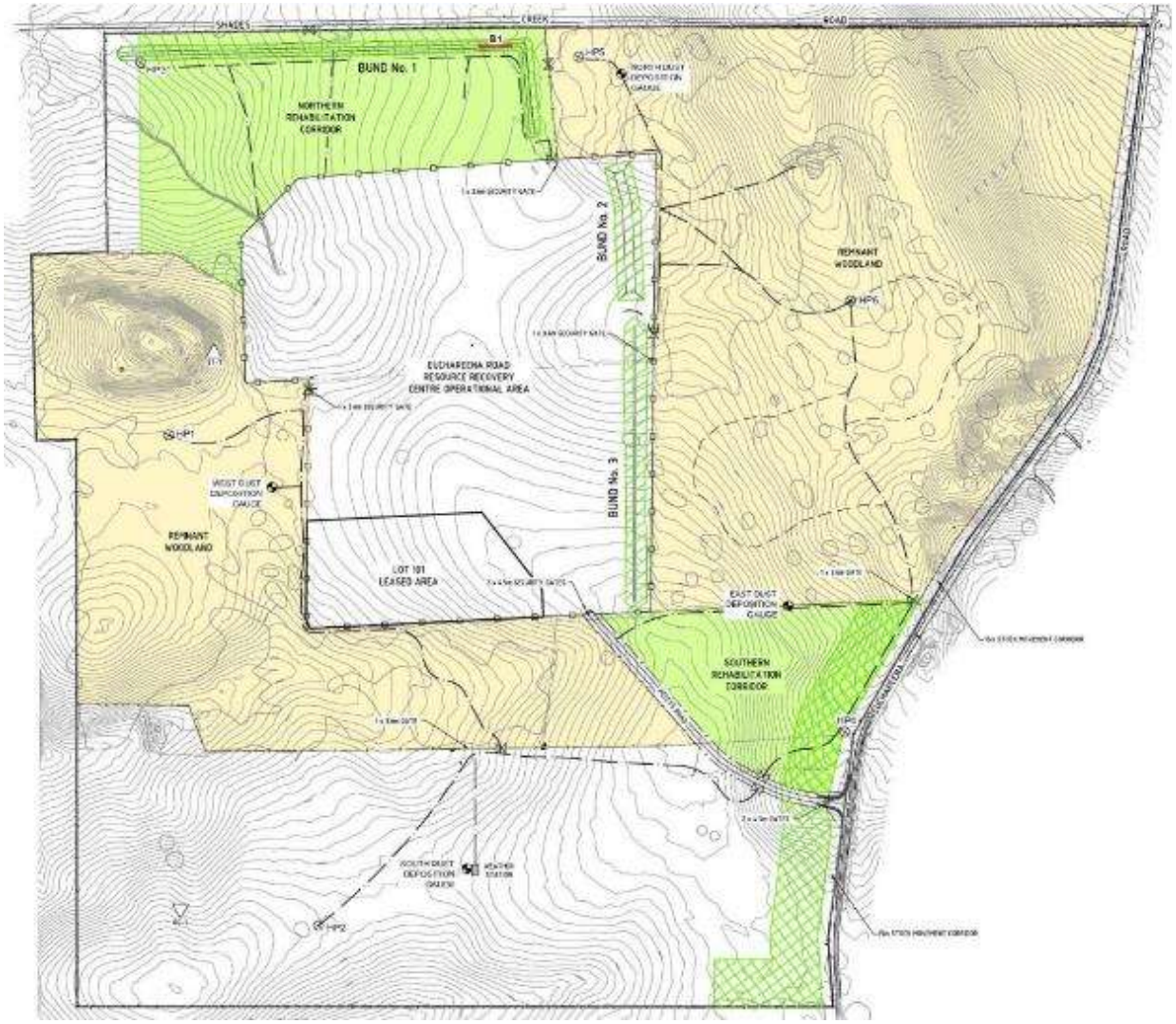


Figure 7.8.3: ERRRC Site Plan Showing Landscaped Bund Monitoring Location

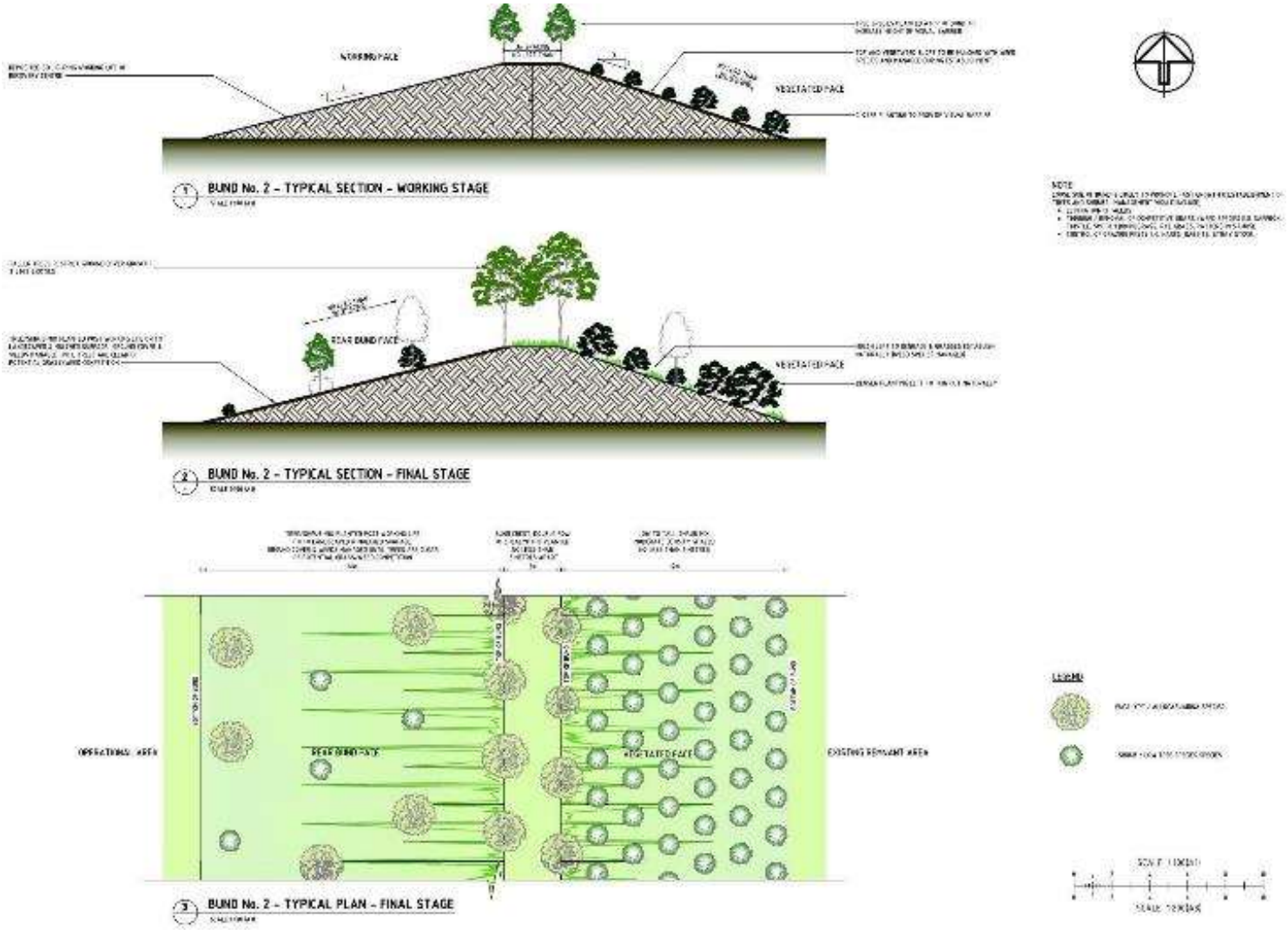


Figure 7.8.4: Bund 2 Typical Planting Plan and Sections

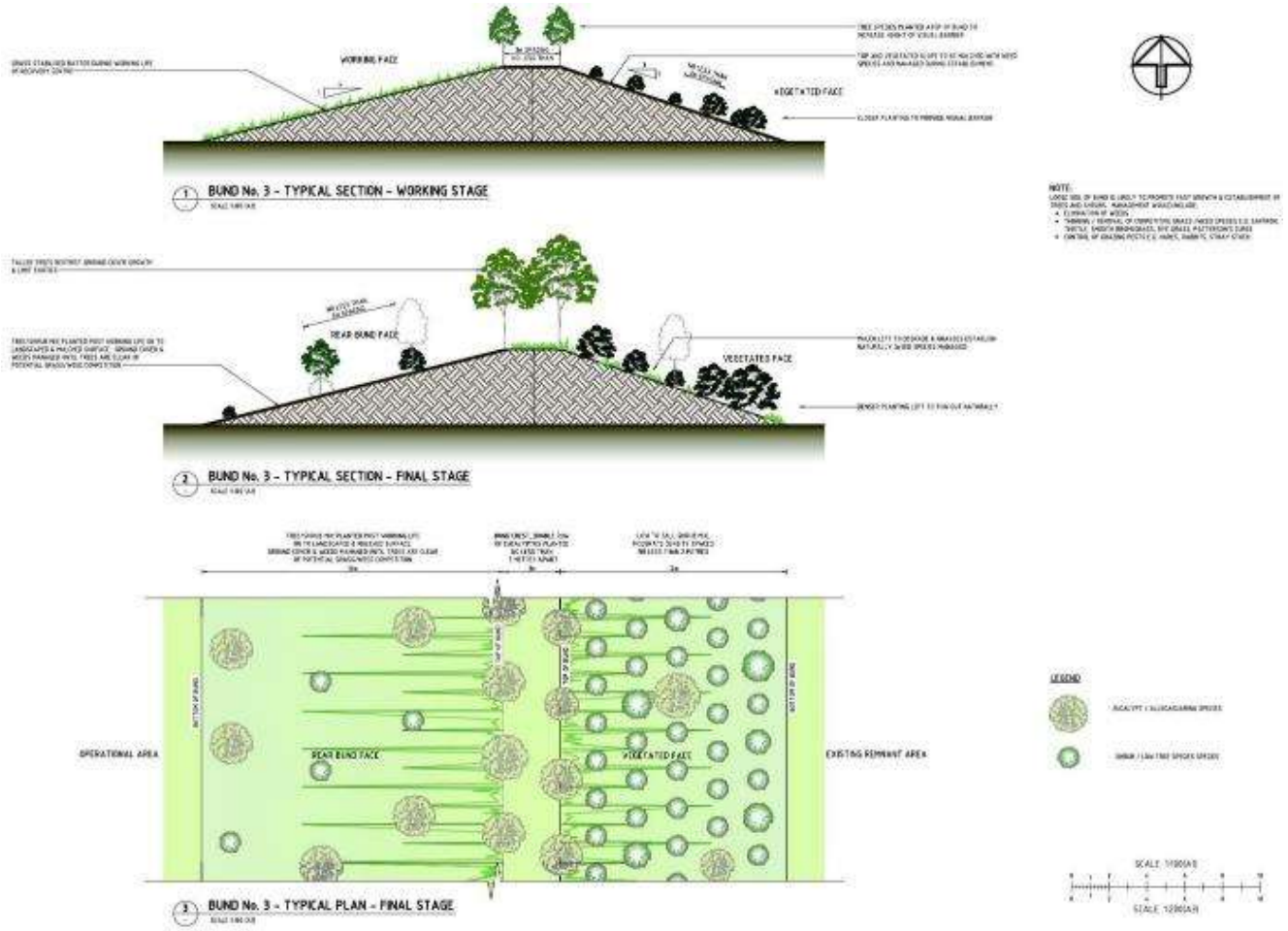


Figure 7.8.5: Bund 3 Typical Planting Plan and Sections

Control and management of pest grazing animals (i.e rabbits and hares) will be required to minimise impact upon young plants. The landscape management contract should require active and ongoing assessment of the problem and measures for control, should they be required, this will be detailed in the ERRRC Pest Management Plan – **Refer Section 7.3** of this OEMP.

Short 'crash grazing' events should occur as per the management plan for the Remnant Woodland.

Table 7.8.4 – Recommended Planting Species List

Botanical Name	Common Name	Contractor Seed Available	OCC Seed Available	Provenance
Acacia buxifolia	Box-leaf Wattle		X	Molong/Fern Hill
Acacia decora	Western Golden Wattle	X		Molong/Fern Hill
Acacia leucoclada	Northern Silver Wattle	X		Molong/Fern Hill
Acacia melanoxylon	Blackwood		X	Orange
Acacia vestita	Weeping Boree Wattle		X	Molong/Fern Hill
Allocasuarina verticillata	Drooping She-oak		X	Molong/Fern Hill
Brachychiton populneus	Kurrajong		X	Molong/Fern Hill
Eucalyptus albens	White Box		X	Molong/Belgravia
Eucalyptus blakelyi	Blakely's Red Gum		X	Molong/Orange
Eucalyptus melliodora	Yellow Box		X	Molong/Fernhill
Hardenbergia violacea	False Sarsaparilla	X		Molong/Fernhill
Indigofera australis	Australian Indigo	X		Molong/Fernhill

NOTE: SEEDING OF NATIVE GRASSES MAY ALSO BE REQUIRED WITHIN THE LANDSCAPED BUNDS, TO BE DETERMINED THROUGH ANNUAL FLORA MONITORING.

Bund 1 & Landscape Strip

This area is located at the northern extent of the site towards the western corner. It consists of a 5 metre wide access road, a 15 metre wide landscape strip, and a low, wide-topped vegetated bund. The 15 metre landscape strip is designed to act as a primary visual barrier before the establishment of Bund 1.

The 15 metre landscape strip shall be planted out with the road side 5m planted as per the Edge Planting Strip in **Section 7.8.4** and the remaining 10m planted per the Rehabilitation Corridors in **Section 7.8.2**.

The bund shall be hydromulched as soon as is practical after it has been formed. Seed shall be applied at a mix and rate as submitted and approved, being predominantly grasses and groundcovers. Watering will only be required if it is deemed necessary to either hold the mulch in place or to assist with germination in a particularly dry period. It is expected that this will occur during the peak of summer but it is understood that the native species of

seeds will remain viable and dormant within the mulch until favourable growing conditions occur. The mulching process will assist in reducing weed germination, minimise erosion and maintain soil moisture.

A direct drill of seed including eucalypts, acacias and other shrubs shall occur in March or April depending on weather conditions. Application rates shall be equal to that detailed in **Section 7.8.2**, however application over the hydromulch should occur without use of the disc of the machine.

Weed monitoring and maintenance shall occur as per the ERRRC Weed Management Plan, refer **Section 7.2**.

Bund 2

Bund 2 is a vegetated bund located on the north eastern corner of the proposed operation area. It is designed to act as a visual barrier and vegetated buffer area between the operational area and remnant woodland located immediately to the east.

The 4 metre tall bund would be hydromulched and direct drilled on the top and eastern side as per Bund 1, allowing the western face to remain 'active' during the operations for the deposition of soil. Post-works, this 'active' face will be vegetated with trees and shrubs with a method submitted and approved.

Bund 3

This structure is vegetated bund located on the south eastern corner of the proposed operation area. It is to be designed to act as a visual barrier and vegetated buffer area between the operation area and remnant woodland located immediately to the east.

This bund will be hydromulched as per Bund 1 and all but the 'active' face direct drilled also per bund 1. This face will remain with groundcover only and should be monitored for sufficient coverage.

Ongoing weed and pest management will be conducted per the Weed Management Program. Mowing or slashing may also be required to avoid the ground cover becoming rank or overly dense. Post-working life, the grassed stabilised batter of the bund will be planted out with an open planting of trees and shrubs in a method to be submitted and approved.

7.8.3.3 Rehabilitation, Management Measures and Monitoring

Table 7.8.5 outlines the rehabilitation and management measures to be followed for the landscaped bunds.

A permanent monitoring site within Landscape Bund 1 has been established (refer to **Figure 7.8.3**), which includes one transect (B1). The site will be monitored annually, and outcomes recorded in the *Flora and Aboriginal Heritage Monitoring* report.

Table 7.8.5 – Landscaped Bunds Rehabilitation and Management Measures

	Category		Task	Responsibility
	PRIOR TO OPERATION OF THE RRC			
a	Landscape Screening Plantings	i	Prior to operation of the RRC, the landscaped area shall be planted as outlined in this section.	OCC
		ii	The perimeter tree screening areas are to provide an appropriate alternative nectar source away from the landfilling operation. These species shall be selected in consultation with OEH.	OCC
b	Baseline information	i	Establishment of a monitoring program, by a suitably qualified person, for the landscaped area to monitor and record the extent of flora growth.	OCC
c	Weed & Pest Management	i	Creation of a Weed Management Plan, by a suitably qualified person, that includes: • Regular inspections of the site; • Education of staff with respect to weed identification and control; and • Continual monitoring and control of identified noxious weeds. This is detailed in **Section 7.2** of this OEMP.	OCC
		ii	A Pest Management Plan shall be formulated, that in particular includes the control of foxes and feral cats and any other invertebrate pest that may be considered a problem. This is included in **Section 7.3** of this OEMP.	OCC
3	**DURING OPERATION OF RRC**			
a	Heritage & Biodiversity Awareness	i	A suitably sized copy of **Figure 7.8.3** shall be displayed in the Site Office, where the Site Manager has visual access to it.	OCC
b	Monitoring	i	Implementation of the landscaped area monitoring program.	OCC
		ii	Where, during monitoring, species diversity is found to be insufficient, supplementary planting programs are to be undertaken in accordance with advice from a suitably qualified person.	OCC
		iii	Any supplementary plantings are to be suitably protected through fencing or suitable tree guard.	OCC
c	Weed & Pest Management	i	Implementation of the Weed Management Plan.	OCC
		ii	Implementation of the Pest Management Plan.	OCC
d	Groundcover Management	i	Groundcover management within the woodland areas is to be undertaken through grazing with cattle, using appropriate stocking rates that reflect seasonal conditions and to ensure an adequate level of groundcover remains at all times.	OCC
		ii	Once established, grazing shall be undertaken in accordance with the measures outlined in the Remnant Woodland Areas (**Section 7.8.1**).	OCC

7.8.4 LANDSCAPED AREA

7.8.4.1 Introduction

As illustrated in **Figure 7.8.7**, this section relates to the Landscaped Area along the property boundary in the south eastern corner of the subject site. This Section and associated plans have been prepared to satisfy Condition 36 in Schedule 5 of the Project Approval.

7.8.4.2 Purpose

The purpose of the landscaped area is to provide visual screening of the site operations. The area would be planted prior to operations commencing on site.

7.8.4.3 Methods

General

The strip of land designated as 'Landscaped Area' is to act as a visual barrier (fronting Euchareena Road). The first 5 metres of the 70 metre wide strip will be planted at a greater density than the rest of the strip and adjacent Southern Rehabilitation Corridor. This 5 metre strip fronting Euchareena Road and the entrance road will be planted with tube stock of primarily Eucalypts and Acacias per the list in **Table 7.8.6** to ensure fast growth prior to the opening of the Centre. The list of species have been selected for being endemic to the site, their growth habit and their availability in tube stock. The remaining 65 metres of the Landscaped Area will be planted as per the Rehabilitation Corridors, detailed in **Section 7.8.2**.

Preparation for revegetation on natural surfaces needs to be started as soon as possible through weed removal, however, maintenance of the existing native grass-cover is important to minimise erosion and retain soil moisture. Slashing of tall grass could occur periodically to reduce fire risk, but existing native grasses on site should be allowed to mature to seed where possible to encourage colonisation.

Weed control should occur regularly before and after planting to minimise competition with young seedlings for water, and light. Spot spraying should be carried out by a qualified professional to an agreed performance contract, with minimum of:

1) Initial assessment with spot spraying as soon as possible

2) Treatment to an agreed schedule based on the initial assessment (Weed Management Program as per **Table 7.8.7**).

3) Treatment two weeks prior to planting as agreed.

4) Maintenance treatment as part of the OEMP for the life of the project, adjusted according to weather conditions.

This 70 metre strip would be planted at a greater density than the adjacent Southern Rehabilitation Corridor. The leading rows fronting Euchareena Road would be planted with a

higher proportion of shrubs than in the rows further into the rehabilitation corridor. Planting lower shrubs as well as small trees such as *Acacia difformis, Acacia buxifolia, Hakea sericea, Acacia melanoxylon* and *Allocasuarina diminuta* amongst upper-storey eucalypt species would provide lower and midstorey diversity and add the screening effect of the landscaped area. Species selection of lower and midstorey species would need to consider impact of any future grazing management of the site.

Table 7.8.6 provides a list of mid and upper storey tree and shrub species suitable for base planting for the re-establishment of a box woodland concurrent with the existing community. The table also lists lower shrub species likely to be suitable for establishing the visual barrier.

The listed species in **Table 7.8.6** have been recorded within the Molong area on similar landscapes to that of the subject site. Upper storey trees include White Box, Yellow Box and Blakely's Red Gum.

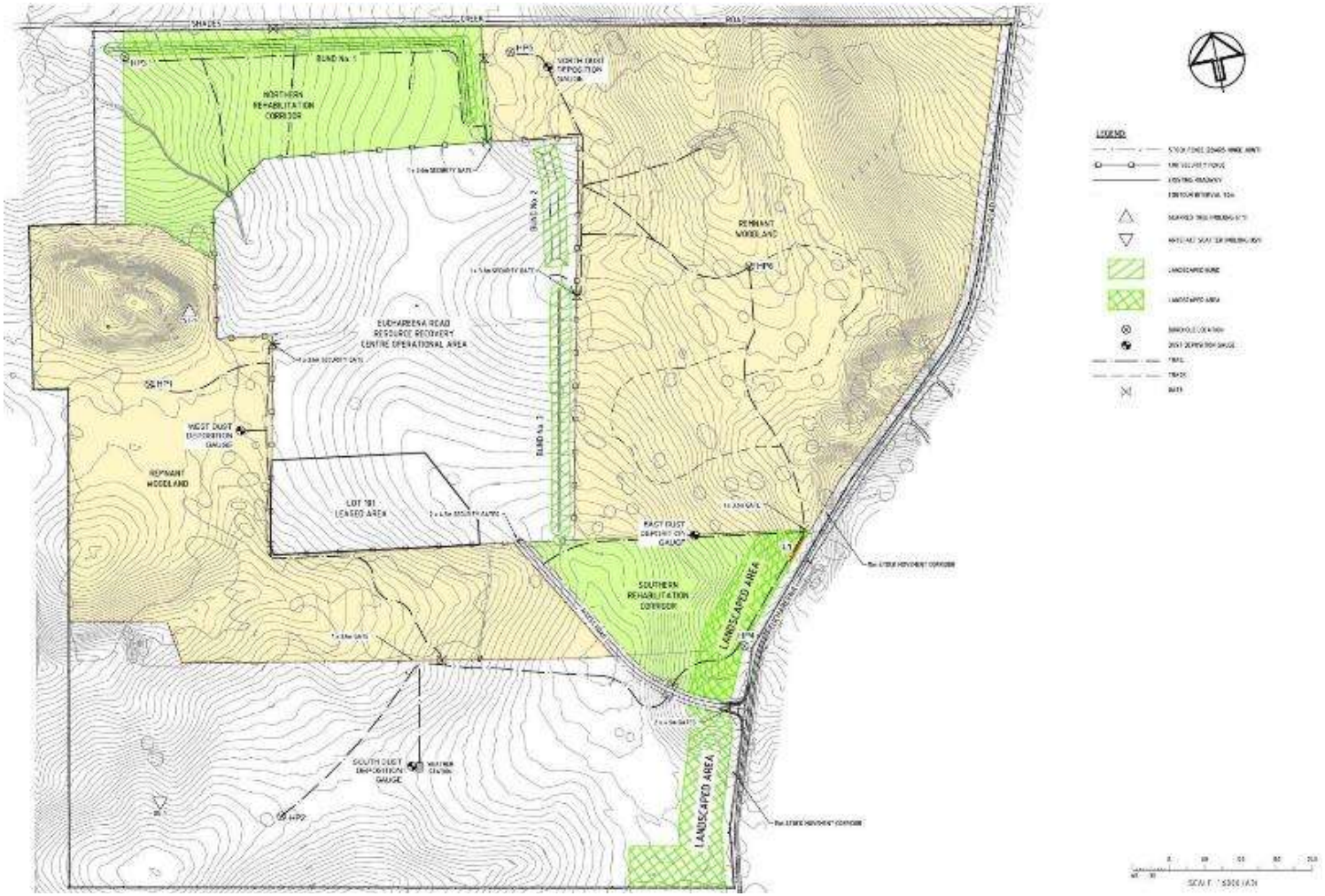


Figure 7.8.6: ERRRC Site Plan Showing Landscaped Area Monitoring Locations

These trees are already present on the site and steps should be taken to collect seed from local seed banks to ensure that seed of the right provenance is obtained. Local advice should be sought on the suitability of seasonal conditions for planting. Care must also be taken in the selection of acacia species as certain acacias can dominate as a woody weed on revegetation sites. (eg. *Acacia dealbata*). Again, final selection of species should refer to local horticultural expertise. Only tube stock and seed stock of local provenance can be used within the landscape bunds.

Native mid and understorey species are poorly represented on the existing site and planting stock may need to be obtained from local sources of homogenous origin. Selected species may also be dependent upon availability of seedling stock.

Reference to publications specific to the rehabilitation and regeneration of Box woodlands should be made before and during the development stage of the revegetation project (e.g. Rawlings, K. 2010, *A Guide to Managing Box Gum Grassy Woodlands*, Department of the Environment, Water, Heritage and the Arts). Personnel skilled in local native revegetation and regeneration works should be employed to undertake this component of the project.

Preparation for revegetation on natural surfaces needs to be started at least one year in advance of planting. Removal of groundcover on areas to be replanted can be achieved by a combination of crash grazing, slashing and spraying. Topsoil removal (scalping) to create weed-free planting strips is unlikely to be suitable for the site, however if this method is used erosion, compaction and weed ingress should be considered. Deep ripping planting strips along rows cleared of groundcover is the best form of ground preparation for trees and shrubs. A single tined ripper should be used to create fissures to a depth of 40 to 60 cm. If areas of the site have compacted soil which may impede ground cover species becoming established, shallow scarifying between rows can assist water ingress.

Weed control before planting is imperative and measures to control weeds for at least two years after planting will be required. Left unchecked, weeds strongly compete with young seedlings for water, and light. Up to 3 to 4 applications of herbicide may be required to prepare a site for planting:

- One year to 10 months before planting;
- Follow-up application in late summer or autumn (depending upon rainfall);
- Third spray applied 6 to 10 weeks after the second spray for control of opportunistic weeds if required; and
- The final spray just before planting (taking into account time periods to allow any residual effect to subside before planting).

Control and management of pest grazing animals (i.e rabbits and hares) will be required to minimise impact upon young plants. The landscape management contract should require active and ongoing assessment of the problem and measures for control, should they be required, this will be detailed in the Pest Control Plan per **Table 7.8.7**.

Short 'crash grazing' events should occur as per the management plan for the Remnant Woodland.

Table 7.8.6 – Recommended Planting Species List

Botanical Name	Common Name	Contractor Seed Available	OCC Seed Available	Provenance
Acacia buxifolia	Box-leaf Wattle		X	Molong/Fern Hill
Acacia decora	Western Golden Wattle	X		Molong/Fern Hill
Acacia leucoclada	Northern Silver Wattle	X		Molong/Fern Hill
Acacia melanoxylon	Blackwood		X	Orange
Acacia vestita	Weeping Boree Wattle		X	Molong/Fern Hill
Allocasuarina verticillata	Drooping She-oak		X	Molong/Fern Hill
Brachychiton populneus	Kurrajong		X	Molong/Fern Hill
Eucalyptus albens	White Box		X	Molong/Belgravia
Eucalyptus blakelyi	Blakely's Red Gum		X	Molong/Orange
Eucalyptus melliodora	Yellow Box		X	Molong/Fernhill
Hardenbergia violacea	False Sarsaparilla	X		Molong/Fernhill
Indigofera australis	Australian Indigo	X		Molong/Fernhill

NOTE: SEEDING OF NATIVE GRASSES MAY ALSO BE REQUIRED WITHIN THE LANDSCAPED AREA, TO BE DETERMINED THROUGH ANNUAL FLORA MONITORING.

Edge Planting Strip

Planting of the roadside 5m edge of the Landscaped Area shall occur as soon as practical (November) so as to ensure maximum growth prior to opening in July 2013.

A weed management team should be engaged to perform a day of inspection and spraying over the Landscaped Area a minimum of two weeks prior to the planting of the edge strip. After planting, regular inspections should occur as per the Weed Management Program.

Planting should be a mix of the species listed in **Table 7.8.6** under Tube Stock, with 1 eucalypt per $5m^2$ and three shrubs per $5m^2$.

It is preferable to plant after a rain event so that the soil is soft and moist; however should no rain event occur the entire area should be thoroughly watered by water truck a maximum of three days prior to planting. All tube stock should be protected with a cardboard milk carton staked according to manufacturer's recommendations.

Rehabilitation, Management Measures and Monitoring

Table 7.8.7 outlines the rehabilitation and management measures to be followed for the landscaped bunds.

A permanent monitoring site within the Landscape Area has been established (refer to **Figure 7.8.7**), which includes one transect (L1). The site will be monitored annually, and outcomes recorded in the *Flora and Aboriginal Heritage Monitoring* report.

Table 7.8.7 – Landscaped Area Rehabilitation and Management Measures

	Category		Task	Responsibility
	PRIOR TO OPERATION OF THE RRC			
a	Landscape Screening Plantings	i	Prior to operation of the RRC, the landscaped area shall be planted as outlined in this section.	OCC
		ii	The perimeter tree screening areas are to provide an appropriate alternative nectar source away from the landfilling operation. These species shall be selected in consultation with OEH.	OCC
b	Baseline information	i	Establishment of a monitoring program, by a suitably qualified person, for the landscaped area to monitor and record the extent of flora growth.	OCC
c	Weed & Pest Management	i	Creation of a Weed Management Plan, by a suitably qualified person, that includes: • Regular inspections of the site; • Education of staff with respect to weed identification and control; and • Continual monitoring and control of identified noxious weeds. This is detailed in **Section 7.2** of this OEMP.	OCC
		ii	A Pest Management Plan shall be formulated, that in particular includes the control of foxes and feral cats and any other invertebrate pest that may be considered a problem. This is detailed in **Section 7.3** of this OEMP.	OCC
3	**DURING OPERATION OF RRC**			
a	Heritage & Biodiversity Awareness	i	A suitably sized copy of **Drawing 7.8.7** shall be displayed in the Site Office, where the Site Manager has visual access to it.	OCC
b	Monitoring	i	Implementation of the landscaped area monitoring program.	OCC
		ii	Where, during monitoring, species diversity is found to be insufficient, supplementary planting programs are to be undertaken in accordance with advice from a suitably qualified person.	OCC
		iii	Any supplementary plantings are to be suitably protected through fencing or suitable tree guard.	OCC
c	Weed & Pest Management	i	Implementation of the ERRRC Weed Management Plan (refer **Section 7.2** of this OEMP).	OCC
		ii	Implementation of the ERRRC Pest Management Plan (refer **Section 7.3** of this OEMP).	OCC
d	Groundcover Management	i	Groundcover management within the woodland areas is to be undertaken through grazing with cattle, using appropriate stocking rates that reflect seasonal conditions and to ensure an adequate level of groundcover remains at all times.	OCC
		ii	Once established, grazing shall be undertaken in accordance with the measures outlined in the Remnant Woodland Areas (**Section 7.8.3**).	OCC

7.8.5 ABORIGINAL HERITAGE MONITORING

An Aboriginal Heritage Assessment was undertaken as part of the Project Approval, consistent with the guidelines issues by the former DECCW. Two sites were identified within the vicinity of the ERRRC; both of which are outside of the impact footprint of the waste facility and thus would therefore not be destroyed or disturbed as a result of the project. The two sites identified include:

- Molong ST1 – Scarred Tree (refer **Plate 1** and **2**); and
- Molong OS1 – Artefacts.

The location of both sites is to be recorded and made known to all staff as part of the site induction (refer **Section 5.1 – Staff Training**), with a copy of **Figure 7.8.8** which shows the location of these sites to be kept in the site office at all times.

Plate 1: Scarred Tree Molong ST1.

Plate 2: Lower Slope and View of Scarred Tree Molong ST1

As per the requirements of the Conservation Agreement and CMP, the scarred tree Molong ST1 is to be monitored annually and results included in the *Annual Flora and Aboriginal Heritage Monitoring* report, and results included in OEH's qualitative monitoring template (refer **Appendix A**). The scarred tree Molong ST1 was first recorded as having the following details (from GHD, 2009: C.4-69-70):

Site :	Molong ST1
Site Type:	Scarred Tree
Tree:	Box (living)
Shape of scar:	Elliptical (shield-shaped)
Length of scar:	147cm
Width of scar:	16cm
Girth mid scar:	247cm
Depth of bark:	15cm
Height of base of scar:	90cm

Each year the tree is to be photographed, and the historic details above checked for consistency with existing condition of the scar. If the measurements are different to the historic details above, this may indicate damage (by either stock of other means), or closing over of the scar. If the details are found to be inconsistent, consultation with OEH is required to determine management of the scar.

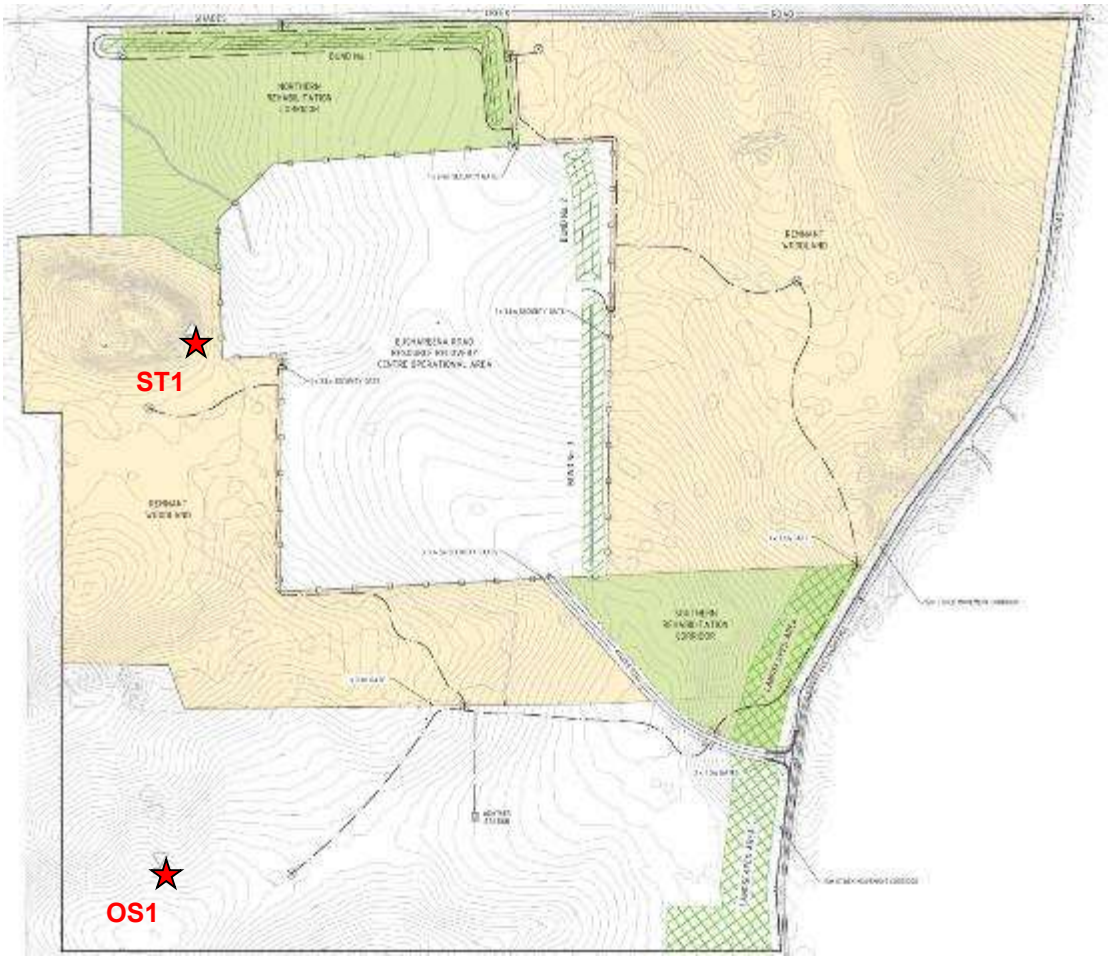


Figure 7.8.7: Location of Aboriginal Heritage Sites

Appendix A

MONITORING REPORT

MONITORING REPORT 2013/14

WORKS UNDERTAKEN SINCE LAST REPORT

Description of work undertaken	Source of funding and amount	Date completed

FIRE HISTORY

Date of fire	Area burnt (% of c.a./approx ha)	Reason (hazard red./wild)	Intensity (low/medium/high)
Unknown			

VISITATION

Average No. of Visitors per year	Purpose of Visitation	Visitation effects	Strategies to overcome effects

COMMUNITY CONSULTATION AND INPUT INTO DECISION MAKING

Type of Involvement	Numbers involved	Outcomes

PHOTO-MONITORING

	Vegetation Community	Current condition	Benchmark comparison, changes or trends (evidence of natural regeneration)	Threats/issues
Monitoring point 1				
Monitoring point 2				
Monitoring point 3				
Monitoring point 4				

CONSERVATION VALUES

	Conservation Values noted in Agreement and its significance	Current condition	Current and emerging threats	Level (*severe, high, moderate or low*) and extent (*throughout, widespread, scattered or localised*) of threats	New findings; any other relevant information.
Native vegetation					
EECs					
Threatened fauna					
Threatened flora					
Aboriginal Cultural Heritage					
Research/ education					
Other					

MANAGEMENT ISSUES

	Describe the Issue (short description of current extent of impacts, new sightings and any other relevant information	Description of planning and implementation of control measures being and to be undertaken, and duration
Weeds (where applicable, infestation can be given as a % of total vegetation)		
Pest Animals - Feral - Domestic - Native		
Natural regeneration		
Fire Management		
Revegetation		
Threatened species; endangered ecological communities etc		

	Describe the Issue (short description of current extent of impacts, new sightings and any other relevant information	Description of planning and implementation of control measures being and to be undertaken, and duration
Cultural Heritage Management		
Visitor Impact Management		
Community Consultation and input into decision making.		
Research/ Education programs		
Other issues - Litter - Vehicle access		

WORKPLAN TO ADDRESS MANAGEMENT ISSUES (in priority order)

Action to be completed or ongoing action (discuss on site and where necessary confirm details later)	Cost and possible funding sources	Completion Date	Responsibility
Revegetation (refer Vegetation Management Plan)			
Weed Control			
Pest Species Control			
Erosion control			

Section 7.9

ORRRC EMERGENCY PROCEDURES MANUAL

Orange City Council

EMERGENCY PROCEDURES MANUAL – D17/63971

Ophir Road Resource Recovery Centre (ORRRC)

Revision record

Date of revision	Authorised by	Revised by
24.10.2017	Formatted into current template to reflect changes in legislation	WHS Team

This document is to be replaced at the end of its operational period of 5 years. Please retain all previous versions and amendments made to these procedures for a period not less than 7 years from its expiration.

Document references:

- ☐ Work Health and Safety Regulations 2017
- ☐ AS 3745 2010- 'Planning for emergencies in facilities'
- ☐ AS 4083 2010- 'Planning for emergencies in healthcare facilities'
- ☐ AS 1851 2012- 'Maintenance of fire protection systems and equipment'
- ☐ AS1940 2004: The storage and handling of flammable and combustible liquids
- ☐ CP: Managing the work environment and facilities 2011
- ☐ CP: Managing the risks of hazardous chemicals in the workplace 2012

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Forward

These emergency procedures have been developed to ensure the safety of the staff, visitors and contractors of Ophir Road Resource Recovery Centre, where a designated and pre-determined response or evacuation of the building/site is required due to an emergency.

DEFINITIONS

Chief Warden
A person who, during an emergency, assumes total control of the site and all its occupants and is also the prime contact person for the senior officer of the first attending Emergency Service(s)

Alert Signal
The incident buildings external fire alarm bell and flashing light, and/or a distinctive "beep beep" tone generated by the Emergency Warning & Intercommunication System (EWIS). The signal provides an alert in all selected buildings in the site that an emergency incident has occurred and is the queue for all ECO members to commence their prescribed emergency actions.

Emergency Control Point
A location where an emergency can be co-ordinated from.

Emergency Control Organisation (ECO)
A structured group of persons who organise and supervise the safe and effective evacuation of all occupants within a building of the site during an emergency incident.

Emergency Incident
An incident which arises either internally or externally to the site which may adversely affect the life safety of any of the site's occupants at that time and generally calls for an immediate response by staff and occupants in order to return the environment to a safe and tenable condition.

Emergency Warning & Intercommunications System (EWIS)
A site wide system of audible warning devices (speakers), providing both an alert and evacuation tone, including the facility for pre-recorded and public address announcements. The system includes WIP phones for direct two-way communication with the EWIS operator. The system can be activated automatically by the Master Fire Alarm Panel and manually at the EWIS panels.

Evacuation
The controlled movement of any or all occupants from a place of imminent danger or risk to a place of safety. An evacuation is usually carried out in a staged manner within a building and ending in another building or the nominated external final assembly area.

Evacuation Signal
A distinctive "woop woop" tone generated by the EWIS or verbal instruction.

Final Assembly Area
An area external to any building capable of accommodating all site occupants in tenable conditions where ongoing security and clear access is available to attending ambulance officers and/or other emergency services.

Fire Indicator Panel (FIP)
A smoke or thermal detector monitoring and control device which, on activation of a detector, will carry out the following functions:

1. **Activate a local alarm bell,**
2. **Activate a red strobe light (where fitted to buildings),**
3. **Transmit an alarm signal to FRNSW and**
4. **Activate the EWIS in the alert mode.**

Improvised Explosive Device (IED)
An IED is a purposely assembled explosive device generally referred to as a bomb.

Manual Call Point (MCP)
A manually operated device (break glass) designed to immediately operate the FIP. The FIP then transmits an alarm signal to FRNSW and activates the EWIS system in the alert mode.

Mobility-impaired Persons
Any person who has a physical, intellectual, mental or sensory impairment either temporary or permanent and who will require assistance in moving from point to point during an emergency evacuation or incident.

Occupant
Any person being either a staff member, member of the public, contractor or any other person who may be inside any part of the site's grounds or its buildings during an emergency incident.

Staging Area
A pre-arranged "safe and tenable" area either inside or outside a building where some or all occupants may be held prior to proceeding to a final assembly area. A staging area may be in an adjoining building dependent upon the type of emergency incident.

Wardens Intercommunication Point (WIP)
A purpose made hand telephone for direct two-way voice communication from the EWIS to a building designed for use by emergency personnel (Unit OIC and the like). This phone does not have dial out facilities and only communicates within its own EWIS network.

EMERGENCY PROCEDURES

These emergency procedures form part of this facilities overall emergency plan. These emergency procedures are a living document. The strength and accuracy of this document relies on several factors.

To assist in the ongoing annual review of this document, the following factors shall be considered in determining possible emergencies:

1. Size and complexity of the site, including construction type and materials
2. Immediate environment surrounding workplace ie: bushland, neighbouring facilities etc
3. Fire engineering
4. Security systems
5. Number and nature of occupants and visitors
6. Hours of operation
7. Type of business operation
8. Incidents, emergencies and near misses on site of a nature which requires inclusion in the Emergency Procedures document.

These emergency procedures must be stored onsite, and made available for any staff member who wishes to reference it. These emergency procedures must form part of the induction process for any new staff member or contractor/ visitor to site. An electronic version must be stored off site for dissemination by an investigative authority post incident.

Building emergencies are an ever present threat and can take many forms, the most likely being fire. Other emergency incidents may arise from time to time such as bomb threats, gas leaks, civil disorder, structural failure, motor vehicle accidents, storm and tempest, a medical emergency or a missing person.

Type of Emergency	**Colour**
Fire/Smoke	Red
Bomb Threat	Purple
Medical Emergency	Blue
Internal Emergency	Yellow
Personal Threat	Black
External Emergency	Brown
Notifiable Incident	Pink
Asbestos	Grey

Ophir Road Resource Recovery Centre is spread over a large open area and is operational 7 days a week (excluding Christmas Day and Good Friday). Operational activities at the premises are conducted during the following operating hours:

- 7.00am to 7.00pm, Monday to Friday; and
- 7.00am to 5.00pm Saturday, Sunday and Public Holidays.

The facility is open to the public from 8am to 5pm, 7 days a week (excluding Christmas Day and Good Friday), therefore it would be expected that the majority of staff and visitors will be present during these hours.

During an internal fire incident the most important aspect to consider is the rapid development of smoke inside buildings even from a relatively small fire. Smoke and its associated toxic products can and will cause severe problems in a very short time to any persons who may be in the immediate vicinity of the fire.

The **TIME** taken by staff in recognising, assessing and acting on this type of incident is critical and therefore will be one of the worst problems to be encountered. The actions undertaken during this period will have a major influence in ensuring firstly the wellbeing of all occupants and secondly the safety of the Council's buildings.
It is therefore necessary to develop an emergency procedure that is capable of being implemented immediately, and which is also generally consistent with standard procedures outlined in Australian Standards AS 3745 and AS 4083 – 2010, together with any specific requirements of Orange City Council.
The main objective of this plan is to provide a controlled method or guideline for the safe evacuation of all occupants within the building in a rapid and effective manner during any emergency incident.
A second objective of the Emergency Plan should be the on-going training of all staff in emergency simulation within the following criteria:

- Participation in regular evacuation drills,
- Training in first attack firefighting – which may include the undertaking of recognised courses in the use of portable firefighting appliances, and

It must be stressed that these procedures are NOT designed nor are they intended to train staff or any occupant to fight fires. The role of firefighting **MUST BE RESERVED** for the attending **FIRE SERVICES.**

DOCUMENT REVIEW

Due to this being a living document, the WHS Team in conjunction with the Emergency Control Organisation (ECO or Wardens) are required to annually review this document for accuracy and relevance. This document will form part of your evidence post any incident, to prove that all measures have been taken compliant with Australian Standard 3745 2010, and the relevant state Work Health and Safety legislation.
The diagram below outlines the overall emergency plan, of which these procedures form a part, and who this information is to be made available to.

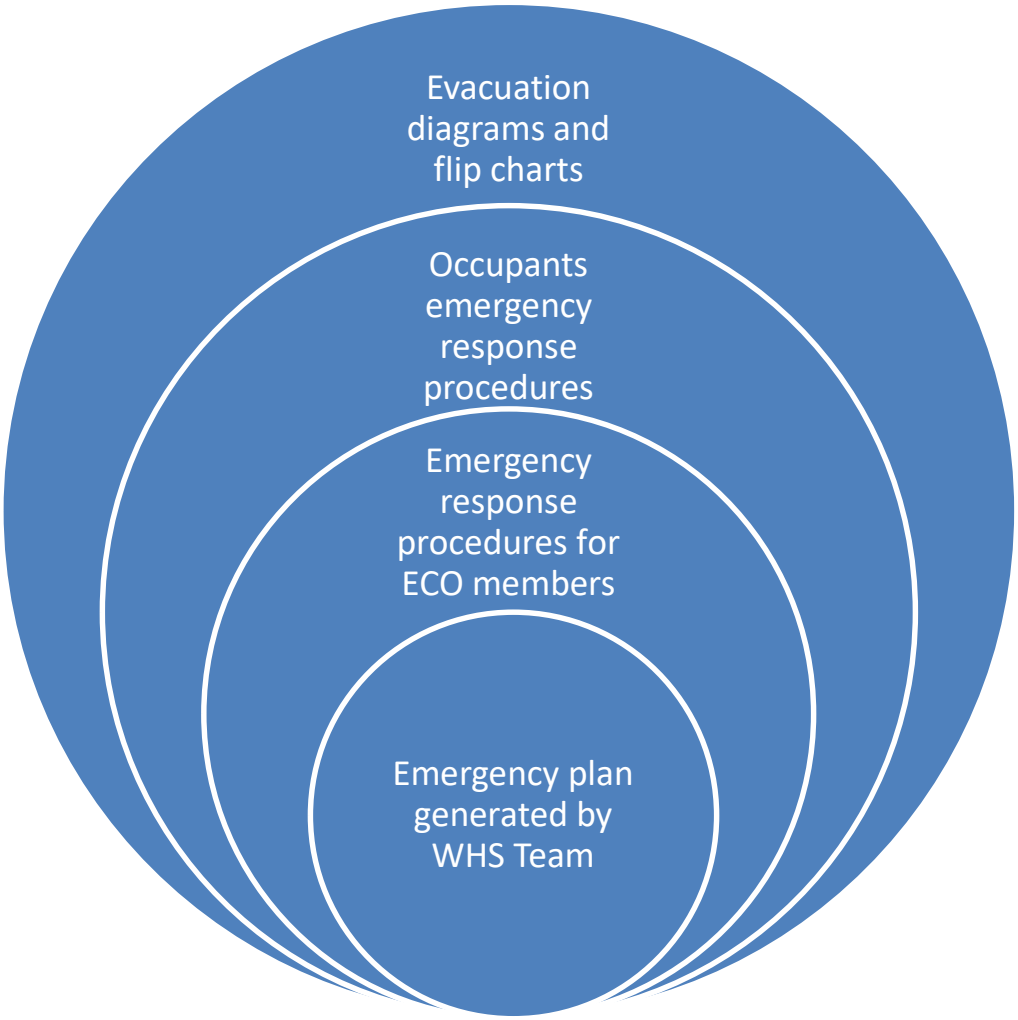
EMERGENCY CONTROL ORGANISATION

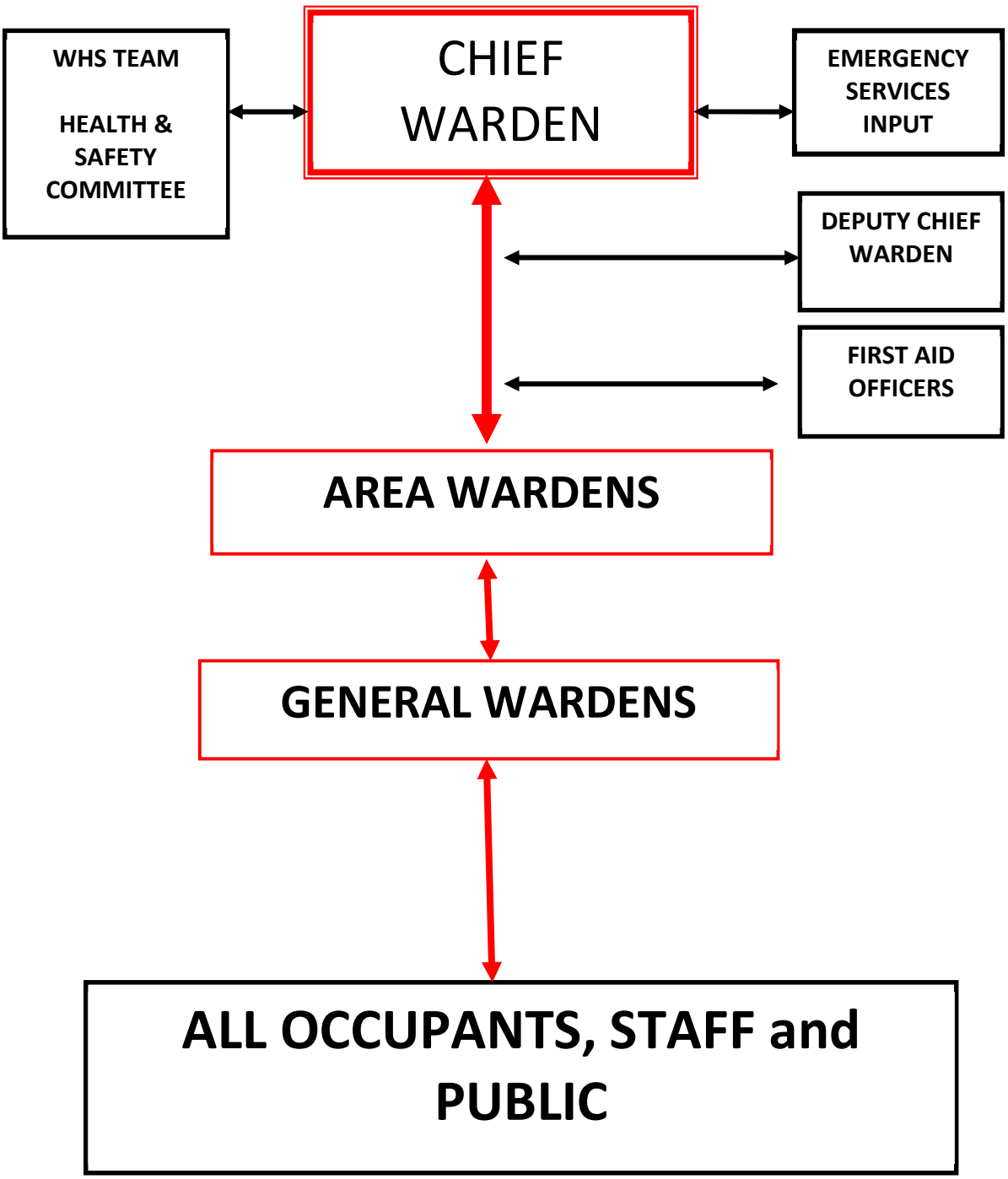
ECO AUTHORITY

At the declaration of an emergency within the confines of this workplace, or an emergency of external origins that will impact upon this workplace, the Chief Warden will have complete control of the emergency response by its occupants until the arrival of the relevant emergency service.

ECO INDEMNITY

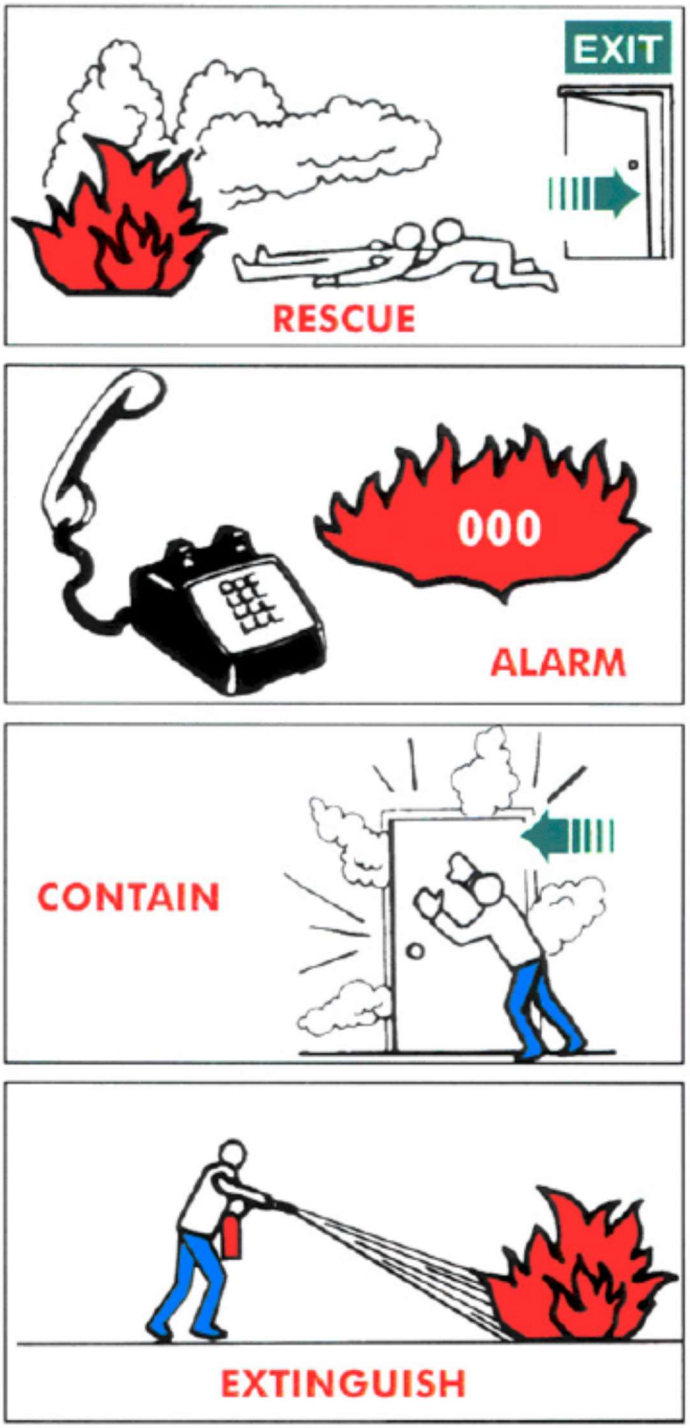
In accordance with changes made to AS 3745 2010, the ECO is advised that they are indemnified against civil liability resulting from practice or emergency evacuations of the building where personnel act in good faith and in course of their duty.


Evacuation diagrams and flip charts
Occupants emergency response procedures
Emergency response procedures for ECO members
Emergency plan generated by WHS Team


WHS TEAM
HEALTH & SAFETY COMMITTEE
CHIEF WARDEN
EMERGENCY SERVICES INPUT
DEPUTY CHIEF WARDEN
FIRST AID OFFICERS
AREA WARDENS
GENERAL WARDENS
ALL OCCUPANTS, STAFF and PUBLIC

ROLES AND RESPONSIBILITIES

Any and all actions of the site ECO shall be based upon the following instruction:



Please ensure all staff are aware of this process and safely adhere to it.

CHIEF WARDEN

EMERGENCY CONTROLLER

Pre incident

- Fire safety audits/checks
- Hazard analysis
- Induct new staff if required in workplace emergency plan
- Unobstructed egress routes and exits
- Electricity is turned off to unused electrical equipment
- Fire doors are not wedged (propped) open
- Safety equipment is functioning properly
- Fire safety signage is current, and in place
- Ensure training schedule is implemented and maintained
- Participate in skills maintenance exercises not more than 6 months apart
- Ensure adequate communication systems are tested and available

During the incident

- During the emergency the Chief Warden is to wear the provided white helmet and high visibility vest to allow them to be easily identified by staff and attending emergency services.
- While coordinating an emergency response the Chief Warden has complete command authority in relation to the emergency. All other staff are to follow their directions.
- The Chief Warden is usually the person performing the role of Supervisor. Should the Supervisor not be on site the Chief Warden will be the most Senior Officer onsite.
- On becoming aware of an emergency the Chief Warden is to:
  1. Ascertain the nature of the emergency and determine appropriate action;
  2. Ensure appropriate emergency services have been notified
  3. Ensure the appropriate Warden(s) are advised of the situation
  4. Arrange for necessary staff to assist with the emergency response
  5. If necessary initiate evacuation and controlled entry of the affected area
  6. Ensure the progress of the evacuation and actions taken is recorded in an incident log
  7. Brief emergency services on their arrival on the type, scope and location of the emergency and the status of the evacuation and, thereafter, act on the emergency services senior officer's instruction.

Post Incident

- Complete OCCWHS039 – Emergency Evacuation Drill Record after a debrief of the incident and incorporate any recommendations.
- Determine what inadequacies if any were found in processes and implement immediate recommendations and change. This may include retraining of staff, change in work processes leading to the emergency, re-inducting contractors and visitors.
- Refresh any used equipment, and report immediately the need to have such equipment replaced or resupplied.
- Ensure the WHS Team is informed of any notifiable event or injury arising from the emergency.

Other responsibilities

- Ensure that regular monthly checks of firefighting equipment and fire safety housekeeping have been undertaken and completed for each building on site, by the designated person/s.
- Ensure that the site EWIS/EWS has been tested each month, along with each Mimic Board and Fire Indicator Panel.
- If the fire alarm has been isolated by the attending FRNSW services, or the alarm is in "Fault" or making noises, the Chief Warden is to notify the relevant maintenance services immediately on their mobile phone.

AREA WARDEN

Pre Incident

- Be competent in the role of Chief Warden/ Emergency Controller to act in their absence
- Report on problems with emergency equipment, and possible issues with the emergency process.
- Know where the local isolations to essential services are in the area which is under the control of the area warden.
- Participate in skills maintenance exercises not more than 6 months apart
- Maintain a safe workplace
- Identify Emergency Control equipment in your work location
- Determine the location of energy and service isolations
- Determine the best egress routes throughout the facility
- Be aware of assembly point and alternate point.
- Participate in skills maintenance exercises not 6 months apart

During Incident

- Don a yellow helmet.
- At that time staff may be authorised to attempt to extinguish the fire if they choose to do so. But, only if they are trained and it is safe to do so.
- Ensure that the alarm is raised, by contacting the designated emergency response phone number.
- Provide direct and clear instructions to staff as to their required actions.
- Ensure that all accessible rooms (including toilets and bathrooms) are checked, and occupants are assisted from the building.
- Ensure that all other persons are evacuated from the building (if possible)
- Ensure that staff do not open doors which have hot handles or have smoke coming from under the door; or do not otherwise place themselves in danger.
- Report to the Chief Warden on the state of evacuation of their workplace. .
- Prevent persons from entering or re-entering the building while the evacuation alarms are sounding by placing a staff member at the exit.
- Ensure a quick search is made of the unit/area, if safe to do so WITHOUT DANGER to any person, to ascertain that person/s are not still in the building.
- Attend the evacuation assembly point and check that all persons are accounted for.
- Ensure that the Chief Warden is fully briefed as to which persons are not accounted for, who they are, and where they should be or were last seen.
- The briefing should include any knowledge of injuries or medical conditions

Post Incident

- Participate in incident debrief

COMMUNICATIONS OFFICER- to be nominated by the Emergency Control Officer

Pre Incident

- Ensure communication systems are functional
- Have adequate reports and forms available for recording incident details
- Participate in testing of the emergency plan, and skills maintenance exercises not 6 months apart

During Incident

- Notify emergency services at Emergency Controllers request
- Record all incident details and occurrences
- Operate emergency alarm equipment and communications
- Keep a log of all evacuated people

Post Incident

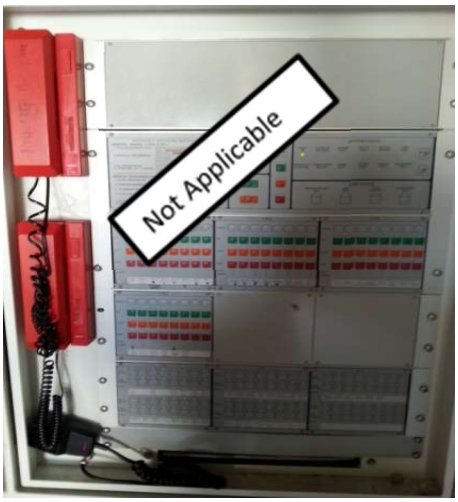
- Participate in incident debrief

EVACUATION/ SKILLS MAINTENANCE EXERCISES

All ECO members must participate in emergency skills maintenance exercises at least twice a year. The WHS Team and general staff will be consulted prior to an exercise, with feedback received as to the most beneficial and relevant exercise to undertake. Results and findings from these exercises will form part of any recommendations requiring improvement to the emergency plan.
Occupants of a facility must participate in one skills maintenance exercise per year. This may be in the form of an evacuation exercise.

INSTALLED EMERGENCY SYSTEMS

Fire Indicator Panel, with a combined occupant warning system. All Fire Indicator panels will also have a Manual Call Point (MCP) mounted on the front, which notify FRNSW directly of any emergency once activated.



Emergency Warning Intercommunication System (EWIS) located at reception. This system will alert occupants of emergencies via recognisable emergency tones, and PA announcements. It incorporates the red WIP phones which allow Wardens and emergency services to talk to the emergency controller positioned at the EWIS

Manual Call Points (MCP's) are located throughout the facility. Activation of these call points will set off the Fire Indicator Panel and Emergency Warning System (EWS), and will activate an automatic response from FRNSW.

External warning systems like this include an audible bell, and a flashing strobe light. This will assist to easily identify which building has the emergency.

This is a local EWS, designated for one building only. It also includes its own FIP with a Manual Call Point (MCP) on the front.

Smoke and thermal detectors which will detect fires in their earliest stages, and activate a response from the FIP.

Fire blankets positioned in areas most required such as kitchens

Extinguishers of differing types dependant on the classification of fire

Smoke or thermal detectors which may be located in areas such as roof spaces or in cupboards.

The isolation valve which will facilitate the shutdown of an active sprinkler system. This flow valve will also activate a 'flow switch' which will tell the FIP that the system is operating.

A fire hose storage cupboard, housing a water fire hose, up to 30 meters in length.

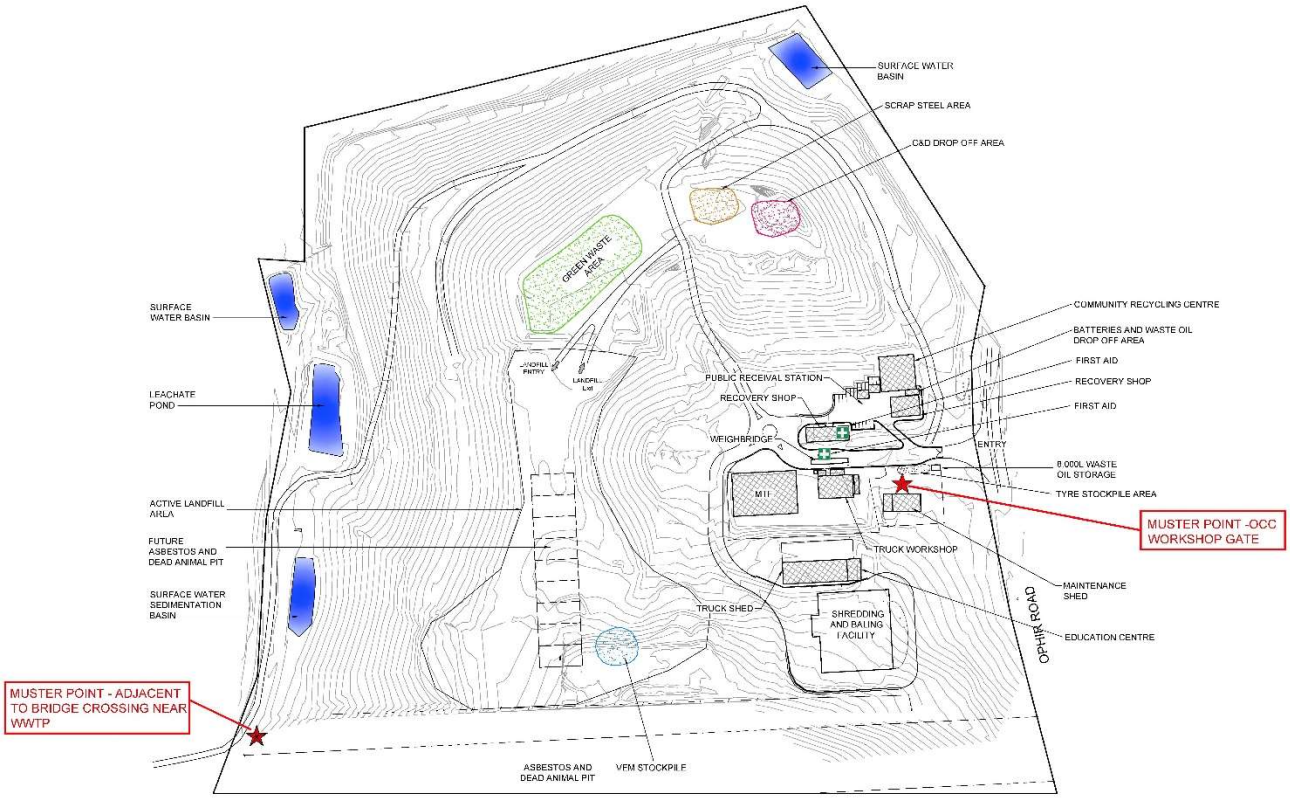
Indicator plate to alert ECO members of a fire.

Hydrant booster systems and associated pillar hydrants are used by FRNSW for firefighting purposes throughout site.

Spill stations are provided to assist with the initial response to small spills of hazardous materials. They will include PPE to assist the person tending to the spill, along with absorbent booms and powder/ sawdust to soak up spills.

EMERGENCY CONTACTS

Police **NSW Fire Rescue** **Ambulance** **Rural Fire Service**	**000**
Manager Waste Services - Technical Support	6393 8113 0419 483 381
Orange City Council WHS Coordinator	6393 8022 0408 653 144
Manager Public Relations & Communications	6393 8211 0437 494 459
Supervisor	6393 8863 or 0438 067 940
Electricity (Essential Energy)	132 830
Gas Emergency	131 909
Plant and Depot Manager	6393 8054 0417 297 889
Hazardous Materials Incidents	000
Hospital	6369 3000
Poisons Information Centre	131 126
SES	132 500



EMERGENCY WARDEN STRUCTURE

Title	Name	Position	Contact
Chief Warden		ORRRC Supervisor	6393 8863 or 0438 067 940
Deputy Chief Warden	Most Senior Person Onsite	Support Operational staff	
Communications warden		Support Operational staff	6393 8861 OCC Operational Staff (Weighbridge at ORRRC)
Deputy Communications warden	**Most Senior Person Onsite**		0419 699 466

BUILDING SPECIFIC INFORMATION

Building name	Ophir Road Resource Recovery Centre
Primary assembly area	OCC workshop gate
Secondary assembly area	Adjacent to bridge crossing near WWTP
Services isolations	Water Services Ophir Road – Paddock Baling Facility
Likely origins of emergencies	Fire/gas cylinder explosion

MEDICAL EMERGENCY

CODE BLUE

The purpose of this procedure is to provide a consistent and effective response to a medical emergency that may occur within Ophir Road Resource Recovery Centre and surrounds. Medical emergencies include but are not limited to spinal injuries, heart attack, life threatening bleeding and sudden unconsciousness.
This procedure does not provide the reader with instruction on how to rescue or provide first aid treatment to an injured person. Any rescue or first aid treatment must be performed in accordance with instruction that formed part of first aid training.

NECESSARY EQUIPMENT

- First Aid Kit
- Portable/Mobile phone

EMERGENCY RESPONSE

1. On advice of a medical emergency arrange for the patient to be removed from any immediate danger.
2. Determine nature of injury and advise the Chief Warden as soon as practicable.
3. Ensure the patient remains calm, render all available first-aid and confirm with the Chief Warden that medical assistance has been called for.
4. Do not, under any circumstances, transport a person who is injured or is suffering an illness, to hospital by car or Council vehicle. You **must** use the NSW Ambulance Service. Phone '0-000' ask for ambulance, then give the Ambulance Controller the information they require.

On advice of a medical emergency the Chief Warden shall ensure that the following occurs:

- Contact the Ambulance Service on **'0-000'** and advise of all incidents and that their presence is urgently required.
- Proceed directly to the location of the emergency.
- Ensure all persons not essential to the treatment of the casualty are removed from the area.

FIRE EMERGENCY

CODE RED

The purpose of this procedure is to provide a consistent and effective response to a fire emergency that may occur within Ophir Road Resource Recovery Centre and surrounds.

NECESSARY EQUIPMENT

- Portable First Aid Kits
- Master access keys
- Communication equipment
- First attack firefighting equipment

EMERGENCY CONTROL POINT (ECP)

In the event of a fire the Chief Warden will coordinate and control ECO personnel and liaise with emergency services personnel from the main emergency control point. In the case where a fire is within close proximity to the main entry to the facility or it is not appropriate to operate from this area, the Emergency Control Point can be moved to another location at the discretion of the Emergency Controller or Chief Warden

EMERGENCY RESPONSE

In the case of a fire the following procedure is to be implemented:

1. Contact the Chief Warden by phone and provide the location and if appropriate the extent of the fire. If it is safe to do so and the subject area is clear of people, where applicable, close the door to the room to contain the fire. Use the RACE procedure.
2. The Chief Warden is required to contact Fire Rescue NSW (FRNSW) on telephone number **000** and request assistance. Please state the address including the nearest cross street, and the best point of access to the emergency. Records of the incident should commence being taken at this point for reference post incident. In the vent that the FIP has been activated, always contact 000 and confirm that FRNSW has received the alarm and are responding to the emergency
3. **Refuge in place**: Dependant on the scale and location of the emergency, the Chief Warden with the assistance of the relevant authorities may wish to authorise a 'refuge in place' response. This is dependent on the severity of the incident, the ability to for contaminants to penetrate the facility and the expected duration of the incident.
4. **Partial evacuation**: Staff are to be notified and requested to commence evacuation of their individual areas and meet at the designated assembly area. Staff are to report to the Chief Warden the number of evacuees and the status of their search area. This will include how many people are un-accounted for, if the emergency is contained and its exact location, what services or energy have been isolated if any, if first attack firefighting has been conducted. This process may include a stage 1 or stage 2 evacuation.

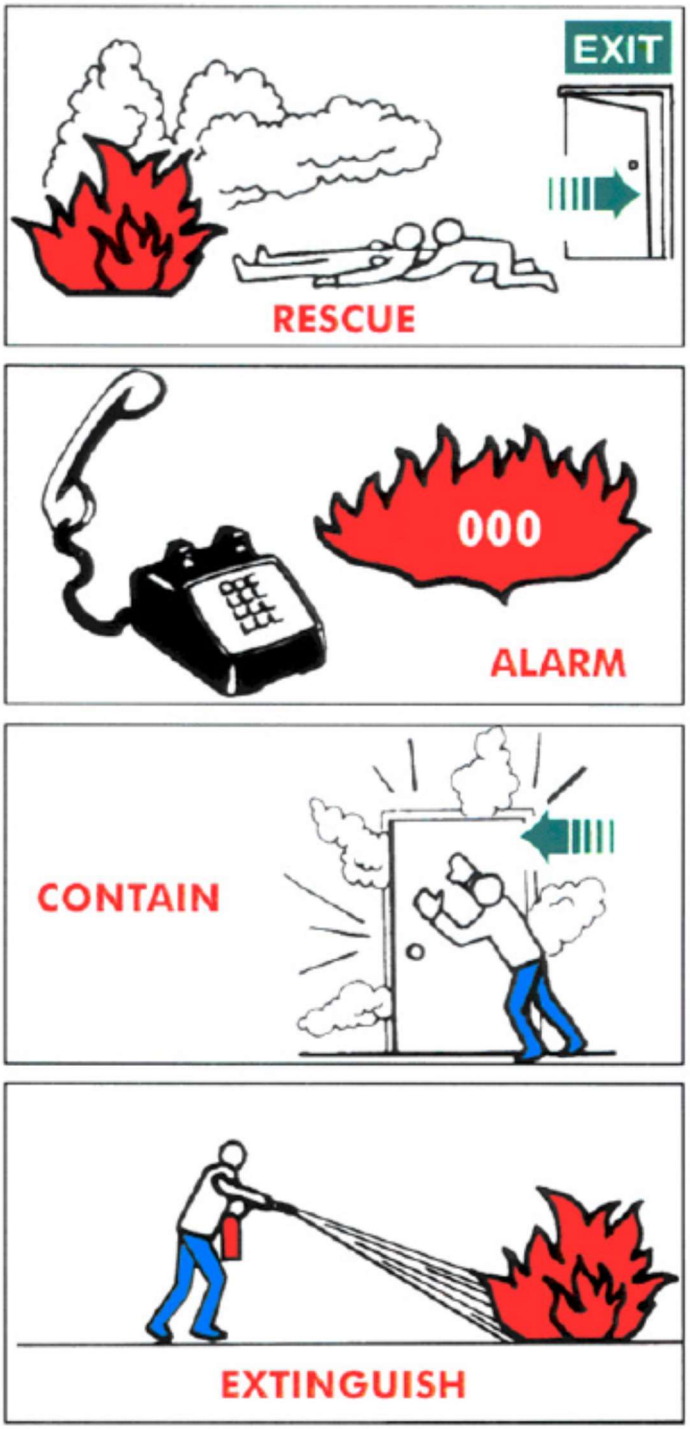
STAGE1: Evacuation of all persons out of the affected room involved in fire

STAGE 2: Evacuation beyond the nearest smoke and fire doors

5. **STAGE 3: Whole building evacuation:** If required the Chief Warden at his/her discretion may evacuate the entire building/complex. If an evacuation is required the Chief Warden is to advise the ECO of the appropriate assembly area.
6. Once an area is searched and cleared the door to the cleared area should be closed to minimise the spread of fire.
7. The Chief Warden is required to collect the sites Chemical Register and Safety Data Sheets (SDS) and provide these FRNSW on arrival.
8. Staff are to evacuate persons calmly and promptly (walking) from the building/complex to the nominated assembly area.
9. Designated staff are to head to the assembly area with first aid kits and await persons requiring treatment.
10. Once the building/complex is clear and all persons are evacuated to the nominated assembly point Building Wardens are required to contact the Emergency Controller to advise that the building/complex is clear.
11. The Chief Warden is to liaise with emergency services throughout the emergency.
12. Entry back into the building/complex is not permitted until Chief Warden has been advised by FRNSW that it is safe to do so.
13. Upon completion all ECO members are to conduct a debrief of the incident to determine the proficiency of response and any improvements that are required.

ASSEMBLY AREAS	
PRIMARY	OCC workshop gate
SECONDARY	Adjacent to bridge crossing near WWTP

Remember the actions to be taken in the event of a fire


EXIT
RESCUE
000
ALARM
CONTAIN
EXTINGUISH

BOMB THREAT

CODE PURPLE

The purpose of this procedure is to provide a consistent and effective response to a bomb threat.

BOMB THREATS TYPES

WRITTEN BOMB THREATS

1. If a written bomb threat is received the letter including its envelope or container is to be kept
2. Once a message is recognised as a bomb threat it is imperative that the letter and its envelope/container are not unnecessarily handled so as to preserve evidence such as fingerprints
3. The letter and its envelope/container should be sealed in a plastic bag
4. Matters of this nature are to be reported to the Chief Warden
5. The Chief Warden is responsible to contact the Police on telephone number 000.

TELEPHONE THREATS:

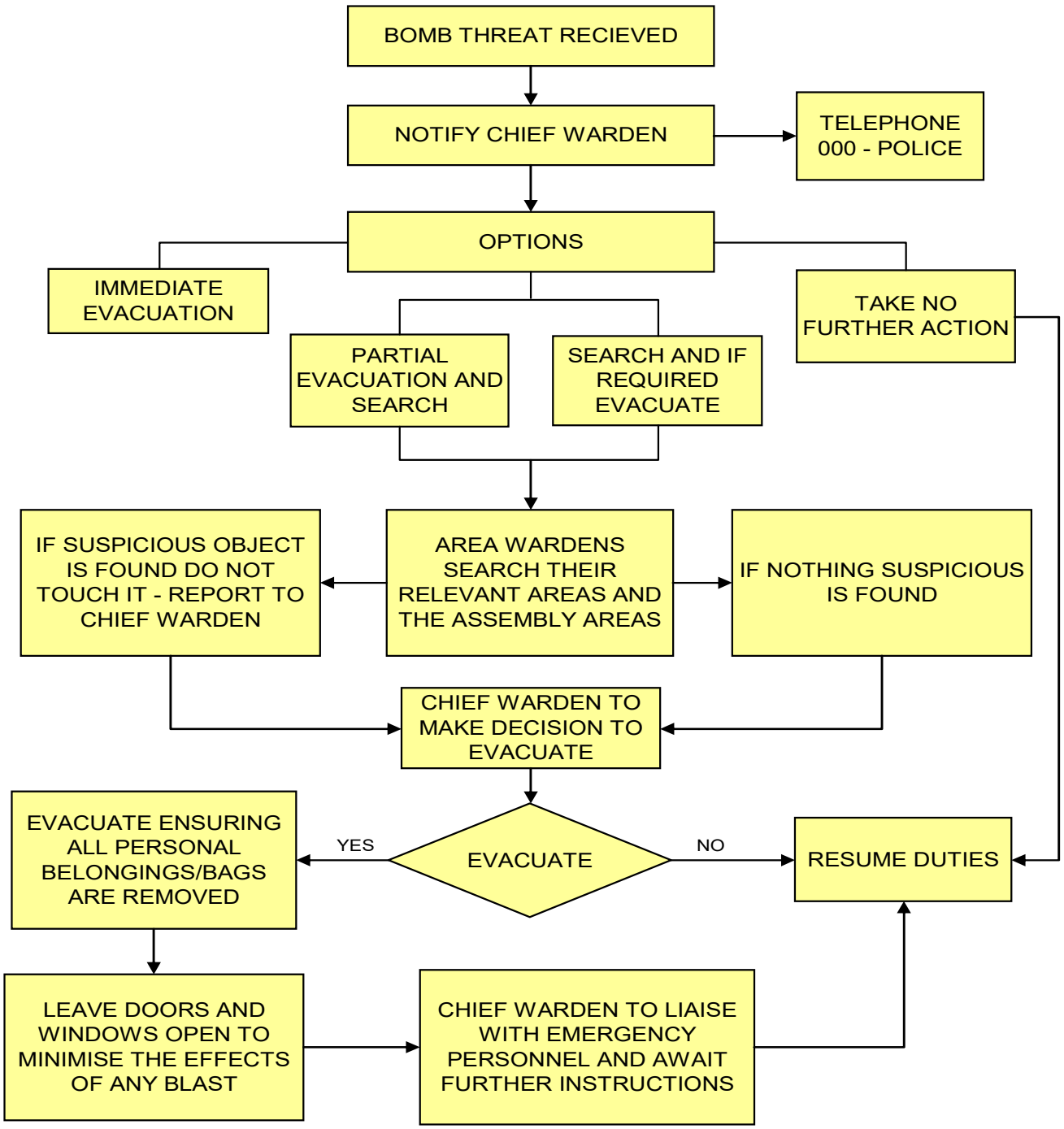
1. If a bomb threat is received by telephone refer to and complete document **Bomb Threat Checklist**. Telephone threats are to be reported to the Chief Warden immediately after completing the call and checklist. Don't hang up the phone! The call can sometimes be traced.
2. The Emergency Controller is responsible to contact the Police on telephone number 000

SUSPICIOUS OBJECT:

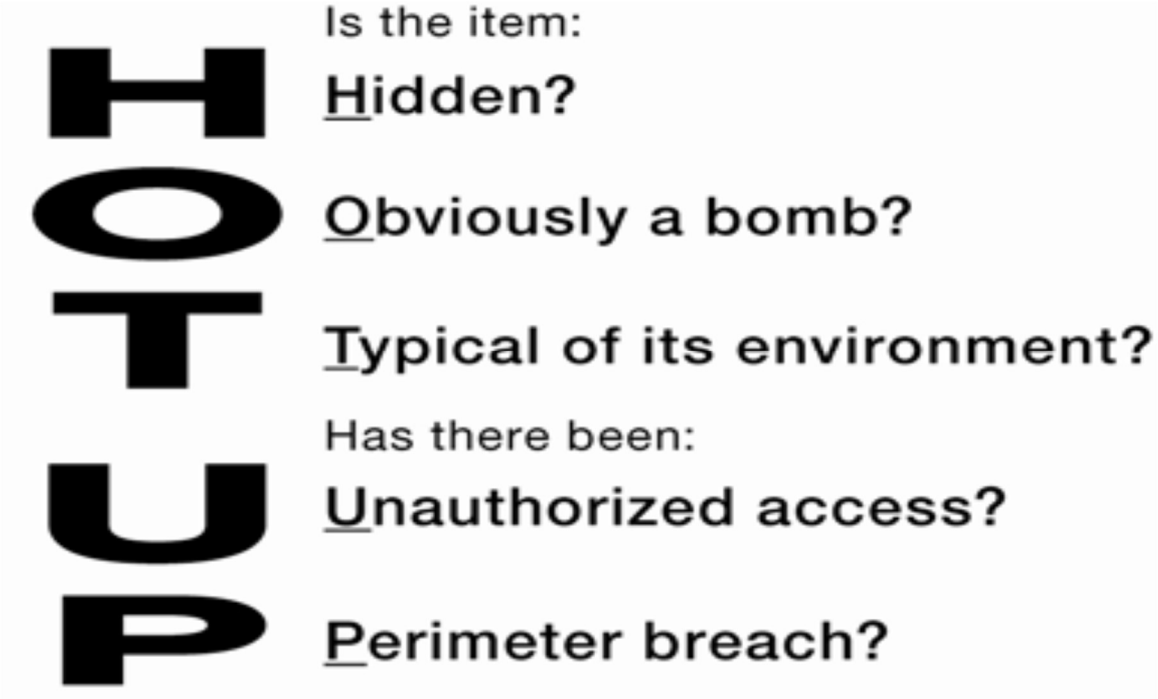
1. If a suspicious object (based on its characteristics, location or circumstances) is found on site and is considered a potential threat the Chief Warden is to be contacted. It is advised that in such circumstances advise is provided in person and done so discretely to minimise any possible panic
2. The Chief Warden may in such circumstances confirm the presence of such a device and if required contact the Police on telephone number 000

Remember to search your work area for anything that looks out of place. You are the best judge of what should, and shouldn't be in your work area. If it doesn't look right, note its appearance and location, and pass this information to the Chief Warden.

ASSEMBLY AREAS	
PRIMARY	OCC workshop gate
SECONDARY	Adjacent to bridge crossing near WWTP


BOMB THREAT RECIEVED
NOTIFY CHIEF WARDEN
TELEPHONE 000 - POLICE
OPTIONS
IMMEDIATE EVACUATION
PARTIAL EVACUATION AND SEARCH
SEARCH AND IF REQUIRED EVACUATE
TAKE NO FURTHER ACTION
IF SUSPICIOUS OBJECT IS FOUND DO NOT TOUCH IT - REPORT TO CHIEF WARDEN
AREA WARDENS SEARCH THEIR RELEVANT AREAS AND THE ASSEMBLY AREAS
IF NOTHING SUSPICIOUS IS FOUND
CHIEF WARDEN TO MAKE DECISION TO EVACUATE
EVACUATE ENSURING ALL PERSONAL BELONGINGS/BAGS ARE REMOVED
YES
EVACUATE
NO
RESUME DUTIES
LEAVE DOORS AND WINDOWS OPEN TO MINIMISE THE EFFECTS OF ANY BLAST
CHIEF WARDEN TO LIAISE WITH EMERGENCY PERSONNEL AND AWAIT FURTHER INSTRUCTIONS

Bomb threat strategy:



SEVERE STORMS AND LIGHTNING

CODE YELLOW

The purpose of this procedure is to provide a consistent and effective response to a severe storm and/or lightning. Severe storms and lightning are potentially serious threats to those persons working outdoors. Lightning most commonly strikes trees, tall objects or objects in open water.

EMERGENCY RESPONSE

In cases where severe storms and/or lightning is imminent the following procedures are to be implemented:

1. Move all persons indoors
2. Advise all persons to avoid contact with sinks/taps, shower rooms, telephones and electrical appliances
3. Avoid doors and windows that face large trees
4. Wait for the storm to pass.
5. Provide first aid assistance to those who require it
6. Contact the Chief Warden and advise of any assistance required.
7. The Chief Warden will advise emergency services, and maintenance services of the situation.
8. The Chief Warden with the assistance of maintenance staff will determine if the building needs to be secured and made weather tight from further damage. If unable to achieve this, the Chief Warden or designated representative is to notify the State Emergency Service (SES) on 132 500 and request further assistance.

INTERNAL EMERGENCY

CODE YELLOW

The purpose of this procedure is to provide a consistent and effective response to internal emergencies caused by several points of origin. This can include water leaks, sewerage release, gas leaks, or other hazardous substances. The most likely internal emergencies will originate from water leaks arising from heavy rain activity, and blocked toilet and waste systems.

EMERGENCY RESPONSE

In cases where an internal emergency has commenced, the observer of the incident is to immediately contact the Chief Warden is to advise of the situation, its nature and severity.
All emergency responders/ general staff are to observe the RACE principle.

R **Remove people from the immediate area of danger, and relocate them to an area which is safe, and unable to be affected by this situation if it develops.**

A **Alert the Emergency Controller or Fire Marshall, or emergency services on 000 if the emergency is life threatening**

C **Contain the emergency to its point of origin by closing doors, and turning off services where possible**

E **Extinguish or render safe if trained to do so.**

1. The Chief Warden is to determine the implications to people and property.
2. The Chief Warden is to contact the relevant emergency service on 000 for life threatening emergencies or servicing companies for non-life threatening emergencies
3. Ensure staff are removed to areas within the facility that are beyond one compartment from the emergency. **i.e. conduct a STAGE 2 evacuation**

ARMED HOLD-UP/ THREATENING PERSONS

CODE BLACK

The purpose of this procedure is to provide a consistent and effective response to an armed hold-up to minimise harm to employees and others in the workplace. This procedure can also be used for illegal entry by a threatening person Ophir Road Resource Recovery Centre.

EMERGENCY RESPONSE

The following procedure is to be followed in the event of an armed hold-up:

1. Remain calm and do not antagonise an aggressive offender/s.
2. Withdraw from the situation immediately if possible. Do not put yourself or others at risk or make the situation worse.
3. Don't argue with the offender & avoid direct eye contact.
4. Create as many barriers between yourself and the offender as possible. This may require subtly moving behind desks, doors, tables or other furniture/ barriers.
5. Avoid sudden movements but follow instructions given by the offender. Treat any weapon as a real danger to yourself and others.
6. Don't stare at the offender.
7. Make a mental note of everything you can about the offender without being obvious. This includes speech, mannerisms, clothing, scars. Use the Offender Description Form to assist you record details.
8. Observe any vehicle used by the bandit to leave the site. Note the registration, type, make, colour etc of the vehicle.
9. Do not pursue the offender.
10. Contact the Chief Warden who is required to contact the Police on telephone number 000.

CIVIL UNREST AND ILLEGAL OCCUPANCY

CODE BLACK

The purpose of this procedure is to provide a consistent and effective response to civil unrest or illegal occupancy and minimise harm to employees and others in the workplace.

EMERGENCY RESPONSE

As soon as staff are aware of a civil disorder occurring in the vicinity of the building they should:-

1. Notify the Chief Warden of the emergency.
2. The Chief Warden or designated officer is to notify Police on 000 and request assistance.
3. Maintain communications with the police service if possible.
4. Alert other members of staff on duty at via internal communications.
5. Restrict entrance to the building or other sections of the building.
6. Confine their presence to their present location.
7. Remove all staff in potentially affected areas to designated and pre-determined refuge areas or rooms, which can be internally secured.
8. If safe to do so, and conditional to not delaying the quick removal of staff and occupants, secure cash and other valuables.
9. Restrict contact between the demonstrators and the building occupants.

EXTERNAL EMERGENCY

CODE BROWN

The purpose of this procedure is to provide a consistent and effective response to a fire, gas leak or other emergency originating from outside of the facility. The most likely origin of such emergencies will be neighbouring buildings on fire, gas leaks caused by earth works, or vehicle accidents on adjacent roads.

NECESSARY EQUIPMENT

- First Aid Kit
- Portable/Mobile phone

EMERGENCY RESPONSE

FIRE IN AN ADJOINING PROPERTY:

In the case of a fire in an adjoining property:

1. An evacuation of Ophir Road Resource Recovery Centre may not be necessary however thick smoke may increase the risk of a medical emergency on site (increased risk of Asthma or airway irritation). It is recommended that if required the Chief Warden considers the effects of evacuation and whether occupants will be placed in more risk by leaving the building than by remaining. At this stage with the assistance of FRNSW, the Chief Warden may choose to refuge in place. In this instance all external entry of smoke and gases are to be excluded by closing windows and doors, and most importantly shutting down all air conditioning systems.

2. Where remaining in the building is not practicable or safe a full evacuation may need to be considered to the most appropriate assembly area.

MOTOR VEHICLE ACCIDENT ON ADJOINING ROADS:

In the case of a motor vehicle accident on an adjoining road:

1. Attempt to determine the severity of the accident, and any potential impact it may have on the facility. If there is any uncertainty of the severity of the accident, the potential for a fire or explosion, or if hazardous substances are involved, commence evacuations of any building within 100 meters of the accident. Considerate of some hazardous substances routinely transported on major thoroughfares, a larger evacuation/ exclusion zone may be required up to 200m. Seek advice from responding emergency services for detailed information, or contact 000.

GAS LEAK

CODE YELLOW

The purpose of this procedure is to provide a consistent and effective response to a gas leak. **Dangers Associated with gas leaks include explosions and fire, and asphyxiation from oxygen deprivation**. It is important to note: **Natural gas** is lighter than air and will dissipate naturally, **however Liquefied Petroleum Gas (LPG)** is heavier than air and will pool in low lying areas, drains and gutters.

NECESSARY EQUIPMENT

- First Aid Kit
- Portable/Mobile phone (not to be used near a gas leak)

EMERGENCY RESPONSE

1. Turn off all electrical appliances and machinery in the area of the leak.
2. Contact the Chief Warden immediately.
3. The Chief warden is to contact 000 and request the attendance of Fire Rescue NSW (FRNSW)
4. Move away from the leak in an upwind and uphill direction so that gas cannot be smelt.
5. Do not start vehicles, use radios or mobile phones in the area where gas can be smelt. **DO NOT SMOKE**.
6. Attempt to contain the gas leak to its point of origin. This may include closing parts of the building which have not been affected by the leak at this stage.
7. Do not attempt to crimp the gas line or cover the leak. Technicians from the gas provider have the equipment and PPE to deal with this emergency.
8. Wait for the arrival of gas company staff and carry out any request made.

If a fire commences:

1. **DO NOT attempt to extinguish the fire. If the fire is extinguished there is the potential for an explosion to follow if the gas leak finds an ignition source.**

2. **Remember to remove people to a safe distance, and determine if the assembly area remains a safe place of refuge. Consider access for emergency services and the removal of any people, vehicles or implements in the way of best access to the emergency.**

ANNEXURE A

Chief Warden Incident Checklist

Date	
Address/Venue	
Name (person completing form)	

		TIME Hours : Minutes	✓
1	Notification of emergency situation received	…… : ……	
2	Attend Fire Indicator Panel	…… : ……	
3	Phone Emergency Services and advise details of emergency	…… : ……	
4	If required, broadcast message over public address system advising occupants of the need to evacuate the building and requesting all Wardens to activate emergency evacuation	…… : ……	
5	Mark off floors/areas as Wardens report them clear	…… : ……	
6	Assist the authorities as required, handover any relevant information	…… : ……	
7	Following advice from relevant authorities, advise when it is safe to re-enter the building	…… : ……	

ANNEXURE B

Warden Incident Checklist

Date	
Address/Venue	
Name (person completing form)	

		TIME Hours : Minutes	✓
1	Upon hearing the alert, prepare to evacuate	…… : ……	
2	Facilitate evacuation of their area	…… : ……	
3	Check floor/area to ensure everyone has vacated the area	…… : ……	
4	Ensure all doors are closed as people are evacuated	…… : ……	
5	Check personnel present including visitors/contractors	…… : ……	
6	Assist people with physical and mobility impairments	…… : ……	
7	Report to the Chief Warden when the floor/areas are clear and provide any relevant information ie people remaining etc.	…… : ……	
8	Carry out any other instructions as requested by the Chief Warden	…… : ……	
9		…… : ……	
10		…… : ……	
11		…… : ……	

ANNEXURE C

Bomb threat Checklist

Exact wording of threat:

.....

.....

.....

.....

Sex of Caller: Male ❑ Female ❑

QUESTION When is the bomb going to explode?

.....

Where did you put the bomb?

.....

When did you put it there?

.....

What does the bomb look like?

.....

What kind of bomb is it?

.....

What will make the bomb explode?

.....

Why did you place the bomb?

.....

What is your name?

.....

CALLER'S VOICE:

Accent: Asian ❑ American ❑ English ❑ Australian ❑ European ❑ Other.....

Voice: Loud ❑ Soft ❑ Other.....

Speech: Loud ❑ Soft ❑ Other.....

Impediment:

Lisp ❑ Stutter ❑ Other.....

Manner:

Calm ❑ Emotional ❑ Other.....

Did you recognise the voice? Yes ❑ No ❑

Was the caller familiar with the area?

Yes ❑ No ❑

THREAT LANGUAGE:

Well spoken	Yes ❑	No ❑
Incoherent	Yes ❑	No ❑
Taped	Yes ❑	No ❑
Message Read by Caller	Yes ❑	No ❑
Abusive	Yes ❑	No ❑
Other.....	Yes ❑	No ❑

BACKGROUND NOISES:

Local Call	STD.....
Music	Voices .....
Street Noises.....	Aircraft.....
House Noises	Machinery.....

Other.....

CALL TAKEN:

Time: ..... Date: .....

Duration of Call:.....

Number Called:.....

ACTION:

Report call immediately to: Manager

RECIPIENT:

Name: .....

Telephone No: .....

Signature:.....

ADDITIONAL INFORMATION:

.....

.....

ANNEXURE D

Offender Report Form

Date of Occurrence	**Time** am/pm

Location Eg: front counter, back room, etc.	
Address	

DETAILS OF PERSON MAKING REPORT

Surname	
First Name	
Department	
Phone	
Mobile	

VEHICLE DETAILS

Type (eg: Sedan, SUV)	
Make (eg: Ford, Holden)	
Model	
Year (approx.)	
Colour	
Distinguishing features (eg: roof rack, bulbar)	
Registration number	
State of registration	
Number of occupants	
Direction of escape	

INCIDENT INFORMATION

Dialogue (conversation)	
Weapons	
Other important information	

Offender Description Form

Where appropriate, tick the box in the space provided.

BUILD	Thin		Fat		Solid		Large		Male		Female		Approx Weight	
AGE	15-20		20-25		25-30		30-35		35-40		40-45		Over 45	
NAME	Was called:						Sounded like:							
HAIR COLOUR	Black		Grey		Brown		Sandy		Blonde		Dyed		Wig	
TYPE	Straight		Dreadlock		Wavy		Afro		Curly		Other:			
LENGTH	Bald		Shaved		Short		Medium		Long					
CONDITION	Clean		Thinning		Scruffy		Thick		Greasy		Other			
HEIGHT		cm		ft										
HEIGHT ZONE	Green		Yellow		Blue		Red		White					
EYE COLOUR	Black		Brown		Blue		Green		Grey		Hazel			
TYPE	Wide		Narrow		Bulging		Squint		Deep Set					
EYEBROWS	Bushy		Thinning		Shaved		Joined		Thick					
GLASSES	Clear		Tinted		Dark		Plastic		Metal					
COMPLEXION RACE	Caucasian		Pacific		Oriental		Indian		Negro					
SKIN COLOUR	Pale		Black		Brown		Fair		Dark					
SKIN TYPE	Clear		Pimply		Acne		Greasy		Olive					

RIG/CLOTHING UPPER BODY OUTER GARMENT	Colour		Description	
UPPER BODY INNER GARMENT	Colour		Description	
LOWER BODY GARMENT	Colour		Description	
HEADGEAR	Colour		Description	
FOOTWEAR	Colour		Description	
GLOVES	Colour		Description	

IDENTIFYING MARKS, SCARS, TATTOOS	Colour	Description

Where appropriate, tick the box in the space provided.

MANNERISMS POSTURE	Stooped		Straight											
MOVEMENT	Jerky		Normal		Limp									
FACE	Twitch		Normal											
EYES	Blinking		Normal		Glancing									
SPEECH	Slow		Stutter		Accent		Fast		Slurred					

Any further information you would like to add?

Signed

ANNEXURE E

Personal Emergency Evacuation Plan (PEEP)

Suitable strategies in an emergency or evacuation should be discussed with those occupants from the site who have a disability and a personal emergency evacuation plan (PEEP) developed for each of those persons. Information on the PEEP shall be disseminated to all people responsible for its implementation by the Chief Warden or as delegated.

Name	
Building location	
Floor/Department	
Are you trained in emergency response procedures (including the evacuation procedures)?	
Type of assistance required (please list procedures for assistance)	
Equipment required for evacuation	
Detail of preferred route for assisted evacuation	
Signed by Staff Member	

Issue date ..... / ..... / .....

Noted by Chief Warden ..... Date ..... / ..... / .....

ANNEXURE F

REPORTING AN INCIDENT
CODE PINK

This will be undertaken by a designated member of the WHS Team

- WHS Coordinator 0408 653 144
- Safety Education & Liaison Officer 6393 8448

What is a WorkCover notifiable incident?	
Fatality	The death of a person
Serious Injury or Illness Requiring immediate treatment	• As an in-patient in hospital, or for • Amputation • Serious head or eye injury or serious burn • Separation of skin from underlying tissue e.g. de-gloving or scalping • Spinal injury • Loss of bodily function • Serious laceration • Exposure to a substance, which requires medical treatment within 48 hours
Other serious injury or illness	• Exposure to a substance, which requires medical treatment within 48 hours • Prescribed illnesses directly attributable to work with micro-organisms, or involving treatment or care of a person, contract with human blood or body substance or contact with animals • The following zoonoses contracted through contact with animals: Q fever, anthrax, leptospirosis, brucellosis, Hendra virus, avian flu, psittacosis
A dangerous incident	• Uncontrolled escape, spillage or leakage of a substance • Uncontrolled implosion, explosion or fire • Uncontrolled escape of gas steam or pressured substance • Electric shock • Fall from height of any plant, substance or thing • Collapse, overturning, failure or malfunction of, or damage to, any plant that is required to be authorised for use in accordance with the regulations • Collapse or partial collapse of a structure, or excavation including shoring supporting an excavation • An inrush of water, mud or gas in an underground excavation or tunnel • Interruption of underground ventilation

	• Other events prescribed by the regulations

ANNEXURE G

ASBESTOS RELATED EMERGENCIES AND INCIDENTS
CODE GREY

In the event of an incident of emergency involving naturally occurring asbestos and asbestos containing material (bonded and friable), Council will enact **section 6 Responding to emergencies and incidents in the Asbestos Management Plan.**

The EPA may be involved in the incident response whereby asbestos material is transported and disposed of, such as the time following a fire.

Council may take the following action when responding to an asbestos related emergency or incident:

- Seek advice from an occupational hygienist on the likely level of risk and appropriate controls required
- Liaise with and consult the appropriate agencies (Safe Work NSW, EPA, WHS Team)
- Follow safe work method statement and risk assessment controls
- Ensure that any Council worker attending the site has appropriate training and are wearing the appropriate PPE
- Exclude the public from the site
- Inform the public of the potential sources of exposure to asbestos, health risks and emergency management response
- Ensure where appropriate the site is kept damp, particularly where friable asbestos is present.

Please find a list below of staff that has undergone appropriate training in the identification, safe handling and suitable control measures for asbestos and asbestos containing material.

Name	Qualification	Division	Contact Number

John Bailey	Asbestos removal	Technical	6393 8280 or 0409 878 313
Joshua Barnes	Asbestos removal friable	Technical	6393 8060 or 0447 267 401
Greg Bartimote	Asbestos removal	Technical	0438 230 178
Brett Beasley	Remove bonded asbestos	Technical	6393 8280
Noel Bennett	Asbestos removal	Technical	6393 8520 or 0408 215 519
Ben Brennan	Remove bonded asbestos	Technical	6393 8515 or 0407 204 265
David Broom	Asbestos removal friable	Technical	6393 8509 or 0417 274 173
Graeme Bryant	Remove bonded asbestos	Technical	6393 8510
Greg Carter	Remove bonded asbestos	Technical	0407 283 768
Nathan Dean	Remove friable asbestos	Technical	6393 8510
Roger Garretty	Remove bonded asbestos	Technical	6393 8500
Roger Harris	Asbestos removal	Technical	0417 062 932
Darren Heaslip	Remove bonded asbestos	Technical	6393 8500
Allan Hitchen	Remove bonded asbestos	Technical	0407 076 939
Clint Kelly	Remove friable asbestos	Technical	0437 033 146

Andrew Kennedy	Remove bonded asbestos	Technical	0419 244 797
Eddie Khattar	Remove bonded asbestos	Technical	6393 8280 or 0418 487 639
Peter Oliver	Asbestos removal	Technical	6393 8500 or 0419 400 785
Dennis Rhodes	Remove bonded asbestos	Technical	6393 8500
Donna Sims	Remove bonded asbestos	Technical	6393 8332 or 0417 273 994
Glenn Sinclair	Remove bonded asbestos	Technical	6393 8503 or 0417 203 367
Leslie Stedman	Asbestos removal	Technical	0418 486 739
Peter Stibbard	Remove friable asbestos	Technical	6393 8500
Kevin Swain	Remove friable and bonded asbestos	Technical	6393 8529 or 0407 184 055
Andrew Wright	Remove bonded asbestos	Technical	6393 8510 or 0418 634 504

Section 7.10

ERRRC EMERGENCY PROCEDURES MANUAL

ORANGE
CITY COUNCIL

Orange City Council

EMERGENCY PROCEDURES MANUAL – D17/62615

Euchareena Road Resource Recovery Centre (ERRRC)

Revision record

Date of revision	Authorised by	Revised by
24.10.2017	Formatted into current template to reflect changes in legislation	WHS Team

This document is to be replaced at the end of its operational period of 5 years. Please retain all previous versions and amendments made to these procedures for a period not less than 7 years from its expiration.

Document references:

- ☐ Work Health and Safety Regulations 2017
- ☐ AS 3745 2010- 'Planning for emergencies in facilities'
- ☐ AS 4083 2010- 'Planning for emergencies in healthcare facilities'
- ☐ AS 1851 2012- 'Maintenance of fire protection systems and equipment'
- ☐ AS1940 2004: The storage and handling of flammable and combustible liquids
- ☐ CP: Managing the work environment and facilities 2011
- ☐ CP: Managing the risks of hazardous chemicals in the workplace 2012

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Forward

These emergency procedures have been developed to ensure the safety of the staff, visitors and contractors of Euchareena Road Resource Recovery Centre, where a designated and pre-determined response or evacuation of the building/site is required due to an emergency.

DEFINITIONS

Chief Warden
A person who, during an emergency, assumes total control of the site and all its occupants and is also the prime contact person for the senior officer of the first attending Emergency Service(s)

Alert Signal
The incident buildings external fire alarm bell and flashing light, and/or a distinctive “beep beep” tone generated by the Emergency Warning & Intercommunication System (EWIS). The signal provides an alert in all selected buildings in the site that an emergency incident has occurred and is the queue for all ECO members to commence their prescribed emergency actions.

Emergency Control Point
A location where an emergency can be co-ordinated from.

Emergency Control Organisation (ECO)
A structured group of persons who organise and supervise the safe and effective evacuation of all occupants within a building of the site during an emergency incident.

Emergency Incident
An incident which arises either internally or externally to the site which may adversely affect the life safety of any of the site’s occupants at that time and generally calls for an immediate response by staff and occupants in order to return the environment to a safe and tenable condition.

Emergency Warning & Intercommunications System (EWIS)
A site wide system of audible warning devices (speakers), providing both an alert and evacuation tone, including the facility for pre-recorded and public address announcements. The system includes WIP phones for direct two-way communication with the EWIS operator. The system can be activated automatically by the Master Fire Alarm Panel and manually at the EWIS panels.

Evacuation
The controlled movement of any or all occupants from a place of imminent danger or risk to a place of safety. An evacuation is usually carried out in a staged manner within a building and ending in another building or the nominated external final assembly area.

Evacuation Signal
A distinctive "woop woop" tone generated by the EWIS or verbal instruction.

Final Assembly Area
An area external to any building capable of accommodating all site occupants in tenable conditions where ongoing security and clear access is available to attending ambulance officers and/or other emergency services.

Fire Indicator Panel (FIP)
A smoke or thermal detector monitoring and control device which, on activation of a detector, will carry out the following functions:

1. **Activate a local alarm bell,**
2. **Activate a red strobe light (where fitted to buildings),**
3. **Transmit an alarm signal to FRNSW and**
4. **Activate the EWIS in the alert mode.**

Improvised Explosive Device (IED)
An IED is a purposely assembled explosive device generally referred to as a bomb.

Manual Call Point (MCP)
A manually operated device (break glass) designed to immediately operate the FIP. The FIP then transmits an alarm signal to FRNSW and activates the EWIS system in the alert mode.

Mobility-impaired Persons
Any person who has a physical, intellectual, mental or sensory impairment either temporary or permanent and who will require assistance in moving from point to point during an emergency evacuation or incident.

Occupant
Any person being either a staff member, member of the public, contractor or any other person who may be inside any part of the site's grounds or its buildings during an emergency incident.

Staging Area
A pre-arranged "safe and tenable" area either inside or outside a building where some or all occupants may be held prior to proceeding to a final assembly area. A staging area may be in an adjoining building dependent upon the type of emergency incident.

Wardens Intercommunication Point (WIP)
A purpose made hand telephone for direct two-way voice communication from the EWIS to a building designed for use by emergency personnel (Unit OIC and the like). This phone does not have dial out facilities and only communicates within its own EWIS network.

EMERGENCY PROCEDURES

These emergency procedures form part of this facilities overall emergency plan. These emergency procedures are a living document. The strength and accuracy of this document relies on several factors.

To assist in the ongoing annual review of this document, the following factors shall be considered in determining possible emergencies:

1. Size and complexity of the site, including construction type and materials
2. Immediate environment surrounding workplace ie: bushland, neighbouring facilities etc
3. Fire engineering
4. Security systems
5. Number and nature of occupants and visitors
6. Hours of operation
7. Type of business operation
8. Incidents, emergencies and near misses on site of a nature which requires inclusion in the Emergency Procedures document.

These emergency procedures must be stored onsite, and made available for any staff member who wishes to reference it. These emergency procedures must form part of the induction process for any new staff member or contractor/ visitor to site. An electronic version must be stored off site for dissemination by an investigative authority post incident.

Building emergencies are an ever present threat and can take many forms, the most likely being fire. Other emergency incidents may arise from time to time such as bomb threats, gas leaks, civil disorder, structural failure, motor vehicle accidents, storm and tempest, a medical emergency or a missing person.

Type of Emergency	**Colour**
Fire/Smoke	Red
Bomb Threat	Purple
Medical Emergency	Blue
Internal Emergency	Yellow
Personal Threat	Black
External Emergency	Brown
Notifiable Incident	Pink
Asbestos	Grey

Euchareena Road Resource Recovery Centre is spread over a large open area, but has the operational area contained within a central compound. This operational area includes the landfill and compost operations. The site is operational 5 days a week (excluding Christmas and Good Friday) between the hours of 7am and 5pm. Operations primarily occur on weekdays, therefore it would be expected that the majority of staff and visitors will be present during the working hours 7am to 5pm weekdays.

During an internal fire incident the most important aspect to consider is the rapid development of smoke inside buildings even from a relatively small fire. Smoke and its associated toxic products can and will cause severe problems in a very short time to any persons who may be in the immediate vicinity of the fire.

The **TIME** taken by staff in recognising, assessing and acting on this type of incident is critical and therefore will be one of the worst problems to be encountered. The actions undertaken during this period will have a major influence in ensuring firstly the wellbeing of all occupants and secondly the safety of the Council's buildings.

It is therefore necessary to develop an emergency procedure that is capable of being implemented immediately, and which is also generally consistent with standard procedures outlined in Australian Standards AS 3745 and AS 4083 – 2010, together with any specific requirements of Orange City Council.
The main objective of this plan is to provide a controlled method or guideline for the safe evacuation of all occupants within the building in a rapid and effective manner during any emergency incident.
A second objective of the Emergency Plan should be the on-going training of all staff in emergency simulation within the following criteria:

- Participation in regular evacuation drills,
- Training in first attack firefighting – which may include the undertaking of recognised courses in the use of portable firefighting appliances,

It must be stressed that these procedures are NOT designed nor are they intended to train staff or any occupant to fight fires. The role of firefighting **MUST BE RESERVED** for the attending **FIRE SERVICES.**

DOCUMENT REVIEW

Due to this being a living document, the WHS Team in conjunction with the Emergency Control Organisation (ECO or Wardens) are required to annually review this document for accuracy and relevance. This document will form part of your evidence post any incident, to prove that all measures have been taken compliant with Australian Standard 3745 2010, and the relevant state Work Health and Safety legislation.
The diagram below outlines the overall emergency plan, of which these procedures form a part, and who this information is to be made available to.

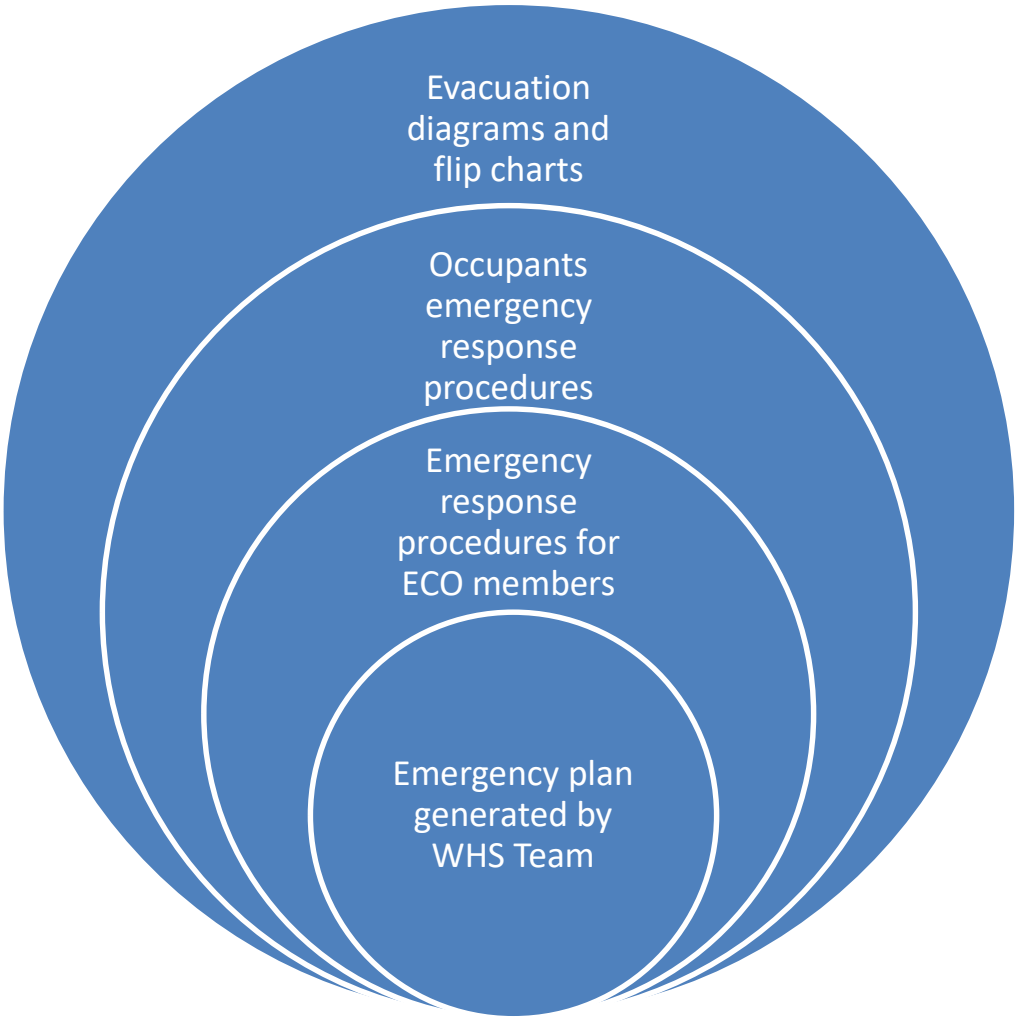
EMERGENCY CONTROL ORGANISATION

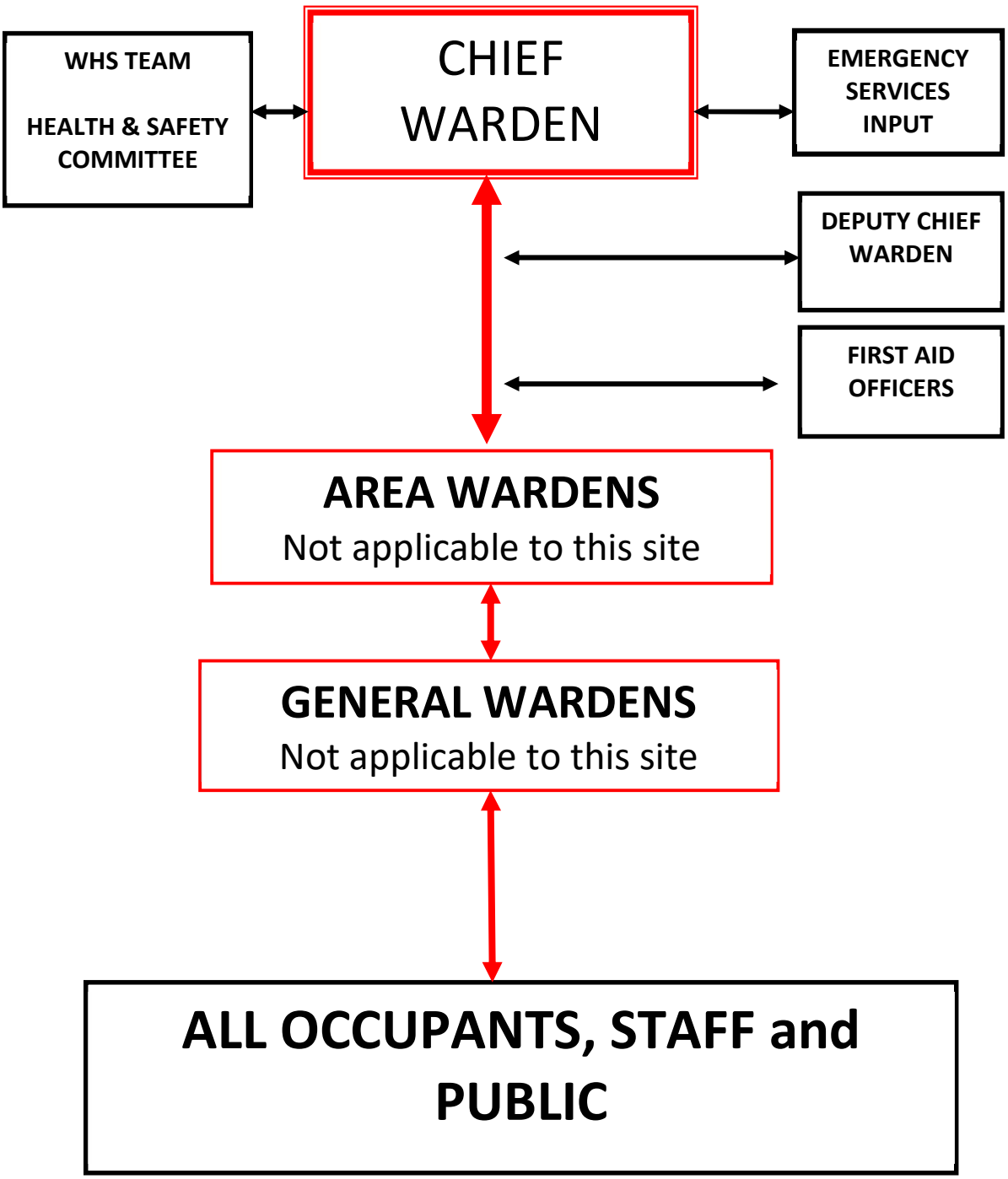
ECO AUTHORITY

At the declaration of an emergency within the confines of this workplace, or an emergency of external origins that will impact upon this workplace, the Chief Warden will have complete control of the emergency response by its occupants until the arrival of the relevant emergency service.

ECO INDEMNITY

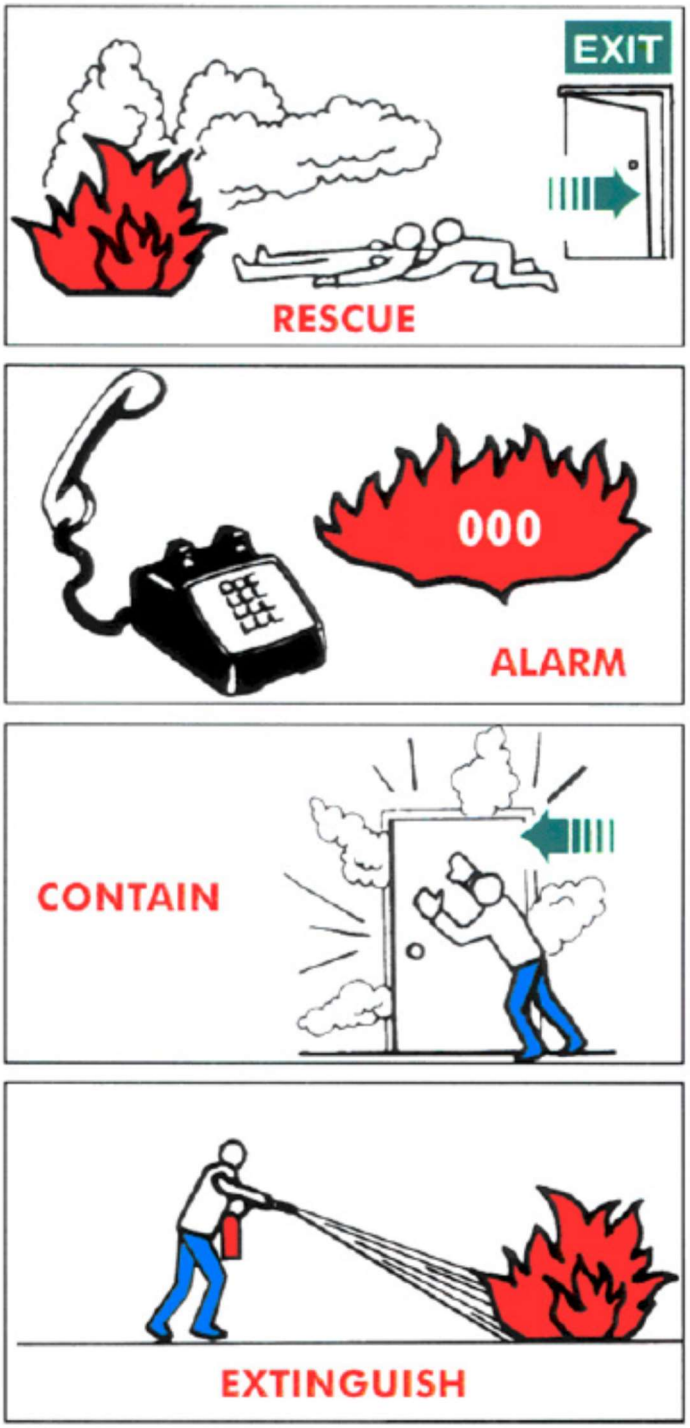
In accordance with changes made to AS 3745 2010, the ECO is advised that they are indemnified against civil liability resulting from practice or emergency evacuations of the building where personnel act in good faith and in course of their duty.


Evacuation diagrams and flip charts
Occupants emergency response procedures
Emergency response procedures for ECO members
Emergency plan generated by WHS Team


WHS TEAM
HEALTH & SAFETY COMMITTEE
CHIEF WARDEN
EMERGENCY SERVICES INPUT
DEPUTY CHIEF WARDEN
FIRST AID OFFICERS
AREA WARDENS
Not applicable to this site
GENERAL WARDENS
Not applicable to this site
ALL OCCUPANTS, STAFF and PUBLIC

ROLES AND RESPONSIBILITIES

Any and all actions of the site ECO shall be based upon the following instruction:



Please ensure all staff are aware of this process and safely adhere to it.

CHIEF WARDEN

EMERGENCY CONTROLLER

Pre incident

- Fire safety audits/checks
- Hazard analysis
- Induct new staff if required in workplace emergency plan
- Unobstructed egress routes and exits
- Electricity is turned off to unused electrical equipment
- Fire doors are not wedged (propped) open
- Safety equipment is functioning properly
- Fire safety signage is current, and in place
- Ensure training schedule is implemented and maintained
- Participate in skills maintenance exercises not more than 6 months apart
- Ensure adequate communication systems are tested and available

During the incident

- During the emergency the Chief Warden is to wear the provided white helmet and high visibility vest to allow them to be easily identified by staff and attending emergency services.
- While coordinating an emergency response the Chief Warden has complete command authority in relation to the emergency. All other staff are to follow their directions.
- The Chief Warden is usually the person performing the role of Supervisor. Should the Supervisor not be on site the Chief Warden will be the most Senior Officer onsite.
- On becoming aware of an emergency the Chief Warden is to:
  1. Ascertain the nature of the emergency and determine appropriate action;
  2. Ensure appropriate emergency services have been notified
  3. Ensure the appropriate Warden(s) are advised of the situation
  4. Arrange for necessary staff to assist with the emergency response
  5. If necessary initiate evacuation and controlled entry of the affected area
  6. Ensure the progress of the evacuation and actions taken is recorded in an incident log
  7. Brief emergency services on their arrival on the type, scope and location of the emergency and the status of the evacuation and, thereafter, act on the emergency services senior officer's instruction.

Post Incident

- Complete OCCWHS039 – Emergency Evacuation Drill Record after a debrief of the incident and incorporate any recommendations.
- Determine what inadequacies if any were found in processes and implement immediate recommendations and change. This may include retraining of staff, change in work processes leading to the emergency, re-inducting contractors and visitors.
- Refresh any used equipment, and report immediately the need to have such equipment replaced or resupplied.
- Ensure the WHS Team is informed of any notifiable event or injury arising from the emergency.

Other responsibilities

- Ensure that regular monthly checks of firefighting equipment and fire safety housekeeping have been undertaken and completed for each building on site, by the designated person/s.
- Ensure that the site EWIS/EWS has been tested each month, along with each Mimic Board and Fire Indicator Panel.
- If the fire alarm has been isolated by the attending FRNSW services, or the alarm is in "Fault" or making noises, the Chief Warden is to notify the relevant maintenance services immediately on their mobile phone.

AREA WARDEN

Pre Incident

- Be competent in the role of Chief Warden/ Emergency Controller to act in their absence
- Report on problems with emergency equipment, and possible issues with the emergency process.
- Know where the local isolations to essential services are in the area which is under the control of the area warden.
- Participate in skills maintenance exercises not more than 6 months apart
- Maintain a safe workplace
- Identify Emergency Control equipment in your work location
- Determine the location of energy and service isolations
- Determine the best egress routes throughout the facility
- Be aware of assembly point and alternate point.
- Participate in skills maintenance exercises not 6 months apart

During Incident

- Don a yellow helmet.
- At that time staff may be authorised to attempt to extinguish the fire if they choose to do so. But, only if they are trained and it is safe to do so.
- Ensure that the alarm is raised, by contacting the designated emergency response phone number.
- Provide direct and clear instructions to staff as to their required actions.
- Ensure that all accessible rooms (including toilets and bathrooms) are checked, and occupants are assisted from the building.
- Ensure that all other persons are evacuated from the building (if possible)
- Ensure that staff do not open doors which have hot handles or have smoke coming from under the door; or do not otherwise place themselves in danger.
- Report to the Chief Warden on the state of evacuation of their workplace. .
- Prevent persons from entering or re-entering the building while the evacuation alarms are sounding by placing a staff member at the exit.
- Ensure a quick search is made of the unit/area, if safe to do so WITHOUT DANGER to any person, to ascertain that person/s are not still in the building.
- Attend the evacuation assembly point and check that all persons are accounted for.
- Ensure that the Chief Warden is fully briefed as to which persons are not accounted for, who they are, and where they should be or were last seen.
- The briefing should include any knowledge of injuries or medical conditions

Post Incident

- Participate in incident debrief

COMMUNICATIONS OFFICER- to be nominated by the Emergency Control Officer

Pre Incident

- Ensure communication systems are functional
- Have adequate reports and forms available for recording incident details
- Participate in testing of the emergency plan, and skills maintenance exercises not 6 months apart

During Incident

- Notify emergency services at Emergency Controllers request
- Record all incident details and occurrences
- Operate emergency alarm equipment and communications
- Keep a log of all evacuated people

Post Incident

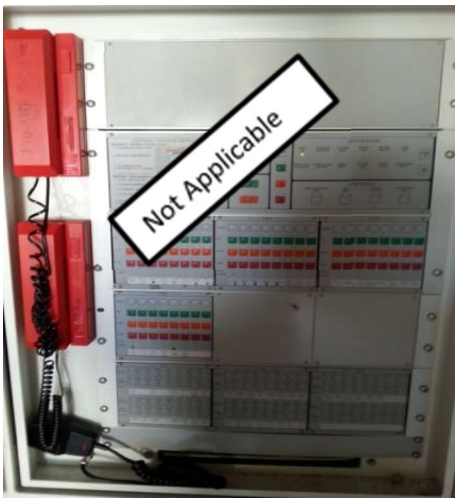
- Participate in incident debrief

EVACUATION/ SKILLS MAINTENANCE EXERCISES

All ECO members must participate in emergency skills maintenance exercises at least twice a year. The WHS Team and general staff will be consulted prior to an exercise, with feedback received as to the most beneficial and relevant exercise to undertake. Results and findings from these exercises will form part of any recommendations requiring improvement to the emergency plan.
Occupants of a facility must participate in one skills maintenance exercise per year. This may be in the form of an evacuation exercise.

INSTALLED EMERGENCY SYSTEMS

Fire Indicator Panel, with a combined occupant warning system. All Fire Indicator panels will also have a Manual Call Point (MCP) mounted on the front, which notify FRNSW directly of any emergency once activated.



Emergency Warning Intercommunication System (EWIS) located at reception. This system will alert occupants of emergencies via recognisable emergency tones, and PA announcements. It incorporates the red WIP phones which allow Wardens and emergency services to talk to the emergency controller positioned at the EWIS

Manual Call Points (MCP's) are located throughout the facility. Activation of these call points will set off the Fire Indicator Panel and Emergency Warning System (EWS), and will activate an automatic response from FRNSW.

External warning systems like this include an audible bell, and a flashing strobe light. This will assist to easily identify which building has the emergency.

This is a local EWS, designated for one building only. It also includes its own FIP with a Manual Call Point (MCP) on the front.

Smoke and thermal detectors which will detect fires in their earliest stages, and activate a response from the FIP.

Fire blankets positioned in areas most required such as kitchens

Extinguishers of differing types dependant on the classification of fire

Smoke or thermal detectors which may be located in areas such as roof spaces or in cupboards.

The isolation valve which will facilitate the shutdown of an active sprinkler system. This flow valve will also activate a 'flow switch' which will tell the FIP that the system is operating.

A fire hose storage cupboard, housing a water fire hose, up to 30 meters in length.

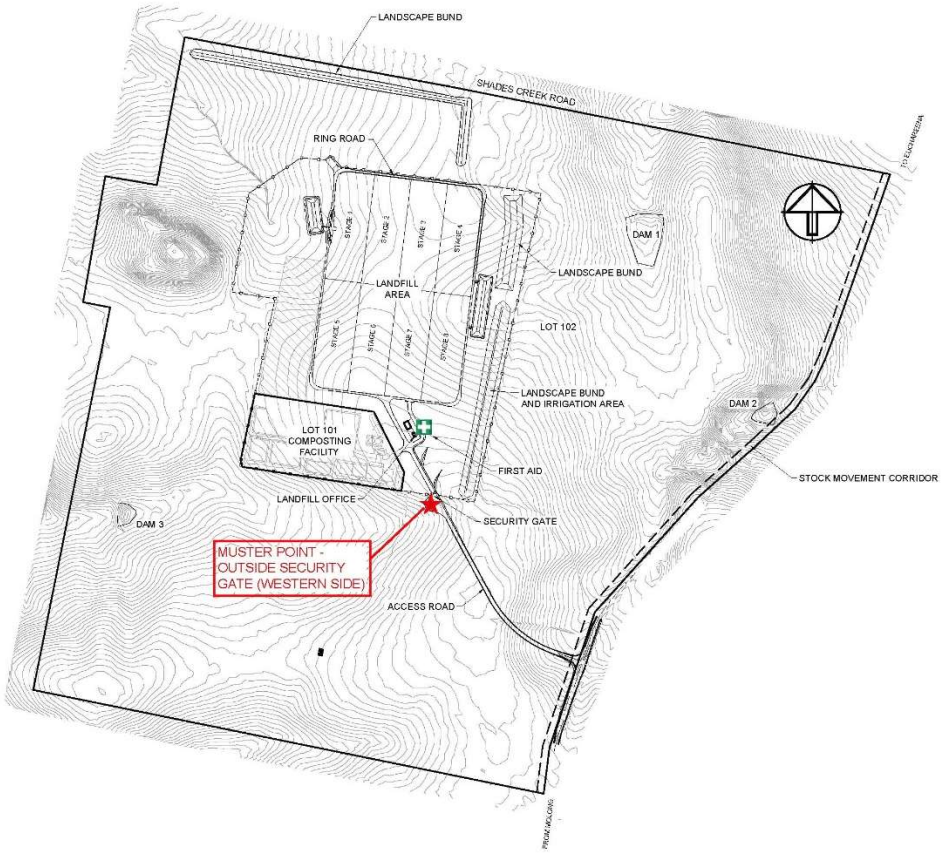
Indicator plate to alert ECO members of a fire.

Hydrant booster systems and associated pillar hydrants are used by FRNSW for firefighting purposes throughout site.

Spill stations are provided to assist with the initial response to small spills of hazardous materials. They will include PPE to assist the person tending to the spill, along with absorbent booms and powder/ sawdust to soak up spills.

EMERGENCY CONTACTS

Police **NSW Fire Rescue** **Ambulance** **Rural Fire Service**	**000**
Manager Waste Services – Technical Support	6393 8113 0419 483 381
Orange City Council WHS Coordinator	6393 8022 0408 653 144
Manager Public Relations & Communications	6393 8211 0437 494 459
Supervisor	6393 8863 or 0438 067 940
Electricity (Essential Energy)	132 830
Gas Emergency	131 909
Plant and Depot Manager	6393 8054 0417 297 889
Hazardous Materials Incidents	000
Hospital	6369 3000
Poisons Information Centre	131 126
SES	132 500



EMERGENCY WARDEN STRUCTURE

Title	Name	Position	Contact
Chief Warden	Most Senior Person Onsite (OCC)		0419 699 466
Deputy Chief Warden	Most Senior Person Onsite		0427 631 560 Ross Skinner – J R Richards
Communications warden	Most Senior Person Onsite (OCC)		0419 699 466
Deputy Communications warden	Most Senior Person Onsite		0427 631 560 Ross Skinner – J R Richards

BUILDING SPECIFIC INFORMATION

Building name	Euchareena Road Resource Recovery Centre
Primary assembly area	Outside security gate on western side
Secondary assembly area	No secondary area
Services isolations	J R Richards only has fire-fighting isolation/pump stand fixtures on their operational site of the Composting facility. OCC utilise a fire truck on site & stored within the truck shed. Electrical meter boards at power post serving OCC operations and J R Richards operations near entry to J R Richards composting site. Electrical switch boards located at J R Richards Control Room & OCC Amenity building and leachate pump station.
Likely origins of emergencies	Composting Maturation Pad-fire/spontaneous combustion event. Grass fire on ERRRC site caused by lightning strike. Plant and equipment accident during operations and in transit to and from site. Possible drowning within surface water retention dams of J R Richards and OCC operational sites.

MEDICAL EMERGENCY

CODE BLUE

The purpose of this procedure is to provide a consistent and effective response to a medical emergency that may occur within Euchareena Road Resource Recovery Centre and surrounds. Medical emergencies include but are not limited to spinal injuries, heart attack, life threatening bleeding and sudden unconsciousness.
This procedure does not provide the reader with instruction on how to rescue or provide first aid treatment to an injured person. Any rescue or first aid treatment must be performed in accordance with instruction that formed part of first aid training.

NECESSARY EQUIPMENT

- First Aid Kit
- Portable/Mobile phone

EMERGENCY RESPONSE

1. On advice of a medical emergency arrange for the patient to be removed from any immediate danger.
2. Determine nature of injury and advise the Chief Warden as soon as practicable.
3. Ensure the patient remains calm, render all available first-aid and confirm with the Chief Warden that medical assistance has been called for.
4. Do not, under any circumstances, transport a person who is injured or is suffering an illness, to hospital by car or Council vehicle. You **must** use the NSW Ambulance Service. Phone '000' ask for ambulance, then give the Ambulance Controller the information they require.

On advice of a medical emergency the Chief Warden shall ensure that the following occurs:

- Contact the Ambulance Service on **'000'** and advise of all incidents and that their presence is urgently required.
- Proceed directly to the location of the emergency.
- Ensure all persons not essential to the treatment of the casualty are removed from the area.

FIRE EMERGENCY

CODE RED

The purpose of this procedure is to provide a consistent and effective response to a fire emergency that may occur within Euchareena Road Resource Recovery Centre and surrounds.

NECESSARY EQUIPMENT

- Portable First Aid Kits
- Master access keys
- Communication equipment
- First attack firefighting equipment

EMERGENCY CONTROL POINT (ECP)

In the event of a fire the Chief Warden will coordinate and control ECO personnel and liaise with emergency services personnel from the main emergency control point. In the case where a fire is within close proximity to the main entry to the facility or it is not appropriate to operate from this area, the Emergency Control Point can be moved to another location at the discretion of the Emergency Controller or Chief Warden

EMERGENCY RESPONSE

In the case of a fire the following procedure is to be implemented:

1. Contact the Chief Warden by phone and provide the location and if appropriate the extent of the fire. If it is safe to do so and the subject area is clear of people, where applicable, close the door to the room to contain the fire. Use the RACE procedure.
2. The Chief Warden is required to contact Fire Rescue NSW (FRNSW) on telephone number **000** and request assistance. Please state the address including the nearest cross street, and the best point of access to the emergency. Records of the incident should commence being taken at this point for reference post incident. In the vent that the FIP has been activated, always contact 000 and confirm that FRNSW has received the alarm and are responding to the emergency
3. **Refuge in place**: Dependant on the scale and location of the emergency, the Chief Warden with the assistance of the relevant authorities may wish to authorise a 'refuge in place' response. This is dependent on the severity of the incident, the ability to for contaminants to penetrate the facility and the expected duration of the incident.
4. **Partial evacuation**: Staff are to be notified and requested to commence evacuation of their individual areas and meet at the designated assembly area. Staff are to report to the Chief Warden the number of evacuees and the status of their search area. This will include how many people are un-accounted for, if the emergency is contained and its exact location, what services or energy have been isolated if any, if first attack firefighting has been conducted. This process may include a stage 1 or stage 2 evacuation.

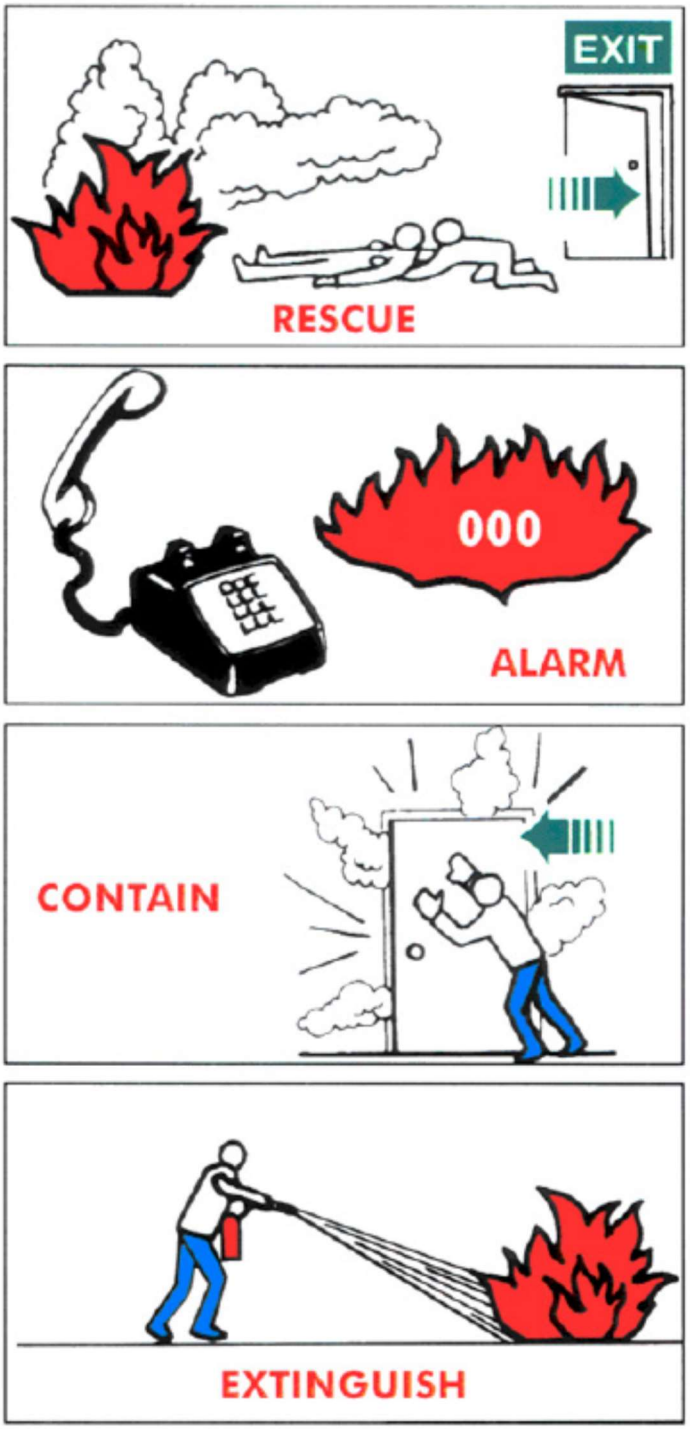
STAGE1: **Evacuation of all persons out of the affected room involved in fire**

STAGE 2: **Evacuation beyond the nearest smoke and fire doors**

5. **Whole building evacuation STAGE 3:** If required the Chief Warden at his/her discretion may evacuate the entire building/complex. If an evacuation is required the Chief Warden is to advise the ECO of the appropriate assembly area.
6. Once an area is searched and cleared the door to the cleared area should be closed to minimise the spread of fire.
7. The Chief Warden is required to collect the sites Chemical Register and Safety Data Sheets (SDS) and provide these FRNSW on arrival.
8. Designated staff are to head to the assembly area with first aid kits and await persons requiring treatment.
9. Once the building/complex is clear and all persons are evacuated to the nominated assembly point Building Wardens are required to contact the Emergency Controller to advise that the building/complex is clear.
10. The Chief Warden is to liaise with emergency services throughout the emergency.
11. Entry back into the building/complex is not permitted until Chief Warden has been advised by FRNSW that it is safe to do so.
12. Upon completion all ECO members are to conduct a debrief of the incident to determine the proficiency of response and any improvements that are required.

ASSEMBLY AREAS	
PRIMARY	Outside security gate on western side
SECONDARY	No secondary area

Remember the actions to be taken in the event of a fire


EXIT
RESCUE
000
ALARM
CONTAIN
EXTINGUISH

BOMB THREAT

CODE PURPLE

The purpose of this procedure is to provide a consistent and effective response to a bomb threat.

BOMB THREATS TYPES

WRITTEN BOMB THREATS

1. If a written bomb threat is received the letter including its envelope or container is to be kept
2. Once a message is recognised as a bomb threat it is imperative that the letter and its envelope/container are not unnecessarily handled so as to preserve evidence such as fingerprints
3. The letter and its envelope/container should be sealed in a plastic bag
4. Matters of this nature are to be reported to the Chief Warden
5. The Chief Warden is responsible to contact the Police on telephone number 000.

TELEPHONE THREATS:

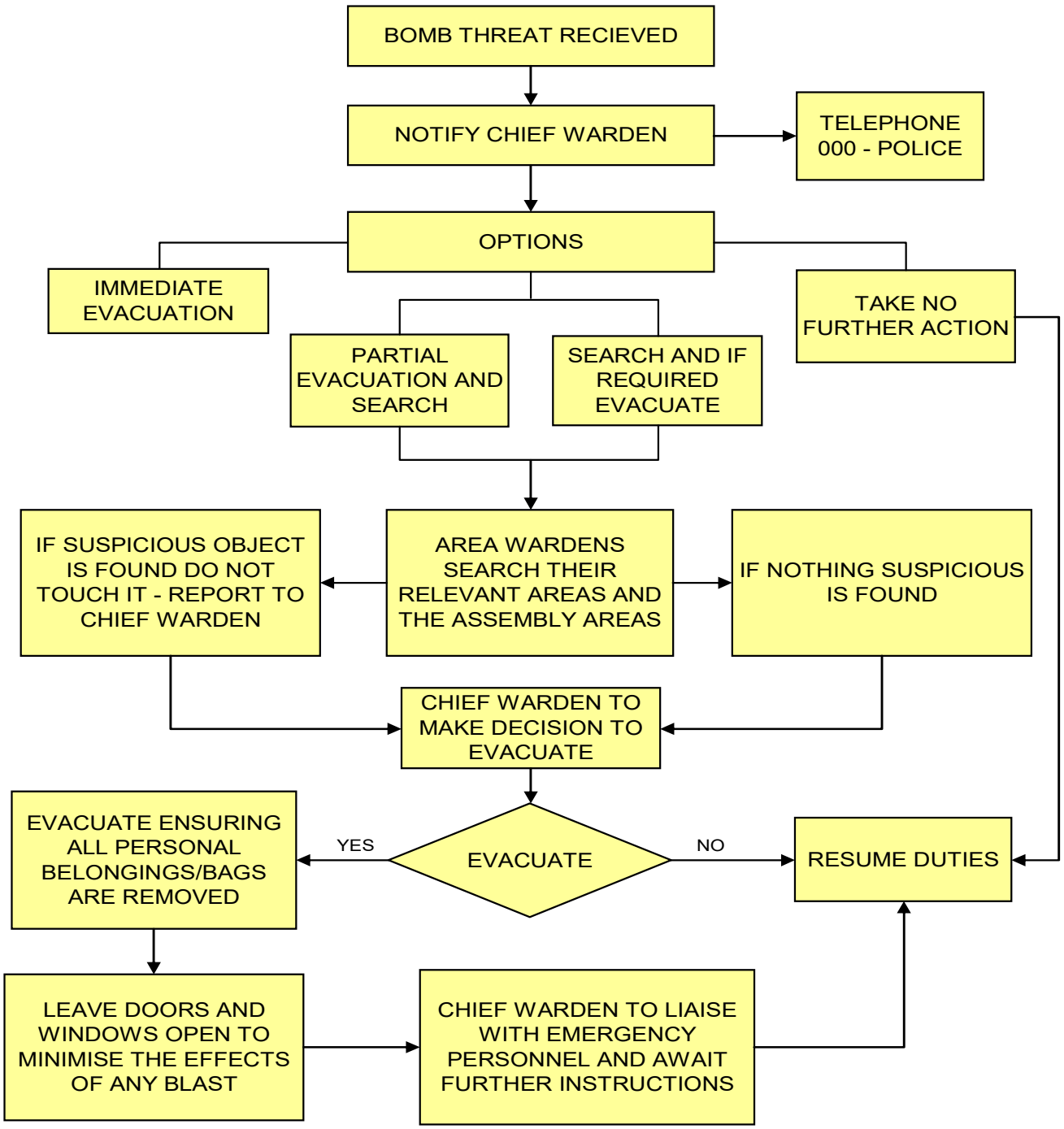
1. If a bomb threat is received by telephone refer to and complete document **Bomb Threat Checklist**. Telephone threats are to be reported to the Chief Warden immediately after completing the call and checklist. Don't hang up the phone! The call can sometimes be traced.
2. The Emergency Controller is responsible to contact the Police on telephone number 000

SUSPICIOUS OBJECT:

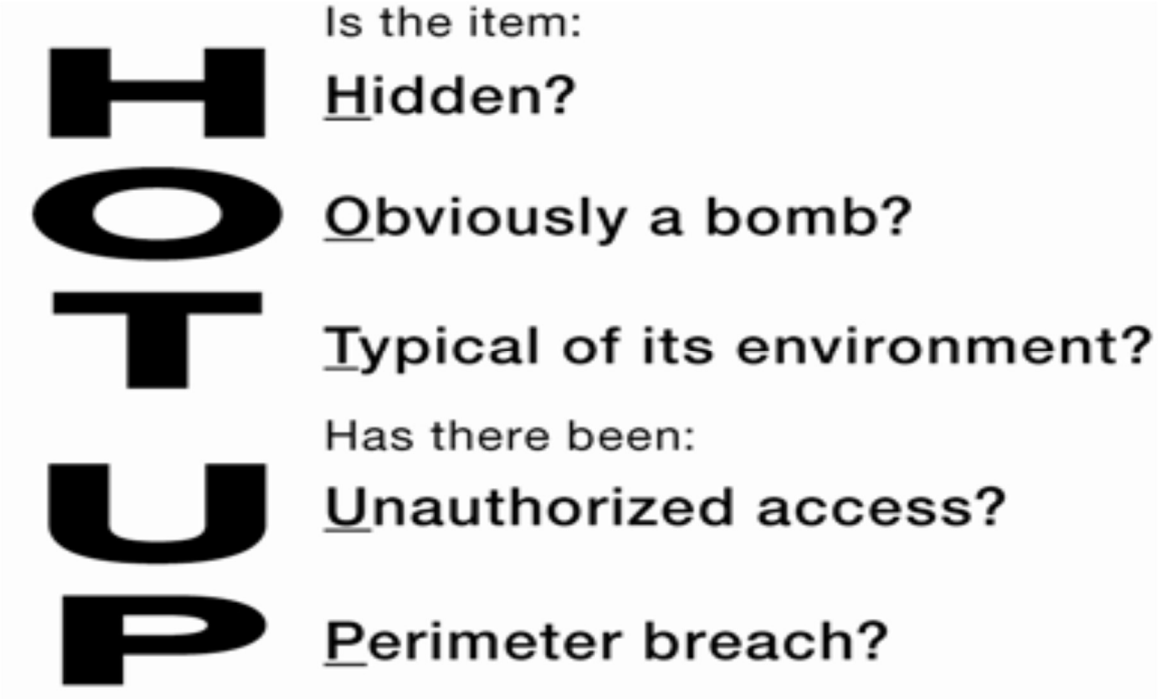
1. If a suspicious object (based on its characteristics, location or circumstances) is found on site and is considered a potential threat the Chief Warden is to be contacted. It is advised that in such circumstances advise is provided in person and done so discretely to minimise any possible panic
2. The Chief Warden may in such circumstances confirm the presence of such a device and if required contact the Police on telephone number 000

Remember to search your work area for anything that looks out of place. You are the best judge of what should, and shouldn't be in your work area. If it doesn't look right, note its appearance and location, and pass this information to the Chief Warden.

ASSEMBLY AREAS	
PRIMARY	Outside security gate on western side
SECONDARY	No secondary area


BOMB THREAT RECIEVED
NOTIFY CHIEF WARDEN
TELEPHONE 000 - POLICE
OPTIONS
IMMEDIATE EVACUATION
PARTIAL EVACUATION AND SEARCH
SEARCH AND IF REQUIRED EVACUATE
TAKE NO FURTHER ACTION
IF SUSPICIOUS OBJECT IS FOUND DO NOT TOUCH IT - REPORT TO CHIEF WARDEN
AREA WARDENS SEARCH THEIR RELEVANT AREAS AND THE ASSEMBLY AREAS
IF NOTHING SUSPICIOUS IS FOUND
CHIEF WARDEN TO MAKE DECISION TO EVACUATE
EVACUATE ENSURING ALL PERSONAL BELONGINGS/BAGS ARE REMOVED
YES
EVACUATE
NO
RESUME DUTIES
LEAVE DOORS AND WINDOWS OPEN TO MINIMISE THE EFFECTS OF ANY BLAST
CHIEF WARDEN TO LIAISE WITH EMERGENCY PERSONNEL AND AWAIT FURTHER INSTRUCTIONS

Bomb threat strategy:



SEVERE STORMS AND LIGHTNING

CODE YELLOW

The purpose of this procedure is to provide a consistent and effective response to a severe storm and/or lightning. Severe storms and lightning are potentially serious threats to those persons working outdoors. Lightning most commonly strikes trees, tall objects or objects in open water.

EMERGENCY RESPONSE

In cases where severe storms and/or lightning is imminent the following procedures are to be implemented:

1. Move all persons indoors
2. Advise all persons to avoid contact with sinks/taps, shower rooms, telephones and electrical appliances
3. Avoid doors and windows that face large trees
4. Wait for the storm to pass.
5. Provide first aid assistance to those who require it
6. Contact the Chief Warden and advise of any assistance required.
7. The Chief Warden will advise emergency services, and maintenance services of the situation.
8. The Chief Warden with the assistance of maintenance staff will determine if the building needs to be secured and made weather tight from further damage. If unable to achieve this, the Chief Warden or designated representative is to notify the State Emergency Service (SES) on 132 500 and request further assistance.

INTERNAL EMERGENCY

CODE YELLOW

The purpose of this procedure is to provide a consistent and effective response to internal emergencies caused by several points of origin. This can include water leaks, sewerage release, gas leaks, or other hazardous substances. The most likely internal emergencies will originate from water leaks arising from heavy rain activity, and blocked toilet and waste systems.

EMERGENCY RESPONSE

In cases where an internal emergency has commenced, the observer of the incident is to immediately contact the Chief Warden is to advise of the situation, its nature and severity.
All emergency responders/ general staff are to observe the RACE principle.

R **Remove people from the immediate area of danger, and relocate them to an area which is safe, and unable to be affected by this situation if it develops.**

A **Alert the Emergency Controller or Fire Marshall, or emergency services on 000 if the emergency is life threatening**

C **Contain the emergency to its point of origin by closing doors, and turning off services where possible**

E **Extinguish or render safe if trained to do so.**

1. The Chief Warden is to determine the implications to people and property.
2. The Chief Warden is to contact the relevant emergency service on 000 for life threatening emergencies or servicing companies for non-life threatening emergencies
3. Ensure staff are removed to areas within the facility that are beyond one compartment from the emergency. **i.e. conduct a STAGE 2 evacuation**

ARMED HOLD-UP/ THREATENING PERSONS

CODE BLACK

The purpose of this procedure is to provide a consistent and effective response to an armed hold-up to minimise harm to employees and others in the workplace. This procedure can also be used for illegal entry by a threatening person Euchareena Road Resource Recovery Centre.

EMERGENCY RESPONSE

The following procedure is to be followed in the event of an armed hold-up:

1. Remain calm and do not antagonise an aggressive offender/s.
2. Withdraw from the situation immediately if possible. Do not put yourself or others at risk or make the situation worse.
3. Don't argue with the offender & avoid direct eye contact.
4. Create as many barriers between yourself and the offender as possible. This may require subtly moving behind desks, doors, tables or other furniture/ barriers.
5. Avoid sudden movements but follow instructions given by the offender. Treat any weapon as a real danger to yourself and others.
6. Don't stare at the offender.
7. Make a mental note of everything you can about the offender without being obvious. This includes speech, mannerisms, clothing, scars. Use the Offender Description Form to assist you record details.
8. Observe any vehicle used by the bandit to leave the site. Note the registration, type, make, colour etc of the vehicle.
9. Do not pursue the offender.
10. Contact the Chief Warden who is required to contact the Police on telephone number 000.

CIVIL UNREST AND ILLEGAL OCCUPANCY

CODE BLACK

The purpose of this procedure is to provide a consistent and effective response to civil unrest or illegal occupancy and minimise harm to employees and others in the workplace.

EMERGENCY RESPONSE

As soon as staff are aware of a civil disorder occurring in the vicinity of the building they should:-

1. Notify the Chief Warden of the emergency.
2. The Chief Warden or designated officer is to notify Police on 000 and request assistance.
3. Maintain communications with the police service if possible.
4. Alert other members of staff on duty at via internal communications.
5. Restrict entrance to the building or other sections of the building.
6. Confine their presence to their present location.
7. Remove all staff in potentially affected areas to designated and pre-determined refuge areas or rooms, which can be internally secured.
8. If safe to do so, and conditional to not delaying the quick removal of staff and occupants, secure cash and other valuables.
9. Restrict contact between the demonstrators and the building occupants.

EXTERNAL EMERGENCY

CODE BROWN

The purpose of this procedure is to provide a consistent and effective response to a fire, gas leak or other emergency originating from outside of the facility. The most likely origin of such emergencies will be neighbouring buildings on fire, gas leaks caused by earth works, or vehicle accidents on adjacent roads.

NECESSARY EQUIPMENT

- First Aid Kit
- Portable/Mobile phone

EMERGENCY RESPONSE

FIRE IN AN ADJOINING PROPERTY:

In the case of a fire in an adjoining property:

1. An evacuation of Euchareena Road Resource Recovery Centre may not be necessary however thick smoke may increase the risk of a medical emergency on site (increased risk of Asthma or airway irritation). It is recommended that if required the Chief Warden considers the effects of evacuation and whether occupants will be placed in more risk by leaving the building than by remaining. At this stage with the assistance of FRNSW, the Chief Warden may choose to refuge in place. In this instance all external entry of smoke and gases are to be excluded by closing windows and doors, and most importantly shutting down all air conditioning systems.

2. Where remaining in the building is not practicable or safe a full evacuation may need to be considered to the most appropriate assembly area.

MOTOR VEHICLE ACCIDENT ON ADJOINING ROADS:

In the case of a motor vehicle accident on an adjoining road:

1. Attempt to determine the severity of the accident, and any potential impact it may have on the facility. If there is any uncertainty of the severity of the accident, the potential for a fire or explosion, or if hazardous substances are involved, commence evacuations of any building within 100 meters of the accident. Considerate of some hazardous substances routinely transported on major thoroughfares, a larger evacuation/ exclusion zone may be required up to 200m. Seek advice from responding emergency services for detailed information, or contact 000.

GAS LEAK

CODE YELLOW

The purpose of this procedure is to provide a consistent and effective response to a gas leak. **Dangers Associated with gas leaks include explosions and fire, and asphyxiation from oxygen deprivation**. It is important to note: **Natural gas** is lighter than air and will dissipate naturally, **however Liquefied Petroleum Gas (LPG)** is heavier than air and will pool in low lying areas, drains and gutters.

NECESSARY EQUIPMENT

- First Aid Kit
- Portable/Mobile phone (not to be used near a gas leak)

EMERGENCY RESPONSE

1. Turn off all electrical appliances and machinery in the area of the leak.
2. Contact the Chief warden immediately.
3. The Chief warden is to contact 000 and request the attendance of Fire Rescue NSW (FRNSW)
4. Move away from the leak in an upwind and uphill direction so that gas cannot be smelt.
5. Do not start vehicles, use radios or mobile phones in the area where gas can be smelt. **DO NOT SMOKE**.
6. Attempt to contain the gas leak to its point of origin. This may include closing parts of the building which have not been affected by the leak at this stage.
7. Do not attempt to crimp the gas line or cover the leak. Technicians from the gas provider have the equipment and PPE to deal with this emergency.
8. Wait for the arrival of gas company staff and carry out any request made.

If a fire commences:

1. **DO NOT attempt to extinguish the fire. If the fire is extinguished there is the potential for an explosion to follow if the gas leak finds an ignition source.**

2. **Remember to remove people to a safe distance, and determine if the assembly area remains a safe place of refuge. Consider access for emergency services and the removal of any people, vehicles or implements in the way of best access to the emergency.**

ANNEXURE A

Chief Warden Incident Checklist

Date	
Address/Venue	
Name (person completing form)	

		TIME Hours : Minutes	✓
1	Notification of emergency situation received	…… : ……	
2	Attend Fire Indicator Panel	…… : ……	
3	Phone Emergency Services and advise details of emergency	…… : ……	
4	If required, broadcast message over public address system advising occupants of the need to evacuate the building and requesting all Wardens to activate emergency evacuation	…… : ……	
5	Mark off floors/areas as Wardens report them clear	…… : ……	
6	Assist the authorities as required, handover any relevant information	…… : ……	
7	Following advice from relevant authorities, advise when it is safe to re-enter the building	…… : ……	

ANNEXURE B

Warden Incident Checklist

Date	
Address/Venue	
Name (person completing form)	

		TIME Hours : Minutes	✓
1	Upon hearing the alert, prepare to evacuate	…… : ……	
2	Facilitate evacuation of their area	…… : ……	
3	Check floor/area to ensure everyone has vacated the area	…… : ……	
4	Ensure all doors are closed as people are evacuated	…… : ……	
5	Check personnel present including visitors/contractors	…… : ……	
6	Assist people with physical and mobility impairments	…… : ……	
7	Report to the Chief Warden when the floor/areas are clear and provide any relevant information ie people remaining etc.	…… : ……	
8	Carry out any other instructions as requested by the Chief Warden	…… : ……	
9		…… : ……	
10		…… : ……	
11		…… : ……	

ANNEXURE C

Bomb threat Checklist

Exact wording of threat:

.....

.....

.....

.....

Sex of Caller: Male ❑ Female ❑

QUESTION When is the bomb going to explode?

.....

Where did you put the bomb?

.....

When did you put it there?

.....

What does the bomb look like?

.....

What kind of bomb is it?

.....

What will make the bomb explode?

.....

Why did you place the bomb?

.....

What is your name?

.....

CALLER'S VOICE:

Accent: Asian ❑ American ❑ English ❑ Australian ❑ European ❑ Other.....

Voice: Loud ❑ Soft ❑ Other.....

Speech: Loud ❑ Soft ❑ Other.....

Impediment:

Lisp ❑ Stutter ❑ Other.....

Manner:

Calm ❑ Emotional ❑ Other.....

Did you recognise the voice? Yes ❑ No ❑

Was the caller familiar with the area?

Yes ❑ No ❑

THREAT LANGUAGE:

Well spoken	Yes ❑	No ❑
Incoherent	Yes ❑	No ❑
Taped	Yes ❑	No ❑
Message Read by Caller	Yes ❑	No ❑
Abusive	Yes ❑	No ❑
Other.....	Yes ❑	No ❑

BACKGROUND NOISES:

Local Call	STD.....
Music	Voices .....
Street Noises.....	Aircraft.....
House Noises	Machinery.....

Other.....

CALL TAKEN:

Time: ..... Date: .....

Duration of Call:.....

Number Called:.....

ACTION:

Report call immediately to: Manager

RECIPIENT:

Name: .....

Telephone No: .....

Signature:.....

ADDITIONAL INFORMATION:

.....

.....

ANNEXURE D

Offender Report Form

Date of Occurrence	**Time** am/pm

Location Eg: front counter, back room, etc.	
Address	

DETAILS OF PERSON MAKING REPORT

Surname	
First Name	
Department	
Phone	
Mobile	

VEHICLE DETAILS

Type (eg: Sedan, SUV)	
Make (eg: Ford, Holden)	
Model	
Year (approx.)	
Colour	
Distinguishing features (eg: roof rack, bulbar)	
Registration number	
State of registration	
Number of occupants	
Direction of escape	

INCIDENT INFORMATION

Dialogue (conversation)	
Weapons	
Other important information	

Offender Description Form

Where appropriate, tick the box in the space provided.

BUILD	Thin		Fat		Solid		Large		Male		Female		Approx Weight	
AGE	15-20		20-25		25-30		30-35		35-40		40-45		Over 45	
NAME	Was called:						Sounded like:							
HAIR COLOUR	Black		Grey		Brown		Sandy		Blonde		Dyed		Wig	
TYPE	Straight		Dreadlock		Wavy		Afro		Curly		Other:			
LENGTH	Bald		Shaved		Short		Medium		Long					
CONDITION	Clean		Thinning		Scruffy		Thick		Greasy		Other			
HEIGHT		cm		ft										
HEIGHT ZONE	Green		Yellow		Blue		Red		White					
EYE COLOUR	Black		Brown		Blue		Green		Grey		Hazel			
TYPE	Wide		Narrow		Bulging		Squint		Deep Set					
EYEBROWS	Bushy		Thinning		Shaved		Joined		Thick					
GLASSES	Clear		Tinted		Dark		Plastic		Metal					
COMPLEXION RACE	Caucasian		Pacific		Oriental		Indian		Negro					
SKIN COLOUR	Pale		Black		Brown		Fair		Dark					
SKIN TYPE	Clear		Pimply		Acne		Greasy		Olive					

RIG/CLOTHING UPPER BODY OUTER GARMENT	Colour		Description	
UPPER BODY INNER GARMENT	Colour		Description	
LOWER BODY GARMENT	Colour		Description	
HEADGEAR	Colour		Description	
FOOTWEAR	Colour		Description	
GLOVES	Colour		Description	

IDENTIFYING MARKS, SCARS, TATTOOS	Colour	Description

Where appropriate, tick the box in the space provided.

MANNERISMS POSTURE	Stooped		Straight											
MOVEMENT	Jerky		Normal		Limp									
FACE	Twitch		Normal											
EYES	Blinking		Normal		Glancing									
SPEECH	Slow		Stutter		Accent		Fast		Slurred					

Any further information you would like to add?

Signed

ANNEXURE E

Personal Emergency Evacuation Plan (PEEP)

Suitable strategies in an emergency or evacuation should be discussed with those occupants from the site who have a disability and a personal emergency evacuation plan (PEEP) developed for each of those persons. Information on the PEEP shall be disseminated to all people responsible for its implementation by the Chief Warden or as delegated.

Name	
Building location	
Floor/Department	
Are you trained in emergency response procedures (including the evacuation procedures)?	
Type of assistance required (please list procedures for assistance)	
Equipment required for evacuation	
Detail of preferred route for assisted evacuation	
Signed by Staff Member	

Issue date ..... / ..... / .....

Noted by Chief Warden ..... Date ..... / ..... / .....

ANNEXURE F

REPORTING AN INCIDENT
CODE PINK

This will be undertaken by a designated member of the WHS Team

- WHS Coordinator 0408 653 144
- Safety Education & Liaison Officer 6393 8448

What is a WorkCover notifiable incident?	
Fatality	The death of a person
Serious Injury or Illness Requiring immediate treatment	• As an in-patient in hospital, or for • Amputation • Serious head or eye injury or serious burn • Separation of skin from underlying tissue e.g. de-gloving or scalping • Spinal injury • Loss of bodily function • Serious laceration • Exposure to a substance, which requires medical treatment within 48 hours
Other serious injury or illness	• Exposure to a substance, which requires medical treatment within 48 hours • Prescribed illnesses directly attributable to work with micro-organisms, or involving treatment or care of a person, contract with human blood or body substance or contact with animals • The following zoonoses contracted through contact with animals: Q fever, anthrax, leptospirosis, brucellosis, Hendra virus, avian flu, psittacosis
A dangerous incident	• Uncontrolled escape, spillage or leakage of a substance • Uncontrolled implosion, explosion or fire • Uncontrolled escape of gas steam or pressured substance • Electric shock • Fall from height of any plant, substance or thing • Collapse, overturning, failure or malfunction of, or damage to, any plant that is required to be authorised for use in accordance with the regulations • Collapse or partial collapse of a structure, or excavation including shoring supporting an excavation • An inrush of water, mud or gas in an underground excavation or tunnel • Interruption of underground ventilation

	• Other events prescribed by the regulations

ANNEXURE G

ASBESTOS RELATED EMERGENCIES AND INCIDENTS
CODE GREY

In the event of an incident of emergency involving naturally occurring asbestos and asbestos containing material (bonded and friable), Council will enact **section 6 Responding to emergencies and incidents in the Asbestos Management Plan.**

The EPA may be involved in the incident response whereby asbestos material is transported and disposed of, such as the time following a fire.

Council may take the following action when responding to an asbestos related emergency or incident:

- Seek advice from an occupational hygienist on the likely level of risk and appropriate controls required
- Liaise with and consult the appropriate agencies (Safe Work NSW, EPA, WHS Team)
- Follow safe work method statement and risk assessment controls
- Ensure that any Council worker attending the site has appropriate training and are wearing the appropriate PPE
- Exclude the public from the site
- Inform the public of the potential sources of exposure to asbestos, health risks and emergency management response
- Ensure where appropriate the site is kept damp, particularly where friable asbestos is present.

Please find a list below of staff that has undergone appropriate training in the identification, safe handling and suitable control measures for asbestos and asbestos containing material.

Name	Qualification	Division	Contact Number

John Bailey	Asbestos removal	Technical	6393 8280 or 0409 878 313
Joshua Barnes	Asbestos removal friable	Technical	6393 8060 or 0447 267 401
Greg Bartimote	Asbestos removal	Technical	0438 230 178
Brett Beasley	Remove bonded asbestos	Technical	6393 8280
Noel Bennett	Asbestos removal	Technical	6393 8520 or 0408 215 519
Ben Brennan	Remove bonded asbestos	Technical	6393 8515 or 0407 204 265
David Broom	Asbestos removal friable	Technical	6393 8509 or 0417 274 173
Graeme Bryant	Remove bonded asbestos	Technical	6393 8510
Greg Carter	Remove bonded asbestos	Technical	0407 283 768
Nathan Dean	Remove friable asbestos	Technical	6393 8510
Roger Garretty	Remove bonded asbestos	Technical	6393 8500
Roger Harris	Asbestos removal	Technical	0417 062 932
Darren Heaslip	Remove bonded asbestos	Technical	6393 8500
Allan Hitchen	Remove bonded asbestos	Technical	0407 076 939
Clint Kelly	Remove friable asbestos	Technical	0437 033 146

Andrew Kennedy	Remove bonded asbestos	Technical	0419 244 797
Eddie Khattar	Remove bonded asbestos	Technical	6393 8280 or 0418 487 639
Peter Oliver	Asbestos removal	Technical	6393 8500 or 0419 400 785
Dennis Rhodes	Remove bonded asbestos	Technical	6393 8500
Glenn Sinclair	Remove bonded asbestos	Technical	6393 8503 or 0417 203 367
Leslie Stedman	Asbestos removal	Technical	0418 486 739
Peter Stibbard	Remove friable asbestos	Technical	6393 8500
Kevin Swain	Remove friable and bonded asbestos	Technical	6393 8529 or 0407 184 055
Andrew Wright	Remove bonded asbestos	Technical	6393 8510 or 0418 634 504

Section 8

APPROVALS

Section 8 – Approvals TOC

8.1 PROJECT APPROVALS

8.2 ENVIRONMENTAL PROTECTION LICENCES

8.3 ORRRC LIQUID TRADE WASTE DISCHARGE APPROVAL

8.4 ERRRC LIQUID TRADE WASTE DISCHARGE APPROVAL

8.5 ERRRC CONSERVATION AGREEMENT

Section 8.1

PROJECT APPROVALS

Notice of Modification

Section 75W of the *Environmental Planning and Assessment Act 1979*

As delegate of the Minister for Planning and Infrastructure, under the delegation of 14 September 2011, I hereby modify the project approval referred to in Schedule 1, subject to the conditions in Schedule 2.

Chris Wilson
Executive Director
Major Projects Assessment

Sydney 7 August 2012

SCHEDULE 1

Project Approval	Orange Waste Project (MP 09_0025), which was approved on 28 April 2010

SCHEDULE 3

1) Replacing Condition 2 in Schedule 3 with the following:

2. The Proponent shall carry out the Project generally in accordance with the:
   a) EA;
   b) statement of commitments (see Appendix 1);
   c) site layout plans and drawings in the EA, except those modified by MP 09_0025 MOD 1 and shown in Appendix 2;
   d) Modification application MP 09_0025 MOD 1, accompanying Environmental Assessment Report titled *'Environmental Assessment – Minor Modification to Part 3A Approval (MP 09_0025)'* dated February 2012, Response to Submissions Report and Addendum to EA for MOD 1 dated 14 May 2012 and Additional Response to Submissions Report and revised drawings (nos. EV01 - 16) dated 7 June 2012, prepared by Geolyse Pty Ltd; and
   e) conditions of this approval.

SCHEDULE 4

2) Insert the following new Conditions 16 and 17 after Condition 15 in Schedule 4:

16. Within 12 months of the approval of MP 09_0025 MOD 1, or a time otherwise agreed to by the Director-General, the Proponent shall submit details of the new education facilities at the Ophir Road site to the Director-General for approval.

17. Construction of the new education facilities at the Ophir Road site shall not commence until the Proponent has received written approval from the Director-General.

SCHEDULE 5

3) Insert the following new Condition 22A after Condition 22 in Schedule 5:

22A. The Proponent shall ensure that Dams C1-C5 as described in MP 09_0025 MOD 1 are lined with a minimum of 900mm of clay material.

4) Insert the following new condition 17A after Condition 17 in Schedule 5:

17A. The Proponent shall ensure that bales are wrapped all year round in accordance with the Apiculture Risk Management Plan for the project approved by the Director-General on 28 September 2011.

5) Replace Condition 33 in Schedule 5 with the following:

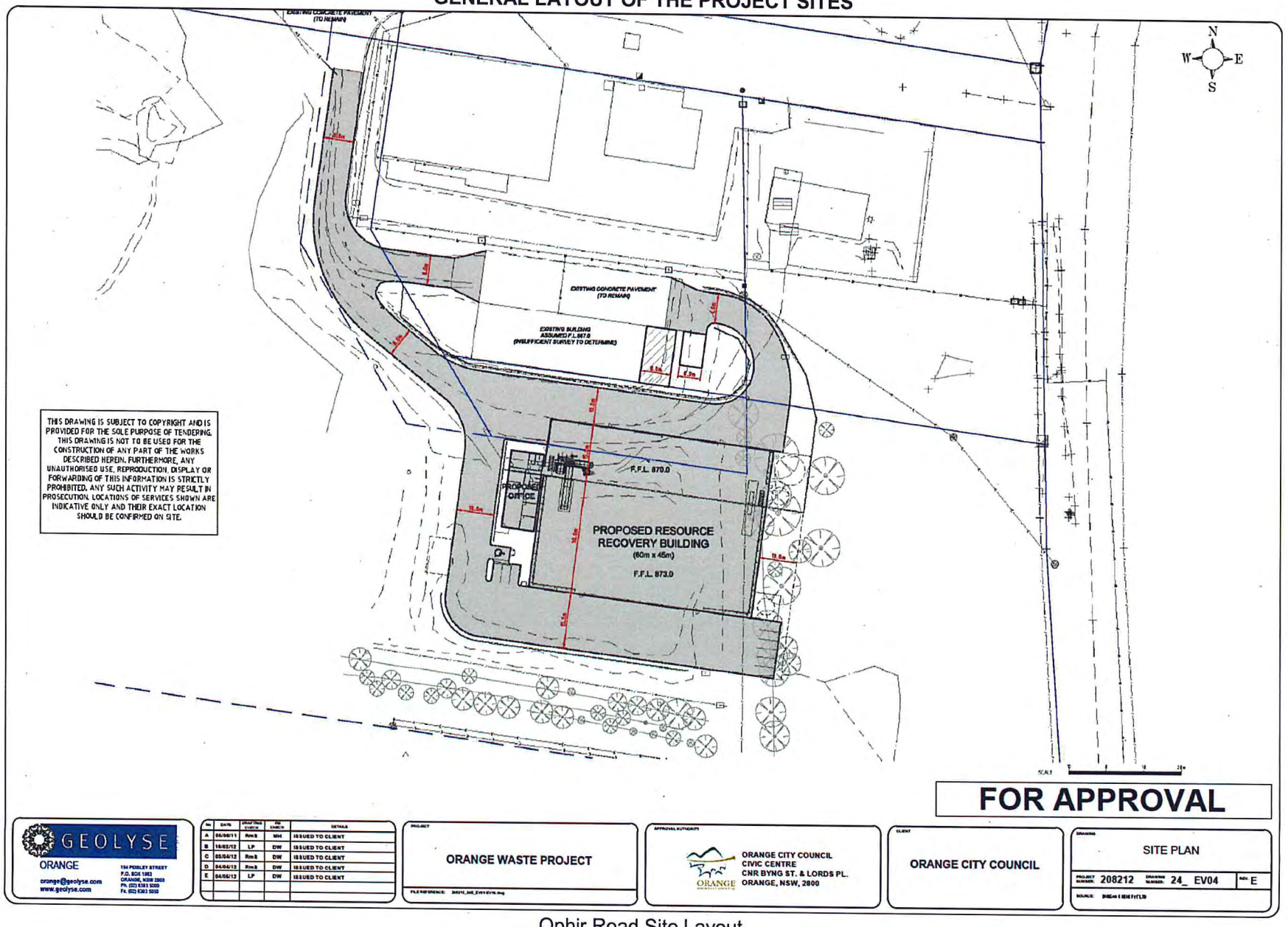
33. The Proponent shall:
   a) construct a sealed road from Euchareena Rd to the entrance to the landfill in general accordance with the figures in Appendix 2; and
   b) ensure:
      - car parking is constructed in accordance with the relevant requirements of the latest version of *AS 2890.1*;
      - a minimum of 13 car parking spaces for light vehicles are provided at the Euchareena Road site;
      - the internal road network is constructed in accordance with the relevant requirements of the latest version of *AS 2890.2;* and
      - the entrance gates are installed a suitable distance from Euchareena Rd so that, at a minimum, a semi-trailer can stand completely clear of the road and stock movement corridor.

6) Insert the following new Condition 36A after Condition 36 in Schedule 5:

36A The Proponent shall ensure that:
   a) all buildings at both the Euchareena Road site and Ophir Road site are externally clad with materials as generally described in MP 09_0025 MOD 1 (and supplementary documents supporting MOD 1), are generally consistent with the colours of existing buildings in each locality and are non-reflective;
   b) all buildings at the Euchareena Road site shall be grey in colour (or similar); and
   c) the Resource Recovery Building at the Ophir Road site shall have light green walls, a grey roof and light brown doors and shutters.

7) Replacing Appendix 2 with the following (see overleaf).

APPENDIX 2
GENERAL LAYOUT OF THE PROJECT SITES



Ophir Road Site Layout

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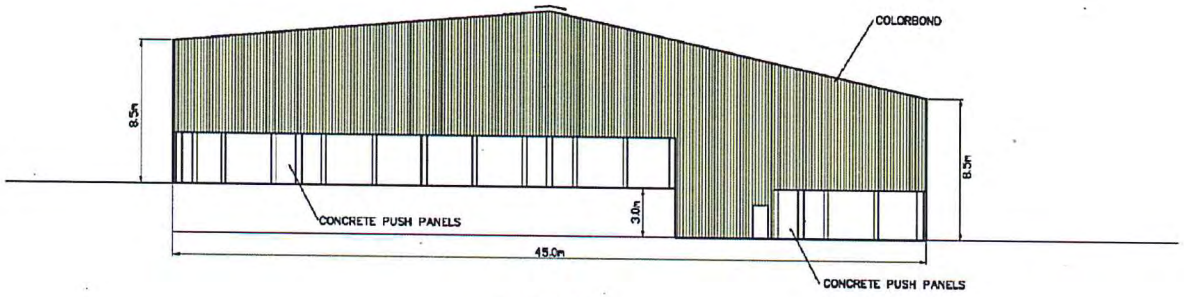
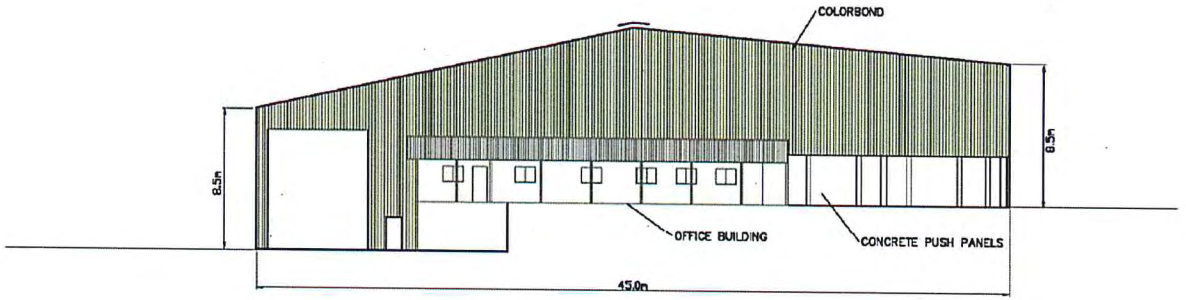


EAST ELEVATION



WEST ELEVATION

1.25 0 1.25 2.5 3.75 5.0 6.25 m

FOR APPROVAL

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P.O. BOX 1063
ORANGE, NSW 2800
Ph. (02) 6363 5000
Fx. (02) 6363 5050

No.	DATE	DRAFTING CHECK	P.M. CHECK	DETAILS
A	06/08/11	Rm3	MH	ISSUED TO CLIENT
B	16/02/12	LP	DW	ISSUED TO CLIENT
C	03/04/12	Rm3	DW	ISSUED TO CLIENT
D	04/04/12	Rm3	DW	ISSUED TO CLIENT
E	04/04/12	LP	DW	ISSUED TO CLIENT

PROJECT: ORANGE WASTE PROJECT

APPROVAL AUTHORITY: ORANGE CITY COUNCIL, CIVIC CENTRE, CNR BYNG ST. & LORDS PL., ORANGE, NSW, 2800

CLIENT: ORANGE CITY COUNCIL

DRAWING: BUILDING ELEVATIONS EAST AND WEST

PROJECT NUMBER: 208212 DRAWING NUMBER: 24_ EV05 REV: E

SOURCE: [illegible]

Ophir Road Resource Recovery Building Elevations (East and West)

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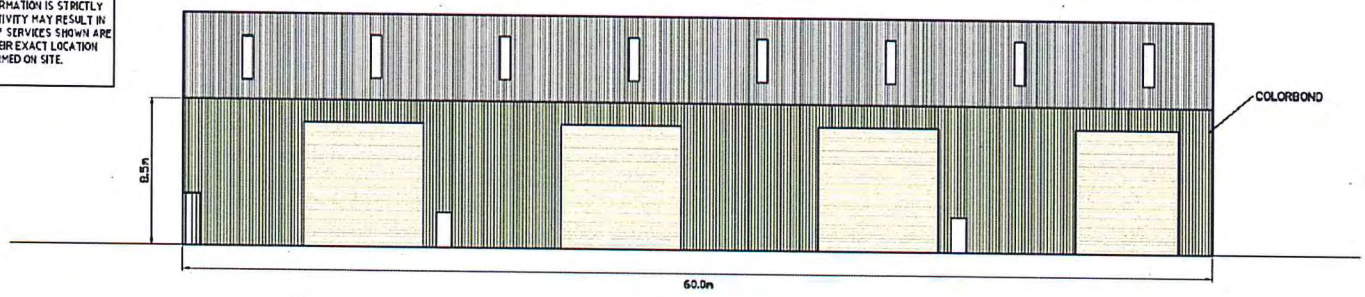
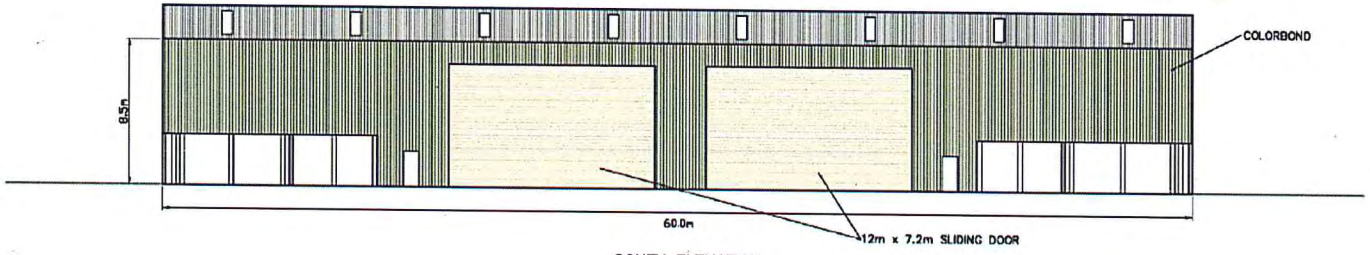


NORTH ELEVATION



SOUTH ELEVATION

1.25 0 1.25 2.5 3.75 5.0 6.25 m

FOR APPROVAL

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ORANGE, NSW 2800
Ph. (02) 6393 5000
Fx. (02) 6393 5050

No	DATE	DRAFTING CHECK	PM CHECK	DETAILS
A	06/08/11	RmS	MH	ISSUED TO CLIENT
B	16/02/12	LP	DW	ISSUED TO CLIENT
C	03/04/12	RmS	DW	ISSUED TO CLIENT
D	04/04/12	RmS	DW	ISSUED TO CLIENT
E	04/06/12	LP	DW	ISSUED TO CLIENT

PROJECT: ORANGE WASTE PROJECT

APPROVAL AUTHORITY: ORANGE CITY COUNCIL
CIVIC CENTRE
CNR BYNG ST. & LORDS PL.
ORANGE, NSW, 2800

CLIENT: ORANGE CITY COUNCIL

DRAWING: BUILDING ELEVATIONS NORTH AND SOUTH

PROJECT NUMBER: 208212 DRAWING NUMBER: 24_ EV06 REV: E

SOURCE: PRIMA 6 IDEAFIT LID

Ophir Road Resource Recovery Building Elevations (North and South)

NOTES
PD – 920(w)x2040(h) PERSONEL DOOR WITH LATCHES IN ACCORDANCE WITH BCA CL2.21
PD2 – 920(w)x2040(h) FIRE DOOR / PERSONEL DOOR WITH LATCHES IN ACCORDANCE WITH BCA CL2.21
W2– 900(w)x900(h) ALUMINIUM WINDOW

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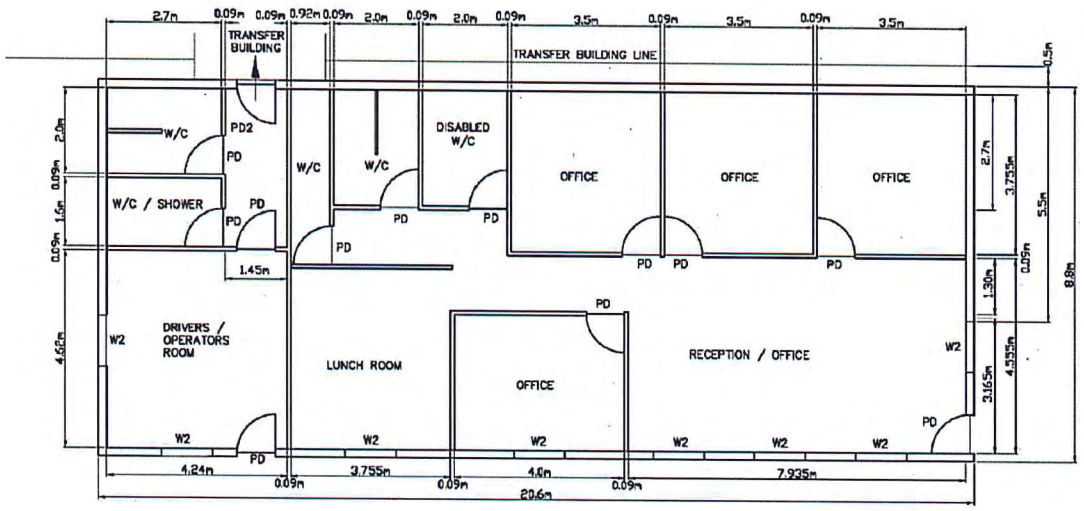

FLOOR PLAN

0.5 0 0.5 1.0 1.5 2.0 2.5 m

FOR APPROVAL

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No	DATE	DRAWING CHECK	PM CHECK	DETAILS
A	06/08/11	RmS	MH	ISSUED TO CLIENT
B	16/02/12	LP	DW	ISSUED TO CLIENT
C	03/04/12	RmS	DW	ISSUED TO CLIENT
D	04/04/12	RmS	DW	ISSUED TO CLIENT
E	04/06/12	LP	DW	ISSUED TO CLIENT

PROJECT: ORANGE WASTE PROJECT

APPROVAL AUTHORITY: ORANGE CITY COUNCIL
CIVIC CENTRE
CNR BYNG ST. & LORDS PL.
ORANGE, NSW, 2800

CLIENT: ORANGE CITY COUNCIL

DRAWING: OFFICE PLAN
PROJECT NUMBER: 208212
DRAWING NUMBER: 24_ EV07
REV: E

Ophir Road Office Plan

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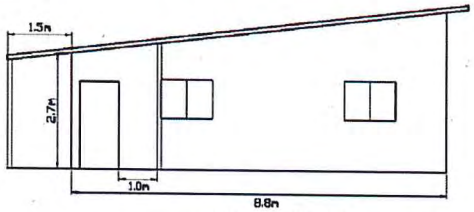
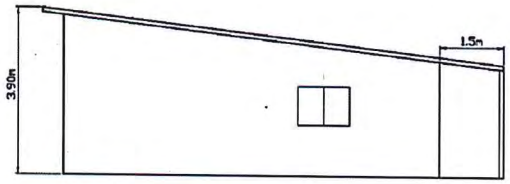
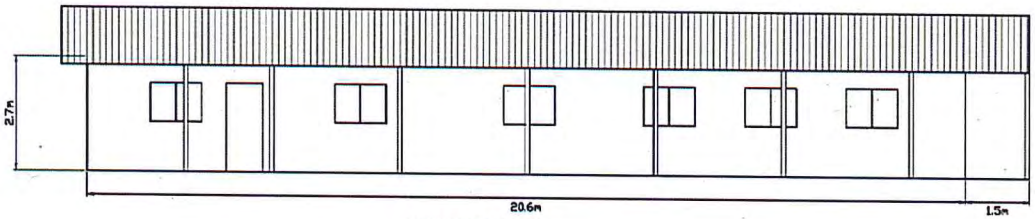


SOUTH ELEVATION



NORTH ELEVATION



WEST ELEVATION

0.5 0 0.5 1.0 1.5 2.0 2.5m

FOR APPROVAL

GEOLYSE
ORANGE
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154 PEISLEY STREET
P.O. BOX 1983
ORANGE, NSW 2800
Ph. (02) 6363 5000
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No	DATE	DRAFTING CHECK	PM CHECK	DETAILS
A	06/08/11	Rm3	MH	ISSUED TO CLIENT
B	16/02/12	LP	DW	ISSUED TO CLIENT
C	03/04/12	Rm3	DW	ISSUED TO CLIENT
D	04/04/12	Rm3	DW	ISSUED TO CLIENT
E	04/06/12	LP	DW	ISSUED TO CLIENT

PROJECT
ORANGE WASTE PROJECT

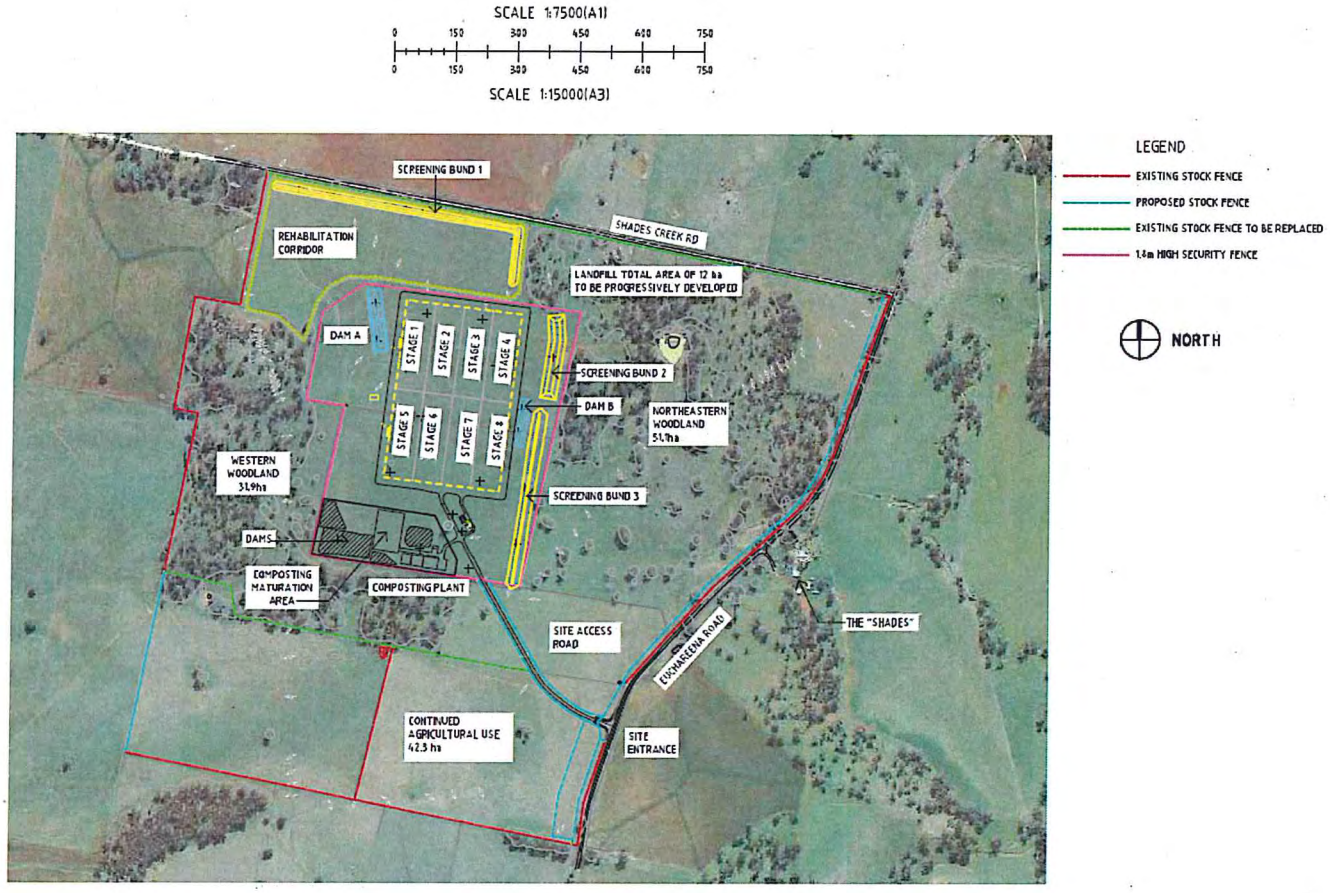
APPROVAL AUTHORITY
ORANGE CITY COUNCIL
CIVIC CENTRE
CNR BYNG ST. & LORDS PL.
ORANGE, NSW, 2800

CLIENT
ORANGE CITY COUNCIL

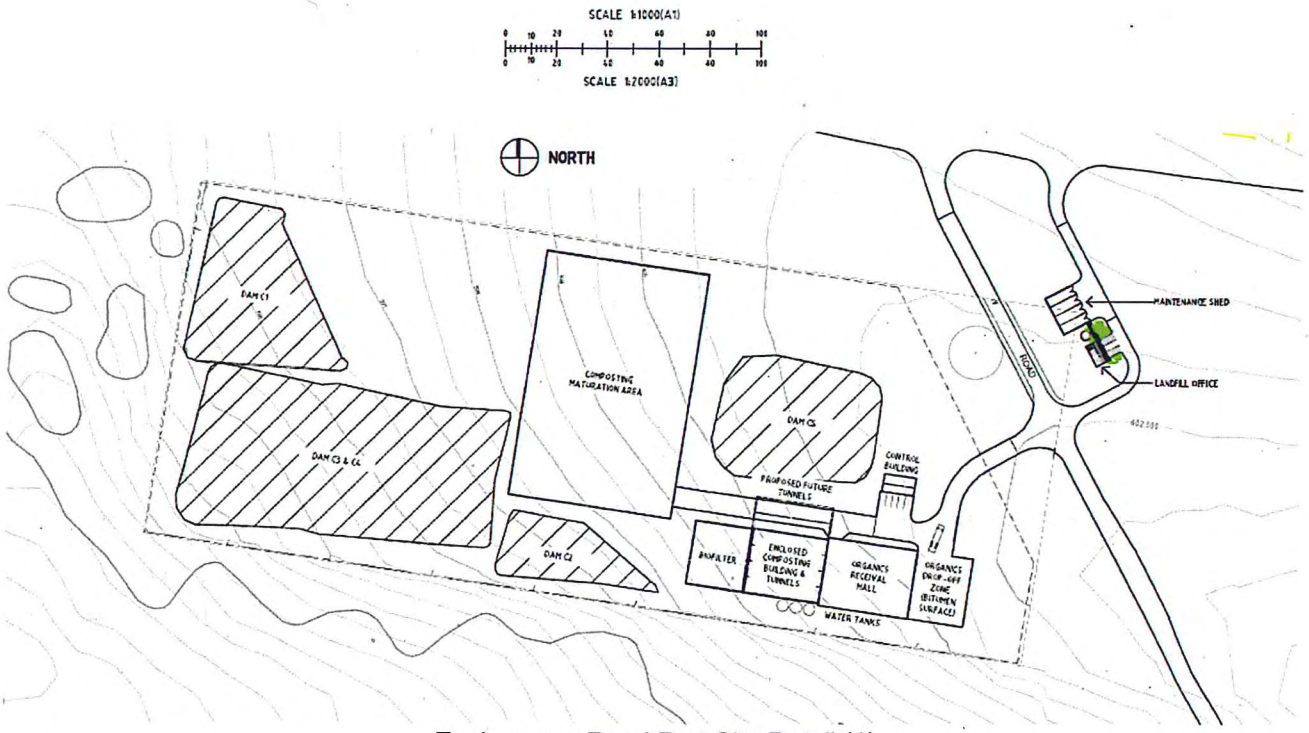
DRAWING
OFFICE ELEVATIONS

PROJECT NUMBER: 208212 DRAWING NUMBER: 24_ EV08 REV: E

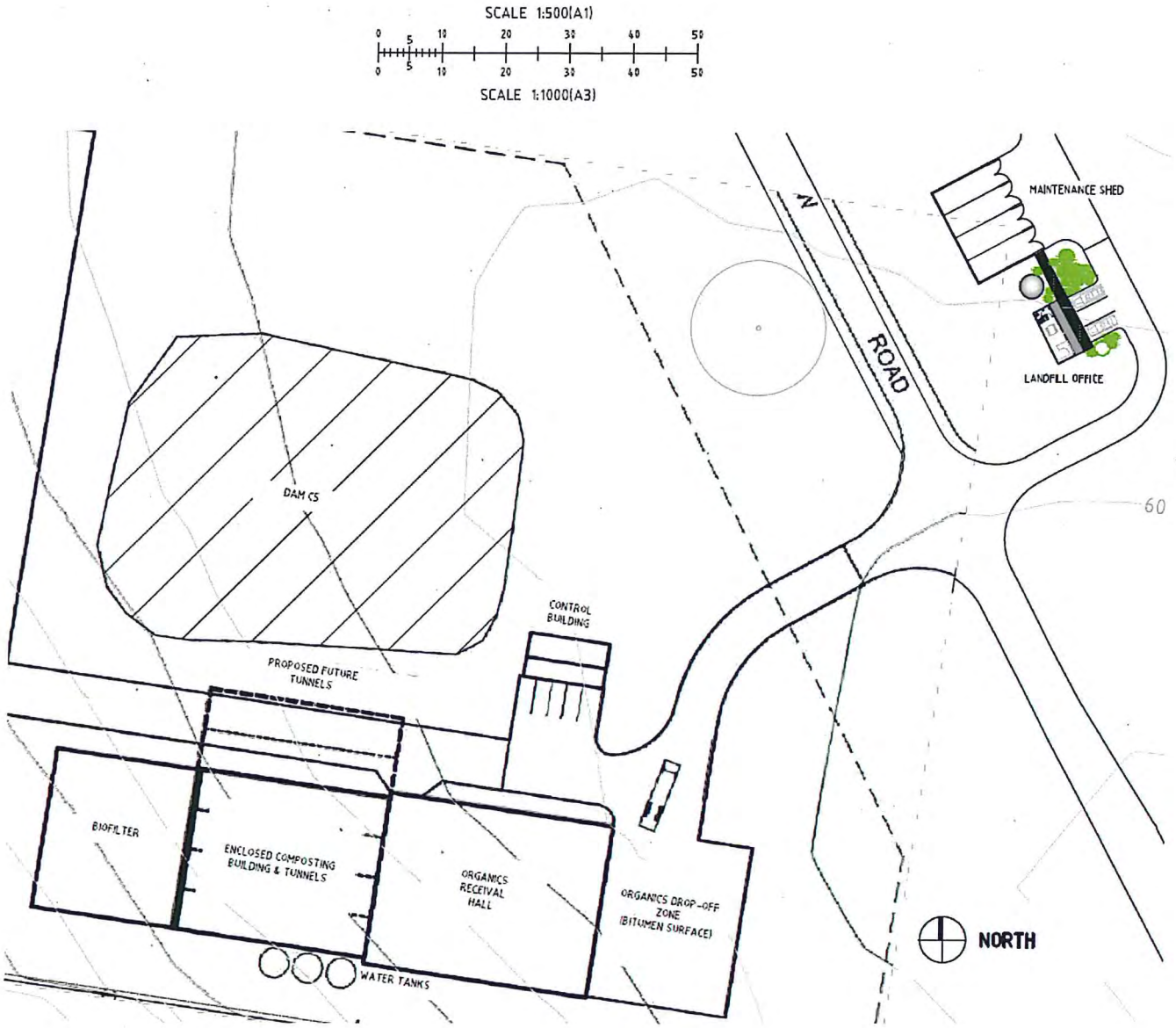
Ophir Road Office Elevations



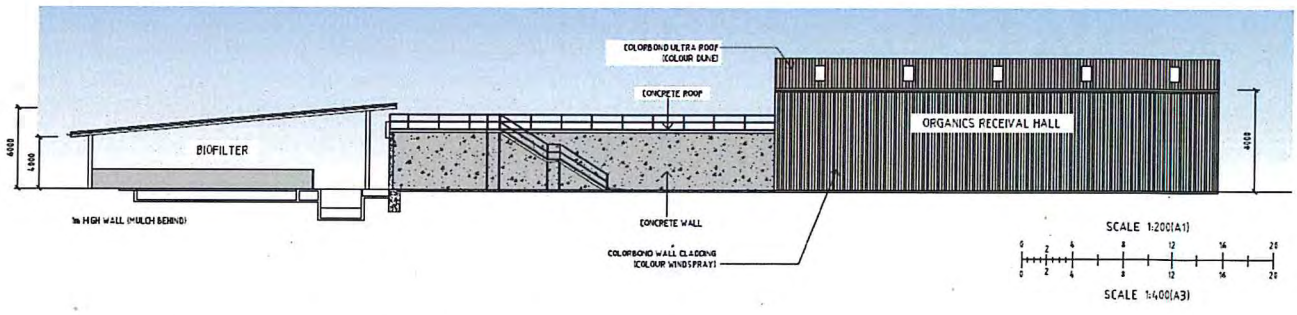
Euchareena Road Site Layout



Euchareena Road Part Site Detail (1)



Euchareena Road Part Site Detail (2)



Euchareena Road Composting Facility (Southern Elevation)

Project Approval

Section 75J of the *Environmental Planning and Assessment Act 1979*

I approve the application referred to in Schedule 1, subject to the conditions in Schedules 2 to 7.

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; and
- provide for the ongoing environmental management of the Project.

The Hon Anthony Kelly MLC
Minister for Planning

2 8 APR 2010

Sydney 2010

SCHEDULE 1

Application No:	09_0025	
Proponent:	Orange City Council	
Approval Authority:	Minister for Planning	
Land:	Euchareena Rd site:	Lot 10 DP 1034198
	Ophir Rd site:	Lots 22 and 23 DP 229513; Lots 2, 3, 4, 5, 7 and 8 DP221529; Lots 102 and 103 DP111653; and Part Lot 61 DP 790515
Project:	Orange Waste Project	

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SCHEDULE 2
DEFINITIONS

AFB	American Foulbrood Disease
Animal Waste	As defined in the *Waste Classification Guidelines* (DECCW)
BCA	Building Code of Australia
Bee Keeping Equipment	Any fitting, utensil, apparatus or implement that is used or has been used for the purposes of, or in connection with beekeeping, or in processing, handling or storing apiary products which include but are not limited to beeswax, honey, cut comb honey, comb sections, honey dew, bee collected pollen, propolis or royal jelly, or any other substance considered to be an apiary product including slum gum
Biosolids	As defined in Schedule 1 of the POEO Act
Construction	The demolition of buildings or works, carrying out of works and erection of buildings and other infrastructure covered by this approval
Council	Cabonne Council
Day	The period from 7am to 6pm on Monday to Saturday, and 8am to 6pm on Sundays and Public Holidays
DECCW	Department of Environment, Climate Change and Water
Department	Department of Planning
DII	Department of Industry and Investment NSW
Director-General	Director-General of the Department (or delegate)
EA	Environmental assessment titled Orange Resource Recovery and Waste Management Project Environmental assessment dated September 2009 and the associated response to submissions, dated 27 January 2010.
EPA	Environment Protection Authority of DECCW
EP&A Act	Environmental Planning & Assessment Act 1979
EP&A Regulation	Environmental Planning & Assessment Regulation 2000
EPL	Environmental Protection Licence
Evening	The period from 6pm to 10pm
Feasible	Feasible relates to engineering considerations and what is practical to build
General Solid Waste (Putrescible)	As defined in the *Waste Classification Guidelines* (DECCW)
General Solid Waste (Non-Putrescible)	As defined in the *Waste Classification Guidelines* (DECCW)
Heavy Vehicle	Any vehicle with a gross vehicle mass of 5 tonnes or more
Incident	An incident causing or threatening material harm to the environment, and/or an exceedance of the limits or performance criteria in this approval
Land	In general, the definition of land is consistent with the definition in the EP&A Act.
LEMP	Landfill Environmental Management Plan
LGA	Local government area
Material harm to the environment	Harm to the environment is material if it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial
Minister	Minister for Planning
Mitigation	Activities associated with reducing the impacts of the Project
Mixed residual waste	Waste that has been through a preliminary screening process, and includes a general solid waste (putrescible) component
Night	The period from 10pm to 7am on Monday to Saturday, and 10pm to 8am on Sundays and Public Holidays
NOW	NSW Office of Water
Operations	When referring to the Euchareena Road site, operations are triggered by the receipt of waste on site; and when referring to the Ophir Road site, operations are triggered by the commissioning of the food and organic waste shredder or the baling plant
POEO Act	Protection of the Environment Operations Act 1997
Privately-owned Land	Land not owned by the Proponent or where a private agreement does not exist between the Proponent and the land owner
Project	The development described in the EA
Proponent	Orange City Council, or its successor
Reasonable	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.

Rehabilitation	The treatment or management of land disturbed by the project for the purpose of establishing a safe, stable and non-polluting environment
RTA	Roads and Traffic Authority
Site	When referring to the Euchareena Rd site means the Lot in the Deposited Plan referred to as such in Schedule 1; and when referring to the Ophir Rd Site means the Lots in the Deposited Plans referred to as such in Schedule 1
Special Waste	As defined in the *Waste Classification Guidelines* (DECCW)
Statement of Commitments	The Proponent's Statement of Commitments in Appendix 1

SCHEDULE 3
ADMINISTRATIVE CONDITIONS

OBLIGATION TO MINIMISE HARM TO THE ENVIRONMENT

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

TERMS OF APPROVAL

2. The Proponent shall carry out the Project generally in accordance with the:
   (a) EA;
   (b) statement of commitments (see Appendix 1);
   (c) site layout plans and drawings in the EA, except that the green and food waste shredding operations shall be relocated from the Euchareena Rd site to the Ophir Rd site (as shown in Appendix 2); and
   (d) conditions of this approval.

3. If there is any inconsistency between the above, the conditions of this approval shall prevail to the extent of any inconsistency.

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

STRUCTURAL ADEQUACY

5. The Proponent shall ensure that all new buildings and structures, and any alterations or additions to existing buildings and structures are constructed in accordance with the relevant requirements of the BCA.

   Notes:

   - *Under Part 4A of the EP&A Act, the Proponent 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 Project.*

DEMOLITION

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

OPERATION OF PLANT AND EQUIPMENT

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

STAGED SUBMISSION OF PLANS OR PROGRAMS

8. With the approval of the Director-General, the Proponent may submit any plan or program required by this approval on a progressive basis.

SCHEDULE 4
SPECIFIC ENVIRONMENTAL CONDITIONS - OPHIR ROAD SITE

WASTE

Restrictions on Receipt, Storage & Handling of Waste

1. The Proponent shall only receive waste on site that is authorised for receipt by an EPL.

Restrictions of Waste Being Sent to Euchareena Road

2. The Proponent shall:
   a) bale all general solid waste (putrescible) and mixed residual waste destined for disposal at the Euchareena Road site;
   b) wrap all baled waste destined for disposal at the Euchareena Road site in plastic at all times;
   c) blend all food and organic waste destined for processing in the composting operations at the Euchareena Road site before dispatching it from the site; and
   d) put in place suitable procedures to avoid sending bee keeping equipment, honey production waste, or any other wastes identified in the approved Apiculture Risk Management Plan (see condition 17 of schedule 5) to the Euchareena Road site.

Resource Recovery

3. The Proponent shall implement all reasonable and feasible measures to recover resources from the waste stream on the Ophir Road site to the satisfaction of the Director-General. These measures shall include a specific program to increase the separation of food wastes from the commercial and industrial waste stream from the inception of the Project.

Monitoring

4. The Proponent shall prepare and implement a Waste and Resource Recovery Monitoring Program for the site to the satisfaction of the Director-General. This program must:
   a) be prepared in consultation with DECCW, and submitted to the Director-General for approval prior to the commencement of the Project's operations on site; and
   b) monitor:
      - the quantity, type and source of waste received on site;
      - the quantity and type of waste sent to the Euchareena Rd site; and
      - the effectiveness of the resource recovery measures (see condition 3 above).

SOIL & WATER

Discharge Limits

5. The Proponent shall comply with Section 120 of the POEO Act.

Leachate

6. The Proponent shall collect all leachate generated by the Project, and transfer it to the Orange Sewage Treatment Plant for treatment.

Stormwater

7. The Proponent shall collect all the runoff from the development associated with the project on site in the existing surface water management system on site.

Bunding

8. The Proponent shall store all chemicals, fuels and oils used on site in appropriately bunded areas, with impervious flooring and sufficient capacity to contain 110% of the largest container stored within the bund, unless double-skinned tanks are used. These bunds shall be designed and installed in accordance with the requirements of all relevant Australian Standards, and/or DECCW's *Storing and Handling Liquids: Environmental Protection* manual.

Erosion and Sediment Control

9. During the construction of the Project, the Proponent shall implement 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.

ODOUR

10. The Proponent shall not cause or permit the emission of offensive odours from the site, as defined under Section 129 of the POEO Act.

AIR

11. The Proponent shall implement all reasonable and feasible measures on the site to minimise the dust generated by the project.

NOISE

12. The Proponent shall ensure that the noise generated by all the development on the site – that is the construction and operation of the project and the ongoing waste operations at the existing waste facility - complies with the noise limits in the EPL for the site.

TRANSPORT

13. The Proponent shall ensure that the internal roads and parking associated with the project are constructed and maintained in accordance with the latest versions of *AS 2890.1* and *AS 2890.2*.

VISUAL AMENITY

Lighting

14. The Proponent shall ensure that the lighting associated with the project:
    a) complies with the latest version of *AS 4282(INT) - Control of Obtrusive Effects of Outdoor Lighting*; and
    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.

Landscaping

15. Prior to operations commencing for the project, the Proponent shall landscape the areas around the new buildings that are to be developed on the site for the project to the satisfaction of the Director-General.

SCHEDULE 5
SPECIFIC ENVIRONMENTAL CONDITIONS - EUCHAREENA ROAD SITE

WASTE

Restrictions on the Receipt, Storage, Handling & Disposal of Waste

1. The Proponent shall only receive, store, handle or dispose of the following waste on site:
   (a) general solid waste (putrescible);
   (b) general solid waste (non-putrescible);
   (c) biosolids for the composting operations on site; and
   (b) special waste that is authorised for receipt on site under an EPL.

2. Notwithstanding condition 1 above, the Proponent shall implement all reasonable and feasible measures to avoid the receipt of beekeeping equipment, honey production waste, any other wastes identified in the approved Apiculture Risk Management Plan (see condition 17 of this schedule) on site.

3. The Proponent shall ensure that all general solid waste (putrescible) and mixed residual waste is appropriately baled and wrapped in plastic, apart from the following waste:
   (a) animal waste; and
   (b) food and organic waste for the composting operation on site.

   Note: To avoid any doubt, general solid waste (non-putrescible) is not required to be baled and wrapped in plastic.

Restrictions on the Outputs of the Composting Facility

4. With the exception of outputs that are approved for use under the POEO Act (and associated Regulations), the Proponent shall dispose of all outputs from the composting facility on site to the landfill on site.

Monitoring

5. The Proponent shall prepare and implement a Waste and Resource Recovery Monitoring Program for the site to the satisfaction of the Director-General. This program must:
   (a) be prepared in consultation with DECCW, and submitted to the Director-General for approval prior to the commencement of the Project's operations on site; and
   (b) monitor:
      - the quantity, type and source of waste received on site; and
      - the outputs produced by the composting facility that are exported from the site.

Leachate Management

6. The Proponent shall:
   (a) install a leachate barrier system on any surface to be used for the direct impoundment of leachate;
   (b) ensure that this leachate barrier system has:
      - a re-compacted clay or modified soil layer of at least 90 centimetres thick with an in situ coefficient of permeability of less than 1×10^{-9} m/s; and
      - a longitudinal gradient design of at least 1% and a transverse gradient design of 3%;
   (c) collect and store all leachate generated by the landfill within the landfill itself, until it is transferred it to the Orange Sewage Treatment Plant for treatment;
   (d) collect all leachate generated by the composting facility in a suitable storage system, and either reuse in the facility or transfer it to the Orange Sewage Treatment Plant for treatment;
   (e) design and operate the leachate storage systems referred to in (c) and (d) above to prevent leachate from escaping to surface water, groundwater or the surrounding subsoils;
   (f) direct all surface water from areas not subject to waste disposal or leachate disposal away from the leachate management system; and
   (g) treat all water that has entered areas filled with waste, or been contaminated by leachate, as leachate.

Landfill Operations

7. Unless the Director-General agrees otherwise, the Proponent shall:
   (a) minimise the exposed or cleared areas at the landfill;
   (b) progressively revegetate all completed areas of the landfill and stabilise any exposed areas that are not required for operational purposes for a period greater than 90 days;
   (c) minimise the tracking of mud and waste from the site on public roads;

(d) fill the landfill cells in a systematic manner;
(e) maximise landfill compaction rates;
(f) cover the active landfill area with at least 0.15 metres of soil (or a suitable alternative material) at the end of daily waste disposal and compaction activities;
(g) progressively cap the landfill cells with the approved capping layer, which shall comprise (from top to bottom):
- 0.15m of topsoil;
- a 0.85m thick layer of uncompacted soil, obtained on site;
- a sealing layer, comprising a compacted clay layer at least 0.5m thick and having a permeability less than $k = 10^{-8}$ ms^{-1} (or an approved alternative such as a geomembrane); and
- a seal bearing layer, comprising a 0.3m thick layer of compacted clay soil; and

(h) revegetate the covered landfill cells following the capping of each cell and once they reach their final design height.

Composting Operations

8. Unless the Director-General agrees otherwise, the Proponent shall ensure that the:
(a) biosolids and food and organic waste received on site is either loaded directly into the composting tunnels upon arrival, or covered at all times until it is loaded into the tunnels; and
(b) windrow composting operations are managed in accordance with:
- AS 4454-2003: Composts, Soil Conditioners and Mulches (Appendix N) or the latest version of this standard; or
- protective measures set out in the *Composting & Related Organics Processing Facilities* guideline.

Greenhouse Gas

9. The Proponent shall implement all reasonable and feasible measures to minimise:
(a) energy use on site; and
(b) the greenhouse gas emissions produced on site,
to the satisfaction of the Director-General.

10. The Proponent shall prepare and implement a Greenhouse Gas Management Plan for operations on site to the satisfaction of the Director-General. This plan must be prepared in consultation with DECCW by a suitably qualified and experienced expert, and be submitted to the Director-General for approval prior to the commencement of operations on site.

Security

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

Litter Control

12. The Proponent shall:
(a) implement suitable measures to prevent the unnecessary proliferation of litter both on and off site, including the installation and maintenance of a mesh fence of not less than 1.8 metres high around the proposed landfill area; and
(b) inspect daily and clear the site (and if necessary, surrounding area) of litter on at least a weekly basis.

Pest, Vermin & Noxious Weed Management

13. The Proponent shall:
(a) implement suitable measures to manage pests, vermin and declared noxious weeds on 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 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.

Fire Management

14. The Proponent shall:
(a) implement suitable measures to minimise the risk of fire on site, including in the landfill area;
(b) extinguish any fires on site promptly; and

(c) maintain adequate fire-fighting capacity on site, including a fire fighting tanker.

Rehabilitation

15. The Proponent shall rehabilitate the site to the satisfaction of the Director-General to ensure that it:
    (a) is consistent with the proposed final landform depicted in the figure in Appendix 5;
    (b) subject to (a), qualifies as Class 3 agricultural land under the *Agricultural Land Suitability Classification* guideline; and
    (c) continues to be non-polluting and does not cause environmental harm after the closure of the landfill.

APICULTURE RISKS

16. The Proponent shall implement all reasonable and feasible measures to minimise the apiculture risks of the project to the satisfaction of the Director-General.

17. The Proponent shall prepare and implement an Apiculture Risk Management Plan for the project to the satisfaction of the Director-General. This plan must:
    (a) be prepared by a suitably qualified and experienced expert whose appointment has been endorsed by the Director-General;
    (b) be prepared in consultation with suitable representatives from DII and the local apiculture industry;
    (c) be submitted to the Director-General for approval prior to the commencement of operations on site;
    (d) describe the measures to be implemented in association with the project to minimise the apiculture risks of the project;
    (e) include a program to monitor:
        - the effectiveness of these management measures;
        - the leachate from the landfill and composting operations on site for AFB spores and any other commonly occurring chemicals that may be harmful to bees; and
        - the infection of hives in the surrounding area that could have been caused by the project; and
    (f) provide for the establishment of a committee, comprised of representatives from both DII and the local apiculture industry and appropriate experts, to oversee the implementation of the plan, and provide advice to the Director-General on any improvements that could be made to the plan.

SOIL & WATER

Soil

18. The Proponent shall:
    (a) minimise any soil loss through erosion on site;
    (b) set aside any topsoil won on site for the proposed revegetation and rehabilitation of the site; and
    (c) ensure that any topsoil stockpiles on site are suitably managed to ensure that the topsoil in these stockpiles can be beneficially used in the proposed revegetation and rehabilitation of the site.

Discharge Limits

19. Except as may be expressly provided in an EPL for the site, the Proponent shall comply with Section 120 of the POEO Act.

Bunding

20. The Proponent shall store all chemicals, fuels and oils used on site in appropriately bunded areas, with impervious flooring and sufficient capacity to contain 110% of the largest container stored within the bund, unless double-skinned tanks are used. Any bunds shall be designed and installed in accordance with the requirements of all relevant Australian Standards, and/or DECCW's Environmental Protection Manual *Technical Bulletin Bunding and Spill Management*.

Erosion & Sediment Control

21. During the construction, the Proponent shall implement 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.

Management Plan

22. The Proponent shall prepare and implement a Soil & Water Management Plan for the project to the satisfaction of the Director-General. This plan must be prepared in consultation with DECCW and NOW by a suitably qualified and experienced expert whose appointment has been endorsed by the Director-General, and be submitted to the Director-General for approval prior to the commencement of operations on site. In addition to the standard requirements for management plans in Schedule 7 of this approval, this plan must:
    (a) include a water balance for the project; and
    (b) ensure that suitable measures are implemented to minimise water use, control soil erosion, prevent groundwater contamination, and comply with any surface water discharge limits.

ODOUR

23. The Proponent shall not cause or permit the emission of offensive odours from the site, as defined under Section 129 of the POEO Act.

AIR

Limits

24. The Proponent shall ensure that dust generated by the project does not cause additional exceedances of the criteria listed in Tables 1 to 3 at any residence on, or on more than 25 percent of any privately owned land surrounding the site.

Table 1: Long term impact assessment criteria for particulate matter

Pollutant	Averaging period	Criterion
Total suspended particulate (TSP) matter	Annual	90 µg/m^3
Particulate matter < 10 µm (PM_{10})	Annual	30 µg/m^3

Table 2: Short term impact assessment criteria for particulate matter

Pollutant	Averaging period	Criterion
Particulate matter < 10 µm (PM_{10})	24 hour	50 µg/m^3

Table 3: Long term impact assessment criteria for deposited dust

Pollutant	Averaging period	Maximum increase in deposited dust level	Maximum total deposited dust level
Deposited dust	Annual	2 g/m^2/month	4 g/m^2/month

Note: Deposited dust is assessed as insoluble solids as defined by Standards Australia, 1991, AS/NZS 3580.10.1-2003: Methods for Sampling and Analysis of Ambient Air - Determination of Particulates - Deposited Matter - Gravimetric Method.

Monitoring

25. The Proponent shall prepare and implement an Air Quality Monitoring Program for the site to the satisfaction of the Director-General.

NOISE

Limits

26. The Proponent shall ensure that the noise generated by the project does not exceed the limits in Table 4 at any residence on privately owned land surrounding the site.

Table 4: Noise impact assessment criteria dB(A)

Receiver	Day/Evening/Night $L_{Aeq(15\ minute)}$
Residences on privately-owned land (during construction)	*40*
Residences on privately-owned land (during operations)	*35*

Notes:

- *Noise from the Project is to be measured at the most affected point or within the residential boundary, or at the most affected point within 30 metres of a dwelling (rural situations) where the dwelling is more than 30 metres from the boundary, to determine compliance with the $L_{Aeq(15\ minute)}$ noise limits in the above table. Where it can be demonstrated that direct measurement of noise from the Project is impractical, the DEC may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy). The modification factors in Section 4 of the NSW Industrial Noise Policy shall also be applied to the measured noise levels where applicable.*
- *The noise emission limits identified in the above table apply under meteorological conditions of:*
  - *wind speeds of up to 3 m/s at 10 metres above ground level; or*
  - *temperature inversion conditions of up to 3ºC/100m, and wind speeds of up to 2 m/s at 10 metres above ground level.*

Operating Hours

27. The Proponent shall comply with the operating hours in Table 5 for the Euchareena Rd site.

Table 5: Operating Hours

Activity	Day	Hours
Construction	Monday - Friday	7 am – 6 pm
	Saturday	7 am – 1 pm
	Sunday & Public Holidays	Nil
Landfill and Outdoor Composting Operations	Monday - Sunday	7am – 5 pm
	Good Friday & Christmas	Nil
Indoor Composting Operations & Emergency Operations	Monday - Sunday	Anytime

Monitoring

28. The Proponent shall prepare and implement a Noise Monitoring Program for the site to the satisfaction of the Director-General.

METEOROLOGICAL MONITORING

29. During the life of the project, the Proponent shall ensure that there is a suitable meteorological station in the vicinity of the site that complies with the requirements in the latest version of *Approved Methods for Sampling of Air Pollutants in New South Wales* guideline.

CONSERVATION

Aboriginal Heritage

30. During the life of the project, the Proponent shall protect the scarred tree on site and the 2 artefacts found in the south-western corner of the site, in consultation with the Local Aboriginal Land Council, and to the satisfaction of the Director-General.

Note: the scarred tree and artefacts are referred to in Appendix 4 of this approval

Biodiversity

31. The Proponent shall:
    (a) actively manage the areas outside the proposed disturbance areas (shown in broad terms on the map in Appendix 3) for conservation purposes;
    (b) only use native grasses and other native species from the White Box-Yellow Box-Blakely's Red Gum Woodland endangered ecological community in any revegetation or rehabilitation works;
    (c) improve the quality of the vegetation in these areas; and
    (d) increase the amount of White Box-Yellow Box-Blakely's Red Gum Woodland vegetation in the two conservation areas on the site,

    to the satisfaction of the Director-General.

Conservation Management Plan

32. The Proponent shall prepare and implement a Conservation Management Plan for the project to the satisfaction of the Director-General. This plan must be prepared in consultation with DECCW by suitably qualified and experienced expert/s whose appointment has been approved by the Director-General, and be submitted to the Director-General for approval prior to the commencement of construction on site. It must provide for both the protection of Aboriginal heritage values and the enhancement of biodiversity values on the site.

TRANSPORT

33. The Proponent shall:
    (a) construct a sealed road from Euchareena Rd to the entrance to the landfill in general accordance with the figures in Appendix 2; and
    (b) ensure that the:
        - car parking is constructed in accordance with the relevant requirements of the latest version of *AS 2890.1*;
        - internal road network is constructed in accordance with the relevant requirements of the latest version of *AS 2890.2;* and
        - entrance gates are installed a suitable distance from Euchareena Rd so that, at the minimum, a semi-trailer can stand completely clear of the road and stock movement corridor.

34. Unless the Director-General agrees otherwise, the Proponent shall ensure that the operations on site do not generate more than 40 heavy vehicle movements in any one day, and not more than 30 heavy vehicle movements a day when averaged over a 7 day period.

VISUAL AMENITY

Visual Bunds & Landscaping

35. Prior to the construction of the proposed visual bunds on site, the Proponent shall submit detailed plans of the bunds and associated landscaping to the Director-General for approval. Following approval, these plans must be implemented and maintained to the satisfaction of the Director-General.

36. Prior to operations commencing for the project, the Proponent shall landscape the area shaded in blue on the map in Appendix 3 to the satisfaction of the Director-General. This landscaping must use species that are consistent with the existing species in the adjoining conservation area.

Lighting

37. The Proponent shall ensure that all external lighting associated with the Project:
    (a) does not create a nuisance to surrounding properties or roadways; and
    (b) complies with *AS 4282(INT) 1995 – Control of Obtrusive Effects of Outdoor Lighting.*

Signage

38. The Proponent shall not install any advertising signs on site without the written approval of the Director-General.

SCHEDULE 6
TRANSPORT

ACCESS ROAD WORKS – EUCHAREENA ROAD SITE

1. Prior to the commencement of construction on the Euchareena Road site, the Proponent shall:
   (a) construct an AUR/AUL intersection at the site entrance, generally in accordance with the plan in Appendix 6;
   (b) install warning signs on both approaches to the site entrance; and
   (c) provide a suitable stock movement corridor along the Euchareena Rd frontage of the site, in consultation with the other users of the corridor,

   to the satisfaction of Council.

   Note: The construction of these works will involve some construction on the Euchareena Road site. To avoid any doubt, this construction work is not prohibited by condition 1 above.

UPGRADE OF EUCHAREENA ROAD

Upgrade Works

2. Prior to the commencement of operations on the Euchareena Road site, the Proponent shall ensure that the recommended measures marked as high and medium priority in the report titled *Euchareena Road Resource recovery Centre – Road User & Operational* Assessment, prepared by Winning Traffic Solutions and dated November 2009, are implemented to the satisfaction of Council.

Road Maintenance Contributions

3. During operations, the Proponent shall pay Council a quarterly contribution of 4 cents per kilometre per tonne of material trucked either to or from the Euchareena Road site along the 5.6 kilometre section of Euchareena Road. The contribution amount shall be adjusted every 3 years from the date of this approval to account for the effects of inflation (Consumer Price Index).

4. With the approval of the Director-General, the Proponent may reduce its road maintenance contributions for the project (see condition 3 above), to ensure there is a fair apportionment between the Proponent and Council for the upgrade works referred to in condition 2 above.

UPGRADE OF WATSON STREET (MITCHELL HIGHWAY) & EUCHAREENA RD INTERSECTION

5. Prior to the commencement of operations on the Euchareena Road site, the Proponent shall upgrade the Watson Street (Mitchell Highway)/Euchareena Road intersection to the satisfaction of both the RTA and the Director-General.

6. The Proponent shall ensure that the development associated with the upgrade of this intersection:
   (a) does not adversely affect the health or condition of the "Christmas Tree" in the vicinity of the existing intersection or its associated root and branch zone; and
   (b) has minimal impact on the heritage values of the Railway Station & Yard precinct in the vicinity of the existing intersection.

7. If the upgrade referred to in condition 5 above requires the floodlights under the "Christmas Tree" to be either removed or relocated, then this must be done in consultation with Council, and to the satisfaction of the Director-General.

8. Prior to carrying out the construction of the upgrade referred to in condition 5 above, the Proponent shall prepare an Intersection Upgrade Plan to the satisfaction of both the RTA and the Director-General. This plan must:
   (a) be prepared by suitably qualified and experienced experts whose appointment has been endorsed by the Director-General, and in consultation with the Heritage Branch and Council;
   (b) include the detailed plans for the proposed upgrade;
   (c) include an assessment of the heritage values of the Railway Station & Yard precinct, and the potential effect of the proposed upgrade on these values;
   (d) include an assessment of the health or condition of the "Christmas Tree", and the potential effects of the proposed upgrade on the tree;
   (e) describe the measures to be implemented to ensure compliance with the criteria in condition 6 above, and minimise the construction impacts of the proposed upgrade;
   (f) include a program to monitor the effectiveness of these measures; and
   (g) include a contingency plan to deal with any unforseen impacts.

9. Following approval, the Proponent shall implement the plan referred to in condition 8 above to the satisfaction of the RTA and Director-General.

HEAVY VEHICLE RESTRICTIONS

10. The Proponent shall ensure that:
    (a) all heavy vehicles associated with the project that are either travelling to or from the Euchareena Road site use the designated heavy vehicle route along Euchareena Road;
    (b) no heavy vehicles associated with the project use Euchareena Road during the regular school bus operations on that road; and
    (c) the heavy vehicles associated with the project that are carrying loads are suitably covered at all times.

TRANSPORT CODE OF CONDUCT

11. The Proponent shall prepare and implement a Transport Code of Conduct for the project to the satisfaction of the Director-General. This protocol must:
    (a) be prepared in consultation with the RTA, Council and the school bus operators, and be submitted to the Director-General for approval prior to delivery of any waste to the Euchareena Road site; and
    (b) describe the measures to be implemented to:
        - minimise the impacts of the Project on the local and regional road network, including traffic noise; and
        - ensure no heavy vehicles associated with the Project use Euchareena Rd during regular school bus operations along Euchareena Rd.

SCHEDULE 7
ENVIRONMENTAL MANAGEMENT, REPORTING & AUDITING

COMMUNITY EDUCATION PROGRAM

1. The Proponent shall prepare and implement a Community Education Program for the project to the satisfaction of the Director-General. This program must be submitted to the Director-General for approval prior to the commencement of operations on the Ophir Road site, and shall at a minimum focus on:
   (a) promoting the:
      - resource recovery activities provided at the Ophir Rd site;
      - community benefits of composting food and garden waste; and
      - importance of food waste recovery from all waste streams, but particularly the commercial and industrial waste stream; and
   (b) avoiding the placing of open, uncleaned honey containers in the waste and creating other risks for the apiculture industry in the region.

ENVIRONMENTAL MANAGEMENT

Construction Management Plan

2. The Proponent shall prepare and implement a Construction Management Plan for the development to be carried out on both the Ophir Road and Euchareena Road sites to the satisfaction of the Director-General.

Landfill Environmental Management Plan

3. Prior to the commencement of the project's operations on the Ophir Rd site, the Proponent shall update the existing Landfill Environmental Management Plan for the site to the satisfaction of the Director-General. Following approval, the Proponent shall implement this plan to the satisfaction of the Director-General.

4. The Proponent shall prepare and implement a Landfill Environmental Management Plan for the Euchareena Road site to the satisfaction of the Director-General. This plan must:
   (a) be submitted to Director-General for approval prior to commencement of operations on the site;
   (b) be prepared by suitably qualified and experienced experts whose appointment has been endorsed by the Director-General;
   (c) describe in detail the management measures that would be implemented to address:
      - the relevant matters referred to in the *Environmental Guidelines for Solid Waste Landfills*; and
      - the conditions of this approval;
   (d) include a copy of:
      - the relevant plans and programs required under this approval;
      - a quality assurance plan for the design and installation of the leachate management system and any capping of the landfill cells that covers the relevant issues outlined in sections 1 – 2 of Appendix A of the the *Environmental Guidelines for Solid Waste Landfills*;
   (e) describe the procedures that would be implemented to:
      - keep the local community and relevant agencies informed about the operation and environmental performance of the project;
      - receive, handle, respond to, and record complaints;
      - resolve any disputes that may arise during the course of the project; and
      - respond to emergencies; and
   (f) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the project.

Management Plan Requirements

5. The Proponent shall ensure that the management plans required under this approval are prepared in accordance with any relevant guidelines, and include:
   a) detailed baseline data;
   b) a description of:
      - the relevant statutory requirements (including any relevant approval, licence or lease conditions);
      - any relevant limits or performance measures/criteria; and
      - the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the Project or any management measures;

c) a description of the 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:
   - impacts and environmental performance of the Project;
   - 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 Project over time;
g) a protocol for managing and reporting any:
   - incidents;
   - complaints;
   - non-compliances with statutory requirements; and
   - exceedances of the relevant limits and/or performance measures / criteria; and
h) a protocol for periodic review of the plan.

Annual Review

6. One year after the commencement of operations, and annually thereafter, the Proponent shall review the environmental performance of the project to the satisfaction of the Director-General. This review must:
   a) describe the operations that were carried out in the past year;
   b) analyse the monitoring results and complaints records of the Project over the past year, which includes a comparison of these results against the
      - relevant statutory requirements, limits or performance measures/criteria;
      - monitoring results of previous years; and
      - relevant predictions in the EA;
   c) identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;
   d) identify any trends in the monitoring data over the life of the Project; and
   e) describe what measure will be implemented over the next year to improve the environmental performance of the Project.

Revision of Plans & Programs

7. Within 3 months of the submission of an:
   a) audit under condition 10 of schedule 7;
   b) incident report under condition 8 of schedule 7; and
   c) annual review under condition 6 of schedule 7,

   the Proponent shall review, and if necessary revise the plans and programs required under this approval to the satisfaction of the Director-General.

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

REPORTING

Incident

8. The Proponent shall notify the Director-General and any other relevant agencies of any incident associated with the project as soon as practicable after the Proponent becomes aware of the incident. Within 7 days of the date of the incident, the Proponent shall provide the Director-General and any relevant agencies with a detailed report on the incident.

Regular

9. The Proponent shall provide regular reporting on the environmental performance of the project on its website, in accordance with the reporting arrangements in any plans or programs approved under the conditions of this approval, and to the satisfaction of the Director-General.

INDEPENDENT ENVIRONMENTAL AUDIT

10. Within a year of the commencement of operations of the project, and every 5 years thereafter, unless the Director-General directs otherwise, the Proponent shall commission and pay the full cost of an Independent Environmental Audit of the project. This audit must:
    a) be conducted by suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Director-General;
    b) include consultation with the relevant agencies;
    c) assess the environmental performance of the project and assess whether it is complying with the relevant requirements in this approval and any relevant EPL (including any plan or program required under these approvals);

d) review the adequacy of any plans or programs required under these approvals; and, if appropriate;
e) recommend measures or actions to improve the environmental performance of the project, and/or any plan or program required under these approvals.

Note: This audit team must be led by a suitably qualified auditor and include experts in any fields specified by the Director-General.

11. Within 6 weeks of the completing of this audit, or as otherwise agreed by the Director-General, the Proponent shall submit a copy of the audit report to the Director-General, together with its response to any recommendations contained in the audit report.

ACCESS TO INFORMATION

12. From the commencement of the construction of the project, the Proponent shall make the following information publicly available on its website as it is progressively required by the approval:
a) a copy of all current statutory approvals;
b) a copy of the current plans and programs required under this approval;
c) a summary of the monitoring results of the Project, which have been reported in accordance with the various plans and programs approved under the conditions of this approval;
d) a complaints register, which is to be updated on a monthly basis;
e) a copy of the Annual Reviews (over the last 5 years);
f) a copy of any Independent Environmental Audit, and the Proponent's response to the recommendations in any audit; and
g) any other matter required by the Director-General.

APPENDIX 1
PROPONENTS STATEMENT OF COMMITMENTS

Statement of Commitments

Issue	Commitments
Waste management strategy	The Proponent will implement its *Resource Recovery and Waste Management Strategy*, as described in Section A.3 of the EA. This has the following key elements: ◗ Introduction of a third household mobile garbage bin for collection of domestic garden waste together with kitchen-separated food waste; ◗ Differential landfill gate pricing at a level required to encourage source separation of business recyclable materials and food waste to provide clean streams for further processing; ◗ Increased landfill gate pricing for C&D waste to encourage source separation of recyclable materials and presentation of clean, unmixed streams; ◗ Further development of the current requirement for building applications to include waste management plans, with extension to include recycling plans that are subject to performance review; ◗ Working with NetWaste to continue improvement in event recycling opportunities; ◗ Action to improve the beneficial use of recycling yield from kerbside collected materials and C&I / C&D recyclables; ◗ Processing of food/garden organics at the Euchareena Road RRC using an enclosed tunnel composting technology; ◗ Continued recovery of dry recyclable materials at the Ophir Road RRC at a new MRF to be constructed; ◗ Baling of mixed residual waste at the Ophir Road RRC at a new baling facility to be installed; and ◗ Transport of baled mixed residual waste to the Euchareena Road RRC for disposal in a specially designed landfill.
Environmental management plans	Construction environmental management plans (CEMPs) would be prepared and implemented to guide environmental management and monitoring activities and compliant handling procedures during construction at both sites. The CEMPs would include the following sub-plans: ◗ Noise management plan – The plan would address how noise will be mitigated and managed during construction activities, in accordance with DECCW's Environmental Noise Control Manual; ◗ Flora and fauna management plan – The plan would address how impacts on flora and fauna would be mitigated and managed during the construction phase; ◗ Air and dust management plan – The plan will outline the mitigation measures to control dust from exposed areas, stockpiles, plant equipment and unsealed roads; ◗ Waste management plan – The plan would include disposal requirements, measures to prevent the generation and measures to reduce, re-use or recycle wastes where possible; ◗ Soil and water management plan – The plan would address how potential construction impacts on soil and water quality will be mitigated and managed during construction works; ◗ Traffic management plan – The plan will include truck movements to and from the site, interactions with general public, parking and access requirements for construction personnel and safety signage and training of personnel in traffic management.

Issue	Commitments
	Operational environmental management plans (OEMPs) would be prepared for both sites and implemented to guide environmental management and monitoring activities and complaints handling procedures during operation. The OEMPs would include the following sub-plans: ◗ Stormwater management plans – The plan would include the measures to retain and re-use the maximum amount of water on-site and ensure the surface run-off water is maintained at acceptable levels. The plan would also include erosion and sediment mitigation measures; ◗ Process water management plan (tunnel composting plant) – The plan would include measures to optimise reuse and ensure that wastewater generation and need for disposal is minimised; ◗ Air quality management plan – The plan would include mitigation measures for control of odours, dust and particles and monitoring undertaken. ◗ Noise management plan – The noise management plan will include noise control measures, monitoring. ◗ Pest, vermin and weed control – The plan will outline mitigation measures that will control pest and vermin that may be attracted to the waste facility and minimise the degradation of the local amenity caused by pest, vermin and noxious weeds. ◗ Traffic management plan – The plan will include parking and access requirements, safety signage and training of personnel in traffic management. ◗ Fire management plan – The plan would include details of sources of water for firefighting, the need for fire extinguishers on all mobile equipment and suitable training for site-based personnel.
Revegetation, rehabilitation and post closure management	The Proponent would undertake a program of progressive revegetation in those areas progressively disturbed by the operations and of the area designated for vegetation enhancement to the north of the landfill at the Euchareena Road Site. The Proponent would continue to manage the Euchareena Road Site following closure of the landfill and enclosed tunnel composting facility, in accordance with the documented set of procedures compiled in conjunction with the Site Closure plan. The Proponent would monitor the Euchareena Road Site in accordance with the site's EPL.
Soils and land capability	The Proponent would implement the following measures for the management of soil at the Euchareena Road Site: ◗ Double skin diesel storage tanks would be used to prevent fuel leakages; ◗ Topsoil would be stockpiled and used later for rehabilitation of the final landscape; ◗ Material at depths greater than 0.75 m would be stockpiled for use in bund wall construction, daily cover or landfill capping; ◗ Handling of topsoil would be minimised to reduce potential mechanical damage to soil structure; ◗ Care would be taken to ensure that topsoils and subsoils are not stripped when they are too moist; ◗ Driving of machinery on topsoil and subsoil stockpiles, other than scrapers during unloading, would be kept to a minimum; ◗ Topsoil stockpiles would be up to 1 m high and subsoil stockpiles would not exceed 3 m in height; ◗ Subsoil and topsoil stockpiles would be located within the footprint of the landfill or on the upper surface of completed landfill stages; and ◗ Stabilisation measures would be used until vegetation is established on

Issue	Commitments
	the stockpiled soil.
Surface water	At the Ophir Road RRC, The Proponent would continue to comply with the existing LEMP. Sediment dams would be constructed prevent runoff from the Euchareena Road landfill from reaching water catchments.
Groundwater	The Proponent would ensure the proper compaction of the floor of each landfill cell and the maturation pad to achieve a uniform low permeability equivalent to less than 1×10^{-9} m/s for a depth of at least 0.9 m. The in situ permeability of compacted material would be tested by sampling and laboratory testing to ensure the required permeability level has been achieved. The Proponent would undertake a groundwater monitoring program at the Euchareena Road Site including groundwater level and quality monitoring as per the EPL for the Site.
Flora & fauna	The Proponent would further enhance the two woodland areas with plantings of all species. In addition, the Proponent would plant a rehabilitation corridor to ultimately join the two existing woodland areas and improve nature conservation across the site. The Proponent would encourage natural regeneration by installing tree guards and appropriate fencing of regeneration areas. Diverse native flowering flora would be planted in other regions to increase the biodiversity and availability of nectar for foraging bees. The Proponent would implement weed management measures including: ◗ Regular inspections of the Euchareena Road Site. ◗ Education of staff with respect to weed identification and control. ◗ Continual monitoring and control of identified noxious weeds. ◗ Investigation into the practicality of sowing crops or competitive improved pastures on sections of the Site not required for immediate disturbance as a means of weed control. The Proponent would also establish permanent quadrats / transects across the western and northeastern woodland areas to enable periodic monitoring to record the extent of flora regrowth within the protected woodland remnants. Where species diversity is found to be insufficient from monitoring, supplementary planting programs would be undertaken. Prior to the removal of any isolated paddock tree, a pre-start survey would be carried out to minimise the potential impact on spring nesting birds and over-wintering bats or any other species utilising the tree at the time. Timber from felled trees would be relocated to a position where it can form part of the ground cover habitat in the woodland habitat on site. The areas of Euchareena Road Site that are not directly affected by the proposed activity would be destocked and remain free of grazing by domestic stock until such time when a long term vegetation rehabilitation management plan can be implemented to ensure the recovery of the woodland remnants on the site. The existing remnant woodland areas would be fenced-off, if necessary, in order to allow the woodland remnants on site to regenerate free from uncontrolled stock grazing pressure. Slashing would be used to minimise fire risk. Vegetation screens would be no less than 20 m wide to enhance wildlife habitat corridors around the perimeter of the Euchareena Road Site. A pest control plan would be formulated and adopted that includes, in particular, the control of foxes and feral cats and any other vertebrate pest that may be a problem to the surrounding properties. This pest control plan

Issue	Commitments
	would form part of the overall Environmental Management Plan for the Euchareena Road RRC. Should a vermin-proof fence be constructed around the perimeter of the Euchareena Road Site, a plan to manage the kangaroos confined within this fence would be put in place in order to keep the natural ground cover at an appropriate level. It is noted that at this stage, the construction of this fence is not anticipated. Strict site hygiene controls and an effective control plan would be implemented to manage the potential impact of rodents, such as the Black Rat and House Mouse, exotic predators such as the European Red Fox and Feral Cat and introduced bird species. A Restrictive Covenant would be attached to the Land Title for the Euchareena Road site. This would protect the critically endangered ecological community and the corridor linking the two areas on which the critically endangered community is present. The only way that the Covenant could be removed is for the Consent to be amended. The Covenant would be administered by the NSW Land Titles Office.
Apiary industry	No apiary-related equipment or pesticide/chemical containers would be accepted at the Euchareena Road RRC or the Ophir Road RRC. Council officers supervising the delivery of wastes to the respective transfer stations would be trained to recognise apiary equipment and pesticide/chemical containers. The Proponent would work closely with the Department of Primary Industries (Agriculture) to inform all registered apiarists in the Orange City regional areas regarding the appropriate manner in which to dispose of apiary equipment and pesticide/chemical containers. The Proponent would continue to further promote recycling through education programs facilitated through NetWaste in order to continue to maximise the diversion of glass and plastic honey containers from the waste stream. All operators responsible for the receipt, compaction and covering of waste delivered to the Euchareena Road Site would be fully trained firstly to recognise any apiary equipment and pesticide/chemical containers and secondly to identify the presence of any bees on site. Similar training would also be provided for operational staff within each of the transfer stations operated by Orange City and where participating, the regional councils. Detailed operational procedures would be prepared and implemented at the Euchareena Road Site and transfer stations in the event that any apiary equipment or pesticide/chemical containers are delivered to the receival areas at either the Euchareena Road Site or transfer stations. Comprehensive training would also be undertaken for all personnel working on the Euchareena Road Site to ensure that the bale placement and covering of wastes within optimum periods is undertaken in accordance with the approved procedures. Delivery of bales would be between 9 am and 5 pm (excluding school bus times) and wrapped bales will be placed in the landfill and covered. Wrapping would not occur when bees are not active, however bales would be secured with straps all year round. Bee-friendly native vegetation would be planted and maintained around the Euchareena Road Site within the various perimeter tree screens to provide a more appropriate alternative nectar source away from the landfilling operation. The species of trees and shrubs would be selected in consultation with the Department of Primary Industries (Agriculture) and local apiarists. A variety of flowering plants would also be planted to increase food source diversity. The Proponent would make arrangement for independent testing of nearby hives in the ownership of local apiarists. Failing that, the Proponent would establish a control, by placing hives at 500 m from the landfill and test for

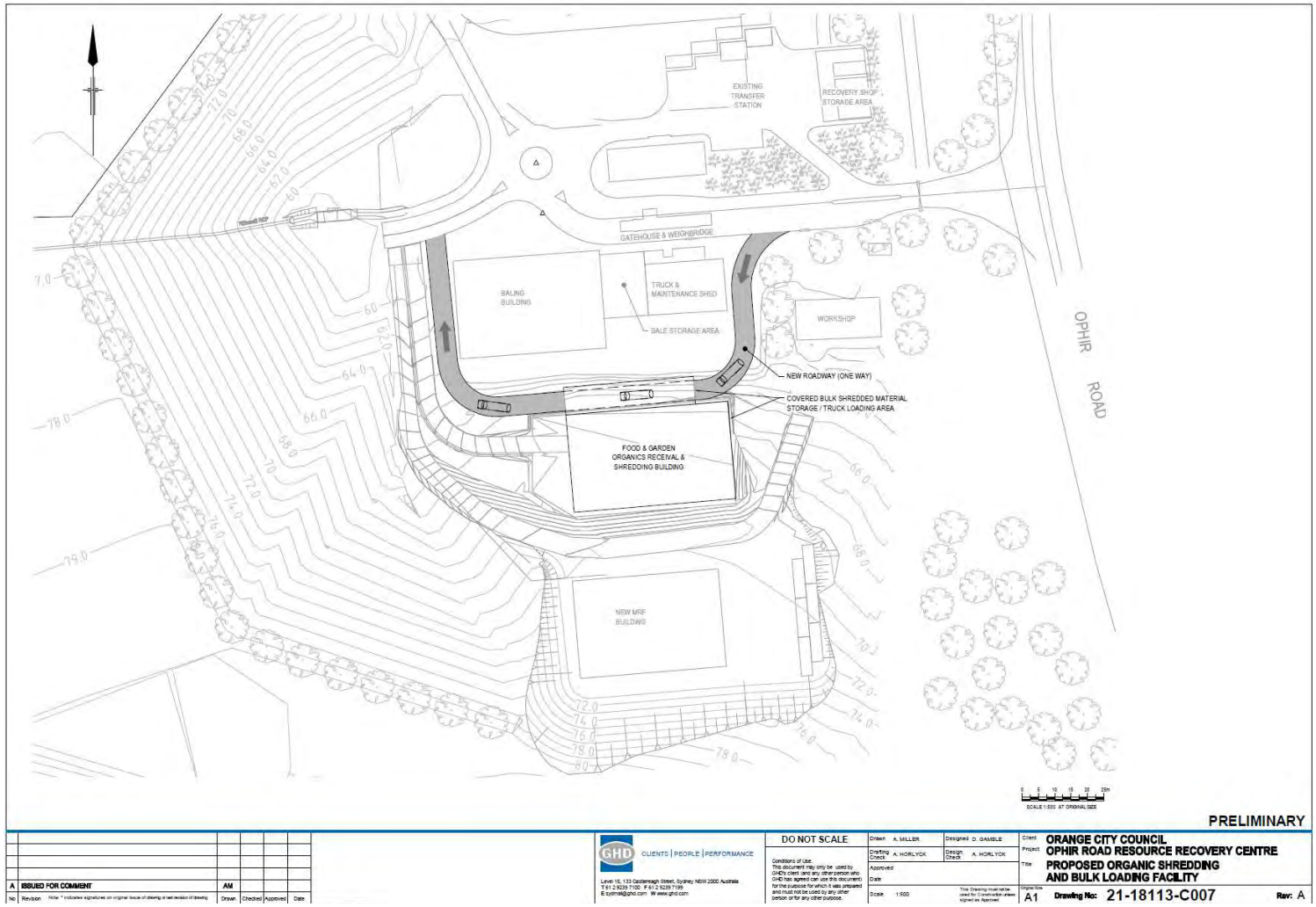
Issue	Commitments
	propolis and AFB during periods that the local hives are active.
Aboriginal heritage	At the Ophir Road Site if during construction, any Aboriginal objects are discovered, work would immediately cease in the area of the discovery and advice would be sought from the Aboriginal Heritage Unit of DECCW. For the Euchareena Road Site, The following management controls would be undertaken to minimise the impact on items of Aboriginal heritage significance: ◗ The woodland remnant containing the scarred tree (Molong ST1) would be retained and existing fencing retained and maintained to ensure no impact to the standing trees, including the scarred tree; ◗ The artefact scatter (Molong OS1) located within the southwestern corner of the Site would be left in its identified location and not salvaged. In order to ensure the continued conservation of both recorded sites, the Proponent would also adopt the following management controls: ◗ The location of site Molong ST1 and Molong OS1 would be recorded on a master plan in the Site Office, where the Site Manager has visual access to it. This plan would note that protected heritage items are present at these locations and that there are to be no impacts in the vicinity of these locations; ◗ The Proponent would appoint a Site Manager to take responsibility for the continued protection of these sites from future impacts as they arise and to ensure that fencing, if it is to be permanent, is appropriately maintained; and ◗ Part of the site induction for all staff and contractors would include a section on Aboriginal heritage. This induction would include brief reference to the legislative framework through which Indigenous heritage is protected, particular reference would be made to the location of the sites as well as providing a more general introduction to cultural heritage. Under the provisions of the National Parks and Wildlife Act 1974, all earthmoving contractors and operators would be instructed that in the event of any bone or stone artefacts, or discrete distributions of shell, being unearthed during earthmoving, work would cease immediately in the area of the discovery, and the Orange LALC and officers of the DECCW (NPWS), informed of the discovery.
European heritage	The Proponent would ensure trucks travelling to and from the Euchareena Road Site have covered or enclosed loads to ensure that windblown litter does not affect European heritage items adjacent to the proposed transport route.
Hazards	The Proponent would implement the following mitigation measures at the Ophir Road Site: ◗ Smoking would not be permitted within the new baling building; ◗ Any dangerous goods would be stored in accordance with normal dangerous goods storage procedures; ◗ Safety hazards would be managed through occupational health and safety procedures and through development and implementation of an operations plan for the baling plant; ◗ Residents would not be permitted to deliver waste and recyclables to any area other than the existing waste transfer station, or to bulk drop-off areas (garden organics or separated concrete); ◗ Safety hazards from proposed construction works would be managed through occupational health and safety procedures and through development and implementation of an occupational health and safety plan for these works; ◗ Occupational health and safety procedures such as the use of personal protective equipment such as earmuffs, where noise exposure is

Issue	Commitments
	unavoidable, would be followed during use of noisy equipment; The Proponent would implement the following mitigation measures at the Euchareena Road Site: ◗ There would be two separate facilities on the site – an enclosed tunnel composting plant, and a new landfill. Neither of these facilities would be considered as hazardous. Normal levels of hazard and risk associated with industrial sites and many construction sites would be managed through development and implementation of a site operations plan; ◗ Fires associated with composting would be avoided through plant operators monitor ongoing temperatures within compost that is undergoing maturation and ensuring that it is turned frequently; ◗ The Euchareena Road landfill would be lined, which would prevent off-site migration of this gas, and a gas management system would be designed in the detailed design phase to prevent methane from being discharged to the atmosphere from closed areas of the landfill; ◗ No dangerous goods would be stored on site, apart from small quantities of paints and solvents, used for equipment maintenance, and herbicides used for controlling weeds on site; ◗ All chemicals would be stored within a building in accordance with standard dangerous goods storage practices. Diesel fuel for on-site machinery would be stored in a double skin tank, located near the landfill site; ◗ Occupational health and safety procedures would be followed during use of composting and landfilling plant and equipment; and ◗ Occupational health and safety procedures such as the use of earmuffs would be followed during use of the composting and landfilling equipment.
Air quality and odour	The Proponent would ensure the design and operation of the Project minimises the potential release of odour emissions. The specifications provided to prospective equipment suppliers would dictate the technical and environmental performance the equipment would be expected to meet, based on the Proponent's operational requirements and the conditions of project approval. The Proponent would implement the following mitigation measures for both sites: ◗ Exposed surfaces, including stockpiles unless revegetated or have a stable surface, would be watered. ◗ The area of exposed surfaces would be minimised. ◗ Available areas of disturbance would be rapidly and progressively rehabilitated. ◗ Visual amenity and perimeter bunds (and tree screens in the case of the Euchareena Road Site) would be established and maintained to limit emissions of particulate matter and odour beyond the site boundaries. ◗ The active landfill area would be covered following the completion of waste placement at the end of each day with approximately 150 mm of daily cover material or a landfill tarpaulin. ◗ Odorous waste loads would be attended immediately tolimit transfer of odour off-site. ◗ Records of any complaints would be kept with respect to odour, and correlating with weather conditions and deliveries of particularly odorous wastes. ◗ Drop heights of waste placed into the landfill would be minimised. ◗ High dust-generating activities would be avoided during adverse wind

Issue	Commitments
	conditions when blowing directly towards the nearest residences. ◗ An air quality (including dust and odour management) strategy would be incorporated into the Operational Environmental Management Plan as a sub-plan. In addition, at the Euchareena Road Site, there would be regular inspections and maintenance of the biofilter servicing the resource reprocessing facility buildings.
Traffic and transport	The Proponent would implement the following mitigation measures: ◗ Maintenance of the Ophir Road Site access intersection and provision of maintenance of Ophir Road for the duration of the Project operation. ◗ Preparation of construction traffic management plans (as part of the construction environmental management plans) to ensure safe movement of vehicles into and around each of the Sites. ◗ Trucks transferring baled waste or bulky / non-baleable waste from Ophir Road RRC to the Euchareena Road RRC would be scheduled to avoid the school bus pickup and drop-off times on Euchareena Road. That is, they would be scheduled so that they would arrive in Molong no earlier than 9 am and no later than 2.30 pm or after 4.30 pm, if necessary. There would be no deliveries of waste to the Euchareena Road RRC on weekends, except in emergencies. ◗ Minor safety improvements along Euchareena Road in accordance with the recommendations of an independent assessment of road safety requirements commissioned jointly by Cabonne Council and the Proponent. The safety improvements would be implemented prior to the first waste being received at the Euchareena Road RRC. ◗ New box culvert at Back Creek. ◗ Construction of a new Intersection at the site entrance to the Euchareena Road Site as per Figure C.4-23, which is designed in accordance with the NSW RTA AUR/AUL standards. This would be constructed prior to the first waste being received at the Euchareena Road RRC. ◗ Upgrade of the intersection of the Mitchell Highway (Watson Street) and Euchareena Road to meet RTA standards, as per Figure C.4-24 of the EA. This would be upgraded prior to the first waste being received at the Euchareena Road RRC. ◗ Commitment of funds for the ongoing maintenance of the section of Euchareena Road used by trucks travelling to and from the Euchareena Road Site. ◗ Requirement that each driver would sign a Code of Conduct (during their first visit). ◗ Continued provision of a 15 m wide stock movement corridor along the western side of Euchareena Road along the Euchareena Road Site boundary.
Noise	The Project would be designed and operated to ensure that noise criteria are not exceeded. The noise management controls that would be implemented during the operation of the Euchareena Road RRC are detailed as follows. ◗ Construction of the perimeter amenity bunds would provide a noise barrier between a number of surrounding residnces and the various operational components on site. ◗ All composting operations (other than maturation) would be undertaken within enclosed buildings. ◗ All construction and operational activities would be undertaken during daytime hours (7 am to 6 pm) with the exception of the composting operation, some components of which need to operate on a continuous

Issue	Commitments
	basis, 24 hours per day, 7 days per week, albeit generating negligible noise levels. ◗ The Proponent would ensure all equipment, particularly waste delivery trucks, are maintained to a high standard to ensure there are no unnecessary noise emissions. Earthmoving equipment used on-site would be fitted with low impact broad band reversing alarms approved by WorkCover.
Visual	The Proponent would implement the following mitigation measures at the Euchareena Road Site: An earth mound, up to 2 m high, would be constructed adjacent to the northern boundary of the Euchareena Road Site for a distance of 600 m along the alignment of Shades Creek Road. The bund would be constructed with gentle external slopes and revegetated to limit the visibility of the bund itself. An eastern amenity bund, up to 4 m high, would be constructed immediately adjacent to the eastern limit of the landfill to provide a visual shield to the periodic construction activities and daily activities on sections of the landfill, particularly when viewed from 'The Shades'. An area of approximately 13.6 ha immediately south of the northern amenity bund would be planted during the first three years of operations. This corridor, as it grows and matures would provide a useful visual screen to shield the landfill from 'Maupas' and 'Meru'. The Proponent would plant some tree screens at strategic locations to limit visibility of the landfill, principally setback from Euchareena Road. The visual character of the other activities on site would also be considered through the following: ◗ All buildings / structures would be clad with materials either coated or painted with a light green hue; ◗ Selective landscaping would be positioned around the office, weighbridge and enclosed composting plant; and The site would be kept clean and tidy at all times.
Socio-economics	The Proponent would undertake consultation with relevant stakeholders including during the construction period. The Proponent would provide a stock movement corridor for north-south access across the Euchareena Road (eastern) side of the Euchareena Road Site to enable local landholders to safely move stock and farm equipment outside the Euchareena Road reserve. Areas not required for project-related activities or their ecological values would continue to be available for agricultural purposes. Approximately 42.3 ha of cleared land would be designated for ongoing agricultural use (Figure c.1-3 of the EA). Compost from the enclosed tunnel composting facility would be made available at no cost for two years to local famers as a certified compost product. Preference would be given to applications where the objectives is to upgrade the agricultural quality of farming land.
Greenhouse gas	Potential energy efficiency measures would be considered in the detailed design phase of the Project. An appropriate landfill gas management system would also be designed in the detailed design phase, which would be a passive landfill gas drainage and flaring system to help minimise potential greenhouse gas emissions from the landfill.

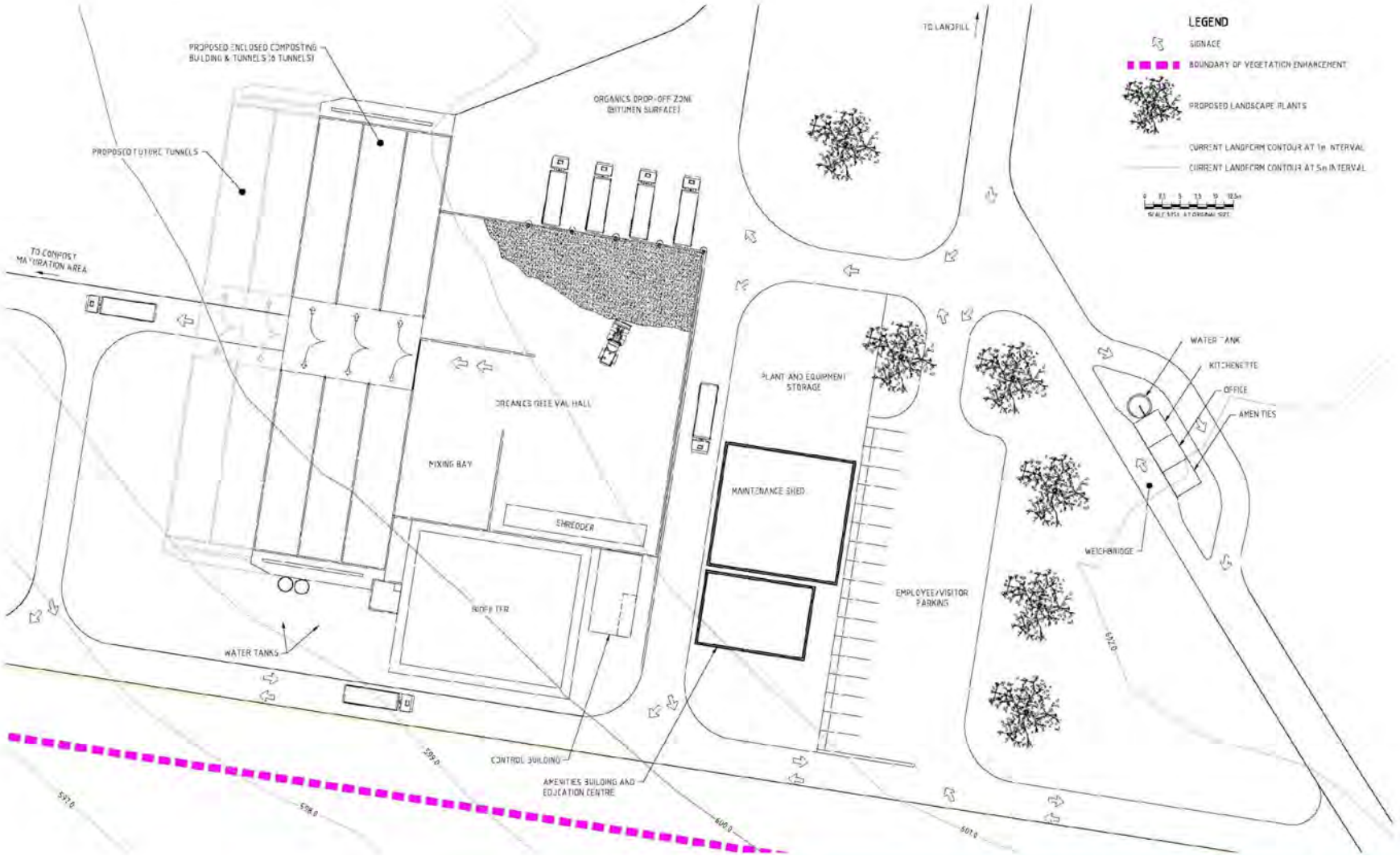
APPENDIX 2
GENERAL LAYOUT OF THE PROJECT SITES



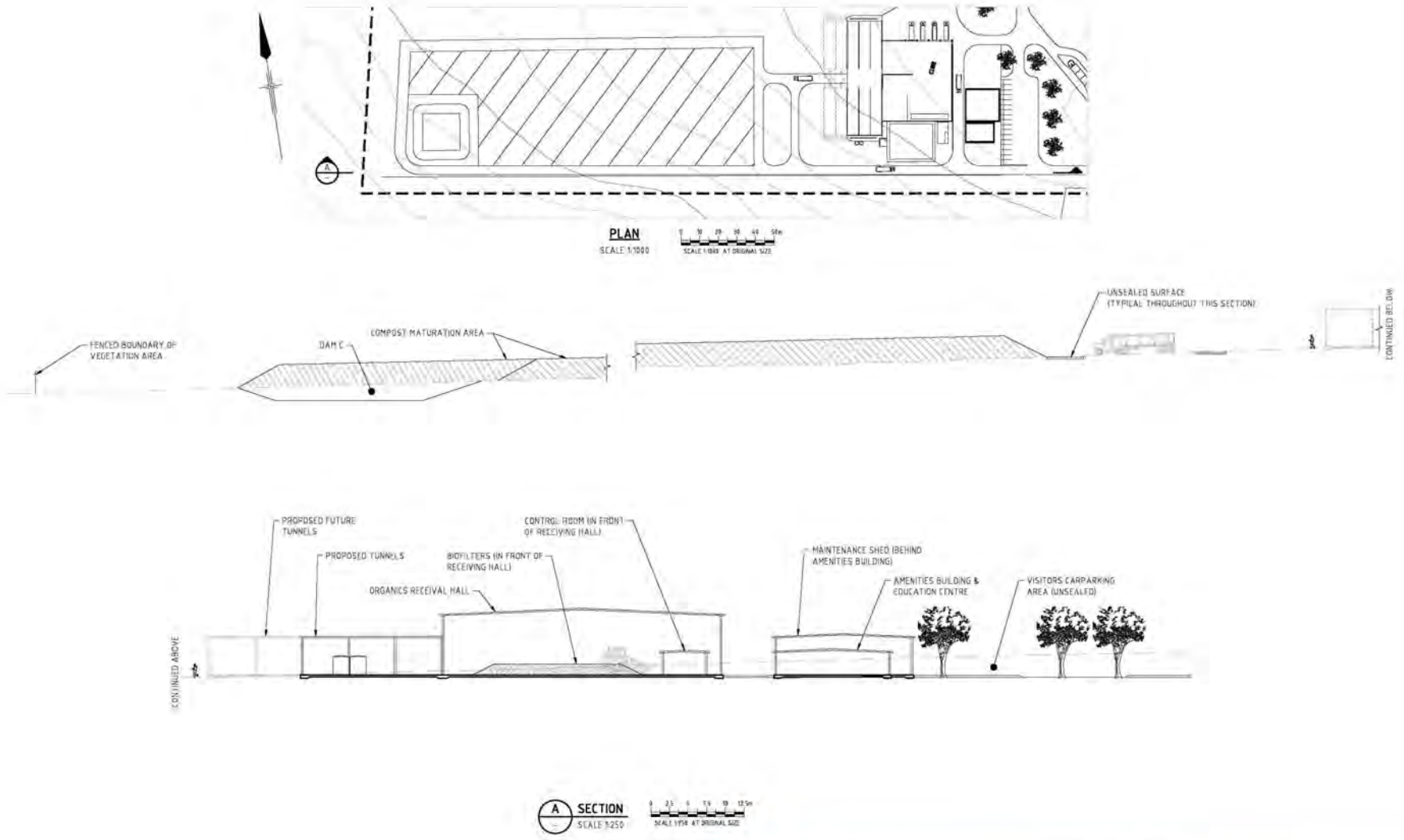
Ophir Rd site layout (with shredding option)

Euchareena Rd site layout

New materials recycling facility at Ophir Rd site

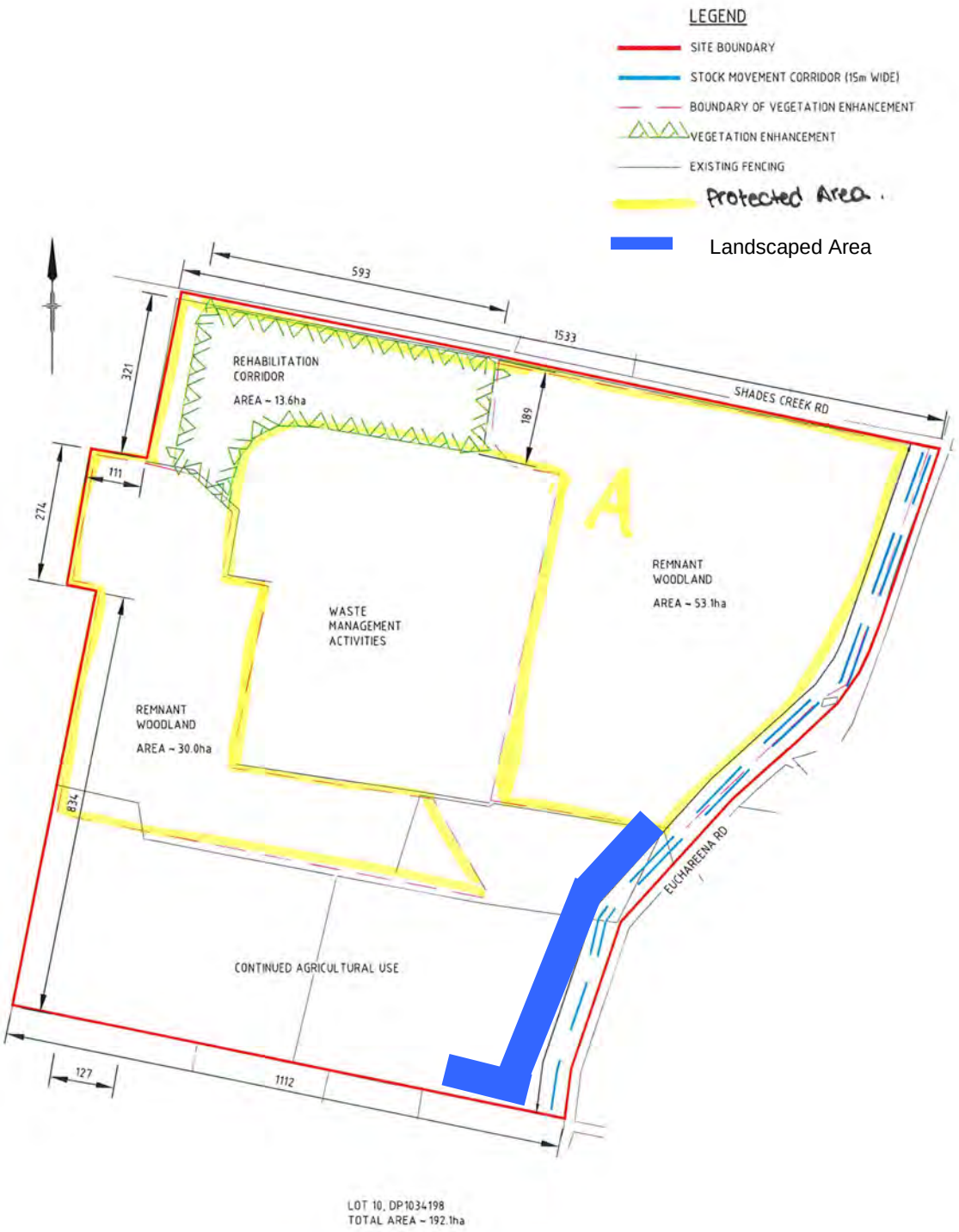


Euchareena Rd enclosed tunnel composting facility (plan)

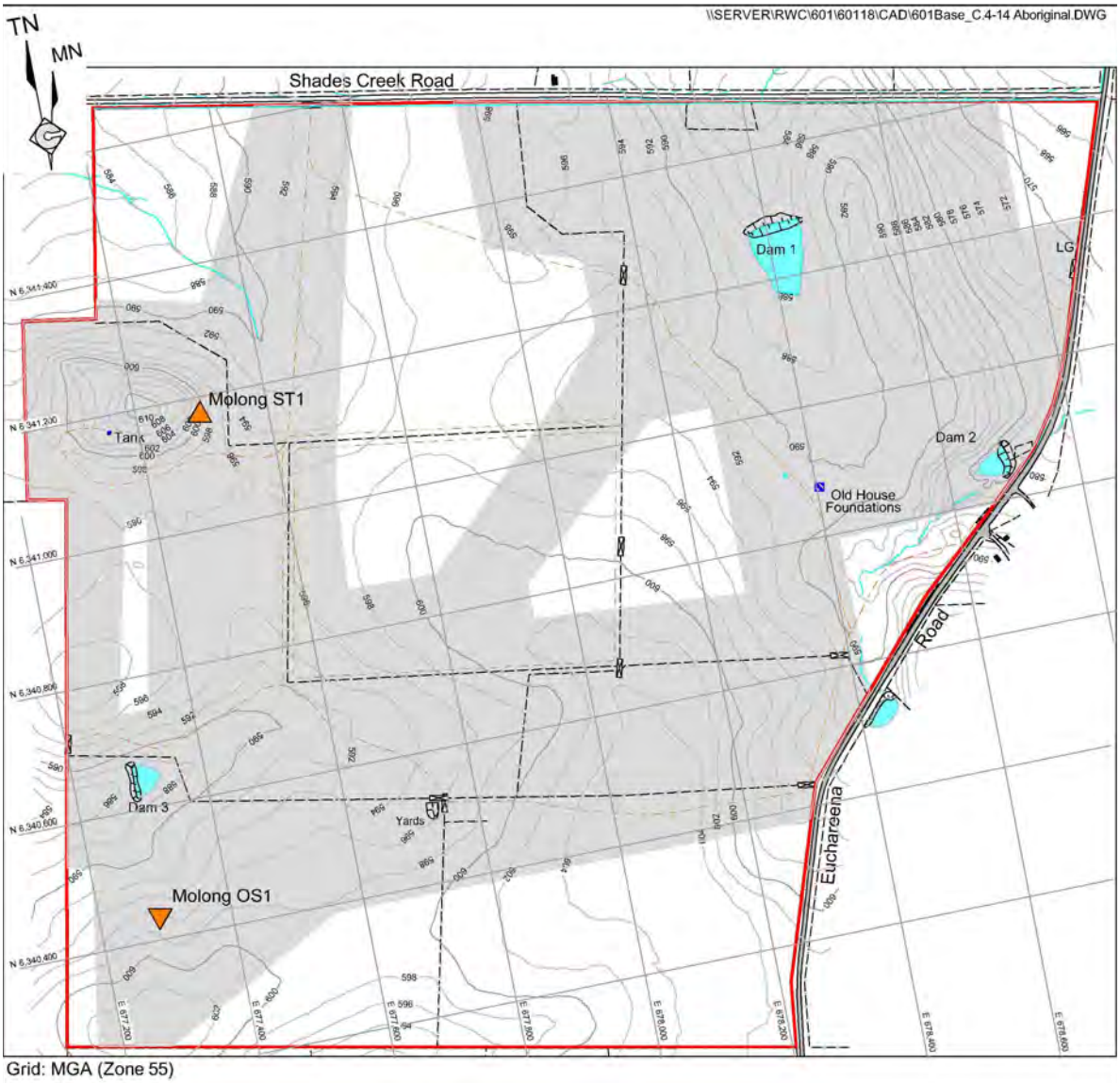


Euchareena Rd enclosed tunnel composting plant (elevations)

APPENDIX 3
CONSERVATION & REHABILITATION AREAS – EUCHAREENA RD



APPENDIX 4
ABORIGINAL HERITAGE SITES – EUCHAREENA RD



Grid: MGA (Zone 55)

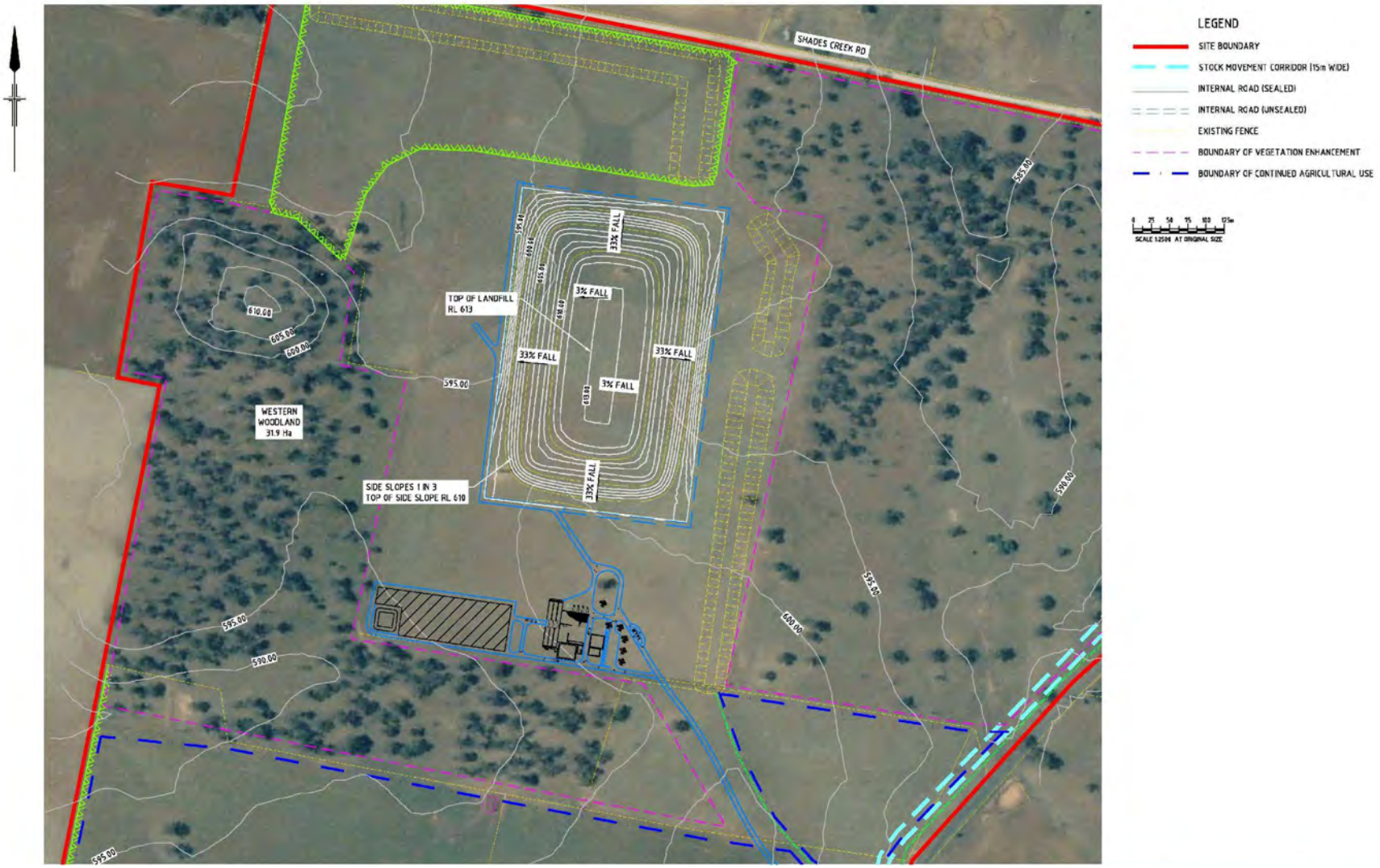
REFERENCE
- Euchareena Road Site Boundary (Fenced)
- Internal Fence
- Contour (m AHD) (Interval = 2m)
- Farm Dam
- Creek
- Sealed Road
- Unsealed Road
- Track
- Gate
- Survey Coverage
- Aboriginal Scarred Tree
- Aboriginal Artefact Scatter

SCALE 1:10 000

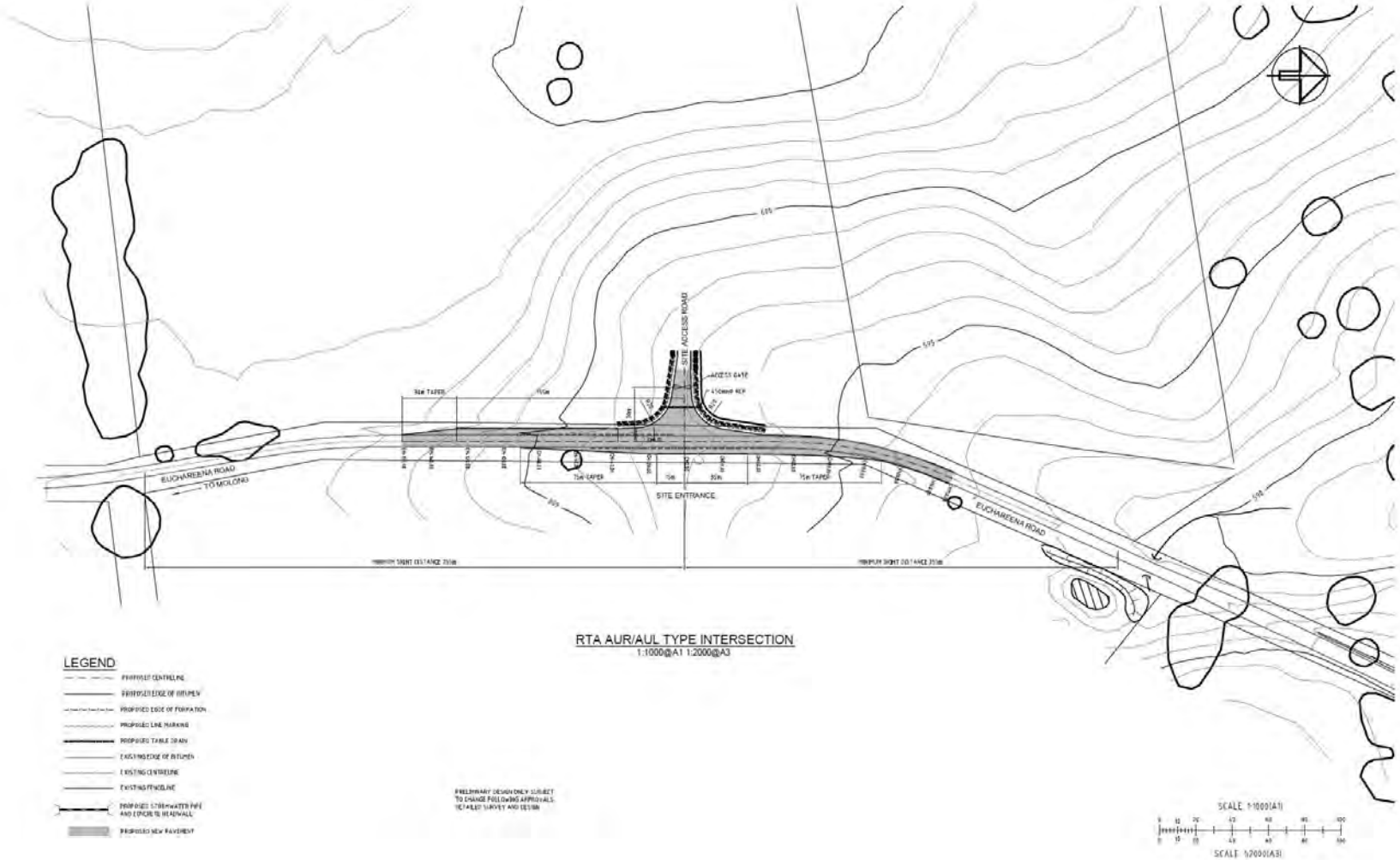
100 0 100 200 300 400 500 m

Source: Archaeological Surveys and Reports (2005) - Figure 6

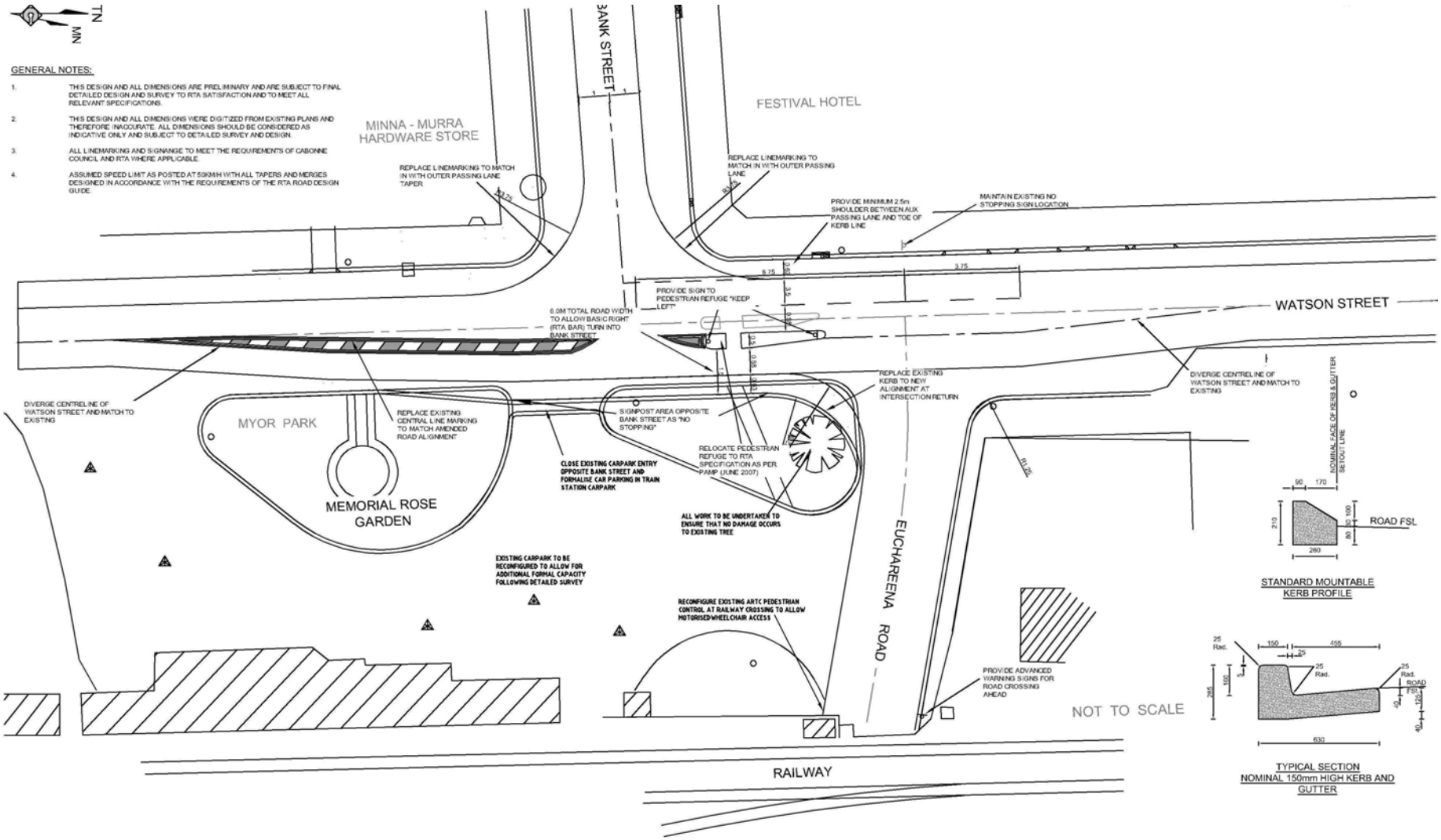
APPENDIX 5
INDICATIVE FINAL LANDFORM OF LANDFILL AREA – EUCHAREENA RD



APPENDIX 6
INDICATIVE ROADWORKS



Proposed intersection to the Euchareena Rd site



Mitchell Highway / Euchareena Rd intersection upgrade

Planning Services
Industry Assessment
Contact: Shaun Williams
Phone: (02) 8275 1345
Email: shaun.williams@planning.nsw.gov.au

Our Ref: MP 09_0025 MOD 2

Wayne Davis
Manager Waste Services
Orange City Council
PO Box 35
ORANGE NSW 2800

Dear Mr Davis

Determination of Modification Request for Orange Waste Project (MP 09_0025 MOD 2)

I am writing to inform you that the above modification request was approved on 20 December 2018 by the Director, Industry Assessments as delegate of the Minister for Planning under Part 3A of the *Environmental Planning and Assessment Act 1979*.

All documents associated with the application are available on the Department's website at: http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=9168

If you have any questions, please contact Shaun Williams on the details listed above.

Yours sincerely

N M · Hall, 21.12.18

Nicholas Hall
Principal Planner
Industry Assessments

Modification of Minister's Approval

Section 75W of the *Environmental Planning and Assessment Act 1979*

As delegate for the Minister for Planning, under the Instrument of Delegation executed on 11 October 2017, I approve the modification of the project approval referred to in Schedule 1, subject to the conditions outlined in Schedule 2.

Chris Ritchie
Director
Industry Assessments

Sydney 20 DECEMBER 2018 File: EF18/6769

SCHEDULE 1

Project Approval (MP 09_0025), granted by the former Minister for Planning on 28 April 2010 for the Orange Waste Project at Euchareena Road, Molong and Ophir Road, Orange in the Cabonne Shire and Orange local government areas.

SCHEDULE 2

This approval is modified as follows:

In SCHEDULE 2: DEFINITIONS

1) Insert the following definitions in alphabetical order:

MOD 1	MP 09_0025 MOD 1 and supporting documentation titled *Minor Modification to Part 3A Approval (MP 09_0026)*, prepared by Geolyse Pty Ltd and dated February 2012.
MOD 2	MP 09_0025 MOD 2 and supporting documentation titled *Minor Modification to Part 3A Approval (MP 09_0025)*, prepared by Orange City Council and dated April 2018.

In SCHEDULE 3: ADMINISTRATIVE CONDITIONS

2) Delete Condition 2 and replace with the following:

TERMS OF APPROVAL

2. The Proponent shall carry out the Project generally in accordance with the:
   (a) EA;
   (b) Statement of commitments (see Appendix 1A);
   (c) Site layout plans and drawing in the EA, except those modified by MP 09_0025 MOD 1 and shown in Appendix 2;
   (d) Modification application MP 09_0025 MOD 1, accompanying Environmental Assessment Report titled '*Environmental Assessment – Minor Modification to Part 3A Approval (MP 09_0025)*' dated February 2012, Response to Submissions Report and Addendum to EA for MOD 1 dated 14 May 2012 and Additional Response to Submissions Report and revised drawings (nos. EV01 – 16) dated 7 June 2012, prepared by Geolyse Pty Ltd;
   (e) Modification application MP 09_0025 MOD 2, accompanying Environment Assessment Report titled '*Environmental Assessment – Minor Modification to Part 3A Approval (MP 09_0025)*' dated April 2018, Response to Submissions Report dated 11 July 2018 and Second Response to Submissions Report dated 20 August 2018; and

(f) Conditions of this approval.

In SCHEDULE 5: SPECIFC ENVIRONMENTAL CONDITIONS – EUCHAREENA ROAD SITE

3) Delete Condition 7 and replace with the following:

Landfill Operations

7. Unless the Director-General agrees otherwise, the Proponent shall:
   (a) minimise the exposed or cleared areas at the landfill;
   (b) progressively revegetate all completed areas of the landfill and stabilise and exposed areas that are not required for operational purposes for a period greater than 90 days;
   (c) minimise the tracking of mud and waste from the site on public roads;
   (d) fill the landfill cells in a systematic manner;
   (e) maximise landfill compaction rates;
   (f) cover the active landfill area in accordance with the Environment Protection Licence;
   (g) progressively cap the landfill cells with the approved capping layer, which shall comprise (from top to bottom):
      - 0.15m of topsoil;
      - a 0.85m thick layer of uncompacted soil, obtained on site;
      - a sealing layer, comprising a compacted clay layer at least 0.5m thick and having a permeability less than $k = 10^{-8}$ ms^{-1} (or an approved alternative such as a geomembrane); and
      - a seal bearing layer, comprising a 0.3m thick layer of compacted clay soil; and
   (h) Revegetate the covered landfill cells following the capping of each cell and once they reach their final design height.

4) Delete Condition 8 and replace with the following:

Composting Operations

8. Unless the Director-General agrees otherwise, the Proponent shall ensure that:

   (a) the enclosed tunnel is a composting system that has:

      - rigid side walls;
      - a top cover that in combination with the side walls constitutes a tunnel-like chamber;
      - a perimeter sealing system which effectively manages the emissions of odour from the enclosure; and
      - an enclosure that can be operated consistent with the requirements of the Apiculture Risk Management Plan.

   (b) any receival and transfer area is to be:

      - capable of being operated consistent with the requirements of the Apiculture Risk Management Plan;
      - capable of being operated consistent with the project requirements for odour management; and
      - constructed and operated such that leachate cannot escape from the area.

   (c) windrow composting operations are managed in accordance with:

      - AS 4454-2003: Composts, Soil Conditioners and Mulches (Appendix N) or the latest version of this standard; or
      - protective measures set out in the *Composting & Related Organics Processing Facilities* guideline.

5) Delete Condition 17 and replace with the following:

APICULTURE RISKS

17. The Proponent shall prepare and implement an Apiculture Risk Management Plan for the project to the satisfaction of the Director-General. The plan must:
   (a) be prepared by a suitably qualified and experienced expert whose appointment has been endorsed by the Director-General;
   (b) be prepared in consultation with suitable representative from DII and the local apiculture industry;
   (c) be submitted to the Director-General for approval prior to the commencement of operations on site;

(d) describe the measures to be implemented in association with the project to minimise the apiculture risks of the project;
(e) provide for the establishment of a committee, comprised of representatives from both DII and the local apiculture industry and appropriate experts, to oversee the implementation of the plan, and provide advice the Director-General on any improvements that could be made to the plan

In the Appendices

6) Replace Appendix 1 with Appendix 1A.

APPENDIX 1A: PROPONENTS STATEMENT OF COMMITMENTS

Statement of Commitments

Issue	Commitments
Waste management strategy	The Proponent will implement its Resource Recovery and Waste Management Strategy, as described in Section A.3 of the EA. This has the following key elements: • Introduction of a third household mobile garbage bin for collection of domestic garden waste together with kitchen-separated food waste; • Differential landfill gate pricing at a level required to encourage source separation of business recyclable materials and food waste to provide clean streams for further processing; • Increased landfill gate pricing for C&D waste to encourage source separation of recyclable materials and presentation of clean, unmixed streams; • Further development of the current requirement for building applications to include waste management plans, with extension to include recycling plans that are subject to performance review; • Working with NetWaste to continue improvement in event recycling opportunities; • Action to improve the beneficial use of recycling yield from kerbside collected materials and C&I / C&D recyclables; • Processing of food/garden organics at the Euchareena Road RRC using an enclosed tunnel composting technology; • Continued recovery of dry recyclable materials at the Ophir Road RRC at a new MRF to be constructed; • Baling of mixed residual waste at the Ophir Road RRC at a new baling facility to be installed; and • Transport of baled mixed residual waste to the Euchareena Road RRC for disposal in a specially designed landfill.
Environmental management plans	Construction environmental management plans (CEMPs) would be prepared and implemented to guide environmental management and monitoring activities and compliant handling procedures during construction at both sites. The CEMPs would include the following sub-plans: • Noise management plan – The plan would address how noise will be mitigated and managed during construction activities, in accordance with DECCW's Environmental Noise Control Manual; • Flora and fauna management plan – The plan would address how impacts on flora and fauna would be mitigated and managed during the construction phase; • Air and dust management plan – The plan will outline the mitigation measures to control dust from exposed areas, stockpiles, plant equipment and unsealed roads; • Waste management plan – The plan would include disposal requirements, measures to prevent the generation and measures to reduce, re-use or recycle wastes where possible; • Soil and water management plan – The plan would address how potential construction impacts on soil and water quality will be mitigated and managed during construction works; • Traffic management plan – The plan will include truck movements to and from the site, interactions with general public, parking and access requirements for construction personnel and safety signage and training of personnel in traffic management. Operational environmental management plans (OEMPs) would be prepared for both sites and implemented to guide environmental

Issue	Commitments
	management and monitoring activities and complaints handling procedures during operation. The OEMPs would include the following sub-plans: • Stormwater management plans – The plan would include the measures to retain and re-use the maximum amount of water on-site and ensure the surface run-off water is maintained at acceptable levels. The plan would also include erosion and sediment mitigation measures; • Process water management plan (tunnel composting plant) – The plan would include measures to optimise reuse and ensure that wastewater generation and need for disposal is minimised; • Air quality management plan – The plan would include mitigation measures for control of odours, dust and particles and monitoring undertaken. • Noise management plan – The noise management plan will include noise control measures, monitoring. • Pest, vermin and weed control – The plan will outline mitigation measures that will control pest and vermin that may be attracted to the waste facility and minimise the degradation of the local amenity caused by pest, vermin and noxious weeds. • Traffic management plan – The plan will include parking and access requirements, safety signage and training of personnel in traffic management. • Fire management plan – The plan would include details of sources of water for firefighting, the need for fire extinguishers on all mobile equipment and suitable training for site-based personnel.
Revegetation, rehabilitation and post closure management	The Proponent would undertake a program of progressive revegetation in those areas progressively disturbed by the operations and of the area designated for vegetation enhancement to the north of the landfill at the Euchareena Road Site. The Proponent would continue to manage the Euchareena Road Site following closure of the landfill and enclosed tunnel composting facility, in accordance with the documented set of procedures compiled in conjunction with the Site Closure plan. The Proponent would monitor the Euchareena Road Site in accordance with the site's EPL.
Soils and land capability	The Proponent would implement the following measures for the management of soil at the Euchareena Road Site: • Double skin diesel storage tanks would be used to prevent fuel leakages; • Topsoil would be stockpiled and used later for rehabilitation of the final landscape; • Material at depths greater than 0.75 m would be stockpiled for use in bund wall construction, daily cover or landfill capping; • Handling of topsoil would be minimised to reduce potential mechanical damage to soil structure; • Care would be taken to ensure that topsoils and subsoils are not stripped when they are too moist; • Driving of machinery on topsoil and subsoil stockpiles, other than scrapers during unloading, would be kept to a minimum; • Topsoil stockpiles would be up to 1 m high and subsoil stockpiles would not exceed 3 m in height; • Subsoil and topsoil stockpiles would be located within the footprint of the landfill or on the upper surface of completed landfill stages; and • Stabilisation measures would be used until vegetation is established on the stockpiled soil.

Issue	Commitments
Surface water	At the Ophir Road RRC, The Proponent would continue to comply with the existing LEMP. Sediment dams would be constructed prevent runoff from the Euchareena Road landfill from reaching water catchments.
Groundwater	The Proponent would ensure the proper compaction of the floor of each landfill cell and the maturation pad to achieve a uniform low permeability equivalent to less than 1 x 10^{-9} m/s for a depth of at least 0.9 m. The in situ permeability of compacted material would be tested by sampling and laboratory testing to ensure the required permeability level has been achieved. The Proponent would undertake a groundwater monitoring program at the Euchareena Road Site including groundwater level and quality monitoring as per the EPL for the Site.
Flora & fauna	The Proponent would further enhance the two woodland areas with plantings of all species. In addition, the Proponent would plant a rehabilitation corridor to ultimately join the two existing woodland areas and improve nature conservation across the site. The Proponent would encourage natural regeneration by installing tree guards and appropriate fencing of regeneration areas. The Proponent would implement weed management measures including: • Regular inspections of the Euchareena Road Site. • Education of staff with respect to weed identification and control. • Continual monitoring and control of identified noxious weeds. • Investigation into the practicality of sowing crops or competitive improved pastures on sections of the Site not required for immediate disturbance as a means of weed control. The Proponent would also establish permanent quadrats / transects across the western and northeastern woodland areas to enable periodic monitoring to record the extent of flora regrowth within the protected woodland remnants. Where species diversity is found to be insufficient from monitoring, supplementary planting programs would be undertaken. Prior to the removal of any isolated paddock tree, a pre-start survey would be carried out to minimise the potential impact on spring nesting birds and overwintering bats or any other species utilising the tree at the time. Timber from felled trees would be relocated to a position where it can form part of the ground cover habitat in the woodland habitat on site. The areas of Euchareena Road Site that are not directly affected by the proposed activity would be destocked and remain free of grazing by domestic stock until such time when a long term vegetation rehabilitation management plan can be implemented to ensure the recovery of the woodland remnants on the site. The existing remnant woodland areas would be fenced-off, if necessary, in order to allow the woodland remnants on site to regenerate free from uncontrolled stock grazing pressure. Slashing would be used to minimise fire risk. Vegetation screens would be no less than 20 m wide to enhance wildlife habitat corridors around the perimeter of the Euchareena Road Site.

Issue	Commitments
	A pest control plan would be formulated and adopted that includes, in particular, the control of foxes and feral cats and any other vertebrate pest that may be a problem to the surrounding properties. This pest control plan would form part of the overall Environmental Management Plan for the Euchareena Road RRC. Should a vermin-proof fence be constructed around the perimeter of the Euchareena Road Site, a plan to manage the kangaroos confined within this fence would be put in place in order to keep the natural ground cover at an appropriate level. It is noted that at this stage, the construction of this fence is not anticipated. Strict site hygiene controls and an effective control plan would be implemented to manage the potential impact of rodents, such as the Black Rat and House Mouse, exotic predators such as the European Red Fox and Feral Cat and introduced bird species. A Restrictive Covenant would be attached to the Land Title for the Euchareena Road site. This would protect the critically endangered ecological community and the corridor linking the two areas on which the critically endangered community is present. The only way that the Covenant could be removed is for the Consent to be amended. The Covenant would be administered by the NSW Land Titles Office.
Apiary industry	No apiary-related equipment would be accepted at the Euchareena Road RRC or the Ophir Road RRC. Council officers supervising the delivery of wastes to the respective transfer stations would be trained to recognise apiary equipment. The Proponent would work closely with the Department of Primary Industries (Agriculture) to inform all registered apiarists in the Orange City regional areas regarding the appropriate manner in which to dispose of apiary equipment. The Proponent would continue to further promote recycling through education programs facilitated through NetWaste in order to continue to maximise the diversion of glass and plastic honey containers from the waste stream. All operators responsible for the receipt, compaction and covering of waste delivered to the Euchareena Road Site would be fully trained firstly to recognise any apiary equipment and secondly to identify the presence of any bees on site. Similar training would also be provided for operational staff within each of the transfer stations operated by Orange City and where participating, the regional councils. Detailed operational procedures would be prepared and implemented at the Euchareena Road Site and transfer stations in the event that any apiary equipment are delivered to the receival areas at either the Euchareena Road Site or transfer stations. Comprehensive training would also be undertaken for all personnel working on the Euchareena Road Site to ensure that the bale placement and covering of wastes within optimum periods is undertaken in accordance with the approved procedures.

Issue	Commitments
Aboriginal heritage	At the Ophir Road Site if during construction, any Aboriginal objects are discovered, work would immediately cease in the area of the discovery and advice would be sought from the Aboriginal Heritage Unit of DECCW. For the Euchareena Road Site, The following management controls would be undertaken to minimise the impact on items of Aboriginal heritage significance: • The woodland remnant containing the scarred tree (Molong ST1) would be retained and existing fencing retained and maintained to ensure no impact to the standing trees, including the scarred tree; • The artefact scatter (Molong OS1) located within the southwestern corner of the Site would be left in its identified location and not salvaged. In order to ensure the continued conservation of both recorded sites, the Proponent would also adopt the following management controls: • The location of site Molong ST1 and Molong OS1 would be recorded on a master plan in the Site Office, where the Site Manager has visual access to it. This plan would note that protected heritage items are present at these locations and that there are to be no impacts in the vicinity of these locations; • The Proponent would appoint a Site Manager to take responsibility for the continued protection of these sites from future impacts as they arise and to ensure that fencing, if it is to be permanent, is appropriately maintained; and • Part of the site induction for all staff and contractors would include a section on Aboriginal heritage. This induction would include brief reference to the legislative framework through which Indigenous heritage is protected, particular reference would be made to the location of the sites as well as providing a more general introduction to cultural heritage. Under the provisions of the National Parks and Wildlife Act 1974, all earthmoving contractors and operators would be instructed that in the event of any bone or stone artefacts, or discrete distributions of shell, being unearthed during earthmoving, work would cease immediately in the area of the discovery, and the Orange LALC and officers of the DECCW (NPWS), informed of the discovery.
European heritage	The Proponent would ensure trucks travelling to and from the Euchareena Road Site have covered or enclosed loads to ensure that windblown litter does not affect European heritage items adjacent to the proposed transport route.
Hazards	The Proponent would implement the following mitigation measures at the Ophir Road Site: • Smoking would not be permitted within the new baling building; • Any dangerous goods would be stored in accordance with normal dangerous goods storage procedures; • Safety hazards would be managed through occupational health and safety procedures and through development and implementation of an operations plan for the baling plant; • Residents would not be permitted to deliver waste and recyclables to any area other than the existing waste transfer station, or to bulk drop-off areas (garden organics or separated concrete); • Safety hazards from proposed construction works would be managed through occupational health and safety procedures and

Issue	Commitments
	through development and implementation of an occupational health and safety plan for these works; • Occupational health and safety procedures such as the use of personal protective equipment such as earmuffs, where noise exposure is unavoidable, would be followed during use of noisy equipment; The Proponent would implement the following mitigation measures at the Euchareena Road Site: • There would be two separate facilities on the site – an enclosed tunnel composting plant, and a new landfill. Neither of these facilities would be considered as hazardous. Normal levels of hazard and risk associated with industrial sites and many construction sites would be managed through development and implementation of a site operations plan; • Fires associated with composting would be avoided through plant operators monitor ongoing temperatures within compost that is undergoing maturation and ensuring that it is turned frequently; • The Euchareena Road landfill would be lined, which would prevent offsite migration of this gas, and a gas management system would be designed in the detailed design phase to prevent methane from being discharged to the atmosphere from closed areas of the landfill; • No dangerous goods would be stored on site, apart from small quantities of paints and solvents, used for equipment maintenance, and herbicides used for controlling weeds on site; • All chemicals would be stored within a building in accordance with standard dangerous goods storage practices. Diesel fuel for on-site machinery would be stored in a double skin tank, located near the landfill site; • Occupational health and safety procedures would be followed during use of composting and landfilling plant and equipment; and • Occupational health and safety procedures such as the use of earmuffs would be followed during use of the composting and landfilling equipment.
Air quality and odour	The Proponent would ensure the design and operation of the Project minimises the potential release of odour emissions. The specifications provided to prospective equipment suppliers would dictate the technical and environmental performance the equipment would be expected to meet, based on the Proponent's operational requirements and the conditions of project approval. The Proponent would implement the following mitigation measures for both sites: • Exposed surfaces, including stockpiles unless revegetated or have a stable surface, would be watered. • The area of exposed surfaces would be minimised. • Available areas of disturbance would be rapidly and progressively rehabilitated. • Visual amenity and perimeter bunds (and tree screens in the case of the Euchareena Road Site) would be established and maintained to limit emissions of particulate matter and odour beyond the site boundaries. • Odorous waste loads would be attended immediately to limit transfer of odour off-site.

Issue	Commitments
	• Records of any complaints would be kept with respect to odour, and correlating with weather conditions and deliveries of particularly odorous wastes. • Drop heights of waste placed into the landfill would be minimised. • High dust-generating activities would be avoided during adverse wind conditions when blowing directly towards the nearest residences. • An air quality (including dust and odour management) strategy would be incorporated into the Operational Environmental Management Plan as a sub-plan. In addition, at the Euchareena Road Site, there would be regular inspections and maintenance of the biofilter servicing the resource reprocessing facility buildings.
Traffic and transport	The Proponent would implement the following mitigation measures: • Maintenance of the Ophir Road Site access intersection and provision of maintenance of Ophir Road for the duration of the Project operation. • Preparation of construction traffic management plans (as part of the construction environmental management plans) to ensure safe movement of vehicles into and around each of the Sites. • Trucks transferring baled waste or bulky / non-baleable waste from Ophir Road RRC to the Euchareena Road RRC would be scheduled to avoid the school bus pickup and drop-off times on Euchareena Road.There would be no deliveries of waste to the Euchareena Road RRC on weekends, except in emergencies. • Minor safety improvements along Euchareena Road in accordance with the recommendations of an independent assessment of road safety requirements commissioned jointly by Cabonne Council and the Proponent. The safety improvements would be implemented prior to the first waste being received at the Euchareena Road RRC. • New box culvert at Back Creek. • Construction of a new Intersection at the site entrance to the Euchareena Road Site as per Figure C.4-23, which is designed in accordance with the NSW RTA AUR/AUL standards. This would be constructed prior to the first waste being received at the Euchareena Road RRC. • Upgrade of the intersection of the Mitchell Highway (Watson Street) and Euchareena Road to meet RTA standards, as per Figure C.4-24 of the EA. This would be upgraded prior to the first waste being received at the Euchareena Road RRC. • Commitment of funds for the ongoing maintenance of the section of Euchareena Road used by trucks travelling to and from the Euchareena Road Site. • Requirement that each driver would sign a Code of Conduct (during their first visit). • Continued provision of a 15 m wide stock movement corridor along the western side of Euchareena Road along the Euchareena Road Site boundary.
Noise	The Project would be designed and operated to ensure that noise criteria are not exceeded. The noise management controls that would be implemented during the operation of the Euchareena Road RRC are detailed as follows. • Construction of the perimeter amenity bunds would provide a noise barrier between a number of surrounding residences and the various operational components on site.

Issue	Commitments
	• All composting operations (other than maturation) would be undertaken within enclosed buildings. • All construction and operational activities would be undertaken during daytime hours (7 am to 6 pm) with the exception of the composting operation, some components of which need to operate on a continuous basis, 24 hours per day, 7 days per week, albeit generating negligible noise levels. • The Proponent would ensure all equipment, particularly waste delivery trucks, are maintained to a high standard to ensure there are no unnecessary noise emissions. Earthmoving equipment used on-site would be fitted with low impact broad band reversing alarms approved by WorkCover.
Visual	The Proponent would implement the following mitigation measures at the Euchareena Road Site: An earth mound, up to 2 m high, would be constructed adjacent to the northern boundary of the Euchareena Road Site for a distance of 600 m along the alignment of Shades Creek Road. The bund would be constructed with gentle external slopes and revegetated to limit the visibility of the bund itself. An eastern amenity bund, up to 4 m high, would be constructed immediately adjacent to the eastern limit of the landfill to provide a visual shield to the periodic construction activities and daily activities on sections of the landfill, particularly when viewed from 'The Shades'. An area of approximately 13.6 ha immediately south of the northern amenity bund would be planted during the first three years of operations. This corridor, as it grows and matures would provide a useful visual screen to shield the landfill from 'Maupas' and 'Meru'. The Proponent would plant some tree screens at strategic locations to limit visibility of the landfill, principally setback from Euchareena Road. The visual character of the other activities on site would also be considered through the following: • All buildings / structures shall be grey in colour (or similar); • Selective landscaping would be positioned around the office, weighbridge and enclosed composting plant; and • The site would be kept clean and tidy at all times.
Socio-economics	The Proponent would undertake consultation with relevant stakeholders including during the construction period. The Proponent would provide a stock movement corridor for north-south access across the Euchareena Road (eastern) side of the Euchareena Road Site to enable local landholders to safely move stock and farm equipment outside the Euchareena Road reserve. Areas not required for project-related activities or their ecological values would continue to be available for agricultural purposes. Approximately 42.3ha of cleared land would be designated for ongoing agricultural use (Figure c.1-3 of the EA). Compost from the enclosed tunnel composting facility would be made available at no cost for two years to local famers as a certified compost

Issue	Commitments
	product. Preference would be given to applications where the objectives is to upgrade the agricultural quality of farming land.
Greenhouse gas	Potential energy efficiency measures would be considered in the detailed design phase of the Project. An appropriate landfill gas management system would also be designed in the detailed design phase, which would be a passive landfill gas drainage and flaring system to help minimise potential greenhouse gas emissions from the landfill.

Section 8.2

ENVIRONMENTAL PROTECTION LICENCES

Environment Protection Licence

Licence - 5956

Licence Details	
Number:	5956
Anniversary Date:	01-July

Licensee

ORANGE CITY COUNCIL

PO BOX 35

ORANGE NSW 2800

Premises

OPHIR ROAD RESOURCE RECOVERY CENTRE

261 OPHIR ROAD

ORANGE NSW 2800

Scheduled Activity

Waste disposal (application to land)

Waste processing (non-thermal treatment)

Waste storage

Fee Based Activity	Scale
Non-thermal treatment of general waste	Any annual processing capacity
Waste disposal by application to land	Any capacity
Waste storage - hazardous, restricted solid, liquid, clinical and related waste and asbestos waste	Any listed waste type stored
Waste storage - other types of waste	Any other types of waste stored

Region

Central West

L102, 346 PANORAMA AVENUE

BATHURST NSW 2795

Phone: (02) 6333 3800

Fax: (02) 6333 3809

PO Box 1388

BATHURST NSW 2795

Environment Protection Licence

Licence - 5956

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Environment Protection Licence

Licence - 5956

Information about this licence

Dictionary

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

Responsibilities of licensee

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

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

Variation of licence conditions

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

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

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

Duration of licence

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

Licence review

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

Fees and annual return to be sent to the EPA

For each licence fee period you must pay:

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

Environment Protection Licence

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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:

ORANGE CITY COUNCIL
PO BOX 35
ORANGE NSW 2800

subject to the conditions which follow.

Environment Protection Licence

Licence - 5956

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
Waste processing (non-thermal treatment)	Non-thermal treatment of general waste	Any annual processing capacity
Waste disposal (application to land)	Waste disposal by application to land	Any capacity
Waste storage	Waste storage - hazardous, restricted solid, liquid, clinical and related waste and asbestos waste	Any listed waste type stored
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
OPHIR ROAD RESOURCE RECOVERY CENTRE
261 OPHIR ROAD
ORANGE
NSW 2800
LOT 112 DP 1170567

A3 Other activities

A3.1 This licence applies to all other activities carried on at the premises, including:

Ancillary Activity
Contaminated soil treatment

A4 Information supplied to the EPA

A4.1 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.

A4.2 Any other document and/or management plan is not to be taken as part of the documentation in condition A4.1, other than those documents and/or management plans specifically referenced in this licence.

2 Discharges to Air and Water and Applications to Land

P1 Location of monitoring/discharge points and areas

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

Air

EPA identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
12	Accumulated gas monitoring		Inside all buildings within 250 metres of waste filled areas (and where consent / permission is granted for buildings not owned by the licensee)

P1.2 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.

P1.3 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	Groundwater quality monitoring		Groundwater Monitoring Bore "BH1" as identified on drawing "Figure 1, Environmental Monitoring Stations" dated 11 June 2014

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2	Groundwater quality monitoring		Groundwater Monitoring Bore "BH1a" as identified on drawing "Figure 1, Environmental Monitoring Stations" dated 11 June 2014
3	Groundwater quality monitoring		Groundwater Monitoring Bore "BH2" as identified on drawing "Figure 1, Environmental Monitoring Stations" dated 11 June 2014
4	Groundwater quality monitoring		Groundwater Monitoring Bore "BH2a" as identified on drawing "Figure 1, Environmental Monitoring Stations" dated 11 June 2014
5	Groundwater quality monitoring		Groundwater Monitoring Bore "BH3" as identified on drawing "Figure 1, Environmental Monitoring Stations" dated 11 June 2014
6	Groundwater quality monitoring		Groundwater Monitoring Bore "BH4" as identified on drawing "Figure 1, Environmental Monitoring Stations" dated 11 June 2014
7	Discharge to waters (wet weather only) Discharge quality monitoring	Discharge to waters (wet weather only) Discharge quality monitoring	Surface Water Monitoring Point "SW3" as identified on drawing "Figure 1, Environmental Monitoring Stations" dated 11 June 2014
8	Discharge to waters (wet weather only) Discharge quality monitoring	Discharge to waters (wet weather only) Discharge quality monitoring	Surface Water Monitoring Point "SW4" (previously "L1") as identified on drawing "Figure 1, Environmental Monitoring Stations" dated 11 June 2014
9	Leachate quality monitoring		Surface Water Monitoring Point "L2" as identified on drawing "Figure 1, Environmental Monitoring Stations" dated 11 June 2014
13	Groundwater quality monitoring		Groundwater Monitoring Bore "BH7" as identified on drawing "Figure 4, Review of Groundwater Contamination Risk" dated January 2015
14	Groundwater quality monitoring		Groundwater Monitoring Bore "BH7a" as identified on drawing "Figure 4, Review of Groundwater Contamination Risk" dated January 2015
15	Groundwater quality monitoring		Groundwater Monitoring Bore "BH5" as identified on drawing "Figure 4, Review of Groundwater Contamination Risk" dated January 2015
16	Groundwater quality monitoring		Groundwater Monitoring Bore "BH6" as identified on drawing "Figure 4, Review of Groundwater Contamination Risk" dated January 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 Waste

L2.1 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	Liquid Waste	Liquid waste to be stored at the premises as part of the on-site Community Recycling Centre	Waste storage	Total quantity stored at the premises must not exceed the storage capacity of liquid waste at the Community Recycling Centre
NA	Restricted solid waste	Restricted solid waste to be stored at the premises as part of the on-site Community Recycling Centre	Waste storage	Total quantity stored at the premises must not exceed the storage capacity of restricted solid waste at the Community Recycling Centre
NA	Hazardous Wastes	Hazardous waste to be stored at the premises as part of the on-site Community Recycling Centre only	Waste storage	Total quantity stored at the premises must not exceed the storage capacity of hazardous waste at the Community Recycling Centre
NA	Petroleum hydrocarbon contaminated soil	As defined in Schedule 1 of the POEO Act, as	Contaminated Soil Treatment	See condition L2.2

		in force from time to time		
NA	General solid waste (putrescible)	As defined in Schedule 1 of the POEO Act, as in force from time to time	Waste disposal (application to land) Waste processing (non-thermal treatment) Waste storage	See condition L2.2
NA	General solid waste (non-putrescible)	As defined in Schedule 1 of the POEO Act, as in force from time to time	Waste disposal (application to land) Waste processing (non-thermal treatment) Waste storage	See condition L2.2
NA	Waste tyres	As defined in Schedule 1 of the POEO Act, as in force from time to time	Waste disposal (application to land) Waste storage Waste processing (non-thermal treatment)	See condition L2.2
NA	Asbestos waste	As defined in Schedule 1 of the POEO Act, as in force from time to time	Waste disposal (application to land)	See condition L2.2
NA	Clinical and related waste	As defined in Schedule 1 of the POEO Act, as in force from time to time	Waste disposal (application to land)	See condition L2.2

L2.2 The total amount of wastes disposed at the premises must not exceed 65,000 tonnes per annum, including no more than 10 tonnes per annum of clinical waste and no more than 50 tonnes of waste tyres being stored at the premises at any one time.

L2.3 The quantity of any waste received at the premises which is to be stored at the Community Recycling Centre (CRC) does not contribute towards the total waste volumes allowed under condition L2.1

L3 Noise limits

Operating hours

L3.1 Operational activities at the premises must only be conducted during the following operating hours:
a) 7.00am to 7.00pm, Monday to Friday; and
b) 7.00am to 5.00pm Saturday, Sunday and Public Holidays.

Operating limits

L3.2 Noise from the premises must not exceed:
a) an $L_{Aeq\ (15\ minute)}$ noise emission criterion of 45 dB(A) during the operating hours stipulated by condition L3.1 at any noise sensitive receiver (land use) as defined by the NSW Industrial Noise Policy (EPA, 2000/2001).

L3.3 To determine compliance with condition L3.2, noise from the premises is to be measured at the most affected point within the sensitive receiver boundary, or at the most affected point within 30 metres of the sensitive receiver boundary where the residence/building is more than 30 metres from the sensitive receiver boundary.

L3.4 To determine compliance with condition L3.2, the modification factors in Section 4 of the NSW Industrial Noise Policy (EPA, 2000/2001) must be applied, as appropriate, to the noise levels measured by any noise monitoring equipment.

L3.5 The noise limits stipulated by condition L3.2 apply under all meteorological conditions except for the following:
a) wind speeds greater than 3 metres per second at ground level; and
b) temperature inversions as outlined in Section 5 of the NSW Industrial Noise Policy (EPA, 2000/2001).

L4 Potentially offensive odour

L4.1 The licensee must not cause or permit the emission of offensive odour beyond the boundary of the premises.

L5 Other limit conditions

L5.1 Only soils contaminated with petroleum hydrocarbons can be treated at the premises.

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.

Note: Plant is defined in the Dictionary. The type of plant and equipment that should be considered includes, but is not limited to, drainage systems; infrastructure and pollution control equipment such as (but not

limited to) spill containment and clean-up equipment; dust screens and collectors; sediment collection systems, traps and sumps; waste collection, storage and disposal equipment.

O3 Dust

O3.1 The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.

O3.2 All operations and activities occurring at the premises must be carried out in a manner that will minimise the emission of dust from the premises.

O4 Emergency response

O4.1 The licensee must have in place and implement procedures to minimise the risk of fire at the premises.

O4.2 The licensee must have adequate fire prevention measures in place, and ensure that facility personnel are able to access fire-fighting equipment and manage fire outbreaks at any part of the premises.

O4.3 The licensee must extinguish fires at the premises as soon as possible.

O5 Processes and management

Staff/personnel training

O5.1 The licensee must ensure that adequately trained staff are available at the premises in order to administer the requirements of this licence.

Unauthorised entry

O5.2 The licensee must take all practicable steps to control entry to the premises.

O5.3 The licensee must install and maintain a stockproof perimeter fence around the premises.

O5.4 The licensee must install and maintain lockable security gates at all access and departure locations.

O5.5 The licensee must ensure that all gates are locked whenever the premises is unattended.

Control of pests, vermin and weeds

O5.6 The licensee must control pests, vermin and weeds at the premises.

Tracking of mud and other materials

O5.7 The licensee must take all practicable measures to minimise the tracking of mud and waste by vehicles leaving the premises.

Surface water management

O5.8 Surface water must be diverted away from any area where waste is being or has been landfilled and/or any leachate disposal and/or utilisation area if there is surface water run on potential of any kind.

O5.9 The licensee must minimise, including through the use of rehabilitation/revegetation techniques, the area of the premsies that is able to generate suspended material when water runs over it.

O5.10 The licensee must maximise the diversion of rain/storm water containing suspended material (not including leachate) to the sediment basin installed at the premises.

O6 Waste management

Leachate management

O6.1 The licensee is prohibited from discharging from the premises any waters or residue liquids that have come in contact with waste contained in the defined waste disposal areas.

O6.2 The licensee must install an EPA endorsed leachate barrier and collection system on each/any surface within the premises to be used for the disposal of waste. This condition does not apply to any surface used for the disposal of waste before 1 July 1998.

O6.3 The licensee must install an EPA endorsed leachate barrier on any surface to be used for the storage/impoundment of leachate.

O6.4 The leachate pond must be maintained to ensure that the design capacity of this pond is available for the storage of leachate.

Screening of waste

O6.5 The licensee must have in place and implement procedures to identify and prevent the disposal of any waste not permitted by this licence to be disposed of at the premises.

Filling of waste

O6.6 The licensee must manage the disposal of waste at the premises in accordance with the progressive filling plan within the in-force Landfill Environmental Management Plan.

Asbestos waste

Note: The *Protection of the Environment Operations (Waste) Regulation*, as in-force from time to time, stipulates the disposal requirements for asbestos waste.

Clinical waste

O6.7 The licensee must ensure that any clinical waste received/disposed of at the premises is packaged in accordance with the requirements as set out in the document titled "Waste Management Guidelines for Health Care Facilities - August 1998" as published by the NSW Ministry of Health and as in force from time to time.

O6.8 The licensee must ensure that any clinical waste received at the premises must be:
a) immediately buried, or
b) immediately contained prior to later disposal in a manner that prevents the waste coming into contact with any persons or animals.

Tyre waste

O6.9 The licensee must not receive tyres at the premises which are delivered in a load containing more than five (5) whole tyres.

Note: This condition does not apply to non-commercial operators (i.e. residents) of the Orange Local Government Area.

O6.10 The licensee must ensure that tyres stockpiled on the premises:
a) do not exceed fifty (50) tonnes at any one time; and
b) are located in a clearly defined area away from the waste disposal areas; and
c) are managed to control vermin; and
d) are managed to prevent any tyres from catching on fire.

O6.11 The licensee must not dispose of any tyres at the premises unless:
a) the tyre/s have a diameter of less than 1.2 metres; or
b) the tyre/s have been shredded so that the pieces measure no more than 250 millimetres in any direction; or
c) the tyre/s have had their walls removed.

Litter

O6.12 The licensee must ensure that the local amenity is not degraded by litter from the premises.

Compaction

O6.13 An average compaction rate of not less than 650 kg per cubic metre must be achieved for all waste disposed of at the premises.

Capping and covering

O6.14 All waste in trenches or cells must be compacted and covered at least once every 7 (seven) days with

waste that causes strong or offensive odours being covered daily.

O6.15 The licensee may use processed (chipped) green and/or wood waste as daily and/or weekly cover as required by condition O6.14.

O6.16 Final capping must comprise the following:
a) a phytocapping layer of no less than 1000mm in depth; and
b) the establishment of appropriate vegetation within this phytocapping layer.

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 Air Monitoring Requirements

POINT 12

Pollutant	Units of measure	Frequency	Sampling Method
Methane	percent by volume	Monthly	Probe

Environment Protection Licence

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M2.3 Water and/ or Land Monitoring Requirements

POINT 1,2,3,4,5,6,13,14,15,16

Pollutant	Units of measure	Frequency	Sampling Method
Alkalinity (as calcium carbonate)	milligrams per litre	Special Frequency 1	Grab sample
Aluminium	milligrams per litre	Special Frequency 1	Grab sample
Ammonia	milligrams per litre	Special Frequency 1	Grab sample
Boron	milligrams per litre	Special Frequency 1	Grab sample
Calcium	milligrams per litre	Special Frequency 1	Grab sample
Chloride	milligrams per litre	Special Frequency 1	Grab sample
Conductivity	microsiemens per centimetre	Special Frequency 1	Grab sample
Copper	milligrams per litre	Special Frequency 1	Grab sample
Fluoride	milligrams per litre	Special Frequency 1	Grab sample
Iron	milligrams per litre	Special Frequency 1	Grab sample
Magnesium	milligrams per litre	Special Frequency 1	Grab sample
Manganese	milligrams per litre	Special Frequency 1	Grab sample
Nitrate	milligrams per litre	Special Frequency 1	Grab sample
pH	pH	Special Frequency 1	Grab sample
Phosphate	milligrams per litre	Special Frequency 1	Grab sample
Potassium	milligrams per litre	Special Frequency 1	Grab sample
Sodium	milligrams per litre	Special Frequency 1	Grab sample
Standing Water Level	As approp.	Special Frequency 1	Inspection
Sulfate	milligrams per litre	Special Frequency 1	Grab sample
Total dissolved solids	milligrams per litre	Special Frequency 1	Grab sample
Total organic carbon	milligrams per litre	Special Frequency 1	Grab sample
Total petroleum hydrocarbons	milligrams per litre	Special Frequency 1	Grab sample
Total Phenolics	milligrams per litre	Special Frequency 1	Grab sample
TRH	milligrams per litre	Special Frequency 1	Grab sample
Zinc	milligrams per litre	Special Frequency 1	Grab sample

POINT 7,8

Pollutant	Units of measure	Frequency	Sampling Method
Alkalinity (as calcium carbonate)	milligrams per litre	Monthly during discharge	Grab sample
Ammonia	milligrams per litre	Monthly during discharge	Grab sample
Boron	milligrams per litre	Monthly during discharge	Grab sample

Calcium	milligrams per litre	Monthly during discharge	Grab sample
Chloride	milligrams per litre	Monthly during discharge	Grab sample
Conductivity	microsiemens per centimetre	Monthly during discharge	Grab sample
Fluoride	milligrams per litre	Monthly during discharge	Grab sample
Iron	milligrams per litre	Monthly during discharge	Grab sample
Magnesium	milligrams per litre	Monthly during discharge	Grab sample
Manganese	milligrams per litre	Monthly during discharge	Grab sample
Nitrate	milligrams per litre	Monthly during discharge	Grab sample
pH	pH	Monthly during discharge	Grab sample
Potassium	milligrams per litre	Monthly during discharge	Grab sample
Sodium	milligrams per litre	Monthly during discharge	Grab sample
Sulfate	milligrams per litre	Monthly during discharge	Grab sample
Total organic carbon	milligrams per litre	Monthly during discharge	Grab sample
Total petroleum hydrocarbons	milligrams per litre	Monthly during discharge	Grab sample
Total Phenolics	milligrams per litre	Monthly during discharge	Grab sample
TRH	milligrams per litre	Monthly during discharge	Grab sample

POINT 9

Pollutant	Units of measure	Frequency	Sampling Method
Alkalinity (as calcium carbonate)	milligrams per litre	Special Frequency 1	Grab sample
Ammonia	milligrams per litre	Special Frequency 1	Grab sample
Boron	milligrams per litre	Special Frequency 1	Grab sample
Calcium	milligrams per litre	Special Frequency 1	Grab sample
Chloride	milligrams per litre	Special Frequency 1	Grab sample
Conductivity	microsiemens per centimetre	Special Frequency 1	Grab sample
Fluoride	milligrams per litre	Special Frequency 1	Grab sample
Iron	milligrams per litre	Special Frequency 1	Grab sample
Magnesium	milligrams per litre	Special Frequency 1	Grab sample
Manganese	milligrams per litre	Special Frequency 1	Grab sample
Nitrate	milligrams per litre	Special Frequency 1	Grab sample
pH	pH	Special Frequency 1	Grab sample

Potassium	milligrams per litre	Special Frequency 1	Grab sample
Sodium	milligrams per litre	Special Frequency 1	Grab sample
Sulfate	milligrams per litre	Special Frequency 1	Grab sample
Total organic carbon	milligrams per litre	Special Frequency 1	Grab sample
Total petroleum hydrocarbons	milligrams per litre	Special Frequency 1	Grab sample
Total Phenolics	milligrams per litre	Special Frequency 1	Grab sample
TRH	milligrams per litre	Special Frequency 1	Grab sample

Note: For the purpose of condition M2.3:
a) Special Frequency 1 means: inspect every 6 months and sample for analysis where liquid is present.

M3 Testing methods - concentration limits

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

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

M3.2 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 Recording of pollution complaints

M4.1 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.

M4.2 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.

M4.3 The record of a complaint must be kept for at least 4 years after the complaint was made.

M4.4 The record must be produced to any authorised officer of the EPA who asks to see them.

M5 Telephone complaints line

M5.1 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.

M5.2 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.

M5.3 The preceding two conditions do not apply until 3 months after: the date of the issue of this licence.

M6 Other monitoring and recording conditions

M6.1 The licensee must monitor the remaining disposal capacity (in cubic metres) of the landfill.

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.

R1.8 Monitoring Report.
The licensee must supply with the Annual Return a Monitoring Report which provides:
a) an analysis and interpretation of monitoring results;
b) actions proposed/taken to correct identified adverse trends; and
c) The achieved compaction rate (excluding cover material) for the premises, if applicable.

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.

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R3 Written report

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

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

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

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

R4 Other reporting conditions

R4.1 The licensee must record the following data in relation to fires occurring at the premises:
a) Time and date when the fire started.
b) Whether the fire was authorised by the licensee, and, if not, the circumstances which ignited the fire.
c) The time and date that the fire burnt out or was extinguished.
d) The location of fire (eg. clean timber stockpile, putrescible garbage cell, etc).
e) Prevailing weather conditions at the time of the fire.
f) Observations made in regard to smoke direction and dispersion.
g) The amount of waste that was combusted by the fire.
h) Action taken to extinguish the fire;
i) Action taken to prevent a reoccurrence.

The data must be recorded on each day that the fire is burning.

R4.2 The licensee or its employees or agents must notify the occurrence of all fires on the premises in accordance with conditions R2.1 and R2.2 immediately after becoming aware of the fire.

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.

G2 Contact number for incidents and responsible employees

G2.1 The licensee must operate 24-hour telephone contact lines for the purpose of enabling the EPA to directly contact one or more representatives of the licensee who can:
a) respond at all times to incidents relating to the premises; and
b) contact the licensee's senior employees or agents authorised at all times to:
i) speak on behalf of the licensee; and
ii) provide any information or document required under this licence.

G2.2 The licensee is to inform the EPA in writing of the appointment of any subsequent contact persons, or changes to the person's contact details as soon as practicable and in any event within fourteen days of the appointment or change.

G3 Signage

G3.1 The location of EPA point identification numbers 1 to 9 and 13 to 16 must be clearly marked by a sign that indicates the point identification numbers used in this licence and be located as close as practical to each point.

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Dictionary

General Dictionary

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

Environment Protection Licence

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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 Environmen t Operations Act 1997
grab sample	Means a single sample taken at a point at a single time
hazardous waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
licensee	Means the licence holder 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 mo nths. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
restricted solid waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
scheduled activity	Means an activity listed in Schedule 1 of the Protection of the Environment Operations Act 1997
special waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
TM	Together with a number, means a test method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*.

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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

Mr Terry Knowles

Environment Protection Authority

(By Delegation)

Date of this edition: 30-November-2000

Environment Protection Licence

Licence - 5956

End Notes

1	Licence varied by notice 1032075, issued on 26-Nov-2003, which came into effect on 21-Dec-2003.
2	Licence varied by Correction to EPA file number, issued on 09-Jan-2004, which came into effect on 09-Jan-2004.
3	Licence varied by notice 1044238, issued on 07-Feb-2005, which came into effect on 04-Mar-2005.
4	Licence varied by TO ADD STREET NUMBER TO PREMISES ADDRESS, issued on 07-Nov-2005, which came into effect on 07-Nov-2005.
5	Licence fee period changed by notice 1065534 approved on 26-Sep-2006.
6	Condition A1.3 Not applicable varied by notice issued on <issue date> which came into effect on <effective date>
7	Licence varied by notice 1093364, issued on 05-Jan-2009, which came into effect on 05-Jan-2009.
8	Licence varied by notice 1098081, issued on 06-Apr-2009, which came into effect on 06-Apr-2009.
9	Licence varied by notice 1505614 issued on 07-Sep-2012
10	Licence varied by notice 1521987 issued on 25-Jun-2014
11	Licence varied by notice 1529510 issued on 17-Apr-2015
12	Licence varied by notice 1536817 issued on 23-Dec-2015
13	Licence format updated on 14-Feb-2019
14	Licence varied by notice 1579446 issued on 30-May-2019

Environment Protection Licence

Licence - 20104

Licence Details	
Number:	20104
Anniversary Date:	01-July

Licensee

ORANGE CITY COUNCIL

PO BOX 35

ORANGE NSW 2800

Premises

EUCHAREENA ROAD RESOURCE RECOVERY CENTRE

EUCHAREENA ROAD

MOLONG NSW 2866

Scheduled Activity

Waste disposal (application to land)

Fee Based Activity	Scale
Waste disposal by application to land	Any capacity

Region

South - Bathurst

Lvl 2, 203-209 Russell Street
BATHURST NSW 2795

Phone: (02) 6332 7600

Fax: (02) 6332 7630

PO Box 1388 BATHURST

NSW 2795

Environment Protection Licence

Licence - 20104

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Environment Protection Licence

Licence - 20104

Information about this licence

Dictionary

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

Responsibilities of licensee

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

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

Variation of licence conditions

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

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

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

Duration of licence

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

Licence review

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

Fees and annual return to be sent to the EPA

For each licence fee period you must pay:

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

Environment Protection Licence

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

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

Transfer of licence

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

Public register and access to monitoring data

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

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

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

This licence is issued to:

ORANGE CITY COUNCIL
PO BOX 35
ORANGE NSW 2800

subject to the conditions which follow.

Environment Protection Licence

Licence - 20104

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
Waste disposal (application to land)	Waste disposal by application to land	Any capacity

A2 Premises or plant to which this licence applies

A2.1 The licence applies to the following premises:

Premises Details
EUCHAREENA ROAD RESOURCE RECOVERY CENTRE
EUCHAREENA ROAD
MOLONG
NSW 2866
LOT 102, DP 1183238

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.

A3.2 Any other document and/or management plan is not to be taken as part of the documentation in condition A3.1, other than those documents and/or management plans specifically referenced in this licence.

Environment Protection Licence

2 Discharges to Air and Water and Applications to Land

P1 Location of monitoring/discharge points and areas

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

Air

EPA identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
1	Air quality monitoring		North Dust Deposition Gauge as identified on drawing 01A_EV01 and dated 02/07/2013
2	Air quality monitoring		East Dust Deposition Gauge as identified on drawing 01A_EV01 and dated 02/07/2013
3	Air quality monitoring		South Dust Deposition Gauge as identified on drawing 01A_EV01 and dated 02/07/2013
4	Air quality monitoring		West Dust Deposition Gauge as identified on drawing 01A_EV01 and dated 02/07/2013
5	Meteorological monitoring		Weather Station as identified on drawing 01A_EV01 and dated 02/07/2013

P1.2 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.

P1.3 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
6	Groundwater monitoring		HP1 as identified on drawing 01A_EV01 and dated 02/07/2013
7	Groundwater monitoring		HP2 as identified on drawing 01A_EV01 and dated 02/07/2013
8	Groundwater monitoring		HP3 as identified on drawing 01A_EV01 and dated 02/07/2013
9	Groundwater monitoring		HP4 as identified on drawing 01A_EV01 and dated 02/07/2013
10	Groundwater monitoring		HP5 as identified on drawing 01A_EV01 and dated 02/07/2013
11	Groundwater monitoring		HP6 as identified on drawing 01A_EV01 and dated 02/07/2013
12	Discharge to waters (wet weather only) Discharge quality monitoring	Discharge to waters (wet weather only) Discharge quality monitoring	SWA as identified on drawing 01A_EV01 and dated 02/07/2013

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13	Discharge to waters (wet weather only) Discharge quality monitoring	Discharge to waters (wet weather only) Discharge quality monitoring	SWB as identified on drawing 01A_EV01 and dated 02/07/2013
14	Discharge to waters (wet weather only) Discharge quality monitoring	Discharge to waters (wet weather only) Discharge quality monitoring	SW1 as identified on drawing 01A_EV01 and dated 02/07/2013
15	Discharge to waters (wet weather only) Discharge quality monitoring	Discharge to waters (wet weather only) Discharge quality monitoring	SW2 as identified on drawing 01A_EV01 and dated 02/07/2013
16	Discharge to waters (wet weather only) Discharge quality monitoring	Discharge to waters (wet weather only) Discharge quality monitoring	SW3 as identified on drawing 01A_EV01 and dated 02/07/2013
17	Leachate quality monitoring		L1 as identified on drawing 01A_EV01 and dated 02/07/2013

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 Waste

L2.1 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 or Specific exempted waste	Waste that meets all the requirements of a resource recovery exemption under Clause 51A of the Protection of the Environment Operations (Waste) Regulation 2005	As specified in each particular resource recovery exemption	NA
NA	General solid waste	As defined by Schedule	Waste disposal	The licensee

	(putrescible)	1 of the Protection of the Environment Operations Act 1997 as inforce from time to time	(application to land)	must not dispose of more than 25,000 tonnes of General solid waste (putrescible) at the premises
NA	General solid waste (non-putrescible)	As defined by Schedule 1 of the Protection of the Environment Operations Act 1997 as inforce from time to time	Waste disposal (application to land)	The licensee must not dispose of more than 20,000 tonnes of General solid waste (non-putrescible) at the premises
NA	Building and demolition waste	As defined by Schedule 1 of the Protection of the Environment Operations Act 1997 as inforce from time to time	Waste disposal (application to land)	NA
NA	Animal waste	As defined by Schedule 1 of the Protection of the Environment Operations Act 1997 as inforce from time to time	Waste disposal (application to land)	NA

L3 Noise limits

L3.1 Hours of operation (construction hours): construction activities at the premises are restricted to the following construction hours:
a) Monday to Friday: 7 am to 6 pm;
b) Saturday: 7 am to 1 pm; and
c) at no time on Sundays and Public Holidays.

L3.2 Noise limits (construction): noise from construction activities at the premises must not exceed:
a) an $L_{Aeq\ (15\ minute)}$ noise emission criterion of 40 dB(A).

L3.3 Hours of operation (operating hours): operational activities at the premises are restricted to the following operating hours:
a) Monday to Sunday: 7 am to 5 pm; and
b) at no time on Good Friday or Christmas Day.

L3.4 Noise limits (operation): noise from operational activities at the premises must not exceed:
a) an $L_{Aeq\ (15\ minute)}$ noise emission criterion of 35 dB(A).

L3.5 Noise from the premises is to be measured at the most affected point on or within the residential property boundary or, if that is more than 30 metres from the residence, at the most-affected point within 30 metres of the residence to determine compliance with conditions L3.2 and L3.4.

L3.6 For the purposes of determining the noise level generated from the premises, the modification factors in Section 4 of the NSW Industrial Noise Policy (EPA, 2000/2001) must be applied, as appropriate, to the

noise levels measured by the noise monitoring equipment.

L3.7 The noise emission limits identified at conditions L3.2 and L3.4 apply under meterological conditions of:
a) wind speeds up to 3m/s at 10 metres above ground level; and/or
b) temperature inversion conditions of up to 3 degrees celcius/100 metres.

L4 Potentially offensive odour

L4.1 The licensee must not cause or permit the emission of offensive odour beyond the boundary of the premises.

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.

Note: Plant is defined in the Dictionary. The type of plant and equipment that should be considered includes, but is not limited to, drainage systems; infrastructure and pollution control equipment such as (but not limited to) spill containment and clean-up equipment; dust screens and collectors; sediment collection systems, traps and sumps; waste collection, storage and disposal equipment.

O3 Dust

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

O3.2 The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.

O4 Emergency response

O4.1 The licensee must have in place and implement as part of the Landfill Environmental Management Plan, fire management practices/protocols to minimise the risk of fire at the premises.

O4.2 The licensee must have in place and implement as part of the Landfill Environmental Management Plan, fire management training for all onsite staff to minimise the risk of fire at the premises.

O4.3 The licensee must have adequate fire prevention measures in place, and ensure that facility personnel are able to access fire-fighting equipment and manage fire outbreaks at any part of the premises.

O4.4 The licensee must extinguish fires at the premises as soon as possible.

O5 Processes and management

O5.1 The licensee must develop, to the satisfaction of the EPA and in accordance with the Project Approval (09_0025, April 2010), a Landfill Environmental Management Plan prior to carrying out the scheduled activity identified at condition A1.1.

O5.2 The licensee must develop, to the satisfaction of the EPA and in accordance with the Project Approval (09_0025, April 2010), a Quality Assurance and Control Plan for the leachate management infrastructure prior to construction and installation of this infrastructure.

O5.3 The licensee must install and maintain a stockproof perimeter fence around the premises.

O5.4 The licensee must maintain lockable security gates at all access and departure locations and ensure that these gates are locked whenever the landfill is unattended.

O5.5 The licensee must take all practicable measures to minimise the tracking of mud and waste by vehicles leaving the premises.

O5.6 The licensee must control pests, vermin and weeds at the premises.

O6 Waste management

O6.1 Surface drainage must be diverted away from any area where waste is being or has been landfilled as well as any leachate storage, disposal or utilisation areas.

O6.2 The licensee must have in place and implement procedures to identify and prevent the disposal of any waste not permitted by this licence to be disposed of at the premises.

O6.3 The licensee must implement all reasonable and feasible measures to avoid the receipt of beekeeping equipment, honey production waste and other wastes identified in the approved Apiculture Risk Management Plan.

O6.4 The licensee must ensure that all general solid waste (putrescible) and mixed residual waste is appropriately baled and wrapped in plastic, apart from the following waste:

a) general solid waste (non-putrescible);
b) building and demolition waste; and
c) animal waste.

O6.5 The licensee must install and maintain a high wire mesh fence of not less than 1.8 metres around the active tipping area.

O6.6 An average compaction rate of not less than 650 kg per cubic metre must be achieved for all waste disposed of at the premises.

O6.7 Cover material must be applied in accordance with the following requirements:
a) Baled waste (including the sides of those outwards facing bales at the perimeter of the landfilling area) and Non Baled Inert Waste must be covered within seven (7) days after being land applied;
b) Broken bales must be covered on the same day they are land applied;
c) Any waste that causes strong or offensive odour must be covered on the same day the waste is land applied;
d) At least 2 weeks cover material must be available at the premises under all weather conditions. This material may be won on site, or alternatively a cover stockpile must be maintained adjacent to the tip face.

O6.8 The licensee may use processed (chipped) green and/or wood waste as daily and/or weekly cover as required by condition O6.7.

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 Air Monitoring Requirements

POINT 1,2,3,4

Pollutant	Units of measure	Frequency	Sampling Method
Particulates - Deposited Matter	grams per square metre per month	Monthly	Australian Standard 3580.10.1-2003

M2.3 Water and/ or Land Monitoring Requirements

POINT 6,7,8,9,10,11

Pollutant	Units of measure	Frequency	Sampling Method
Alkalinity (as calcium carbonate)	milligrams per litre	Special Frequency 1	Grab sample
Ammonia	milligrams per litre	Special Frequency 1	Grab sample
Calcium	milligrams per litre	Special Frequency 1	Grab sample
Chloride	milligrams per litre	Special Frequency 1	Grab sample
Conductivity	microsiemens per centimetre	Special Frequency 1	Grab sample
Fluoride	milligrams per litre	Special Frequency 1	Grab sample
Iron	milligrams per litre	Special Frequency 1	Grab sample
Magnesium	milligrams per litre	Special Frequency 1	Grab sample
Manganese	milligrams per litre	Special Frequency 1	Grab sample
Nitrate	milligrams per litre	Special Frequency 1	Grab sample
pH	pH	Special Frequency 1	Grab sample
Potassium	milligrams per litre	Special Frequency 1	Grab sample
Sodium	milligrams per litre	Special Frequency 1	Grab sample
Standing Water Level	As approp.	Special Frequency 1	Grab sample
Sulfate	milligrams per litre	Special Frequency 1	Grab sample
Total organic carbon	milligrams per litre	Special Frequency 1	Grab sample
Total Phenolics	milligrams per litre	Special Frequency 1	Grab sample

POINT 12,13,14,15,16

Pollutant	Units of measure	Frequency	Sampling Method
Alkalinity (as calcium carbonate)	milligrams per litre	Monthly during discharge	Grab sample
Ammonia	milligrams per litre	Monthly during discharge	Grab sample
Arsenic	milligrams per litre	Monthly during discharge	Grab sample

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Cadmium	milligrams per litre	Monthly during discharge	Grab sample
Calcium	milligrams per litre	Monthly during discharge	Grab sample
Chloride	milligrams per litre	Monthly during discharge	Grab sample
Chromium	milligrams per litre	Monthly during discharge	Grab sample
Conductivity	microsiemens per centimetre	Monthly during discharge	Grab sample
Copper	milligrams per litre	Monthly during discharge	Grab sample
Fluoride	milligrams per litre	Monthly during discharge	Grab sample
Iron	milligrams per litre	Monthly during discharge	Grab sample
Lead	milligrams per litre	Monthly during discharge	Grab sample
Magnesium	milligrams per litre	Monthly during discharge	Grab sample
Manganese	milligrams per litre	Monthly during discharge	Grab sample
Mercury	milligrams per litre	Monthly during discharge	Grab sample
Nickel	milligrams per litre	Monthly during discharge	Grab sample
Nitrate	milligrams per litre	Monthly during discharge	Grab sample
Oil and Grease	milligrams per litre	Monthly during discharge	Grab sample
Pesticides	milligrams per litre	Monthly during discharge	Grab sample
pH	pH	Monthly during discharge	Grab sample
Polycyclic aromatic hydrocarbons	milligrams per litre	Monthly during discharge	Grab sample
Potassium	milligrams per litre	Monthly during discharge	Grab sample
Sodium	milligrams per litre	Monthly during discharge	Grab sample
Sulfate	milligrams per litre	Monthly during discharge	Grab sample
Total Phenolics	milligrams per litre	Monthly during discharge	Grab sample
Total suspended solids	milligrams per litre	Monthly during discharge	Grab sample
Turbidity	nephelometric turbidity units	Monthly during discharge	Grab sample
Zinc	milligrams per litre	Monthly during discharge	Grab sample

POINT 17

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Pollutant	Units of measure	Frequency	Sampling Method
Alkalinity (as calcium carbonate)	milligrams per litre	Special Frequency 1	Grab sample
Ammonia	milligrams per litre	Special Frequency 1	Grab sample
Arsenic	milligrams per litre	Special Frequency 1	Grab sample
BTEX	milligrams per litre	Special Frequency 1	Grab sample
Cadmium	milligrams per litre	Special Frequency 1	Grab sample
Calcium	milligrams per litre	Special Frequency 1	Grab sample
Chloride	milligrams per litre	Special Frequency 1	Grab sample
Chromium	milligrams per litre	Special Frequency 1	Grab sample
Conductivity	microsiemens per centimetre	Special Frequency 1	Grab sample
Copper	milligrams per litre	Special Frequency 1	Grab sample
Fluoride	milligrams per litre	Special Frequency 1	Grab sample
Iron	milligrams per litre	Special Frequency 1	Grab sample
Lead	milligrams per litre	Special Frequency 1	Grab sample
Magnesium	milligrams per litre	Special Frequency 1	Grab sample
Manganese	milligrams per litre	Special Frequency 1	Grab sample
Mercury	milligrams per litre	Special Frequency 1	Grab sample
Nickel	milligrams per litre	Special Frequency 1	Grab sample
Nitrate	milligrams per litre	Special Frequency 1	Grab sample
Oil and Grease	milligrams per litre	Special Frequency 1	Grab sample
Pesticides	milligrams per litre	Special Frequency 1	Grab sample
pH	pH	Special Frequency 1	Grab sample
Polycyclic aromatic hydrocarbons	milligrams per litre	Special Frequency 1	Grab sample
Potassium	milligrams per litre	Special Frequency 1	Grab sample
Sodium	milligrams per litre	Special Frequency 1	Grab sample
Sulfate	milligrams per litre	Special Frequency 1	Grab sample
Total petroleum hydrocarbons	milligrams per litre	Special Frequency 1	Grab sample
Total Phenolics	milligrams per litre	Special Frequency 1	Grab sample
Total suspended solids	milligrams per litre	Special Frequency 1	Grab sample
Turbidity	nephelometric turbidity units	Special Frequency 1	Grab sample
Zinc	milligrams per litre	Special Frequency 1	Grab sample

Note: For the purpose of condition M2.1/M2.3:
a) Special Frequency 1 means: inspect every 6 months and sample for analysis where liquid is present.

M3 Testing methods - concentration limits

M3.1 Monitoring for the concentration of a pollutant emitted to the air required to be conducted by this licence must be done in accordance with:
a) any methodology which is required by or under the Act to be used for the testing of the concentration of

the pollutant; or
b) if no such requirement is imposed by or under the Act, any methodology which a condition of this licence requires to be used for that testing; or
c) if no such requirement is imposed by or under the Act or by a condition of this licence, any methodology approved in writing by the EPA for the purposes of that testing prior to the testing taking place.

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

M3.2 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 For each monitoring point specified in the table below the licensee must monitor (by sampling and obtaining results by analysis) the parameters specified in Column 1. The licensee must use the sampling method, units of measure, averaging period and sample at the frequency, specified opposite in the other columns.

Point 5

Parameter	Units of Measure	Frequency	Averaging Period	Sampling Method
Air temperature	°C	Continuous	1 hour	AM-4
Wind direction	°	Continuous	15 minute	AM-2 & AM-4
Wind speed	m/s	Continuous	15 minute	AM-2 & AM-4
Sigma theta	°	Continuous	15 minute	AM-2 & AM-4
Rainfall	mm	Continuous	15 minute	AM-4
Relative humidity	%	Continuous	1 hour	AM-4

M5 Recording of pollution complaints

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

M5.2 The record must include details of the following:
a) the date and time of the complaint;
b) the method by which the complaint was made;
c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
d) the nature of the complaint;

e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and
f) if no action was taken by the licensee, the reasons why no action was taken.

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

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

M6 Telephone complaints line

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

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

M6.3 The preceding two conditions do not apply until after 3 months from: the date of the issue of this licence.

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.

R1.8 Monitoring Report.
The licensee must supply with the Annual Return a Monitoring Report which provides:
a) an analysis and interpretation of monitoring results;
b) actions proposed/taken to correct identified adverse trends; and
c) The achieved compaction rate (excluding cover material) for the premises, if applicable.

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.

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.

G2 Contact number for incidents and responsible employees

G2.1 The licensee must operate 24-hour telephone contact lines for the purpose of enabling the EPA to directly contact one or more representatives of the licensee who can:
a) respond at all times to incidents relating to the premises; and
b) contact the licensee's senior employees or agents authorised at all times to:
i) speak on behalf of the licensee; and
ii) provide any information or document required under this licence.

G2.2 The licensee is to inform the EPA in writing of the appointment of any subsequent contact persons, or changes to the person's contact details as soon as practicable and in any event within fourteen days of the appointment or change.

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G3 Signage

G3.1 The location of EPA point number(s) 1 to 17 must be clearly marked by signs that indicate the point identification number used in this licence and be located as close as practical to the point.

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Dictionary

General Dictionary

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

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

Environment Protection Licence

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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

Mr Richard Whyte

Environment Protection Authority

(By Delegation)

Date of this edition: 28-May-2012

End Notes

2 Licence varied by notice 1515076 issued on 10-Jul-2013

3 Licence fee period changed by notice 1522076 on 28-May-2014

4 Licence varied by notice 1525339 issued on 16-Jan-2015

5 Licence varied by notice 1538487 issued on 06-Jul-2016

Environment Protection Licence

Licence - 20140

Licence Details	
Number:	20140
Anniversary Date:	01-July

Licensee

J.R. & E.G. RICHARDS PTY LTD

92-94 MANNING STREET

TUNCURRY NSW 2428

Premises

EUCHAREENA ROAD COMPOSTING FACILITY

EUCHAREENA ROAD

MOLONG NSW 2866

Scheduled Activity

Composting

Fee Based Activity	Scale
Composting	> 5000-50000 T of organics received

Region

South - Bathurst

Lvl 2, 203-209 Russell Street
BATHURST NSW 2795

Phone: (02) 6332 7600

Fax: (02) 6332 7630

PO Box 1388 BATHURST

NSW 2795

Environment Protection Licence

Licence - 20140

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Environment Protection Licence

Licence - 20140

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); and
- report incidents causing or threatening material environmental harm to the environment, as set out in Part 5.7 of the Act.

Variation of licence conditions

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

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

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

Duration of licence

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

Licence review

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

Fees and annual return to be sent to the EPA

For each licence fee period you must pay:

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

Environment Protection Licence

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

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

Transfer of licence

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

Public register and access to monitoring data

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

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

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

This licence is issued to:

J.R. & E.G. RICHARDS PTY LTD
92-94 MANNING STREET
TUNCURRY NSW 2428

subject to the conditions which follow.

Environment Protection Licence

Licence - 20140

1 Administrative Conditions

A1 What the licence authorises and regulates

A1.1 This licence authorises the carrying out of the scheduled development work listed below at the premises listed in A2:
Construction of steel framed organics receival hall building, fully enclosed concrete composting tunnels, biofilter including roof, control building, concrete pavements, gravel pavements, gravel maturation area and ancillary works.

A1.2 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
Composting	Composting	> 5000 - 50000 T of organics received

A2 Premises or plant to which this licence applies

A2.1 The licence applies to the following premises:

Premises Details
EUCHAREENA ROAD COMPOSTING FACILITY
EUCHAREENA ROAD
MOLONG
NSW 2866
LOT 101, DP 1183238

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.

A3.2 Any other document and/or management plan is not to be taken as part of the documentation in condition A3.1, other than those documents and/or management plans specifically referenced in this licence.

A4 Other administrative conditions

A4.1 The licensee is prohibited from carrying out the Scheduled Activity identified at condition A1.2 during the undertaking of the Scheduled Development Work identified at condition A1.1.

2 Discharges to Air and Water and Applications to Land

P1 Location of monitoring/discharge points and areas

P1.1 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.

P1.2 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.

Water and land

EPA Identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
1	Discharge to waters (wet weather only) Discharge quality monitoring	Discharge to waters (wet weather only) Discharge quality monitoring	Stormwater Overflow/Discharge S1 as identified on drawing JR212-10-99 and dated 27/04/2012
2	Discharge to waters (wet weather only) Discharge quality monitoring	Discharge to waters (wet weather only) Discharge quality monitoring	Stormwater Overflow/Discharge S2 as identified on drawing JR212-10-99 and dated 27/04/2012
3	Discharge to waters (wet weather only) Discharge quality monitoring	Discharge to waters (wet weather only) Discharge quality monitoring	Stormwater Overflow/Discharge S3 as identified on drawing JR212-10-99 and dated 27/04/2012
4	Discharge to utilisation area Volume monitoring	Discharge to utilisation area Volume monitoring	Liquid Residue Discharge C3 to Liquid Residue Irrigation Area as identified on drawing JR212-10-99 and dated 27/04/2012
5	Soil quality monitoring		Liquid Residue Irrigation Area as identified on drawing JR212-10-99 and dated 27/04/2012

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3 Limit Conditions

L1 Pollution of waters

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

L2 Concentration limits

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

L2.2 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\s.

L2.4 Water and/or Land Concentration Limits

POINT 1,2,3

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

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 or Specific exempted waste	Waste that meets all the requirements of a resource recovery exemption under Clause 51A of the Protection of the Environment Operations (Waste) Regulation 2005	As specified in each particular resource recovery exemption	NA
NA	Garden waste	As defined in Schedule 1 of the POEO Act as in force from time to time	Composting	
NA	Paper or cardboard	Soiled and biodegradable paper products	Composting	
NA	Wood waste	As defined in Schedule 1 of the POEO Act as in force from time to time	Composting	
NA	Food waste	As defined in Schedule 1 of the POEO Act as in force from time to time	Composting	

L3.2 Any outputs from the composting operations that are not permitted for reuse by a general resource recovery exemption or specific resource recovery exemption issued under the Protection of the Environment (Waste) Regulation 2005 must only be disposed of at the Euchareena Road Resource Recovery Centre.

L4 Noise limits

L4.1 Hours of operation (construction hours): construction activities at the premises are restricted to the following construction hours:
a) Monday to Friday: 7 am to 6 pm;
b) Saturday: 7 am to 1 pm; and
c) at no time on Sundays or Public Holidays.

L4.2 Noise limits (construction): noise from construction activities at the premises must not exceed:
a) an $L_{Aeq\ (15\ min)}$ noise emission criterion of 40 dB(A).

L4.3 Hours of operation (operating hours): Outdoor composting operations at the premises are restricted to the following operating hours:
a) Monday to Sunday: 7 am to 5 pm; and
b) at no time on Good Friday or Christmas Day.

L4.4 Noise limits (operation): noise from operational activities at the premises must not exceed:
a) an $L_{Aeq\ (15\ minute)}$ noise emission criterion of 35 dB(A).

L4.5 Noise from the premises is to be measured at the most affected point on or within the residential property boundary or, if that is more than 30 metres from the residence, at the most-affected point within 30 metres of the residence to determine compliance with conditions L4.2 and L4.4.

L4.6 For the purposes of determining the noise level generated from the premises, the modification factors in Section 4 of the NSW Industrial Noise Policy (EPA, 2000/2001) must be applied, as appropriate, to the noise levels measured by the noise monitoring equipment.

L4.7 The noise emission limits identified at conditions L4.2 and L4.4 apply under meteorological conditions of:
a) wind speeds up to 3m/s at 10 metres above ground level; and/or
b) temperature inversion conditions of up to 3 o C/100 metres.

L5 Potentially offensive odour

L5.1 The licensee must not cause or permit the emission of offensive odour beyond the boundary of the premises.

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.

Note: Plant is defined in the Dictionary. The type of plant and equipment that should be considered includes, but is not limited to, drainage systems; infrastructure and pollution control equipment such as (but not limited to) spill containment and clean-up equipment; dust screens and collectors; sediment collection systems, traps and sumps; waste collection, storage and disposal equipment.

O3 Dust

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

O3.2 The premises must be maintained in a condition which minimises or prevents the emission of dust from

the premises.

O4 Emergency response

O4.1 The licensee must have adequate fire prevention measures in place, and ensure that facility personnel are able to access fire-fighting equipment and manage fire outbreaks at any part of the premises.

O4.2 The licensee must extinguish fires at the premises as soon as possible.

O5 Processes and management

O5.1 The licensee must install and maintain a stockproof perimeter fence around the premises.

O5.2 The licensee must maintain lockable security gates at all access and departure locations and ensure that these gates are locked whenever the landfill is unattended.

O5.3 The licensee must take all practicable measures to minimise the tracking of mud and waste by vehicles leaving the premises.

O5.4 The licensee must control pests, vermin and weeds at the premises.

O6 Waste management

O6.1 Surface drainage must be diverted away from the composting maturation area.

O6.2 The licensee must have in place and implement procedures to identify and prevent the receipt of any waste not permitted by this licence to be composted of at the premises.

O7 Other operating conditions

O7.1 The licensee must develop and implement a Construction Management Plan for the scheduled development work identified at condition A1.1 in accordance with the Project Approval (MP 09_0025, April 2010).

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

POINT 1,2,3

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

POINT 5

Pollutant	Units of measure	Frequency	Sampling Method
Calcium	milligrams per kilogram	Special Frequency 1	Special Method 1
Chloride	milligrams per kilogram	Special Frequency 1	Special Method 1
Conductivity	microsiemens per centimetre	Special Frequency 1	Special Method 1
Magnesium	milligrams per kilogram	Special Frequency 1	Special Method 1
Manganese	milligrams per kilogram	Special Frequency 1	Special Method 1
Nitrate + nitrite (oxidised nitrogen)	milligrams per kilogram	Special Frequency 1	Special Method 1
Nitrogen (total)	milligrams per kilogram	Special Frequency 1	Special Method 1
pH	pH	Special Frequency 1	Special Method 1
Phosphorus (total)	milligrams per kilogram	Special Frequency 1	Special Method 1
Phosphorus Sorption Capacity	milligrams per kilogram	Special Frequency 1	Special Method 1
Sodium	milligrams per kilogram	Special Frequency 1	Special Method 1

Total organic carbon	milligrams per kilogram	Special Frequency 1	Special Method 1

Note: For the purposes of condition M2.1/M2.2:
a) Special Frequency 1 means: the collection of samples from the utilisation area once a year where the application of liquid residue has occurred within the reporting period.
b) Special Method 1 means: the collection of a representative soil sample from each soil type within the utilisation area.

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 Recording of pollution complaints

M4.1 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.

M4.2 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.

M4.3 The record of a complaint must be kept for at least 4 years after the complaint was made.

M4.4 The record must be produced to any authorised officer of the EPA who asks to see them.

M5 Telephone complaints line

M5.1 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.

M5.2 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.

M5.3 The preceding two conditions do not apply until after 3 months from:

a) the date of the issue of this licence or
b) if this licence is a replacement licence within the meaning of the Protection of the Environment Operations (Savings and Transitional) Regulation 1998, the date on which a copy of the licence was served on the licensee under clause 10 of that regulation.

M6 Requirement to monitor volume or mass

M6.1 For each discharge point or utilisation area specified below, the licensee must monitor:
a) the volume of liquids discharged to water or applied to the area;
b) the mass of solids applied to the area;
c) the mass of pollutants emitted to the air;
at the frequency and using the method and units of measure, specified below.

POINT 4

Frequency	Unit of Measure	Sampling Method
Daily when wastes discharged	litres per day	Flow meter and continuous logger

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:
a) a Statement of Compliance; and
b) a Monitoring and Complaints Summary.
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 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 Statement 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.

R1.8 A person who has been given written approval to certify a certificate of compliance under a licence issued under the Pollution Control Act 1970 is taken to be approved for the purpose of this condition until the date of first review of this licence.

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.

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.

G2 Contact number for incidents and responsible employees

G2.1 The licensee must operate 24-hour telephone contact lines for the purpose of enabling the EPA to directly contact one or more representatives of the licensee who can:
a) respond at all times to incidents relating to the premises; and
b) contact the licensee's senior employees or agents authorised at all times to:
i) speak on behalf of the licensee; and
ii) provide any information or document required under this licence.

G2.2 The licensee is to inform the EPA in writing of the appointment of any subsequent contact persons, or changes to the person's contact details as soon as practicable and in any event within fourteen days of the appointment or change.

G3 Signage

G3.1 The location of EPA point number(s) 1 to 5 must be clearly marked by signs that indicate the point identification number used in this licence and be located as close as practical to the point.

Environment Protection Licence

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Dictionary

General Dictionary

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

Environment Protection Licence

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

Environment Protection Licence

Licence - 20140

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

Mr Darryl Clift

Environment Protection Authority

(By Delegation)

Date of this edition: 17-September-2012

End Notes

2 Licence varied by notice 1512029 issued on 12-Jul-2013

3 Licence fee period changed by notice 1518106 on 12-Nov-2013

Section 8.3

ORRRC LIQUID TRADE WASTE DISCHARGE APPROVAL

Section 8.4

ERRRC LIQUID TRADE WASTE DISCHARGE APPROVAL

F533
D18/68114

18 December 2018

Mr Wayne Davis
Manager Waste Services & Technical Support
Orange City Council
PO Box 35
ORANGE NSW 2800

Dear Wayne,

LIQUID TRADE WASTE APPROVAL TO DISCHARGE TO COUNCILS SEWER - EUCHAREENA ROAD RESOURCE RECOVERY CENTRE TANKERED WASTE TO ORANGE WASTE WATER TREATMENT PLANT.

Please find enclosed Councils approval for the Euchareena Road Resource Recovery Centre (ERRRC) leachate to be carted to the Orange Waste Water Treatment Plant for discharge. This conditions of this approval has been granted with concurrence from the NSW Department of Industry.

Please find enclosed a copy of the Approval which is due to expire on the 16 January 2024. It is recommended that you arrange a renewal of this approval with Council at least 3 months prior to the expiry date.

Should you have any enquiries or wish to discuss any liquid trade waste matters, please contact me on (02) 6393 8870.

Yours sincerely,

Paul Ryan
TRADE WASTE OFFICER

LIQUID TRADE WASTE

DISCHARGE APPROVAL

GRANTED TO

EUCHAREENA ROAD RESOURCE RECOVERY CENTRE

BY

ORANGE CITY COUNCIL

ON

18 December 2018

Ref No F533

D18/68114

DETERMINATION OF THE APPLICATION TO DISCHARGE LIQUID TRADE WASTE TO THE ORANGE CITY COUNCIL SEWERAGE SYSTEM

1. RECITALS

A The Council is the owner and operator of the sewerage systems within the Orange City Council local government area.

B Application has been made to Council by "the Applicant" to discharge liquid trade wastes into Council's sewerage system.

C Pursuant to Chapter 7 of the *Local Government Act 1993*, notice is hereby given of the determination by Council of the subject application.

D The application has been approved by Council on certain conditions, as outlined in this document.

E The Secretary of the **Department of Industry** has concurred in the approval in accordance with clause 28 of the *Local Government (General) Regulation 2005*.

2. THE APPLICANT

Full name of Applicant: Euchareena Road Resource Recovery Centre

Nature of business: Municipal Waste Management

3. PREMISES

Address: Euchareena Road, Molong NSW 2866

Council reference: F533

4. TERM OF THE APPROVAL

Commencement date: 16 January 2019

Duration: 5 Years

Classification: C

Fee Category: 3 *(as at 1 July 2018)*

5. DEFINITIONS AND INTERPRETATION

In this Approval, unless the context otherwise requires:

"Act" or "LG Act" means the *Local Government Act 1993* (NSW).

"Annual Management Plan" means the annual management plan of Council, as adopted by the Council from time to time.

"Applicant" means the entity as detailed in Section 2.

"Council" means Orange City Council.

"DOI" means Department of Industries (Crown Lands & Water).

"Liquid Trade Waste Services" means the making available by the Council of its sewerage system for the connection to the premises, for the purpose of discharge by the Applicant of its liquid trade waste.

"Premises" means the premises as detailed in Section 3.

"Agreement" means Liquid Trade Waste Services Agreement.

6. OPERATIVE PART

The Applicant has applied to Council to discharge certain waste from the premises to Council's sewerage system. Council, as Local Water Utility (LWU), has granted approval subject to the conditions set out below:

General Conditions

1. The Applicant must comply with all applicable Acts, Regulations, By-Laws Proclamations and Orders and with any lawful direction or order given by or for the Council or any other competent authority.

   (Reason: Requirement to comply with all applicable government legislation).

2. The work that will be carried out under the General Conditions of Approval shall be implemented and operated in compliance with the Work Health & Safety Act 2011, the Work Health & Safety Regulation 2011, the Plumbing Code of Australia, the Australian Standard AS3500, Part 2, Sanitary Plumbing and Sanitary Drainage and Council requirements.

   (Reason: Government requirement for compliance with relevant standards and legislation).

3. Term of the Approval

   Commencement date**: 16 January 2019**

   This approval has a duration period as specified above except where the approval is terminated by the Council or the applicant. Conditions may however be varied during this period.

   (Reason: Requirement under the Local Government Act).

4. The Council may terminate this approval at any time if the applicant is in breach of its terms and conditions, by notice in writing to the Applicant revoking its approval to discharge.

   (Reason: Requirement of the Local Government Act (1993)).

5. If this approval is terminated or if the Council gives written notice to the Applicant revoking its approval to discharge trade waste, the Applicant must immediately cease to discharge trade waste.

   (Reason: Department of Industry and Council requirement for compliance with the conditions of approval, protection of the sewerage system and the environment).

6. The discharge of the waste is to be carried out;

   - **Between the hours of 7am and 3pm Monday to Friday.**
   - **Under the supervision of a Council employee.**

   (Reason: Department of Industry and Council requirement for auditing purposes and to prevent odours and/or overloading of the sewerage system. Requirement to protect the integrity of the waste and security of the site)

7. The composition of the liquid trade waste shall comply with that approved. A new application shall be made if the quantity and/or quality of the liquid trade waste are to be varied.

   (Reason: Requirement pursuant to Clause 32 of the Local Government (General) Regulation 2005).

8. If, in the opinion of the council, the liquid trade waste being discharged does not comply with the conditions contained herewith or is adversely affecting the performance of the sewage treatment plant, the sewerage system, or the ecological system in the waters, land or area receiving sewage treatment plant effluent, the company shall forthwith, on receipt of notice in writing from Council to this effect, take remedial action by modifying the characteristics of the liquid trade waste, reducing the amount of the liquid trade waste or ceasing to discharge the liquid trade waste as directed by notice from council.

   (Reason: Department of Industry and Council requirement for compliance with the conditions of approval, protection of the sewerage system and the environment)

9. The Applicant must provide at its own cost the plant and equipment specified in the Approval and must maintain such plant and equipment and any other pipes, equipment or apparatus used for the conveyance, measurement or treatment of trade waste in a clean and efficient condition.

   (Reason: Department of Industry and Council requirement to ensure compliance with the conditions of approval)

10. The applicant must provide suitable access to all pre-treatment device(s) at all times for inspections and sampling by authorised Council Officers and for safe and suitable access for servicing by approved Contractors.

    (Reason: Department of Industry and Council requirement to ensure compliance with the conditions of approval)

11. In consideration of initial and ongoing approval to discharge liquid trade wastes, Council requires the payment of all fees and charges as issued by Council to the owner of the property.

    (Reason: Department of Industry and Council requirement to ensure no cross subsidies in rate collection)

12. Council may at any time enter the premises for the purpose of conducting any inspection, examination, testing, monitoring or sampling to determine whether the Applicant is complying with the conditions of this Approval.

    (Reason: Department of Industry and Council requirement to ensure compliance with Approval conditions)

13. Council may by written notice to the Applicant require the Applicant to rectify any breach of this Approval within such time as is specified in the notice and, where appropriate, to cease the discharge of trade waste pending such rectification.

    (Reason: Department of Industry and Council requirement to ensure compliance with Approval conditions)

14. Council will not be liable to the discharger or owner of the property for any loss or damage due to the disruption of the Applicant's business arising out of the exercise of Council's powers pursuant to this Approval.

    (Reason: Department of Industry and Council requirement to ensure compliance with Approval conditions)

15. The discharger must immediately notify the Council in writing of any error or omission in information supplied in the application, or otherwise, or any change to the information of which the discharger becomes aware.

    (Reason: Department of Industry and Council requirement to ensure compliance with Approval conditions)

16. The Applicant must not provide any materially false or misleading information to the Council.

    (Reason: Department of Industry and Council requirement to ensure compliance with Approval conditions)

17. Council's consent is to be obtained prior to any new or changed business activity that discharges liquid trade waste to Council's sewerage system from this premise. The Applicant shall forward to Council the name and such details as may be required by Council to determine that appropriate pre-treatment equipment are provided and/or sufficient pre-treatment capacity is available to accommodate the new or changed business activity.

(Reason: Department of Industry and Council requirement to ensure grease arrestors are not overloaded)

18. The equipment for the treatment of the liquid trade waste is to be kept clean and maintained in an efficient condition to the satisfaction of Council and must not be modified without the approval in writing of the council.

(Reason: Department of Industry and Council requirement to ensure compliance with the conditions of approval).

19. Back-flow protection device to AS3500 shall be installed on all hose fitting water taps located within 18 metres of the Pre-Treatment system or on any tap used for hosing out such device.

(Reason: Council and Department of Health requirement for protection of the integrity of the potable water system).

Substances Prohibited from Discharge

20. The following substances are prohibited from being discharged into sewerage systems or drains:

    a. organochlorine weedicides, fungicides, pesticides, herbicides and substances of a similar nature and/or wastes arising from the preparation of these substances
    b. organophosphorus pesticides and/or waste arising from the preparation of these substances
    c. any substances liable to produce noxious or poisonous vapours in the sewerage system
    d. organic solvents and mineral oil
    e. any flammable or explosive substances
    f. discharges from 'Bulk Fuel Depots'
    g. chromate from cooling towers
    h. natural or synthetic resins, plastic monomers, synthetic adhesives, rubber and plastic emulsions
    i. rain, surface, seepage or subsoil water, unless specifically permitted
    j. solid matter
    k. any substance assessed as not suitable to be discharged to the sewerage system
    l. waste liquids that contain pollutants at concentrations which inhibit the sewage treatment process – refer National Wastewater Source Management Guideline, June 2012, WSAA
    m. any other substances listed in a relevant regulation.

(Reason: Statutory provision in Local Government Act Section 638 and Department of Industry and Council requirement for protection of the sewerage system, safety of workers and the environment)

21. Concentrated acids, caustic and other corrosive chemicals shall not be discharged to the sewerage system.

(Reason: Department of Industry and Council requirement to protect the sewerage system and worker health and safety)

Flow Specific Conditions

22. The maximum daily discharge shall not exceed 20 kilolitre per day.

(Reason: Department of Industry and Council requirement to prevent overflows and overloading of the sewerage system)

23. A log book must be kept and filled in on each occasion of waste discharge as part of the LWU's due diligence program.

The log book should detail the following items:

i. The day, date and time of discharge
ii. The type and volume of waste discharged
iii. Vehicle registration number
iv. The name of the person or company and the address of the site from witch liquid trade waste were collected.
v. The log book is to be made available to a Council and DOI officer upon request.
vi. Each entry in the log book is to be signed by the tanker driver.
vii. pH reading
viii. Periodical sample analysis results when conducted.

(Reason: Requirement for due diligence, compliance auditing, monitoring and sampling purposes)

24. Where any flow-metering device is installed, the Applicant must at its own cost cause the device to be calibrated at least annually by a person or company approved by the Council. The Applicant must obtain a calibration certificate and provide a copy of the certificate to the Council within one month of receiving it.

(Reason: Department of Industry and Council requirement for auditing and compliance monitoring)

Quality Specific Conditions

25. The pH of the liquid trade waste shall be maintained within the range of 7.0 to 9.0 at all times.

(Reason: Extremes of pH can adversely affect biological treatment processes and cause the release of toxic gases in sewer. Low pH causes corrosion of sewer structures)

26. The temperature of the liquid trade waste shall not exceed 38°C at any time.

(Reason: Council requirement to protect sewerage system and worker health and safety)

27. Grease trap pump-out or other wastes shall not be discharged with the waste into the sewerage system. To prevent contamination of the septic tank waste or accidental discharge of grease trap waste or other wastes into the sewerage system, a road tanker should be preferably dedicated to septic tank service only. If this is impractical, the road tanker is required to be washed out after the grease trap waste or other wastes are disposed of to the appropriate disposal facilities.

(Department of Industry and Council requirement to prevent dumping of unauthorised wastes into the sewerage system

28. The concentration of the following substances shall not exceed:

Substance	Limit (mg/L)	Reason
BOD_5	300	***Department of Industry* and Council requirement to limit loading on the sewerage system**
Total Suspended Solids	600	
COD	600 mg/L if BOD < 150 mg/L, otherwise 3 times BOD	***Requirement to prevent the discharge of non-biodegradable waste and to ensure treatability of the proposed liquid trade waste***
Total Dissolved Solids	4000	***Requirement for effluent management options (reduces the opportunity for reuse) and protection of the receiving aquatic environment***
Ammonia (as N)	50	***Requirement for protection of the sewerage system and worker health & safety***
Sulphate	500	
Sulphide	1	
Total Kjeldahl Nitrogen (TKN)	100	***Requirement for protection of the sewerage system and the environment***
Total Phosphorus	20	
Organochlorines	Nil	
Polynuclear Aromatic Hydrocarbons	5	
Pesticides (General)	0.1	
Formaldehyde	30	
Organophosphorus pesticides	Nil	
Phenolic substances	5	***Protection of the sewerage treatment processes and the receiving aquatic environment***
Silver	2	
Oil & Grease	100	***Department of Industry* and Council requirement to prevent sewer blockage**
Petrol Hydrocarbons (non-Flammable)	30	***Requirement for protection of worker health and safety, the sewerage system and the receiving aquatic environment***
Benzene	0.04	
Toluene	0.5	
Ethyl-Benzene	1	
Xylene	1	
Cyanide	1	
Lead	1	***Protection of the sewerage treatment processes and the receiving***

Nickel	3	***aquatic environment and restricts effluent re-use***
Copper	5	
Mercury	0.01	
Zink	5	
Arsenic	1	
Cadmium	1	
Cobalt	5	***Protection of the receiving aquatic environment and restricts effluent re-use***
Tin	5	***Protection of the receiving aquatic environment***
Molybdenum	10	

Monitoring Conditions

29. Council will carry out routine sampling and testing of the waste stream if required.
(Reason: Department of Industry and Council requirement to permit auditing of liquid trade waste).

30. An inspection point suitable for taking representative samples shall be provided immediately prior to the point where the liquid trade waste enters the sewerage system and/or mixes with domestic sewage from the premises.

(*Reason: Department of Industry and Council requirement to permit sampling & compliance auditing of discharge quality)*

31. Representative samples of the leachate are to be collected and analyse for the parameters at the frequency shown in the table:

Parameter	**Frequency**
pH	Each Batch*
Suspended Solids (SS), Total Dissolved Solids(TDS)	Weekly*
BOD5, COD, Ammonia, Total Kjeldahl Nitrogen (TKN)	Quarterly
All other parameters listed in condition 28	Annually

*Sampling frequency will be reviewed by Council, where appropriate.

(Reason: Requirement for due diligence, compliance auditing, monitoring and sampling purposes)

32. The sample analysis tests shall be carried out only by laboratories that hold National Association of Testing Authorities (NATA) registration for the class of test(s) or specific test(s) specified in the trade waste approval or a laboratory acceptable to Department of Industry. Tests shall be carried out by using analytical methods indicated in the Australian Sewage Management Guidelines, June 2012, WSAA. The results of the chemical analysis shall be forwarded to Council for review as

soon as available from the laboratory. The analysis records are to be retained by the discharger for the specified period of three (3) years.

(Reason: Department of Industry and Council requirement to ensure the integrity of any sampling analysis results are not compromised and due diligence concerns are satisfied)

Site Specific Practices / Pre-treatment

33. Council shall be notified 24 hours in advance of each delivery of tankered leachate to the sewerage treatment works.

(Reason: Department of Industry and Council requirement for protection and prevention of overloading of the sewerage system and worker safety and pursuant to Section 89 (3a) Local Government Act 1993 for protection of the environment)

34. The discharge of septic tankered effluent shall only be to the OCC WWTP sludge lagoon.
(***Reason: Department of Industry and Council requirement to protect the sewerage system and public amenity)***

35. If odours occur due to the discharge, measures should be taken to rectify this problem.
(Reason: Department of Industry and Council requirement to protect health of public and workers, public amenity and compliance)

36. Sludge resulting from treatment of the waste shall be removed by a licensed contractor.
(Reason: Department of Industry and Council requirement to protect the sewerage system and worker health & safety and EPA requirement for waste disposal.)

Housekeeping Conditions

37. Measures shall be taken to prevent spillage of chemicals and any other product used. Any spillage, if occurring, shall be recovered/removed by using dry cleaning methods and not discharged to the sewerage system.

(Reason: Department of Industry and Council requirement for protection & prevention of overloading of the sewerage system, worker safety and pursuant to Section 89 (3a) Local Government Act 1993 for protection of the environment).

38. A contingency plan and a due diligence program are to be submitted to Council within three (3) months and six (6) months respectively of commencement of the approval from Council.

(Reason: Department of Industry and Council requirement to ensure that adequate contingency measures are in place to address a potentially hazardous situation).

Storage Related Conditions

39. Chemical and oil storage containers shall be contained within a roofed and bunded area with either the bund having capacity to retain 110% or the largest container or other acceptable means of containment that prevents flow to the sewerage system/environment in case of accident, leakage or spills.

(Reason: Department of Industry and Council requirement to protect the sewerage system and worker health and safety).

Stormwater Related Conditions

40. Measures shall be taken to prevent the contamination and ingress of storm water into the sewerage system. Storm water surface runoffs to be diverted and prevented from entering the leachate ponds through the use of bunds and trenches.

(Reason: Department of Industry and Council requirement for protection and prevention of overloading of the sewerage system and worker safety and pursuant to Section 89 (3a) Local Government Act 1993 for protection of the environment)

7. NOTES

Right of Review

Section 100 of the Local Government Act, 1993 confers the right for an applicant to request the Council to review its determination within 28 days after the date of determination. Any requests for review are required to be accompanied by a fee as set by Council.

Right of Appeal

Section 176 of the Local Government Act, 1993 confers the right for an applicant who is dissatisfied with the determination of Council to appeal to the Land and Environment Court within twelve (12) months after the date of determination.

Section 8.5

ERRRC CONSERVATION AGREEMENT

CONSERVATION AGREEMENT

BETWEEN

THE MINISTER ADMINISTERING THE NEW SOUTH WALES NATIONAL PARKS AND WILDLIFE ACT (1974)

AND

ORANGE CITY COUNCIL

FOR

Euchareena Road Resource Recovery Centre

_____
General Manager
Orange City Council

_____
Minister

CONSERVATION AGREEMENT UNDER PART 4 DIVISION 12 OF THE NATIONAL PARKS AND WILDLIFE ACT 1974

THIS AGREEMENT made the day of , Two thousand and , **BETWEEN** the Minister for the time being administering the *National Parks and Wildlife Act 1974* ("the Minister" which expressions shall where the context admits, be deemed to include successors in office) of the one part and **Orange City Council** ("the Owner") of Euchareena Road Resource Recovery Centre (ERRRC), Euchareena Road, Molong NSW 2866 of the other part.

WHEREAS:

A The Owner is the registered proprietor of that parcel of land being Lot 102, Deposited Plan 1183238 (currently being registered with Land and Property Information), Parish of Copper Hill, County of Wellington ("**the Land**"). That part of the Land shown by hatching on **Diagram A** annexed to this Agreement is the conservation area ("**the conservation area**"), being part of Lot 102 DP1183238. The conservation area covered by this Agreement equals 110.3 hectares.

B The Owner and the Minister recognise that the conservation area contains White Box Yellow Box Blakely's Red Gum Woodland, which is listed as an endangered ecological community under Schedule 1 of the *Threatened Species Conservation Act 1995*, and as a critically endangered ecological community under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.

C The Owner and the Minister recognise that the conservation area contains habitat suitable for the Brown Treecreeper (*Climacteris picumnus victoriae)*, Koala (Phascolarctos cinereus) and the Eastern Bentwing Bat (*Miniopterus schreibersii oceanensis)*, listed as vulnerable species on Schedule 2 of the *Threatened Species Conservation Act 1995* and which have been recorded in the local area. The Superb Parrot (*Polytelis swainsonii)*, listed as vulnerable on Schedule 2 of the *Threatened Species Conservation Act 1995*, has been recorded on the site.

D The Owner and the Minister recognise that the conservation area contains a scarred tree that has been identified as an item of Aboriginal cultural heritage significance, listed in the Aboriginal Heritage Information System (Molong ST1, Site ID 44-1-0080).

E The Owner and Minister recognise that this Agreement is part of a requirement to satisfy The Statements of Commitments (Flora & Fauna) in the Project Approval by the Minister for Planning for the Orange Waste Project (Application No MP09_0025) dated 28 April 2010 for the long term conservation and enhancement of identified areas.

F Accordingly, the parties hereby enter into the following conservation agreement under Section 69B Part 4 Division 12 of the *National Parks and Wildlife Act 1974.*

G The Owner and the Minister agree to take steps to protect and manage the conservation values of the conservation area as set out in Annexures B and C.

NOW THIS AGREEMENT WITNESSES:

1. INTERPRETATION

1.1 In this Agreement unless the contrary intention appears:-

"**Aboriginal Object**" has the same meaning as in Section 5 of the Act;

"**Aboriginal Place**" has the same meaning as in Section 5 of the Act;

"the **Act**" means the *National Parks and Wildlife Act 1974* and any regulations from time to time in force thereunder;

"**conservation area**" means that part of the Land shown by red diagonal hatching on the diagram annexed to this Agreement as Annexure A;

"**conservation values**" includes any native fauna and their habitats, native plants and their habitats, cultural heritage and geo-heritage and includes the conservation values listed in Annexure B under the heading 'conservation values'

"control", in relation to the conservation area, means lawful occupation, possession or management of the conservation area

"**controlled burning**" means the controlled application of fire under specified environmental and weather conditions to a predetermined area and at the time, intensity and rate of spread required to attain planned resource management objectives;

"**critical habitat**" has the same meaning as in Section 4 of the *Threatened Species Conservation Act 1995;*

"**cultural heritage**" refers to the aesthetic, historic, scientific, social, spiritual or other values of a place and associated physical evidence and traditions held by past, present or future generations of peoples, including Aboriginal peoples

"**damage**" is defined under the Act in relation to habitat (including critical habitat) includes damage by the removal or relocation of the habitat or a part of the habitat;

"the **Department**" means the NSW Government Department responsible for administering Section 69A to KA of the Act;

"**development**" has the same meaning as provided for in Section 69A of the Act;

"**Director-General**" has the same meaning as Section 5 of the Act;

"**fauna**" has the same meaning as in Section 5 of the Act;

"**geo-heritage**" means any karst environment and any geological deposits and landforms that provide habitat for indigenous fauna and includes values identified as geo-heritage under the heading "Conservation values" in Annexure B

"**harm**" has the same meaning as in Section 5 of the Act

"**indigenous fauna**" means a species of animal that was established in, or started regularly migrating to, New South Wales before European settlement and includes fauna listed in Annexure B under the heading "Conservation Values"

"**indigenous plants**" means a species of plant that was established in New South Wales prior to European settlement and includes plants listed in Annexure B under the heading "Conservation Values;

"**Land**" means that parcel of land described in Recital A;

"**Management Scheme for the conservation area**" means management scheme prepared for the conservation area in consultation with the owner, annexed to this Agreement as Annexure C;

"**Minister**" means the Minister for the time being administering the Act and where not repugnant to the context includes the servants and agents of the Minister;

"**native fauna**" has the same meaning as "protected fauna" in Section 5 of the Act;

"**native plant**" has the same meaning as in Section 5 of the Act;

"native vegetation" has the same meaning as in the *Native Vegetation Act 2003*

"**Owner**" has the meaning as in Section 69A of the Act and includes any successor in title to the owner within the meaning of Section 69E of the Act;

"**pest animal**" means any non-native animal having, or with the potential to have, an adverse economic, environmental or social impact;

"**pesticide**" has the same meaning as in Section 5 of the *Pesticides Act 1999* which includes herbicides, insecticides, fungicides, baits and rodenticides;

"**reasonable**" in relation to carrying out an activity, means using the best methods available and carrying out the activity in such a way as to have minimal impact on the conservation values of the conservation area;

"**road**" allows the passage of vehicles and persons and may be of more developed construction and surface improvement;

"**threatened species, populations and ecological communities**" and "**threatened species, population or ecological community**" have the same meaning as in the *Threatened Species Conservation Act 1995;*

"**track**" allows non-vehicular access only;

"**trail**" allows the passage of vehicles and persons and is of minimal construction, being of limited width and minimal surface improvement;

1.2 Words importing the singular number shall include the plural and masculine gender the feminine or neuter and vice versa.

1.3 Any reference to a person shall be deemed to include a corporate body and vice versa.

1.4 Any covenant or agreement on the part of two or more persons shall be deemed to bind them jointly and severally.

2 USE OF THE CONSERVATION AREA

The Owner covenants with the Minister as follows:-

General responsibilities

2.1 Except as otherwise permitted by this Agreement, the Owner must not intentionally carry out any act or omit to carry out any act, or cause or permit any act to be carried out or any act not to be carried out which act or omission may harm any native fauna, native plants, their habitats, cultural heritage, geo-heritage or other conservation values in the conservation area.

Development

2.2 Except as permitted in this Agreement the Owners shall not construct any new road, access track, trail, building or internal fencing or any development that could adversely affect the conservation values of the conservation area.

2.3 The Owner shall be permitted to:

2.3.1 construct or cause the construction of a fence along the boundary of the conservation area where adjacent landuse is causing an adverse impact on the conservation area;

2.3.2 construct or cause the construction of a fence for the purpose of protecting sites of high conservation value from grazing animals or other impacts or creating small grazing exclusion reference sites to assist in monitoring vegetation condition;

2.3.3 maintain existing tracks and access trails in the conservation area as identified in Annexure B Figures 3 & 5;

2.3.4 maintain all existing fences within the conservation area; and

2.3.5 maintain dust deposition gauges and peizometers (or boreholes) within the conservation area as identified at locations in Annexure B Figures 3 & 5**.**

Subdivision

2.4 The Owner must not subdivide or permit the subdivision of the conservation area.

Threatened species, ecological communities, populations and their habitats and critical habitat

2.5 Consistent with the *Threatened Species Conservation Act 1995*, where threatened species, populations and ecological communities occur in the conservation area the Owner must manage the conservation area:

2.5.1 to protect and promote the recovery of threatened species, populations and ecological communities, and

2.5.2 to protect the critical habitat of those threatened species, populations and ecological communities that are endangered, and

2.5.3 to eliminate or manage certain processes that threaten the survival or evolutionary development of threatened species, populations and ecological communities, and

2.5.4 to ensure that the impact of any action affecting threatened species, populations and ecological communities is properly assessed.

Fire

2.6 The Owner must not light a fire, or cause a fire to be lit on the conservation area unless it complies with the *Rural Fires Act 1997*, and:

2.6.1 the lighting of the fire is for the purposes of controlled burning and is carried out in accordance with any fire guidelines for controlled burning as provided for in Annexure C: Management Scheme for the conservation area; or

2.6.2 the lighting of the fire is a necessary component of bush fire hazard reduction work carried out in accordance with a notice served on the Owner under the *Rural Fires Act 1997* or other applicable legislation; or

2.6.3 life or property is in immediate threat by bush fire and the lighting of the fire is reasonably necessary to protect life or property; or

2.6.4 the fire is a camp fire, subject to the compliance with the *Rural Fires Act 1997,* or

2.6.5 the Director-General gives prior written consent to the lighting of the fire.

Cultural Heritage

2.7 In accordance with Part 6 of the Act, the Owner must preserve and protect Aboriginal places and Aboriginal objects and other sites of cultural heritage significance on the conservation area.

Control of non-indigenous plants and fauna

2.8 Except as permitted in this Agreement the Owner:

2.8.1 must use their best endeavours to control, and where possible remove all non-indigenous plants and non-indigenous fauna from the conservation area identified to have significant detrimental impacts on the conservation area; and

2.8.2 must take such reasonable measures in relation to the control of non-indigenous plants and non-indigenous fauna as specified in the Management Scheme (Annexure C).

3. MANAGEMENT OF THE LAND

3.1 The Owner must manage the conservation area in accordance with this Agreement.

3.2 The Owner must inform the Director-General as soon as practicable after becoming aware of the deterioration of any of the natural values or cultural values of the conservation area, or of any threat to these values.

3.3 This Agreement includes Annexure B describing and mapping the conservation values of the conservation area. An aerial photograph shows the location of the conservation area, the conservation values and photo-points. Photographs have been taken at the photo-points, at the time of entering into this Agreement. This provides baseline information and data for ongoing compliance monitoring and adaptive management of the conservation area.

3.4 This Agreement includes Annexure C, setting out the Management Scheme for the conservation area including the management of conservation values and other matters referred to in Annexure B.

3.5 This Agreement has been prepared to satisfy conditions of consent for development and will be implemented in conjunction with the Euchareena Road Resource Recovery Centre Conservation Management Plan (CMP). The CMP has been prepared to provide detailed management guidance including information relating to maintenance, monitoring and reporting of the conservation area. The CMP will be implemented for the operational life of the Euchareena Road Resource Recovery Centre (estimated to be approximately 40 years).

3.6 Annual reports will be submitted to the Department for the duration of The Euchareena Road Resource Recovery Centre CMP. The reports will detail current site condition as well as completed management actions. The reports will also detail proposed management actions to the satisfaction of the Department.

3.7 If the property containing the conservation agreement is sold prior to completion of the CMP the calculated cost of continued implementation of the CMP is to be paid by the

Owner into a nominated Trust fund. This Trust fund will enable the Department to provide ongoing management support to the new Owner and fulfill the objectives of the CMP.

4. USE OF THE LAND BY SERVANTS, AGENTS, LESSEES OR LICENSEES

The Owner must incorporate the terms of this Agreement in any lease or licence issued over the conservation area, and at all times ensure that any servant, contractor, consultant, agent, lessee, licensee occupying the conservation area shall be aware of the relevant provisions of this Agreement.

5. CHANGE OF OWNERSHIP

The Owner must notify the Director-General in writing of any change of Ownership or control of the conservation area within 28 days after the change of ownership and control. The notice must include the name and address of the new Owner.

6. RIGHT TO INSPECT

The Minister, the Director-General and their servants and agents may at any time upon first giving reasonable notice in the circumstances to the Owner, the Owner's agent, lessee or licensee, enter upon the conservation area to ensure compliance with this Agreement.

7. OBLIGATIONS OF THE MINISTER

The Minister covenants with the Owner as follows: -

7.1 The Minister agrees to notify the Registrar General when this Agreement has been entered into, varied or terminated so that the Registrar General can carry out his or her responsibilities pursuant to Section 69F of the Act.

7.2 The Minister will arrange for the provision of technical advice and any other assistance to the Owner as the Minister deems necessary to assist with the implementation of this Agreement.

7.3 The Minister agrees to the extent of his or her statutory responsibilities that the signing of this Agreement shall not render the Owners ineligible for any compensation and assistance which may, under future legislation, become available to landowners who enter into a conservation agreement pursuant to the Act or any other Act.

8. NON-COMPLIANCE

In the event that the owner fails to comply with this Agreement, including, without limitation, damaging or causing damage to the conservation area, the Department may issue a written notice to the owner requiring the owner to remedy the non-compliance or damage within a specified time period. This clause does not affect any rights of the parties under Section 69G of the Act.

9. DISPUTE RESOLUTION

9.1 If a party to this Agreement is dissatisfied with the conduct of the other party under this Agreement, that party must notify the other and if the dispute cannot be resolved by discussions between the parties it shall be referred to the Director-General who will establish a mechanism whereby the dispute can be resolved.

9.2 If the Owner is reasonably dissatisfied with the mechanism chosen by the Director-General the Owner shall have the option of nominating an alternative informal dispute resolution technique such as mediation, expert evaluation or other technique in order to resolve the dispute.

10. COSTS

Each party will bear its own costs of, and incidental to, the preparation of this Agreement including any legal costs.

11. COMMENCEMENT

This Agreement shall have effect from the day of execution.

IN WITNESS WHEREOF the parties hereto have executed this Agreement the day and year first above written.

SIGNED by
The Minister administering)
the *National Parks and Wildlife Act 1974*)
for the purpose of rendering liable the)
Government of the State of New)
South Wales (but not so as to incur)
any personal liability) hereunder in)
the presence of:)

_____
Minister

_____
Date

_____
Witness

_____

_____
Witness Name and address

_____
Date

SIGNED by the **OWNERS**

_____
Executed by the General Manager
of Orange City Council under
delegated authority

Date _____

in the presence of

_____
Witness signature

_____

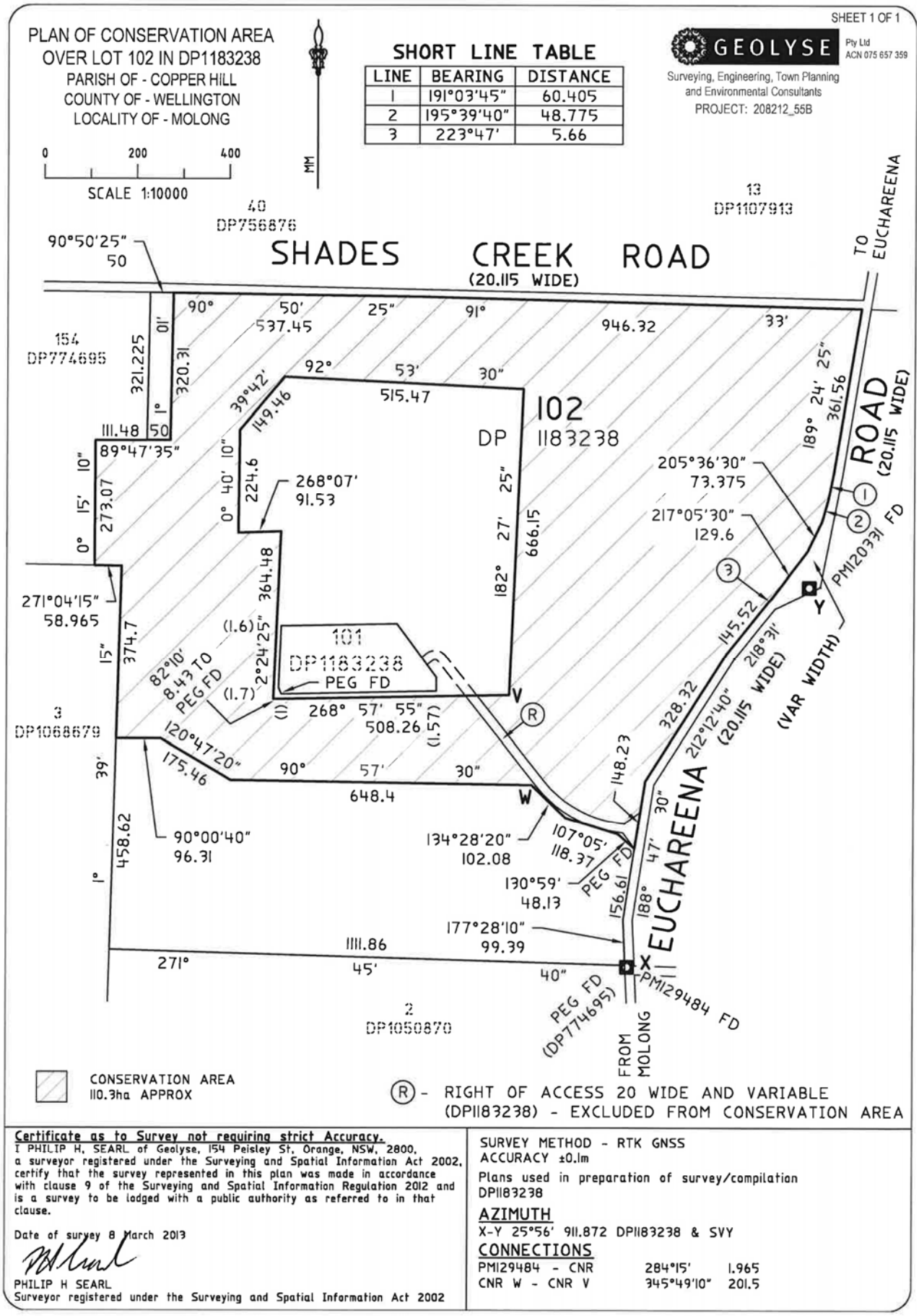
_____

_____
Witness Name and address

_____
Date

Landowners Name and address for service of notices:
The General Manager
Orange City Council
PO Box 35
ORANGE NSW 2800

ANNEXURE A; DIAGRAM A



Orange City Council Minister

ANNEXURE B
CONSERVATION VALUES

1. CONSERVATION VALUES

The Owner and the Minister recognise that the conservation area contains the following conservation values. Conservation values are to be managed in accordance with Annexure C: Management Scheme for the conservation area.

A The conservation area contains White Box Yellow Box Blakely's Red Gum Woodland, which is listed as an endangered ecological community on Schedule 1 of the *Threatened Species Conservation Act 1995*, and as a critically endangered ecological community under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.

B The conservation area contains habitat suitable for the Brown Treecreeper (*Climacteris picumnus victoriae)*, Koala (Phascolarctos cinereus), and the Eastern Bentwing Bat (*Miniopterus schreibersii oceanensis)*, listed as vulnerable species on Schedule 2 of the *Threatened Species Conservation Act 1995* and which have been recorded in the local area. The Superb Parrot (*Polytelis swainsonii)*, listed as vulnerable on Schedule 2 of the *Threatened Species Conservation Act 1995*, has been recorded on the site.

C The conservation area contains a scarred tree that has been identified as an item of Aboriginal cultural heritage significance, listed in the Aboriginal Heritage Information System (Molong ST1, Site ID 44-1-0080).

2. AERIAL PHOTOGRAPH AND OTHER MAPPING

Figure 1. Locality Plan

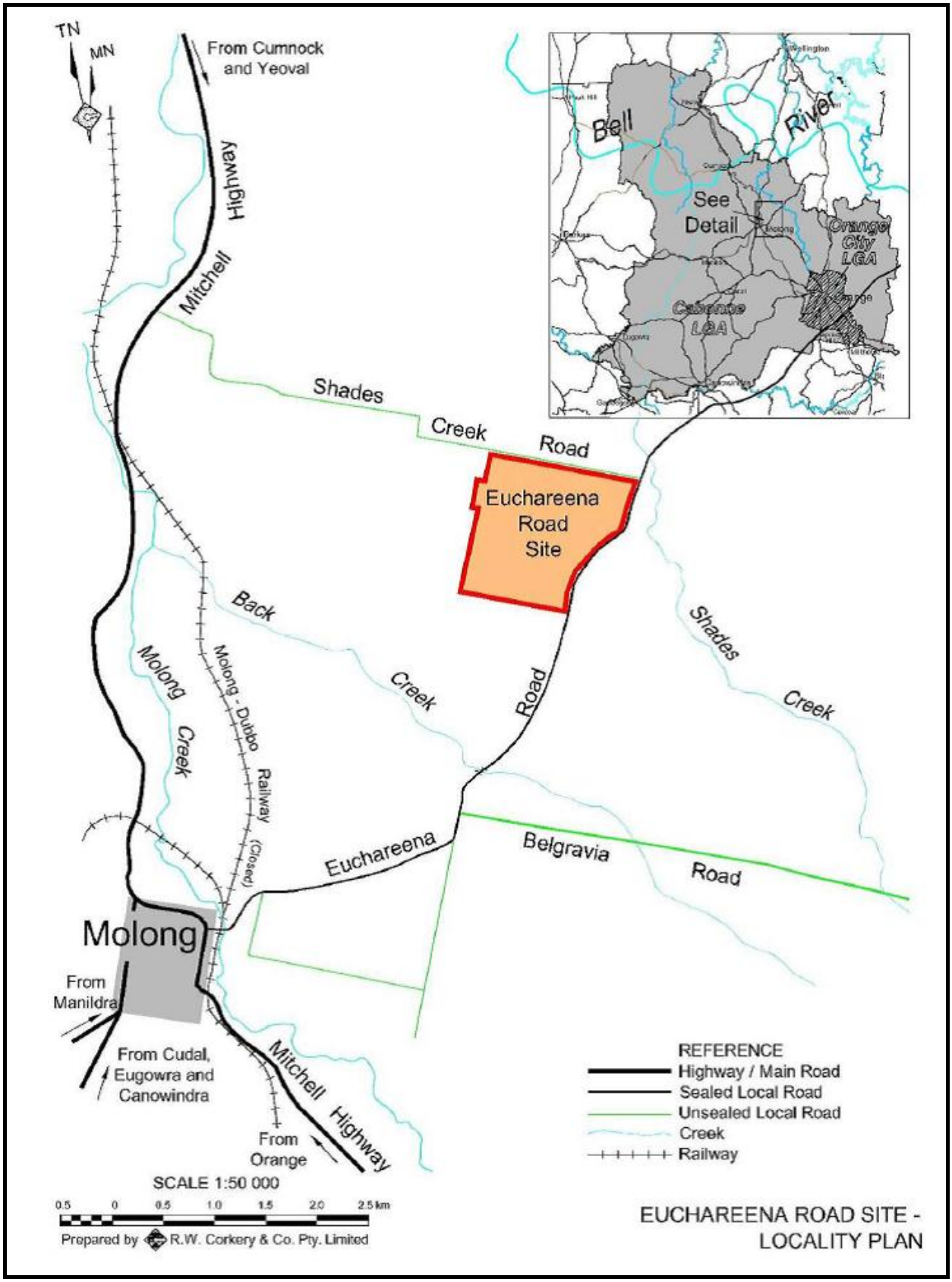


Figure 2. The Subject Site

Source: Department of Lands SIX Viewer

Figure 3. Conservation Area – Management Zones

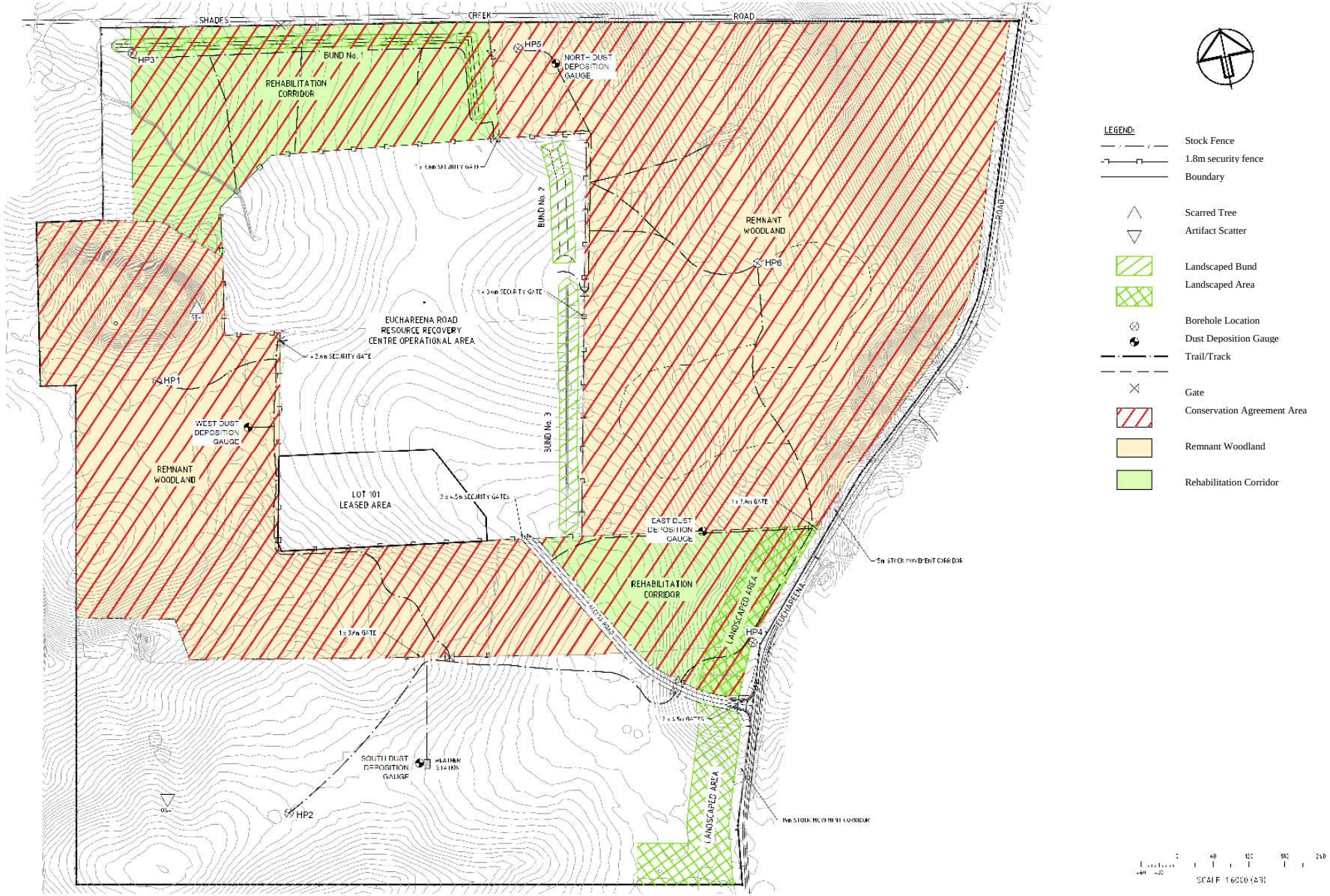
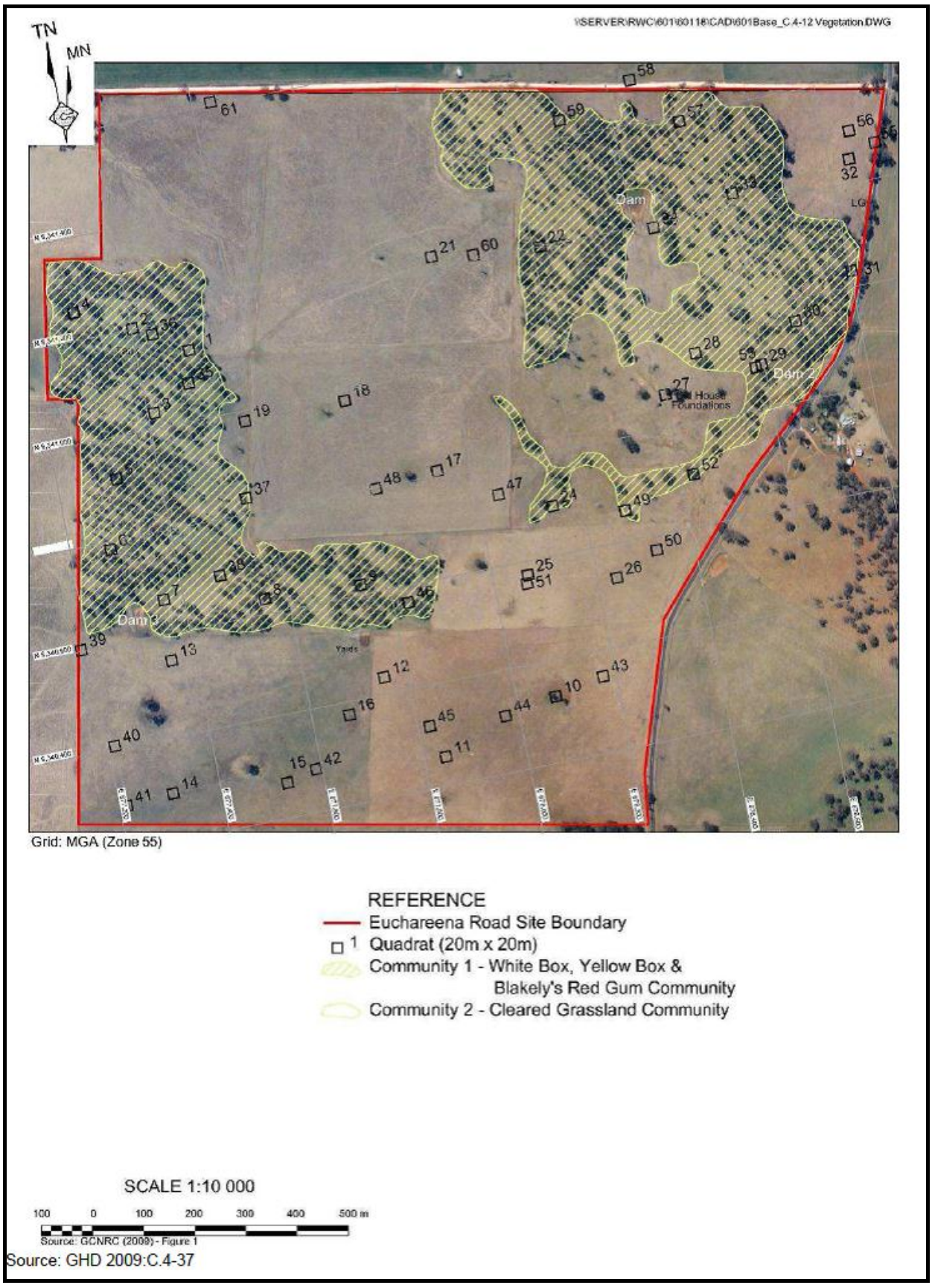
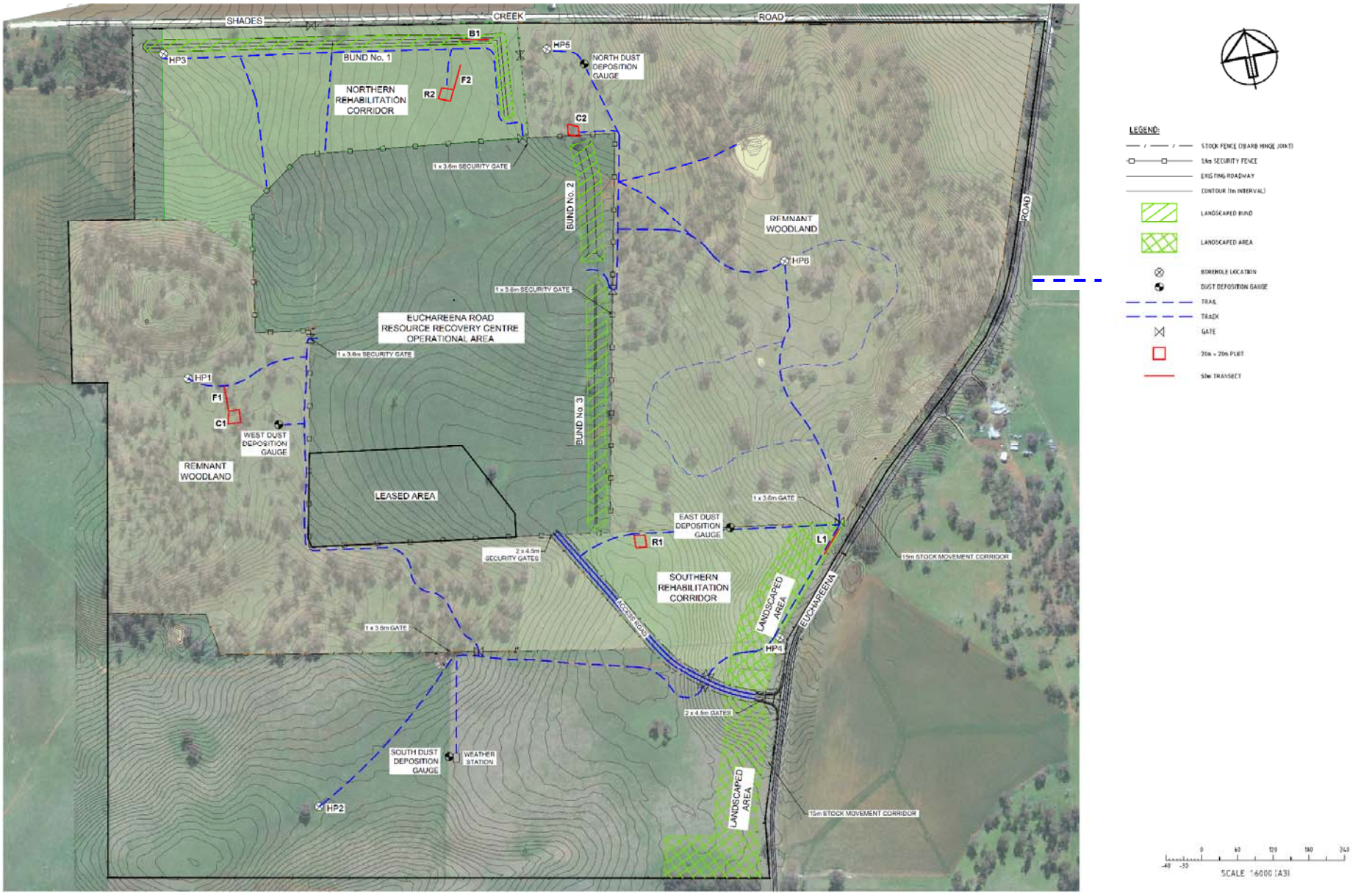


Figure 4. White Box, Yellow Box & Blakely's Red Gum Community



Source: GHD 2009:C.4-37

Figure 5. Photo-point locations



3. PHOTO-POINT PHOTOGRAPHS AND OTHER PHOTOGRAPHS

The following images have been taken at the designated photo-points. **Plate 1** to **Plate 14** are an extract from the Euchareena Road Resource Recovery Centre Flora Monitoring report, May 2012, and **Plate 15** to **Plate 21** are an extract from the Euchareena Road Resource Recovery Centre Flora Monitoring Report, February 2013 All co-ordinates listed are GDA 94 (Zone 55).

The images shown on **Plates 1 – 14** were taken on 21 December 2011.

Plate 1: Looking north from Corner C of Plot R1 - E 678114 N 6340635

The vegetation structure is restricted to groundcover and dominated by *Austrodanthonia pilosa* (wallaby grass) reaching a height of 1m. Vegetation cover is over 95% with the remainder occupied by leaf litter. The percentage of weed cover is 30% with the dominant species being **Carthamus lanatus*. Disturbance noted in this plot is grazing.

Plate 2: Looking northeast from Corner C of Plot R2 – E 677919 N 6341442

The vegetation structure is restricted to groundcover and dominated by *Austrodanthonia pilosa* and **Carthamus lanatus* to a height of 1m. Vegetation cover is 100%. The percentage of weed cover is 50% with the dominant species being **Carthamus lanatus*.

Nb. * indicates exotic species.

Plate 3: Looking northeast from Corner D of Plot C1 – E 677485 N 6340975

The vegetation structure comprises a canopy and groundcover. The dominant canopy tree is *Eucalyptus tereticornis* with crown cover of 45%. The dominant groundcover and weed species is **Marrubium vulgare* with weeds occupying 50% of the groundcover. The groundcover includes logs, bare ground and leaf litter. Disturbance from grazing via an existing sheep track occurs in this plot.

Plate 4: Looking northwest from Corner D of Plot C2- E 678138 N 6341335

The vegetation structure supports a canopy and groundcover. The dominant canopy species is *Eucalyptus albens* with crown cover of 40%. The dominant groundcover species are *Aristida ramose, Austrodanthonia pilosa* and *Austrostipa bigeniculata*. Total vegetation cover is 90% with the remaining ground occupied by leaf litter, logs and rocks. Disturbance is present from grazing with weeds occupying <15% of groundcover and dominated by **Marrubium vulgare*.

Plate 5: Looking east over 10m sampling point of Transect F1 – E 677469 N 6341034

Cover abundance is highest for the weed **Marrubium vulgare* with less frequent occurrences of native grasses and an overall dominance of weed species in the groundcover.

Plate 6: Looking east over 20m sampling point of Transect F1 – E 677468 N 6341024

This transect location supports *Eucalyptus microcarpa* in the canopy with a groundcover dominated by the weed **Marrubium vulgare*. The groundcover includes the presence of logs.

Plate 7: Looking east over 30m sampling point of Transect F1 – E 677469 N 6341011

**Marrubium vulgare*, *Aristida ramosa* and *Austrostipa bigeniculata* represent the dominant groundcover species at this location. Logs are also present in the ground layer.

Plate 8: Looking east over 40m sampling point of Transect F1 – E 677470 N 6341004

The groundcover is dominated by *Austrostipa bigeniculata* followed by *Einadia nutans subsp nutans*. A low cover abundance of weed species was observed at this location.

Plate 9: Looking east over 50m sampling point of Transect F1 - E 677469 N 6340997

Groundcover supports mainly native species dominated by *Deyeuxia quadriseta*, *Microlaena stipoides* and *Einadia nutans subsp nutans*. Weed species persist in lower abundances. Bare ground is noted at likely to result from sheep tracks occurs at this location.

Plate 10: Looking east over 10m sampling point of Transect F2 – E 677964 N 6341495

The dense groundcover is dominated by *Austrodanthonia richardsonii* and **Setaria parviflora*. Less common weed species include **Eleusine tristachya*, **Carthamus lanatus* and **Taraxacum officinale*.

Plate 11: Looking east over 20m sampling point of Transect F2 – E 677960 N 6341485

Common introduced and native grasses in this location include *Austrodanthonia richardsonii, *Setaria parviflora, Bothriochloa macra* and **Bromus hordeaceus*.

Plate 12: Looking east over 30m sampling point of Transect F2 - E 677956 N 6341476

Common groundcover species in this location include *Austrodanthonia richardsonii, *Setaria parviflora* and **Carthamus lanatus*.

Plate 13: Looking east over 40m sampling point of Transect F2 – E 677952 N 6341464

The groundcover is dominated by *Austrodanthonia richardsonii*. Less common occurrences of **Carthamus lanatus*, **Setaria parviflora*, **Avena fatua* and *Geranium retrorsum* occur at this location.

Plate 14: Looking east over 50m sampling point of Transect F2 – E 677947 N 6341454

The dominant groundcover species is **Setaria parviflora* closely followed by **Carthamus lanatus* and *Oxalis perennans*. The vegetation cover is 100% throughout transect F2.

The images shown on **Plates 15 – 21** were taken on 10 January 2013.

Plate 15: Looking southwest over 10m sampling point of Transect L1 – E 678288 N 6340401

Plate 16: Looking southwest over 20m sampling point of Transect L1 – E 678282 N 6340397

Plate 17: Looking southwest over 30m sampling point of Transect L1 – E 678277 N 6340389
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Plate 18: Looking southwest over 40m sampling point of Transect L1 – E 678271 N 6340383

Plate 19: Looking southwest over 50m sampling point of Transect L1 – E 678268 N 6340374

Plate 20: Looking west over 10m sampling point of Transect B1 – E 678029 N 6341523

Plate 21: Looking west over 50m sampling point of Transect B1- E 678989 N 6341530

Plate 22: Scarred tree (Molong ST1. Site ID 44-1-0080) Photograph from Appleton 2005: 37.

ANNEXURE C

MANAGEMENT SCHEME FOR THE CONSERVATION AREA

The conservation values identified in Annexure B are to be managed in accordance with the principles and activities outlined below.

ITEM 1: Activities permitted in the conservation area

The following activities may be undertaken on, or in respect of, the conservation area. The landholders shall not undertake, consent to, or permit the following activities unless they are undertaken in the manner specified as follows:

Control of Weeds and non-indigenous flora

a) Carrying out weed control using the appropriate control methods:

i) Remove weeds by hand ensuring that all plant parts which can reproduce are removed and that soils do not become prone to erosion.

ii) Use of carefully selected herbicide according to label directions and/or current off label permit, ensuring minimal off target damage.

iii) Using appropriate control measures as recommended in the Department of Primary Industries *Noxious and Environmental Weed Control 5th Edition 2011* (or equivalent replacement) for control of weeds, ensuring minimal off target damage.

iv) Use of forestry mulching or slashing machinery only with prior written permission from the Department.

v) Other weed control methods may be undertaken with prior written permission of the Department.

vi) Ensure control programs are commenced when timing and extent of weed removal will minimise adverse effects on wildlife (weeds may provide protection or habitat for native fauna).

vii) Contact the Department if any uncertainty exists regarding weed control methods.

Control of Pest animals and non-indigenous fauna

b) Monitoring impacts to the conservation area by pest animals and undertaking of on-going control programs for pest animals if appropriate.

i) Methods for monitoring pest animal activity can include:

- observations and/or hearing calls,
- the use of standard “sand plots”,
- the use of non-poisoned “bait stations”,
- scat counts, and
- other quantitative techniques which can be designed in discussion with the Department or the Livestock Health and Pest Authority.

ii) Methods for control can include shooting, trapping and use of poisonous baits consistent with advice from the Department and the Livestock Health and Pest Authority. Use control methods identified as ‘humane’ as defined in the NSW Codes of Practice and Standard Operating Procedures for Humane Pest Vertebrate Control (*Control Capture and Destruction of Feral Animals in Australia*) as developed by the NSW Department of Primary Industries.

iii) Participate in community pest animal control programs, and encourage neighbours to implement pest animal control programs. Contact your local National Parks and Wildlife Area office to find out where community control programs are occurring.

Grazing management

c) Controlled grazing by livestock to maintain or improve native vegetation values at a low to moderate stocking rate or 'crash grazing'. Grazing is an ecological tool and the aim of crash grazing is to manage the groundcover to ensure that a diverse groundlayer of native species is encouraged. Grazing will only be permitted with prior written agreement of the Department subject to monitoring reports.

i) Grazing regimes will be guided by:

- Appropriate location of grazing
- Triggers to change grazing regime eg. changes to abundance of selected key species.
- Triggers for grazing to be excluded eg. during flowering and seeding of particular species.
- Seasons where grazing may be desirable e.g. reduction in seeding of particular weed species.
- Exclusion of grazing for a required number of years or until certain outcomes have been achieved.
- Management of stock in the remnant woodland should aim to minimise damage to native vegetation and minimise introduction of weeds and disease as follows:
- Ensure stock camps are not established
- Ensure stock are confined to formed tracks and are under supervision when moving livestock through the conservation area.
- Mustering of livestock with the use of working dogs and horses is permitted.
- Fodder or any stock feed may not be brought into the remnant woodland areas.
- Before introduction of stock into the remnant woodland areas ensure they are held in a relatively weed free area for at least a week immediately prior to their introduction.
- Pasture improvement or fertilisation is not permitted.
- Exclude stock from any burnt area of the remnant woodland until native vegetation has re-established. Stock should be excluded for at least three years and groundcover should be >70% before grazing recommences.

d) Controlled grazing at a low to moderate stocking rate or 'crash grazing', guided by:

- Appropriate location of grazing
- Triggers to change grazing regime eg. changes to abundance of selected key species.
- Triggers for grazing to be excluded eg. during flowering and seeding of particular species.
- Seasons where grazing may be desirable eg. reduction in seeding of particular weed species.
- Exclusion of grazing for a required number of years or until certain outcomes have been achieved.

e) Reducing the population of native grazing animals where grazing pressure is resulting in the degradation of the quality and structure of native vegetation and inhibiting natural regeneration and the owner is granted a licence to cull under Section 121 of the Act.

Fire management

f) Suppression of all wildfires occurring in the conservation area as quickly as possible with the aim of keeping fires to a small area.

g) Undertaking of fire hazard reduction to protect the natural assets of the conservation area, in appropriate locations, with any required approvals and/or permits using:

i) raking and hand clearing

ii) pile burning

iii) fuel reduction burns.

h) Using fire hazard reduction burns and controlled burning which take into account the recommended fire intervals given in the ***Bush Fire Environmental Assessment Code for New South Wales*** (Rural Fire Service February 2006) and the guidelines contained in the ***Threatened Species Hazard Reduction Lists for the Bush Fire Environmental Assessment Code*** or equivalent replacements.

The current recommendation for Box-Gum Grassy Woodland is a fire frequency in individual patches of between four and eight years.

Vehicle access

i) Vehicle access restricted to formed roads or trails for bio-security purposes such as minimising the risk of spreading weeds and diseases, except for management purposes, research, fire fighting or and any emergency requirements. Vehicles should be clean of weed seed and soil before entering conservation area.

Threatened species

j) Implementing any measures included in recovery plans for any threatened species, populations or ecological communities which are or may be found in the conservation area.

k) Implementing other specific management advice from the Department for any threatened species, populations or ecological communities which are or may be found in the conservation area.

Restoration of indigenous vegetation

l) Restoration of native vegetation using the preferred method of encouraging and retaining natural regeneration, as per the Conservation Management Plan.

m) Revegetation to establish indigenous plants to maintain the vegetation structure in keeping with the identified vegetation community, using species produced from material sourced locally and without fertilisers, where the ability to regenerate naturally within a reasonable time frame has been lost, or to prevent soil erosion.

Revegetation methods can include:

i) planting

ii) brush mulching

iii) direct seeding.

Seed collection

n) Collection of seed for non-commercial use in keeping with Guidelines and Codes of Practice as given in the OEH Conservation Management Note ***Seed Collecting*** (http://www.environment.nsw.gov.au/cpp/ConservationManagementNotes.htm), and the following limitations and permissions:

i) Collect seed in the conservation area only if seed of the particular species and genotype is not available elsewhere, or if the seed collected is intended for seedlings that will be planted within the conservation area or adjacent to the conservation area.

ii) Seeds may be collected from within endangered ecological communities.

iii) Seeds may not be collected from species individually listed on Schedules 1, 1A or 2 of the *Threatened Species Conservation Act 1995* without prior written approval from the Director General, or under a licence granted under Section 132c of the Act or Section 91 of the *Threatened Species Conservation Act 1995*.

iv) Seeds may be collected from any protected species listed under Section 131 (Schedule 13) of the Act.

v) Seeds may be collected from any other native species.

Thinning of indigenous vegetation

o) Thinning of regenerating indigenous species which are altering the structure of the vegetation and/or reducing conservation values. Thinning should be planned in consultation with the Department and may require approvals by a Catchment Management Authority (or other relevant authority) under the *Native Vegetation Act 2003* or any relevant subsequent legislation.

Cultural heritage

p) Recording and management of any newly identified Aboriginal objects, in consultation with the Department (and the Aboriginal community where applicable).

Visitation and research

q) Visitation, research and community use at a level that does not adversely impact on the conservation values of the area or the amenity of the Owners. Research projects should be discussed with the Department.

Developments

r) Carrying out developments as described in Clause 2.3 of the Agreement, and maintaining developments (including existing fire trails and infrastructure) with the following conditions:

i) The width of roads and trails to a maximum of 4 metres wide roadway with 1 metre width for vegetation clearance on each side.

ii) Tracks will not be wider than 1.5 metres.

iii) Clear a corridor not greater than 3 metres wide during construction or for maintenance for the installation of fences or other agreed rural structures.

iv) Construct and maintain fences to ensure they are stockproof.

v) Move fallen timber and any other obstructions to maintain access.

vi) Where clearing is necessary, undertake all works in a manner that minimises disturbance to soil and hydrological characteristics.

vii) Remove old fences and close unwanted tracks within the conservation area and facilitate restoration of native vegetation by allowing natural regeneration.

Monitoring

s) An annual flora monitoring program has been developed for the conservation area which will be monitored for the operational life of the Euchareena Road Resource Recovery Centre (an estimated 40 years). These sites are mapped on the Photopoint Map, **Figure 5** in Annexure B. Monitoring locations have been selected in each area of the conservation agreement area, including: the remnant woodlands, the rehabilitation corridors, the landscape bund, and within the landscaped area. The Conservation Management Plan further details the monitoring locations and requirements.

t) An annual Aboriginal heritage monitoring program has been developed for the conservation area which will be monitored for the operational life of the Euchareena Road Resource Recovery Centre. The scarred tree that has been identified as an item of Aboriginal heritage significance listed in the Aboriginal Heritage Information System will be monitored annually. The Conservation Management Plan further details the monitoring requirements.

u) Annexure B contains aerial photographs and maps showing the location of the conservation area, the photo-points and the conservation values.

v) Monitoring of the conservation values will be done in accordance with the Conservation Management Plan and clause below.

w) The Owner should complete an annual flora monitoring report, and an annual Aboriginal heritage monitoring report and qualitative monitoring using the Department's template, including the condition of the conservation values, changes occurring in the conservation area and an annual work plan of management actions to be undertaken. A copy of all annual monitoring reports should be forwarded to the Department.

x) Monitoring of the conservation agreement after the life of the Euchareena Road Resource Recovery Center will continue at the photo-points in Annexure B every 3 years.

ITEM 2: <u>Activities not permitted in the Conservation Area unless specified in Item 1</u>
The landholders shall not undertake, consent to or permit (unless specified in Item 1 of Annexure C or with prior written consent of the Director-General)

a) the sowing or planting of trees, grasses or other plants in the conservation area.

b) the introduction of any non-indigenous plants or non-indigenous fauna into the conservation area.

c) the entry of domestic animals including pets and domestic livestock in the conservation area.

d) the use or application of fertiliser or pesticides in the conservation area.

e) the use of trail bikes, four wheel drive vehicles or any other vehicle in the conservation area off any formed road.

f) any works in the conservation area, especially any revegetation work and developments, which have the potential to impact on any cultural features. Seek advice from the Department if any are identified, prior to any work commencing.

g) the removal of any biological or inorganic component of the conservation area.

h) any works which will adversely affect the natural flows and bodies of water.

_____
General Manager
Orange City Council

_____
Minister

NSW GOVERNMENT | Office of Environment & Heritage

Orange City Council
Scanned
10 MAR 2014
CONTAINER No.
F535

The General Manager
Orange City Council
PO Box 35
ORANGE NSW 2800

Our reference: FIL10/15219-02
Contact: Bruce Thompson, 9995 6763

Dear Sir or Madam

Re: Registration of Euchareena Road Conservation Agreement

I am pleased to advise you that the registration of your Conservation Agreement is now complete. A copy of the signed Agreement lodged at Land and Property Information (LPI) is enclosed for your records, as well as a copy of the title information showing the registration on title. Also, if you have not been sent or arranged for a Conservation Area identification sign for your property, please advise us as soon as practicable and we will arrange for a sign to be sent to you.

With regard to eligibility for proportional rate exemptions under s555 of the *Local Government Act 1993*, a courtesy letter has been sent to your local Council notifying them of details relating to your Conservation Agreement. A copy of the letter is enclosed for your information. We encourage you to contact your local Council regarding the calculation of your rates to ensure your Conservation Agreement is taken into account.

You may be eligible for Land Tax exemption under s10 of the *Land Tax Management Act 1956*. Further information is available at: http://www.osr.nsw.gov.au/taxes/land/exemptions/other/#Conservationagreements. Inquiries can be made through the NSW Office of State Revenue email landtax@osr.nsw.gov.au or phone 1300 139 816. Income tax concessions may be available to land owners who enter into conservation covenants to protect areas of high conservation value under the *Income Tax Assessment Act 1997*. Further information may be found at http://www.environment.gov.au/biodiversity/publications/fact-sheets/incentives.html.

Landowners with Conservation Agreements are part of the OEH Conservation Partners Program, which provides monitoring and support for landowners with commitments to conservation. Technical Notes are available giving practical management guidance and information on a number of topics. The *"Bush Matters"* newsletter, providing current news and information about future activities around the state and locally, is mailed directly. A copy of the most recent issue is enclosed. Past copies are available at http://www.environment.nsw.gov.au/cpp/ConservationPartners.htm. Hardcopies of all information are available on request.

Finally, I would also like to take this opportunity to congratulate you for pursuing your goal to permanently protect your property through a Conservation Agreement.

Yours faithfully

Bruce Thompson 6.3.2014

BRUCE THOMPSON
Conservation Partners Program
Enclosure

PO Box A290 Sydney South NSW 1232
59-61 Goulburn St Sydney NSW 2000
Tel: (02) 9995 5000 Fax: (02) 9995 5999
TTY (02) 9211 4723
ABN 30 841 387 271
www.environment.nsw.gov.au

NSW GOVERNMENT | Office of Environment & Heritage

Our reference: 10/15219-02

Orange City Council
Attn: General Manager
Civic Centre Cnr Byng Street and Lords Place
ORANGE NSW 2800

Dear Sir or Madam

I am writing to inform you of the signed "Euchareena Road" Conservation Agreement, which came into effect on 10th September 2013, in accordance with provisions of the *National Parks and Wildlife Act 1974.*

The Conservation Agreement covers 110.3 hectares of the property. The Agreement relates to part of the land described as Lot 102 Deposited Plan 1183238, Parish of Copper Hill, County of Wellington.

Rate exemption

As stated through the provisions of Section 555 (1) (b1) and (3) of the *Local Government Act 1993* the land subject to this Conservation Agreement is exempt from rates.

The Act states:

Section 555 what land is exempt from all rates?

(1.b.1) Subject to subsection (3), land that is subject of a conservation agreement (within the meaning of the *National Parks and Wildlife Act, 1974*),

(3) If part of a single parcel of land is the subject of a conservation agreement within the meaning of the *National Parks and Wildlife Act 1974* (as referred to in subsection (1) (b1)), any rate levied on that whole parcel (for any period on or after 1 July 2008) is to be reduced by the following percentage:

$$\frac{A_{ca}}{A_{whole}} \times \frac{100}{1}$$

where:

A_{ca} is the area of that part of the parcel that is the subject of the conservation agreement, and A_{whole} is the area of the whole parcel.

Note. For example, if a parcel of land would normally be subject to a rate of $1,000, but 40% of the area of the land is subject to a conservation agreement, that rate is to be reduced by 40% to $600.

PO Box A290 Sydney South NSW 1232
59-61 Goulburn St Sydney NSW 2000
Tel: (02) 9995 5000 Fax: (02) 9995 5999
TTY (02) 9211 4723
ABN 30 841 387 271
www.environment.nsw.gov.au

Section 13.3 of the Department of Local Government *Council Rating and Revenue Raising Manual* (dated January 2007) provides information on the application of this exemption. In addition the Department of Local Government *Council Circular 08/49* provides policy direction regarding the rating approach for land protected by a Conservation Agreement.

This provision for rate exemption is a positive recognition for those dedicated landholders who have taken voluntary action to legally protect and actively manage their land for conservation. Through their legacy an invaluable gift is passed on to all generations, ensuring significant natural and cultural heritage is protected into the future.

Section 149 planning certificate

Landholders or prospective purchasers may apply for planning certificates under s149 of the *Environmental Planning and Assessment Act 1979,* to find out about relevant planning matters pertaining to the land. We ask that you note details of areas subject to a Conservation Agreement on relevant s149 certificates. The inclusion of this information will help new owners identify their responsibilities in managing the significant conservation values on their land, including threatened species and their habitats, and endangered ecological communities. This approach may also assist Council when assessing and approving development applications and in undertaking strategic planning tasks.

For your information and any necessary action, please find attached a copy of the Conservation Agreement, which includes a diagram showing the defined Conservation Area and title information showing the registration on the Land Title.

If you have any queries relating to this Conservation Agreement please phone me on (02) 9995 6763. For further information relating to the rate exemption provisions please contact the Department of Local Government.

Yours sincerely

Bruce Thompson 6.3.2014

BRUCE THOMPSON

Senior Conservation Partnerships Officer (Monitoring & Support)
for the A/Chief Executive

Enclosure

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 102/1183238

SEARCH DATE	TIME	EDITION NO	DATE
22/11/2013	11:06 AM	1	17/6/2013

LAND

LOT 102 IN DEPOSITED PLAN 1183238
AT MOLONG
LOCAL GOVERNMENT AREA CABONNE
PARISH OF COPPER HILL COUNTY OF WELLINGTON
TITLE DIAGRAM DP1183238

FIRST SCHEDULE

ORANGE CITY COUNCIL

SECOND SCHEDULE (5 NOTIFICATIONS)

1 LAND EXCLUDES MINERALS AND IS SUBJECT TO RESERVATIONS AND CONDITIONS IN FAVOUR OF THE CROWN - SEE CROWN GRANT(S)
2 DP774695 EASEMENT FOR WATER SUPPLY 4 METRE(S) WIDE APPURTENANT TO THE LAND ABOVE DESCRIBED
3 DP1183238 RIGHT OF ACCESS 20 METRE(S) WIDE AND VARIABLE AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM
4 DP1183238 POSITIVE COVENANT
* 5 AI48149 CONSERVATION AGREEMENT AFFECTING THE PART SHOWN HATCHED IN PLAN WITH AI48149

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

DECCW-cpd-EuchareenaRdCA PRINTED ON 22/11/2013

Any entries preceded by an asterix do not appear on the current edition of the certificate of title.
Warning: the information appearing under notations has not been formally recorded on the Register.
Hazlett Information Services hereby certifies that the information contained in this document has been provided electronically by the Registrar-General in accordance with Section 96B(2) of the Real Property Act 1900.
Level 4, 122 Castlereagh Street, Sydney 2000 - DX 1078 SYDNEY
PHONE: (02) 9261 5211 FAX: (02) 9264 7752
www.hazlett.com.au

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INFORMATION SERVICES

CONSERVATION AGREEMENT

BETWEEN

THE MINISTER ADMINISTERING THE NEW SOUTH WALES NATIONAL PARKS AND WILDLIFE ACT (1974)

AND

ORANGE CITY COUNCIL

FOR

Euchareena Road Resource Recovery Centre

General Manager
Orange City Council

Minister

CONSERVATION AGREEMENT UNDER PART 4 DIVISION 12 OF THE NATIONAL PARKS AND WILDLIFE ACT 1974

THIS AGREEMENT made the tenth day of September, Two thousand and thirteen
BETWEEN the Minister for the time being administering the *National Parks and Wildlife Act 1974* ("the Minister" which expressions shall where the context admits, be deemed to include successors in office) of the one part and **Orange City Council** ("the Owner") of Euchareena Road Resource Recovery Centre (ERRRC), Euchareena Road, Molong NSW 2866 of the other part.

WHEREAS:

A The Owner is the registered proprietor of that parcel of land being Lot 102, Deposited Plan 1183238 (currently being registered with Land and Property Information), Parish of Copper Hill, County of Wellington (**"the Land"**). That part of the Land shown by hatching on **Diagram A** annexed to this Agreement is the conservation area (**"the conservation area"**), being part of Lot 102 DP1183238. The conservation area covered by this Agreement equals 110.3 hectares.

B The Owner and the Minister recognise that the conservation area contains White Box Yellow Box Blakely's Red Gum Woodland, which is listed as an endangered ecological community under Schedule 1 of the *Threatened Species Conservation Act 1995,* and as a critically endangered ecological community under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999.*

C The Owner and the Minister recognise that the conservation area contains habitat suitable for the Brown Treecreeper (*Climacteris picumnus victoriae),* Koala (Phascolarctos cinereus) and the Eastern Bentwing Bat (*Miniopterus schreibersii oceanensis),* listed as vulnerable species on Schedule 2 of the *Threatened Species Conservation Act 1995* and which have been recorded in the local area. The Superb Parrot (*Polytelis swainsonii),* listed as vulnerable on Schedule 2 of the *Threatened Species Conservation Act 1995,* has been recorded on the site.

D The Owner and the Minister recognise that the conservation area contains a scarred tree that has been identified as an item of Aboriginal cultural heritage significance, listed in the Aboriginal Heritage Information System (Molong ST1, Site ID 44-1-0080).

E The Owner and Minister recognise that this Agreement is part of a requirement to satisfy The Statements of Commitments (Flora & Fauna) in the Project Approval by the Minister for Planning for the Orange Waste Project (Application No MP09_0025) dated 28 April 2010 for the long term conservation and enhancement of identified areas.

F Accordingly, the parties hereby enter into the following conservation agreement under Section 69B Part 4 Division 12 of the *National Parks and Wildlife Act 1974.*

G The Owner and the Minister agree to take steps to protect and manage the conservation values of the conservation area as set out in Annexures B and C.

NOW THIS AGREEMENT WITNESSES:

1. INTERPRETATION

1.1 In this Agreement unless the contrary intention appears:-

"**Aboriginal Object**" has the same meaning as in Section 5 of the Act;

"**Aboriginal Place**" has the same meaning as in Section 5 of the Act;

"the **Act**" means the *National Parks and Wildlife Act 1974* and any regulations from time to time in force thereunder;

"**conservation area**" means that part of the Land shown by red diagonal hatching on the diagram annexed to this Agreement as Annexure A;

"**conservation values**" includes any native fauna and their habitats, native plants and their habitats, cultural heritage and geo-heritage and includes the conservation values listed in Annexure B under the heading 'conservation values'

"**control**", in relation to the conservation area, means lawful occupation, possession or management of the conservation area

"**controlled burning**" means the controlled application of fire under specified environmental and weather conditions to a predetermined area and at the time, intensity and rate of spread required to attain planned resource management objectives;

"**critical habitat**" has the same meaning as in Section 4 of the *Threatened Species Conservation Act 1995;*

"**cultural heritage**" refers to the aesthetic, historic, scientific, social, spiritual or other values of a place and associated physical evidence and traditions held by past, present or future generations of peoples, including Aboriginal peoples

"**damage**" is defined under the Act in relation to habitat (including critical habitat) includes damage by the removal or relocation of the habitat or a part of the habitat;

"the **Department**" means the NSW Government Department responsible for administering Section 69A to KA of the Act;

"**development**" has the same meaning as provided for in Section 69A of the Act;

"**Director-General**" has the same meaning as Section 5 of the Act;

"**fauna**" has the same meaning as in Section 5 of the Act;

"**geo-heritage**" means any karst environment and any geological deposits and landforms that provide habitat for indigenous fauna and includes values identified as geo-heritage under the heading "Conservation values" in Annexure B

"**harm**" has the same meaning as in Section 5 of the Act

"**indigenous fauna**" means a species of animal that was established in, or started regularly migrating to, New South Wales before European settlement and includes fauna listed in Annexure B under the heading "Conservation Values"

"**indigenous plants**" means a species of plant that was established in New South Wales prior to European settlement and includes plants listed in Annexure B under the heading "Conservation Values;

"**Land**" means that parcel of land described in Recital A;

"**Management Scheme for the conservation area**" means management scheme prepared for the conservation area in consultation with the owner, annexed to this Agreement as Annexure C;

"**Minister**" means the Minister for the time being administering the Act and where not repugnant to the context includes the servants and agents of the Minister;

"**native fauna**" has the same meaning as "protected fauna" in Section 5 of the Act;

"**native plant**" has the same meaning as in Section 5 of the Act;

"native vegetation" has the same meaning as in the *Native Vegetation Act 2003*

"**Owner**" has the meaning as in Section 69A of the Act and includes any successor in title to the owner within the meaning of Section 69E of the Act;

"**pest animal**" means any non-native animal having, or with the potential to have, an adverse economic, environmental or social impact;

"**pesticide**" has the same meaning as in Section 5 of the *Pesticides Act 1999* which includes herbicides, insecticides, fungicides, baits and rodenticides;

"**reasonable**" in relation to carrying out an activity, means using the best methods available and carrying out the activity in such a way as to have minimal impact on the conservation values of the conservation area;

"**road**" allows the passage of vehicles and persons and may be of more developed construction and surface improvement;

"**threatened species, populations and ecological communities**" and "**threatened species, population or ecological community**" have the same meaning as in the *Threatened Species Conservation Act 1995;*

"**track**" allows non-vehicular access only;

"**trail**" allows the passage of vehicles and persons and is of minimal construction, being of limited width and minimal surface improvement;

1.2 Words importing the singular number shall include the plural and masculine gender the feminine or neuter and vice versa.

1.3 Any reference to a person shall be deemed to include a corporate body and vice versa.

1.4 Any covenant or agreement on the part of two or more persons shall be deemed to bind them jointly and severally.

2 USE OF THE CONSERVATION AREA

The Owner covenants with the Minister as follows:-

General responsibilities

2.1 Except as otherwise permitted by this Agreement, the Owner must not intentionally carry out any act or omit to carry out any act, or cause or permit any act to be carried out or any act not to be carried out which act or omission may harm any native fauna, native plants, their habitats, cultural heritage, geo-heritage or other conservation values in the conservation area.

Development

2.2 Except as permitted in this Agreement the Owners shall not construct any new road, access track, trail, building or internal fencing or any development that could adversely affect the conservation values of the conservation area.

2.3 The Owner shall be permitted to:

2.3.1 construct or cause the construction of a fence along the boundary of the conservation area where adjacent landuse is causing an adverse impact on the conservation area;

2.3.2 construct or cause the construction of a fence for the purpose of protecting sites of high conservation value from grazing animals or other impacts or creating small grazing exclusion reference sites to assist in monitoring vegetation condition;

2.3.3 maintain existing tracks and access trails in the conservation area as identified in Annexure B Figures 3 & 5;

2.3.4 maintain all existing fences within the conservation area; and

2.3.5 maintain dust deposition gauges and peizometers (or boreholes) within the conservation area as identified at locations in Annexure B Figures 3 & 5.

Subdivision

2.4 The Owner must not subdivide or permit the subdivision of the conservation area.

Threatened species, ecological communities, populations and their habitats and critical habitat

2.5 Consistent with the *Threatened Species Conservation Act 1995*, where threatened species, populations and ecological communities occur in the conservation area the Owner must manage the conservation area:

2.5.1 to protect and promote the recovery of threatened species, populations and ecological communities, and

2.5.2 to protect the critical habitat of those threatened species, populations and ecological communities that are endangered, and

2.5.3 to eliminate or manage certain processes that threaten the survival or evolutionary development of threatened species, populations and ecological communities, and

2.5.4 to ensure that the impact of any action affecting threatened species, populations and ecological communities is properly assessed.

Fire

2.6 The Owner must not light a fire, or cause a fire to be lit on the conservation area unless it complies with the *Rural Fires Act 1997*, and:

2.6.1 the lighting of the fire is for the purposes of controlled burning and is carried out in accordance with any fire guidelines for controlled burning as provided for in Annexure C: Management Scheme for the conservation area; or

2.6.2 the lighting of the fire is a necessary component of bush fire hazard reduction work carried out in accordance with a notice served on the Owner under the *Rural Fires Act 1997* or other applicable legislation; or

2.6.3 life or property is in immediate threat by bush fire and the lighting of the fire is reasonably necessary to protect life or property; or

2.6.4 the fire is a camp fire, subject to the compliance with the *Rural Fires Act 1997*, or

2.6.5 the Director-General gives prior written consent to the lighting of the fire.

Cultural Heritage

2.7 In accordance with Part 6 of the Act, the Owner must preserve and protect Aboriginal places and Aboriginal objects and other sites of cultural heritage significance on the conservation area.

Control of non-indigenous plants and fauna

2.8 Except as permitted in this Agreement the Owner:

2.8.1 must use their best endeavours to control, and where possible remove all non-indigenous plants and non-indigenous fauna from the conservation area identified to have significant detrimental impacts on the conservation area; and

2.8.2 must take such reasonable measures in relation to the control of non-indigenous plants and non-indigenous fauna as specified in the Management Scheme (Annexure C).

3. MANAGEMENT OF THE LAND

3.1 The Owner must manage the conservation area in accordance with this Agreement.

3.2 The Owner must inform the Director-General as soon as practicable after becoming aware of the deterioration of any of the natural values or cultural values of the conservation area, or of any threat to these values.

3.3 This Agreement includes Annexure B describing and mapping the conservation values of the conservation area. An aerial photograph shows the location of the conservation area, the conservation values and photo-points. Photographs have been taken at the photo-points, at the time of entering into this Agreement. This provides baseline information and data for ongoing compliance monitoring and adaptive management of the conservation area.

3.4 This Agreement includes Annexure C, setting out the Management Scheme for the conservation area including the management of conservation values and other matters referred to in Annexure B.

3.5 This Agreement has been prepared to satisfy conditions of consent for development and will be implemented in conjunction with the Euchareena Road Resource Recovery Centre Conservation Management Plan (CMP). The CMP has been prepared to provide detailed management guidance including information relating to maintenance, monitoring and reporting of the conservation area. The CMP will be implemented for the operational life of the Euchareena Road Resource Recovery Centre (estimated to be approximately 40 years).

3.6 Annual reports will be submitted to the Department for the duration of The Euchareena Road Resource Recovery Centre CMP. The reports will detail current site condition as well as completed management actions. The reports will also detail proposed management actions to the satisfaction of the Department.

3.7 If the property containing the conservation agreement is sold prior to completion of the CMP the calculated cost of continued implementation of the CMP is to be paid by the

Owner into a nominated Trust fund. This Trust fund will enable the Department to provide ongoing management support to the new Owner and fulfill the objectives of the CMP.

4. USE OF THE LAND BY SERVANTS, AGENTS, LESSEES OR LICENSEES

The Owner must incorporate the terms of this Agreement in any lease or licence issued over the conservation area, and at all times ensure that any servant, contractor, consultant, agent, lessee, licensee occupying the conservation area shall be aware of the relevant provisions of this Agreement.

5. CHANGE OF OWNERSHIP

The Owner must notify the Director-General in writing of any change of Ownership or control of the conservation area within 28 days after the change of ownership and control. The notice must include the name and address of the new Owner.

6. RIGHT TO INSPECT

The Minister, the Director-General and their servants and agents may at any time upon first giving reasonable notice in the circumstances to the Owner, the Owner's agent, lessee or licensee, enter upon the conservation area to ensure compliance with this Agreement.

7. OBLIGATIONS OF THE MINISTER

The Minister covenants with the Owner as follows: -

7.1 The Minister agrees to notify the Registrar General when this Agreement has been entered into, varied or terminated so that the Registrar General can carry out his or her responsibilities pursuant to Section 69F of the Act.

7.2 The Minister will arrange for the provision of technical advice and any other assistance to the Owner as the Minister deems necessary to assist with the implementation of this Agreement.

7.3 The Minister agrees to the extent of his or her statutory responsibilities that the signing of this Agreement shall not render the Owners ineligible for any compensation and assistance which may, under future legislation, become available to landowners who enter into a conservation agreement pursuant to the Act or any other Act.

8. NON-COMPLIANCE

In the event that the owner fails to comply with this Agreement, including, without limitation, damaging or causing damage to the conservation area, the Department may issue a written notice to the owner requiring the owner to remedy the non-compliance or damage within a specified time period. This clause does not affect any rights of the parties under Section 69G of the Act.

9. DISPUTE RESOLUTION

9.1 If a party to this Agreement is dissatisfied with the conduct of the other party under this Agreement, that party must notify the other and if the dispute cannot be resolved by discussions between the parties it shall be referred to the Director-General who will establish a mechanism whereby the dispute can be resolved.

9.2 If the Owner is reasonably dissatisfied with the mechanism chosen by the Director-General the Owner shall have the option of nominating an alternative informal dispute resolution technique such as mediation, expert evaluation or other technique in order to resolve the dispute.

10. COSTS

Each party will bear its own costs of, and incidental to, the preparation of this Agreement including any legal costs.

11. COMMENCEMENT

This Agreement shall have effect from the day of execution.

IN WITNESS WHEREOF the parties hereto have executed this Agreement the day and year first above written.

SIGNED by
The Minister administering)
the *National Parks and Wildlife Act 1974*)
for the purpose of rendering liable the)
Government of the State of New)
South Wales (but not so as to incur)
any personal liability) hereunder in)
the presence of:)

Minister

10/9/13
Date

Witness

A TOMLINSON
10 Boronga Av West Pymble
Witness Name and address

10/9/13
Date

SIGNED by the OWNERS

Executed by the General Manager of Orange City Council under delegated authority

Date 26 JULY 2013

in the presence of

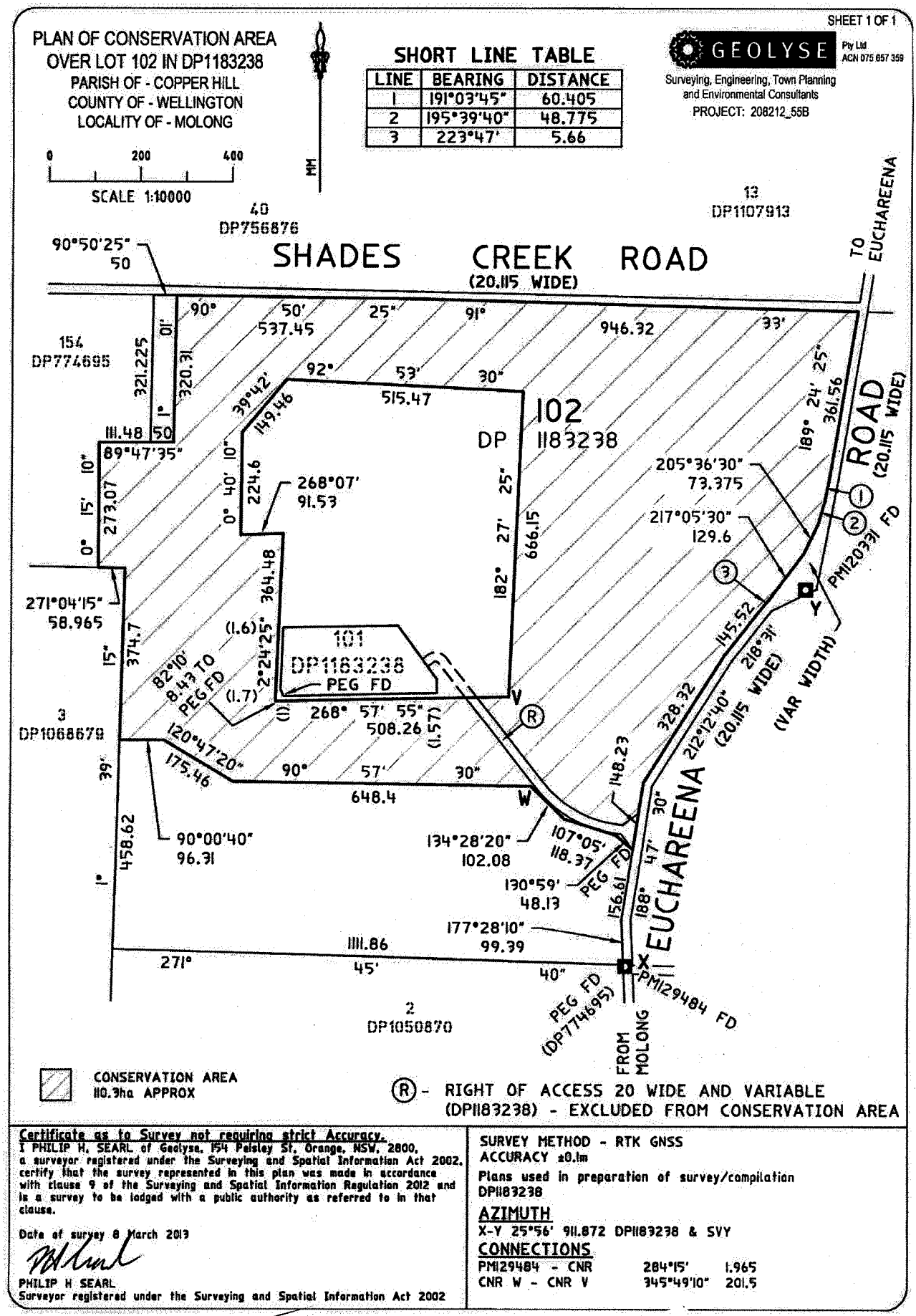
Witness signature

WAYNE DAVIS
ORANGE CITY COUNCIL
PO BOX 35, ORANGE NSW 2800
Witness Name and address

26 JULY 2013
Date

Landowners Name and address for service of notices:
The General Manager
Orange City Council
PO Box 35
ORANGE NSW 2800

ANNEXURE A; DIAGRAM A



Certificate as to Survey not requiring strict Accuracy.
I PHILIP H. SEARL of Geolyse, 154 Paisley St, Orange, NSW, 2800, a surveyor registered under the Surveying and Spatial Information Act 2002, certify that the survey represented in this plan was made in accordance with clause 9 of the Surveying and Spatial Information Regulation 2012 and is a survey to be lodged with a public authority as referred to in that clause.

Date of survey 8 March 2013

PHILIP H SEARL
Surveyor registered under the Surveying and Spatial Information Act 2002

SURVEY METHOD - RTK GNSS
ACCURACY ±0.1m

Plans used in preparation of survey/compilation
DP1183238

AZIMUTH
X-Y 25°56' 911.872 DP1183238 & SVY

CONNECTIONS

PM129484 - CNR	284°15'	1.965
CNR W - CNR V	345°49'10"	201.5

Orange City Council

Minister

ANNEXURE B
CONSERVATION VALUES

1. CONSERVATION VALUES

The Owner and the Minister recognise that the conservation area contains the following conservation values. Conservation values are to be managed in accordance with Annexure C: Management Scheme for the conservation area.

A The conservation area contains White Box Yellow Box Blakely's Red Gum Woodland, which is listed as an endangered ecological community on Schedule 1 of the *Threatened Species Conservation Act 1995,* and as a critically endangered ecological community under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999.*

B The conservation area contains habitat suitable for the Brown Treecreeper (*Climacteris picumnus victoriae),* Koala (Phascolarctos cinereus), and the Eastern Bentwing Bat (*Miniopterus schreibersii oceanensis),* listed as vulnerable species on Schedule 2 of the *Threatened Species Conservation Act 1995* and which have been recorded in the local area. The Superb Parrot (*Polytelis swainsonii),* listed as vulnerable on Schedule 2 of the *Threatened Species Conservation Act 1995,* has been recorded on the site.

C The conservation area contains a scarred tree that has been identified as an item of Aboriginal cultural heritage significance, listed in the Aboriginal Heritage Information System (Molong ST1, Site ID 44-1-0080).

2. AERIAL PHOTOGRAPH AND OTHER MAPPING

Figure 1. Locality Plan

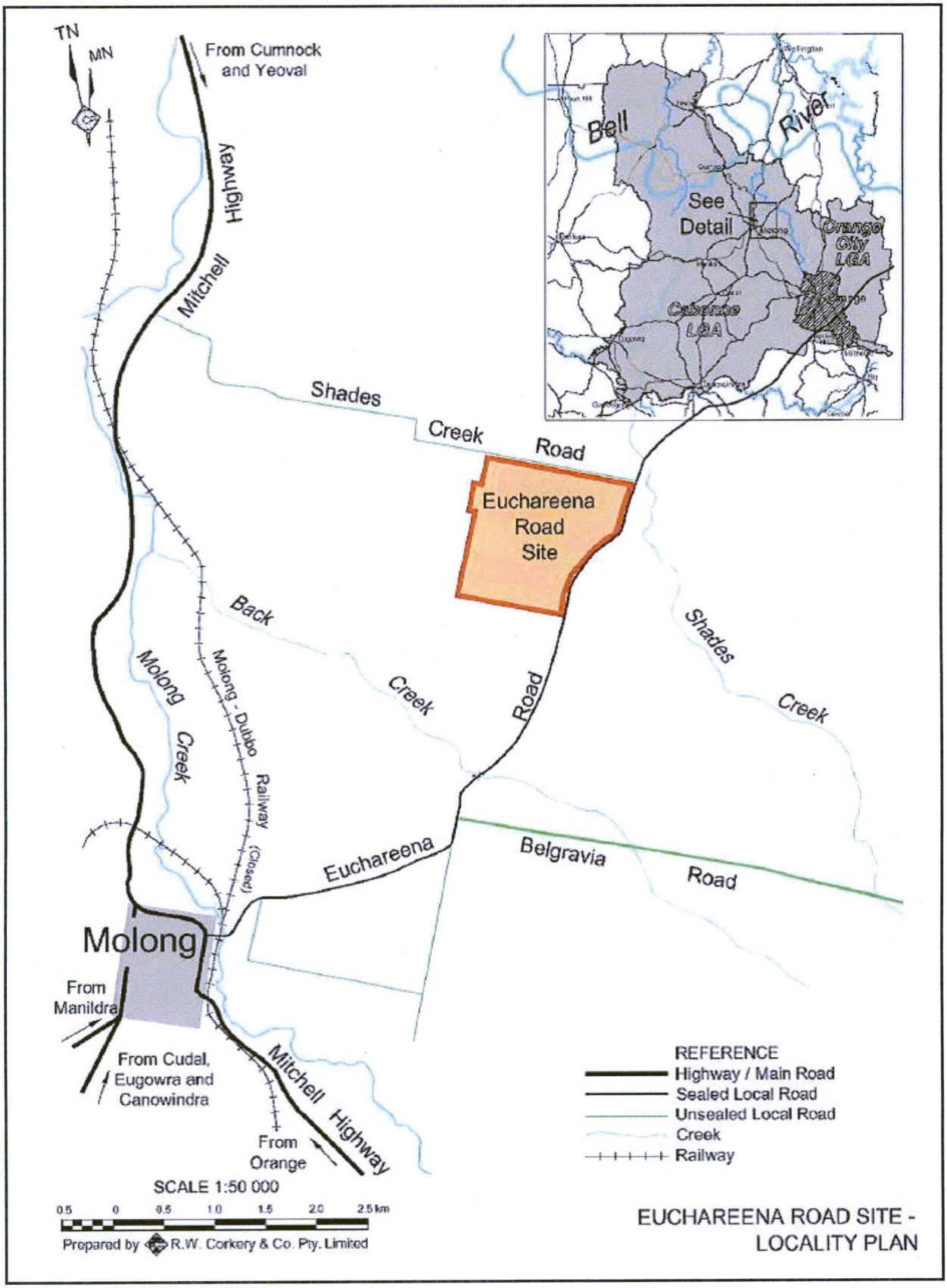


Figure 2. The Subject Site

Source: Department of Lands SIX Viewer

Figure 3. Conservation Area – Management Zones

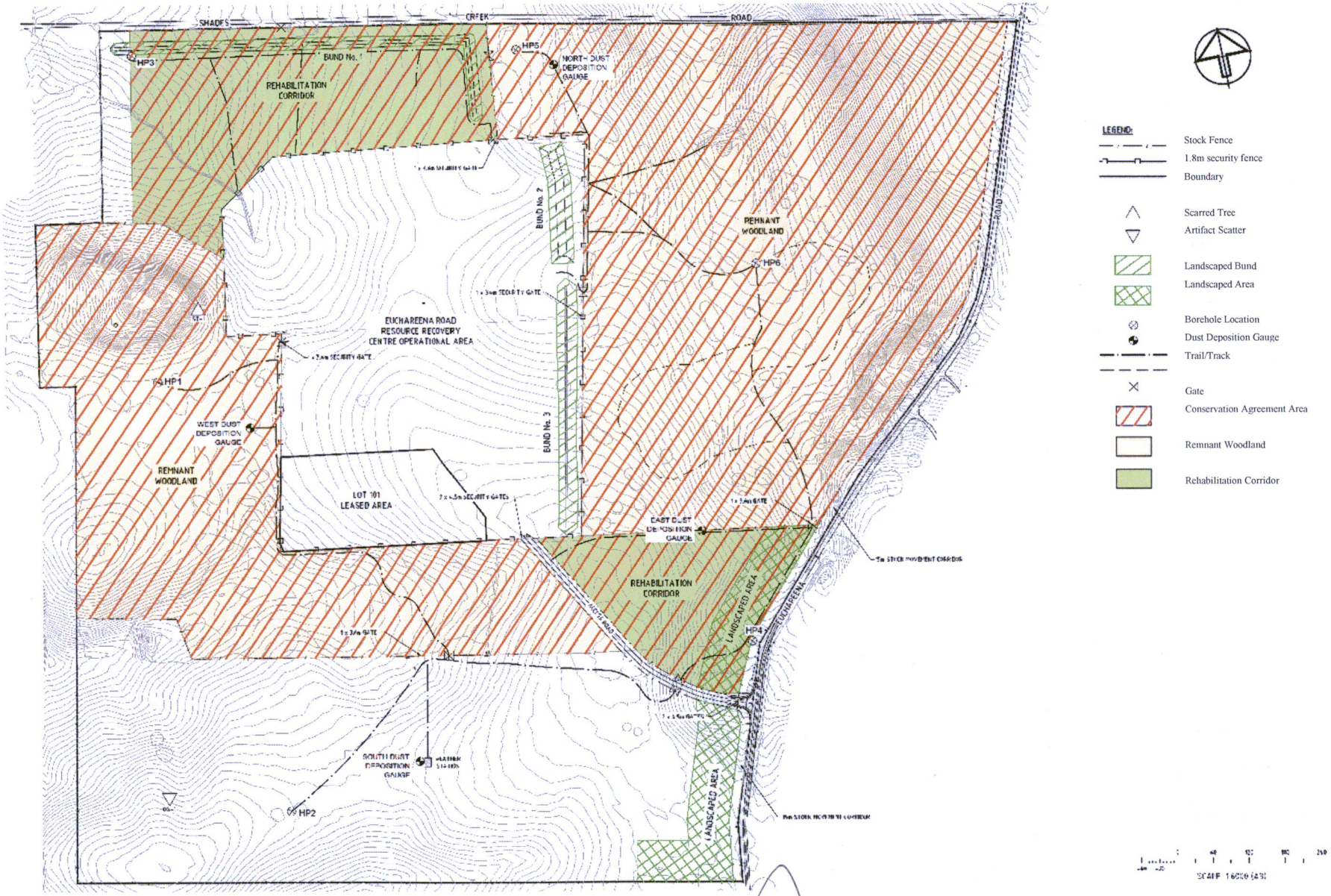
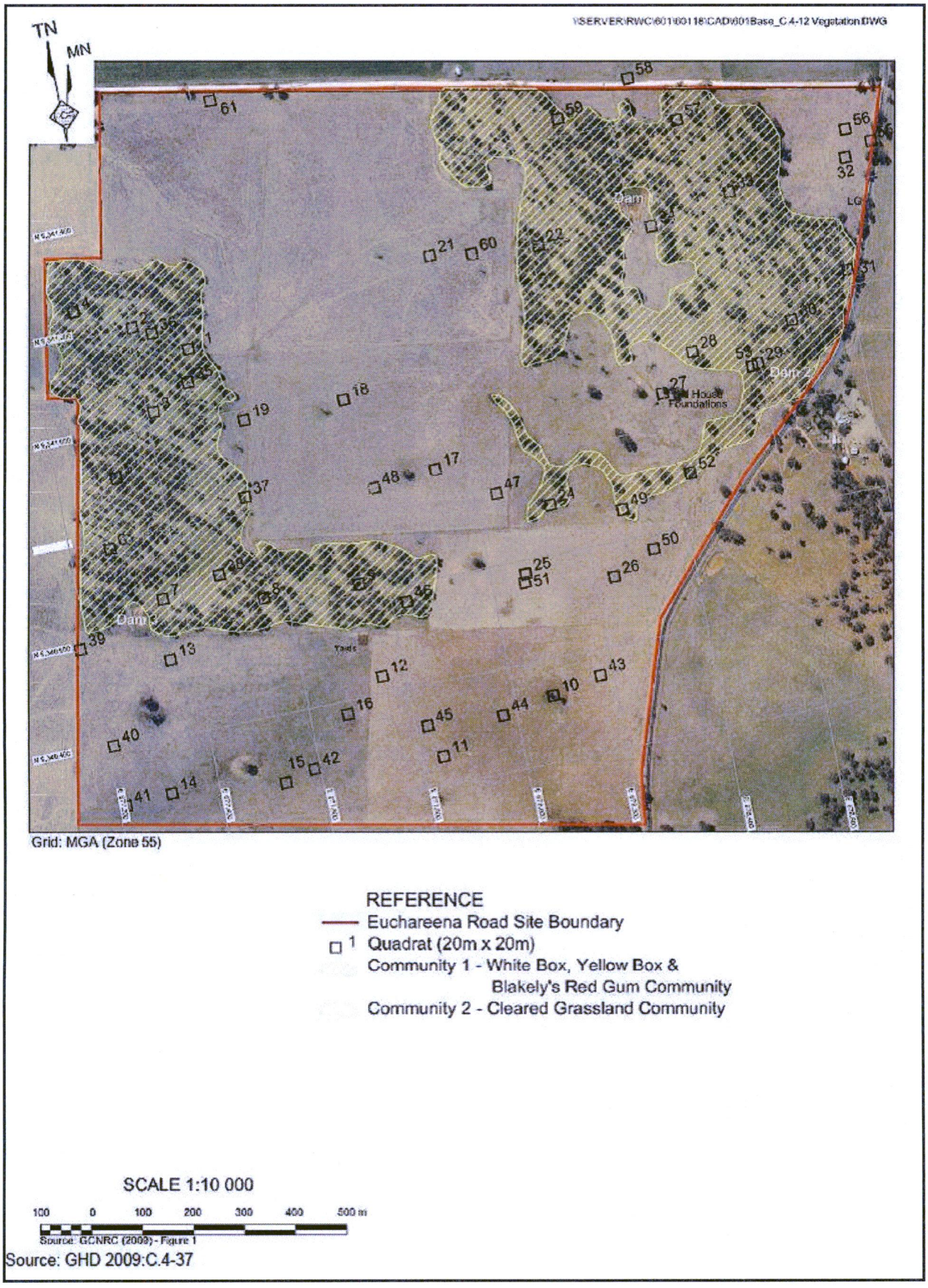


Figure 4. White Box, Yellow Box & Blakely's Red Gum Community



Source: GHD 2009:C.4-37

Figure 5. Photo-point locations

3. PHOTO-POINT PHOTOGRAPHS AND OTHER PHOTOGRAPHS

The following images have been taken at the designated photo-points. **Plate 1** to **Plate 14** are an extract from the Euchareena Road Resource Recovery Centre Flora Monitoring report, May 2012, and **Plate 15** to **Plate 21** are an extract from the Euchareena Road Resource Recovery Centre Flora Monitoring Report, February 2013 All co-ordinates listed are GDA 94 (Zone 55).

The images shown on **Plates 1 – 14** were taken on 21 December 2011.

Plate 1: Looking north from Corner C of Plot R1 - E 678114 N 6340635

The vegetation structure is restricted to groundcover and dominated by *Austrodanthonia pilosa* (wallaby grass) reaching a height of 1m. Vegetation cover is over 95% with the remainder occupied by leaf litter. The percentage of weed cover is 30% with the dominant species being **Carthamus lanatus*. Disturbance noted in this plot is grazing.

Plate 2: Looking northeast from Corner C of Plot R2 – E 677919 N 6341442

The vegetation structure is restricted to groundcover and dominated by *Austrodanthonia pilosa* and **Carthamus lanatus* to a height of 1m. Vegetation cover is 100%. The percentage of weed cover is 50% with the dominant species being **Carthamus lanatus*.

Nb. * indicates exotic species.

Plate 3: Looking northeast from Corner D of Plot C1 – E 677485 N 6340975

The vegetation structure comprises a canopy and groundcover. The dominant canopy tree is *Eucalyptus tereticornis* with crown cover of 45%. The dominant groundcover and weed species is **Marrubium vulgare* with weeds occupying 50% of the groundcover. The groundcover includes logs, bare ground and leaf litter. Disturbance from grazing via an existing sheep track occurs in this plot.

Plate 4: Looking northwest from Corner D of Plot C2- E 678138 N 6341335

The vegetation structure supports a canopy and groundcover. The dominant canopy species is *Eucalyptus albens* with crown cover of 40%. The dominant groundcover species are *Aristida ramose, Austrodanthonia pilosa* and *Austrostipa bigeniculata.* Total vegetation cover is 90% with the remaining ground occupied by leaf litter, logs and rocks. Disturbance is present from grazing with weeds occupying <15% of groundcover and dominated by **Marrubium vulgare.*

Plate 5: Looking east over 10m sampling point of Transect F1 – E 677469 N 6341034

Cover abundance is highest for the weed **Marrubium vulgare* with less frequent occurrences of native grasses and an overall dominance of weed species in the groundcover.

Plate 6: Looking east over 20m sampling point of Transect F1 – E 677468 N 6341024

This transect location supports *Eucalyptus microcarpa* in the canopy with a groundcover dominated by the weed **Marrubium vulgare*. The groundcover includes the presence of logs.

Plate 7: Looking east over 30m sampling point of Transect F1 – E 677469 N 6341011

**Marrubium vulgare, Aristida ramosa* and *Austrostipa bigeniculata* represent the dominant groundcover species at this location. Logs are also present in the ground layer.

Plate 8: Looking east over 40m sampling point of Transect F1 – E 677470 N 6341004

The groundcover is dominated by *Austrostipa bigeniculata* followed by *Einadia nutans subsp nutans.* A low cover abundance of weed species was observed at this location.

Plate 9: Looking east over 50m sampling point of Transect F1 - E 677469 N 6340997

Groundcover supports mainly native species dominated by *Deyeuxia quadriseta, Microlaena stipoides* and *Einadia nutans subsp nutans.* Weed species persist in lower abundances. Bare ground is noted at likely to result from sheep tracks occurs at this location.

Plate 10: Looking east over 10m sampling point of Transect F2 – E 677964 N 6341495

The dense groundcover is dominated by *Austrodanthonia richardsonii* and **Setaria parviflora.* Less common weed species include **Eleusine tristachya, *Carthamus lanatus* and **Taraxacum officinale.*

Plate 11: Looking east over 20m sampling point of Transect F2 – E 677960 N 6341485

Common introduced and native grasses in this location include *Austrodanthonia richardsonii, *Setaria parviflora, Bothriochloa macra* and **Bromus hordeaceus*.

Plate 12: Looking east over 30m sampling point of Transect F2 - E 677956 N 6341476

Common groundcover species in this location include *Austrodanthonia richardsonii, *Setaria parviflora* and **Carthamus lanatus*.

Plate 13: Looking east over 40m sampling point of Transect F2 – E 677952 N 6341464

The groundcover is dominated by *Austrodanthonia richardsonii.* Less common occurrences of **Carthamus lanatus,* **Setaria parviflora,* **Avena fatua* and *Geranium retrorsum* occur at this location.

Plate 14: Looking east over 50m sampling point of Transect F2 – E 677947 N 6341454

The dominant groundcover species is **Setaria parviflora* closely followed by **Carthamus lanatus* and *Oxalis perennans*. The vegetation cover is 100% throughout transect F2.

The images shown on **Plates 15 – 21** were taken on 10 January 2013.

Plate 15: Looking southwest over 10m sampling point of Transect L1 – E 678288 N 6340401

Plate 16: Looking southwest over 20m sampling point of Transect L1 – E 678282 N 6340397

Plate 17: Looking southwest over 30m sampling point of Transect L1 – E 678277 N 6340389

Plate 18: Looking southwest over 40m sampling point of Transect L1 – E 678271 N 6340383

Plate 19: Looking southwest over 50m sampling point of Transect L1 – E 678268 N 6340374

Plate 20: Looking west over 10m sampling point of Transect B1 – E 678029 N 6341523

Plate 21: Looking west over 50m sampling point of Transect B1- E 678989 N 6341530

Plate 22: Scarred tree (Molong ST1. Site ID 44-1-0080) Photograph from Appleton 2005: 37.

ANNEXURE C

MANAGEMENT SCHEME FOR THE CONSERVATION AREA

The conservation values identified in Annexure B are to be managed in accordance with the principles and activities outlined below.

ITEM 1: Activities permitted in the conservation area

The following activities may be undertaken on, or in respect of, the conservation area. The landholders shall not undertake, consent to, or permit the following activities unless they are undertaken in the manner specified as follows:

Control of Weeds and non-indigenous flora

a) Carrying out weed control using the appropriate control methods:

i) Remove weeds by hand ensuring that all plant parts which can reproduce are removed and that soils do not become prone to erosion.

ii) Use of carefully selected herbicide according to label directions and/or current off label permit, ensuring minimal off target damage.

iii) Using appropriate control measures as recommended in the Department of Primary Industries *Noxious and Environmental Weed Control 5th Edition 2011* (or equivalent replacement) for control of weeds, ensuring minimal off target damage.

iv) Use of forestry mulching or slashing machinery only with prior written permission from the Department.

v) Other weed control methods may be undertaken with prior written permission of the Department.

vi) Ensure control programs are commenced when timing and extent of weed removal will minimise adverse effects on wildlife (weeds may provide protection or habitat for native fauna).

vii) Contact the Department if any uncertainty exists regarding weed control methods.

Control of Pest animals and non-indigenous fauna

b) Monitoring impacts to the conservation area by pest animals and undertaking of on-going control programs for pest animals if appropriate.

i) Methods for monitoring pest animal activity can include:

- observations and/or hearing calls,
- the use of standard "sand plots",
- the use of non-poisoned "bait stations",
- scat counts, and
- other quantitative techniques which can be designed in discussion with the Department or the Livestock Health and Pest Authority.

ii) Methods for control can include shooting, trapping and use of poisonous baits consistent with advice from the Department and the Livestock Health and Pest Authority. Use control methods identified as 'humane' as defined in the NSW Codes of Practice and Standard Operating Procedures for Humane Pest Vertebrate Control (*Control Capture and Destruction of Feral Animals in Australia*) as developed by the NSW Department of Primary Industries.

iii) Participate in community pest animal control programs, and encourage neighbours to implement pest animal control programs. Contact your local National Parks and Wildlife Area office to find out where community control programs are occurring.

Grazing management

c) Controlled grazing by livestock to maintain or improve native vegetation values at a low to moderate stocking rate or 'crash grazing'. Grazing is an ecological tool and the aim of crash grazing is to manage the groundcover to ensure that a diverse groundlayer of native species is encouraged. Grazing will only be permitted with prior written agreement of the Department subject to monitoring reports.

i) Grazing regimes will be guided by:

- Appropriate location of grazing
- Triggers to change grazing regime eg. changes to abundance of selected key species.
- Triggers for grazing to be excluded eg. during flowering and seeding of particular species.
- Seasons where grazing may be desirable e.g. reduction in seeding of particular weed species.
- Exclusion of grazing for a required number of years or until certain outcomes have been achieved.
- Management of stock in the remnant woodland should aim to minimise damage to native vegetation and minimise introduction of weeds and disease as follows:
- Ensure stock camps are not established
- Ensure stock are confined to formed tracks and are under supervision when moving livestock through the conservation area.
- Mustering of livestock with the use of working dogs and horses is permitted.
- Fodder or any stock feed may not be brought into the remnant woodland areas.
- Before introduction of stock into the remnant woodland areas ensure they are held in a relatively weed free area for at least a week immediately prior to their introduction.
- Pasture improvement or fertilisation is not permitted.
- Exclude stock from any burnt area of the remnant woodland until native vegetation has re-established. Stock should be excluded for at least three years and groundcover should be >70% before grazing recommences.

d) Controlled grazing at a low to moderate stocking rate or 'crash grazing', guided by:

- Appropriate location of grazing
- Triggers to change grazing regime eg. changes to abundance of selected key species.
- Triggers for grazing to be excluded eg. during flowering and seeding of particular species.
- Seasons where grazing may be desirable eg. reduction in seeding of particular weed species.
- Exclusion of grazing for a required number of years or until certain outcomes have been achieved.

e) Reducing the population of native grazing animals where grazing pressure is resulting in the degradation of the quality and structure of native vegetation and inhibiting natural regeneration and the owner is granted a licence to cull under Section 121 of the Act.

Fire management

f) Suppression of all wildfires occurring in the conservation area as quickly as possible with the aim of keeping fires to a small area.

g) Undertaking of fire hazard reduction to protect the natural assets of the conservation area, in appropriate locations, with any required approvals and/or permits using:

i) raking and hand clearing

ii) pile burning

iii) fuel reduction burns.

h) Using fire hazard reduction burns and controlled burning which take into account the recommended fire intervals given in the ***Bush Fire Environmental Assessment Code for New South Wales*** (Rural Fire Service February 2006) and the guidelines contained in the ***Threatened Species Hazard Reduction Lists for the Bush Fire Environmental Assessment Code*** or equivalent replacements.

The current recommendation for Box-Gum Grassy Woodland is a fire frequency in individual patches of between four and eight years.

Vehicle access

i) Vehicle access restricted to formed roads or trails for bio-security purposes such as minimising the risk of spreading weeds and diseases, except for management purposes, research, fire fighting or and any emergency requirements. Vehicles should be clean of weed seed and soil before entering conservation area.

Threatened species

j) Implementing any measures included in recovery plans for any threatened species, populations or ecological communities which are or may be found in the conservation area.

k) Implementing other specific management advice from the Department for any threatened species, populations or ecological communities which are or may be found in the conservation area.

Restoration of indigenous vegetation

l) Restoration of native vegetation using the preferred method of encouraging and retaining natural regeneration, as per the Conservation Management Plan.

m) Revegetation to establish indigenous plants to maintain the vegetation structure in keeping with the identified vegetation community, using species produced from material sourced locally and without fertilisers, where the ability to regenerate naturally within a reasonable time frame has been lost, or to prevent soil erosion.

Revegetation methods can include:

i) planting

ii) brush mulching

iii) direct seeding.

Seed collection

n) Collection of seed for non-commercial use in keeping with Guidelines and Codes of Practice as given in the OEH Conservation Management Note ***Seed Collecting*** (http://www.environment.nsw.gov.au/cpp/ConservationManagementNotes.htm), and the following limitations and permissions:

i) Collect seed in the conservation area only if seed of the particular species and genotype is not available elsewhere, or if the seed collected is intended for seedlings that will be planted within the conservation area or adjacent to the conservation area.

ii) Seeds may be collected from within endangered ecological communities.

iii) Seeds may not be collected from species individually listed on Schedules 1, 1A or 2 of the *Threatened Species Conservation Act 1995* without prior written approval from the Director General, or under a licence granted under Section 132c of the Act or Section 91 of the *Threatened Species Conservation Act 1995*.

iv) Seeds may be collected from any protected species listed under Section 131 (Schedule 13) of the Act.

v) Seeds may be collected from any other native species.

Thinning of indigenous vegetation

o) Thinning of regenerating indigenous species which are altering the structure of the vegetation and/or reducing conservation values. Thinning should be planned in consultation with the Department and may require approvals by a Catchment Management Authority (or other relevant authority) under the *Native Vegetation Act 2003* or any relevant subsequent legislation.

Cultural heritage

p) Recording and management of any newly identified Aboriginal objects, in consultation with the Department (and the Aboriginal community where applicable).

Visitation and research

q) Visitation, research and community use at a level that does not adversely impact on the conservation values of the area or the amenity of the Owners. Research projects should be discussed with the Department.

Developments

r) Carrying out developments as described in Clause 2.3 of the Agreement, and maintaining developments (including existing fire trails and infrastructure) with the following conditions:

i) The width of roads and trails to a maximum of 4 metres wide roadway with 1 metre width for vegetation clearance on each side.

ii) Tracks will not be wider than 1.5 metres.

iii) Clear a corridor not greater than 3 metres wide during construction or for maintenance for the installation of fences or other agreed rural structures.

iv) Construct and maintain fences to ensure they are stockproof.

v) Move fallen timber and any other obstructions to maintain access.

vi) Where clearing is necessary, undertake all works in a manner that minimises disturbance to soil and hydrological characteristics.

vii) Remove old fences and close unwanted tracks within the conservation area and facilitate restoration of native vegetation by allowing natural regeneration.

Monitoring

s) An annual flora monitoring program has been developed for the conservation area which will be monitored for the operational life of the Euchareena Road Resource Recovery Centre (an estimated 40 years). These sites are mapped on the Photopoint Map, **Figure 5** in Annexure B. Monitoring locations have been selected in each area of the conservation agreement area, including: the remnant woodlands, the rehabilitation corridors, the landscape bund, and within the landscaped area. The Conservation Management Plan further details the monitoring locations and requirements.

t) An annual Aboriginal heritage monitoring program has been developed for the conservation area which will be monitored for the operational life of the Euchareena Road Resource Recovery Centre. The scarred tree that has been identified as an item of Aboriginal heritage significance listed in the Aboriginal Heritage Information System will be monitored annually. The Conservation Management Plan further details the monitoring requirements.

u) Annexure B contains aerial photographs and maps showing the location of the conservation area, the photo-points and the conservation values.

v) Monitoring of the conservation values will be done in accordance with the Conservation Management Plan and clause below.

w) The Owner should complete an annual flora monitoring report, and an annual Aboriginal heritage monitoring report and qualitative monitoring using the Department's template, including the condition of the conservation values, changes occurring in the conservation area and an annual work plan of management actions to be undertaken. A copy of all annual monitoring reports should be forwarded to the Department.

x) Monitoring of the conservation agreement after the life of the Euchareena Road Resource Recovery Center will continue at the photo-points in Annexure B every 3 years.

ITEM 2: <u>Activities not permitted in the Conservation Area unless specified in Item 1</u>
The landholders shall not undertake, consent to or permit (unless specified in Item 1 of Annexure C or with prior written consent of the Director-General)

a) the sowing or planting of trees, grasses or other plants in the conservation area.

b) the introduction of any non-indigenous plants or non-indigenous fauna into the conservation area.

c) the entry of domestic animals including pets and domestic livestock in the conservation area.

d) the use or application of fertiliser or pesticides in the conservation area.

e) the use of trail bikes, four wheel drive vehicles or any other vehicle in the conservation area off any formed road.

f) any works in the conservation area, especially any revegetation work and developments, which have the potential to impact on any cultural features. Seek advice from the Department if any are identified, prior to any work commencing.

g) the removal of any biological or inorganic component of the conservation area.

h) any works which will adversely affect the natural flows and bodies of water.

General Manager
Orange City Council

Minister

Section 9

SUPPORTING DOCUMENTS

Supporting Documents – TOC

9.1 APICULTURE RISK MANAGEMENT PLAN

9.2 SOIL AND WATER MANAGEMENT PLAN

9.3 WASTE AND RESOURCE RECOVERY MONITORING PROGRAM

9.4 ERRRC CONSERVATION MANAGEMENT PLAN

9.5 ERRRC FIVE-YEAR WORKS ACTION PLAN

9.6 TRANSPORT CODE OF CONDUCT

9.7 ORRRC PIRMP

9.8 ORRRC PIRMP SUPPORTING STATEMENT

9.9 ERRRC PIRMP

9.10 ERRRC PIRMP SUPPORTING STATEMENT

Section 9.1

APICULTURE RISK MANAGEMENT PLAN

AsureQuality
INDEPENDENT QUALITY ASSURANCE

QUALITY COUNTS

APICULTURE RISK MANAGEMENT PLAN FOR THE ORANGE WASTE PROJECT

Mr Byron P Taylor
Mr G Murray Reid

APICULTURE RISK MANAGEMENT PLAN FOR THE ORANGE WASTE PROJECT

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Amendment Record

Issue	Date of Issue	Section	Reason for Change	Signature
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Project Overview

Orange City Council (Council) is responsible for providing services to the residential, industrial and commercial community of approximately 40,000 people and to visitors of Orange and surrounding areas. Some 3,500 people from surrounding shires work in Orange. Council provides physical infrastructure as well as environmental, social and cultural services for use by the residents of both the City and the surrounding areas.

On 28 April 2010 Council received approval from The Hon Anthony Kelly MLC, Minister for Planning, for the Orange Waste Project. The Orange Waste Project is an integrated project for improving resource recovery and residual waste management for Orange and its surrounds. The project addresses the imminent end of available landfill space at Council's existing facility as well as introducing a composting operation to manage organic materials. The project will deliver greater resource recovery and waste diversion from landfill.

The Project includes operations at two separate sites owned by Council:

- The existing Ophir Road Resource Recovery Centre (ORRRC) located approximately 5 km north east of Orange central business district; and
- The proposed Euchareena Road Resource Recovery Centre (ERRRC) located approximately 44 km from Orange and 5 km northeast of Molong.

The Project will include:

- A new kerbside collection of food and garden waste for all eligible residential properties in Orange;
- The kerbside collected food and organic waste plus self haul and commercial green waste will be delivered to the ORRRC and pre-sorted prior to blending on site. This material will then be transported to ERRRC to the composting facility;
- A composting facility will be operated at the ERRRC to process the food and organic waste;
- All mixed waste (putrecible) will be delivered to the new waste baling facility at ORRRC and pre-sorted to remove hazardous waste, organic materials and recyclables. The residual waste will be baled and wrapped in plastic. These wrapped bales will be transported to the ERRRC to the landfill; and
- All inert waste that can not be baled will be delivered to ORRC then transported to ERRRC for disposal in the landfill.

Council's approval requires compliance with the conditions set out in the Project Approval. One such condition of the Project Approval is Council's need to implement all reasonable and feasible measures to minimise the apiculture risks of the project. This documentation addresses this condition.

Apiculture Risks

Glossary

American foulbrood (AFB)	a serious disease of developing honey bees caused by the bacterium *Paenibacillus larvae larvae.*
Bailing	the process of compressing waste into manageable blocks and strapping the waste so as to retain the structural integrity of the compressed waste – see 'wrapping'
DPI	the New South Wales Department of Primary Industries.
European foulbrood (EFB)	a disease of honey bees caused by the bacterium *Melissococcus plutonius*
ERRRC	the Euchareena Road Resource Recovery Centre.
Green Waste	waste that consists of branches, grass, leaves, plants, loppings, and similar materials, and includes any mixture of those materials (referred to as 'garden waste' in the *DECCW Waste Classification Guidelines.*
HACCP	Hazard Analysis and Critical Control Points is a strategy which assesses the hazards involved in a process and identifies places within the process where some level of control is required in order to deal with the hazard.
Inert Waste	waste that is highly unlikely to contain any risk material (eg: construction waste).
Non Conformance	a system deficiency that compromises an outcome required by this risk management program or could compromise an outcome if not addressed by the responsible person.
ORRRC	the Ophir Road Resource Recovery Centre.
Propolis	Resinous substance collected by bees (usually from plants), then modified and used to seal the inside of a hive and strengthen wax combs.
Residual Waste	Any waste unable to be diverted into recycling or composting waste streams.

Risk Management Plan (RMP)	A document that identifies the risks associated with a project (in this case contained within a risk assessment document) and outlines the strategy to mitigate the identified risks.
Slum Gum	Mixture of pupal cocoons, pollen, propolis and small amounts of beeswax left after brood combs have been rendered down.
Wrapping	the process of enclosing baled waste in plastic – see 'bailing'

Introduction

This risk management program (RMP) was developed in response to a requirement in the "Project Approval and Conditions of Consent for the Orange Waste Project – *Section 75J of the Environmental Planning and Assessment Act 1979".*

Information has been drawn from several sources including Orange City Council's Statement of Commitments and supporting documentation, the most recent being the "Review of the Proponents Statement of Commitment and the Risk Assessment for the Transmission of American Foulbrood Disease for the Euchareena Road Waste Disposal Site" completed by Dr Mark Goodwin, a scientist and Team Leader of the Apiculture and Pollination division of The New Zealand Institute for Plant and Food Research Ltd.

Dr Goodwin's report has formed the basis of the hazard analysis and critical control point (HACCP) analysis that has been undertaken as part of the development of this RMP and Dr Goodwin has also been involved in the review of this RMP to ensure that it accurately reflects the level of risk outlined in the report.

Industry input on this RMP will be sought via advertising the plan and inviting registered beekeepers to make submissions. Each of these submissions will be considered by Mr Byron Taylor and Mr Murray Reid, both Apiculture Technical Advisors of AsureQuality Ltd and Dr Mark Goodwin.

A number of assumptions have been made in the development of the RMP around the processes and procedures that will take place from the receipt of waste at the Ophir Road Resource Recovery Centre (ORRRC) through to the land filling and composting operations at the Euchareena Road Resource Recovery Centre (ERRRC). These are included in a number of documents including:

- The Project Approval
- The Proponents Statement of Commitments
- A number of supporting documents available via the Department of Planning website.

Additionally, the authors have carried out a case study (Appendix 2) assessing the level of American foulbrood (AFB) disease reported in managed beehives within 5km of a landfill located near Hamilton, New Zealand. The outcome of this case study confirmed that the level of AFB reported in apiaries within 5km of this site is no greater than the national average.

Purpose and scope

To ensure that activities undertaken at the ERRRC are managed in such a way that they minimise the apiculture risks to the satisfaction of the Director General.

Sources of hazards

Source	Examples of hazard
Beehives and used beekeeping equipment	• American foulbrood disease (*Paenibacillus larvae larvae*)
Used honey containers	• American foulbrood disease (*Paenibacillus larvae larvae*)
Tree logs	• American foulbrood disease (*Paenibacillus larvae larvae*)
Green waste	• Chemical residues
Inert Waste	• American foulbrood disease (*Paenibacillus larvae larvae*)
Leachate and Liquid Residue	• Chemical residues • American foulbrood disease (*Paenibacillus larvae larvae*)

Mandatory requirements

1. Project Approval for the Orange Waste Project – *Section 75J of the Environmental Planning and Assessment Act 1979*
   - Schedule 5, clauses 16 & 17 – Apiculture Risks
   - Appendix 1 – Proponents Statement of Commitments – Apiary Industry
   - Schedule 4, clause 2(b) – Restrictions on Waste Being Sent to Euchareena Road

2. Community Education Program and Communications Strategy – February 2011

General Requirements

1. Preliminary Provisions

1.1 Procedures

- All material destined for the ERRRC must be pre-screened for chemicals and apiculture related equipment.

- All customer complaints must be investigated and followed up as appropriate.

1.2 Records and Monitoring

- Where not otherwise stated, a record of any non-conformance detected and the subsequent corrective actions must be kept.

- A register of bee sightings at the ERRRC must be kept

- Customer complaints must be recorded on the customer complaints register and updated on the Orange City Council website monthly. All supporting documentation relating to the complaint must also be retained on file (Appendix 3).

- A report on issues relating to this RMP must be provided to the Review Committee either by exception or at no less than 6-monthly intervals.

2. Used Beekeeping Equipment

2.1 Definition

Used beekeeping equipment is any fitting, utensil, apparatus or implement that is used, or has been used, for the purposes of, or in connection with beekeeping, or in processing, handling or storing apiary products which include but are not limited to: beeswax, honey, cut comb honey, comb sections, honeydew, bee collected pollen, propolis or royal jelly, supers, frames, hive lids, floorboards, queen excluders, feeders, division boards or any other substance considered to be an apiary product including slum gum.

Included in this definition is any cavity which has contained bees. This includes but is not limited to: bird nesting boxes, buckets, tyres and cavities in construction waste (eg: in a wall). See also section 6 – Inert Waste.

2.2 Hazard Analysis

The Review of the Proponents Statement of Commitments and the Risk Assessment for the Transmission of American Foulbrood Disease for the ERRRC commented that there was a risk associated with used beekeeping equipment entering the waste stream destined for the ERRRC due to the exclusion processes not being 100% effective. The analysis goes on to say that the chance of an item of used beekeeping equipment being missed by the diversion strategies proposed is unlikely due to the method of separating waste streams, and the proposed education program.

Additionally, the risk assessment states that in the unlikely event that an item of used beekeeping equipment is missed, it would be wrapped in plastic prior to being transferred to the ERRRC. Ultimately the risk analysis concludes that the risk of used beekeeping equipment being transferred to ERRRC, and the subsequent risk to apiculture via the potential spread of American foulbrood disease is very low.

This hazard will be effectively managed by several strategies including:

- Not accepting used beekeeping equipment onto the ORRRC
- Effective diversion and burial on site of any material that is accidentally accepted
- A training program for staff, beekeepers and the general public.

As a result of these management practices, no critical control points have been identified for this process.

2.3 Procedures

2.3.1 <u>Ophir Road Resource Recovery Centre (or other council approved blending sites)</u>

- Loads will be subject to inspection at a designated point and any load containing used beekeeping equipment will not be accepted.
- All material accepted on site will be sorted prior to processing.
- Any beekeeping equipment found during the sorting process will be removed from the waste stream for immediate burial on site (consistent with site approvals).

2.3.2 Transport

- Used beekeeping equipment will not be transported to the ERRRC

2.3.3 Euchareena Road Resource Recovery Centre

- Used beekeeping equipment will not be accepted at the ERRRC.

2.4 Records & Monitoring

2.4.1 Records

- Records will be kept of all instances where loads containing used beekeeping equipment have been rejected. This should contain, date stopped, nature of goods, driver details and date reported to site supervisor
- Records will be kept by waste stream of the discovery and subsequent burial of any item of beekeeping equipment that inadvertently enters the ORRRC. This should also contain, date found, nature of goods and date reported to site supervisor.

2.4.2 Monitoring

- Site supervisor to check processes and records quarterly
- Site supervisor to report incidents to the NSW Department of Primary Industries (DPI) as appropriate

3. Used Honey Containers

3.1 Definition

Used honey containers are defined as being any receptacle that contains or has contained honey in consumer ready packaging.

It is accepted that most used honey containers will be commercial retail packs, although some could be from hobby beekeepers or farmers markets, and may include non-conventional packaging.

3.2 Hazard Analysis (HACCP)

The Review of the Proponents Statement of Commitments and the Risk Assessment for the Transmission of American Foulbrood Disease for the ERRRC commented that, while there were some inaccuracies in the original assessment carried out by Emphron due to insufficient or incorrect information, this 'did not significantly alter the conclusion that there is no meaningful risk of AFB contamination from retail honey residues'.

The hazard analysis assumes that most used retail honey containers will be separated into the recycling waste stream by householders as a result of an ongoing education program, and that a significant percentage of those containers that are put into the residual waste stream will be removed when the waste is sorted prior to baling. It is expected that most used honey containers will also be washed before being disposed of or will have lids on and not be accessible to bees (79% according to the Emphron risk assessment).

However, the risk assessment accepts that some used honey containers will be missed and will be processed with residual waste. In this situation, waste is baled and wrapped in plastic prior to being transferred to the ERRRC. Ultimately the risk analysis concludes that the risk of exposing honey bees to American foulbrood disease via used honey containers at the ERRRC is very low.

This hazard will be effectively managed by several strategies including:

- Educating the general public to separate honey containers into the recycling waste stream
- Washing containers before placing in kerbside collection bins
- Diversion of containers found in the residual waste stream into recycling
- Wrapping of baled residual waste destined for the ERRRC.

As a result of these management practices, no critical control points have been identified for this process.

3.3 Procedures

3.3.1 <u>Ophir Road Resource Recovery Centre (or other council approved blending sites)</u>

- All material accepted on site will be sorted prior to processing.
- Any retail honey containers found during the sorting process will be removed from the waste stream and recycled.

3.3.2 Transport

- All residual waste (in this case, containing one or more retail honey containers) will be baled and wrapped in plastic prior to being transported to the ERRRC.

3.3.3 Euchareena Road Resource Recovery Centre

- Baled and wrapped residual waste arriving at ERRRC will be inspected to ensure there has been no serious integrity failure of the wrapping. Any unacceptable bales will not be accepted onto the site.
- Any wrapped bale which suffers a tear or wrapping integrity failure on site will be covered on the day that they are recieved to prevent honey bee access to any exposed waste. Covering may include patching of the tear, placing any torn surface hard against other bales, or covering with soil or sand.

3.4 Records & Monitoring

3.4.1 Records

- A record of any bale rejection is to be kept and is to include date, degree of failure plus any indication of cause, and date reported to management.
- A record of any wrapping tear or failure is to be kept and is to include incident date, corrective action, and date reported to management.

3.4.2 Monitoring

- Site supervisor to check processes and records quarterly

4. Timber or Tree Logs

4.1 Definition

A tree log is defined as a tree or part of a tree large enough to contain a cavity capable of housing a honey bee colony. Honey bees will occupy cavities as small as 12 litres ([1]Seeley 1977). As a general indication, this would include logs with an approximate diameter greater than 250mm and / or any such log or log shaped such that a suitable cavity may be present.

4.2 Hazard Analysis (HACCP)

The Review of the Proponents Statement of Commitments and the Risk Assessment for the Transmission of American Foulbrood Disease for the ERRRC commented that there was a risk associated with trees delivered to the ORRRC destined for the ERRRC. The risk is around the potential presence of feral colonies (whether alive or dead) infected with American foulbrood disease in logs large enough to contain suitable cavities. The risk analysis concluded that there was insufficient data available to accurately measure the risk posed by these colonies and suggested diverting this material away from the ERRRC as a management strategy.

Orange City Council has expressed a desire to assess tree logs for risk and transfer the material from those of no risk to the ERRRC. This will require that the hazard is managed by identifying and segregating logs that meet the risk definition. Logs with a diameter larger than 500mm will be split in preparation for chipping which will allow for an additional inspection to be carried out. All logs containing feral colonies, or the remains thereof, will be retained at the ORRRC. An education plan will also be put in place (covered in this RMP) to train staff in the identification and segregation of these risk logs.

It is accepted that there is a risk associated with restricting inspection and splitting to logs over 500mm. However, if we consider that the majority of feral colonies will be in larger logs, that wax moth and other scavengers will have removed a percentage of potentially infective comb, and that there will be a considerable amount of dilution of material, the risk of AFB transmission is low.

This also pertains to feral swarms that are, or have been, present in containers other than tree logs, such as; wall cavities of buildings, bird boxes, letter boxes, buckets, tyres etc. See section 6 – Inert Waste

4.3 Procedures

4.3.1 <u>Ophir Road Resource Recovery Centre (or other council approved blending sites)</u>

- Tree logs with a diameter greater than 500mm
    - Logs will be automatically segregated for processing.
    - Logs will be split and inspected prior to being chipped
    - Logs found free of risk material should be processed as per standard operating procedures.

[1] Seeley T, 1977. Measurement of Nest Cavity Volume by the Honey Bee (*Apis mellifera).* Behav. Ecol. Sociobiol. 2, 201-227. (http://www.jstor.org/pss/4599130)

- Any tree logs found to contain feral colonies (alive or dead), or the remains of such a colony, will be segregated and processed separately
- Processed material from tree logs, where potentially infective material has been found, must not come in contact with material of a different status and must be retained at ORRRC (or other council approved blending sites).
- The area where contaminated logs or the material from such logs is kept must be controlled so as to limit the chance of material being transferred to Euchareena Road.
- Material from logs that have contained a honey bee colony must be disposed of at the ORRRC (or other council approved blending sites)

- Tree logs with a diameter between 250mm and 500mm and / or any such log or log shaped such that a suitable cavity may be present.
  - Logs will be visually inspected prior to processing.
  - Logs found free of risk material should be processed as per standard operating procedures.
  - Any tree logs found to contain feral colonies (alive or dead), or the remains of such a colony, will be segregated and processed separately
  - Processed material from tree logs, where potentially infective material has been found, must not come in contact with material of a different status and must be retained at ORRRC (or other council approved blending sites).
  - The area where contaminated logs or the material from such logs is kept must be controlled so as to limit the chance of material being transferred to Euchareena Road.
  - Material from logs that have contained a honey bee colony must be disposed of at the ORRRC (or other council approved blending sites)

4.3.2 Transport

- The tree logs, or any other product derived from those logs, sent to ERRRC will have been inspected and deemed to be of no risk.

4.3.3 Euchareena Road Resource Recovery Centre

- The tree logs, or any other product derived from those logs, sent to ERRRC will have been inspected and deemed to be of no risk.

4.4 Records & Monitoring

4.4.1 Records

- A record of feral colonies (alive or dead) found in tree logs must be kept
- Processing, storage and disposal records for risk material must be kept.

4.4.2 Monitoring

- Site supervisor to report instances of feral colonies in tree logs to DPI as appropriate.
- Site supervisor to check processes and records quarterly

5. Green Waste

The Composting Operations section of the conditions of consent (Schedule 5, part 8) states:
"Unless the Director General states otherwise, the Proponent shall ensure that the:
(a) biosolids and food organic waste received on site is either loaded directly into the composting tunnels upon arrival, or covered at all times until it is loaded into the tunnels;
and
(b) windrow composting operations are managed in accordance with:
- AS 4454-2003: Composts, Soil Containers and Mulches (Appendix N) or the latest version of this standard; or
- Protective measures set out in the *Composting & Related Organics Processing Facilities* guideline.

The review of the risk assessment completed by Dr Mark Goodwin (Appendix 1) concluded that the risk associated with pesticides on green waste delivered to the ERRRC appeared to be insignificant and that any risk could be further reduced by ensuring that there is sufficient permanent water close to any hives in the immediate vicinity of the facility.

As a result of this determination, it is the opinion of the authors that the risk to apiculture of green waste arriving at the ERRRC is sufficiently low so as not to require any management strategies around the exclusion of honey bees.

It is the opinion of the authors that waiving the requirements of Schedule 5, Part 8(a) would not significantly alter the risk to apiculture of the ERRRC.

The authors would also note that composting operations have been known to attract individual bees at certain times of the year but not in the quantities required to be a risk to apiculture.

For the purpose of managing apiculture risk, the Apiculture Risk Management Plan does not require food and garden organic material to be covered prior to composting.

6. Inert Waste

Both the review of the risk assessment completed by Dr Mark Goodwin (Appendix 1) and the risk assessment completed by Emphron did not consider the issue of inert waste such as that generated at a construction site. It is understood that by exclusion, no risk had been identified from inert waste. The authors believe it is possible for used beekeeping equipment, or objects that may have contained a swarm, to be included with inert waste. However, it is the opinion of the authors that no additional management of inert waste beyond that which is proposed by Orange City Council is warranted.

The definition of 'used beekeeping equipment' has been made sufficiently broad so that any construction waste or other containers that may have housed bees (such as within a section of the wall of a house) would be treated in the same manner as other used beekeeping equipment as per section 2.

7. Leachate and Liquid Residue

7.1 Landfill

Leachate from the landfill operation will be collected within the landfill itself (see schedule 5, clause 6 of the Project Approval) and, as a result, honey bees will not be able to gain access to it.

The review of the risk assessment completed by Dr Mark Goodwin (Appendix 1) concluded that if the requirements of Schedule 5, clause 6 of the Project Approval are complied with, 'there should be no negative affect on beehives'. This applies to both pesticides and American foulbrood disease.

7.2 Green waste

Liquid residue collected from green waste may be accessible to bees. However; it is assumed that any insecticide which migrated into this liquid residue would be subjected to significant dilution, effectively removing any risk to apiculture.

As a result of this determination, it is the opinion of the authors that no additional management is necessary for liquid residue beyond that which is required by operational parameters and certified by the construction certificate for the final design.

8. Wrapping Baled Residual Waste

8.1 Background

Once any applicable pre-screening has been completed, all residual waste collected at the ORRRC will be processed, baled and wrapped in plastic for transfer to the ERRRC (See Schedule 4, Clause 2(b) of the Project Approval). This wrapping will ensure that any risk item that is not identified and removed from the waste stream will not be visited by honey bees.

8.2 Procedures

8.2.1 Ophir Road Resource Recovery Centre (or other council approved blending sites)

- All residual waste must be baled and wrapped prior to transfer to the ERRRC.
- Wrapped bales must be inspected prior to dispatch to ensure that honey bees are unable to access the waste material.
- Any bale not accepted at the ERRRC and returned to the ORRRC (or other council approved blending sites) due to wrapping failure, must be rewrapped and inspected as above.

8.2.2 Transport

- No additional procedures are required around transport.

8.2.3 Euchareena Road Resource Recovery Centre

- Baled and wrapped residual waste arriving at the ERRRC will be inspected by council staff to ensure there has been no wrapping integrity failure. Any unacceptable bale will not be accepted onto the site.
- Any wrapped bale which suffers a tear or wrapping integrity failure on site will be covered on the day they are recieved to prevent honey bee access to any exposed waste. Covering may include patching of the tear, placing any torn surface hard against other bales or covering with soil.

8.3 Records & Monitoring

No additional records are required beyond those specified in previous sections.

9. Education / Personnel Competency

9.1 Background

An education program is required to maximise the efficiency of the Apiculture Risk Management Program. The education strategy should encompass the general public, beekeepers and staff involved with the operation of both the ORRRC and ERRRC.

The "Community Education Program and Communications Strategy – February 2011" covers, in some detail, the public education that is taking place over the duration of this project. Within the document are a number of references to honey bee safety and the importance of separating used honey containers into the recycling waste stream.

Beekeeper education will also be required, particularly around the disposal of used beekeeping equipment, which is not catered for at the ORRRC or ERRRC. This education program will need to be conducted in consultation with the Department of Primary Industries (DPI) in order to maximise the effectiveness of this program.

Training of staff at both the ORRRC and ERRRC will need to be undertaken in order to ensure the requirements of the risk management program can be met.

9.2 Competencies

- The day-to-day manager/s, or the person responsible for this risk management program (RMP), must be familiar with the program and have the following competencies:
    - Have knowledge in honey bee safety in relation to the waste management industry
    - Be able to liaise and communicate effectively with workers and the review committee where necessary
- Workers performing key tasks relating to the RMP must have knowledge and skill in executing the particular task allocated to them.
- New workers must be informed of their job description and relevant procedures relating to this RMP before starting work.
- Ongoing supervision and/or training must be provided to ensure that workers are adequately trained on their specific tasks.

Note: It is expected that staff performing key tasks will attend the DPI Apiculture Pest and Diseases Course (or equivalent) as a component of their training.

9.3 Records & Monitoring

9.3.1 Records

- Induction and training records for all staff performing key tasks relating to the RMP must be kept on file. Staff must sign these records confirming that training has been received.

9.3.2 Monitoring

- Monitoring of staff performance must be carried out by the responsible person at regular intervals.

10. Planting of Trees

The review of the risk assessment completed by Dr Mark Goodwin (Appendix 1) concluded that 'It is unclear whether the planting of flowering trees in the vicinity of the ERRRC will have an impact on the attractiveness of any honey that was exposed at the site'.

As a result of this determination, it is the opinion of the authors that no requirement be placed on Orange City Council in relation to the planting of trees for the purposes of reducing risk to apiculture.

11. Appendices

11.1 Appendix 1

"Review of the Proponents Statement of Commitment and the Risk Assessment for the transmission of American Foulbrood Disease for the Euchareena Road Resource Recovery Centre" by Dr R M Goodwin (pdf copy of report to be supplied separately).

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Review of the Proponents Statement of Commitment and the Risk Assessment for the transmission of American Foulbrood Disease for the Euchareena Road Resource Recovery Centre

Dr RM Goodwin

August 2011

A report prepared for

AsureQuality

Dr RM Goodwin

Plant & Food Research, Ruakura

SPTS No. 5789

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This report has been approved by:

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Executive summary

Review of the Proponents Statement of Commitment and the Risk Assessment for the transmission of American Foulbrood Disease for the Euchareena Road Resource Recovery Centre

Dr RM Goodwin, August, SPTS No. 5789

The purpose of this study is to review both the risk assessment 'Implications for Risk of Transmission of American Foulbrood Disease and Propolis from the Proposed Resource Recover and Waste Project. Re-analysis for Baled Waste', produced by Emphron Informatics Pty Ltd, and the 'Proponents Statement of Commitments' that relate to risks to honey bees.

There are areas of the 'Risk Assessment' that use insufficient or incorrect information in assessing the risk of spreading American Foulbrood (AFB) disease. However, these problems do not significantly alter the conclusion that there is no 'meaningful risk of AFB contamination from retail honey residues'.

The Risk Assessment should have included chipped logs that may contain feral honey bee colonies. This risk could be best managed by not transporting chipped logs to Euchareena Rd.

The risk of the green waste poisoning bees because they have collected water from plants that were treated with insecticides before being harvested is minimal. Any risk can be further reduced by providing standing water close to any hives surrounding the site.

The leachate from the site is being handled in a manner that will prevent bees seeking water from feeding from it and therefore should provide no risk to bees. It is unclear whether the planting of flowering trees in the vicinity of Euchareena Rd will probably have an impact on the attractiveness of any honey that was exposed at the site.

Assuming that chipped logs are not transported to Euchareena Rd, with current information there should be very minimal risk of AFB being spread from the site or of bees visiting the site being poisoned.

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Introduction

The purpose of this study is to review both the risk assessment 'Implications for Risk of Transmission of American Foulbrood Disease and Propolis from the Proposed Resource Recover and Waste Project. Re-analysis for Baled Waste', produced by Emphron Informatics Pty Ltd, and the 'Proponents Statement of Commitments' as it relates to risks posed to honey bees.

The risks to beehives that need to be managed are the spread of American foulbrood disease and toxic substances.

American foulbrood disease (AFB) is caused by the spore-forming bacterium *Paenibacillus larvae* subsp. *larvae*. *P. larva attacks* the larvae of honey bee queens, workers and drones (Woodrow 1942; Bailey & Ball 1991). Larvae become infected by ingesting spores contaminating their food (Woodrow 1942). The number of spores required to infect a larva increases with larval age. As few as ten spores may infect 24-hour-old larvae, whereas larger numbers are needed to infect larvae over 2 days old (Woodrow 1942; Brodsgaard 1998). The spores germinate soon after they enter the larval gut and penetrate the body cavity through the gut wall (Bailey & Ball 1991). The infected larva then quickly dies and about 2500 million spores form (Sturtevant 1932). Additional larvae are infected by bees performing house-cleaning duties (Bailey & Ball 1991). *P. larvae* spores may remain viable for at least 35 years (Haseman 1961).

P. larvae spores are not particularly infective. The lowest concentration of spores that have been fed to colonies which were then reported to become infected is 50 million spores/L of syrup (Goodwin et al.1994a; Sturtevant 1932). The lowest number to create an infection is 5 million spores (fed in 100 ml of sugar solution) (Goodwin et al 1994a). The number of spores required to be on other commodities to create an infection is unknown. However, it has been assumed that equipment from colonies with AFB is capable of transmitting the disease.

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Implications for Risk of Transmission of American Foulbrood Disease and Propolis from the Proposed Resource Recover and Waste Project. Re-analysis for Baled Waste by Emphron Informatics Pty Ltd

The Risk Assessment assessed the risk of the following:

'It has been suggested that the proposed Euchareena Road landfill site would increase the risk of contamination of local (within 5 km of the development) commercial apiaries by American Foulbrood Disease (AFB). The purported incremental risk has been said to arise through foraging bees coming into contact with contaminated discarded honey containers or the Resource Recover and Waste Project.'

The title of this Risk Assessment includes the risk of the transmission of propolis. The assessment does not, however, discuss the risks associated with propolis. It is unclear why the transmission of propolis should be included in this risk assessment. Bees collect propolis from trees and use it as a building material. Honey bees use it to block up holes in hives that are too small for a bee to move through. Occasionally propolis may be collected from discarded beekeeping equipment. Propolis is not fed to larvae and therefore has little implication for the spread of AFB disease. There might be *P. larvae* spores on the surface of the propolis if it were collected from a beehive. It is, however, no more likely to be contaminated with *P. larvae* spores than the woodwork and wax inside the hive, which are not included in this risk assessment. Propolis therefore presents no additional risk to the spread of AFB outside the risk from used beekeeping equipment.

Used beekeeping equipment

The Risk Assessment assumes that all used hive equipment will be diverted from the waste stream before the waste is transported to the Euchareena Rd site. There is however, an unreported probability associated with hive equipment being missed, entering the waste stream and being transported to Euchareena Rd. If included in the analysis, this would have increased the likelihood of AFB being spread to managed colonies near the site. The size of any increase in risk depends on the likelihood of hive equipment being missed, and the likelihood of the equipment being infected with *P.* larvae a spore that is unreported. Considering the method of separating waste streams, i.e. conveyer belts, and the proposed education programme, it would appear very unlikely that hive parts would be missed at the Ophir Rd site and transferred to the Euchareena Rd site. This is supported by the observation that 32.7% of plastic honey containers are reclaimed. Most hive parts are considerably larger than honey containers and easily identified by trained staff.

Even if the hive parts were missed at Ophir Rd, they would be wrapped in plastic before being transported to Euchareena Rd, preventing honey bee access. The frequency of used hive parts arriving at Ophir Rd would be considerably lower than the frequency of used honey containers. The chance that they would be missed would also be significantly lower than for honey containers. The increase in the AFB risk associated with hives parts transported to Euchareena Rd should therefore be classed as very low.

Feral colonies

The Risk Assessment also does not deal with feral honey bees at Euchareena Rd site. The reason provided for not assessing any risk associated for feral colonies is because of a comment made by Mr Robert Guilliford that:

'I have not seen any substantive evidence that AFB is caught from feral colonies despite that claim often being made by beekeepers that have no other explanations for outbreaks of AFB in their apiaries'.

However, Mr Robert Guilliford's report provides no evidence to support the assumption that feral colonies cannot spread AFB to managed colonies. Feral colonies have been reported to have AFB in other countries (Goodwin et al. 1994b), so there is no reason to suspect that they might not also become infected in Australia. Once having AFB, a feral colony normally dies (Bailey & Ball 1991), leaving contaminated honey that will occasionally be robbed by managed hives, thus spreading the disease.

Although feral colonies can become infected with AFB and may spread the disease to managed colonies, there is no reason to think that feral colonies are more likely to be infected by rubbish at the site than managed colonies, and the reason for including them in this risk assessment is unclear.

It is, however, reported that trees that are delivered to the Ophir Rd site will be chipped and transported to the Euchareena Rd site with the green waste. Some of these trees may contain feral colonies and some may be infected with *P. larvae* spores.

Any known feral colonies should be killed (if alive) removed and disposed of at Ophir Rd. It is however unlikely that all feral colonies will be detected. Some colonies may be dead when they arrive at Ophir Rd which would make them difficult to find. The chipping process will destroy any comb and honey present mixing them with the woodchips. This may result in some honey being exposed to bees when it is transported to Euchareena Rd.

There is therefore a risk associated with chipped feral colonies. Without information on the numbers of feral colonies, the number that will not be detected, the number infected with *P. larvae* spores, the spore concentrations in honey, and the degree of chipping, it is not possible to assess the degree of any risk.

The risk associated with chipped feral colonies could be eliminated by disposing the chipped trees at a site other than Euchareena Rd.

Expected Number of Honey Containers Reaching the Landfill Site

The detailed assessment of the number of honey containers likely to be in the waste stream appears to be appropriate, as is the analysis of the proportion of these containers that still contain honey.

Accessibility of Discarded Containers for Forage

The assessment of the likelihood of the contents of a bale being exposed to bees appears to be reasonable.

Temperature Dependent Bee Activity

The discussion about the temperatures required for flight activity is problematic. As correctly pointed out by the court-appointed apiary inspector, radiant energy is an important factor, as well as air temperatures. Observational data on flight activity at the site would be needed to be confident on any assessment of the time available for flight.

P. larvae Spores in Retail Honey

Twenty-four out of 36 retail honey samples were reported in the Risk Assessment to contain *P. larvae* spores. The results are reported as colony forming units (CFUs) rather than the number of spores. The analysis of these data uses CFUs rather than actual bacterial concentrations. *P. larvae* does, however, have a very low germination rate on all media used. There is only a 1% germination rate on Brain heart Infusion Agar (Shimanuki & Knox 1988) and an estimated 2% germinate rate on MyPG agar (Hornitzky & Nicolls 1993). J agar is reported to have a lower germination rate (<2%) than MyPG agar (Dingman & Stahly 1983). Although not reported, the Sheep Blood Agar with added naladixic acid used in the survey is likely to have a similar germination rate. The steps used in the testing of the honey may have also reduced the sensitivity of the test, as only 20 µl of 3 g of supernatant from centrifuging 50 ml of honey was spread onto plates. There are therefore likely to be more positive samples than those indicated in Table 7. The concentrations of *P. larvae* spores will also probably be significantly higher than the reported CFUs.

The numbers of positive samples in the survey were very high. This suggests that there are significant AFB issues with the apiaries from which the honey was sourced from. A similar survey of retail honey in New Zealand found no positive samples (Goodwin et al. 2007). This suggests that there is a risk of managed colonies in the vicinity of Euchareena Rd contracting AFB from other managed hives in the area, not just from activities on the site.

Will Honey Bees Forage Over the Landfill Area

The analysis of the distances from hives that bees will forage appears to be appropriate, as is the comment that bees will forage relatively close to their hives if a plentiful food supply is nearby. However, the analysis should have addressed the issue of stocking rates and flowering rates. The number of flowers produced varies from year to year; as does the amount of nectar the flowers produce. The amount of available nectar is also affected by the density of foraging colonies. If there are large numbers of colonies, they may deplete the available nectar close by and have to fly longer distances than if there were few colonies present.

Planting more nectar-producing plants will increase the probability that foraging bees will fly to the site. It may not, however, reduce the probability that bees will forage from the site, as discarded honey may be more attractive than flowering plants.

There is also the issue of what happens when there is a break in flowering. The bees that were foraging on the flowers may search for other food close to where they were foraging, increasing the chance of them foraging from rubbish.

Probability of Detection of an Exposed Honey Container by a Scout Forager

This analysis is complicated by having to use the number of hives currently surrounding the site and their distances from the site. Both of these are likely to vary over the life of the site and may be altered if large plantings of flowering plants occur at the site, as this may attract other beekeepers.

The analysis is also complicated by having to use the data from Ridout et al and V Frisch. Their results were likely to be affected by both the number of bees in the area in which the trials were carried out, and the relative attractiveness of the food source and surface area of the food source to be discovered. As with flight activity and weather, actual data are probably required to answer this question.

Bee Memory

This assessment appears reasonable. The expected number of honey containers exposed at the site and the short exposure times suggest a very low likelihood that bees will become trained to visit the site by a continued supply of honey.

Recruitment of Foragers

This assessment appears reasonable. The number of foragers recruited by a bee feeding on honey is likely to be low because of the short time the infected material is exposed, but recruitment by a forager may increase the number of bees searching in the vicinity of the dump. This would slightly increase the probability of another container being found if exposed soon after the first one.

Probability of Brood Infection

The assessment assumes that cfu number = spore number. This is an incorrect assumption for *P. larvae,* as described above. The calculations are therefore a large under-representation of the actual number of spores that may be carried by a bee. However, the assumption of the number of spores required to create an infection is also an underestimate, because it uses the number of spores required to be fed to a larva. When spores were fed to a colony, the lowest of spores that needed to be fed to create an infection was 5 million spores fed in 100 ml of sugar syrup.

Using the 40 mg crop capacity suggested in the Risk Assessment, a crop would need to contain 2,000 *P. larvae* spores to create an infection (assuming 100 ml was fed), rather than the 10 spores suggested in the Risk Assessment.

The high number of spores required is partly because of the bees' hygienic behaviour. When the spores are fed to larvae, they produce vegetative rods in the gut. These migrate into the haemocoel and multiply, killing the larva and finally producing more spores. The spores are able to infect other larvae if they are fed to them but the vegetative rods are not. Worker honey bees are often able to detect the presence of infected larvae while they still only contain the non-infective vegetative rods, and remove them from their colony at that stage, preventing an infection developing (Woodrow 1942; Rotherbuhler 1958; Woodrow & Holst 1942).

The underestimate of the number of spores in honey (100x) is more than compensated by the large underestimate of the number of spores required to be fed to a colony to create an infection (200x).

The assessment of the likelihood of a honey pot infecting colonies is therefore probably an overestimate.

Proponents Statement of Commitments

Risk Associated with Green Waste

There has been a suggestion that green waste transported to Euchareena Rd may pose a hazard to bees because of chemicals that have been applied to the plant material before it was taken to Ophir Rd. The only chemicals that are likely to be significant are insecticides. It is difficult, however, to suggest why an insecticide might be applied to plant material close to the time when the material was to be harvested and taken to Ophir Rd. Even should this occur, the green waste will generally not be attractive to bees, as there will not be any nectar present. Bees might be attracted if there was water associated with the green waste. However, there are likely to be other water sources more prominent and more available for the bees. Therefore the risk associated with insecticide-treated green waste would appear to be insignificant. The minimal risk can be further decreased by ensuring there is sufficient permanent water at the site close to any nearby hives.

Planting Trees

It is unclear whether the planting of flowering trees at the Euchareena Rd site will have any impact on the attractiveness on any honey exposed at the site. When flowering and producing nectar, the trees will reduce the number of bees available to search for honey. However, whether this would be a significant effect on the chance of a bee finding a honey pot will depend on the numbers of trees and bees. Planting trees could possibly attract bees to the site from hives that are more distant, and which would not normally visit the site.

Leachate

The description of the leachate management from the site indicates that bees will not have access to any leachate. If this is the case, there should be no negative effect on beehives

.

Conclusions

There are areas of the 'Risk Assessment' that use insufficient or incorrect information in assessing the risk of spreading American Foulbrood disease. However, these problems do not significantly alter the conclusion that there is no 'meaningful risk of AFB contamination from retail honey residues'.

The Risk Assessment should have included chipped logs that may contain feral honey bee colonies. This risk could be best managed by not transporting chipped logs to Euchareena Rd.

The risk of the green waste poisoning bees because they have collected water from plants that were treated with insecticides before being harvested is minimal. Any risk can be further reduced by providing standing water close to any hives surrounding the site.

The leachate from the site is being handled in a manner that will prevent bees seeking water from feeding from it and therefore should provide no risk to bees. It is unclear whether the planting of flowering trees in the vicinity of Euchareena Rd will have an impact on the attractiveness of any honey that was exposed at the site.

Assuming that chipped logs are not transported to Euchareena Rd, with current information there should very minimal risk of AFB being spread from the site, or of bees visiting the site being poisoned.

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11.2 Appendix 2

Case study in American foulbrood (AFB) infection rates in managed colonies within 5km of the Horotiu landfill near Hamilton, New Zealand.

Introduction & Background

This case study was undertaken to evaluate the conclusions drawn from the risk assessment for the transmission of American foulbrood disease for the ERRRC.

American foulbrood disease (AFB) is managed in New Zealand by way of a pest management strategy, which is owned by the New Zealand beekeeping industry. The strategy requires that all colonies are inspected for AFB at least once per year by someone competent in the diagnosis of the disease. Furthermore, the strategy requires that any incidence of AFB is reported within 7 days of discovery and is destroyed within the same timeframe.

A key tool used in the management of AFB is an apiary register. All New Zealand beekeepers are required to be registered and the location of every apiary operated must also be registered on the apiary database. The information relating to each apiary on the database contains both textual data (such as disease reports) as well as geospatial information. This allows apiaries to be plotted on a map and allows more complex analysis of disease incidence by area and by beekeeping operation.

European foulbrood (EFB) disease has not been detected in New Zealand and it is currently illegal to feed antibiotics for the control of AFB. Both of these facts increase the sensitivity of our surveillance resulting in a high percentage of AFB cases being identified and reported.

Ultimately this gives us the ability to be able to assess the reported AFB disease incidence in any part of New Zealand at a level that is not possible in New South Wales.

Findings

An area assessment was undertaken in order to substantiate the claims that a landfill presents a very low risk of contaminating surrounding hives with AFB.

The assessment looked at all registered apiaries within 5km of the landfill located at Horotiu, just north of Hamilton. 19 apiaries were located in the area containing 377 hives. No AFB has been reported in hives on any of these sites in recent history (since 1 July 2009). This is obviously below the national average which is currently 0.3% of hives

Discussion & Conclusion

This data relates to just one case study and therefore care must be taken when extrapolating any findings. Having said that, it would appear that the presence of this landfill is not linked with an elevated incidence of AFB in the surrounding area suggesting that the Horotiu landfill is not a risk factor with respect to incidence reporting of AFB.

As mentioned previously, the prevalence of *Paenibacillus larvae larvae* spores (the causative agent of AFB) in New Zealand retail honey packs is much lower than New South Wales as confirmed by retail honey analysis comparisons. One could argue that in an area with higher prevalence of *P. larvae* spores in honey, there is more

chance of infected material being dumped (illegally or otherwise) and therefore more opportunity for a landfill to consolidate and spread AFB disease.

It should also be pointed out that the volume and quality of apiculture risk mitigation measures proposed for the ERRRC far surpass those of the Horotiu landfill, which was the subject of this case study. The authors would suggest that, while this case study cannot be used as a direct comparison with the ERRRC, the findings for Horotiu are still encouraging.

11.3 Appendix 3

Complaints Register

Date	Time	Person	Contact Details	Incident Description	Incident Location	Action Taken	Follow up Action Required

Section 9.2

SOIL AND WATER MANAGEMENT PLAN

EUCHAREENA ROAD RESOURCE RECOVERY CENTRE
SOIL AND WATER MANAGEMENT PLAN

PREPARED FOR
ORANGE CITY COUNCIL

APRIL 2015

• Civil, Environmental & Structural Engineering • Surveying • Environmental • Planning • Architecture

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ORANGE CITY COUNCIL

OCTOBER 2014

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Introduction

1.1 BACKGROUND

Orange City Council is developing the Euchareena Road Resource Recovery Centre (ERRRC) located off Euchareena Road, Molong approximately 5 km northeast of the township of Molong. The site is bounded by Shades Creek Road to the north and to the east by Euchareena Road. The surrounding land is used for agricultural purposes.

An Environmental Assessment (EA) was prepared in 2009 (GHD, 2009) to support an application to the NSW Minister for Planning for approval of the Project and to address the requirements of the Director-General of the NSW Department of Planning (the Director-General's requirements) dated 14 April 2009. Council received Project Approval (PA) for the project on 28 April 2010.

Condition 22 Schedule 5 of the Minister's Project Approval requires preparation of a Soil and Water Management Plan (SWMP) for the project at the Euchareena Road site. The PA stipulates that the SWMP shall:

- include a water balance for the project; and
- ensure that suitable measures are implemented to minimise water use, control soil erosion, prevent groundwater contamination, and comply with any surface water discharge limits.

The SWMP must be prepared in consultation with DECCW (NSW Environment Protection Authority) and NSW Office of Water (NOW) and be approved by the Director-General prior to the commencement of operations on the site.

1.2 SCOPE

This SWMP applies to the operation of the project on the ERRRC site. These operations include the composting facility (operated by JR & EG Richards Pty Ltd) and the bale fill landfill (operated by Orange City Council).

The SWMP contains the following information:

- A description of the site and baseline data;
- An overview of the project operations and relevant statutory requirements;
- A discussion of the potential issues relating to soil and water management;
- An outline of the proposed soil and water management measures and a description of the measures to be implemented to comply with the relevant statutory requirements;
- A program to monitor and report on the:
  - impacts and environmental performance of the project as it relates to soil and water management
  - effectiveness of management measures
- A contingency plan to manage any unpredicted impacts and their consequences;
- A program to investigate and implement ways to improve the environmental performance of the project over time;
- A protocol for managing and reporting any:
  - incidents
  - complaints

  - non-compliances with statutory requirements
  - exceedances of the relevant limits and/or performance measures/criteria; and
- A protocol for periodic review.

This SWMP forms part of the ERRRC Landfill Environmental Management Plan (LEMP).

1.3 STRUCTURE

This SWMP is presented in three sections:

- **Section 1** provides the background and scope;
- **Section 2** presents an overview of the site, the operations, relevant statutory requirements and a discussion of the potential issues relating to soil and water management; and
- **Section 3** outlines the soil and water management plan including its objectives, implementation, monitoring, reporting and review.

Site Operations

2.1 SITE DESCRIPTION

2.1.1 LOCATION AND SITE ACCESS

The ERRRC site is located approximately 5 km northeast of the township of Molong on the western side of Euchareena Road, as shown in **Drawing 54B_EV01**. It comprises Lots 1 and 2 in DP 1183238 and occupies a total area of approximately 192.6 hectares.

The site is bounded by Shades Creek Road to the north and to the east by Euchareena Road. Access to the site is from Euchareena Road.

2.1.2 SITE CHARACTERISTICS

The ERRRC site covers an area of approximately 192.6 ha. The final landfill will cover an area of approximately 12 ha. **Drawing 54B_EV02** shows the layout of the existing site.

Landfilling is planned to be undertaken in 8 separate stages, with each stage occupying around 1.5 ha. Landfill staging is shown on **Drawing 54B_EV03**.

The landfill facility is owned and will be operated by Orange City Council and is being constructed to supplement the existing Ophir Road Landfill. The site will also accommodate a separate composting facility.

Visual screening bunds will be constructed to the north and to the east of the landfilling area to shield views of the site activities from Shades Creek Road and Euchareena Road.

A stock movement corridor will be provided on the eastern side of the site to allow north-south access across the Euchareena Road side of the site to enable local landholders to safely move stock and farm equipment outside the Euchareena Road reserve.

Two woodland areas on the western and north-eastern portions of the site will be retained and connected via a rehabilitation corridor in the north-west.

2.1.3 TOPOGRPAHY AND HYDROLOGY

The site is located on a low flat central ridge surrounded to the east and west by gently undulating topography. Elevations across the site range from approximately 564 m AHD in the northeast, to 610 m AHD near the crest of a small prominent basalt capped hill along the western edge. Drainage lines are generally not incised below the natural surface.

Slopes typically range from approximately 1:4 to 1:50 (V:H) across the site. Slopes in the north western corner have a typical gradient of 1:30 (V:H) while the prominent basalt capped hill has slopes up to 1:4 (V:H) leading up to the crest of the small hill. The central and southern parts of the site, where the landfilling area is located, are characterised by undulating slopes ranging from 1:30 to 1:50 (V:H).

2.1.4 SOILS, GEOLOGY AND HYDROGEOLOGY

2.1.4.1 Soils

The land within the landfill footprint is underlain by a considerable thickness (up to 20 m) of saprolitic clay which provides for good soil development. The topsoil and subsoil within in the proposed areas of disturbance have moderate erodibility.

2.1.4.2 Geology

The geology of the site is characterised by intermediate-mafic volcaniclastic and volcanic rocks of the Middle Ordovician Fairbridge Volcanics (Kenilworth Group) and younger overlying basaltic volcanic rocks of Tertiary age. The Fairbridge Volcanics are exposed along the western side of the site and are interpreted to be in faulted contact (Nurea Fault) with younger rocks of the Late Ordovician Oakdale Formation.

The faulted contact is not evident on the surface and is interpreted to underlie the eastern half of the site. Rocks of the Oakdale Formation are interpreted to be entirely overlain by younger Tertiary basalt and consequently are not exposed at surface within the site.

2.1.4.3 Hydrogeology

Measured groundwater levels in bores on and around the site indicate the piezometric surface lies between approximately RL576 and RL565. Groundwater flows are to the west and north east from recharge areas southeast of the site.

The groundwater occurs in a fractured rock aquifer with preferential flow through zones of fracturing and appears to be hydraulically connected with alluvium associated with Shades Creek and other local drainage lines. Testing indicates permeability ranging from less than 1×10^{-8} to 1×10^{-5} m/s.

2.1.5 CLIMATE

Local climate data was retrieved from SILO for the period 1 January 1889 to 31 December 2012 and is summarised in the following sections.

2.1.5.1 Rainfall and Evaporation

The monthly rainfall and evaporation distribution is shown in **Figure 1**. Rainfall at the site is reasonably consistent throughout the year ranging from 48 mm to 64 mm. January has recorded the highest average rainfall and April the lowest. The mean annual rainfall for the site is 664 mm.

Monthly evaporation ranges from 41 mm in June to 242 mm in January. The mean annual evaporation for the site is 1,571 mm. Monthly evaporation exceeds rainfall from August through to May with average annual evaporation exceeding the mean annual rainfall by a factor of approximately 2.4. Overall, there is an annual rainfall deficit of approximately 907 mm.

2.1.5.2 Temperature

Average monthly maximum and minimum temperatures for the site are presented in **Figure 2**. January and February are the hottest months with mean monthly maximum temperatures on 31.0°C and 30.1°C and mean monthly minimum temperatures of 15.2°C and 14.9°C. June and July are the coldest months with mean monthly maximum temperatures of 14.1°C and 13.0°C and mean monthly minimum temperatures of 2.5°C and 1.4°C respectively.

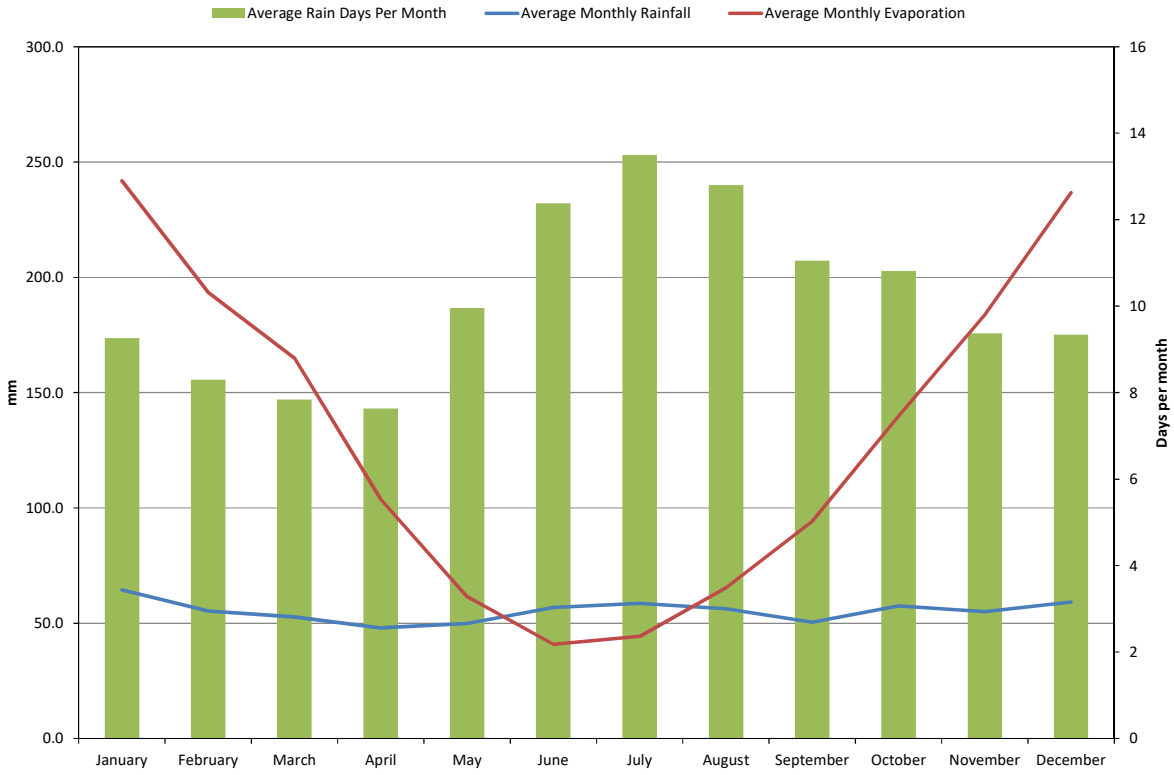


Figure 1: Average monthly rainfall, evaporation and rain days

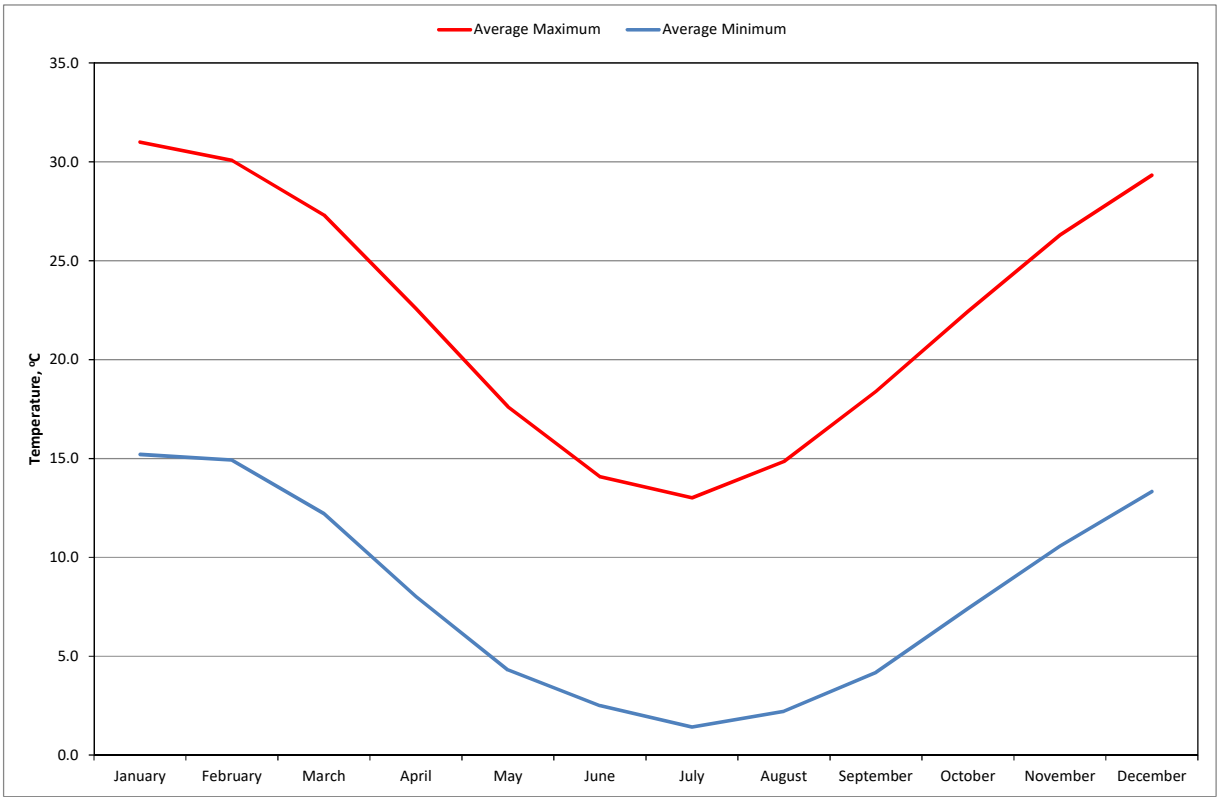


Figure 2: Maximum and minimum monthly temperature

2.1.5.3 Wind

Wind behaviour at the ERRRC site, based on data collected by the on-site weather station, indicates that:

- In autumn, the prevailing wind direction is from the southwest;
- In winter, the prevailing wind direction is predominantly from the south-southwest;
- In spring, the prevailing wind direction is from the north with an increasing south-westerly component; and
- In summer, the prevailing wind directions are from the north and northeast.

2.2 SITE OPERATIONS

2.2.1 SCOPE OF OVERALL PROJECT

The ERRRC site will support landfilling, composting, landscape rehabilitation and agronomic activities. Development will generally encompass the following:

- Development of a portion of the existing land for use as a landfill waste disposal site, including construction of a new site entrance and associated infrastructure, internal site access roads, the landfill waste disposal cells, and the leachate and stormwater management systems;
- Operation of the Euchareena Road Landfill for a period of approximately 36 years, including:
  - Progressive development and landfilling of the site (Cells 1 to 8) in accordance with conditions of an Environment Protection Licence (EPL) issued by the Environment Protection Authority (EPA);
  - Management, operation and monitoring of the leachate and stormwater management systems;
  - Progressive rehabilitation of the landfilled areas of the site, which includes construction of an engineered landfill capping and revegetation layer;
  - Monitoring of the site in accordance with conditions of an EPL issued by the EPA; and
  - Closure of the site (once landfilling has been completed) and ongoing management, monitoring, and maintenance of the site, including the leachate and stormwater management systems, until required by the EPA.
- Development of a compositing facility for the processing of organic wastes separated from the municipal waste stream. This facility will include enclosed composting tunnels and open maturation areas. The compost facility is located in a separate lot (Lot 2 DP 1183238) and will be operated in accordance with conditions of an EPL issued by the EPA. The final composted organic material will be transported off-site;
- Two woodland areas on the western and north-eastern portions of the site will be retained and actively managed under a Voluntary Conservation Agreement. These areas will be enhanced through rehabilitation of a corridor along the northern part of the site, which will connect the two woodland areas, and an area of rehabilitation to the south; and
- Areas of the site not used for landfilling, composting or conservation/rehabilitation activities will be managed as farming areas. This would typically involve grazing and maintenance of pasture.

The proposed layout of the ERRRC site is shown on the attached drawings.

The following sections describe the proposed site operations in more detail.

2.2.2 LANDFILL OPERATIONS

2.2.2.1 General

Operation of the ERRRC Landfill will be undertaken in accordance with all requirements of the PA and all conditions specified by the Environmental Protection Authority (EPA) in a site Environmental Protection Licence (EPL). The following sections provide a general description of various aspects of the landfilling operation.

2.2.2.2 Staging

Development and operation of the landfill will be undertaken in eight stages, as shown on **Drawing 54B_EV03**.

Stage 1 to 8 will be developed and landfilled progressively, with Stage 1 forming the north-western corner of the landfill. The landfill footprint and limits of Stage 1 to 8 are shown on the drawings. Generally, the process for each stage will encompass the following:

- Construction/extension of the stormwater drainage works for the planned landfill stages and associated stockpile areas;
- Clearing existing vegetation within the landfill footprint for the planned landfill stages;
- Excavation to form the planned waste disposal cell, with the excavated material being stockpiled onsite for use as daily, intermediate or final cover (as appropriate) during the landfilling operation; and
- Installation of the leachate barrier system and leachate collection and removal system (LCRS) for the waste disposal cell.

2.2.2.3 Surface Water Management

All areas outside of the landfill cells will be directed to stormwater management dams A and B (refer to **Drawing 54B_EV03**). The landfill ring road provides and collection drainage system that will keep all surface water within the landfill footprint area and direct surface flows to the stormwater management dams.

Internal drainage bunds within the cell will separate clean water from the active landfill cell. Water collected in the sump will be pumped to the surface water drainage system that discharges to the stormwater management dams.

Stormwater management infrastructure, including drains and dams, is required to provide protection for downstream receptors and to minimise the amount of water running onto the active construction and landfilling areas to reduce erosion and leachate generation.

Two stormwater management dams have been provided, as per the recommendations of the water and surface water assessment prepared by Evans & Peck for the project EA (August 2009). The report concluded that two dams would be required for water storage and sediment control for a 90th percentile 5 day rainfall event for Type D/F soils. The dams were sized based on a maximum storage depth of 2.5 m and internal slopes of 1(V):3(H) with 0.3 m deep spillways designed to cater for 50 yr ARI storm event.

The design criteria in **Table 2.1** have been adopted as the basis for determining the capacity of the dams. A water balance analysis (see **Section 2.4**) has been used to optimise the division between “water storage zone” and “sediment settlement zone” sections of the dams in order to maximise the available water for on-site use while achieving the performance goal of overflows occurring less than 2-4 days per year on average.

Two dual purpose dams (Dams A and B) are proposed to serve the needs of the site for sediment control and to provide a source of water for on-site purposes, principally dust suppression. Because of the dual purpose nature of the dams, two operational zones need to be distinguished:

- A lower "water storage zone" in which water can be retained for an extended period after a storm and used as necessary for on-site purposes; and
- An upper "sediment settlement zone" which will be operated in a manner similar to a "Type F" sediment retention basin. In order to maintain the capacity to retain runoff from the next significant storm, any water in this zone must be removed within a specified period after the end of significant rainfall. In this instance, it is proposed that this water would be first used to meet any on-site purposes and any excess irrigated onto adjacent landscape areas.

Table 2.1 – Stormwater management dam design criteria

Design parameter	Dam A	Dam B
Overall capacity (ML)	2	5
Configuration (L:W)	3:1	6:1
Sediment settlement zone (m^3)	1400	3200
Water storage zone (m^3)	600	1800
Overflow frequency (days/year)	2-4	2-4

Source: DECC, 2008

In accordance with the design principles for Type F and D soils, the water level would be drawn down to the bottom of the designated sediment settlement zone level within five (5) days of the end of the storm which gave rise to runoff. Any water that needs to be removed to achieve the necessary drawdown would be used for on-site purposes (dust suppression or supply to the composting facility) or irrigated onto adjacent landscape areas.

2.2.2.4 Cell Excavation

The landfill cells (Stage 1-8) will be constructed progressively, as required for the landfilling operations.

A landfill cell access road will be constructed during the construction of Stage 1 & 2, which shall be unsealed around and across the landfill footprint as landfilling progresses to allow access to the appropriate landfill cell. Portions of the access road will be removed (as necessary) as cell construction and landfilling operations progress.

2.2.2.5 Leachate Barrier System

To ensure that leachate from the landfill is contained, collected and does not contaminate local groundwater, each waste disposal cell will be constructed with a leachate containment barrier and a leachate collection and removal system.

The intent of the landfill design is to provide a level of protection for the environment that meet or exceeds the recommended leachate barrier system prescribed in *Environmental Guidelines: Solid Waste Landfill Guidelines* (NSW EPA 1996). The proposed landfill leachate barrier system will encompass the following (from top to bottom), or similar system:

- Soil protection layer (on sidewalls only);
- Sacrificial woven geotextile protection layer (on all sidewall and internal staging bunds on cells of the landfill not in current operation, to protect the critical protection layer and liner layers from potentially being degraded while exposed to the elements);
- Non-woven geotextile protection layer;
- 2 mm HDPE geomembrane liner (where required; smooth on base, single side textured on sidewalls) (Cells 1, 2, 5 and 6 only);
- 900 mm compacted clay; and
- Prepared subgrade.

The landfill leachate barrier system will be installed in the following areas:

- Base of the excavated landfill cells including over internal staging bunds; and
- Sidewalls of the excavated landfill cells.

All of the waste disposal cells will incorporate a 900mm thick layer of compacted clay in the leachate barrier system, which will be progressively constructed across the entire landfill footprint. Additionally, the western side of the landfill (Stage 1, 2, 5 and 6) will also incorporate a 2 mm thick HDPE geomembrane liner to provide an additional barrier to leachate escape, and allow storage of leachate generated during wet weather within the leachate drainage layer and the landfilled waste.

2.2.2.6 Leachate Collection and Removal System

The leachate collection and removal system (LCRS) drains by gravity and allows for leachate to be collected at a defined extraction point (refer to point L1 on **Drawing 54B_EV06**) from where the leachate is transferred, through a leachate riser and sump, to a leachate tanker for transfer to Orange Sewage Treatment Plant (STP).

The LCRS comprises a 300 mm thick gravel drainage layer encapsulated by two (2) geotextiles and will also serve as bedding material for the LCRS piping. The separation geotextile (above the gravel drainage layer) which is designed to minimise clogging (by fines from the overlying waste) consists of a non-woven geotextile. The aggregate is to be constructed from granular material meeting EPA guidelines and of sufficient permeability to convey leachate to the collection pipes and sump and is to be placed on the non-woven geotextile protection layer of the leachate barrier system.

Initially the leachate collection systems contained in Stage 1 will not be connected to the leachate collection system of Stage 2, and likewise for Stage 2 being connected to future Stage 3. Prior to commissioning of each stage, the leachate pipe for that stage will be connected, the temporary stormwater sump removed, any temporary stormwater pumping pipework removed and the bund infill removed.

A portable submersible pump will be used to extract leachate from the leachate sump (to allow easy removal and installation of additional sections of the riser) to a leachate storage tank contained within a bunded tanker loading area. This is located at the western boundary of the landfill area and allows leachate to be tankered to Orange STP for treatment.

2.2.2.7 Ongoing Management, Monitoring and Maintenance

Waste disposal cells would be progressively landfilled and capped with the final capping system.

Monitoring would occur in accordance with the site's EPL. It is expected that aftercare monitoring would be likely to include the following parameters until monitoring is no longer required by the EPA:

- Surface water;
- Leachate;
- Groundwater;
- Landfill gas;
- Landfill settlement;
- Vegetation; and
- Final capping layer integrity.

2.2.2.8 Site Closure

Site closure would be undertaken in accordance with EPA requirements, including preparation of a site closure plan consistent with Benchmark Technique 29, which requires EPA approval. The landfill would be progressively capped with a specifically designed capping layer to achieve long term stability and allow agricultural use.

At the conclusion of the operational life of the Euchareena Road RRC, Council would undertake site decommissioning involving:

- Removal of all buildings, services and structures not required for any ongoing purpose/activity; and
- Ripping and removing all sealed or hardstand areas not required for any ongoing purpose/activity with these materials either placed within the final cell of the landfill area or recycled.

All infrastructure areas and the site of the enclosed composting plant disturbed throughout the life of the facility would be rehabilitated with topsoil replaced and the subject areas re-seeded with pasture species and flowering native plants and shrubs as appropriate.

Council would continue to manage and monitor the site following the closure of the facility in accordance with the documented set of procedures compiled in conjunction with the site closure plan.

2.2.3 COMPOST FACILITY OPERATIONS

An organic waste composting facility will be operated on the ERRRC site. This facility is operated by JR & EG Richards Pty Ltd on Lot 2 DP 1183238. Operation of this facility is under a separate Environmental Protection Licence issued by the EPA (EPL 20140).

The compost facility includes:

- A receival hall where shredded organic material will be delivered;
- Enclosed composting tunnels;
- A compost maturation area;
- Process and surface water dams;
- A biofilter to treat air removed from the receival hall and compost tunnel area; and
- Office and control building and associated car parking.

The compost facility will receive shredded organic waste from the Ophir Road Resource Recovery Centre. This will include kerbside collected organic waste and self-hauled green waste. The shredded green waste will be delivered to the ERRRC site in enclosed trucks.

The water supply for the composting facility is largely supplied by on site harvesting and reuse. The facility includes:

- Two Water Supply Dams (C1 and C2) which receive building and general surface runoff from clean areas. These dams have a combined capacity of 4,098 m^3 and provide process water for the facility;
- Two Liquid Residue Dams (C3 and C4) which manage runoff from the compost maturation area. Dam C3 provides 5,632 m^3 of storage and overflows when full to Dam C4 which provides a further 2,756 m^3 of storage. Water is recycled from these ponds to provide process water with any excess reused across a 2.7 ha irrigation area; and
- Fire water tanks.

The surface water management system has been designed to have no uncontrolled discharge.

2.2.4 CONSERVATION AND REHABILITATION AREAS

Larges areas of the ERRRC site will be actively manage for conservation and rehabilitation. These areas are shown on **Drawing 54B_EV02**. These areas are fully fenced and will have limited site access. Activities undertaken in these areas will include revegetation, weed and pest control and limited grazing.

Intermittent site access will be required for environmental monitoring.

2.2.5 FARMING OPERATIONS

The balance of the site will be used for farming practices (refer to **Drawing 54B_EV02**). This area will be managed through controlled grazing activities consistent with current practice.

Intermittent site access will be required for environmental monitoring.

2.3 SITE WATER USES

Site water uses, their operational area and source are summarised in **Table 2.2**.

Table 2.2 – Site water uses

Operational Area	Water Demand	Source	End Use
Landfill	Potable demand	Office and shed roof and rainwater tank	On-site disposal
	Dust suppression	Stormwater Management Dams A and B	Dust control/evaporation
	Irrigation of landscape areas	Stormwater Management Dams A and B	Crop demand
	Leachate	Landfill cells	Disposal at STP
Compost Facility	Potable demand	Runoff Dam C1 and C2	On-site disposal
	Dust suppression	Runoff Dam C1 and C2	Dust control/evaporation
	Operational use	Runoff Dams C1 and C2 Liquid residue Dams C3 and C4 Stormwater Management Dam A	Product
	Irrigation	Liquid residue Dams C3 and C4	Crop demand
Conservation/rehabilitation	Irrigation	Stormwater Management Dams A and B	Crop demand
Farming	Stock	Dam 1	Stock

2.4 SITE WATER BALANCE

2.4.1 DESCRIPTION

A daily water balance model was used to assess the overall water cycle for the site. The model is used to:

- estimate the average annual demand for each water system at the facility;
- establish balances for the various storages;
- assess the ability of the proposed water supply sources to meet demand; and
- assess storage and irrigation area requirements for the reuse systems.

The model is based on SILO generated daily climate (rainfall and evaporation) data covering the period 1 January 1889 to 31 December 2010 (i.e. 122 years). The SILO data interpolates rainfall and evaporation values from surrounding climate stations to provide a long term data set for the specific location.

The water cycle is broken down into its various components and then the inflows and outflows are modelled for each section. Each storage in the system includes:

- Inflow from catchment runoff;
- Direct rainfall additions;

- Evaporation losses;
- Losses through extraction to meet demand; and
- Spill.

The water cycle model includes an irrigation reuse component that is based on a soil moisture balance. Daily evapotranspiration is determined using crop factors applied to the daily potential evaporation. Crop factors for grass were used for the modelling.

Irrigation reuse is based on a deficit irrigation approach using the following parameters:

- Landfill facility – applying 10 mm of irrigation across 1 ha of landscape area (100 kL) when the soil moisture is 15 mm below field capacity; and
- Compost facility – applying 5 mm across 1.5 ha (75 kL) when the soil moisture is 10 mm below field capacity.

Leaving a 5 mm soil moisture deficit provides a buffer to accommodate some rainfall if it was to occur immediately following irrigation.

2.4.2 COMPOST FACILITY WATER DEMAND

Water demands for the compost facility are summarised in **Table 2.3**.

Table 2.3 – Compost facility water demand

Component	Quantity	Sourced from
Operational	13.7 kL/day	Source 1: Liquid residue pond C3 Source 2: Water supply dams C1 and C2 Source 3: Stormwater Management Dam A*
Potable	0.3 kL/day	Water supply dams C1 and C2 Top-up tankered in if required
Dust suppression summer	20 kL/day On trafficked surfaces if temperature exceeds 25ºC	Water supply dams C1 and C2
Dust suppression winter	10 kL/day On trafficked surfaces if temperature exceeds 25ºC	Water supply dams C1 and C2
Irrigation	75 kL each irrigation event	Liquid residue pond C3

*** Water will be transferred opportunistically from Stormwater Management Dam A to top up supplies for the composting operations**

2.4.3 LANDFILL WATER DEMAND

Water demands for the landfill facility are summarised in **Table 2.4**.

Table 2.4 – Landfill facility water demand

Component	Quantity	Sourced from
Potable	0.2 kL/day	Roof water tank
Dust suppression	Application equal to the moisture deficit up to a maximum 6 mm per day over trafficked areas (~16,600 m^2)	Stormwater Management Dams A and B
Irrigation	100 kL each irrigation event	Stormwater Management Dams A and B

2.4.4 WATER BALANCE RESULTS

The site water balance results are shown on **Drawing 54B_EV04** and show:

- The compost facility is largely self-sufficient with regards to water supply. The water balance results indicate an average top-up of about 60,000 L/year is required; however this is dependent on the amount of compost product processed. If required, top-up water would be tankered to the site. Alternatively this water may be drawn from Stormwater Management Dam A;
- There is no discharge from the compost facility liquid residue ponds over the 122 years modelled;
- About 3.2 ML/year of the compost residue water is irrigated across the 1.5 ha irrigation area. This represents a low irrigation application of around 2.10 ML/ha/year;
- The roof water system provides adequate water for the landfill office demand;
- The landfill stormwater management dams provide the required control and a source of dust suppression water and irrigation for the landfill operations;
- The average annual spill from Stormwater Management Dam A is 23 kL/year (0.02 ML/year) and this dam spills on average 0.25 days per year over the 122 years modelled;
- The average annual spill from Stormwater Management Dam B is 180 kL/year (0.18 ML/year) and this dam spills on average 1.5 days per year over the 122 years modelled; and
- About 2.36 ML/year of the surface water collected in the landfill stormwater management dams is irrigated across the 1.0 ha irrigation area. This represents a low irrigation application of around 2.36 ML/ha/year.

The frequency of discharge form the two landfill stormwater management dams is less than the design criteria of 2 to 4 days per year on average (DECC, 2008).

2.4.5 FARM DAMS POLICY

Water management infrastructure that needs to be considered under the Maximum Harvestable Rights Dam Capacity (MHRDC) are:

- The permanent water holding capacity of stormwater management dams A and B;
- Water supply dams C1 and C2; and
- And the existing farm dams.

All other storages have a pollution control function. The permanent storage capacity of these storages is listed in **Table 2.5**. The total permanent storage capacity is 13.0 ML which is less than the MHRDC for the property (13.72 ML).

Table 2.5 – Permanent storage capacity of dams

Dam	Storage Capacity (ML)
Stormwater Management Dam A	0.6
Stormwater Management Dam B	1.8
Water supply Dams C1 and C2	4.1
Dam1	5.0
Dam 2	0.7
Dam 3	0.8
Total	**13.0**

Dams 1, 2 and 3 are located outside the operational area and will not be used to supply water for the development.

The water cycle does indicate a slight water deficit.

Any water shortfall would be tankered to the site.

2.4.6 WATER RECORDS

Records of water use across the site will be maintained in accordance with the OEMP.

2.4.7 IRRIGATION AREA LOADINGS

2.4.7.1 Landfill System

Excess water captured in the two stormwater management dams would be irrigated across the landscape bund area adjacent to the landfill (refer to **Drawing 54B_EV05**) and other areas to maintain ground cover. An area of greater than 1.3 ha (13,000 m^2) is available.

Irrigation would be undertaken using a deficit irrigation approach to avoid runoff and ensure there is adequate soil moisture deficit for the soil profile to accept irrigation application. The average annual irrigation application determined from the water balance model is a low 2.36 ML/ha/year.

The average annual crop water demand in the landscape areas is around 9 to 10 ML/ha/year.

2.4.7.2 Compost System

Excess residue water from the compost facility would be reused across a 2.7 ha irrigation area (refer to **Drawing 54B_EV05**).

Irrigation would be undertaken using a deficit irrigation approach to avoid runoff and ensure there is adequate soil moisture deficit for the soil profile to accept irrigation application. The average annual irrigation application determined from the water balance model is a low 2.10 ML/ha/year.

The average annual crop water demand in the irrigation area is around 8 to 9 ML/ha/year.

Expected nutrient loadings and the respective balances are summarised in **Table 2.6**. These show an approximate phosphorus balance and nitrogen deficit across the irrigation area.

Table 2.6 – Compost irrigation area nutrient loading

Parameter	Unit	Nitrogen	Phosphorus
Water nutrient content	mg/L	150	30
Nutrient load in water	kg/ha/year	315	63
Crop uptake	%	3	0.4
Crop yield	T (dm)/ha/year	15	15
Crop uptake	kg/ha/year	450	60
Nutrient balance	kg/ha/year	-135	3

2.5 RELEVANT STATUTORY REQUIREMENTS

Relevant statutory requirements are:

- The project received Project Approval under Section 75J of the *Environmental Planning and Assessment Act 1979* on 28 April 2010;
- The landfill activity is a licensed activity under Section 55 of the *Protection of the Environment Operations Act 1997* (Environment Protection Licence 20104); and

- The compost activity is a licensed activity under Section 55 of the *Protection of the Environment Operations Act 1997* (Environment Protection Licence 20140).

Condition 22 Schedule 5 of the Minister's Project Approval requires preparation of a Soil and Water Management Plan (SWMP) for the project at the Euchareena Road site.

2.6 POTENTIAL ISSUES

2.6.1 SOURCES OF POLLUTION

The activities and aspects that have potential to lead to erosion, sediment transport, siltation and contamination of natural waters include:

- Earthworks;
- Work areas that have not been stabilised (i.e. rehabilitated/vegetated);
- Works within drainage paths, including depressions and waterways;
- Stockpiling of excavated materials;
- Traffic areas;
- Discharge from liquid residue dams; and
- Inadequate maintenance of environmental control measures.

2.6.2 POTENTIAL IMPACTS

The potential impacts on the receiving environment relate to erosion of disturbed areas or stockpiles and sediment transportation offsite and the discharge of residue water from the compost facility. Potential adverse impacts can include:

- Loss of topsoil in flow paths of overland surface water;
- Increased water turbidity;
- Discharge of nutrient rich waters;
- Decreased levels of dissolved oxygen;
- Changed salinity levels;
- Changed pH levels;
- Smothering of stream beds and aquatic vegetation;
- Reduction in aquatic habitat diversity;
- Increased maintenance costs; and
- Decrease in waterway capacity leading to increased flood levels and durations.

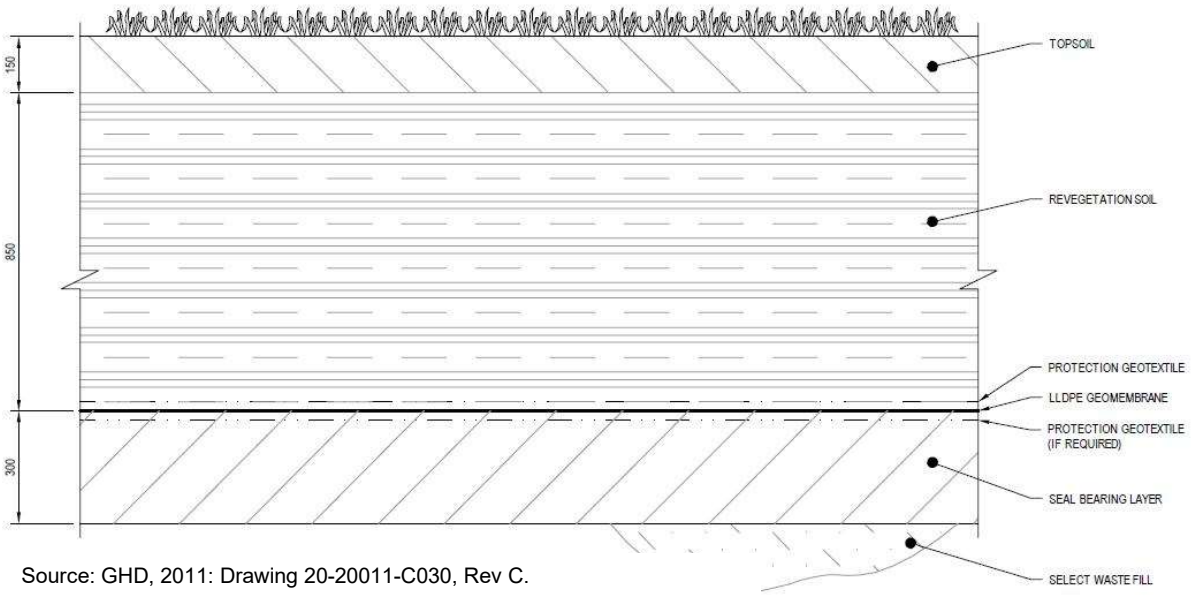
Soil and Water Management Plan

3.1 SOIL AND WATER MANAGEMENT STRATEGY

3.1.1 OBJECTIVES

The primary objective of this SWMP is to minimise the extent of erosion at the site, restrict movement of soil particles and other contaminants, and mitigate the impacts of the site operations on the receiving environment. To achieve this objective, the adopted stormwater management strategy for the works encompasses the following:

- Requiring the development and implementation of Erosion and Sediment Control Plans (ESCP) for all construction works at the site;
- Minimising stormwater from running onto disturbed areas of the site by staging the work and, where necessary, utilising stormwater diversion drains and bunds;
- Upon completion of each stage of landfilling, the cell is to be progressively rehabilitated as per the requirements of the LEMP, this includes capping the completed cell (refer to **Figure 3**), and revegetating with a pasture seed mix;
- Minimising erosion of disturbed areas by utilising erosion control measures;
- Ensuring all stormwater runoff from disturbed areas of the site is treated to an acceptable standard prior to reuse or discharge offsite, by utilising the indicated sediment control measures;
- Minimising the amount of stormwater runoff discharged from the site by maximising reuse on-site;
- Providing controlled reuse of excess water through irrigation of vegetated areas;
- Ensuring all surface water management measures are properly maintained by implementing an inspection and monitoring schedule;
- Separating ‘clean’ and ‘dirty’ water to minimise the storage demand for stormwater management dams; and
- Adequately maintaining all water management devices.



Source: GHD, 2011: Drawing 20-20011-C030, Rev C.

Figure 3: Typical capping profile

3.1.2 STORMWATER QUALITY OBJECTIVES

In accordance with *Managing Urban Stormwater: Soils and Construction – Volume 2B – Waste Landfills* (DECC, 2008) any surface water discharged from the site shall meet the limits defined in **Table 3.1**.

Table 3.1 – Discharge limits

Pollutant	Unit	Limit
pH	pH units	6.5 – 8.5
Total Suspended Solids	mg/L	50
Turbidity	NTU	100
Ammonia	mg/L	0.9
Oil and grease	mg/L	10

3.2 FUTURE SITE DEVELOPMENT WORKS

This SWMP applies to the operational activities undertaken at the site following the initial works to establish the landfill and composting facilities.

All future site development shall require the preparation of specific Erosion and Sediment Control Plans (ESCP) that are consistent with this SWMP. The SWMP shall be included with engineering plans and any other plans or written instructions which may be issued in relation to the subject works of the site. In general:

- All Contractors shall prepare erosion and sediment control plans for their specific works, and shall ensure the document is consistent with the requirements of this SWMP. All erosion and sediment control works are to be undertaken as documented and constructed following the guidelines stated in *Managing Urban Stormwater: Soils and Construction – Volume 2B – Waste Landfills* (DECC, 2008), and according to Council requirements;
- All subcontractors should be informed of their responsibilities in minimising the potential for soil erosion and pollution to down-gradient areas; and
- The ESCP should incorporate the following principles:
  - Staging the works;
  - Minimising construction/disturbed areas;
  - Controlling access into and within the construction area;
  - Management of earthworks;
  - Maintaining existing vegetation on-site, as much as practical;
  - Commencing works at the “upstream” end of the work area and progressing in the “downstream” direction;
  - Implementing appropriate soil erosion controls; and
  - Revegetating and rehabilitating areas as soon as practical after completion of required works.

3.3 LANDFILL OPERATION

3.3.1 CONSTRUCTION

Specific ESCPs shall be prepared for all future construction activities as detailed in **Section 3.2**.

3.3.2 MANAGEMENT OF EARTHWORKS

- Care shall be taken to minimise the extent of disturbance during clearing and bulk earthworks;
- Where practical, construction areas shall generally be minimised;
- All disturbed areas not required for stockpiling of material, access roads or other areas directly associated with the proposed works shall be revegetated and/or appropriately maintained as soon as practicable during the construction phase; and
- All disturbed areas shall be restored and revegetated as quickly as possible after completion of each stage of the works to protect against erosion, to minimise sediment transportation and to limit ongoing impacts on water quality.

3.3.3 SOIL MANAGEMENT

- Handling of topsoil would be minimised to reduce potential mechanical damage to soil structure.
- Care shall be taken to ensure that topsoils and subsoils are not stripped when they are too moist.
- Topsoil and subsoil stockpiles shall be managed in accordance with **Section 3.3.4**.
- Driving of machinery on topsoil and subsoil stockpiles, other than construction equipment during unloading, would be kept to a minimum to reduce compaction of soils.

3.3.4 STOCKPILE MANAGEMENT

- Stockpile areas will be located within the landfill ring road (controlled drainage area), refer to **Drawing 54B_EV02**.
- No stockpile may be located within 10 m of stormwater drains or conveyance systems;
- The maximum height of the stockpile is not to exceed 8 m, with side slopes flatter than 1:2 (V:H). Topsoil stockpiles shall not exceed 1 m high. The shoulders and base of batters shall be rounded to minimise wind and water erosion;
- A temporary stormwater diversion drain shall be installed on the uphill side of the stockpile to divert surface water from the stockpile area; and
- Erosion from the surface of stockpiles shall be minimised by:
  - Maintaining adequate dust control in a manner that will not produce blow-off from the stockpile;
  - Installation and maintenance of a stockpile cover; and/or
  - Allowing vegetative cover (or approved equal) to establish on the stockpile.

3.3.5 STORMWATER DRAINS, DIVERSION DRAINS AND BERMS

During the progressive development of the landfill, stormwater collection drains are proposed along the perimeter of the waste cells. In Stage 1 and 2, the drains will direct flow to the stormwater management dam located immediately to the northwest of Stage 1 (Stormwater Management Dam A).

In Stage 3 and all subsequent stages, perimeter drains will continue to direct surface water runoff to Stormwater Management Dam A. However water will also be diverted to Stormwater Management Dam B (located immediately east of the landfill area). As these stormwater drains are relatively flat, following existing site contours, the risk of erosion is low.

During the progressive development of the landfill, surface water diversion drains are proposed around the landfill area to direct flow from undisturbed areas up-gradient of disturbed areas. These diversion drains will direct water away from the cell to the surface water drainage system.

Stormwater drains are also proposed on the upstream side of any stockpiled excavated materials removed from the excavation, and on the upstream side of the stormwater management dams whilst under construction.

All permanent stormwater drains have been sized to convey runoff from the 20 year ARI rainfall event.

Generally, erosion protection shall be installed in all drains and channels and other areas expecting concentrated flows, to prevent erosion and scour.

Grass-lined diversion channels are susceptible to scour from high velocity flow. Although the design of the channels proposed for the site has been based on achieving a velocity that can be tolerated by grass, the grass cover could still be susceptible to localised scour around individual tussocks of grass or rocks. Accordingly, all drains should be inspected and repaired if necessary after any significant storms that have led to flow in the channels (refer to **Section 3.6**).

3.3.6 SILT FENCE

Temporary silt fences should be installed as required around the perimeter of all temporarily stockpiled materials, in surface water drains and on the downstream side of any construction areas.

Any silt fences will be inspected and, if necessary, repaired/reinstated after any significant rainfall (greater than 10 mm in a day).

3.3.7 LANDFILL STAGING

3.3.7.1 Stage 1 and 2

Development of the site and landfilling Stage 1 & 2 included:

- Construction of the site entrance and associated facilities including the tanker loading area;
- Construction of the internal access roads;
- Construction of stormwater drainage and diversion works including Stormwater Management Dams A and B and associated drainage measures;
- Progressive clearing of existing vegetation in the Stage 1 & 2 area, including the area designated for the Surface Water Management Dams and Screening Bunds;
- Earthworks to construct the Stage 1 and 2 waste disposal cells;
- Construction of Screening Bunds 1, 2 and 3;
- Stockpiling of excavated material in designated area; and
- Installation of leachate barrier system, LCRS and the associated section of the LCRS piping.

Excavated rock/soil was separated and used in the construction of the three screening bunds, or stockpiled on the area designated, for later use as landfill cover material or other beneficial use.

Stormwater collection drains were constructed along the south-western, southern and northern perimeters of the waste cell. Diversion drains extend along the top of the eastern perimeter of the waste cell.

Drainage infrastructure was constructed around the designated stockpile area.

Construction of the Stage 1 & 2 leachate barrier and LCRS occurred immediately after excavation of the waste cell.

3.3.7.2 Stage 3 and 4

The construction phase of Stage 3 & 4 of the ERRRC landfill will involve:

- Progressive clearing of existing vegetation in the Stage 3 & 4 area;

- Maintenance of existing (Stage 1 and 2) stormwater drainage and diversion works and extension of these works to accommodate Stage 3 & 4;
- Earthworks to construct the waste cell; and
- Installation of leachate barrier system, LCRS and the associated section of the LCRS conveyance piping.

Excavated rock/soil will be stockpiled on the area designated, for later use as landfill cover material or other beneficial use. If insufficient area is available for stockpiling, alternative areas will be utilised.

During the construction phase of the Stage 3 & 4 waste cell, the stormwater collection drains and access tracks previously constructed for Stage 1 and 2 will be extended as required.

Runoff intercepted by the internal staging bund between Stage 2 and 3 will be pumped out of the landfill from temporary stormwater sumps and directed to the stormwater management dams via the stormwater collection drains.

Drainage measures constructed during the works for Stage 1 and 2, such as the stormwater drains and diversion drains, shall be maintained during the construction and operational phases of Stage 3 & 4 in order to minimise the intrusion of stormwater into the partially filled Stage 2 waste cell and completed Stage 1 cell.

Silt fences shall be installed immediately down-gradient of all stormwater collection drains during their construction. The soil and erosion control measures installed around all temporary stockpiles will remain until such time as each stockpile has been exhausted.

Construction of the Stage 3 leachate barrier and LCRS shall occur immediately after excavation of the cell. Sediment and erosion control measures will be maintained during the construction and operational phases of Stage 3 & 4.

3.3.7.3 Stage 5 to 8

Similarly to Stage 1 to 4, the construction phases of Stage 5 to 8 of the ERRRC landfill will involve:

- Progressive clearing of existing vegetation in each area;
- Maintenance of existing stormwater drainage and diversion works implemented in previous stages and the progressive extension of these works to accommodate each of the four remaining stages;
- Earthworks to construct each of the waste cells; and
- Installation of leachate barrier system, LCRS and the associated section of the LCRS conveyance piping.

From Stage 5 to 8, excavated rock/soil will be stockpiled for later use as landfill cover material or other beneficial use.

During the construction phases of each of the waste cells for Stage 5 to 8, the stormwater collection drains previously constructed for Stage 1 to 4 will be progressively extended and new drains constructed as required at the perimeters of the waste cells. Similarly, the access road and diversion drains will be extended and constructed.

For all remaining stages, drainage measures constructed during the works for all previous stages, such as stormwater drains and diversion drains, shall be maintained during the construction and operational phases of each subsequent stage in order to minimise the intrusion of stormwater into previously partially filled or completed waste cells.

Silt fences are recommended immediately down-gradient of all stormwater collection drains during their construction. The soil and erosion control measures installed around all temporary stockpiles will remain until such time as each stockpile has been exhausted.

Construction of the leachate barrier and LCRS in Stage 5 to 8 shall occur immediately after excavation of each cell. Sediment and erosion control measures constructed during all previous stages will be maintained during the construction and operational phases of all subsequent stages.

3.3.8 PROGRESSIVE REHABILITATION

- Upon completion of each stage of landfilling, the cell is to be progressively rehabilitated as per the requirements of the LEMP, this includes capping the completed cell (refer to **Figure 3**), and revegetating with a pasture seed mix.

3.3.9 CELL WATER MANAGEMENT

- Prior to the commencement of landfilling in Stage 2, surface water falling within the Stage 2 cell will be prevented from entering the Stage 1 LCRS by the internal staging bund constructed between the areas. Water that has not been in contact with waste will be pumped from the temporary sump and directed to the stormwater management dams via the stormwater collection drains ;and
- Runoff intercepted by the internal staging bund between Stage 2 and 3 will be pumped out of the landfill from temporary stormwater sumps and directed to the stormwater management dams via the stormwater collection drains.

3.3.10 STORMWATER MANAGEMENT DAMS

- A marker peg will be installed in each stormwater management dam to indicate the top of the water storage zone;
- Any water that is retained in either stormwater management dam above the water storage zone is to be removed within five (5) days of the end of the storm which gave rise to runoff. Water will be used for dust suppression, supply to the composting facility or for the irrigation of landscape areas;
- Water below the water storage zone marker peg can be used as required for dust suppression, supply to the composting facility, irrigation or other on-site purposes;
- Dust suppression water will be applied at a rate that does not generate surface runoff;
- Irrigation water will be applied at a rate that does generate surface runoff or cause ponding of water;
- In order to maintain the effectiveness of Stormwater Management Dams A and B for sediment retention, each dam will be drained down and cleaned at least annually in the first instance. For operational purposes this could be achieved by transferring water into one of the dams while the other is cleaned-out or using the water from one dam for operational purposes or irrigation. The frequency of clean-out can be reviewed after the first cleanout; and
- Any uncontrolled discharge from the stormwater management dams shall be monitored in accordance with licence requirements (refer to **Section 3.7**).

3.3.11 LEACHATE MANAGEMENT

- The leachate collection and removal system has level control sensors that will operate pumps to remove leachate from the landfill cell to the leachate storage tank;
- The volume of stored leachate in the leachate storage tank will be monitored daily and removed as required by tanker to the Orange STP;
- All tanker loading will only take place in the bunded tanker loading area;
- The volume removed will be recorded each time leachate is removed. Records will be maintained in accordance with the ERRRC LEMP; and
- Leachate quality monitoring will be undertaken in accordance with licence requirements (refer to **Section 3.7**) and the ERRRC LEMP.

3.3.12 VEHICLE ACCESS

- Vehicles will only travel on designated access roads to prohibit unnecessary site disturbance;
- Additional site access roads to work areas shall be temporary and be laid out by Council or their Representative;
- Temporary barrier fencing will be installed at the discretion of Council or their Representative to ensure traffic control and prohibit unnecessary site disturbance;
- Temporary sediment control measures will be installed for any new access tracks; and
- Where practical, access shall be limited to a maximum width of 5 m.

3.3.13 FINAL LANDFORM

The stormwater controls associated with the final landform will be as follows:

- Initial phase: all permanent and temporary measures will remain in situ until all stages are revegetated and stabilised; and
- Post closure phase: the perimeter stormwater drains will be retained around the final landform, and other soil and erosion control measures implemented during the construction and operational phases of the landfill will be removed with the exception of the stormwater management dams which will be retained. Flow from the stormwater drains will be directed to natural drainage lines on the eastern and western sides of the site.

3.4 COMPOST OPERATION

3.4.1 CONSTRUCTION

Specific ESCPs shall be prepared for all future construction activities as detailed in **Section 3.2**.

3.4.2 MANAGEMENT OF EARTHWORKS

- Care shall be taken to minimise the extent of disturbance during clearing and bulk earthworks;
- Where practical, construction areas shall generally be minimised;
- All disturbed areas not required for stockpiling of material, access roads or other areas directly associated with the proposed works shall be revegetated and/or appropriately maintained as soon as practicable during the construction phase; and
- All disturbed areas shall be restored and revegetated as quickly as possible after completion of each stage of the works to protect against erosion, to minimise sediment transportation and to limit ongoing impacts on water quality.

3.4.3 SURFACE WATER MANAGEMENT

- All surface water drains and diversion mounds should be inspected and repaired if necessary after any significant storms that have led to flow in the channels (refer to **Section 3.6**);
- No compost material shall be stored outside of the compost maturation area. Runoff from the compost maturation area is directed to Liquid Residue Pond C3;
- Water shall be pumped from Liquid Residue Pond C4 to Liquid Residue Pond C3 to maintain a maximum of 10% full condition of Liquid Residue Pond C4 i.e. there is always a spare capacity of 2,480 m^3. The maximum allowable pumping rate from Liquid Residue Pond C4 is 400 kL/day; however this is only allowed to occur when Liquid Residue Pond C3 is less than 90% full;
- Pumping for irrigation will only occur from Liquid Residue Pond C3 whenever water is available in this pond;
- Irrigation shall only occur if soil moisture conditions allow an application of 5 mm and if rainfall has not occurred on that day;

- Irrigation water will be applied at a rate that does generate surface runoff or cause ponding of water; and
- Monitoring of discharge to water from the surface water system, the volume irrigated and the soil quality in the irrigation area shall be undertaken in accordance with EPL 20140.

3.5 MATERIALS HANDLING, TRANSFER AND STORAGE

3.5.1 GENERAL

- Materials storage areas shall not be located within 50 metres of any drainage path, waterway or flood-prone land;
- Materials storage procedures shall comply with any EPA and WorkCover requirements and relevant Australian Standards, including the current issues of:
  - AS1940 The Storage and Handling of Flammable and Combustible Liquids;
  - AS2430 Classification of Hazardous Areas;
  - AS3773 Bulk Solids Containers;
  - AS3780 The Storage and Handling of Corrosive Substances;
  - AS4084 Steel Storage Racking;
  - AS4332 The Storage and Handling of Gases In Cylinders; and
  - AS4452 The Storage and Handling of Toxic Substances;
- Materials Safety Data Sheets (MSDS) for all chemicals stored on-site shall be kept at the site office, made available to the staff who manage the storage of materials and be readily available to site personnel;
- Storage areas for fuels, oils and other liquid chemicals (if applicable) shall be surrounded by impervious bund walls. The retained volume shall conform to the requirements of the EPA Storing and Handling Liquids: Environmental Protection, Participants Manual. There shall be no pipes and valves in the bund. The storage area shall slope to one corner to allow for clean-up;
- Chemical drums shall not be left open either inside or outside of bunded areas; and
- Old drums used as temporary works markers shall not contain chemical or hydrocarbon residues.

3.5.2 BUNDING

All chemicals, fuels and oils used on site will be stored in appropriately bunded areas, with impervious flooring and sufficient capacity to contain 110% of the largest container stored within the bund, unless double-skinned tanks are used. Any bunds will be designed and installed in accordance with the requirements of all relevant Australian Standards, and/or DECCW's Environmental Protection Manual *Technical Bulletin Bunding and Spill Management*.

3.5.3 TRANSFER, REFUELLING AND MAINTENANCE

- The transfer, the refuelling/maintenance of equipment or any other activity that may result in a spillage of any fuel, oil or chemical shall not be permitted within 20 metres of any drainage path or waterway;
- A responsible person shall remain present to observe all transfer, refuelling and maintenance operations. In the event that equipment, plant or vehicles require refuelling or maintenance and cannot be moved away from a drainage path or waterway, a temporary bund or spillage trays shall be used to contain all potential contaminants; and
- All equipment, plant and vehicles shall be routinely maintained to prevent leakage from tanks, hoses and sumps.

3.6 INSPECTION AND MAINTENANCE

3.6.1 INSPECTION

An inspection program shall be implemented during operational activities based on a regular visual check of site conditions which shall occur:

- At least weekly; and
- Immediately following rainfall events in excess of 10 mm in any one 24-hour period.

The inspection shall:

- Record the condition of all soil and water management structures; and
- Record maintenance requirements (if any) for each soil and water management structures.

In the event that any inspection identifies significant erosion and/or sediment accumulation, appropriate measures should be taken to rectify the situation including providing additional, or undertaking maintenance of, erosion and sediment control.

3.6.2 MAINTENANCE

- All erosion and sediment control measures, including drainage control measures, must be maintained in proper working order at all times during their operational lives;
- All temporary erosion and sediment control measures, including drainage control measures, must be fully operational and maintained in proper working order at all times;
- Proper drainage of the site shall be maintained. To this end, drains shall be maintained to ensure that:
  - No low points exist which can be overtopped in a large storm event;
  - Areas of erosion are repaired (e.g. lined with suitable material), and/or velocity of flow is reduced by appropriate arrangements such as upstream energy dissipation structures, small check dams, or installation of additional diversions upslope; and
  - Blockages are cleared.
- All stormwater management dams must be maintained in proper working order at all times during their operational lives. To this end, dams shall be maintained to ensure that:
  - All sediment is removed once the sediment storage zone is full;
  - Inlet and outlet structures are maintained in a fully operational condition at all times;
  - No low points exist which can be overtopped in a large storm event; and
  - Areas of erosion are repaired (e.g. revegetated and/or lined with suitable material).
- Any sand/soil/spoil materials placed within two metres of areas with high velocity water flows shall be relocated;
- Recently stabilised lands shall be checked to ensure that any erosion hazard has been effectively reduced. Any repairs shall be initiated as appropriate;
- Additional erosion and/or sediment control works shall be constructed as necessary to ensure the desired protection is given to downslope lands and waterways; and
- Erosion and sediment control measures shall be maintained in a functioning condition, until all earthwork activities in the affected areas are completed and stabilised.

3.7 MONITORING

3.7.1 LANDFILL

3.7.1.1 Surface Water Monitoring

Monitoring Network

The landfill surface water monitoring network is shown on **Drawing 54B_EV06**. It includes[1]:

- SWA – Stormwater Management Dam A
- SWB – Stormwater Management Dam B
- SW1 – Dam 1
- SW2 – Dam 2
- SW3 – Dam 3

Monitoring Schedule

The surface water monitoring schedule is listed in **Table 3.2**.

Table 3.2 – Landfill surface water monitoring schedule

Point	Discharge Sampling	Routine Sampling
SWA	Quarterly during discharge	Stored water quarterly. One quarterly round to include routine plus additional annual analytes
SWB	Quarterly during discharge	Stored water quarterly. One quarterly round to include routine plus additional annual analytes
SW1	Quarterly during discharge	Nil
SW2	Quarterly during discharge	Nil
SW3	Quarterly during discharge	Nil

The need to continue the routine sampling will be reviewed after two years. This review will include an assessment of surface water quality and recommendations with regards to monitoring frequency and analyte list.

The review would be provided to the EPA for approval as required prior to modifying the monitoring regime.

[1] The EA identified additional surface water monitoring points in Bell River and Molong Creek. Through negotiation with the EPA (M Corradin pers com) it was agreed that these points are not suitable. The EPA is more concerned about the quality of surface water leaving the site; the points are too remote to provide definitive data with regards to the potential interaction of the site operations within the broader surface water catchments. That is, it would be difficult to link changes in water quality at these remote points to the site operations given the large catchment areas.

Monitoring Parameters

The surface water monitoring parameters are listed in **Table 3.3**.

Table 3.3 – Surface water monitoring parameters

Discharge Sampling (all sites)	Routine Sampling (all sites)	Routine Sampling – Annual (all sites)
Alkalinity (as calcium carbonate), mg/L Ammonia, mg/L Calcium, mg/L Chloride, mg/L Conductivity, µS/cm Flouride, mg/L Iron, mg/L Magnesium, mg/L Manganese, mg/L Nitrate, mg/L Oil and grease, mg/L pH Potassium, mg/L Sodium, mg/L Sulfate, mg/L Total Suspended Solids, mg/L Total Phenolics, mg/L Turbidity, NTU	Alkalinity (as calcium carbonate), mg/L Ammonia, mg/L Calcium, mg/L Chloride, mg/L Conductivity, µS/cm Flouride, mg/L Iron, mg/L Magnesium, mg/L Manganese, mg/L Nitrate, mg/L Oil and grease, mg/L pH Potassium, mg/L Sodium, mg/L Sulfate, mg/L Total Suspended Solids, mg/L Total Phenolics, mg/L Turbidity, NTU	Routine sampling suite plus, Total Petroleum Hydrocarbons, mg/L BTEX, mg/L PAH, mg/L OC/OP pesticides, mg/L Arsenic, mg/L Cadmium, mg/L Chromium, mg/L Copper, mg/L Nickel, mg/L Lead, mg/L Zinc, mg/L Mercury, mg/L

3.7.1.2 Leachate Monitoring

Monitoring Network

The leachate monitoring network is shown on **Drawing 54B_EV06**. It includes:

- L1 – the Leachate Storage Tank.

Monitoring Schedule

The Leachate Storage Tank will be inspected every three months and a sample collected for analysis when liquid is present. One quarterly round will include routine plus additional annual analytes.

Monitoring Parameters

The leachate monitoring parameters are listed in **Table 3.4**.

Table 3.4 – Leachate monitoring parameters

Routine Sampling	Routine Sampling – Annual
Alkalinity (as calcium carbonate), mg/L Ammonia, mg/L Calcium, mg/L Chemical Oxygen Demand, mg/L Chloride, mg/L Conductivity, µS/cm Flouride, mg/L Iron, mg/L Magnesium, mg/L Manganese, mg/L Nitrate, mg/L pH Potassium, mg/L Sodium, mg/L Sulfate, mg/L Total Suspended Solids, mg/L Total Phenolics, mg/L	Routine sampling suite plus, Total Petroleum Hydrocarbons, mg/L BTEX, mg/L PAH, mg/L OC/OP pesticides, mg/L Arsenic, mg/L Cadmium, mg/L Chromium, mg/L Copper, mg/L Nickel, mg/L Lead, mg/L Zinc, mg/L Mercury, mg/L

3.7.1.3 Groundwater Monitoring

Monitoring Network

The site includes six piezometer bores on the site, HP1 – HP6 (refer to **Drawing 54B_EV06**) that will be used for the groundwater monitoring program.

Monitoring Schedule

The groundwater monitoring piezometers will be inspected every six months and sampled if measurable groundwater is present.

This monitoring program would continue until the end of the project although the analytes and frequency of monitoring would be re-evaluated periodically to ensure only meaningful data is being collected.

Monitoring Parameters

The groundwater monitoring parameters are listed in **Table 3.5**.

Table 3.5 – Groundwater monitoring parameters

Analyte	Units
Alkalinity (as calcium carbonate)	mg/L
Ammonia	mg/L
Calcium	mg/L
Chloride	mg/L
Conductivity	µS/cm
Fluoride	mg/L
Iron	mg/L
Magnesium	mg/L
Manganese	mg/L
Nitrate	mg/L
pH	pH units
Potassium	mg/L
Sodium	mg/L
Standing Water Level	m (below ground level) and reduced
Sulfate	mg/L
Total Organic Carbon	mg/L
Total Phenolics	mg/L

Off-site Monitoring

The groundwater monitoring network is consistent with the Environment Protection Licence for the site (EPL 20104) and the Landfill Environmental Management Plan (LEMP) includes operational procedures for validation sampling and development of a groundwater assessment plan if contamination is identified.

It is considered that the on-site monitoring network is adequate for the development given the proximity of the monitoring points to the landfill cells, the groundwater depths and the engineered landfill liner system.

However, if the on-site monitoring network detected groundwater anomalies, off-site sampling would be incorporated into the groundwater assessment plan if deemed necessary. In this scenario, the five (5) off-site down gradient bores/wells identified in the EA Groundwater Assessment would be sampled.

It is considered that this approach provides suitable protection and negates the need for annual sampling of off-site bores.

Monitoring Post Closure

In accordance with EPA requirements, and as detailed in the LEMP, a site closure plan would be developed towards the end of the facility's operational life. This would include a suitable ongoing groundwater monitoring program.

3.7.2 COMPOST FACILITY

Monitoring of discharge to waters from the surface water system, the volume irrigated and the soil quality in the irrigation area shall be undertaken in accordance with EPL 20140.

This monitoring shall be the responsibility of JR & EG Richards Pty Ltd.

3.7.2.1 Surface Water Monitoring

Monitoring Network

The compost facility surface water monitoring network is shown on **Drawing 54B_EV06**. It includes:

- EPL Point 1 – Stormwater overflow/Discharge S1
- EPL Point 2 – Stormwater overflow/Discharge S2
- EPL Point 3 – Stormwater overflow/Discharge S3

Monitoring Schedule

Samples will be collected from the surface water monitoring points monthly during discharge.

Monitoring Parameters

Surface water samples will be analysed for:

- Oil and grease, mg/L
- pH
- Total Suspended Solids, mg/L

3.7.2.2 Irrigation Monitoring

Monitoring Network

The compost facility irrigation monitoring point is shown on **Drawing 54B_EV06**. It includes:

- EPL Point 4 – Liquid residue discharge to irrigation area.

Monitoring Schedule

The volume irrigated will be recorded each day during irrigation (L/day) using a flow meter and continuous logger.

Monitoring Parameter

- Volume applied in L/day.

3.7.3 SOIL MONITORING

Monitoring Network

The compost facility soil monitoring point is shown on **Drawing 54B_EV06**. It includes:

- EPL Point 5 – Liquid residue irrigation area.

Monitoring Schedule

Representative soil samples will be collected from the irrigation area once a year where the application of liquid residue has occurred within the reporting period.

Monitoring Parameters

Soil samples will be analysed for:

- Calcium, mg/kg
- Chloride, mg/kg
- Conductivity, µS/cm
- Magnesium, mg/kg
- Manganese, mg/kg
- Nitrate + nitrite, mg/kg
- Nitrogen (total), mg/kg
- pH
- Phosphorus (total), mg/kg
- Phosphorus sorption capacity, mg/kg
- Sodium, mg/kg
- Total organic carbon, mg/kg

3.8 PERFORMANCE REVIEW

The environmental monitoring data shall be reviewed annually to identify any adverse trends and issues which may be impacting on the ability of the control measures to meet design objectives. This review shall include:

- Compilation and review of the monitoring data;
- A summary of climate data;
- A summary of any incidents relating to soil and water management, the causes and rectification measures;
- A summary of any complaints received relating to soil and water management; and
- A review of system performance and recommendations for any augmentation works to ensure compliance with objectives.

3.9 INCIDENT REPORTING

Protocols for recording incidents that occur at the facilities on the site are documented in the LEMP and Compost Facility EMP.

3.10 COMPLAINTS HANDLING

Protocols for handling complaints arising from the operation of the facilities on the site are documented in the LEMP and Compost Facility EMP.

3.11 CONTINGENCY PLAN

Contingency planning relates to either too much or too little water on the site. Other unpredicted incidents will be managed through implementation of the Pollution Incident Response Management Plans (PIRMP) for each facility as required.

In the event that there is insufficient water on site to meet demand it will be tankered to the site.

Excess water will either be:

- Spread across additional irrigation areas; or
- Removed from the site by tanker and disposed of under Council direction.

3.12 SITE MANAGEMENT, RESPONSIBILITY AND RESOURCES

3.12.1 LINKAGE TO SITE ENVIRONMENTAL MANAGEMENT PLANS

This SWMP should be attached to the relevant Environmental Management Plans for each facility (i.e. the LEMP for the landfill and EMP for the compost operation).

The LEMP and compost facility EMP shall allocate responsibilities and the resources necessary to implement the environmental controls and procedures. It shall include a flow chart that clearly presents the chain of responsibility for implementing the erosion, sediment control and pollution controls. These plans shall include:

- Allocation of responsibilities;
- Allocation of resources;
- Induction and training procedures;
- Complaints handling protocols;
- Incident report protocols; and
- Reporting protocols.

3.13 REVIEW

This SWMP will be reviewed every five years and updated to take account of operational experience. This review will take into account:

- the annual performance reports;
- any incidents and complaint; and
- possible future site development.

Changes to the SWMP shall be made where the SWMP proves to be inadequate in practice or is subjected to changes in conditions at the work site or elsewhere in the catchment.

References

DECC (2008) *Managing Urban Stormwater: Soils and Construction – Volume 2B – Waste Landfills*

NSW EPA (1996) *Environmental Guidelines: Solid Waste Landfill Guidelines*

Drawings

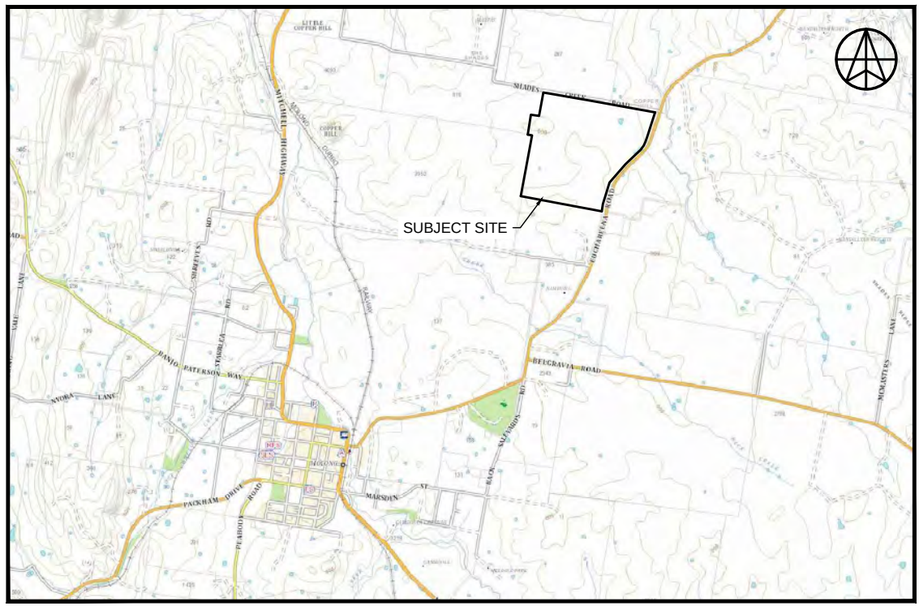
EUCHAREENA ROAD RESOURCE RECOVERY CENTRE

EUCHAREENA ROAD, MOLONG

ORANGE CITY COUNCIL

SOIL AND WATER MANAGEMENT PLAN

SCHEDULE OF DRAWINGS	
SHEET	TITLE
54B_EV01	TITLE SHEET, DRAWING LIST, AND SITE LOCALITY
54B_EV02	OVERALL SITE LAND USE
54B_EV03	LANDFILL AND COMPOSTING FACILITIES
54B_EV04	SITE WATER CYCLE
54B_EV05	SURFACE WATER CATCHMENTS
54B_EV06	MONITORING POINTS



SITE LOCALITY

NOT TO SCALE

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No	DATE	DRAFTING CHECK	APPROVED BY	DETAILS
A	08/03/13	LP	MH	ISSUED TO CLIENT
B	02/04/13	MH	MH	ISSUED TO CLIENT

PROJECT

EUCHAREENA ROAD RESOURCE RECOVERY CENTRE
SOIL AND WATER MANAGEMENT PLAN

FILE REFERENCE: 208212_54B_E01-E06.dwg

APPROVAL AUTHORITY

ORANGE
Australia's Colour City

CLIENT

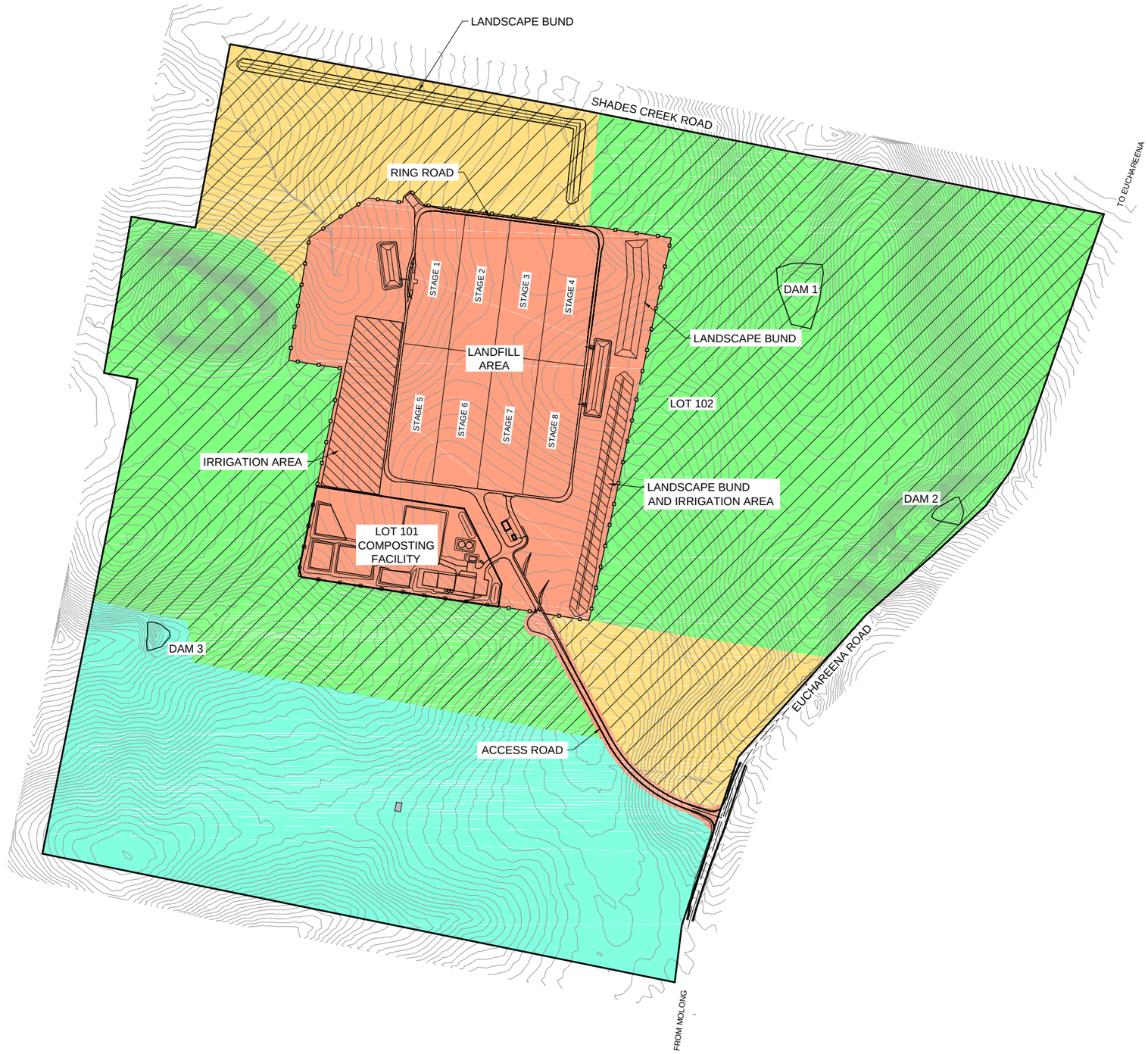
ORANGE
Australia's Colour City

DRAWING

TITLE SHEET, DRAWING LIST, AND SITE LOCALITY

PROJECT NUMBER: 208212 | DRAWING NUMBER: 54B_EV01 | REV. B

SOURCE: SIX MAPS



LEGEND:

- REHABILITATION AREA
- REMNANT WOODLAND
- FARMING AREA
- OPERATIONAL AREA
- IRRIGATION AREA
- CONSERVATION AREA

0 80 160 240 320

SCALE 1:8000 (A3)

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SOIL AND WATER MANAGEMENT PLAN

FILE REFERENCE: 208212_54B_E01-E06.dwg

APPROVAL AUTHORITY

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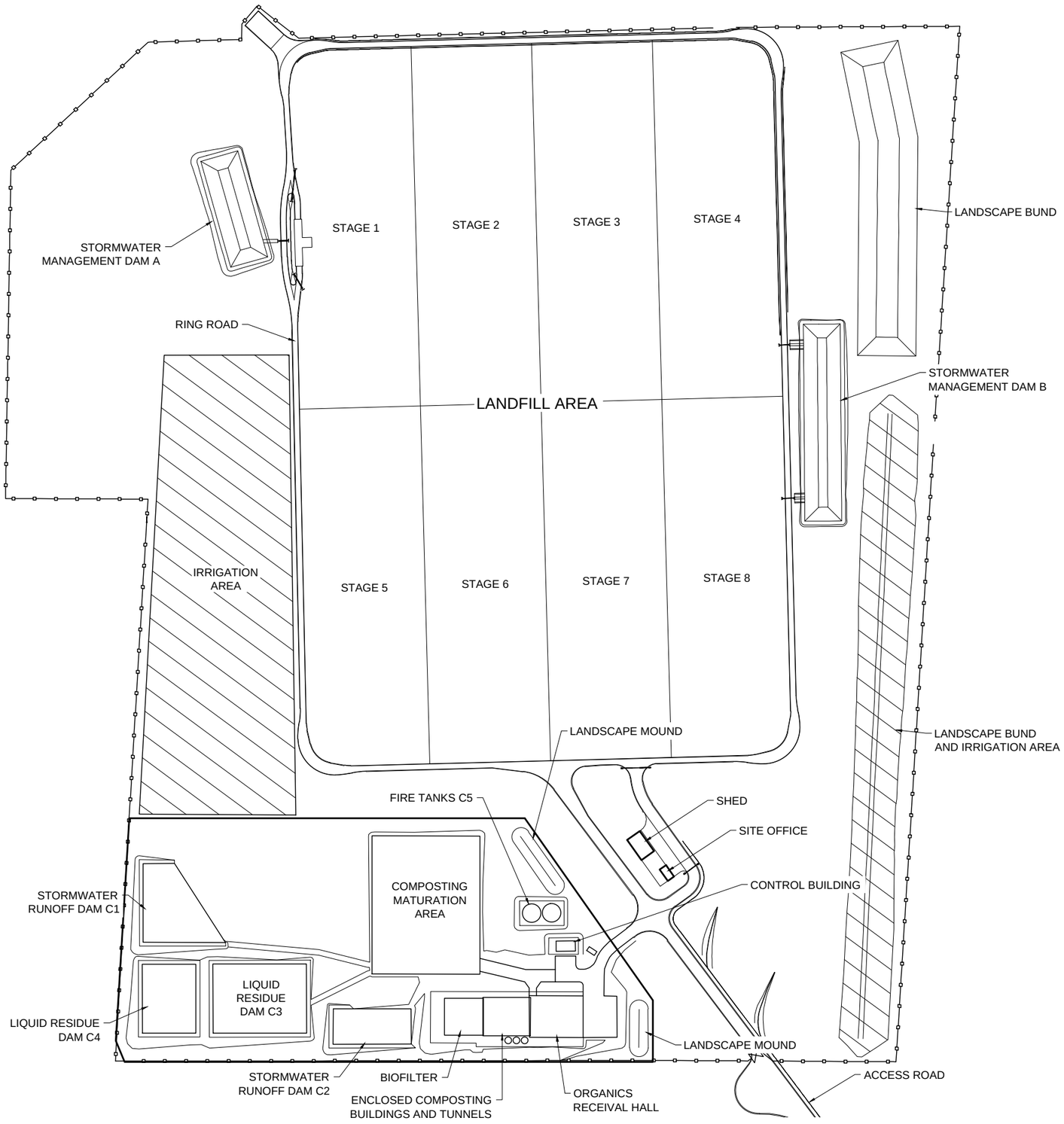
DRAWING

OVERALL SITE LAND USE

PROJECT NUMBER: 208212 | DRAWING NUMBER: 54B_EV02 | REV. B

SOURCE: INTERNAL



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0 10 20 40 60 80 100

SCALE 1:3000(A3)

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B	02/04/13	MH	MH	ISSUED TO CLIENT

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EUCHAREENA ROAD RESOURCE RECOVERY CENTRE
SOIL AND WATER MANAGEMENT PLAN

FILE REFERENCE: 208212_54B_E01-E06.dwg

APPROVAL AUTHORITY

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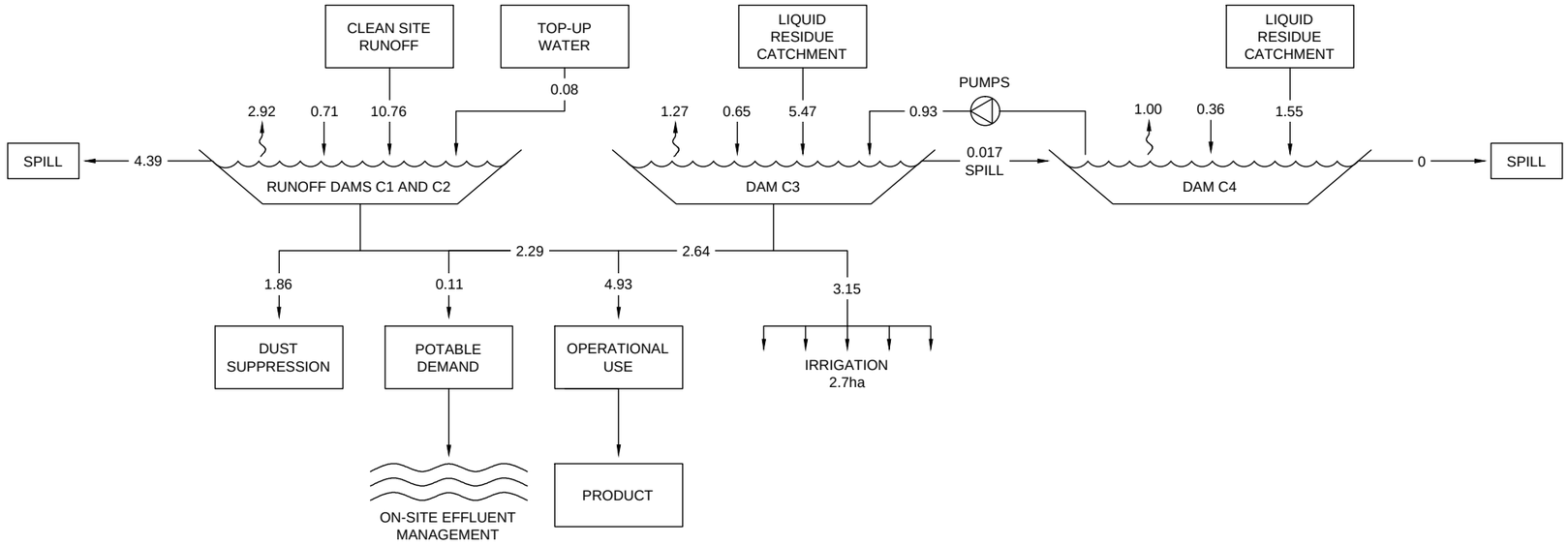
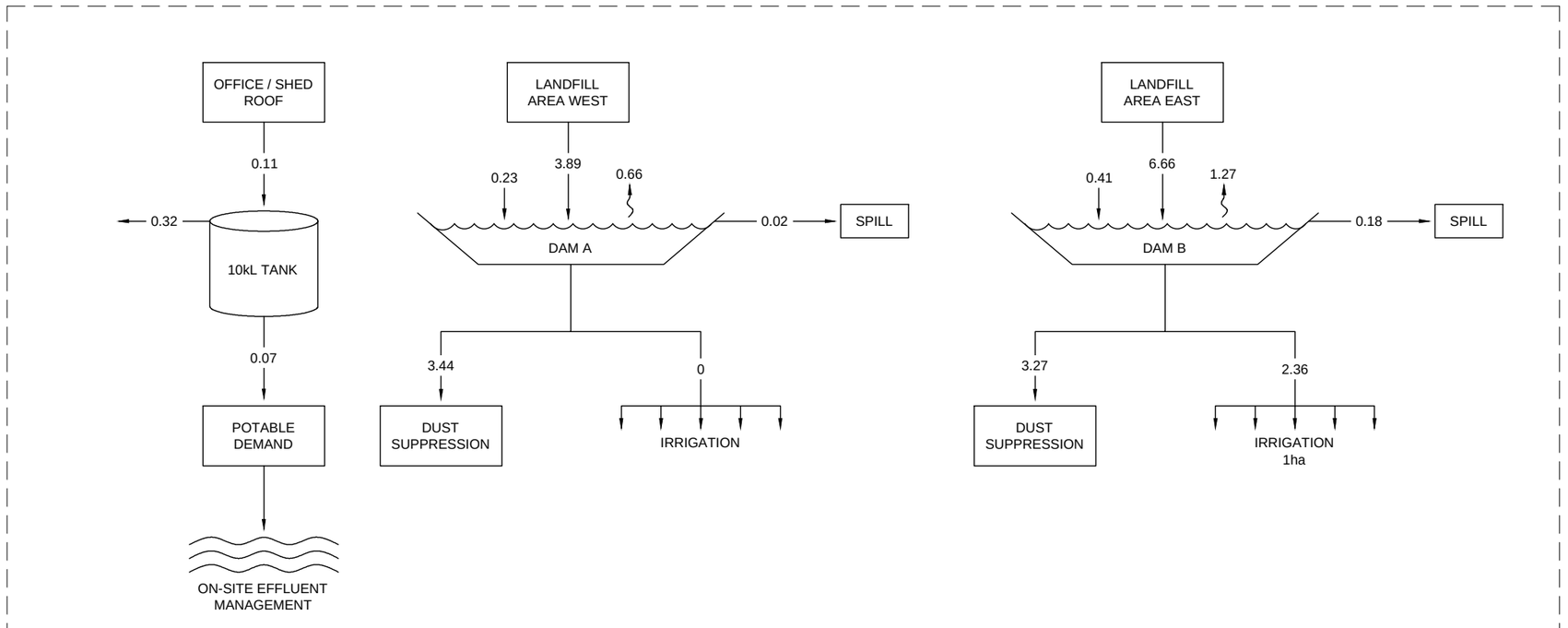
DRAWING

LANDFILL AND COMPOSTING FACILITIES

PROJECT NUMBER: 208212 | DRAWING NUMBER: 54B_EV03 | REV. B

SOURCE: INTERNAL





AVERAGE ANNUAL FLOW
IN ML/YEAR

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PROJECT
EUCHAREENA ROAD RESOURCE RECOVERY CENTRE
SOIL AND WATER MANAGEMENT PLAN
FILE REFERENCE: 208212_54B_E01-E06.dwg

APPROVAL AUTHORITY
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CLIENT
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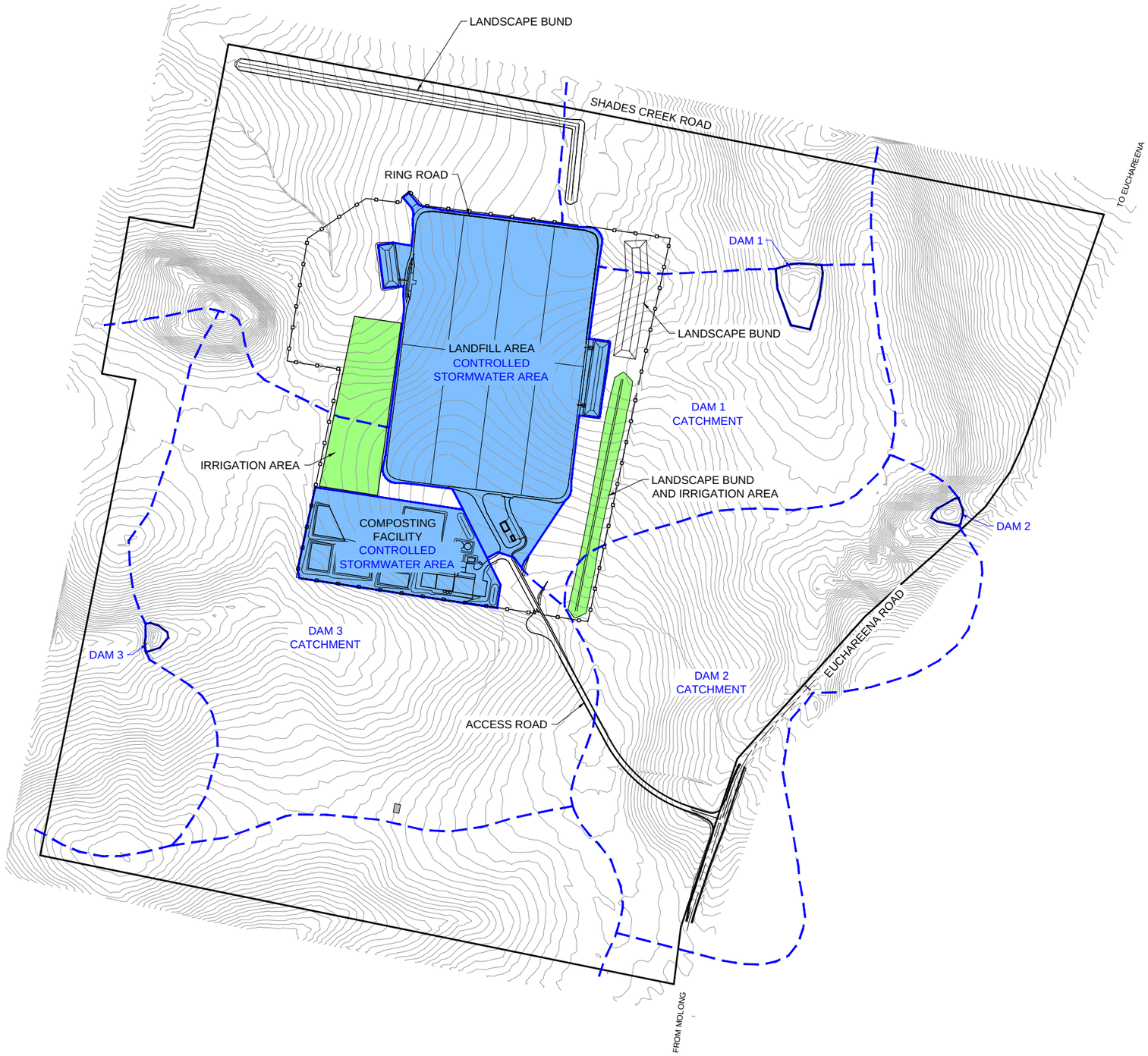
Australia's Colour City

DRAWING
SITE WATER CYCLE

PROJECT NUMBER: 208212
DRAWING NUMBER: 54B_EV04
REV. B

SOURCE: INTERNAL



LEGEND:

- CONTROLLED DRAINAGE
- IRRIGATION AREA
- CATCHMENT BOUNDARY

0 80 160 240 320

SCALE 1:8000 (A3)

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EUCHAREENA ROAD RESOURCE RECOVERY CENTRE
SOIL AND WATER MANAGEMENT PLAN

FILE REFERENCE: 208212_54B_E01-E06.dwg

APPROVAL AUTHORITY: ORANGE Australia's Colour City

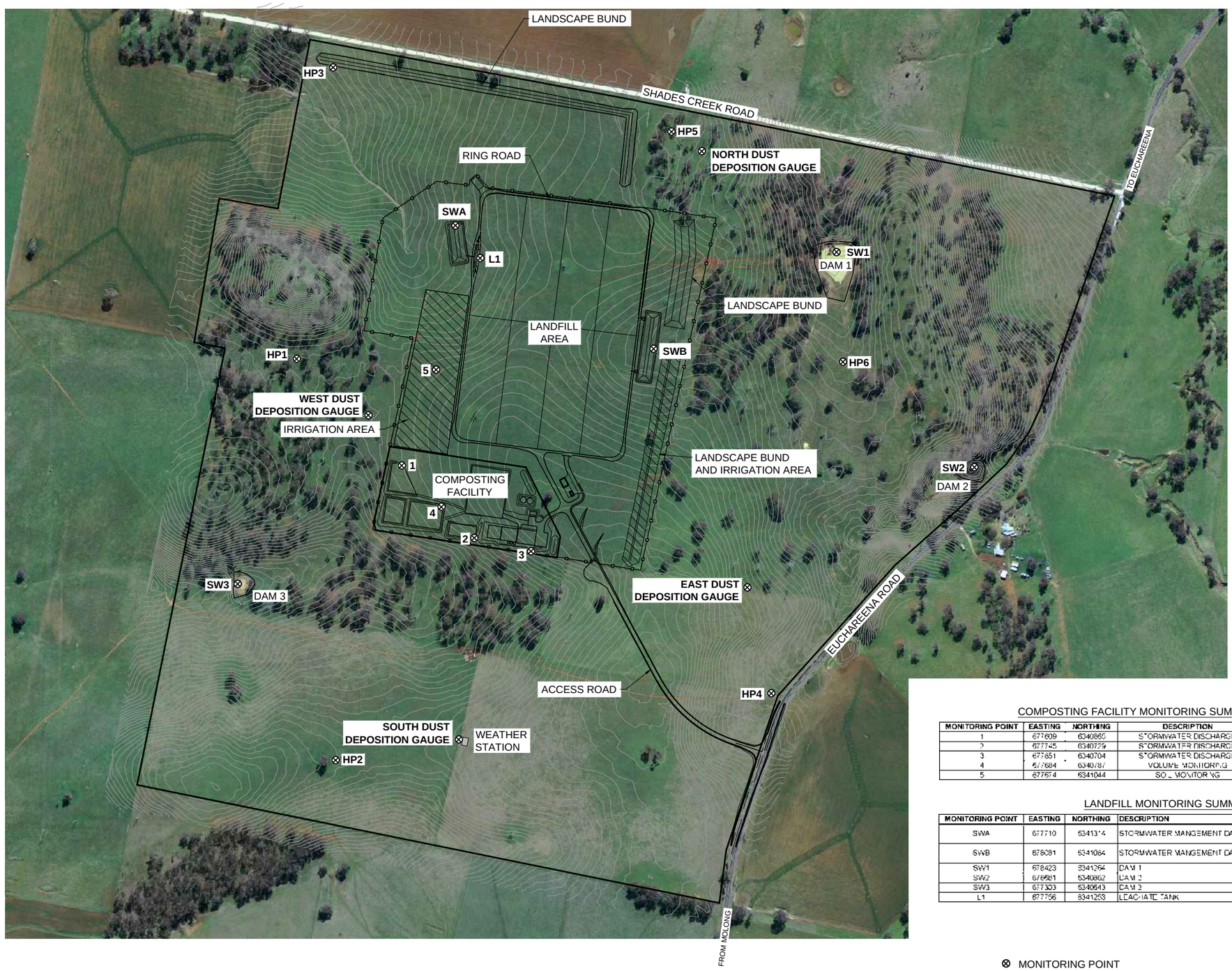
CLIENT: ORANGE Australia's Colour City

DRAWING

SURFACE WATER CATCHMENTS

PROJECT NUMBER: 208212 | DRAWING NUMBER: 54B_EV05 | REV. B

SOURCE: INTERNAL



COMPOSTING FACILITY MONITORING SUMMARY (EPL 20140)

MONITORING POINT	EASTING	NORTHING	DESCRIPTION	SAMPLING FREQUENCY
1	677609	6340865	STORMWATER DISCHARGE	MONTHLY DURING DISCHARGE
2	677745	6340729	STORMWATER DISCHARGE	MONTHLY DURING DISCHARGE
3	677851	6340704	STORMWATER DISCHARGE	MONTHLY DURING DISCHARGE
4	677684	6340787	VOLUME MONITORING	DAILY DURING IRRIGATION
5	677654	6341044	SOIL MONITORING	ANNUALLY

LANDFILL MONITORING SUMMARY

MONITORING POINT	EASTING	NORTHING	DESCRIPTION	SAMPLING FREQUENCY
SWA	677710	6341174	STORMWATER MANGEMENT DAM A	QUARTERLY DURING DISCHARGE PLUS STORED WATER EVERY 3 MONTHS
SWB	678081	6341084	STORMWATER MANGEMENT DAM B	QUARTERLY DURING DISCHARGE PLUS STORED WATER EVERY 3 MONTHS
SW1	678423	6341264	DAM 1	QUARTERLY DURING DISCHARGE
SW2	678581	6340862	DAM 2	QUARTERLY DURING DISCHARGE
SW3	677303	6340643	DAM 3	QUARTERLY DURING DISCHARGE
L1	677756	6341253	LEACHATE TANK	QUARTERLY

⊗ MONITORING POINT

0 80 160 240 320

SCALE 1:8000 (A3)

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SOIL AND WATER MANAGEMENT PLAN

FILE REFERENCE: 208212_54B_E01-E06.dwg

APPROVAL AUTHORITY

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Australia's Colour City

CLIENT

ORANGE
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DRAWING

MONITORING POINTS

PROJECT NUMBER: 208212 | DRAWING NUMBER: 54B_EV06 | REV. B

SOURCE: INTERNAL

Section 9.3

WASTE AND RESOURCE RECOVERY MONITORING PROGRAM

ORANGE WASTE PROJECT
WASTE AND RESOURCE RECOVERY MONITORING PROGRAM

PREPARED FOR
ORANGE CITY COUNCIL

FEBRUARY 2018

• Civil, Environmental & Structural Engineering • Surveying • Environmental • Planning • Architecture

ORANGE WASTE PROJECT

WASTE AND RESOURCE RECOVERY MONITORING PROGRAM

PREPARED FOR:

ORANGE CITY COUNCIL

FEBRUARY 2018

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Report Title:	*Orange Waste Project*
Project:	*Waste and Resource Recovery Monitoring Program*
Client:	*Orange City Council*
Report Ref.:	*208212_WRRMP_001H.docx*
Status:	*Final*
Issued:	*14 February 2018*

Geolyse Pty Ltd and the authors responsible for the preparation and compilation of this report declare that we do not have, nor expect to have a beneficial interest in the study area of this project and will not benefit from any of the recommendations outlined in this report.

The preparation of this report has been in accordance with the project brief provided by the client and has relied upon the information, data and results provided or collected from the sources and under the conditions outlined in the report.

All information contained within this report is prepared for the exclusive use of Orange City Council to accompany this report for the land described herein and are not to be used for any other purpose or by any other person or entity. No reliance should be placed on the information contained in this report for any purposes apart from those stated therein.

Geolyse Pty Ltd accepts no responsibility for any loss, damage suffered or inconveniences arising from, any person or entity using the plans or information in this study for purposes other than those stated above.

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ABBREVIATIONS

C&D	Construction and Demolition sector
C&I	Commercial and Industrial sector
EA	Environmental Assessment
ERRRC	Euchareena Road Resource Recovery Centre
HHW	Household Hazardous Waste
MTF	Material Transfer Facility
ORRRC	Ophir Road Resource Recovery Centre
PA	Project Approval
VEM	Virgin Excavated Material
WRRMP	Waste and Resource Recovery Monitoring Program

Introduction

1.1 BACKGROUND

Orange City Council (Council) is implementing the Orange Waste Project (the Project) which is an integrated waste management project aimed at increasing resource recovery from the waste stream. The Project will be developed across two sites: the Ophir Road Resource Recovery Centre (ORRRC) located off Ophir Road, approximately 3 km northeast of Orange; and the Euchareena Road Resource Recovery Centre (ERRRC) located off Euchareena Road, approximately 5 km northeast of Molong.

An Environmental Assessment (EA) was prepared in 2009 (GHD, 2009) to support an application to the NSW Minister for Planning for approval of the Project and to address the requirements of the Director-General of the NSW Department of Planning (the Director-General's requirements) dated 14 April 2009. Council received Project Approval (PA) for the project on 28 April 2010.

Condition 4 Schedule 4 of the Minister's PA requires preparation of a Waste and Resource Recovery Monitoring Program (WRRMP) for the project at the Ophir Road site. Specifically:

> *The Proponent shall prepare and implement a Waste and Resource Recovery Monitoring Program for the site to the satisfaction of the Director-General. This program must:*
>
> *(a) be prepared in consultation with DECCW, and submitted to the Director-General for approval prior to the commencement of the Project's operations on site; and*
>
> *(b) monitor:*
>
> - *the quantity, type and source of waste received on site;*
> - *the quantity and type of waste sent to the Euchareena Rd site; and*
> - *the effectiveness of the resource recovery measures (see condition 3 above).*

Condition 5 Schedule 5 of the Minister's PA requires preparation of WRRMP for the project at the Euchareena Road site. Specifically:

> *The Proponent shall prepare and implement a Waste and Resource Recovery Monitoring Program for the site to the satisfaction of the Director-General. This program must:*
>
> *(c) be prepared in consultation with DECCW, and submitted to the Director-General for approval prior to the commencement of the project's operations on site; and*
>
> *(d) monitor:*
>
> - *the quantity, type and source of waste received on site; and*
> - *the outputs produced by the composting facility that are exported from the site.*

The above conditions will be addressed in a single WRRMP for the Orange Waste Project.

With regards to resource recovery, Condition 3 Schedule 4 of the Minister's PA states:

> *The Proponent shall implement all reasonable and feasible measures to recover resources from the waste stream on the Ophir Road site to the satisfaction of the Director-General. These measures shall include a specific program to increase the separation of food wastes from the commercial and industrial waste stream from the inception of the Project.*

Measures proposed are outlined in this WRRMP.

1.2 SCOPE

This WRRMP has been prepared to address conditions of the Minister's PA as outlined above. It:

- Provides an outline of the resource recovery program that will be implemented and monitored from the commencement of the Project;
- Details how each waste stream will be monitored, recorded and reported; and
- Presents the methodology for calculating the resource recovery effectiveness.

The WRRMP has also been developed to be consistent with the NSW EPA Yearly Waste Data Report.

1.3 STRUCTURE

The WRRMP is presented in three sections:

- **Section 1** provides the background and report scope;
- **Section 2** provides an outline of the project and resource recovery measures; and
- **Section 3** outlines the waste data monitoring, recording, calculations and reporting.

Waste Strategy

2.1 THE ORANGE WASTE PROJECT

2.1.1 SOLID WASTE AND RESOURCE MANAGEMENT POLICY

Orange City Council currently operates a domestic waste collection service and a kerbside recyclables collection service. The Ophir Road Resource Recovery Centre (ORRRC) receives recyclables for sorting and self-hauled garden waste which is processed and sold. The landfill on site provides for disposal of municipal, commercial and industrial (C&I), and construction and demolition (C&D) waste. An active recovered resource shop at the landfill sells used and salvaged products and materials.

Council endorsed a *Solid Waste and Resource Management Policy* in December 2007. The broad policy aim is to increase diversion from landfill for beneficial resource recovery from 20% to 55%. The policy contains the following stewardship principles:

- Waste is a potential resource that should be managed as an asset rather than a liability;
- Waste should only be landfilled if it cannot be diverted, reused or reprocessed;
- Landfill space should be conserved and efficiently managed as a community resource;
- Pricing should be used to maximise source separation and discourage receival of mixed waste loads, where reasonably avoidable; and
- Policies should be implemented in such a way that they do not cause increases in illegal dumping or economic dislocation.

The policy outcomes intended by the stewardship principles described above are clear, namely:

- Increased recovery and recycling of discarded materials;
- Clever use of recovered materials for beneficial purposes;
- Reduced disposal of waste to landfill;
- Use of landfill gate pricing policy measures to encourage separation at source of recoverable materials and delivery of streamed loads to the resource recovery centre; and
- Community participation in waste diversion for beneficial purposes and through this active involvement, support for the policy initiatives taken.

2.1.2 RESOURCE RECOVERY AND WASTE MANAGEMENT STRATEGY

The Resource Recovery and Waste Management Strategy has three primary purposes:

- To ensure that the management of waste contributes to Council's commitment to ecologically sustainable development and to enable the Orange community to play its part in protecting the local and global environment;
- To contribute positively to the objectives and the waste diversion targets of the NSW *Waste Avoidance and Resource Recovery Strategy*; and
- To define and organise for delivery of the infrastructure needed for ecologically sustainable waste management and resource recovery over coming decades as current waste management infrastructure completes its life cycle.

The Strategy is based on two central themes:

- Capturing and processing the maximum recoverable quantity of food/garden organics to keep these biodegradable materials out of landfill, create high grade compost and reduce greenhouse gas emissions; and
- Improving recycling of materials from households and businesses – particularly metals, glass, timber, plastics and virgin excavated material (VEM).

2.1.3 PLANNED POLICY, REGULATORY AND PROGRAM INITIATIVES

As part of the Strategy, a number of new policy and regulatory initiatives will be progressively introduced to drive resource recovery.

Policy initiatives:

- Introduction of a third household mobile garbage bin for weekly collection of domestic garden waste together with kitchen-separated food waste (the combination is referred to in the Environmental Assessment as food/garden organics). Currently scheduled for July 2013;
- Differential landfill gate pricing at a level required to encourage source separation of business recyclable materials and food wastes to provide clean streams for further processing. This will allow recovery and diversion of C&I food waste as well as greatly improved recovery of dry C&I recyclables such as timber, paper/cardboard, metals and industrial plastics; and
- Increased landfill gate pricing for C&D waste to encourage source separation of recyclable materials and presentation of clean, unmixed streams. This will allow improved recovery and recycling of VEM, metals, timber and plastics.

Regulatory initiatives:

- Further development of the current requirement for building applications to include waste management plans, with extension to include recycling plans that are subject to performance review.

Statutory requirements:

Waste Avoidance and Resource Recovery Act 2001

The objects of this Act are as follows:

(a) to encourage the most efficient use of resources and to reduce environmental harm in accordance with the principles of ecologically sustainable development,

(b) to ensure that resource management options are considered against a hierarchy of the following order:

(i) avoidance of unnecessary resource consumption,

(ii) resource recovery (including reuse, reprocessing, recycling and energy recovery),

(iii) disposal,

(c) to provide for the continual reduction in waste generation,

(d) to minimise the consumption of natural resources and the final disposal of waste by encouraging the avoidance of waste and the reuse and recycling of waste,

(e) to ensure that industry shares with the community the responsibility for reducing and dealing with waste,

(f) to ensure the efficient funding of waste and resource management planning, programs and service delivery,

(g) to achieve integrated waste and resource management planning, programs and service delivery on a State-wide basis,

(h) to assist in the achievement of the objectives of the Protection of the Environment Operations Act 1997.

Program initiatives:

- Improved recovery of beverage containers, by working with NetWaste to continue improvement in event recycling opportunities; and
- Action to improve the beneficial use of recycling yield from kerbside collected recyclables and C&I/C&D dry recyclables.

Illegal Dumping:

With regards to Council's policy relating to illegal dumping:

- OCC has signage along Ophir Road warning of the fines related to illegal dumping;
- OCC conducts monthly and random ranger patrols to enforce the warning relating to illegal dumping;
- The OCC ranger work in consultation with Forest NSW to monitor and detect illegal dumping in the nearby Kinross State Forest; and
- OCC conduct an annual clean-up campaign in conjunction with Forest NSW to remove waste from the Kinross State Forest. Recoverable wastes (scrap steel (car bodies), recyclables etc) are separated during this process.

2.1.4 WASTE RECOVERY AND DIVERSION

The key resource recovery outcome of the Strategy is to achieve an overall 58% diversion of waste from landfill including:

- 63% of municipal waste generated;
- 53% of C&I waste generated; and
- 53% of C&D waste generated.

2.2 IMPLEMENTING THE STRATEGY

Operations at the ORRRC and ERRRC sites together create an integrated resource recovery and waste management strategy. Facilities necessary for the shredding of organic waste and baling of mixed waste for transfer to the ERRRC are located on the south eastern portion of the ORRRC site (refer to **Figure 1**).

Activities undertaken at the ORRRC which form part of the overall strategy for resource recovery and waste management for the Orange Waste Project include:

- **Residential organics waste collection service** – a kerbside collection service is provided to all households to capture domestic food and garden organics in a designated mobile garbage bin. This organic waste is diverted from landfill. Organic waste is also collected from the C&I sector, and delivered to the ORRRC by self haul;
- **Pre-processing of food/garden organics** – food and garden organics are shredded at the ORRRC and delivered in enclosed bins to the ERRRC for composting;
- **Recovery of dry recyclable materials** – existing kerbside recycling is improved by securing beneficial use of a proportion of recovered recyclables from the waste stream and diverted to the MTF;
- **Resource recovery** – through the separation of resalable materials and operation of the Recovery Shop;
- **Management of other wastes** – including household hazardous wastes, e-wastes, tyres, recycled oils and batteries;
- **Recovery from construction and demolition waste stream** – C&D waste is sorted with residual waste transferred as inert waste to the ERRRC landfill;
- **Virgin Excavated Material (VEM)** – this is received and used beneficially as final landfill cover material;

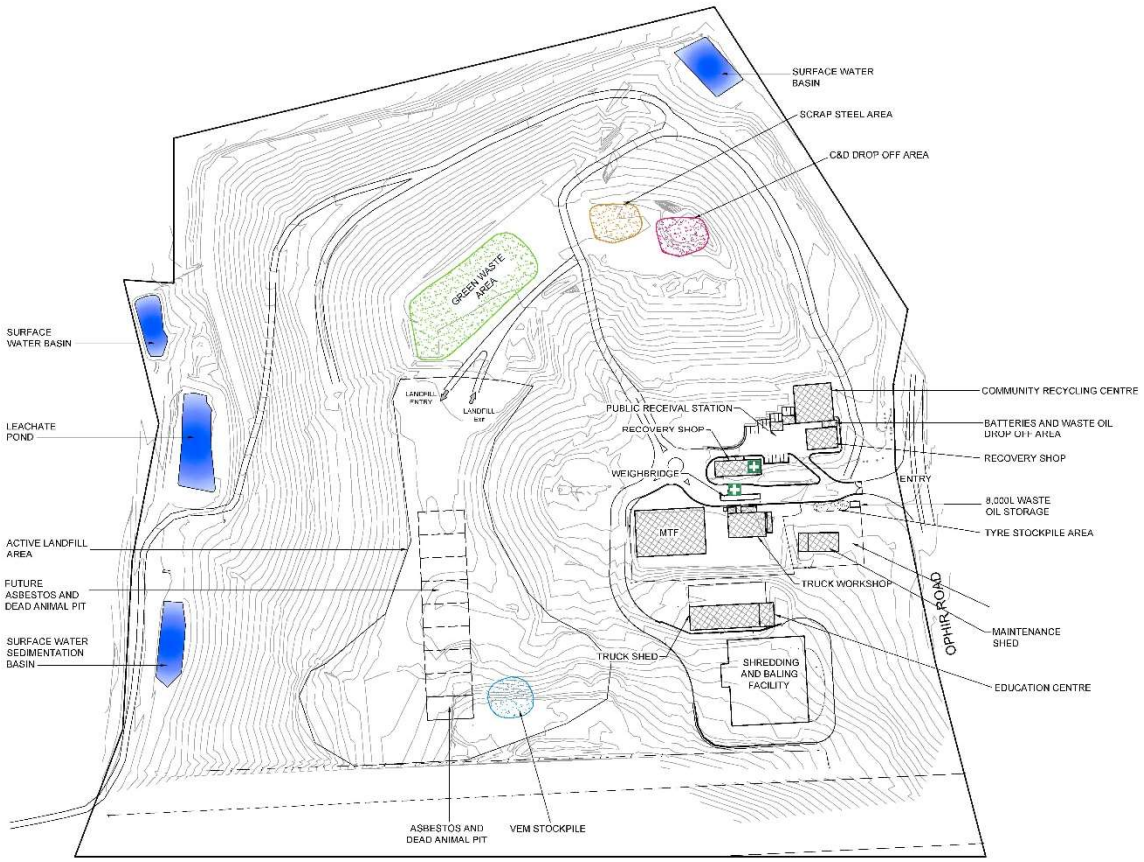

Figure 1: ORRRC Site Layout

- **Baling of mixed residual waste at the ORRRC** – mixed residual waste (municipal, C&I and residual C&D) is delivered to the baling shed for consolidation, primary sorting and recovery of recyclable materials. The primary non-recoverable sorted waste would then be compacted, baled and wrapped for transport to the ERRRC landfill; and
- **Landfilling of specific waste types** – this would include asbestos and dead animals, street sweepings, and apiary products, plus rejects from the baling operations from time to time.

Activities undertaken at the ERRRC which form part of the overall strategy for resource recovery and waste management for the Orange Waste Project include:

- **Processing of food/garden organics** – food and garden organics are shredded at the ORRRC and delivered to the ERRRC and composted using an enclosed tunnel composting system facility to produce high grade compost. This processing takes place on Lot 101 DP 1183238 (refer to **Figure 2**) in the enclosed tunnel composting plant, operated by JR & EG Richards. Finished compost product is exported off-site; and
- **Disposal of mixed residual waste** – the baled and wrapped general solid waste (putrescible) delivered to the ERRRC is disposed of in a specially designed bale fill landfill. Bulky, general non-recoverable solid waste (non-putrescible) from the C&I and C&D sectors which is unsuited to baling is separately transported to the ERRRC in skip bins for direct landfill disposal. The landfill area is shown on **Figure 2**.

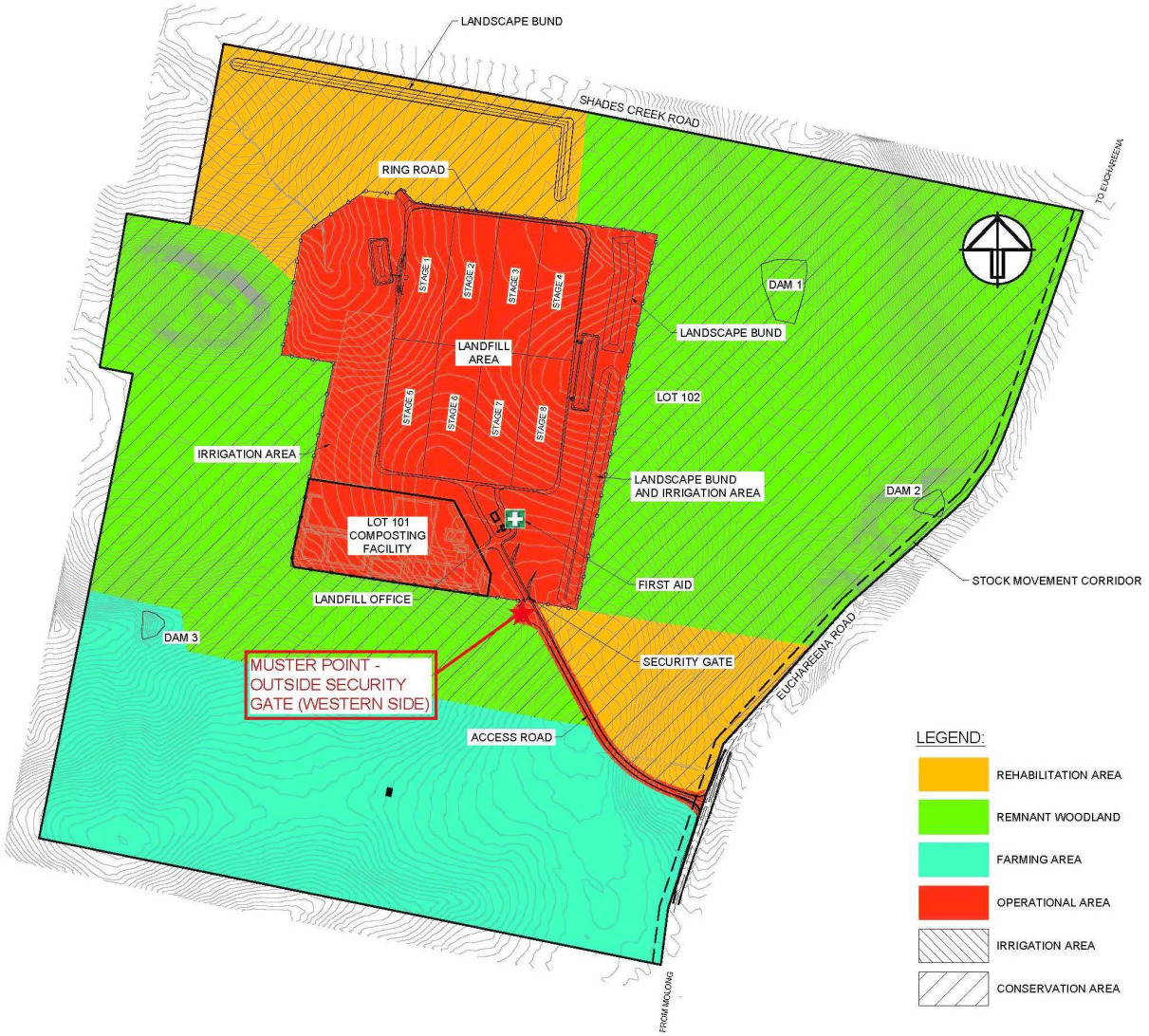

Figure 2: ERRRC Site Layout and Land Use

2.3 RESOURCE RECOVERY MEASURES

Resource recovery measures include the following:

- **Recyclables** – fortnightly kerbside collection service and drop-off points at waste management facilities. The ORRRC Material Transfer Facility (MTF) (previously the Material Recycling Facility [MRF]) is the regional centre for recycling and also processes recyclables from Cabonne, Forbes, Parkes, Blayney and Bathurst;
- **New residential organics waste collection service (commencing July 2013)** – the new weekly kerbside collection service is provided to all households to capture domestic food and garden organics in a designated mobile garbage bin. This organic waste is diverted from landfill. Organic waste is also collected from the C&I sector and delivered to the ORRRC by self-haul. The organic waste is delivered to the shredding shed at the ORRRC for consolidation, primary sorting and recovery of recyclable materials;
- **Sorting of construction and demolition waste** – recoverable C&D material (bricks/masonry/tiles/concrete/etc.) delivered in large and small loads is directed to designated areas for stockpiling and removal off site. Mixed C&D loads delivered in large vehicles with tipping capacity are directed to the baling shed where waste is sorted and recyclables recovered. Small loads of C&D material delivered in utes, trailers, vans etc are directed to the public receival station and then to the baling shed where sorting and recovery occurs. Select non-recoverable C&D waste is used to form cell walls and finished grades at the ORRRC landfill. Other non-recoverable C&D waste is baled for landfilling;
- **Baling of mixed residual waste at the ORRRC** – mixed residual waste (municipal, C&I and residual C&D) is delivered to the baling shed for consolidation, primary sorting and recovery of recyclable materials. The non-recoverable waste is compacted, baled and wrapped for transport to the ERRRC landfill;
- **Garden waste** – self-hauled garden waste is stockpiled and then shredded for composting. A portion of the finished compost material is made available for sale to the public;
- **VEM** – all VEM is received at the ORRRC landfill and stockpiled for use as cover and capping material;
- **Scrap steel, furniture, white goods, etc** – recyclable industrial/commercial materials are recovered for sale at the Recovery Shop and/or recycled through a scrap metal contract;
- **DrumMUSTER** – drop-off points are located at the ORRRC and in various surrounding towns;
- **Household chemical collection** – regular collection programs are conducted from specified drop-off points.;
- **e-waste** – regular collection programs are conducted from the drop-off at the ORRRC and exported off-site by a re-processing contractor;
- **Household hazardous waste (HHW)** – receival and storage provided at the ORRRC which is regularly exported off-site by re-processing contractor;
- **Used oil collection** – drop-off points are located at the ORRRC and various surrounding towns;
- **Tyres** – tyres are segregated and regularly exported off-site by re-processing contractor;
- **Recovery shop** – an active recovered resource shop at the ORRRC sells used and salvaged products and materials; and
- **Education program** – the kerbside collection contract includes community education to improve diversion and reduce contamination.

2.4 LICENSED PREMISES

The NSW Environment Protection Authority has issued three separate Environment Protection Licences (EPLs) for premises and activities associated with the Orange Waste Project:

- The ORRRC landfill operates under EPL 5956. Licensee is Orange City Council;
- The ERRRC landfill operates under EPL 20104. Licensee is Orange City Council; and
- The composting facility at the ERRRC operates under EPL 20140. Licensee is JR & EG Richards Pty Ltd.

Each EPL has limit and reporting conditions. Data generated from this WRRMP will be reported as required for each premise.

Waste and Resource Monitoring

3.1 WASTE TYPES

3.1.1 SOURCE

The source of each waste type coming into the ORRRC will be recorded as either:

- Municipal;
- Commercial and Industrial;
- Construction and Demolition; or
- Other waste facility.

The source of waste received at the ERRRC will be recorded as either:

- Combined waste (mix of municipal, C&I, C&D and other waste facilities);
- Construction and Demolition (the inert portion delivered to landfill); or
- Combined organics (mix of municipal, C&I).

At this stage, only waste originating from the ORRRC will be accepted at the ERRRC. This may change with regional contracts and this WRRMP will be updated accordingly.

3.1.2 WASTE TYPES

A range of waste types, sub-types and vehicle types will be used to describe each waste stream received at the ORRRC. These are listed in **Appendix A**. This list may be expanded over time.

The waste types received at the ERRRC will be recorded as either:

- Baled mixed waste;
- Inert (non-putrescible) mixed waste; or
- Shredded organics.

3.1.3 CLASSIFICATION

Each waste type will be classified as either:

- Putrescible;
- Inert;
- Organic;
- VEM;
- Recycling; or
- Export.

Definitions are provided in **Table 3.1**.

The distinction between putrescible and inert waste is used to determine an appropriate differential pricing regime.

Table 3.1 – Waste classification

Classification	Description
Putrescible	Household wastes being food or animal matter (including dead animals or animal parts), or unstable or untreated biosolids. Examples: mixed domestic waste, organic matter, food scraps. Also includes commercial/industrial and building/demolition wastes contaminated with the above waste types. The Orange Waste Project aims to remove a large proportion of the food and garden waste from the municipal waste stream. However the residual will remain classified as putrescible waste. All residual putrescible wastes will be baled and wrapped prior to transport to the ERRRC landfill. Residual cells will remain open at the ORRRC landfill for the disposal of specific putrescible wastes (asbestos or dead animals). In the context of the Orange Waste Project, putrescible wastes are seen as requiring a higher level of management and therefore cost. The distinction of the putrescible waste stream determines the differential pricing policy.
Inert	Wastes which do not undergo environmentally significant physical, chemical or biological transformations and have no potentially hazardous content once landfilled. They must not be contaminated or mixed with any other material. Examples: clean bricks, concrete, glass, plastics, metals and timber. Inert wastes will primarily be sourced from the C&D waste stream. They will also be recovered during the sorting process prior to baling.
Organic	Kerbside collected and self-haul garden and food organics that are shredded at the ORRRC and then transferred to the ERRRC for composting.
VEM	Virgin Excavated Material. To be stockpiled and used as final cover at the ORRRC landfill.
Recycling	Dry recyclables that are delivered to (either by kerbside or self-haul) the MTF for processing.
Export	Wastes that are typically segregated into designated storage areas and later exported from the site. It includes such things as tyres, batteries, waste oil, scrap steel, e-waste, HHW and items at the recovery shop.

3.2 WASTE FLOWS

The ORRRC will be used as the main point of waste receival and distribution.

Waste types and where they are received at the facility are listed in **Appendix A** and summarised in **Table 3.2**, with waste flows diagrammatically depicted in **Figure 3**. Operational areas are shown on **Figure 1**.

Table 3.2 – Waste receival

Waste Type/Source	Where Delivered
Municipal – kerbside collected	Baling shed
Municipal – cars, utes, trailers	Public receival station
Municipal – large loads without tipping capability	Public receival station
Municipal – large loads with tipping capability	Baling shed
Commercial and industrial – utes, vans, trailers	Public receival station
Commercial and industrial – large loads without tipping capability	Public receival station
Commercial and industrial – large loads with tipping capability	Baling shed
Construction and demolition – utes, vans, trailers	Public receival station (except for dedicated loads of bricks, masonry etc product which goes to the dedicated stockpile area on the scrap steel pad)
Construction and demolition – large loads	Baling shed
Green waste – utes, vans trailers	Green waste drop off
Green waste – large loads	Green waste drop off
Asbestos	Landfill cell
Dead animals	Landfill cell
Reject from baling/unsuitable material	ERRRC
VEM	Landfill stockpile
Hydrocarbon contaminated soil	Landfill stockpile
Reject from MTF	Baling shed
Scrap steel	Scrap steel stockpile
Oil including motor oil, cooking and heating	Bunded battery storage area at the Community Recycling Centre (CRC) then to the waste oil storage tank
Batteries including household, lead acid and lithium ion	Bunded battery storage at the Community Recycling Centre (CRC)
Fluorescent tubes/bulbs and Fittings	Community Recycling Centre (CRC)
Gas Cylinders (including LPG and Propane)	Community Recycling Centre (CRC)
Fire Extinguishers	Community Recycling Centre (CRC)
Smoke Detectors	Community Recycling Centre (CRC)
Tyres	Workshop area
e-waste	Community Recycling Centre (CRC)

At this stage, only waste originating from the ORRRC will be accepted at the ERRRC. This will include:

- Baled mixed waste;
- Inert (non-putrescible) mixed waste; or
- Shredded organics.

Baled waste and inert waste will be disposed to landfill.

Shredded organics will be further processed through composting with the finished compost exported off-site.

Due to the sorting and shredding of organic waste at the ORRRC, it is envisaged that there will be no reject material from the composting facility at the ERRRC.

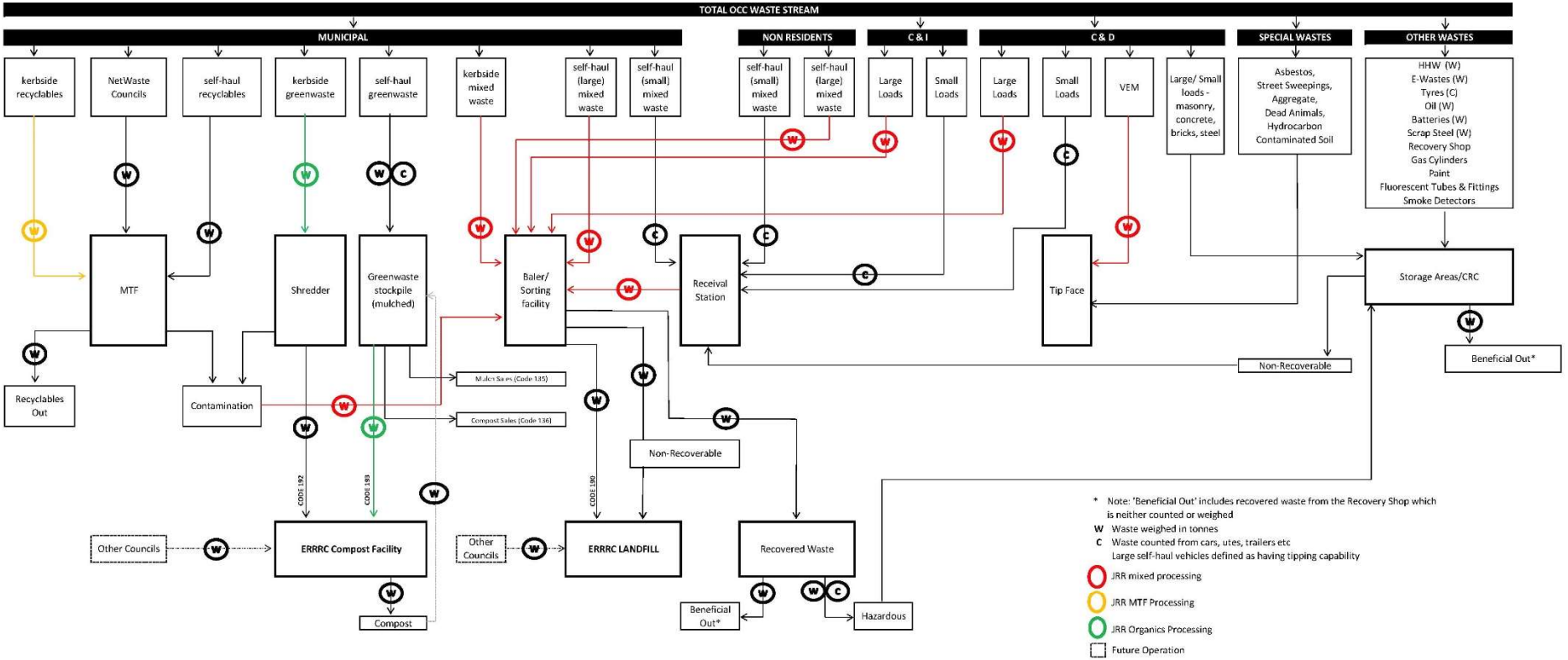

Figure 3: Waste Flow Diagram

3.3 WASTE RECORDING

3.3.1 METHODS

The following methods will be used for waste recording:

- The ORRRC weighbridge will be used to record the quantity of wastes delivered by heavy vehicles on a weigh on tare off basis;
- Small loads (cars, utes, vans, trailers and minimum loads) arriving at the ORRRC will be recorded on a count basis. The weight factors listed in **Appendix A** will be applied to estimate waste tonnes;
- The ORRRC weighbridge will be used to record the quantity of wastes leaving by heavy vehicles on a tare on weigh off basis;
- Small loads (cars, utes, vans, trailers and minimum loads) leaving the ORRRC will be recorded on a count basis. The weight factors listed in **Appendix A** will be applied to estimate waste tonnes;
- The quantity of finished compost product leaving the ERRRC will be recorded for each load. Load cells on the front end loaders will be used to record the weight in each truck; and
- Internal waste movements at the ORRRC will be recorded over the weighbridge.

In addition to the above methods, where required, asbestos and tyre waste will be recorded by waste transporters using the WasteLocate system at the ORRRC weighbridge by scanning the QR2id plate as detailed in **Standard Operating Procedure (SOP) 26 – WasteLocate Tracking** in the Orange Waste Project Operational Environmental Management Plan (OEMP).

Orange City Council does weigh in/weigh out large loads using the single weighbridge. The items that are counted are cars, utes and trailers, with weight factors applied to these loads. Data for the 2012/2013 financial year indicate counted loads make up about 10% of the total waste stream (in terms of weight).

OCC use the EPA weight factors and has also done some studies to determine weight factors for loads which will then be applied.

There will be a gross check on the tonnes of waste coming into the facility as all waste leaving will be weighed. Further, all small loads will be delivered to the receival station, and the receival station bins will be weighed as they are transferred to the baling shed. It will be possible to use this data to identify any potential errors that may be attributable to using the weight factors.

Council's forward capital works program does not include a second weighbridge at the ORRRC.

It is suggested that OCC use the waste data collected over the next two years and review the need for a second weighbridge if a significant discrepancy is identified in the waste in/waste out data.

3.3.2 WASTE INTO ORRRC

Every vehicle entering the ORRRC is recorded by the weighbridge operators. Records will include:

- Date/time;
- Vehicle type;
- Waste type;
- Waste source; and
- Weight (or vehicle type where applicable).

If required, asbestos and tyre waste will be recorded by waste transporters using the WasteLocate system at the weighbridge by scanning the QR2id plate as detailed in **SOP 26 – WasteLocate Tracking** in the Orange Waste Project OEMP.

A range of waste types, sub-types and vehicle types will be used to describe each waste stream received at the ORRRC. These are listed in **Appendix A**.

Computer records will be maintained. All records will be kept for a minimum of four years.

3.3.3 INTERNAL ORRRC WASTE MOVEMENTS

Internal waste movements will be recorded over the ORRRC weighbridge in accordance with **Table 3.3**. Records will include:

- Date/time;
- Waste type;
- Waste source; and
- Weight (or vehicle type where applicable).

A range of waste types will be used to describe each waste stream moved internally at the ORRRC. These are listed in **Appendix A**.

Computer records will be maintained. All records will be kept for a minimum of four years.

Table 3.3 – Internal waste movements

Type	Waste Movement		How measured
	From	To	
Mixed self-haul waste (municipal, C&I and C&D)	Receival station bins	Baling shed	Weighed
Select non-recoverable C&D Waste	Baler/shredding shed	ERRRC	Weighed
Recoverable C&D waste	Baling/shredding shed	Storage areas	Weighed
Garden organics	Green drop off	ERRRC Compost Facility	Weighed
Recycling	Recovered from mixed waste in baling shed	Recovered Material	Weighed
Recycling	Recovered from organics in shredding shed	Recovered Material	Weighed
Mixed waste	Waste from MTF	Baling shed	Weighed
Mixed waste	Contamination from organics	Baling shed	Weighed

3.3.4 WASTE LEAVING ORRRC

Every vehicle leaving the ORRRC with any waste will be recorded by the weighbridge operators. Records will include:

- Date/time;
- Vehicle type;
- Waste type;
- Waste source; and
- Weight (or vehicle type where applicable).

If required, asbestos and tyre waste will be recorded by waste transporters using the WasteLocate system at the weighbridge by scanning the QR2id plate as detailed in **SOP 26 – WasteLocate Tracking** in the Orange Waste Project OEMP.

A range of waste types and sub-types and vehicle types will be used to describe each waste stream leaving the ORRRC. These are listed in **Appendix A**.

Computer records will be maintained. All records will be kept for a minimum of four years.

3.3.5 WASTE INTO ERRRC

At this stage, only three waste types will be received at the ERRRC:

- Baled mixed waste to be landfilled;
- Inert waste to be landfilled; and
- Shredded organic waste to be composted.

Each load will be weighed and recorded over the ORRRC weighbridge as it leaves the facility.

Computer records will be maintained. All records will be kept for a minimum of four years.

3.3.6 WASTE LEAVING ERRRC

The only waste leaving the ERRRC will be composted organics.

Records for each load will include:

- Date and time;
- Vehicle type;
- Weight (tonnes); and
- Destination.

Load cells on the front end loaders will be used to record the weight in each truck.

JR & EG Richards will provide a financial year annual summary of compost movements out of the ERRRC to Orange City Council. All records will be kept for a minimum of four years.

3.4 CALCULATIONS

3.4.1 SECTOR WASTE STREAMS

Individual waste streams entering the ORRRC will be calculated from the weighbridge data as follows:

$$M_T = \sum(P_M, I_M, O_M, R_M, E_M)$$

$$CI_T = \sum(P_{CI}, I_{CI}, O_{CI}, R_{CI}, E_{CI})$$

$$CD_T = \sum(P_{CD}, I_{CD}, O_{CD}, R_{CD}, E_{CD})$$

Where:

M_T = Total municipal waste stream

CI_T = Total commercial and industrial waste stream

CD_T = Total construction and demolition waste stream

P = All putrescible waste for each stream (as noted by the subscript)

I = All inert waste for each stream (as noted by the subscript)

O = All organic waste for each stream (as noted by the subscript)

R = All recycling waste for each stream (as noted by the subscript)

E = All exported waste for each stream (as noted by the subscript)

3.4.2 TOTAL WASTE STREAM

The total waste stream will be calculated as the sum of all municipal, C&I and C&D sector wastes. That is:

$$Waste_T = \sum(M, CI, CD)$$

3.4.3 WASTE DIVERSION

The effectiveness of the resource recovery program will be monitored by calculating the waste diversion for each waste sector and the total waste stream. These calculations will be based on the waste as it enters the ORRRC[1].

Waste diversion for each sector will be calculated as follows:

$$\text{Municipal diversion \%} = (M - \sum(O_M, R_M, E_M)) / M \times 100$$

$$\text{C\&I diversion \%} = (CI - \sum(O_{CI}, R_{CI}, E_{CI})) / CI \times 100$$

$$\text{C\&D diversion \%} = (CD - \sum(O_{CD}, R_{CD}, E_{CD})) / CD \times 100 \text{ (see note below)}$$

Total waste diversion will be calculated as follows:

$$\text{Total waste diversion \%} = (Waste_T - \sum(O_T, R_T, E_T)) / Waste_T \times 100$$

Additional C&D diversion will occur with the primary sorting and recovery of recyclable materials from the C&D drop-off area. Non-recoverable waste will be transferred to the baling shed. The difference between the C&D waste received, less O_{CD} R_{CD} T_{CD}, and the tonnes transferred to the baling shed will represent the amount of C&D diversion achieved from sorting. This will be factored into the above waste diversion calculation for C&D.

Gross check of the entire waste stream will be made by comparing all waste in to all waste out. The majority of waste leaving the ORRRC will be weighed (only mulch in small loads will be counted). The use of weight factors for incoming waste may cause differences in comparing the total waste in and out of the facility. This will need to be carefully considered when the results are reported.

3.5 REPORTING

Yearly waste data reports will be submitted for the ORRRC landfill and ERRRC landfill in accordance with clause 109 of the *Protection of the Environment Operations (Waste) Regulation, 2014*.

These reports will be provided in the approved form to the EPA within 60 days of the end of each subsequent financial year.

[1] Once wastes enter the ORRRC it will become combined and therefore it would be difficult to identify diversion from individual waste streams if the calculation was based solely on waste out data. For example, tyres will be received from municipal and C&I sectors. The recording of tyres out of the ORRRC will be a total and will not identify the waste source.

Full waste reporting including total waste streams, diversion, disposal at ORRRC landfill, transfer to the ERRRC for processing and disposal, and the quantity of finished product exported from the composting facility will be documented in the ORRRC Annual Environmental Monitoring Report (AEMR).

This report will accompany the Annual Return for EPL 5956.

Appendix A

WASTE DATA RECORDING

Orange Waste Project - Waste Data Recording

Source	Waste Type	Sub Waste Type/Vehicle	EPA Yearly Waste Data Report Section	EPA Material Composition Code	Classification	How Measured	Weight factor	Destination
Waste Coming Into ORRRC								
Municipal	Kerbside	None	2A	MIX	P	Weighed		Baler/Shredding shed
	Other domestic waste	Pacman	2A	MIX	P	Weighed		Baler/Shredding shed
		Ashes - ute/trailer	2A	ASH	P	Counted	0.3	Receival Station
		Bulk pick-up - truck	2A	MIX	P	Weighed		Baler/Shredding shed
		Bulk pick-up - ute	2A	MIX	P	Counted	0.3	Receival Station
		Mixed truck	2A	MIX	P	Weighed		Baler/Shredding shed
		Rag/textile - ute/trailer	2A	TEXT	I	Counted	0.3	Receival Station
		Orange show	2A	MIX	P	Weighed		Baler/Shredding shed
	Other Council waste	Street sweepings	2A	MIX	P	Weighed		Baler/Shredding shed
		Mixed waste	2A	MIX	P	Weighed		Baler/Shredding shed
		Bricks/concrete	2A	BC	I	Weighed		C&D drop off
		Stormwater harvest	2A	MIX	P	Weighed		Baler/Shredding shed
		Treatment works sludge	2A	SOIL	P	Weighed		ORRRC landfill
	Garden organics	Kerbside	2A	VEG	O	Weighed		Baler/Shredding shed
		Self haul - truck	2A	VEG	O	Weighed		Baler/Shredding shed
		Self haul - car	2A	VEG	O	Counted	0.06	Green drop off
		Self haul - ute/trailer	2A	VEG	O	Counted	0.3	Green drop off
	Mixed waste	Mixed - car	2A	MIX	P	Counted	0.06	Receival Station
		Mixed - ute/trailer	2A	MIX	P	Counted	0.3	Receival Station
		Mixed - minimum	2A	MIX	P	Counted	0.06	Receival Station
	Asbestos	Asbestos - truck	2A	ASB	P	Weighed		ORRRC landfill
		Asbestos - ute/trailer	2A	ASB	P	Counted	0.3	ORRRC landfill
	Bricks/concrete	Bricks/concrete - truck	2A	BC	I	Weighed		C&D drop off
		Bricks/concrete - ute/trailer	2A	BC	I	Counted	0.3	C&D drop off
	Wood	Wood - truck	2A	WOOD	I	Weighed		C&D drop off
		Wood - ute/trailer	2A	WOOD	I	Counted	0.3	C&D drop off
	Dead animal	Cat	2A	OTH/DEAD ANIMALS	P	Counted	0.005	ORRRC landfill
		Dog	2A	OTH/DEAD ANIMALS	P	Counted	0.015	ORRRC landfill
		Pig	2A	OTH/DEAD ANIMALS	P	Counted	0.15	ORRRC landfill
		Sheep	2A	OTH/DEAD ANIMALS	P	Counted	0.06	ORRRC landfill
		Calf	2A	OTH/DEAD ANIMALS	P	Counted	0.15	ORRRC landfill
		Bull	2A	OTH/DEAD ANIMALS	P	Counted	0.4	ORRRC landfill
		Cow	2A	OTH/DEAD ANIMALS	P	Counted	0.4	ORRRC landfill
		Foal	2A	OTH/DEAD ANIMALS	P	Counted	0.15	ORRRC landfill
		Goat	2A	OTH/DEAD ANIMALS	P	Counted	0.06	ORRRC landfill
		Horse	2A	OTH/DEAD ANIMALS	P	Counted	0.4	ORRRC landfill
		Kangaroo	2A	OTH/DEAD ANIMALS	P	Counted	0.15	ORRRC landfill
		Possum	2A	OTH/DEAD ANIMALS	P	Counted	0.005	ORRRC landfill
		Other	2A	OTH/DEAD ANIMALS	P	Counted	0.005	ORRRC landfill
	Tyre	Car tyre - no rim	2A	TYRE	E	Counted	0.008	Tyre drop off
		Car tyre - rim	2A	TYRE	E	Counted	0.02	Tyre drop off
		Motorbike tyre	2A	TYRE	E	Counted	0.005	Tyre drop off
		Truck tyre - no rim	2A	TYRE	E	Counted	0.075	Tyre drop off
		Truck tyre - rim	2A	TYRE	E	Counted	0.12	Tyre drop off
		Tractor tyre - large	2A	TYRE	E	Counted	0.075	Tyre drop off
		Tractor tyre - small	2A	TYRE	E	Counted	0.06	Tyre drop off

Orange Waste Project - Waste Data Recording

Source	Waste Type	Sub Waste Type/Vehicle	EPA Yearly Waste Data Report Section	EPA Material Composition Code	Classification	How Measured	Weight factor	Destination
		Tyre - other	2A	TYRE	E	Counted	0.005	Tyre drop off
	National Field Days	Mixed waste	2A	MIX	P	Weighed		Baler/Shredding shed
		Recycling	2A	COMM	R	Weighed		MTF
	Other	Other - large	2A	MIX	P	Weighed		Baler/Shredding shed
		Other - car	2A	MIX	P	Counted	0.06	Receival Station
		Other - ute/trailer	2A	MIX	P	Counted	0.3	Receival Station
		Other - minimum	2A	MIX	P	Counted	0.06	Receival Station
	Recycling	Kerbside	2A	COMM	R	Weighed		MTF
		Self haul - car	2A	COMM	R	Counted	0.06	MTF/Bin 1
		Self haul - ute/trailer	2A	COMM	R	Counted	0.3	MTF/Bin 1
		Self haul - minimum	2A	COMM	R	Counted	0.06	MTF/Bin 1
		Batteries	2A	COMM	E	Counted	0.005	Batteries/Oil storage at CRC
		Waste oil	2A	COMM	E	Counted	0.005	Batteries/Oil storage at CRC
		Scrap steel - large	2A	COMM	E	Weighed		Scrap steel
		Scrap steel - ute/trailer	2A	COMM	E	Counted	0.3	Scrap steel
		Recovery shop	2A	COMM	E	Counted	0.01	Recovery shop
	Household Hazardous Waste	Self haul - car	2A	OTH/HHW	E	Counted	0.06	CRC
		Self haul - ute/trailer	2A	OTH/HHW	E	Counted	0.3	CRC
		Self haul - minimum	2A	OTH/HHW	E	Counted	0.06	CRC
	e-waste	Self haul - car	2A	OTH/e-waste	E	Counted	0.06	CRC
		Self haul - ute/trailer	2A	OTH/e-waste	E	Counted	0.3	CRC
		Self haul - minimum	2A	OTH/e-waste	E	Counted	0.06	CRC
Commercial & Industrial	Mixed waste	Self haul - truck	2B	MIX	P	Weighed		Baler/Shredding shed
		Self haul - car	2B	MIX	P	Counted	0.06	Receival Station
		Self haul - ute/trailer	2B	MIX	P	Counted	0.3	Receival Station
		Self haul - minimum	2B	MIX	P	Counted	0.06	Receival Station
	Inert waste	Self haul - truck	2B	MIX	I	Weighed		Baler/Shredding shed
		Self haul - car	2B	MIX	I	Counted	0.06	Receival Station
		Self haul - ute/trailer	2B	MIX	I	Counted	0.3	Receival Station
		Self haul - minimum	2B	MIX	P	Counted	0.06	Receival Station
	Bricks/concrete	Bricks/concrete - truck	2B	BC	I	Weighed		C&D drop off
		Bricks/concrete - ute/trailer	2B	BC	I	Counted	0.3	C&D drop off
	Asbestos	Asbestos - truck	2B	ASB	P	Weighed		ORRRC landfill
		Asbestos - ute/trailer	2B	ASB	P	Counted	0.3	ORRRC landfill
	Paper/Cardboard	Paper - truck	2B	PAPER	R	Weighed		MTF
		Paper - ute/trailer	2B	PAPER	R	Counted	0.3	MTF
	Wood	Wood - truck	2B	WOOD	I	Weighed		C&D drop off
		Wood - ute/trailer	2B	WOOD	I	Counted	0.3	C&D drop off
	Carpet/textile	Carpet - truck	2B	TEXT	I	Weighed		C&D drop off
		Carpet - ute/trailer	2B	TEXT	I	Counted	0.3	C&D drop off
	Food	Food - truck	2B	FOOD	O	Weighed		Baler/Shredding shed
		Food - ute/trailer	2B	FOOD	O	Counted	0.3	Receival Station
	Contaminated waste	Contam - truck	2B	CONT	P	Weighed		Baler/Shredding shed
		Contam - ute/trailer	2B	CONT	P	Counted	0.3	Receival Station
	Glass	Glass - truck	2B	GLASS	I	Weighed		ORRRC landfill
		Glass - ute/trailer	2B	GLASS	I	Counted	0.3	ORRRC landfill
	Tyre	Car tyre - no rim	2B	TYRE	E	Counted	0.008	Tyre drop off

Orange Waste Project - Waste Data Recording

Source	Waste Type	Sub Waste Type/Vehicle	EPA Yearly Waste Data Report Section	EPA Material Composition Code	Classification	How Measured	Weight factor	Destination
		Car tyre - rim	2B	TYRE	E	Counted	0.02	Tyre drop off
		Motorbike tyre	2B	TYRE	E	Counted	0.005	Tyre drop off
		Truck tyre - no rim	2B	TYRE	E	Counted	0.075	Tyre drop off
		Truck tyre - rim	2B	TYRE	E	Counted	0.12	Tyre drop off
		Tractor tyre - large	2B	TYRE	E	Counted	0.075	Tyre drop off
		Tractor tyre - small	2B	TYRE	E	Counted	0.06	Tyre drop off
		Tyre - other	2B	TYRE	E	Counted	0.005	Tyre drop off
	Dead animal	Cat	2B	OTH/DEAD ANIMALS	P	Counted	0.005	ORRRC landfill
		Dog	2B	OTH/DEAD ANIMALS	P	Counted	0.015	ORRRC landfill
		Pig	2B	OTH/DEAD ANIMALS	P	Counted	0.15	ORRRC landfill
		Sheep	2B	OTH/DEAD ANIMALS	P	Counted	0.06	ORRRC landfill
		Calf	2B	OTH/DEAD ANIMALS	P	Counted	0.15	ORRRC landfill
		Bull	2B	OTH/DEAD ANIMALS	P	Counted	0.4	ORRRC landfill
		Cow	2B	OTH/DEAD ANIMALS	P	Counted	0.4	ORRRC landfill
		Foal	2B	OTH/DEAD ANIMALS	P	Counted	0.15	ORRRC landfill
		Goat	2B	OTH/DEAD ANIMALS	P	Counted	0.06	ORRRC landfill
		Horse	2B	OTH/DEAD ANIMALS	P	Counted	0.4	ORRRC landfill
		Kangaroo	2B	OTH/DEAD ANIMALS	P	Counted	0.15	ORRRC landfill
		Possum	2B	OTH/DEAD ANIMALS	P	Counted	0.005	ORRRC landfill
		Other	2B	OTH/DEAD ANIMALS	P	Counted	0.005	ORRRC landfill
	Other	Other C&I - large	2B	MIX	P	Weighed		Baler/Shredding shed
		Other C&I - car	2B	MIX	P	Counted	0.06	Receival Station
		Other C&I - ute/trailer	2B	MIX	P	Counted	0.3	Receival Station
		Other C&I - minimum	2B	MIX	P	Counted	0.06	Receival Station
	Contaminated soil	Contaminated soil - truck	2B	CONT	E	Weighed		ORRRC landfill
		Contaminated soil - ute/trailer	2B	CONT	E	Counted	0.3	ORRRC landfill
	Recycling	Self haul - car	2B	COMM	R	Counted	0.06	MTF/Bin 1
		Self haul - ute/trailer	2B	COMM	R	Counted	0.3	MTF/Bin 1
		Batteries	2B	COMM	E	Counted	0.005	Batteries/Oil storage at CRC
		Waste oil	2B	COMM	E	Counted	0.005	Batteries/Oil storage at CRC
		Scrap steel - large	2B	COMM	E	Weighed		Scrap steel
		Scrap steel - ute/trailer	2B	COMM	E	Counted	0.3	Scrap steel
		Recovery shop	2B	COMM	E	Counted	0.01	Recovery shop
	Garden organics	Self haul - truck	2B	VEG	O	Weighed		Baler/Shredding shed
		Self haul - car	2B	VEG	O	Counted	0.06	Green drop off
		Self haul - ute/trailer	2B	VEG	O	Counted	0.3	Green drop off
Construction and Demolition	Mixed waste	Self haul - truck	2C	MIX	P	Weighed		Baler/Shredding shed
		Self haul - car	2C	MIX	P	Counted	0.06	Receival Station
		Self haul - ute/trailer	2C	MIX	P	Counted	0.3	Receival Station
		Self haul - minimum	2C	MIX	P	Counted	0.06	Receival Station
	Inert waste	Self haul - truck	2C	MIX	I	Weighed		Baler/Shredding shed
		Self haul - car	2C	MIX	I	Counted	0.06	Receival Station
		Self haul - ute/trailer	2C	MIX	I	Counted	0.3	Receival Station
		Self haul - minimum	2C	MIX	P	Counted	0.06	Receival Station
	Bricks/concrete	Bricks/concrete - truck	2C	BC	I	Weighed		C&D drop off
		Bricks/concrete - ute/trailer	2C	BC	I	Counted	0.3	C&D drop off
	Aggregate	Aggregate - truck	2C	AGG	I	Weighed		C&D drop off

Orange Waste Project - Waste Data Recording

Source	Waste Type	Sub Waste Type/Vehicle	EPA Yearly Waste Data Report Section	EPA Material Composition Code	Classification	How Measured	Weight factor	Destination
		Aggregate - ute/trailer	2C	AGG	I	Counted	0.3	C&D drop off
	Asbestos	Asbestos - truck	2C	ASB	P	Weighed		ORRRC landfill
		Asbestos - ute/trailer	2C	ASB	P	Counted	0.3	ORRRC landfill
	Wood	Wood - truck	2C	WOOD	I	Weighed		C&D drop off
		Wood - ute/trailer	2C	WOOD	I	Counted	0.3	C&D drop off
	Carpet/textile	Carpet - truck	2C	TEXT	I	Weighed		C&D drop off
		Carpet - ute/trailer	2C	TEXT	I	Counted	0.3	C&D drop off
	Plasterboard	Plasterboard - truck	2C	PB	I	Weighed		C&D drop off
		Plasterboard - ute/trailer	2C	PB	I	Counted	0.3	C&D drop off
	VEM	VEM - truck	2C	VEM	V	Weighed		ORRRC Stockpile
		VEM - car	2C	VEM	V	Counted	0.06	ORRRC Stockpile
		VEM - ute/trailer	2C	VEM	V	Counted	0.3	ORRRC Stockpile
	Other	Other C&D - large	2C	MIX	P	Weighed		Baler/Shredding shed
		Other C&D - car	2C	MIX	P	Counted	0.06	Receival Station
		Other C&D - ute/trailer	2C	MIX	P	Counted	0.3	Receival Station
		Other C&D - minimum	2C	MIX	P	Counted	0.06	Receival Station
	Contaminated soil	Contaminated soil - truck	2C	CONT	E	Weighed		ORRRC landfill
		Contaminated soil - ute/trailer	2C	CONT	E	Counted	0.3	ORRRC landfill
	Recycling	Self haul - car	2C	COMM	R	Counted	0.06	MTF/Bin 1
		Self haul - ute/trailer	2C	COMM	R	Counted	0.3	MTF/Bin 1
		Batteries	2C	COMM	E	Counted	0.005	Batteries/Oil storage at CRC
		Waste oil	2C	COMM	E	Counted	0.005	Batteries/Oil storage at CRC
		Scrap steel - large	2C	COMM	E	Weighed		Scrap steel
		Scrap steel - ute/trailer	2C	COMM	E	Counted	0.3	Scrap steel
		Recovery shop	2C	COMM	E	Counted	0.01	Recovery shop
	Garden organics	Self haul - truck	2C	VEG	O	Weighed		Baler/Shredding shed
		Self haul - car	2C	VEG	O	Counted	0.06	Green drop off
		Self haul - ute/trailer	2C	VEG	O	Counted	0.3	Green drop off
Other waste facilities	Mixed waste	Self haul - truck	2D	MIX	P	Weighed		Baler/Shredding shed
		Self haul - car	2D	MIX	P	Counted	0.06	Receival Station
		Self haul - ute/trailer	2D	MIX	P	Counted	0.3	Receival Station
		Self haul - minimum	2D	MIX	P	Counted	0.06	Receival Station

Orange Waste Project - Waste Data Recording

Source	Waste Type	Sub Waste Type/Vehicle	EPA Yearly Waste Data Report Section	EPA Material Composition Code	Classification	How Measured	Weight factor	Destination
ORRRC Internal Waste Movement								
Combined	Mixed waste	Receival station bins	na	MIX	P	Weighed		Baler/Shredding shed
	Garden organics	Green drop off	na	VEG	O	Weighed		Baler/Shredding shed
	Recycling	Recovered from mixed waste	na	COMM	R	Weighed		MTF
	Recycling	Recovered from organics	na	COMM	R	Weighed		MTF
	Mixed waste	Waste from MTF	na	RES	P	Weighed		Baler/Shredding shed
	Mixed waste	Contamination from organics	na	RES	P	Weighed		Baler/Shredding shed
	Mixed waste	Contamination from mixed waste	na	RES	P	Weighed		Storage areas

Orange Waste Project - Waste Data Recording

Source	Waste Type	Sub Waste Type/Vehicle	EPA Yearly Waste Data Report Section	EPA Material Composition Code	Classification	How Measured	Weight factor	Destination
Waste Leaving ORRRC								
Combined	Recycling	Recycled paper	3A	PAPER	R	Weighed		Off site
		Recycled glass	3A	GLASS	R	Weighed		Off site
		Recycled steel cans	3A	FE	R	Weighed		Off site
		Recycled plastic general	3A	PL	R	Weighed		Off site
		Recycled aluminium cans	3A	AL	R	Weighed		Off site
		Recycled carboard	3A	PAPER	R	Weighed		Off site
		Recycled plastic HDPE	3A	PL	R	Weighed		Off site
		Recycled plastic PET	3A	PL	R	Weighed		Off site
		Recycled other	3A	OTH/	R	Weighed		Off site
		Scrap steel - general	3A	FE	R	Weighed		Off site
		Recycled copper wire	3A	FE	R	Weighed		Off site
		Non ferrous metals	3A	NFE	R	Weighed		Off site
		Metals	3A	FE	R	Weighed		Off site
		Tyres	3A	TYRE	R	Weighed		Off site
		Other	3A	OTH/	R	Weighed		Off site
	Mulch	Self haul - truck	3A	COMP	O	Weighed		Off site
		Self haul - ute/trailer	3A	COMP	O	Counted	0.5	Off site
		Free mulch - truck	3A	COMP	O	Weighed		Off site
		Free mulch - ute/trailer	3A	COMP	O	Counted	0.5	Off site
	Processed	Shredded organics	3A	COMP	O	Weighed		ERRRC composting
		Chipped garden organics	3A	VEG	O	Weighed		ERRRC composting
		Contaminated waste	3A	CONT	P	Weighed		Off site
		Waste oil	3A	OIL	P	Weighed		Off site
		Batteries	3A	BATT	P	Weighed		Off site
		e-waste	3A	OTH/e-waste	I	Weighed		Off site
		Household Hazardous Waste	2A	OTH/HHW	E	Weighed		Off site
	Disposal	Baled mixed waste	3B	MIX	P	Weighed		ERRRC landfill
		Inert mixed waste	3B	MIX	P	Weighed		ERRRC landfill
Waste Leaving ERRRC								
Combined	Recycling	Processed organics	3A	COMP	O	Weighed		Off site

Section 9.4

ERRRC CONSERVATION MANAGEMENT PLAN

CONSERVATION MANAGEMENT PLAN
EUCHAREENA ROAD RESOURCE RECOVERY CENTRE

PREPARED FOR
ORANGE CITY COUNCIL

MARCH 2013

CONSERVATION MANAGEMENT PLAN

EUCHAREENA ROAD RESOURCE RECOVERY CENTRE

PREPARED FOR:

ORANGE CITY COUNCIL

MARCH 2013

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Geolyse Pty Ltd and the authors responsible for the preparation and compilation of this report declare that we do not have, nor expect to have a beneficial interest in the study area of this project and will not benefit from any of the recommendations outlined in this report.

The preparation of this report has been in accordance with the project brief provided by the client and has relied upon the information, data and results provided or collected from the sources and under the conditions outlined in the report.

All maps, plans and cadastral information contained within this report are prepared for the exclusive use of Orange City Council to accompany this report for the land described herein and are not to be used for any other purpose or by any other person or entity. No reliance should be placed on the information contained in this report for any purposes apart from those stated therein.

Geolyse Pty Ltd accepts no responsibility for any loss, damage suffered or inconveniences arising from, any person or entity using the plans or information in this study for purposes other than those stated above.

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Introduction

1.1 INTRODUCTION

Geolyse Pty Ltd (Geolyse) has been commissioned by Orange City Council to prepare a Conservation Management Plan (CMP) to provide for the protection of Aboriginal heritage values and the enhancement of biodiversity values on its Euchareena Road Resource Recovery Centre (ERRRC) Site.

1.2 BACKGROUND

1.2.1 ORANGE WASTE PROJECT

On 28 April 2010 the Minister for Planning granted development consent (09_0025) to the Orange Waste Project (OWP). The OWP consists of:

- the development of additional resource recovery plant at the existing waste facility at Ophir Road; and
- the development of composting and landfilling operations at a new waste facility off Euchareena Road near Molong.

This report relates to the Euchareena Road Site. The location of the site is illustrated on **Drawing 06H_EV01**. For the purposes of this plan, the site has been separated into various areas:

- Remnant woodland areas;
- Rehabilitation corridors;
- Operational area;
- Landscape bunds; and
- Landscape area.

Drawing 06H_EV02 illustrates the site layout.

1.2.2 CONSENT CONDITIONS

Approval was granted to the OWP subject to it being carried out in accordance with the Statement of Commitments and a number of conditions. The conditions relevant to the protection of Aboriginal heritage values and the enhancement of biodiversity values on the Euchareena Road Site are located in Schedule 5 of the consent, and state:

> ***Aboriginal Heritage***
>
> *30. During the life of the project, the Proponent shall protect the scarred tree on site and the 2 artefacts found in the south-western corner of the site, in consultation with the Local Aboriginal Land Council, and to the satisfaction of the Director-General.*
>
> *Note: the scarred tree and artefacts are referred to in Appendix 4 of this approval*

Biodiversity

31. The Proponent shall:

(a) actively manage the areas outside the proposed disturbance areas (shown in broad terms on the map in Appendix 3) for conservation purposes;

(b) only use native grasses and other native species from the White Box-Yellow Box-Blakely's Red Gum Woodland endangered ecological community in any revegetation or rehabilitation works;

(c) improve the quality of the vegetation in these areas; and

(d) increase the amount of White Box-Yellow Box-Blakely's Red Gum Woodland vegetation in the conservation area on the site, to the satisfaction of the Director-General.

Conservation Management Plan

32. The Proponent shall prepare and implement a Conservation Management Plan for the project to the satisfaction of the Director-General. This plan must be prepared in consultation with DECCW by suitably qualified and experienced expert/s whose appointment has been approved by the Director-General, and be submitted to the Director-General for approval prior to the commencement of construction on site. It must provide for both the protection of Aboriginal heritage values and the enhancement of biodiversity values on the site.

Visual Bunds & Landscaping

35. Prior to the construction of the proposed visual bunds on site, the Proponent shall submit detailed plans of the bunds and associated landscaping to the Director-General for approval. Following approval, these plans must be implemented and maintained to the satisfaction of the Director-General.

36 Prior to operations commencing for the project, the Proponent shall landscape the area shaded in blue on the map in Appendix 3 to the satisfaction of the Director-General. This landscaping must use species that are consistent with the existing species in the adjoining conservation area.

1.3 SCOPE OF THIS PLAN

This plan has been prepared to fulfil the requirements of condition 32, as outlined above. The plans to satisfy conditions 35 and 36 have also been incorporated into this plan, as they are integral to the rehabilitation and future management of the site.

In developing this CMP, a review of relevant legislation has been undertaken and is outlined in **Section 3**. As part of the Environmental Assessment (EA) process, the impacts of the development, in terms of Aboriginal heritage and ecology, were assessed in accordance with the relevant legislation in the reports prepared by OzArk and Geoff Cunningham Natural Resource Consultants Pty Ltd. Site specific mitigation measures and recommendations were provided by these reports. The relevant components of the Statement of Commitments were also developed from these assessments. The measures outlined in **Section 4** and **Appendices B-F** of this report is a collation of these measures and commitments.

This CMP, which reflects the recommendations of the Aboriginal heritage and ecological impact assessments and thus the Statement of Commitments, seeks to protect the items of Aboriginal heritage significance and enhance the biodiversity values on site, consistent with the abovementioned conditions of consent.

1.4 CONSULTATION

Following the project approval, OCC has been in consultation with the Office of Environment and Heritage (OEH) (formerly DECCW) in relation to establishing a Conservation Agreement (CA) for the areas of remnant woodland and rehabilitation corridors on site (refer to **Drawing 06H_EV03**). To ensure the CMP is consistent with the CA for the site OEH has advised that the grazing regime for the site needs to have a dual role; providing not only fire fuel management, but also to ensure it leads to an improvement over time of the understorey of the remnant woodland.

1.5 FORMAT OF THIS PLAN

The plan is provided in the following format:

- **Section 1** provides an introduction and background to the plan;
- **Section 2** provides a description of the site and significant items of heritage and ecological significance;
- **Section 3** outlines the legislative framework for the protection of Aboriginal heritage and ecological communities; and
- **Section 4** describes the management and rehabilitation measures for the site prior to and during the operation of the Euchareena Road Resource Recovery Centre.

The Site

2.1 OVERVIEW

The ERRRC site consists of Lot 10 DP 1034198, as illustrated in **Plate 1**.

Throughout the EA process for the DA, it was determined that the site contained:

- two sites of Aboriginal heritage significance; and
- two remnants of the Box Gum Woodland Ecological Community (EC). The EC is known as 'White Box Yellow Box Blakely's Red Gum Woodland Community' and listed as an Endangered EC under the NSW *Threatened Species Conservation Act 1995* and known as 'Grassy White Box Woodlands and Derived Native Grassland' listed as a Critically Endangered EC under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999.*

These items and communities are discussed further in the following sections. **Plate 2** and **Plate 3** illustrate the location of these features.

2.2 ABORIGINAL HERITAGE

2.2.1 BACKGROUND

As part of the EA two assessments for Aboriginal heritage were undertaken. In 2005 an Aboriginal Heritage Assessment was undertaken by Archaeological Surveys and Reports Pty Ltd in consultation with the Orange Local Aboriginal Land Council (LALC). In 2009 OzArk Environmental Heritage and Management Pty Ltd (OzArk) provided an update of the initial report, specifically providing a review of the methods and results of the initial report and further consultation with Aboriginal stakeholders, consistent with the more recent *Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation*.

2.2.2 ITEMS OF HERITAGE SIGNIFICANCE

These assessments identified two sites of Aboriginal heritage significance, Molong ST1; being a scarred tree, and Molong OS1; being an open site/artefact scatter. **Plate 2** illustrates the location of these items.

GHD (2009:C.4-69-70) provides the following details on the two sites:

Site:	*Molong ST1*
Site Type:	*Scarred Tree*
Tree:	*Box (living)*
Shape of scar:	*Elliptical (shield-shaped)*
Length of scar:	*147cm*
Width of scar:	*16cm*
Girth mid scar:	*247cm*
Depth of bark:	*15cm*
Height of base of scar above ground:	*90cm*

Site:	*Molong OS1*
Site Type:	*Open site/artefact scatter*
Artefacts comprise	*Grindstone or muller. A water-worn river cobble of layered (laminated) sandstone, exhibiting a worn surface. Regardless of the artefacts' history, either grinding stone or natural movement from water movement, the cobble is out of its natural geological context, being too large to have come from the sedimentary soils within the Euchareena Road Site, and must therefore have been manually brought onto the site. During the site meeting on 7 July 2009, it was considered the muller may indeed only be a natural stone without elements of Aboriginal use and that the hand axe is at best interpreted as a blank. Hence it was assessed these artefacts had minimal archaeological significance.* *A ground-edged axe manufactured from a river cobble of indurated sandstone. The sharpened end was damaged, half of the cutting edge having been broken off as a single flake, either during use or from a post-depositional event. The butt-end was battered and pitted indicating that it had also been used as a hammer stone.*

2.3 ECOLOGICAL COMMUNITIES

2.3.1 BACKGROUND

A Flora Assessment of the subject site for the Euchareena Road RRC was undertaken by Geoff Cunningham Natural Resource Consultants Pty Ltd (GCNRC) in 2009. This assessment involved an initial field inspection in October 2003 and a subsequent inspection in April 2009. The field assessments were undertaken in accordance with the Department of Environment and Climate Change's *Threatened Species Survey and Assessment: Guidelines for Developments and Activities – Working Draft*.

2.3.2 COMMUNITIES OF SIGNIFICANCE

The assessment identified two major remnants of the Box-Gum Woodland on site. **Plate 3** illustrates the location and extent of the community on site.

GHD (2009:C4-36&38) provides the following description of the Box-Gum Woodland Community found on site:

> *Trees are spaced from <2 m to more than 100 m apart but are generally recorded at approximately 5 m to 20 m spacings. The main species is White Box (Eucalyptus albens), with Yellow Box (Eucalyptus melliodora) in lower areas and a scattering of Blakely's Red Gum (Eucalyptus blakelyi). Apple Box (Eucalyptus bridgesiana) is found on the eastern side of the Euchareena Road Site near the drainage depression in that location. In 2003, some White Box trees were showing signs of dieback. This situation was more noticeable during the 2009 survey when many trees in ridgetop locations were observed to be dying back or dead.*
>
> *Shrubs are uncommon with only two native species recorded - Riceflower (Pimelea sp. and Hickory Wattle (Acacia implexa).*

This community is widespread in the region surrounding the Euchareena Road Site. Although much of the area that the community originally occupied has been cleared there are still many remnants present in the Orange - Molong - Wellington area. The remnants on the Site have been affected by clearing and grazing by domestic livestock. Its health, or condition, is at low to moderate levels and there is little evidence of recent regeneration of native trees and shrubs.

The Box-Gum Woodland is listed as:

- *An Endangered Ecological Community, known as White Box Yellow Box Blakely's Red Gum Woodland, under the NSW Threatened Species Conservation Act 1995 (TSC Act); and*
- *A Critically Endangered Ecological Community, known as White Box Yellow Box Blakely's Red Gum Grassy Woodland and Derived Native Grassland, under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act).*

Legislative Framework

3.1 NATIONAL PARKS & WILDLIFE ACT 1974

3.1.1 ABORIGINAL HERITAGE

The relevant legislation in NSW for the protection of Aboriginal heritage is the *National Parks and Wildlife Act 1974* (NPW Act). The objects of the Act in relation to cultural heritage are:

> *(b) the conservation of objects, places or features (including biological diversity) of cultural value within the landscape, including, but not limited to:*
>
> *(i) places, objects and features of significance to Aboriginal people, and*
>
> *(ii) places of social value to the people of New South Wales, and*
>
> *(iii) places of historic, architectural or scientific significance,*
>
> *(c) fostering public appreciation, understanding and enjoyment of nature and cultural heritage and their conservation,*
>
> *(d) providing for the management of land reserved under this Act in accordance with the management principles applicable for each type of reservation.*

In relation to Aboriginal heritage, Part 6 of the Act exists to provide protection for Aboriginal objects by providing offences for harm. However for Project Approvals, a permit under section 87 or consent under section 90 of the NPW Act is not required.

Instead the OEH provides Environmental Assessment Requirements for such projects. In this instance the requirements provided by the former DECCW were:

> *1. The EA should address and document the information requirements set out in the draft "Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation", involving surveys and consultation with the Aboriginal community.*
>
> *2. Identify the nature and extent of Aboriginal cultural heritage values across the project area and assess the nature and extent of the likely impacts on this heritage of all proposed activities;*
>
> *This assessment should consider the cumulative impact of the proposal and do so in a regional context by assessing the cumulative impact to cultural heritage of proposed and approved developments throughout the region.*
>
> *3. Describe the actions that will be taken to avoid or mitigate impacts or compensate, in order to prevent unavoidable impacts of the project on Aboriginal cultural heritage values. This should include an assessment of the effectiveness and reliability of the measures and any residual impacts after these measures are implemented.*
>
> *4. Where it is determined that impacts are unavoidable and excavation and/or salvage and/or destruction of Aboriginal objects is proposed detailed methodologies for the conduct of these activities should be provided. These methodologies should conform to archaeological best practice and include strategies for the effective reporting of all actions, results and required amendments to the AHIMS site Register to DECC. Where transfer of Aboriginal objects to local community members is proposed in any salvage methodology, the EA should demonstrate both a commitment to and a process for meeting the statutory obligation to seek a Care and Control Permit under s85A of the NPW Act 1974 for such transfer.*
>
> *5. Where new sites are located during the assessment process and/or at any time during the life of the project in accordance with s91 of the National Parks and Wildlife Act 1974, DECC requires that it be notified. This notification is expected to be in the form of the completion of DECC Aboriginal Heritage Site Cards, available on the DECC website. The EA should include all details of any new sites recorded during the assessment process and include a procedure for the formal identification, recording and notification of any new sites located during any project related activities, and for the life of the project.*

6. *The EA needs to clearly demonstrate that comprehensive and effective consultation with Aboriginal communities has been undertaken. This consultation should allow Aboriginal community input into the survey, assessment and determination of the Aboriginal cultural heritage values of the project development areas. In addition, this consultation should enable Aboriginal input into the assessment of the impacts of the proposed works on identified Aboriginal cultural heritage values inclusive of the development of avoidance and mitigation options and in making final recommendations. This consultation should be conducted in accord with the "Interim Community Consultation Guidelines for Applicants" (Dec, 2004).*

3.1.2 NATURAL HERITAGE

The NPW Act also provides for conservation of natural heritage, with the relevant objects of the Act being *inter alia*:

(a) the conservation of nature, including, but not limited to, the conservation of:

(i) habitat, ecosystems and ecosystem processes, and

(ii) biological diversity at the community, species and genetic levels, and

(c) fostering public appreciation, understanding and enjoyment of nature and cultural heritage and their conservation,

(d) providing for the management of land reserved under this Act in accordance with the management principles applicable for each type of reservation.

In achieving the above, the act makes it an offence to harm, pick a threatened species, population or ecological community, or damage any critical habitat.

Part 4 of the Act provides for the reservation of lands, including the establishment of and requirements for Conservation Agreements (CA) (Division 12 of Part 4). Section 69B of the Act states:

(1) A conservation agreement may be entered into:

(a) in relation to areas containing scenery, natural environments or natural phenomena worthy of preservation,

(b) in relation to areas of special scientific interest,

(c) in relation to areas that are the sites of buildings, objects, monuments or events of national significance,

(d) in relation to areas in which Aboriginal objects, or Aboriginal places, of special significance are situated,

(e) for the purpose of the study, preservation, protection, care or propagation of fauna or native plants or other flora,

(e1) for the purpose of the study, preservation, protection or care of karst environments,

(e2) for the purpose of the conservation of critical habitat or the conservation of threatened species, populations or ecological communities, or their habitats, or

(e3) for the purpose of the protection, conservation or management of waters in or in connection with an area or purpose referred to in paragraph (a), (b), (c), (d), (e), (e1) or (e2), or

(f) for any purpose connected with an area or purpose elsewhere referred to in this subsection.

The CA would be established for the purpose outlined in (e2) above. The area covered by the CA is illustrated in **Drawing 06H_EV03**.

3.2 THREATENED SPECIES LEGISLATION

3.2.1 THREATENED SPECIES CONSERVATION ACT

The primary piece of NSW legislation protecting EECs is the *Threatened Species Conservation Act 1995* (TSC Act). The objects of the TSC Act are:

(a) to conserve biological diversity and promote ecologically sustainable development, and

(b) to prevent the extinction and promote the recovery of threatened species, populations and ecological communities, and

(c) to protect the critical habitat of those threatened species, populations and ecological communities that are endangered, and

(d) to eliminate or manage certain processes that threaten the survival or evolutionary development of threatened species, populations and ecological communities, and

(e) to ensure that the impact of any action affecting threatened species, populations and ecological communities is properly assessed, and

(f) to encourage the conservation of threatened species, populations and ecological communities by the adoption of measures involving co-operative management.

As outlined in the previous section, the White Box Yellow Box Blakely's Red Gum Woodland is listed as an EEC under the TSC Act. Whilst the RRC would not impact upon the EEC, there is onus to protect and enhance the community consistent with the above objectives.

Recovery plans are to be prepared for EECs. The object of a recovery plan is to promote the recovery of the threatened species, population or ecological community to which it relates to a position of viability in nature. There is no recovery plan for the Box Woodland at a state level. There is however a draft National Recovery Plan which is discussed further in **Section 3.2.3**.

The Box-Gum Woodland species profile on OEH's website does however identify the following Threats and Management Actions for the community.

- *Threats*
  - *Clearing, degradation and fragmentation of remnants for agricultural, forestry, infrastructure and residential development.*
  - *Continuous heavy grazing and trampling of remnants by grazing stock, resulting in losses of plant species (simplification of the understorey and ground layer and suppression of over storey), erosion and other soil changes (including increased nutrient status).*
  - *Invasion of remnants by non-native plant species, including noxious weeds, pasture species and environmental weeds, including garden escapes, olives and pines.*
  - *Invasion of remnants by feral animals resulting in the loss or modification of habitat.*
  - *Disturbance and clearance of remnants during road, rail and infrastructure maintenance and upgrades.*
  - *Harvesting of firewood (either living or standing dead, including material on the ground).*
  - *Collection of on-ground woody debris in the guise of a 'clean-up'.*
- *Management Actions*
  - *Undertake control of rabbits, hares, foxes, pigs and goats (using methods that do not disturb the native plants and animals of the remnant).*
  - *Do not harvest firewood from remnants (this includes living or standing dead trees and fallen material).*
  - *Leave fallen timber on the ground.*
  - *Manage stock to reduce grazing pressure in high quality remnants (i.e. those with high flora diversity or fauna habitat).*
  - *Encourage regeneration by fencing remnants, controlling stock grazing and undertaking supplementary planting, if necessary.*
  - *Erect on-site markers to alert maintenance staff to the presence of a high quality remnant or population of a threatened species.*

- *Undertake weed control (taking care to spray or dig out only target species).*
- *Protect all sites from further clearing and disturbance.*
- *Ensure remnants remain connected or linked to each other; in cases where remnants have lost connective links, re-establish them by revegetating sites to act as stepping stones for fauna, and flora (pollen and seed dispersal).*
- *Mark remnants onto maps (of the farm, shire, region, etc) and use to plan activities (e.g. remnant protection, rehabilitation or road, rail and infrastructure maintenance work). On-site markers can alert maintenance staff to the presence of a threatened species.*

3.2.2 ENVIRONMENTAL PLANNING & ASSESSMENT ACT

Projects assessed under Part 3A of the EP&A Act are not required to conduct an Assessment of Significance (required by s.5A of the Act), however proponents must demonstrate that a proposal will improve or maintain biodiversity outcomes.

By virtue of granting approval for the project, the Minister for Planning has determined that the proposal, with its proposed management measures, will improve or maintain biodiversity outcomes.

3.2.3 ENVIRONMENT PROTECTION & BIODIVERSITY CONSERVATION ACT

3.2.3.1 Overview

The primary piece of Commonwealth legislation protecting EECs is the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). As outlined in the previous section, the 'White Box Yellow Box Blakely's Red Gum Grassy Woodland and Derived Native Grassland' is listed as a CEEC under EPBC Act.

A draft *National Recovery Plan: White Box Yellow Box Blakely's Red Gum Grassy Woodland and Derived Native Grassland* has been prepared on behalf of the Commonwealth Department of Environment, Water, Heritage and the Arts (DEWHA). The aim of the draft plan is:

> *… to promote the recovery and prevent the extinction of the critically endangered ecological community…* (DECCW 2010:3).

For the life of the recovery plan, the specific objective is to minimise the risk of extinction of the EEC, which is to be achieved through:

- *achieving no net loss in extent and condition of the ecological community throughout its geographic distribution;*
- *increasing protection of sites in good condition;*
- *increasing landscape functionality of the community through management and restoration of degraded sites;*
- *increasing transitional areas around remnants and linkages between remnants; and*
- *bringing about enduring changes in participating land manager attitudes and behaviours towards environmental protection and sustainable land management practices to increase extent, integrity and function of Box-Gum Grassy Woodland* (DECCW 2010:3).

The draft recovery plan identifies the following activities and processes that have and are leading to the decline of the Box Woodland:

- *Land Use and Management Change;*
  - Agricultural and horticultural development
  - Rural residential and urban development
  - Public infrastructure

- *Conflicting Management Practices;*
  - Grazing regimes and pasture management
  - Firewood collection and 'tidying up'
  - Changed fire regimes
  - Increased soil nutrients and use of chemicals
  - Mowing or slashing regimes
  - Revegetation management
- *Degrading Landscape Processes;*
  - Weed invasion
  - Climate Change
  - Salinity
  - Declining tree health and regeneration
- *Other Potential Threats;*
  - *Animal pests*
  - *Disease*
  - *Collection/removal of native flora.*

Table 4 in the draft recovery plan provides a list of current best practices for management of the Box Woodland. It is replicated below in **Table 3.1**.

Table 3.1 – Site Management Practices for the Continued Existence of Box-Gum Grassy Woodland

Maintain or improve soil conditions	• Avoid physical disturbance (e.g. cultivation, ripping, excavation) • Avoid chemical changes (e.g. use of fertilisers or soil ameliorants) • Avoid soil compaction from vehicles/machinery or stock camps
Maintain or improve drainage conditions / existing hydrological regime	• Do not direct run-off (from roads, urban developments, contour banks) into remnant areas • Do not divert existing run-on from remnant areas (e.g. diversion drains)
Control exotic plant introductions	• Prevent the introduction of exotic pasture species (i.e. pasture improvement) • Prevent the introduction of non-indigenous native species • Ensure machinery hygiene protocols are implemented to prevent the spread of weeds • Prevent the stockpiling of topsoil or overburden within remnant areas • Implement a weed control program to control weed invasion, wildlings from adjacent tree plantings (e.g. Radiata Pine and European Olives) and garden escapees
Avoid inappropriate native tree planting	• Do not plant indigenous native trees/shrubs in high quality and/or small derived grassland sites • Where practicable and subject to the viability of available seed, only plant trees/shrubs from local provenance seed • Plant trees and shrubs at natural grassy woodland densities
Maintain or improve connectivity	• Ensure existing links are maintained between Box-Gum Grassy Woodland remnants and/or between Box-Gum Grassy Woodland and other native vegetation types, for example grassland, woodland, forest, riparian and/or wetlands
Maintain sunlight levels	• Prevent changes which will result in prolonged shading (e.g. buildings, dense tree plantings)
Maintain or improve structural diversity	• Prevent the removal of regenerating trees and shrubs within remnant patches • Prevent firewood collection or the "tidying up" of fallen dead timber • Prevent the removal of standing dead hollow trees

Table 3.1 – Site Management Practices for the Continued Existence of Box-Gum Grassy Woodland

Ensure adequate buffers are retained	• Protect areas of Box-Gum Grassy Woodland from adjacent landuse (e.g. urban and agricultural development) that may potentially impact on its integrity
Minimise chemical use	• Weed control should use spot-spraying, basal spraying, stem injection or cut and paint application methods • Avoid overspray and minimise impacts on non-target species • Monitor treated areas to ensure weeds do not establish on any resultant bare patches
Implement strategic grazing	• Ensure remnant areas are rested at appropriate times, for example when perennial native ground cover species are flowering and seeding
Implement appropriate burning regimes	• Burning regimes will depend on the floristic composition of a remnant and research is continuing to determine appropriate fire regimes for Box-Gum Grassy Woodland in all its various condition states. For remnants dominated by Snow Grass and Kangaroo Grass autumn burning cycles approximately every 4-8 years are considered adequate for maintaining floristic diversity • Any burning should be applied to remnants in mosaics (i.e. burning small areas at staggered intervals) to allow survival of soil and ground fauna (including invertebrates, amphibians and reptiles) and promote diversity in the states of the ecological community • Sites where burning is practiced should retain unburnt areas, to provide refuges for species of fauna and flora that may be intolerant of fire • Timing of burns must be considered in relation to the flowering and seeding of native and exotic species. Where possible burns should be carried out after natives have seeded but before weeds flower and seed • Be aware that some weed species (e.g. Coolatai Grass) increase with burning
Avoid inappropriate mowing / slashing	• If mowing/slashing is used to reduce biomass within remnants and increase species diversity, it should be carried out in a mosaic pattern to allow for the retention of refuges for tall tussock grasses, regenerating overstorey and groundlayer dependent fauna as well as habitat features (such as fallen logs, litter) • On-road sides, only mow areas essential for visibility and safety, in most cases this will be to the table drain. Mow from clean areas out • Ensure machinery hygiene protocols are implemented to avoid the spread of weeds
Control feral animals	• Protect native fauna and flora populations by controlling feral predators; foxes, dogs, cats, pigs within and or adjacent to remnant areas • Do not push fallen or felled timber into stacks or windrows within remnant areas as these form harbours for foxes, cats and rabbits • If ripping is used to control rabbits within remnants ensure machinery hygiene procedures are adhered to, and ripped areas are monitored to prevent weed infestations • Protect native flora by controlling feral grazers; rabbits, goats and deer within remnants
Control domestic pets	• Within remnants control domestic cats and dogs • Avoid increasing the numbers of domestic pets in, and or adjacent to, remnant areas

Source: DECCW 2010:51-52

3.2.3.2 Referral

A referral (2009/5020) was made to the Commonwealth Department of the Environment, Water, Heritage and the Arts (DEWHA) on 22 July 2009 for the Euchareena Road Site component of the proposed waste facility. A number of measures were identified, as part of the application, to avoid or reduce impacts of the development. These measures essentially encompassed those as outlined in **Section 4** of this report. However, the following measure was also included:

> *The Proponent would investigate the possibility of implementing an adaptive management plan of the woodland areas as a native wildlife sanctuary preferably under a covenant of a voluntary conservation agreement with the DECC (NPWS).*

On 4 November 2009, DEWHA determined that the development did not constitute a controlled action, and thus does not require approval under the EPBC Act.

3.2.4 NATIONAL PARKS AND WILDLIFE ACT

As outlined above, Council proposes to implement an adaptive management plan for the woodland areas as a native wildlife sanctuary through a Conservation Agreement under the *National Parks and Wildlife Act 1974*.

Council has made an application to the OEH for the establishment of a conservation agreement/wildlife refuge. OEH has advised that they agree to place a Conservation Agreement over the remnant woodland areas and rehabilitation corridors to ensure their protection in perpetuity. **Drawing 06H_EV03** illustrates the proposed Conservation Agreement Area. The areas covered by the Conservation Agreement would be managed in accordance with the appendices attached to this report.

Management & Rehabilitation

4.1 ABORIGINAL HERITAGE

4.1.1 OVERVIEW

An Aboriginal Heritage Assessment (AHA) was undertaken as part of the Project Approval, consistent with the guidelines issued by the former DECCW as outlined in **Section 3.1**. It was determined that the two sites identified (refer **Section 2.2.2**) would be outside of the impact footprint of the waste facility and thus would not be destroyed or disturbed as a result of the project (Ozark 2009a:13).

To ensure the identified sites are conserved into the future and to enable their optimal environmental management, the AHA recommended an Aboriginal Heritage Management Plan (AHMP) be prepared.

A draft AHMP was prepared and has been circulated amongst registered stakeholders for discussion:

> *It was determined that the contents of the AHMP should provide for scarred tree Molong ST1 and open site Molong OS1 to be conserved and their location and legislative protection made known to the environmental manager of the proposed RRC and to any staff or contractors that may have reason to access the area* (Ozark 2009a:17).

The AHMP has since been finalised (**Appendix A**) with relevant management measures are summarised below and outlined in **Appendix B**.

4.1.2 MANAGEMENT MEASURES

- Molong ST1:
  - *It was determined that the existing fencing of this area is sufficient to ensure this site is conserved and that the fencing of the individual tree is unwarranted and likely to draw undue attention. The location of this tree will then remain known to the Environmental Management team of Orange City Council and the Euchareena Road RRC staff and inductions as discussed below should be used to ensure staff and contractors using the RRC are aware of the location of this site and its legislative protection (Ozark 2009b:11).*
- Molong OS1
  - *The location of this site should remain known to the Environmental Management team of Orange City Council and the Euchareena Road RRC staff and inductions as discussed below should be used to ensure staff and contractors using the RRC are aware of the location of this site and its legislative protection (Ozark 2009b:12).*
- General
  - *The location of both sites will be recorded on a master plan in the Site Office, where the Site Manager has visual access to it. This plan will note that protected heritage items are present at these locations and that there will be no impacts in the vicinity of these locations (Ozark 2009b:13).*
  - *The OCC will appoint someone (e.g. Environmental Officer or Site Manager) to take responsibility for the continued protection of these sites from future impacts as they arise and to ensure that fencing, if it is to be permanent, is appropriately maintained (Ozark 2009b:13).*
  - *Part of the site induction for all staff and contractors will include a section on Aboriginal heritage. This induction will include brief reference to the legislative framework through which Indigenous heritage is protected, particular reference will be made to the location of the sites as well as providing a more general introduction to cultural heritage (Ozark 2009b:13).*

4.2 ECOLOGICAL COMMUNITIES

4.2.1 OVERVIEW

Consistent with the legislative framework outlined in **Section 3**, and as described in the EA (GHD 2009) as part of the Project Approval, the following rehabilitation and management measures are proposed.

4.2.2 REHABILITATION AND MANAGEMENT MEASURES

Replanting of Native Species

Many of the original native groundcover species have disappeared from within the woodland remnants at the Euchareena Road Site and many of the mature trees that exist within these remnants are debilitated. The Project includes the conservation and enhancement of these woodland remnants and the planting of a connecting area of vegetation between the two remnant stands. As such, the Proponent would supplement the existing woodland through planting seedlings of White Box, Yellow Box and Blakely's Red Gum within the existing remnants. The plantings would not be too dense as the original woodlands were relatively open and 'grassy' for the most part. These seedlings would be propagated from seed collected on site together with specific understorey species sourced locally. The seedlings would be protected from grazing by native and domestic animals by well-maintained perimeter fencing, and where appropriate, substantial tree guards.

Encouragement of Natural Regeneration

The likelihood of native groundcover species on the Euchareena Road Site out-competing the entrenched populations of introduced species is low. Tree and shrub regeneration is more likely to occur and as such, whenever natural regeneration of native trees and shrubs occurs, the individuals or clumps would be protected from damage by grazing animals by tree guards or temporary fencing of the regeneration areas.

Weed Management

The nature of the proposed Euchareena Road RRC could make the site susceptible to the possible infestation of weed species not already present in the area. To combat this, the following would be implemented:

- All seed stock in incoming green waste would be rendered infertile through the enclosed composting process;
- Regular inspections of the Euchareena Road Site;
- Education of staff with respect to weed identification and control;
- Continual monitoring and control of identified noxious weeds; and
- Investigation into the practicality of sowing crops or competitive improved pastures on sections of the Site not required for immediate disturbance as a means of weed control.

Prevention of Fire and Fire Management

The management of the entire Euchareena Road Site is an important part of the Project as the undisturbed areas, if left ungrazed, could present a fire hazard due to the growth of dense groundcover. Occasional slashing or controlled grazing would be undertaken as part of responsible land management in areas not included in the woodland enhancement efforts, to minimise fire risk on the property.

Groundcover management within the native vegetation remnants would be appropriately achieved by grazing with cattle using appropriate seasonal stocking rates to ensure that seasonal conditions are taken into account and that an adequate level of ground cover remains at all times. This would be undertaken through a contractual arrangement with a stock owner that allows grazing of the remnant woodland areas when herbage is available and provides for immediate adjustment of stocking rates or stock removal once critical ground cover levels are reached. In the remnant woodland areas, grazing is preferable to mowing/slashing due to the restricted machine access due to the presence of rocks, logs and other obstructions. Grazing would also achieve a more even management of herbage. Cattle would be used as they generally tend not to graze plants as low as sheep and thus the potential for natural tree and shrub establishment would be enhanced.

The Proponent would incorporate a fire management plan as part of the Site Environmental Management Plan. This plan would incorporate details of sources of water for firefighting, the need for fire extinguishers on all mobile equipment and suitable training for site-based personnel. It is also noted that all composting to be conducted on site would be undertaken in enclosed buildings. Specific controls would be adopted to ensure spontaneous combustion does not occur throughout the life of the Euchareena Road RRC.

4.3 REHABILITATION & MANAGEMENT MEASURES

The proposed rehabilitation and management measures to be undertaken for the site have been compiled for each of the components of the site and provided in the Appendices to this plan.

- **Appendix B** addresses Aboriginal Heritage;
- **Appendix C** addresses the Remnant Woodland Areas;
- **Appendix D** addresses the Rehabilitation Corridors;
- **Appendix E** addresses the Landscaped Bunds; and
- **Appendix F** addresses the Landscaped Area.

The rehabilitation and management measures have been provided in a table for each of the appendices based on the timing of the project approval, i.e. prior to works commencing, during works, during operation of the RRC, and post operation of the RRC.

4.4 TIMING

The tables titled *Rehabilitation and Management Measures* in each of the Appendices providing timing of the components of the project in relation to the construction and operation of the facility.

The landscape strip adjacent to Bund 1 would be established prior to any works commencing on site.

The Landscaped Area adjacent to Euchareena Road would be planted prior to operations commencing on site.

All landscape bunds would be constructed as part of the Stage 1 works.

4.5 ORANGE CITY COUNCIL RESPONSIBILITIES

OCC is responsible for implementation of all measures outlined in the Appendices, and ensuring all people engaged to undertake the above works (both internal and external) are suitably qualified.

References

Geoff Cunningham Natural Resource Consultants Pty Ltd (GCNRC). 2009, *Flora Assessment of the Euchareena Road Resource Recovery Centre*, GCNRC, Killara.

GHD. 2009, *Orange Resource Recovery and Waste Management Project Environmental Assessment*, GHD, Sydney.

NSW Department of Environment, Climate Change and Water (DECCW). 2010, *draft National Recovery Plan: White Box Yellow Box Blakely's Red Gum Grassy Woodland and Derived Native Grassland*, DECCW, Sydney.

Ozark Environmental & Heritage Management Pty Limited (Ozark). 2009a, *Aboriginal Heritage Assessment of the Euchareena Road Resource Recovery Centre*, Ozark, Dubbo.

Ozark Environmental & Heritage Management Pty Limited (Ozark). 2009b, *Aboriginal Heritage Management Plan for the Euchareena Road Resource Recovery Centre*, Ozark, Dubbo.

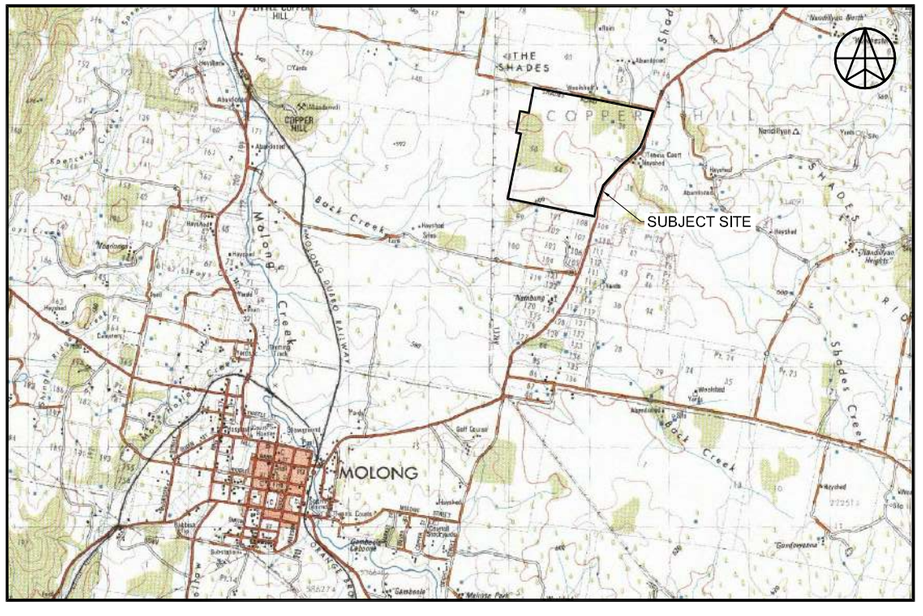
Drawings

EUCHAREENA ROAD RESOURCE RECOVERY CENTRE

CONSERVATION MANAGEMENT PLAN

ORANGE CITY COUNCIL

SCHEDULE OF DRAWINGS			
SHEET	TITLE	REV.	DATE
06G_EV01	TITLE SHEET, DRAWING SCHEDULE & SITE LOCALITY	G	04/05/2011
06G_EV02	SITE PLAN	G	04/05/2011
06G_EV03	CONSERVATION AGREEMENT AREA	G	04/05/2011



SITE LOCALITY

NOT TO SCALE

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orange@geolyse.com
www.geolyse.com
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P.O. BOX 1963
ORANGE, NSW 2800
Ph. (02) 6393 5000
Fx. (02) 6393 5050

No	DATE	DRAFTING CHECK	PM CHECK	DETAILS
A	26/05/10	LRP	EJB	ISSUED TO CLIENT
B	21/07/10	LRP	EJB	ISSUED TO CLIENT
C	08/02/11	LRP	EJB	ISSUED TO CLIENT
D	08/03/11	RmS	EJB	ISSUED TO CLIENT FOR REVIEW
E	06/04/11	RmS	EJB	ISSUED TO CLIENT FOR REVIEW
F	18/04/11	RmS	EJB	ISSUED TO CLIENT FOR REVIEW
G	04/05/11	RmS	EJB	ISSUED TO CLIENT FOR REVIEW

PROJECT

EUCHAREENA ROAD RESOURCE RECOVERY CENTRE CONSERVATION MANAGEMENT PLAN

FILE REFERENCE: 208212_06G_EV01-EV02.dwg

APPROVAL AUTHORITY

NSW GOVERNMENT DEPARTMENT OF PLANNING

CLIENT

ORANGE Australia's Colour City

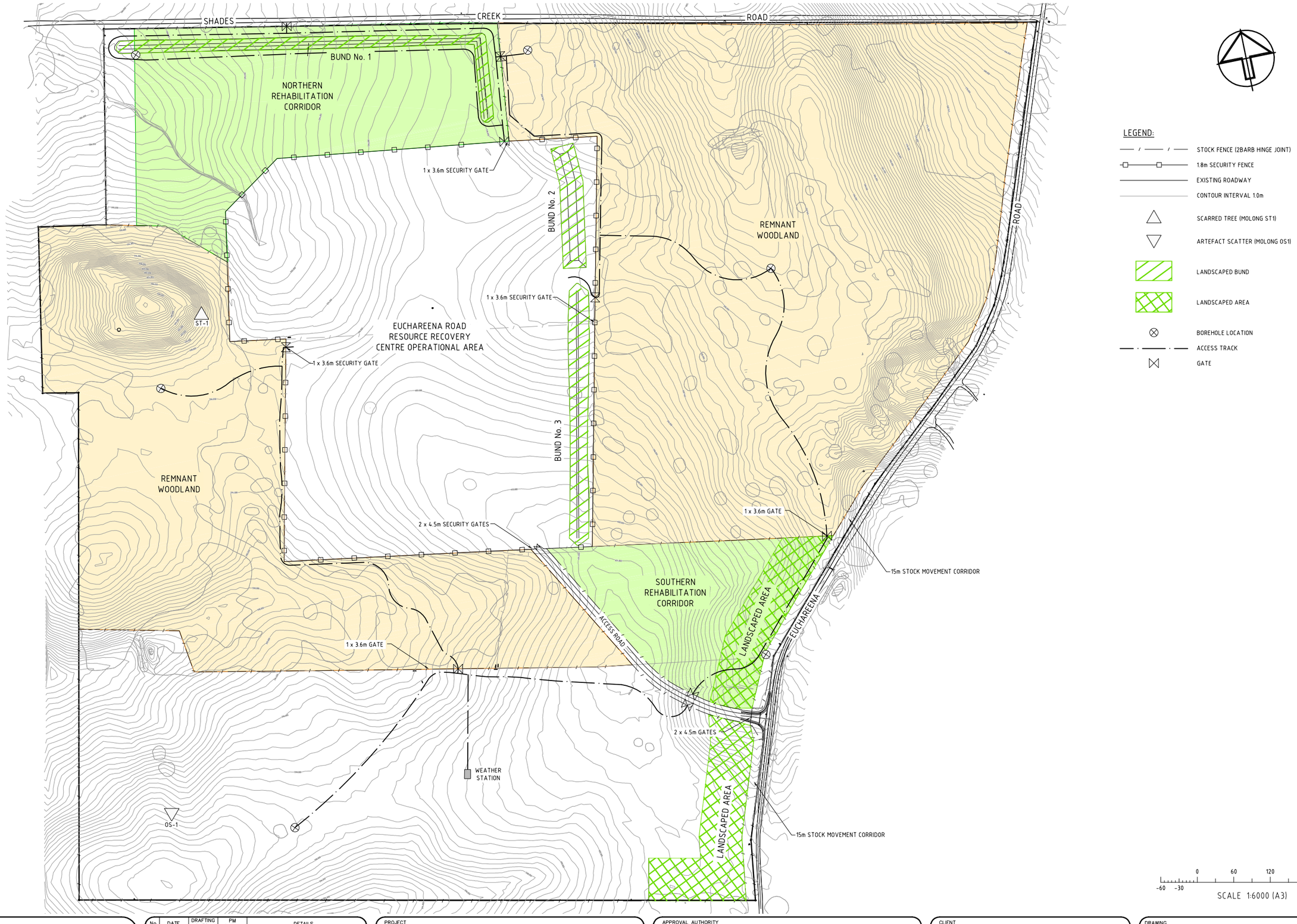
CIVIC CENTRE
CNR BYNG ST AND
LORDS PLACE,
ORANGE NSW 2800

DRAWING

TITLE SHEET, DRAWING SCHEDULE & SITE LOCALITY

PROJECT NUMBER: 208212 | DRAWING NUMBER: 06G_EV01 | REV: G

SOURCE: TOPOVIEW RASTER VIEWER



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F	18/04/11	RmS	EJB	ISSUED TO CLIENT FOR REVIEW
G	04/05/11	RmS	EJB	ISSUED TO CLIENT FOR REVIEW

PROJECT
EUCHAREENA ROAD RESOURCE RECOVERY CENTRE CONSERVATION MANAGEMENT PLAN
FILE REFERENCE: 208212_06G_EV01-EV02.dwg

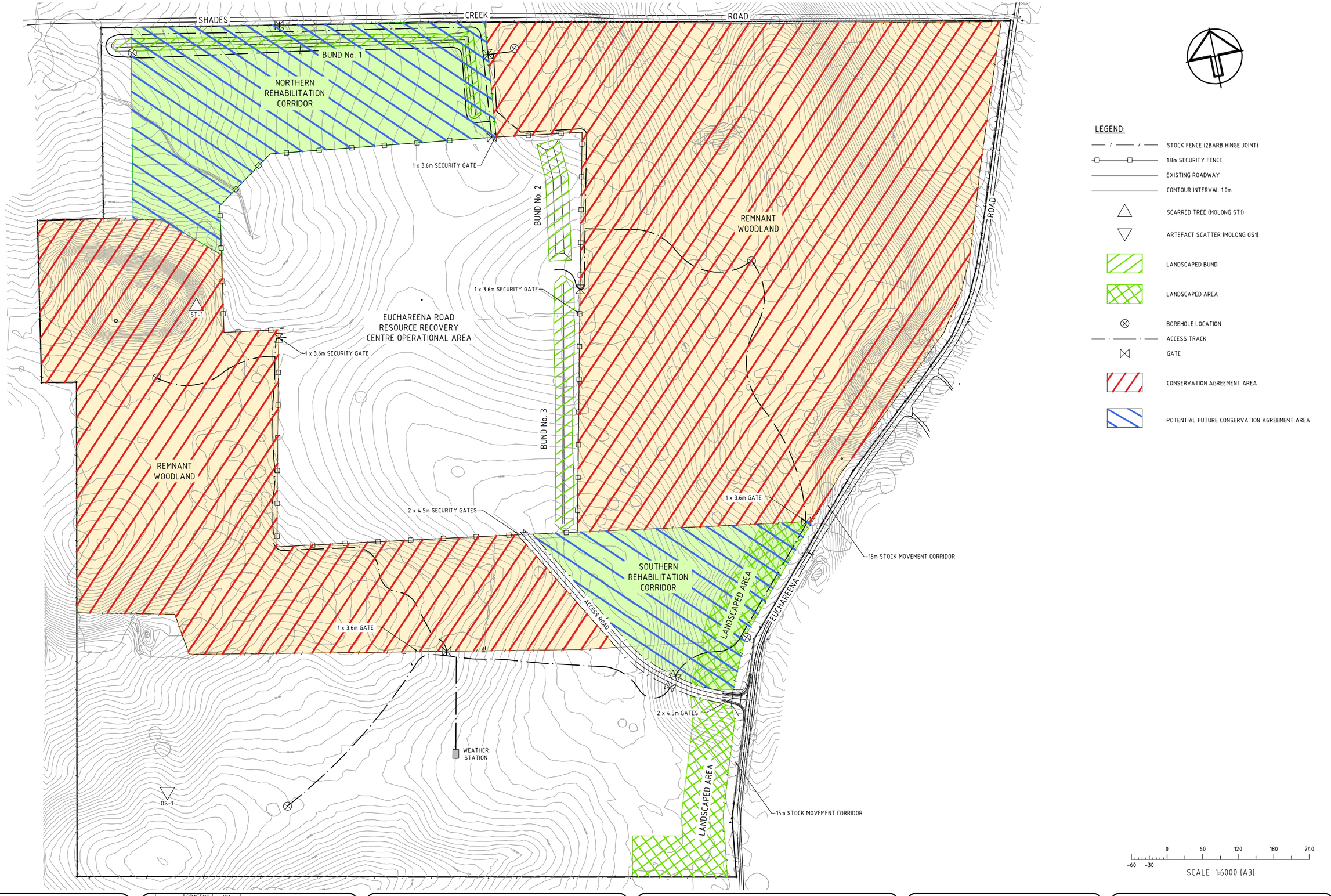
APPROVAL AUTHORITY
NSW GOVERNMENT
DEPARTMENT OF PLANNING

CLIENT
ORANGE Australia's Colour City
CIVIC CENTRE
CNR BYNG ST AND LORDS PLACE,
ORANGE NSW 2800

DRAWING
SITE PLAN

PROJECT NUMBER: 208212 | DRAWING NUMBER: 06G_EV02 | REV. G

SOURCE: INTERNAL



LEGEND:

- STOCK FENCE (2BARB HINGE JOINT)
- 1.8m SECURITY FENCE
- EXISTING ROADWAY
- CONTOUR INTERVAL 1.0m
- SCARRED TREE (MOLONG ST1)
- ARTEFACT SCATTER (MOLONG OS1)
- LANDSCAPED BUND
- LANDSCAPED AREA
- BOREHOLE LOCATION
- ACCESS TRACK
- GATE
- CONSERVATION AGREEMENT AREA
- POTENTIAL FUTURE CONSERVATION AGREEMENT AREA

0 60 120 180 240
-60 -30
SCALE 1:6000 (A3)

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No	DATE	DRAFTING CHECK	PM CHECK	DETAILS
A	26/05/10	LRP	EJB	ISSUED TO CLIENT
B	21/07/10	LRP	EJB	ISSUED TO CLIENT
C	08/02/11	LRP	EJB	ISSUED TO CLIENT
D	08/03/11	RmS	EJB	ISSUED TO CLIENT FOR REVIEW
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G	04/05/11	RmS	EJB	ISSUED TO CLIENT FOR REVIEW

PROJECT
EUCHAREENA ROAD RESOURCE RECOVERY CENTRE CONSERVATION MANAGEMENT PLAN
FILE REFERENCE: 208212_06G_EV01-EV02.dwg

APPROVAL AUTHORITY
NSW GOVERNMENT
DEPARTMENT OF PLANNING

CLIENT
ORANGE Australia's Colour City
CIVIC CENTRE
CNR BYNG ST AND LORDS PLACE,
ORANGE NSW 2800

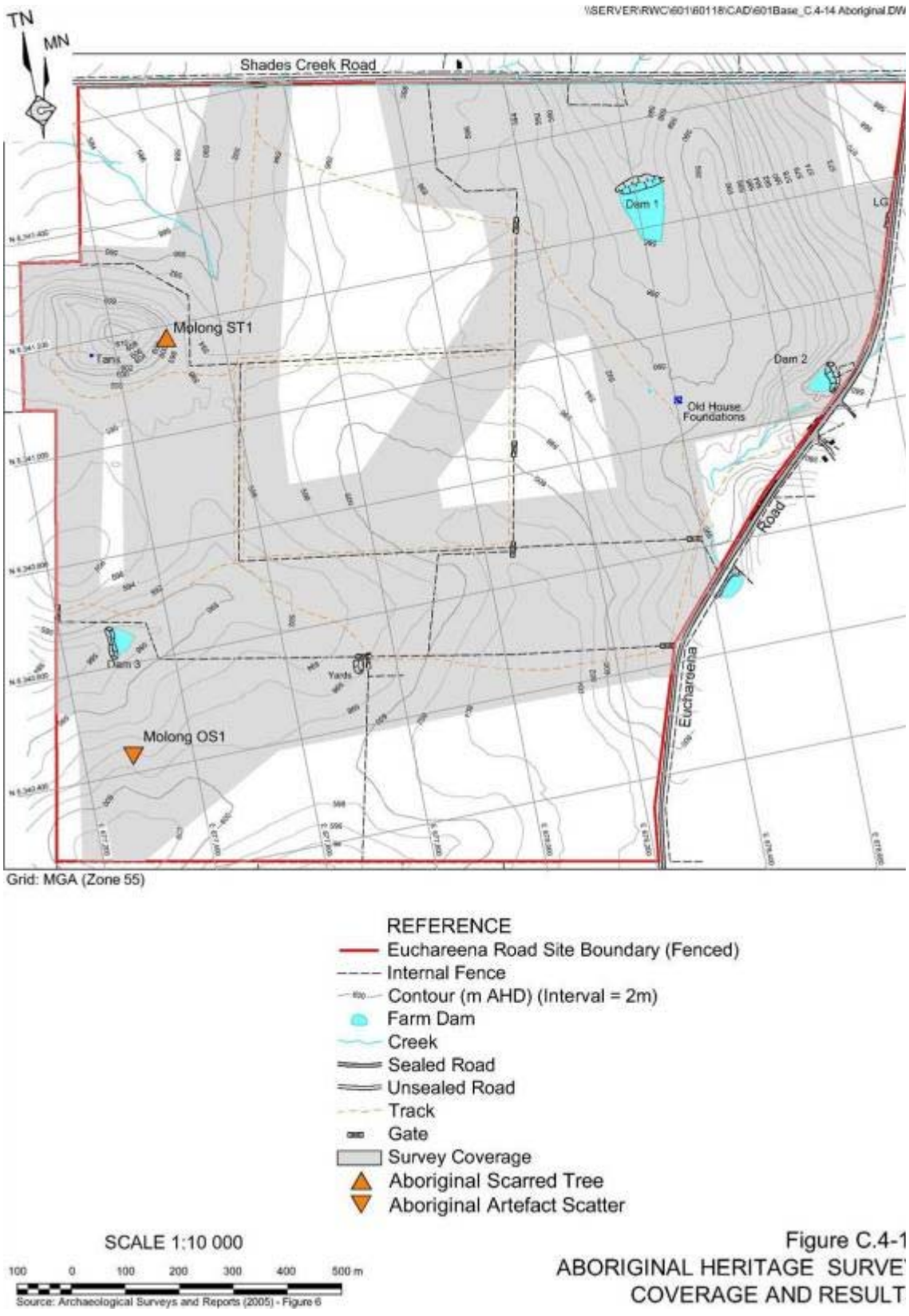
DRAWING
CONSERVATION AGREEMENT AREA

PROJECT NUMBER: 208212 | DRAWING NUMBER: 06G_EV03 | REV: G
SOURCE: INTERNAL

Plates

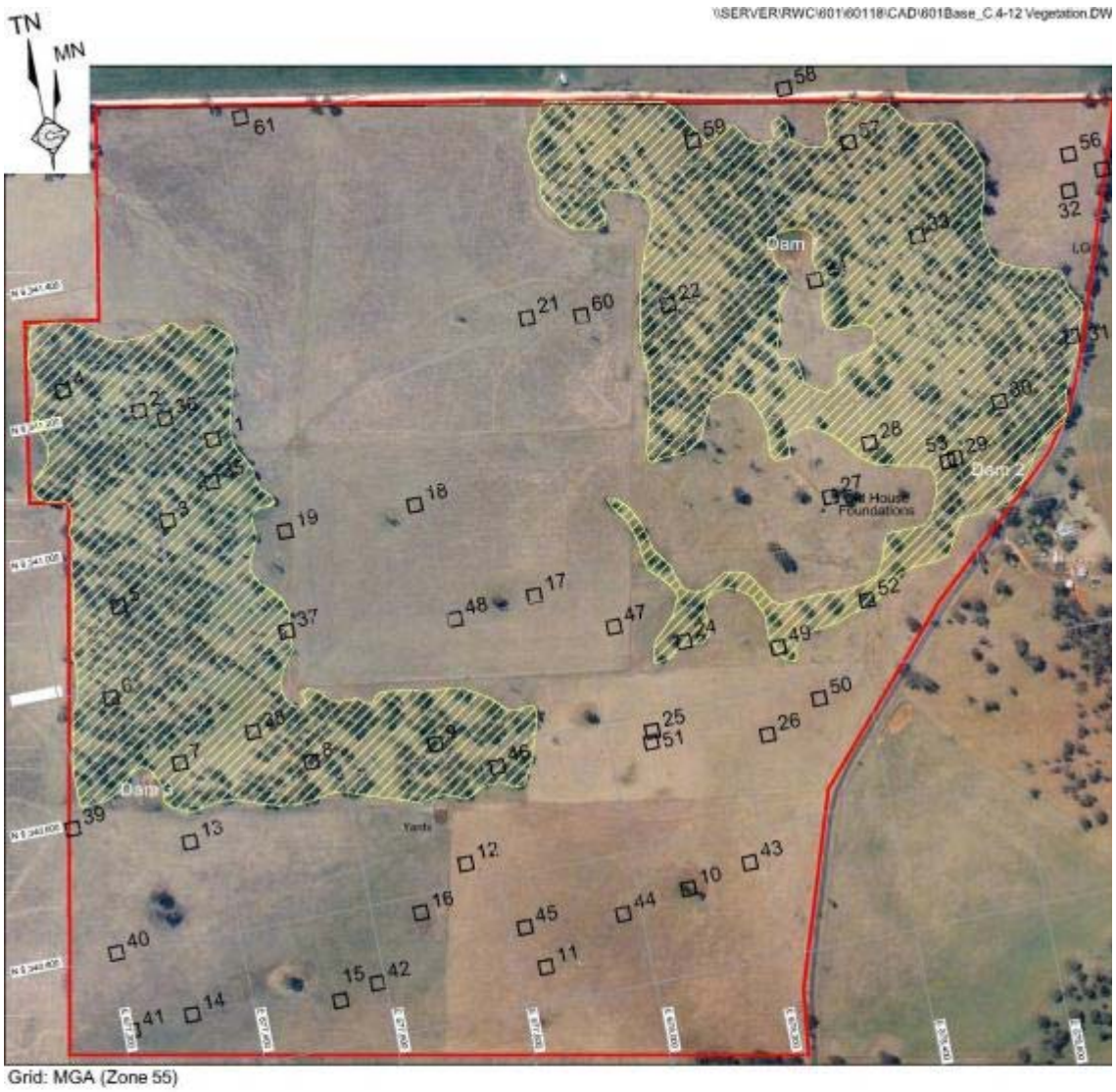
Source: Department of Lands SIX Viewer

Plate 1: The Subject Site



Source: GHD 2009:C.4-68

Plate 2: Aboriginal Heritage Survey Coverage and Results



Source: GHD 2009:C.4-37

Plate 3: Vegetation Communities and Quadrat Locations

Appendix A

ABORIGINAL HERITAGE MANAGEMENT PLAN

ABORIGINAL HERITAGE MANAGEMENT PLAN

for the

EUCHAREENA ROAD RESOURCE RECOVERY CENTRE

Prepared for:
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Prepared by:
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July, 2009

Revision History *					
Edition	**Revision**	**Reason for Revision**	**Author**	**Date**	**Authorised by:**
V 1.0	JB	After draft reviewed by Aboriginal community stakeholders and client	Dr Jodie Benton	14th July 09	RWC
V 1.1	JB	Final Draft for DoP consideration	Dr Jodie Benton	21st July 09	RWC
V2.0	JB	Final AHMP	Dr Jodie Benton	13th August 09	

*** To be revised at least every 2 years**

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1 PROJECT DESCRIPTION

The Euchareena Road Resource Reprocessing Centre (RRC) is a component of the Orange Waste Project, designed to service the waste management needs of the Orange and surrounding local government areas. The Euchareena Road RRC proposed to be constructed on land, located approximately 44 km from the Ophir Road RRC in Orange and 5 km northeast of Molong (**Figure 1**). The land on which the centre would be constructed is referred to as the "Euchareena Road Site" and for the purpose of this document as the „Study Area" (**Figures 1** and **2**).

The Euchareena Road Site covers an area of 192.6 hectares (476 acres) and is located on Lot 10, DP 1034198, Parish of Copper Hill, County of Wellington. The Euchareena Road Site is bounded to the north by Shades Creek Road and to the east by Euchareena Road and is owned by Orange City Council.

Figure 2 displays the conceptual Euchareena Road RRC site layout, incorporating the following components.

- A site entrance and site access road

  The site entrance would be positioned at the point with optimum sight distance to both the north and south. The site access road would follow an alignment with optimum gradients. Both the site entrance and access road would be designed to meet requirements of the NSW RTA (1999) Road Design Guide.

- Office and weighbridge

  The office and weighbridge would be located adjacent to the site access road and proposed enclosed composting plant.

- An enclosed composting plant

  The enclosed composting plant would be located in an area largely shielded by topography to the north and east and existing woodland vegetation to the west and south.

- A landfill area

  The landfill area would be located where geotechnical testing has demonstrated there is a considerable thickness of low permeability clay.

- An internal road network

  The internal road network would be positioned to minimise disturbance and provide direct access, wherever possible, between all site components.

- A visual amenity bund and vegetation screens

  The northern visual bund would shield views of the Euchareena Road Site activities from Shades Creek Road. The proposed vegetation screens would, in time, provide further shielding of Euchareena Road Site activities.

- A stock movement corridor

  The proposed stock movement corridor would provide a north-south access across the Euchareena Road side of the Euchareena Road Site to enable local landholders to safely move stock and farm equipment outside the Euchareena Road reserve when adjacent to the Euchareena Road Site.
- Two retained woodland areas

  The two woodland areas are recognised to have considerable ecological value given the ongoing removal of similar vegetation throughout the local/regional farming regions.
- Areas planned for ongoing agricultural use

  Areas not required for project-related activities or their ecological values would continue to be available for agricultural purposes.

2 LEGISLATIVE BACKGROUND

2.1 Legislation Relevant to the Development of this CHMP

The project is classified as a major project under Part 3A of the Environmental Planning and Assessment Act 1979 (EP&A Act) and as a result, the Minister for Planning is the consent authority for project approval.

Should the project be approved, it will include the need to develop an Aboriginal Heritage Management Plan (AHMP). Such a requirement has been anticipated as a result of consultation with the Department of Environment and Climate Change DECC[1]. Consequently, it was advised that a streamlined approach to the Aboriginal Heritage Assessment for this project would include the preparation of a draft AHMP that could be appended to the Aboriginal heritage review and hence be the subject of Aboriginal community consultation even prior to the Environmental Assessment (EA) being lodged with the Department of Planning (DoP) for exhibition.

2.1.1 Legislation Relevant to the Protection of Indigenous Heritage

Baseline principles for the conservation of heritage places and relics can be found in the Burra Charter[2], which recognises that there are places worth keeping because they can enrich our lives on many levels. The significance of such places may be embodied in fabric (physical material), environmental setting, contents, use or its meaning to people, and should be assessed through methodical data collection. Since its adoption in 1979, The Burra Charter has become the standard of best practice in the conservation of heritage places in Australia, and heritage organisations and local government authorities have incorporated the inherent principles and logic into guidelines and other conservation planning documents. The Burra Charter generally advocates a cautious approach to changing places of heritage significance. This conservative notion embodies the basic premise behind legislation designed to protect our heritage, which operates primarily at a State level.

[1] Consultation with Maria Cotter, DECC Northwest Regional Archaeologist.

[2] The Burra Charter defines the basic principles and procedures to be followed in the conservation of all kinds of places such as monuments, buildings, Aboriginal sites, roads, archaeological sites, whole districts or even regions. It was first adopted in 1979, based on the Australian ICOMOS (International Council on Monuments and Sites) review (1977) of the 1966 Venice Charter (Australian ICOMOS Inc. 1998).

A number of Acts of parliament provide for the protection of Aboriginal heritage at various levels of government[3]. The three most important statutes in New South Wales are:

- The Environmental Planning and Assessment Act (EP&A Act) 1979;
- The National Parks and Wildlife Act 1974; and
- The Heritage Act 1977.

The *EP&A Act 1979* requires that environmental impacts, including cultural heritage, are considered at the land use planning and decision making level. Under this Act, Aboriginal heritage is protected in several different ways. Under the *State Environmental Planning Policy (Major Projects) 2005*, projects assessed to be of State significance (such as the current Orange Waste Project) are assessed under Part 3A of the *EP&A Act 1979* and approval is given by the Minister for Planning.

The National Parks and Wildlife Act 1974 (as amended; particularly sections 83-91A) provide statutory protection for all Aboriginal relics and places, regardless of significance, land tenure or whether they have been previously recorded in the DEC Aboriginal Sites Register. Areas may be gazetted as Aboriginal „places" when the Minister is satisfied that sufficient evidence exists to demonstrate that the area is or was of special significance to Aboriginal people.

Under this Act, it is an offence to knowingly damage, deface or cause or permit the destruction of an Aboriginal relic or place without the prior written consent of the Director-general of the NSW DEC. Prosecution for such offences may include the imposition of financial penalties and/or imprisonment. Reporting the discovery of previously unknown Aboriginal sites to the DEC within a reasonable time of discovery is also obligatory.

It is noteworthy here that once a project is deemed to be assessed under Part 3A of the *EP&A Act 1979*, the requirement for DEC permits is replaced by a requirement to meet cultural heritage obligations through a Statement of Commitments.

The Heritage Act 1977 (as amended) protects the State"s natural and cultural heritage and contains measures to protect archaeological remains. Generally, Aboriginal sites are protected by the *NP&W Act*, but if certain sites are deemed as having great significance, they can be further protected by a heritage order, issued by the Minister, on the advice of the Heritage Council.

3 ABORIGINAL COMMUNITY CONSULTATION

The original 2005 assessment of the Euchareena Road Study Area involved consultation with the Orange Local Aboriginal Land Council (OLALC) and involvement of a representative of the OLALC in the field assessment. Mr Appleton of Archaeological Surveys and Reports (ASR) described this consultation and involvement (ASR 2005: Chapters 2, 9 and 10.).

[3] NSW Heritage Office 1998: Living with Aboriginal Culture, p. 3

Figure 1: Locality Plan

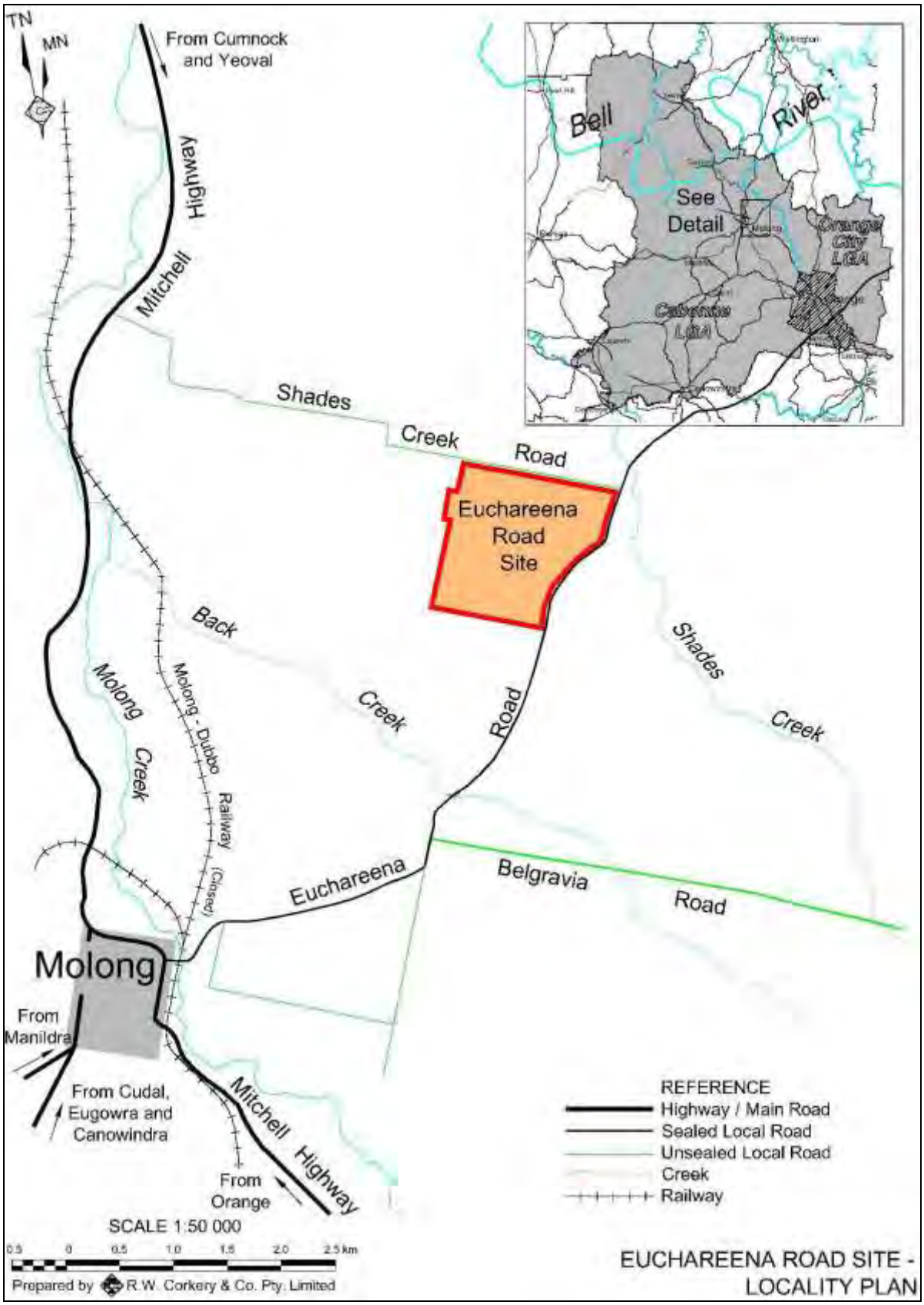
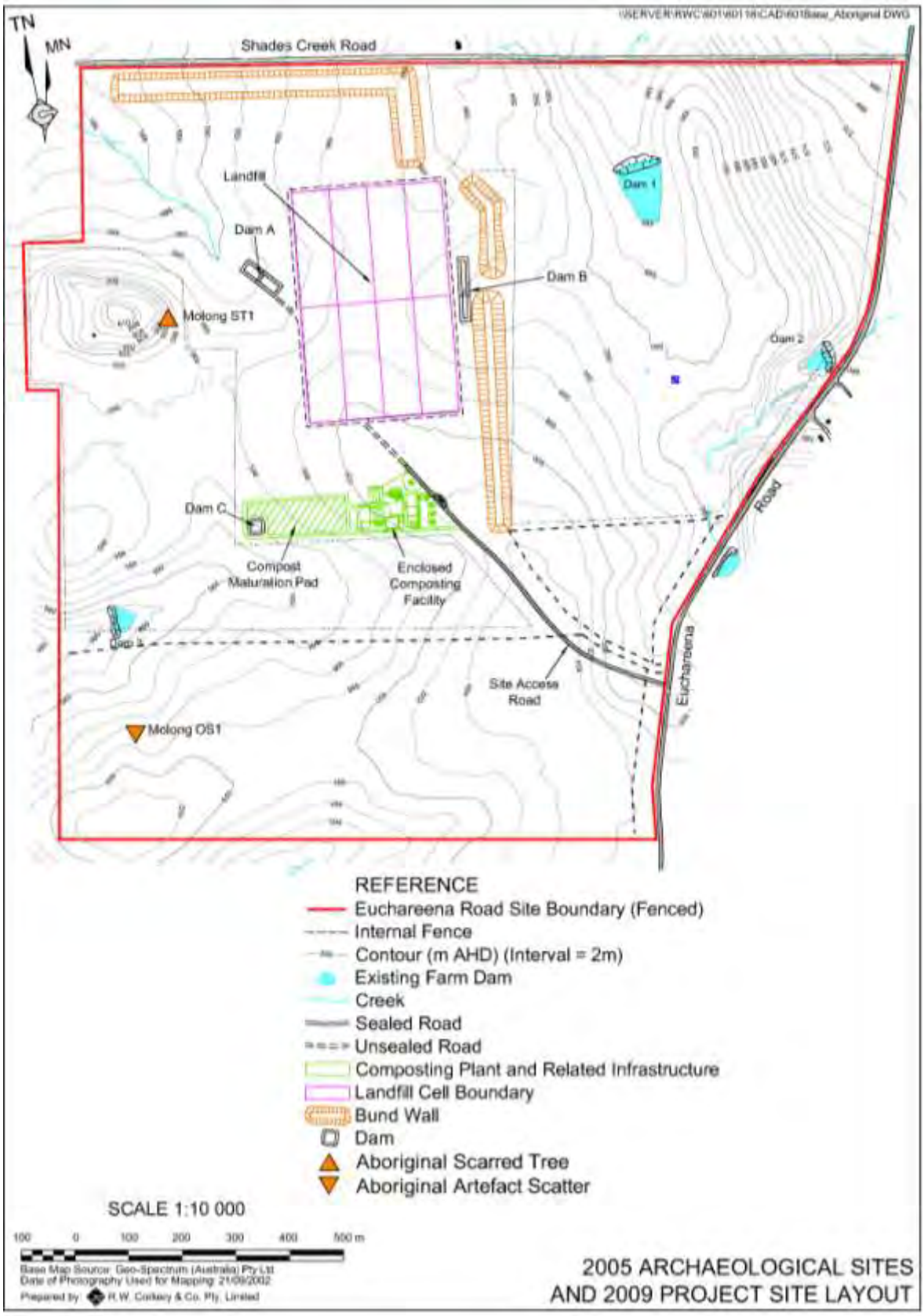


Figure 2: Euchareena Road RRC site layout, the Study Area

Figure 3: Aboriginal sites recorded by Appleton in 2005 overlain with 2009 site layout.



The original 2005 assessment report (related to the original project impact footprint) does note that the OLALC had at that time wished to retrieve the artefacts from open site Molong-OS1 and keep them in the LALC offices for educational purposes (although it is noteworthy that this site was not to be directly impacted by the development proposal). At that stage, such salvage of artefacts would have required a permit under section 90 of the National Parks and Wildlife Act (NPW Act). It is also noted that it was between the time of field survey and report completion that the DEC "Interim Community Consultation Requirements for Applicants" (ICCRs) had been released and that if a permit was to be sought, consultation would be required in adherence to these guidelines (ASR 2005: 41-42).

Now, with the project being assessed under Part 3A of the EP& Act, permits are no longer required for the management of Indigenous sites and as such management of Aboriginal heritage is to be embodied in Aboriginal Heritage Management Plan (AHMP).

As it is considered likely that an AHMP will be required for the current Euchareena Road RRC project, it was deemed appropriate to develop a draft AHMP for consideration during the Aboriginal community consultation leading up the lodgement of the EA.

Concomitant with Part 3A assessments and the development of AHMPs is a need to undertake Aboriginal community consultation according to the "Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation" (DEC 2005), which refer back to the "Interim Community Consultation Requirements for Applicants" (DEC 2004). These requirements have been undertaken in full for the current Euchareena Road RRC project and are documented in full in OzArk EHM 2009.

The results of this consultation formed the following group of registered stakeholders:

- Orange Local Aboriginal Land Council (OLALC);
- Mooka Traditional Owners Corporation (MTOC); and
- Wiradjuri Council of Elders (WCE).

Contact names and details for these groups are presented in Appendix 1.

Letters regarding the proposed methodology for bringing the results of the 2005 archaeological assessment into focus for the 2009 project were sent out to all registered stakeholder groups. Responses were received from the Orange LALC and MTOC. Orange LALC were supportive of the methodology proposed while MTOC requested a copy of the ASR 2005 report (which was forwarded to them), a copy of the draft OzArk desktop report and draft AHMP (also forwarded to them) and a site meeting.

After the draft assessment report and AHMP had been sent to all registered stakeholders, a site meeting was arranged and notification of the meeting sent out to all stakeholders, to be held at Euchareena Road RRC Study Area on July 7th 2009. Unfortunately Neville Williams of Mooka TOC was not able to attend the meeting but did request to be updated on the results of it. He noted that he had received all draft documents but did wish to be sent any newly generated documents resulting from the meeting. Rob Clegg of WCE noted he could not make the meeting but had

reviewed the draft documents and expressed he was happy with their content. James Williams of the OLALC advised his availability to attend the meeting.

The meeting held on July 7th 1009 was attended by Wayne Davis of Orange City Council; Dr Jodie Benton and Kim Tuovinen of OzArk Environmental & Heritage Management and James Williams of Orange LALC. Both previously recorded sites were visited and management of them in light of the proposed development discussed. As both sites are able to be conserved within the parameters of the project, their conservation was discussed and is detailed under site specific measures in Section 6 of this document.

The draft AHMP was then updated to reflect the discussion regarding site management from the July 7th meeting and again distributed to all groups for final review prior to finalising.

A two week time period was given for response, extending to the 10th August, by which date no verbal or written comment was received by the OLALC and Mooka TOC. In conversation with Rob Clegg from WCE he conveyed he approved of the redrafted documents and had no further comment. It was noted in the accompanying letter that no response was considered to mean that stakeholders supported the management advocated in the AHMP, as follows.

3.1 Protocol for continued Aboriginal community consultation

Under the umbrella of this AHMP, the recorded Aboriginal sites (Molong ST1 (DECC # 44-1-0080) and Molong OS1 (DECC # 44-1-0081) will be conserved.

In the event that any of the following incidents occur, Orange City Council will contact the Aboriginal registered stakeholders within 24 hours:

1. If any inadvertent impacts occur to either Molong ST1 and Molong OS1;

2. If there are any changes to the impact areas proposed such that it places these previously identified sites at risk of disturbance or destruction; or

3. If any previously unrecorded Indigenous sites are located during earthworks.

Should the Aboriginal registered stakeholders wish to visit these recorded sites for cultural purposes, access may be arranged but will require 7 working days notice, with the date and time to be confirmed with Orange City Council. Ad-lib access to these sites is not possible due to occupational health and safety regulations.

4 AGENCY CONSULTATION

OzArk has consulted with DECC with regards to the development of this AHMP. Its early development was instigated in response to DECC discussions, with an aim to expedite the process of AHMP development and utilise best the earlier stages of Aboriginal community consultation. Copies of correspondence related to this phase of consultation can be found in Appendix 4 of the OzArk review (OzArk 2009).

5 ABORIGINAL CULTURAL HERITAGE ASSESSMENT

In 2005, John Appleton of ASR and Sam Ah-See of the Orange Local Aboriginal Land Council (OLALC) undertook Aboriginal cultural assessment over the Euchareena Road RRC Study Area, then known as the "the Hub Site".

Due to the relatively small scale of the Study area, Appleton and Ah-See were able to undertake complete field assessment of the entire study area, although it is noted that grass cover was dense in places such that only sampling was feasible (i.e. survey of areas where ground surface visibility enabled effective assessment). Appleton notes that the techniques were considered effective as grazing had exposed ground surfaces in the less disturbed wooded parts of the study area, and there was visibility on tracks as well as parts of the study area most likely to contain sites (Appleton 2005: 24). All mature trees were able to be inspected. He notes that this sampling of areas of visibility was the most appropriate technique in the circumstances (i.e. areas of thick ground cover).

The assessment recorded one scarred tree – Molong ST1 (DECC # 44-1-0080) and one open site comprising a grinding stone and a hand axe, called Molong OS1 (DECC # 44-1-0081). In relation to Molong OS1, two factors are of relevance. It is important to note that the find spot of the items is considered to be secondary – i.e. the artefacts are not originally from here but have been thrown at the base of tree with other rocks during paddock clearing, and secondly, one of the two items only possibly shows evidence of Aboriginal use and may be natural. The find of a hand axe as a one –off artefact is quite common and may have been a „drop" artefact. Re-inspection of these artefacts in 2009 in the company of James Williams of the OLALC brought into serious doubt the interpretation of the „muller" as an Aboriginal artefact and further reduced the significance of the hand axe as it displays no evidence of a ground edge and is at best a blank.

The location of these sites can be found in **Figure 3** in relation to the new 2009 site layout. No further sites have been recorded.

These two sites are both outside the impact footprint for the Euchareena Road RRC and hence will not be destroyed or disturbed as a result of the project.

The methods adopted in the 2005 assessment are considered to be satisfactory and the results are interpreted as being representative of the Aboriginal heritage resource within the Euchareena Road RRC. Additional field survey was not considered necessary for the 2009 EA, especially in light of the fact that the 2009 project layout had been reduced in impact footprint extent from the original 2005 "Hub" layout.

It is acknowledged, however, that the presence of the identified Aboriginal sites within the Euchareena Road RRC study area in the face of unknown future impacts, does instigate a need to provide management recommendations for these sites to ensure their continued conservation into the future and to assist in their optimal environmental management, hence the potential requirement for Aboriginal Heritage Management Plan.

6 MANAGEMENT STRATEGY

Although no identified Aboriginal sites will be impacted by the current Euchareena Road RRC proposal, management and mitigation measures are required to ensure the continued survival of identified sites, guide the salvage of sites or artefacts from sites, should that be an outcome of consultation and to provide contingency planning for the incidental discovery of archaeological material during works.

6.1 Site specific management in relation to recorded sites

It has been determined that Molong ST1 (DECC # 44-1-0080) and Molong OS1 (DEC # 44-1-0081) (**Figure 3**) can be conserved within the parameters of the Euchareena Road RRC. The following measures have been designed for site specific conservation.

1. Molong ST1

Plate 1: Scarred tree Molong ST1. Photograph from Appleton 2005: 37.

Plate 2: Lower slope and view of scarred tree Molong ST1. Photograph from Appleton 2005: 37.

This scarred tree is located in an area that will not be impacted by the Euchareena Road RRC project. It is on the toe slopes of a hill that is currently fenced off from the ploughed paddock below within which the RRC project will be focussed.

Consultation with the registered stakeholders was undertaken with regards to the conservation of this site during the on site meeting on July 7th 2009 and through letter and email communication.

It was determined that the existing fencing of this area is sufficient to ensure this site is conserved and that the fencing of the individual tree is unwarranted and likely to draw undue attention. The location of this tree will then remain known to the Environmental Management team of Orange City Council and the Euchareena Road RRC and inductions as discussed below should be used to ensure staff and contractors using the RRC are aware of the location of this site and its legislative protection.

Molong OS1

Plate 3: location of artefacts of site Molong OS1. Photograph from Appleton 2005: 38.

Plate 4: Artefacts of Molong OS1. Photograph from ASR 2005: 38.

As noted above, this site is a secondary context location where these two stones had been moved to from their original finds spots. Further, one of the artefacts – the „muller" - does not in fact display elements of Aboriginal use and may indeed be natural. As noted above, the hand-axe is at best interpreted as a blank. That leaves these artefacts as minimally significant but their find location as not significant at all, i.e. this is not a primary context.

Consultation was undertaken with regards to the conservation of this site during the on-site meeting on July 7th 2009 and it was decided that this site is within an area that is beyond any direct impacts of the project and therefore will not be disturbed as a result of the project. Like Molong ST1, the location of this site should remain known to the Environmental Management team of Orange City Council and the Euchareena Road RRC and inductions as discussed below should be used to ensure staff and contractors using the RRC are aware of the location of this site and its legislative protection.

6.1.1 Mitigative measures relevant to both sites

To ensure the continued conservation of both recorded sites, the following measures should be adhered to:

- The location of both sites will be recorded on a master plan in the Site Office, where the Environment Manager has visual access to it. This plan will note that protected heritage items are present at these locations and that there will are to be no impacts in the vicinity of these locations.

- The OCC will appoint someone (e.g. Environmental Officer or Site Manager) to take responsibility for the continued protection of these sites from future impacts as they arise and to ensure that fencing, if it is to be permanent, is appropriately maintained.

- Part of the site induction for all staff and contractors will include a section on Aboriginal heritage. This induction will include brief reference to the legislative framework through which Indigenous heritage is protected, particular reference will be made to the location of the sites as well as providing a more general introduction to cultural heritage.

6.2 General Heritage Conservation Measures

Two Aboriginal sites have been identified over the Euchareena Road RRC site and there is limited potential previously unrecorded sites may be identified during ground surface disturbing works. The Proponent should undertake the following measures to ensure the potential for such inadvertent impacts are minimised.

6.2.1 Inductions

Ensure that all staff and contractors undertake induction that includes a cultural heritage awareness component. This should include some site specific information with relation to Molong Scarred Tree 1 and Molong Open Site 1, but should also briefly cover more general topics such as rudimentary site identification (e.g. some photos of stone tools, flakes, scarred trees and grinding grooves etc.) and an introduction to cultural values.

6.2.2 Procedure for previously undiscovered Aboriginal objects

If in the course of clearing or ground surface disturbing works a suspected Aboriginal object is discovered, the following procedures will be adopted.

- The staff member / contractor will notify machinery operators in the immediate vicinity of the Aboriginal object that work should be temporarily halted in that area.
- The nature and extent of the Aboriginal object(s) will then be determined. The site Environmental Officer may be able to undertake this. If not, then an appropriately experienced site officer (from the OLALC or other registered stakeholder) or an

archaeologist may be required. Contact details for these individuals are provided in Appendix 1.

- If the object is determined to be of Aboriginal origin, then the extent of the assessed site area should be cordoned off. The registered stakeholders should be informed of the discovery, as should the DECC.
- A decision must be made by the Proponent as to whether the area can then be avoided by the works or whether consultation with the registered stakeholder groups will be required to determine the appropriate management of the site (which may include a provision for further archaeological assessment).

6.2.3 Procedure for Dealing with Skeletal Material

If during RRC activities, skeletal material is discovered, the Orange City Council will follow the procedures outlined in the flow chart in Appendix 3. The intention of this procedure is to avoid the unnecessary removal or disturbance of skeletal material and to provide for the involvement of Aboriginal registered stakeholders if the skeletal material should prove to be those of an Aboriginal person.

7 REFERENCES

Australian ICOMOS Inc. 1998 Understanding the Burra Charter: A guide to the principles of heritage conservation in Australia. Brochure produced for Australia ICOMOS.

Archaeological Surveys and Reports - ASR) 2005 Aboriginal Heritage Assessment of the proposed Hub Regional Resource Processing Facility. Report to R.W. Corkery on behalf of Orange City Council.

Department of Environment and Climate Change 2004 Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation.

Department of Environment and Climate Change 2005 Interim Community Consultation Requirements for Applicants.

OzArk Environmental and Heritage Management 2009 Aboriginal Heritage Assessment of the Euchareena Road Resource Recovery Centre. Report to R.W. Corkery on behalf of Orange City Council.

APPENDIX 1

Contact List

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APPENDIX 1 - CONTACT LIST

Organisation	Contact Name	Phone Number	Address
Aboriginal community groups			
Orange Local Aboriginal Land Council	Mr James Williams (Chairperson)	6361 4742	Orange LALC Attn: James Williams - CEO 42 Dalton Street ORANGE NSW 2800 Email: olalc1@olalc.ngo.org.au
Wiradjuri Council of Elders	Rob Clegg	0450 530 920	Members: WCECHC c/- Robert Clegg 3 Loretta Place Glendinning NSW 2761
Mooka Traditional owners corporation	Neville Williams		Mooka Traditional Owners Council c/- Neville Williams PO Box 70 Cowra NSW 2794
DEC Offices			
Dubbo DEC	Ms Maria Cotter (Northwest Region Archaeologist)	(02) 6773 7018	Dubbo Office 48-52 Wingewarra St; PO Box 2111, Dubbo, NSW, 2830
Archaeologist			
OzArk Environmental & Heritage Management P/L	Dr. Jodie Benton	(02) 6882 0118 0403 763 504	145 Wingewarra St, Dubbo, 2830

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APPENDIX 2

Aboriginal Community Correspondence

NB Where letters have been sent from OzArk to all registered stakeholders only one example is presented

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Environmental & Heritage Management P/L

ABN: 59 104 582 354

25th May 2009

Attn: Members
Mooka Traditional Owners Council
c/- Neville Williams
PO Box 70
Cowra NSW 2794

Dear Neville

8.A.1.1.1 Re: Stage 2 of the ICCRs - Methodology for Indigenous heritage management for the Orange Waste Project, Euchareena Road Site, Molong, NSW

Thank you for your registration of interest to form part of the stakeholder group to be consulted concerning Indigenous heritage management related to the Orange Waste Project (OWP) at the Euchareena Road Site, Molong, New South Wales (**Figure 1**).

Orange City Council is proposing to develop an alternative waste technology facility. As part of this it is proposed to provide Orange City residents with of number of environmentally friendly options to process different waste products including:

- food and garden organics kerb-side collection service;
- processing of food/garden organics into compost at the Euchareena Road facility;
- baling of mixed residual waste (food/garden organics removed), and
- a recovery programme for recyclable materials.

The Euchareena Road Site, which is the subject of this correspondence, is one part of this overall Orange Waste Project (**Figures 1 and 4**).

The following information states the proposed methodology for the ongoing Indigenous heritage management for the Euchareena Road site. It is most important that MTOC review this methodology and provide feedback within a twenty-one (21) day period.

Background

- This project was initiated in 2005 but did not go ahead. The OWP has been recently re-invigorated, with some minimisation of project impacts (**Figure 4**);

- The site was fully surveyed in 2005 by Archaeological Surveys and Reports Pty Ltd, with the participation of Orange Local Aboriginal Land Council participants. The resultant report is entitled: "Aboriginal Heritage Assessment of the Proposed Hub

Regional Resource Reprocessing Facility". Effective survey coverage was high (**Figure 2**), and it is noteworthy that the study area was described as being

„..significantly altered by clearing for crops and grazing".

- Two Indigenous heritage sites were identified: ST-1 which was in an area of environmental protection, and OS-1 which was formerly in the Excess Clay Storage Emplacement (**Figure 3**) but will no longer be impacted by the project.

- An updated DECC AHIMS search has been undertaken and no new sites have been recorded over the study area since the 2005 survey.

Proposed Methodology

- OzArk will prepare a brief desktop report detailing the methods and results of the 2005 survey, overlaying this with the new proposed impacts thereby demonstrating that the Euchareena Road Site component of the Orange Waste Project does not disturb any Indigenous heritage sites.

- To ensure the preservation of the recorded sites into the future, OzArk will also prepare a draft Aboriginal Heritage Management Plan as an attachment to the report, with measures to protect sites & contingency planning for any inadvertent discoveries.

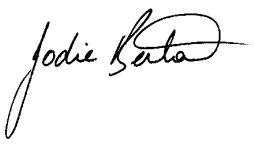
- These documents will then be circulated to the registered stakeholder groups for comment and input, prior to being finalised and submitted with the Environmental Assessment to the Department of Planning for project approval.

- Preliminary discussions held with DECC-Western Region support this approach.

Feedback

- We require feedback on this approach, either verbal or in writing, which should be received no later than **Wednesday 17th June 2009.**

If you have any queries, please feel free to contact our office. We look forward to your reply.
Kind regards
Jodie Benton - Director – OzArk EHM



LAND
HOUSING
ENTERPRISE

42 DALTON STREET,
ORANGE N.S.W. 2800
PH: (063) 61-4742
FAX: (063) 61-9119

Jodie Benton

OZARK Environmental & Heritage Management

PO Box 2069

Dubbo NSW 2830

Re: Stage 2 of the ICCR's - Methodology for Indigenous heritage management for the Orange Waste Project, Euchareena Road Site, Molong, NSW

Thank you for the opportunity to respond to your correspondence re the above project proposed methodology as outlined below.

Proposed Methodology

- OzArk will prepare a brief desktop report detailing the methods and results of the 2005 survey, overlaying this with the new proposed impacts thereby demonstrating that the Euchareena Road Site component of the Orange Waste Project does not disturb any Indigenous heritage sites.

- To ensure the preservation of the recorded sites into the future, OzArk will also prepare a draft Aboriginal Heritage Management Plan as an attachment to

the report, with measures to protect sites & contingency planning for any inadvertent discoveries.

- These documents will then be circulated to the registered stakeholder groups for comment and input, prior to being finalised and submitted with the Environmental Assessment to the Department of Planning for project approval.
- Preliminary discussions held with DECC-Western Region support this approach.
- The Orange Local Aboriginal Land Council supports the methodology that you have proposed.

Thanking you

James Williams

CEO OLALC

22/6/2009

PO Box 70
COWRA NSW 2794

Mobile: 0447 841 560

12 June 2009

Dr Jodie Benton
OzArk EHM P/L
PO Box 2069
DUBBO NSW 2830

Dear Dr Benton

Stage 2 of the ICCrs—Methodology for Indigenous heritage management for the Orange Waste Project, Euchareena Road Site, Molong NSW

Thank you for your letter dated 25 May 2009 acknowledging our interest to form part of the stakeholder group to be consulted about Indigenous heritage management related to the Orange Waste Project, Eurachareena Road Site, Molong, New South Wales.

So we can comment on Indigenous heritage management related to this project, could you please send me a copy of the report entitled: "Aboriginal Heritage Assessment of the Proposed Hub Regional Resource Reprocessing Facility".

Could you please also send me a copy of your desktop report detailing the methods and results of the 2005 survey, overlaying this with the new proposed impacts.

I would also like to arrange to visit the site before I make any comments.

Could you please get back to me about arranging a site visit.

Sincerely

Neville Williams

Environmental & Heritage Management P/L

ABN: 59 104 582 354

25th June 2009

Members: WCECHC
c/- Robert Clegg
3 Loretta Place
Glendenning NSW 2761

Dear Rob

Re: Stage 2 of the ICCRs regarding the Euchareena Road site for the Orange Waste Project

In order to address any issues Jodie Benton will hold a brief on site meeting with all Registered Stakeholders at the proposed Euchareena RRC, on the corner of Euchareena and Shades Creek Road, northeast of Molong. This on site meeting is scheduled for 9.30 am on Tuesday 7th July 2009.
Please advise us by Friday 3rd July if you are able to attend this meeting.

Yours faithfully

Jodie Benton

Dr Jodie Benton
Director – OzArk EHM P/L

Cc:
RW Corkery

Environmental & Heritage Management P/L
ABN: 59 104 582 354

24th June 2009

Mr Neville Williams
Mooka Traditional Owners
PO Box 70
Cowra NSW 2794

Re: Response letter regarding Stage 2 of the ICCRs regarding the Euchareena Road site for the Orange Waste Project

Dear Mr Williams,
Thank you for your letter dated June 12 in response to the proposed methods for the Aboriginal heritage management at Euchareena Road, near Molong.

As requested, please find attached a copy of the report "Aboriginal Heritage Assessment of the proposed Hub Regional Resource Reprocessing Facility" prepared by J. Appleton.
A conceptual site layout, with two previously identified sites superimposed, is attached **(Figure 1)**. You will note that neither site will be impacted by the project. The draft desktop report that reviews the initial survey report in light of the recently proposed project impacts will be forwarded to you within a few days.

In order to address any issues Jodie Benton will hold a brief on site meeting with all Registered Stakeholders at the proposed Euchareena RRC, on the corner of Euchareena and Shades Creek Road, northeast of Molong (**Figure 2**). This on site meeting is scheduled for 9.30 am on Tuesday 7th July 2009.

Please advise us by Friday 3rd July if you are able to attend this meeting.

Yours faithfully

Jodie Benton

Dr Jodie Benton
Director – OzArk EHM P/L

Cc:
RW Corkery
Encl. documents:

- Appleton 2005 report

Environmental & Heritage Management P/L
ABN: 59 104 582 354

25th June 2009

Members: WCECHC
c/- Robert Clegg
3 Loretta Place
Glendenning NSW 2761

Dear Rob

Re: Stage 2 of the ICCRs regarding the Euchareena Road site for the Orange Waste Project

In order to address any issues Jodie Benton will hold a brief on site meeting with all Registered Stakeholders at the proposed Euchareena RRC, on the corner of Euchareena and Shades Creek Road, northeast of Molong. This on site meeting is scheduled for 9.30 am on Tuesday 7th July 2009.
Please advise us by Friday 3rd July if you are able to attend this meeting.

Yours faithfully

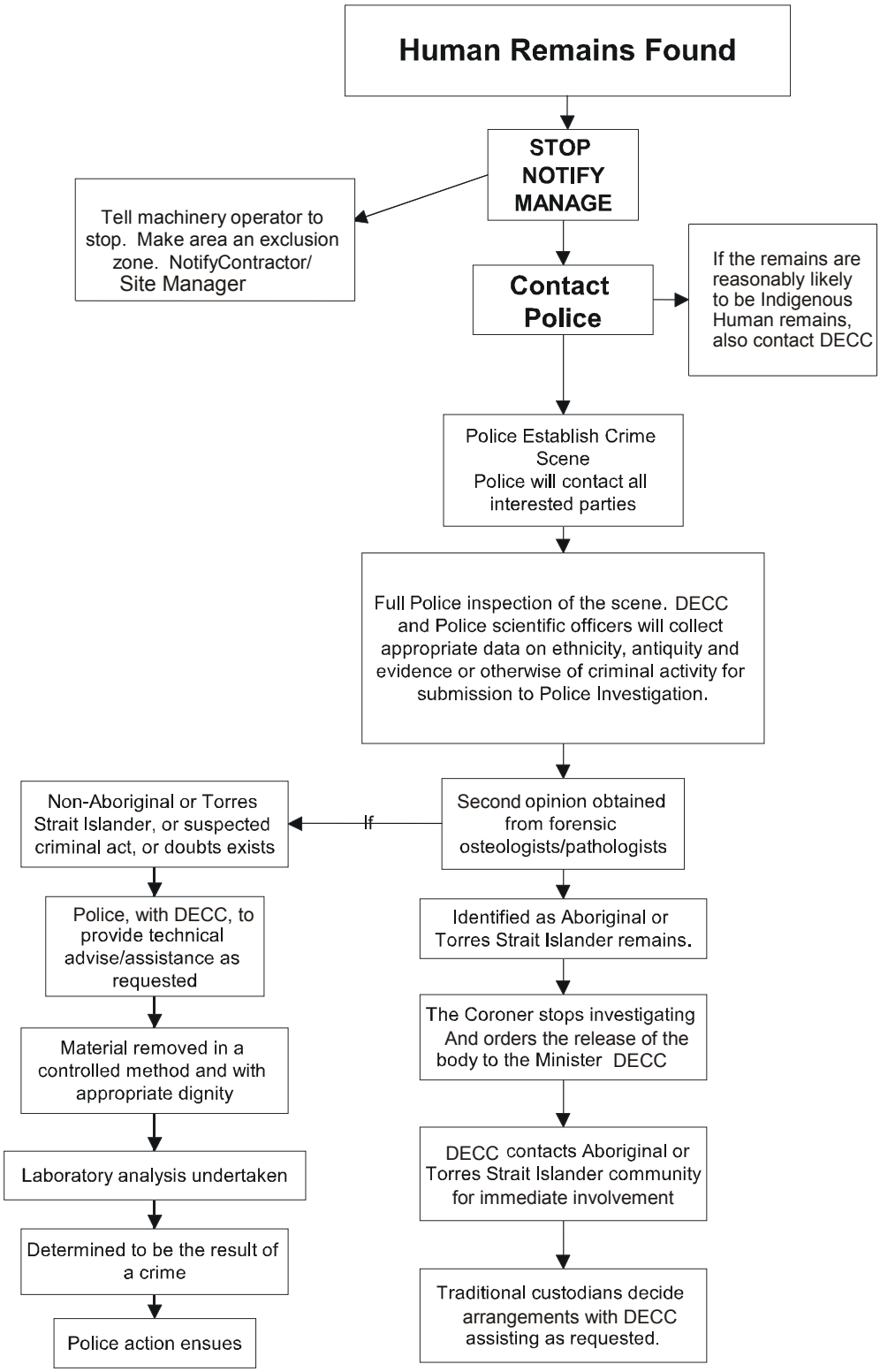
Jodie Benton

Dr Jodie Benton
Director – OzArk EHM P/L

Cc:
RW Corkery

APPENDIX 3

Skeletal remains protocol


Human Remains Found
STOP
NOTIFY
MANAGE
Tell machinery operator to stop. Make area an exclusion zone. NotifyContractor/ Site Manager
Contact Police
If the remains are reasonably likely to be Indigenous Human remains, also contact DECC
Police Establish Crime Scene
Police will contact all interested parties
Full Police inspection of the scene. DECC and Police scientific officers will collect appropriate data on ethnicity, antiquity and evidence or otherwise of criminal activity for submission to Police Investigation.
Second opinion obtained from forensic osteologists/pathologists
If
Non-Aboriginal or Torres Strait Islander, or suspected criminal act, or doubts exists
Police, with DECC, to provide technical advise/assistance as requested
Material removed in a controlled method and with appropriate dignity
Laboratory analysis undertaken
Determined to be the result of a crime
Police action ensues
Identified as Aboriginal or Torres Strait Islander remains.
The Coroner stops investigating And orders the release of the body to the Minister DECC
DECC contacts Aboriginal or Torres Strait Islander community for immediate involvement
Traditional custodians decide arrangements with DECC assisting as requested.

Appendix B

ABORIGINAL HERITAGE

Aboriginal Heritage

INTRODUCTION

This Appendix relates to the items of Aboriginal Heritage significance located on site, as illustrated in **Drawing 18B_EV02**. This appendix and associated drawings have been prepared to satisfy Conditions 30 and 32 in Schedule 5 of the Project Approval.

A permanent photo monitoring site has been established (refer to **Drawing 18B_EV02**). This site will be monitored annually, with the outcomes recorded in an Aboriginal Heritage Monitoring report.

METHODS

The following measures have been provided from the *Aboriginal Heritage Management Plan* (in **Appendix A**) for the management of the items of significance on site:

- Molong ST1:
  - *It was determined that the existing fencing of this area is sufficient to ensure this site is conserved and that the fencing of the individual tree is unwarranted and likely to draw undue attention. The location of this tree will then remain known to the Environmental Management team of Orange City Council and the Euchareena Road RRC staff and inductions as discussed below should be used to ensure staff and contractors using the RRC are aware of the location of this site and its legislative protection* (Ozark 2009b:11).
- Molong OS1
  - *The location of this site should remain known to the Environmental Management team of Orange City Council and the Euchareena Road RRC staff and inductions as discussed below should be used to ensure staff and contractors using the RRC are aware of the location of this site and its legislative protection* (Ozark 2009b:12).
- General
  - *The location of both sites will be recorded on a master plan in the Site Office, where the Site Manager has visual access to it. This plan will note that protected heritage items are present at these locations and that there will be no impacts in the vicinity of these locations* (Ozark 2009b:13).
  - *The OCC will appoint someone (e.g. Environmental Officer or Site Manager) to take responsibility for the continued protection of these sites from future impacts as they arise and to ensure that fencing, if it is to be permanent, is appropriately maintained* (Ozark 2009b:13).
  - *Part of the site induction for all staff and contractors will include a section on Aboriginal heritage. This induction will include brief reference to the legislative framework through which Indigenous heritage is protected, particular reference will be made to the location of the sites as well as providing a more general introduction to cultural heritage* (Ozark 2009b:13).

Table B1 – Aboriginal Rehabilitation and Management Measures

	Category		Task	Responsibility
1	**DURING CONSTRUCTION**			
a	Previously undiscovered Aboriginal objects	i	If during the course of clearing or ground surface disturbing works, a suspected Aboriginal object is discovered, the measures outlined in Section 6.2.2 of the Aboriginal Heritage Management Plan (**Appendix A**) shall be followed.	OCC
		ii	If during RRC activities, skeletal material is discovered, the Orange City Council will follow the procedures outlined in the flow chart in Appendix 3 of the Aboriginal Heritage Management Plan (**Appendix A**). The intention of this procedure is to avoid the unnecessary removal or disturbance of skeletal material and to provide for the involvement of Aboriginal registered stakeholders if the skeletal material should prove to be those of an Aboriginal person.	OCC
2	**DURING OPERATION OF RRC**			
a	Staff Inductions	i	All staff and contractors are to undertake an induction that includes a cultural heritage awareness component, consistent with Sections 6.1.1 and 6.2.1 of the Aboriginal Heritage Management Plan (**Appendix A**).	OCC
b	Heritage & Biodiversity Awareness	i	A suitably sized copy of **Drawing 18B_EV01** shall be displayed in the Site Office, where the Site Manager has visual access to it.	OCC
		ii	A person shall be appointed by Orange City Council to take responsibility for the continued protection of the identified heritage items, ensuring they are protected from future impacts.	OCC
		iii	The items are to be monitored regularly. In particular monitoring shall consider: • The impacts of any grazing animals. If it looks like stock are rubbing against the items they should be fenced off to avoid such impacts. • Whether or not the scarred tree (ST1) is closing over. If such occurs consultation with OEH and the LALC shall be undertaken to determine what measures/if any shall be undertaken to rectify the situation. • Photo monitoring site to be monitored annually, with outcomes recorded in an *Aboriginal Heritage Monitoring* report.	OCC

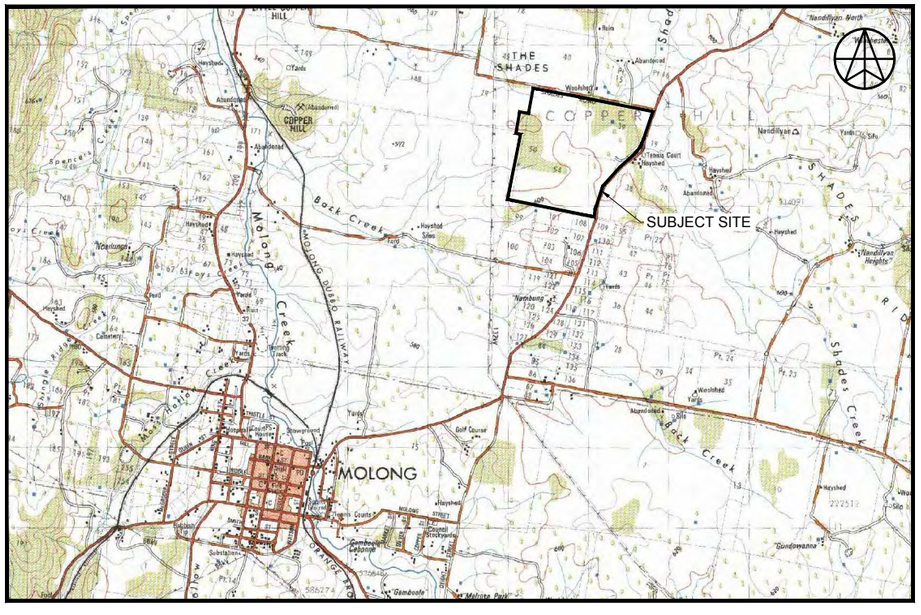
EUCHAREENA ROAD RESOURCE RECOVERY CENTRE

CONSERVATION MANAGEMENT PLAN

ORANGE CITY COUNCIL

ABORIGINAL HERITAGE

DRAWING SCHEDULE			
SHEET	TITLE	REV.	DATE
18A_EV01	TITLE SHEET, DRAWING SCHEDULE & SITE LOCALITY	A	08/03/2011
18A_EV02	SITE PLAN	A	08/03/2011



SITE LOCALITY
NOT TO SCALE

GEOLYSE
ORANGE
154 PEISLEY STREET
P.O. BOX 1963
ORANGE, NSW 2800
Ph. (02) 6393 5000
Fx. (02) 6393 5050
orange@geolyse.com
www.geolyse.com

No	DATE	DRAFTING CHECK	PM CHECK	DETAILS
A	08/03/11	RmS	EJB	ISSUED TO CLIENT FOR REVIEW

PROJECT
EUCHAREENA ROAD RESOURCE RECOVERY CENTRE
CONSERVATION MANAGEMENT PLAN
ABORIGINAL HERITAGE

FILE REFERENCE: 208212_18A_EV01-EV02.dwg

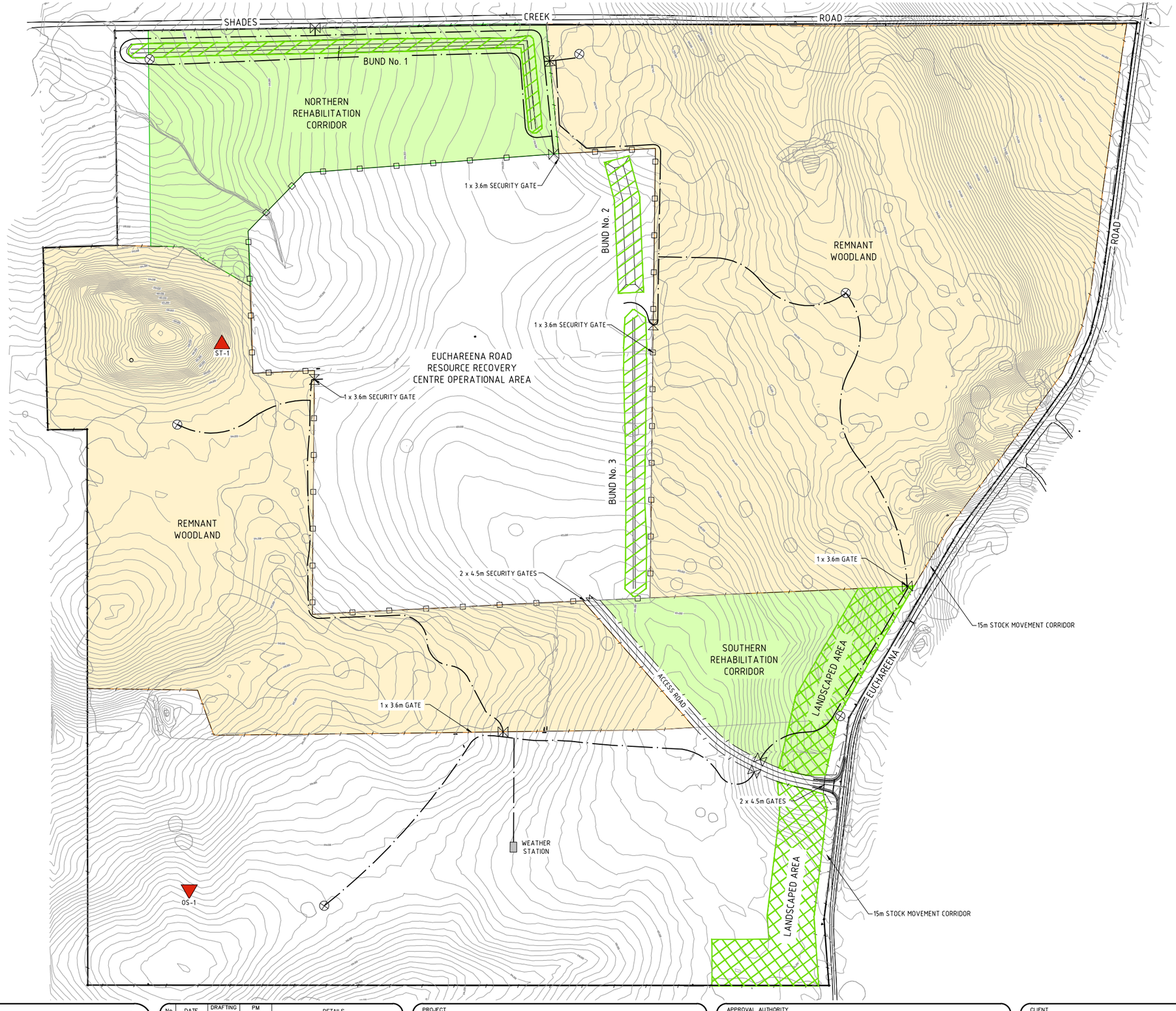
APPROVAL AUTHORITY
NSW GOVERNMENT
DEPARTMENT OF PLANNING

CLIENT
ORANGE Australia's Central City
CIVIC CENTRE
CNR BYNG ST AND LORDS PLACE,
ORANGE NSW 2800

DRAWING
TITLE SHEET, DRAWING SCHEDULE & SITE LOCALITY

PROJECT NUMBER: 208212 | DRAWING NUMBER: 18A_EV01 | REV: A

SOURCE: TOPOVIEW RASTER VIEWER



LEGEND:

- STOCK FENCE (2BARB HINGE JOINT)
- 1.8m SECURITY FENCE
- EXISTING ROADWAY
- CONTOUR INTERVAL 1.0m
- SCARRED TREE (MOLONG ST1)
- ARTEFACT SCATTER (MOLONG OS1)
- LANDSCAPED BUND
- LANDSCAPED AREA
- BOREHOLE LOCATION
- ACCESS TRACK
- GATE

0 60 120 180 240
-60 -30
SCALE 1:6000 (A3)

GEOLYSE
ORANGE
154 PEISLEY STREET
P.O. BOX 1963
ORANGE, NSW 2800
Ph. (02) 6393 5000
Fx. (02) 6393 5050
orange@geolyse.com
www.geolyse.com

No	DATE	DRAFTING CHECK	PM CHECK	DETAILS
A	08/03/11	RmS	EJB	ISSUED TO CLIENT FOR REVIEW

PROJECT
EUCHAREENA ROAD RESOURCE RECOVERY CENTRE
CONSERVATION MANAGEMENT PLAN
ABORIGINAL HERITAGE

FILE REFERENCE: 208212_18A_EV01-EV02.dwg

APPROVAL AUTHORITY
NSW GOVERNMENT
DEPARTMENT OF PLANNING

CLIENT
ORANGE Australia's Colonial City
CIVIC CENTRE
CNR BYNG ST AND
LORDS PLACE,
ORANGE NSW 2800

DRAWING
SITE PLAN

PROJECT NUMBER: 208212
DRAWING NUMBER: 18A_EV02
REV: A
SOURCE: INTERNAL

Appendix C

REMNANT WOODLAND AREAS

Remnant Woodland Areas

INTRODUCTION

This Appendix relates to the two remnants of the 'White Box Yellow Box Blakely's Red Gum Woodland Community' Ecological Community located on site (refer **Drawing 19B_EV02**).

As these areas are already established, they will be managed differently to the rehabilitation and landscaped areas of the site. Essentially they would be monitored with plantings provided where deficiencies are found.

Two permanent monitoring sites throughout the remnant Box-gum woodland EEC have been established (refer to **Drawing 19B_EV02**), which includes two quadrants (C1 and C2) and one transect (F1). These sites will be monitored annually, and outcomes recorded in the *Flora Monitoring* report.

The existing access tracks within the woodland areas would be maintained to provide access to the piezometers for groundwater monitoring purposes. They would also provide for general access to these areas for rehabilitation monitoring and management purposes.

Table C1 outlines the rehabilitation and management measures to be followed for the two Remnant Woodland Areas.

Table C1 – Remnant Woodland Rehabilitation and Management Measures

	Category		Task	Responsibility
1	**PRIOR TO CONSTRUCTION WORKS COMMENCING**			
a	Fencing of regeneration areas	i	The two remnant Box Woodland areas are to be fenced off from the remainder of the site, in accordance with the attached plans. The fencing is to be provided outside of the dripline of the trees on the outermost extent of indicated areas. The fencing shall be designed to minimise detrimental impacts on native fauna.	OCC
b	Baseline Information	i	Permanent quadrats/transects shall be established, by a suitably qualified person, across the remnant woodland areas to enable periodic monitoring to record the extent of flora regrowth in these areas.	OCC
		ii	An initial assessment of the woodland areas, by a suitably qualified person and based on the identified quadrats/transects, to identify deficiencies in species diversity.	OCC
		iii	An initial planting program may be developed, by a suitably qualified person, subject to the above initial assessment.	OCC
		iv	Establishment of a monitoring program, by a suitably qualified person, for the remnant woodland areas to monitor and record the extent of flora regrowth.	OCC
c	Stock control	i	Those areas of the site that are not directly affected by the proposed activity shall be de-stocked and remain free of grazing by domestic stock.	OCC
2	**DURING CONSTRUCTION**			
a	Woodland Enhancement	i	Implementation of the initial planting program in the remnant woodland areas.	OCC
3	**PRIOR TO OPERATION OF THE RRC**			
a	Weed & Pest Management	i	A Weed Management Program shall be prepared, by a suitably qualified person, that incorporates: • Regular inspections of the site; • Education of staff with respect to weed identification and control; and • Continual monitoring and control of identified noxious weeds. This shall form part of the OEMP.	OCC
		ii	A Pest Control Plan shall be formulated, that in particular includes the control of foxes and feral cats and any other invertebrate pest that may be considered a problem. This shall form part of the OEMP.	OCC

Table C1 – Remnant Woodland Rehabilitation and Management Measures

	Category		Task	Responsibility
4	**DURING OPERATION OF RRC**			
a	Heritage & Biodiversity Awareness	i	A suitably sized copy of **Drawing 19B_EV02** shall be displayed in the Site Office, where the Site Manager has visual access to it.	OCC
b	Woodland Monitoring	i	Implementation of the woodland monitoring program.	OCC
		ii	Where, during monitoring, species diversity is found to be insufficient, supplementary planting programs may be undertaken in accordance with advice from a suitably qualified person.	OCC
		iii	Any supplementary plantings are to be suitably protected through fencing or suitable tree guards.	OCC
c	Weed & Pest Management	i	Implementation of the Weed Management Program.	OCC
		ii	Implementation of the Pest Control Plan.	OCC
d	Groundcover Management	i	Groundcover management within the woodland areas is to be undertaken through grazing with cattle, using appropriate stocking rates that reflect seasonal conditions and to ensure an adequate level of groundcover remains at all times.	OCC
		ii	• Controlled grazing by livestock to maintain or improve native vegetation values at a low to moderate stocking rate or 'crash grazing'. Grazing is an ecological tool and the aim of crash grazing is to manage the groundcover to ensure that a diverse groundlayer of native species is encouraged. • Grazing regimes will be guided by: - Appropriate location of grazing - Triggers to change grazing regime e.g. changes to abundance of selected key species. - Triggers for grazing to be excluded e.g. during flowering and seeding of particular species. - Seasons where grazing may be desirable e.g. reduction in seeding of particular weed species. - Exclusion of grazing for a required number of years or until certain outcomes have been achieved. • Management of stock in the remnant woodland should aim to minimise damage to native vegetation and minimise introduction of weeds and disease as follows: - Ensure stock camps are not established - Ensure stock are confined to formed tracks and are under supervision when moving livestock through the conservation area. - Mustering of livestock with the use of working dogs and horses is permitted. - Fodder or any stock feed may not be brought into the remnant woodland areas. - Before introduction of stock into the remnant woodland areas ensure they are held in a relatively weed free area for at least a week immediately prior to their introduction. - Pasture improvement or fertilisation is not permitted. - Exclude stock from any burnt area of the remnant woodland until native vegetation has re-established. Stock should be excluded for at least three years and groundcover should be >70% before grazing recommences.	OCC
		iii	Any grazing and implementation of grazing regime requires prior written agreement from OEH, subject to monitoring reports.	OCC

Table C1 – Remnant Woodland Rehabilitation and Management Measures

	Category		Task	Responsibility
		iv	Reducing the population of native grazing animals where grazing pressure is resulting in the degradation of the quality and structure of native vegetation and inhibiting natural regeneration and the owner is granted a licence to cull under Section 121 of the *NPW Act 1974*.	OCC

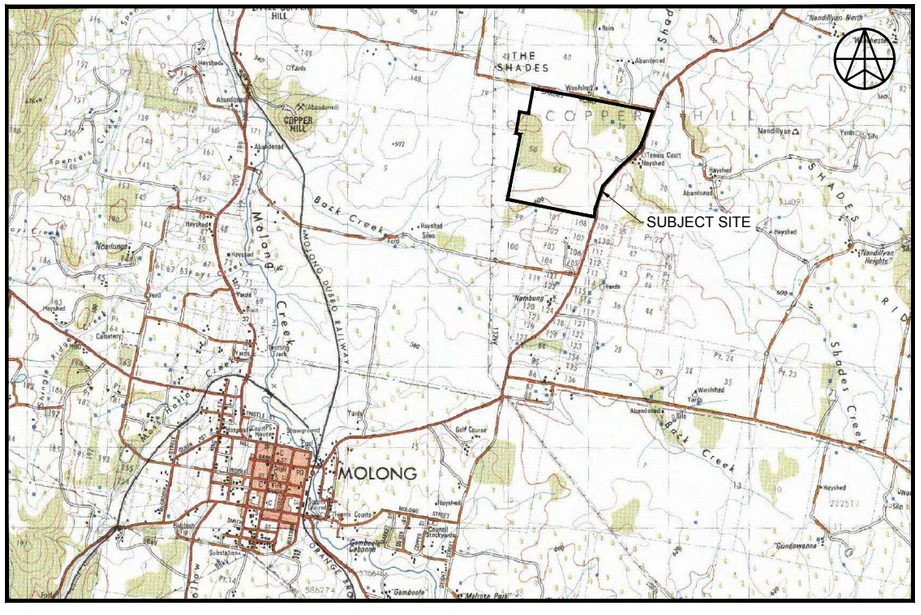
EUCHAREENA ROAD RESOURCE RECOVERY CENTRE

CONSERVATION MANAGEMENT PLAN

ORANGE CITY COUNCIL

REMNANT WOODLAND AREAS

SCHEDULE OF DRAWINGS			
SHEET	TITLE	REV.	DATE
19A_EV01	TITLE SHEET, DRAWING SCHEDULE & SITE LOCALITY	A	08/03/2011
19A_EV02	SITE PLAN	A	08/03/2011



SITE LOCALITY
NOT TO SCALE

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No	DATE	DRAFTING CHECK	PM CHECK	DETAILS
A	08/03/11	RmS	EJB	ISSUED TO CLIENT FOR REVIEW

PROJECT
EUCHAREENA ROAD RESOURCE RECOVERY CENTRE
CONSERVATION MANAGEMENT PLAN
REMNANT WOODLAND AREAS

FILE REFERENCE: 208212_19A_EV01-EV02.dwg

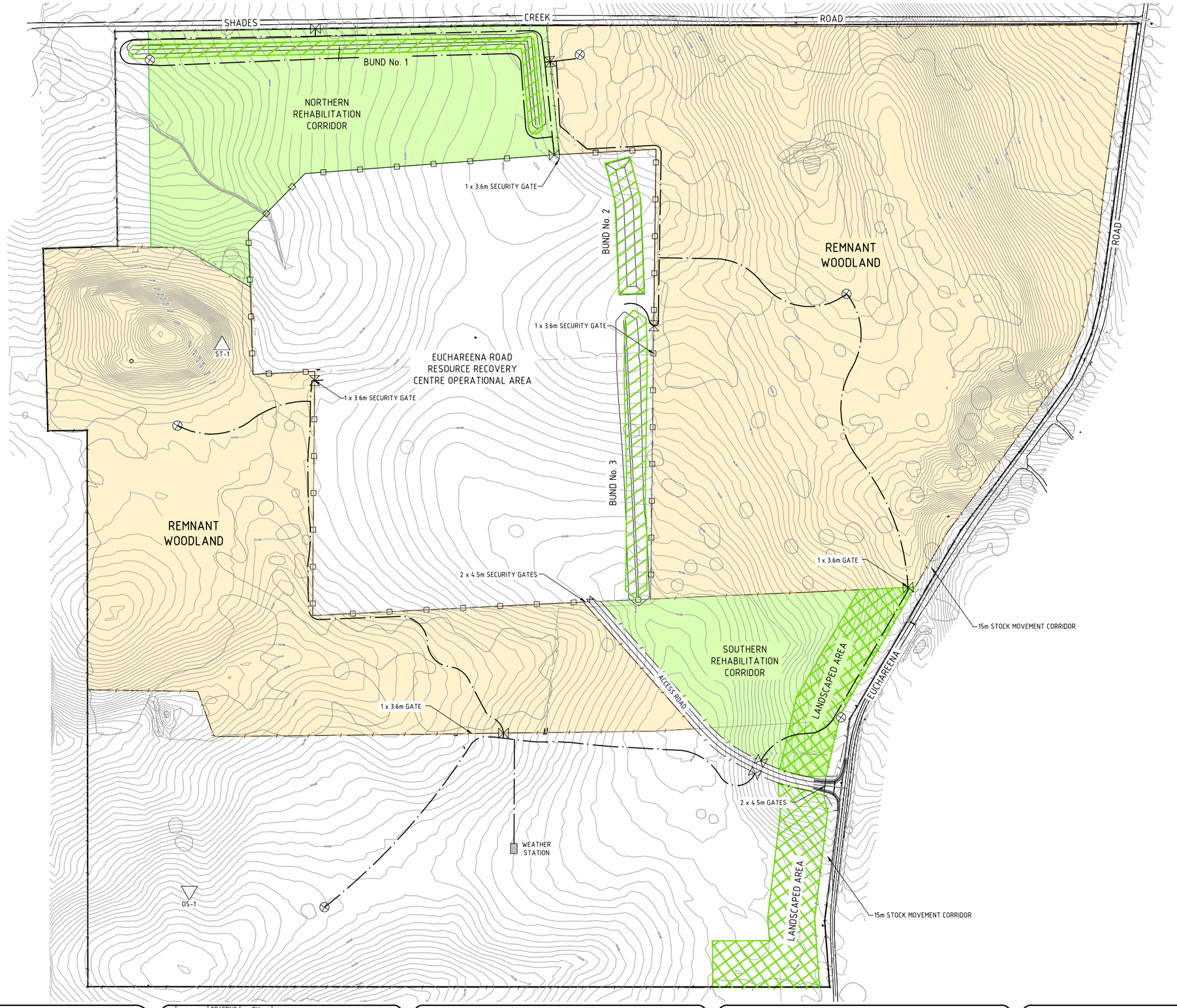
APPROVAL AUTHORITY
NSW GOVERNMENT
DEPARTMENT OF PLANNING

CLIENT
ORANGE Australia's Colour City
CIVIC CENTRE
CNR BYNG ST AND LORDS PLACE,
ORANGE NSW 2800

DRAWING
TITLE SHEET, DRAWING SCHEDULE & SITE LOCALITY

PROJECT NUMBER: 208212 | DRAWING NUMBER: 19A_EV01 | REV: A

SOURCE: TOPOVIEW RASTER VIEWER



LEGEND:

- STOCK FENCE (2BARB HINGE JOINT)
- 1.8m SECURITY FENCE
- EXISTING ROADWAY
- CONTOUR INTERVAL 1.0m
- SCARRED TREE (MOLONG ST1)
- ARTEFACT SCATTER (MOLONG OS1)
- LANDSCAPED BUND
- LANDSCAPED AREA
- BOREHOLE LOCATION
- ACCESS TRACK
- GATE

0 60 120 180 240
-60 -30

SCALE 1:6000 (A3)

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CLIENT
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CNR BYNG ST AND
LORDS PLACE,
ORANGE NSW 2800

DRAWING
SITE PLAN

PROJECT NUMBER: 208212
DRAWING NUMBER: 19A_EV02
REV: A
SOURCE: INTERNAL

Appendix D

REHABILITATION CORRIDORS

Rehabilitation Corridors

INTRODUCTION

This Appendix relates to the two areas to the north and south of operational area of the site which will provide for connectivity between the two remnant areas of Box Gum Woodland. These areas are hereon referred to as the northern and southern rehabilitation corridors. **Drawing 15C_EV02** illustrates the location of these areas.

The rehabilitation corridors are proposed on open grassland located to the northern and southern ends of the development site. Adjacent woodlands are comprised of an open Grassy Box-eucalypt community with a tree spacing averaging between 5 and 20 metres. Openings in the existing woodlands span up to 100 metres. Existing trees are predominantly mature with age structure of the community tending to be skewed towards old-mature trees. Recruitment is present but uncommon.

PURPOSE

The purpose of the proposed rehabilitation Corridors is to establish continuity with existing remnants of woodland, to create a greater area of woodland habitat and to form a visual barrier to the Resource Recovery Centre (RRC).

METHODS

GENERAL

Table D1 provides a list of tree, shrub, and groundcover species suitable for planting for the re-establishment of a Box Woodland concurrent with the existing community, including shrub species suitable for establishing visual barrier or bund stabilisation vegetation.

The listed species in **Table D1** have been recorded within the Molong area on similar landscapes to that of the subject site. Upper storey trees include White Box, Yellow Box and Blakey's Red Gum. These trees are already present on the site and Orange City Council already possesses seed that has been sourced from the Molong area, this seed should be used in deference to other seed to ensure provenance is maintained. Only tube stock and seed stock of local provenance can be used within the rehabilitation corridors.

Preparation for revegetation on natural surfaces needs to be started as soon as possible through weed removal however maintenance of the existing native grass-cover is important to minimise erosion and maintain soil moisture. Slashing of tall grass could occur periodically to reduce fire risk, but existing native grasses on site should be allowed to mature to seed where possible to encourage colonisation.

Weed control should occur regularly before and after planting to minimise competition with young seedlings for water, and light. Spot spraying should be carried out by a qualified professional to an agreed performance contract, with a minimum of:

1) Initial assessment with spot spraying as soon as possible.

2) Treatment to an agreed schedule based on the initial assessment (Weed Management program as per **Table D2**).

3) Treatment two weeks prior to planting, as agreed.

4) Maintenance treatment as part of the Operational Environmental Management Plan for the life of the project, adjusted according to weather conditions.

Control and management of pest grazing animals (ie rabbits and hares) will be required to minimise impact upon young plants. The landscape management contract should require active and ongoing assessment of the problem and measures for control, should they be required, this will be detailed in the Pest Control Plan as per **Table D2**.

Short 'crash grazing' events should occur as per the management plan for the Remnant Woodland.

Table D1 – Recommended Planting Species List

Botanical Name	Common Name	Contractor Seed Available	OCC Seed Available	Provenance
Acacia buxifolia	Box-leaf Wattle		X	Molong/Fern Hill
Acacia decora	Western Golden Wattle	X		Molong/Fern Hill
Acacia leucoclada	Northern Silver Wattle	X		Molong/Fern Hill
Acacia melanoxylon	Blackwood		X	Orange
Acacia vestita	Weeping Boree Wattle		X	Molong/Fern Hill
Allocasuarina verticillata	Drooping She-oak		X	Molong/Fern Hill
Brachychiton populneus	Kurrajong		X	Molong/Fern Hill
Eucalyptus albens	White Box		X	Molong/Belgravia
Eucalyptus blakelyi	Blakely's Red Gum		X	Molong/Orange
Eucalyptus melliodora	Yellow Box		X	Molong/Fernhill
Hardenbergia violacea	False Sarsaparilla	X		Molong/Fernhill
Indigofera australis	Australian Indigo	X		Molong/Fernhill

NOTE: seeding of native grasses may also be required within the rehabilitation corridors, to be determined through annual flora monitoring.

NORTHERN REHABILITATION CORRIDOR

The aim of the northern rehabilitation corridor is provide connectivity between existing open woodland located to the east and south. It covers a 'L' shaped area measuring approximately 550 metres long.

Revegetation of the rehabilitation corridor needs to retain the structure and species composition of existing woodland areas on the site. The existing woodland structure varies between a closed woodland formation (less than 10 metres between trees) to very open (up to 50 metres between trees).

The planting strategy of this area is to direct drill a mix of seed (to be submitted and approved) from the seed list provided in **Table D1** at a rate of 400gm per km over the entire area in meandering rows a maximum of 6m apart to achieve a dominance of grass and ground cover species with an average of 3 eucalypts and 6 other trees/shrubs per 10x10 metre square. Planting should occur either just prior to a rain event or not long after a rain event, ensuring practicality with equipment, in March/April of 2013.

Success of the planting should be assessed a month after drilling and infill planting occur if deemed necessary. This could be either planting of tube-stock or re-drilling as agreed. Long term maintenance of the area should include further in-fill planting should it be deemed necessary.

SOUTHERN REHABILITATION CORRIDOR

The aim of the rehabilitation corridor is provide connectivity between existing open woodland located immediately to the north and west. This site is a triangular shaped area measuring approximately 320 metres long and 300 metres wide at the broadest part. A 70 metre strip (known as the Landscaped Area, refer **Appendix F**) fronting the Euchareena Road and directly connective to the rest of the rehabilitation corridor would act as a visual barrier for the Operational Area of the RRC.

Revegetation of the broader area of rehabilitation corridor needs to retain the structure and species composition of existing woodland areas on the site. The existing woodland structure varies between a closed woodland formation (less than 10 metres between trees) to very open (up to 50 metres between trees).

The planting strategy of this area is equal to that used across the Northern Rehabilitation Area except for the 70m Landscaped Area which is described in **Appendix F**.

REHABILITATION AND MANAGEMENT MEASURES

Table D2 outlines the rehabilitation and management measures to be followed for the two Rehabilitation Corridor Areas.

Two permanent monitoring sites within the rehabilitation corridor have been established (refer to **Drawing 15C_EV02**), which includes two quadrants (R1 and R2) and one transect (F2). These sites will be monitored annually, and outcomes recorded in the *Flora Monitoring* report.

Table D2 – Rehabilitation Corridors Rehabilitation and Management Measures

	Category		Task	Responsibility
1	**PRIOR TO CONSTRUCTION WORKS COMMENCING**			
a	Baseline Information	i	An initial planting program is to be developed, by a suitably qualified person, based on this methodology.	OCC
		ii	Establishment of a Rehabilitation Area monitoring program, by a suitably qualified person, for the rehabilitation areas to monitor and record the extent of flora growth. This program shall incorporate the principles outlined in this appendix.	OCC
b	Stock control	i	Those areas of the site that are not directly affected by the proposed activity shall be de-stocked and remain free of grazing by domestic stock (except in accordance with any management plan).	OCC
2	**DURING CONSTRUCTION**			
a	Woodland Enhancement	ii	Implementation of the initial planting program in the rehabilitation corridor.	OCC
3	**PRIOR TO OPERATION OF THE RRC**			
a	Weed & Pest Management	i	Creation of a Weed Management Program, by a suitably qualified person, that includes: • Regular inspections of the site; • Education of staff with respect to weed identification and control; and • Continual monitoring and control of identified noxious weeds. This shall form part of the Operational Environmental Management Plan (OEMP).	OCC
		ii	A Pest Control Plan shall be formulated, that in particular includes the control of foxes and feral cats and any other invertebrate pest that may be considered a problem. This shall form part of the OEMP.	OCC

Table D2 – Rehabilitation Corridors Rehabilitation and Management Measures

	Category		Task	Responsibility
4	**DURING OPERATION OF RRC**			
b	Woodland Monitoring	i	Implementation of the rehabilitation corridor monitoring program.	OCC
		ii	Where, during monitoring, species diversity is found to be insufficient, supplementary planting programs are to be undertaken in accordance with advice from a suitably qualified person.	OCC
		iii	Any supplementary plantings are to be suitably protected through fencing or suitable tree guard, as outlined in this Appendix.	OCC
c	Weed & Pest Management	i	Implementation of the Weed Management Program.	OCC
		ii	Implementation of the Pest Control Plan.	OCC
d	Groundcover Management	i	Groundcover management within the rehabilitation areas is to be undertaken through grazing with cattle, using appropriate stocking rates that reflect seasonal conditions and to ensure an adequate level of groundcover remains at all times. Trees and shrubs are to be protected from cattle in accordance with the principles outlined in this Appendix.	OCC
		ii	Once established, grazing shall be undertaken in accordance with the measures outlined in the Remnant Woodland Areas (**Appendix C**).	OCC

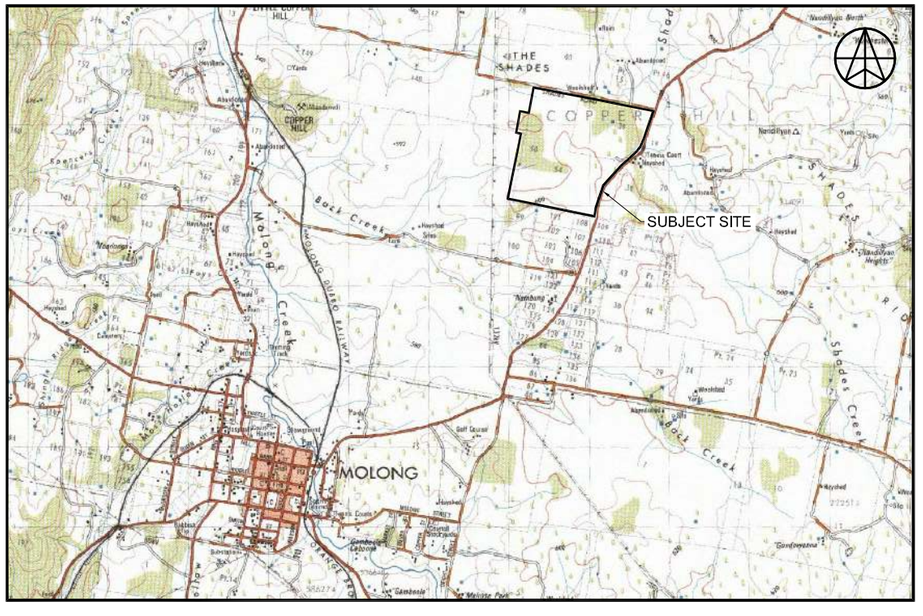
EUCHAREENA ROAD RESOURCE RECOVERY CENTRE

CONSERVATION MANAGEMENT PLAN

ORANGE CITY COUNCIL

REHABILITATION CORRIDORS

DRAWING SCHEDULE			
SHEET	TITLE	REV.	DATE
15B_EV01	TITLE SHEET, DRAWING SCHEDULE, & SITE LOCALITY	B	27/04/2011
15B_EV02	SITE PLAN	B	27/04/2011
15B_EV03	TYPICAL PLANTING PLAN & DETAIL	B	27/04/2011



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PROJECT
EUCHAREENA ROAD RESOURCE RECOVERY CENTRE
CONSERVATION MANAGEMENT PLAN
REHABILITATION CORRIDORS

FILE REFERENCE: 208212_15B_EV01-EV03.dwg

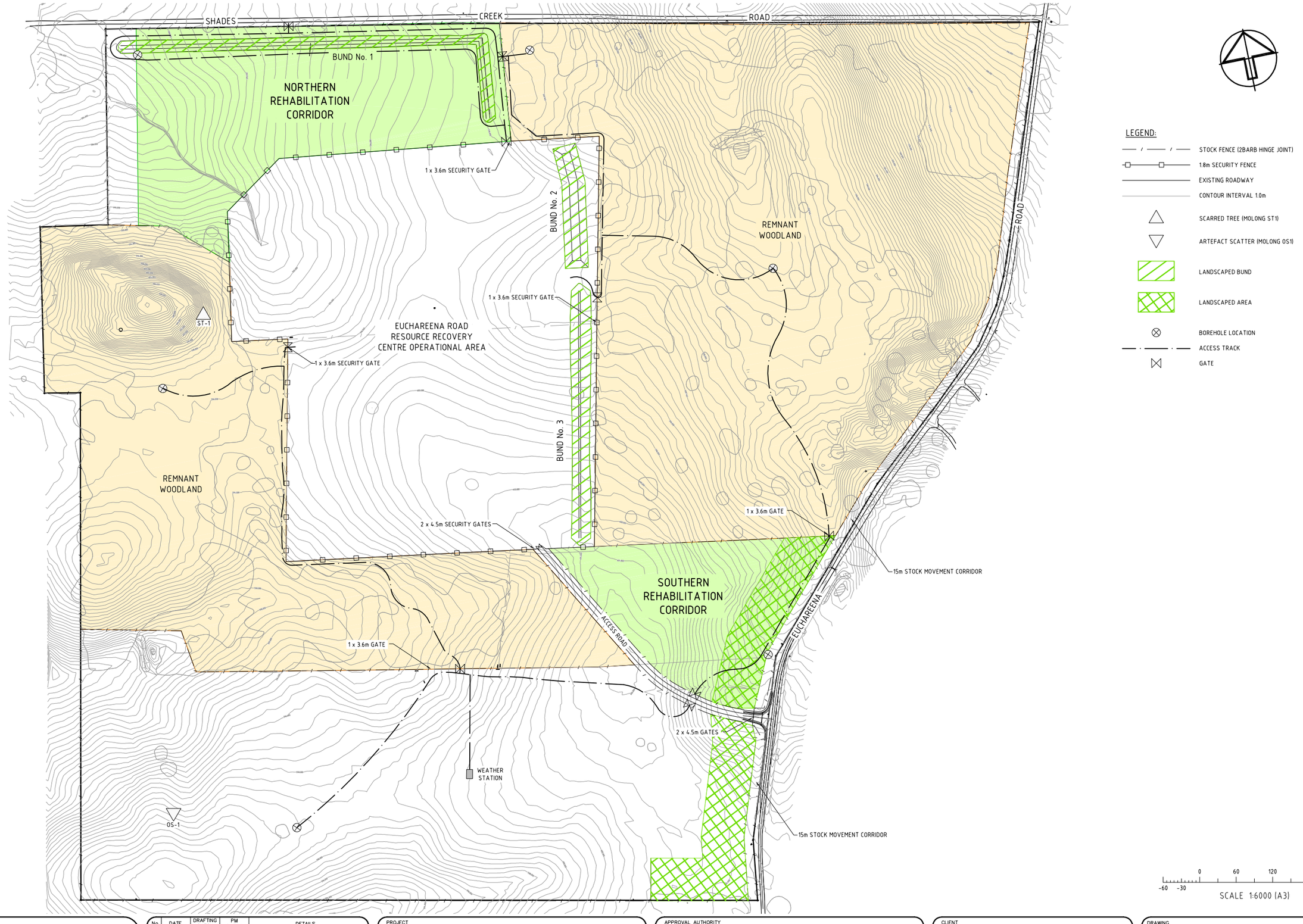
APPROVAL AUTHORITY
NSW GOVERNMENT
DEPARTMENT OF PLANNING

CLIENT
ORANGE Australia's Colour City
CIVIC CENTRE
CNR BYNG ST AND LORDS PLACE,
ORANGE NSW 2800

DRAWING
TITLE SHEET, DRAWING SCHEDULE AND SITE LOCALITY

PROJECT NUMBER: 208212 | DRAWING NUMBER: 15B_EV01 | REV: B

SOURCE: TOPOVIEW RASTER VIEWER



LEGEND:

- STOCK FENCE (2BARB HINGE JOINT)
- 1.8m SECURITY FENCE
- EXISTING ROADWAY
- CONTOUR INTERVAL 1.0m
- SCARRED TREE (MOLONG ST1)
- ARTEFACT SCATTER (MOLONG OS1)
- LANDSCAPED BUND
- LANDSCAPED AREA
- BOREHOLE LOCATION
- ACCESS TRACK
- GATE

0 60 120 180 240
-60 -30
SCALE 1:6000 (A3)

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REHABILITATION CORRIDORS

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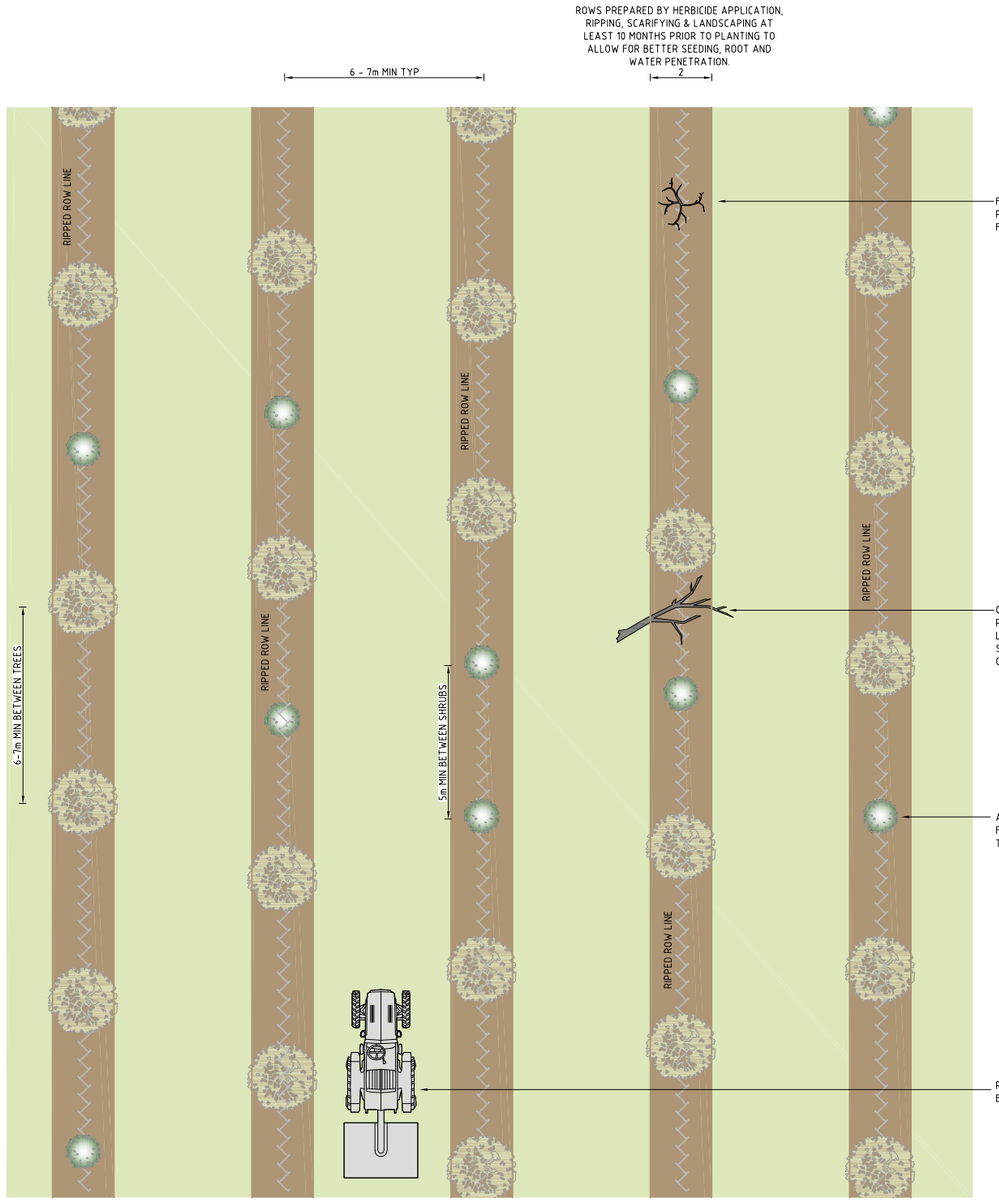
ORANGE NSW 2800

DRAWING
SITE PLAN

PROJECT NUMBER: 208212 | DRAWING NUMBER: 15B_EV02 | REV. B

SOURCE: INTERNAL



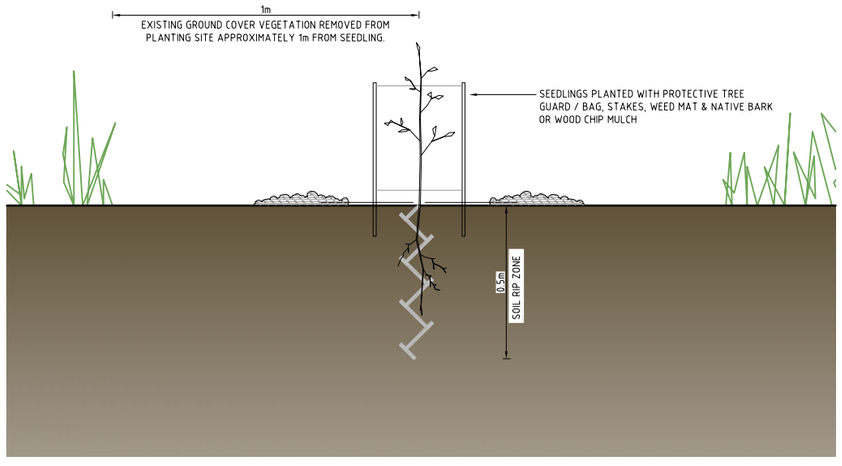
1 – REHABILITATION CORRIDOR - TYPICAL PLANTING PLAN

SCALE 1:100 (A1)

Botanical Name	Common Name	Form and Size
Allocasuarina diminuta	Shrubby She-oak	Upright shrub, 6–10m
Indigofera adesmiifolia	Tick Indigo	Shrub to 1.5 m.
Indigofera australis	Australian Indigo	Spreading Shrub, 2.5m.
Eucalyptus blakelyi	Blakely's Red Gum	Open spreading tree. 16–20m.
Eucalyptus albens	White Box	Open to compact tree. 15-8m.
Eucalyptus melliodora	Yellow Box	Open crowned tree. 15-18m.
Grevillea floribunda	Seven Dwarfs Grevillea	Open shrub 1–2mt
Grevillea rosmarinifolia	Rosemary Grevillea	Dense and prickly leafed shrub to 2m.
Grevillea ramosissima	Fan Grevillea	Prickly leafed shrub. 1.5m
Hakea decurrens	Bushy Needlewood	Erect shrub 0.5–5m.
Hakea sericea	Needlebush	Erect, slender or compact shrub 2–5m.
Acacia doratoxylon	Currawang	Tall shrub or small open tree 3–8m.
Acacia implexa	Hickory Wattle	Small tree 5–15m.
Acacia buxifolia	Box-leaf Wattle	Glaborous Shrub 1–3m
Acacia vestita	Weeping Boree Wattle	Spreading, multi-stemmed shrub. 1–4m
Acacia decora	Western Golden Wattle	Rounded to spreading shrub 1–4m.
Acacia deanei	Dean's Wattle	Shrub or small tree 2–9m
Acacia melanoxylon	Blackwood	Dense large shrub or small tree to 10m.
Hardenbergia violacea	False Sarsaparilla	Low spreading shrub 1m
Dillwynia phylicoides	Pea Flower	Spreading to erect shrub 0.5–1.5m.
Dillwynia sericea	Showy Parrot-pea	Small rounded shrub 1m.
Styphelia triflora	Fivecorners	Erect bushy shrub to 2m.

2 – RECOMMENDED NATIVE TREE & SHRUB SPECIES

-



3 – TYPICAL SEEDLING PLANTING DETAIL

SCALE 1:10 (A1)

LEGEND

EUCALYPT / ALLOCASUARINA SPECIES

SHRUB / LOW TREE SPECIES SPECIES

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EUCHAREENA ROAD RESOURCE RECOVERY CENTRE
CONSERVATION MANAGEMENT PLAN
REHABILITATION CORRIDORS

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APPROVAL AUTHORITY
NSW GOVERNMENT
DEPARTMENT OF PLANNING

CLIENT
ORANGE Australia's Colour City
CIVIC CENTRE
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ORANGE NSW 2800

DRAWING
TYPICAL PLANTING PLAN & DETAILS

PROJECT NUMBER: 208212
DRAWING NUMBER: 15B_EV03
REV: B

SOURCE: INTERNAL

Appendix E

LANDSCAPE BUNDS

Landscaped Bunds

INTRODUCTION

This Appendix relates to the three landscaped bunds, as illustrated in **Drawing 16B_EV02**. This appendix and associated drawings have been prepared to satisfy Condition 35 in Schedule 5 of the Project Approval.

The purpose of the bunds is to provide visual screening of the site operations. As outlined in **Section 4.5** of the main report to which this section appends, the bunds would be constructed in a staged and evolving manner based on the availability of overburden.

As the bunds will not be able to be constructed until after excavations on site have commenced, a landscape strip is to be established between Bund 1 and the northern property boundary. **Drawing 16B_EV03** illustrates the cross section of this landscape strip. An access track would be provided adjacent to the property boundary/fence, with a 15m wide landscaped strip provided between the access track and the toe of Bund 1.

Again, Bunds 2 and 3 would be constructed when enough overburden is available from the construction stages of the project. These two bunds would be constructed in accordance with **Drawings 16B_EV04** and **16B_EV05.** During operation of the Resource Recovery Centre (RRC), the rear (inside) of these bunds would operate with a 'working face', enabling overburden from the landfill cells to be stockpiled as needed.

PURPOSE

The purpose of these bunds is to provide for visual screening of the RRC.

METHODS

GENERAL

Table E1 provides a list of tree, shrub, and groundcover species suitable for planting for the re-establishment of a Box Woodland concurrent with the existing community, including shrub species suitable for establishing visual barrier or bund stabilisation vegetation.

The listed species in **Table E1** have been recorded within the Molong area on similar landscapes to that of the subject site. Upper storey trees include White Box, Yellow Box, and Blakely's Red Gum. These trees are already present on the site and Orange City Council already possesses seed that has been sourced from the Molong area, this seed should be used in deference to other seed to ensure provenance is maintained. Only tube stock and seed stock of local provenance can be used within the landscape bunds.

Preparation for revegetation on natural surfaces needs to be started as soon as possible through weed removal, however maintenance of the existing native grass-cover is important to minimise erosion and retain soil moisture. Slashing of tall grass could occur periodically to reduce fire risk, but existing native grasses on site should be allowed to mature to seed where possible to encourage colonisation.

Weed control should occur regularly before and after planting to minimise competition with young seedlings for water and light. Spot spraying should be carried out by a qualified professional to an agreed performance contract, with a minimum of:

1. Initial assessment with spot spraying as soon as possible

2. Treatment to an agreed schedule based on the initial assessment (Weed Management Program as per **Table E2**).
3. Treatment two weeks prior to planting as agreed.
4. Maintenance treatment as part of the OEMP for the life of the project, adjusted according to weather conditions.

Control and management of pest grazing animals (i.e rabbits and hares) will be required to minimise impact upon young plants. The landscape management contract should require active and ongoing assessment of the problem and measures for control, should they be required, this will be detailed in the Pest Control Plan per **Table E2**.

Short 'crash grazing' events should occur as per the management plan for the Remnant Woodland.

Table E1 – Recommended Planting Species List

Botanical Name	Common Name	Contractor Seed Available	OCC Seed Available	Provenance
Acacia buxifolia	Box-leaf Wattle		X	Molong/Fern Hill
Acacia decora	Western Golden Wattle	X		Molong/Fern Hill
Acacia leucoclada	Northern Silver Wattle	X		Molong/Fern Hill
Acacia melanoxylon	Blackwood		X	Orange
Acacia vestita	Weeping Boree Wattle		X	Molong/Fern Hill
Allocasuarina verticillata	Drooping She-oak		X	Molong/Fern Hill
Brachychiton populneus	Kurrajong		X	Molong/Fern Hill
Eucalyptus albens	White Box		X	Molong/Belgravia
Eucalyptus blakelyi	Blakely's Red Gum		X	Molong/Orange
Eucalyptus melliodora	Yellow Box		X	Molong/Fernhill
Hardenbergia violacea	False Sarsaparilla	X		Molong/Fernhill
Indigofera australis	Australian Indigo	X		Molong/Fernhill

NOTE: seeding of native grasses may also be required within the Landscaped Bunds, to be determined through annual flora monitoring.

BUND 1 & LANDSCAPE STRIP

This area is located at the northern extent of the site towards the western corner. It consists of a 5 metre wide access road, a 15 metre wide landscape strip, and a low, wide-topped vegetated bund. The 15 metre landscape strip is designed to act as a primary visual barrier before the establishment of Bund 1.

The 15 metre landscape strip shall be planted out with the road side 5m planted as per the Edge Planting Strip in **Appendix F** and the remaining 10m planted per the Rehabilitation Corridors in **Appendix D**.

The bund shall be hydromulched as soon as is practical after it has been formed. Seed shall be applied at a mix and rate as submitted and approved, being predominantly grasses and groundcovers. Watering will only be required if it is deemed necessary to either hold the mulch in place or to assist with germination in a particularly dry period. It is expected that this will occur during the peak of summer but it is understood that the native species of seeds will remain viable and dormant within the mulch until favourable growing conditions occur. The mulching process will assist in reducing weed germination, minimise erosion and maintain soil moisture.

A direct drill of seed including eucalypts, acacias and other shrubs shall occur in March or April depending on weather conditions. Application rates shall be equal to that detailed in **Appendix D** however application over the hydromulch should occur without use of the disc of the machine.

Weed monitoring and maintenance shall occur as per the Weed Management Program.

BUND 2

Bund 2 is a vegetated bund located on the north eastern corner of the proposed operation area. It is designed to act as a visual barrier and vegetated buffer area between the operational area and remnant woodland located immediately to the east.

The 4 metre tall bund would be hydromulched and direct drilled on the top and eastern side as per Bund 1, allowing the western face to remain 'active' during the operations for the deposition of soil. Post-works, this 'active' face will be vegetated with trees and shrubs with a method submitted and approved.

BUND 3

This structure is vegetated bund located on the south eastern corner of the proposed operation area. It is to be designed to act as a visual barrier and vegetated buffer area between the operation area and remnant woodland located immediately to the east.

This bund will be hydromulched as per Bund 1 and all but the 'active' face direct drilled also per bund 1. This face will remain with groundcover only and should be monitored for sufficient coverage.

Ongoing weed and pest management will be conducted per the Weed Management Program. Mowing or slashing may also be required to avoid the ground cover becoming rank or overly dense. Post-working life, the grassed stabilised batter of the bund will be planted out with an open planting of trees and shrubs in a method to be submitted and approved.

REHABILITATION AND MANAGEMENT MEASURES

Table E2 outlines the rehabilitation and management measures to be followed for the landscaped bunds.

A permanent monitoring site within Landscape Bund 1 has been established (refer to **Drawing 16B_EV02**), which includes one transect (B1). The site will be monitored annually, and outcomes recorded in the *Flora Monitoring* report.

Table E2 – Landscaped Bunds Rehabilitation and Management Measures

	Category		Task	Responsibility
1	**PRIOR TO CONSTRUCTION WORKS COMMENCING**			
a	Landscape screening	i	The landscape strip to the north of Bund 1 shall be established in accordance with this Appendix.	OCC
		ii	The perimeter tree screening areas are to provide an appropriate alternative nectar source away from the landfilling operation. These species shall be selected in consultation with OEH.	OCC
b	Baseline information	i	Establishment of a Landscaped Bund/Strip monitoring program, by a suitably qualified person, consistent with this Appendix, for the landscaped bund areas to monitor and record the extent of flora growth.	OCC
2	**DURING CONSTRUCTION**			
a	Landscaped Bunds	i	During the construction of the Stage 1 landfill Cell, Bund 1 is to be constructed and landscaped in accordance with this Appendix.	OCC
3	**PRIOR TO OPERATION OF THE RRC**			
a	Weed & Pest Management	i	Creation of a Weed Management Program, by a suitably qualified person, that includes: • Regular inspections of the site; • Education of staff with respect to weed identification and control; and • Continual monitoring and control of identified noxious weeds. This shall form part of the OEMP.	OCC
		ii	A Pest Control Plan shall be formulated, that in particular includes the control of foxes and feral cats and any other invertebrate pest that may be considered a problem. This shall form part of the OEMP.	OCC
4	**DURING OPERATION OF RRC**			
a	Landscaped Bunds	i	The landscaped bunds shall be constructed and landscaped in accordance with this Appendix.	OCC
b	Heritage & Biodiversity Awareness	i	A suitably sized copy of **Drawing 16B_EV02** shall be displayed in the Site Office, where the Site Manager has visual access to it.	OCC

Table E2 – Landscaped Bunds Rehabilitation and Management Measures

	Category		Task	Responsibility
c	Monitoring	i	Implementation of the Landscaped Bund/Strip monitoring program.	OCC
		ii	Where, during monitoring, species diversity is found to be insufficient, supplementary planting programs are to be undertaken in accordance with advice from a suitably qualified person.	OCC
		iii	Any supplementary plantings are to be suitably protected through fencing or suitable tree guard.	OCC
d	Weed & Pest Management	i	Implementation of the Weed Management Program.	OCC
		ii	Implementation of the Pest Control Plan.	OCC
e	Groundcover Management	i	Once established, grazing shall be undertaken in accordance with the measures outlined in the Remnant Woodland Areas (**Appendix C**).	OCC

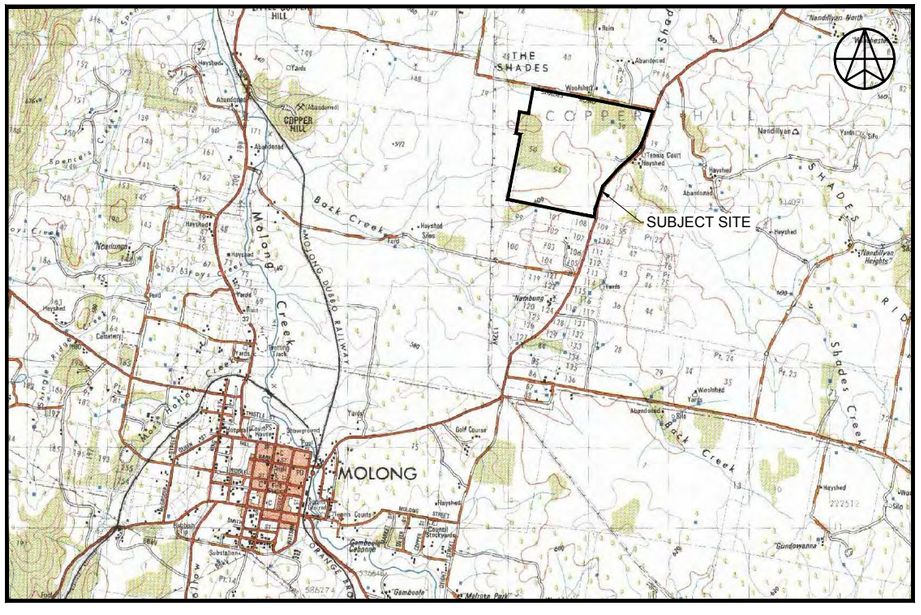
EUCHAREENA ROAD RESOURCE RECOVERY CENTRE

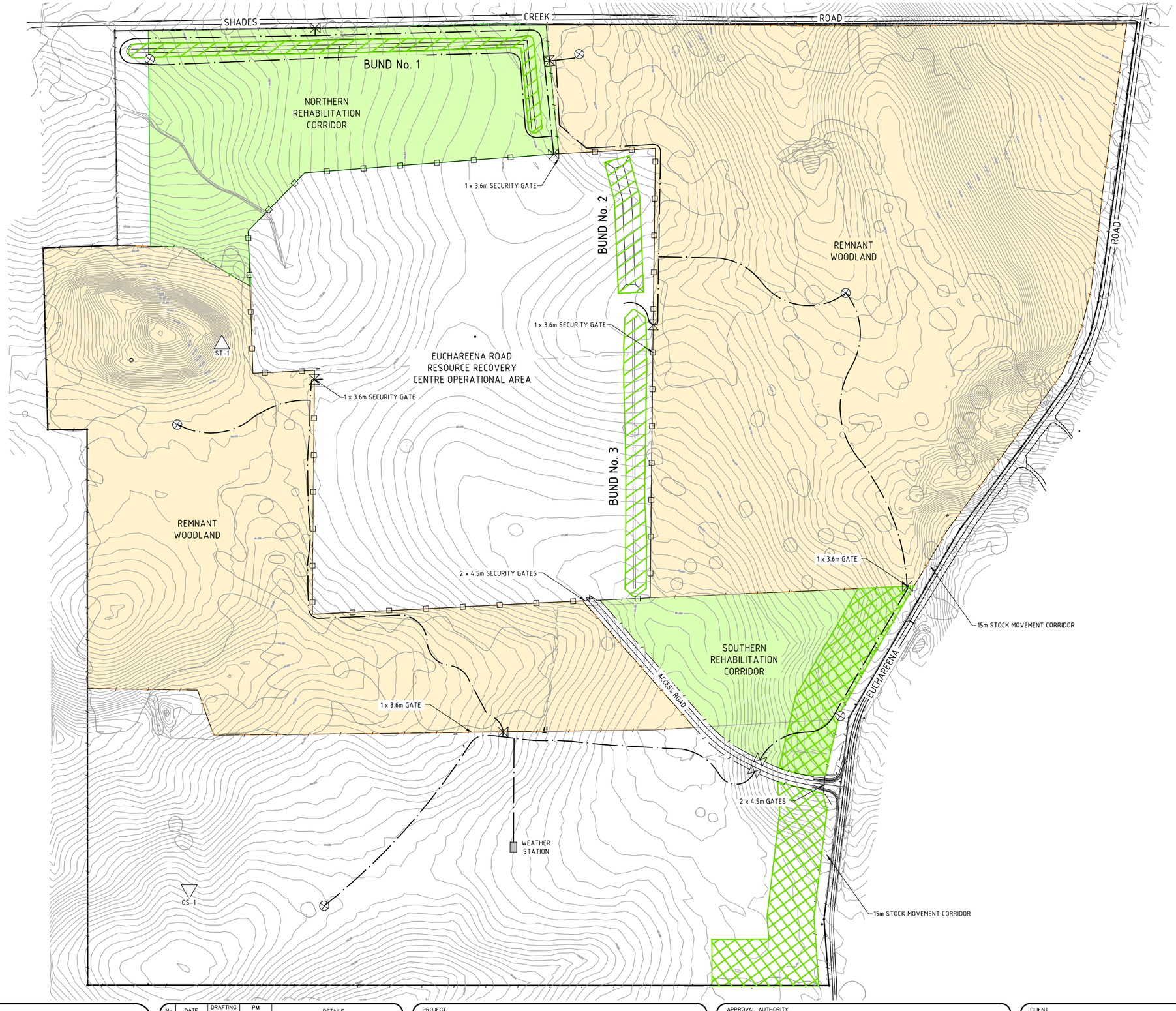
CONSERVATION MANAGEMENT PLAN

ORANGE CITY COUNCIL

LANDSCAPED BUNDS

DRAWINGS SCHEDULE			
SHEET	TITLE	REV.	DATE
1□A_EV01	TITLE SHEET, DRAWING SCHEDULE, & SITE LOCALITY	A	08/03/2011
1□A_EV02	SITE PLAN	A	08/03/2011
1□A_EV03	BUND 1 □TYPICAL PLANTING PLAN & SECTION	A	08/03/2011
1□A_EV0□	BUND 2 □TYPICAL PLANTING PLAN & SECTION	A	08/03/2011
1□A_EV0□	BUND 3 □TYPICAL PLANTING PLAN & SECTION	A	08/03/2011


THE SHADES
COPPER HILL
SUBJECT SITE
MOLONG
Molong Creek
Back Creek
Shades Creek
ROAD
Gravesend
Abandoned
Yeoval
Yeoval Sta
Tennis Court
Haystack
Windyridge
Nandillyan
Nandillyan Heights
Nandillyan North
Cemetery
Golf Course
Gundowanna
Gambootle
Gambootle Lagoon
Mt Molong Quarry
Molong Creek
Molong Creek
Molong Creek



LEGEND:

- STOCK FENCE (2BARB HINGE JOINT)
- 1.8m SECURITY FENCE
- EXISTING ROADWAY
- CONTOUR INTERVAL 1.0m
- SCARRED TREE (MOLONG ST1)
- ARTEFACT SCATTER (MOLONG OS1)
- LANDSCAPED BUND
- LANDSCAPED AREA
- BOREHOLE LOCATION
- ACCESS TRACK
- GATE

0 60 120 180 240
-60 -30
SCALE 1:6000 (A3)

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No	DATE	DRAFTING CHECK	PM CHECK	DETAILS
A	08/03/11	RmS	EJB	ISSUED TO CLIENT FOR REVIEW

PROJECT
EUCHAREENA ROAD RESOURCE RECOVERY CENTRE
CONSERVATION MANAGEMENT PLAN
LANDSCAPED BUNDS

FILE REFERENCE: 208212_16A_EV01-EV05.dwg

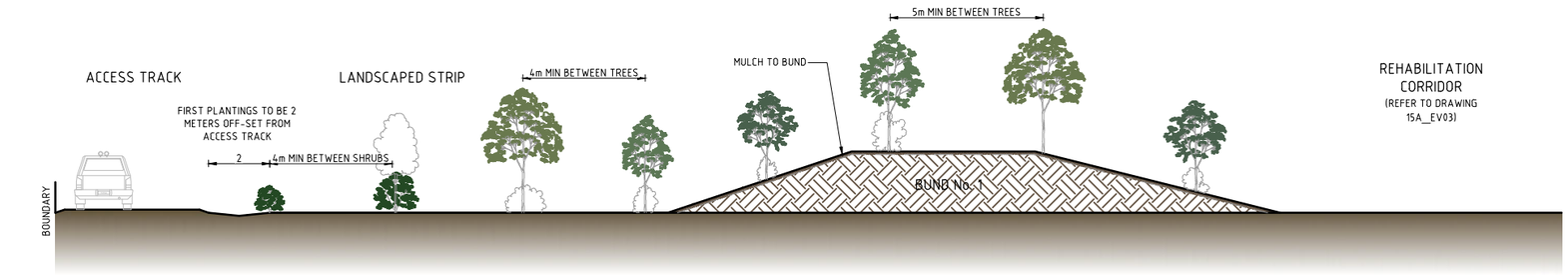
APPROVAL AUTHORITY
NSW GOVERNMENT
DEPARTMENT OF PLANNING

CLIENT
ORANGE Australia's Colonial City
CIVIC CENTRE
CNR BYNG ST AND
LORDS PLACE,
ORANGE NSW 2800

DRAWING
SITE PLAN

PROJECT NUMBER: 208212
DRAWING NUMBER: 16A_EV02
REV: A

SOURCE: INTERNAL



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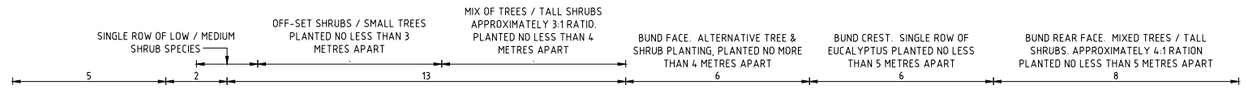

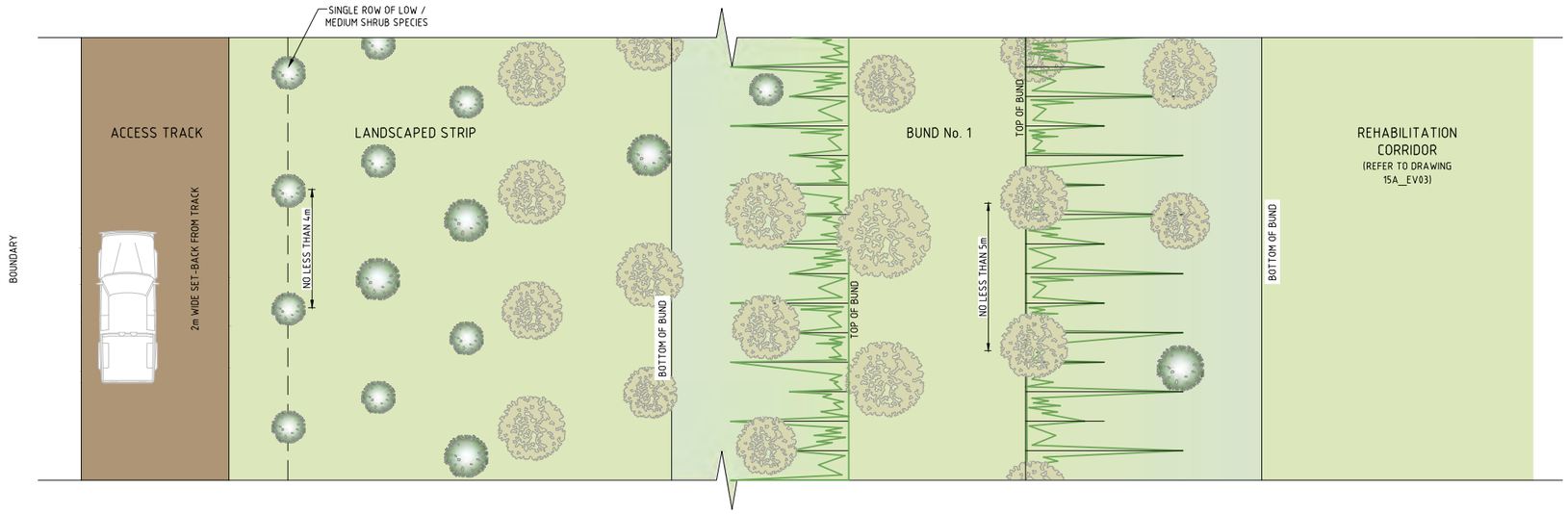

2 – BUND No. 1 – TYPICAL PLAN

SCALE 1:100 (A1)

LEGEND

EUCALYPT / ALLOCASUARINA SPECIES

SHRUB / LOW TREE SPECIES SPECIES

SCALE 1:100(A1)

0 1 2 4 6 8 10

0 1 2 4 6 8 10

SCALE 1:200(A3)

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PROJECT
EUCHAREENA ROAD RESOURCE RECOVERY CENTRE
CONSERVATION MANAGEMENT PLAN
LANDSCAPED BUNDS

FILE REFERENCE: 208212_16A_EV01-EV05.dwg

APPROVAL AUTHORITY
NSW GOVERNMENT
DEPARTMENT OF PLANNING

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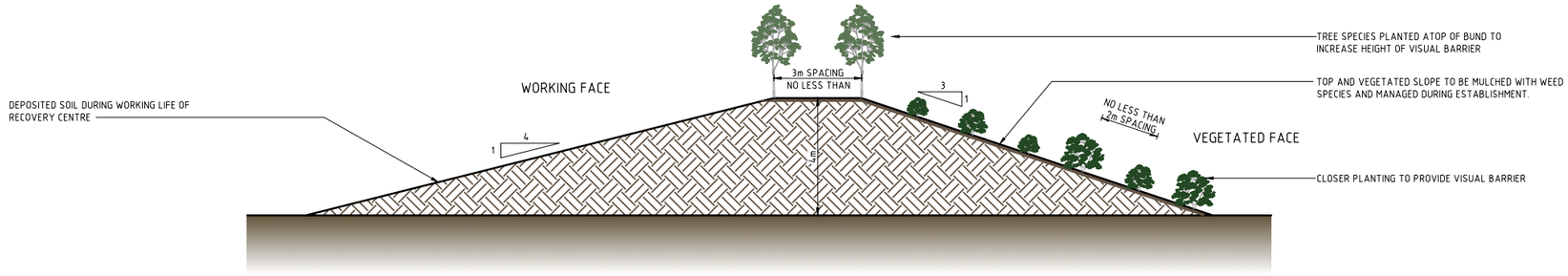
CNR BYNG ST AND LORDS PLACE,
ORANGE NSW 2800

DRAWING
BUND 1 – TYPICAL PLANTING PLAN & SECTION

PROJECT NUMBER: 208212
DRAWING NUMBER: 1_A_EV03
REV: A

SOURCE: INTERNAL

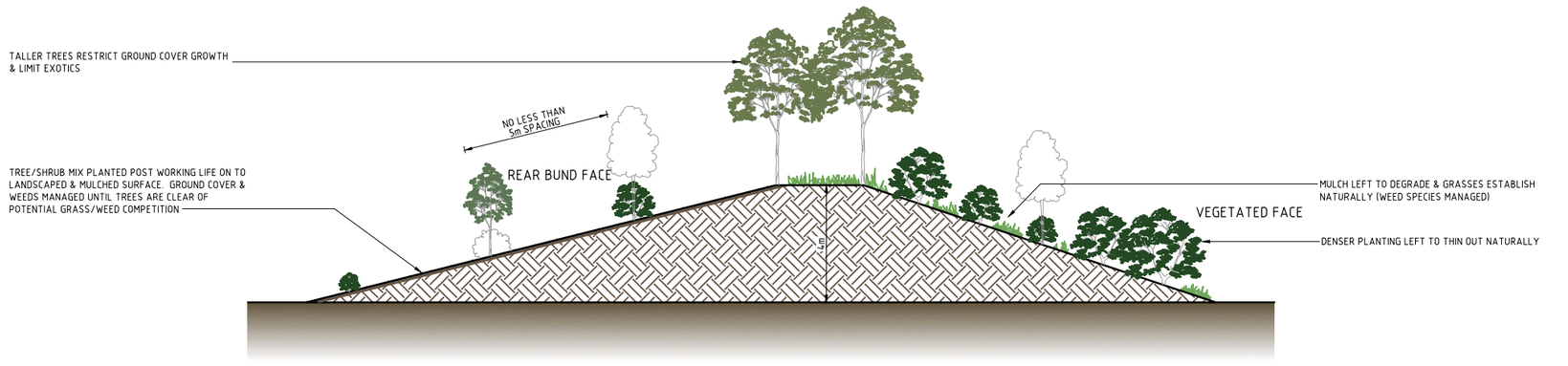


1 – BUND No. 2 – TYPICAL SECTION – WORKING STAGE

SCALE 1:100 (A1)

NOTE:
LOOSE SOIL OF BUND IS LIKELY TO PROMOTE FAST GROWTH & ESTABLISHMENT OF TREES AND SHRUBS. MANAGEMENT WOULD INCLUDE;

- ELIMINATION OF WEEDS
- THINNING / REMOVAL OF COMPETITIVE GRASS /WEED SPECIES E.G. SAFFRON, THISTLE, SMOOTH BROMEGRASS, RYE GRASS, PATTERSON'S CURSE
- CONTROL OF GRAZING PESTS E.G. HARES, RABBITS, STRAY STOCK.



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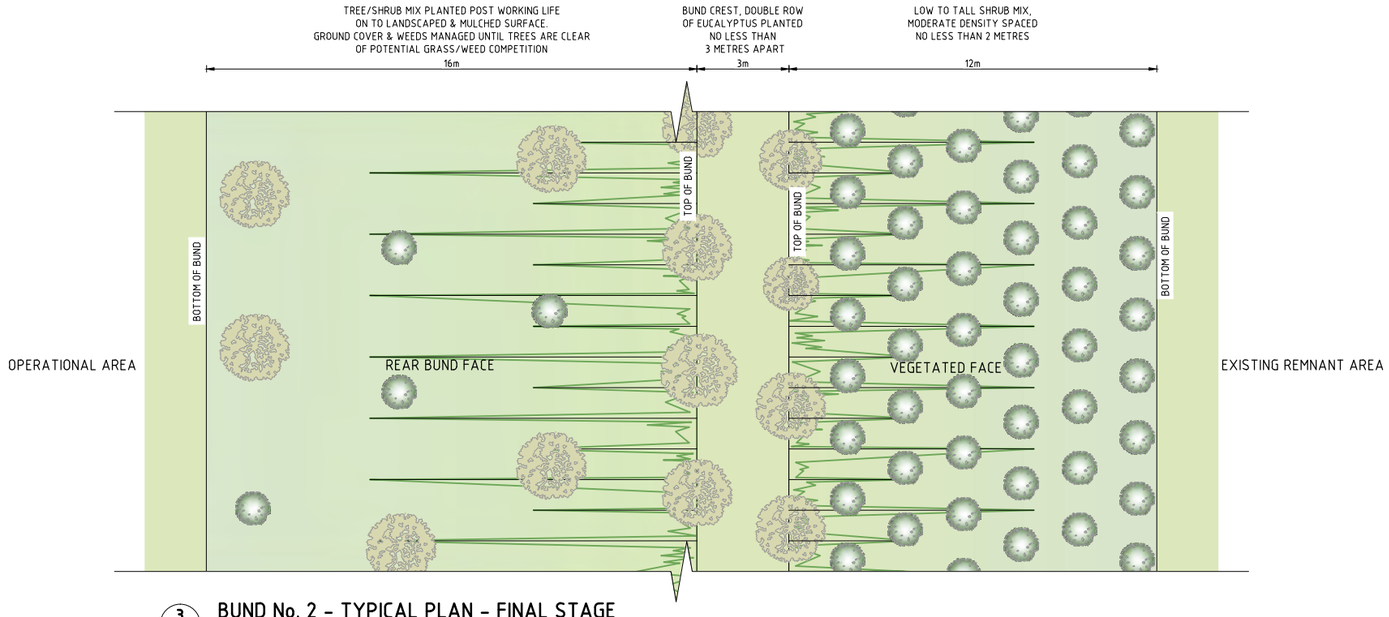
SCALE 1:100 (A1)



3 – BUND No. 2 – TYPICAL PLAN – FINAL STAGE

SCALE 1:100 (A1)

LEGEND

EUCALYPT / ALLOCASUARINA SPECIES

SHRUB / LOW TREE SPECIES SPECIES

SCALE 1:100(A1)
0 1 2 4 6 8 10
SCALE 1:200(A3)
0 1 2 4 6 8 10

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No	DATE	DRAFTING CHECK	PM CHECK	DETAILS
A	08/03/11	RmS	EJB	ISSUED TO CLIENT FOR REVIEW

PROJECT
EUCHAREENA ROAD RESOURCE RECOVERY CENTRE
CONSERVATION MANAGEMENT PLAN
LANDSCAPED BUNDS

FILE REFERENCE: 208212_16A_EV01-EV05.dwg

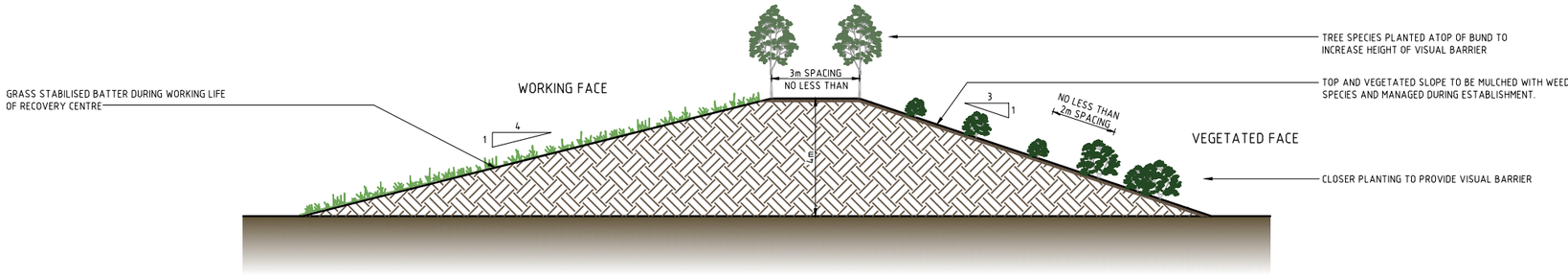
APPROVAL AUTHORITY
NSW GOVERNMENT
DEPARTMENT OF PLANNING

CLIENT
ORANGE
CIVIC CENTRE
CNR BYNG ST AND LORDS PLACE,
ORANGE NSW 2800

DRAWING
BUND 2 □TYPICAL PLANTING PLAN & SECTIONS

PROJECT NUMBER: 208212
DRAWING NUMBER: 1□A_EV0□
REV: A

SOURCE: INTERNAL



1 – BUND No. 3 – TYPICAL SECTION – WORKING STAGE

SCALE 1:100 (A1)

NOTE:
LOOSE SOIL OF BUND IS LIKELY TO PROMOTE FAST GROWTH & ESTABLISHMENT OF TREES AND SHRUBS. MANAGEMENT WOULD INCLUDE;

- ELIMINATION OF WEEDS
- THINNING / REMOVAL OF COMPETITIVE GRASS /WEED SPECIES E.G. SAFFRON, THISTLE, SMOOTH BROMEGRASS, RYE GRASS, PATTERSON'S CURSE
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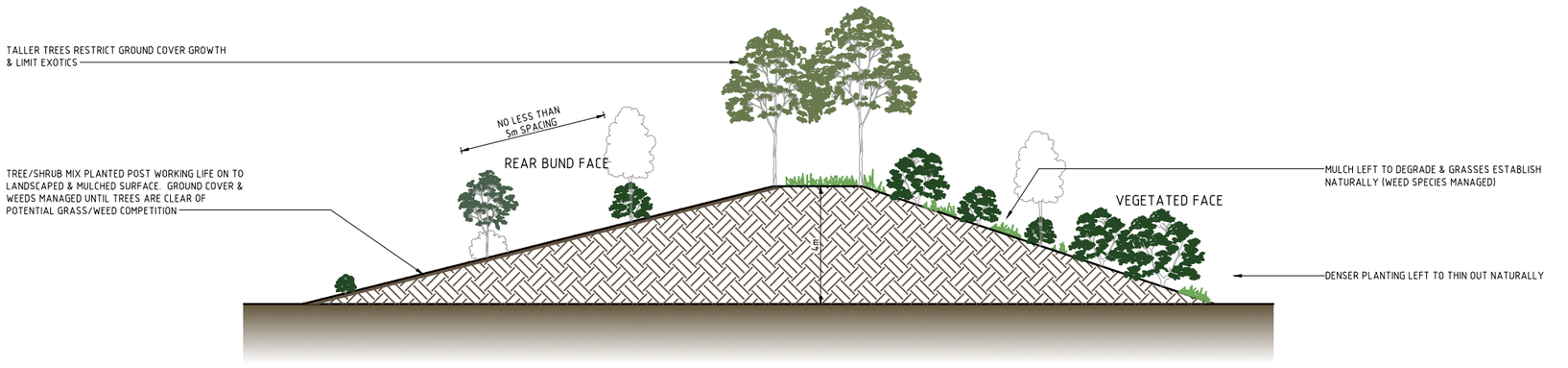
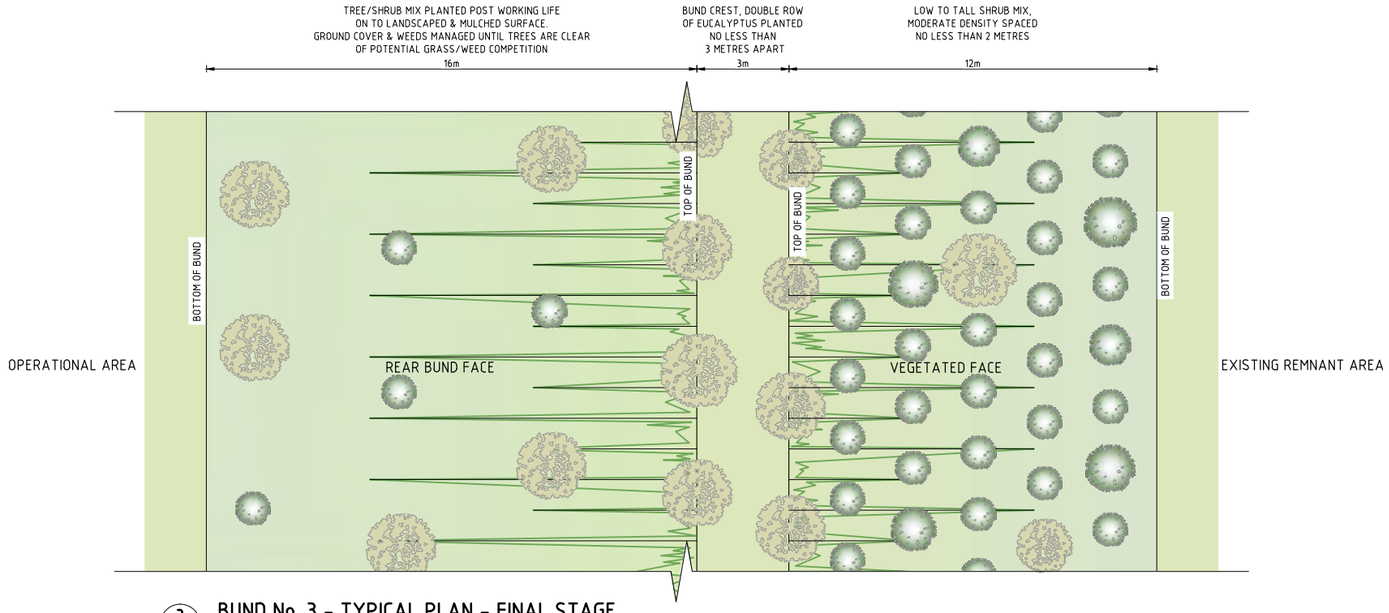


2 – BUND No. 3 – TYPICAL SECTION – FINAL STAGE

SCALE 1:100 (A1)



3 – BUND No. 3 – TYPICAL PLAN – FINAL STAGE

SCALE 1:100 (A1)

LEGEND

EUCALYPT / ALLOCASUARINA SPECIES

SHRUB / LOW TREE SPECIES SPECIES

SCALE 1:100(A1)

0 1 2 4 6 8 10

SCALE 1:200(A3)

0 1 2 4 6 8 10

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No	DATE	DRAFTING CHECK	PM CHECK	DETAILS
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PROJECT
EUCHAREENA ROAD RESOURCE RECOVERY CENTRE
CONSERVATION MANAGEMENT PLAN
LANDSCAPED BUNDS

FILE REFERENCE: 208212_16A_EV01-EV05.dwg

APPROVAL AUTHORITY
NSW GOVERNMENT
DEPARTMENT OF PLANNING

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CNR BYNG ST AND LORDS PLACE,
ORANGE NSW 2800

DRAWING
BUND 3 □TYPICAL PLANTING PLAN & SECTION

PROJECT NUMBER: 208212
DRAWING NUMBER: 1□A_EV0□
REV: A

SOURCE: INTERNAL

Appendix F

LANDSCAPED AREA

Landscaped Area

INTRODUCTION

As illustrated in **Drawing 17C_EV02**, this Appendix relates to the landscaped Area along the property boundary in the south eastern corner of the subject site. This Appendix and associated plans have been prepared to satisfy Condition 36 in Schedule 5 of the Project Approval.

PURPOSE

The purpose of the landscaped area is to provide visual screening of the site operations. As outlined in **Section 4.5** of the main report to which this appends, the area would be planted prior to operations commencing on site.

METHODS

GENERAL

The strip of land designated as 'Landscaped Area' is to act as a visual barrier (fronting Euchareena Road). The first 5 metres of the 70 metre wide strip will be planted at a greater density than the rest of the strip and adjacent Southern Rehabilitation Corridor. This 5 metre strip fronting Euchareena Road and the entrance road will be planted with tube stock of primarily Eucalypts and Acacias per the list in **Table F1** to ensure fast growth prior to the opening of the Centre. The list of species have been selected for being endemic to the site, their growth habit and their availability in tube stock. The remaining 65 metres of the Landscaped Area will be planted as per the Rehabilitation Corridors, detailed in **Appendix D**.

Preparation for revegetation on natural surfaces needs to be started as soon as possible through weed removal, however, maintenance of the existing native grass-cover is important to minimise erosion and retain soil moisture. Slashing of tall grass could occur periodically to reduce fire risk, but existing native grasses on site should be allowed to mature to seed where possible to encourage colonisation.

Weed control should occur regularly before and after planting to minimise competition with young seedlings for water, and light. Spot spraying should be carried out by a qualified professional to an agreed performance contract, with minimum of:

1. Initial assessment with spot spraying as soon as possible
2. Treatment to an agreed schedule based on the initial assessment (Weed Management Program as per **Table F2**).
3. Treatment two weeks prior to planting as agreed.
4. Maintenance treatment as part of the OEMP for the life of the project, adjusted according to weather conditions.

This 70 metre strip would be planted at a greater density than the adjacent Southern Rehabilitation Corridor. The leading rows fronting Euchareena Road would be planted with a higher proportion of shrubs than in the rows further into the rehabilitation corridor. Planting lower shrubs as well as small trees such as *Acacia difformis, Acacia buxifolia, Hakea sericea, Acacia melanoxylon* and *Allocasuarina diminuta* amongst upper-storey eucalypt species would provide lower and midstorey diversity and add the screening effect of the landscaped area. Species selection of lower and midstorey species would need to consider impact of any future grazing management of the site.

Table F1 provides a list of mid and upper storey tree and shrub species suitable for base planting for the re-establishment of a box woodland concurrent with the existing community. The table also lists lower shrub species likely to be suitable for establishing the visual barrier.

The listed species in **Table F1** have been recorded within the Molong area on similar landscapes to that of the subject site. Upper storey trees include White Box, Yellow Box and Blakely's Red Gum. These trees are already present on the site and steps should be taken to collect seed from local seed banks to ensure that seed of the right provenance is obtained. Local advice should be sought on the suitability of seasonal conditions for planting. Care must also be taken in the selection of acacia species as certain acacias can dominate as a woody weed on revegetation sites. (eg. *Acacia dealbata*). Again, final selection of species should refer to local horticultural expertise. Only tube stock and seed stock of local provenance can be used within the landscape bunds.

Native mid and understorey species are poorly represented on the existing site and planting stock may need to be obtained from local sources of homogenous origin. Selected species may also be dependent upon availability of seedling stock.

Reference to publications specific to the rehabilitation and regeneration of Box woodlands should be made before and during the development stage of the revegetation project (e.g. Rawlings, K. 2010, *A Guide to Managing Box Gum Grassy Woodlands*, Department of the Environment, Water, Heritage and the Arts). Personnel skilled in local native revegetation and regeneration works should be employed to undertake this component of the project.

Preparation for revegetation on natural surfaces needs to be started at least one year in advance of planting. Removal of groundcover on areas to be replanted can be achieved by a combination of crash grazing, slashing and spraying. Topsoil removal (scalping) to create weed-free planting strips is unlikely to be suitable for the site, however if this method is used erosion, compaction and weed ingress should be considered. Deep ripping planting strips along rows cleared of groundcover is the best form of ground preparation for trees and shrubs. A single tined ripper should be used to create fissures to a depth of 40 to 60 cm. If areas of the site have compacted soil which may impede ground cover species becoming established, shallow scarifying between rows can assist water ingress.

Weed control before planting is imperative and measures to control weeds for at least two years after planting will be required. Left unchecked, weeds strongly compete with young seedlings for water, and light. Up to 3 to 4 applications of herbicide may be required to prepare a site for planting:

1. One year to 10 months before planting;
2. Follow-up application in late summer or autumn (depending upon rainfall);
3. Third spray applied 6 to 10 weeks after the second spray for control of opportunistic weeds if required; and
4. The final spray just before planting (taking into account time periods to allow any residual effect to subside before planting).

Control and management of pest grazing animals (i.e rabbits and hares) will be required to minimise impact upon young plants. The landscape management contract should require active and ongoing assessment of the problem and measures for control, should they be required, this will be detailed in the Pest Control Plan per **Table F2**.

Short 'crash grazing' events should occur as per the management plan for the Remnant Woodland.

Table F1 – Recommended Planting Species List

Botanical Name	Common Name	Contractor Seed Available	OCC Seed Available	Provenance
Acacia buxifolia	Box-leaf Wattle		X	Molong/Fern Hill
Acacia decora	Western Golden Wattle	X		Molong/Fern Hill
Acacia leucoclada	Northern Silver Wattle	X		Molong/Fern Hill
Acacia melanoxylon	Blackwood		X	Orange
Acacia vestita	Weeping Boree Wattle		X	Molong/Fern Hill
Allocasuarina verticillata	Drooping She-oak		X	Molong/Fern Hill
Brachychiton populneus	Kurrajong		X	Molong/Fern Hill
Eucalyptus albens	White Box		X	Molong/Belgravia
Eucalyptus blakelyi	Blakely's Red Gum		X	Molong/Orange
Eucalyptus melliodora	Yellow Box		X	Molong/Fernhill
Hardenbergia violacea	False Sarsaparilla	X		Molong/Fernhill
Indigofera australis	Australian Indigo	X		Molong/Fernhill

NOTE: seeding of native grasses may also be required within the Landscaped Area, to be determined through annual flora monitoring.

EDGE PLANTING STRIP

Planting of the roadside 5m edge of the Landscaped Area shall occur as soon as practical (November) so as to ensure maximum growth prior to opening in July 2013.

A weed management team should be engaged to perform a day of inspection and spraying over the Landscaped Area a minimum of two weeks prior to the planting of the edge strip. After planting, regular inspections should occur as per the Weed Management Program.

Planting should be a mix of the species listed in **Table F1** under Tube Stock, with 1 eucalypt per $5m^2$ and three shrubs per $5m^2$.

It is preferable to plant after a rain event so that the soil is soft and moist; however should no rain event occur the entire area should be thoroughly watered by water truck a maximum of three days prior to planting. All tube stock should be protected with a cardboard milk carton staked according to manufacturer's recommendations.

REMAINING LANDSCAPED AREA

A permanent monitoring site within the Landscaped Area has been established (refer to **Drawing 17C_EV02**), which includes one transect (L1). The site will be monitored annually, and outcomes recorded in the *Flora Monitoring* report.

REHABILITATION AND MANAGEMENT MEASURES

Table F2 outlines the rehabilitation and management measures to be followed for the landscaped bunds.

Table F2 – Landscaped Area Rehabilitation and Management Measures

	Category		Task	Responsibility
	PRIOR TO OPERATION OF THE RRC			
a	Landscape Screening Plantings	i	Prior to operation of the RRC, the landscaped area shall be planted as outlined in this appendix.	OCC
		ii	The perimeter tree screening areas are to provide an appropriate alternative nectar source away from the landfilling operation. These species shall be selected in consultation with OEH.	OCC
b	Baseline information	i	Establishment of a monitoring program, by a suitably qualified person, for the landscaped area to monitor and record the extent of flora growth.	OCC
c	Weed & Pest Management	i	Creation of a Weed Management Program, by a suitably qualified person, that includes: • Regular inspections of the site; • Education of staff with respect to weed identification and control; and • Continual monitoring and control of identified noxious weeds. This shall form part of the OEMP.	OCC
		ii	A Pest Control Plan shall be formulated, that in particular includes the control of foxes and feral cats and any other invertebrate pest that may be considered a problem. This shall form part of the OEMP.	OCC
3	**DURING OPERATION OF RRC**			
a	Heritage & Biodiversity Awareness	i	A suitably sized copy of **Drawing 17C_EV02** shall be displayed in the Site Office, where the Site Manager has visual access to it.	OCC
b	Monitoring	i	Implementation of the landscaped area monitoring program.	OCC
		ii	Where, during monitoring, species diversity is found to be insufficient, supplementary planting programs are to be undertaken in accordance with advice from a suitably qualified person.	OCC
		iii	Any supplementary plantings are to be suitably protected through fencing or suitable tree guard.	OCC
c	Weed & Pest Management	i	Implementation of the Weed Management Program.	OCC
		ii	Implementation of the Pest Control Plan.	OCC
d	Groundcover Management	i	Groundcover management within the woodland areas is to be undertaken through grazing with cattle, using appropriate stocking rates that reflect seasonal conditions and to ensure an adequate level of groundcover remains at all times.	OCC
		ii	Once established, grazing shall be undertaken in accordance with the measures outlined in the Remnant Woodland Areas (**Appendix C**).	OCC

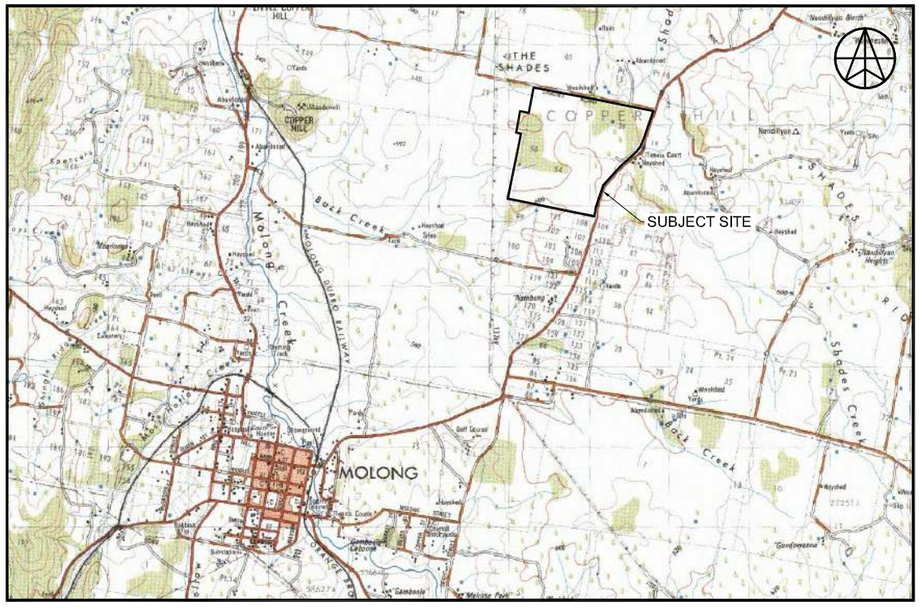
EUCHAREENA ROAD RESOURCE RECOVERY CENTRE

CONSERVATION MANAGEMENT PLAN

ORANGE CITY COUNCIL

LANDSCAPED AREA

DRAWING SCHEDULE			
SHEET	TITLE	REV.	DATE
17B_EV01	TITLE SHEET, DRAWING SCHEDULE, & SITE LOCALITY	B	27/04/2011
17B_EV02	SITE PLAN	B	27/04/2011
17B_EV03	TYPICAL PLANTING PLAN & DETAILS	B	27/04/2011



SITE LOCALITY
NOT TO SCALE

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154 PEISLEY STREET
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ORANGE, NSW 2800
Ph. (02) 6393 5000
Fx. (02) 6393 5050

No	DATE	DRAFTING CHECK	PM CHECK	DETAILS
A	08/03/11	RmS	EJB	ISSUED TO CLIENT FOR REVIEW
B	27/04/11	GS	EJB	REVISED ISSUE TO CLIENT FOR REVIEW

PROJECT
EUCHAREENA ROAD RESOURCE RECOVERY CENTRE
CONSERVATION MANAGEMENT PLAN
LANDSCAPED AREA

FILE REFERENCE: 208212_17B_EV01-EV03.dwg

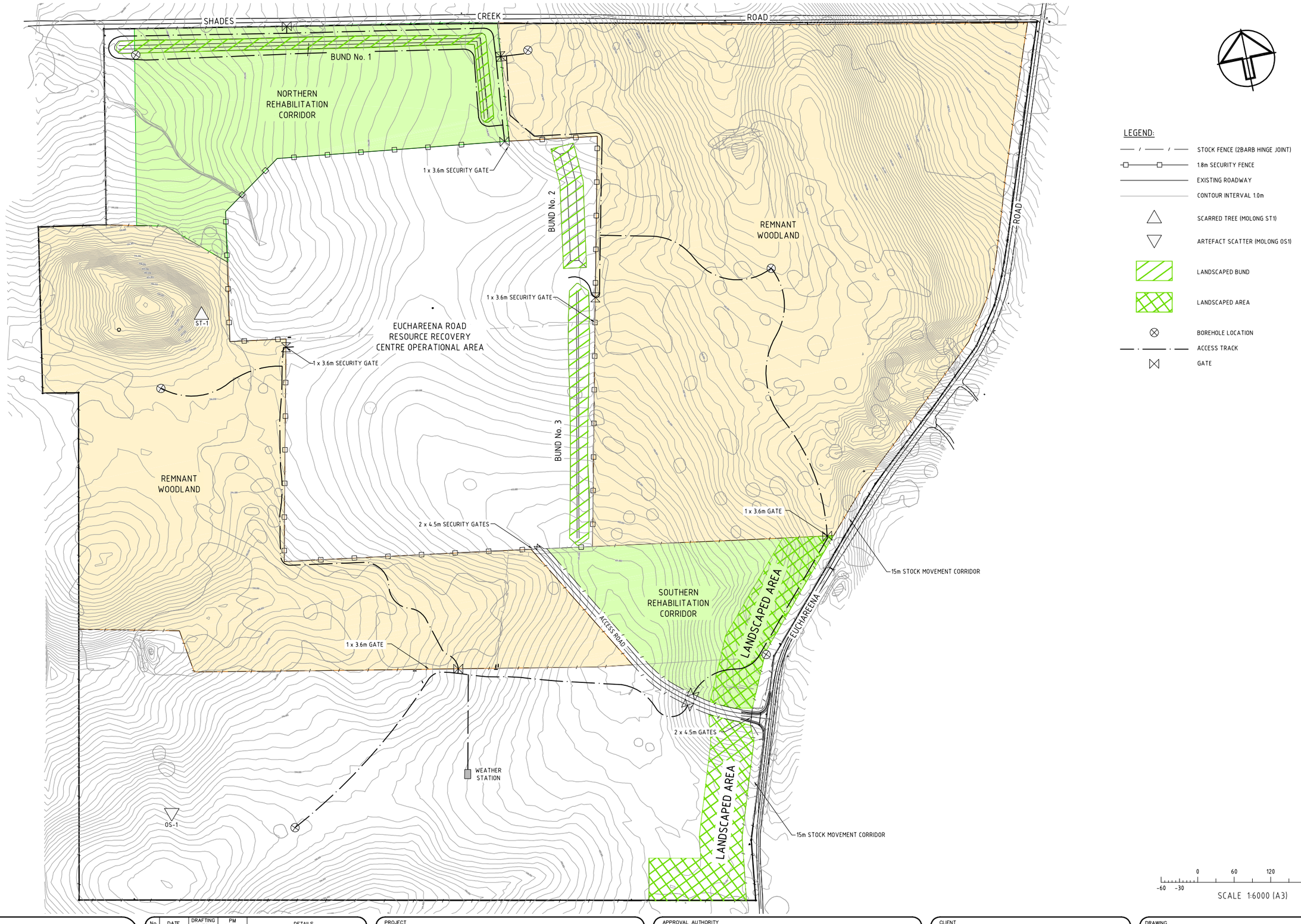
APPROVAL AUTHORITY
NSW GOVERNMENT
DEPARTMENT OF PLANNING

CLIENT
ORANGE Australia's Colour City
CIVIC CENTRE
CNR BYNG ST AND LORDS PLACE,
ORANGE NSW 2800

DRAWING
TITLE SHEET, DRAWING SCHEDULE AND SITE LOCALITY

PROJECT NUMBER: 208212 | DRAWING NUMBER: 17B_EV01 | REV: B

SOURCE: TOPOVIEW RASTER VIEWER



LEGEND:

- STOCK FENCE (2BARB HINGE JOINT)
- 1.8m SECURITY FENCE
- EXISTING ROADWAY
- CONTOUR INTERVAL 1.0m
- SCARRED TREE (MOLONG ST1)
- ARTEFACT SCATTER (MOLONG OS1)
- LANDSCAPED BUND
- LANDSCAPED AREA
- BOREHOLE LOCATION
- ACCESS TRACK
- GATE

0 60 120 180 240
-60 -30
SCALE 1:6000 (A3)

GEOLYSE
ORANGE
orange@geolyse.com
www.geolyse.com
154 PEISLEY STREET
P.O. BOX 1963
ORANGE, NSW 2800
Ph. (02) 6393 5000
Fx. (02) 6393 5050

No	DATE	DRAFTING CHECK	PM CHECK	DETAILS
A	08/03/11	RmS	EJB	ISSUED TO CLIENT FOR REVIEW
B	27/04/11	GS	EJB	REVISED ISSUE TO CLIENT FOR REVIEW

PROJECT
EUCHAREENA ROAD RESOURCE RECOVERY CENTRE
CONSERVATION MANAGEMENT PLAN
LANDSCAPED AREA

FILE REFERENCE: 208212_17B_EV01-EV03.dwg

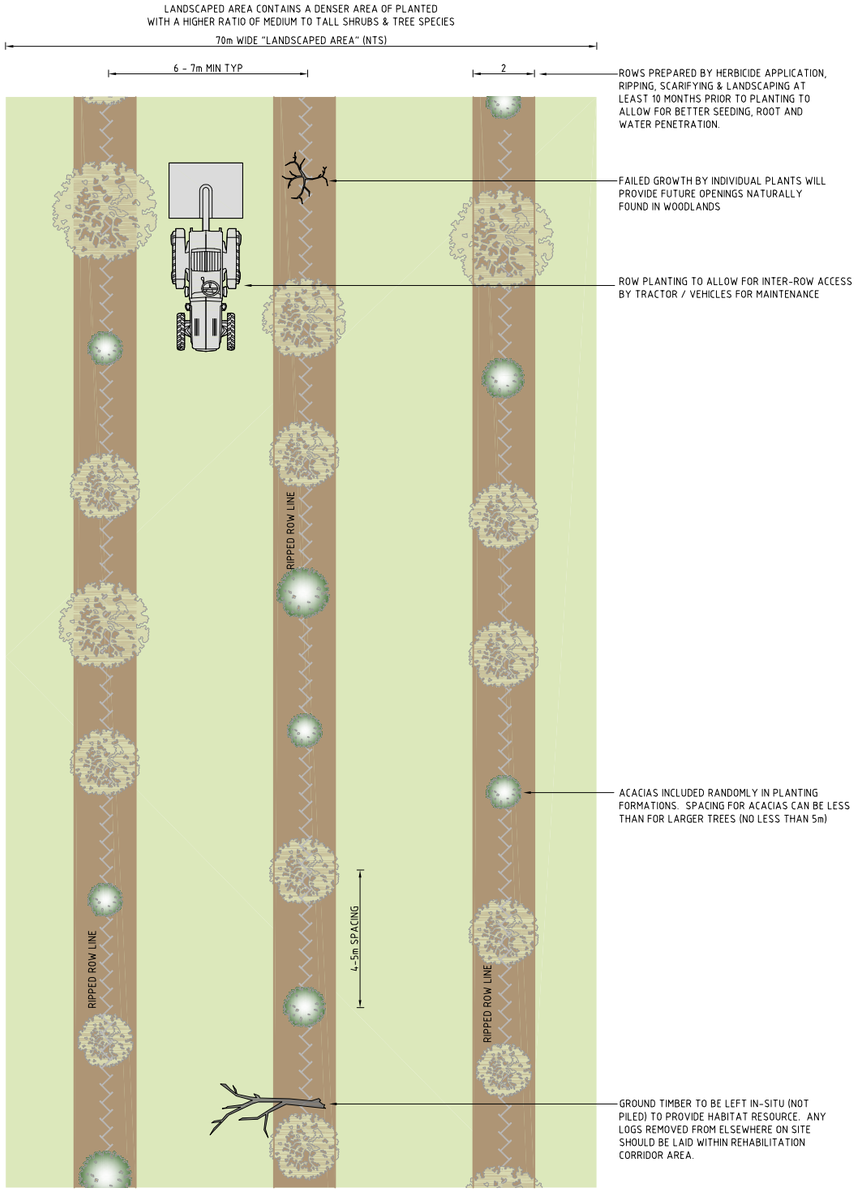
APPROVAL AUTHORITY
NSW GOVERNMENT
DEPARTMENT OF PLANNING

CLIENT
ORANGE Australia's Colour City
CIVIC CENTRE
CNR BYNG ST AND LORDS PLACE,
ORANGE NSW 2800

DRAWING
SITE PLAN

PROJECT NUMBER: 208212 | DRAWING NUMBER: 17B_EV02 | REV. B

SOURCE: INTERNAL



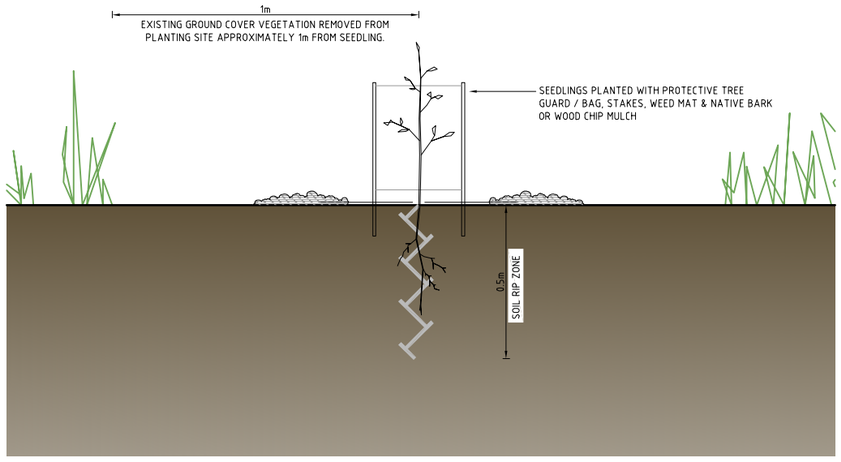
1 – LANDSCAPED AREA - TYPICAL PLANTING PLAN

SCALE 1:100 (A1)

Botanicl Name	Common Name	Form and Size
Allocasuarina diminuta	Shrubby She-oak	Upright shrub, 6–10m
Indigofera adesmiifolia	Tick Indigo	Shrub to 1.5 m.
Indigofera australis	Australian Indigo	Spreading Shrub, 2.5m.
Eucalyptus blakelyi	Blakely's Red Gum	Open spreading tree. 16–20m.
Eucalyptus albens	White Box	Open to compact tree. 15-8m.
Eucalyptus melliodora	Yellow Box	Open crowned tree. 15-18m.
Grevillea floribunda	Seven Dwarfs Grevillea	Open shrub 1–2mt
Grevillea rosmarinifolia	Rosemary Grevillea	Dense and prickly leafed shrub to 2m.
Grevillea rismosissima	Fan Grevillea	Prickly leafed shrub 1.5m
Hakea decurrens	Bushy Needlewood	Erect shrub 0.5–5m.
Hakea sericea	Needlebush	Erect, slender or compact shrub 2–5m.
Acacia doratoxylon	Currawang	Tall shrub or small open tree 3–8m.
Acacia implexa	Hickory Wattle	Small tree 5–15m.
Acacia buxifolia	Box-leaf Wattle	Glaborous Shrub 1–3m
Acacia vestita	Weeping Boree Wattle	Spreading, multi-stemmed shrub. 1–4m
Acacia decora	Western Golden Wattle	Rounded to spreading shrub 1–4m.
Acacia deanei	Dean's Wattle	Shrub or small tree 2–9m
Acacia melanoxylon	Blackwood	Dense large shrub or small tree to 10m.
Hardenbergia violacea	False Sarsaparilla	Low spreading shrub 1m
Dillwynia psylcoides	Pea Flower	Spreading to erect shrub 0.5–1.5m.
Dillwynia swicea	Showy Parrot-pea	Small rounded shrub 1m.
Styphelia triflora	Fivecorners	Erect bushy shrub to 2m.

2 – RECOMMENDED NATIVE TREE & SHRUB SPECIES

-



3 – SEEDLING PLANTING DETAIL

SCALE 1:10 (A1)

LEGEND

EUCALYPT / ALLOCASUARINA SPECIES

SHRUB / LOW TREE SPECIES SPECIES

GEOLYSE
ORANGE
orange@geolyse.com
www.geolyse.com
154 PEISLEY STREET
P.O. BOX 1963
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Ph. (02) 6393 5000
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PROJECT
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FILE REFERENCE: 208212_17B_EV01-EV03.dwg

APPROVAL AUTHORITY
NSW GOVERNMENT
DEPARTMENT OF PLANNING

CLIENT
ORANGE Australia's Colour City
CIVIC CENTRE
CNR BYNG ST AND LORDS PLACE,
ORANGE NSW 2800

DRAWING
TYPICAL PLANTING PLAN & DETAILS

PROJECT NUMBER: 208212
DRAWING NUMBER: 17B_EV03
REV: B

SOURCE: INTERNAL

Section 9.5

ERRRC FIVE-YEAR WORKS ACTION PLAN

Five-Year Works Action Plan

Zones include the Northern Rehabilitation Corridor (northern vegetation islands and Southern Boundary of Northern Rehab Corridor) and the Southern Rehabilitation Corridor (southern vegetation islands and Landscape Area 1 and 2) (***Figure 1***).

Management Issue	**Long Term Target/Indicator**	**Zone**	**Action - Maintain**	**Action - Enhance**	**Management Action Goal**	**Timing**	**Required Minimum Standard** – in addition to text below, the landholder must/should conduct action in accordance with relevant guidelines	**Person responsible**
Stock Exclusion and Fencing (***Figure 3***)	*High diversity and cover of native plants in the ground layer*	*All*		*Stock excluded from Conservation Area*	*Increase in native species diversity and cover; decrease in exotic species cover*	*For duration of Five-Year Works Action Plan*	*Increase in cover of diversity native trees and shrubs in all zones.*	Property manager (OCC) responsible for ensuring stock exclusion. Environmental Consultant to conduct monitoring.
	Wildlife-fence collisions reduced to zero	*All*		*Some interior fencing replaced and removed; top barbs removed from existing fencing*	*One section of fence replaced with wildlife-friendly fencing; top barbs removed from existing fencing*	*For duration of the CMP Agreement.*	*1. 360 m of fencing along the northern extent of the Southern Rehabilitation Corridor is to be replaced with wildlife friendly fencing (Figure 3).* *2. Fencing replaced within duration of Five-Year Works Action Plan and old wire removed from site (Figure 3).* *3. Top barb removed within first two years of Five-Year Works Action Plan and barbed wire taken off site (Figure 3).*	Property manager (OCC)

Management Issue	Long Term Target/Indicator	Zone	Action - Maintain	Action - Enhance	Management Action Goal	Timing	**Required Minimum Standard** – in addition to text below, the landholder must/should conduct action in accordance with relevant guidelines	Person responsible
							4. All gates within the North Rehabilitation Corridor are to remain open to allow for wildlife dispersal throughout the site.	
Weed Control	*Low cover/abundance of High Threat Weeds*	*All*	*Targeted weed control*		*Reduction in cover of weed species.*	*For duration of the CMP Agreement.* *Spring and Autumn visit by property manager.*	*1. Spot spraying to occur prior to tubestock planting* *2. Slashing to occur across open areas, excluding the grazing exclosures (Figures 1-3), to maintain native groundcover species.* *3. Application of mulch and jute matting to all vegetation islands, landscape areas, Bund 1 and the Southern Boundary of the Northern Rehab Corridor.* *4. Control when weeds are actively growing and prior to seed set.* *5. Only herbicides that are registered in NSW for the control of the target species are to be applied in accordance with the label and registered off label use* *6. Target for the Rehabilitation Corridors is reduction of weed species to less than 50% cover.*	Property manager (OCC)
	Relevant Weeds							
	Saffron Thistle		*Bi-annual*					

Management Issue	Long Term Target/Indicator	Zone	Action - Maintain	Action - Enhance	Management Action Goal	Timing	**Required Minimum Standard** – in addition to text below, the landholder must/should conduct action in accordance with relevant guidelines	Person responsible
	(*Carthamus lanatus*)		*control treatment & monitoring.*		*Ensure area of weed cover does not increase in size.*	*For duration of the CMP Agreement*	*1. Control when weeds are actively growing and prior to seed set.* *2. Only herbicides that are registered in NSW for the control of the target species are to be applied in accordance with the label and registered off label use* *3. Continue with current weed management occurring bi-annually in Spring and Autumn*	Property manager (OCC)
	Yellow Star-thistle (*Centaurea solstitialis*)							
	Phalaris (*Phalaris* sp.)							
	Bathurst Burr (*Xanthium spinosum*)							
	St John's Wort (*Hypericum perforatum*)							
Feral Animal Control	*Low occurrence and impact of feral animals: cat, fox, rabbit, goats, pigs (and other species as they are detected)*	*All*	*Control and monitor for pest species bi-annually or as required; integrate with neighbours' programs. Continue with*		*Reduction in occurrence of feral animal species.*	*For duration of the CMP Agreement*	*1. Only pesticides that are registered in NSW for the control of the target species are to be applied in accordance with the label and registered off label use.* *2.Treatment of pests and euthanasia to be in accordance with relevant legislation and guidelines: Euthanasia https://pestsmart.org.au/methods-of-euthanasia/ and Animal welfare codes:*	Property manager (OCC). Consult Local Land Services

Management Issue	Long Term Target/Indicator	Zone	Action - Maintain	Action - Enhance	Management Action Goal	Timing	**Required Minimum Standard** – in addition to text below, the landholder must/should conduct action in accordance with relevant guidelines	Person responsible
			established program.				*https://pestsmart.org.au/animal-welfare/humane-codes/* *3. Use of Firearms must comply with relevant legislation.*	
Erosion Control	*Healthy ground-cover and stable slopes; non-incising gullies*	*All*	*Monitor for sign of potential & real erosion sites every 6 months*		*Development of erosion points eliminated.*	*For duration of the CMP Agreement*	*Bi-annual surveys for evidence of erosion points. Monitoring to be adaptive e.g. post-storm/torrential rain and bushfire events, to minimise soil loss and facilitate detection of potential erosion points.*	Property manager (OCC)
Firewood Harvesting	*Sustain the presence of living trees, stags and material on ground*	*Remnant Woodland*	*Monitor for sign of firewood harvesting every 6 months*		*Elimination of firewood harvesting*	*For duration of the CMP Agreement*	*1. Bi-annual surveys for evidence of tree, stag or groundcover removal.* *2. Installation of signage at site entrance points and access roads prohibiting collection of firewood on site.*	Property manager (OCC)
Fallen Timber Removal	*Sustain the presence of fallen limbs in understorey*	*Remnant Woodland*	*Monitor for sign of fallen limb removal every 6 months*		*Elimination of fallen timber removal*	*For duration of the CMP Agreement*	*1. Bi-annual surveys for evidence of fallen timber removal.* *2. Installation of signage at site entrance points and access roads prohibiting the removal of fallen timber (Figure 3).*	Property manager (OCC)
Regenerating Fencing Remnants (***Figure 2***)	*Improve condition of fenced remnants*	*All*	*Active regeneration of fencing remnants and monitor*		*Improve condition of fenced remnants*	*For duration of the CMP Agreement*	*1. Elimination of stock grazing through maintenance of fencing.* *2. Soil to be prepared by boring holes using auger in all vegetation*	Property manager (OCC). Environmental Consultant to

Management Issue	Long Term Target/Indicator	Zone	Action - Maintain	Action - Enhance	Management Action Goal	Timing	**Required Minimum Standard** – in addition to text below, the landholder must/should conduct action in accordance with relevant guidelines	Person responsible
			for presence and effects of feral animals and weeds				*islands and Southern Boundary of Northern Rehab Corridor (Figure 2).* *3. Supplementary plantings to improve condition within remnants using seeds from on-site species where possible.* *4. Control when weeds are actively growing and prior to seed set. Only herbicides that are registered in NSW for the control of the target species are to be applied in accordance with the label and registered off label use.* *5. Feral animal exclusion and removal through NSW registered pesticides; pest treatment, euthanasia, and firearm usage in accordance with relevant afore mentioned legislation (Feral Animal Control).* *6. Success of native grassland regeneration post grazing removal assessed by monitoring exclusion structures (one per zone) (Figures 1-3)*	conduct monitoring.
Installation of On-site Markers (***Figure 3***)	*Increase communications with*			*Utilisation of on-site markers for*	*Development of on-site markers*	*Year 1 of the Five-Year Works Action Plan*	*1. Install on-site signage to notify maintenance staff to the presence of high-quality remnants and the presence of a threatened species.*	Property manager (OCC)

Management Issue	Long Term Target/Indicator	Zone	Action - Maintain	Action - Enhance	Management Action Goal	Timing	**Required Minimum Standard** – in addition to text below, the landholder must/should conduct action in accordance with relevant guidelines	Person responsible
	maintenance staff			*maintenance work*			*2. Signage to be installed at entrances along Euchareena Rd and Shades Creek Rd in first year of Five-Year Works Action Plan (Figure 3).*	
Clearing and Disturbance	*Protect site from further clearing and disturbance*	*All*	*Monitor for sign of clearing and disturbance*		*Prevention of future clearing and disturbance*	*For duration of the Agreement*	*1. On-site signage notifying public of private property and prohibition of firewood harvesting and fallen timber removal.* *2. Signage to be installed at entrances along Euchareena Rd and Shades Creek Rd in first year of Five-Year Works Action Plan (Figure 3).* *3. Supplementary plantings to improve condition within remnants using seeds from on-site species where possible.* *4. Survey for disturbance post-storm/torrential rain and bushfire events, identify need for and establishment of additional plantings for habitat regeneration.*	Property manager (OCC)
Remnant Connectivity (***Figure 2***)	*Increase connectivity within remnants*	*North and South Rehab Corridors*	*Revegetate site*		*Improve remnant connectivity*	*For duration of the Agreement. Initial planting in*	*1. Initial plantings and then supplementary plantings in Year 2 of Five-Year Works Action Plan to improve connectivity within remnants using cuttings or seeds*	Property manager (OCC)

Management Issue	Long Term Target/Indicator	Zone	Action - Maintain	Action - Enhance	Management Action Goal	Timing	**Required Minimum Standard** – in addition to text below, the landholder must/should conduct action in accordance with relevant guidelines	Person responsible
						August or September 2021. Secondary plantings in Autumn or Winter 2022.	*from on-site species. Refer to Revegetation Plan and Figure 2.* *2. Removal of non-native species, including noxious weeds, pasture species and environmental weeds, as well as garden escapes, olives and pines.* *3. Removal of feral animals to prevent habitat loss and modification.*	
Mapping Remnants (***Figure 3***)	*Map remnant locations to assist activities*	*Remnant Woodland*	*Identify remnant locations*		*Utilisation of maps for remnant protection, rehabilitation or maintenance work*	*Within year 1 of Five-Year Works Action Plan*	*1. On-site signage to notify maintenance staff to the presence of high-quality remnants and the presence of a threatened species.* *2. Signage to occur at entrances along Euchareena Rd and Shades Creek Rd (Figure 3).*	Property manager (OCC)
Groundcover Management	*Maintain adequate level of groundcover*	*North and South Rehab Corridors*	*Slashing of open areas*		*Reduce bushfire risk and overdominance of exotic plant species*	*For duration of the Five-Year Action Plan, occurring annually in Summer. Review outcome at*	*1. Minimum bi-annual slashing is to occur. This frequency may be increased at property manager's discretion based on monitoring of excessive biomass or the overdominance of exotic plant species.* *2. Slashing is to occur in open areas to reduce weed cover and bushfire*	Property manager (OCC)

Management Issue	**Long Term Target/Indicator**	**Zone**	**Action - Maintain**	**Action - Enhance**	**Management Action Goal**	**Timing**	**Required Minimum Standard** – in addition to text below, the landholder must/should conduct action in accordance with relevant guidelines	**Person responsible**
						end of 5 years.	*risk, as well as to assist regeneration of native grassland.* *3. Slashing is to avoid grazing exclosures (one per corridor area) (Figures 1-3).*	

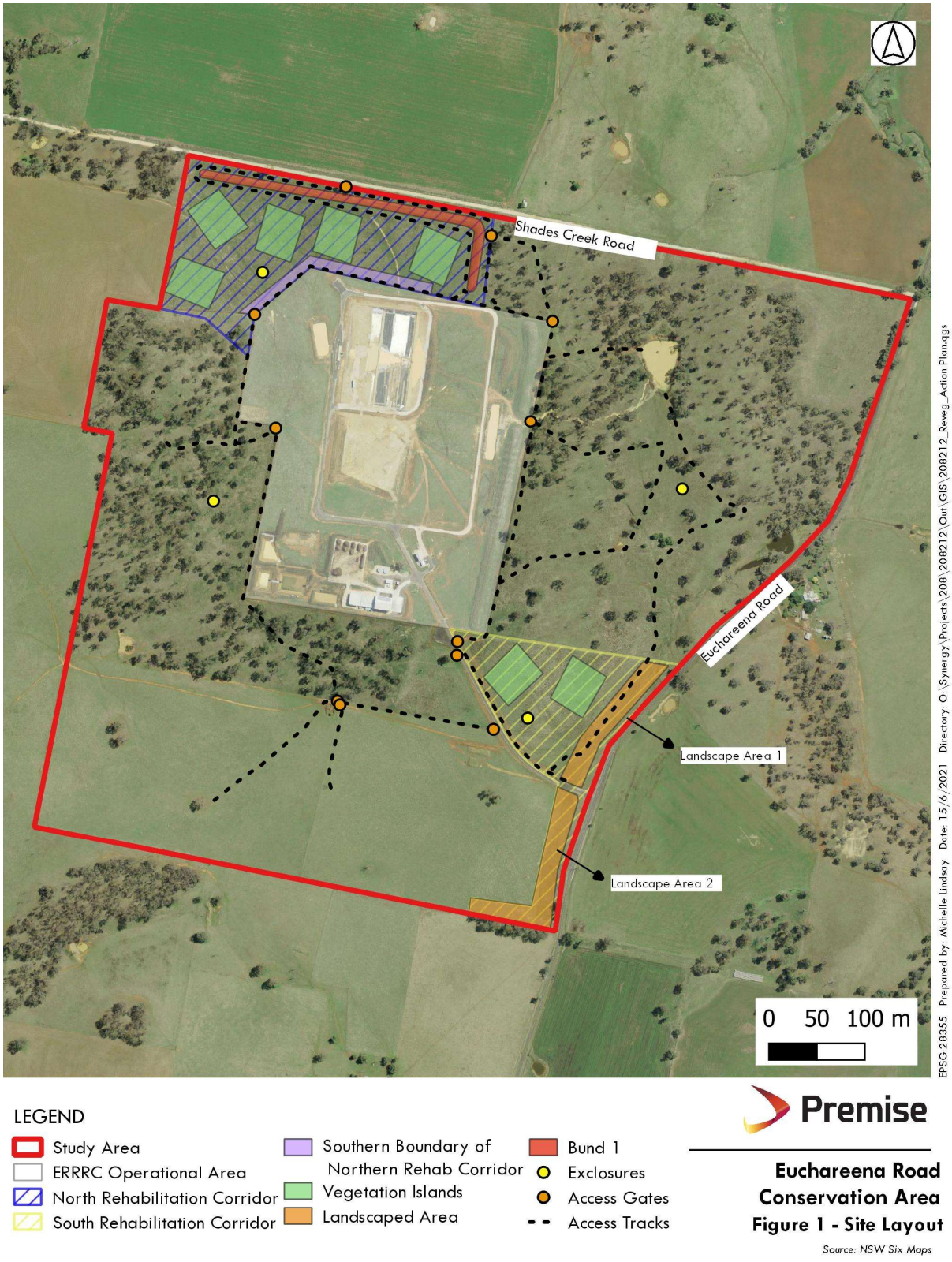

Figure 1. Planned site layout of Euchareena Road Conservation Area, showing all zones where planting of native tree, shrub or groundcover species will occur during 5 Year Works Action Plan. Also shows location of access tracks, gates and planned grazing exclosures.

Figure 2. Map showing the planned location and layout of contour island plantings within the Euchareena Road Conservation Area, for implementation via the 5 Year Works Action Plan.

Figure 3. Map showing the site preparation that is required within the duration of the 5 Year Works Action Plan, to facilitate ongoing management of Euchareena Road Conservation Area

Section 9.6

TRANSPORT CODE OF CONDUCT

JR Richards & Sons

WASTE and RECYCLING SERVICES

TRANSPORT
CODE OF CONDUCT

Issue 3.0
Dated: April 2019

Prepared by:

JR Richards & Sons
Occupational Health Safety, Quality & Environmental Department
Web site: www.jrrichards.com.au

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1. Introduction

Purpose

As a professional and ethical company, JR Richards & Sons Pty Ltd maintain the confidence of the community through sound expertise, innovation, good decision making skills and due regard for our accountabilities.

The JR Richards & Sons Transport Code of Conduct is a decision making tool for JR Richards & Sons managers, supervisor, employees and subcontractors. The practical application of this Code by our employees and subcontractors involved directly or indirectly with JR Richards & Sons will allow ethical and considerate behaviour for the transport of materials. This Code applies to all JR Richards & Sons employees and subcontractors.

Drivers must reference contract details in relation to specific council contracts in Appendix “A”, page 11

2. Operator

Operator Requirements and Targets

Operators of vehicles must be licensed and competent to drive the assigned vehicle; must comply with JR Richards & Sons fatigue management, Chain of Responsibility policies and procedures and Road Rules when performimg duties.

In performing duties, operators will:

- Obey all road rules whilst driving.
- Complete documentation as required to complete the task.
- Know and understand the duties of the assigned job as outlined in the job description and procedures.
- Fulfil conditions of employment with regard to hours of work and leave provisions.
- Be thoroughly familiar with any operations manuals, procedures, and guidelines that apply to the area of work, and ensure that these are followed in the performance of duties.
- Comply with JR Richards & Sons drug and alcohol policy and fitness for work procedures.
- Ensure all waste is disposed of at an approved facility.
- Ensure all defects are reported and the vehicle is maintained in a clean and presentable state.

Team Contribution

Operators are expected to contribute constructively to the depot team, by providing a positive attitude towards others and thereby the efficient resolution of problems. Operators should aim for the following for interaction with others:

- Open and helpful relationships, with increased levels of trust and reduced levels of potential frustration and conflict,
- Enhanced levels of service,
- Improved efficiency, effectiveness and productivity,
- Improved communication and flow of information,

- Improved problem solving.

Operator Training and Development

JR Richards & Sons operates a Learning Management System (LMS) that provides training courses for all vehicles operated within the fleet. This system is cloud based and maintains a record of training of each employee that can be accessed by managers and supervisors.

The LMS also operates an automated licence system, this system required drivers to provide a current licence for the vehicles they operate every six months.

Where new procedures are introduced, the appropriate training will be provided and recorded through the LMS.

Operators are encouraged to engage in relevant learning opportunities to develop the skills and knowledge necessary to perform their job and to enhance the delivery of services.

3. Conduct

Document Confidentiality

Operators are required to carry documentation with necessary for the run they are performing and information for the transport of waste/materials they are carrying; this information will be treated as confidential and will not be disclosed to unauthorised persons.

Where it has been proven, wilful misuse and blatant abuse of such information has occurred, JR Richards & Sons may decide to terminate employment or disengage services. In serious cases, breach of implied terms of employment or contract agreement may lead to prosecution.

Personal Conduct

Operators are not to:
- Intentionally behave in a manner aimed at physically injuring or assaulting a person, leading to actual physical or psychological harm,
- Verbally abuse, including swearing, insult, or use condescending language,
- Use aggressive body language indicating intimidation, contempt or disdain,
- Harass, including bullying, racial or sexual harassment,
- Express either verbally or in writing, threatening behaviour with an intention to cause harm.

Employees and contractors are to abide by the JR Richards & Sons Harassment Policy.

JR Richards & Sons are an equal opportunity employer.

Unlawful Instructions

Operators will not act unlawfully. Instructions provided by JR Richards & Sons will not pressure an operator into breaking the law or jeopardising their life or the lives of others; if such a case were to occur the operator must immediately report the circumstance to the Compliance Manager.

Gratuities, Gifts or Benefits

Operators will not seek gratuities, gifts or benefits from customers, suppliers or other contract carriers in return for improved service for the other party. JR Richards & Sons expects that no operator will put themselves into a situation that will compromise work ethic; such behaviour may result in termination of employment or contract agreement.

JR Richards & Sons General Induction clearly defines employees & contractors expectations.

The acceptance of corporate gifts or gifts in festive seasons, provided these are not in return for improved services are authorised at the discretion of JR Richards & Sons Management.

Ethics

Operators are expected to act in an ethical manner in order to provide excellent customer service; examples of ethical behaviour include but are not limited to the following:

- Act in an honest and truthful manner,
- Treat other individuals fairly and with respect,
- Be accountable for actions taken and avoid financial burden or other obligation to outside individuals or organisations that might influence the performance of official duties,
- Ethics are covered in the JR Richards & Sons General Induction.

4. Driving

Professional Conduct

Operators will maintain a high level of professional conduct and respect for other road users, the following are examples that should be exercised at all times:

- Avoid use of engine brakes in residential areas,
- Use the horn as a warning device only,
- Drive defensively and with care to avoid accidents and sudden stops, i.e. allow sufficient room between vehicles and consider weight of load,
- Adhere to posted speed limits and road signs,
- Obey directions of Police, Road and Traffic Authority (RTA) and other authorities,
- Respect and be watchful for pedestrians,
- Do not crowd other operators or traffic, and allow irate drivers the right of way,
- Avoid excessive revving of the engine when performing collections,
- Avoid excessive breaking between services,
- Acknowledge courteous acts by others.
- No JR Richards & Sons employee or contractor will participate in any form of road rage incidents, a driver is to pull over and stay within his locked vehicle and let the third party drive away. If you feel threatened contact 000.

Workplace Safety

Operators have a duty to apply safe work practices for both personal safety and the safety of others. Under no circumstances is the operator to endanger or jeopardise the life of another for the sake of being time efficient or for any other reason. Operators must inform JR Richards & Sons of any unsafe work practices, near misses or incidents/injuries and cooperate in any investigation carried out by JR Richards & Sons or authorities.

In the event of an injury resulting in medical attention, the operator must immediately notify their supervisor who will arrange transport to a Medical Professional. JR Richards & Sons has in place an active Safety Management System and all employees and subcontractors are required to follow all procedures laid out with the system.

Licence

Operators must have the appropriate driving licences for the class of vehicle they will be operating. Licences are maintained in the LMS and are inspected biannually, a licence holder will receive an automated reminder 14 days prior to to the expiry date and must present a copy of the renewed licence to be uploaded into LMS.

Where a licence has been cancelled the Operator is to inform JR Richards & Sons of the situation immediately, failure to do so may result in termination of employment or contract agreement.

To perform tasks at depots and customers facilities drivers may also need to hold various licences for the use of plant and equipment. Copies of these licences must be supplied to your supervisor prior to operation of plant.

Passengers

Operators are not permitted to carry passengers without written permission given by JR Richards & Sons management; the picking up of hitchhikers will not be tolerated. The only exception is when rendering aid during an accident or other emergency.

5. General

Health

Operators should inform their supervisor if they feel unwell and believe their condition may impair their ability to safely operate a vehicle. Operators suffering from any medical condition which may impair their ability to drive must advise their supervisor immediately, driving duties will cease. JR Richards & Sons management will require a clearance from a medical professional before driving will recomence.

Under no circumstances are operators to drive a vehicle once being deemed unfit to do so by a medical practitioner.

Good housekeeping is required in all JR Richards& Sons work areas, including vehicles and lunch room facilities. Smoking is not permitted inside buildings, offices, vehicles or depot. The depot manager will set aside a designated area for smoking.

Operators shall maintain a satisfactory level of physical fitness and general health to enable them to safely perform their duties. JR Richards & Sons encourages all employees and contractors to follow a nutritional diet and exercise regularly.

Appearance

JR Richards & Sons provide high visibility uniforms that comply with all contractual obligations. The work attire is to be maintained in a neat and tidy manner when on duty; personal appearance should be clean and presentable. All operators will be provide with personal protective equipment as required to complete tasks.

Company uniforms are not to be worm outside of work hours or when not engaged in paid duties.

Prescribed Drugs and Intoxicants

It is the operator's responsibility to confirm with the doctor prescribing the drug to ensure there are no detrimental effects likely to occur whilst driving. All drivers must advise their supervisor when taking prescribed medications. Any person found under the influence of alcohol or drugs will not be permitted to commence duties. Consumption of alcohol or drugs is not permitted whilst on duty. Job Function Analysis are available for all tasks undertaken by JR Richards & Sons, these can be provided to medical practioners to review.

Collection of Services

Operators are expected to perform their duties in a professional manner at all times, this includes:

- Operators conduct a pre task inspection (take 5) prior to servicing waste cubicles ensuring the service can be preformed safely,
- Services are carried out in line with the run schedule,
- Services are performed consistently and as requested by the customer,
- The contents of waste cubicles are inspected to ensure suitability for transport and contact is made with their supervisor if unsuitable material is found within the cubicle prior to loading.
- The area immediately around mobile garbage bins (MGB) is cleaned during service when carrying out domestic waste collections.
- MGB's are placed back in the same location they were collected and in an upright manner.
- The contamination procedure for MGB's is followed and all relevant documentation completed and passed onto depot administration.

6. Depot Organisation

Site Activity

All waste collection vehicles are to be driven within the depot in a safe manner complying with site speed limits and traffic management plans.

Visitors are to park in the designated visitor parking area ensuring they do not interfere with the flow of traffic within the depot.

Unloading at Material Recovery Facilities

Units are only to unload when instructed by the floor attendant and operators are to ensure there is ample room to safely manoeuvre the unit they are driving when unloading.

Once unloaded the operator is to exit the unit and ensure the vehicle is empty and clean the rear door seal

Parking

All vehicles are to be parked in the designated parking area and as follows:

- Hand break applied,
- Complete Post start procedure.
- Keys removed and stored in the designated location,
- Air drained from air tanks,
- Battery isolation switches turned off,
- Waste is only to remain in collection vehicle with approval from the depot manager.

7. Vehicle Operation and Maintenance

Inspection

The operator is to carry out a complete pre-start inspection in line with procedure for the vehicle they are operating on the day.

A pre-start inspection form must be completed and remain in the vehicle until the end of shift when it is to be handed in with the daily run sheet and time sheet.

CAT 1 & CAT 2 defects are to be reported as per the JR Richards & Sons defect reporting procedure.

Load Coverage

Operators are to ensure all loads are covered to ensure the contents cannot escape during transport. All bins are to be tarped whilst on the ground and inspected prior to loading. Vehicles fitted with Hydra Tarps may fit tarps with automated tarping systems whilst bin is mounted on the vehicle.

The National Restraint Guide is available at all depots.

Security

Operators are to ensure that vehicles are properly secured when left unattended. Whether on company premises, customer premises or elsewhere the responsibility of securing the vehicle is paramount.

Servicing

The servicing of vehicles shall be carried out in line with the company's maintenance program and all relevant documentation relating to the service must be completed and forwarded to head office for filing.

JRR participate in the National Heavy Vehicle Accreditation Scheme – Maintenance.

Accident

In the event of an accident it is the operator's responsibility to obtain the details of those involved i.e.
name(s), address(s), vehicle registration and type, time, date, location, injuries if known, and any relevant points relating to the accident. The police must be notified if required. The Operator should not sign written statements by any person until JR Richards & Sons have been fully informed of the details and given instructions.

Vehicle Noise Emission

Vehicle noise includes noise from exhaust systems, horns, brakes, engine, sound systems and revving.

To combat the emissions of noise the following must be observed;

- Operators will not use engine brakes in residential areas and the horn will only be used as a warning device.
- Vehicles are not to be over revved during collections,
- Breaking between bins is to be maintained to a minimum to safely perform ones duties.
- Services are only to be performed during approved hours.

8. Traffic Interaction and Road Sharing

Emergency Vehicles

When Drivers become aware of approaching Emergency Vehicles, they are to indicate and pull over to the left hand side of the road where safe and allow Emergency vehicles to pass. Drivers are to adhere to the following rules when encountering an Emergency Vehicle:

- If an emergency vehicle approaches sounding an alarm or flashing lights, you are required to move out of its path, as soon as it is safe to do so,
- If you cannot move left safely, stay where you are and let the emergency vehicle over take you,
- Emergency service workers are trained to provide a rapid response but also to anticipate the reactions of drivers on the road,

Other Heavy Vehicles

Drivers of Heavy Vehicles are required to take particular care when sharing the road with other Heavy Vehicles. Drivers should be particularly mindful of:

- Overtaking should only be performed when safe to do so.

- Take into account weather conditions, the width of the road, condition of the road, passenger vehicles also wishing to overtake, and if it is really necessary to overtake at all,
- Ensure that if following another Heavy Vehicle that you maintain adequate distance.
- Remember, "If you can't see my mirrors, I can't see you". Do not Tailgate,
- Never enter a Roundabout with another Heavy Vehicle in close proximity,
- If you encounter an "Oversized" vehicle, reduce speed and pull over to the left to allow safe passage,
- Be courteous when driving, allow time and distance when dealing with other heavy vehicles.

Built Up Areas

Waste collection Vehicles will be manoeuvring in and around vehicles and pedestrians. Be mindful at all times that you are driving a Heavy Vehicle in close proximity to others. Always drive to the conditions and take into consideration:

- Your braking distance is greatly increased,
- Your acceleration is greatly reduced,
- Your special visibility is reduced,
- Other road users may not have the same skills as yourself being a professional driver,
- Be alert and anticipate other driver errors,
- Watch for children, the elderly and animals that may not be road wise,
- Use your mirrors and cameras at all times,
- Take your time reversing. Ensure that you know what is behind you!
- Slow down in School Zones and be vigilant in awareness of school children

School Bus Routes

During all waste collection services, drivers may share the same route as School Buses and vans. Particular attention must be paid in rural or regional areas.

Drivers operating on school routes should be mindful that:

- School Bus routes are normally active for two hours before and after school times (9am – 3.30pm),
- School children may stand close to, or on the road at times,
- Children may be waiting for or departing buses during twilight hours (winter months),
- Pick up points maybe located close to bends or corners and you should anticipate this at all times,
- When you approach a bus that has stopped to pick up or set down passengers, you must reduce your speed to 40 kmph,
- You should anticipate that children may run across a road without looking.

Drivers operating on rural or regional roads should take particular car during the hours of pick up and set down of school children.

Drivers travelling on rural roads with speed postings above residential speed limits should anticipate and prepare to stop when approaching bends, blind corners, crests or dips in the roads.

Take particular care when approaching areas where children will be and anticipate children to make sudden movements around roadways.

9. Appendix (Contract Specific Requirements)

Appendix "A"

The below requirements relate to the contract for the collection and processing of household organics and general waste for Orange City Council.

FRM-WP 508 Euchareena Rd Access Procedure must be signed off by all drivers, this procedure must be strictly adhered to.

Heavy Vehicle Route

All Waste Vehicles are to only use the designated heavy vehicle routes along Euchareena Road, accessing from Shades Road via Mitchell Highway.

Restricted Vehicle Operating Hours:

Waste Vehicles using Euchareena Road are subject to restricted operating conditions during the following hours:

- **7.00am – 7.15am Mon to Friday (School Days),**
- **8.28am – 8.37am Mon to Friday (School Days),**
- **3.28pm – 3.40pm Mon to Friday (School Days) and**
- **4.40pm – 5.00pm Mon to Friday (School Days)**

The primary objective is to ensure Waste Vehicles from being in the immediate vicinity of School Buses picking up, transporting, or setting down passengers. The School bus may be on Euchareena Road at other times without passengers aboard and as such will be treated as normal traffic.

Verification of School Bus Travel Times

To ensure conflict between heavy vehicles and the school bus movements on Euchareena Road do not occur, JR Richards and Sons will verify annually that the above listed heavy vehicle restriction times are correct at the commencement of the school year. Verification will be sought in writing by the school bus operator, Cabonne Bus Line P/L, that the times are correct. If these times vary, the Transport Code of Conduct will be updated accordingly and Department of Planning and Environment will be advised.

Contingency arrangements if School Bus is encountered:

In the event a School Bus operates out of the normal operating times, the following steps are to be taken:

- If a School Bus is approaching on Euchareena Road from the opposite direction then the Waste Vehicle must immediately reduce speed and be vigilant whilst passing.
- Similarly, if a Waste Vehicle approaches a stationary Bus from behind, then it must move left off the road where safe and stop until the bus driver indicates that the bus has departed from that section of Euchareena Road. Waste vehicles are not to pass buses picking up or setting down passengers from the roadside at any time.

Covered Loads

As per company procedures and RTA regulations, all vehicles carrying loads must have the loads suitably covered using coverings fit for purpose. Refer to Section 7, Vehicle Operation and Maintenance, point 2, “Load Covering”.

Traffic Noise

JR Richards employees driving heavy vehicles are required to minimise noise emitted from heavy vehicles being operated. These include:

- Economical acceleration,
- Minimisation of engine brake usage in built up areas,
- The use of horn only for emergency use,
- Minimisation of reversing manoeuvres (reversing buzzer), and
- Only operating during daytime hours.

System Improvements Post February 2018 Caution

Additional measures to ensure compliance with Condition l0(b) of Schedule 6 of Project Approval 09_0025 as modified for the Orange Waste Project. We provide the following information detailing the additional measures;

1. Two (2) additional geo-fenced zones have been added to the Fleetmax GPS tracking to function as Warning Zones. The warning zones trigger a buzzer fitted to the truck cabin. The buzzer will be activated only during the school hour's exclusion times. Details of the zones are included in the revised procedure in *appendix B* below.

2. Buzzers are installed in all trucks and are activated if a driver enters the geofence during the restricted hours as set in Fleetmax GPS tracking system.

3. FRM-WP 508 Euchareena Road Access Procedure has been implemented. This procedure works in conjunction with the geo-fenced Zones which activate the audible cab buzzers prior to entering Euchareena Road.

4. Additionally drivers must be issued with a unique load number each time they access the exclusion zone. A copy of the procedure (Attachment B) is attached.

Appendix "B"

MOLONG FORMS

FRM-WP 508 Euchareena Rd Access Procedure

1. PURPOSE

This document describes the procedure to be followed for any JR Richards & Sons heavy vehicle that is to travel along Euchareena Rd, Molong NSW to or from the Euchareena Road Resource Recovery Centre.

This procedure will be used in conjunction with Geofences connected to in cab audible buzzers which will activate in the designated warning zones prior to entering Euchareena Rd. The audible buzzers connected to the Geofence are programmed to activate between the following hours

- 7.00am - 9.00am
- 3.00pm – 5.00pm

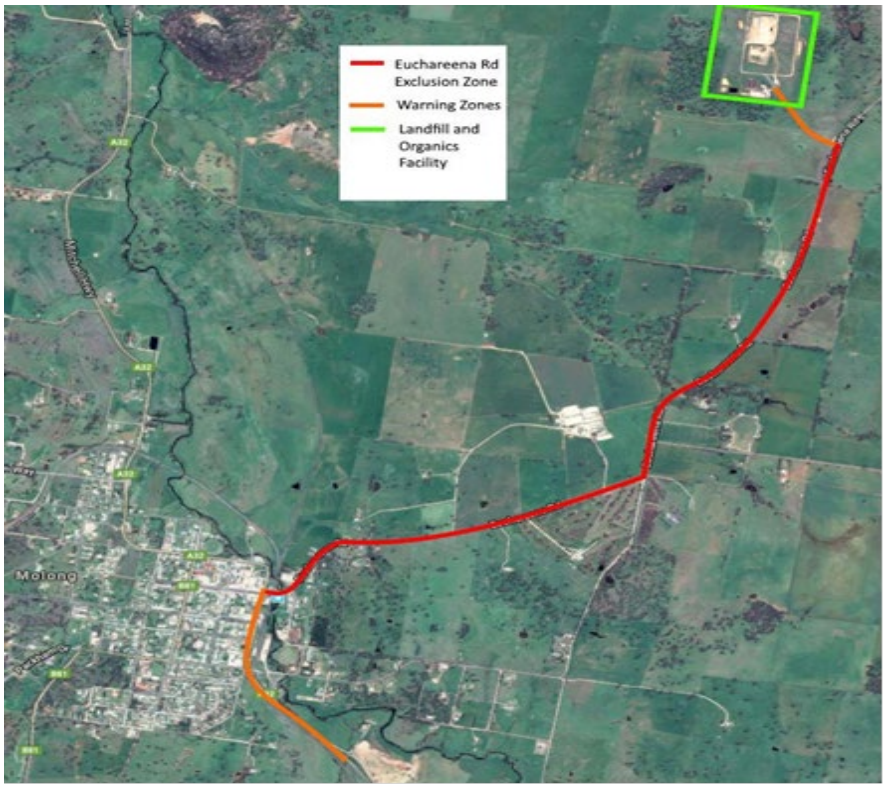
Each vehicle that uses Euchareena Rd has been fitted with the audible buzzers.

Correct execution of this procedure will ensure compliance with this contractual obligation

2. REFERENCES

NSW Planning Heavy Vehicle Exclusion Times – Euchareena Rd, Molong
NSW 7.00am – 7.15am
8.28am – 8.37am
3.28pm – 3.40pm
4.40pm – 5.00pm

Euchareena Road Resource Recovery Centre Map



3. PROCEDURE – TRAVELLING TOWARD ERRRC

Prior to entering Euchareena Road Resource Recovery Entry the driver must stop his/her vehicle at the Molong Heavy Vehicle parking area as highlighted below

- Once driver has stopped the vehicle in the appropriate location he/she must call in the current location of the vehicle to **6362 6353** or **0478 749 966 (after hours)**
- Admin/Supervisor will log the call and check time against Euchareena Rd curfew hours.

IF OK TO PROCEED

- Admin/Supervisor will issue driver with a unique load number for that load
- Driver will record Unique Load Number on Runsheet prior to proceeding to ERRRC
- Driver will proceed to ERRRC

IF NOT OK TO PROCEED

- Admin/Supervisor will advise driver to remain parked until a designated time.
- Once the designated time has elapsed driver will recommence process from the beginning

4. PROCEDURE – TRAVELLING FROM ERRRC

Prior to entering Euchareena Road the driver must stop his/her vehicle at the Euchareena Road Resource Recovery Centre exit area as highlighted below:

- Once driver has stopped the vehicle in the appropriate location he/she must call in the current location of the vehicle to **6362 6353** or **0478 749 966 (after hours)**
- Admin/Supervisor will log the call and check time against Euchareena Rd curfew hours.

IF OK TO PROCEED

- Admin/Supervisor will issue driver with a unique load number for that load
- Driver will record Unique Load Number on Runsheet prior to proceeding toward Molong township
- Driver will proceed toward Molong township

IF NOT OK TO PROCEED

- Admin/Supervisor will advise driver to remain parked until a designated time.
- Once the designated time has elapsed driver will recommence process from the beginning.

5. Documentation

Orange Key Operations Manual, Euchareena Rd Access Spreadsheet

Section 9.7

ORRRC PIRMP

Premise

Ophir Road Resource Recovery Centre

POLLUTION INCIDENT RESPONSE MANAGEMENT PLAN

Report No: 208212_PIRMP_002J_ORRRC
Rev: J
3 December 2021

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Chloe Bigg		Brendan Stuart		Brendan Stuart	

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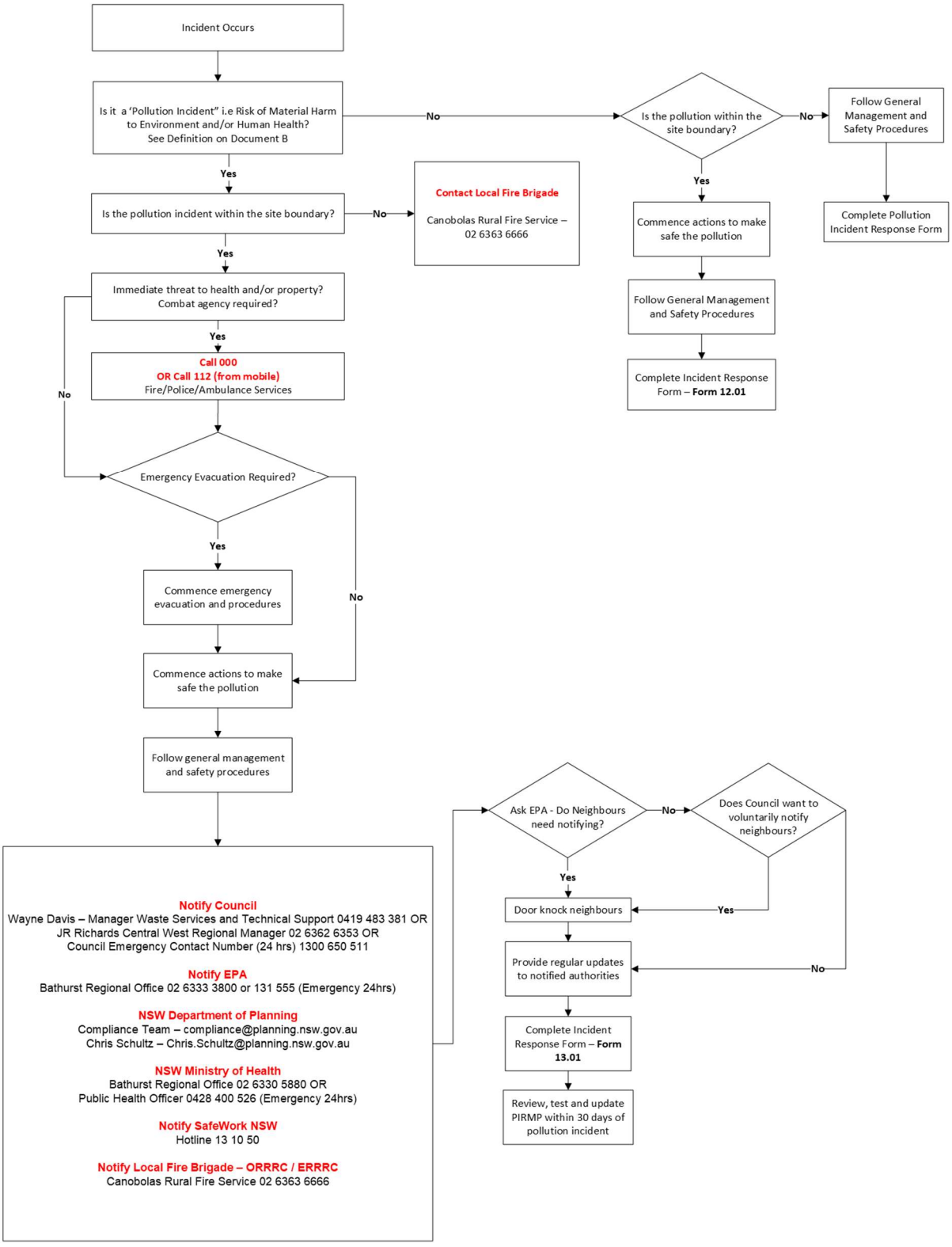
1. POLLUTION INCIDENT CLASSIFICATION, RISK ASSESSMENT AND CONTRIBUTING FACTORS

Table 1 – Pollution Incident Classification, Risk Assessment and Contributing Factors

Description of Pollution Incident	Likelihood	Impact	Contributing Factors
Identifying non-domestic quantities (more than 200 millimetres per tonne or 200 grams per tonne) of hazardous substances among waste	Medium	Low	Human errors made during waste screening
Surface or subsurface fires at active landfill, public receival areas & recycling facility	Medium	Medium	High winds, dry weather, prolonged high temps and low humidity. Human errors made during waste screening, poor maintenance of plant and equipment, spontaneous combustion, hot embers in waste deliveries.
Surface or subsurface fires at maintenance and inactive areas	Low	High	High winds, dry weather, prolonged high temps, low humidity and spontaneous combustion.
Mixing of leachate and stormwater or waste and stormwater	Low	Medium	Prolonged periods of heavy rain, and lack of surface water pond and site maintenance.
Identification of any failure of an environmental protection system	Low	Low	Prolonged periods of heavy rain and/or a mechanical failure of the pump at the leachate pond.
Identification of a significant difference in groundwater indicator parameters	Low	Low	Prolonged periods of heavy rain
Confirmation of gas accumulated in buildings at greater than 1.25 per cent methane (volume for volume)	Low	Low	On-site buildings which have not been designed to prevent accumulation of methane gas.
Acts of vandalism or target of terrorist activity	Low	Medium	Increased risk during hours of closure
Any other incident or observation that could potentially pose an immediate environmental hazard outside normal operating conditions	Low	Low	N/A

2. DOCUMENT A – POLLUTION INCIDENT DECISION FLOW CHART

Pollution Incident Decision Flow Chart



3. DOCUMENT B – POLLUTION INCIDENT EMERGENCY CONTACT DETAILS

3.1 Definition of Pollution Incident

A pollution incident is required to be notified if there is a risk of 'material harm to the environment', which is defined in section 147 of the POEO Act 1997:

" (a) harm to the environment is material if:

i) it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or

ii) it results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding $10,000 (or such other amount as is prescribed by the regulations), and

(b) 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."

… it does not matter that harm to the environment is caused only in the premises where the pollution incident occurs

3.2 Notification of Pollution Incident

3.2.1 NOTIFICATION SPEED OF RESPONSE

The notification of the relevant authority when material harm to the environment or human health is caused or threatened must be 'immediate', meaning 'promptly without delay', but it does not mean undertaking notification ahead of doing what is necessary to make the environment safe.

3.2.2 NOTIFICATION OF RELEVANT AUTHORITIES

Where the pollution incident causes or threatens material harm to the environment or human health, all the following authorities must be notified:

Table 2 – Notification of Relevant Authorities

1. Emergency Call Services	
• Emergency Hotline Number (24 hours)	000* (or 112 from mobile)
*The Site Supervisor should call 000 if the incident presents an immediate threat to human health and/or property and a combat agency is required (i.e. NSW Fire and Rescue, NSW Ambulance Service, NSW Police Force) and then notify all other parties below including NSW Fire and Rescue via a local telephone number.	
2. Orange City Council (OCC)	
• Wayne Davis, Manager Waste Services and Technical Support (OCC)	0419 483 381
• JR Richards Central West Regional Manager	02 6362 6353

• Council Emergency contact number (24 hours)	1300 650 511
3. The Environment Protection Authority (EPA)	
• Bathurst Regional Office	02 6333 3800
• Emergency Hotline Number (24 hours)	131 555
4. NSW Ministry of Health (via Public Health Units)	
• Bathurst Regional Office	02 6330 5880
• Public Health Officer on Call (24 hours)	0428 400 526
5. SafeWork NSW	
• Hotline Number	13 10 50
6. Canobolas Zone Rural Fire Service	
• Canobolas Zone RFS	02 6363 6666**
** If there is no immediate threat to human health and/or property i.e. a combat agency is not required, then the Site Supervisor is still required to follow that outlined above except for dialling 000.	

4. POLLUTION INCIDENT REPORTING FORM

Incident No:	**Time:**
Date:	**Duration of Incident:**

Nature of Incident:

Temperature:	**°C**	**Wind direction & speed:**	**km/hr**
Relative Humidity:	**%**	**Rainfall since 9am:**	**mm**
Fire Danger Rating:			
http://www.bom.gov.au/climate/data/index.shtml '063254 – Orange Agricultural Institute'			

The Location of the Place Where Pollution is Occurring or is Likely to Occur:

The nature, the estimated quantity or volume, and the concentration of any pollutants involved (if known):

The Circumstances in which the Incident Occurred, Including the Cause of the Incident (if known):

The Corrective Action Taken or Proposed to be Taken to Deal with the Incident and Any Resulting Pollution or Threatened Pollution (if known):

Notification:		
Stakeholder	**Date / Time**	**Contact**
Orange City Council	/ / am/pm	
NSW Environment Protection Authority	/ / am/pm	
NSW Ministry Of Health (Via Public Health Units)	/ / am/pm	
SafeWork NSW	/ / am/pm	
NSW Fire and Rescue	/ / am/pm	

Notification of Neighbours Required by EPA **Yes / No**
If Not, Have Neighbours Been Notified Voluntarily **Yes / No**
Particulars:

Signature: **Date / /**
Council Officer

Signature: **Date / /**
Manager Waste Services and Technical Support, Orange City Council

5. PIRMP TESTING & UPDATE REGISTER

Table 3 – PIRMP Testing & Update Register

Date	Name	Routine Testing	Routine Update	Post Incident Updates	4 New Copies Distributed?
31 March 2014	Not specified	Tested contact numbers	Updated position title for Wayne Davis	N/A	Yes as Part of OEMP
14 October 2014	Chloe Bigg (Geolyse)	N/A	Updated PIRMP to reflect current legislative requirements. Removed Staff Training Register, refer reader to OEMP instead.	N/A	Yes (as part of OEMP update)
31 August 2015	Chloe Bigg (Geolyse)	N/A	Updated phone numbers and updated reference for MRF to MTF	N/A	Yes (as part of OEMP update)
24 March 2017	Brendan Stuart (Geolyse)	Tested and updated contact numbers Tested incident response flowchart (loss of containment from leachate pond)	Contact numbers and minor corrections	N/A	Electronic Only (hard-copies to be distributed as part of 2017 OEMP update)
14 February 2018	Chloe Bigg (Geolyse)	N/A	Updated contact details. Updated PIRMP drawing set to include CRC	N/A	Yes (as part of OEMP update)
6 December 2018	Brendan Stuart (Geolyse)	Tested and updated contact numbers Tested incident response flowchart (waste fire)	Contact numbers and minor corrections	N/A	Yes (as part of OEMP update)

Date	Name	Routine Testing	Routine Update	Post Incident Updates	4 New Copies Distributed?
24 January 2020	Brendan Stuart (Premise)	Tested and updated contact numbers Tested incident response flowchart (Litter from high wind)	Contact numbers and minor corrections. Changes to template	N/A	Yes (as part of OEMP update)
29 January 2021	Brendan Stuart (Premise)	Tested and updated contact numbers Tested incident response flowchart (Unauthorised entry of waste carrier)	Contact numbers and minor corrections.	N/A	Yes (as part of OEMP update)
3 December 2021	Brendan Stuart (Premise)	Tested and updated contact numbers Tested incident response flowchart (loss of containment from leachate pond)	Contact numbers and minor corrections.	N/A	Yes (as part of OEMP update)

Section 9.8

ORRRC PIRMP SUPPORTING STATEMENT

Premise

Ophir Road Resource Recovery Centre

POLLUTION INCIDENT RESPONSE MANAGEMENT PLAN SUPPORTING STATEMENT

Report No: 208212_PIRMP_001J_ORRRC
Rev: J
3 December 2021

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FOREWORD

This is the Supporting Statement for the Pollution Incident Response Management Plan (PIRMP). The PIRMP is a functional document. It is designed to assist personnel at the Ophir Road Resource Recovery Centre (ORRRC) to correctly identify pollution incidents and detail the procedures for the response and reporting of a pollution incident.

The structure and scope of this Supporting Statement and PIRMP reflects the requirements of the Environmental Protection Authority's Guidelines: Pollution incident response management plans, March 2020 and in doing so embodies the principles of best practice environmental management.

Utilisation of this PIRMP aims to improve, monitor and demonstrate environmental performance. If you have any suggestions for amendments, additions or improvements, please discuss these with your supervisor.

.....

Orange City Council
Manager Waste Services & Technical Support

Date: 14-12-2021

1. INTRODUCTION

1.1 Purpose

This supporting statement and PIRMP have been prepared in accordance with the Protection of the Environment Operations Act 1997 (POEO Act) and reflects the requirements specified in the Environment Protection Authority's (EPA's) Guidelines: Pollution incident response management plans, March 2020, noting this document was initially prepared in general accordance with the previous version of these guidelines (EPA, March 2012).

The PIRMP details:

- Procedures for notifying a pollution incident to relevant persons;
- Actions to be taken to reduce and/or control pollution; and
- Procedures for co-ordinating those notified and any action taken in combating the pollution.

1.2 Definition of Pollution Incident

A pollution incident is required to be notified if there is a risk of 'material harm to the environment', which is defined in section 147 of the POEO Act 1997:

> *"(a) harm to the environment is material if:*
>
> *i) it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or*
>
> *ii) it results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding $10,000 (or such other amount as is prescribed by the regulations), and*
>
> *(b) 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."*
>
> *... it does not matter that harm to the environment is caused only in the premises where the pollution incident occurs*

1.3 Identified Pollution Incident Risks

The primary potential hazards to human health or the environment associated with the activity undertaken at this site – i.e. 'Pollution Incidents' - include the following:

- Identifying non-domestic quantities (more than 200 millilitres per tonne or 200 grams per tonne) of hazardous substances among waste;
- Surface or subsurface fires;
- Mixing of leachate and stormwater or waste and stormwater;
- Identification of any failure of an environmental protection system;
- Identification of a significant difference in groundwater indicator parameters;

- Confirmation of gas accumulated in buildings at greater than 1.25 per cent methane (volume for volume);
- Acts of vandalism or target of terrorist activity; or
- Any other incident or observation that could potentially pose an immediate environmental hazard outside normal operating conditions.

2. SITE OVERVIEW

2.1 Site Overview

The Ophir Road Resource Recovery Centre (ORRRC or the 'facility') has been operating since the mid-1960s. The property is owned by Orange City Council.

After 2013 the ORRRC will continue to be used as a waste transfer station, and the asbestos and dead animal waste disposal cells will remain to avoid double handling. The sorted, compacted and baled waste destined for landfill will then be taken to the new landfill site at Euchareena Road near Molong.

The Environment Protection Authority (EPA) has issued Environment Protection Licence 5956 in accordance with Section 5.7 of the *Protection of the Environment Operations Act 1997*.

2.2 Site Characteristics

The ORRRC is located approximately 3 km north-east of Orange (see drawing EV01).

The area surrounding the facility to the north, east and south is predominantly rural residential development. Council owned infrastructure exists to the west, on the opposite side of Blackmans Swamp Creek and includes the Sewage Treatment Plant (STP) immediately adjacent and the Stormwater Harvesting Scheme further west and upgradient.

The nearest residential property to the facility is located approximately 200m from the south-eastern corner of the boundary. Further details of neighbouring properties (residential, commercial and industrial categories) are provided in drawing **EV02**.

Access to the ORRRC is via the Ophir Road, a two lane sealed road. From Ophir Road the facility is accessed by a primary sealed road. Within the site, sealed roads and formed gravel access roads lead to the various defined tipping areas and processing pads. The central portion of the site is currently used for landfilling with weighbridge, public recovery shop and receivable areas, Material Transfer Facility (MTF) (previously the Materials Recycling Facility [MRF]) and maintenance sheds are located around the site entrance to the east.

The ORRRC is fenced along the southern, northern and north eastern boundaries with 1.8m chain mesh security fence. In addition, the eastern boundary fence is topped with a single strand of barbed wire. The western boundary is not fenced, however access is only available through the manned STP, which is locked out of hours. In addition, a 1.8m chain mesh security fence separates the MTF and maintenance sheds from public areas of the weighbridge, recovery shop and receival station.

Previous and current landfilling practices have altered the local topography significantly, creating numerous rises, as such, the current landfill area no longer retains the natural topography but is designed to channel surface water and minimise off site impact of the landfill operations.

The site topography and drainage have been engineered to ensure that there is negligible stormwater runoff into and out of the site, thus minimising any offsite impact. Site generated surface water is channelled around the edge of the premises and also through the centre towards the two onsite collection ponds. A gross pollutant trap to the west of the MTF exists to minimise litter migration.

On rare occasions when the surface water ponds reach capacity, water filters over vegetated ground before reaching Blackmans Swamp Creek. Outside of the site, natural topography to the north of the facility boundary drains to Blackmans Swamp Creek and topography to the east drains to Summer Hill Creek, downstream of Suma Park Reservoir (see drawing **EV02**).

There is no remnant natural vegetation over the site. The northern and western capped areas of the landfill have been revegetated with a perennial grass mix. Plantations of Radiata Pine and some native trees have been established along the northern, eastern and southern boundaries act as visual and wind buffers.

2.3 Site Supervision and Control

The ORRRC is open to the public during the hours specified in the Environment Protection Licence (EPL 5956). Access to the site outside of these hours (e.g. for special circumstances and emergency waste disposal) is subject to the approval of the Manager Waste Services & Technical Support.

ORRRC is supervised at all times when open for the receival of wastes. The facility is staffed by qualified and experienced personnel. These include a Resource Recovery Centre Supervisor (RRCS) and up to two Resource Recovery Centre Plant Operators (RRCPO's). Two RRCPO's are generally present during normal operation.

Lockable security gates are in place at the access points to the facility. All gates are locked outside of the specified opening hours except for when approved by the Manager Waste Services & Technical Support in special circumstances. The site is also monitored by CCTV with one camera on the weighbridge looking towards Ophir Road, and other cameras inside and outside the recovery shop to prevent shoplifting. Security patrols are conducted twice per night, alarmed doors are checked and a site patrol conducted to prevent vandalism.

All vehicles are directed to the weighbridge upon entry to the facility, and distributed appropriately according to waste type. Council maintains the sealed access road from the facility entry to the Public Receival Station. Council staff are responsible for internal traffic control.

All light vehicles, trailers and up to two tonne loads are directed to disposal skips in the Public Receival Station. Larger loads of waste (i.e. in excess of two tonne) are, after being weighed on the weighbridge, directed to the active landfill face and/or operating site for the waste item in question.

A daily checklist for monitoring, recording activities and incidents that occur during operation of the Facility is kept by the Site Supervisor.

2.4 Site Safety Equipment

The ORRRC maintains a water cart which consists of a 2,000 litre tank, pump and hose. This can be mobilised immediately to the site of a fire as and when required. The MTF building is protected from fire throughout by a mist system in the roof as well as several hose reels, fire extinguishers and hydrants. Where further assistance is required in addition to the on-site fire-fighting equipment, the Council Works Depot is contacted to utilise their 12,000 litre water truck. Further fire-fighting details are provided in the Orange *Waste Project Operational Environmental Management Plan* (OEMP).

To manage leaks, chemicals such as diesel fuel are kept on mobile self-bunded trolleys to allow their safe use in less well protected areas of the site. Spill Sorb is present on site to manage fuel and oil spills. The used Spill Sorb is then deposited in the landfill. In the event of a chemical spill, PPE is provided for on-site staff which consists of safety goggles, respirator face masks and protective gloves.

3. RISK MANAGEMENT AND PRE-EMPTIVE ACTIONS

3.1 Introduction

The following section outlines current operational procedures and design intended to minimise and manage risk. Members of staff working on site are responsible for being aware and notifying the Site Supervisor of any potential pollution incidents on the premises. All management procedures detailed within the OEMP must be adhered to.

3.2 Pre-emptive actions

3.2.1 IDENTIFYING NON-DOMESTIC QUANTITIES OF HAZARDOUS SUBSTANCES

The following practices apply to screening of incoming wastes:

- Public access is only permitted during opening hours;
- Drivers are asked to describe the type of waste to be deposited on entry to the Facility;
- Inspections of waste loads are made when required;
- Drivers are directed to the correct area of the facility for disposal of specific loads (e.g. builder's wastes, greens, whitegoods, tyres, derelict cars etc.);
- Wastes are monitored and inspected as they are being discharged to ensure excluded non-approved wastes are not being disposed; and
- Wastes are monitored and inspected during spreading, compaction and covering.

The following steps are undertaken if non-domestic quantities of hazardous wastes are identified:

- If identified at point of entry the vehicle is refused entry and the driver advised to contact the EPA for advice on proper disposal of the hazardous waste.
- If identified during waste deposition the Resource Recovery Centre Operators immediately advise the Resource Recovery Centre Supervisor. The supervisor advises the driver that the waste is not acceptable and organises for the waste to be loaded back onto the vehicle, where practicable and safe to do so. The supervisor then escorts the load off-site and advises the driver to contact the EPA for advice in the proper disposal of the excluded waste.
- If identified during waste spreading and compaction the Resource Recovery Centre Operators immediately notify the Resource Recovery Centre Supervisor. The supervisor makes all practicable efforts to identify the source of the waste (e.g. labelling, waste type). The supervisor is then responsible for contacting the EPA for advice on the proper disposal of the hazardous waste and will dispose of the hazardous waste in accordance with the EPA's requirements. In the event that the EPA cannot be contacted, the wastes will be relocated to the domestic hazardous waste lock up cage. This is identified in enclosed Site Plan EV03.
- In any situation where non-domestic quantities of hazardous wastes are identified, the incident is reported as described below:
  - If an excluded waste was to be discovered on the site, the Manager Waste Services & Technical Support would be notified immediately. If it is considered hazardous, it would be first moved to the household hazardous waste lock up cage (refer to enclosed Site Plan EV03) as this location is secure and relatively isolated. The EPA would then be contacted and Council would then await their instruction. The incident is recorded on the daily checklist kept by the Site Supervisor.

- If the waste is leaking, the local fire brigade would be contacted and requested to bring a drum for the containment of hazardous materials.
- The excluded waste is recorded on the Daily Checklist including details of the type of waste, the source of waste and vehicle and driver identification.

3.2.2 SURFACE OR SUBSURFACE FIRES

The potential for fires to occur at the site are controlled by:

- A security fence to prevent unauthorised access and acts of vandalism;
- Maintaining machinery in good working order to minimise risk of sparks;
- Smothering immediately with soil or water sprayed from the water cart;
- Adequately compacting and covering waste;
- Mulched green waste has the capacity to spontaneously combust. This risk is minimised via shaping into divided windrows (i.e. small cones) to isolate/contain any fires;
- Regular litter patrols;
- Ensuring fire breaks are maintained around any temporary stockpile of combustibles;
- Access to on-site fire fighting equipment; and
- Accepting only permitted wastes.

In addition to the above preventative measures, operators at the Facility maintain the fire fighting equipment to ensure that the on-site fire fighting capability is maintained. Specifically this involves:

- Ensuring that the water cart permanently located at the facility is full at all times and that it is positioned in a readily accessible location;
- Weekly testing of the tanker pump and checks that the motor is topped with fuel and oil; and
- Weekly checks that the overhead standpipe that feeds the water cart is functional.

3.2.3 MIXING OF LEACHATE AND STORMWATER OR WASTE AND STORMWATER

The potential for the mixing of leachate and stormwater or waste and stormwater is controlled by ensuring that the level of the leachate ponds is regularly checked. If the level of a pond is too high and at risk of flooding then the excess water is pumped away to the adjacent sewage treatment plant to create airspace.

3.2.4 CONFIRMATION OF GAS ACCUMULATED IN BUILDINGS

Gas accumulation monitoring of buildings is undertaken on a monthly basis. If detected at a concentration that exceeds the threshold limit the EPA is notified within 24 hours. Within 14 days of the notification, a plan will be submitted to the EPA for further investigation and/or remediation of the elevated gas levels in accordance with the EPA's Environmental Guidelines: Solid Waste Landfills (2016).

3.2.5 ACTS OF VANDALISM OR TARGET OF TERRORIST ACTIVITY

The boundary road fence along Ophir Road limits unauthorised access outside operational hours. CCTV is installed and after hours security patrols are undertaken as a deterrent. All staff are required to be vigilant and aware that the site is a potential target for vandalism, particularly by arsonists.

3.3 Inventory of Maintenance Pollutants

The following pollutants can be stored on site in quantities required for routine maintenance necessary for operations at the facility:

- Glyphosate Isopropylamine Salt (Weedkiller);
- Castrol Hydraulic Transmission Oil R.H;
- Diesel;
- BP Zoom 50;
- Castrol WR Grease; and
- Petrol Unleaded.

Enclosed site plan EV03 provides details of where these chemicals are stored on the premises as well as those on bunded palettes.

3.4 Identifiable Waste Pollutants

A variety of waste household pollutants can be stored on site until sufficient quantity deems it necessary for the relevant contractor to collect.

Enclosed site plan EV03 provides details of where these hazardous household waste items are stored on the premises, including the location of gas cylinders, waste oil, batteries, fluorescent tubes, globes, smoke detectors and clinical waste.

3.5 Potential Pollution Incidents

The potential main hazards to human health or the environment – i.e. 'Pollution Incidents' - associated with the activity undertaken at this site include the following:

- Identifying non-domestic quantities (more than 200 millilitres per tonne or 200 grams per tonne) of hazardous substances among waste;
- Surface or subsurface fires;
- Mixing of leachate and stormwater or waste and stormwater;
- Identification of any failure of an environmental protection system;
- Identification of a significant difference in groundwater indicator parameters;
- Confirmation of gas accumulated in buildings at greater than 1.25 per cent methane (volume for volume);
- Acts of vandalism or target of terrorist activity; or
- Any other incident or observation that could potentially pose an immediate environmental hazard outside normal operating conditions.

It is possible that dumping of hazardous waste may occur outside the boundary, but in close visual proximity to the ORRRC outside of normal operational hours. In this instance, if the pollution is a risk of material harm to the environment and/or human health then the local fire brigade should be contacted immediately. The initial response to the pollution and assessment of the situation thereafter will be managed by the local fire brigade. Refer to **Document A** – Pollution Incident Decision Flow Chart in **Appendix A** for details.

3.6 Likelihood, Impact and Contributing Factors to Pollution Incidents Occurring

There have been no major pollution incidents at the site reported to the EPA. Surface gas was identified in 2008 and the EPA was notified and subsequent monitoring revealed no further presence.

Incidents can be classified as being of low, medium or high risk of occurring (likelihood) based on the past history of the facility, an assessment of management procedures, staff training and site layout.

The impact of an incident can be classed as low, medium or high based on the potential extent of off-site harm to humans and/or the environment.

The following assessment of potential pollution incidents detailed below is summarised in **Table 1.1** of **Appendix A**.

3.6.1 IDENTIFYING NON-DOMESTIC QUANTITIES OF HAZARDOUS SUBSTANCES

Medium Likelihood – Non-domestic quantities of hazardous waste could be discovered at point of entry into the site, during waste deposition, and/or during waste/recycling spreading, sorting and compaction.

Low Impact – The site has a protective system of impermeable lining, drainage, bunding and holding ponds which are likely to contain and prevent the immediate spread of hazardous substances outside of the premises.

Contributing Factors – Human errors made during waste screening.

3.6.2 SURFACE OR SUBSURFACE FIRES

3.6.2.1 Active Landfill, Public Receival Areas and Recycling Facility

The ORRRC often deals with the sorting and deposition of combustible waste, coupled with the storage and use of some highly combustible chemicals and fuels.

Medium Likelihood– The likelihood of a fire within the active landfill area is relatively high, for example kerbside collection can include household fire embers and mulch can self combust.

Medium Impact – It is probable that a fire of this nature could be contained due to the procedures and equipment in place. Therefore, the impact is classed as medium.

Contributing Factors – Factors which may increase fire risk include high winds, dry weather, prolonged periods of high temperatures and low humidity, spontaneous combustion and hot embers in waste deliveries. Human errors made during waste screening and the poor maintenance of plant and equipment which may spark a fire.

3.6.2.2 Maintenance and Inactive Areas

Low Likelihood – The storage of potential accelerants such as maintenance chemicals and fuels is undertaken onsite, however as these are located in secure facilities and only utilised by trained staff, the risk is considered minimal.

High Impact – If a fire were to initiate within the chemical storage areas, or in an inactive area of the site, there is a high risk of spread offsite and to susceptible surrounding open pasture and wooded areas.

Contributing Factors – Factors which may increase fire risk include high winds, dry weather, prolonged periods of high temperatures and low humidity.

3.6.3 MIXING OF LEACHATE AND STORMWATER OR WASTE AND STORMWATER

Low Likelihood – the site has a protective system of impermeable lining, drainage, bunding and holding ponds which contain surface water, leachate and waste sufficient to manage a 1 in 20 year storm event. A Gross Pollutant Trap west of the MTF removes litter before stormwater run-off is fed through a drainage pipe beneath the active landfill area and out into two surface water ponds. On-site roads are designed to channel and capture runoff.

Medium Impact – the site has a protective system of impermeable lining, drainage, bunding and holding ponds which are likely to contain and prevent the immediate spread of surface water, leachate and waste outside of the premises. However the impact is considered to be medium due to the close proximity of Blackmans Swamp Creek to the site. Any pollutants which manage to reach the creek could cause harm to properties and environmental habitats for some distance downstream.

Contributing Factors –Prolonged periods of heavy rain and lack of surface water pond and site maintenance may increase risk.

3.6.4 IDENTIFICATION OF ANY FAILURE OF AN ENVIRONMENTAL PROTECTION SYSTEM

Low Likelihood – the site has a protective system of impermeable lining, drainage, bunding and holding ponds, and the surface water, groundwater, surface gas, sub-surface gas and leachate of the premises is regularly monitored.

Low Impact – the site has a protective system of impermeable lining, drainage, bunding and holding ponds and the surface water, groundwater, surface gas, sub-surface gas and leachate of the premises is regularly monitored which means any failure in this environmental protection system is likely to be identified well before there is potential for impact outside of the site.

Contributing Factors – Prolonged periods of heavy rain and/or a mechanical failure of the pump at the leachate pond may result in the leachate flowing directly into the adjacent Blackmans Swamp Creek without first being treated in the STP.

3.6.5 IDENTIFICATION OF A SIGNIFICANT DIFFERENCE IN GROUNDWATER INDICATOR PARAMETERS

Low Likelihood – the site has a protective system of impermeable lining, drainage, bunding and holding ponds, and the surface water, groundwater, surface gas, sub-surface gas and leachate of the premises is regularly monitored.

Low Impact – the site has a protective system of impermeable lining, drainage, bunding and holding ponds and the surface water, groundwater, surface gas, sub-surface gas and leachate of the premises is regularly monitored which means any significant difference in groundwater indicator parameters is likely to be identified well before there is a potential impact outside of the site.

Contributing Factors – Prolonged periods of heavy rain may increase risk.

3.6.6 CONFIRMATION OF LANDFILL GAS ACCUMULATED IN BUILDINGS

Low Likelihood – the possible accumulation of landfill gas in buildings at the site is regularly monitored.

Low Impact – the possible accumulation of landfill gas in buildings at the site is regularly monitored which means any significant methane gas emissions are likely to be identified well before there is a potential impact outside of the premises.

Contributing Factors – on-site buildings which have not been designed to prevent accumulation of methane gas.

3.6.7 ACTS OF VANDALISM OR TARGET OF TERRORIST ACTIVITY

Low Likelihood – The site is enclosed by secure fencing and monitored by CCTV, and during hours of closure is patrolled by security guards twice per night. Although the site is of limited strategic value as a potential target for terrorism, the premises may prove attractive to arsonists as it is isolated from habited areas and deals with the sorting and deposition of combustible waste, coupled with the storage and use of often highly combustible chemicals. For example the tyre store is located in relative close proximity to the site boundary fence and also mature trees.

Medium Impact – the site is surrounded by open pasture and wooded areas susceptible to fire.

Contributing Factors –Increased risk during hours of closure and during sustained periods of hot and dry weather.

3.6.8 ANY OTHER INCIDENT OR OBSERVATION THAT COULD POTENTIALLY POSE AN IMMEDIATE ENVIRONMENTAL HAZARD OUTSIDE NORMAL OPERATING CONDITIONS

Low Likelihood – The site has significant and advanced environmental protection measures and monitoring schedules.

Low Impact – The site has significant and advanced environmental protection measures and monitoring schedules which are likely to identify, contain and prevent the immediate spread of environmental hazards outside of the premises even outside of normal operating conditions.

Contributing Factors – N/A.

4. PIRMP

4.1 Definition of Pollution Incident

A pollution incident is required to be notified if there is a risk of 'material harm to the environment', which is defined in section 147 of the POEO Act 1997:

"(a) harm to the environment is material if:

i) it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or

ii) it results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding $10,000 (or such other amount as is prescribed by the regulations), and

(b) 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."

... it does not matter that harm to the environment is caused only in the premises where the pollution incident occurs

4.2 Notification of Pollution Incident

4.2.1 NOTIFICATION SPEED OF RESPONSE

The notification of the relevant authority when material harm to the environment or human health is caused or threatened must be 'immediate', meaning 'promptly without delay', but it does not mean undertaking notification ahead of doing what is necessary to make the environment safe.

4.2.2 NOTIFICATION OF RELEVANT AUTHORITIES

Where the pollution incident causes or threatens material harm to the environment or human health, all the following authorities must be notified:

1. Emergency Call Services	
• Emergency Hotline Number (24 hours)	000* (or 112 from mobile)
*The Site Supervisor should call 000 if the incident presents an immediate threat to human health and/or property and a combat agency is required (i.e. NSW Fire and Rescue, NSW Ambulance Service, NSW Police Force) and then notify all other parties below including NSW Fire and Rescue via a local telephone number.	
2. Orange City Council (OCC)	
• Wayne Davis, Manager Waste Services and Technical Support (OCC)	0419 483 381
• JR Richards Central West Regional Manager	02 6362 6353
• Council Emergency contact number (24 hours)	1300 650 511
3. The Environment Protection Authority (EPA)	
• Bathurst Regional Office	02 6333 3800
• Emergency Hotline Number (24 hours)	131 555

4. NSW Ministry of Health (via Public Health Units)	
• Bathurst Regional Office	02 6330 5880
• Public Health Officer on Call (24 hours)	0428 400 526
5. SafeWork NSW	
• Hotline Number	13 10 50
6. Canobolas Zone Rural Fire Service	
• Canobolas Zone RFS	02 6363 6666**
** If there is no immediate threat to human health and/or property i.e. a combat agency is not required, then the Site Supervisor is still required to follow that outlined above except for dialling 000.	

A summary of the above pollution incident notification procedure is provided in **Document A** – Pollution Incident Decision Flow Chart in **Appendix A**.

4.2.3 INFORMATION TO BE NOTIFIED

Under section 150 of the POEO Act 1997, the information about a pollution incident that must be notified is:

- The time, date, nature, duration and location of the incident;
- The location of the place where pollution is occurring or is likely to occur;
- The nature, the estimated quantity or volume and the concentration of any pollutants involved, if known;
- The circumstances in which the incident occurred, including the cause of the incident, if known;
- The action taken or proposed to be taken to deal with the incident and any resulting pollution or threatened pollution, if known; and
- Other information prescribed by the regulations.

Notification is required by the Site Supervisor immediately after a pollution incident becomes known. Any information required that is not known at the time the incident is notified must be provided when it becomes known.

Complying with these notification requirements does not remove the need to comply with any other obligations for incident notification, for example, those that apply under other environment protection legislation or legislation administered by SafeWork NSW.

A Pollution Incident Reporting Form is produced in **Appendix A** to assist the Site Supervisor in correctly recording and notifying the relevant authorities detailed in Section **4.2.2** above.

4.3 Actions to be taken during or immediately after a pollution incident

All site personnel with relevant training must make every effort to contain the pollution incident on site, without putting themselves at risk of harm.

In the case of a fire and where safe, attempts must be made to extinguish or contain the fire immediately. This could be through the use of a fire extinguisher, fire hose, water cart or smothering with cover material. If a fire occurs within the MTF, the misting system should be activated to assist in fire-fighting efforts.

In the event of a chemical spill that is not contained by bunding, Spill Sorb must be used to restrict the spread of the chemical.

If the leachate ponds are nearing capacity, staff must initiate pumping of liquid to the STP to retain headspace. If pollution is identified through groundwater or surface monitoring, procedures as identified in the OEMP will be followed.

4.4 Minimising harm to persons on the premises

In the event of a pollution incident occurring, an emergency alarm will be sounded from the weighbridge. All members of the public, JR Richards, Wangarang and other Council staff will be mustered by Council site staff to the Emergency Assembly Point on the footpath at the entrance to the ORRRC adjacent to the overhead water standpipe (identified on Site Plan **EV03**), after which they will be safely evacuated from site where appropriate. It is a condition of entry that in the event of an emergency, both the public and staff must adhere to directions given by the Site Supervisor.

4.5 EPA Powers of Direction & Notification of Neighbours

Where the pollution incident causes or threatens material harm to the environment or human health, the EPA is notified in accordance with **Section 4.2**.

Once the EPA is notified, it is then for the EPA to determine whether commercial, industrial and residential neighbours of the site need to be contacted by Council and informed of the circumstances of the incident and what action is being taken in response to it. If deemed necessary, the EPA then has powers to formally direct Council to notify the neighbours of the site.

Irrespective of whether the EPA directs Council to notify neighbours and depending on the circumstances of the particular pollution incident, Council may at their own discretion voluntarily choose to notify neighbours.

The Council would notify neighbours by 'door knocking' every neighbouring property identified on enclosed Site Plan EV02. A summary of the neighbour notification procedure is provided in **Document A** – Pollution Incident Decision Flow Chart in **Appendix A**.

4.6 Identification of Neighbours

To assist the EPA in its decision as to whether it needs to direct Council to notify neighbours and to assist Council in visiting all the local neighbours, enclosed is aerial plan EV02 which identifies the commercial, industrial and residential properties within 500m of the site boundary.

5. IMPLEMENTATION

5.1 Existing Plans

The PIRMP forms part of the Orange Waste Project Operational Environmental Management (OEMP) and is filed under Section 9.6 (ORRRC PIRMP) and Section 9.7 (ORRRC PIRMP Supporting Statement) of the OEMP.

If Orange City Council should choose to file the PIRMP and the Supporting Statement in any other document, it must be readily identifiable in that document in order to meet the requirements of Section 153C of the POEO Act and the POEO(G) Regulation.

5.2 Staff Training

New members of staff at the facility should be inducted. This induction must cover the purpose, requirements and responsibilities detailed in this PIRMP.

All staff should receive sufficient training to enable them to carry out their assigned duties in a competent and safe manner. In particular:

- Staff must be capable of using the fire-fighting equipment;
- Staff must be capable of identifying excluded wastes;
- Staff must be capable of identifying potential pollution incidents; and
- Staff must be familiar with the requirements and procedures contained within this PIRMP.

Staff competency will be monitored through audits, public complaints and pollution incident reports.

At least once every year staff should undertake a simulated pollution incident response exercise, including with emergency services, to familiarise site personnel with the requirements of this management plan. A register of staff training can be found in Section 5.1 of the OEMP.

Regular site briefings and toolbox meetings should be held when considered appropriate to draw attention to potential pollution incidents and identify improvements to on-site safety procedures.

5.3 Review and Update PIRMP

The PIRMP is a living document required to be reviewed, tested and updated at least once every 12 months, and within one month of any pollution incident occurring to ensure accuracy and effectiveness.

For these reasons, document control is an important part of the environmental management system. It is critical that PIRMP storage locations are made known to all relevant staff members and that only the latest version is in use. Details of the version and date of issue are recorded on each page of the PIRMP in the bottom left hand corner.

Revised and updated versions of the PIRMP will always be issued with a covering memo summarising the changes. When a new PIRMP is received the old version is replaced in its entirety. A register for updating and testing the PIRMP can be found in Appendix A and must be kept on site and updated regularly.

This Supporting Statement requires that the PIRMP documentation is controlled in accordance with SOP 21 in the OEMP (Document Control), including providing update details in Form 21.02 (OEMP Updates Register) when a new PIRMP is produced and issued.

Five copies of any new PIRMP will need to be produced. They are to be distributed to the following:

- One copy to Manager Waste Services & Technical Support, Orange City Council;

- Two copies to Resource Recovery Centre Supervisor, Orange City Council;
- One copy to Administration Manager, Orange City Council; and
- One copy to Premise Australia Pty Ltd, Orange.

REFERENCES

Environmental Guidelines: Solid Waste Landfills, 2016 (2nd Edition) – prepared by Environment Protection Authority
Environmental Guidelines: Preparation of Pollution Incident Response Management Plans, March 2012 – prepared by Environment Protection Authority
Guidelines: Pollution Incident Response Management Plans, March 2020 – prepared by Environment Protection Authority
Environment Protection Licence 5956, 30 May 2019 – prepared by Environment Protection Authority
Orange Waste Project Operational Environmental Management Plan – Prepared by Orange City Council (Version 7: December 2021)

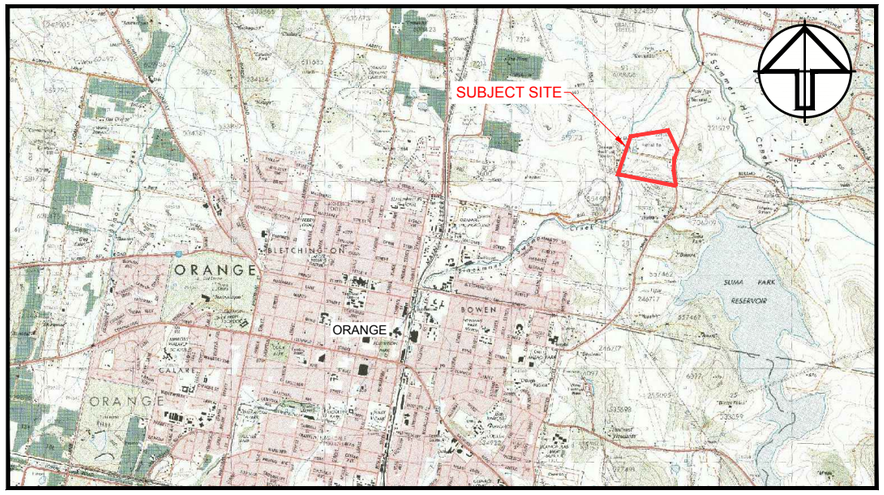
DRAWINGS

POLLUTION INCIDENT RESPONSE MANAGEMENT PLAN

OPHIR ROAD RESOURCE RECOVERY CENTRE

NETWASTE

SCHEDULE OF DRAWINGS	
DRAWING	TITLE
EV01	TITLE SHEET & LOCALITY MAP
EV02	PLAN OF NEIGHBOURS
EV03	SITE PLAN



SITE LOCALITY
NOT TO SCALE

GEOLYSE
ORANGE
154 PEISLEY STREET
P.O. BOX 1963
ORANGE, NSW 2800
orange@geolyse.com
www.geolyse.com
Ph. (02) 6393 5000
Fx. (02) 6393 5050

REV.	DATE	DFTD.	APPD.	DETAILS
B	25/10/17	GKT	CB	FOR INFORMATION
C	30/10/17	GKT	CB	FOR INFORMATION
D	14/11/17	GKT	CB	FOR INFORMATION

DRAWING SCALE

DO NOT SCALE FROM THESE DRAWINGS. ALL MEASUREMENTS SHALL BE CONFIRMED ON SITE AND WITH GEOLYSE PTY. LTD. PRIOR TO CONSTRUCTION

APPROVAL AUTHORITY
ORANGE CITY COUNCIL

CLIENT
NetWaste
A COLLABORATIVE APPROACH

PROJECT
POLLUTION INCIDENT RESPONSE MANAGEMENT PLAN
OPHIR ROAD RESOURCE RECOVERY CENTRE

DRAWING
TITLE SHEET & LOCALITY MAP

PROJECT NUMBER 208212	DRAWING FILE 208212_62D-EV01-EV03.dwg	ORIGINAL A1
DATA SOURCE -		
IMAGE SOURCE -		SET 62
STATUS DRAFT	SHEET EV01 OF EV03	

LEGEND:

- SITE BOUNDARY
- 500m OFFSET FROM SITE BOUNDARY
- INDUSTRIAL
- RESIDENTIAL
- APPROVED RESIDENTIAL
- DRAINAGE

LOT 100 DP 1198640
LOT 1 DP 190898
LOT 200 DP 1227253
BLACKMANS SWAMP CREEK
OPHIR ROAD
LOT 25 DP 1075011
SUMMER HILL CREEK
LOT 201 DP 1227253
LOT 112 DP 1170567
NARRAMBLA INDUSTRIAL PARK
LOT 772 DP 1182086
LOT 105 DP 1194589
LOT 402 DP 1232601
LOT 2 DP 738366
LOT 3 DP 738366
LOT 10 DP 1168292
LOT 11 DP 1168292
LOT 1 DP 1148513
LOT 2 DP 738366
LOT 51 DP 806320
LOT 2 DP 706209
LOT 3 DP 706209
LOT 52 DP 806320
LOT 1 DP 706209
LOT 102 DP 1227722
LOT 1 DP 538786
NORTHERN DISTRIBUTOR ROAD
SUMA PARK RESERVOIR

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REV.	DATE	DFTD.	APPD.	DETAILS
B	25/10/17	GKT	CB	FOR INFORMATION
C	30/10/17	GKT	CB	FOR INFORMATION
D	14/11/17	GKT	CB	FOR INFORMATION

DRAWING SCALE

SCALE 1:1250 (A1)

0 20 40 60 80 100

0 20 40 60 80 100

SCALE 1:2500 (A3)

DO NOT SCALE FROM THESE DRAWINGS. ALL MEASUREMENTS SHALL BE CONFIRMED ON SITE AND WITH GEOLYSE PTY. LTD. PRIOR TO CONSTRUCTION

APPROVAL AUTHORITY: ORANGE CITY COUNCIL

CLIENT: NetWaste — A COLLABORATIVE APPROACH

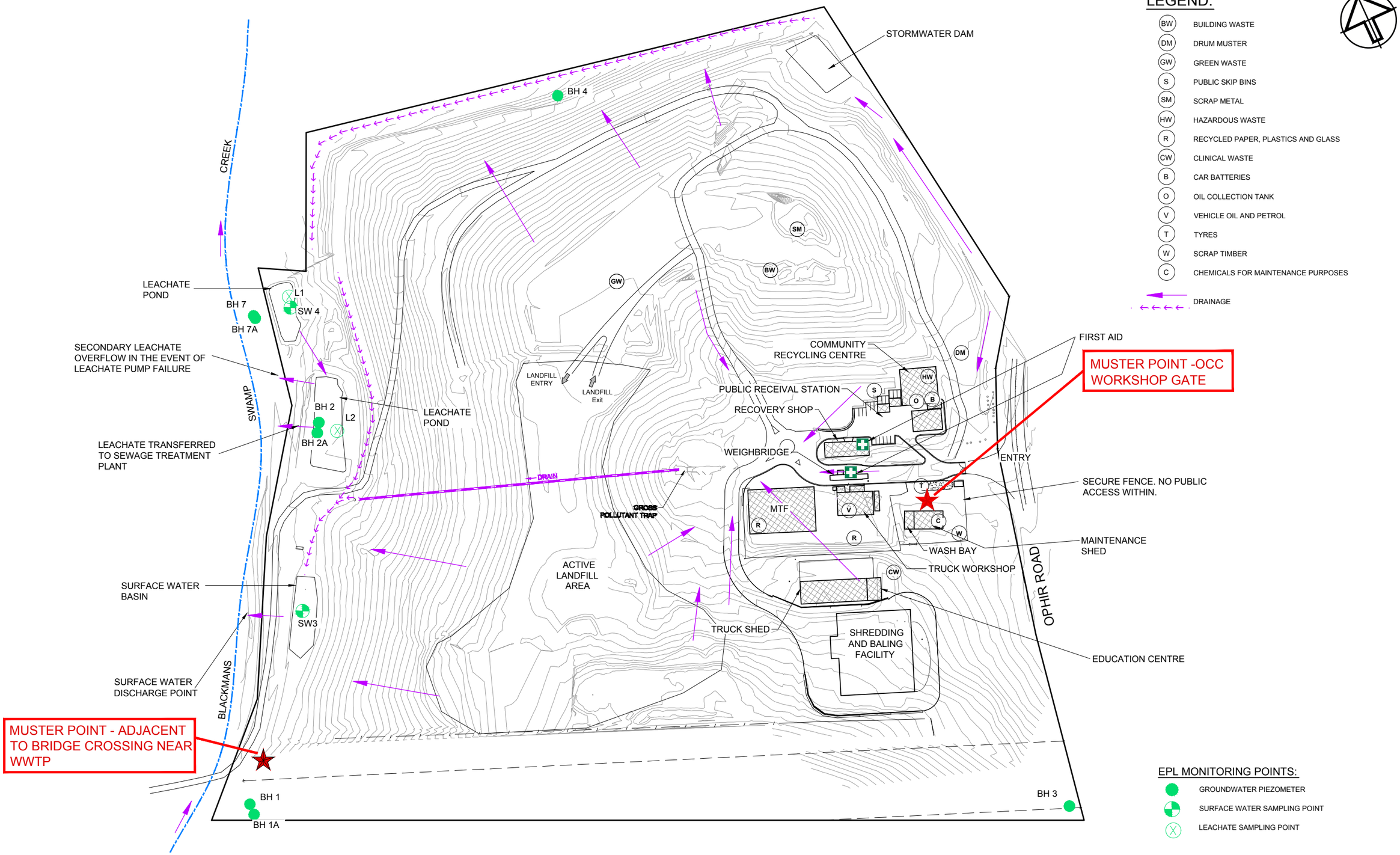
PROJECT

POLLUTION INCIDENT RESPONSE MANAGEMENT PLAN
OPHIR ROAD RESOURCE RECOVERY CENTRE

DRAWING

PLAN OF NEIGHBOURS

PROJECT NUMBER 208212	DRAWING FILE 208212_62D-EV01-EV03.dwg	ORIGINAL A1
DATA SOURCE		
IMAGE SOURCE		SET 62
STATUS DRAFT	SHEET EV02 OF EV03	



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REV.	DATE	DFTD.	APPD.	DETAILS
B	25/10/17	GKT	CB	FOR INFORMATION
C	30/10/17	GKT	CB	FOR INFORMATION
D	14/11/17	GKT	CB	FOR INFORMATION

DRAWING SCALE
SCALE 1:1250 (A1)
0 20 40 60 80 100
0 20 40 60 80 100
SCALE 1:2500 (A3)
DO NOT SCALE FROM THESE DRAWINGS. ALL MEASUREMENTS SHALL BE CONFIRMED ON SITE AND WITH GEOLYSE PTY. LTD. PRIOR TO CONSTRUCTION

APPROVAL AUTHORITY
ORANGE CITY COUNCIL

CLIENT
NetWaste
A COLLABORATIVE APPROACH

PROJECT
POLLUTION INCIDENT RESPONSE MANAGEMENT PLAN
OPHIR ROAD RESOURCE RECOVERY CENTRE

DRAWING
SITE PLAN

PROJECT NUMBER 208212	DRAWING FILE 208212_62D-EV01-EV03.dwg	ORIGINAL A1
DATA SOURCE -		
IMAGE SOURCE -		SET 62
STATUS DRAFT	SHEET EV03 OF EV03	

Premise

Section 9.9

ERRRC PIRMP

Premise

Euchareena Road Resource Recovery Centre

POLLUTION INCIDENT RESPONSE MANAGEMENT PLAN

Report No: 208212_PIRMP_002J_ERRRC
Rev: J
3 December 2021

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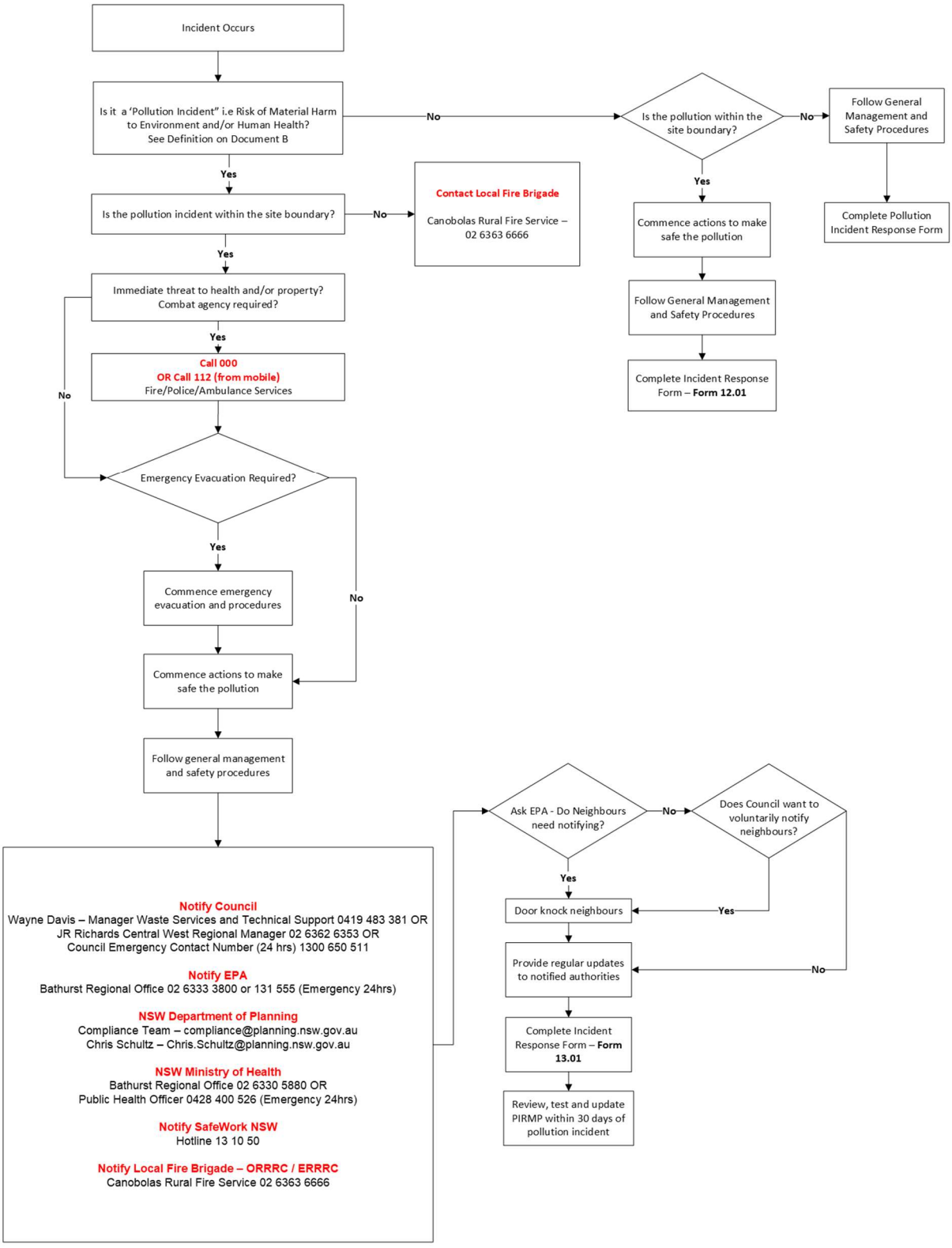
1. POLLUTION INCIDENT CLASSIFICATION, RISK ASSESSMENT AND CONTRIBUTING FACTORS

Table 1 – Pollution Incident Classification, Risk Assessment and Contributing Factors

Description of Pollution Incident	Likelihood	Impact	Contributing Factors
Surface or subsurface fires at active landfill	Low	Medium	High winds, dry weather, prolonged high temps and low humidity. Human errors made during waste screening at ORRRC, poor maintenance of plant and equipment, spontaneous combustion.
Surface or subsurface fires at maintenance and inactive areas	Low	High	High winds, dry weather, prolonged high temps and low humidity and spontaneous combustion.
Mixing of leachate and stormwater or waste and stormwater	Low	Medium	Prolonged periods of heavy rain, and lack of surface water pond and site maintenance.
Identification of any failure of an environmental protection system	Low	Low	Prolonged periods of heavy rain and/or a mechanical failure of the leachate holding system.
Identification of a significant difference in groundwater indicator parameters	Low	Low	Prolonged periods of heavy rain
Acts of vandalism or target of terrorist activity	Low	Medium	Increased risk during hours of closure
Any other incident or observation that could potentially pose an immediate environmental hazard outside normal operating conditions	Low	Low	N/A

2. DOCUMENT A – POLLUTION INCIDENT DECISION FLOW CHART

Pollution Incident Decision Flow Chart



3. DOCUMENT B – POLLUTION INCIDENT EMERGENCY CONTACT DETAILS

3.1 Definition of Pollution Incident

A pollution incident is required to be notified if there is a risk of 'material harm to the environment', which is defined in section 147 of the POEO Act 1997:

" (a) harm to the environment is material if:

i) it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or

ii) it results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding $10,000 (or such other amount as is prescribed by the regulations), and

(b) 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."

… it does not matter that harm to the environment is caused only in the premises where the pollution incident occurs

3.2 Notification of Pollution Incident

3.2.1 NOTIFICATION SPEED OF RESPONSE

The notification of the relevant authority when material harm to the environment or human health is caused or threatened must be 'immediate', meaning 'promptly without delay', but it does not mean undertaking notification ahead of doing what is necessary to make the environment safe.

3.2.2 NOTIFICATION OF RELEVANT AUTHORITIES

Where the pollution incident causes or threatens material harm to the environment or human health, all the following authorities must be notified:

Table 2 – Notification of Relevant Authorities

1. Emergency Call Services	
• Emergency Hotline Number (24 hours)	000* (or 112 from mobile)
*The Site Supervisor should call 000 if the incident presents an immediate threat to human health and/or property and a combat agency is required (i.e. NSW Fire and Rescue, NSW Ambulance Service, NSW Police Force) and then notify all other parties below including NSW Fire and Rescue via a local telephone number.	
2. Orange City Council (OCC)	
• Wayne Davis, Manager Waste Services and Technical Support (OCC)	0419 483 381
• JR Richards Central West Regional Manager	02 6362 6353

• Council Emergency contact number (24 hours)	1300 650 511
3. The Environment Protection Authority (EPA)	
• Bathurst Regional Office	02 6333 3800
• Emergency Hotline Number (24 hours)	131 555
4. NSW Ministry of Health (via Public Health Units)	
• Bathurst Regional Office	02 6330 5880
• Public Health Officer on Call (24 hours)	0428 400 526
5. SafeWork NSW	
• Hotline Number	13 10 50
6. Canobolas Zone Rural Fire Service	
• Canobolas Zone RFS	02 6363 6666**
** If there is no immediate threat to human health and/or property i.e. a combat agency is not required, then the Site Supervisor is still required to follow that outlined above except for dialling 000.	

4. POLLUTION INCIDENT REPORTING FORM

Incident No:	**Time:**
Date:	**Duration of Incident:**

Nature of Incident:

Temperature:	**°C**	**Wind direction & speed:**	**km/hr**
Relative Humidity:	**%**	**Rainfall since 9am:**	**mm**
Fire Danger Rating:			
http://www.bom.gov.au/climate/data/index.shtml '065023 – Molong (Hill St)'			

The Location of the Place Where Pollution is Occurring or is Likely to Occur:

The nature, the estimated quantity or volume, and the concentration of any pollutants involved (if known):

The Circumstances in which the Incident Occurred, Including the Cause of the Incident (if known):

The Corrective Action Taken or Proposed to be Taken to Deal with the Incident and Any Resulting Pollution or Threatened Pollution (if known):		
Notification:		
Stakeholder	**Date / Time**	**Contact**
Orange City Council	/ / am/pm	
NSW Environment Protection Authority	/ / am/pm	
NSW Ministry Of Health (Via Public Health Units)	/ / am/pm	
SafeWork NSW	/ / am/pm	
NSW Fire and Rescue	/ / am/pm	

Notification of Neighbours Required by EPA	**Yes / No**
If Not, Have Neighbours Been Notified Voluntarily	**Yes / No**
Particulars:	

Signature: **Date / /**
Council Officer

Signature: **Date / /**
Manager Waste Services and Technical Support, Orange City Council

5. PIRMP TESTING & UPDATE REGISTER

Table 3 – PIRMP Testing & Update Register

Date	Name	Routine Testing	Routine Update	Post Incident Updates	4 New Copies Distributed?
31 March 2014	Not specified	Tested contact numbers	Updated position title for Wayne Davis	N/A	Yes as Part of OEMP
14 October 2014	Chloe Bigg (Geolyse)	N/A	Updated PIRMP to reflect current legislative requirements. Removed Staff Training Register, refer reader to OEMP instead.	N/A	Yes (as part of OEMP update)
31 August 2015	Chloe Bigg (Geolyse)	N/A	Updated phone numbers and updated reference for MRF to MTF	N/A	Yes (as part of OEMP update)
24 March 2017	Brendan Stuart (Geolyse)	Tested and updated contact numbers Tested incident response flowchart (grass fire, not threatening life or property)	Contact numbers and minor corrections	N/A	Electronic Only (hard-copies to be distributed as part of 2017 OEMP update)
14 February 2018	Chloe Bigg (Geolyse)	N/A	Updated contact details. Updated PIRMP drawing set with muster point label.	N/A	Yes (as part of OEMP update)
6 December 2018	Brendan Stuart (Geolyse)	Tested and updated contact numbers Tested incident response flowchart (loss of containment from sediment pond)	Contact numbers and minor corrections	N/A	Yes (as part of OEMP update)

Date	Name	Routine Testing	Routine Update	Post Incident Updates	4 New Copies Distributed?
24 January 2020	Brendan Stuart (Premise)	Tested and updated contact numbers Tested incident response flowchart (Fissure in capping)	Contact numbers and minor corrections. Changes to template	N/A	Yes (as part of OEMP update)
29 January 2021	Brendan Stuart (Premise)	Tested and updated contact numbers Tested incident response flowchart (Odour reported off-site)	Contact numbers and minor corrections. Changes to template	N/A	Yes (as part of OEMP update)
3 December 2021	Brendan Stuart (Premise)	Tested and updated contact numbers Tested incident response flowchart (grass fire, not threatening life or property)	Contact numbers and minor corrections. Changes to template	N/A	Yes (as part of OEMP update)

Section 9.10

ERRRC PIRMP SUPPORTING STATEMENT

Premise

Ophir Road Resource Recovery Centre

POLLUTION INCIDENT RESPONSE MANAGEMENT PLAN SUPPORTING STATEMENT

Report No: 208212_PIRMP_001J_ORRRC
Rev: J
3 December 2021

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FOREWORD

This is the Supporting Statement for the Pollution Incident Response Management Plan (PIRMP). The PIRMP is a functional document. It is designed to assist personnel at the Ophir Road Resource Recovery Centre (ORRRC) to correctly identify pollution incidents and detail the procedures for the response and reporting of a pollution incident.

The structure and scope of this Supporting Statement and PIRMP reflects the requirements of the Environmental Protection Authority's Guidelines: Pollution incident response management plans, March 2020 and in doing so embodies the principles of best practice environmental management.

Utilisation of this PIRMP aims to improve, monitor and demonstrate environmental performance. If you have any suggestions for amendments, additions or improvements, please discuss these with your supervisor.

.....

Orange City Council
Manager Waste Services & Technical Support

Date: 14-12-2021

1. INTRODUCTION

1.1 Purpose

This supporting statement and PIRMP have been prepared in accordance with the Protection of the Environment Operations Act 1997 (POEO Act) and reflects the requirements specified in the Environment Protection Authority's (EPA's) Guidelines: Pollution incident response management plans, March 2020, noting this document was initially prepared in general accordance with the previous version of these guidelines (EPA, March 2012).

The PIRMP details:

- Procedures for notifying a pollution incident to relevant persons;
- Actions to be taken to reduce and/or control pollution; and
- Procedures for co-ordinating those notified and any action taken in combating the pollution.

1.2 Definition of Pollution Incident

A pollution incident is required to be notified if there is a risk of 'material harm to the environment', which is defined in section 147 of the POEO Act 1997:

> *"(a) harm to the environment is material if:*
>
> *i) it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or*
>
> *ii) it results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding $10,000 (or such other amount as is prescribed by the regulations), and*
>
> *(b) 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."*
>
> *... it does not matter that harm to the environment is caused only in the premises where the pollution incident occurs*

1.3 Identified Pollution Incident Risks

The primary potential hazards to human health or the environment associated with the activity undertaken at this site – i.e. 'Pollution Incidents' - include the following:

- Identifying non-domestic quantities (more than 200 millilitres per tonne or 200 grams per tonne) of hazardous substances among waste;
- Surface or subsurface fires;
- Mixing of leachate and stormwater or waste and stormwater;
- Identification of any failure of an environmental protection system;
- Identification of a significant difference in groundwater indicator parameters;

- Confirmation of gas accumulated in buildings at greater than 1.25 per cent methane (volume for volume);
- Acts of vandalism or target of terrorist activity; or
- Any other incident or observation that could potentially pose an immediate environmental hazard outside normal operating conditions.

2. SITE OVERVIEW

2.1 Site Overview

The Ophir Road Resource Recovery Centre (ORRRC or the 'facility') has been operating since the mid-1960s. The property is owned by Orange City Council.

After 2013 the ORRRC will continue to be used as a waste transfer station, and the asbestos and dead animal waste disposal cells will remain to avoid double handling. The sorted, compacted and baled waste destined for landfill will then be taken to the new landfill site at Euchareena Road near Molong.

The Environment Protection Authority (EPA) has issued Environment Protection Licence 5956 in accordance with Section 5.7 of the *Protection of the Environment Operations Act 1997*.

2.2 Site Characteristics

The ORRRC is located approximately 3 km north-east of Orange (see drawing EV01).

The area surrounding the facility to the north, east and south is predominantly rural residential development. Council owned infrastructure exists to the west, on the opposite side of Blackmans Swamp Creek and includes the Sewage Treatment Plant (STP) immediately adjacent and the Stormwater Harvesting Scheme further west and upgradient.

The nearest residential property to the facility is located approximately 200m from the south-eastern corner of the boundary. Further details of neighbouring properties (residential, commercial and industrial categories) are provided in drawing **EV02**.

Access to the ORRRC is via the Ophir Road, a two lane sealed road. From Ophir Road the facility is accessed by a primary sealed road. Within the site, sealed roads and formed gravel access roads lead to the various defined tipping areas and processing pads. The central portion of the site is currently used for landfilling with weighbridge, public recovery shop and receivable areas, Material Transfer Facility (MTF) (previously the Materials Recycling Facility [MRF]) and maintenance sheds are located around the site entrance to the east.

The ORRRC is fenced along the southern, northern and north eastern boundaries with 1.8m chain mesh security fence. In addition, the eastern boundary fence is topped with a single strand of barbed wire. The western boundary is not fenced, however access is only available through the manned STP, which is locked out of hours. In addition, a 1.8m chain mesh security fence separates the MTF and maintenance sheds from public areas of the weighbridge, recovery shop and receival station.

Previous and current landfilling practices have altered the local topography significantly, creating numerous rises, as such, the current landfill area no longer retains the natural topography but is designed to channel surface water and minimise off site impact of the landfill operations.

The site topography and drainage have been engineered to ensure that there is negligible stormwater runoff into and out of the site, thus minimising any offsite impact. Site generated surface water is channelled around the edge of the premises and also through the centre towards the two onsite collection ponds. A gross pollutant trap to the west of the MTF exists to minimise litter migration.

On rare occasions when the surface water ponds reach capacity, water filters over vegetated ground before reaching Blackmans Swamp Creek. Outside of the site, natural topography to the north of the facility boundary drains to Blackmans Swamp Creek and topography to the east drains to Summer Hill Creek, downstream of Suma Park Reservoir (see drawing **EV02**).

There is no remnant natural vegetation over the site. The northern and western capped areas of the landfill have been revegetated with a perennial grass mix. Plantations of Radiata Pine and some native trees have been established along the northern, eastern and southern boundaries act as visual and wind buffers.

2.3 Site Supervision and Control

The ORRRC is open to the public during the hours specified in the Environment Protection Licence (EPL 5956). Access to the site outside of these hours (e.g. for special circumstances and emergency waste disposal) is subject to the approval of the Manager Waste Services & Technical Support.

ORRRC is supervised at all times when open for the receival of wastes. The facility is staffed by qualified and experienced personnel. These include a Resource Recovery Centre Supervisor (RRCS) and up to two Resource Recovery Centre Plant Operators (RRCPO's). Two RRCPO's are generally present during normal operation.

Lockable security gates are in place at the access points to the facility. All gates are locked outside of the specified opening hours except for when approved by the Manager Waste Services & Technical Support in special circumstances. The site is also monitored by CCTV with one camera on the weighbridge looking towards Ophir Road, and other cameras inside and outside the recovery shop to prevent shoplifting. Security patrols are conducted twice per night, alarmed doors are checked and a site patrol conducted to prevent vandalism.

All vehicles are directed to the weighbridge upon entry to the facility, and distributed appropriately according to waste type. Council maintains the sealed access road from the facility entry to the Public Receival Station. Council staff are responsible for internal traffic control.

All light vehicles, trailers and up to two tonne loads are directed to disposal skips in the Public Receival Station. Larger loads of waste (i.e. in excess of two tonne) are, after being weighed on the weighbridge, directed to the active landfill face and/or operating site for the waste item in question.

A daily checklist for monitoring, recording activities and incidents that occur during operation of the Facility is kept by the Site Supervisor.

2.4 Site Safety Equipment

The ORRRC maintains a water cart which consists of a 2,000 litre tank, pump and hose. This can be mobilised immediately to the site of a fire as and when required. The MTF building is protected from fire throughout by a mist system in the roof as well as several hose reels, fire extinguishers and hydrants. Where further assistance is required in addition to the on-site fire-fighting equipment, the Council Works Depot is contacted to utilise their 12,000 litre water truck. Further fire-fighting details are provided in the Orange *Waste Project Operational Environmental Management Plan* (OEMP).

To manage leaks, chemicals such as diesel fuel are kept on mobile self-bunded trolleys to allow their safe use in less well protected areas of the site. Spill Sorb is present on site to manage fuel and oil spills. The used Spill Sorb is then deposited in the landfill. In the event of a chemical spill, PPE is provided for on-site staff which consists of safety goggles, respirator face masks and protective gloves.

3. RISK MANAGEMENT AND PRE-EMPTIVE ACTIONS

3.1 Introduction

The following section outlines current operational procedures and design intended to minimise and manage risk. Members of staff working on site are responsible for being aware and notifying the Site Supervisor of any potential pollution incidents on the premises. All management procedures detailed within the OEMP must be adhered to.

3.2 Pre-emptive actions

3.2.1 IDENTIFYING NON-DOMESTIC QUANTITIES OF HAZARDOUS SUBSTANCES

The following practices apply to screening of incoming wastes:

- Public access is only permitted during opening hours;
- Drivers are asked to describe the type of waste to be deposited on entry to the Facility;
- Inspections of waste loads are made when required;
- Drivers are directed to the correct area of the facility for disposal of specific loads (e.g. builder's wastes, greens, whitegoods, tyres, derelict cars etc.);
- Wastes are monitored and inspected as they are being discharged to ensure excluded non-approved wastes are not being disposed; and
- Wastes are monitored and inspected during spreading, compaction and covering.

The following steps are undertaken if non-domestic quantities of hazardous wastes are identified:

- If identified at point of entry the vehicle is refused entry and the driver advised to contact the EPA for advice on proper disposal of the hazardous waste.
- If identified during waste deposition the Resource Recovery Centre Operators immediately advise the Resource Recovery Centre Supervisor. The supervisor advises the driver that the waste is not acceptable and organises for the waste to be loaded back onto the vehicle, where practicable and safe to do so. The supervisor then escorts the load off-site and advises the driver to contact the EPA for advice in the proper disposal of the excluded waste.
- If identified during waste spreading and compaction the Resource Recovery Centre Operators immediately notify the Resource Recovery Centre Supervisor. The supervisor makes all practicable efforts to identify the source of the waste (e.g. labelling, waste type). The supervisor is then responsible for contacting the EPA for advice on the proper disposal of the hazardous waste and will dispose of the hazardous waste in accordance with the EPA's requirements. In the event that the EPA cannot be contacted, the wastes will be relocated to the domestic hazardous waste lock up cage. This is identified in enclosed Site Plan EV03.
- In any situation where non-domestic quantities of hazardous wastes are identified, the incident is reported as described below:
  - If an excluded waste was to be discovered on the site, the Manager Waste Services & Technical Support would be notified immediately. If it is considered hazardous, it would be first moved to the household hazardous waste lock up cage (refer to enclosed Site Plan EV03) as this location is secure and relatively isolated. The EPA would then be contacted and Council would then await their instruction. The incident is recorded on the daily checklist kept by the Site Supervisor.

- If the waste is leaking, the local fire brigade would be contacted and requested to bring a drum for the containment of hazardous materials.
- The excluded waste is recorded on the Daily Checklist including details of the type of waste, the source of waste and vehicle and driver identification.

3.2.2 SURFACE OR SUBSURFACE FIRES

The potential for fires to occur at the site are controlled by:

- A security fence to prevent unauthorised access and acts of vandalism;
- Maintaining machinery in good working order to minimise risk of sparks;
- Smothering immediately with soil or water sprayed from the water cart;
- Adequately compacting and covering waste;
- Mulched green waste has the capacity to spontaneously combust. This risk is minimised via shaping into divided windrows (i.e. small cones) to isolate/contain any fires;
- Regular litter patrols;
- Ensuring fire breaks are maintained around any temporary stockpile of combustibles;
- Access to on-site fire fighting equipment; and
- Accepting only permitted wastes.

In addition to the above preventative measures, operators at the Facility maintain the fire fighting equipment to ensure that the on-site fire fighting capability is maintained. Specifically this involves:

- Ensuring that the water cart permanently located at the facility is full at all times and that it is positioned in a readily accessible location;
- Weekly testing of the tanker pump and checks that the motor is topped with fuel and oil; and
- Weekly checks that the overhead standpipe that feeds the water cart is functional.

3.2.3 MIXING OF LEACHATE AND STORMWATER OR WASTE AND STORMWATER

The potential for the mixing of leachate and stormwater or waste and stormwater is controlled by ensuring that the level of the leachate ponds is regularly checked. If the level of a pond is too high and at risk of flooding then the excess water is pumped away to the adjacent sewage treatment plant to create airspace.

3.2.4 CONFIRMATION OF GAS ACCUMULATED IN BUILDINGS

Gas accumulation monitoring of buildings is undertaken on a monthly basis. If detected at a concentration that exceeds the threshold limit the EPA is notified within 24 hours. Within 14 days of the notification, a plan will be submitted to the EPA for further investigation and/or remediation of the elevated gas levels in accordance with the EPA's Environmental Guidelines: Solid Waste Landfills (2016).

3.2.5 ACTS OF VANDALISM OR TARGET OF TERRORIST ACTIVITY

The boundary road fence along Ophir Road limits unauthorised access outside operational hours. CCTV is installed and after hours security patrols are undertaken as a deterrent. All staff are required to be vigilant and aware that the site is a potential target for vandalism, particularly by arsonists.

3.3 Inventory of Maintenance Pollutants

The following pollutants can be stored on site in quantities required for routine maintenance necessary for operations at the facility:

- Glyphosate Isopropylamine Salt (Weedkiller);
- Castrol Hydraulic Transmission Oil R.H;
- Diesel;
- BP Zoom 50;
- Castrol WR Grease; and
- Petrol Unleaded.

Enclosed site plan EV03 provides details of where these chemicals are stored on the premises as well as those on bunded palettes.

3.4 Identifiable Waste Pollutants

A variety of waste household pollutants can be stored on site until sufficient quantity deems it necessary for the relevant contractor to collect.

Enclosed site plan EV03 provides details of where these hazardous household waste items are stored on the premises, including the location of gas cylinders, waste oil, batteries, fluorescent tubes, globes, smoke detectors and clinical waste.

3.5 Potential Pollution Incidents

The potential main hazards to human health or the environment – i.e. 'Pollution Incidents' - associated with the activity undertaken at this site include the following:

- Identifying non-domestic quantities (more than 200 millilitres per tonne or 200 grams per tonne) of hazardous substances among waste;
- Surface or subsurface fires;
- Mixing of leachate and stormwater or waste and stormwater;
- Identification of any failure of an environmental protection system;
- Identification of a significant difference in groundwater indicator parameters;
- Confirmation of gas accumulated in buildings at greater than 1.25 per cent methane (volume for volume);
- Acts of vandalism or target of terrorist activity; or
- Any other incident or observation that could potentially pose an immediate environmental hazard outside normal operating conditions.

It is possible that dumping of hazardous waste may occur outside the boundary, but in close visual proximity to the ORRRC outside of normal operational hours. In this instance, if the pollution is a risk of material harm to the environment and/or human health then the local fire brigade should be contacted immediately. The initial response to the pollution and assessment of the situation thereafter will be managed by the local fire brigade. Refer to **Document A** – Pollution Incident Decision Flow Chart in **Appendix A** for details.

3.6 Likelihood, Impact and Contributing Factors to Pollution Incidents Occurring

There have been no major pollution incidents at the site reported to the EPA. Surface gas was identified in 2008 and the EPA was notified and subsequent monitoring revealed no further presence.

Incidents can be classified as being of low, medium or high risk of occurring (likelihood) based on the past history of the facility, an assessment of management procedures, staff training and site layout.

The impact of an incident can be classed as low, medium or high based on the potential extent of off-site harm to humans and/or the environment.

The following assessment of potential pollution incidents detailed below is summarised in **Table 1.1** of **Appendix A**.

3.6.1 IDENTIFYING NON-DOMESTIC QUANTITIES OF HAZARDOUS SUBSTANCES

Medium Likelihood – Non-domestic quantities of hazardous waste could be discovered at point of entry into the site, during waste deposition, and/or during waste/recycling spreading, sorting and compaction.

Low Impact – The site has a protective system of impermeable lining, drainage, bunding and holding ponds which are likely to contain and prevent the immediate spread of hazardous substances outside of the premises.

Contributing Factors – Human errors made during waste screening.

3.6.2 SURFACE OR SUBSURFACE FIRES

3.6.2.1 Active Landfill, Public Receival Areas and Recycling Facility

The ORRRC often deals with the sorting and deposition of combustible waste, coupled with the storage and use of some highly combustible chemicals and fuels.

Medium Likelihood– The likelihood of a fire within the active landfill area is relatively high, for example kerbside collection can include household fire embers and mulch can self combust.

Medium Impact – It is probable that a fire of this nature could be contained due to the procedures and equipment in place. Therefore, the impact is classed as medium.

Contributing Factors – Factors which may increase fire risk include high winds, dry weather, prolonged periods of high temperatures and low humidity, spontaneous combustion and hot embers in waste deliveries. Human errors made during waste screening and the poor maintenance of plant and equipment which may spark a fire.

3.6.2.2 Maintenance and Inactive Areas

Low Likelihood – The storage of potential accelerants such as maintenance chemicals and fuels is undertaken onsite, however as these are located in secure facilities and only utilised by trained staff, the risk is considered minimal.

High Impact – If a fire were to initiate within the chemical storage areas, or in an inactive area of the site, there is a high risk of spread offsite and to susceptible surrounding open pasture and wooded areas.

Contributing Factors – Factors which may increase fire risk include high winds, dry weather, prolonged periods of high temperatures and low humidity.

3.6.3 MIXING OF LEACHATE AND STORMWATER OR WASTE AND STORMWATER

Low Likelihood – the site has a protective system of impermeable lining, drainage, bunding and holding ponds which contain surface water, leachate and waste sufficient to manage a 1 in 20 year storm event. A Gross Pollutant Trap west of the MTF removes litter before stormwater run-off is fed through a drainage pipe beneath the active landfill area and out into two surface water ponds. On-site roads are designed to channel and capture runoff.

Medium Impact – the site has a protective system of impermeable lining, drainage, bunding and holding ponds which are likely to contain and prevent the immediate spread of surface water, leachate and waste outside of the premises. However the impact is considered to be medium due to the close proximity of Blackmans Swamp Creek to the site. Any pollutants which manage to reach the creek could cause harm to properties and environmental habitats for some distance downstream.

Contributing Factors –Prolonged periods of heavy rain and lack of surface water pond and site maintenance may increase risk.

3.6.4 IDENTIFICATION OF ANY FAILURE OF AN ENVIRONMENTAL PROTECTION SYSTEM

Low Likelihood – the site has a protective system of impermeable lining, drainage, bunding and holding ponds, and the surface water, groundwater, surface gas, sub-surface gas and leachate of the premises is regularly monitored.

Low Impact – the site has a protective system of impermeable lining, drainage, bunding and holding ponds and the surface water, groundwater, surface gas, sub-surface gas and leachate of the premises is regularly monitored which means any failure in this environmental protection system is likely to be identified well before there is potential for impact outside of the site.

Contributing Factors – Prolonged periods of heavy rain and/or a mechanical failure of the pump at the leachate pond may result in the leachate flowing directly into the adjacent Blackmans Swamp Creek without first being treated in the STP.

3.6.5 IDENTIFICATION OF A SIGNIFICANT DIFFERENCE IN GROUNDWATER INDICATOR PARAMETERS

Low Likelihood – the site has a protective system of impermeable lining, drainage, bunding and holding ponds, and the surface water, groundwater, surface gas, sub-surface gas and leachate of the premises is regularly monitored.

Low Impact – the site has a protective system of impermeable lining, drainage, bunding and holding ponds and the surface water, groundwater, surface gas, sub-surface gas and leachate of the premises is regularly monitored which means any significant difference in groundwater indicator parameters is likely to be identified well before there is a potential impact outside of the site.

Contributing Factors – Prolonged periods of heavy rain may increase risk.

3.6.6 CONFIRMATION OF LANDFILL GAS ACCUMULATED IN BUILDINGS

Low Likelihood – the possible accumulation of landfill gas in buildings at the site is regularly monitored.

Low Impact – the possible accumulation of landfill gas in buildings at the site is regularly monitored which means any significant methane gas emissions are likely to be identified well before there is a potential impact outside of the premises.

Contributing Factors – on-site buildings which have not been designed to prevent accumulation of methane gas.

3.6.7 ACTS OF VANDALISM OR TARGET OF TERRORIST ACTIVITY

Low Likelihood – The site is enclosed by secure fencing and monitored by CCTV, and during hours of closure is patrolled by security guards twice per night. Although the site is of limited strategic value as a potential target for terrorism, the premises may prove attractive to arsonists as it is isolated from habited areas and deals with the sorting and deposition of combustible waste, coupled with the storage and use of often highly combustible chemicals. For example the tyre store is located in relative close proximity to the site boundary fence and also mature trees.

Medium Impact – the site is surrounded by open pasture and wooded areas susceptible to fire.

Contributing Factors –Increased risk during hours of closure and during sustained periods of hot and dry weather.

3.6.8 ANY OTHER INCIDENT OR OBSERVATION THAT COULD POTENTIALLY POSE AN IMMEDIATE ENVIRONMENTAL HAZARD OUTSIDE NORMAL OPERATING CONDITIONS

Low Likelihood – The site has significant and advanced environmental protection measures and monitoring schedules.

Low Impact – The site has significant and advanced environmental protection measures and monitoring schedules which are likely to identify, contain and prevent the immediate spread of environmental hazards outside of the premises even outside of normal operating conditions.

Contributing Factors – N/A.

4. PIRMP

4.1 Definition of Pollution Incident

A pollution incident is required to be notified if there is a risk of 'material harm to the environment', which is defined in section 147 of the POEO Act 1997:

"(a) harm to the environment is material if:

i) it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or

ii) it results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding $10,000 (or such other amount as is prescribed by the regulations), and

(b) 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."

... it does not matter that harm to the environment is caused only in the premises where the pollution incident occurs

4.2 Notification of Pollution Incident

4.2.1 NOTIFICATION SPEED OF RESPONSE

The notification of the relevant authority when material harm to the environment or human health is caused or threatened must be 'immediate', meaning 'promptly without delay', but it does not mean undertaking notification ahead of doing what is necessary to make the environment safe.

4.2.2 NOTIFICATION OF RELEVANT AUTHORITIES

Where the pollution incident causes or threatens material harm to the environment or human health, all the following authorities must be notified:

1. Emergency Call Services	
• Emergency Hotline Number (24 hours)	000* (or 112 from mobile)
*The Site Supervisor should call 000 if the incident presents an immediate threat to human health and/or property and a combat agency is required (i.e. NSW Fire and Rescue, NSW Ambulance Service, NSW Police Force) and then notify all other parties below including NSW Fire and Rescue via a local telephone number.	
2. Orange City Council (OCC)	
• Wayne Davis, Manager Waste Services and Technical Support (OCC)	0419 483 381
• JR Richards Central West Regional Manager	02 6362 6353
• Council Emergency contact number (24 hours)	1300 650 511
3. The Environment Protection Authority (EPA)	
• Bathurst Regional Office	02 6333 3800
• Emergency Hotline Number (24 hours)	131 555

4. NSW Ministry of Health (via Public Health Units)	
• Bathurst Regional Office	02 6330 5880
• Public Health Officer on Call (24 hours)	0428 400 526
5. SafeWork NSW	
• Hotline Number	13 10 50
6. Canobolas Zone Rural Fire Service	
• Canobolas Zone RFS	02 6363 6666**
** If there is no immediate threat to human health and/or property i.e. a combat agency is not required, then the Site Supervisor is still required to follow that outlined above except for dialling 000.	

A summary of the above pollution incident notification procedure is provided in **Document A** – Pollution Incident Decision Flow Chart in **Appendix A**.

4.2.3 INFORMATION TO BE NOTIFIED

Under section 150 of the POEO Act 1997, the information about a pollution incident that must be notified is:

- The time, date, nature, duration and location of the incident;
- The location of the place where pollution is occurring or is likely to occur;
- The nature, the estimated quantity or volume and the concentration of any pollutants involved, if known;
- The circumstances in which the incident occurred, including the cause of the incident, if known;
- The action taken or proposed to be taken to deal with the incident and any resulting pollution or threatened pollution, if known; and
- Other information prescribed by the regulations.

Notification is required by the Site Supervisor immediately after a pollution incident becomes known. Any information required that is not known at the time the incident is notified must be provided when it becomes known.

Complying with these notification requirements does not remove the need to comply with any other obligations for incident notification, for example, those that apply under other environment protection legislation or legislation administered by SafeWork NSW.

A Pollution Incident Reporting Form is produced in **Appendix A** to assist the Site Supervisor in correctly recording and notifying the relevant authorities detailed in Section **4.2.2** above.

4.3 Actions to be taken during or immediately after a pollution incident

All site personnel with relevant training must make every effort to contain the pollution incident on site, without putting themselves at risk of harm.

In the case of a fire and where safe, attempts must be made to extinguish or contain the fire immediately. This could be through the use of a fire extinguisher, fire hose, water cart or smothering with cover material. If a fire occurs within the MTF, the misting system should be activated to assist in fire-fighting efforts.

In the event of a chemical spill that is not contained by bunding, Spill Sorb must be used to restrict the spread of the chemical.

If the leachate ponds are nearing capacity, staff must initiate pumping of liquid to the STP to retain headspace. If pollution is identified through groundwater or surface monitoring, procedures as identified in the OEMP will be followed.

4.4 Minimising harm to persons on the premises

In the event of a pollution incident occurring, an emergency alarm will be sounded from the weighbridge. All members of the public, JR Richards, Wangarang and other Council staff will be mustered by Council site staff to the Emergency Assembly Point on the footpath at the entrance to the ORRRC adjacent to the overhead water standpipe (identified on Site Plan **EV03**), after which they will be safely evacuated from site where appropriate. It is a condition of entry that in the event of an emergency, both the public and staff must adhere to directions given by the Site Supervisor.

4.5 EPA Powers of Direction & Notification of Neighbours

Where the pollution incident causes or threatens material harm to the environment or human health, the EPA is notified in accordance with **Section 4.2**.

Once the EPA is notified, it is then for the EPA to determine whether commercial, industrial and residential neighbours of the site need to be contacted by Council and informed of the circumstances of the incident and what action is being taken in response to it. If deemed necessary, the EPA then has powers to formally direct Council to notify the neighbours of the site.

Irrespective of whether the EPA directs Council to notify neighbours and depending on the circumstances of the particular pollution incident, Council may at their own discretion voluntarily choose to notify neighbours.

The Council would notify neighbours by 'door knocking' every neighbouring property identified on enclosed Site Plan EV02. A summary of the neighbour notification procedure is provided in **Document A** – Pollution Incident Decision Flow Chart in **Appendix A**.

4.6 Identification of Neighbours

To assist the EPA in its decision as to whether it needs to direct Council to notify neighbours and to assist Council in visiting all the local neighbours, enclosed is aerial plan EV02 which identifies the commercial, industrial and residential properties within 500m of the site boundary.

5. IMPLEMENTATION

5.1 Existing Plans

The PIRMP forms part of the Orange Waste Project Operational Environmental Management (OEMP) and is filed under Section 9.6 (ORRRC PIRMP) and Section 9.7 (ORRRC PIRMP Supporting Statement) of the OEMP.

If Orange City Council should choose to file the PIRMP and the Supporting Statement in any other document, it must be readily identifiable in that document in order to meet the requirements of Section 153C of the POEO Act and the POEO(G) Regulation.

5.2 Staff Training

New members of staff at the facility should be inducted. This induction must cover the purpose, requirements and responsibilities detailed in this PIRMP.

All staff should receive sufficient training to enable them to carry out their assigned duties in a competent and safe manner. In particular:

- Staff must be capable of using the fire-fighting equipment;
- Staff must be capable of identifying excluded wastes;
- Staff must be capable of identifying potential pollution incidents; and
- Staff must be familiar with the requirements and procedures contained within this PIRMP.

Staff competency will be monitored through audits, public complaints and pollution incident reports.

At least once every year staff should undertake a simulated pollution incident response exercise, including with emergency services, to familiarise site personnel with the requirements of this management plan. A register of staff training can be found in Section 5.1 of the OEMP.

Regular site briefings and toolbox meetings should be held when considered appropriate to draw attention to potential pollution incidents and identify improvements to on-site safety procedures.

5.3 Review and Update PIRMP

The PIRMP is a living document required to be reviewed, tested and updated at least once every 12 months, and within one month of any pollution incident occurring to ensure accuracy and effectiveness.

For these reasons, document control is an important part of the environmental management system. It is critical that PIRMP storage locations are made known to all relevant staff members and that only the latest version is in use. Details of the version and date of issue are recorded on each page of the PIRMP in the bottom left hand corner.

Revised and updated versions of the PIRMP will always be issued with a covering memo summarising the changes. When a new PIRMP is received the old version is replaced in its entirety. A register for updating and testing the PIRMP can be found in Appendix A and must be kept on site and updated regularly.

This Supporting Statement requires that the PIRMP documentation is controlled in accordance with SOP 21 in the OEMP (Document Control), including providing update details in Form 21.02 (OEMP Updates Register) when a new PIRMP is produced and issued.

Five copies of any new PIRMP will need to be produced. They are to be distributed to the following:

- One copy to Manager Waste Services & Technical Support, Orange City Council;

- Two copies to Resource Recovery Centre Supervisor, Orange City Council;
- One copy to Administration Manager, Orange City Council; and
- One copy to Premise Australia Pty Ltd, Orange.

REFERENCES

Environmental Guidelines: Solid Waste Landfills, 2016 (2nd Edition) – prepared by Environment Protection Authority
Environmental Guidelines: Preparation of Pollution Incident Response Management Plans, March 2012 – prepared by Environment Protection Authority
Guidelines: Pollution Incident Response Management Plans, March 2020 – prepared by Environment Protection Authority
Environment Protection Licence 5956, 30 May 2019 – prepared by Environment Protection Authority
Orange Waste Project Operational Environmental Management Plan – Prepared by Orange City Council (Version 7: December 2021)

DRAWINGS

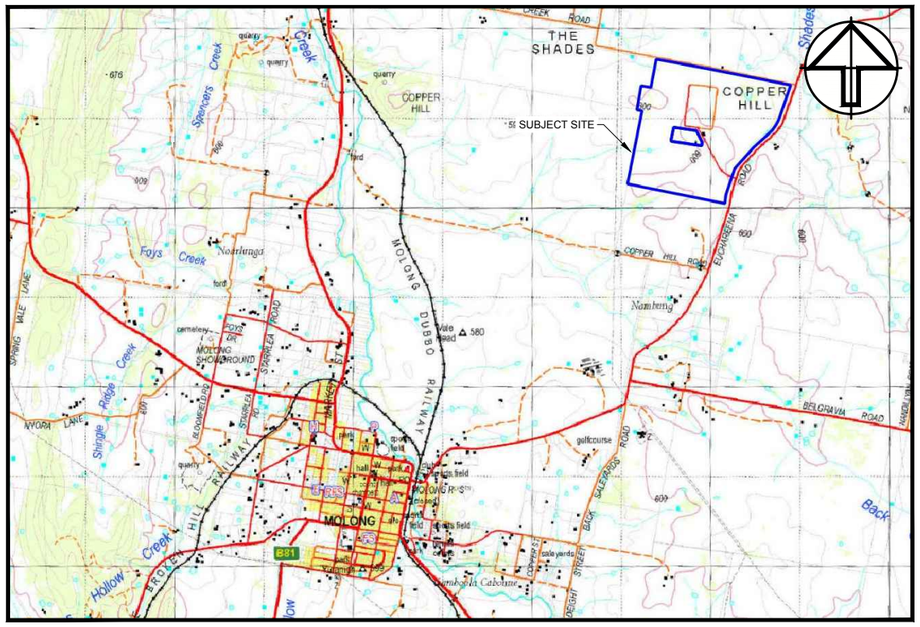
EUCHAREENA ROAD RESOURCE RECOVERY CENTRE

LOT 102 DP 1183238

NETWASTE

POLLUTION INCIDENT RESPONSE MANAGEMENT PLAN

SCHEDULE OF DRAWINGS	
DRAWING	TITLE
EV01	TITLE SHEET & LOCALITY PLAN
EV02	PLAN OF NEIGHBOURS
EV03	SITE PLAN



SITE LOCALITY

NOT TO SCALE

REV.	DATE	DFTD.	APPD.	DETAILS
A	02/11/17	GT	CB	FOR REVIEW
B	14/11/17	GT	CB	FOR REVIEW

	FILE	INITIALS	DATE
SURVEY	-	-	-
DESIGN	-	-	-
DRAINS/ HEC-RAS MODELLING	-	-	-
ENGINEERING/ SURVEYING APPROVAL		-	-

DRAWING SCALE

DO NOT SCALE FROM THESE DRAWINGS. ALL MEASUREMENTS SHALL BE CONFIRMED ON SITE AND WITH GEOLYSE PTY. LTD. PRIOR TO CONSTRUCTION

APPROVAL AUTHORITY: NEW SOUTH WALES ENVIRONMENT PROTECTION AUTHORITY

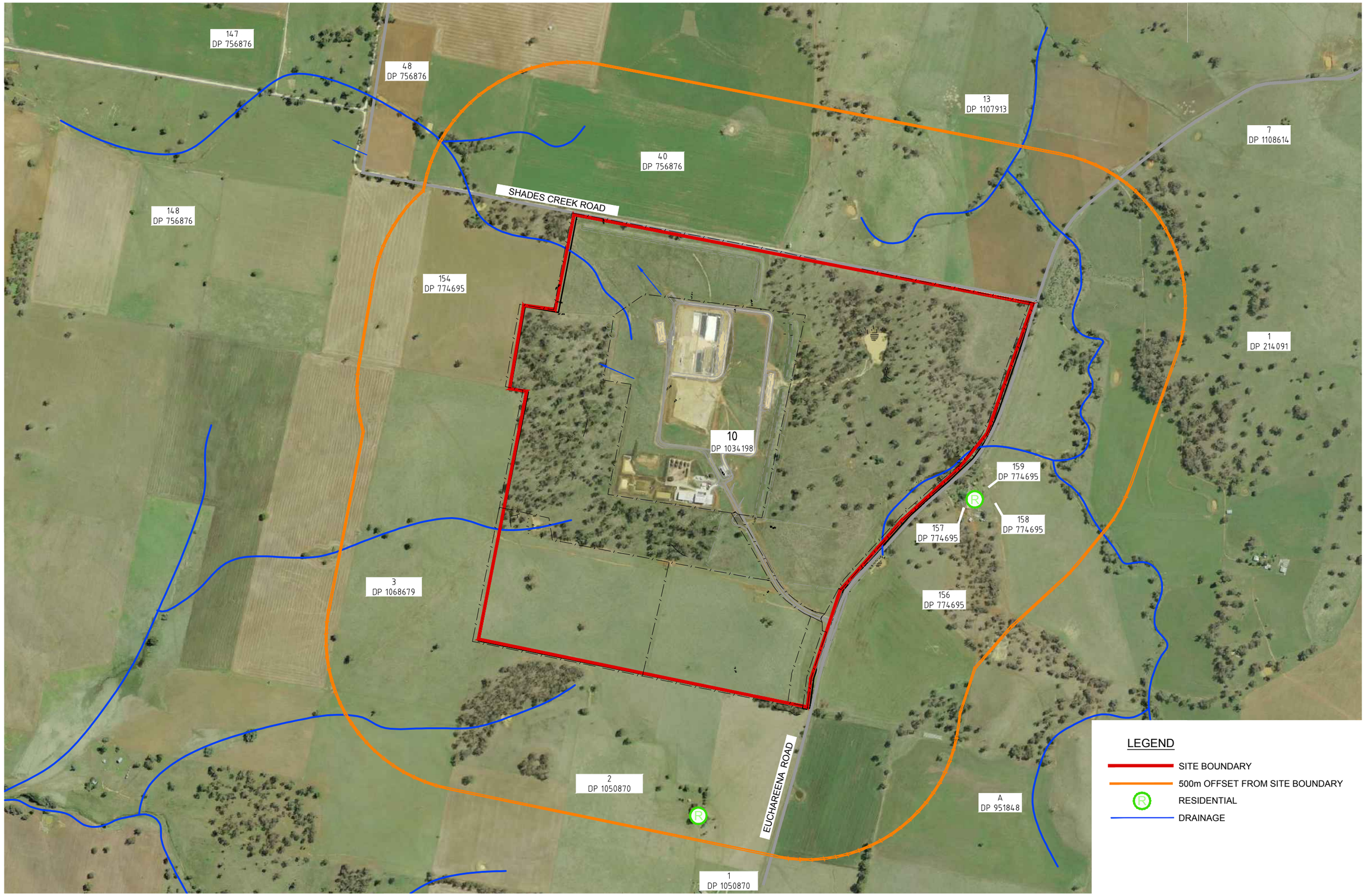
CLIENT: ORANGE CITY COUNCIL

PROJECT: EUCHAREENA ROAD RESOURCE RECOVERY CENTRE

GEOLYSE
ORANGE
154 PEISLEY STREET
P.O. BOX 1963
ORANGE, NSW 2800
orange@geolyse.com
www.geolyse.com
Ph. (02) 6393 5000
Fx. (02) 6393 5050

DRAWING: TITLE SHEET & LOCALITY PLAN

PROJECT NUMBER 208212	DRAWING FILE 208212_63B-EV01-EV03.dwg	ORIGINAL A1
SURVEY MARK STN 9001	R.L. 598.415 DATUM A.H.D.	
IMAGE SOURCE -		SET 02
STATUS FOR REVIEW	SHEET EV01 OF EV03	



REV.	DATE	DFTD.	APPD.	DETAILS
A	02/11/17	GT	CB	FOR REVIEW
B	14/11/17	GT	CB	FOR REVIEW

	FILE	INITIALS	DATE
SURVEY	-	-	-
DESIGN	-	-	-
DRAINS/ HEC-RAS MODELLING	-	-	-
ENGINEERING/ SURVEYING APPROVAL		-	-

DRAWING SCALE

SCALE 1:6000 (A1)

0 100 200 300 400 500 600

0 100 200 300 400 500 600

SCALE 1:12000 (A3)

DO NOT SCALE FROM THESE DRAWINGS. ALL MEASUREMENTS SHALL BE CONFIRMED ON SITE AND WITH GEOLYSE PTY. LTD. PRIOR TO CONSTRUCTION

APPROVAL AUTHORITY: NEW SOUTH WALES ENVIRONMENT PROTECTION AUTHORITY

CLIENT: ORANGE CITY COUNCIL

PROJECT: EUCHAREENA ROAD RESOURCE RECOVERY CENTRE

GEOLYSE
ORANGE
154 PEISLEY STREET
P.O. BOX 1963
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orange@geolyse.com
Ph. (02) 6393 5000
www.geolyse.com
Fx. (02) 6393 5050

DRAWING: PLAN OF NEIGHBOURS

PROJECT NUMBER 208212	DRAWING FILE 208212_63B-EV01-EV03.dwg	ORIGINAL A1
SURVEY MARK STN 9001	R.L. 598.415 DATUM A.H.D.	
IMAGE SOURCE -		SET 02
STATUS FOR REVIEW	SHEET EV02 OF EV03	

REV.	DATE	DFTD.	APPD.	DETAILS
A	02/11/17	GT	CB	FOR REVIEW
B	14/11/17	GT	CB	FOR REVIEW

	FILE	INITIALS	DATE
SURVEY	-	-	-
DESIGN	-	-	-
DRAINS/ HEC-RAS MODELLING	-	-	-
ENGINEERING/ SURVEYING APPROVAL		-	-

DRAWING SCALE

SCALE 1:1000 (A1)

0 20 40 60 80 100

0 20 40 60 80 100

SCALE 1:2000 (A3)

DO NOT SCALE FROM THESE DRAWINGS. ALL MEASUREMENTS SHALL BE CONFIRMED ON SITE AND WITH GEOLYSE PTY. LTD. PRIOR TO CONSTRUCTION

APPROVAL AUTHORITY: NEW SOUTH WALES ENVIRONMENT PROTECTION AUTHORITY

ORANGE CITY COUNCIL

CLIENT: ORANGE CITY COUNCIL

PROJECT: EUCHAREENA ROAD RESOURCE RECOVERY CENTRE

GEOLYSE
ORANGE
orange@geolyse.com
www.geolyse.com
154 PEISLEY STREET
P.O. BOX 1963
ORANGE, NSW 2800
Ph. (02) 6393 5000
Fx. (02) 6393 5050

DRAWING: SITE PLAN

PROJECT NUMBER 208212	DRAWING FILE 208212_63B-EV01-EV03.dwg	ORIGINAL A1
SURVEY MARK STN 9001	R.L. 598.415 DATUM A.H.D.	
IMAGE SOURCE -		SET 02
STATUS FOR REVIEW	SHEET EV03 OF EV03	

Premise

OPERATIONAL ENVIRONMENTAL MANAGEMENT PLAN

ORANGE WASTE PROJECT

ORANGE CITY COUNCIL

ORANGE CITY COUNCIL

December 2021

VOLUME 2: STANDARD OPERATING PROCEDURES, WORK ACTIVITY PROCEDURES & SAFE WORK METHOD STATEMENTS

OEMP VOLUME 2 – TOC

STANDARD OPERATING PROCEDURES

SOP 01 ANNUAL CALENDAR OF ACTIVITIES

FORM 01 – CALENDAR OF ACTIVITIES CHECKLIST

SOP 02 SITE INDUCTIONS

FORM 02.01 – ERRRC VISITOR RECORD OF ENTRY

FORM 02.02 – ORRRC VISITOR RECORD OF ENTRY

FORM 02.03 – TOOLBOX MEETING RECORD FOR CONTRACTORS

SOP 03 ORRRC ENTRY/EXIT PROTOCOLS

SOP 04 ERRRC ENTRY/EXIT PROTOCOLS

SOP 05 ALLOCATION OF KEYS AND FOBS AT THE ERRRC

FORM 05 – KEY AND FOB ISSUE REGISTER

SOP 06 BEE KEEPING EQUIPMENT AND HONEY CONTAINERS

FORM 06.01 – REJECTED APICULTURE PRODUCT REGISTER

FORM 06.02 – DISPOSAL OF APICULTURE EQUIPMENT HANDOUT

FORM 06.03 – FOUND APICULTURE PRODUCT REGISTER

SOP 07 WEIGHBRIDGE PROCEDURES

SOP 08 HANDLING AND DISPOSAL OF ASBESTOS

FORM 08 – DRIVER DETAILS FOR REJECTED ASBESTOS WASTE

HANDOUT 08 – SAFELY DISPOSING OF ASBESTOS FROM YOUR HOME

SOP 09 REJECTED BALES FROM ERRRC

FORM 09 – COMPROMISED BALES RETURNED TO ORRRC

SOP 10 OPERATION OF ERRRC LEACHATE PUMPS

FORM 10.01 – LEACHATE VOLUME RECORD FOR EACH TRUCK MOVEMENT

FORM 10.02 – MONTHLY LEACHATE VOLUME

SOP 11 MANAGEMENT OF ERRRC SURFACE WATER PONDS

FORM 11.01 – SURFACE WATER DAM OVERFLOW

FORM 11.02 – REMOVAL OF WATER FROM SURFACE WATER MANAGEMENT DAMS

SOP 12 ERRRC CELL SURFACE WATER MANAGEMENT

FORM 12 - INACTIVE LANDFILL CELL SURFACE WATER REMOVAL

SOP 13 POLLUTION INCIDENT RESPONSE MANAGEMENT

FORM 13.01 – INCIDENT REGISTER

FORM 13.02 – INCIDENT REPORT FORM

SOP 14 COMPLAINTS HANDLING

FORM 14.01 – COMPLAINTS REGISTER

FORM 14.02 – COMPLAINT REPORT FORM

SOP 15 ORRRC DAILY CHECKLIST

FORM 15 – ORRRC DAILY CHECKLIST

SOP 16 ERRRC DAILY CHECKLIST

FORM 16 – ERRRC DAILY CHECKLIST

SOP 17 ANNUAL OEMP REVIEW

SOP 18 INDEPENDENT ENVIRONMENTAL AUDIT

SOP 19 ORRRC ENVIRONMENTAL MONITORING

SOP 20 ERRRC ENVIRONMENTAL MONITORING

ERRRC WEATHER STATION DATA INTERFACE MANUALS

SOP 21 DOCUMENT CONTROL

FORM 21.01 – OEMP REGISTER

FORM 21.02 – OEMP UPDATES REGISTER

SOP 22 ORRRC TYRE MANAGEMENT

SOP 23 ORRRC TRAFFIC MANAGEMENT

SOP 24 ERRRC TRAFFIC MANAGEMENT

SOP 25 HANDLING CONTAMINATED SOIL AT ORRRC

SOP 26 WASTELOCATE TRACKING

FORM 26.01 – ASBESTOS AND TYRE WASTE DAILY RECORD

FORM 26.02 – RECORD OF UNSCANNED LOADS

SOP 27 ORRRC COMMUNITY RECYCLING CENTRE

CRC HANDBOOK

WORK ACTIVITY PROCEDURES

WAP001 DUST PREVENTION ON SITE

WAP002 BIN CLOSURE / SERVICING

WAP003 LOAD MULCH

WAP004 TRANSFER OIL

WAP006 TYRE STOCKPILING

WAP007 LITTER COLLECTION

WAP009 LANDFILL WASTE DISPOSAL

WAP010 BEEKEEPING EQUIPMENT

WAP011 WEIGHBRIDGE PROCEDURES

WAP012 ERRRC TRAFFIC MANAGEMENT

WAP013 ORRRC TRAFFIC MANAGEMENT

WAP014 HANDLING CONTAMINATED SOIL AT ORRRC

WAP015 PLANT – ROUTINE MAINTENANCE

WAP016 CRC – HOUSEHOLD HAZARDOUS WASTE RECEIPT AND MANAGEMENT

WAP017 MANUAL HANDLING

SAFE WORK METHOD STATEMENT

SWMS 001 ASBESTOS DISPOSAL

SWMS 002 LONE WORKER

SWMS ERRRC-001 LEACHATE TANK EXCLUSION ZONE

Standard Operating Procedures

Standard Operating Procedure

Annual Calendar of Activities

File No: **SOP 01**

I approve the use of this Standard Operating Procedure:

Name: Wayne Davis	**Position:** Manager Waste Services and Technical Support
Signature:	**Date:** 14/12/2021

Revision Status:

Change History

Date	Details of Change	Version No.
10/12/2013	Document created	Draft
31/03/2014	Draft approved	Version 1
22/09/2014	Content updated	Version 2
17/08/2015	Draft approved	Version 2
31/1/2020	Added quarterly surface gas monitoring schedule Version updated to correspond to OEMP	Version 5
2/3/2021	Update Signature Date Version updated to correspond to OEMP	Version 6
14/12/2021	Update Signature Date Version updated to correspond to OEMP	Version 7

PURPOSE

The purpose of this SOP is to provide a checklist and guidance to the Manager Waste Services and Technical Support to effectively complete all tasks (as a requirement of the PA) within the review calendar year, ending 30th September each year.

WORK PROCEDURE

1) **Form 01 – Calendar of Activities** is to be completed by the Manager Waste Services and Technical Support as tasks are completed. The form is formatted such that the required completion time is highlighted yellow, and the Manager Waste Services and Technical Support is to check the appropriate month when the activity is completed.

2) The calendar year ends 31st October each year, and therefore this SOP needs to be updated annually.

RESPONSIBILITIES

It is the responsibility of the Manager Waste Services and Technical Support to ensure that the **Form 01** is correctly completed and updated accordingly.

RECORDS

Records are to be kept using **Form 01 – Calendar of Activities**.

Action	N	D	J	F	M	A	M	J	J	A	S	O	Reference	Sign-off
Ophir Road Resource Recovery Centre Actions														
Annual Survey & Review and update filling plan													Section 3.4	
Weighbridge Calibration Certificate													Section 3.5	
Monthly Waste Reporting													Section 3.5	
Annual Returns													EPL 5956, Section 6.3	
Annual Environmental Monitoring Report													Section 6.4	
Monthly discharge Sample: SW3 or SW4													EPL 5956, Section 3.7	
Groundwater Monitoring													EPL 5956, Section 3.8	
Surface Gas monitoring													EPL 5956, Section 3.9	
Accumulated Gas Monitoring													EPL 5956, Section 3.9	
Sub-surface gas monitoring													No Longer Required	
Truck wash monitoring													Section 8.3	
Euchareena Road Resource Recovery Centre Actions														
Annual Survey & Review and update filling plan													Section 4.4	
Monthly Waste Reporting*													Section 4.5	
Annual Returns*													EPL 20104, Section 4.5	
Annual Environmental Monitoring Report													Section 6.4	
Leachate sampling - routine monitoring suite													EPL 20104, Section 4.7	
Surface water monitoring - routine monitoring suite													EPL 20104, Section 4.8	
Surface water monitoring - Quarterly during discharge													EPL 20104, Section 4.8	
Groundwater Monitoring													EPL 20104, Section 4.9	
Surface Gas monitoring~													Section 4.10, Section 7.7	
Air Quality Monitoring													EPL 20104, Section 4.12	
Noise Monitoring (upon receival of complaints)													EPL 20104, Section 4.14	
Annual Flora and Aboriginal Heritage Monitoring report													Section 7.8, 8.4, 9.4	
Apiculture Risk Management Plan Annual Meeting of Apiculture													Minutes of meeting OWP Apiculture Committee held 29/10/13	
Staff Beekeeping Equipment Refresher Training held every 3 years														
Overall Orange Waste Project Actions														
Independent Environmental Audit^													Section 6.5	
Review and update all OEMP and SOPs													Section 6.5	
Annual Review													Section 6.5	

*After two years of operation of ERRRC, need to check with EPA if VENM needs to be included in calculations for total waste

~Landfill gas monitoring to commence at ERRRC after completion of first two landfill cells.

^within the first year of commencing operations at the ERRRC, and every 5 years thereafter

	Standard Operating Procedure
	Site Inductions
	File No: **SOP 02**

I approve the use of this Standard Operating Procedure:

Name: Wayne Davis	**Position:** Manager Waste Services and Technical Support
Signature:	**Date:** 14/12/2021

Revision Status:

Change History

Date	Details of Change	Version No.
28/10/2013	Document created	Draft
31/03/2014	Draft approved	Version 1
5/6/2015	Document updated to incorporate Section 5	Version 2
17/08/2015	Draft approved	Version 2
22/08/2016	Draft approved	Version 3
14/02/2018	Draft approved	Version 4
07/12/2018	Draft approved	Version 5
2/3/2021	Update Signature Date Version updated to correspond to OEMP	Version 6
14/12/2021	Update Signature Date Version updated to correspond to OEMP	Version 7

PURPOSE

The purpose of this SOP is to ensure that all staff, contractors, and visitors are adequately inducted to undertake their required work or visit either of the two Resource Recovery Centres in a safe and effective manner.

Work under this project comprises routine activities of the Resource Recovery Centre (RRC) at Ophir Road Orange and Euchareena Road, Molong including:

- Orange City Council staff;
- Wangarang Industries (Contractor);
- J R Richards & Sons (Contractor); and
- And other contractors working on the site(s).

The type of work includes, but is not limited to, receival, recycling, recovering of waste materials and burial of waste, monitoring of environmental conditions, revegetating the site and undertaking weed/pest control.

WORK PROCEDURE FOR STAFF AND CONTRACTORS

1) Staff and contractors working within the Orange Waste Project boundaries are required to undergo the staff induction process in accordance with **Operational Policy 084 – Work Health and Safety Management Policy Statement,** and familiarise themselves with the **Pollution Incident Response Management** protocols – **SOP 13** of the OEMP.

2) Either the Manager Waste Services and Technical Support, or the Resource Recovery Centre Supervisor is required to induct new staff or contractors before they commence work on the site.

3) The inducted staff member or contractor is required to take a hard copy of **SOP 13 – Pollution Incident Response Management** for future reference, and any additional hard copy SOPs for their particular role.

4) Please read this information and ensure you ask questions if there is anything you need clarified concerning safety measures at the Resource Recovery Centre.

5) Upon completion of the induction the inducted staff member or contractor is required to sign and complete the details on the 'Receipt of Induction Package' statement on the final page of the Staff and Contractor Induction package. This statement is to be forwarded to the Manager Waste Services and Technical Support.

6) The Orange City Council Form TDSOHS 001 is used for staff and contractors performing works at the site, records are kept as **Form 02.01**.

Areas to be covered in the induction include sections on:

- Fitness on site
- Contact information
- Standard Operating Procedures and Work Activity Procedures
- Visitors
- Safety Equipment
- Weed Management
- Aboriginal Heritage Management
- Emergency Procedures
- Reporting Accidents/ Incidents
- Working Near Construction Plant
- Hazard Identification
- Quality System

FITNESS ON SITE

All employees and contractors must be in a state such that they are not a risk to their own safety or the safety of others. Anyone suspected of being under the influence of drugs or alcohol, or otherwise posing a threat to safety, will not be permitted to enter the work site. It is your responsibility to ensure that you are fit for work and not under the influence of drugs or alcohol. If you are taking any prescription medication that may affect your ability at work, advise your supervisor.

CONTACT INFORMATION

Please contact the following people in regard to any issues relating to disposal, recycling, recovery and sales; general WHS & site safety; environmental and quality assurance.

- Wayne Davis – Manager Waste Services and Technical Support:
  6393 8113 or 0419 483 381

- RRC Supervisor – Peter Ford:
  AH 6365 9225 or AH Mob 0419 630 891

STANDARD OPERATING PROCEDURES AND WORK ACTIVITY PROCEDURES

A total of 27 Standard Operating Procedures (SOPs) and 14 Work Activity Procedures (WAPs) have been developed to provide clear, detailed and standardised guidance for carrying out operational tasks at the ORRRC and ERRRC. These SOPs and WAPs are available in the site offices, and hard copies are available on request.

Staff will be trained in relevant SOPs and WAPs as listed in Volume 2 of the OEMP.

SAFE WORK METHOD STATEMENT

One Safe Work Method Statement (SWMS) is provided for Asbestos Disposal (SWMS 001). This SWMS is available in the site offices, and hard copies are available upon request.

Staff will be trained in SWMS 001 – Asbestos Disposal.

VISITORS

All persons within the property boundary (other than those visiting the recovery shop storage/display areas, scrap steel storage or green waste area) must be either fully inducted in accordance with this package or accompanied by inducted personnel.

The Resource Recovery Centre Supervisor shall induct visitors to the site in accordance with the work procedures outlined below.

SAFETY EQUIPMENT

The supervisor's vehicle carries a general purpose fire extinguisher. The location of other Fire-fighting equipment is shown in the Emergency Evacuation Plan. A water cart is on site to extinguish minor fires. For major fires, reference is made to the Landfill Environmental Management Plan (**Section 3.15**) and Orange City Council Resource Recovery Centre Emergency Procedures Manual for ERRRC (**Section 7.10**) and ORRRC (**Section 7.9**).

The Supervisors vehicle is equipped with a First Aid Kit. Kits are also located in the Recovery Shop. J R Richards vehicles are also required to carry first aid equipment.

Safety signs are placed for your protection. Please ensure to follow them. Where indicated by signs, or where indicated in Safe Work Method Statements (SWMS) and Work Activity Procedures (WAPs), PPE must be used properly by all personnel and maintained in effective condition.

WEED MANAGEMENT

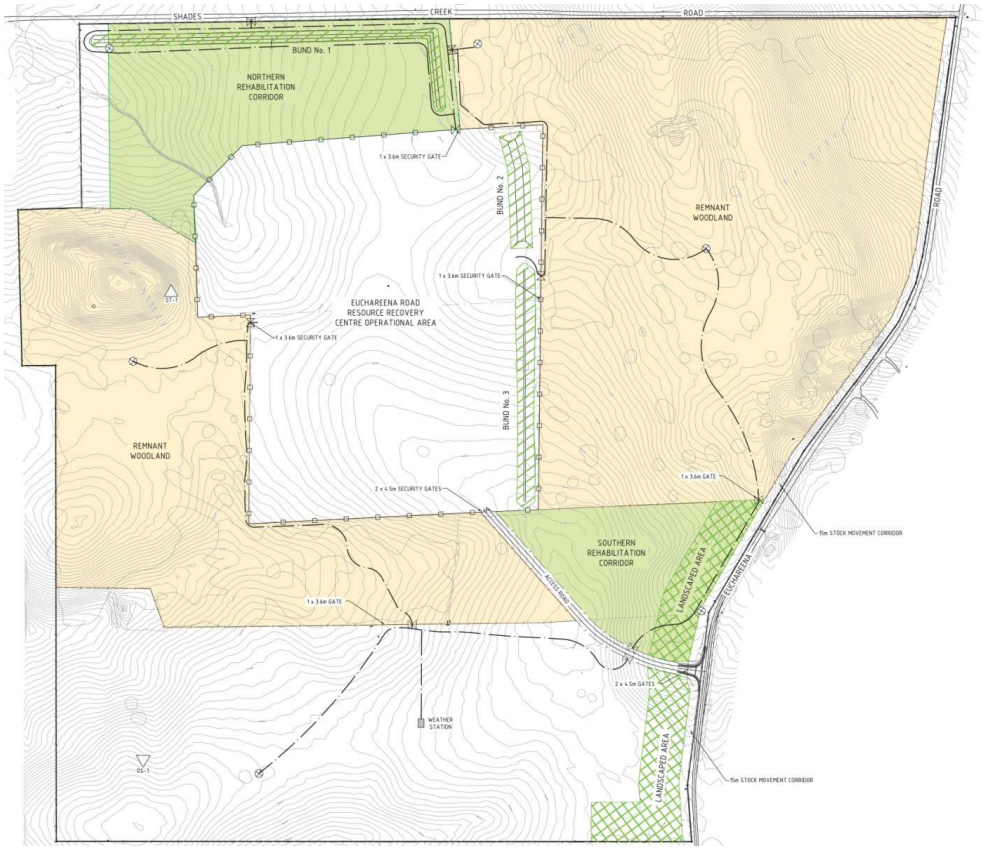
There are a number of requirements that all staff and regular contractors on the site are required to follow in order to prevent the spread of noxious weeds within the Orange Waste Project sites. These include:

- Weed hygiene practices would be adopted to prevent the introduction of weeds. This includes ensuring plant and construction equipment arrive weed free, and vehicles only travel on the existing internal road network;
- Excavated top-soil would be stored separately from subsoil and replaced in a manner that replicates the original soil profile as closely as possible to assist rapid revegetation;
- Site stabilisation would be undertaken progressively during works to ensure that soils are stabilised as soon as practical. This would minimise weed infestation and the potential for sedimentation and erosion;

- Declared noxious weeds would be actively managed consistent with requirements of the *Noxious Weeds Act 1993.* The Act imposes obligations on occupiers of land to control noxious weeds declared for their area.
- Weeds that are declared noxious are those weeds that have the potential to cause harm to the community and individuals, can be controlled by reasonable means and most importantly, have the potential to spread within an area to other areas. A weed is declared noxious because its control will provide a benefit to the community over and above the cost of implementing control programs; and
- OCC staff at the ERRRC are required to follow the procedures outlined in **Section 7.2 - ERRRC Weed Management Plan**, this includes familiarisation with known weeds in the Cabonne Shire Council area, and ongoing visual monitoring to identify the presence or spread of any of these weeds.

ABORIGINAL HERITAGE MANAGEMENT

- All staff to receive training for this SOP must be trained in **Section 5.1.10 – Aboriginal Heritage Management** of the OEMP.
- There are two Aboriginal Heritage sites recorded within the ERRRC site boundary. The location of these sites is recorded on **Figure 1.** The sites include Molong ST1 – a scarred tree, and Molong OS1 – Stone Artefacts. These sites are under no circumstances to be interfered with.



EMERGENCY PROCEDURES

For all emergencies requiring Police, Ambulance or Fire Brigade ring: **000**

If no phones are available, contact Orange City Council Depot Office by two-way radio:

Contact Manager Waste Services and Technical Support on 6393 8113 and WH&S Coordinator on 6393 8022.

In all cases assess the situation and clearly inform the operator of:

- Location of incident – road, distance from nearest town, nearest intersection or other feature;
- Type of incident;
- Number and type of vehicles (if motor vehicle accident);
- Number of people injured and severity of injuries;
- If a spill, type of material and quantity;
- Other details e.g. fire or risk of fire, fallen power lines etc.

This will enable the appropriate emergency services to be dispatched.

While waiting for emergency services:

- Apply first aid if appropriate;
- Control traffic around the incident. Stop traffic if necessary. Be sure to facilitate access for emergency vehicles; and
- Take whatever mitigation measures can be done safely – prevent spread of any spills, extinguish fires etc.

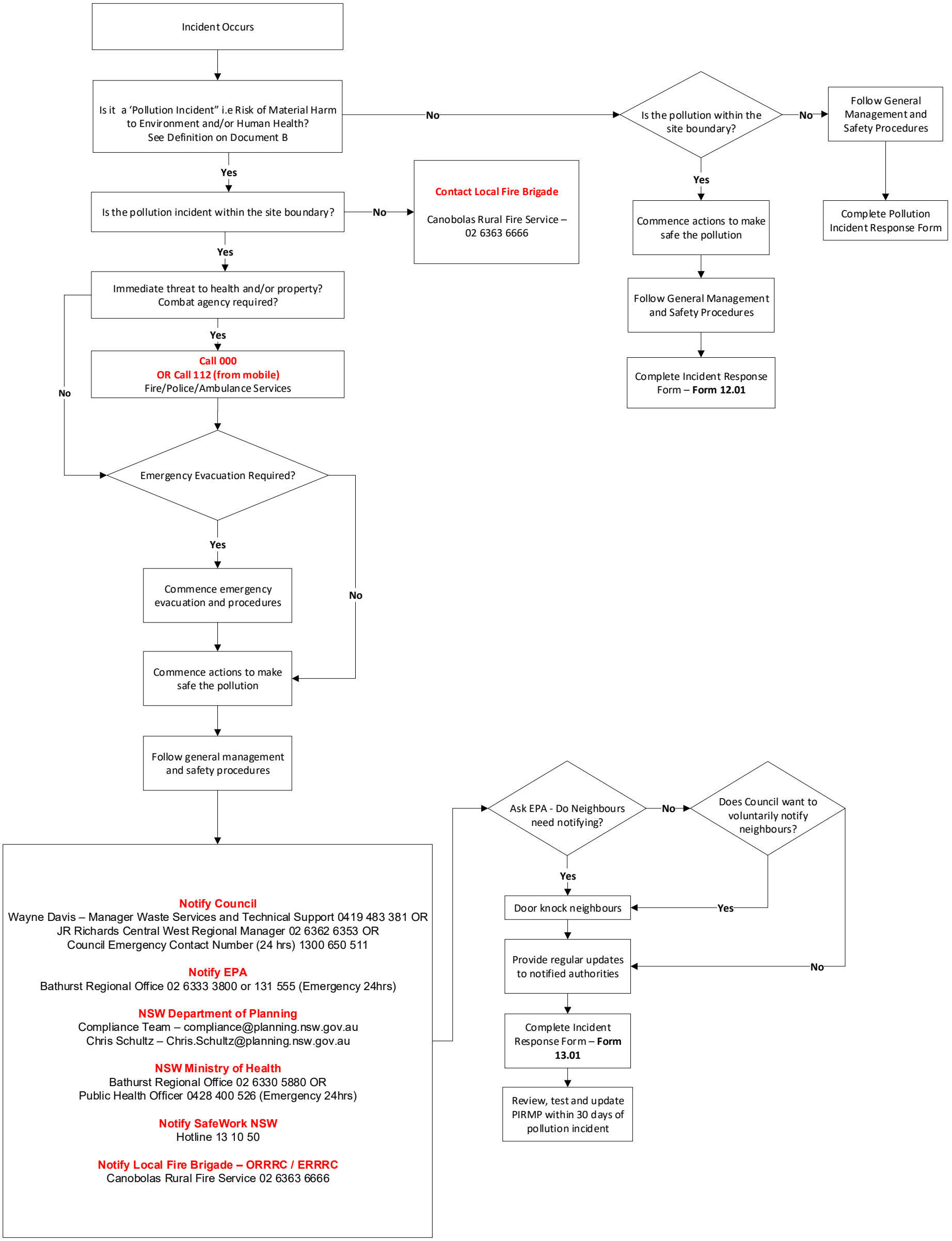
Do not take any actions which will put yourself, other employees or members of the public at greater risk.

When emergency services arrive they will take control of the incident. You will need to:

- Give them details of the incident and any further actions you have taken.
- Assist as directed with traffic control.

In the event of a Pollution Incident please refer to **SOP 13 – Pollution Incident Response Management** and the flowchart on the following page which indicates the reporting procedures in case of an accident or incident. Refer to Site specific Emergency Manual Procedure for further information.

Pollution Incident Decision Flow Chart



REPORTING ACCIDENTS / INCIDENTS

The WHS Team is to be notified of all near misses, incidents and accidents within 24 hours and be involved in all investigations. For Major Incidents Executive Management will be immediately notified by verbal contact. For all other incidents the Supervisor will be notified within 24 hours and also be involved in the investigation.

Details of the incident will be recorded on the Incident / Hazard Notification/ Near Miss Form TSDOHS 004. For incidents which required first aid to be applied, Attachment 1 of TSDOHS 004 is to be completed and forwarded to the WHS Team.

In the event of a notifiable incident WorkCover will be notified by the WHS Team. Should the incident have been a non-disturbance occurrence, the area is to be preserved until a WorkCover Inspector has completed their investigation and an internal investigation has been completed. (Refer WHS Act Part 10 Division 3).

Details of any incidents / accidents will be included in the quarterly performance report. The incident will be discussed at the next Toolbox Meeting.

WORKING NEAR CONSTRUCTION PLANT

- All personnel must wear a safety vest or other approved high visibility garments and safety footwear.
- Hard hats must be worn in designated hard hat zones. Where applicable, these are clearly marked on site. Hard hats are also required near lifting and slewing plant such as cranes, backhoes and excavators.
- Visibility, especially to the rear of some construction plant is quite limited. Be alert to reversing alarms and move away from the path of these vehicles.
- If making or receiving phone calls; or anything else which may distract you from plant and vehicle movement, move well away from the work zone and traffic paths.

HAZARD IDENTIFICATION

A Safe Work Method Statement (SWMS) will be developed for all high risk tasks associated with work undertaken by or for Council utilising the risk management methodology outlined in Section 5.1 of OP 084 Orange City Council Work Health and Safety Management Policy and Procedures.

Input from all personnel to the development and review of SWMS, and indeed for all safety and environmental issues, is encouraged.

The Manager Waste Services and Technical Support or Resource Recovery Centre Supervisor will explain and talk through the relevant WAPs and SWMS, and ensure that all personnel understand, before commencing any new activity.

In order for these controls to be effective, all personnel need to:

- correctly use and maintain all protective and personal protective equipment;
- follow safe work procedures;
- inform the Supervisor of any risks identified for which no controls have been developed.

QUALITY SYSTEM

Orange City Council has documented procedures and specific requirements and staff are required to:

- Follow procedures and specific requirements as per the **SOPs;**
- Complete forms and checklists accurately and promptly;
- Notify RRC Supervisor or Manager Waste Services and Technical Support of anything that may impact on the quality of the work;
- Only use materials specified by the Manager Waste Services and Technical Support;
- Verify that the work conforms with the requirements.

ORANGE CITY COUNCIL – ORANGE WASTE PROJECT

INDUCTION PACKAGE

This page is to be filled out and returned to the RRC Supervisor

RECEIPT OF INDUCTION PACKAGE

By completing the information below, I agree that I have read, or have had read to me, the induction package. I also agree that by signing and returning this page I understand my responsibilities as an employee or contractor on this site.

Print Name: _____

Organisation: _____

Date: _____

Signature: _____

ADDITIONAL TICKETS/LICENCES

Type of licence or ticket	Expiry Date	Sighted
General Construction Induction Card (White)		
CENTROC Induction		
Telescopic Handler		
Motor Vehicle Licence		
Backhoe (if used)		
Skid Steer (if used)		
Excavator (if used)		

STAFF TRAINING REGISTER

Completion and signing of the **Staff Training Register** confirms that:

- The trainees have received the appropriate training and have a full understanding of the training provided (i.e. Induction, OEMP, SOPs, WAPs, SWMS, PIRMP).
- The trainees will commit to incorporating their training into daily work practices.
- The trainer has fully trained the trainees in the appropriate inductions/procedures/plans/documents, and is confident that suitable competency has been demonstrated by the trainees.

Date of Training	Trainee Name	Trainer Name	Details of Training Completed	Trainee Signature	Trainer Signature

WORK PROCEDURE FOR VISITORS

All visitors shall undergo an induction in accordance with ***Operational Policy 084 – Work Health and Safety Management Policy Statement and Procedure.*** Visitors are required to be accompanied by a staff member or contractor who has undergone the staff induction process.

The Resource Recovery Centre Supervisor shall induct the visitor to the site by using the Orange City Council **OCCOHS 016 - Visitor Record of Entry** form and read through the visitor induction checklist. Visitors are required to initial next to each item to acknowledge that they have been provided with the relevant information and sign in and out to the site by using this form. Completed records are to be returned to the Manager of Waste Services and Technical Support at the end of each month to be included in the WHS Monthly Summary.

If you are required to escort a visitor on site, ensure that:

- They are issued with appropriate personal protective equipment (PPE) and know how to use it; and
- They remain with you and well away from potential hazards.

Any difficulties encountered in getting visitors to comply should be reported immediately to the Manager Waste Services and Technical Support or Resource Recovery Centre Supervisor.

RESPONSIBILITIES

It is the responsibility of the Resource Recovery Centre Supervisor to ensure that only inducted personnel are on the site, or visitors are accompanied by staff or contractors who have undergone the induction process.

REFERENCES

Section 7.9 – ORRRC Emergency Procedures Manual

Section 7.10 – ERRRC Emergency Procedures Manual

ORANGE CITY COUNCIL
VISITOR RECORD OF ENTRY
Euchareena Road Resource Recovery Centre

Date	Name	Company	Reason for visit	Responsible OCC Officer	ID No	Time		I have read / been advised of the emergency procedures for this site.	Entry Authorised In/ Out
						In	Out		

EMERGENCY PROCEDURE

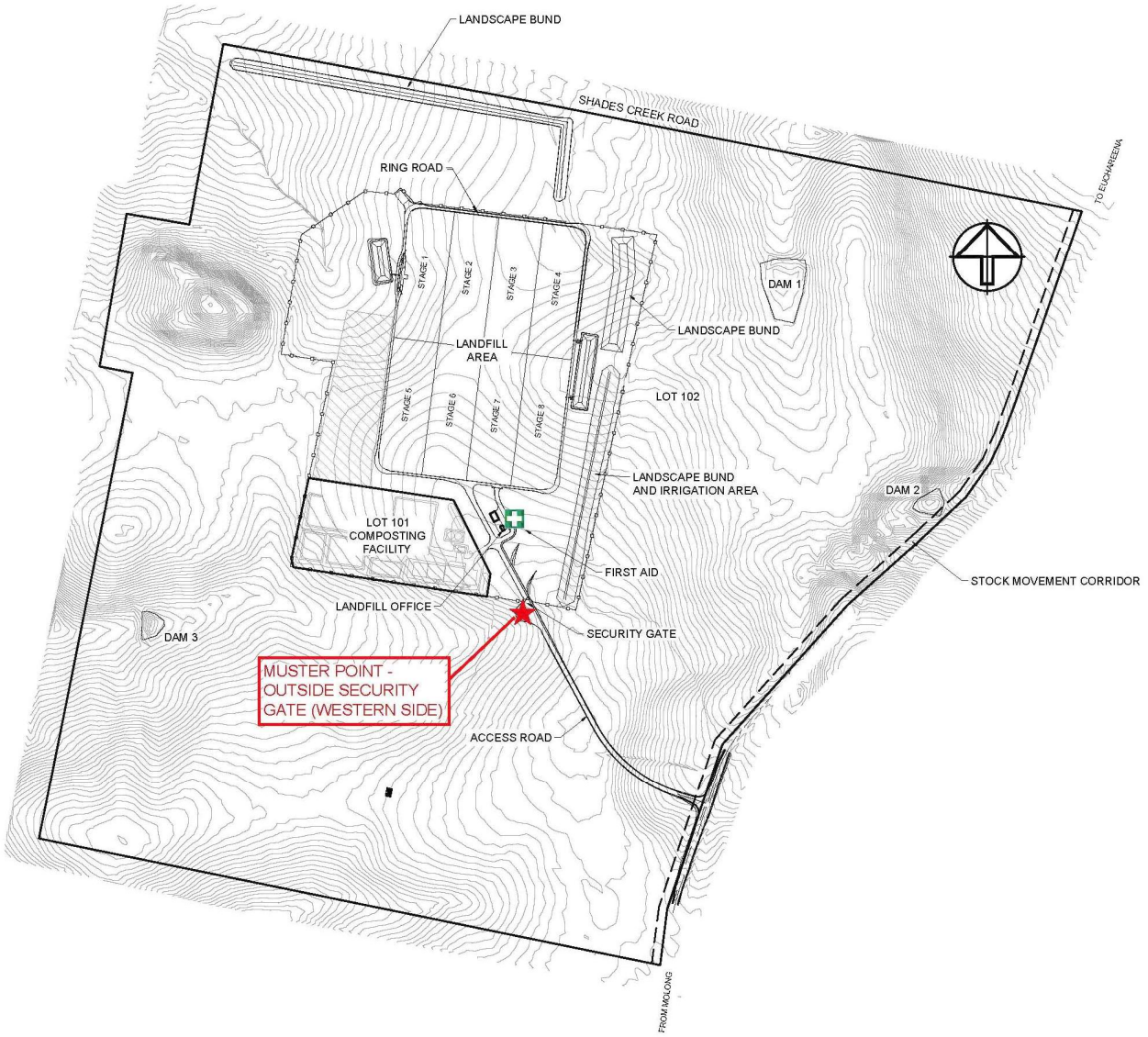
In the event of an evacuation, please proceed to the designated muster point as outlined in the sketch opposite and wait for further instructions.

INCIDENT REPORT

In the event of you having an incident, accident or other concern while you are in Council's facility, please immediately advise the staff member with whom you are dealing/meeting.

Enjoy your visit to Orange City Council

ORANGE
CITY COUNCIL



VISITOR WHS INDUCTION CHECKLIST

GENERAL	COMMENT	INITIAL
Health & Safety within all workplaces is important to us		
Visitors have a responsibility to care for their own and others safety		
Movement around the workplace must be authorised by an OCC representative		
Any identified or perceived hazards or risks must be reported immediately to a staff member		
Faulty or equipment in poor or questionable condition must not be used and should be reported immediately		
You must declare any hazardous equipment, materials or substances which you bring onto the work premises		
PPE must be worn at all times where identified or if instructed to do so		
Blocking or obstructing walkways, or access to emergency exits, switchboards or fire extinguishers is strictly prohibited		
EMERGENCY PROCEDURES		
Emergency Evacuation paths, exits and Evacuation point explained (reminding visitor(s) to look for illuminated green exit signage)		
Explained – in the event of an emergency to make way to an emergency exit and follow your instructions or instructions from a Fire Warden. Explain that a Fire Warden will be wearing a red or yellow hard had and vest identifying them.		
Explain – who will take leadership of the workplace in the event of an emergency		
Explain – all injuries or illness sustained whist in the workplace must be reported to a staff member immediately or as soon as possible		
SMOKING, ALCOHOL & OTHER DRUGS		
Smoking is not permitted within any OCC workplace		
Explain – where designated smoking areas are if applicable		
You must not be under the influence of any alcohol or other illegal drugs whist in any OCC workplace		
If you are taking any prescription medication which may impair your judgement or ability to undertake work/duties or put any other person in the workplace at risk, you must discuss this with a OCC representative prior to commencement of work or activities		
ACCEPTABLE CONDUCT		
OCC workplaces do not tolerate verbal or physical aggression to any staff, clients, patrons or others within the workplace. Serious incidents will be reported to senior management and where necessary, local law enforcement may be notified.		
CONFIDENTIALITY		
You must maintain the confidentiality of any information that you become aware of as a consequence of your visit to this OCC workplace		
ADDITIONAL / OTHER		

ORANGE CITY COUNCIL
VISITOR RECORD OF ENTRY
Ophir Road Resource Recovery Centre

Date	Name	Company	Reason for visit	Responsible OCC Officer	ID No	Time		I have read / been advised of the emergency procedures for this site.	Entry Authorised In/ Out
						In	Out		

EMERGENCY PROCEDURE

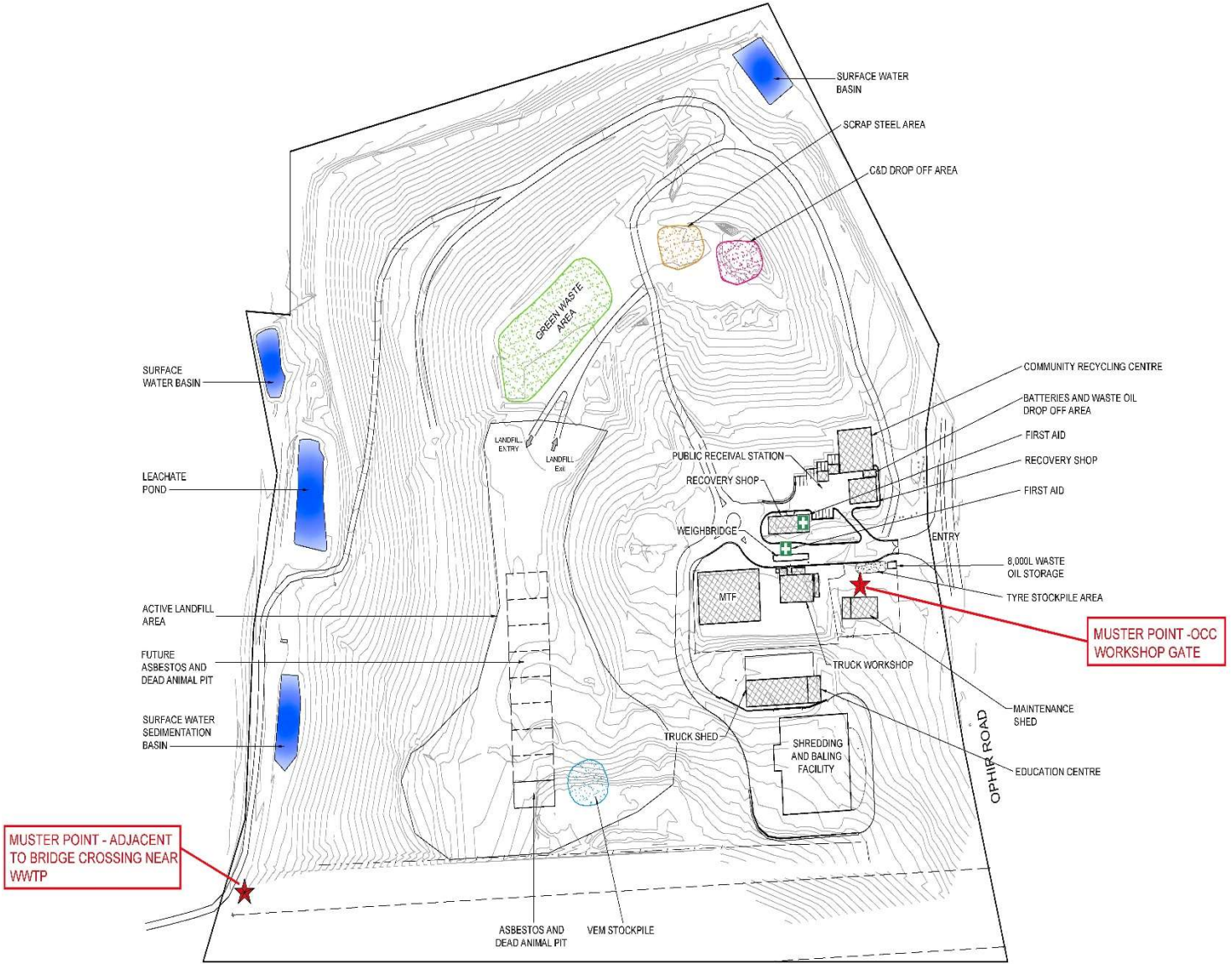
In the event of an evacuation, please proceed to the designated muster point as outlined in the sketch opposite and wait for further instructions.

INCIDENT REPORT

In the event of you having an incident, accident or other concern while you are in Council's facility, please immediately advise the staff member with whom you are dealing/meeting.

Enjoy your visit to Orange City Council

ORANGE
CITY COUNCIL



VISITOR WHS INDUCTION CHECKLIST

GENERAL	COMMENT	INITIAL
Health & Safety within all workplaces is important to us		
Visitors have a responsibility to care for their own and others safety		
Movement around the workplace must be authorised by an OCC representative		
Any identified or perceived hazards or risks must be reported immediately to a staff member		
Faulty or equipment in poor or questionable condition must not be used and should be reported immediately		
You must declare any hazardous equipment, materials or substances which you bring onto the work premises		
PPE must be worn at all times where identified or if instructed to do so		
Blocking or obstructing walkways, or access to emergency exits, switchboards or fire extinguishers is strictly prohibited		
EMERGENCY PROCEDURES		
Emergency Evacuation paths, exits and Evacuation point explained (reminding visitor(s) to look for illuminated green exit signage)		
Explained – in the event of an emergency to make way to an emergency exit and follow your instructions or instructions from a Fire Warden. Explain that a Fire Warden will be wearing a red or yellow hard had and vest identifying them.		
Explain – who will take leadership of the workplace in the event of an emergency		
Explain – all injuries or illness sustained whist in the workplace must be reported to a staff member immediately or as soon as possible		
SMOKING, ALCOHOL & OTHER DRUGS		
Smoking is not permitted within any OCC workplace		
Explain – where designated smoking areas are if applicable		
You must not be under the influence of any alcohol or other illegal drugs whist in any OCC workplace		
If you are taking any prescription medication which may impair your judgement or ability to undertake work/duties or put any other person in the workplace at risk, you must discuss this with a OCC representative prior to commencement of work or activities		
ACCEPTABLE CONDUCT		
OCC workplaces do not tolerate verbal or physical aggression to any staff, clients, patrons or others within the workplace. Serious incidents will be reported to senior management and where necessary, local law enforcement may be notified.		
CONFIDENTIALITY		
You must maintain the confidentiality of any information that you become aware of as a consequence of your visit to this OCC workplace		
ADDITIONAL / OTHER		

Toolbox Meeting Record

Toolbox meetings will be conducted at the commencement of any site works, daily for a PSMP or at the commencement of any new job, and at least once a week for repetitive maintenance works and Council fixed sites. Toolbox meetings may be carried out by any Council staff member, who has been trained in the toolbox meeting procedure, and has been delegated the responsibility for doing so by their Supervisor or Line Manager. OP 084 section 3.5

Workplace/Job Site

Company

Name of person conducting toolbox meeting

Activity description

Name of Supervisor for Works	**Period Covered by Toolbox Talk** (✓) ☐ today only ☐ if longer than one day (dates) - / / to / /
Time /Date am/pm / /	

Executive Management site visit **Signature:** **Date:** ……/……/20…..

Line Manager site visit **Signature:** **Date:** ……/……/20…..

SWMS/ WAPS/SOPs applicable to work being undertaken

CENTROC Induction Card (Contractors Only)

❑ **Yes - Card Sighted**

❑ **No - Company Name & Contact**

Discussion Items	n/a✓	Issues identified / discussed
All staff inducted to the site		
Work to be undertaken		Discuss work activities covered by this toolbox. Does everyone understand what work is to be undertaken?
Traffic/Pedestrian Access		Approved TCP
Other people & crews on site		Location, activities
Weather hazards & night work		Snow, wind, rain, lighting, heat
Utilities		Dial before you dig
PPE Available/First aid on site		First aider, kits, PPE
Plant condition/log books		Pre start checks, log books
Work at heights		Scaffolding, ladders
Excavation trenches		>1.5m bench, batter and shore
Confined spaces		Entry permit, risk assessment
Electrical works		Lockout / Tag out procedure
Noise/dust/environment in workplace		PPE, water cart
Chemicals/Hazardous materials		Safety Data Sheets, chemical storage, chemical records
Manual handling		Lifting equipment
Material storage/gas cylinders		Procedures for storage
Emergency Procedures		Muster point, equipment, first aid, communication
Amenities		Location
Design Changes		Any changes as a result of a WHS design audit
Environmental Controls		e.g. sediment and erosion controls, trees etc.
Asbestos issues		Could the work area contain asbestos

Health Conditions –Please list any known health conditions in the workplace such as allergies and anaphylaxis reactions:

Fatigue Management –Have you a strategy in place to manage fatigue? Please list any control measures to be implemented to avoid fatigue (includes secondary employment)
Have you notified your supervisor if you are exceeding fatigue management guidelines **Yes** ☐ **No** ☐
Detail on timesheet authorisation received

Additional hazards identified not included in the SWMS- Is fatigue management relevant

Hazard	Risk Level	Control	Residual Risk

Additional points raised/comments –including any recent incidents relating to this activity, changes or updates to legislation, standards, codes of practice or safety alerts are to be discussed here.

I acknowledge I have been involved in/advised of the above discussions and I am confident the safety issues raised have been addressed to ensure as safe workplace as far as reasonably practicable. **Visitors to the site to indicate with a 'V' next to their name. Card number is for contractors - Centroc induction card number**

Card No	Print Name	Signature	Time

Site Characteristics & Environmental Controls

Sketch the site layout highlighting site works, intended environmental controls (such as sediment and erosion controls) and any significant features (i.e. water course, trees etc.)

Note: Sediment and erosion control used on site – insert reference or symbols from "Divert, Cover, Capture and maintain " "Booklet onto the above sketch e.g.

Standard Operating Procedure

ORRRC Entry/Exit Protocols

File No: **SOP 03**

I approve the use of this Standard Operating Procedure:

Name: Wayne Davis	**Position:** Manager Waste Services and Technical Support
Signature:	**Date:** 14/12/2021

Revision Status:

Change History

Date	Details of Change	Version No.
28/10/2013	Document created	Draft
31/03/2014	Draft approved	Version 1
23/10/2014	Content updated	Version 2
17/08/2015	Draft approved	Version 2
22/1/2020	Version updated to correspond to OEMP	Version 5
2/3/2021	Update Signature Date Version updated to correspond to OEMP	Version 6
14/12/2021	Update Signature Date Version updated to correspond to OEMP	Version 7

PURPOSE

The purpose of this document is to ensure the correct procedures are followed when entering and exiting the Ophir Road Resource Recovery Centre.

WORK PROCEDURE

1) Public access is not permitted outside of the operating hours specified in EPL 5956: **7.00 am to 7.00 pm Monday to Friday** and **7:00 am to 5:00 pm Saturday, Sunday and Public Holidays**. Outside of these hours the main site gate is to be closed.

2) The Resource Recovery Centre Supervisor, or a nominated staff member or contractor is to unlock and open the gate at the site entrance at **8.00 am** each morning to allow public access to the site.

3) The site supervisor, or a nominated staff member or contractor is to monitor the site for any members of public remaining within the site at **5.00 pm** each afternoon. Members of the public are to be asked to exit the premise, and after the last member of the public has left, the site entrance gate is to be closed and locked.

4) OCC staff, and JR Richards contractors working at the site are permitted to enter and exit the site outside of opening hours, however, the site entrance gate is to be closed and locked when not open to the public.

5) Any unusual incidents, for example finding the site entrance gate open outside of opening hours or members of the public on the site outside of opening hours is to be recorded on **Form 15**, detailed in **SOP 15 - ORRRC Daily Checklist**.

RESPONSIBILITIES

It is the responsibility of individual staff and contractors to ensure the correct procedures are followed when entering and exiting the site.

RECORDS

Any unusual incidents are recorded on **Form 15** from **SOP 15 - ORRRC Daily Checklist**.

REFERENCES

SOP 15 – ORRRC Daily Checklist

	Standard Operating Procedure
	ERRRC Entry/Exit Protocols
	File No: **SOP 04**

I approve the use of this Standard Operating Procedure:

Name: Wayne Davis	**Position:** Manager Waste Services and Technical Support
Signature:	**Date:** 14/12/2021

Revision Status:

Change History

Date	Details of Change	Version No.
28/10/2013	Document created	draft
31/03/2014	Draft approved	Version 1
17/08/2015	Draft approved	Version 2
22/1/2020	Version updated to correspond to OEMP	Version 5
2/3/2021	Update Signature Date Version updated to correspond to OEMP	Version 6
14/12/2021	Update Signature Date Version updated to correspond to OEMP	Version 7

PURPOSE

The purpose of this document is to ensure the correct procedures are followed when entering and exiting the Euchareena Road Resource Recovery Centre.

WORK PROCEDURE

1) Public access is not permitted at the ERRRC. Two gates are passed on the way into the ERRRC: first the gate on Euchareena Road, and second the security gate at the operational site boundary.
2) **Procedures for entering the site**
    a. The Euchareena Road gate is to be opened whenever there is a Resource Recovery Centre Operator on the site. This gate remains open until the Resource Recovery Centre Operator leaves the site.
    b. The electric security gate is to remain closed at all times; the gate will automatically open and close, access is only permitted to those who either:
        i. Are authorised and have undergone the **Staff Training** in **Section 5.1** of the OEMP, and have been issued a 'fob' to open the security gate; or
        ii. Individuals accompanied by an authorised person.
    c. Individuals who are not authorised to access the site with a fob, and are arriving unaccompanied may call the number on the site entrance sign and speak to either the Resource Recovery Centre Supervisor, or the Manager Waste Services and Technical Support.
    d. All staff members and contractors who are authorised to enter the site and have been issued a fob are required to follow the procedures in **SOP 05 – Allocation of keys and Fobs at the ERRRC.**
3) **Procedures for exiting the site**

    The last staff member or contractor leaving the site is required to monitor the site for any other individuals still present. An inspection of the site is made to ensure that:

    a. The site office is to be locked
    b. All machinery is away and sheds are closed
    c. Check all pumps are off
    d. Workshop cage is locked
    e. No dams are overflowing
    f. All gates are closed

RESPONSIBILITIES

It is the responsibility of individual staff and contractors to ensure the correct procedures are followed when entering and exiting the site.

RECORDS

Any unusual incidents are recorded on **Form 16** from **SOP 16 - ERRRC Daily Checklist**.

REFERENCES

Section 5.1 – Staff Training

SOP 05 – Allocation of Keys to the ERRRC

SOP 16 – ERRRC Daily Checklist

	Standard Operating Procedure
	Allocation of Keys and Fobs at the ERRRC
	File No: **SOP 05**

I approve the use of this Standard Operating Procedure:

Name: Wayne Davis	**Position:** Manager Waste Services and Technical Support
Signature:	**Date:** 14/12/2021

Revision Status:

Change History

Date	Details of Change	Version No.
01/11/2013	Document created	Draft
31/03/2014	Draft approved	Version 1
17/08/2015	Draft approved	Version 2
22/1/2020	Version updated to correspond to OEMP	Version 5
2/3/2021	Update Signature Date Version updated to correspond to OEMP	Version 6
14/12/2021	Update Signature Date Version updated to correspond to OEMP	Version 7

PURPOSE

The purpose of this document is to ensure the correct procedures are followed when allocating keys and fobs to the ERRRC, and tracking the whereabouts of each key.

WORK PROCEDURE

1) Authorisation is required from the Manager Waste Services and Technical Support prior to any staff, contractors, or visitors entering the ERRRC site. Resource Recovery Centre Operators and select contractors will be issued a key to unlock the gate off Euchareena Road, and regular staff members and contractors will be issued a 'fob' key to access the internal security gate.

2) Upon issuing a key or 'fob', the **Key and Fob Issue Register – Form 05** is to be completed by the Manager Waste Services and Technical Support.

3) All keys and fobs are held by the Manager Waste Services and Technical support, and issued as required.

RESPONSIBILITIES

It is the responsibility of Manager Waste Services and Technical Support to ensure only personnel who have undergone the appropriate Staff Training are issued keys or fobs to the ERRRC.

The Manager Waste Services and Technical Support is required to complete **Form 05 – Key and Fob Issue Register** and is responsible for controlling who has access to the site and managing the issue of keys and fobs.

RECORDS

Records of who holds, or has held keys to the site are recorded on **Form 05 – Key Issue Register**. This form is kept with the Manager Waste Services and Technical Support.

REFERENCES

Section 5.1 – Staff Training

KEY AND FOB ISSUE REGISTER

Fob Number	Key Number	Date Issued	Name	Organisation	Role	Inducted (Y/N)	Key Returned (signature)	Key Returned (Date)

Standard Operating Procedure

Beekeeping Equipment and Honey Containers

File No: **SOP 06**

I approve the use of this Standard Operating Procedure:

Name: Wayne Davis	**Position:** Manager Waste Services and Technical Support
Signature:	**Date:** 14/12/2021

Revision Status:

Change History

Date	Details of Change	Version No.
19/11/2013	Document created	draft
31/03/2014	Draft approved	Version 1
17/08/2015	Draft approved	Version 2
01/09/2016	Draft approved	Version 3
14/02/2018	Draft approved	Version 4
31/1/2020	Apiculture Committee Members Updated Version updated to correspond to OEMP	Version 5
2/3/2021	Apiculture Committee Members Updated Version updated to correspond to OEMP	Version 6
14/12/2021	Update Signature Date Version updated to correspond to OEMP	Version 7

PURPOSE

The purpose of this document is to describe the procedure to be followed in the identification and management of bee keeping equipment or timber containing evidence of bee activity found within waste streams entering the facility and bee activity within logs prior to processing.

It is noted Beekeeping is also known as "Apiculture".

There are many various items of equipment used in the collection and production of honey which have the potential to enter waste streams. Some of these items can be easily identified while others may take a more detailed examination, refer to **References** for more information on identification.

WORK PROCEDURE

Inspection of waste and removal of beekeeping equipment and used containers

1) All incoming waste loads entering the Ophir Road Site will be inspected at the weighbridge for beekeeping equipment. If any equipment is detected it will be rejected and the person advised to seek alternative means of disposal. A record of all rejections of bee related material is to be taken at the time of rejection as per details requested on record sheet (refer **Form 6.01 – Rejected Apiculture Product Register**). A hand out providing alternative disposal options is to be provided to the driver (refer **Form 6.02 – Disposal of Apiculture Equipment Handout**).

2) Waste being unloaded at the baling facility is to be inspected for beekeeping equipment and containers which had contained honey or bi-products.

3) If beekeeping equipment is identified as waste is being unloaded or sorted in the baling facility, it is to be placed in the designated MGB and taken to the weighbridge for burial onsite ASAP.

4) A record of all bee related material found within the waste stream and actions taken are to be recorded as per details requested on **Form 6.03 – Found Apiculture Product Register**.

5) Used honey containers are to be placed in the designated MGB and taken to the MTF for recycling.

Inspection, segregation and processing of logs greater than 250 mm diameter

1) All logs between 250 mm & 500 mm diameter are to be visually inspected for bee activity prior to processing.

2) Logs over 500 mm diameter are to be split and inspected.

3) All pieces of timber found containing evidence of live or dead bees, larvae and/or colonies must to be placed in a segregated location and processed separately.

4) Infected logs along with any infected processed material must not be transported to the ERRRC it is to be disposed of at the Ophir Road facility or another Council approved site.

Record Keeping and Reporting

1) Records must be kept for:

   a. All feral colonies (alive or dead) found in tree logs, recorded as rejected or found waste on **Form 06.01 - Rejected Apiculture Product Register** or **Form 6.03 – Found Apiculture Product Register** respectively.

   b. Processing, storage and disposal records for all infected material

2) If any bee keeping equipment, containers, or infected timber is found within the waste stream at the ORRRC, this is to be noted on the ORRRC Daily Checklist (refer **SOP 15**) as well as **Form 06.03 – Found Apiculture Product Register**.

3) Each time a beekeeping related product or infected log is identified **Form 06.01 – Rejected Apiculture Product Register** or **Form 6.03 – Found Apiculture Product Register** (as appropriate) is to be sent to the Manager Waste Services and Technical Support.

4) The Manager Waste Services and Technical Support is to notify the members of the OWP Apiculture Committee and additional representatives at DPI when apiculture products are identified within the waste stream. The following people are to be notified:

   Orange Waste Project Apiculture Committee Members:

   - Mr Mal Porter – malp380@hotmail.com
   - Mr Jon Lockwood – jon@goldfieldshoney.com
   - Jane Frances– jane.frances@dpi.nsw.gov.au
   - Mr Byron Taylor – Byron.Taylor@asurequality.com

   Representatives from NSW Department of Primary Industries:

   - Jane Frances– jane.frances@dpi.nsw.gov.au

RESPONSIBILITIES

It is the Resource Recovery Centre Supervisor's and Operator's responsibility to ensure that all incoming waste is screened, and the landfilling operations are monitored to ensure that no beekeeping equipment, containers or infected logs are transported to the ERRRC for disposal.

The Resource Recovery Centre Supervisor is responsible for ensuring the Resource Recovery Centre Operators are adequately trained in this work procedure.

It is also the responsibility of the Resource Recovery Centre Supervisor and Operators to complete the necessary documentation, including:

- **Form 06.01 – Rejected Apiculture Product Register**
- **Form 06.03 – Found Apiculture Product Register**
- **Form 15.01 – ORRRC Daily Checklist**

RECORDS

Records are to be kept using:

- **Form 06.01 – Rejected Apiculture Product Register** for products, containers or infected timber found by RRC operators screening incoming self-haul waste.
- **Form 06.03 – Found Apiculture Product Register** for products, containers or infected timber found by RRC operators found in waste being unloaded at the bailing facility.
- **Form 15.01 – ORRRC Daily Checklist** is to note the incidence of any bee related products rejected from or found at the site.

Each time a beekeeping product or infected log is identified, **Form 06.01** or **Form 06.03** (whichever is appropriate) is to be sent to the Manager Waste Services and Technical Support.

REFERENCES

WAP 010 – Beekeeping Equipment

Used Beekeeping Equipment

Used beekeeping equipment is any fitting, utensil, apparatus or implement that is used, or has been used, for the purposes of, or in connection with beekeeping, or in processing, handling or storing apiary products which include but are not limited to: beeswax, honey, cut comb honey, comb sections, honeydew, bee collected pollen, propolis or royal jelly, supers, frames, hive lids, floorboards, queen excluders, feeders, division boards, honey tins, buckets, drums and IBC's or any other substance considered to be an apiary product including slum gum.

Included in this definition is any cavity which has contained bees. This includes but is not limited to: bird nesting boxes, buckets, tyres and cavities in construction waste (e.g.: in a wall).

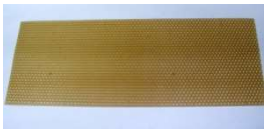
Used honey containers are defined as being any receptacle that contains or has contained honey in consumer ready packaging.

It is accepted most used honey containers will be commercial retail packs, although some could be from hobby beekeepers or farmers markets, and may include non-conventional packaging.

Hand operated Extractor (plastic or metal

Motorised Extractor

Extractor Buckets



Beeswax Foundation

Frames

Split Frames

Box Frames

Storage tanks

Boxes

Gloves

Suits

Scraper

Hive Tool

Strainer

Bee Brushes

Excluder Cleaner

Smoker

Steel Excluder (also in plastic)

Honey comb

Pollen

Royal Jelly

Honey Containers

Bees Wax

Slumgum

Beehives in and on timber

Beehive inside timber

Beehive inside timber

Beehive inside timber

External Beehives

External Beehives

External Beehives

OPHIR ROAD RESOURCE RECOVERY CENTRE

REJECTED APICULTURE PRODUCT REGISTER				
Date	**Time**	**Type of Product Rejected, incl. Any markings or registration of apiarist**	**Mode of Transport to ORRRC, incl. Registration No. of vehicle**	**Handout Given (Y/N)**

Certified Correct (signed)

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Resource Recovery Centre Supervisor

Note: This original form is to be kept by the Resource Recovery Centre Supervisor at the ORRRC and a copy sent to the Manager Waste Services and Technical Support each time an apiculture product is rejected from the ORRRC.

No dumping of any honey bee equipment, products or remains at Orange City Council Waste Facilities

We apologise for the inconvenience of refusing beekeeping equipment or beekeeping products or waste containing evidence of bee colony remains at waste management facilities in the Orange City Council area.

Why can't beekeeping equipment and or products be disposed at Orange City Council tips?

This is being done to minimise the risk of spreading honey bee diseases, and in particular, American Foulbrood Disease (AFB) to bee colonies, feral or managed, in the flight range of these facilities.

What is American Foulbrood Disease (AFB) and why is it a concern?

AFB is caused by a spore forming bacteria that kills the young developing honey bees. The spores are consumed by the bee larvae via their food (honey and pollen). When many spores are fed to very young bee larva they become infected resulting in their death. With each larvae dying from AFB, a huge number of spores are being produced resulting in high spore levels and therefore high infection rates of the developing larvae within the hive. This results in the death of the hive as fewer young bees develop through to adults. A hive that has died out because of AFB can then be robbed by bees from other hives spreading the disease to other colonies.

Honey bee equipment and products can be infected with AFB spores which if honey bees have access to can potentially spread the disease to other colonies.

AFB is an expensive burden on the apiary industry through lost production, equipment and time in monitoring and eradicating the disease. The only legal way to deal with AFB in NSW is to burn, bury or irradiate infected hive material.

How can I get rid of my beekeeping equipment/products?

The type of beekeeping equipment/products will impact the disposal method chosen.

Burning

Beekeeping equipment and products, logs with cavities containing bee combs etc can be burnt in a pit to prevent any honey and wax flowing away and then cover with a minimum of 30 cm of soil to prevent any bee access to the material.

If burning **all fire restrictions must be followed** and permits obtained if required.

Deep burial

Deep burial is another option available for disposing of equipment.

Recycling

Metal beekeeping equipment can be recycled. These items should be cleaned and free of any honey or wax prior to delivery to scrap metal recyclers including galvanised drums, honey tins, queen excluders etc., to minimise the possible spread of AFB.

Other Waste Management facilities

Waste management facilities in other council areas may still accept bee equipment. You should ring and check prior to delivery. The risk of possible disease spread still needs to be considered. You should inform the tip of the nature of the goods and ask if it can be buried immediately on delivery.

Irradiation as an alternative

Irradiation is available if the equipment is still useable but you think there is an AFB risk involved. Equipment can be irradiated by Steritech (see web page http://www.steritech.com.au/) and then used with confidence that AFB has been killed.

Further Information

For further information, please contact:

Dr Doug Somerville
Technical Specialist Honeybees
NSW Department of Primary Industries
Email: doug.somerville@dpi.nsw.gov.au

Ph: 02 4828 6619
Mob: 0427 311 410

OPHIR ROAD RESOURCE RECOVERY CENTRE

FOUND APICULTURE PRODUCT REGISTER				
Date	**Time**	**Type of Product Found incl. Any markings or apiarist registration number**	**Mode of transport and Registration No. (if known)**	**Action Taken**

Certified Correct (signed)

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Resource Recovery Centre Supervisor

Note: This original form is to be kept by the Resource Recovery Centre Supervisor at the ORRRC and a copy sent to the Manager Waste Services and Technical Support each time an apiculture product is found in the waste stream at the ORRRC.

	Standard Operating Procedure
	Weighbridge Procedures
	File No: **SOP 07**

I approve the use of this Standard Operating Procedure:

Name: Wayne Davis	**Position:** Manager Waste Services and Technical Support
Signature:	**Date:** 14/12/2021

Revision Status:

Change History

Date	Details of Change	Version No.
1/11/2013	Document created	Draft
31/03/2014	Draft approved	Version 1
17/08/2015	Draft approved	Version 2
22/08/2016	Draft approved	Version 3
14/02/2018	Draft approved	Version 4
22/1/2020	Version updated to correspond to OEMP	Version 5
2/3/2021	Update Signature Date Version updated to correspond to OEMP	Version 6
14/12/2021	Update Signature Date Version updated to correspond to OEMP	Version 7

PURPOSE

The purpose of this document is to provide Resource Recovery Centre employees with the correct work procedures to ensure the weighbridge procedures are correctly and efficiently undertaken.

WORK PROCEDURE

Incoming Waste

1) Every vehicle entering into the ORRRC is recorded by the weighbridge operators. Records are recorded electronically and will include:
   a) Date/Time
   b) Vehicle Type (including registration number for heavy vehicles)
   c) Waste Type
   d) Waste Source, and
   e) Weight (or vehicle type where applicable)
2) Asbestos and tyre waste must be recorded by waste transporters using the WasteLocate system at the ORRRC weighbridge by scanning the QR2id plate (refer – **SOP 26 – WasteLocate Tracking**) when waste amounts are:
   a) Asbestos waste that is more than 100 kilograms or more than 10 square metres of asbestos sheeting.
   b) Tyre waste that is greater than 200 kilograms or more than 20 waste tyres (whichever weighs less).
3) The waste load of light vehicles and single axel trailers is calculated using a multiplication factor to estimate the weight.
4) The waste load of heavy vehicles and double axel trailers is calculated using the calibrated weighbridge.
5) The fees and charges applicable to incoming self-haul loads is listed in the OCC 'Delivery Plan', which is located in the site office.
6) The following practices apply to screening of incoming waste:
   a) Public access is only permitted during opening hours
   b) Drivers are asked to describe the type of waste to be deposited on entry to the facility
   c) Inspections of waste loads are to be made as required
7) Screen incoming waste, looking specifically for:
   a) bee keeping equipment, containers, infected timber products
   b) non-approved (excluded wastes), refer to **Section 3.5.1.6** of the OEMP for a complete list of excluded wastes.

8) If bee related products, or excluded wastes are identified, the vehicle is to be refused entry to the site.

9) The correct tipping fee is calculated and requested (for self-haul drivers).

10) Receipt given to all vehicles.

11) Direct traffic to appropriate drop-off zone (refer to **Section 3.5.1.5** of the OEMP for further details).

12) Wastes are monitored and inspected as they are being discharged to ensure excluded non-approved wastes are not being disposed. Drivers are to be asked to uncover their load if required.

Internal Waste Movements

1) Internal waste movements will be recorded over the weighbridge in accordance with **Table 7.1**. Electronic records will include:

   a) Date/time;

   b) Waste type;

   c) Waste source; and

   d) Weight.

Table 7.1 – Internal waste movements

Type	Waste Movement		How measured
	From	To	
Mixed self-haul waste (municipal, C&I and C&D)	Receival station bins	Baling shed	Weighed
Select non-recoverable C&D Waste	Baler/shredding shed	ERRRC	Weighed
Recoverable C&D waste	Baling/shredding shed	Storage areas	Weighed
Garden organics	Green drop off	ERRRC Compost Facility	Weighed
Recycling	Recovered from mixed waste in baling shed	Recovered Material	Weighed
Recycling	Recovered from organics in shredding shed	Recovered Material	Weighed
Mixed waste	Waste from MTF	Baling shed	Weighed
Mixed waste	Contamination from organics	Baling shed	Weighed

Source: Waste and Resource Recovery Monitoring Program

Waste Movements – Leaving ORRRC

1) Every vehicle leaving the ORRRC with any waste will be recorded by the weighbridge operators. Electronic records will include:

   - Date/Time
   - Vehicle type
   - Waste type

- Waste source
- Weight (or vehicle type where applicable)

2) Asbestos and tyre waste must be recorded by waste transporters using the WasteLocate system at the ORRRC weighbridge by scanning the QR2id plate (refer – **SOP 26 – WasteLocate Tracking**) when waste amounts are:

   a) Asbestos waste that is more than 100 kilograms or more than 10 square metres of asbestos sheeting.

   b) Tyre waste that is greater than 200 kilograms or more than 20 waste tyres (whichever weighs less).

Reporting Excluded Waste

1) If during the screening, waste deposition, waste spreading and compacting, or during sorting of waste in the baling shed or during the baling, any excluded waste(s) is identified, the Resource Recovery Centre Operators are required to immediately notify the Resource Recovery Centre Supervisor.

2) Any identified excluded waste is to be transported to the lockup household waste storage facility.

3) The incident is to be recorded on the Daily Checklist (refer to **SOP 15 – ORRRC Daily Checklist** with reference to an Incident Report Number, and an Incident Report is to be prepared as per **SOP 13 – Pollution Incident Response Management**. Including details of the type of waste, the source of the waste and the vehicle and driver identification (if applicable).

RESPONSIBILITIES

It is the Resource Recovery Centre Supervisor's responsibility to ensure that the Recovery Centre Operators are adequately trained in this work procedure, including operating the weighbridge computer and identifying excluded wastes.

It is the responsibility of the Resource Recovery Centre Operators to undertake the correct weighbridge procedures.

RECORDS

Weighbridge records are recorded electronically on the computer within the weighbridge gatehouse. These records are kept for a minimum of four years.

The identification of excluded wastes is to be recorded as per **SOP 13 – Pollution Incident Response Management,** and the incident number recorded on the **ORRRC Daily Checklist** (refer **SOP 15**).

REFERENCES

Section 3.5 – Waste Receival

Section 9.3 – Waste and Resource Recovery Monitoring Program

SOP 13 – Pollution Incident Response Management

SOP 15 – ORRRC Daily Checklist

SOP 23 – ORRRC Traffic Management (including Traffic Management Plan)

SOP 26 – WasteLocate Tracking

WAP 011 – Weighbridge Procedures

Standard Operating Procedure

Handling and Disposal of Asbestos

File No: **SOP 08**

I approve the use of this Standard Operating Procedure:

Name: Wayne Davis	**Position:** Manager Waste Services and Technical Support
Signature:	**Date:** 14/12/2021

Revision Status:

Change History

Date	Details of Change	Version No.
28/11/2013	Document created	draft
31/03/2014	Draft approved	Version 1
17/08/2015	Draft approved	Version 2
22/08/2016	Draft approved	Version 3
22/1/2020	Version updated to correspond to OEMP	Version 5
2/3/2021	Update Signature Date Version updated to correspond to OEMP	Version 6
14/12/2021	Update Signature Date Updated SafeWork NSW and NSW Asbestos Coordination Committee links Version updated to correspond to OEMP	Version 7

PURPOSE

The purpose of this document is to describe the procedure to be followed when asbestos is presented at the weighbridge to Resource Recovery Centre Operators. It is important for the health and safety of Resource Recovery Centre Staff and the general public utilising the facility to ensure asbestos waste is appropriately handled and disposed of, with minimal exposure to the open air.

WORK PROCEDURE

1) All incoming waste is to be screened at the weighbridge, following the procedures identified in **SOP 07 – Weighbridge Procedures**; drivers are obliged to notify weighbridge operators if their load contains asbestos.

2) All transporters of incoming loads of asbestos waste are to be instructed to scan the QR2id plate at the ORRRC weighbridge. If the transporter fails to scan the plate, vehicle registration details must be recorded by the operator on **Form 26.01** (refer – **SOP 26 – WasteLocate Tracking**).

3) If the load is identified as containing asbestos, the waste may only be received (as per the provisions of the Protection of the Environment Operations (Waste) Regulation 2014) if:

    a. Bonded asbestos material is securely packaged (e.g. with heavy duty plastic);

    b. Friable asbestos is in a sealed container; and/or

    c. Asbestos contaminated soils are wetted down

4) If the load does not comply with the conditions noted in Work Procedure 3 above, the waste is to be rejected by weighbridge operators, and drivers issued with the NSW Asbestos Coordination Committee document ***Disposing of asbestos waste***.

5) The following details are to be recorded by weighbridge operators for rejected loads on **Form 08 – Driver/Transport company details for rejected asbestos waste loads**:

    a. Name and contact details of the driver/transport company;

    b. Origin of the asbestos or asbestos containing material;

    c. Amount and type of asbestos or asbestos containing material;

    d. Reasons why the asbestos waste was not properly packaged, disclosed or transported; and

    e. Development consent details (if applicable)

    The Resource Recovery Centre Supervisor is required to follow up with the driver/transport company should the asbestos waste not be returned to the ORRRC for disposal. If evidence of appropriate disposal of the waste cannot be provided, the Resource Recovery Centre supervisor is required to notify the Manager Waste Services and Technical Support who will report the driver/transport company to the EPA.

6) When a driver who has previously been rejected returns with the asbestos waste appropriately packaged, **Form 08** is to check off the date the driver returned.

7) Asbestos waste is to be handled in a manner to minimise the chance of damage to the wrapping, breakage and/or dust generation, and immediately placed in the active landfill cell and covered with a minimum of 300 mm of VEM.

8) Weighbridge operators are required to issue a receipt to drivers for asbestos waste received. The receipt will note the time, date, location of disposal, weight of asbestos containing material disposed, method of disposal, and a receipt number.

RESPONSIBILITIES

It is the Resource Recovery Centre Supervisor's responsibility to ensure that all incoming waste is screened, and the landfilling operations are monitored to ensure that asbestos waste is appropriately handled.

If asbestos waste is not adequately packaged and the load is consequently rejected at the weighbridge, the weighbridge operators are required to complete **Form 08 – Driver/Transport Company details for rejected asbestos waste loads.**

It is the Resource Recovery Centre Supervisors responsibility to follow up all entries listed on **Form 08** to ensure that waste is adequately packaged and returned to the ORRRC for disposal. If evidence of appropriate disposal of the waste is not provided, the Manager Waste Services and Technical Support is to be notified, who is then responsible for notifying the EPA.

The Resource Recovery Centre Supervisor is responsible for ensuring that all Resource Recovery Centre Operators undertaking weighbridge procedures and landfilling of asbestos waste are adequately trained in this work procedure.

RECORDS

Form 08 – Driver/Transport Company details for rejected asbestos waste loads is to be completed each time a load of asbestos is rejected at the weighbridge. When the driver returns with the waste appropriately packaged, the form is to reflect the date the waste is received.

REFERENCES

Section 3.6 – Waste Disposal

SOP 07 – Weighbridge Procedures

SOP 26 – WasteLocate Tracking

SWMS 001 – Asbestos Disposal

Orange Waste Project Asbestos Management Plan

NSW SafeWork *Guide – Management of asbestos in recycled construction and demolition waste – guide* available from:

https://www.safework.nsw.gov.au/

NSW Asbestos Coordination Committee, *Disposing of asbestos waste* available from: https://www.asbestos.nsw.gov.au/removal-and-disposal/disposing-of-asbestos-waste

Note: 'Bonded asbestos material' means any material (other than friable asbestos material) that contains asbestos. 'Friable asbestos material' means any material that contains asbestos and is in the form of a powder or can be crumbled, pulverised or reduced to powder by hand pressure when dry.

DRIVER DETAILS FOR REJECTED ASBESTOS WASTE								
Name (1)	**Company (1)**	**Address (1)**	**Phone (1)**	**Origin of Asbestos**	**Amount of Asbestos**	**Reason for Rejection**	**Development Consent Details**	**Waste returned for disposal (date)**

(1) If no contact details are provided please record vehicle registration, vehicle type, make and model (if possible) and vehicle colour

Certified Correct (signed)

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Resource Recovery Centre Supervisor

Note: This original form is to be kept by the Resource Recovery Centre Supervisor at the ORRRC and a copy sent to the Manager Waste Services and Technical Support when the form is full, and/or when driver has not returned waste for disposal and evidence of appropriate disposal of the waste cannot be provided within 28 days.

	Standard Operating Procedure
	Rejected Bales from ERRRC
	File No: **SOP 09**

I approve the use of this Standard Operating Procedure:

Name: Wayne Davis	**Position:** Manager Waste Services and Technical Support
Signature:	**Date:** 14/12/2021

Revision Status:

Change History

Date	Details of Change	Version No.
4/11/2013	Document created	draft
31/03/2014	Draft approved	Version 1
17/08/2015	Draft approved	Version 2
22/09/2016	Draft approved	Version 3
22/1/2020	Version updated to correspond to OEMP	Version 5
2/3/2021	Update Signature Date Version updated to correspond to OEMP	Version 6
14/12/2021	Update Signature Date Version updated to correspond to OEMP	Version 7

PURPOSE

The purpose of this document is to describe the procedure to be followed when a compromised bale is identified during screening of incoming waste at the ERRRC. It is sometimes necessary to return compromised bales to the ORRRC for re-baling for a number of reasons, including: limiting the possibility of beekeeping equipment or containers potentially exposed, and limiting the incidence of odour, litter, and vermin at the site.

WORK PROCEDURE

1) All incoming waste is to be screened when unloaded at the tipping face by the Resource Recovery Centre Operator.

2) Screening involves visually assessing the integrity of the baled waste, and identifying any tears or holes in the wrapping.

3) Broken bales may be placed in landfill but must be covered on the same day they are land applied.

4) Broken bales must be placed in the landfill with the tear/hole firmly abutted against a non-compromised bale.

5) If required, the tear/hole can be re-wrapped using the onsite wrapper.

6) If the tear or hole in the bale is large enough to render the integrity of the bale to be compromised, and the waste is not adequately contained within the bale (such that the bale is not sealed from bee access) it is to be returned to the ORRRC for re-baling.

7) If the compromised bale is returned to the ORRRC for re-baling, this is to be recorded on **Form 09 – Compromised Bales Returned to ORRRC** and noted on **Form 16 – ERRRC Daily Checklist**.

8) A copy of **Form 09 – Compromised Bales Returned to ORRRC** is to be sent to the Manger Waste Services and Technical Support when the form is full.

RESPONSIBILITIES

It is the Resource Recovery Centre Supervisor's responsibility to ensure that all incoming waste is screened, and the landfilling operations are monitored to ensure that no compromised bales are landfilled.

The Resource Recovery Centre Supervisor is responsible for ensuring that all Resource Recovery Centre Operators undertaking the unloading of the bales into the landfill are adequately trained in this work procedure.

It is also the responsibility of the Resource Recovery Centre Supervisor to complete the necessary documentation, including:

- **Form 09 – Compromised Bales Returned To ORRRC**
- **Form 16 – ERRRC Daily Checklist** (if a bale is returned to the ORRRC).

RECORDS

If a compromised bale is returned to the ORRRC for re-baling this is to be recorded on:

- **Form 09 – Compromised Bales Returned To ORRRC**
- **Form 16 – ERRRC Daily Checklist**

REFERENCES

SOP 16 – ERRRC Daily Checklist

EUCHAREENA ROAD RESOURCE RECOVERY CENTRE

COMPROMISED BALES RETURNED TO ORRRC						
Date	Time	Status of bale returned				Number Returned
		Small tear	Large tear	Structural	Other	

Certified Correct (signed)

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Resource Recovery Centre Supervisor

Note: This original form is to be kept by the Resource Recovery Centre Supervisor at the ERRRC and a copy sent to the Manager Waste Services and Technical Support when the form is full.

	Standard Operating Procedure
	Operation of ERRRC Leachate Pumps
	File No: **SOP 10**

I approve the use of this Standard Operating Procedure:

Name: Wayne Davis	**Position:** Manager Waste Services and Technical Support
Signature:	**Date:** 14/12/2021

Revision Status:

Change History

Date	Details of Change	Version No.
4/11/2013	Document created	Draft
31/03/2014	Draft approved	Version 1
14/04/2015	Content updated	Version 2
17/08/2015	Draft approved	Version 2
31/1/2020	Included reference to Exclusion Zone SWMS Version updated to correspond to OEMP	Version 5
2/3/2021	Update Signature Date Version updated to correspond to OEMP	Version 6
14/12/2021	Update Signature Date Version updated to correspond to OEMP	Version 7

PURPOSE

The purpose of this document is to provide Resource Recovery Centre employees with the correct work procedures to ensure that the two pumps on site to manage the leachate are safely and efficiently utilised.

WORK PROCEDURE

1) Leachate is to be extracted and disposed of from the landfill on a five day basis (or as required.

2) A minimum of 24 hours notice is to be provided prior to the delivery of leachate to the Orange Waste Water Treatment Plant. Notification is to be phoned to Council's Waste Water Treatment Plant Operators on 6393 8871 in advance. If the Waste Water Treatment Plant cannot be contacted, contact Council's Water Management Officer, Nicole Reid on 0400 415 873.

3) The maximum daily discharge into the Orange Waste Water Treatment Plant is 20,000 litres, and delivery is to be scheduled between the hours of 7 am to 4 pm, Monday to Friday only.

   In the event of a major rainfall event and an accumulation of leachate occurs, provision can be made to receive additional volumes of leachate at the Orange Waste Water Treatment Plant. This leachate will be discharged to the sludge lagoon. To arrange for additional volumes to be received at the Orange Waste Water Treatment Plant contact Council's Waste Water Treatment Plant Operators on 6393 8871 in advance. If the Waste Water Treatment Plant cannot be contacted, contact Council's Water Management Officer, Nicole Reid on 0400 415 873.

4) Each day the Resource Recovery Centre Site Supervisor or Operators are to inspect the leachate extraction area, with particular detail given to:

   a. The presence of any ponding within the bunded tanker loading area:

      i. If there is stormwater ponding in the tanker loading area, check the valve allowing stormwater to leave the area is open (on the opposite side of the tanker loading area to the tank). This valve should be open at all times except when leachate is being extracted.

      ii. If the valve is open, and water is still ponding this indicates the valve is blocked and corrective actions are to be arranged.

   b. The leachate storage tank must be inspected daily to check the level of leachate, there is a float level on the side of the tank to indicate the level.

   c. Listen for any alarms sounding from the control panel. The audible alarm is for high level of the sump in the tanker loading area. This alarm advisors the operator that liquid has entered the sump, probably from a leak, rain or burst hose. This must be investigated immediately. If it is rainwater, the stormwater

valve can be opened to release water. If it is leachate, this must be pumped back into the landfill cell and any residual leachate to be cleaned up. Leachate cannot be released to the environment.

d. Operations in proximity to the Leachate Holding Tank Exclusion Zone are to be conducted in accordance with Safe Work Method Statement (SWMS) ERRRC-001, *Working within the leachate holding tank exclusion zone*.

5) **Procedure for extracting leachate into above ground tank**

a. Turn switch to 'auto' position (the switch should already be in the 'auto position).

b. Press 'Stop' button

c. Press 'Start' button – the green light will illuminate

d. Check the hose leading up from the sump to confirm leachate is moving through the hose. This can be done by listening for flow in the hose or the tank filling. Check hose for leaks or damage.

e. The level gauge on the side of the tank will indicate level. The pump will automatically shut off when the tank reaches capacity. Full and empty labels are indicated on the side of the tank.

f. Leachate is now ready to be pumped into the transport tanker

6) **Procedure for extracting leachate for transport – Pumping leachate into the tanker**

a. Tanker driver is to notify the Resource Recovery Centre Site Supervisor or Operators of their arrival to site. Tanker driver is to sign into the site visitor book at the site office.

b. Turn stormwater valve off to eliminate the possibility of any spilt leachate escaping the tanker loading bund area.

c. Connect tanker hose to the tanker parked up in the tanker loading area.

d. Ensure the air bleed valve within the tank bund area is closed

e. Turn discharge valve on (valve to the left of the control panel) at the base of the tank connected to the extraction hose

f. Record the reading on the flow meter prior to commencing extraction of leachate; this number is to be reported to the Resource Recovery Centre Supervisor or Operator before leaving the site

g. On the control panel:

i. Turn switch to the 'auto' position

ii. Press 'Stop'

iii. Press 'Start' – the green light will illuminate to indicate the pump is active

iv. The tanker pump will run for 15 minutes before automatically shutting down, after each 15 minute interval the pump will need to be restarted by following the 'Stop' and 'Start' button procedure

v. When the tanker reaches capacity, press 'Stop'.

h. Close the discharge valve from the above ground storage tank.

i. Open the air bleed valve and use the trucks vacuum pump to remove any residual leachate from the extraction hose.

j. Close air bleed valve.

k. The hose is to be returned to the hose holding frame within the tank bund area.

l. Tanker operator is to record the reading on the flow meter after extracting leachate and report this figure to the Resource Recovery Centre Supervisor or Operator before leaving the site.

m. The tanker operator is then required to check the tanker loading area for any leachate spills. Any spills are to be immediately reported to the RRC Supervisor or Operators so that the spill can be contained and cleaned up.

n. Tanker driver is to ensure the driver log book regarding the leachate removal is completed and all other required paper work is completed and returned to site office.

o. The stormwater valve is to be reopened prior to the tanker leaving the site.

p. Tanker driver is to ensure they sign out of the site at the site office on departure.

7) Using the flow meter readings before and after extracting leachate for transport to the Orange Waste Water Treatment Plant, Records of each leachate extraction and disposal activity are to be recorded on **Form 10.01 – Leachate Volume Record for Each Truck Movement** by the Resource Recovery Centre Operator**.**

8) **Form 10.01** is to be kept onsite, and a copy of the form to be forwarded to the Manager Waste Services and Technical Support when each line on the Form is completed.

9) At the end of each month the reading on the leachate flow meter is to be recorded on **Form 10.02 – Monthly Leachate Volume** by the Resource Recovery Centre Operator.

10) **Procedure to respond to leachate pump SMS alarm notifications**

a. SMS alarm messages will be sent to the Resource Recovery Centre Supervisor and Manager Waste Services and Technical Supports mobile phones. The following table outlines the possible alarms and the required corrective action:

Alarm Name	SMS message received	Action required
Sump pump internal Fault	Molong Land Fill Sump Pump internal fault [time][date]	SMS alerts operator that there is a fault in the sub-surface landfill pump. OCC electricians to be called to investigate.
Sump pump internal Fault (reset)	Molong Land Fill Reset sump pump internal fault [time][date]	SMS alarm advises the operator that the sub-surface landfill pump fault has been rectified and the alarm has been reset. No action required.
Tanker loading pump internal Fault:	Molong Land Fill Loading Pump Fault [time][date]	SMS alerts operator that there is a fault in the tanker loading pump. OCC electricians to be called to investigate.
Tanker loading pump internal Fault (reset)	Molong Land Fill Loading Pump Fault Reset [time][date]	SMS alarm advises the operator that the tanker loading pump fault has been rectified and the alarm has been reset. No action required.
High Level Storage Tank:	Molong Land Fill High Level Storage Tank 4.2v [time][date]	SMS advises the operator that the above ground storage tank has reached high level (i.e. it is full) and that pumping of leachate from the sub-surface storage area cannot occur until the leachate from the tank is pumped and removed from site. Operator to arrange for leachate to be pumped and tankered off site. Work Procedures 5 – 9 are to be followed as outlined above. If unable to resolve by emptying storage tank, contact OCC Electricians.
High Level Storage Tank (reset):	Molong Land Fill Reset High Level Storage Tank 4.2v [time][date]	SMS alarm advises the operator that the storage tanker level has dropped and the alarm has been reset. No action required.
High Level Leachate Sump:	Molong Land Fill Reset High Level Leachate Sump 0.0v [time][date]	SMS alarm advises the operator that the sub-surface storage area has reached high level (i.e. full). Operator to arrange for leachate to be pumped and transported off site. Work Procedures 5 – 9 are to be followed as outlined above. If unable to resolve by emptying storage tank, contact OCC Electricians.
High Level Leachate Sump (reset):	Molong Land Fill Reset High Level Leachate Sump 0.0v [time][date]	SMS alarm advises the operator that the sub-surface storage area level has dropped and the alarm has been reset. No action required.

b. Resource Recovery Centre staff are to attend to the alarm message no later than the next normal work day and arrange for attendance by electrician or leachate tanker Contractor.

11) Contingency plan in the event of leachate pumping equipment failure

a. In the event that the leachate pumping equipment fails or is damaged and cannot be used to pump leachate from the sub-surface storage area or the above ground storage tank, the Manager Waste Services and Technical Support must be contacted immediately to arrange alternative pumping arrangements. Arrangements to pump directly from the storage areas to the leachate tanker are to be made bypassing the failed leachate pumping equipment.

b. Records of each leachate extraction and disposal activity are to be recorded on **Form 10.01 – Leachate Volume Record** for each truck movement by the Resource Recovery Centre Operator.

c. The leachate equipment failure or damage is to be documented on **Form 16 – ERRRC Daily Checklist**.

RESPONSIBILITIES

It is the Resource Recovery Centre Supervisor's responsibility to ensure that the leachate pump is correctly utilised, and the correct procedures are followed by the Resource Recovery Centre Operators and Contractors transporting leachate to the Orange Waste Water Treatment Plant.

The Resource Recovery Centre Supervisor is responsible for ensuring the Resource Recovery Centre Operators are adequately trained in this work procedure.

It is also the responsibility of the Resource Recovery Centre Supervisor to complete the necessary documentation, including:

- Form 10.01 – Leachate Volume Record for Each Truck Movement
- Form 10.02 – Monthly Leachate Volume

RECORDS

- Each time leachate is extracted and transported to the Orange Waste Water Treatment Plant details are to be recorded on **Form 10.01 - Leachate Volume Recorded for Each Truck Movement.**
- At the end of each month the reading on the leachate flow meter is to be recorded on **Form 10.02 – Monthly Leachate Volume**.
- The ERRRC daily checklist (**SOP 16**) includes signing off on inspecting the tanker loading area.

REFERENCES

SOP 16 – ERRRC Daily Checklist

SWMS ERRRC-001 – Working within the leachate holding tank exclusion zone

EUCHAREENA ROAD RESOURCE RECOVERY CENTRE

LEACHATE RECORDING – LEACHATE VOLUME RECORD FOR EACH TRUCK MOVEMENT

To be completed by the Resource Recovery Centre Supervisor when leachate is extracted and delivered to the WWTP.

Date	Time	Contractor	Meter Reading Before Pumping	Meter Reading After Pumping	Leachate Volume kL

kL = kilolitres

1 kL = 1000 litres

Certified Correct (signed)

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Resource Recovery Centre Supervisor

Note: this form is to be completed by the Resource Recovery Centre Site Supervisor when leachate is extracted and delivered to the Orange Sewerage Treatment Plant. When the Form is full, it is to be sent to the Manager Waste Services and Technical Support.

EUCHAREENA ROAD RESOURCE RECOVERY CENTRE

LEACHATE RECORDING – MONTHLY LEACHATE VOLUME

YEAR:

Month	Meter Reading Previous Month kL	Meter Reading Current Month kL	Leachate Transported to WWTP (kL)
31 January			
28 February			
31 March			
30 April			
31 May			
30 June			
31 July			
31 August			
30 September			
31 October			
30 November			
31 December			

kL = kilolitres

1 kL = 1000 litres

Certified Correct (signed)

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Resource Recovery Centre Supervisor

Note: This original form is to be kept by the Resource Recovery Centre Supervisor at the Euchareena Road Resource Recovery Centre and a copy sent to the Manager Waste Services and Technical Support monthly.

Standard Operating Procedure

Management of ERRRC Surface Water Ponds

File No: **SOP 11**

I approve the use of this Standard Operating Procedure:

Name: Wayne Davis	**Position:** Manager Waste Services and Technical Support
Signature:	**Date:** 14/12/2021

Revision Status:

Change History

Date	Details of Change	Version No.
4/11/2013	Document created	Draft
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22/1/2020	Version updated to correspond to OEMP	Version 5
2/3/2021	Update Signature Date Version updated to correspond to OEMP	Version 6
14/12/2021	Update Signature Date Version updated to correspond to OEMP	Version 7

PURPOSE

To ensure that the correct procedures are followed to ensure the correct and efficient management of the two surface water management dams at the ERRRC, ie Dam A on the western side of the landfill operations, and Dam B to the eastern side of the landfill operations.

WORK PROCEDURE

1) ***Maintaining correct water level in Stormwater Management Dam A and B***

- Following a storm event, the marker peg (in the sidewall of the dam approximately 0.6m below the spillway) is to be visually monitored – this marker peg indicates the top of the water storage zone. If the water in the dam is above the marker peg, arrangements are to be made to remove the water in the zone above the marker peg within five days after the end of the storm which gave rise to the runoff to fill the dam.
- Water retained above the water storage zone is to be used for dust suppression, supply to the composting facility or irrigation of the landscaped areas.
- Water below the water storage zone marker peg can be used as required for dust suppression, supply to the composting facility or irrigation and other on-site purposes.
- Dust suppression water is only to be applied at a rate that does not generate surface runoff or cause ponding of water.
- If either dam experiences a discharge over the spillway (i.e. an overflow event) the Resource Recovery Centre Supervisor shall report the event to the Manager Waste Services and Technical Support and record it on **Form 11.01 – Surface Water Dam Overflow**. If required, the monitoring consultants (Geolyse Pty Ltd) shall be contacted to collect samples (refer to Section 6 – Surface Water Monitoring).
- Each time water is removed from either Dam A or Dam B, this event is to be recorded on **Form 11.02 – Removal of Water from Surface Water Management Dams.**

2) ***Pumping Water from Stormwater Management Dam A***

- The mobile pump is to be connected to the fixed discharge line immediately south of the dam.
- Water can be pumped to the composting facility, used to irrigate the stockpile mound or pumped to the water tanker for dust suppression. Valves are used to control the water movement.
- Once the connection is made the valve and mobile pump are to be turned on and the outlet to the discharge pipe is to be checked to ensure the stormwater is being discharged.

- If the discharge line in the western conservation area is moved, the star pickets marking the location of the pipe are also to be moved to ensure the pipe is not damaged by unaware vehicles, slashing or any other operational movements on the site.

3) ***Pumping Water from Stormwater Management Dam B***

- The mobile pump is to be connected to the fixed discharge line immediately southeast of the dam
- There is the option to either irrigate the landscape bund using a series of sprinklers immediately east of the dam, or the t-piece tap can be used to divert the pump to flow to discharge pipe to the eastern conservation area.
- Once the t-piece tap is in the correct position (open to divert flow to the eastern conservation area, or closed to irrigate the landscape bund) the valve and mobile pump are to be turned on and the outlet to the discharge pipe is to be checked to ensure the stormwater is being discharged.
- If the discharge line to the eastern conservation area is moved, the star pickets marking the location of the pipe are also to be moved to ensure the pipe is not damaged by unaware vehicles, slashing or any other operational movements on the site.
- Water from Stormwater Dam B can be pumped to the water tanker for dust suppression.

4) ***Draining and cleaning Stormwater Management Dam A and B***

- In order to maintain effectiveness of Stormwater Management Dams A and B for sediment retention, each dam will be drained down and cleaned at least annually in the first instance. For operational purposes this could be achieved by transferring water into one of the dams while the other is cleaned out or using the water from one dam for operational purposes or irrigation. The frequency of clean-out can be reviewed after the first clean out.

5) ***Surface water management within the composting facility***

- All surface water drains and diversion mounds should be inspected and repaired if necessary after any significant storms that have led to flow in the channels.
- All compost material is to be stored within the compost maturation area, Runoff from the compost maturation area is directed to Liquid Residue Pond C3.
- Water is to be pumped from Liquid Residue Pond C4 to Liquid Residue Pond C3 to maintain a maximum of 10% full condition of Liquid Residue Pond C4 i.e. there is always a spare capacity of 2,480 m^3. The maximum allowable pumping rate from Liquid Residue Pond C4 is 400 kL/day; however this is only allowed to occur when Liquid Residue Pond C3 is less than 90% full.
- Pumping for irrigation will only occur from Liquid Residue Pond C3 whenever water is available in this pond.

- Irrigation shall only occur if soil moisture conditions allow an application of 5mm and if rainfall has not occurred on that day.
- Irrigation water will be applied at a rate that does not generate surface water runoff or cause ponding of water.

6) ***Surface water monitoring***

- Surface water is monitored from the stormwater management dams on a quarterly basis upon discharge.
- Monitoring consultants (Geolyse Pty Ltd) will install sample bottles in the rising stage samplers at the start of each quarter. If a rainfall event causes either of the stormwater management dams to fill and spill, and samples are collected in the bottles, the Resource Recovery Centre Supervisor is to advise Geolyse of the overflow by calling the office on **6393 5000**.
- The sample bottles will be collected by the monitoring consultants and the rising stage samplers left empty until the start of the next quarter.

RESPONSIBILITIES

- It is the responsibility of the Resource Recovery Centre Supervisor to ensure all operating staff are adequately trained in operating the surface water pumps.
- The Resource Recovery Centre Supervisor shall advise the Manager Waste Services and Technical Support if there is an overflow event from either of the stormwater management dams.
- The Resource Recovery Centre Supervisor shall advise the monitoring consultants if sample bottles need to be collected following an overflow event.

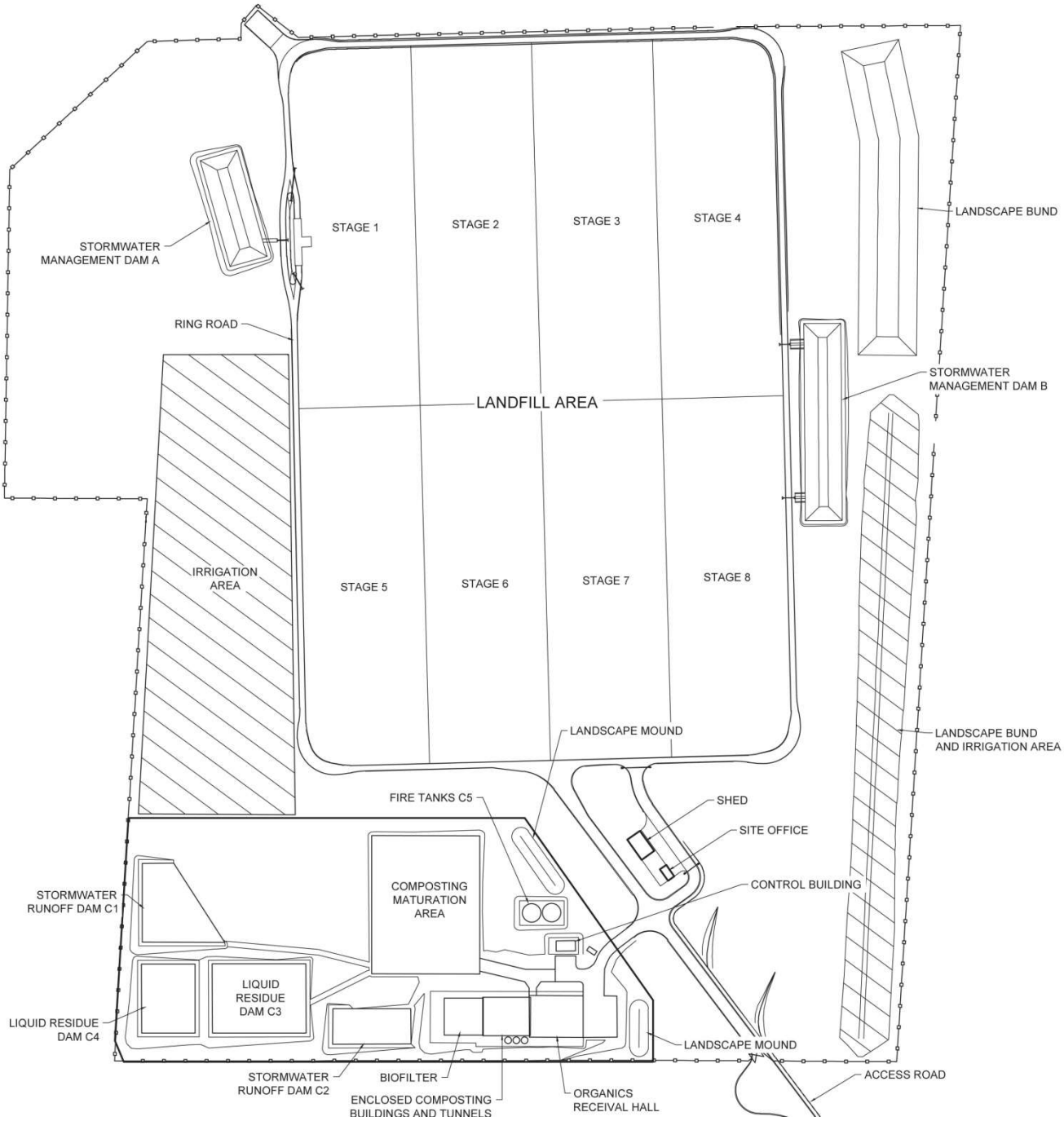
RECORDS

The occurrence of an overflow from either of the surface water dams is to be recorded on **Form 11.01 – Surface Water Dam Overflow**. This form is to be kept on site, with the Manager Waste Services and Technical Support notified should either surface water dam overflow.

Each time water is removed from either of the dams, this is to be noted on **Form 11.02 - Removal of Water from Surface Water Management Dams**.

REFERENCES

Soil and Water Management Plan – **Section 9.2** of the OEMP


STORMWATER MANAGEMENT DAM A
STAGE 1
STAGE 2
STAGE 3
STAGE 4
LANDSCAPE BUND
RING ROAD
LANDFILL AREA
STORMWATER MANAGEMENT DAM B
IRRIGATION AREA
STAGE 5
STAGE 6
STAGE 7
STAGE 8
LANDSCAPE MOUND
LANDSCAPE BUND AND IRRIGATION AREA
FIRE TANKS C5
SHED
SITE OFFICE
CONTROL BUILDING
STORMWATER RUNOFF DAM C1
COMPOSTING MATURATION AREA
LIQUID RESIDUE DAM C3
LIQUID RESIDUE DAM C4
LANDSCAPE MOUND
ACCESS ROAD
STORMWATER RUNOFF DAM C2
BIOFILTER
ENCLOSED COMPOSTING BUILDINGS AND TUNNELS
ORGANICS RECEIVAL HALL

EUCHAREENA ROAD RESOURCE RECOVERY CENTRE

SURFACE WATER DAM OVERFLOW

To be completed by the Resource Recovery Centre Supervisor when water discharges over the spillway from stormwater Dam A or B.

Date	Time	Surface Water Dam		Time discharge commenced	Time discharge ceased	Actions Taken (has Geolyse been notified?)
		Dam A	Dam B			

Certified Correct (signed)

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Resource Recovery Centre Supervisor

Note: This original form is to be kept by the Resource Recovery Centre Supervisor at the Euchareena Road Resource Recovery Centre and a copy sent to the Manager Waste Services and Technical Support when the Form is filled.

EUCHAREENA ROAD RESOURCE RECOVERY CENTRE

REMOVAL OF WATER FROM SURFACE WATER MANAGEMENT DAMS

To be completed by the Resource Recovery Centre Supervisor when water is removed from dams and used for irrigating landscape bunds or discharged into Conservation Area

Date	Time	Surface Water Dam		Time discharge commenced	Time discharge ceased	Area pumped to
		Dam A	Dam B			

Certified Correct (signed)

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Resource Recovery Centre Supervisor

Note: This original form is to be kept by the Resource Recovery Centre Supervisor at the Euchareena Road Resource Recovery Centre and a copy sent to the Manager Waste Services and Technical Support when the Form is filled.

	Standard Operating Procedure
	ERRRC Cell Surface Water Management
	File No: **SOP 12**

I approve the use of this Standard Operating Procedure:

Name: Wayne Davis	**Position:** Manager Waste Services and Technical Support
Signature:	**Date:** 14/12/2021

Revision Status:

Change History

Date	Details of Change	Version No.
4/11/2013	Document created	Draft
31/03/2014	Draft approved	Version 1
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22/1/2020	Version updated to correspond to OEMP	Version 5
2/3/2021	Update Signature Date Version updated to correspond to OEMP	Version 6
14/12/2021	Update Signature Date Version updated to correspond to OEMP	Version 7

PURPOSE

To ensure that the correct procedures are followed for correct and efficient management of surface water within the inactive landfill cells.

WORK PROCEDURE

1) Following storm events, water will accumulate within the pre-prepared landfill cells; this water is to be pumped in to stormwater management dam B using the following steps:
   - There is a mobile line leading from the western (lowest) side to the eastern bank of the Stage 2 cell. This line is fixed to the eastern bank where the mobile pump can be placed to remove water from Stage 2. Once the pump is in place, the valve and pump are turned on and pumping will commence to Stormwater Dam B.
   - Water is pumped from the Stage 2 cell underground to an outlet above Stormwater Dam B – the outlet is between two large boulders on the western bank above Dam B. After commencing pumping, the outlet is to be checked to ensure the pipe is discharging correctly.
   - During and after extracting stormwater from the inactive landfill cell, the marker peg in the Stormwater Dam B is to be visually monitored. If the water level is above the marker peg (indicating the top of the water storage zone) then water is to be pumped from the Stormwater Dam B as per **SOP 11 – Management of ERRRC Surface Water Ponds**.
2) Each time stormwater is removed from the inactive landfill cell and pumped to Stormwater Dam B, **Form 12 – Inactive Landfill Cell Surface Water Removal** is to be completed. A copy is to be sent to the Manager Waste Services and Technical Support each time the Form is filled.
3) After storm events, landfill operators are to inspect the integrity of the internal bunding within the landfill area to ensure that the water that has been in contact with the active landfill cell(s) does not contaminate the undeveloped landfill cells.

RESPONSIBILITIES

It is the responsibility of the site supervisor to ensure all operating staff are adequately trained in operating the surface water pump and identifying when the inactive landfill cell and Stormwater Dam B require stormwater to be extracted.

RECORDS

Records are kept using **Form 12 – Inactive Landfill Cell Surface Water Removal**. This form is to be completed each time stormwater is extracted from the inactive landfill cell, and forwarded to the Manager Enterprise Services each time the Form is filled.

REFERENCES

Soil and Water Management Plan – **Section 9.2** of the OEMP.

SOP 11 – Management of ERRRC Surface Water Ponds.

EUCHAREENA ROAD RESOURCE RECOVERY CENTRE

INACTIVE LANDFILL CELL SURFACE WATER REMOVAL

To be completed by the Resource Recovery Centre Supervisor when water is pumped from the inactive landfill cell to Stormwater Dam B.

Date	Time	Time discharge commenced	Time discharge ceased	Actions Taken

Certified Correct (signed)

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Resource Recovery Centre Supervisor

Note: This original form is to be kept by the Resource Recovery Centre Supervisor at the Euchareena Road Resource Recovery Centre and a copy sent to the Manager Waste Services and Technical Support when the Form is filled.

	Standard Operating Procedure
	Pollution Incident Response Management
	File No: **SOP 13**

I approve the use of this Standard Operating Procedure:

Name: Wayne Davis	**Position:** Manager Waste Services and Technical Support
Signature:	**Date:** 14/12/2021

Revision Status:

Change History

Date	Details of Change	Version No.
05/11/2013	Document created	Draft
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07/12/2018	Draft approved	Version 4
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2/3/2021	Update Signature Date Version updated to correspond to OEMP	Version 6
14/12/2021	Update Signature Date Version updated to correspond to OEMP	Version 7

Purpose

To ensure that incidents are correctly responded to, and outcomes recorded correctly. This SOP is to be read in conjunction with the ORRRC and ERRRC Pollution Incident Response Management Plans (PIRMPs) and Supporting Statements, refer **Section 9.7 to Section 9.10** of the OEMP. This SOP is designed for the response to **Environmental** incidents as opposed to **WHS** incidents.

Procedures

1) When an incident occurs the flow chart titled: **Pollution Incident Decision Flow Chart** on the following page is to be followed. This flow chart identifies the correct steps to take that identify the actions required when responding to an incident.

2) If further information is required in regards to defining whether the incident is a 'pollution incident' as per the provisions of the Protection of the Environment and Operations Act 1997, this can be found in **Section 9.7 to Section 9.10** of the OEMP.

3) After working through the flow chart to identify who requires notification (depending on the severity of the incident), the relevant authority is to be notified promptly without delay. All relevant authority contact details can be found in **Table 1**.

4) Each time an incident is identified; this is to be recorded on **Form 13.01 – Incident Register** with particular details recorded on **Form 13.02 – Incident Report Form**. Incidents to be reported may include (but not be limited to):

   - Identification of excluded waste products in the waste stream
   - Surface or subsurface fires at active landfill
   - Surface or subsurface fires at maintenance or inactive areas
   - Mixing of leachate and stormwater or waste and stormwater
   - Identification of any failure of an environmental protection system
   - Identification of a significant difference in groundwater indication parameters
   - Detection of subsurface gas, surface gas and/or accumulated gas in buildings at greater than 1.25% methane
   - Acts of vandalism or target of terrorist activity
   - Any spills (hydrocarbon etc)
   - Damage to the Conservation Area (eg unlawful removal of trees, ground disturbance)
   - Any other incident or observation that could potentially pose an immediate environmental hazard outside of normal operating conditions.

5) **Form 13.01 – Incident Register** is to be completed by the Resource Recovery Centre Supervisor and forwarded to the Manager Waste Services and Technical Support each time the Form is full.

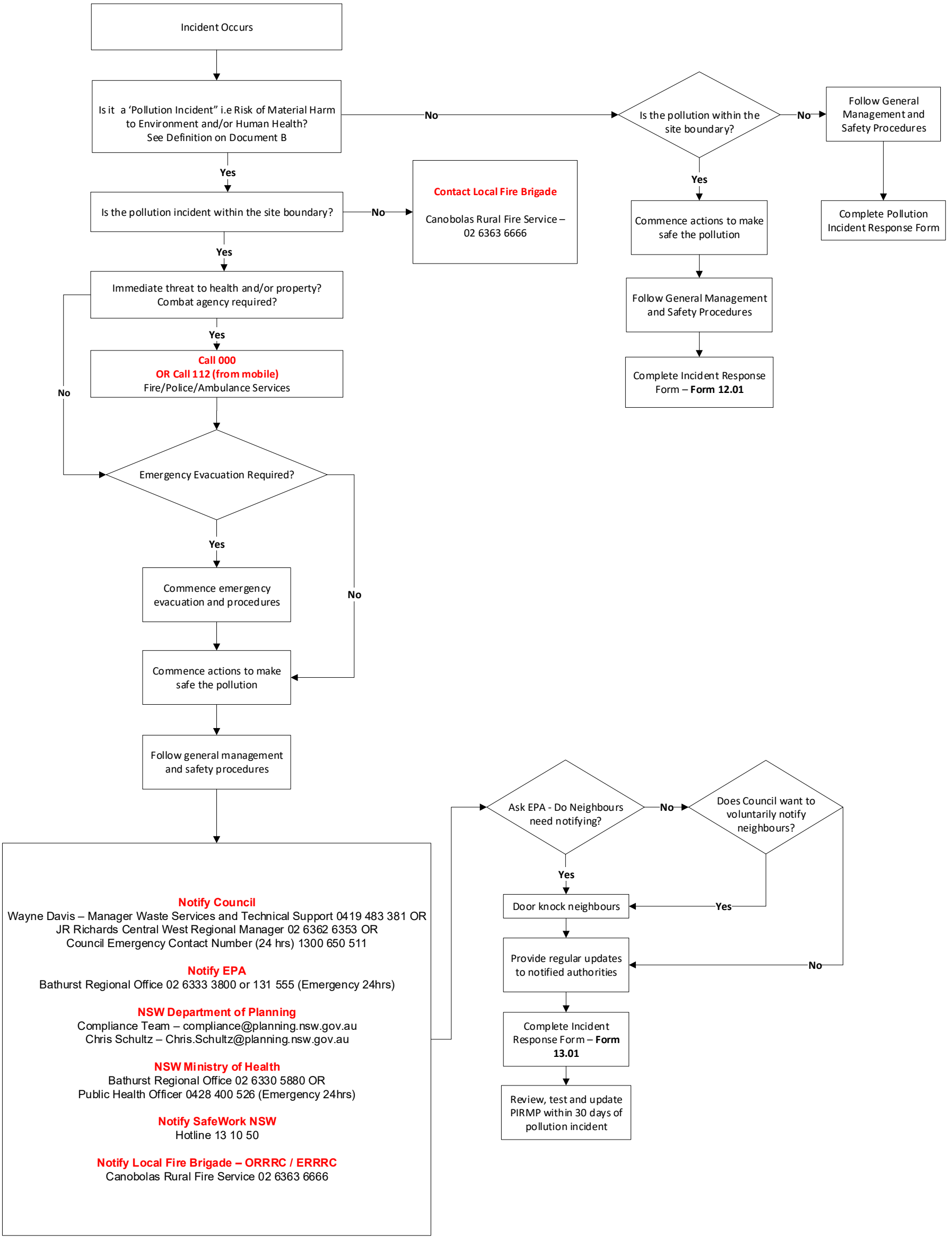
6) **Form 13.02 – Incident Report Form** is to be completed by the staff member or contractor who identified the incident, and signed off by the Resource Recovery Centre Supervisor and forwarded to the Manager Waste Services and Technical Support upon completion.

Table 1– Notification of Relevant Authorities

Authority	Contact Number
1. Emergency Call Services	
• **Emergency Hotline Number (24 hours)** *The Site Supervisor should call 000 if the incident presents an immediate threat to human health and/or property and a combat agency is required (i.e. NSW Fire and Rescue, NSW Ambulance Service, NSW Police Force) and then notify all other parties below including NSW Fire and Rescue via a local telephone number	000*
2. Orange City Council	
• Wayne Davis (Manager Waste Services and Technical Support) • JR Richards Central West Regional Manager • Council Emergency contact number (24 hours)	0419 483 381 6362 6353 1300 650 511
3. The Environment Protection Authority (EPA)	
• Bathurst Regional Office • Emergency Hotline Number (24 hours)	02 6332 7600 131 555
4. NSW Department of Planning	
• Compliance Team • Chris Schultz – Senior Compliance Officer	compliance@planning.nsw.gov.au Chris.Schultz@planning.nsw.gov.au
5. NSW Ministry of Health (via Public Health Units)	
• Bathurst Regional Office • Public Health Officer on Call (24 hours)	02 6330 5880 0428 400 526
6. SafeWork NSW	
• Hotline Number	13 10 50
7. Canobolas Zone Rural Fire Service	
• Orange Rural Fire Service	02 6363 6666

** If there is no immediate threat to human health and/or property i.e. a combat agency is not required, then the Site Supervisor is still required to follow the outline above except for dialling 000.

Pollution Incident Decision Flow Chart



Responsibilities

It is the responsibility of the Manager Waste Services and Technical Support to ensure all staff and contractors are adequately trained in responding to an incident, and completing the correct documentation.

This SOP is to be included in all Staff Inductions (refer **Section 5.1 – Staff Training**).

Records

Every incident, whether it is an incident requiring notification to authorities or not, requires documentation. The forms to be filled out following an incident are:

- Form 13.01 – Incident Register
- Form 13.02 – Incident Report Form

References

OEMP Section 9.7 – ORRRC PIRMP

OEMP Section 9.8 – ORRRC PIRMP Supporting Statement

OEMP Section 9.9 – ERRRC PIRMP

OEMP Section 9.10 – ERRRC PIRMP Supporting Statement

OEMP Section 5.1 – Staff Training

INCIDENT REGISTER

INCIDENT NO.	FACILITY	DATE	NATURE OF INCIDENT

Certified Correct (signed)

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Resource Recovery Centre Supervisor

Note: This original form is to be kept by the Resource Recovery Centre Supervisor at both the Euchareena Road Resource Recovery Centre and Ophir Road Resource Recovery Centre and a copy sent to the Manager Waste Services and Technical Support when Form is full.

INCIDENT REPORT FORM

Incident No:	**Time:**
Date:	**Duration of Incident:**

Nature of Incident:

Temperature:	**°C**	**Wind direction & speed:**	**km/hr**
Relative Humidity:	**%**	**Rainfall since 9am:**	**mm**
Fire Danger Rating:			
http://www.bom.gov.au/climate/data/index.shtml '065023 – Molong (Hill St)'			

The Location of the Place Where Pollution is Occurring or is Likely to Occur:

The nature, the estimated quantity or volume, and the concentration of any pollutants involved (if known):

The Circumstances in which the Incident Occurred, Including the Cause of the Incident (if known):

INCIDENT REPORT FORM

The Corrective Action Taken or Proposed to be Taken to Deal with the Incident and Any Resulting Pollution or Threatened Pollution (if known):

Notification:

Stakeholder	Date / Time	Contact
Orange City Council	/ / am/pm	
NSW Environment Protection Authority	/ / am/pm	
NSW Ministry Of Health (Via Public Health Units)	/ / am/pm	
SafeWork NSW	/ / am/pm	
NSW Fire and Rescue	/ / am/pm	

Notification of Neighbours Required by EPA **Yes / No**

If Not, Have Neighbours Been Notified Voluntarily **Yes / No**

Particulars:

Signature: **Date / /**
Council Officer

Signature: **Date / /**
Manager Waste Services and Technical Support, Orange City Council

	Standard Operating Procedure
	Complaints Handling
	File No: **SOP 14**

I approve the use of this Standard Operating Procedure:

Name: Wayne Davis	**Position:** Manager Waste Services and Technical Support
Signature:	**Date:** 14/12/2021

Revision Status:

Change History

Date	Details of Change	Version No.
05/11/2013	Document created	Draft
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PURPOSE

Any complaint received will be investigated and options for avoiding recurrence will be considered.

WORK PROCEDURE

1) Any complaint received by an outside party must be reported immediately to the Resource Recovery Centre Supervisor.
2) Any complaint received will be followed up by an investigation as to the cause of the complaint, and options for avoiding recurrence will be considered.
3) Appropriate documentation to be completed, including:
    - Form 14.01 – Complaints Register
    - Form 14.02 – Complaint Report Form
4) **Form 14.01 – Complaints register** is to be forwarded to the Manager Waste Services and Technical Support when the form is full, and Form **14.02 – Complaint Report Form** is to be forwarded to the Manager Waste Services and Technical Support upon completion after each complaint is lodged.

Responsibilities

It is the responsibility of all Resource Recovery Centre Staff or contractors to notify the Resource Recovery Centre Supervisor of any complaints received. The Resource Recovery Centre Supervisor is responsible for following up the complaint, including completing **Form 14.01 – Complaints Register** and **Form 14.02 – Complaint Report Form**.

Any complaints are also to be recorded on the Daily Checklist (refer **SOP 15 – ORRRC Daily Checklist** and **SOP 16** – **ERRRC Daily Checklist**).

Records

Upon receiving a complaint from an outside party, the complaint, and any subsequent investigation is to be recorded on **Form 14.02 – Complaint Report Form**. Details of the nature of the complaint, who made the complaint, and any unusual circumstances (such as equipment malfunction, weather conditions) should be noted.

A complaint register – **Form 14.01** documenting a sequential complaint number for each facility will also be maintained.

Records are to be kept for at least four years, and will be included in the Annual Report as detailed in **Section 6.3** of the OEMP.

References

SOP 15 – ORRRC Daily Checklist

SOP 16 – ERRRC Daily Checklist

Section 6.3 – EPL Annual Returns

COMPLAINTS REGISTER

COMPLAINT NO.	FACILITY	DATE	NATURE OF COMPLAINT

Certified Correct (signed)

.....

Resource Recovery Centre Supervisor

Note: This original form is to be kept by the Resource Recovery Centre Supervisor at both the Euchareena Road Resource Recovery Centre and Ophir Road Resource Recovery Centre and a copy sent to the Manager Waste Services and Technical Support when the Form is full.

COMPLAINT REPORT FORM

COMPLAINT NO:	**TIME:**
DATE:	**FACILITY:**

HOW COMPLAINT WAS LODGED:

COMPLAINANT DETAILS:

THE NATURE OF THE COMPLAINT:

CAUSE:

CORRECTIVE ACTION?

FOLLOW-UP CONTACT REQUIRED?

Weather Conditions

Wind Speed (circle)	light			medium				strong
Wind Direction (circle)	N	NE	E	SE	S	SW	W	NW
Rainfall (mm)	.....							

Certified Correct (signed)

.....

Resource Recovery Centre Supervisor

Certified as Actioned Appropriately (signed)

.....

Manager Waste Services & Technical Support

Note: This original form is to be kept by the Resource Recovery Centre Supervisor at both the ERRRC and ORRRC and a copy sent to the Manager Waste Services and Technical Support following a complaint.

	Standard Operating Procedure
	ORRRC Daily Checklist
	File No: **SOP 15**

I approve the use of this Standard Operating Procedure:

Name: Wayne Davis	**Position:** Manager Waste Services and Technical Support
Signature:	**Date:** 14/12/2021

Revision Status:

Change History

Date	Details of Change	Version No.
05/11/2013	Document created	Draft
31/03/2014	Draft approved	Version 1
17/08/2015	Draft approved	Version 2
22/1/2020	Version updated to correspond to OEMP	Version 5
2/3/2021	Update Signature Date Version updated to correspond to OEMP	Version 6
14/12/2021	Update Signature Date Version updated to correspond to OEMP	Version 7

Purpose

The purpose of the daily checklist is to ensure that operational staff and contractors are correctly undertaking daily tasks, resulting in correct and efficient operations at the ORRRC.

In addition to recording daily operational procedures, the checklist also records references to incidents, complaints, or any other unusual activities or occurrences.

Work Procedures

The site supervisor is to complete **Form 15 – ORRRC Daily Checklist** throughout the day as tasks are completed or checked.

Responsibilities

It is the responsibility of the Resource Recovery Centre Supervisor to ensure the Daily Checklist is completed each day, and filed on-site appropriately.

The Manager Waste Services and Technical Support is responsible for undertaking periodic site inspections and audits to determine compliance with the Daily Checklist procedures.

Records

Completed daily checklists, as recorded on **Form 15 – ORRRC Daily Checklist** are to be kept for a minimum of three years and will be made available on request.

References

Section 3.3 – Daily Checklist

ORRRC DAILY CHECKLIST

DAY: **DATE:**

To be completed by the Resource Recovery Centre Supervisor on a daily basis.

		YES	NO
1.	Security gates locked from 7:00pm to 7:00am Monday to Friday, and 5:00pm to 7:00am Saturday, Sunday and Public Holidays.		
2.	Site opened to public on time, from 7:00am to 7:00pm Monday to Friday, and 7:00am to 5:00pm Saturday, Sunday and Public Holidays.		
3.	No additional waste deposited on-site since closing previous day		
4.	At least one (1) Operational staff on-site		
5.	All residual waste ramped in layers of up to 600 mm maximum and compacted to 650 kg/m^3		
6.	Daily cover applied		
7.	Only approved wastes deposited during opening hours		
8.	Any litter collected and disposed of appropriately		
9.	Were there any incidents?		
10.	Were any complaints received?		
11.	Freeboard in surface water and leachate ponds >1 m		
12.	Machinery shut down/stored		
13.	Do site conditions comply with LEMP		
14.	Waste received recorded		

Reasons for Non-Compliance with Checklist

.....

Incident/Complaint Report Prepared Yes/No No.: .....

Action to be taken for Non-Compliance to be rectified

.....

.....

Any other unusual occurrences?

Weather Conditions

Wind Speed (circle) light medium strong

Wind Direction N NE E SE S SW W NW

Rainfall (mm) .....

Certified Correct (signed)

.....

Resource Recovery Centre Supervisor

Note: This original checklist is to be kept by the Resource Recovery Centre Supervisor at the Ophir Road Resource Recovery Centre and filed appropriately onsite upon completion each day.

	Standard Operating Procedure
	ERRRC Daily Checklist
	File No: **SOP 16**

I approve the use of this Standard Operating Procedure:

Name: Wayne Davis	**Position:** Manager Waste Services and Technical Support
Signature:	**Date:** 14/12/2021

Revision Status:

Change History

Date	Details of Change	Version No.
05/11/2013	Document created	Draft
31/03/2014	Draft approved	Version 1
17/08/2015	Draft approved	Version 2
31/1/2020	Opening hours updated Version updated to correspond to OEMP	Version 5
2/3/2021	Update Signature Date Version updated to correspond to OEMP	Version 6
14/12/2021	Update Signature Date Version updated to correspond to OEMP	Version 7

Purpose

The purpose of the daily checklist is to ensure that operational staff and contractors are correctly undertaking daily tasks, resulting in correct and efficient operations at the ERRRC. In addition to recording daily operational procedures, the checklist also records references to incidents, complaints, or any other unusual daily activities or occurrences.

Work Procedures

1) The Resource Recovery Centre Supervisor is to complete **Form 16 – ERRRC Daily Checklist** throughout the day as tasks are completed or checked.
2) The Resource Recovery Centre Supervisor is required to file the completed form appropriately onsite upon completion each day.

Responsibilities

It is the responsibility of the Resource Recovery Centre Supervisor to ensure the Daily Checklist is completed each day, and filed appropriately.

The Manager Waste Services and Technical Support is responsible for undertaking periodic site inspections and audits to determine compliance with the Daily Checklist procedures.

Records

Completed daily checklists, as recorded on **Form 16 – ERRRC Daily Checklist** are to be kept for a minimum of three years and will be made available on request.

References

Section 4.3 – Daily Checklist

ERRRC DAILY CHECKLIST

DAY: **DATE:**

To be completed by the Resource Recovery Centre Supervisor on a daily basis.

		YES	NO
1.	Security gates locked		
2.	Site opened to waste receival vehicles on time (Mon-Sun, 7 am – 5 pm. Closed Good Friday and Christmas Day)		
3.	No additional waste deposited on-site since closing previous day		
4.	Daily cover applied		
5.	Minimum of one operational staff on-site		
6.	Any litter collected and disposed of appropriately		
7.	Were there any incidents?		
8.	Were any complaints received?		
9.	Leachate sump levels checked and dealt with appropriately		
10.	Machinery shut down/stored		
11.	Do site conditions comply with LEMP		
12.	Were there any compromised bales returned to ORRRC		
13.	Check level in leachate tank		
14.	Check valve in tanker loading area is open and no ponding occurring		
15.	Check levels of Surface Water Dams A & B		

Reasons for Non-Compliance with Checklist

.....

Incident/Complaint Report Prepared Yes/No No.: .....

Action to be taken for Non-Compliance to be rectified

.....

.....

Any other unusual occurrences?.....

Weather Conditions

Wind Speed (circle) light medium strong

Wind Direction N NE E SE S SW W NW

Certified Correct (signed)

.....

Resource Recovery Centre Supervisor

Note: This original checklist is to be kept by the Resource Recovery Centre Supervisor at the Euchareena Road Resource Recovery Centre and filed onsite upon completion.

	Standard Operating Procedure
	Annual OEMP Review
	File No: **SOP 17**

I approve the use of this Standard Operating Procedure:

Name: Wayne Davis	**Position:** Manager Waste Services and Technical Support
Signature:	**Date:** 14/12/2021

Revision Status:

Change History

Date	Details of Change	Version No.
05/11/2013	Document created	Draft
31/03/2014	Draft approved	Version 1
17/08/2015	Draft approved	Version 2
22/1/2020	Version updated to correspond to OEMP	Version 5
2/3/2021	Update Signature Date Version updated to correspond to OEMP	Version 6
14/12/2021	Update Signature Date Version updated to correspond to OEMP	Version 7

Purpose

The purpose of the annual OEMP review is to ensure that the evolving nature of operations throughout all facets of the OWP are recorded and best practice methods are continually employed and updated throughout the life of the project.

The OEMP is a document that consolidates a number of smaller reports and management plans that were developed in order to fulfil the conditions of the PA, it is expected that with time, work place practices will evolve and improve, and the relevant management plans and SOPs need to be updated accordingly.

The annual OEMP review will facilitate a positive outcome from the Independent Environmental Audit, a requirement of the Project Approval (refer **SOP 18**).

Work Procedures

1) Continuously throughout the year the Resource Recovery Site Supervisor and Site Operators are to bring to the attention any inefficiencies in work practices, or ideas to improve best practice methods to the Manager Waste Services and Technical Support.
2) The Manager Waste Services and Technical Support is required to document and compile any ideas and suggestions raised by the Resource Recovery Centre Supervisor, Operational Staff or contractors.
3) Within the month of the anniversary of the commencement of operations of the OWP (5th August 2013), the Manager Waste Services and Technical Support is required to review the entire OEMP, including Volume 1 and Volume 2, and update any changes to the environmental management, or operating procedures. All JR Richards operational procedures and documentation are also to be reviewed annually.
4) **SOP 21 – Document Control** is to be adhered to when updating documents.
5) If the Independent Environmental Audit (refer **SOP 18**) is conducted in the same year, any outcomes from the audit are to be incorporated into the OEMP or other documentation.

Responsibilities

It is the responsibility of the Resource Recovery Centre Supervisor to ensure that any issues, ideas or concerns of the staff or contractors at the Resource Recovery Centres, or transport between the two sites are brought to the attention of the Manager Waste Services and Technical Support.

The Manager Waste Services and Technical Support is responsible for reviewing and updating the OEMP and reviewing and suggesting updates for any JR Richards operational management plans or documentation.

Records

Each year any updated sections of the OEMP will replace the preceding version. Records of the version number and date of update are recorded on the bottom left hand side of every page in the OEMP.

Document control is managed as per **SOP 21**.

References

SOP 21 – Document Control

SOP 18 – Independent Environmental Audit

Section 1 – Environmental Management

	Standard Operating Procedure
	Independent Environmental Audit
	File No: **SOP 18**

I approve the use of this Standard Operating Procedure:

Name: Wayne Davis	**Position:** Manager Waste Services and Technical Support
Signature:	**Date:** 14/12/2021

Revision Status:

Change History

Date	Details of Change	Version No.
05/11/2013	Document created	Draft
31/03/2014	Draft approved	Version 1
17/08/2015	Draft approved	Version 2
22/1/2020	Version updated to correspond to OEMP	Version 5
2/3/2021	Update Signature Date Version updated to correspond to OEMP	Version 6
14/12/2021	Update Signature Date Version updated to correspond to OEMP	Version 7

Purpose

It is a requirement of the PA that an independent environmental audit be conducted: *"within a year of the commencement of operations of the project, and every 5 years thereafter"*. Operations at the ERRRC commenced on 5 August, 2013. This date therefore becomes the anniversary date.

Work Procedures

1) The Audit must:
    a) Be conducted by suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Director-General;
    b) Include consultation with the relevant agencies;
    c) Assess the environmental performance of the project and assess whether it is complying with the relevant requirements in the Project Approval and the relevant EPLs (including JR Richards EPL);
    d) Review the adequacy of any plans or programs required under these approvals; and, if appropriate;
    e) Recommend measures or actions to improve the environmental performance of the project, and/or any plan or program required under these approvals.
2) Within six weeks of completing the audit, a copy of the audit report is to be submitted to the Director-General, together with its response to any recommendations contained in the audit report.

Responsibilities

The Manager Waste Services and Technical Support is responsible for commissioning and submitting the environmental audit, and following through with updating the OEMP or any plans or programs accordingly.

Records

Each year the updated OEMP will be replaced in its entirety with the new version. Document control is managed as per **SOP 21**.

References

SOP 21 – Document Control

Section 8.1 – Project Approvals

SOP 17 – Annual OEMP Review

	Standard Operating Procedure
	ORRRC Environmental Monitoring
	File No: **SOP 19**

I approve the use of this Standard Operating Procedure:

Name: Wayne Davis	**Position:** Manager Waste Services and Technical Support
Signature:	**Date:** 14/12/2021

Revision Status:

Change History

Date	Details of Change	Version No.
12/12/2013	Document created	Draft
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17/08/2015	Draft approved	Version 2
05/09/2016	Draft approved	Version 3
14/02/2018	Draft approved	Version 4
22/1/2020	Version updated to correspond to OEMP	Version 5
2/3/2021	Update Signature Date Version updated to correspond to OEMP	Version 6
14/12/2021	Update Signature Date Version updated to correspond to OEMP	Version 7

PURPOSE

To ensure consistent and correct methods are used for all environmental monitoring at the ORRRC, as per the requirements of the Environment Protection Licence (EPL 5956) and the Trade Waste Agreement. Environmental monitoring in this SOP includes groundwater, surface water, leachate, truck wash, surface gas, accumulated gas and sub-surface gas monitoring.

The network, schedule, and parameters to be monitored are detailed in **Section 3.8 – Groundwater Management** from the OEMP- Following the requirements of this section, the following procedures are to be followed.

WORK PROCEDURE

1. GROUNDWATER LEVEL MEASUREMENT

The monitoring frequency will be in accordance with EPL requirements.

Water level measurement will be undertaken using an electronic water level meter tape. The following procedure will be used:

1. Before starting, prepare field notebook and check that the water level meter is working.
2. Decontaminate the water whistle by rinsing with tap water followed by distilled water.
3. Visually check the borehole for damage and record any observed damage in the field sheets.
4. Remove cap(s), measure depth to water below top of 50mm PVC casing for the piezometer.
5. Replace caps, record piezometer number, date, time and depth to water in field sheets.

Conversion of Groundwater Level to Metres AHD

Recorded depths to groundwater should be converted to an elevation in metres AHD.

groundwater	=	elevation top	-	depth to
elevation (m AHD)		PVC pipe (m AHD)		groundwater (m)

2. GROUNDWATER SAMPLING

The monitoring frequency will be in accordance with EPL requirements.

The following procedure will be used to obtain water samples.

1. Measure water level as described above.
2. Prepare sample containers, cross-check sampling requirements with laboratory sample container guide for correct bottle type, preservative and required quantity, note any specific holding times.
3. Label laboratory prepared bottles with project number, monitoring point

identification, sampler initials, date and time using water proof ink (xylene free) on self adhesive labels.

4. Purge the borehole: calculate purge volume (V) using the following formula:

   for 50 mm borehole V (litres) = 3x [(depth of bore - depth to water) x 2.26]

   Sampling should be conducted after the monitoring point has recovered from purging (sampling should not take place more than one day after purging) or alternatively, water can continue to be extracted until field measured parameters stabilise, indicating sample is representative of recharge.

5. Field measure temperature, pH and electrical conductivity; record results in field sheets.

6. Note on field sheets any visual observations relating to volume/flow present, colour, sediment, particulate matter, oil on surface etc as well as any apparent odour.

7. Lower a new plastic unpreserved bottle gently below surface of the water sample, filling bottle to top. Decant into sample bottles containing preservatives directly without rinsing, with zero headspace. Samples for volatile analysis should be obtained first. Samples for metals analysis should be field filtered using 11µm filter paper or equivalent. Replace lids tightly.

8. Place sample bottles into pre-chilled esky with several frozen ice-packs immediately after sample is decanted.

Methods of Purging

Bailing

Rinse the line in distilled water. Remove a new polyethylene bailer (factory decontaminated) from its protective wrapping. Attach the line to the bailer. Lower bailer gently to mid-point of screen, withdraw, decant into distilled water rinsed bucket. Repeat until purge volume and sufficient recharge is achieved or until field measured parameters stabilise, indicating sample is representative of recharge.

Submersible Pump

Ensure pump has been running to tank or waste for at least 100L. Run discharge into bucket and measure field parameters to ensure stabilisation. Obtain sample as described above.

3. SURFACE WATER AND LEACHATE SAMPLING

The monitoring frequency will be in accordance with EPL requirements and Trade Waste Agreement.

The following procedure will be used to obtain surface water and leachate samples.

1. Prepare sample containers, cross-check sampling requirements with laboratory sample container guide for correct bottle type, preservative and required quantity, note any specific holding times.
2. Label laboratory prepared bottles with project number, monitoring point identification, sampler initials, date and time using water proof ink (xylene free) on self adhesive labels.
3. Collect from as close as practicable to point of discharge and upwind if possible to avoid collecting any concentration of surface contaminants. Obtain sample from below surface, being careful not to disturb any bottom sediment.
4. Field measure temperature, pH and electrical conductivity; record results in field sheets.
5. Note on field sheets any visual observations relating to volume/flow present, colour, sediment, particulate matter, oil on surface etc as well as any apparent odour.
6. Lower a new plastic unpreserved bottle gently below surface of the water, filling bottle to top. Decant into sample bottles containing preservatives directly without rinsing, with zero headspace. Samples for volatile analysis should be obtained first. Replace lids tightly.
7. Place sample bottles into pre-chilled esky with several frozen ice-packs immediately after sample is decanted.

4. TRUCK WASH SAMPLING

The monitoring frequency will be in accordance with the Trade Waste Agreement.

The following procedure will be used to obtain truck wash samples.

1. Ensure truck wash is in use during sampling and pump is functioning.
2. Prepare sample containers, cross-check sampling requirements with laboratory sample container guide for correct bottle type, preservative and required quantity, note any specific holding times.
3. Label laboratory prepared bottles with project number, monitoring point identification, sampler initials, date and time using water proof ink (xylene free) on self adhesive labels.
4. Collect from point of discharge to sewer.
5. Note on field sheets any visual observations relating to volume/flow present, colour, sediment, particulate matter, oil on surface etc as well as any apparent odour.
6. Lower a new plastic unpreserved bottle gently below surface of the water, filling bottle to top. Decant into sample bottles containing preservatives directly without rinsing, with zero headspace. Samples for volatile analysis should be obtained first. Replace lids tightly.
7. Place sample bottles into pre-chilled esky with several frozen ice-packs immediately after sample is decanted.

5. TRANSPORT TO LABORATORY

1. Complete chain-of-custody (COC) form for samples, ensuring that details on COC and sample bottle label are identical.
2. On returning to base, repack esky with fresh ice packs. Seal copy of COC in plastic sleeve and place inside esky. Seal esky with packaging tape, security seal and care stickers.
3. Dispatch esky to laboratory by courier on the same day that samples are taken. Retain copy of courier consignment notice. Do no dispatch samples on Fridays unless arranged prior with laboratory.

6. QUALITY CONTROL

For each groundwater sampling round, one duplicate sample and one field blank will be submitted for Quality Control.

1. With each batch of samples submit 1 trip blank comprising a standard set of sample bottles filled with distilled water decanted in the field directly into sample bottles and labelled W9001.
2. With each batch of samples sent to the laboratory, submit 1 set of duplicate samples collected from any groundwater monitoring station and labelled W9003.
3. Carry out sampling, sample handling, sample documentation and sample dispatch as described above, note duplicate origin in field sheets.

7. GAS MONITORING

Accumulated gas monitoring is undertaken at the ORRRC as a requirement of the EPL.

The network, schedule, and parameters to be monitored are further detailed in **Section 3.9** of the OEMP. Following the requirements of this section of the OEMP and the EPL, the following procedures are to be followed.

7.2 ACCUMULATED GAS MONITORING

Accumulated (building) gas methane monitoring will be conducted using a zeroed and calibrated methane, carbon dioxide and oxygen gas detector, currently the GA2000. The threshold level for closer investigation and potential action is 12,500 parts per million (1.25 % v/v) of methane in any building on the facility or within 250 m of landfilled areas. If methane is detected above this limit, daily testing is required until ventilation or other measures have controlled the methane concentration. The monitoring frequency will be in accordance with EPL requirements.

The following procedure will be used to monitor surface gas emissions:

1. Before starting, prepare field notebook and check that gas analyser is working.
2. All enclosed buildings within 200m of active or capped areas of landfill shall be monitored. All rooms shall be investigated, with the gas meter allowed to detect for a period of approximately one minute in each. Ensure larger spaces also have perimeter walks conducted as well as investigation of alcoves and pits.

Notification of Gas Emissions

The EPA is notified as soon as practicable if any of the gas monitoring detects methane concentrations exceeding the threshold level. The methods for notification are identified in **SOP 13 – Pollution Incident Response Management**.

8. REPORTING

All results will be reviewed and forwarded to the Manager Waste Services and Technical Support when they are made available. At the end of each reporting year, all data collected will be compiled in an Annual Environmental Monitoring Report and Annual Return which will be forwarded to Council.

Data will be validated against monitoring program QA objectives, and interpreted with reference to the overall monitoring program objectives.

The monitoring program and annual reporting will be used to establish a record of groundwater, surface water, leachate quality, truck wash and gas accumulation. Data will be reviewed and any trends identified and possible causes investigated.

RESPONSIBILITIES

The Manager Waste Services and Technical Support is responsible for commissioning a contractor to undertake the environmental monitoring, as per the provisions of Environment Protection Licence No. 5956 and the Trade Waste Agreement.

RECORDS

After each round of monitoring, results are to be forwarded to the Manager Waste Services and Technical Support.

The contractor is required to complete the Annual Return and an Annual Environmental Monitoring Report (refer **Section 6.4**), detailing the results and findings of the environmental monitoring after each year of sampling.

REFERENCES

Section 3.7 – Surface Water and Leachate Management

Section 3.8 – Groundwater Management

Section 3.9 – Landfill Gas Management

Section 6.4 – Annual Environmental Monitoring Reports

Section 8.2 – Environment Protection Licences

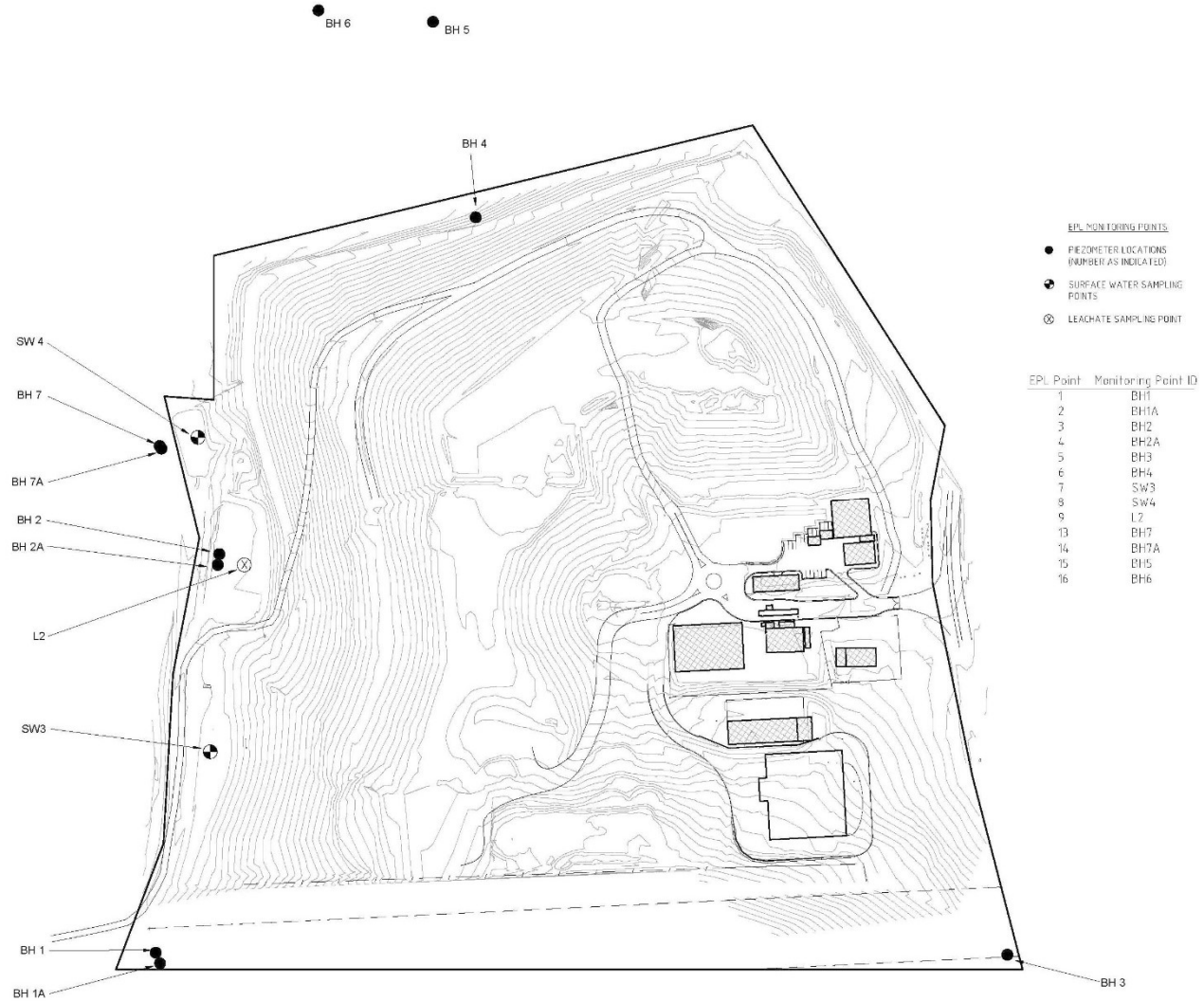


Figure 1: ORRRC Monitoring Points

ORANGE CITY COUNCIL	Standard Operating Procedure
	ERRRC Environmental Monitoring
	File No: **SOP 20**

I approve the use of this Standard Operating Procedure:

Name: Wayne Davis	**Position:** Manager Waste Services and Technical Support
Signature:	**Date:** 14/12/2021

Revision Status:

Change History

Date	Details of Change	Version No.
13/12/2013	Document created	Draft
31/03/2014	Draft approved	Version 1
17/08/2015	Draft approved	Version 2
05/09/2016	Draft approved	Version 3
31/1/2020	Weather Station User Manual version updated (March-2017) Added Surface Gas Monitoring Version updated to correspond to OEMP	Version 5
2/3/2021	Update Signature Date Version updated to correspond to OEMP	Version 6
14/12/2021	Update Signature Date Version updated to correspond to OEMP	Version 7

PURPOSE

To ensure consistent and correct methods are used for all environmental monitoring at the ERRRC, as per the requirements of the Environment Protection Licence (EPL 20104) and the Soil and Water Management Plan (SWMP). Environmental monitoring in this SOP includes groundwater, surface water, leachate, deposited dust and meteorological monitoring.

The network, schedule, and parameters to be monitored are detailed in **Section 4.9 – Groundwater Management** of the OEMP. Following the requirements of this section, the following procedures are to be followed.

WORK PROCEDURE

1. GROUNDWATER LEVEL MEASUREMENT

The monitoring frequency will be in accordance with EPL requirements.
Water level measurement will be undertaken using an electronic water level meter tape. The following procedure will be used:

1. Before starting, prepare field notebook and check that the water level meter is working.
2. Decontaminate the water whistle by rinsing with tap water followed by distilled water.
3. Visually check the borehole for damage and record any observed damage in the field sheets.
4. Remove cap(s), measure depth to water below top of 50mm PVC casing for the piezometer.
5. Replace caps, record piezometer number, date, time and depth to water in field sheets.

Conversion of Groundwater Level to Metres AHD

Recorded depths to groundwater should be converted to an elevation in metres AHD.

groundwater elevation (m AHD)	-	elevation top PVC pipe (m AHD)	-	depth to groundwater (m)

2. GROUNDWATER SAMPLING

The monitoring frequency will be in accordance with EPL requirements.
The following procedure will be used to obtain water samples.

1. Measure water level as described above.
2. Prepare sample containers, cross-check sampling requirements with laboratory sample container guide for correct bottle type, preservative and required quantity, note any specific holding times.
3. Label laboratory prepared bottles with project number, monitoring point

identification, sampler initials, date and time using water proof ink (xylene free) on self adhesive labels.

4. Purge the borehole: calculate purge volume (V) using the following formula:

   for 50 mm borehole V (litres) = 3x [(depth of bore - depth to water) x 2.26]

   Sampling should be conducted after the monitoring point has recovered from purging (sampling should not take place more than one day after purging) or alternatively, water can continue to be extracted until field measured parameters stabilise, indicating sample is representative of recharge.

5. Field measure temperature, pH and electrical conductivity; record results in field sheets.

6. Note on field sheets any visual observations relating to volume/flow present, colour, sediment, particulate matter, oil on surface etc as well as any apparent odour.

7. Lower a new plastic unpreserved bottle gently below surface of the water sample, filling bottle to top. Decant into sample bottles containing preservatives directly without rinsing, with zero headspace. Samples for volatile analysis should be obtained first. Samples for metals analysis should be field filtered using 11µm filter paper or equivalent. Replace lids tightly.

8. Place sample bottles into pre-chilled esky with several frozen ice-packs immediately after sample is decanted.

Methods of Purging

Bailing

Rinse the line in distilled water. Remove a new polyethylene bailer (factory decontaminated) from its protective wrapping. Attach the line to the bailer. Lower bailer gently to mid-point of screen, withdraw, decant into distilled water rinsed bucket. Repeat until purge volume and sufficient recharge is achieved or until field measured parameters stabilise, indicating sample is representative of recharge.

Submersible Pump

Ensure pump has been running to tank or waste for at least 100L. Run discharge into bucket and measure field parameters to ensure stabilisation. Obtain sample as described above.

3. SURFACE WATER SAMPLING

The monitoring frequency will be in accordance with EPL requirements and the SWMP.

The following procedure will be used to obtain surface water samples:

1. Prepare sample containers, cross-check sampling requirements with laboratory sample container guide for correct bottle type, preservative and required quantity, note any specific holding times.
2. Label laboratory prepared bottles with project number, monitoring point identification, sampler initials, date and time using water proof ink (xylene free) on self adhesive labels.
3. Collect from as close as practicable to point of discharge and upwind if possible to avoid collecting any concentration of surface contaminants. Obtain sample from below surface, being careful not to disturb any bottom sediment.
4. Field measure temperature, pH and electrical conductivity; record results in field sheets.
5. Note on field sheets any visual observations relating to volume/flow present, colour, sediment, particulate matter, oil on surface etc as well as any apparent odour.
6. Lower a new plastic unpreserved bottle gently below surface of the water, filling bottle to top. Decant into sample bottles containing preservatives directly without rinsing, with zero headspace. Samples for volatile analysis should be obtained first. Replace lids tightly.
7. Place sample bottles into pre-chilled esky with several frozen ice-packs immediately after sample is decanted.

4. LEACHATE SAMPLING

The monitoring frequency will be in accordance with the EPL and the SWMP.

The following procedure will be used to obtain leachate samples.

1. Ensure leachate tank contains liquid.
2. Prepare sample containers, cross-check sampling requirements with laboratory sample container guide for correct bottle type, preservative and required quantity, note any specific holding times.
3. Label laboratory prepared bottles with project number, monitoring point identification, sampler initials, date and time using water proof ink (xylene free) on self adhesive labels.
4. Collect from outlet tap of tank.
5. Note on field sheets any visual observations relating to volume/flow present, colour, sediment, particulate matter, oil on surface etc as well as any apparent odour.
6. Lower a new plastic unpreserved bottle gently below surface of the water, filling bottle to top. Decant into sample bottles containing preservatives directly without rinsing, with zero headspace. Samples for volatile analysis should be obtained first. Replace lids tightly.
7. Place sample bottles into pre-chilled esky with several frozen ice-packs immediately after sample is decanted.

5. TRANSPORT TO LABORATORY

1. Complete chain-of-custody (COC) form for samples, ensuring that details on COC and sample bottle label are identical.

2. On returning to base, repack esky with fresh ice packs. Seal copy of COC in plastic sleeve and place inside esky. Seal esky with packaging tape, security seal and care stickers.

3. Dispatch esky to laboratory by courier on the same day that samples are taken. Retain copy of courier consignment notice. Do no dispatch samples on Fridays unless arranged prior with laboratory.

6. QUALITY CONTROL

For each groundwater sampling round, one duplicate sample and one field blank will be submitted for Quality Control.

1. With each batch of samples submit 1 trip blank comprising a standard set of sample bottles filled with distilled water decanted in the field directly into sample bottles and labelled W9001.

2. With each batch of samples sent to the laboratory, submit 1 set of duplicate samples collected from any groundwater monitoring station and labelled W9003.

3. Carry out sampling, sample handling, sample documentation and sample dispatch as described above, note duplicate origin in field sheets.

7. DUST

7.1 QUALITATIVE

Dust will be monitored qualitatively continuously, that is visually, for plumes of windblown dust generated at the site potentially being blown beyond the site boundary. If dust plumes are seen near the site boundary the site supervisor will be notified immediately and mitigation measures implemented (refer **Section 4.12 – Dust Control**).

7.2 QUANTITATIVE- DEPOSITED DUST

Section 4.12 – Dust Monitoring of the OEMP details the dust monitoring frequency and network at the ERRRC. The monitoring frequency will be in accordance with EPL requirements.

The following procedures are to be followed:

1. Dust sampling will be in accordance with **AS/NZS 3580.10.1:2003**.

8. SURFACE GAS MONITORING

Surface gas monitoring is used to demonstrate that cover material is controlling the emission of landfill gas and is undertaken over capped areas of the landfill. Surface gas methane monitoring will be conducted using a zeroed and calibrated methane, carbon

dioxide and oxygen gas detector, currently the GA2000. The threshold concentration for closer investigation and potential action is 500 parts per million (v/v) of methane at any point on the landfill surface. The monitoring frequency will be in accordance with EPL requirements.

The following procedure will be used to monitor surface gas emissions:

1. Before starting, prepare field notebook and check that gas analyser is working.

2. Surface gas will be measured five centimetres above the ground surface in areas with intermediate or final cover where wastes have been placed. A field technician will start at a point 5 m away from the waste perimeter, walking across the waste parallel to the boundary of the landfill until reaching the opposite side. This procedure will be repeated at 25 m intervals inward from the perimeter across the centre of the site to the opposite side of the waste landfill. Due to accessibility constraints, areas consisting of varying gradient will be monitored following contour lines rather than maintaining a rigid grid coverage. Monitoring will be performed on calm days when winds are below 10 km/hr. Depressions in the cover material or surface fissures away from the sampling grid must also be investigated for methane emissions.

9. METEOROLOGICAL MONITORING

Orange City Council owns and maintains a meteorological station on the Euchareena Road Resource Recovery Centre site. This meteorological station utilises web-based software. Data from this meteorological station can be accessed by the following web link: http://www.weathermation.net.au/
Council shares access to this data with Golden Cross Resources. The login details of these two parties are as follows:

User Name	Password
OrangeCityCouncil	OcC437
Golden.Cross	OcC4683

Exporting Data
The step by step procedures detailed in the 'WeatherMation LIVE Web Module' and 'WeatherMation LIVE Reports Module' have been attached. These user manuals are to be followed when viewing, downloading and exporting data. The monitoring frequency will be in accordance with EPL requirements.

10. REPORTING

All results will be reviewed and forwarded to the Manager Waste Services and Technical Support when they are made available. At the end of each reporting year, all data collected will be compiled in an Annual Environmental Monitoring Report and Annual Return which will be forwarded to Council.

Data will be validated against monitoring program QA objectives, and interpreted with

reference to the overall monitoring program objectives.

The monitoring program and annual reporting will be used to establish a record of groundwater, surface water, leachate quality, truck wash and gas accumulation. Data will be reviewed and any trends identified and possible causes investigated.

RESPONSIBILITIES

The Manager Waste Services and Technical Support is responsible for commissioning a contractor to undertake the environmental monitoring, as per the provisions of Environment Protection Licence No. 20104 and the Trade Waste Agreement.

RECORDS

After each round of monitoring, results are to be forwarded to the Manager Waste Services and Technical Support.

The contractor is required to complete the Annual Return and an Annual Environmental Monitoring Report (refer **Section 6.4**), detailing the results and findings of the environmental monitoring after each year of sampling.

REFERENCES

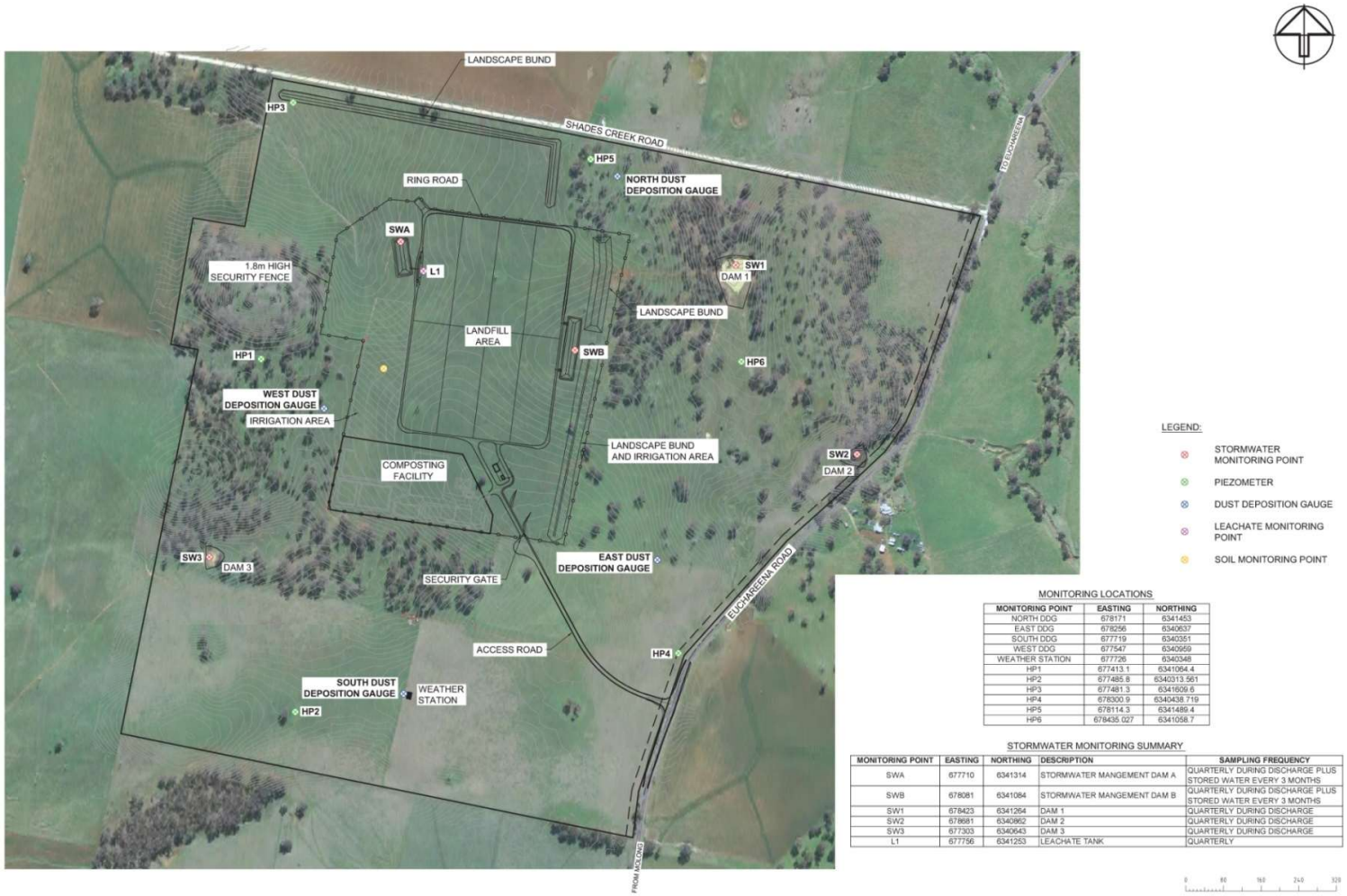
Section 3.7 – Surface Water and Leachate Management

Section 3.8 – Groundwater Management

Section 3.9 – Landfill Gas Management

Section 6.4 – Annual Environmental Monitoring Report

Section 8.2 – Environment Protection Licences



MONITORING LOCATIONS

MONITORING POINT	EASTING	NORTHING
NORTH DDG	678171	6341453
EAST DDG	678256	6340637
SOUTH DDG	677719	6340351
WEST DDG	677547	6340959
WEATHER STATION	677726	6340348
HP1	677413.1	6341064.4
HP2	677485.8	6340313.561
HP3	677481.3	6341609.6
HP4	678300.9	6340438.719
HP5	678114.3	6341489.4
HP6	678435.027	6341058.7

STORMWATER MONITORING SUMMARY

MONITORING POINT	EASTING	NORTHING	DESCRIPTION	SAMPLING FREQUENCY
SWA	677710	6341314	STORMWATER MANGEMENT DAM A	QUARTERLY DURING DISCHARGE PLUS STORED WATER EVERY 3 MONTHS
SWB	678081	6341084	STORMWATER MANGEMENT DAM B	QUARTERLY DURING DISCHARGE PLUS STORED WATER EVERY 3 MONTHS
SW1	678423	6341264	DAM 1	QUARTERLY DURING DISCHARGE
SW2	678681	6340962	DAM 2	QUARTERLY DURING DISCHARGE
SW3	677303	6340643	DAM 3	QUARTERLY DURING DISCHARGE
L1	677756	6341253	LEACHATE TANK	QUARTERLY

Figure 1: ERRRC Monitoring Points

WeatherMation LIVE Report Module

Version 1.6.3
28 March 2017

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Introduction

Environdata's WeatherMation software has been developed to download, display and respond to the weather data from your weather stations, automatically.

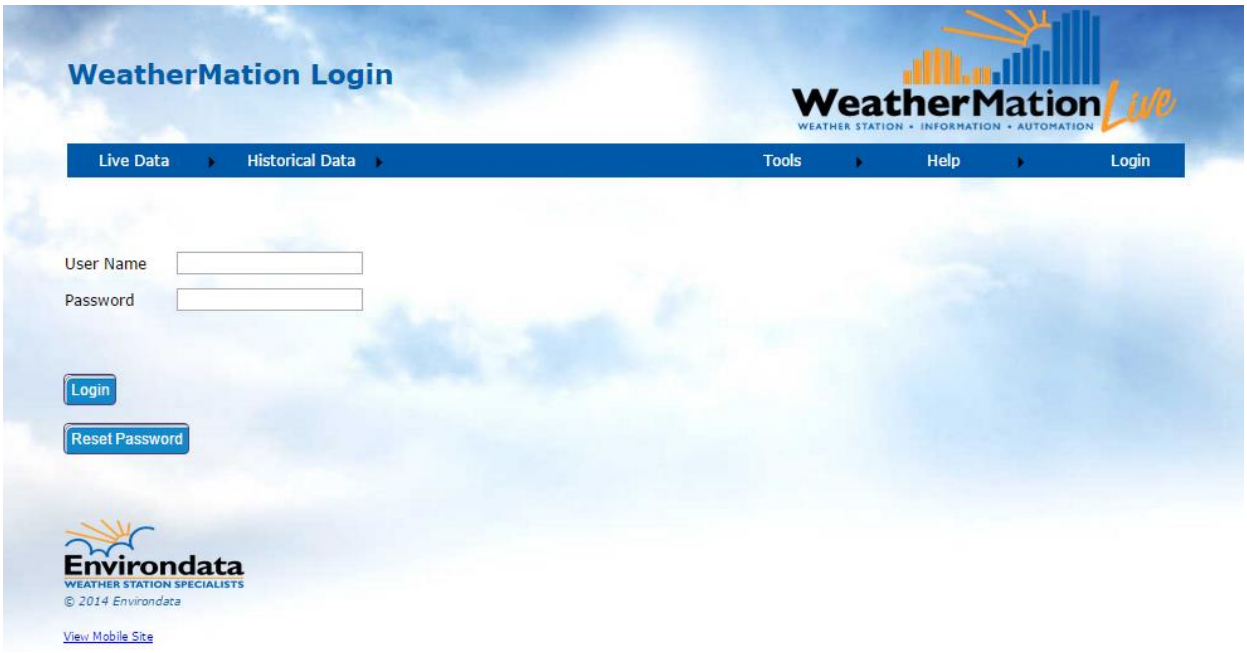
WeatherMation's Reports Module, provides your users with extra tools to analyse all of your weather data from each of your connected weather stations. This data is on a Webpage to be accessed via the internet on any browser from a computer.

Using the System

Go to www.weathermation.net.au
You will see the Login Page – please enter your User Name and Password that were provided to you.

Click on the Login button to access the system

(If you need to change your password, click on the Reset Password button)



1. Reports Specific *Menu Options*

- **Live Data**
    - **Weather Dashboard** - displays a customized report based on Current Readings Graphs, Historical Data Graphs or Current Values from your weather station. You can include multiple weather stations on 1 report. This is ONLY available if you have purchased the Reports Module.
- **Historical Data**
    - **Reports** – This allows you to setup, save and run reports based on your historical data. This is ONLY available if you have bought the Reports Module and if you have Reporting permission.
    - **Wind Rose -** This allows you to set up, save and run Wind Rose reports based on your historical data. This is ONLY available if you have bought the Reports Module and if you have Reporting permission.
- **Tools**
    - **Weather Dashboard Setup**– You can customize your Weather Dashboard Reports page. This is ONLY available if you have bought the Reports Module and if you have configuration permission.

2. Weather Dashboard

Using the Weather Dashboard Page

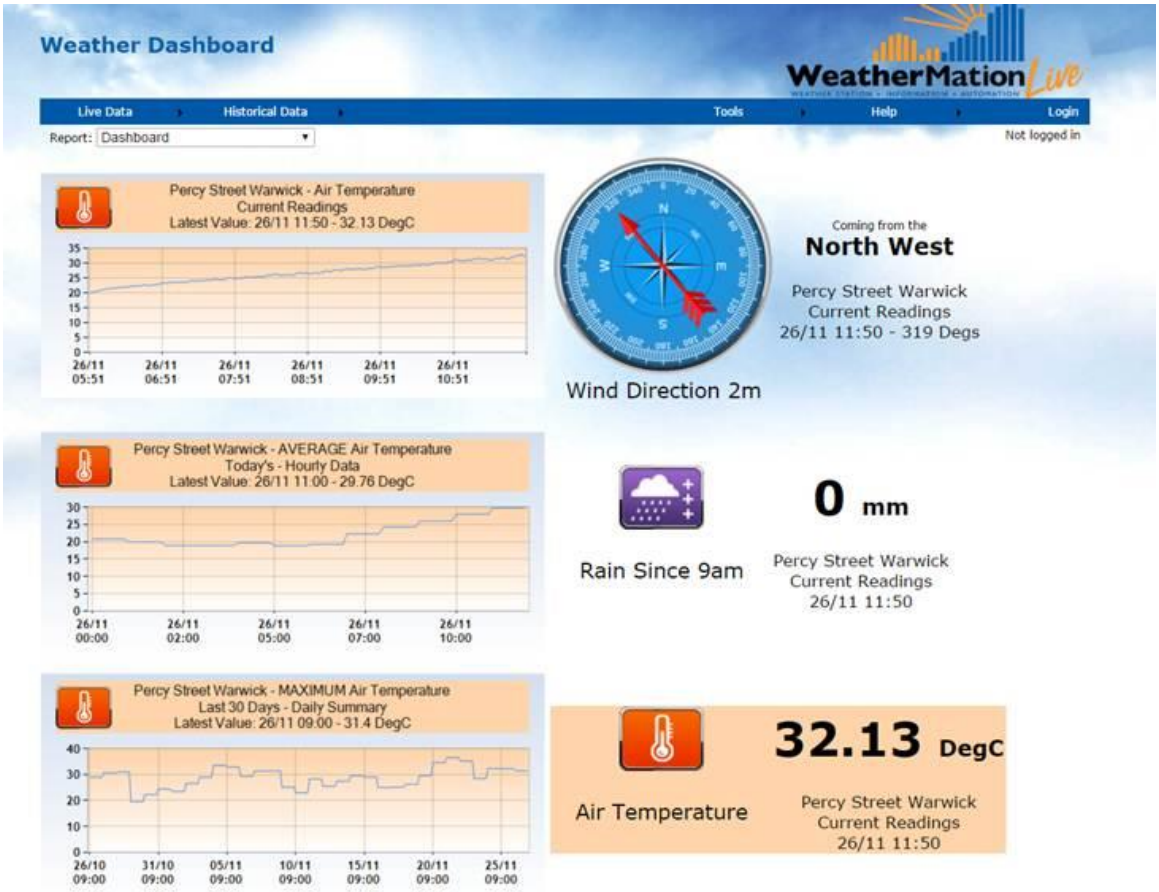
If your user has permission to do configuration, they can setup different Dashboard Reports. Each report can have up to 12 Graphs, Wind Compasses or Latest Values – based on Current or Historical Data.

You can display multiple sensors from multiple weather stations on each Dashboard Report. Please see Section 3 on how to customize and save these reports.

If you have more than one Weather Dashboard Report set up, you can select which Report to display by clicking the arrow on the drop-down box and selecting your chosen Report.

Notes:

You may have the optional Alerts & Notifications Module and have On-Screen Alerts setup. E.g. Air Temperature in the below image has an orange background to indicate the temperature has reached the settings to display a yellow background. 7 settings per sensor are possible.



3. Weather Dashboard Setup

Weather Dashboard Setup Screen

The Weather Dashboard Setup Screen allows you to setup which sensors from which weather station you would like to be displayed on Weather Dashboard Report. You can also select in which order they will appear and what type of graph you'd like for them. Only a user assigned layout setup access will be able to make these changes.

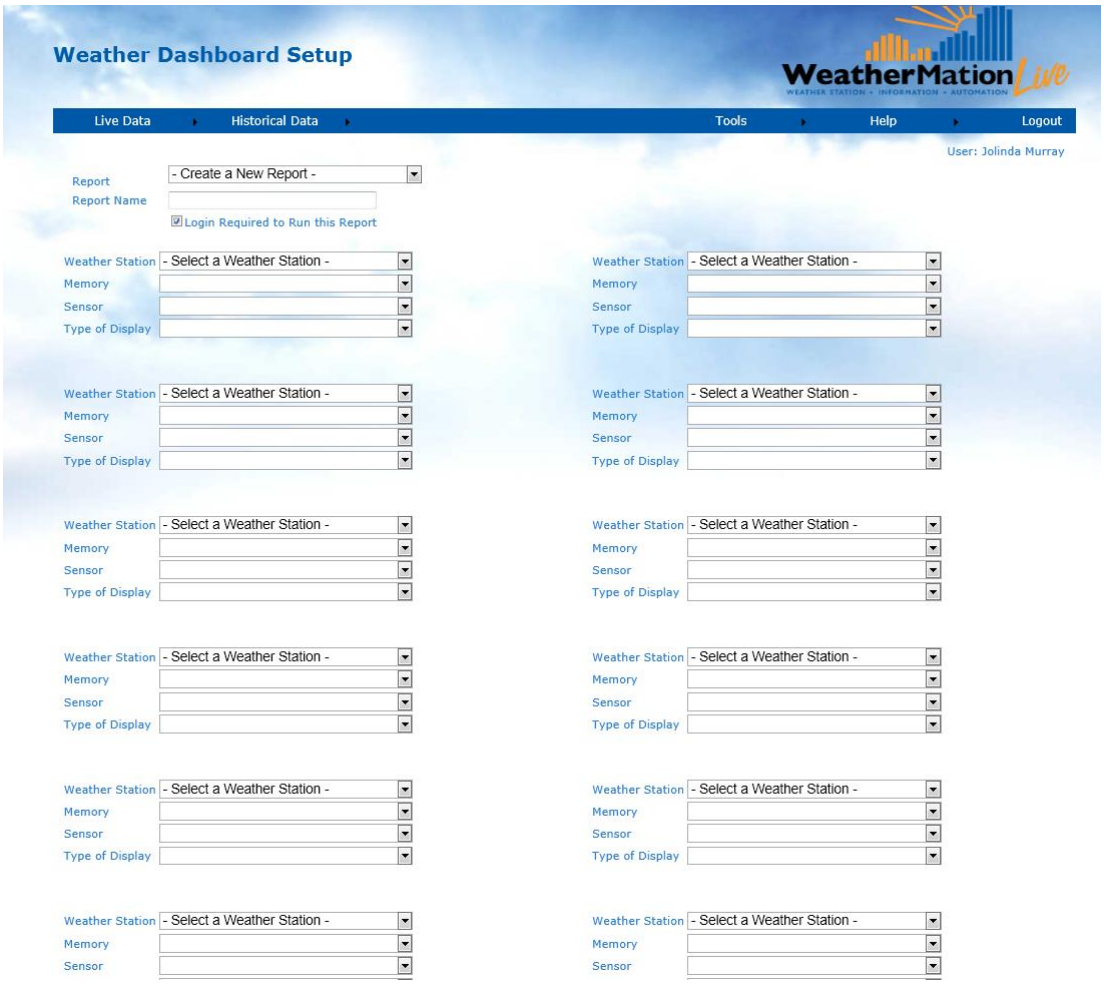
You are able to create and save multiple Dashboard Reports.

Creating a NEW Weather Dashboard Report

Enter a Name for your New Report in the Report Name field.

Login Required to Run this Report:

1. If you have chosen to have your sites secure, and require your users to login to access your weather stations, then this field should be ticked in order to keep your data secure.
2. If you have chosen to NOT have a login for your weather stations and they are publicly viewable, then leave this box un-ticked to make this report publicly viewable or tick this box to make the report secure and require a login to view.



You have the option to display up to 12 item per Dashboard Report, so for each graph:

- If you have more than 1 weather station linked to this software, you can select which weather station's data to display by clicking the arrow on the drop-down box and selecting a different weather station.
- Select which Memory you'd like to display – Current Data of Historical Data like Daily Summary or Hourly Data etc.
- All Sensors that are AVAILABLE to be selected to be displayed on the Sensor Drop-down box, select one by clicking on it.
- Then select what type of Graph you'd like to display – BAR or LINE or LATEST VALUE. For Wind Direction sensors, you will have an added option to display a COMPASS. (Latest Value will display the last value received from the Weather Station)

Click on the Save Report button to save this Dashboard Report.

Deleting a Weather Dashboard Report

N.B. Weather Dashboard reports can be edited or deleted by the original creator, only.

In order to delete a Dashboard Report, select the Dashboard Report clicking the arrow on the drop-down box and selecting the Report.

Then click the Delete Report button.

Editing/Changing a Weather Dashboard Report

N.B. Weather Dashboard reports can be edited or deleted by the original creator, only.

In order to edit a Dashboard Report, select the Dashboard Report clicking the arrow on the drop-down box and selecting the Report.

If you'd like to make changes to the Dashboard Report and save it with a NEW Name, enter a NEW Name in the Report Name field. This will save the NEW Report with a different name AND keep the original report.

Once you have made the changes, click the Save Report Layout button to save the report.

4. Reports

The Reports option gives you multiple ways to view and analyse your weather station's historical data.

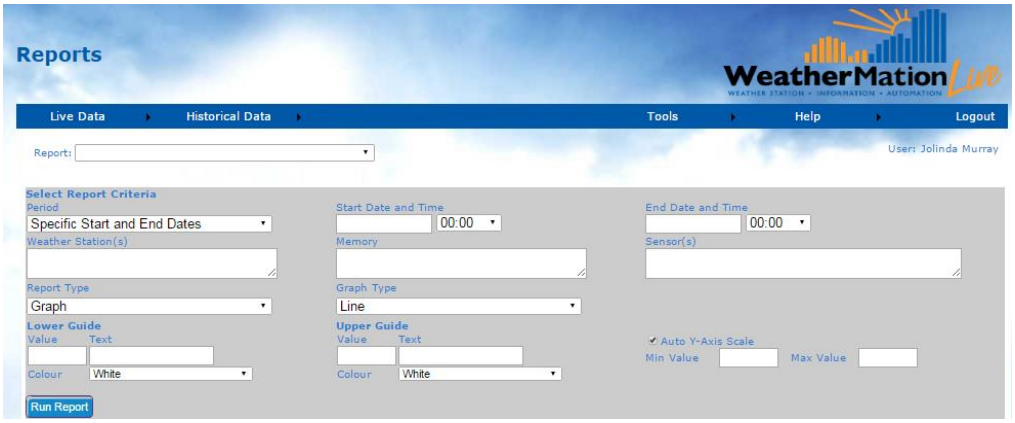
As a user with Reporting permissions, you will be able to view and run Reports, but not be able to save any new or change any existing reports.

As a user with Configuration & Reporting permissions, you will be able to view, run, save, edit and delete reports.

Viewing the Reports Page the First Time (without Configuration permissions)

Viewing the Reports Page for the 1st time or while you don't have any SAVED Reports, you will get the Select Report Criteria section.

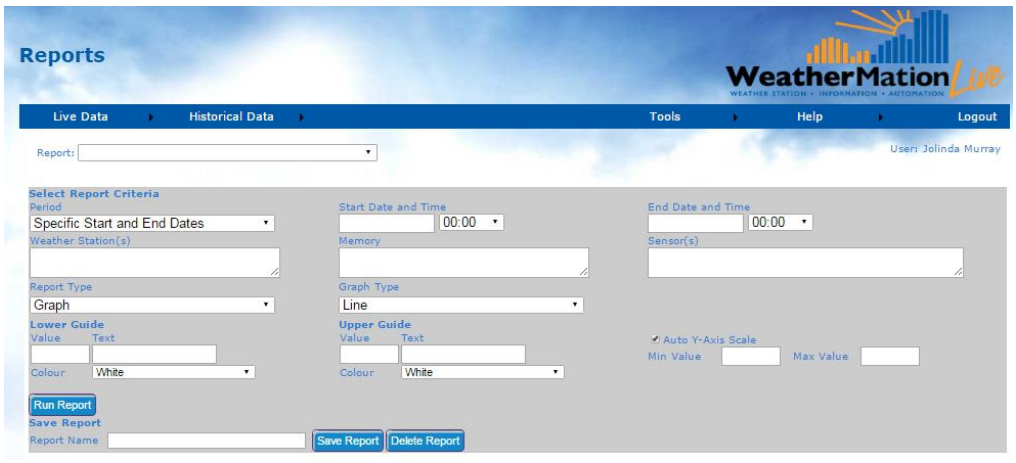
Here you can select what should be displayed on the Report & RUN the report



Viewing the Reports Page the First Time (with Configuration permissions)

Viewing the Reports Page for the 1st time or while you don't have any SAVED Reports, you will get the Select Report Criteria section.

Here you can select what should be displayed on the Report, RUN the report and SAVE the Report for future use.



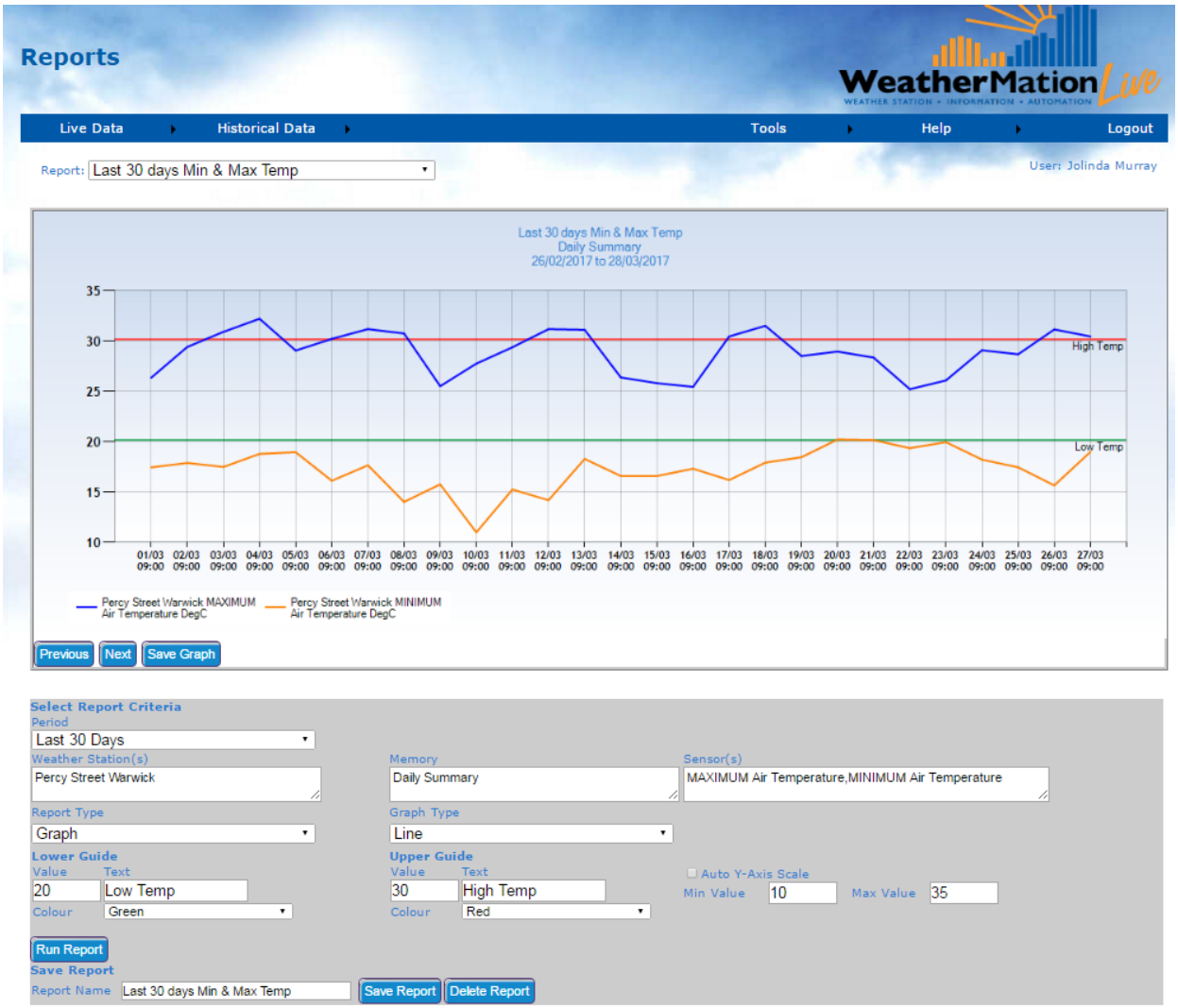
What options do I have for viewing a report?

- Period:
  This is the 'timeframe' for the data you want to report on
  - Specific Start and End Dates
  - Yesterday
  - Last 4 Hours
  - Last 8 Hours
  - Last 12 Hours
  - Last 24 Hours
  - Last 7 Days
  - Last 30 Days
  - Last 90 Days
  - Last 180 Days
  - Last Year
  - Last Full Week
  - Last Full Month
  - Last Full 4 Months
  - Last Full 6 Months
  - Last Full 12 Months
  - Summary To Date
  - Summary By Month
  - Summary By Quarter
- Weather Station(s):
  - You can select one or more of your weather stations
- Memory:
  - You can only select ONE Memory per report.
  - Your selection here is important e.g. selecting 'Last X Hours' in your Period, does not make sense if you select Daily Summary. See the *Note* below.
- Sensor(s):
  - You can select one or more Sensors for the report.
- Report Type:
  - Graph – this will only display a graph with your data
  - Grid Report – this will display only a table with your data
  - Graph and Grid – this will display a graph and a table report with your data
- Graph Type:
  - Line Graph
  - Bar Graph
- Lower and Upper Guides:
  - Value – the value of where the guide will be on the graph
  - Text – A label that will be displayed on the graph
  - Colour – Select a colour for the guide
- Auto Y-Axis Scale:
  - Checked allows you to set a specific Min and Max Value for the Vertical Y-Axis Scale

***Note**: Consider the Memory and Period you selected carefully – e.g. If you select 'Daily Summary' (which normally only has records for 9am every day), then selecting last 4 Hours as the Period will only have 1 data record (if you are running the report before 1pm (4 hours after 9am)) or it might have no data if you run it after 1pm.*

Once you have entered all the Report Parameters, click the Run Report button to display your report.

Running a Graph Report



Select your Report Criteria – make sure Report Type is **Graph**. Then click the Run Report button to display your Graph.

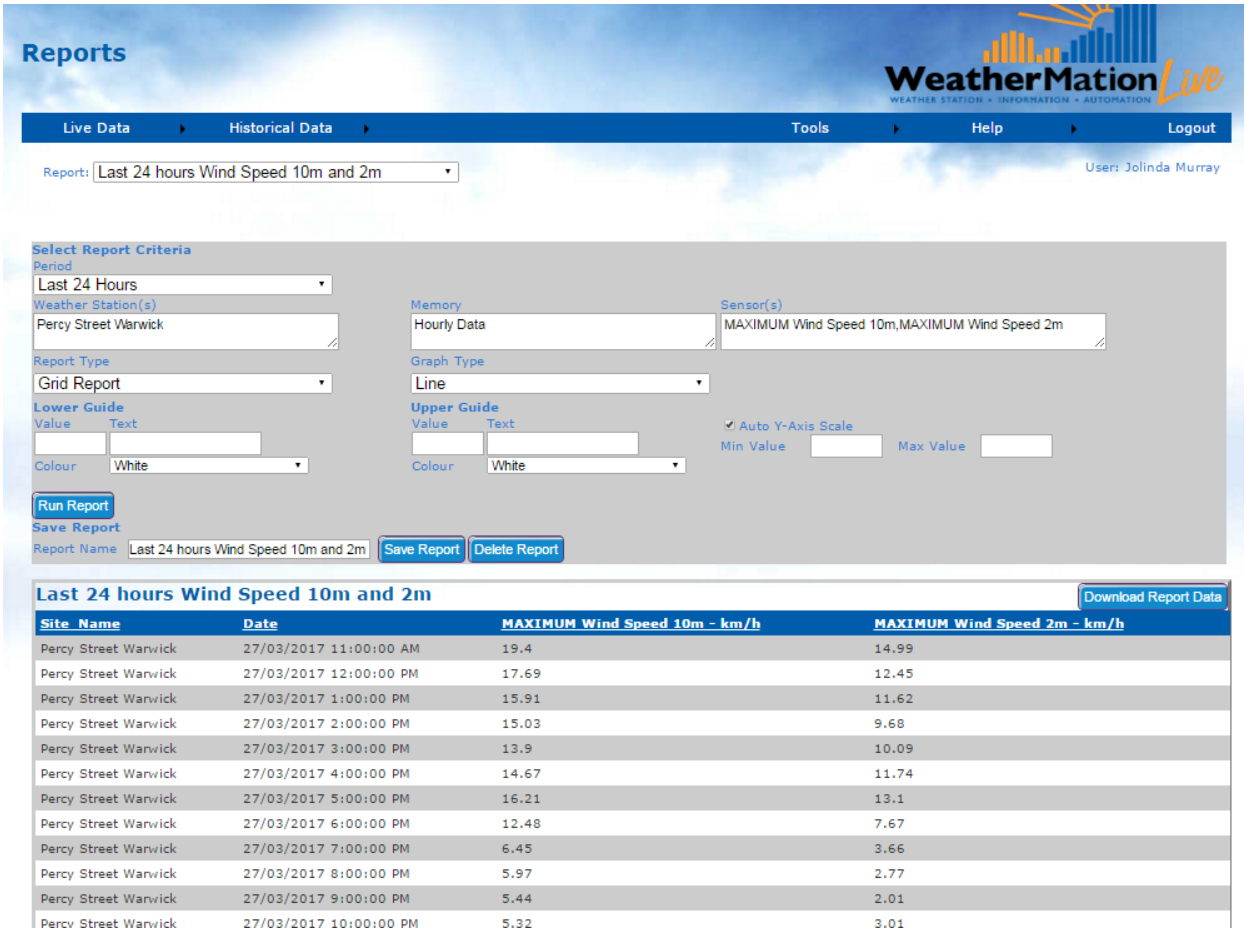
In this example we are displaying a Graph for one Weather Station (Percy Street Warwick) for its Max and Min Air Temperature. Data is based on Daily Summary data over the last 30 Days.

It also uses the Guide Lines with labels and the Y-Axis is from 10-35 Degrees C

Specific Options on a Graph:

- Previous – this will display the Data for the Previous Period e.g. previous 30 days in this case.
- Next - this will display the Data for the Next Period.
- Save Graph – this will save a .png file of the Graph to your PC or device.

Running a Grid Report



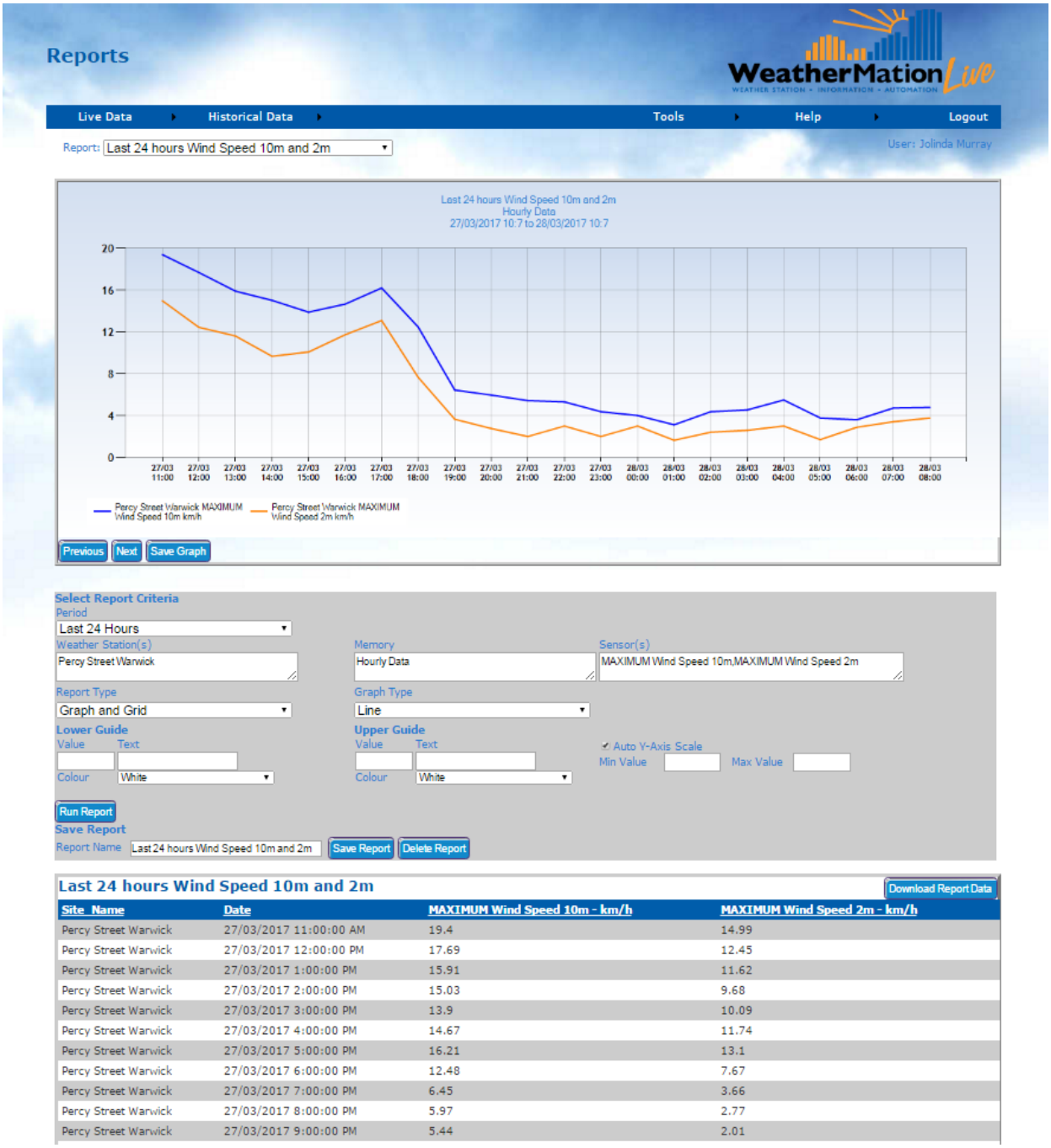
Select your Report Criteria – make sure Report Type is **Grid Report**. Then click the Run Report button to display your data in a Grid/Table format.

In this example we are displaying a Table for One Weather Station (Percy Street Warwick) for its Maximum Wind Speed at 2M and at 10M. Data is based on Hourly data over the last 24 Hours.

Specific Options on a Grid Report:

- Download Report Data – this will save a Comma Separated File (csv) of all the data in this Report to your PC or device. You can then open this file either in Excel or in any other text editor like Word or Notepad.

Running a Graph and Grid Report

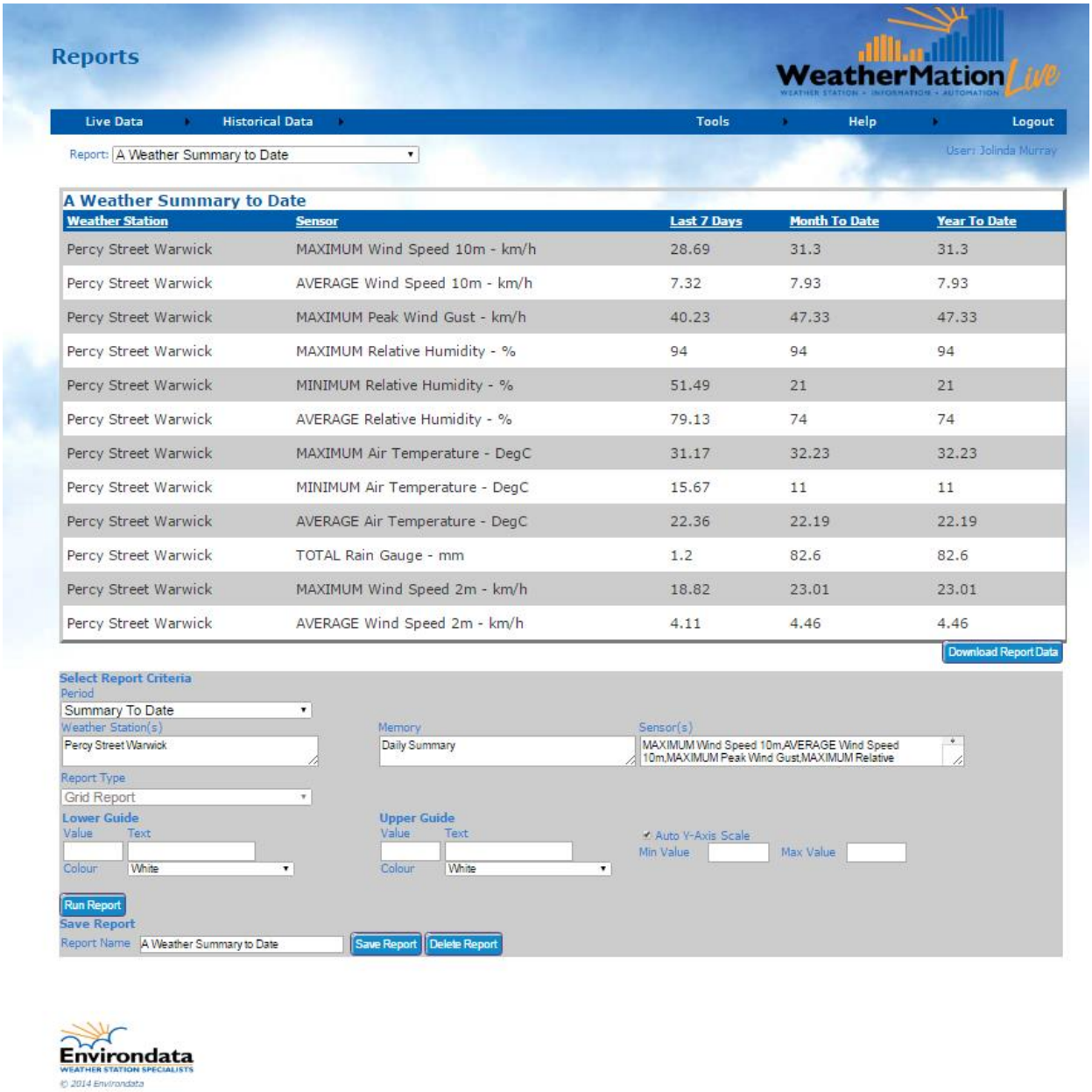


Site_Name	Date	MAXIMUM Wind Speed 10m - km/h	MAXIMUM Wind Speed 2m - km/h
Percy Street Warwick	27/03/2017 11:00:00 AM	19.4	14.99
Percy Street Warwick	27/03/2017 12:00:00 PM	17.69	12.45
Percy Street Warwick	27/03/2017 1:00:00 PM	15.91	11.62
Percy Street Warwick	27/03/2017 2:00:00 PM	15.03	9.68
Percy Street Warwick	27/03/2017 3:00:00 PM	13.9	10.09
Percy Street Warwick	27/03/2017 4:00:00 PM	14.67	11.74
Percy Street Warwick	27/03/2017 5:00:00 PM	16.21	13.1
Percy Street Warwick	27/03/2017 6:00:00 PM	12.48	7.67
Percy Street Warwick	27/03/2017 7:00:00 PM	6.45	3.66
Percy Street Warwick	27/03/2017 8:00:00 PM	5.97	2.77
Percy Street Warwick	27/03/2017 9:00:00 PM	5.44	2.01

Select your Report Criteria – make sure Report Type is **Graph and Grid**. Then click the Run Report button to display your data in a Graph at the top and a Grid/Table format at the bottom.

In this example we are displaying a Graph and a Table for one Weather Station (Percy Street Warwick) for its Max Wind Speed at 2M and at 10M. Data is based on hourly data over the last 24 Hours.

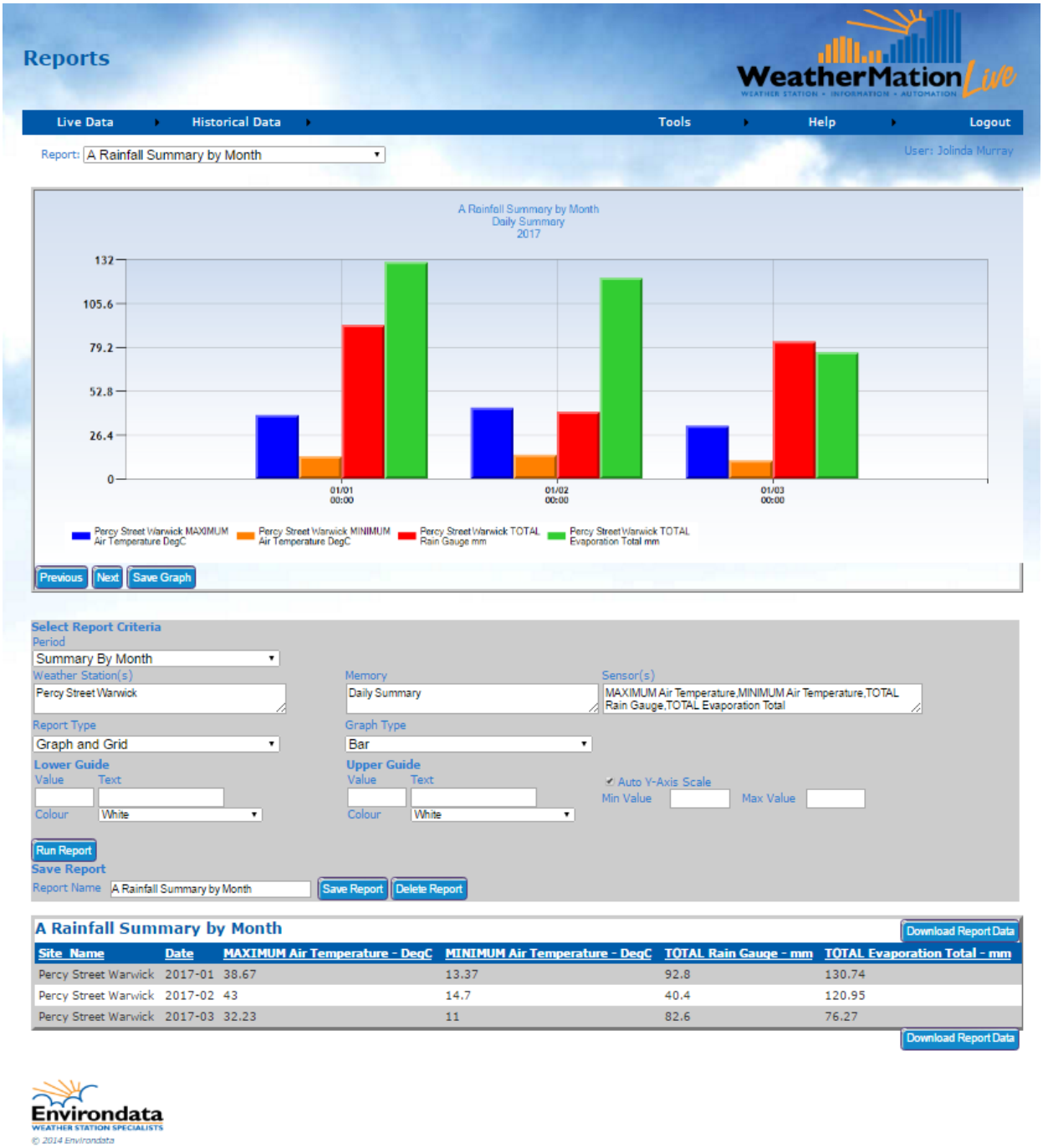
Running a ‘Summary to Date’ Report



Select your Report Criteria – make sure **Period** is ‘**Summary To Date’**. Then click the Run Report button to display your data.

In this example we are displaying a Summary to Date for one Weather Station (Percy Street Warwick) for 7 various selected sensors. Data is retrieved from the Daily Summary data.

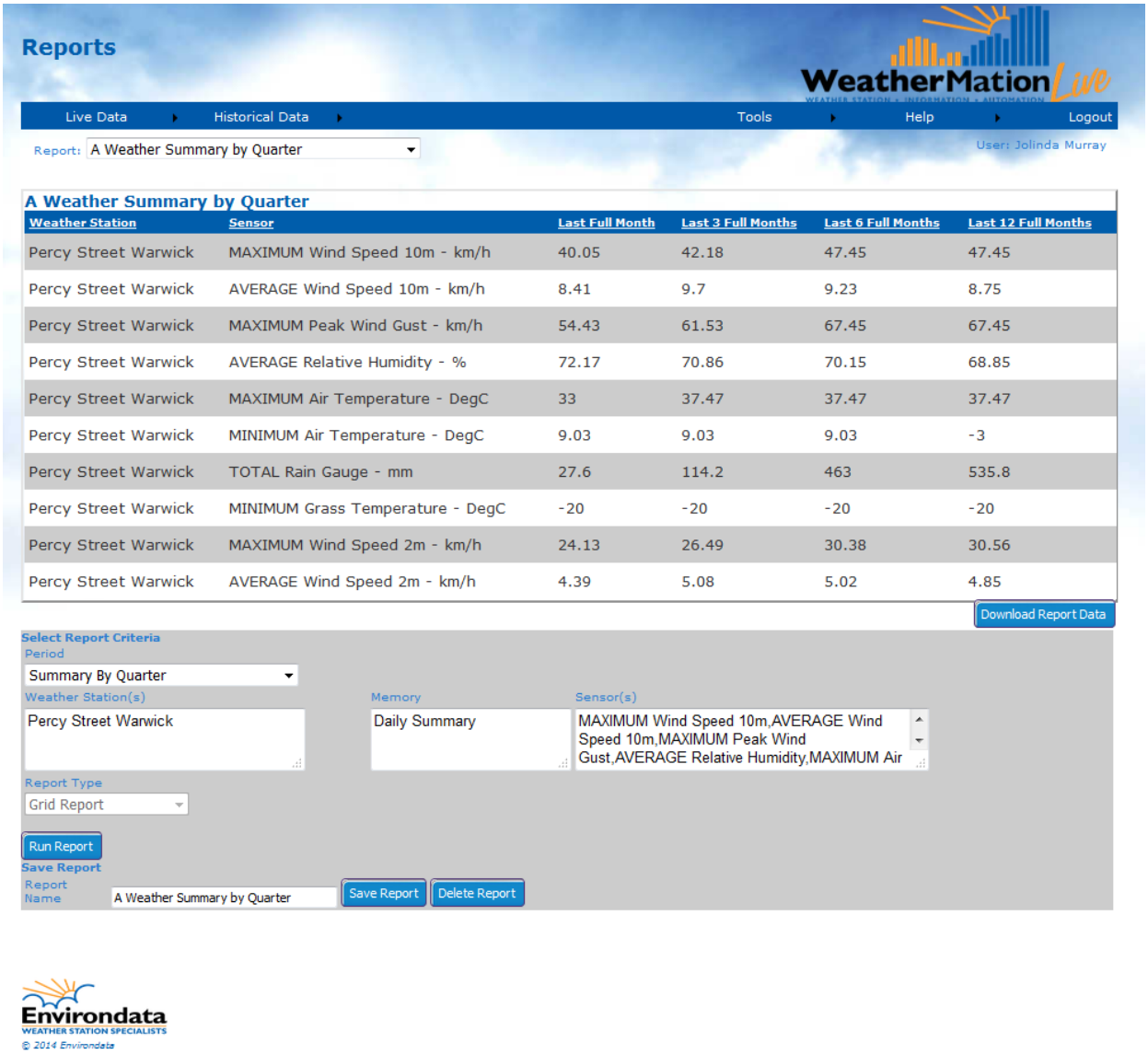
Running a ‘Summary By Month’ Report



Select your Report Criteria – make sure **Period** is ‘**Summary by Month’**. Then click the Run Report button to display your data. Summary by Month will return summary weather data reported per Year. You have an option to display a Graph or a Grid or both.

In this example we are displaying a Summary by Month for one Weather Station (Percy Street) for 4 various selected sensors. Data is retrieved from the Daily Summary data.

Running a ‘Summary By Quarter’ Report



Select your Report Criteria – make sure **Period** is ‘**Summary by Quarter”**. Then click the Run Report button to display your data. Summary by Quarter will return summary weather data reported from full calendar months only, last single full month, last 3 months, 6 months and 12 months.

In this example we are displaying a Summary by Quarter for one Weather Station (Percy Street Warwick) for 7 various selected sensors. Data is retrieved from the Daily Summary data.

Notes on the Summary Reports

Values are based on the Sensor Selected e.g.

- MAXIMUM Wind Speed – will give the MAXIMUM value over the period
- MINIMUM Air Temperature – will give the LOWEST of the MINIMUM Air Temperature values over the period
- MAXIMUM Air Temperature – will give the HIGHEST of the MAXIMUM Air Temperatures value over the period
- AVERAGE Air Temperature – will give the AVERAGE value over the period
- TOTAL Rain Gauge – will give the TOTAL rainfall over the period

Periods on the Summary To Date:

- Week To Date – From midnight on the same day last week till NOW
- Month To Date – From midnight on 1st of the Current Month till NOW
- Year To Date – From midnight on 1st January till NOW

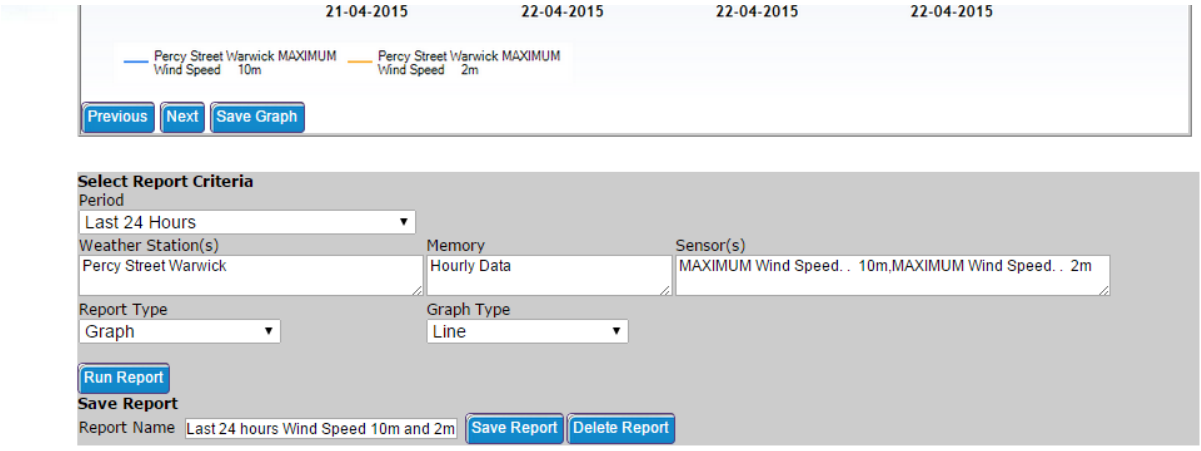
Periods on the Summary by Quarter:

- Last Full Month
  - From midnight on the 1st till midnight on the last day of the previous month.
- Last 3 Full Months
  - From midnight on the 1st till midnight on the last day of the previous 3 months.
- Last 6 Full Months
  - From midnight on the 1st till midnight on the last day of the previous 6 months.
- Last 12 Full Months
  - From midnight on the 1st till midnight on the last day of the previous 12 months.

Saving a Report

***Note**: Only available if you have Configuration Permissions – if you don't see the button to Save a Report, please contact your Administrator User to save the Report for you.*

To save a report , click the Save Report button.

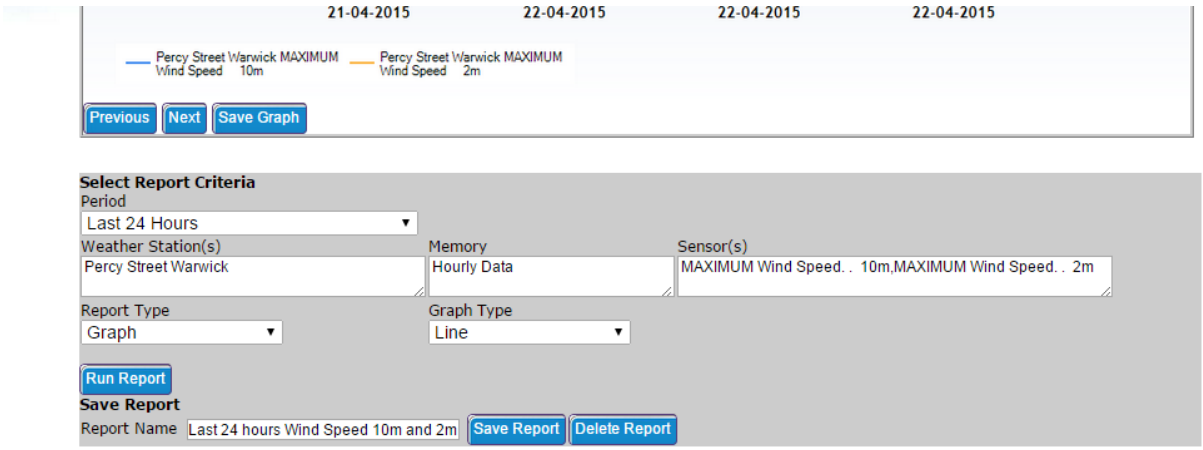


Edit a Report

***Note**: Only available if you have Configuration Permissions, otherwise please contact your Administrator User to edit and save the Report for you.*

To edit a report, select the Report from the Report list. You can make any changes to the Report Selection Criteria and Run the Report.

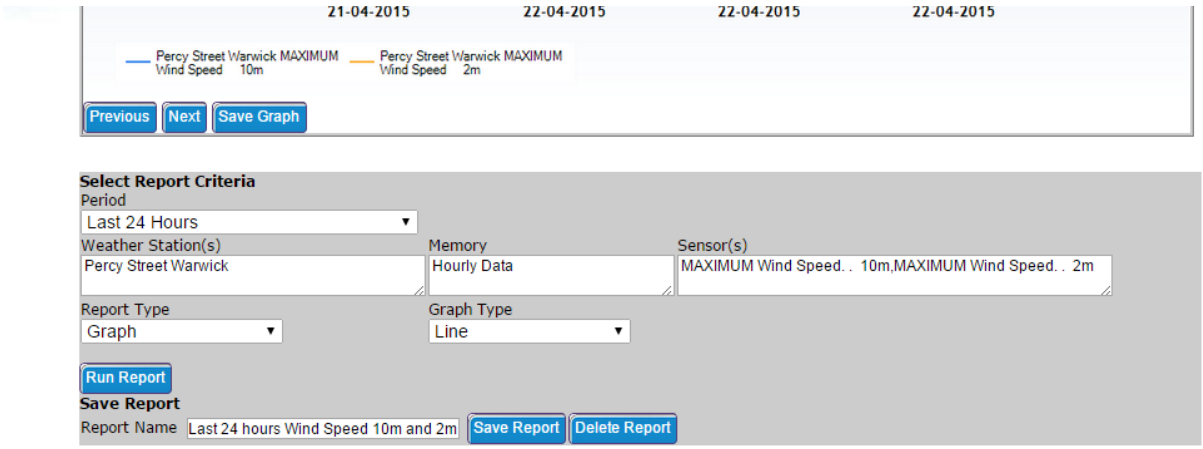
- Save Current Report – Click the Save Report button – edits the current report
- Save NEW Report – Change the Report Name in the Report Name field and click the Save Report button. Both old and new reports are available.



Delete a Report

***Note**: Only available if you have Configuration Permissions – if you don't see the section to Delete a Report, please contact your Administrator User to delete the Report for you.*

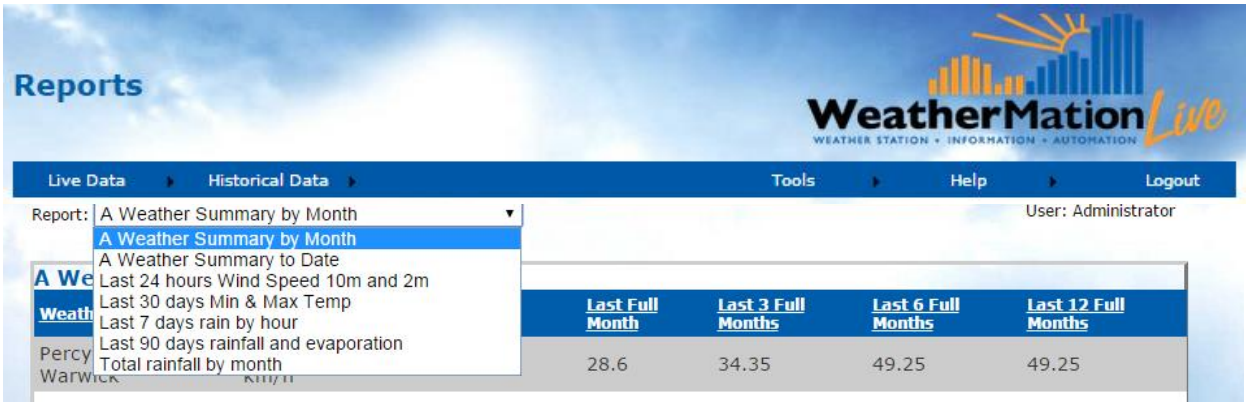
To delete a report, select the Report from the Report list and click the Delete Report button.



Running a SAVED Report

All of your Company's Saved Reports will be displayed for selection in the Report list. You can select any report in order to run it.

You can make changes to the Report Criteria and Run the report again – this will NOT save the report with the new criteria.



5. Wind Rose Reports

The Wind Rose Reports displays a Graph and Data about your Wind Speed and Wind Direction combination.

As a user with Reporting permissions, you will be able to view and run Reports, but not be able to save any new or change any existing reports.

As a user with Configuration & Reporting permissions, you will be able to view, run, save, edit and delete reports.

Viewing the Wind Rose Reports Page the First Time (without Configuration permissions)

Viewing the Wind Rose Reports Page for the 1st time or while you don't have any SAVED Reports, you will get the Select Report Criteria section.

Here you can select what should be displayed on the Report & RUN the report

Viewing the Reports Page the First Time (with Configuration permissions)

Viewing the Wind Rose Reports Page for the 1st time or while you don't have any SAVED Reports, you will get the Select Report Criteria section.

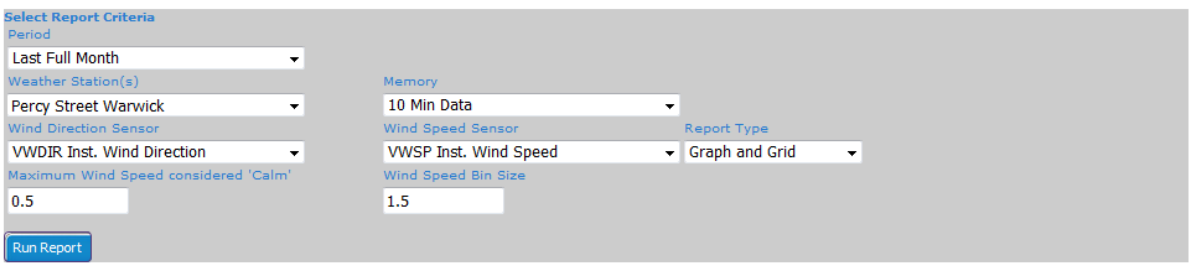
Here you can select what should be displayed on the Report, RUN the report and SAVE the Report for future use.

What options do I have for viewing a Wind Rose report?

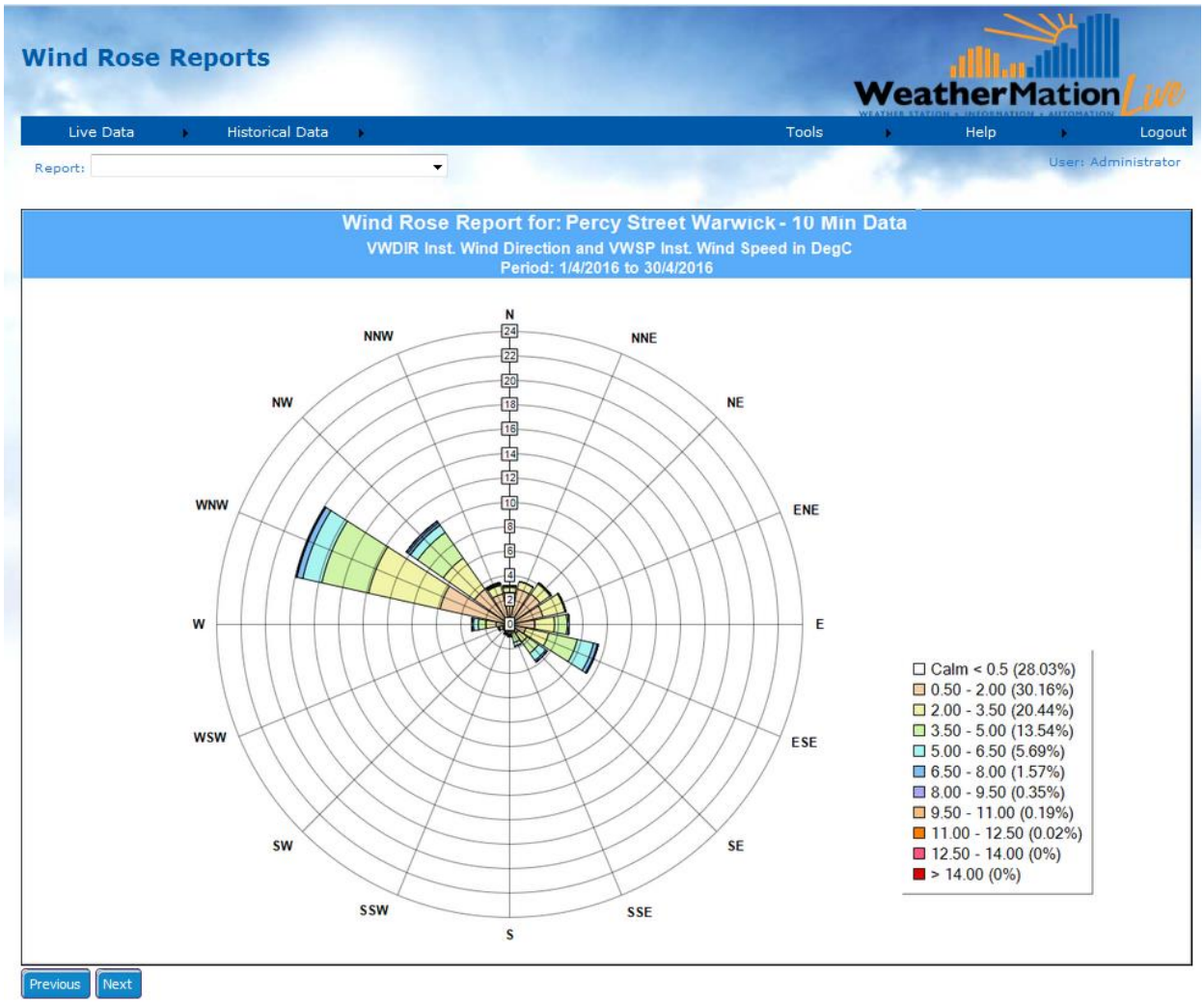
- Period:
  This is the 'timeframe' for the data you want to report on
  - Specific Start and End Dates
  - Yesterday
  - Last 4 Hours
  - Last 8 Hours
  - Last 12 Hours
  - Last 24 Hours
  - Last 7 Days
  - Last 30 Days
  - Last 90 Days
  - Last 180 Days
  - Last Year
  - Last Full Week
  - Last Full Month
  - Last Full 4 Months
  - Last Full 6 Months
  - Last Full 12 Months
- Weather Station:
  - You can select one weather station
- Memory:
  - You can only select ONE Memory per report.
  - Your selection here is important e.g. selecting 'Last X Hours' in your Period, does not make sense if you select Daily Summary. See the *Note* below.
- Wind Direction Sensor:
  - You have to select a Wind Direction Sensor for the report.
- Wind Speed Sensor:
  - You have to select a Wind Speed Sensor for the report.
- Report Type:
  - Graph – this will only display a graph with your data
  - Grid Report – this will display only a table with your data
  - Graph and Grid – this will display a graph and a table report with your data
- Maximum Wind Speed considered "Calm":
  - Enter the Value for which you still consider Wind Speed to be calm. Default is 0.5
- Wind Speed Bin Size:
  - This is the value in which the Wind Speeds will be increased. Default is 1.5

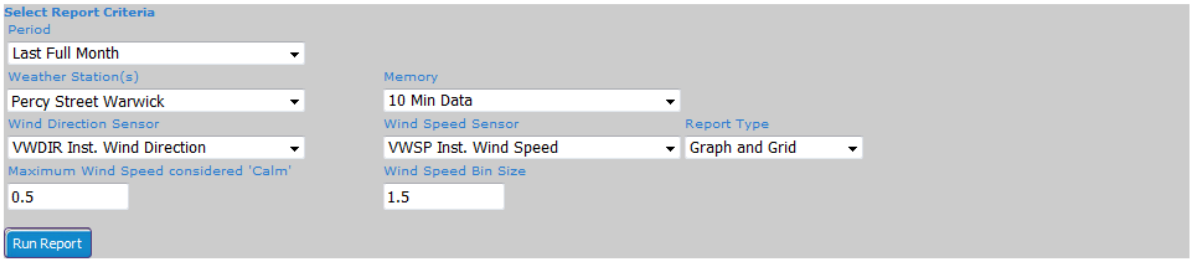
***Note**: Consider the Memory and Period you selected carefully – e.g. If you select 'Daily Summary' (which normally only has records for 9am every day), then selecting last 4 Hours as the Period will only have 1 data record (if you are running the report before 1pm (4 hours after 9am)) or it might have no data if you run it after 1pm.*

Once you have entered all the Parameters, click the Run Report button to display your report.



Running a Wind Rose Report





Wind Rose Report for: Percy Street Warwick 10 Min Data VWDIR Inst. Wind Direction and VWSP Inst. Wind Speed in DegC
Period: 1/4/2016 to 30/4/2016

Download Report Data

Wind Speed Range	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Totals
0.50 - 2.00	2.66	2.96	3.03	2.78	2.06	1.39	0.86	0.23	0.21	0.3	0.21	0.35	1.13	5.86	3.56	2.57	30.16
2.00 - 3.50	0.37	0.62	1.06	1.85	1.64	1.9	0.93	0.46	0.42	0.23	0.21	0.19	0.79	5.97	3.1	0.69	20.44
3.50 - 5.00	0.14		0.05	0.07	1.02	2.38	1.06	0.81	0.19	0.16	0.14	0.3	0.62	3.94	2.55	0.12	13.54
5.00 - 6.50					0.16	1.39	0.74	0.3	0.07		0.05	0.12	0.42	1.62	0.74	0.09	5.69
6.50 - 8.00						0.3	0.14		0.07	0.12		0.02	0.14	0.46	0.23	0.09	1.57
8.00 - 9.50						0.07	0.02			0.05			0.02	0.05	0.14		0.35
9.50 - 11.00									0.05	0.05	0.05			0.02	0.02		0.19
11.00 - 12.50							0.02										0.02
12.50 - 14.00																	0
> 14.00																	0
Totals	3.17	3.59	4.14	4.7	4.88	7.43	3.77	1.81	1	0.9	0.65	0.97	3.12	17.92	10.35	3.56	71.97
Calms	28.03																

Download Report Data

Environdata
WEATHER STATION SPECIALISTS
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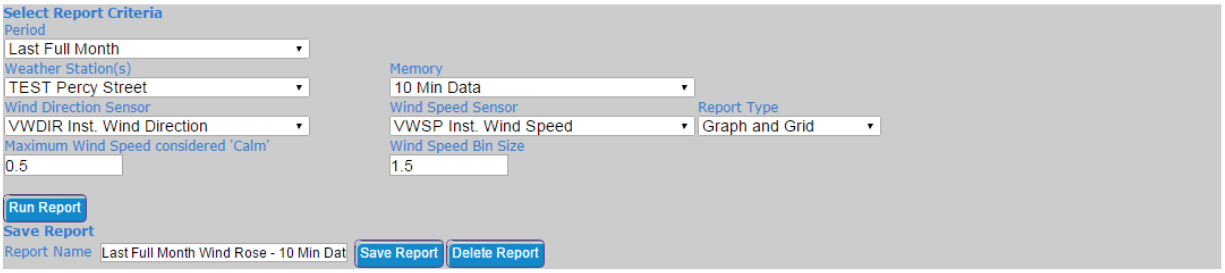
Select your Wind Rose Report Criteria – make sure Report Type is **Graph and Grid**. Then click the Run Report button to display your data in a Graph at the top and a Grid/Table format at the bottom.

Saving a Report

***Note**: Only available if you have Configuration Permissions – if you don't see the button to Save a Report, please contact your Administrator User to save the Report for you.*

To save a report, click the Save Report button.

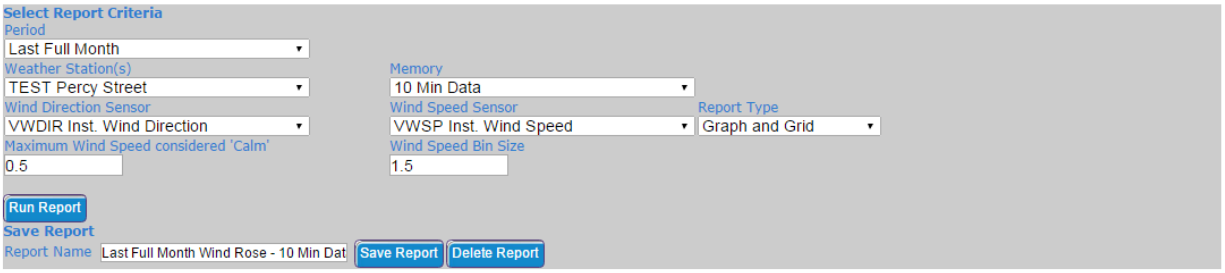


Edit a Report

***Note**: Only available if you have Configuration Permissions, otherwise please contact your Administrator User to edit and save the Report for you.*

To edit a report, select the Report from the Report list. You can make any changes to the Report Selection Criteria and Run the Report.

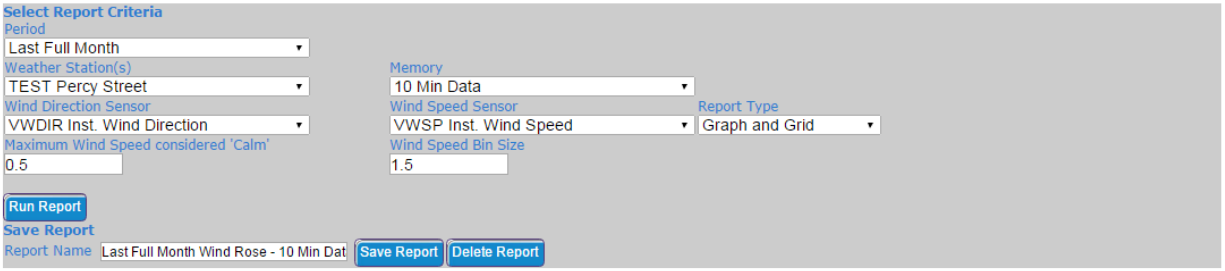
- Save Current Report – Click the Save Report button – edits the current report
- Save NEW Report – Change the Report Name in the Report Name field and click the Save Report button. Both old and new reports are available.



Delete a Report

***Note**: Only available if you have Configuration Permissions – if you don't see the section to Delete a Report, please contact your Administrator User to delete the Report for you.*

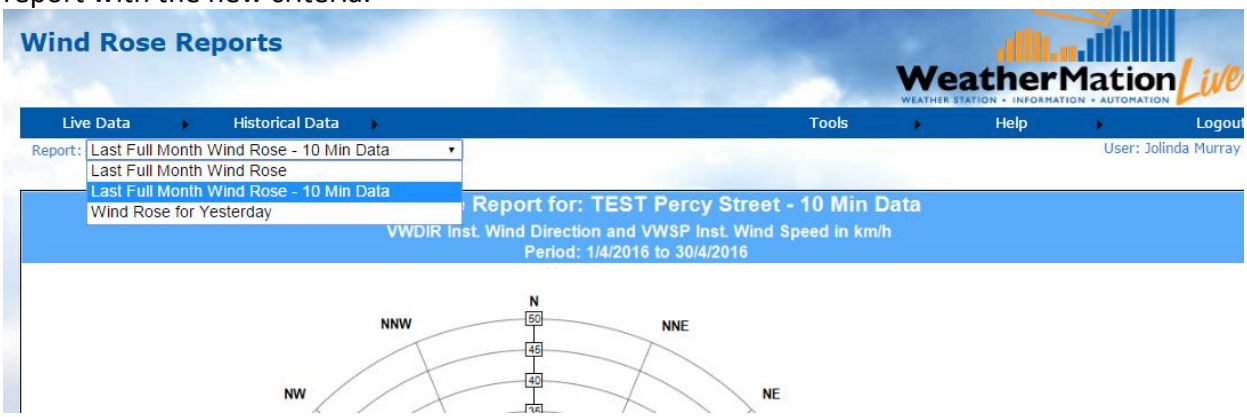
To delete a report, select the Report from the Report list and click the Delete Report button.



Running a SAVED Report

All of your Company's Saved Reports will be displayed for selection in the Report list. You can select any report in order to run it.

You can make changes to the Report Criteria and Run the report again – this will NOT save the report with the new criteria.



WeatherMation LIVE Core Module

Version 1.6.3
28/03/2017

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Introduction

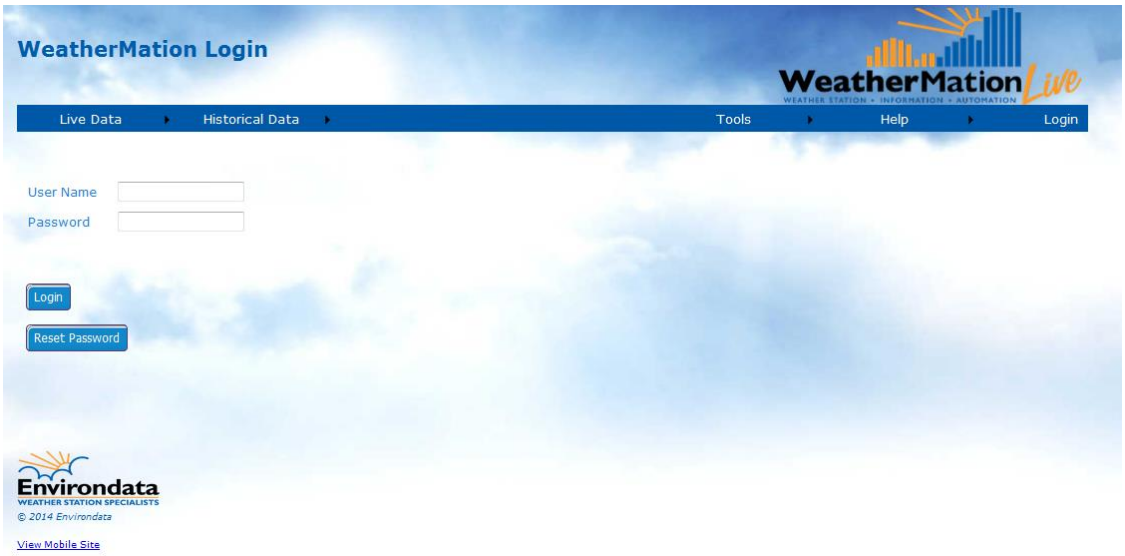
Environdata's WeatherMation software has been developed to download, display and respond to the weather data from your weather stations, automatically.

WeatherMation's Core Module, as you see in the WeatherMation LIVE Service, provides users all of your weather data from each of your connected weather stations. This data is on a Webpage to be accessed via the internet on any browser from a computer or mobile device.

Using the System
Go to www.weathermation.net.au
You will see the Login Page – please enter your User Name and Password that were provided to you.

Click on the Login button to access the system

(If you need to change your password, click on the Reset Password button)



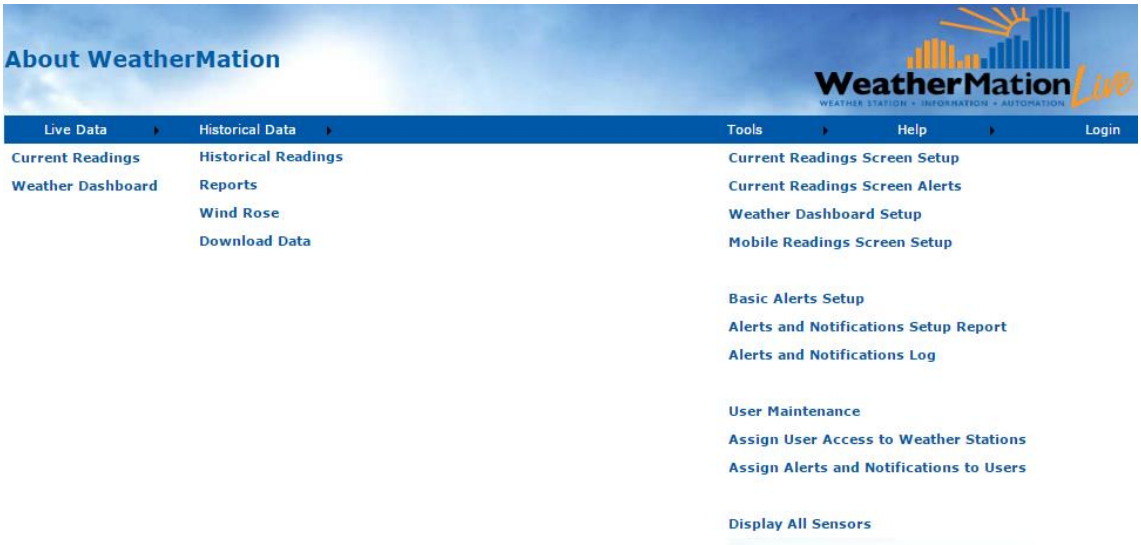
1. Menu Options

- **Live Data**
  - **Current Readings** - displays the customized Current Readings from your weather station.
  - **Weather Dashboard** - displays a customizable Weather Dashboard from your weather station. This is ONLY available if you have purchased the Reports Module.
- **Historical Data**
  - **Historical Readings** - displays historical weather data (memory data) from your weather station.
  - **Reports** – This allows you to setup, save and run reports based on your historical data. This is ONLY available if you have bought the Reports Module and if you have Reporting permission.
  - **Wind Rose -** This allows you to set up, save and run Wind Rose reports based on your historical data. This is ONLY available if you have bought the Reports Module and if you have Reporting permission.
  - **Download Data** – to download your historical weather data as a .csv file.

- **Tools**
  - **Current Readings Screen Setup** – customize your Current Readings Display page. This is ONLY available if you have configuration permission.
  - **Current Readings Screen Alerts** – Setup different coloured Alerts used on the Current Readings Page and the Weather Dashboard. This is ONLY available if you have bought the Alerts Module and if you have configuration permission.
  - **Weather Dashboard Setup** – customize your Weather Dashboard Reports. This is ONLY available if you have bought the Reports Module and if you have configuration permission.
  - **Mobile Readings Screen Setup** – customize your Current Readings Display page specifically for a Mobile Device. This is ONLY available if you have configuration permission.
  - **Basic Alerts Setup –** Setup some basic SMS and E-mail Alerts based on your weather conditions. This is ONLY available if you have bought the Alerts Module and if you have configuration permission.
  - **Alerts and Notifications Setup Report** – displays the Alerts and Notifications as it is setup per User. ONLY available if you have bought the Alerts Module.
  - **Alerts and Notifications Log** – displays a log of all your Alerts. ONLY available if you have bought the Alerts Module.
  - **User Maintenance** – Add or Remove users, update User details like phone number and e-mail address. ONLY available if you have user administration permission.
  - **Assign Users Access to Weather Stations** – You can control which users have access to which stations. ONLY available if you have user administration permission.
  - **Assign Alerts and Notifications to Users Stations** – You can control which users receive which Alerts or Notifications. ONLY available if you have user administration permission.

- **Display All Sensors** - displays the full list of the Current Readings from your weather station.

- **Help**
  - Web, Alerts and Reports Manuals
  - **About** – information about the system.
- **Login/Logout** – if you want to change the user.



2. Current Readings

Once logged in, you will get the Main Page for displaying your weather station's Current Readings

Using the Current Readings Page

If you have more than one weather station linked to this service, you can select which weather stations' data to display by clicking the arrow on the drop-down box and selecting a new weather station or using the < and > arrow buttons to scroll through your stations.

In order to see the graphs at the bottom of each table, you have to click on any sensor. This graph will then display the last 30 records of Current Reading values for the selected sensor.

Note:

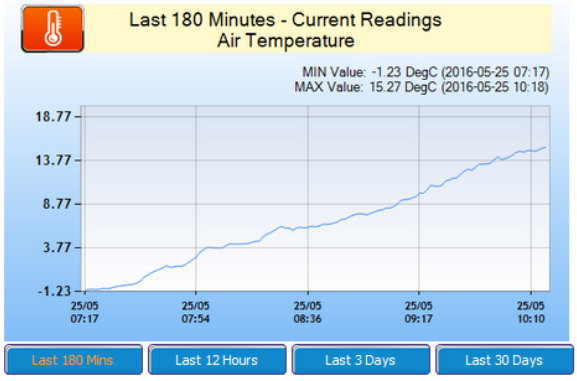
You may have the optional Alerts & Notifications Module and have On-Screen Alerts setup. E.g. Air Temperature in the below image has an orange background to indicate the temperature has reached the settings to display an orange background. 7 settings per sensor are possible.

You can customize the display and sequence of the sensors on this page using the Current Readings Screen Layout option under Tools. See Section 7 for more information.

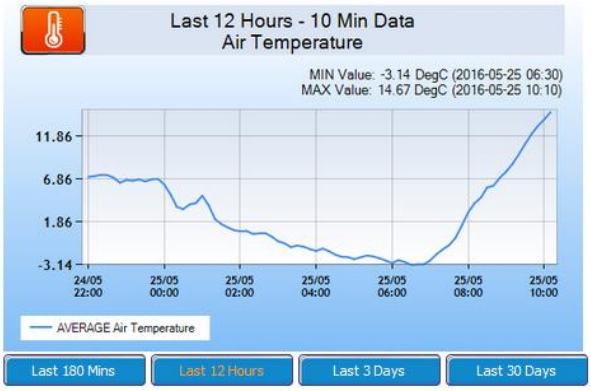
Below each Graph is 4 buttons to select what data is displayed on the Graph:

- **Last 180 Minutes** – this displays data from your Current Readings. The number of minutes is configurable in the Current Readings Screen Layout option under Tools. See Section 7 for more information.
- **Last 12 Hours** – this displays the last 12 hours of your 5/10/15 Minute data depending on your station setup
- **Last 3 Days** - this displays the last 12 hours of your Hourly data
- **Last 30 Days** - this displays the last 30 Days of your Daily data

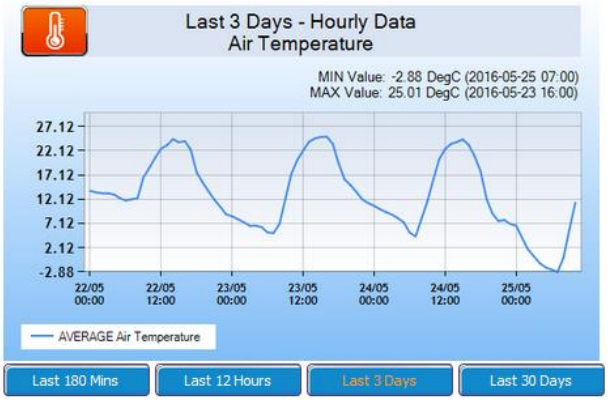
Last 180 Minutes Air Temperature



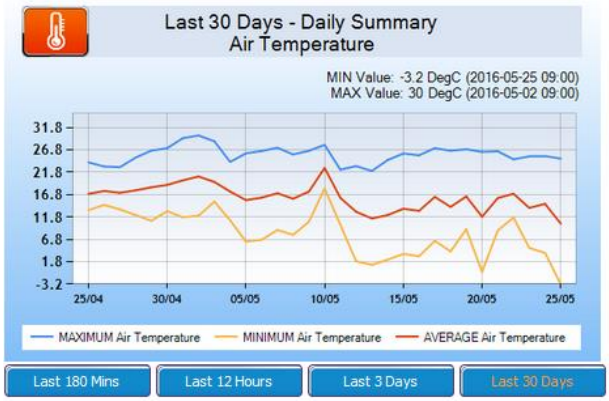
Last 12 Hours Air Temperature



Last 3 Days



Last 30 Days



3. Weather Dashboard

This is part of the WeatherMation LIVE Reports module. Please see the **Report Module Handbook** on how to use this.

4. Historical Readings

'Historical Readings' displays the historical weather data from your chosen weather station that has been downloaded into the WeatherMation Database.
The date & time stamp for each record is for the END of the memory period.
E.g. Hourly Data with the date & time stamp of 20/02/2015 16:00 is data recorded from 15:00 to 16:00 on the 20/02/2015.
Daily data with the date & time stamp of 20/02/2015 09:00 is the 24 hours from 19/02/2015 9:01 to 20/02/2015 09:00, which is a standard meteorological recording period. Hence the minimum Air Temperature value in the 20/02/2015 daily summary is normally for the morning of the date (20/02/2015) and maximum Air Temperature is normally from the afternoon of the day before (19/02/2015 in our example).

Using the Historical Readings Page

If you have more than one weather station linked to this software, you can select which weather station's data to display by clicking the arrow on the drop-down box and selecting a new weather station.

You can select what historical data to display by clicking the arrow on the drop-down box and selecting a different memory. E.g. Daily Summary is the default, but you can select Hourly Data or 10-Minute Data or 5-Minute Data etc (The options available depend on each of your weather stations' programs).

The data displayed is the LATEST record downloaded from the weather station for the particular memory. Please note the date/time on the right side.

In order to see the graphs below the data, you have to click on any sensor. This graph will then display a history of records for the selected Memory values for the selected sensor.

Using the Graph Data

- Previous button - you will get the previous period's historical data displayed on the graph.
- Next button - you will get the next period's historical data displayed on the graph. The Next Period can only be displayed if you have gone and displayed older historical data.
- Download Graph Data – will download into a .csv file only the data displayed on the graph currently.

Historical Hourly Data
WeatherMation Live
Live Data
Historical Data
Tools
Help
Login
Not logged in
Weather Station: Percy Street Warwick
Memory: Hourly Data
25/05/2016 10:00:00 AM
Sensor Name
Values
Units
MAXIMUM Wind Speed 10m 4.85 km/h
AVERAGE Wind Speed 10m 3.04 km/h
STDEV Wind Speed 10m 0.95 km/h
AVERAGE Wind Direction 10m 100.9 E
S-THETA Wind Direction 10m 40.9 Degrees
MAXIMUM Peak Wind Gust 5.91 km/h
AVERAGE Relative Humidity 45.92 %
AVERAGE Air Temperature 11.4 DegC
TOTAL Rain Gauge 0 mm
AVERAGE Solar Radiation 317.36 W/m2
AVERAGE Barometric Pressure 1009.91 hPa
AVERAGE Grass Temperature 9.91 DegC
MAXIMUM Wind Speed 2m 4.48 km/h
AVERAGE Wind Speed 2m 2.13 km/h
AVERAGE Black Globe Temp 21.53 DegC
AVERAGE Baro Pressure kPa 95.59 kPa
AVERAGE Wet Bulb Temp 6.03 DegC
AVERAGE Thermal Work Limit 369.94 W/m2
AVERAGE Wet Bulb Globe Temp 9.63 DegC
CURRENT Evaporation Rate 0.1626 mm/h
AVERAGE Battery Voltage 14 V
AVERAGE Solar Voltage 20.12 V
Hourly Data
MAXIMUM Wind Speed 10m
25/05/2016
Previous
Next
Download Graph Data
Hourly Data
AVERAGE Grass Temperature
25/05/2016
Previous
Next
Download Graph Data

5. Reports

This is part of the optional WeatherMation LIVE Reports module. Please see the **Report Module Handbook** on how to use this.

6. Download Data

Download Memory Data allows you to download your weather station's saved historical data to your PC or device as a .csv file. You can then open this file in other programs like Notepad or Excel.

Using the Download Historical Memory Data Page

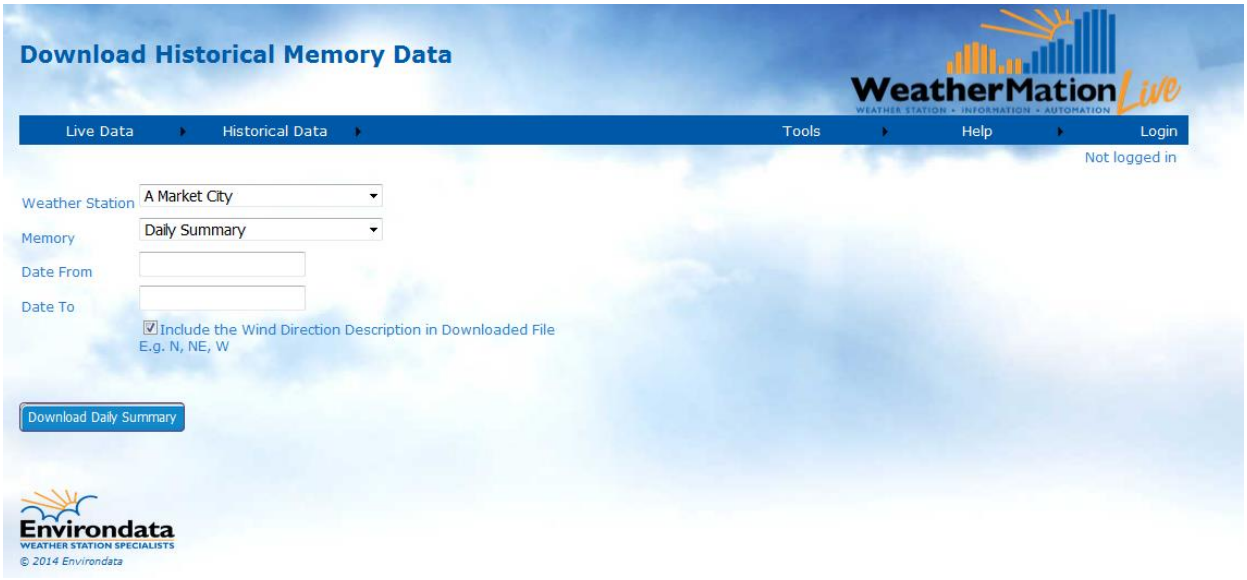
If you have more than one weather station linked to this software, you can select which weather station's data to display by clicking the arrow on the drop-down box and selecting your chosen weather station.

You can select what historical data to download by clicking the arrow on the drop-down box and selecting your chosen data set (memory). E.g. Daily Summary is the default, but you can select Hourly Data or 10-Minute Data or 5-Minute Data (The options available depend on your weather station program).

Enter a "Date From" and "Date To" value. If you click in the box, a calendar will be displayed.

You have the option to include a Wind Direction Description in your download.

Click the "Download 'Daily Summary'" button to download the selected data to your PC as a .csv file. (N.B. This button's name will vary depending on WHAT historical data you are downloading).



7. Current Readings Screen Layout - Customize Current Readings Screen

The Customize Current Readings Screen allows you to setup which sensors from your weather station you would like to be displayed on the Main Current Readings Screen. You can also select in which order they will appear and what type of graph you'd like for them. *Only a user assigned layout setup access will be able to make these changes.*

Using the Customize Current Readings Page
If you have more than 1 weather station linked to this software, you can select which weather station's data to display by clicking the arrow on the drop-down box and selecting your chosen weather station.

- ALL sensors that are AVAILABLE to be displayed are on the LEFT side of the selection screen
- All Sensors and the order in which they are displayed selected for display on the LEFT side of your Current Readings Screen are shown in the MIDDLE Table
- All Sensors and the order in which they are displayed selected for display on the RIGHT side of your Current Readings Screen are shown in the RIGHT Table

To add a Sensor from the custom display:
Click on the sensor's **Left >** button for it to be displayed on the LEFT side or
Click on the sensor's **Right >** button for it to be displayed on the RIGHT side

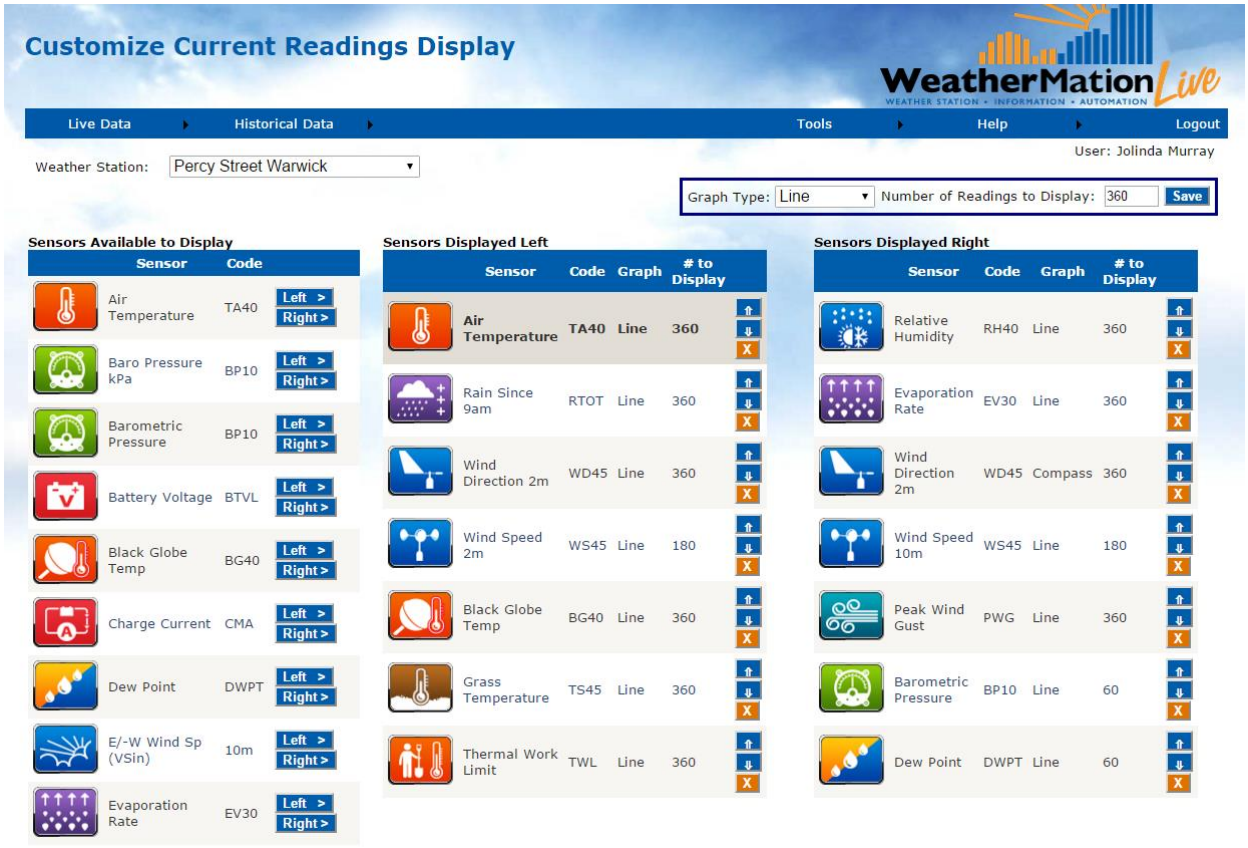
To remove a Sensor from the custom display:
Click on the sensor on the MIDDLE or RIGHT side tables and click on the x button

To change the order in which sensors are displayed
Click on the sensor on the MIDDLE or RIGHT side tables and click on the UP or DOWN arrow buttons

To setup the Type of Graph
Click on the sensor on the MIDDLE or RIGHT side tables and select your preferred graph type from the dropdown box in the top right corner.
Available Types:

- Line or Bar for most sensors.
- Wind Direction has an added option for Compass.

To setup the Number of Current Reading Records to Display on Graphs
Click on the sensor on the MIDDLE or RIGHT side tables and enter the number in the box in the top right corner.
This number of records will be used for your Current Readings page, on the Mobile page and for Current Readings Graph Reports.



8. Weather Dashboards Setup

This is part of the Optional WeatherMation LIVE Reports module. Please see the **Report Module Handbook** if you have purchased the Reports Module for details on how to use this feature.

9. Mobile Readings Screen Layout - Customize Current Readings Screen specifically for a Mobile Device

The Customize Mobile Display Screen allows you to setup which sensors from your weather station you would like to be displayed on a Mobile Device Current Readings Screen. You can also select in which order they will appear and what type of graph you'd like for them. *Only a user assigned layout setup access will be able to make these changes.*

Using the Customize Mobile Display Page

If you have more than 1 weather station linked to this software, you can select which weather station's data to display by clicking the arrow on the drop-down box and selecting your chosen weather station.

- ALL sensors that are AVAILABLE to be displayed are on the LEFT side of the selection screen
- All Sensors and the order in which they are displayed selected for display on the Mobile Current Readings Screen are shown in the RIGHT Table

To add a Sensor from the custom display:
Click on the sensor's **Select >** button for it to be displayed

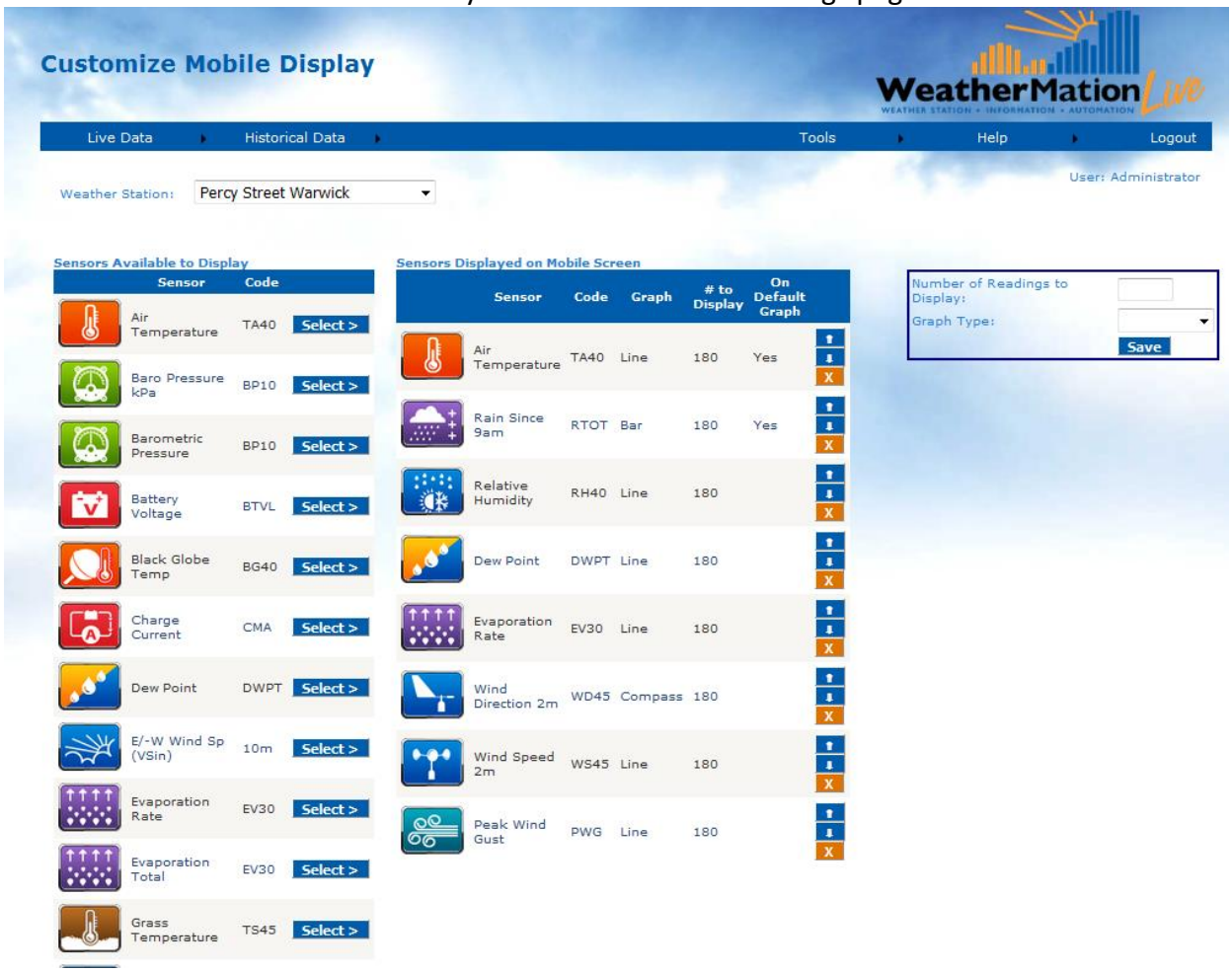
To remove a Sensor from the custom display:
Click on the sensor on the RIGHT side tables and click on the x button

To change the order in which sensors are displayed
Click on the sensor on the RIGHT side tables and click on the UP or DOWN arrow buttons

To setup the Type of Graph
Click on the sensor on the RIGHT side tables and select your preferred graph type from the dropdown box in the top right corner.
Available Types:

- Line or Bar for most sensors.
- Wind Direction has an added option for Compass.

To setup the Number of Current Reading Records to Display on Graphs
Click on the sensor on the RIGHT side tables and enter the number in the box in the top right corner.
This number of records will be used for your Mobile Current Readings page



10. Basic Alerts Setup

This is part of the Optional WeatherMation LIVE Alerts and Notifications module. Please see the **Alerts and Notifications Module Handbook** if you have purchased the alerts module for details on how to use this feature.

11. Alerts and Notifications Setup Report

This is part of the Optional WeatherMation LIVE Alerts and Notifications module. Please see the **Alerts and Notifications Module Handbook** if you have purchased the alerts module for details on how to use this feature.

12. Alerts and Notifications Log

This is part of the Optional WeatherMation LIVE Alerts and Notifications module. Please see the **Alerts and Notifications Module Handbook** if you have purchased the alerts module for details on how to use this feature.

13. User Maintenance

Add, Remove users or Update User details like phone number and e-mail address. Please see the **User Maintenance Handbook** for details on how to use this feature. This is ONLY available if you have user administration permission.

14. Assign Users Access to Weather Stations

You can control which users have access to which stations. Please see the **User Maintenance Handbook** for details on how to use this feature. This is ONLY available if you have user administration permission.

15. Assign Alerts and Notifications to Users Stations

This is part of the Optional WeatherMation LIVE Alerts and Notifications module. You can control which users receive which Alerts or Notifications. Please see the **User Maintenance Handbook** if you have purchased the alerts module for details on how to use this feature.

16. All Sensors

Using the All Sensors Page

This page should mostly be used for Diagnostics. As the Current Readings page can be customised to only display your most important sensors, this page will show you a list of all the sensors from your weather station and the latest Current Reading from each.

This page cannot be customized and just displays the sensors in the order they are programed into your weather station.

This will be useful if you want to check a specific value like Battery Voltage, but don't always want it to be displayed on your main page.

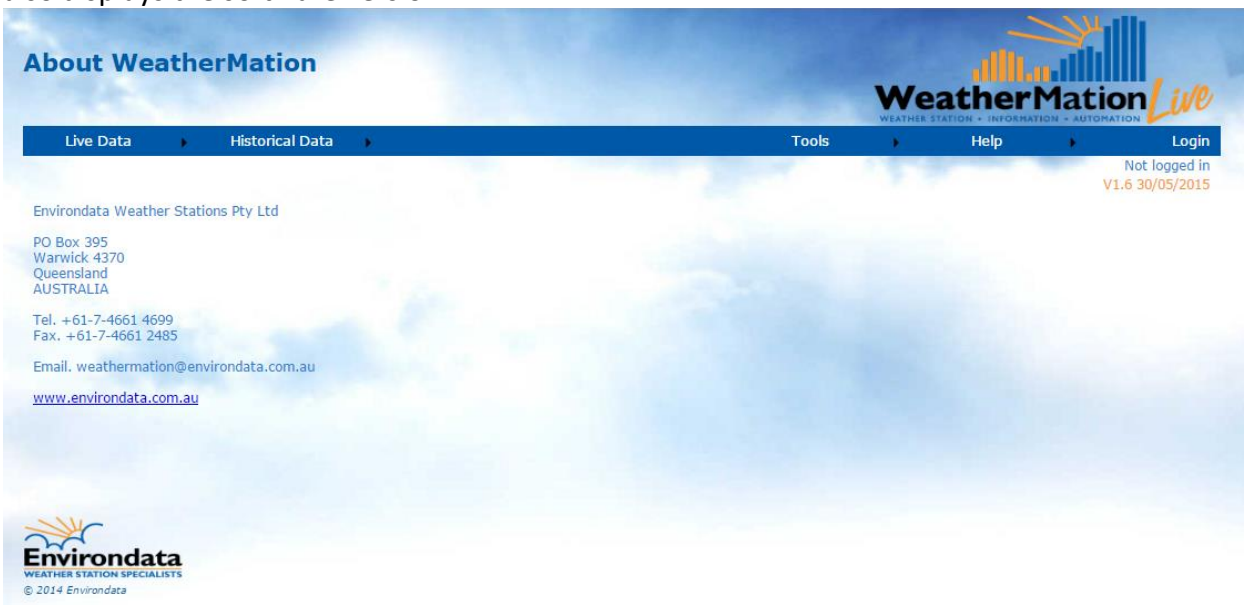
If you have more than one weather station linked to this software, you can select which weather station's data to display by clicking the arrow on the drop-down box and selecting a new weather station or using the < and > arrow buttons to scroll through your stations.

Notes:

You may have the optional Alerts & Notifications Module and have On-Screen Alerts setup. E.g. Air Temperature in the below image has an orange background to indicate the temperature has reached the settings to display a orange background. 7 settings per sensor are possible.

17. About WeatherMation

The About WeatherMation screen will show you some contact information for Environdata. It also displays the software version.



	Standard Operating Procedure
	Document Control
	File No: **SOP 21**

I approve the use of this Standard Operating Procedure:

Name: Wayne Davis	**Position:** Manager Waste Services and Technical Support
Signature:	**Date:** 14/12/2021

Revision Status:

Change History

Date	Details of Change	Version No.
05/11/2013	Document created	Draft
31/03/2014	Draft approved	Version 1
23/09/2014	Content updated	Version 2
17/08/2015	Draft approved	Version 2
22/02/2018	Content updated / draft approved	Version 3
07/12/2018	Content updated / draft approved	Version 4
22/1/2020	Content updated Version updated to correspond to OEMP	Version 5
2/3/2021	OEMP Updates Register Updated (items 200 – 225) Version updated to correspond to OEMP	Version 6
14/12/2021	Update Signature Date Version updated to correspond to OEMP	Version 7

PURPOSE

The purpose of this Document Control SOP is to provide clear, detailed and standardised guidance for updating and distributing the OEMP and any of its encompassing reports, management plans, or standard operating procedures to ensure that only controlled copies of the latest version of the document are held by authorised parties, and updates are disseminated in a controlled manner.

WORK PROCEDURES

1) Dissemination and Updates

Both Volume 1 and Volume 2 of the OEMP are living documents and reviews and updates are required to ensure accuracy and effectiveness. For this reason, document control is an important part of the environmental management system.

It is important that the OEMP storage locations are made known to all relevant staff members and that only the latest version is in use.

An OEMP Register – **Form 21.01** must be maintained that records who holds controlled copies (or individual sections) of the OEMP.

2) Updates

Details on the update number, new section of the OEMP, new version number and issue month/year must be recorded and signed off on the OEMP Register – **Form 21.02**.

The footer of all OEMP sections will be updated during annual OEMP review to contain the same issue month/year, irrespective of whether the section content was changed. If a section has not had content updated, the version number will not change. The version number will only change if content has been changed in a section.

The timestamp of all original approval documents, management plans, licences and codes will not be updated during annual OEMP review.

Updated versions of any section of the OEMP must always be issued with a covering memo summarising changes and a new table of contents created if necessary.

3) Dissemination

Copies of any new OEMP, or new sections of the OEMP, will need to be produced and distributed as per **Table 1**.

Table 1 – Distribution List and document Format

Position	Organisation	Document Format
Manager Waste Services and Technical Support	Orange City Council	Hard Copy
Ophir Road Resource Recovery Centre Supervisor	Orange City Council	Hard Copy
Euchareena Road Resource Recovery Centre Supervisor	Orange City Council	Hard Copy
Project and Research Officer (Technical Services)	Orange City Council	PDF Document (CD)
Manager Administration – Governance	Orange City Council	PDF Document (CD)

Table 1 – Distribution List and document Format

Position	Organisation	Document Format
Work Health and Safety (WH&S) Coordinator	Orange City Council	PDF Document (CD)
	Orange City Council	PDF Document (CD) +1 spare copy
	EPA, Bathurst	PDF Document (CD)
	NSW Department of Planning & Environment	PDF Document (CD)
	Geolyse	Word Document (Digital) + PDF Document (Digital)

RESPONSIBILITIES

It is the responsibility of the Manager Waste Services and Technical Support to ensure that updates to the OEMP are communicated to all staff and incorporated into the OEMP.

The Manager Waste Services and Technical Support is required to ensure that updates to the OEMP are issued in a controlled manner.

The Manager Waste Services and Technical Support will ensure that updated versions of the OEMP are made available online on the Orange City Council website.

RECORDS

Records detailing who holds controlled copies of the OEMP are detailed on **Form 21.01 – OEMP Register**, and details of updates are recorded **Form 21.02 – Updates Register**.

Superseded hardcopy sections are to be removed and destroyed from the OEMP and replaced with the new version of the section(s). Digital copies of updated sections of the OEMP are to be retained for reference.

REFERENCES

Section 6.6 – Document Control

SOP 17 – Annual OEMP Review

OEMP REGISTER					
Copy No.	**Date of Issue**	**Document**	**Version**	**Registered Holder**	**Document Format**
1	March 2014	OEMP – Volume 1 & 2	2014	Manager Waste Services and Technical Support, OCC	Hard Copy
2	March 2014	OEMP – Volume 1 & 2	2014	Ophir Road Resource Recovery Centre Supervisor	Hard Copy
3	March 2014	OEMP – Volume 1 & 2	2014	Euchareena Road Resource Recovery Centre Supervisor	Hard Copy
4	March 2014	OEMP – Volume 1 & 2	2014	Project and Research Officer (Technical Services)	PDF Document (CD)
5	March 2014	OEMP – Volume 1 & 2	2014	Manager Administration – Governance	PDF Document (CD)
6	March 2014	OEMP – Volume 1 & 2	2014	1 x spare electronic copies for OCC to distribute	PDF Document (CD)
7	March 2014	OEMP – Volume 1 & 2	2014	EPA, Bathurst	PDF Document (CD)
8-9	March 2014	OEMP – Volume 1 & 2	2014	Geolyse, Orange	Word Document (Digital) PDF Document (Digital)
10	October 2015	OEMP – Volume 1 & 2	2015	Geolyse, Orange	Word Document (Digital) PDF Document (Digital)
11	October 2015	OEMP – Volume 1 & 2	2015	Orange City Council	PDF Document (CD)
12	October 2015	OEMP – Volume 1 & 2	2015	NSW Department of Planning & Environment	PDF Document (CD)
13	September 2016	OEMP – Volume 1 & 2	2016	Geolyse, Orange	Word Document (Digital) PDF Document (Digital)
14	September 2016	OEMP – Volume 1 & 2	2016	Orange City Council	Hard Copy PDF Document (Digital)
15	September 2016	OEMP – Volume 1 & 2	2016	NSW Department of Planning & Environment	PDF Document (CD)
16	February 2018	OEMP – Volume 1 & 2	2017	Geolyse, Orange	Word Document (Digital) PDF Document (Digital)
17	February 2018	OEMP – Volume 1 & 2	2017	Orange City Council	Hard Copy PDF Document (Digital)
18	February 2018	OEMP – Volume 1 & 2	2017	NSW Department of Planning & Environment	PDF Document (CD)
19	January 2019	OEMP – Volume 1 & 2	2018	Geolyse, Orange	Word Document (Digital) PDF Document (Digital)

OEMP REGISTER					
Copy No.	**Date of Issue**	**Document**	**Version**	**Registered Holder**	**Document Format**
20	January 2019	OEMP – Volume 1 & 2	2018	Orange City Council	Hard Copy PDF Document (Digital)
21	January 2019	OEMP – Volume 1 & 2	2018	NSW Department of Planning & Environment	PDF Document (CD)
22	January 2020	OEMP – Volume 1 & 2	2020	Premise Australia, Orange	Word Document (Digital) PDF Document (Digital)
23	January 2020	OEMP – Volume 1 & 2	2020	Orange City Council	Hard Copy PDF Document (Digital)
24	January 2020	OEMP – Volume 1 & 2	2020	NSW Department of Planning & Environment	PDF Document (CD)
22	February 2021	OEMP – Volume 1 & 2	2021 – V6	Premise Australia, Orange	Word Document (Digital) PDF Document (Digital)
23	February 2021	OEMP – Volume 1 & 2	2021 – V6	Orange City Council	Hard Copy PDF Document (Digital)
24	February 2021	OEMP – Volume 1 & 2	2021 – V6	NSW Department of Planning & Environment	PDF Document (CD)
25	December 2021	OEMP – Volume 1 & 2	2021 – V7	Premise Australia, Orange	Word Document (Digital) PDF Document (Digital)
26	December 2021	OEMP – Volume 1 & 2	2021 – V7	Orange City Council	Hard Copy PDF Document (Digital)
27	December 2021	OEMP – Volume 1 & 2	2021 – V7	NSW Department of Planning & Environment	PDF Document (USB Drive)

OEMP UPDATES REGISTER

Update No.	Section of OEMP	New Version No	Date Issued	Sign-off
1	Form 06.02	Version 2	8/8/14	MDH
2	Section 3.10	Version 2	27/3/15	CAB
3	Section 4.11	Version 2	27/3/15	CAB
4	Section 3.2	Version 2	27/3/15	CAB
5	Section 3.6	Version 2	27/3/15	CAB
6	Section 4.6	Version 2	27/3/15	CAB
7	Form 15	Version 2	27/3/15	CAB
8	Form 14.02	Version 2	27/3/15	CAB
9	SOP 14	Version 2	27/3/15	CAB
10	SOP 21	Version 2	27/3/15	CAB
11	SOP 1	Version 2	27/3/15	CAB
12	Form 01	Version 2	27/3/15	CAB
13	SOP 13	Version 2	27/3/15	CAB
14	Section 9.2 (SWMP)	Version 2	27/3/15	CAB
15	Table of Contents – Volume 2	Version 2	27/3/15	CAB
16	Section 3.5	Version 2	27/3/15	CAB
17	Section 9.6 (ORRRC PIRMP)	Version 2	27/3/15	CAB
18	Section 9.7 (ERRRC PIRMP)	Version 2	27/3/15	CAB
19	Section 9.8	Version 2	27/3/15	CAB
20	Section 9.9	Version 2	27/3/15	CAB
21	Section 5.1	Version 2	27/3/15	CAB
22	Section 5	Version 2	27/3/15	CAB
23	SOP 23	Version 2	27/3/15	CAB
24	SOP 24	Version 2	27/3/15	CAB
25	Section 2	Version 2	27/3/15	CAB
26	Section 3.13	Version 2	27/3/15	CAB
27	Section 3.16	Version 2	27/3/15	CAB
28	Section 4.17	Version 2	27/3/15	CAB
29	Section 4.8	Version 2	27/3/15	CAB

OEMP UPDATES REGISTER

Update No.	Section of OEMP	New Version No	Date Issued	Sign-off
30	Section 4.12	Version 2	27/3/15	CAB
31	Section 3.11	Version 2	27/3/15	CAB
32	Section 3.12	Version 2	27/3/15	CAB
33	Section 4.13	Version 2	27/3/15	CAB
34	Section 6.3	Version 2	27/3/15	CAB
35	Section 6.4	Version 2	27/3/15	CAB
36	Section 7.6 (Air Quality Monitoring Program)	Version 2	27/3/15	CAB
37	SOP 03	Version 2	27/3/15	CAB
38	SOP 19	Version 2	27/3/15	CAB
39	Section 3.3	Version 2	27/3/15	CAB
40	Section 4.14	Version 2	27/3/15	CAB
41	Section 8.2	Version 2	27/3/15	CAB
42	SOP 22	Version 2	27/3/15	CAB
43	SOP 25	Version 2	27/3/15	MDH
44	Table of Contents – Volume 1	Version 2	27/3/15	CAB
45	Form 08	Version 2	27/3/15	MDH
46	Section 9.3 (Waste and Resource Recovery Monitoring Program)	Version 2	27/3/15	CAB
47	**Entire OEMP document**	**Version 2**	27/8/2015	CAB
48	Volume 1 Table of Contents	Version 3	29/9/2016	CAB
49	Section 1.0	Version 3	29/9/2016	CAB
50	Section 2.0	Version 3	29/9/2016	CAB
51	Section 3.1	Version 3	29/9/2016	CAB
52	Section 3.5	Version 3	29/9/2016	CAB
53	Section 3.6	Version 3	29/9/2016	CAB
54	Section 4.1	Version 3	29/9/2016	CAB
55	Section 4.4	Version 3	29/9/2016	CAB
56	Section 4.5	Version 3	29/9/2016	CAB
57	Section 4.6	Version 3	29/9/2016	CAB
58	Section 5.1	Version 3	29/9/2016	CAB

OEMP UPDATES REGISTER

Update No.	Section of OEMP	New Version No	Date Issued	Sign-off
59	Section 6 Table of Contents	Version 3	29/9/2016	CAB
60	Section 6.2	Version 3	29/9/2016	CAB
61	Section 6.3	Version 3	29/9/2016	CAB
62	Section 6.4	Version 3	29/9/2016	CAB
63	Section 6.5	Version 3	29/9/2016	CAB
64	Section 6.6	Version 3	29/9/2016	CAB
65	Section 8.2 (EPLs)	Version 3	29/9/2016	CAB
66	Section 9.3 (WRRMP)	WRRMP_001G	29/9/2016	CAB
67	Volume 2 Table of Contents	Version 3	29/9/2016	CAB
68	Form 01	Version 3	29/9/2016	CAB
69	SOP 02	Version 3	29/9/2016	CAB
70	Toolbox Meeting Record	OCCWHS 001 V2_16	29/9/2016	CAB
71	SOP 06	Version 3	29/9/2016	CAB
72	SOP 07	Version 3	29/9/2016	CAB
73	SOP 08	Version 3	29/9/2016	CAB
74	SOP 09	Version 3	29/9/2016	CAB
75	SOP 19	Version 3	29/9/2016	CAB
76	SOP 20	Version 3	29/9/2016	CAB
77	Form 21.01	Version 3	29/9/2016	CAB
78	Form 21.02	Version 3	29/9/2016	CAB
79	SOP 22	Version 3	29/9/2016	CAB
80	New SOP 26	Version 1	29/9/2016	CAB
81	WAP 001	OCCWHS 017 V1_16	29/9/2016	CAB
82	WAP 002	OCCWHS 017 V1_16	29/9/2016	CAB
83	WAP 003	OCCWHS 017 V1_16	29/9/2016	CAB
84	WAP 004	OCCWHS 017 V1_16	29/9/2016	CAB
85	WAP 005	OCCWHS 017 V1_16	29/9/2016	CAB
86	WAP 006	OCCWHS 017 V1_16	29/9/2016	CAB
87	WAP 007	OCCWHS 017 V1_16	29/9/2016	CAB

OEMP UPDATES REGISTER

Update No.	Section of OEMP	New Version No	Date Issued	Sign-off
88	WAP 008 Removed (replaced with SWMS 001)	N/A	29/9/2016	CAB
89	WAP 009	OCCWHS 017 V1_16	29/9/2016	CAB
90	WAP 010	OCCWHS 017 V1_16	29/9/2016	CAB
91	WAP 011	OCCWHS 017 V1_16	29/9/2016	CAB
92	WAP 012	OCCWHS 017 V1_16	29/9/2016	CAB
93	WAP 013	OCCWHS 017 V1_16	29/9/2016	CAB
94	WAP 014	OCCWHS 017 V1_16	29/9/2016	CAB
95	New title page – Safe Work Method Statement	Version 1	29/9/2016	CAB
96	New SWMS 001	OCCWHS 015 V1_16	29/9/2016	CAB
97	Form 02.01	OCCWHS 047 V1_16	29/9/2016	CAB
98	Form 02.02	OCCWHS 047 V1_16	29/9/2016	CAB
99	New Form 26.01	Version 1	29/9/2016	CAB
100	New Form 26.02	Version 1	29/9/2016	CAB
101	Volume 1 Abbreviations	Version 3	29/9/2016	CAB
102	Section 7.9 (ORRRC Emergency Procedures Manual)	D15/28972	29/9/2016	CAB
103	Section 7.10 (ERRRC Emergency Procedures Manual)	D15/28984	29/9/2016	CAB
104	Section 5.1 (Staff Training)	Version 4	February 2018	CAB
105	Section 7.9 (ORRRC Emergency Procedures Manual)	D17/63971	February 2018	CAB
106	Section 7.10 (ERRRC Emergency Procedures Manual)	D17/62615	February 2018	CAB
107	Section 7.1 (ORRRC Fire Management Plan)	Version 3	February 2018	CAB
108	Section 7.4 (ERRRC Fire Management Plan)	Version 3	February 2018	CAB
109	ORRRC LEMP Section 3.2 (Site Supervision and Control)	Version 3	February 2018	CAB
110	ORRRC LEMP Section 3.4 (Landfill Staging)	Version 3	February 2018	CAB
111	ORRRC LEMP Section 3.7 (Surface Water and Leachate Management)	Version 3	February 2018	CAB
112	ORRRC LEMP Section 3.16 (Progressive Rehabilitation)	Version 3	February 2018	CAB
113	Section 6.3 (Consultation and Reporting)	Version 4	February 2018	CAB
114	Section 9.3 (WRRMP)	001H	February 2018	CAB

OEMP UPDATES REGISTER

Update No.	Section of OEMP	New Version No	Date Issued	Sign-off
115	Section 2 (Operations Overview)	Version 3	February 2018	CAB
116	ORRRC LEMP Section 3.5 (Waste Receival)	Version 4	February 2018	CAB
117	Section 9.6 (ORRRC PIRMP)	002F_ORRRC	February 2018	CAB
118	Section 9.7 (ORRRC PIRMP Supporting Statement)	001F_ORRRC	February 2018	CAB
119	Section 9.8 (ERRRC PIRMP)	002F_ERRRC	February 2018	CAB
120	Section 9.9 (ERRRC PIRMP Supporting Statement)	001F_ERRRC	February 2018	CAB
121	SOP 02 (Site Inductions)	Version 4	February 2018	CAB
122	SOP 06	Version 4	February 2018	CAB
123	SOP 07	Version 4	February 2018	CAB
124	SOP 13	Version 3	February 2018	CAB
125	SOP 19	Version 4	February 2018	CAB
126	SOP 23	Version 3	February 2018	CAB
127	New SOP 27	Version 1	February 2018	CAB
128	SOP 21 Form 21.01	Version 4	February 2018	CAB
129	SOP 21 Form 21.02	Version 4	February 2018	CAB
130	ERRRC Visitor Record of Entry	OCCWHS 047 V1_17	February 2018	CAB
131	ORRRC Visitor Record of Entry	OCCWHS 047 V1_17	February 2018	CAB
132	WAP 001	OCCWHS 017 V3_17	February 2018	CAB
133	WAP 002	OCCWHS 017 V3_17	February 2018	CAB
134	WAP 003	OCCWHS 017 V3_17	February 2018	CAB
135	WAP 004	OCCWHS 017 V3_17	February 2018	CAB
136	WAP 005	OCCWHS 017 V3_17	February 2018	CAB
137	WAP 006	OCCWHS 017 V3_17	February 2018	CAB
138	WAP 007	OCCWHS 017 V3_17	February 2018	CAB
139	WAP 009	OCCWHS 017 V3_17	February 2018	CAB
140	WAP 010	OCCWHS 017 V3_17	February 2018	CAB
141	WAP 011	OCCWHS 017 V3_17	February 2018	CAB
142	WAP 012	OCCWHS 017 V3_17	February 2018	CAB
143	WAP 013	OCCWHS 017 V3_17	February 2018	CAB

OEMP UPDATES REGISTER

Update No.	Section of OEMP	New Version No	Date Issued	Sign-off
144	WAP 014	OCCWHS 017 V3_17	February 2018	CAB
145	WAP 015	OCCWHS 017 V3_17	February 2018	CAB
146	SWMS 001	OCCWHS 015 V4_17	February 2018	CAB
147	Toolbox Meeting Record	OCCWHS 001 V3-17	February 2018	CAB
148	OEMP Volume 2 TOC	Version 4	February 2018	CAB
149	SOP 21	Version 3	February 2018	CAB
150	Section 9.6 (ORRRC PIRMP)	002G_ORRRC	December 2018	BS
151	Section 9.7 (ORRRC PIRMP Supporting Statement)	001G_ORRRC	December 2018	BS
152	Section 9.8 (ERRRC PIRMP)	002G_ERRRC	December 2018	BS
153	Section 9.9 (ERRRC PIRMP Supporting Statement)	001G_ERRRC	December 2018	BS
154	SOP 02	Version 5	December 2018	BS
155	SOP 13	Version 4	December 2018	BS
156	OEMP Volume 2 TOC	Version 5	December 2018	BS
157	Section 8.1 (Modification of Minister's Approval)	EF18/6769	December 2018	BS
158	Lone Worker SWMS	OCCWHS 015 V1-18	December 2018	BS
159	Section 8.3 (ORRRC Liquid Trade Waste Discharge Approval)	PR25658 – D18/66800	December 2018	BS
160	Section 8.4 (ERRRC Liquid Trade Waste Discharge Approval)	F533 – D18/68114	December 2018	BS
161	Section 2.2 (Operations Overview – Ophir Road Resource Recovery Centre)	Version 5	January 2020	BS
162	Section 3.1 (ORRRC Landfill Management Plan – Introduction)	Version 5	January 2020	BS
163	Section 3.5 (ORRRC Landfill Management Plan – Waste Receival)	Version 5	January 2020	BS
164	Section 3.9 (ORRRC Landfill Management Plan – Landfill Gas Management	Version 5	January 2020	BS
165	Section 4.1 (ERRRC Landfill Management Plan – Introduction)	Version 5	January 2020	BS
166	Section 4.10 (ERRRC Landfill Management Plan – Landfill Gas Management)	Version 5	January 2020	BS
167	Section 5.1 (Training – Staff Training)	Version 5	January 2020	BS
168	Section 6.6 (Document Control)	Version 5	January 2020	BS
169	Section 7.7 (ERRRC Landfill Gas	Version 5	January 2020	BS

OEMP UPDATES REGISTER

Update No.	Section of OEMP	New Version No	Date Issued	Sign-off
	Management Plan)			
170	Section 9.5 (Transport Code of Conduct)	Issue 3.0	April 2019	BS
171	Section 9.6 (ORRRC PIRMP)	002H_ORRRC	January 2020	BS
172	Section 9.7 (ORRRC PIRMP Supporting Statement)	001H_ORRRC	January 2020	BS
173	Section 9.8 (ERRRC PIRMP)	002H_ERRRC	January 2020	BS
174	Section 9.9 (ERRRC PIRMP Supporting Statement)	001H_ERRRC	January 2020	BS
175	SOP 1 (Annual Calendar of Activities)	Version 5	January 2020	BS
176	SOP 6 (Beekeeping Equipment and Honey Containers)	Version 5	January 2020	BS
177	SOP 10 (Operation of ERRRC Leachate Pumps)	Version 5	January 2020	BS
178	SOP 16 (ERRRC Daily Checklist)	Version 5	January 2020	BS
179	SOP 20 (ERRRC Environmental Monitoring)	Version 5	January 2020	BS
180	SOP 23 (ORRRC Traffic Management)	Version 5	January 2020	BS
181	SOP 24 (ERRRC Traffic Management)	Version 5	January 2020	BS
182	WAP 001 (Dust Prevention On Site)	OCCWHS_017_V1-18	March 2019	BS
183	WAP 002 (Bin Closure / Servicing)	OCCWHS_017_V1-18	March 2019	BS
184	WAP 003 (Load Mulch / Compost)	OCCWHS_017_V1-18	March 2019	BS
185	WAP 004 (Transfer Oil)	OCCWHS_017_V1-18	March 2019	BS
186	WAP 006 (Tyre Stockpiling)	OCCWHS_017_V1-18	March 2019	BS
187	WAP 007 (Litter Collection)	OCCWHS_017_V1-18	March 2019	BS
188	WAP 009 (Landfill Waste Disposal)	OCCWHS_017_V1-18	March 2019	BS
189	WAP 010 (Beekeeping Equipment and Honey Containers)	OCCWHS_017_V1-18	March 2019	BS
190	WAP 011 (Weighbridge Procedures)	OCCWHS_017_V1-18	March 2019	BS
191	WAP 012 (ERRRC Traffic Management)	OCCWHS_017_V1-18	March 2019	BS
192	WAP 013 (ORRRC Traffic Management)	OCCWHS_017_V1-18	March 2019	BS
193	WAP 014 (Handling Contaminated Soil at ORRRC)	OCCWHS_017_V1-18	March 2019	BS
194	WAP 015 (Plant – Routine Maintenance)	OCCWHS_017_V1-18	March 2019	BS
195	WAP 016 (Community Recycling Centre Household Hazardous Waste Receipt and Management)	OCCWHS_017_V1-18	March 2019	BS

OEMP UPDATES REGISTER

Update No.	Section of OEMP	New Version No	Date Issued	Sign-off
196	WAP 017 (Manual Handling)	OCCWHS_017_V1-18	March 2019	BS
197	SWMS RRC_001 (Asbestos Disposal)	OCCWHS_015_V1-19	February 2019	BS
198	SWMS RRC_001 (Lone Worker)	OCCWHS_015_V1-19	March 2019	BS
199	SWMS ERRRC_001 (Working Within the Leachate Holding Tank Exclusion Zone)	OCCWHS_015_V1-19	Sept 2019	BS
200	Section 5.1 (Training – Staff Training)	Version 6	February 2021	BS
201	Section 9.6 (ORRRC PIRMP)	002I_ORRRC	February 2021	BS
202	Section 9.7 (ORRRC PIRMP Supporting Statement)	001I_ORRRC	February 2021	BS
203	Section 9.8 (ERRRC PIRMP)	002I_ERRRC	February 2021	BS
204	Section 9.9 (ERRRC PIRMP Supporting Statement)	001I_ERRRC	February 2021	BS
205	SOP 1 (Annual Calendar of Activities)	Version 6	February 2021	BS
206	SOP 6 (Beekeeping Equipment and Honey Containers)	Version 6	February 2021	BS
207	SOP 21 (Document Control) – OEMP Register and Updates Register	Version 6	February 2021	BS
208	WAP 001 (Dust Prevention On Site)	OCCWHS_017_V1-2020	February 2021	BS
209	WAP 002 (Bin Closure / Servicing)	OCCWHS_017_V1-2020	February 2021	BS
210	WAP 003 (Load Mulch / Compost)	OCCWHS_017_V1-2020	February 2021	BS
211	WAP 004 (Transfer Oil)	OCCWHS_017_V1-2020	February 2021	BS
212	WAP 006 (Tyre Stockpiling)	OCCWHS_017_V1-2020	February 2021	BS
213	WAP 007 (Litter Collection)	OCCWHS_017_V1-2020	February 2021	BS
214	WAP 009 (Landfill Waste Disposal)	OCCWHS_017_V1-2020	February 2021	BS
215	WAP 010 (Beekeeping Equipment and Honey Containers)	OCCWHS_017_V1-2020	February 2021	BS
216	WAP 011 (Weighbridge Procedures)	OCCWHS_017_V1-2020	February 2021	BS
217	WAP 012 (ERRRC Traffic Management)	OCCWHS_017_V1-2020	February 2021	BS
218	WAP 013 (ORRRC Traffic Management)	OCCWHS_017_V1-2020	February 2021	BS
219	WAP 014 (Handling Contaminated Soil at ORRRC)	OCCWHS_017_V1-2020	February 2021	BS
220	WAP 015 (Plant – Routine Maintenance)	OCCWHS_017_V1-2020	February 2021	BS

OEMP UPDATES REGISTER

Update No.	Section of OEMP	New Version No	Date Issued	Sign-off
221	WAP 016 (Community Recycling Centre Household Hazardous Waste Receipt and Management)	OCCWHS_017_V1-2020	February 2021	BS
222	WAP 017 (Manual Handling)	OCCWHS_017_V1-2020	February 2021	BS
223	SWMS RRC_001 (Asbestos Disposal)	OCCWHS_015_V1-20	February 2021	BS
224	SWMS RRC_001 (Lone Worker)	OCCWHS_015_V1-20	February 2021	BS
225	SWMS ERRRC_001 (Working Within the Leachate Holding Tank Exclusion Zone)	OCCWHS_015_V1-20	February 2021	BS
226	Section 5.1 (Training – Staff Training)	Version 7	December 2021	BS
227	Section 9.5 (ERRRC Five-Year Works Action Plan)	208212_2021_ERRRC 5-year WAP	December 2021	BS
228	Section 9.7 (ORRRC PIRMP)	002J_ORRRC	December 2021	BS
229	Section 9.8 (ORRRC PIRMP Supporting Statement)	001J_ORRRC	December 2021	BS
230	Section 9.9 (ERRRC PIRMP)	002J_ERRRC	December 2021	BS
231	Section 9.10 (ERRRC PIRMP Supporting Statement)	001J_ERRRC	December 2021	BS
232	SOP 1 (Annual Calendar of Activities)	Version 7	December 2021	BS
233	SOP 2 (Visitor Record of Entry ERRRC)	Version 7	December 2021	BS
234	SOP 2 (Visitor Record of Entry ORRRC)	Version 7	December 2021	BS
235	SOP 2 (Toolbox Meeting Record)	Version 7	December 2021	BS
236	SOP 8 (Handling and Disposal of Asbestos)	Version 7	December 2021	BS
237	SOP 21 (Document Control) – OEMP Register and Updates Register	Version 7	December 2021	BS
238	WAP 001 (Dust Prevention On Site)	OCCWHS_017_V2-21	December 2021	BS
239	WAP 002 (Bin Closure / Servicing)	OCCWHS_017_V2-21	December 2021	BS
240	WAP 003 (Manual Handling)	OCCWHS_017_V2-21	December 2021	BS
241	WAP 004 (Transfer Oil)	OCCWHS_017_V2-21	December 2021	BS
242	WAP 005 (Community Recycling Centre-Household Waste Receipt & Management)	OCCWHS_017_V2-21	December 2021	BS
243	WAP 006 (Tyre Stockpiling)	OCCWHS_017_V2-21	December 2021	BS
244	WAP 007 (Litter Collection)	OCCWHS_017_V2-21	December 2021	BS

OEMP UPDATES REGISTER

Update No.	Section of OEMP	New Version No	Date Issued	Sign-off
245	WAP 008 (Plant-Routine Maintenance)	OCCWHS_017_V2-21	December 2021	BS
246	WAP 009 (Handling Contaminated Soil at ORRRC)	OCCWHS_017_V2-21	December 2021	BS
247	WAP 010 (Beekeeping Equipment and Honey Containers)	OCCWHS_017_V2-21	December 2021	BS
248	WAP 011 (Weighbridge Procedures)	OCCWHS_017_V2-21	December 2021	BS
249	WAP 012 (ERRRC Traffic Management)	OCCWHS_017_V2-21	December 2021	BS
250	WAP 013 (ORRRC Traffic Management)	OCCWHS_017_V2-202	December 2021	BS
251	SWMS-RRC_001 (asbestos Disposal)	OCCWHS_015_V2-2021	December 2021	BS
252	SWMS-RRC_002 (Lone Worker)	OCCWHS_015_V2-2021	December 2021	BS
253	SWMS-RRC_003 (Load Mulch / Compost)	OCCWHS_015_V2-2021	December 2021	BS
254	SWMS-RRC_004 (Landfill Waste Disposal)	OCCWHS_015_V2-2021	December 2021	BS
255	SWMS-RRC_005 (Plant Operation)	OCCWHS_015_V2-2021	December 2021	BS
256	SWMS-RRC_006 (Telescopic handler Operation)	OCCWHS_015_V2-2021	December 2021	BS

Approved: ..... Wayne Lawrence .....
Manager Waste Services and Technical support

Date: ..... 14 / 12 / 2021 .....

Standard Operating Procedure

ORRRC Tyre Management

File No: **SOP 22**

I approve the use of this Standard Operating Procedure:

Name: Wayne Davis	**Position:** Manager Waste Services and Technical Support
Signature:	**Date:** 14/12/2021

Revision Status:

Change History

Date	Details of Change	Version No.
23/09/2014	Document created	Draft
28/10/2014	Draft approved	Version 1
15/04/2015	Draft approved	Version 1
17/08/2015	Draft approved	Version 2
22/08/2016	Draft approved	Version 3
22/1/2020	Version updated to correspond to OEMP	Version 5
2/3/2021	Update Signature Date Version updated to correspond to OEMP	Version 6
14/12/2021	Update Signature Date Version updated to correspond to OEMP	Version 7

PURPOSE

The purpose of this document is to provide Resource Recovery Centre employees with the correct work procedures to ensure that incoming tyre waste is permitted and is appropriately disposed of at the premises.

WORK PROCEDURE

Incoming Waste

1) All incoming waste is to be screened at the weighbridge, following the procedures identified in **SOP 07 – Weighbridge Procedures**; weighbridge operators will identify whether a load contains tyres.
2) Tyre waste that is greater than 200 kilograms or more than 20 waste tyres (whichever weighs less) must be recorded by waste transporters using the WasteLocate system at the weighbridge by scanning the QR2id plate (refer – **SOP 26 – WasteLocate Tracking**).
3) If a load from a commercial operator contains more than five (5) whole tyres, the weighbridge operator must refuse receival of the waste at the premises.
4) Loads with more than five (5) whole tyres delivered by non-commercial operators (i.e. residents) of the Orange Local Government Area are permitted at the premises.
5) If a load is identified as containing tyres, the waste must not be disposed at the premises unless:
    a. The tyre/s have a diameter of less than 1.2 metres; or
    b. The tyre/s have been shredded so that the pieces measure no more than 250 millimetres in any direction; or
    c. The tyre/s have had their walls removed.
6) The weighbridge operator will charge drivers with the applicable charge(s) for tyre waste.

Tyre Stockpile Management

1) Recovery Centre Operators will ensure that tyres stockpiled on the premises:
    a. Do not exceed fifty (50) tonnes at any one time; and
    b. Are located in a clearly defined area away from the waste disposal areas; and
    c. Are managed to control vermin; and
    d. Are managed to prevent any tyres from catching on fire.
2) Tyres will be stockpiled in the workshop compound (refer to **Figure 3.4.1**) on the designated storage pallets. Stockpiled tyres must be covered with a tarp at all

times to ensure they remain clean. Unclean tyres will not be accepted by the recycler.

3) Once tyre stockpile reaches capacity, the Resource Recovery Centre Supervisor will advise the Resource Recovery Operators to arrange tyre collection with the tyre recycler:

   a. Send an email to the tyre recycler (JLW Services – jamie@jlwservices.com.au) requesting a Waste Tyre Collection Service. The email is to include the following detail:

      - Photographs of the tyre stockpile;
      - Address and contact details for the Ophir Road Resource Recovery Centre;
      - Advice that the pickup service will be required to weigh on before and after the collection of tyres for recording purposes;
      - Advice that the collection service is on a per tyre basis;
      - Request confirmation of collection date to be telephoned to the Weighbridge on 6393 8861.

   b. If confirmation is not received from JWL Services for the collection, contact Jamie Walmsley on 0428 599 471 or alternatively Adam Fuller on 0427 902 963

   c. Once a collection date is confirmed, the Resource Recovery Operators logon to the WasteLocate website (https://wastelocate.epa.nsw.gov.au/login) to register a consignment note for the collection:

      - Login Email Address: occweighbridge@gmail.com Password: Res0urce (Note: the '0' is Zero);
      - Click on "Consignments" in the right hand navigation;
      - Click on "New Consignment" button;
      - Complete consignment details.

RESPONSIBILITIES

It is the Resource Recovery Centre Supervisor's responsibility to ensure that all incoming waste is screened, and the landfilling operations are monitored to ensure that tyre waste is appropriately stockpiled.

The Resource Recovery Centre Supervisor is responsible for ensuring that all Resource Recovery Centre Operators undertaking weighbridge procedures and landfilling of tyre waste are adequately trained in this work procedure.

RECORDS

Weighbridge records are recorded electronically on the computer within the weighbridge gatehouse. These records are kept for a minimum of four years.

REFERENCES

Section 3.5 – Waste Receival

Section 9.3 – Waste and Resource Recovery Monitoring Program

SOP 26 – WasteLocate Tracking

WAP 006 – Tyre Stockpiling

	Standard Operating Procedure
	ORRRC Traffic Management
	File No: **SOP 23**

I approve the use of this Standard Operating Procedure:

Name: Wayne Davis	**Position:** Manager Waste Services and Technical Support
Signature:	**Date:** 14/12/2021

Revision Status:

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Date	Details of Change	Version No.
14/10/2014	Document created	Draft
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17/08/2015	Draft approved	Version 2
14/02/2018	Draft approved	Version 3
31/1/2020	Vehicle wheel inspection and wash-down added Version updated to correspond to OEMP	Version 5
2/3/2021	Update Signature Date Version updated to correspond to OEMP	Version 6
14/12/2021	Update Signature Date Version updated to correspond to OEMP	Version 7

PURPOSE

The purpose of this document is to ensure the correct procedures are followed by all vehicles and machinery operating at ORRRC.

WORK PROCEDURE

Internal traffic movements at ORRRC will be undertaken in accordance with the ORRRC Traffic Management Plan in **Figure 1**.

1) General public vehicles, heavy vehicles and other equipment that may be operating at ORRRC will comply with site speed limits and any directional signage.

2) Traffic movement will be restricted to established all weather access roads, unless otherwise approved by the Manager Waste Services and Technical Support.

3) Visitors are to park in the designated parking area, ensuring that they do not interfere with the flow of traffic within the depot.

4) The weighbridge staff will direct all patrons of the facility to the appropriate end disposal point subject to the nature of the material presented (refer to **Section 3.5**).

5) Operational staff will coordinate with the weighbridge operator to provide traffic control to incoming patrons of the ORRRC in order to maintain a sufficient space for large trucks to egress off the weighbridge in an easterly direction.

6) JR Richards & Sons Pty Ltd will adhere to their *Transport Code of Conduct* to ensure safe conduct at ORRRC, including appropriate licencing, safe vehicle operation and interactions, and necessary maintenance (refer – **Section 9.5**)

7) Each JR Richards & Sons Pty Ltd new driver is required to sign the *Code of Conduct* during their first visit.

8) Operational staff involved with providing direction and end disposal of incoming waste streams will be provided with appropriate site induction and traffic management training.

9) Before waste transport vehicles leave the ORRRC premises, a wheel inspection for mud and/or other material is to be carried out. A wash down using the water tanker must be performed where there is a risk of mud and/or other material being tracked off-site.

10) Any incidents that occur are to be recorded on **Form 15**, detailed in **SOP 15 - ORRRC Daily Checklist**.

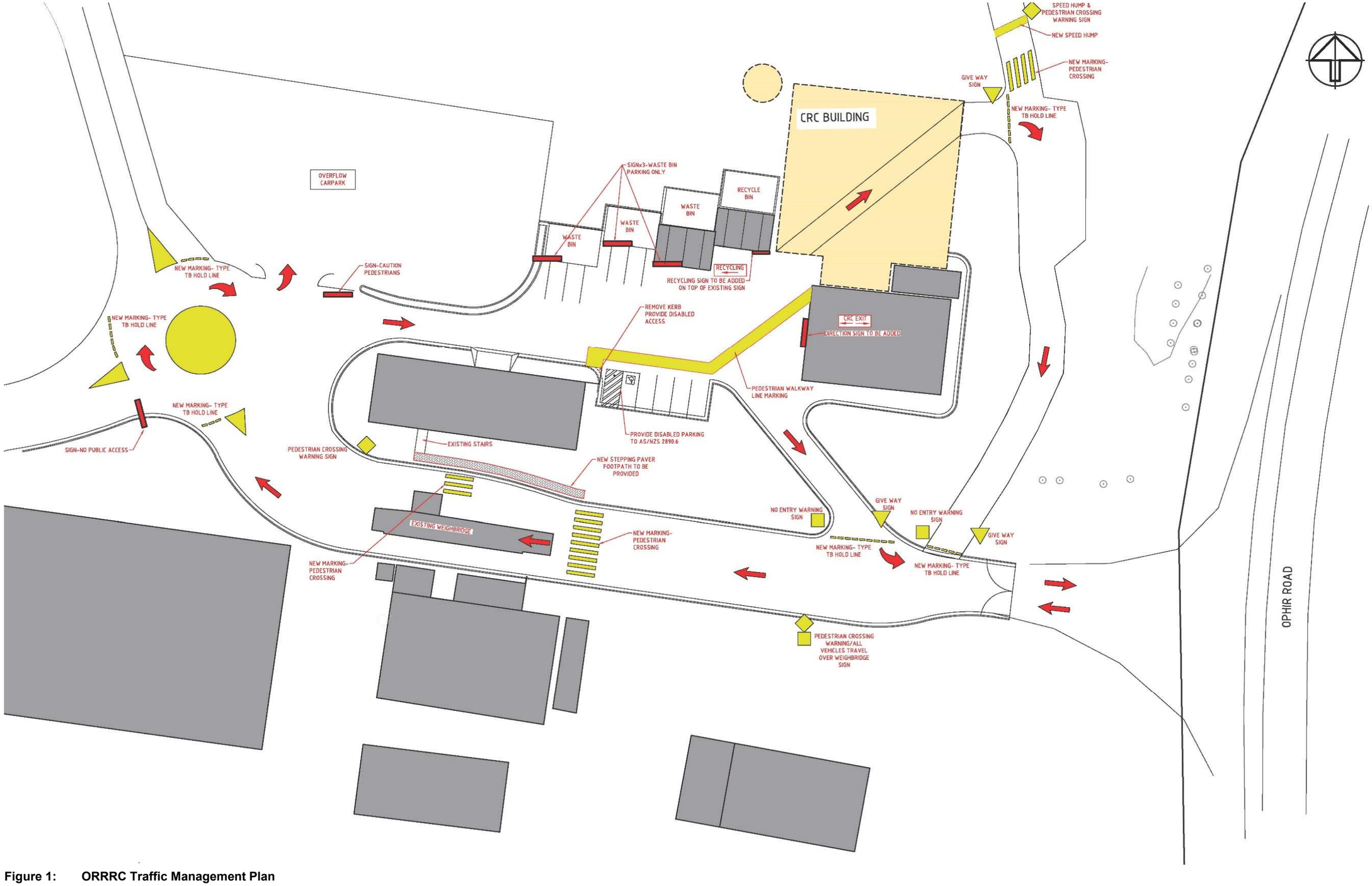

Figure 1: ORRRC Traffic Management Plan

RESPONSIBILITIES

It is the responsibility of individual staff and contractors to ensure the correct procedures are followed by all vehicles and machinery operating at ORRRC.

RECORDS

Any incidents are recorded on **Form 15** from **SOP 15 - ORRRC Daily Checklist**.

REFERENCES

SOP 15 – ORRRC Daily Checklist

WAP 013 – ORRRC Traffic Management

	Standard Operating Procedure
	ERRRC Traffic Management
	File No: **SOP 24**

I approve the use of this Standard Operating Procedure:

Name: Wayne Davis	**Position:** Manager Waste Services and Technical Support
Signature:	**Date:** 14/12/2021

Revision Status:

Change History

Date	Details of Change	Version No.
14/10/2014	Document created	Draft
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22/1/2020	Vehicle wheel inspection and wash-down added Version updated to correspond to OEMP	Version 5
2/3/2021	Update Signature Date Version updated to correspond to OEMP	Version 6
14/12/2021	Update Signature Date Version updated to correspond to OEMP	Version 7

PURPOSE

The purpose of this document is to ensure the correct procedures are followed by all vehicles and machinery operating at ERRRC, and heavy vehicles transporting waste to ERRRC.

WORK PROCEDURE

1) General public vehicles, heavy vehicles and other equipment that may be operating at ERRRC will comply with site speed limits and any directional signage.

2) Heavy vehicles transporting waste to ERRRC will comply with road speed limits and signs, and any directions given by Police, Roads and Maritime Services (RMS), or other authorities.

3) The operations at ERRRC will not generate more than 40 heavy vehicle movements in any one day, and not more than 30 heavy vehicle movements a day when averaged over a 7 day period.

4) To avoid interaction with school buses, heavy vehicles transporting waste to ERRRC must not travel in the hours specified below:

   - 7.00am – 7.15am Mon to Friday (School Days)
   - 8.28am – 8.37am Mon to Friday (School Days)
   - 3.28pm – 3.40pm Mon to Friday (School Days)
   - 4.40pm – 5.00pm Mon to Friday (School Days)

5) Traffic movement will be restricted to established all weather access roads, unless otherwise approved by the Manager Waste Services and Technical Support.

6) Visitors are to park in the designated parking area, ensuring that they do not interfere with the flow of traffic within the depot.

7) Operational staff involved with providing direction and end disposal of incoming waste streams will be provided with appropriate site induction and traffic management training.

8) JR Richards & Sons Pty Ltd will adhere to their *Transport Code of Conduct* to ensure safe conduct at ERRRC, including appropriate licencing, safe vehicle operation and interactions, and necessary maintenance (refer – **Section 9.5**)

9) Each JR Richards & Sons Pty Ltd new driver is required to sign the *Code of Conduct* during their first visit.

10) All JR Richards & Sons Pty Ltd will be geo-tracked to ensure heavy vehicle restrictions are followed and to ensure JR Richards & Sons Pty Ltd vehicles are not on Euchareena Road during the hours specified in point (4) above. Geo-tracking will record the date and time each vehicle enters Euchareena Road and enters the ERRRC site.

11) Before waste transport vehicles leave the ERRRC premises, a wheel inspection for mud and/or other material is to be carried out. A wash down using the water tanker must be performed where there is a risk of mud and/or other material being tracked off-site.

RESPONSIBILITIES

It is the responsibility of individual staff and contractors to ensure the correct procedures are followed when operating vehicles or machinery at the site, or transporting waste to the site.

RECORDS

Any incidents are recorded on **Form 16** from **SOP 16 - ERRRC Daily Checklist**.

REFERENCES

SOP 16 – ERRRC Daily Checklist
WAP 012 – ERRRC Traffic Management

	Standard Operating Procedure
	Handling Contaminated Soil at ORRRC
	File No: **SOP 25**

I approve the use of this Standard Operating Procedure:

Name: Wayne Davis	**Position:** Manager Waste Services and Technical Support
Signature:	**Date:** 14/12/2021

Revision Status:

Change History

Date	Details of Change	Version No.
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22/1/2020	Version updated to correspond to OEMP	Version 5
2/3/2021	Update Signature Date Version updated to correspond to OEMP	Version 6
14/12/2021	Update Signature Date Version updated to correspond to OEMP	Version 7

PURPOSE

The purpose of this document describes how hydrocarbon contaminated soil will be managed at ORRRC.

WORK PROCEDURE

1) Condition L5 of EPL No. 5956 states *only soils contaminated with petroleum hydrocarbons can be treated at the premises*.

2) All enquiries regarding delivery of hydrocarbon contaminated soil will be directed to the Manager Waste Services and Technical Support for approval prior to receipt at ORRRC.

3) Receipt of hydrocarbon contaminated soil will be recorded in the waste data records.

4) Contaminated soil will be managed in an area adjacent to the active disposal pits on the top of the Stage 3 landfill cell (refer to **Figure 3.4.1**).

5) Soils contaminated with petroleum hydrocarbons shall be placed in windrows in an area that will not be required for at least two (2) months.

6) The soil windrows will have a maximum height of 1.5m and base width of 4m.

7) The soil windrows will be turned once every two weeks for a minimum of two (2) months or until there is no significant hydrocarbon odour remaining in the soil.

8) When there is no significant hydrocarbon odour remaining in the soil it can be used as cover material.

9) Management of hydrocarbon contaminated soil shall be included in staff training.

RESPONSIBILITIES

Manager Waste Services and Technical Support will be responsible for approving receipt of hydrocarbon contaminated soil.

The Resource Recovery Centre Supervisor is responsible for the receipt and management of hydrocarbon contaminated soil.

RECORDS

Receipt of hydrocarbon contaminated soil will be recorded in the waste data records.

REFERENCES

WAP 014 – Handling Contaminated Soil at ORRRC

	Standard Operating Procedure
	WasteLocate Tracking
	File No: **SOP 26**

I approve the use of this Standard Operating Procedure:

Name: Wayne Davis	**Position:** Manager Waste Services and Technical Support
Signature:	**Date:** 14/12/2021

Revision Status:

Change History

Date	Details of Change	Version No.
17/08/2016	Document created	Draft
22/08/2016	Draft approved	Version 1
22/1/2020	Version updated to correspond to OEMP	Version 5
2/3/2021	Update Signature Date Version updated to correspond to OEMP	Version 6
14/12/2021	Update Signature Date Version updated to correspond to OEMP	Version 7

PURPOSE

The purpose of this document is to describe how the EPA WasteLocate system is to be used for tracking of the following asbestos and tyre waste received at the ORRRC.

- Waste tyres greater than 200 kilograms or more than 20 waste tyres, whichever weighs less.
- More than 100 kilograms of asbestos waste or more than 10 square metres of asbestos sheeting.

WORK PROCEDURE

1) Transporters of asbestos or waste tyres meeting the above descriptions are required to use the WasteLocate system to create or select a consignment at the pick-up location using WasteLocate on a smartphone or tablet, available at www.wastelocate.epa.nsw.gov.au

2) At the receiving waste facility the transporter must scan the QR2id plate and follow the on-screen prompts.

3) Operators must direct the transporters with loads exceeding the above-listed amounts tyre waste to scan the QR2id plate at the ORRRC weighbridge. All transporters of incoming loads of asbestos waste are to be instructed to scan the QR2id plate at the ORRRC weighbridge. If the transporter fails to scan the plate, vehicle registration details must be recorded by the operator on **Form 26.01**.

4) At the end of each calendar month, the Resource Recovery Centre Operator reconciles the recorded details on **Form 26.01** against the weighbridge computer records. Any loads of asbestos that did not scan the QR2id plate or any tyre loads exceeding the above listed thresholds that did not scan the QR2id plate are to be entered onto **Form 26.02**. Once **Form 26.02** is completed, PDF the document. finalised,

5) The Resource Recovery Centre Operator emails completed **Form 26.02** monthly to the NSW Environment Protection Authority Waste Operations Section (waste.operations@epa.nsw.gov.au) and copies the Manager Waste Services and Technical Support to the email.

RESPONSIBILITIES

Manager Waste Services and Technical Support and Resource Recovery Centre Supervisor will be responsible for ensuring that monthly records are sent to the EPA of vehicle registration numbers that fail to scan the QR2id plate when directed by Resource Recovery Centre Operators.

The Resource Recovery Centre Operators are responsible for ensuring drivers scan the QR2id plate when required, and maintaining a record of vehicle registration numbers of those who fail to scan the QR2id plate.

The Resource Recovery Centre Operators are responsible for ensuring that emails of completed **Form 26.02** is sent monthly to the NSW Environment Protection Authority Waste Operations Section, and copied to the Manager Waste Services and Technical Support.

RECORDS

A record of all transporters of incoming loads of asbestos waste who do not scan the QR2id plate at the ORRRC weighbridge will be recorded and kept at ORRRC on **Form 26.01.**

Monthly reconciliation of recorded details on **Form 26.01** against the weighbridge records will identify any loads of asbestos or tyres that exceed the thresholds and did not scan the QR2id plate. These transporters will be recorded and kept at ORRRC on **Form 26.02**.

REFERENCES

Section 3.5 – Waste Receival

Section 3.6 – Waste Disposal

Section 6.2 – Waste Reporting

Section 9.3 – Waste and Resource Recovery Monitoring Program

SOP 7 – Weighbridge Procedures

SOP 8 – Handling and Disposal of Asbestos Waste

SOP 22 – ORRRC Tyre Management

WAP 006 – Stockpiling of Tyres

WAP 011 – Weighbridge Procedures

ASBESTOS AND TYRE WASTE DAILY RECORD

THIS MUST BE FILLED OUT WITH ALL DETAILS LISTED BELOW

Date of Delivery	Time Of Delivery	Vehicle Rego	PLEASE PRINT CLEAR Organisation or Name of Driver	Tick Scanned		Asbestos	Tyres
				Yes	No		

RECORD OF UNSCANNED LOADS

DETAILS OF RECEIVING PREMISE	
Company or agency name	Orange City Council
Contact name	Wayne Davis
Address of premises	261 Ophir Road Orange NSW 2800
Environment Protection Licence Number	5956
Australian Business Number (ABN)	85 985 402 386
Phone number	02 63938861
Email address	wdavis@orange.nsw.gov.au
Fixed Plate Number or Numbers (if more than one on premises)	H9NV-ERD

Month:					
Date of Delivery	**Time of Delivery**	**Waste Tyres or Asbestos Waste**	**Customer Name**	**Vehicle Registration**	**Weight (Tonnes)**
				Total Weighed	

Submitted by:

Name	Position	Signature	Date

	Standard Operating Procedure
	ORRRC Community Recycling Centre
	File No: **SOP 27**

I approve the use of this Standard Operating Procedure:

Name: Wayne Davis	**Position:** Manager Waste Services and Technical Support
Signature:	**Date:** 14/12/2021

Revision Status:

Change History

Date	Details of Change	Version No.
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2/3/2021	Update Signature Date Version updated to correspond to OEMP	Version 6
14/12/2021	Update Signature Date Version updated to correspond to OEMP	Version 7

PURPOSE

To ensure consistent and correct methods are used for the operation of the ORRRC Community Recycling Centre (CRC) in accordance with the NSW EPA *Community Recycling Centres: Operations and management handbook 2nd edition* (CRC Handbook).

WORK PROCEDURE

The CRC Handbook outlines minimum standards for infrastructure, risk management, operating procedures, training, record-keeping and reporting.

The CRC Handbook standards require CRC operators to ensure facilities and equipment, processes and documented procedures are in place to protect the health and safety of customers and staff at the facility, and for managing the impact of the facility on the environment.

The CRC Handbook is attached to this SOP.

RESPONSIBILITIES

The Manager Waste Services and Technical Support is responsible for commissioning a contractor to operate the CRC in accordance with the CRC Handbook.

The CRC contractor is responsible for operating the CRC in accordance with the CRC Handbook.

RECORDS

The contractor is required to complete all applicable forms contained within the CRC Handbook.

Completed CRC Handbook forms must be forwarded to the Manager Waste Services and Technical Support.

REFERENCES

Section 2 – Operations Overview

NSW EPA
Environment Protection Authority

Community Recycling Centres

Operations and management handbook – 2nd ed.

Waste matters
Drop off your household problem waste for recycling

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Speak and listen users: phone 1300 555 727, then ask for 131 555

Email: info@environment.nsw.gov.au
Website: www.epa.nsw.gov.au

Report pollution and environmental incidents

Environment Line: 131 555 (NSW only) or info@environment.nsw.gov.au
See also www.epa.nsw.gov.au

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This is a NSW EPA Waste Less, Recycle More initiative funded from the Waste Levy.

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Disclaimer

This Handbook is intended to assist in the design of Community Recycling Centres (CRCs) to maximise the efficient operation of the centre or service and maximize resource recovery. It does not constitute legal or regulatory advice on any issue. It does not dissolve the user or facility from compliance with NSW waste regulations or environmental license conditions. Councils and others should seek and rely on their own advice in relation to issues such as environmental licensing, Work Health and Safety and planning approvals in relation to specific facilities. The NSW Environment Protection Authority (EPA) accepts no responsibility for errors or omissions in the Handbook or for any loss or damage arising from the use of the Handbook.

Community Recycling Centres program

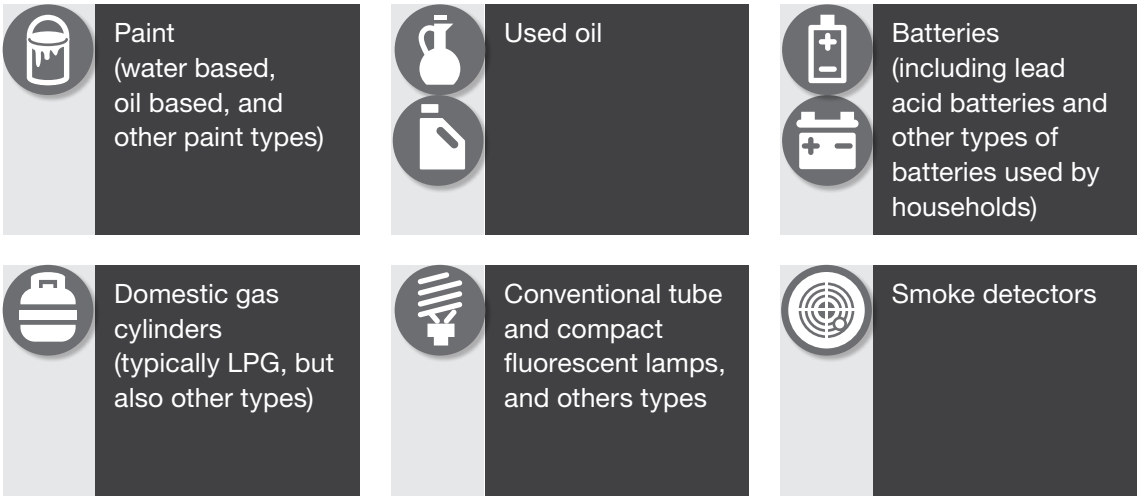
The NSW Environment Protection Authority (EPA) is establishing a network of Community Recycling Centres (CRCs) across NSW. The primary aim of this program is to make it easy for householders in NSW to safely dispose of materials that can be hazardous to the environment or to public health. CRCs are to be designed and operated to temporarily store these materials safely until they can be recycled or disposed of appropriately.

The materials being targeted by the EPA for collection at CRCs are referred to as CRC materials in this Handbook and are listed below.

Facility operators may collect other materials, but are to do so at their own discretion and cost.

The program is aimed at householders, who wherever possible will be able to have their materials accepted at any facility in the network of CRCs. Materials accepted from commercial or business operators will not form part of this program, and their collection and disposal will not be funded by the EPA.

CRC materials



Purpose of this Handbook

The EPA has prepared this Handbook to assist facility owners and operators to establish and operate a CRC. The Handbook outlines minimum standards for infrastructure, risk management, operating procedures, training, record keeping and reporting. These standards require CRC operators to ensure facilities and equipment, processes and documented procedures are in place to protect the health and safety of customers and staff at the facility, and for managing the impact of the facility on the environment.

This Handbook must be kept at the CRC for reference by operations staff.

The Handbook contains the following sections:

1.
Establishing a Community Recycling Centre

Outlines the requirements for locating a CRC, standards for infrastructure, buildings, site control measures, and equipment required for handling materials appropriately.

2.
Risk management

Describes the elements of risk management and how they can be applied to the design and operation of CRCs. A worksheet is provided that can be used by CRC operators to undertake a Risk Assessment and prepare a Risk Management Plan for a particular CRC.

3.
Operating a Community Recycling Centre

Provides procedures to protect the health and safety of customers and staff, and for managing the impact of a CRC on the environment. This includes advice on safe handling of materials and emergency response, that can be used by CRC operators as is or to update their own procedures.

4.
Induction and training

Outlines the requirements for induction and training of staff involved in establishing and operating a CRC. An induction checklist and templates are provided for keeping records of induction and training.

5.
Record keeping and reporting

Outlines the requirements for record keeping and reporting in relation to quantities of materials kept on site and collected, risks, induction and training, and performance self-assessments. Guidance is provided in using the online reporting system for CRCs.

6.
Mobile Community Recycling Centre Operations

Outlines requirements for infrastructure and equipment, storage control measures, procedures to protect the health and safety of customers, and manage the impact on the environment for mobile CRC services.

7.
Important references

Provides a list of important references and links relevant to establishing and operating a CRC.

8.
Safety data sheets

Provides safety data sheets for the hazardous materials received at a Community Recycling Centre.

Emergency contact numbers

(Write in contact details for this CRC)

NSWFB / RFS	
Hazmat	
Police	
Local hospital / medical	
Poisons information	
Local EPA	
EPA contractor for CRCs	

REFER TO EMERGENCY RESPONSE PLAN AND NOTE THE PRIORITY CALL LIST HERE:
(i.e. who to call in what order)

Important contacts

(Write in contact details for this CRC)

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Council contacts	**Site supervisor:** Name: _____ Title: _____ Phone: _____ Mobile: _____ Email: _____ **Education officer:** Name: _____ Title: _____ Phone: _____ Mobile: _____ Email: _____
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Data reporting information	Centre ID: _____ Password: _____ **Registered users:** Name: _____ Login: _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____

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1.
Establishing a Community Recycling Centre

General requirements

Infrastructure and building requirements

Site control measures

Collection of deposited materials

Equipment and handling procedures

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1.1 General requirements

1.1.1 Preferred locations

Where drop-off centres for waste and recyclables are already in operation, it is preferable, where practical, that these existing facilities are adapted to establish CRCs.

To ensure ready access and maximise participation by the community, new centres should be located in or close to population centres.

Any adjacent facilities or activities should be taken into account to ensure that any impact on or by the CRC is minimised.

1.1.2 Site management

The council or site operator shall manage the site(s) and be responsible for ongoing risk assessment and management, and adherence to operational procedures.

1.1.3 Community involvement

A desired outcome of the program is for the local community to engage with, and feel welcome at, CRC facilities. The community should clearly understand what materials can be dropped off and where they should be placed.

As the CRCs evolve there may be opportunity for expansion to include additional household wastes that have been identified by the community as a problem waste. Facility operators are encouraged to support activities that will achieve better waste and resource recovery outcomes.

1.1.4 Site approvals and consents

Facilities are to be operated so that the volume of materials held on site remains under 'Manifest' quantities in accordance with applicable regulations and standards. Generally the local council will be the consent authority authorised to deal with Development Approvals (DAs) and other applications if required.

An EPA Environment Protection Licence is required for any activity above the scheduled size for waste storage under the *Protection of the Environment Operations Act 1997* Schedule 1 (42), which is more than 5 tonnes of hazardous waste, restricted solid waste, liquid waste, clinical or related waste, or asbestos waste stored on the premises at any time. The CRC will be designed and operated not to exceed the Schedule 1 thresholds for waste storage.

Where a CRC is established at an existing facility that is currently licensed for solid waste only, the EPA will assist in amending as appropriate the licence to accept liquid and hazardous wastes from domestic sources as described. If a licence amendment is required the CRC operator must advise the relevant EPA office.

Waste levy exemption for facility construction

Where a CRC is located at a waste facility in a regulated area where the waste levy applies on materials entering the site, the facility manager can apply to the EPA for a levy exemption for construction materials such as concrete slabs, footings, roofs, floors, posts and collection infrastructure through the Operational Purpose Deduction. The waste levy guidelines are available at: **www.epa.nsw.gov.au/wasteregulation/waste-levy.htm**.

To apply for these waste levy exemptions contact the EPA Waste Strategy and Innovation Unit at **waste.operations@epa.nsw.gov.au**.

1.1.5 Work Health and Safety

Under the *NSW Work Health and Safety Act* (WHS Act), a person conducting a business or undertaking has the primary duty to ensure, so far as is reasonably practicable, that the health and safety of workers and other persons are not put at risk from work carried out as part of the conduct of the business or undertaking.

The NSW Work Health and Safety Regulations (WHS Regulations) include specific duties for a person conducting a business or undertaking to manage the risks to health and safety associated with using, handling, generating and storing hazardous chemicals at a workplace. The duties applicable to CRCs include:

- correct labelling of containers using warning placards, outer warning placards and displaying of safety signs
- maintaining a register of hazardous chemicals and providing notification to the regulator of manifest quantities if required
- identifying risk of physical or chemical reaction of hazardous chemicals and ensuring the stability of hazardous chemicals
- ensuring that exposure standards are not exceeded
- provision of health monitoring to workers
- provision of information, training, instruction and supervision to workers
- provision of spill containment system for hazardous chemicals if necessary
- ensuring Safety Data Sheets appropriate to the materials being stored are available
- controlling ignition sources and accumulation of flammable and combustible substances
- provision and availability of fire protection, firefighting equipment and emergency and safety equipment
- preparing an emergency plan if the quantity of a class of hazardous chemical at a workplace exceeds the manifest quantity for that hazardous chemical.

Officers, such as company directors, have a duty to exercise due diligence to ensure that the business or undertaking complies with the WHS Act and Regulations. This includes taking reasonable steps to ensure that the business or undertaking has and uses appropriate resources and processes to eliminate or minimise risks that arise from hazardous chemicals at the workplace.

Workers have a duty to take reasonable care for their own health and safety and must not adversely affect the health and safety of other persons. Workers must comply with any reasonable instruction and cooperate with any reasonable policy or procedure relating to the use, handling and storage of hazardous chemicals at the workplace.

1.1.6 Risk management

The quantity of materials held on site (in particular oil based paint) will generally be above the threshold quantities under the NSW Work Health and Safety Regulation. As a result, facility operators must prepare a risk management plan for the drop-off and storage area covering both design and operations, and comply with the placarding signage requirements.

1.1.6.1 Managing the risks of hazardous chemicals

Part 2 of this Handbook provides guidance in identifying, assessing and managing the risks associated with the hazardous materials that are collected at CRCs.

The WHS Act requires CRC operators to consult, as far as reasonably practical, with workers involved in the operation of the CRC in conducting the risk assessments and implementing controls.

The WHS Act also requires that CRC operators consult, co-operate and co-ordinate activities with all other persons who have a work health or safety duty in relation to the same matter, as far as is reasonably practicable. This is particularly relevant where a CRC site has co-located activities undertaken by an external party such as a contractor, or where the CRC is operated by a contractor to the organisation which has established the CRC.

1.1.6.2 Register of hazardous chemicals

CRC operators must ensure that a register of hazardous chemicals is prepared and kept up to date. The register must be readily accessible to workers involved in using, handling or storing hazardous chemicals and to anyone else who is likely to be affected by a hazardous chemical at the workplace. The register is a list of all hazardous chemicals used, handled or stored at the workplace accompanied by the current SDS (one that is not more than five years old) for each hazardous chemical listed. It must be updated as new hazardous chemicals are introduced to the workplace or when the use of a particular hazardous chemical is discontinued.

The online dropoffwaste reporting system is appropriate for use as a register of hazardous materials stored at a CRC.

1.1.6.3 Safety Data Sheets

CRC operators must ensure Safety Data Sheets (SDSs) for the hazardous chemicals being stored at the CRC are obtained as soon as practicable.

CRC operators must also ensure the current SDSs are readily accessible to workers who handle the hazardous chemical at the workplace and emergency service workers, or anyone else, who is likely to be exposed to the hazardous chemical.

The SDSs should be kept in a location near the work area where the substance is stored. All workers likely to be exposed to the hazardous chemical must know how to find the SDS. In some cases it may be practicable to provide workers with access to SDS via an electronic database. However, this should be readily available to workers, workers should know how to use it, and a backup means of providing the SDSs should also be provided, for example as hard copies in a filing system.

The EPA has prepared a set of ten SDSs applicable to the materials that will be received at a CRC. These SDSs are provided at Tab 8 of this Handbook. NSW WHS Regulation 2011 Schedule 7(2) allows SDSs for waste products to be less detailed than those for non-waste products, and this has been taken into account in preparing SDSs for use at CRCs.

The EPA also provides a waterproof box to hold the sheets in a convenient location near the entrance to the CRC building. CRC operators are responsible for installing the box and keeping the SDSs inside it.

The waterproof box is also an appropriate location to hold a copy of emergency response procedures and other associated information.

1.1.6.4 Labels

CRC operators must ensure that containers of hazardous chemicals are correctly labelled. The collection contractor supplies labels for receptacles of CRC materials, and CRC operators must ensure these labels are correctly affixed to the relevant receptacle as soon as it is brought into service. These labels will correctly designate the receptacle both for storage and for transport of the material.

Correct labelling of receptacles as soon as they are brought into service must be included in the Safe Work Method Statements or Safe Operating Procedures for the CRC. Operations staff at the CRC must be trained in correct labelling procedures.

Additional placards as required by Schedule 11 and Schedule 13 of the WHS Regulation must be installed at a CRC. Refer to **Section 1.3.1.2** for more information.

1.1.6.5 Fire and explosion

CRC operators must manage the risk to health and safety associated with a hazardous atmosphere or an ignition source in a hazardous atmosphere at the workplace. This includes preventing ignition sources in the CRC via both design (e.g. intrinsically safe electrical equipment) and procedures (e.g. preventing customers and staff from smoking or using mobile phones in the CRC). Refer to **Part 2** of this Handbook for more detailed information on the fire and explosion risks arising from specific CRC materials.

1.1.6.6 Personal protective equipment (PPE)

PPE includes overalls, aprons, footwear, gloves, chemical resistant glasses, face shields and respirators. CRC operators must ensure that PPE is:

- selected to minimise risk to health and safety
- suitable for the nature of the work and any hazard associated with the work
- a suitable size and fit and reasonably comfortable for the person wearing it
- maintained, repaired or replaced so it continues to minimise the risk
- used or worn by workers, so far as is reasonably practicable.

Staff working in a CRC must, so far as reasonably able, wear the PPE in accordance with any information, training or reasonable instruction.

In most circumstances, PPE should not be relied on to control risk. It should be used only as a last resort when all other reasonably practicable control measures have been used and the risk has not been eliminated, or as interim protection until higher level controls are implemented. There may also be situations when the use of other controls is not practicable.

1.1.6.7 Containing spills

CRC operators must ensure, so far as is reasonably practicable that where there is a risk of a spill or leak of a hazardous chemical in a solid or liquid form, provision is made for a spill containment system. This system must contain within the workplace any spill or leak of a hazardous chemical and any resulting effluent.

When a spill, leak or accidental release of hazardous chemicals occurs, appropriate actions must be taken to contain the hazardous chemicals within the workplace. The spill containment system must describe how to contain, clean up and dispose of the spill or leak and any resulting effluent. The system must not create a hazard by bringing together different hazardous chemicals that would react together to cause a fire, explosion, harmful reaction or evolution of flammable, toxic or corrosive vapour.

1.1.6.8 Maintaining control measures

CRC operators must ensure that the implemented control measures remain effective. This includes checking that the control measures are fit for purpose, suitable for the nature and duration of the work and are installed and used correctly.

They must also ensure that a system used at the workplace for the use, handling or storage of hazardous chemicals is used only for the purpose for which it was designed, manufactured, modified, supplied or installed. It must be operated, tested, maintained, installed, repaired and decommissioned having regard to the safety or workers and other persons at the workplace.

1.1.6.9 Providing information, training, instruction and supervision

CRC operators must ensure that information, training and instruction provided to workers is suitable and adequate to:

- the nature of the work carried out by the workers
- the nature of the risks associated with the work at the time the information, training or instruction is provided, and
- the control measures implemented.

CRC operators must also provide any supervision necessary to protect workers from health and safety risks arising at the workplace, if workers:

- use, handle, generate or store a hazardous chemical
- operate, test, maintain, repair or decommission a storage or handling system for a hazardous chemical, or
- are likely to be exposed to a hazardous chemical.

Information, training, instruction and supervision must be provided not only to workers, but also to other persons at the workplace such as visitors.

Information, training and instruction should include:

- the nature of the hazardous chemicals involved and the risks to workers
- the control measures implemented, how to use and maintain them correctly
- the arrangements in place to deal with emergencies, including evacuation procedures, containing and cleaning up spills and first aid instructions
- the selection, use, maintenance and storage of any personal protective equipment (PPE) required to control risks and the limitations of the PPE
- any health monitoring which may be required and workers' rights and obligations
- the labelling of containers of hazardous chemicals, the information that each part of the label provides and why the information is being provided
- the availability of SDSs for all hazardous chemicals, how to access the SDSs, and the information that each part of an SDS provides
- the work practices and procedures to be followed in the use, handling, processing, storage, transportation, cleaning up and disposal of hazardous chemicals.

Information, training and instruction must be provided in such a way that it is easily understood. The amount of detail and extent of training will depend on the nature of the hazards and the complexity of the work procedures and control measures required to minimise the risks.

Records of training provided to workers should be kept, documenting who was trained, when and on what.

1.1.6.10 Emergency preparedness

CRC operators must prepare an effective emergency plan for the workplace. The purpose of the emergency plan is to plan for, and thus minimise the effects of, any dangerous occurrence or near miss at a workplace resulting from handling of hazardous chemicals.

The emergency plan should have provision for notifying appropriate authorities and any neighbours of the CRC that may be affected.

1.1.7 Insurance

The facility operator is to maintain adequate property, public liability, and workers compensation insurance cover for the facility and its operations.

1.1.8 Site appraisal

Upon acceptance of an Environmental Trust grant the CRC operator must provide a copy of the site plan and designs to the EPA's Community Recycling Unit for approval before construction commences. The EPA will appraise each site and provide comment on design plans and designs for the facility and its operations. Prior to the opening of each facility the EPA will provide training for site staff including guidance in conducting risk assessments.

1.1.9 Site layout and access

The site layout should support the safe and smooth flow of traffic through the facility, minimise customer waiting times, reduce the likelihood of congestion, and provide the minimum possible distances that customers need to carry materials they are delivering to the facility.

The facility should have separate entry and exit points for householder vehicles, and accessible parking immediately adjacent to the storage receptacles for materials.

The facility should provide sufficient space for truck and forklift movements including allowance for turning circles. The facility should have enough room to safely and easily move full receptacles into a storage area and to replace them with empty receptacles. It should also allow sufficient area for the loading of full storage receptacles for transport. The layout of the facility should as far as practicable ensure that truck, forklift, and customer vehicle movements do not intersect when materials are being collected. The separation of these site users may also be achieved by suitable operational procedures that are based on a risk management approach.

If a CRC is established at a works depot or other similar site where it is not desirable to allow householders access, consideration could be given to providing a drop-off area just inside the perimeter of the site that is adjacent to an external roadway. In this situation the facility layout must ensure that material storage areas can be secured out of hours.

All facility operators must obtain concept design advice from the EPA which can assist to ensure the proposed layout is operationally sound and conforms to the relevant Australian Standards. The EPA's Community Recycling Unit must approve the initial concept design and the final design. Funding may be withheld or delayed without these approvals.

1.1.10 Opening times

A considerable degree of latitude will be granted to the site host in regard to opening times. However, as a minimum it is expected that the site is supervised during householder access times which should be a minimum of 2 days during the week and 3 hours on some part of the weekend. Ideally operation 7 days per week is preferred to maximize availability and convenience for residents. Consistent and regular opening times are also preferable to encourage use by residents.

Depending on the site it may be necessary to close during periods where the receptacles are being moved or collected for the safety of members of the public and staff. Opening times for each specific centre will be incorporated into the agreement between the EPA and the facility operator.

1.1.11 No charge to householders

All materials accepted under this program are to be accepted at no charge to the householder whilst the EPA is paying the collection and processing costs. An existing facility that currently accepts the targeted materials at a charge to the householder must cease charging to be eligible for support under the CRC program.

1.2 Infrastructure and building requirements

The materials accepted should be stored out of the weather. As a minimum requirement materials are to be stored in a well-ventilated shed consisting of three sides and a roof, on a concrete or bitumen sealed surface, and with sufficient awning overhang on the open side to prevent rain ingress and provide cover for householders unloading. An appropriately designed building may also be used for storage where it has adequate forklift access and ventilation.

1.2.1 Receiving area and roadway surfaces

All surfaces where target materials are to be unloaded from householder vehicles and deposited in the storage receptacles must be sealed to contain inadvertent spills. Road surfaces should be designed and reinforced to withstand the loads applied by repeated use by heavy vehicles such as trucks collecting materials, and forklift movements, without degradation. Drainage in the immediate area should be designed and managed to prevent any spillages from entering waterways. Drainage should also be provided to minimise flooding from heavy rain within the unloading and storage areas, and within the approaches and exits from these areas.

1.2.2 Rain cover

The facility structure should provide protection from the weather, including a covered area where materials are accepted and moved from customers' vehicles to storage receptacles. Where it is intended or likely that the collection vehicle will pass under this area then it must have a minimum height of 5 metres.

1.2.3 Ventilation

Ventilation is a means of maintaining a safe atmosphere by the introduction or recirculation of air by natural, forced or mechanical means. Maintaining a safe atmosphere in the storage and handling area of hazardous chemicals is an important control measure. A CRC building or structure must be provided with adequate natural or mechanical ventilation. Natural ventilation is preferred and can be achieved by providing:

- at least two external sides completely open to the outside atmosphere
- one external side completely open to the outside atmosphere, with no other vents, provided that the distance to and the length of the opposite wall do not exceed the length of the open side
- one external side open to the atmosphere, and vents in one opposite or adjacent wall
- vents in one external wall, provided that such a wall is at least 6m long and the opposite wall is not more than 5m away from it
- vents in opposing walls.

Open or mesh sides with adequate roof overhang are recommended for natural ventilation. If an enclosed shed is to be used for either drop-off of materials and/or storage of full receptacles, vents are to be included at both the top and bottom of the shed walls and should be louvered to provide weather protection.

For guidance on providing ventilation, refer to *AS/NZS 3833:2007 The storage and handling of mixed classes of dangerous goods in packages and intermediate bulk containers*.

The storage of LPG gas cylinders requires unconfined air space, and in most cases locating the receptacle cage external to a building (if used) will be most appropriate.

1.2.4 Arrangement and nominal size of facility

The CRC program targets six material groups (in nine separate storage receptacles).

AS/NZ53833:2007 specifies that incompatible dangerous goods must be segregated. Receptacles used at CRCs should provide adequate segregation. However, as lead acid batteries (corrosive class 5) are usually not placed in a receptacle, they should be segregated from other materials, and in particular from LPG cylinders by a distance of at least 3 metres.

A typical arrangement for the nine storage receptacles is in a straight line including walking space between the receptacles. This would require an unloading length of between 16 and 18 metres. A roofed area of around 70 to 100 square metres is suitable for initial operation of an average size facility. However, the structure or area in which the CRC is located may be larger and may have multiple uses particularly if other materials are accepted.

Nominal dimensions above represent minimum requirements. Centres that serve large population centres may require larger areas than described above.

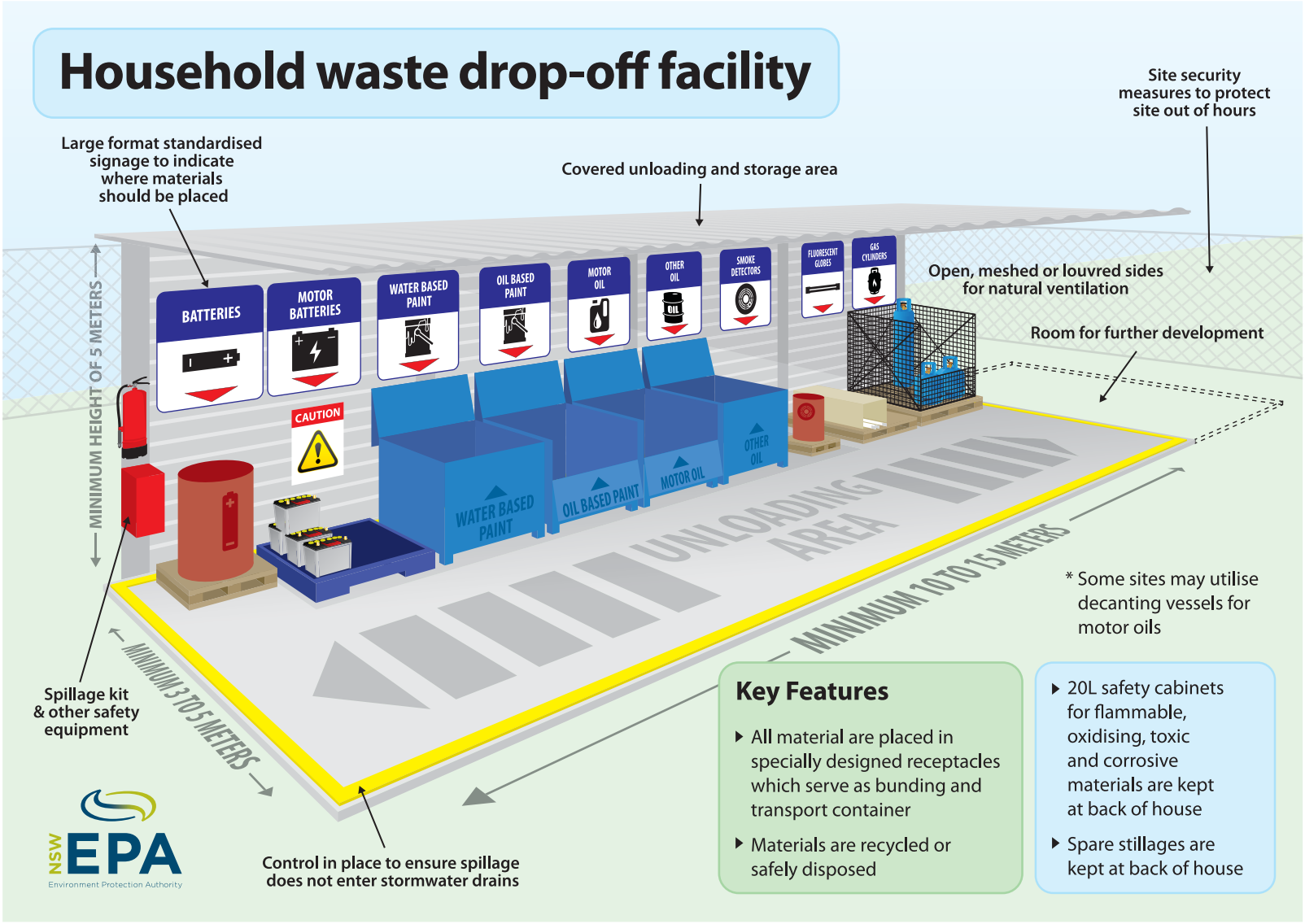
Further guidance on sizing a new CRC is provided in **Appendix 1.1** of this Handbook. An indicative layout of receptacles for the facility is illustrated in **Figure 1.2.4**.

1.2.5 Storage area for full and replacement receptacles

A separate area, or areas, is required for storage of full and replacement storage receptacles as well as safety cabinets for by-catch materials. This area should be secured from the drop-off area by a lockable gate if possible. Storage for the full receptacles requires adequate rain cover whether by roofing or tarpaulin. Storage of full and empty receptacles (also referred to as 'back-of-house') will typically require an area of 6m by 3m, and safety cabinets for by-catch will typically require an area of 6m by 1m.

Sufficient area must be provided to allow for easy movement of storage receptacles by forklift within the unloading and storage areas.

Figure 1.2.4 – Indicative layout for a Community Recycling Centre



1.2.6 Dangerous Goods Safety Cabinets (DGSC)

Irrespective of gate policies and dedicated signage, a small percentage of non-targeted by-catch materials can be expected. Separate dangerous goods safety cabinets compliant with the relevant Australian Standards for flammable, oxidising, toxic and corrosive materials will be provided by the EPA during establishment of the facility.

The DGSC are to be kept in a separate secured area out of sight from the main drop-off area to discourage the delivery of non-target materials, and should not be accessible to members of the public. The cabinets are only to be moved when empty to avoid spills and damage to the cabinet. The cabinets should remain on pallets supplied for ease of movement by forklift if required.

The appropriate primary Australian Standard for Community Recycling Centres – *AS/NZS 3833:2007 The storage and handling of mixed classes of dangerous goods in packages and intermediate bulk containers* has specific requirements relating to the use of cabinets for the storage and handling of mixed classes of dangerous goods. These include requirements relating to the types of substances kept, the maximum quantities to be kept, cabinet construction, cabinet location, and cabinet marking.

Where the quantity of dangerous goods being kept in the cabinet(s) is less than minor storage quantities as defined by AS/NZS 3833:2007, these requirements are advisory but should be implemented at CRCs. **Table 1.2.6**, extracted directly from this standard, outlines the maximum quantities for minor storage. Although the preferred approach to the storage of by-catch at CRCs is that minor storage quantities should not be exceeded, there will be circumstances where these will be exceeded, and these requirements must be met.

Box 1 on page 14 shows the requirements of the standard for minor storage, and Box 2 on page 15 shows the requirements of the standard where the quantities for minor storage are exceeded. These requirements should be considered during the design of the CRC. **Note these requirements are summarised for information here – the full standard should be referenced when designing a CRC.**

Table 1.2.6 – Maximum quantities for minor storage

Description	Quantity: kg or L		
	Packing Group I	Packing Group II	Packing Group III
Total quantity of all dangerous goods	25	250	1,000

Notes:

1. It is permissible to store, at the same time and in the same area, the maximum allowance for each of all the Packing Groups. Refer to Box 3 on page 16 for an explanation and examples of packing groups.
2. Where manufactured product is stored, the quantities of manufactured product may be doubled.
3. The maximum quantity of Class 5.2 dangerous goods (organic peroxides) allowable as minor storage is 10kg or L.
4. For the purpose of determining minor storage quantities Class 2 dangerous goods in retail packages, aerosols, and substances and articles of Class 9 are regarded as Packing Group III.

Arrangement of Dangerous Goods Safety Cabinets (DGSC)

In most instances the total capacity of the DGSC will be less than the requirement for minor storage. Where the total capacity of these cabinets is greater than this, the cabinets are to be arranged as two or more minor stores.

These minor stores must be:

- separated by more than 10m from any other dangerous goods store
- located to ensure there is not more than one minor store per 500m^2 of floor or ground area
- at least 10m apart.

Like types of DGSC are to be kept together.

As an example the following arrangement would be appropriate.

Table 1.2.6.2 – Example of arrangement of DGSCs as two minor stores

	Cabinet Capacity	Number of Cabinets	Total Capacity
Minor Store 1			
Flammable Liquid	250L	2	500L
Toxic	250L	1	250L
Total			**750L**
Minor Store 2			
Oxidising Agents	250L	1	250L
Corrosives – Acids	250L	1	250L
Corrosives – Alkalis	250L	1	250L
Total			**750L**

Box 1 – Summary of requirements of AS/NZS 3833:2007 in relation to minor storage

Classification as minor storage

Less than or equal to maximum quantities for minor storage **(Table 1.2.6)**

Separated by more than 10m from any other dangerous goods store.

Not more than one minor store per 500m^2 of floor or ground area.

Minor stores shall be at least 10m apart.

Precautions applying to minor storage

Any materials that are incompatible or might react dangerously, are segregated.

Storage areas shall be away from heating and ignition sources.

Storage areas shall be provided with adequate natural or mechanical ventilation.

Packages shall be kept closed when not in use, and only opened in a well-ventilated area. If their contents are flammable, packages shall be kept away from potential ignition sources.

Appropriate spill control measures shall be provided where packages are opened and their contents transferred.

Any spills or leaks shall be cleaned up immediately and disposed of appropriately in accordance with Section 10 of this handbook. Contaminated, spilled or leaked material shall not be returned to original packaging, except for disposal where it is known that this will not increase the risk.

Dangerous goods shall not be stored or handled where they could hinder escape from a building in the event of fire.

Persons who handle dangerous goods are informed and aware of the hazards involved.

Packages are to be kept in such a manner as to avoid spillage.

Stores are to be kept clear of combustible matter and refuse.

Packages must be kept on surfaces that are resistant to attack by their contents if spilt.

Appropriate personal protective equipment is to be worn by personnel involved in product transfer or clean-up operations.

A fire extinguisher of a suitable type must be installed in each minor store. It should be located so that it is immediately accessible in an emergency, along an exit route.

A supply of water must be available at a nearby location for personal hygiene.

Additional precautions for outdoor minor storage

The ground around the storage area shall be kept clear of combustible vegetation and refuse by at least 3m.

Any potential flow of spillage shall be prevented from reaching any protected place, watercourse or boundary by such means as the use of natural ground slope, or the provision of a diversion channel, kerb or bund.

The store shall be separated from any protected place or property boundary by at least 3m.

Box 2 – Summary of requirements of AS/NZS 3833:2007 in relation to storage in cabinets where minor storage quantities are exceeded

Type of substances kept

Cabinets may be used for the storage of packaged dangerous goods of Classes 3 (Flammable Liquids), 5 (Oxidising Agents), 6.1 (Toxic Materials) and 8 (Corrosive Substances).

Maximum quantities to be kept

Where a storage cabinet is used as a means of segregating a single class within a mixed class store, the maximum quantity of the class kept in the cabinet must not exceed 850kg or L.

Cabinet location

Cabinets must be located so that they do not impede escape in an emergency.

Cabinets having a capacity greater than 250L:

- should only be installed on floors that have direct access from street or ground level;
- shall not be installed in residential or accommodation buildings, commercial buildings, hospitals, aged care buildings or school buildings;
- shall not be placed nearer than 3m to any wall that is common with another room unless that wall is constructed of concrete or masonry to ceiling height or 3m above the top of the cabinet.

The aggregate capacity of cabinets shall be no greater than 850L per 250m^2 of ground floor area, and 250L per 250m^2 on other floors.

Exclusion of ignition sources

There should be no ignition sources within the cabinet. Ignition sources must be excluded from the area outside the cabinet where flammable and dangerous goods are stored. This exclusion area should be to a distance of 3m measured laterally, and from the floor to a height of 1m above any opening in the cabinet, including the door opening.

Cabinet marking

Cabinets must be marked with placards in accordance with Schedule 13 of the NSW Work Health and Safety Regulation 2011, and provided with warning signs as appropriate. **Section 1.3.1.2** provides further information on placarding.

Box 3 – Explanation and examples of Packing Groups (PG)

Substances are assigned to three packing groups in accordance with the degree of danger they present:

- Packing Group I: Substances presenting high danger
- Packing Group II: Substances presenting medium danger
- Packing Group III: Substances presenting low danger.

The Packing Group to which a substance is assigned is indicated in the Dangerous Goods List in Chapter 3.2 of the Australian Dangerous Goods Code.

Note that substances listed in the ADG Code under Classes 1 (Explosives), 2 (Gases) and 7 (Radioactive Materials), Divisions 5.2 (Organic peroxides) and 6.2 (Infectious substances), and other than self-reactive substances of Division 4.1 (Flammable solids, self reactive substances and solid desensitized explosives) are not assigned Packing Groups.

Examples of Packing Group I

Arsenical pesticides (may be PG I or II)	Hydrofluoric acid (> 60% strength)
Hydrogen peroxide (> 60% strength)	Strychnine

Examples of Packing Group II

Acetone (nail polish remover)	Some arsenical pesticides
Methyl ethyl ketone (common solvent)	Hydrofluoric acid (<60% strength)
Hydrogen peroxide (> 60% strength)	Isopropyl alcohol
Lithium batteries	Methanol
Concentrated hydrochloric acid	Petrol

Calcium hypochlorite ('solid pool chlorine'), with > 39% available chlorine

Potassium permanganate crystals or powder

Solid caustic soda (may be a component in drain cleaners)

Some solvent based paints

Sulphuric acid (any concentration except fuming)

Examples of Packing Group III

Some solvent based paints	Lead-acid batteries
Kerosene	Perchloroethylene (dry cleaning liquid)
Ethyl alcohol (<70% strength)	Hydrogen peroxide (8-20% strength)
Metallic mercury	Naphthalene (old-style mothballs)
Dilute hydrochloric acid	Turpentine

Calcium hypochlorite ('solid pool chlorine') with 10-39% available chlorine

1.3 Site control measures

The layout of the facility, signage, storage control measures, and interaction with staff at the facility should work together to ensure that householders are welcomed. Site visitors should clearly understand what materials they can drop-off at the facility and where they should do so, and clearly understand where they can take materials that are not accepted by the facility.

1.3.1 Signage

CRC branded signage must be used at the centre. Artwork for all signage is provided by the EPA and is online at **epa.metrographics.com.au** Contact **recycling.centres@epa.nsw.gov.au** to request an account for access or if you require graphic design support to update and customise your signage.

1.3.1.1 CRC program signage

Entry sign

A CRC branded entry sign which includes opening times and contact details must be installed at the entry gate to the facility. This may be on the roadside or facility gate or both.

Shed sign

A CRC branded sign must be installed on the building. This is a simplified version of the entry sign.

Funding acknowledgement

Signage acknowledging the NSW EPA and Environmental Trust must be installed on the CRC building.

Directional signage

Directional signage has been developed to help users navigate the CRC site and easily locate the CRC. This signage is particularly useful if the CRC is located within a larger waste management site. Please use judgement when selecting which directional signage is appropriate for the site.

If appropriate, arrows showing the direction customer vehicles are to travel to and through the CRC can be painted on the pavement leading to and inside the CRC building.

Material signs

Artwork has been developed for all of the material types that can be collected at the CRC.

Large format icons (1mx1m) are intended to be positioned above each receptacle. The large format signage includes pictorial and text descriptors.

The EPA will provide all artwork in electronic format. Customisable artwork such as the entry sign and any new artwork must be reviewed and approved by the EPA prior to printing and installation. Artwork is also available for many materials that are not targeted by the EPA's household problem wastes program.

1.3.1.2 Hazardous chemicals placarding

Placarding compliant with the NSW Work Health and Safety Regulation 2011 is to be installed at the facility. An outer warning placard, or HAZCHEM sign, is required at the entrance of the facility, and must remain visible when the entry gate is open or closed. Information placards must also be placed where the chemicals are stored. These placards are included on the labels that must be affixed to each storage receptacle as soon as it is brought into usage. On some receptacles the adhesive label is obscured when the receptacle door is open for use. Additional magnetic labels indicating material type should be placed on a visible portion of these types of receptacles when they are in use. More information on placarding can be found in the SafeWork NSW Fact Sheet available at **www.safework.nsw.gov.au/media/publications/health-and-safety/placarding-for-storage-of-hazardous-chemicals**.

Signs must comply with *AS 1216-2006 Class labels for dangerous goods*.

1.3.1.3 Warning signs

The following signs need to be displayed:

- A warning sign to prohibit smoking and to exclude other ignition sources, e.g. **DANGER: NO SMOKING, NO IGNITION SOURCES.**
- A warning sign to restrict entry to the storage area and the dangerous goods storage area as appropriate, e.g. **RESTRICTED AREA, AUTHORISED PERSONNEL ONLY.**
- Warning signs to control customer behaviour, e.g. **LEAVE CHILDREN IN VEHICLE, SWITCH OFF ENGINE, SWITCH OFF MOBILE PHONE.**

These signs must have lettering that contrasts with the background, and be clearly legible from any access point to the CRC. Signs must comply with *AS 1319-1994 Safety signs for the occupational environment.*

1.3.1.4 Signs showing location of safety and personal protective equipment

Signs showing the location of safety equipment including first aid, fire extinguishers, safety shower and eyewash, and personal protective equipment must also be installed in accordance with the relevant Australian Standards.

1.3.2 Storage control measures

All CRC materials delivered to the facility shall be contained by placement in specially designed storage receptacles that are provided by the EPA's collection contractor.

Storage receptacles must be appropriate to the class of material being stored and transported. Receptacles are typically collapsible steel-frame containers with plywood sides, fully welded steel boxes for paint and oils, cages for gas bottles, drums for batteries and smoke detectors and various boxes for fluorescent tubes. Storage receptacles must be approved segregation devices in accordance with the Australian Dangerous Goods (ADG) Code.

Products containing liquids such as used oil and lead acid batteries must be stored in purpose built storage receptacles that provide bunding to an acceptable Australian standard.

Materials accepted (with the exception of used oil when a decanting operation is used) should be stored in their original packages, as brought in by householders. Packages should then be neatly stacked directly into the storage receptacles, so that these receptacles can be picked up for recycling without the need for repacking.

Leaking containers should be over wrapped in a plastic bag before removing from vehicle. Leave the leaking container in the plastic bag and place in the appropriate receptacle.

The number of storage receptacles will be controlled to limit the total volume of materials held on site. This will minimise risks and may remove any need for licence amendments relating to waste storage limits by keeping the quantity of hazardous materials stored at any one time under 5 tonnes.

Householders are required to separate water based and oil based paints by placing them in separate storage receptacles. If unsure of paint type then place in the oil based paint receptacle.

1.3.3 Safety equipment

The following safety equipment must be provided within the CRC:

- Safety shower and eyewash
- Spill response kit
- Fire extinguishers
- Personal protective equipment (PPE)
- First aid equipment and supplies.

Procedures must be implemented to regularly:

- test the operation of the safety shower and eyewash
- check and replenish the first aid equipment and supplies
- check and replenish the PPE
- check and replenish the spill response equipment.

Spill response equipment should include adequate quantities of suitable absorbent materials. This includes a sufficient quantity of resealable waste recovery containers compatible with the substances being kept, marked for emergency use only, and shovels, brooms and scrubbing brushes. Spill response equipment must be located at both the drop-off area and the storage area.

Dry chemical powder type fire extinguishers are appropriate for all types of CRC materials except for cooking oil, for which a wet chemical type is more appropriate. It is the CRC operator's responsibility to ensure this equipment is on hand. Refer to *AS 2444-2001 Portable fire extinguishers and fire blankets – Selection and location* for guidance on the selection and location of fire extinguishers.

1.3.4 Safety and environmental management procedures

1.3.4.1 Safe Work Method Statements

Established processes and documented procedures such as Safe Work Method Statements (SWMSs) or Safe Operating Procedures (SOPs) should be in place to protect the health and safety of customers and staff at the facility, and for managing the impact of the facility on the environment.

These should include procedures and equipment for safe handling of materials (such as Personal Protective Equipment and Safety Data Sheets) and emergency response (such as fire detection and protection, safety shower, spill response kit and first aid equipment).

They should also outline how public and staff safety will be ensured when moving storage receptacles and loading service vehicles.

All staff involved in the operation of the CRC must be trained in the use of the SWMSs and must sign off as having been trained and agreeing to undertake the relevant tasks safely in accordance with the SWMSs.

1.3.4.2 Emergency plan and procedures

An emergency plan must be prepared to minimise the effects of any dangerous occurrence or near miss at a CRC resulting from handling of hazardous chemicals.

When preparing an emergency plan consideration should be given to:

- procedures that include:
  - an effective response to an emergency
  - evacuation procedures
  - notification procedures to advise emergency services organisations at the earliest convenience
  - medical treatment and assistance
  - communication between the person coordinating the emergency response and all persons at the workplace
- the testing of procedures, and how often this will be done
- how relevant workers will be provided with information, training and instruction about implementing the emergency procedures

A comprehensive emergency plan should include:

- a site map showing where hazardous chemicals are stored
- responsibilities of key persons in managing emergencies
- circumstances to activate the plan
- systems for raising the alarm
- estimating the extent of the emergency
- alerting emergency services organisations to the emergency, or a situation with the potential to become a dangerous occurrence
- procedures that account for all people at the workplace
- isolation of the emergency area to prevent entry by non-essential personnel

- roles of on-site emergency response teams (including first aid officers, emergency wardens) in the containment of any spillage
- the requirement for fire-water retention to ensure that contaminated fire-water cannot enter waterways, drains or ground water
- disconnection of power supplies and other energy sources except when required to maintain safety of a critical operation or to run emergency equipment such as fire booster pumps
- prevention of hazardous chemicals or contaminated material of any kind from entering drains or waterways
- provision of relevant information and assistance to the emergency services authority, both in anticipation of emergencies and when they occur
- notification of regulatory authorities, as required by law
- liaison with any neighbours of the CRC, as appropriate
- maintenance of site security throughout the emergency
- provision for dealing with the public and the press
- site rehabilitation requirements.

The extent of emergency procedures required will depend on the size and complexity of the workplace, types and quantities of hazardous chemicals and the processes involved when the goods are in use. As a minimum, emergency procedures should include instructions on:

- how to raise the alarm, including how to contact the appropriate emergency services organisation
- any actions to be taken by workers to ensure the safety and health of all persons at the workplace to minimise risks, damage to property as well as the environment
- any actions to be taken by prescribed persons such as fire wardens, for example how to evacuate the workplace or use fire extinguishers.

To be effective, workers need to be appropriately trained, and any procedures tested. Workers should be consulted and ideally directly involved in the development of emergency procedures.

An effective emergency procedure could be a simple one-page document of dot points detailing evacuation procedures, assembly areas, identifying first aid officers and emergency wardens at the workplace, contact numbers of emergency services organisations (such as fire brigade, police, ambulance, local hospital and regulatory authorities).

Copies of the Emergency Plan must located near the CRC and near the entrance to the facility.

1.3.4.3 Procedures for handling commercial waste

CRCs must not accept commercial or business waste. CRC operators must prepare and implement procedures to identify and separate commercial and business waste from household waste. If the CRC is located at a facility that accepts business or commercial waste under no circumstances should this waste be accepted at the CRC.

1.3.5 Staffing levels and operator qualifications and training

Dedicated full time supervision of the CRC is not necessary. However, it is expected that the CRCs are located within a site where adequate overall supervision is available by appropriately qualified and trained personnel.

In particular, supervision needs to be sufficient to prevent the acceptance of hazardous materials, or waste, dropped off from commercial or business activity, at the CRC.

1.3.6 Security

The sites must be secured to prevent unauthorised access out of hours. In some cases closed circuit surveillance (CCTV) may be warranted to discourage vandalism or illegal dumping.

1.3.7 Materials register

The facility should have processes and procedures in place to ensure an accurate register of materials stored is maintained and kept up-to-date, and is easily accessible in the event of an emergency.

1.3.8 Data management and reporting

Records of the quantities of each type of material accepted under this program are to be kept and reported to EPA using the online reporting system. Reporting is required at minimum on a weekly basis for an overall site capacity update, and every single occasion an EPA designated or EPA authorised third party organisation contractor collects targeted materials. In the case of lead acid batteries and used motor oil that is not collected by the EPA contractor, the means of recycling (processing and end-use) is also to be reported.

1.3.9 Specialist advice

The EPA will establish and maintain contracts for the provision of specialist advice and support arrangements in the event of unknown materials being deposited, and other unexpected or emergency situations. The CRC operator is to ensure their operating and emergency procedures appropriately reference this specialist advice.

1.3.10 Auditing

The EPA may, at its discretion, audit facilities to verify any aspect of facility design or operations including determining quantities of materials accepted, record keeping, acceptance and storage procedures, staffing and supervision, and charging of customers. Facility operators will be expected to provide full access and cooperate with the EPA in undertaking any audit.

1.4 Collection of deposited materials

1.4.1 Contracts to collect and recycle or dispose

The EPA will establish and maintain contracts for the collection and recycling (or disposal) of paint, used oil (other than motor oil), gas cylinders, household batteries, smoke detectors and fluorescent lights, as well as incidental by-catch for the duration of the program.

The facility is required to have a forklift on site to change over receptacles, move receptacles to and from the storage area, and to load the collection contractor's vehicle. If for some reason the forklift is not available, the collection contractor should be notified well in advance of collection.

The facility operator will be responsible for arranging the storage, collection and recycling (not disposal) of lead acid batteries and used motor oil. The facility operator will be required to record the quantities of lead acid batteries and used motor oil received at the facility, and report these quantities to EPA with reports on other materials.

1.4.2 Collection of other materials (facility operator's discretion)

It is envisaged that over time, many of the CRCs will evolve to become community based recycling centres collecting a wider range of targeted materials for recycling, sale, exchange or distribution as the facility operator deems fit.

Where existing facilities are to be adapted to accept materials targeted by this program, facility operators are encouraged at their own discretion to continue their current resource recovery activities and constantly seek higher order outcomes.

1.5 Equipment and handling procedures

The facility should have procedures in place to ensure that customers deliver only materials that are accepted at the site, and that these materials are handled by customers and staff in a safe and secure manner. Materials should be separated into different areas in a manner appropriate for compliant storage and ease of loading for transport.

Refer to **Section 3** of this Handbook (Operating a Community Recycling Centre) for more information on the specific requirements for acceptance and storage of CRC materials, non-targeted by-catch materials, and unknown materials.

Appendix 1.1: CRC sizing and collection frequency

The requirements of the NSW Workplace Health and Safety Regulation 2011 are applicable to CRCs as they store materials considered by the regulation as hazardous chemicals. The regulation establishes requirements for the safe use, storage and handling of hazardous chemicals as classified under the UN Globally Harmonised System of Classification and Labelling of Chemicals (GHS).

Some of the requirements depend on the quantity of hazardous chemicals stored. If more than placard quantities of hazardous chemicals are stored, outer warning placarding and placarding of the particular hazardous chemicals (349 and 350) is required. If more than manifest quantities are stored, provision of a manifest and site plan (347), and notifying the regulator of this situation (348) is required.

Placard and manifest quantities for materials to be stored at CRCs are shown in **Table A1.1(a)** below. The classifications of these materials under the Australian Dangerous Goods Code (ADG) and the GHS are also shown.

Table A1.1(a): Placard and manifest quantities for materials stored at CRCs

Material	ADG Class	GHS classification	Placard quantity	Manifest quantity
Batteries – household				
Lithium ion	9 Miscellaneous	None	No limit	No limit
Other types	None	None	No limit	No limit
Batteries – lead acid[1]	8 Corrosive: packing group II	Skin corrosion: category 1A	250kg or L	2,500kg or L
Fire extinguishers	2.2 Compressed gases	Compressed gas	1,000L	10,000L
Fluorescent tubes and light fittings[2]	6.1 Toxic: packing group II	Acute toxicity – Category 1	250kg	2,500kg
Gas cylinders LPG or propane	2.1 Flammable gas	Flammable gases category 1	200L	5,000L
Oil – heating	3 Flammable liquid: packing group III	Flammable liquid: category 3	1,000	10,000L
Oil – motor and cooking	None	None	No limit	No limit
Paint – water based	None	None	No limit	No limit
Paint – oil based	3 Flammable liquid:	Flammable liquid:		
	Packing group II	Category 2	250L	2,500L
	Packing group III	Category 3	1,000	10,000L

[1] Although fluorescent tubes and fittings packed for retail distribution are not considered dangerous goods, good practice for waste lamps is to consider them as mercury containing waste, or Mercury Compounds N.O.S. which is classified as 6.1 Toxic under the ADG Code.

To ensure that the requirements for the design and operation of CRCs are manageable, the quantity of materials stored should be kept below manifest quantity.

The quantity stored at a particular CRC will depend on the population served and the frequency with which it is emptied. Data from earlier modelling based on similar programs in Victoria and Western Australia have indicated that for a population of 50,000 a CRC can typically be expected to receive the quantities indicated in **Table A1.1(b)**. The sizing and frequency of collection for a particular centre should take into account these quantities and the manifest quantities in **Table A1.1(a)**.

The material of most concern is oil based paint which, if considered as all Packing Group II, would require a collection frequency of every seven weeks for the quantity stored to remain below manifest quantity. The next most frequent collection is required for lead acid batteries, every 17 weeks to remain under manifest quantity.

Table A1.1(b): Typical quantities of materials anticipated at a CRC serving 50,000 people and calculated collection frequency

Material	Quantity tonnes per year	Quantity kilograms per week	Collection frequency weeks
Batteries – household	0.07	2	NA
Batteries – lead	9	150	17
Fire extinguishers	0.14	3	> 52
Fluorescent tubes and light fittings	0.71	15	> 52
Gas cylinders – LPG and propane	3.6	100	> 52
Oil	8.6	200	NA
Paint – water based	30.0	600	NA
Paint – oil based	19.1	400	7
Total	**71.22**	**1,470**	

In the early stages of the program, the smaller number of CRCs will serve populations larger than 50,000, hence the quantities received may be higher, resulting in the need for more frequent collections. The figures provided in **Table A1.1(b)** are therefore a guide, and actual quantities will need to be monitored to determine the appropriate collection frequency.

Consideration of manifest quantities provides a useful guide for the sizing and design of these facilities.

The collection frequency noted above is presented to highlight which materials may trigger the need for a collection. The collection contractor will remove all full (or near full) receptacles at each pick up.

Appendix 1.2: Site establishment checklist

Aspect	Element
1 Location	
1.1 Adjacent activities	• What is located adjacent to the site that may be impacted on or may impact the CRC? • Have appropriate controls been established to manage these impacts?
1.2 Co-located activities	• What other activities are taking place on the site that may be impacted on or may impact the CRC? • Have appropriate controls been established to manage these impacts?
2 Layout	
2.1 Traffic flow	• Does the site provide for safe and smooth flow of traffic, separate entry and exit points, and space for truck and forklift movements?
2.2 Location of receptacles	• Has double handling of materials been minimised and have the receptacles been placed in the most convenient location for customers?
2.3 Space for collection contractor vehicles	• Is there sufficient space for manoeuvring trucks removing materials?
3 Infrastructure	
3.1 Road and building	• Does the facility comprise hard surfacing, rain cover (minimum 5m high if collection vehicles are required to fit underneath), drainage, buildings, storage areas, and appropriate bunding?
3.2 Ventilation	• Is there adequate ventilation provided in both drop-off area and storage areas?
4 Signage	
4.1 Directional	• Have appropriate entry / directional signs been installed?
4.2 Safety	• Have appropriate HAZCHEM / placarding / safety signs been installed?
4.3 Material designation	• Are signs designating material type included and are they the correct size (1m x 1m)? • Are the signs clearly visible to CRC customers and operators?
4.4 Acknowledgement	• Has EPA and Environmental Trust acknowledgement signage been installed?

Aspect	Element
5 Storage	
5.1 Core materials	• Is there a sufficient quantity of appropriate storage receptacles available? • Are separation distances appropriate e.g. gas cylinders separated from lead-acid batteries? • Is sufficient space allocated for storing empty and full storage receptacles?
5.2 Used oil	• If used oil is decanted on site, have appropriate facilities been installed?
5.3 By catch	• Have by-catch cabinets been installed in a suitable location (i.e. not clearly visible to CRC customers)?
6 Safety and emergency response	
6.1 Equipment	• Is appropriate safety equipment and information in place and operational – safety shower, first aid, SDSs, safety procedures? • Is appropriate emergency response equipment (spill kit, fire extinguishers) and procedures in place?
6.2 Procedures	• Are workplace health and safety procedures in place? • Is there an appropriate emergency response plan?
7 Security	
7.1 Infrastructure	• Has appropriate security been provided (fencing, gates, CCTV, locking procedures and times)? • Has a CCTV system been installed, and if so, is it working and monitored appropriately?
8 Staff and training	
8.1 Staff numbers	• Are staffing levels appropriate? • How many staff are available for the CRC?
8.2 Training	• Have all staff completed a site induction, safe work method procedure training, and training by the collection contractor on safe handling of materials and procedures for material collection?
9 Operations	
9.1 Guidance for customers	• Are appropriate arrangements in place to note and direct customers to the CRC (e.g. weighbridge log)? • Are customers required to place their materials in the appropriate receptacles?
9.2 Labelling of receptacles	• Are appropriate arrangements in place to ensure receptacles are labelled correctly at the time they are brought into service?

Appendix 1.2: Site establishment checklist *(continued)*

Aspect	Element
9.3 Separation of paints	• Are appropriate arrangements in place to ensure separation of water based and oil based paint?
9.4 By-catch	• Are appropriate arrangements in place to ensure by-catch is stored in the appropriate cabinets and does not accumulate to unsafe levels?
9.5 Collection truck loading	• Are appropriate arrangements in place to ensure safety during collection of full receptacles and moving full and empty receptacles?
9.6 Housekeeping	• Are appropriate arrangements in place for housekeeping and to ensure the site is kept tidy and well organised?
9.7 Commercial waste	• Are appropriate arrangements in place to keep household wastes separate from commercial and industrial wastes (if commercial and industrial wastes are accepted at the facility)?
10 Collection of materials	
10.1 Core materials	• Are appropriate procedures in place for initiating pickup and subsequent reporting?
10.2 Lead-acid batteries and motor oil	• Are appropriate arrangements in place for recycling lead-acid batteries and motor oil, so that these materials are being collected regularly?
11 Record keeping	
11.1 Online system	• Are appropriate arrangements in place for online reporting and completing consignor / loader checklists?
11.2 Materials register	• Is a register of materials being kept?
11.3 Other records	• Is any other record keeping planned?
12 Insurance	
	• Is appropriate insurance cover in place and have the relevant insurers been advised of the establishment of the CRC for property, public liability, and workers compensation insurance policies?

Appendix 1.3: Site commissioning checklist

Part A – Design standards	Tick
A1. Standard Community Recycling Centre (CRC) signage	
• CRC Entry sign in place including opening times	☐
• NSW EPA and Environmental Trust acknowledgement (one sign can contain both)	☐
• HAZCHEM sign on the front entrance to the CRC site indicating that this is a Placarded site. *Note the minimum requirement is the HAZCHEM sign at the front entrance. If the CRC is distant from the front entrance then a second HAZCHEM sign is recommended at the CRC facility and at all entrances likely to be used by the emergency services. See WorkCover Placarded Site Guide.* 	☐
Each storage receptacle should have the CRC branded icon signage above it in good view (approx. 2m off the ground) to inform the public on material placement	
• Storage receptacle for paint (water based) with branded icon signage	☐
• Storage receptacle for paint (oil based) with branded icon signage	☐
• Storage receptacle for fluoro tubes and globes with branded icon signage	☐
• Storage receptacle for smoke detectors (usually a 10L plastic bucket) with branded icon signage	☐
• Storage receptacle for household batteries (usually a 10L plastic bucket) with branded icon signage	☐
• Storage cages for gas bottles / fire extinguishers with branded icon signage (located outdoors or in a ventilated area and at least 3m from the vehicle battery storage pallet)	☐
• Vehicle battery bunded storage pallets with branded icon signage (not located next to motor oil storage, gas bottles or Dangerous Goods Safety Cabinets)	☐
• Used oil storage or decanting receptacle (both bunded) with branded icon signage	☐
• Signs clearly visible to the public	☐
*Contact EPA CRC Program Unit on **02 9995 6880** for advice if required*	
A2. Structure / Building	
• Security – there is no public access to the storage receptacles when facility is closed e.g. the CRC is fenced / lockable	☐
• Ventilation – there is adequate ventilation in closed buildings (not applicable to open structures) *Requires high level and low level fixed ventilation at each end. This is usually louvres or grills (nominally – 1sqm for each 50sqm floor area)*	☐

Appendix 1.3: Site commissioning checklist *(continued)*

• Paints, batteries, smoke detectors, fluoro globes and tubes are under cover in specified containers	☐
• The area where public vehicles stop to unload is under cover	☐
A3. Safety equipment – close to the CRC	
• Emergency shower – installed and operational with dedicated uninterrupted water supply	☐
• Eye wash on hand (can be combined with the above)	☐
• Spill kit on hand	☐
• PPE on hand	☐
• Fire extinguisher(s) on hand (at CRC) as well as adequate water supply e.g. mains supply, water tank, water cart	☐

Part B – Operational compliance	Tick
B1. Back of house storage	
• Dangerous Goods Safety Cabinets (DGSC) – five cabinets one for each of the following: Flammable, Toxic, Oxidisers, Corrosives (Acids) and Corrosives (Alkalis) with appropriate signage displayed.	☐
• The capacity of the cabinets: _____ *Note, these should not be accessed by the public. They should be close to the drop off area but discretely placed (possibly simply with their backs to the public area or screened). Their security is important. Four of the cabinets are supplied with keyed alike locks. The Oxidisers cabinet is not lockable.*	
• Number of empty receptacles in reserve: _____	
B2. Operations	
• Roads around the CRC have arrows or directional signage to indicate traffic flow to and from the CRC	☐
• The public are required to unload their materials and place directly into the receptacle	☐
• Forklift on site	☐
• If commercial and industrial problem wastes are accepted at the facility there is a system in place to keep the household and commercial quantities separate.	☐
• CRC database operation – site staff demonstrate how they update the status report using their tablet. *The CRC Status Update is required to be entered every Monday morning and whenever one of the full receptacles is swapped for an empty one.*	☐
• Labels and signs are being placed on all receptacles as they are brought into service. *(This includes both the adhesive transportation signage supplied by the contractor, and the CRC program branded magnetic material signs).*	☐

B3. Safety	
• Directional signage provides clear directions to and from the CRC	☐
• Dangerous Goods Safety Cabinets are located in a secure area away from the drop off area and as far as possible out of public view	☐
• Procedures are in place to ensure public and staff safety when moving storage receptacles and loading service vehicles *e.g. the area is closed to public whilst storage receptacles are moved / replaced, or some sites may be able to draw the receptacles away from the traffic flow or swap over using a pallet jack.*	☐
• Storage cages for gas bottles and fire extinguishers are located outdoors or in a ventilated area and not placed next to the vehicle battery storage pallet.	☐
• Vehicle battery storage pallets are not located next to the motor oil decanter / container or gas bottles or DGSC (minimum 3m separation)	☐
• The CRC area is clean and tidy i.e. all materials are contained in an appropriate storage receptacle or DGSC	☐
• There are no trip hazards or other site safety hazards e.g. drop off to unfenced retaining walls	☐
• Training – Operational staff have received training by the collection contractor Date(s): _____ Number of staff who attended _____	☐
• Safe Work Method Statements (SWMS) are prepared for the operation of the CRC and signed by all staff who will use the procedure	☐
• Risk Management Plan in place	☐

2.
Risk Management

Introduction

Risk management process

Example of risk assessment and controls

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Risk management

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2.1 Introduction

CRCs must be designed and operated to temporarily store household problem waste safely until it can be recycled or disposed of appropriately. In order to support this, CRC operators must prepare a Risk Management Plan for their centre. This section of the Handbook outlines the elements of risk management and how they can be applied to the design and operation of CRCs.

Table 2.1 below provides a summary of the primary hazard events associated with the target materials and the controls that should be implemented to reduce the risk associated with these hazards. A more detailed Risk Assessment Checklist, that can be used to assess whether appropriate controls have been implemented at a CRC, is provided at the end of this document.

Appendix 2.1 provides a worksheet that can be used to undertake a full Risk Assessment and prepare a Risk Management Plan for a CRC.

Table 2.1: Primary hazards and controls for CRCs

Hazard event	Material	Possible controls
Container failure or container dropped causing release of: • compressed gas • flammable substance • corrosive substance • toxic substance	All types of materials	• Use intermediate containers • Spill containment • Procedures and training • Do not stack cylinders • Do not stack lead acid batteries
Vehicle collision that causes release of material, mixing of incompatible substances or ignition source	All types of materials	• Store away from traffic • Procedures to control vehicle movements • Awareness and supervision of vehicle movements
Mixing of incompatible substances causing a reaction that releases heat or toxic gases	Lead acid batteries Nickel cadmium batteries	• Use intermediate containers • Store acids and alkalis separately • Procedures and training
Ignition of atmosphere or adjacent fire	Gas cylinders Solvent based paint	• Store gas cylinders separately outdoors • Isolate from ignition sources • Ensure adequate security • Ventilate store for solvent based paint • Separate from possible fire sources • Fire suppression • Emergency response

2.2 Risk management process

CRCs should be designed and operated to achieve the following objectives:

- protect staff and employees
- protect public health
- protect the environment
- facilitate safe collection and storage of materials collected.

Risk management is a structured way of identifying threats and opportunities in achieving these objectives, and responding to them with appropriate controls or management activities.

Risk, in the context of a CRC, is the combination of the likelihood and severity of any harm that hazards associated with the operation of the centre may cause.

These hazards may include:

- leakage from a container exposing staff, members of the public or the environment to toxic or corrosive agents
- fire or explosion caused by leaking material coming into contact with an ignition source
- unintentional mixing of incompatible or reactive substances causing a chemical reaction, explosion or fire, and exposure to unknown substances thus generated.

The key elements of the risk management process are outlined in **Table 2.2** below. This procedure will help identify issues unique to each site.

Table 2.2: Processes to mitigate risks

Step	Key elements
Step 1 **Identify the hazards**	• Examine all activities, work processes, plant, substances, work environment, layout and condition of the site, and any other factors • Identify all of the dangerous goods and their associated hazards • Identify the hazards in or arising from the storage and handling processes • Identify any neighbouring or external hazards
Step 2 **Assess the risks**	• Identify potentially harmful situations that could arise involving each hazard • Identify the potential consequences of these situations • Assess the severity of the consequences • Assess the likelihood of each incident taking place • Determine initial prioritisation of risk • Record results of assessment
Step 3 **Eliminate or reduce the risks**	• Apply the 'hierarchy of control' measures tackling the most serious risks first • Apply Practicability Test (based on feasibility and cost of mitigating risk) • Determine final risk ranking • Eliminate hazards leading to risk where practicable • Determine risk control measures to reduce the risk as far as practicable • Implement risk control measures • Identify record keeping necessary to ensure controls are maintained
Step 4 **Monitor and review the control measures**	• Repeat Steps 1 and 2 to ensure risks are mitigated, and record results of second assessment • Implement additional risk control measures if necessary • Periodically re-do the risk assessment to ensure that safety is maintained and the risk control measures are working, and to respond to changes in work practices, activities and other conditions

2.2.1 Hazard identification

The CRC site operator must identify all hazards associated with the storage and handling of CRC materials.

When identifying hazards, the following activities should be undertaken:

a) consult with employees

b) consult with the suppliers of the dangerous goods, structures, equipment and supplies, or other persons with specific expertise

c) consult commercially available databases on hazardous properties of chemicals

d) walk through and inspect the premises and the methods of storage and handling

e) thoroughly examine plans of the premises, for all buildings and services, including water, gas, electricity, drains, fire services, roads and access ways and engineering drawings of relevant plant

f) discuss risks with occupiers of nearby premises and the emergency services authority

g) consult injury and illness records.

2.2.1.1 Material characteristics

The starting point for identifying the hazards associated with specific household hazardous waste (HHW) is normally the Safety Data Sheet (SDS). Due to the wide range of materials generally found in a CRC it can be helpful to group materials into several different types, depending primarily on the dangerous goods classification, but also taking into consideration toxicological hazards.

The hazards identified are not restricted to those inherent in the primary dangerous goods classification. Equally important are any secondary dangerous goods hazards as indicated by one or more subsidiary risks in addition to the primary Class.

The physical properties of the CRC materials may represent or contribute to hazards in the particular storage and handling situation. These hazards include:

- **flammability –** the potential to burn or explode in air when ignited
- **toxicity –** the immediate, delayed or long term effect on humans or animals through inhalation, skin absorption or ingestion
- **reactivity or sensitivity –** the potential to react with certain conditions, other chemicals, water or other materials
- **instability –** the potential to undergo a spontaneous violent reaction, such as decomposition or polymerization, under certain conditions
- **ecotoxicity –** the effect on the environment, in particular on aquatic life
- **corrosivity –** the slow destruction or damage to materials, particularly packaging and human skin, caused by a chemical reaction
- **radioactivity –** spontaneously emitting harmful radiation.

The materials accepted at CRCs (lead acid and household batteries, used oil, domestic gas cylinders, fluorescent tubes and lamps, and oil based and water based paint) have a range of hazards as indicated by **Table 2.2.1.1** on the following page.

Table 2.2.1.1: Materials accepted by CRCs and their hazards

Material	Hazard
Batteries – lead acid	Corrosive
Batteries – nickel cadmium / other	Environmental hazard / toxic / corrosive
Fluorescent tubes and light fittings	Toxic
Gas Cylinders – other / propane	Compressed gas / flammable
Low level radioactive substances – e.g. smoke detectors	Radioactive / toxic
Paint – oil based	Flammable
Paint – water based	Low level ecotoxic

Provision is to be made for the safe storage of 'by-catch' – the small volume of higher toxicity materials which may be received as orphan or illegally dumped dangerous or hazardous materials. Hazards for these materials are outlined in **Appendix 2.2**. Consideration of these hazards guides appropriate storage and handling of these materials. More details are provided in **Appendix 2.2**.

2.2.1.2 Storage and handling

In addition to the hazards arising from the nature of the CRC materials, other hazards arise from the structures, equipment, systems of work and activities used in the storage and handling of CRC material. Hazards can be identified by considering the following:

- physical components or characteristics that have the potential to cause harm
- systems of work, including normal operating procedures and the possibility of unusual operating conditions, including the possibilities of operator error
- hazardous chemical and physical effects created in a manufacturing or handling process.

Structures, plant or equipment used in the storage or handling of materials could include, but are not limited to:

- a container (including tank or package)
- shelves or racks used for storage
- a spill containment system
- a vehicle used for the transport or transfer of materials such as a forklift
- firefighting or fire protection system.

Systems of work predominately relate to the activities involved in accepting CRC materials from householders, transferring these materials to the storage area, and the regular clearance of the storage area for treatment, recycling or disposal of the materials.

Chemical reactions are those that result in a chemical change in one or more of the goods when they come into contact. Physical processes include dilution, dissolution, abrasion, phase change, leaching and absorption. Consider the following hazards:

- physical reaction from incompatible substances coming into contact (e.g. rapid heating generated by acid mixing with water causing a steam explosion)
- chemical reaction resulting from contact with other substances (e.g. an oxidising agent such as pool chlorine coming into contact with an oil such as brake fluid).

For example, the separation of lead acid batteries from gas cylinders (to limit potential for acid corrosion of the cylinders) is a reasonable design and operational risk control measure.

2.2.1.3 Hazards within the facility site

Some activities, systems of work, structures and equipment that are not directly involved with the storage and handling of household hazardous waste (HHW) materials, may constitute a hazard for storage and handling. Potential external hazard sources include:

- any adjacent dangerous goods storages
- the proximity of other work areas, including on-site offices
- plant used or moved on the site (e.g. ignition sources from engines)
- vehicle movements on the site
- deliveries of other dangerous goods
- transfer of CRC materials between receptacles on the site
- personnel movements in normal and emergency situations
- visitor access, and unauthorised access to the drop-off or storage areas
- portable sources of ignition, generation of static electricity
- fire hazards including buildings, concentrations of combustible material and uncontrolled vegetation
- weather conditions such as temperature extremes, wind, lightning, or rainfall including the potential for flooding.

Employees are commonly aware of these hazards and operators should consult them during the identification process.

2.2.1.4 Hazards external to the facility site

There may also be hazards that are external to the facility site. For example, an adjacent forest with densely grouped eucalypt trees is an external fire risk, because if the trees catch fire, this hazard could impinge on the dangerous goods.

External hazards include:

- any dangerous goods or incompatible substances stored at other adjacent premises or public places
- activities, facilities or installations on neighbouring premises that could create a hazard (e.g. an ignition source)

- the effects of infrastructure such as a road, rail line, airport, pipeline, power line, radio transmitter or telephone tower
- fire hazards, including concentrations of combustible material or uncontrolled vegetation on neighbouring premises or public areas.

2.2.1.5 Past incidents

Incident information, such as past accidents or spills, contributes to knowledge about the hazards and risk. It is important to obtain and consider information about incidents and near misses that involved storage and handling of CRC materials at the facility and at other facilities. This information should include the nature and cause of the incident, the effectiveness of controls and how they could be improved.

2.2.2 Risk assessment

Once the materials and hazards have been identified, the next step in the risk management process is to assess the risks. It is important to gather information about both the likelihood and the severity of incidents, including the review of historical information at the site or similar sites, and estimate the frequency of various activities.

The risk assessment should include:

- identification of the events with hazard potential that could give rise to the risk
- the extent of the risk to people (workers and members of the public), other dangerous goods, other substances, and plant or buildings both on the site and beyond – in terms of the probability of the event occurring and the nature of the harm that would arise from its occurrence
- the extent and type of controls necessary to reduce the risk to a level that is appropriate
- the priority with which controls should be implemented.

Risk assessment to be documented and reviewed regularly: The risk assessment must be documented and records of the assessment kept. The risk assessment should be reviewed at least every five years, but in the case of a CRC at least every two years.

Employees to be consulted as part of the risk assessment: Facility operators must consult with employees involved with the operation of the CRC during the risk assessment process. Operators must ensure employees aware of the results of the assessment and its implications for design and operation of the facility.

2.2.2.1 Events with hazard potential arising from CRCs

The general hazards that can arise from different events are outlined in **Figure 2.2.2.1**. Location-specific hazards arise from the features of the site in which the CRC is located, and must be identified for each specific CRC.

Figure 2.2.2.1: Identification of potential hazard events

Loss of containment

- Customer or operator drops container when removing from vehicle
- Customer or facility vehicle collides with drop-off area
- Customer or facility vehicle collides with storage area
- Disposal contractor vehicle collides with storage area
- Operator drops container when transferring from drop-off area to storage area
- Container fails in drop-off area (e.g. heat from direct sunlight increases vapour pressure)
- Container fails in storage area due to sensitivity of material to environmental conditions or ageing of container
- Violent storm destroys CRC infrastructure.

Mixing of incompatible or reactive substances

- Operator places incompatible substances in same part of the storage area, with subsequent loss of containment of two or more incompatible materials
- Containers of incompatible or reactive substances fail simultaneously and mix.

Fire or explosion

- Ignition source (e.g. customer smoking, static discharge, vehicle ignition or electrical spark) near drop-off area ignites flammable atmosphere
- Ignition source in drop-off or storage area ignites flammable atmosphere
- Fire in neighbouring property ignites storage area
- Fire within facility ignites storage area.

Location-specific hazards

- Other buildings and work areas including site-offices
- Other dangerous goods storages within the facility or in adjacent premises
- Vehicle movements near the drop-off area or storage area
- Activities, facilities or installations on neighbouring premises
- Other infrastructure such as road, rail, pipeline, powerline, or telephone tower
- Occasional work such as repairs or maintenance on the storage area.

2.2.2.2 Calculating the level of risk

Risk assessments may be qualitative, quantitative, or a combination of both. In the case of a CRC, due to the many different types of materials, it is appropriate to use qualitative assessment. In such an assessment the level of risk can be determined by estimates of the likelihood of an incident that will cause harm occurring and the severity or degree of harm arising from the incident.

Table 2.2.2.2(a): Risk level

The risk level can be estimated from the following table.

Likelihood (L)	Severity (S)				
	5 Catastrophic	4 Major	3 Significant	2 Moderate	1 Minor
5 Imminent	Extreme	Extreme	Extreme	High	Medium
4 Certain	Extreme	Extreme	High	Medium	Medium
3 Likely	Extreme	High	Medium	Medium	Low
2 Unlikely	High	Medium	Medium	Low	Very Low
1 Rare	Medium	Medium	Low	Very Low	Very Low

Table 2.2.2.2(b): Priority for action

The level of risk determines the level of priority for action, which can be determined from the following table.

Risk Level	Priority for action
Extreme	Cease operations until additional controls are implemented
High	Take immediate action to implement additional controls
Medium	Action to implement additional controls is a priority
Low	Action to implement additional controls can be scheduled
Very Low	Low priority for action

Table 2.2.2.2(c): Likelihood

Likelihood (L) can be estimated using the following table.

L	Likelihood of occurrence	Indicative frequency
0	Totally eliminated	Zero
1	Rare	Could happen, but improbable, once in a thousand years
2	Unlikely	Remote, could happen but rarely, once in a hundred years
3	Likely	Could happen occasionally, once in ten years
4	Certain	Could happen frequently, less than once a year
5	Imminent	More than once a year

Table 2.2.2.2(d): Severity

The severity (S) of the incident can be estimated using the following table.

S	Extent of consequence	Harm to persons on or off-site	Community damage and disruption	On-site damage	Off-site environmental damage
1	Minor	No harm to persons	No disruption or damage	No damage or interruption to operations	No off-site environmental impact
2	Moderate	Slight injury requiring first aid treatment	No disruption or damage	Slight damage Interruption to operations < 24 hours	Off-site environmental impact but is not significant
3	Significant	Medical treatment with immediate recovery Hospitalisation < 24 hours Restricted or lost work < 4 days	Disruption to essential utilities, road closures or evacuation required	Localised damage Interruption to operations 1–7 days	Some off site environmental impact and damage is significant
4	Major	Multiple injuries Hospitalisation for more than 24 hours Delayed symptoms	Disruption to essential utilities, road closures or evacuation required for some time Some damage to off-site private property, dwellings still inhabitable	Major damage Interruption to operations 1 to 12 weeks	Environmental damage is significant and recovery will take more than 20 years
5	Catastrophic	Fatality or total permanent disability	Disruption to essential utilities, road closures or evacuation required for extensive period Major damage to off-site private property, dwellings uninhabitable	Extensive damage Long-term interruption to operations > 12 weeks	Off-site environmental impact extends to more than 500m radius around incident site Recovery will take more than 20 years

2.2.2.3 Records

A record of the risk assessment should include:

- date
- name of assessor
- names of people who provided specialist advice
- site, storage location, area
- dangerous goods involved
- identified risks
- controls required to reduce risk to an acceptable level
- existing controls in place
- controls that need to be implemented
- basis for decision-making (MSDSs, Australian Standard etc).

2.2.2.4 Changes triggering a review of the risk assessment

The risk assessment should be reviewed when:

- new dangerous goods are introduced
- quantities of dangerous goods at the site change
- goods are moved to a different location on the site
- a process or plant is modified
- new information on hazards or risks becomes available
- monitoring indicates inadequate controls
- an incident has occurred
- there are changes on a neighbouring property
- there are changes to the site, structure or buildings.

2.2.3 Risk control measures

Risk control is the process of determining and implementing appropriate measures to control the risks identified by the risk assessment. Control measures should, wherever possible, first be applied to the highest priority risks, and then to the others in order of priority. Effective risk control may require the application of more than one control measure, and a hierarchy of control measures should be applied.

2.2.3.1 Hierarchy of controls

The preferred sequence of application of risk control measures is:

- elimination
- substitution
- quantity reduction.

Where the above do not achieve the necessary risk reduction, other measures that should be applied are:

- isolation
- engineering controls
- administrative controls
- personal protective clothing and equipment.

2.2.3.2 Possible controls

Examples of other types of control measures that can be applied are listed below.

Elimination and substitution

Elimination and substitution are generally not feasible in the case of a CRC because its purpose is to deal with the targeted materials.

Quantity reduction

The careful management of the quantity of materials in a CRC can be achieved firstly by design of the facility to contain certain quantities of the materials likely to be received, and by ensuring the store is cleared regularly to keep those quantities below design limits.

Isolation

- Separation from other on-site activities, on-site buildings, property on adjoining premises, other dangerous goods, people and other property
- Enclosing a hazardous activity
- Storing incompatible dangerous goods, such as oxidising agents and flammable materials, in buildings that are sufficiently separated that interaction is impossible and an incident in one will not involve the other
- Separation from ignition sources
- Segregation within the storage area.

Table 2.2.3.2: Hierarchy of control measures

	Hierarchy of control measures	Examples	Applied to Community Recycling Centre
Most effective	Elimination	Use a non-harmful substance	Not feasible – the purpose of a CRC is to accept and store dangerous goods
		Eliminate ignition sources in hazardous areas	Prohibit carriage of matches, lighters and spark producing tools in the CRC
	Substitution	Use a less hazardous substance	Not feasible – purpose of CRC is to accept and store dangerous goods
		Use non-sparking tools in a hazardous area	Ensure operations and maintenance procedures specify use of non-sparking tools in CRC
	Quantity reduction	Reduce the inventory of dangerous goods	Design CRC to contain specific quantities of various types of dangerous goods Ensure the CRC is cleared regularly to keep quantities within design limits
	Isolation	Introduce a restricted work area	Locate drop off area away from storage area and restrict access to storage area by trained operators only Prevent access to drop-off area and storage area when moving or loading full storage receptacles
		Separate goods from other hazards	Locate CRC away from other activities on the site
		Segregate incompatible substances	Design and operate CRC with internal segregation for incompatible substances
	Engineering controls	Total enclosure of dangerous goods	Storage of oxidisers in specific purpose cabinets
		Ventilation to eliminate flammable or toxic atmospheres	Installation of natural and mechanical ventilation in the CRC
		Provide spill control such as bunds or sumps	Construct separate bunds for different types of material within the CRC
		Install detection systems and alarms for fire or hazardous atmospheres	Include an appropriate fire detection system within the CRC
	Administrative controls	Procedures, training, emergency plans, signs, placarding	Implement these for the operation of the CRC as appropriate
Least effective	Personal protective equipment	Gloves, respirators, safety showers, generally required in addition to other control measures	Implement these for the operation of the CRC as appropriate

Engineering controls

Role of engineering controls

- Ensure the effectiveness and integrity of buildings, plant and equipment
- Contain or suppress dangerous goods e.g. vapours or dusts
- Eliminate or confine processes or plant that may impinge on dangerous goods
- Protect dangerous goods from environment e.g. rain and sunshine
- Limit the area of contamination in the event of spills or leaks.

Types of engineering controls

- Total or partial enclosure
- Ventilation
- Control devices, alarms or shutdown devices
- Appropriately rated electrical plant and circuitry to minimise ignition hazards
- Spill control to contain the largest foreseeable spill
- Effective barriers between incompatible goods
- Detection systems and alarms for hazardous atmospheres and fires
- Protection from external hazards e.g. crash barriers
- Fire control and suppression systems.

Administrative controls

Operations

- Safe work procedures
- Scheduling transfers at 'low-traffic' times
- Prevent use of storage area as a thoroughfare
- Transfer of packages by trolley rather than by hand
- Keep lids on receptacles when not in immediate use
- Do not open containers for identification
- Control of access to storage and handling areas
- Prohibition of the carriage of matches, lighters or spark producing tools.

Maintenance

- Maintenance procedures that ensure integrity of plant and structures
- Procedures to ensure adequacy of other controls e.g. monitoring of inventory
- Operation of bunding and fire systems
- Procedures for hot work in or around the storage area
- Procedures that ensure drop-off and storage areas are kept tidy.

Spills and emergencies

- Procedures for spill clean up and decontamination
- Procedures for waste disposal including clean-up and contaminated waste
- Emergency procedures.

Signage and labelling

- Labelling of packages and storage
- Signage in storage area
- Instructions and warnings to operators and visitors
- Placarding.

Personal Protective Equipment (PPE)

- Eye protection
- Gloves, aprons, coats and overalls
- Footwear
- Safety showers, eye washes and hygiene facilities
- Respiratory protection
- Hearing protection.

2.3 Example of risk assessment and controls

Table 2.3 on the following page outlines the hazards arising from materials to be accepted at CRCs and possible risk control measures. This table can be used as a prompt to ensure appropriate risk control measures are in place.

Table 2.3: Risk control measures of materials collected

Material	Hazard	Hazard events	L / S / risk	Possible controls
Gas cylinders – other / propane	Compressed gas / flammable	Container failure	3 / 2 / Medium	Emergency response Do not stack cylinders
		Container dropped	3 / 2 / Medium	Procedures and training
		Vehicle collision	2 / 4 / Medium	Store away from traffic
		Ignition of atmosphere	2 / 4 / Medium	Store securely and separately outdoors
		Adjacent fire	3 / 4 / High	Separation / fire suppression / emergency response
			1 / 4 / Medium	
Batteries – lead acid Batteries – nickel cadmium / other	Corrosive	Container failure	3 / 2 / Medium	Use intermediate containers / spill containment
		Container dropped	3 / 2 / Medium	Use intermediate container / procedures and training Do not stack lead acid batteries
		Vehicle collision	2 / 4 / Medium	Store away from traffic
		Mixing of incompatible substances	3 / 4 / High	Use intermediate containers Store acids and alkalis separately / procedures
Used oils	Flammable	Container failure	3 / 2 / Medium	Use intermediate containers / spill containment
		Vehicle collision	2 / 4 / Medium	Store away from traffic
Paint – oil based		Ignition of atmosphere	3 / 4 / High	Isolate from ignition / security / ventilate store
		Adjacent fire	1 / 4 / Medium	Separation / fire suppression / emergency response
Paint – water based	Low level ecotoxic	Container failure	3 / 1 / Low	Use intermediate containers / spill containment
		Container dropped	3 / 1 / Low	Spill containment / emergency response
		Vehicle collision	2 / 2 / Low	Store away from traffic / environment
Low level radioactive substances	Radioactive – toxic	Container failure	3 / 1 / Low	Use intermediate container
Fluorescent tubes and light fittings	Toxic	Container failure	3 / 3 / Medium	Use intermediate containers / spill containment
		Container dropped	2 / 3 / Medium	Use intermediate container
		Vehicle collision	2 / 4 / Medium	Store away from traffic

Appendix 2.1: CRC risk assessment worksheet

Overview

Organisation	
Location / facility	
Name of assessor	
Date of assessment	
Date to be reassessed	
Specialist advice	

Site description	

Hazard identification, assessment and control

Hazards	Hazard events	L x S = Risk	Control measures (Existing or required)
Hazards arising from CRC materials • Compressed gas / flammable • Corrosive • Flammable • Low level ecotoxic • Radioactive – toxic • Toxic			

Hazards	Hazard events	L x S = Risk	Control measures (existing or required)
Hazard arising from storage and handling infrastructure ***Structures, plant or equipment*** used in the storage or handling of materials including: • a container (including tank or package) • storage areas, receptacles, or shelves • a spill containment system • a vehicle used for the transport or transfer of materials such as a forklift • firefighting or fire protection system. ***Systems of work*** involved in accepting CRC materials from householders, transferring these materials to the storage area, and the regular clearance of the storage area for treatment, recycling or disposal of the materials. ***Chemical reactions*** that result in a chemical change in one or more of the goods when they come into contact (e.g. an oxidising agent such as pool chlorine coming into contact with an oil such as brake fluid). ***Physical processes*** include dilution, dissolution, abrasion, phase change, leaching and absorption (e.g. rapid heating generated by acid mixing with water, causing a steam explosion).			

Hazards	Hazard events	L x S = Risk	Control measures (existing or required)
Hazards within the site of the facility • Any adjacent dangerous goods storages • The proximity of other work areas, including on-site offices • Plant used or moved on the site (e.g. ignition sources from engines) • Vehicle movements on the site • Deliveries of other dangerous goods • Transfer of CRC materials between containers on the site • Personnel movements in normal and emergency situations • Visitor access, and unauthorised access to the CRC drop-off or storage areas • Portable sources of ignition, generation of static electricity • Fire hazards including buildings, concentrations of combustible material and uncontrolled vegetation • Weather conditions such as temperature extremes, wind, lightning, or rainfall including the potential for flooding.			

Hazards	Hazard events	L x S = Risk	Control measures (existing or required)
Hazards external to the site of the facility • Any dangerous goods or incompatible substances stored at other adjacent premises or public places • Activities, facilities or installations on neighbouring premises that could create a hazard (e.g. an ignition source) • The effects of infrastructure such as a road, rail line, airport, pipeline, power line, radio transmitter or telephone tower • Fire hazards, including concentrations of combustible material or uncontrolled vegetation on neighbouring premises or public areas.			

Hazards	Hazard events	L x S = Risk	Control measures (existing or required)
Hazards indicated by past incidents Accidents, spills, incidents and near misses that involved storage and handling of CRC materials at the facility and at other facilities. Include details of the nature and cause of the incident, and the effectiveness of controls and how they could be improved.			

Implementation of controls

Organisation	Action by	Action due

Appendix 2.2: By-catch hazards and controls

Provision is to be made at CRCs for the safe storage of 'by-catch' – the small volume of higher toxicity materials which may be received as orphan or illegally dumped dangerous or hazardous materials. Hazards for these materials are outlined below in **Table A2.2(a)**. Consideration of these hazards guides appropriate storage and handling of these materials.

Table A2.2(a): By-catch materials and their hazards

Material	Hazard
Acids	Corrosive
Aerosols – CFC based / flammable	Flammable gas / gas under pressure
Aerosols – flammable, pesticide	Flammable gas / toxic
Alkalis	Corrosive
Arsenic based products	Toxic
Cyanide	Toxic
Engine coolants and glycols	Flammable / possibly reactive
Fire extinguishers – non-halon	Compressed gas / low oxygen atmosphere
Flammable liquids – hydrocarbons, fuels and solvents	Flammable
Flammable solids	Flammable
Flares	Explosive
General household chemical	Low level toxic / corrosive
Heavy metal compounds / mercury – elemental	Toxic
Organic peroxides	Reactive / flammable
Oxidising agents e.g. pool chlorine	Reactive
Paint – other, including isocyanates and amines	Flammable / toxic
Paint – metal based	Toxic
PCB materials	Toxic
Pesticides – non schedule X (non-organochlorine)	Toxic / flammable
Pesticides – schedule X (organochlorine)	Toxic / flammable / ecotoxic
Solvents – halogenated	Toxic

Figure A2.2: Properties of materials to be considered in hazard identification

Physical state

Compressed gas
Gas dissolved under pressure
Liquefied gas
Cryogenic liquid
Mobile liquid
Viscous liquid
Volatile liquid
Liquid with solids in solution or suspension
Finely divided solid
Granular / flaked solid
Caked or undivided solid
Physical state as stored / handled if different from above

Flammability

Flashpoint
Sustains flame
Auto ignition temperature
Flammability range LEL – UEL
Evolves / produces hazardous combustion products
Explosion potential

Toxicity

Exposure limits
Toxicity
Irritant
Carcinogen (known / suspected)
Mutagen
Sensitiser
Biologically active

Reactivity

With air
With water
With other materials (details)
Self reactive

Corrosivity

Skin
Metals
Other materials

Physical properties

Solubility in water
Boiling point / range
Melting point / range
Odour
Electrical conductivity / resistance
Relative density
Pressure as packed
Vapour pressure
Polarity
pH as stored and handled
pH of 1% solution

Instability

Decomposition conditions
Hazardous decomposition effects
Hazardous decomposition products
Polymerisation potential
Hazardous polymerisation effects
Inhibitor required
Phlegmatiser required
Blanketing material required
Self accelerating decomposition
Temperature
Control temperature
Other special controls required

Ecotoxicity

Atmospheric pollutant
Ozone depleter
Odorous
Visual pollutant
Marine pollutant
Ground water pollutant
Soil pollutant
Relevant half life information
Special neutralising / absorbent material requirements

Sensitivity

To shock
To heat
To radiation
To moisture
To contamination with other materials

Table A2.2(b): Hazards arising from by-catch and possible controls

The table below outlines the hazards arising from by-catch materials that could be received at CRCs and possible risk control measures.

Hazard	Material	Hazard events	L / S / Risk	Possible controls
Corrosive	Acids Alkalis	Container failure	3 / 2 / Medium	Use intermediate containers / spill containment
		Container dropped	3 / 2 / Medium	Use intermediate container / procedures and training
		Vehicle collision	2 / 4 / Medium	Store away from traffic
		Shelving corrosion	2 / 2 / Low	Use intermediate containers
		Shelving collapse	2 / 4 / Medium	Do not overload shelves
		Mixing of incompatible substances	3 / 4 / High	Store acids and alkalis separately / procedures
Flammable	Engine coolants and glycols Flammable liquids – hydrocarbons, fuels and solvents Flammable solids	Container failure in store	3 / 2 / Medium	Use intermediate containers / spill containment
		Vehicle collision	2 / 4 / Medium	Store away from traffic
		Shelving collapse	2 / 3 / Medium	Ensure adequate shelving design
		Ignition of atmosphere	3 / 4 / High	Isolate from ignition / security / ventilate store
		Adjacent fire	1 / 4 / Medium	Separation / fire suppression / emergency response
Toxic	Arsenic based products Cyanide Heavy metal compounds / Mercury – elemental Paint – metal based PCB materials Solvents – halogenated	Container failure	3 / 3 / Medium	Use intermediate containers / spill containment
		Container dropped	2 / 3 / Medium	Use intermediate container
		Vehicle collision	2 / 4 / Medium	Store away from traffic
		Shelving collapse	2 / 3 / Medium	Ensure adequate shelving design
Compressed gas / Low oxygen atmosphere	Fire extinguishers – non-halon	Container failure	3 / 2 / Medium	Emergency response
		Container dropped	3 / 2/ Medium	Procedures and training
		Vehicle collision	2 / 4 / Medium	Separation from vehicles
		Shelving collapse	2 / 4 / Medium	Do not stack cylinders

Hazard	Material	Hazard events	L / S / Risk	Possible controls
Explosive	Flares	Explosion and fire	2 / 3 / Medium	Store in segregation device
Flammable / toxic	Paint – other, including isocyanates and amines	Container failure in store	3 / 2 / Medium	Use intermediate containers / spill containment
		Vehicle collision	2 / 5 / High	Store away from traffic
		Shelving collapse	2 / 3 / Medium	Ensure adequate shelving design
		Ignition of atmosphere	3 / 4 / High	Isolate from ignition / security / ventilate store
		Adjacent fire	1 / 4 / Medium	Separation / fire suppression / emergency response
Flammable gas	Aerosols – CFC based / flammable	Container failure	3 / 1 / Low	Emergency response
		Ignition of atmosphere	3 / 4 / High	Isolate from ignition / ventilate store
		Adjacent fire	1 / 4 / Medium	Separation / fire suppression / emergency response
Flammable gas / toxic	Aerosols – flammable, pesticide	Container failure	3 / 1 / Low	Emergency response
		Ignition of atmosphere	3 / 4 / High	Isolate from ignition / ventilate store
		Adjacent fire	1 / 4 / Medium	Separation / fire suppression / emergency response
Low level toxic / corrosive	General household chemical	Container failure	3 / 1 / Low	Use intermediate containers / spill containment
		Container dropped	3 / 1 / Low	Spill containment / emergency response
		Vehicle collision	2 / 2 / Low	Store away from traffic / environment
		Shelving collapse	2 / 1 / Very low	Ensure adequate shelving design
		Shelving corrosion	2 / 1 / Very low	Use intermediate containers
		Mixing of incompatible substances	2 / 2 / Low	Store acids and alkalis separately
Reactive	Oxidising agents e.g. pool chlorine	Container failure	3 / 3 / Medium	Use separate cabinet with internal bunding
		Container dropped	3 / 3 / Medium	Use separate cabinet with internal bunding
		Vehicle collision	2 / 4 / Medium	Separate store from traffic
		Mixing of incompatible substances	3 / 4 / High	Use separate cabinet / operating procedures

Hazard	Material	Hazard events	L / S / Risk	Possible controls
Reactive / flammable	Organic peroxides	Container failure	3 / 3 / Medium	Use separate cabinet with internal bunding
		Container dropped	3 / 3 / Medium	Use separate cabinet with internal bunding
		Vehicle collision	2 / 4 / Medium	Separate store from traffic
		Mixing of incompatible substances	3 / 4 / High	Use separate cabinet / operating procedures
		Ignition of materials	2 / 4 / Medium	Isolate from ignition
		Adjacent fire	1 / 4 / Medium	Separation / fire suppression / emergency response
Toxic / flammable	Pesticides – non schedule X (non-organochlorine)	Container failure	3 / 3 / Medium	Use intermediate containers / spill containment
		Container dropped	2 / 3 / Medium	Use intermediate container
		Vehicle collision	2 / 4 / Medium	Store away from traffic
		Shelving collapse	2 / 3 / Medium	Ensure adequate shelving design
		Ignition of atmosphere	2 / 4 / Medium	Isolate from ignition / ventilate store
		Adjacent fire	1 / 4 / Medium	Separation / fire suppression / emergency response
Toxic / flammable / ecotoxic	Pesticides – schedule X (organochlorine)	Container failure	3 / 3 / Medium	Use intermediate containers / spill containment
		Container dropped	2 / 3 / Medium	Use intermediate container
		Vehicle collision	2 / 4 / Medium	Store away from traffic / environment
		Shelving collapse	2 / 3 / Medium	Ensure adequate shelving design
		Ignition of atmosphere	2 / 4 / Medium	Isolate from ignition / ventilate store
		Adjacent fire	1 / 4 / Medium	Separation / fire suppression / emergency response

3.
Operating a Community Recycling Centre

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Operating a Community Recycling Centre

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3.1 Introduction

CRCs are designed and operated to temporarily store household problem wastes safely until they can be recycled or disposed. To support this, CRC operators are required to ensure processes and documented procedures are in place to protect the health and safety of customers and staff at the facility, and for managing the impact of the facility on the environment. This includes having procedures for safe handling of materials, and emergency response.

This section of the Handbook provides core elements of procedures for this purpose that can be used by CRC operators as a resource to update their own existing procedures.

3.1.1 Objectives

The objectives of the procedures are to:

- protect staff and employees
- protect public health
- protect the environment
- facilitate safe disposal or reuse.

Due to the different nature and type of materials that may be received at a CRC, it is important that strict procedures be followed to reduce the risk of substance exposure to employees and members of the public who have access or proximity to the facility.

3.1.2 Scope

The procedure outlined in this section applies to all persons involved in the operation and use of the CRC.

3.1.3 Hazardous properties of CRC materials

Materials received at a CRC may have the following hazardous properties:

- **flammability –** the potential to burn or explode in air when ignited
- **instability –** the potential to undergo a spontaneous violent reaction, such as decomposition or polymerization, under certain conditions
- **reactivity –** the potential to react with certain other chemicals, with water or other materials
- **toxicity –** the immediate, delayed or long term effect on humans or animals through inhalation, skin absorption or ingestion
- **ecotoxicity –** the effect on the environment, in particular on aquatic life
- **corrosivity –** to other materials, in particular packaging, or human skin
- **radioactivity –** spontaneously emitting harmful radiation.

Table 3.1.3: CRC materials have a range of hazardous properties as indicated by the table below.

Material	Hazard
Car batteries	Corrosive
Batteries – nickel cadmium / other	Environmental hazard / toxic / corrosive
Fluorescent tubes and light fittings	Toxic
Gas Cylinders – other / propane	Compressed gas / flammable
Low level radioactive substances – e.g. smoke detectors	Radioactive – toxic
Used oils	Combustible / flammable
Paint – oil based	Flammable
Paint – water based	Low level ecotoxic

Some of the hazards arising from the operation of a CRC therefore include:

- leakage from a container exposing staff, members of the public, or the environment to toxic or corrosive agents
- fire or explosion caused by leaking material coming into contact with an ignition source
- unintentional mixing of incompatible or reactive substances causing a chemical reaction, explosion or fire, and exposure to unknown substances thus generated.

3.2 Public safety

CRCs aim to make it easy for householders to manage their problem waste. A well-managed facility ensures user and operator safety, minimises waste spillage and ensures safe traffic management flow.

The following requirements are to ensure the safety of members of the public, including those who may live near the site, those who are visiting the site for other purposes, and customers who are bringing CRC materials to the site.

Minimum requirements:

- signage at the facility should instruct customers to the drop-off point and advise them where to deposit the respective materials
- signage and the operator should direct customers that children, if present, should remain in the vehicle
- members of the public are not to remove any materials from the drop-off area or any ancillary storage areas
- members of the public are not to enter any ancillary storage area
- members of the public are not to smoke or to use a mobile phone while within the drop-off area (either inside or outside their vehicle), and this should be clearly advised by appropriate signage
- the facility supervisor or manager should be advised of all spills or loss of containment immediately, and appropriate spill and/or emergency response procedures initiated. These should include notification of appropriate authorities and members of the public on and surrounding the site if necessary.

3.3 Workplace health and safety

3.3.1 Risk management

Facility operators need to complete a risk assessment to identify hazards and risks, and implement appropriate controls to ensure the health and safety of workers involved in the operation of CRCs.

Refer to **Section 2** – Risk Management of this Handbook for more guidance on potential hazards, risks and controls associated with the operation of CRCs.

3.3.2 Labelling

Facility operators must ensure that labels appropriate to the material being stored in a particular receptacle are affixed to the receptacle as soon as it is brought into service. These labels will correctly designate the receptacle both for storage and for transport of the material.

The collection contractor supplies both adhesive and magnetic labels for receptacles of CRC materials. CRC operators must ensure these labels are stored safely and available for use as required.

Correct labelling of receptacles as soon as they are brought into service must be included in the SWMSs or SOPs for the CRC. Operations staff at the CRC must be trained in correct labelling procedures.

3.3.3 Safe work method statements

Facility operators need to prepare safe work method statements (SWMSs), also known as safe work procedures or job safety assessments, specifically for the tasks involved in the operation of CRCs. These are to be in addition to any other SWMSs by which the facility operates.

All staff involved in the operation of the CRC must be trained in the use of the SWMSs, sign off as having been trained and agree to undertake the relevant tasks safely in accordance with the SWMSs.

3.3.4 Personal protective equipment

3.3.4.1 Acceptance and storage

The following items of Personal Protective Equipment (PPE) must be worn by operators when unloading materials or moving them between storage receptacles in the drop-off area:

- eye protection – safety glasses
- gloves – in chloroprene or nitrile rubber
- heavy-duty, chemical resistant footwear with slip reducing soles and steel caps.

Refer to the procedures provided in the collection contractor's training package for more information on appropriate PPE and its use for handling CRC materials.

3.3.4.2 Spill response

In the event of a leak or spill the following items may be required and should be stored in a location quickly and easily accessible to the drop-off and storage area:

- coverall suit
- chemical resistant face shield
- chemical resistant boots.

3.3.4.3 Maintenance of PPE

PPE should be kept separate from normal clothing. After use, all PPE should be maintained and cleaned in accordance with the manufacturer's instructions and the relevant Australian Standard.

3.4 Acceptance and storage

Householders should deposit target materials directly into appropriate designated receptacles. Householders attempting to drop off non-target items such as hazardous toxic chemicals should be asked to retain them and referred to the next Household Chemical CleanOut event.

Waste from commercial sources must not be accepted at the CRC

Problem wastes and hazardous wastes from commercial and industrial sources must not be accepted at the CRC. If commercial and industrial waste is brought to the CRC, the facility operator must make their own arrangements for the acceptance, storage, transport and disposal of these wastes. If problem and hazardous wastes from commercial and industrial sources are accepted, the facility operator must also make appropriate arrangements to ensure that they are kept completely separate from the CRC materials. These arrangements will be audited.

3.4.1 Notification of arrival of CRC materials

The facility should establish a way in which relevant operators can be made aware that a customer is delivering CRC materials. For example, where staff are present in a gatehouse or weighbridge at the entrance to the facility they should ask customers if they are delivering CRC materials and if so advise the relevant operator.

At the time a customer enters the facility they should be asked what CRC materials they are carrying, if the containers all have lids, and if any of them are leaking. The customer must be informed that containers without lids, or that are leaking, cannot be accepted. If any of the materials they are carrying cannot be accepted, the customer must be informed of where they could be taken (e.g. a mobile collection event or alternative facility).

3.4.2 Unloading

The customer should remove containers from their vehicle and place them directly into the designated storage receptacle (e.g. box, cage, pallet). These receptacles will be identified with large format standard signage with a minimum size of 1m x 1m.

Once the materials are safely unloaded the customer should be directed to leave the drop-off area immediately. Under no circumstances should intermediate storage areas be used with a view for later separation as these areas are uncontrolled and materials are uncontained.

3.4.3 Storage of CRC materials

Refer to the procedures provided in the collection contractor's training package for specific information on handling CRC materials safely. This is provided to all staff who complete on site CRC training.

CRC materials are to be stored in the appropriate receptacle into which they are placed when they are unloaded from customer vehicles. Materials should be placed into the correct receptacle immediately. Materials must not be stored for later sorting. Direct placement will reduce the risk of spills and accidents.

Labels for the storage receptacles are provided by the collection contractor when these receptacles are delivered to the CRC. These labels include information necessary to comply with the *Work Health and Safety Act* and Regulation 2011 for storage and transport of dangerous goods and hazardous materials. A label appropriate to the type of receptacle and material to be stored in it must be affixed to the receptacle as soon as it is brought into service. In addition, a program-branded magnetic sign of the material type can be affixed to the receptacle to help customers sort their materials correctly.

More information on acceptance and storage of each specific CRC material is provided below.

3.4.3.1 Paint

Two streams of paint will be collected as part of this program.

Water based paint

Water based paint will be the highest volume material collected. Storage receptacles must be presented to householders in a manner that ensures separation of oil based from water based paint. Water based and oil based paints are readily identified by manufacturers' labels on the cans. Householders need to place their cans of paint directly into the storage receptacles thus eliminating the need for second handling.

Oil (solvent based) paint

Oil paint, lacquers, epoxies and other miscellaneous paint products (not including metal-containing paint, see below) are to be placed in a similar well-marked storage receptacle by the householder. By separating the water based paint, a large proportion of material collected can be classified and treated as non-flammable.

Other paint

Small quantities of metal based paint (e.g. lead, zinc) may be received at the facility. This material is considered toxic and should be separated into the by-catch stream (see **Section 3.4.4** on the following page).

Aerosol paint

Paint in aerosol cans must be stored in a receptacle that allows appropriate ventilation, but that also fully contains the aerosol cans in case they explode. More guidance is provided in **Section 3.4.3.6**.

3.4.3.2 Used Oils

Two streams of oil will be collected as part of this program – motor oil and other oil.

Motor oil

As used motor oils represent a valuable resource, most facility operators have their own arrangements with recycling contractors for collecting and being reimbursed for it. While used motor oil forms a part of the CRC program and is allocated space at a CRC, it is not collected by the EPA CRC collection contractor.

Motor oil may be decanted by customers into dedicated vessels. This is common practice at many existing sites that become CRCs. In this situation 240 litre bins or similar are provided to deposit the empty delivery containers (if the householder chooses to forfeit them). If a decanting vessel is not provided then the motor oil shall be placed, in the original packaging, into a storage receptacle (provided either by the facility operator or the contractor they engage to collect used motor oil).

Other oil

Other oil such as cooking, heating and transmission oils should be placed into the appropriate storage receptacles in the container in which they are delivered to the facility, and the delivery container forfeited by the householder. Other oils will generally be collected by the collection contractor, unless particular arrangements have been made by the facility operator. Heating oil is actually kerosene and should be stored in the Flammables Dangerous Goods Safety Cabinet.

3.4.3.3 Gas cylinders

The collection contractor will provide transportable cages for gas cylinders. Householders should place their cylinders directly into the cages with no further handling or processing on site. The cylinder valve should be closed when a cylinder is placed in a cage.

SafeWork NSW recommends that CRC operators test gas cylinders for leaks using a simple method like spraying the valve area with a mixture of water and mild detergent and looking for any bubbles. If a leak is detected, the valve can be tightened. If the leak continues the cylinder should be marked, placed in a suitably ventilated area and the collection contractor notified.

Typically two types of cages are used. For standard size bottles a three shelf cage (with door) will be used, and for longer bottles an open top cage will be used. Once the cages are near full the facility operator shall notify the collection contractor to remove the cage and replace it with an empty one.

3.4.3.4 Batteries

Two streams of household batteries will be collected as part of this program.

Lead acid batteries

As the lead inside a lead acid battery represents a valuable, facility operators have their own arrangements with recycling contractors for collecting used lead acid batteries and being reimbursed for them. While lead acid batteries form a part of the CRC program and are allocated space at a CRC, they are not collected by the EPA CRC collection contractor.

Lead acid batteries are to be placed by householders directly onto bunded pallets (provided either by the facility operator or by the contractor they engage to collect them).

Note: as lead acid batteries provide a feasible ignition source it is recommended that the bunded pallet be positioned at the opposite end of the drop-off area to the gas bottle cage, and kept away from oil based paint and used oil.

Household batteries

These are generally single use or rechargeable batteries of several types, such as zinc carbon (the most common), alkaline, nickel cadmium, nickel hydride, mercury and lithium. These are stored at a CRC in purpose-built containers provided by the EPA's collection contractor. It is preferable to separate batteries of different types into individual containers at a CRC, as this removes the need for the contractor to sort through them after they are collected. Special attention must be paid to lithium batteries, which contain certain hazardous properties, as described below.

Lithium ion and lithium metal cells and batteries, and equipment containing these, must be prepared for transport (for disposal and recycling) in accordance with packing instruction P909 of the Australian Dangerous Good Code (Current version is 7.4). Receptacles must be marked 'LITHIUM BATTERIES FOR DISPOSAL' or 'LITHIUM BATTERIES FOR RECYCLING'. The collection contractor will supply labels, receptacles and plastic liners appropriate to this purpose. The CRC operator must line the battery receptacle with the plastic liner prior to its use.

In addition, lithium batteries must be packed to prevent short circuits and the dangerous evolution of heat. This could include, but is not limited to:

- individual protection of the battery terminals, or
- inner packaging to prevent contact between cells and batteries, or
- the use of a non-conductive and non-combustible cushioning material to fill empty space between the cells or batteries in the packaging.

Lithium batteries must also be secured within the outer packaging to prevent excessive movement during transport (e.g. by using a non-combustible and non-conductive cushioning material or through the use of a tightly closed plastic bag).

3.4.3.5 Fluorescent tubes

Fluorescent tubes and globes will be placed in various receptacles designed to minimise breakage and prevent the release of mercury to the environment during storage, handling and transport. The collection contractor will provide these receptacles (e.g. boxes for tubes, bins for globes).

Procedures for the safe handling of fluorescent tubes and globes need to be included in the facility operating procedures and care needs to be exercised at all times to prevent breakage of tubes and globes.

3.4.3.6 Aerosols

Aerosol cans must be stored in a receptacle that allows appropriate ventilation, but that also fully contains the aerosol cans in case they explode. The collection contractor will provide a drum with a ventilated lid for the storage of aerosols.

The lid of the drum must be kept secure, and only opened by a CRC operator when placing aerosols in the drum. Customers are not to open the drum.

Where CRCs are not constantly staffed by a CRC operator, customers can place aerosols in the fire extinguisher cage. They can then be transferred to the drum by a CRC operator. This should take place each day the CRC is open, prior to the end of the day.

3.4.4 Storage of by-catch materials

Irrespective of gate policies and dedicated signage, a small percentage of non-targeted by-catch materials can be expected. Separate dangerous goods safety cabinets (DGSC) compliant with the relevant Australian Standards for flammable, oxidising, toxic and corrosive materials will be provided by the EPA during establishment of the facility.

The procedures for sizing and placement of DGSC are outlined in detail in **Section 1.2.6** of this Handbook.

The facility operator is to ensure that the drop-off area is inspected regularly, and that any containers of by-catch materials are placed in relevant cabinets based on the safety symbol on the container's label.

The facility operator must report the status (percentage full) of each of these cabinets to the EPA using the online reporting system. This is reported on the status screens when a change of status has occurred, for example, when a receptacle of core material is changed over or when a large volume of by-catch is received.

Refer to the procedure provided in the collection contractor's training package for more information on sorting by-catch materials into the appropriate cabinet.

Where more than one cabinet is used for a particular type of by-catch the facility operator should fill one cabinet first, then the others in succession, and report the percentage full status considering the capacity of all the cabinets. For example, where two 250L cabinets are used for flammable liquids, if one cabinet is half full, and the other cabinet empty, the percentage full status should be reported as 25%.

The EPA CRC collection contractor shall empty the cabinets at the same time as the target materials.

3.4.5 Handling of unknowns

Wherever possible the facility operator should prevent the deposit of unknown materials at the facility. Containers are not to be opened on site by either facility staff or householders for the purpose of identification.

Where acceptance cannot be prevented, the facility operator is to immediately seek specialist advice from the collection contractor. A photograph of the container should be emailed to the collection contractor with a request for advice as to how the container should be stored. Refer to the collection contractor's contact information at the front of this Handbook for the relevant email address. Once the response is received, the container should be placed in a resealable container suitable as a segregation device (e.g. a bucket or drum) appropriate to the material, labelled (e.g. with the material designation written on an adhesive label affixed to the container) and placed in the appropriate receptacle or DGSC. Where the material cannot be identified either through the provision of specialist advice, it should be placed in the Toxic DGSC.

A supply of overpackings suitable as segregation devices will be provided by the collection contractor.

3.4.6 Handling of containers that are leaking or without lids

Customers must be informed when they arrive at the facility that leaking containers or containers without lids will not be accepted.

If for some reason a container that is leaking or that doesn't have a lid is delivered to the CRC despite best efforts, it must be placed in a resealable container, that is appropriate to the material type and suitable as a segregation device, along with adequate absorbent material. The outer container must then be labelled according to the material type and then placed in the correct storage unit. Target materials should be placed in the appropriate receptacle and by-catch in the appropriate Dangerous Goods Safety Cabinet.

3.5 Transfer and removal

3.5.1 Sorting of materials

The drop-off area should be checked regularly to ensure that materials dropped off by customers visiting the CRC have been placed in the appropriate storage receptacle. The operator should attempt to identify substances in accordance with training. Should any containers need to be moved, the operator should check that containers are intact, not leaking and unlikely to fail, and use appropriate PPE (safety boots, gloves and safety glasses as a minimum) before attempting to do so.

3.5.2 Transfer of full storage receptacles

Full receptacles in the drop-off area must be transferred to the storage area to prevent receptacles from overflowing and causing hazards. The drop-off area should be checked, and cleared if necessary, at least daily. The storage area should remain locked at all times unless an appropriately trained and qualified operator is present. The storage area should only be opened for the purpose of transferring material from drop-off area into the store or for clearance of the material for disposal or recycling.

3.5.3 Removal of materials

The EPA and/or other funding bodies (e.g. product stewardship schemes) will establish and maintain contracts for the collection and recycling (or disposal) of paint, used oil (other than motor oil), gas cylinders, household batteries, smoke detectors and fluorescent lights, as well as incidental by-catch.

The facility operator will be responsible for arranging the collection and recycling (not disposal) of lead acid batteries and used motor oil. The facility operator must ensure that materials are removed with sufficient frequency to prevent the accumulation beyond the capacity of the storage area.

Collection of materials will be scheduled by the collection contractor by reviewing the information provided by the facility operator via the online reporting system (dropoffwaste.com). The facility operator may also request a collection by contacting the collection contractor directly.

Refer to the procedure provided in the collection contractor's training package for detailed information on requesting the collection of accumulated materials.

Once a collection has been scheduled the collection contractor will notify the facility operator by email. Facility operators must ensure that the collection contractor has the appropriate email address, so that the facility operator can prepare the site for a collection. An example of the email is provided as **Figure 3.5.3(a)**.

Prior to the day of the collection the facility operator must ensure the following:

1. All receptacles are packed appropriately
2. Site is accessible for the collection truck with no obstructions
3. All receptacles are labelled with labels supplied by collection contractor
4. All by-catch is sorted and segregated
5. All by-catch is placed in by-catch cabinets
6. A forklift and driver is on hand for the collection date
7. The tablet reporting device is charged so a staff member can enter the required 'Drop Off: Add to Truck' update on collection day.

Figure 3.5.3(a)

Sample notification email for CRC collection

SUBJECT: CRC [location] next collection date: 02/08/2016

TO: [location] CRC,

A truck has now been scheduled to collect materials from [location] Community Recycling Centre on Tuesday 02/08/2016.

Please ensure you add this to your CRC staff work schedule to prepare your site for collection. It is a regulatory requirement that you complete the 'Add to Truck' entry on 'Drop Off' at the time of collection.

A site ready for collection has the following tasks completed:

1. All receptacles are packed appropriately
2. Site is accessible for the collection truck with no obstructions
3. All receptacles are labelled with labels supplied by collection contractor
4. All by-catch is sorted and segregated
5. All by-catch is placed in by-catch cabinets
6. A forklift and driver is on hand for the collection date
7. The tablet is charged so a staff member can enter the required 'Drop Off: Add to Truck' update on collection day.

Contact Toxfree directly if you require any further information.

This email has been automatically generated from the Community Recycling Centres Drop Off System. Do not reply to this email.

Toxfree: **9851 4200** – **i.parkes@toxfree.com.au**

If there are any potential problems with the collection date, contact Toxfree directly.

For Drop Off technical problems, contact the Community Recycling Unit of the NSW EPA: **zac.lambert@epa.nsw.gov.au** or **9995 6346**.

On the day of the collection, the facility operator must ensure that materials are loaded and consigned in accordance with basic requirements for the transport of waste and dangerous goods as indicated by the following procedure. See **Figure 3.5.3(b)**.

Figure 3.5.3(b)

Procedure for loading and consignment of waste and dangerous goods

Step 1	When the contractor's truck arrives, ask to see the Waste Transport Certificate (WTC) number and record this number using the Online Reporting System.
Step 2	Unload empty receptacles and load truck with full receptacles using a forklift (the same number of receptacles should be unloaded and loaded). Record the number of receptacles loaded for each type of CRC material using the Online Reporting System.
Step 3	Open the by-catch safety cabinets and observe that the driver collects stored materials. Before the contractor collects the by-catch materials, enter the 'percentage full' individual cabinet amounts into the online database.
Step 4	Check that the truck has placards (hazardous signs) displayed.
Step 5	Check that the driver has completed the Waste Transport and Dangerous Goods Manifest documentation and signed it.
Step 6	Check that driver has secured the load (straps secured over receptacles and cages).
Step 7	Count the total number of the main receptacles held on site and record these using the Online Reporting System.
Step 8	If the site has a weighbridge, record the total weight of materials removed from the site (gross weight of collection vehicle on exit minus gross weight of collection vehicle on entry).

3.6 Emergency situations

3.6.1 Emergency equipment and procedures

3.6.1.1 Emergency equipment

The following safety equipment is to be provided within the CRC:

- Safety shower and eyewash
- Spill response kit
- Fire extinguishers
- Personal Protective Equipment (PPE)
- First aid equipment and supplies

Procedures to be regularly implemented:

- Test the operation of the safety shower and eyewash
- Check and replenish the first aid equipment and supplies
- Check and replenish the PPE
- Check and replenish the spill response equipment.

Spill response equipment should include: adequate quantities of suitable absorbent materials; a sufficient quantity of resealable waste recovery containers compatible with the substances being kept and marked for emergency use only; and shovels brooms and scrubbing brushes. Spill response equipment must be located at both the drop-off area and the storage area.

Dry chemical powder type fire extinguishers are appropriate for all types of CRC materials except for cooking oil, for which a wet chemical type is more appropriate. It is the CRC operator's responsibility to ensure this equipment is on hand. Refer to *AS 2444-2001 Portable fire extinguishers and fire blankets* – Selection and location for guidance on the selection and location of fire extinguishers.

3.6.1.2 Emergency procedures

Procedures must be prepared for emergency incidents involving the CRC such as fire detection and response, spill response, and customer or staff injury or exposure to hazardous chemicals.

All staff involved in the operation of the CRC must be trained in the use of the emergency procedures, sign off as having been trained and agree to undertake the relevant tasks safely in accordance with these procedures.

Refer to **Section 1.3.4.2** for more information on preparing the Emergency Plan and associated procedures.

3.6.2 Specialist advice

The EPA will establish and maintain contracts for the provision of specialist advice and support arrangements in the event of unknown materials being deposited, and other unexpected or emergency situations. The facility operator is to ensure their operating and emergency procedures appropriately reference this specialist advice.

3.6.3 General spill response

In the event of a spill the following initial response should be followed:

- protect yourself by putting on appropriate PPE as required
- protect others, identifying all people in the vicinity including members of the public, and moving them to the designated evacuation point upwind
- stop the leak (e.g. by turning off the tap, righting the drum or container, or placing in an outer container if possible)
- contain the leak by placing appropriate absorbent or bunding material in place (using the spill kits that are available)
- avoid contact with the spilled material
- advise the site supervisor or manager
- if you consider it necessary seek specialist advice and/or spill response, providing details of the chemical if known
- clean up spill
- complete incident response form as soon as possible after the situation has been contained.

Refer to the procedure provided in the collection contractor's training package for more information on general spill response.

3.6.4 Spill clean up procedures

Clean up spills in the following way:

- Contain the spill using the appropriate absorbent material
- Scoop up and recover spilled material and put into a waste container
- Repeat using appropriate absorbent material as many times as necessary in order to remove as much of the spilled material as is practical
- Clean brush and shovel of absorbent material, also placing this into the waste container
- Label waste container with details of contents if known including the absorbent material used
- Place waste container into the appropriate area of the CRC (e.g. applicable to the spilled material)

3.6.5 First aid

If any discomfort is reported, or if a person has inhaled, ingested or been contaminated with a potentially hazardous or toxic substance:

- remove the person to a safe place prior to treatment, if safe to do so. Before doing this, put on PPE appropriate to the nature of the incident
- send for a designated first aid person and, at the same time, obtain the Safety Data Sheet (SDS) for the toxic substance involved. Summon professional medical assistance without delay. If there is any doubt as to the appropriate first aid procedure contact the Poisons Information Centre (see front section of this Handbook for emergency contact numbers)
- if the person has stopped breathing, ensure a clear airway and apply an appropriate method of artificial resuscitation. Note that the appropriate method depends on the substance involved. Oxygen resuscitation or external air resuscitation may be required
- if the eyes are contaminated, wash thoroughly with water from a low-pressure water source for at least 15 minutes
- remove all contaminated clothing and footwear. Wash contaminated area with soap and lukewarm water
- carry out appropriate first aid treatment and if medical assistance has not been summoned, transport the patient to a hospital or doctor
- send the SDS (if available), product label (if available), and all relevant details of the accident, to the hospital or doctor with the patient
- complete incident response form as soon as possible after the incident in accordance with any WHS procedures.

4.
Induction and training

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Induction and training

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4.1 Induction

When commencing work in the CRC, operators must be instructed in the following:

- general layout of the drop-off and storage areas, in particular the location of safety equipment such as the Safety Data Sheets, PPE, safety shower, eyewash, first aid cabinet and evacuation points
- administrative procedures for controlling risks, such as permit to work systems
- hazardous areas and restrictions on ignition sources, especially vehicles and portable items
- security measures, signs and procedures
- record keeping, in particular recording the quantity of materials currently on hand
- general emergency procedures for the facility, including the Fire Plan and Emergency Evacuation Procedures.

4.2 Training

Staff involved in the operation of the CRC should be trained and demonstrate competency in the following skills:

- storage and handling of CRC materials including identification, keeping incompatible materials separate, and appropriate spill response
- appropriate fitting and use of PPE.

The EPA will arrange for site operator training to be provided. Each and every staff member involved in the operation of the CRC must attend this training.

Refer to the collection contractor's training package for more information on the contents of this training.

Records showing who was trained, when they were trained, and by whom, are to be maintained for the following training:

- Site induction
- Site specific risk register
- Training by the collection contractor
- Training in the use of the Safe Work Method Statements (or equivalent).

Appendix 4.1: Induction checklist

Element	Done?
1. Site orientation	
1.1 Drop-off area features and infrastructure	
1.2 Storage area features and infrastructure	
1.3 Location of documentation and procedures	
1.4 Location of records and record keeping equipment	
1.5 Location of safety equipment and PPE	
1.6 Location of key security features	
1.7 Location of emergency response equipment and procedures	
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4.3.2 Incidents	
4.3.3 Annual reporting	
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4.4.1 Storage receptacle transfer	
4.4.2 Material removal and storage receptacle replacement	
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4.5.1 General spill response	
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4.5.3 Situations requiring specialist advice	

Appendix 4.2: Training register

Induction

Name	Date training completed	Signature

Appendix 4.3: Collection contractor training package (Risk management and safe work procedures)

Name	Date training completed	Signature

5.
Record keeping and reporting

Record keeping

Reporting

Using the online reporting system

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5.1 Record keeping

CRC operators must create and ensure the safe keeping of the following records.

5.1.1 On-site materials register

The facility should have processes and procedures in place to ensure an accurate register of stored materials is maintained and kept up-to-date, and is easily accessible in the event of an emergency.

5.1.2 Risk register

The risk register and associated risk management plan should be updated annually.

5.1.3 Training register

A record of all staff that have been provided with induction and training in the operations of the CRC should be kept on-site (and updated as staff are trained).

5.1.4 Performance self-assessment

5.1.4.1 Site establishment

Immediately after the CRC is commissioned, facility operators need to complete the site establishment checklist provided at the end of **Section 1** of this Handbook (Establishing a Community Recycling Centre) and provide a copy of the completed checklist to the EPA within 30 days of the commencement of operations.

5.1.4.2 Site operations

Periodically (at least annually), facility operators are to undertake a performance self-assessment of operations of the facility, note any issues, and implement any actions required to ensure the facility is operating safely and efficiently.

This performance self assessment is to include the following:

1. Condition of infrastructure:
    - 1.1 roofs and awnings
    - 1.2 road surfaces
    - 1.3 bunding
    - 1.4 security measures
    - 1.5 signage
    - 1.6 safety equipment including spill kits, safety shower, eyewash, first aid supplies, and fire extinguishers
2. Encroachment of surrounding activities
3. Licencing – note any changes in operations that may affect licencing

4. Materials storage and handling
    - 4.1 housekeeping
    - 4.2 material accumulation is managed appropriately
    - 4.3 materials are kept in appropriate receptacles and not on the ground around the receptacles
    - 4.4 separation of water based and oil based paint
    - 4.5 storage of by-catch in appropriate cabinets
    - 4.6 appropriate arrangements are in place for recycling of lead acid batteries and motor oils (including evidence that these are not being sent to landfill)
5. Customer supervision
6. Workplace Health and Safety procedures are understood by staff and implemented.

5.2 Reporting

5.2.1 Material quantities and collection reporting

Records of the quantities of each type of material accepted under this program are to be kept, and reported to the EPA on a weekly basis using the EPA's online reporting system. This should include the number and type of storage receptacles that are removed by the collection contractor for each type of material.

Online reporting must be done on a minimum of a weekly basis. This allows the contractor to plan their next collection in a timely manner, and the EPA to track local demand for the centre. Ongoing reporting of accurate data is a critical CRC task and will influence future program adjustments.

Although removal and disposal of motor oil and lead acid batteries is to be arranged by the facility operator, the quantities received at the facility are to be recorded and reported to EPA with reports on other materials (using dropoffwaste). The means of recycling, this includes processing and end-use must also be reported annually.

5.2.2 Annual reporting

An annual report is to be prepared outlining the following:

1. Total quantities of each type of target material received, including by-catch
2. An outline of other materials received at the facility in the year, including quantities if this information is available
3. A brief commentary on the operation of the facility over the year including highlights of promotional campaigns, customer feedback, staffing, and materials handling
4. A progress report on the implementation of recommendations from any CRC audits undertaken for the facility
5. An outline of any changes to infrastructure or operations undertaken during the year, and a summary or progress report of future plans (including design and construction).
6. A copy of the up-to-date training register for the site
7. A copy of the up-to-date risk register, and risk management plan for the site (as relevant to the infrastructure and operations of the CRC)
8. A copy of the performance self-assessments completed during the year
9. If any incidents have occurred, a list comprising the date, a brief description of the nature of each incident, and any action that has been taken to prevent recurrence of each type of incident.

The annual report is to cover the period 1 July to 30 June, and must be submitted to the EPA by 31 August each year. The EPA will provide the reporting template.

5.2.3 Incident reporting

All incidents, including but not limited to spills, injury to staff or members of the public, or events impacting on the environment are to be captured in the facility operator's incident management system. Any incidents are to be summarised in the annual report to the EPA. Significant incidents should be reported immediately to the local EPA office, the EPA Community Recycling Unit, and any other appropriate agencies.

5.3 Using the online reporting system

There are two required entries that must be completed in the CRC online reporting system, known as dropoffwaste. A CRC status update must be entered every Monday morning and each time a full receptacle is replaced with an empty one. An 'Add to Truck' entry must be completed every time an EPA contractor or Paintback truck collects materials from the CRC. For detailed information about how to use dropoffwaste, contact the Community Recycling Unit to request a user guide.

Dropoffwaste has been designed to work on a touch screen tablet. This allows the operator to walk around the centre and directly upload the status of materials stored, spare storage capacity and volumes dispatched.

Each Monday morning and every time a receptacle of core materials is changed over the operator will log on to dropoffwaste with the CRC user name and password. The CRC 'status update' screen allows reporting of number of full receptacles of core materials and an approximate percentage full of each safety by-catch cabinet. The screen also displays the date the status was last updated and the next scheduled collection date.

From the site menu, the 'Add to Truck pickup' screens will lead the operator to record the Transport Certificate Number (TCN) (this confirms that the transporter is licensed to carry dangerous goods and the load is tracked). The number of receptacles loaded on the truck is recorded on the touch screen. The next phase is to confirm the volumes held in the by-catch cabinets and record that they were collected. The operator will also be asked to confirm that the truck is 'placarded' (hazardous goods signs) front and back, that load has been secured (straps over the receptacles) and that the transport certificate has been signed. These steps cover some of the obligations of a consigner / loader in the Dangerous Goods Code. If the site has a weighbridge installed then the total weight removed from site should also be recorded.

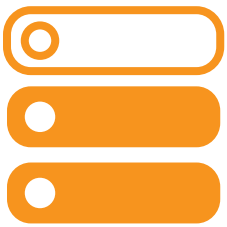
The number of receptacles held on site should then be confirmed and the status screens updated.

Once saved, this data will be accessible by the EPA and the collection contractor.

The contractor will perform detailed weighing and online reporting for each material type from their processing facility. This data will be available to the site manager within a fortnight.

When other materials are dispatched (via other contractors) such as motor oil and lead acid batteries, the total weight, volume or number must be recorded.

6. Establishing and operating mobile services for household problem wastes



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Compliance with dangerous goods transport legislation

Compliance with legislation regarding transport of wastes

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Establishing and operating mobile services for household problem wastes

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6.1 Introduction

The CRC program was designed to become a network of facilities across NSW where householders could take their problem wastes to be safely stored temporarily before collection and recycling or disposal. However, the program also provided interested organisations with the opportunity to propose innovative solutions for the collection and disposal of problem waste. An innovative solution proposed by a number of organisations has been a mobile service.

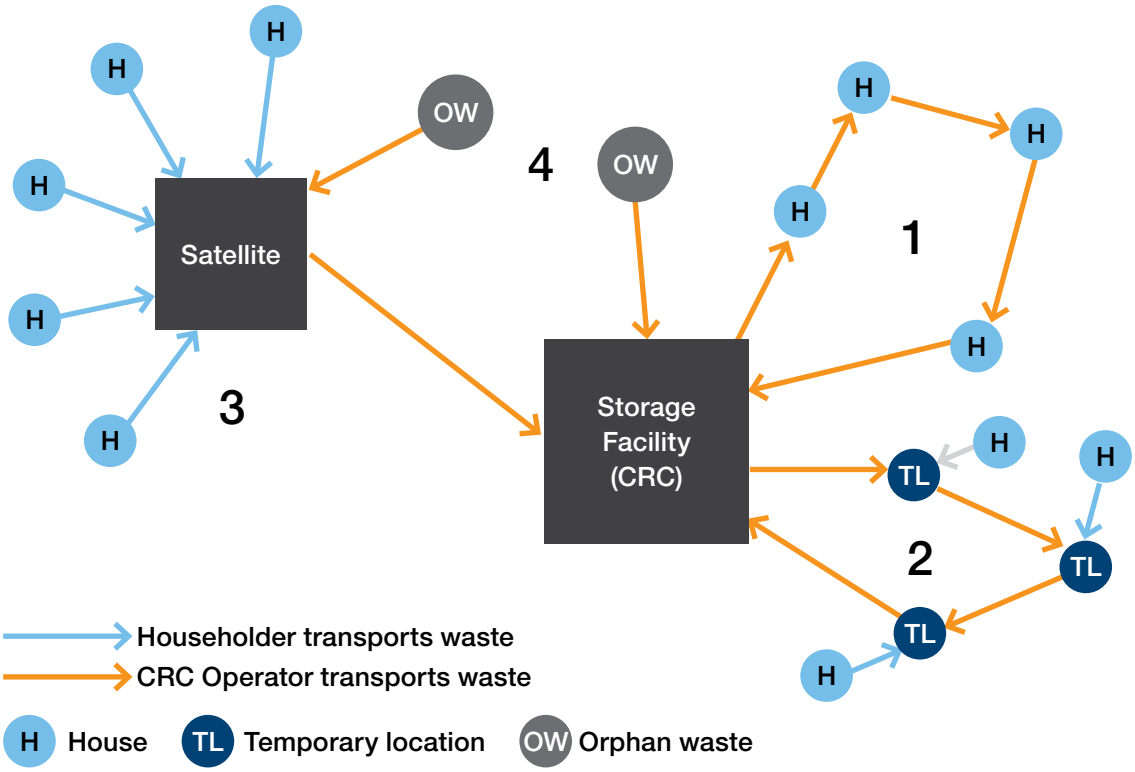
Several variations of mobile services been proposed (see **Figure 6.1** diagram).

1. **Model 1:** The CRC operator collects waste from householders directly. A vehicle or moveable unit (such as a truck or trailer equipped to transport household problem waste) travels to a house where the wastes are accepted from the householder, packed into the vehicle or unit, and then transported to the next house where further problem wastes are collected. The vehicle then travels to a storage facility (usually a standard Community Recycling Centre) where the problem wastes are unloaded from the vehicle and stored until they are collected by the EPA's collection contractor.
2. **Model 2:** The vehicle travels to a location where it remains for a period of time, and is visited by householders. The vehicle may then move to another location where it again remains for a period of time and is visited by householders. After this cycle is repeated any number of times, the vehicle then travels to a storage facility where the problem wastes are unloaded from and stored until they are collected by the EPA's collection contractor.
3. **Model 3:** Householders bring small quantities of problem wastes to one or more small drop-off points or 'satellites'. The CRC operator then packs the problem waste into a vehicle or moveable unit and transports it to a storage facility where the waste is unloaded and stored until it is collected by the EPA's collection contractor.
4. **Model 4:** The CRC operator goes to a location and collects 'orphan waste' – waste that has been left unattended somewhere within the CRC operator's area of operations. The orphan waste is brought back either to a satellite or a storage facility.

Activities that may be involved in providing mobile CRC services include:

1. acceptance of problem waste from householders
2. packing and storage of problem waste into a suitable transport vehicle
3. transport of problem waste to another location
4. intermediate or overnight parking of the transport vehicle
5. unloading of problem waste materials from transport vehicle into a storage facility
6. consolidation into storage receptacles suitable for collection by the collection contractor
7. storage of materials in a facility while they are awaiting collection
8. collection of materials by the EPA's collection contractor.

Figure 6.1 – Different models of mobile CRC services



These activities should be carefully considered to ensure the appropriate design, construction and operation of mobile CRC services. The mobile service and any associated storage facility should protect health of staff and members of the public, and minimise the impact on the environment.

This part of the Handbook outlines important considerations and minimum requirements for providing mobile CRC services. A key feature of providing mobile CRC services is the need to safely transport problem wastes that are dangerous goods, in compliance with legislation, and in accordance with waste tracking requirements.

Sections 6.2 – 6.4 provide guidance on the additional hazards and risks that must be considered in the transport of problem wastes by the CRC Operator, and the appropriate controls and legislative requirements that are generally applicable to these activities. **Sections 6.5** and **6.6** provide specific guidance on establishing and operating mobile CRC services, including the appropriate controls and minimum requirements that should be implemented when providing mobile CRC services as part of the EPA's CRC program.

6.2 Risk management approach

A risk management approach is important in effectively providing mobile CRC services. Organisations considering providing mobile CRC services must prepare an initial functional description of how the service(s) will operate, and then undertake a risk assessment to identify the most appropriate controls to incorporate into its design and operation.

It is recommended that this part of the Handbook be read fully prior to undertaking the risk assessment as it first outlines the legislative requirements applicable to the transport of problem wastes, and then provides specific guidance on the minimum requirements for mobile CRC services. This information will inform and assist in undertaking the risk assessment.

The Worksheet provided as **Appendix 2.1** of this Handbook should be used to complete this risk assessment. An example of a completed risk assessment for a mobile CRC service is provided as **Appendix 6.1**.

6.3 Compliance with dangerous goods transport legislation

In NSW the transport of dangerous goods must comply with the *Dangerous Goods (Road and Rail Transport) Act 2008* and the *Dangerous Goods (Road and Rail Transport) Regulation 2014*. The Regulation extensively references the Australian Dangerous Goods Code (ADG Code), which classifies the substances that are dangerous goods.

In general, a vehicle transporting problem wastes will carry the following substances that are dangerous goods:

- Gas cylinders (Class 2.1 – flammable gas)
- Fire extinguishers (Class 2.2 – compressed gas)
- Lead acid batteries (Class 8 – corrosive substance)
- Smoke detectors (Class 9 – miscellaneous dangerous goods)
- Solvent (oil) based paint (Class 3 – flammable liquid)
- Other by-catch materials as determined by the CRC operator.

Operators of mobile CRC services must therefore comply with the requirements of the Act and Regulation. The NSW EPA regulates the on-road transport of dangerous goods and provides an outline of the requirements at **www.epa.nsw.gov.au/dangerousgoods**. A summary of the requirements relevant to mobile CRC services is provided here.

The Act, Regulation and the ADG Code specify the controls that must be implemented to manage the risks associated with the transport of dangerous goods. Different levels of controls apply to different types of loads, depending on the size of the receptacles (containers in which the dangerous goods are packed) and the total quantity of goods transported. **Table 6.1** outlines the three types of loads defined by the legislation, and the controls applicable to each.

6.3.1 Placard load

A placard load is any load containing an aggregate quantity of dangerous goods of 1,000kg or L or more, or individual receptacles greater than 500L capacity or with a net mass greater than 500kg. Where individual receptacles up to 500L capacity or net mass less than 500kg are transported, a placard load is also any of the following:

- Any quantity of Class 6.2 – infectious substances – Category A
- 10kg or more of Class 6.2 – infectious substances – Category B
- 250L or kg or more where there is any Division 2.1 – flammable gases (not including aerosols) or 2.3 – toxic gases, or any Packing Group I substance.

The legislation requires CRC operators to implement the controls listed in **Table 6.1** that are relevant to the specific design of their mobile CRC service. Many vehicles providing mobile CRC services will be designed to carry more than 250kg or L of gas cylinders, or 1,000kg or L or more of other dangerous goods, in receptacles less than 500L capacity or net mass 500kg. In this case the controls listed in **Table 6.1** for Transport Type 2 would be implemented. However, the CRC program requires CRC operators to implement more stringent controls. Details of what is required are outlined in **Section 6.5** Establishing a mobile CRC service.

Table 6.1: Controls applicable to various types of Dangerous Goods loads

Type of Transport	Controls
1. Less than placard load	Transport documents
2. Placard load (where receptacles have up to 500L capacity or net mass up to 500kg)	Placards (Class Labels) Transport documents Emergency information Emergency information holder Double-sided reflectors 30B Fire extinguisher Driver protective equipment Materials stowed correctly Segregation
3. Placard load (where receptacles have greater than 500L capacity or net mass greater than 500kg)	Placards (EIPs and Class Label) Transport documents Emergency information Emergency information holder Double-sided reflectors Additional fire extinguishers Driver protective equipment Materials stowed correctly Segregation Vehicle and driver to be licensed

6.3.2 Transport documents

Transport documents listing the type and quantity of dangerous goods are required at all times that these goods are transported. The transport document must include the following information in legible English:

1. Consignor's name and telephone number
2. A description of the dangerous goods including:
    - United Nations number (UN number)
    - the proper shipping name, or the name that appears on the packaging or receptacle
    - the dangerous goods Class or Division
    - the subsidiary risk (if applicable)
    - the packing group (if applicable)
    - a description of each receptacle, e.g. 'drum' or 'intermediate bulk container' (IBC).
3. The number of packages or receptacles of each type
4. The 'aggregate quantity' of the goods. This is the total quantity in litres and/or kilograms of each separate type of dangerous good being transported. At all times the aggregate quantities shown must reflect the actual quantities currently on the vehicle. It must be updated as dangerous goods are loaded and unloaded from the vehicle.

The driver of the mobile CRC vehicle must ensure their transport documents are carried in the vehicle's cabin, and make them available to any authorised person and emergency services if requested. If the vehicle is transporting a placard load, transport documents must be carried in the emergency information holder.

A template for a transport document suitable for a mobile CRC vehicle is provided as **Appendix 6.2**.

6.3.3 Placards

Information on placarding requirements is provided in **Section 5.3** of the ADG Code. A mobile CRC vehicle carrying a placard load must be placarded with a Mixed Class Placard as more than one Class or Division will be carried in the load. Placards must be: displayed in a substantially vertical plane and securely fixed to the vehicle; or stencilled onto or printed on to it; or placed securely in a frame that is securely fixed to the mobile CRC vehicle. The placard must be durable and weather resistant, have letters and numerals that are legible, and must not be obscured. The part of the mobile CRC vehicle immediately behind the placard must be of a contrasting colour to the colour of the placard unless the border of the placard is of a contrasting colour and design.

Any placard must be capable of being removed. It is an offence to display a placard if there are no dangerous goods in the load.

As a minimum, placards must be installed on the front and rear of the vehicle.

In the case of a trailer the whole unit becomes a combination vehicle. If the whole combination is carrying a placard load, a dangerous goods placard should be placed at the front and at the rear. If any part of the combination vehicle contains more than a placard load on its own, then it requires additional placards on each side. Again a mixed class placard will be required as more than one Class or Division will be carried in the load. For more details on placard requirements, including the particular locations they must be displayed for other combinations, refer to **Section 5.3.6** of the ADG Code.

Mixed class placard

6.3.4 Emergency information

Emergency information addresses substance hazards, first aid procedures and the protective equipment to use. It explains how to deal with any emergency involving dangerous goods, such as a leak, spill, vehicle rollover or fire. The following are acceptable types of emergency information:

- the Standards Australia HB76 Dangerous Goods – Initial Emergency Response Guide (recommended)
- an individual Standards Australia emergency procedure guide (EPG) plus the emergency guide for vehicle fire
- an emergency procedure guide plus a vehicle fire guide that are both substantially the same as the Standards Australia guides
- any other emergency procedure guide plus a vehicle fire guide, which have both been approved by the EPA before the mobile CRC service becomes operational.

A safety data sheet (SDS) is not the same as emergency information and is not acceptable.

Where an operator of a mobile CRC service prepares their own emergency procedure guide, it should be prepared using specialist advice such as from an appropriately qualified and experienced Dangerous Goods Consultant.

In the case of a placard load, emergency information must be carried in an emergency information holder. If less than a placard load is being transported and an emergency information holder is not fitted, emergency information must be in a prominent position in the cabin if it is a vehicle, or if it is a trailer, at the front of the trailer.

6.3.5 Emergency information holder

An emergency information holder must be fitted to a vehicle transporting a placard load of dangerous goods. The holder must be:

- of a size and shape suitable for carrying emergency information and transport documentation
- marked with the words 'emergency procedure guides' or 'emergency information' in red letters at least 10mm high on a white background
- securely placed on a road vehicle in one of these locations:
  - on the inside of a door of the cabin
  - immediately adjacent to a door of the cabin
  - if either of the above is not possible, in a visible and accessible position in the cabin (provided the position of the holder is identified on a notice affixed to the inside of the driver's door).

6.3.6 Safety equipment

The following safety equipment must be carried on a vehicle transporting a placard load of dangerous goods:

- three double-sided reflector signals that comply with AS 3790 and are clean and in good condition
- one 30B dry powder fire extinguisher located in or directly behind the cabin near the driver's door, or at the front of any trailer
- personal protective and safety equipment including thermal insulated gloves, chemical resistant gloves and chemical resistant boots.

Each fire extinguisher must be mounted securely in a quick-release bracket. In cases of combination vehicles, a fire extinguisher must be provided for every separate trailer transporting a placard load. Refer to *AS 2444-2001 Portable fire extinguishers and fire blankets – Selection and location* for more guidance on the selection and location of fire extinguishers.

Safety equipment requirements depend on the type of dangerous goods being transported. **Table 6.2** (an excerpt from **Table 12.2** in the ADG Code) shows the safety equipment required for transporting each class or division of dangerous goods in a mobile CRC vehicle.

Table 6.2: Personal Protective Equipment required for mobile CRCs

Minimum equipment required	Class of Dangerous Goods (refer to **Section 6.3** for material types relevant to classes)					
	2.1	2.2	3	6.1	8	9
Respiratory protection equipment for escape purposes	No	No	No	***[a]***	***[a]***	No
Face hugging goggles with increased facial seal or full face shield as appropriate	Yes	Yes	No	Yes	Yes	No
Eye wash kit at least 250ml capacity, filled and ready for use	No	No	Yes	Yes	Yes	Yes
Chemical resistant gloves or gauntlets	No	No	Yes	Yes	Yes	Yes
Thermal insulated gloves or gauntlets	Yes	Yes	No	No	No	No
Chemical resistant suit or coveralls	No	No	No	Yes	Yes	No
Chemical resistant boots	No	No	No	Yes	Yes	No
Any electric torch	No	Yes	No	Yes	Yes	Yes
Electric torch complying with AS/NZS 60079.11 or other recognised Code	Yes	No	Yes	No	No	No

[a] The minimum requirement is air supplied short term breathing apparatus suitable for escape purposes, except when, even in an emergency, the dangerous goods will not give rise to harmful vapours, gases or dust. Note that where a driver attends to the loading or transfer of goods, self contained breathing apparatus with a duration of greater than 15 minutes may be required by other (e.g. health and safety) legislation.

Minimum requirements for safety equipment are outlined in **Section 6.5.3** Important design elements of a mobile CRC vehicle.

6.3.7 Stowing materials correctly

The mobile CRC vehicle must be strong enough to withstand the rigours of transport. Packages must be stowed and restrained within the vehicle or trailer as outlined in the National Transport Commission's Load Restraint Guide. This includes any intermediate containers into which the materials are loaded. The design and operation of the mobile CRC service must ensure that materials are stowed correctly, and that manual handling by operators is kept to a minimum. Further guidance on the important design elements of a mobile CRC vehicle is provided in **Section 6.5.3**.

Before loading, the interior and exterior of the mobile CRC vehicle must be inspected to ensure there is no damage that could affect its integrity or that of the packages to be loaded in it. Specific loading instructions such as orientation arrows, 'not to be double stacked' 'keep dry' or temperature control requirements must be met. Liquid dangerous goods must be loaded below dry dangerous goods whenever possible. Packaging fitted with a vented closure must be stowed and restrained with the closure at the top.

If the dangerous goods are of a kind that may lead to the formation of flammable, toxic or other harmful atmospheres, they must be stowed so that no harmful atmosphere will accumulate in the vehicle cabin if there is a leak.

Packages that appear to be leaking or damaged, potentially allowing the contents to escape, must be placed in an appropriate container together with appropriate absorbent material, before they are loaded into the mobile CRC vehicle. The container used must be approved for dangerous goods transport, such as the HAZMAT containers used by Fire and Rescue NSW, or pails, drums or kegs that have been approved and provided by the EPA's collection contractor.

For a vehicle that has open or non-rigid sides:

- materials must be stowed and restrained within rigid sides or gates
- no package containing dangerous goods may protrude above the sides or gates by more than 30 per cent of the height of the article or package, and
- no package may protrude horizontally beyond the sides or gates.

A curtain-sided container or vehicle is not regarded as a closed unit and must be fitted with gates. The requirement for rigid sides or gates does not apply to intermediate containers or segregation devices, as long as they are restrained on the vehicle according to the load restraint guide.

6.3.8 Segregation

Segregation rules help minimise the risk of incompatible substances reacting dangerously if they were to come into contact with each other. Such contact might be caused by a leak, spill or vehicle accident. Section 6 of the ADG Code has considerable information covering segregation rules, the types of segregation devices and their design tests, and how to use such devices.

In general, the target materials carried on a mobile CRC vehicle do not need to be segregated. However by-catch materials, if accepted, do need to be segregated. If these materials are to be accepted, specialist advice must be obtained on the appropriate segregation devices to be used and the design of the mobile CRC vehicle.

The mobile CRC vehicle must be designed such that lead acid batteries are not packed immediately adjacent to either motor oil or gas cylinders.

6.3.9 Dangerous goods training and licensing

Mobile CRC vehicles only need to be licensed for dangerous goods transport if they are designed to carry individual receptacles that have a capacity of more than 500L or contain more than 500kg of dangerous goods. Where this is the case, the vehicle must be covered by a dangerous goods vehicle licence and the driver must hold a dangerous goods driver licence.

A licence can be issued for a vehicle that will be loaded with dangerous goods, such as a trailer, rigid vehicle, B-double trailer or a road-train trailer. Prime movers are not able to be licenced. A single licence is issued for each transport organisation and details of each vehicle are included on that licence. The licence is valid for one year and is nationally recognised. Applicants for a vehicle licence must:

- provide information about the vehicle
- advise the class or classes of dangerous goods to be carried
- hold an insurance policy for the vehicle to cover clean-up and emergency services costs incurred in response to, and recovery of, any vehicle(s) and/or goods involved in a dangerous goods incident
- pay the licence application fee (currently $89)
- provide a rear 3/4 image of the vehicle showing the number plate and vehicle type.

More information on application requirements is available at **www.epa.nsw.gov.au/dangerousgoods/training.htm**.

A current dangerous goods driver licence issued by any state or territory is recognised throughout Australia. Holders of a current interstate dangerous goods driver licence are able to drive a dangerous goods vehicle anywhere in NSW.

Dangerous goods driver training

Before applying for a dangerous goods driver licence, the driver must complete a certified training course in the transport of dangerous goods by road (reference number TLILOC3013A). Information on providers of this training can be found at **www.training.gov.au**. Applicants for a dangerous goods driver licence must:

- complete the required training provided by an appropriate Registered Training Organisation (RTO)
- be certified as medically fit by a general practitioner
- have a satisfactory driving history
- provide identification (passport-sized photographs and a copy of your vehicle driver licence)
- obtain the RTO's certification on the application form
- submit an application within 6 months of undertaking the training or the medical assessment.

More information on application requirements is available at **www.epa.nsw.gov.au/dangerousgoods/training.htm**. The requirements for driving history and medical fitness are given in the licence application form.

6.4 Compliance with legislation regarding transport of wastes

The operation of a mobile CRC service involves the transport of waste and is subject to the requirements of the *Protection of the Environment Operations Act 1997* (the Act), and the *Protection of the Environment Operations (Waste) Regulation 2014* (the Regulation). These requirements are outlined below.

6.4.1 Environment protection licence

An environmental protection licence is required to undertake certain activities (scheduled activities) that are not premises-based (Clause 49 of the Act). The transport of more than 200kg of category 1 trackable waste is a scheduled activity (Clause 48 of Schedule 1 of the Act).

Category 1 trackable waste means waste transported within NSW of a type described in Part 1 of Schedule 1 of the Regulation that exhibits any of the characteristics specified in Part 3 of that Schedule. Not all CRC target materials are specifically listed as Category 1 trackable wastes. Only waste paint, waste oil (waste mineral oil, water/oil mixtures), and lead acid batteries (as these contain acid) are listed. Smoke detectors, gas cylinders, fluorescent tubes and globes, and household batteries are not listed as Category 1 trackable waste. **Table 6.1** below shows which household problem wastes are trackable.

Under Part 9 of the Regulation, waste oil and lead acid batteries are exempt from the tracking requirements outlined in Part 4 of the Regulation (notices 2006-E-4 and 2009-E-1, respectively). However, these exemptions only modify the record keeping requirements, they do not remove them.

An environment protection licence is therefore required where a mobile CRC service will transport more than 200kg of paint, oil, or lead acid batteries at a time.

Table 6.1: Status of household problem wastes as Category 1 trackable wastes

Household Problem Waste	Trackable Waste?
Targeted	
Paint (water based, oil –based, and other paint types)	YES
Used oil (non-hazardous waste hydrocarbon oil)	EXEMPTED BY 2006-E-4
Batteries – lead acid batteries	EXEMPTED BY 2009-E-1
Batteries – other household types	NO
Domestic gas cylinders (typically LPG, but also other types)	NO
Conventional tube type and compact fluorescent lamps, and other types	NO
Smoke detectors	NO
Not targeted but accepted	
By catch (Toxic, Flammable Liquid, Oxidiser, Acid, Alkali)	YES

Waste transporter licence application

Applications for this licence must be made using the application form that is available at:

www.epa.nsw.gov.au/resources/licensing/140543-licence-application-waste-transport.doc.

6.4.2 Waste tracking

Part 4 of the POEO (Waste) Regulation 2014 (the Regulation) places certain obligations on consigners, transporters, and receivers of waste to track and record the movement of waste.

The EPA approved an exemption under Part 9 of the Regulation on 12 August 2016, modifying these obligations and simplifying the requirements for operators of CRCs, in particular operators of mobile CRC services.

Where the waste tracking exemption applies

The exemption applies to household problem waste that is trackable waste and that is being transported to a CRC that has been approved and established under the NSW Government's Waste Less, Recycle More Initiative.

The exemption applies to:

- waste delivered by a householder to a CRC; or
- waste collected from a householder, or a temporary location, or a satellite CRC; or
- orphan household waste collected by a mobile, satellite or central storage facility (CRC) operator.

It exempts a consignor, a transporter, and a receiver of waste to which the exemption applies from Part 4 of the Regulation.

Conditions relating to the exemption of transporters

A transporter is exempt only if the transporter complies with these conditions.

For each load of waste transported, the transporter must make a record of the following:

- the name and address of the transporter
- the transporter's environment protection licence number (if the transporter is required to be licensed under the Act)
- the registration number of the vehicle used to transport the waste
- the type and quantity of the waste transported
- the date on which the waste is delivered to the receiver
- the name and address of the receiver
- the date on which the record was made.

The transporter must:

- retain the record for a period of not less than four years after the date on which the record was made;
- make the record available for inspection by an authorised officer on request; and
- give a copy of the record to the receiver.

Conditions relating to the exemption of receivers

A receiver is exempt only if the receiver complies with the following conditions. The receiver must:

- retain the copy of the record made by the transporter (see above) for a period of not less than 4 years after the time the record was made; and
- make a copy of the record available for inspection by an authorised officer on request.

Dangerous goods requirements

The exemption does not exempt any person or class of person from any requirement under the *Road and Rail Transport (Dangerous Goods) Act 1997* or the Regulations made under that Act.

Definitions

- **Householder –** person who owns, or rents, or lives in a house or tenement, and generates household problem waste.
- **Temporary location –** a location at which a mobile CRC service temporarily collects household problem waste as part of the EPA's Community Recycling Centres Program.
- **Mobile CRC service –** a service in which household problem waste is collected from dispersed locations and transported to either a Satellite CRC or a Central CRC.
- **Satellite CRC –** a location at which small quantities (less than minor quantities as defined by AS3833 The Storage and Handling of Mixed Classes of Dangerous Goods) of household problem waste can be deposited and stored temporarily, prior to transport to a Central CRC.
- **Central CRC –** a Community Recycling Centre that has been approved and established as such by the EPA.
- **Orphan waste –** household problem waste left abandoned on public land.
- **Household problem waste –** waste generated by householders which CRCs are designed to accept and store including:
    - paint (water based, oil based and other paint types)
    - used oil
    - batteries (including lead acid batteries, and other types of batteries used by households)
    - domestic gas cylinders (typically LPG, but also other types)
    - conventional tube type and compact fluorescent lamps, and other types
    - smoke detectors
    - other types of hazardous waste originating from household or domestic sources.

Not all household problem waste is trackable waste.

Householders

As a result of the exemption, householders are now exempt from waste tracking requirements where they transport waste to an approved CRC or mobile CRC service.

Operators of a mobile CRC service

Operators of a mobile CRC service transporting household problem waste from a household, a temporary location, a satellite CRC, or collecting orphan waste, are exempted from waste tracking requirements for movements of waste to a central CRC. However, these operators are required to carry a Transport Document listing the waste carried. The required form of Transport Document is provided as **Appendix 6.2**.

Operators of a mobile CRC service must obtain a Waste Transport Licence for movements where applicable (refer to **Section 6.4.1**).

Central CRC operators

Receivers of waste being transported to a central CRC are exempted from waste tracking requirements. However, they are required to keep copies of the transport documents provided to them by transporters delivering waste to the Central CRC for a minimum of four years.

Transport of waste by the collection contractor

The contractor engaged by the EPA to collect waste from CRCs must generate a new transport certificate number (TCN) under a new consignment authorisation (CA) for movements of waste from the central CRC to the collection contractor's receiving facility. The collection contractor generates a CA for the central CRC that is part of a mobile CRC service. The organisation that operates the central CRC (which is a waste facility as defined by the Act) must confirm consignment of the waste by completing the appropriate part of the transport certificate when the waste is collected by the contractor.

When the EPA's contractor collects the target materials (paint, oil, gas bottles, batteries, smoke detectors and fluorescent lights), the CRC operator must lodge this information on the online Drop Off system. The CRC operator must also use this system to capture the transport certificate number, record the number of receptacles collected, confirm that placards were displayed and the load was secured, and enter the total weight collected (if there is a weighbridge on site). This process will ensure the movement of materials from the CRC to the collection contractor's premises is tracked and meets all ADG requirements.

This activity is not exempted. Only transport of household problem waste to a central CRC is exempt.

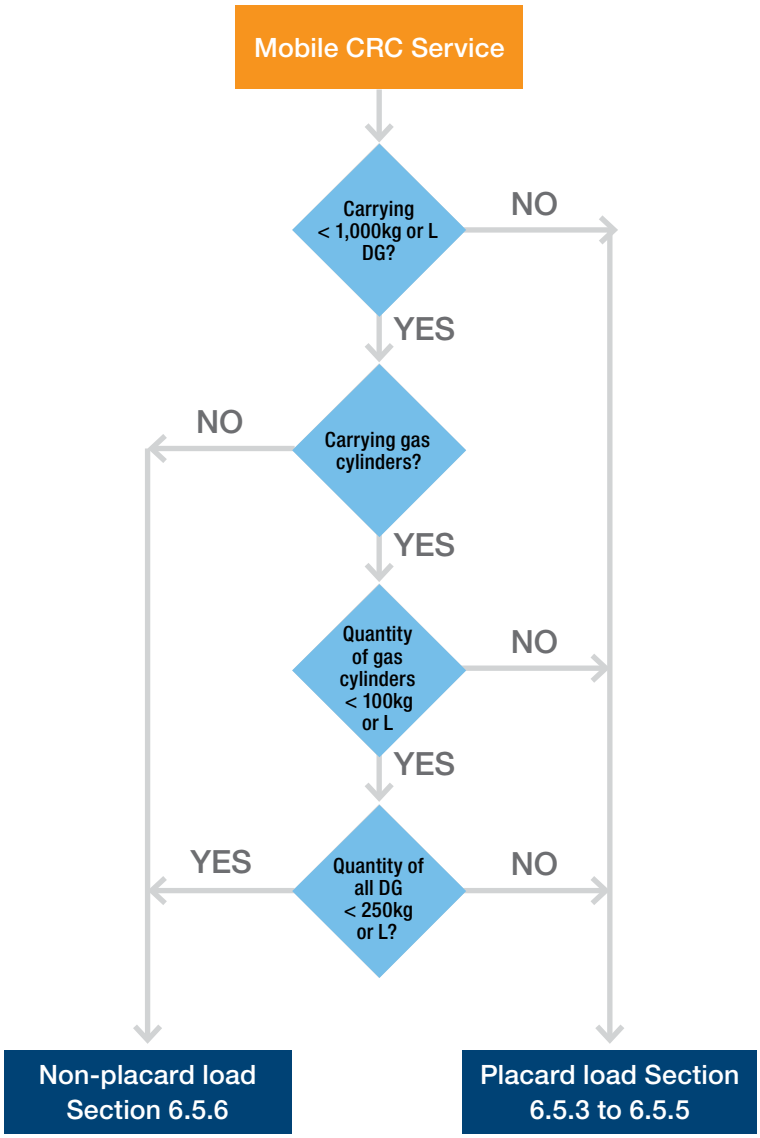
6.5 Establishing a mobile CRC service

6.5.1 Size and capacity of the mobile CRC service

When considering the establishment of a mobile CRC service, the following factors should to be taken into account.

- The distribution of householders and their willingness and ability to travel to the locations proposed for the service
- The number of locations proposed to be served
- The number of households to be served
- The type and quantity of the different materials that are to be accepted
- The required capacity of the mobile CRC vehicle(s) and storage facility.

The flowchart below provides a simple test to determine whether a mobile CRC must meet the requirements of a placard load under the dangerous goods legislation. It also includes references to relevant sections of the Handbook.



6.5.2 Preparing materials for acceptance

When operating a mobile CRC service, the means for providing clear instruction to householders on what materials are accepted (and what materials are not) and how to present them at the drop-off or pick-up point must be considered. This could include signage on a mobile CRC vehicle at a location visited by householders, or information mailed to householders prior to a pick up from their house. Consideration should also be given to the appropriateness of providing bags for certain types of materials for segregation, and to minimise the manual handling and loss of containment risks.

6.5.3 Important design elements of a mobile CRC vehicle

The design of a mobile CRC vehicle must incorporate the following features.

Sizing

When designing the mobile CRC transport vehicle, ensure that the appropriate weight capacity calculations are undertaken. The material carrying capacity of the vehicle will be net of the weight of all the equipment, shelves, compartments and receptacles to be carried. For example a trailer rated for 3T may only be able to carry 2T of materials once the weight of equipment and compartments is taken into consideration.

Transport receptacles

Materials should be transported in receptacles appropriate to their type.
Liquids (e.g. water based and solvent based paint) must be transported in bunded storage receptacles.

Transport receptacles must be fixed or easily secured to prevent movement during transport that could cause damage to the vehicle, receptacle failure, or loss of containment. Transport receptacles and any shelving built into the mobile CRC vehicle to accommodate them must be adequate for the load they will bear. The way in which any shelves are used must minimise overloading.

The transport receptacles must be easily accessible for packing to minimise manual handling difficulty, and prevent operator slips, trips or falls when entering the mobile CRC vehicle that could result in injury or loss of containment.

Transport receptacles should either be able to be unloaded in their entirety by forklift, or be unpacked easily in a way that minimises manual handling difficulty. During packing or unpacking of fixed storage receptacles, the mobile CRC vehicle should allow easy use of intermediate containers such as a box trolley or wheeled receptacle to minimise the risk of loss of containment and impact on public health or environment.

Transport of flammable liquids and gases

Flammable liquids and gases (oil based paint, gas cylinders) must be kept separate from ignition sources (especially lead acid batteries) inside the mobile CRC vehicle.
The vehicle must be adequately ventilated to prevent build-up of flammable gases from gas cylinders and flammable liquids, such as solvent based paint. Flammable liquids must be stored in a bunded transport receptacle.

Transport of aerosols

The transport of aerosols, being flammable gases, presents some difficulties and is not recommended. If aerosols are collected and transported as part of a mobile CRC service, the following considerations apply:

- the aerosols must be transported in a cage receptacle that allows adequate ventilation to prevent the build up of dangerous gases and provide protection, should an aerosol can explode.
- The cage receptacle should be transported in a part of the mobile CRC vehicle that is also adequately ventilated and kept separate from ignition sources.

Transport of gas cylinders – flammable and non-flammable

A mobile CRC service should only collect regular household gas cylinders. Other types of gas cylinders such as acetylene, oxygen and medical oxygen, or vehicle LPG tanks require additional controls and add a level of complexity that is outside the scope of the CRC program.

Gas cylinders must not be stacked, but can be placed in a cage with multiple level racks. Gas cylinders must not be stowed near a source of heat. When transporting gas cylinders the main valve must be closed and any regulator removed prior to loading.

When gas cylinders are transported in standard gas industry cylinder pallets (stillages):

- the cylinders must be secured within the frame of the stillage by a lashing system that meets the load restraint guide
- not more than 45 per cent of the height of the cylinders may protrude above the stillage rail
- the stillages must be stowed and restrained according to the load restraint guide.

Where gas cylinders are collected as part of a mobile CRC service, consideration should be given to transporting them separately to all other types of problem wastes collected by the service.

Transport of lead acid batteries

Lead acid batteries are the primary corrosive material accepted by the CRC Program and must not be stacked. They should be able to be secured when packed in an upright position.

Transport of household batteries

Single use household batteries are to be placed in a purpose built collection receptacle supplied by the collection contractor. Household batteries of all types are to be placed in the same container. Special requirements apply to lithium metal and lithium ion batteries.

Lithium ion and lithium metal cells and batteries, and equipment containing such cells and batteries, must be packaged in accordance with instruction P909 of the Australian Dangerous Goods Code (current version is 7.4), when transported for disposal or recycling. Receptacles must be marked ‘LITHIUM BATTERIES FOR DISPOSAL’ or ‘LITHIUM BATTERIES FOR RECYCLING’. The collection contractor will supply labels and receptacles appropriate to this purpose.

In addition, lithium batteries must be packed to prevent short circuits and the dangerous evolution of heat. This could include, but is not limited to:

- individual protection of the battery terminals, or
- inner packaging to prevent contact between cells and batteries, or
- the use of a non-conductive and non-combustible cushioning material to fill empty space between the cells or batteries in the packaging.

Lithium batteries must be secured within the outer packaging to prevent excessive movement during transport (e.g. by using a non-combustible and non-conductive cushioning material or through the use of a tightly closed plastic bag).

Transport of by-catch

If by-catch is accepted, separate transport receptacles that are appropriate segregation devices must be provided for each of the following types of materials: flammable liquids, toxics, oxidisers, acids, and alkalis. Specialist advice on the appropriate type of segregation devices required for each type of material, and their location within the mobile CRC vehicle, must be obtained if it is intended that by-catch be accepted.

Safety and spill response equipment

The following safety equipment must be carried on a mobile CRC vehicle:

- three double-sided reflector signals that comply with AS 3790 and are clean and in good condition
- one 30B dry powder fire extinguisher located in or directly behind the cabin near the driver's door, or at the front of any trailer
- personal protective and safety equipment including thermal insulated gloves, chemical resistant gloves and chemically resistant boots.

Each fire extinguisher must be mounted securely in a quick-release bracket. In cases of combination vehicles, a fire extinguisher must be provided for every separate trailer transporting a placard load. Refer to *AS 2444-2001 Portable fire extinguishers and fire blankets – Selection and location* for more guidance on the selection and location of fire extinguishers.

As a minimum, a mobile. CRC vehicle must have the following personal protective equipment (PPE):

- gas tight goggles or full face shield as appropriate
- eye-wash kit
- chemically resistant gloves or gauntlets
- thermally insulated gloves or gauntlets
- chemically resistant suit or coveralls
- chemically resistant boots
- electric torch complying with AS/NZS 60079.11
- first aid kit

The CRC operator must carry out its own risk assessment and determine any additional safety equipment appropriate to its particular operation. The risk assessment and determination must be recorded and kept for reference.

The mobile CRC vehicle must also carry spill response equipment appropriate to the materials being carried. This includes adequate quantities of absorbent material, a sufficient quantity of resealable waste-recovery containers made of materials compatible with the substances being kept, and marked for emergency use only, and shovels and brooms. Waste recovery containers should be approved for dangerous goods, such as the Hazmat bins used by Fire and Rescue NSW.

Procedures are to be implemented to regularly:

- check and replenish the first aid equipment and supplies
- check and replenish the personal protective equipment (PPE)
- check and replenish the spill response equipment.

PPE should be kept separate from normal clothing, and cleaned and maintained after use in accordance with the manufacturer's instructions and the relevant Australian Standard.

Security

The mobile CRC vehicle must incorporate security features to prevent theft of the vehicle, access to the storage compartment and theft of material.

Signage and labelling

The mobile CRC vehicle must be provided with placards as outlined in **Section 6.3.3**.

A CRC program branded sign must be installed on the mobile CRC vehicle. Signage acknowledging the NSW EPA and Environmental Trust must also be installed on the vehicle. Please contact the Community Recycling Unit to discuss custom signage. Email **recycling.centres@epa.nsw.gov.au**

Signs with pictorial and text descriptors appropriate to the type of material to be stored must be installed on the receptacles to allow easy sorting and packing by operators. If appropriate, the signage should include how materials are to be packed in the storage receptacles.

The EPA will provide artwork in electronic format to maintain consistent branding across the network and to distinguish CRCs from the Household Chemical CleanOut events. The particular requirements for the mobile CRC service must be discussed with the EPA's Community Recycling Unit, and all artwork for signs must be sent to the Unit for approval prior to purchasing and installing the signs.

6.5.4 Safety and environmental management procedures

Established processes and documented procedures such as Safe Work Method Statements (SWMSs) or Safe Operating Procedures (SOPs) should be in place for both the mobile CRC service and the storage facility to protect the health and safety of customers and staff. These procedures must be based on a risk assessment approach as outlined in **Section 6.2**.

All staff involved in the operation of the mobile CRC service are to be trained in the use of the SWMSs and must sign off as having been trained and agreeing to undertake the relevant tasks safely in accordance with the SWMSs.

6.5.5 Emergency preparedness and response

The equipment and facilities required for emergency situations have already been outlined in previous sections. The mobile CRC vehicle must have reflectors, fire extinguishers, a spill response kit and personal protective equipment on board. The storage facility must have a safety shower and eyewash station, spill response kits, fire extinguishers, personal protective equipment and first aid equipment on site.

An emergency response plan, outlining the initial response in the event of vehicle accident, loss of containment, fire or other incident, must be prepared and carried with the mobile CRC vehicle. Refer to **Section 6.3.4** Emergency Information for details of what is required.

An emergency plan and associated procedures must be prepared for the storage facility, and located near the entrance to the facility. Refer to **Section 1.3.4.2** for more information on preparing the emergency plan and associated procedures. All staff involved in the operation of the mobile CRC service and associated storage facility must be trained to implement the emergency plans and procedures.

The EPA will establish and maintain contracts for the provision of specialist advice and support arrangements in the event of unknown materials being deposited, and other unexpected or emergency situations. The mobile CRC operator is to ensure its operating and emergency procedures appropriately reference this specialist advice.

6.5.6 Specific requirements for transport from a satellite

Whilst the operator of a satellite arrangement will transport dangerous goods and trackable waste from the satellites to the storage facility in a similar way to other models, due to the smaller quantities of materials to be transported, minimum requirements are slightly different.

Dangerous goods quantity limits

If flammable gas cylinders (Class 2.1) are not being transported, loads must be in quantities of less than 1,000kg or L of dangerous goods. If the load contains flammable gas cylinders, then a total quantity of dangerous goods of 250kg or L may be transported, and the quantity of gas cylinders must not exceed 100kg or L. Note that these quantity limits apply to the capacity of the cylinders. No individual transport container must have a capacity of greater than 500kg or L. Note also that water based paint is not a dangerous good and does not need to be included in these quantity limits.

Controls required

Transporting wastes under the dangerous goods quantity limits means that the loads are not placard loads. The only control required by the dangerous goods transport legislation is to carry transport documents. However, operators of a satellite must implement the following controls when transporting any load:

- Carry transport documents showing the quantity of each type of material being transported – refer to **Section 6.3.2** for details on the appropriate information to be provided in the documents
- Keep a copy of Standards Australia HB76 Dangerous Goods – Initial Emergency Response Guide in the cab of the transport vehicle

- Locate a 30B fire extinguisher at the front of vehicle behind the cab or in an easily accessible position
- Carry a small spill kit appropriate to the quantity of materials being carried, in particular the largest package being carried
- Provide the following protective equipment for the driver: safety glasses, eye-wash kit, chemical resistant gloves, thermal insulated gloves, chemical resistant suit or coveralls, chemical resistant boots, and an electric torch complying with AS/NZS 60079.11 or other recognised Code
- Stow materials safely in accordance with the guidance provided in **Sections 6.3.7** and **6.5.2**
- If by-catch is transported, provide separate transport receptacles such as pails or boxes that are appropriate segregation devices for each of the following types of materials: flammable liquids, toxics, oxidisers, acids, and alkalis. Specialist advice on the appropriate type of segregation devices required for each type of material, and their location within the transport vehicle must be obtained if it is intended that by-catch be transported.

In addition, packages in which materials have been delivered must be inspected prior to loading to ensure they are in a sound condition and are not leaking. Intermediate containers should be used if necessary. A sufficient supply of appropriate intermediate containers should be kept on the transport vehicle for this purpose.

In order to limit exposure to ignition sources, smoking must not be permitted in and around the satellite, transport vehicle or in the storage facility at any time. Mobile phones should not be used near any material storage areas.

Flammable liquids such as solvent based paint and flammable gas cylinders should be packed separately from lead acid batteries.

Waste tracking

The waste tracking requirements outlined in **Section 6.4** must be met.

6.5.7 Specific requirements for the design of satellites

In general satellites will be small sites at which only a small quantity of materials are kept. They should be established and operated as a minor store as outlined in Section 2 of *AS/NZS 3833:2007 The storage and handling of mixed classes of dangerous goods in packages and intermediate bulk containers*. **Table 6.3** outlines the maximum quantities for minor storage.

Where a satellite is operated with quantities greater than those of a minor store, it should meet all the requirements for a regular CRC as outlined in this Handbook.

Table 6.3: Maximum quantities for minor storage

Description	Quantity, kg or L		
	Packing Group I	Packing Group II	Packing Group III
Total quantity of all dangerous goods	25	250	1,000

Notes:

1. It is permissible to store, at the same time and in the same area, the maximum allowance for each of the Packing Groups. For an explanation and examples of Packing Groups, refer to Box 3 in **Section 1.2.6** of this manual.
2. Where manufactured product is stored, the quantities of manufactured product may be doubled.
3. The maximum quantity of Division 5.2 dangerous goods allowable as minor storage is 10kg or L.
4. For the purpose of determining minor storage quantities, Class 2 dangerous goods in retail packages, aerosols, and substances and articles of Class 9 are regarded as Packing Group III.

The following requirements must be implemented for satellites operating as minor stores.

Location

- Separated by more than 10m from any other dangerous goods store.
- Not more than one minor store per 500sqm of floor or ground area.

Precautions

- Any materials that are incompatible or might react dangerously, are segregated.
- Storage area shall be away from heating and ignition sources.
- Storage area shall be provided with adequate natural or mechanical ventilation.
- Packages shall be kept closed, and there should be no decanting on site.
- Appropriate spill control measures shall be provided where packages are opened and their contents transferred.
- Any spills or leaks shall be cleaned up immediately and disposed of appropriately. Contaminated, spilled or leaked material shall not be returned to original packaging, except for disposal where it is known that this will not increase the risk.
- The transfer of dangerous goods from the store to transport vehicle shall be carried out in a manner that minimises the possibility of spillage or fire.
- Dangerous goods shall not be stored or handled where they could hinder escape from a building in the event of fire.
- Persons who handle dangerous goods shall be informed and aware of the hazards involved.

- Packages shall be kept in such a manner as to avoid spillage.
- Stores shall be kept clear of combustible matter and refuse.
- Packages shall be kept on surfaces that are resistant to attack by their contents if spilt.
- Appropriate personal protective equipment shall be worn by personnel involved in product transfer or clean-up operations.
- A fire extinguisher of a suitable type shall be installed in each minor store. It shall be located so that it is immediately accessible in an emergency, along an exit route.
- A supply of water shall be available at a nearby location for personal hygiene.

Additional precautions for outdoor minor storage

- The ground around the storage area shall be kept clear of combustible vegetation and refuse by at least 3m.
- Any potential flow of spillage shall be prevented from reaching any protected place, watercourse or boundary by such means as the use of natural ground slope, or the provision of a diversion channel, kerb or bund.
- The store shall be separated from any protected place or property boundary by at least 3m.

Signage

Signage must be provided at the satellite to direct customers where to place their materials safely. CRC program branded signage is required.

6.5.8 Storage facility for a mobile CRC service

Whether or not a storage facility established for a mobile CRC service accepts material directly from customers or not, it must meet all the requirements of a regular CRC as outlined in this Handbook. This includes the design, construction and operation of the facility, emergency preparedness and response, induction and training of all staff involved in the provision of the all parts of the mobile CRC service, and record-keeping and reporting.

6.5.9 Insurance

The operator of a mobile CRC service must maintain adequate property, motor vehicle, comprehensive third party, public liability and workers compensation insurance cover for the mobile CRC vehicle(s), for the various locations of the vehicle whilst it will be accepting materials (if necessary), for satellites if part of the service and for the storage facility.

6.6 Operating a mobile CRC service

A mobile CRC service should be operated to make it easy for householders to manage their own problem waste. A well-managed operation protects the health and safety of customers and staff, protects the environment and the community, and facilitates safe disposal and reuse of problem materials. The following elements must be implemented when operating a mobile CRC service.

6.6.1 Acceptance from householders

Containers must be inspected prior to acceptance to ensure they are in a sound condition and not leaking. Intermediate containers should be used if necessary. A sufficient supply of appropriate intermediate containers should be kept on the mobile CRC for this purpose.

Where applicable, material should be moved from the house to the mobile CRC vehicle in small loads, or in a box trolley to minimise the risk of loss of containment and operator injury from manual handling. Care should be taken not to mix incompatible substances when moving them from the house to the mobile CRC vehicle.

A sign (e.g. A-frame size) should be placed on the footpath when material is being moved from the house to the mobile CRC vehicle to advise members of the public that material is being moved, and to minimise the risk of collision with a pedestrian.

In order to limit exposure to ignition sources, smoking must not be permitted in and around the mobile CRC vehicle at any time, or in the storage facility. Mobile phones and cellular tablet devices should not be used within the storage compartment of the mobile CRC vehicle. Flammable liquids such as oil based paint and flammable gas cylinders should be packed separately from lead acid batteries.

6.6.2 Loading for transport

If materials are packed into transport receptacles, these receptacles must be labelled on the outside and inside to indicate their contents. Operations staff must follow any directions provided in the mobile CRC vehicle indicating how materials should be packed.

In addition, adsorbent material should be added to transport receptacles where they are used to minimise vapour production from flammable liquids, and to minimise the potential for loss of containment and environmental damage.

6.6.3 Transfer to storage facility

In order to minimise the risk of operator injury and loss of containment, it is recommended that materials being unloaded from a mobile CRC vehicle with fixed transport receptacles be moved in an intermediate receptacle on a box (bunded) trolley. Materials should not be carried package by package more than a metre from mobile CRC vehicle to storage facility.

It is recommended that wherever possible, materials of a particular type be moved from the mobile CRC vehicle to the storage facility separately. If the mobile CRC vehicle is designed such that each type of material is transported in a separate moveable transport receptacle, this means only moving receptacles of that type of material at one time. If the mobile CRC vehicle is designed such that materials are packed into fixed receptacles, then only materials of one type should be moved at one time.

6.6.4 Collection of materials from storage facility

The EPA and/or other funding bodies (e.g. product stewardship schemes) will establish and maintain contracts for the collection and disposal (or recycling) of paint, used oil (other than motor oil), gas cylinders, household batteries and fluorescent lights, as well as incidental by-catch. The mobile CRC operator will be responsible for arranging the collection and recycling (not disposal) of lead acid batteries and used motor oil.

The mobile CRC operator must ensure that materials are removed from the storage facility with sufficient frequency to prevent the accumulation beyond the capacity of the facility.

The mobile CRC operator must ensure that materials are loaded and consigned in accordance with basic requirements for the transport of waste and dangerous goods. Refer to the procedure in **Section 3.5.3** of this Handbook for the procedure for loading and consignment of materials from CRCs. Monitoring, record-keeping and reporting of material quantities in the storage facility, and reporting of collections is the same as for a regular CRC as outlined in **Part 5** of this Handbook.

6.6.5 Collecting orphan waste

The collection of orphan waste requires pre-planning and care when undertaking the task. However, operators of mobile CRC services are often the best equipped to do so. The following specific requirements must be met when collecting orphan waste.

Providing appropriate segregation devices

As the type of material is generally not known beforehand, and there could be a number of different types of both target problem wastes and by-catch materials, a quantity of approved segregation devices (e.g. buckets, kegs or drums) should be carried on the mobile CRC vehicle.

Handling unknowns

Containers of unknown materials are not to be opened for the purpose of identification. A photograph of the container should be taken prior to packing. The container should then be placed in a resealable container suitable as a segregation device (e.g. a bucket or drum) appropriate to the material and labelled as unknown (e.g. 'Unknown – to be identified' written on to an adhesive label affixed to the container).

The photograph must then be emailed to the collection contractor with a request for advice as to how the material should be stored. Once a response is received, the identification can be written on the label, and the resealable container can be placed in the appropriate receptacle or Dangerous Goods Safety Cabinet. Where the material cannot be identified through the provision of specialist advice, it should be placed in the Toxic Dangerous Goods Safety Cabinet.

Handling of containers that are leaking or without lids

Similarly, if there are leaking containers or containers without lids, these must be placed in a resealable container appropriate to the material type, suitable as a segregation device, with a suitable amount of adsorbent material. The outer container must then be labelled according to the material type and placed in the appropriate receptacle or Dangerous Goods Safety Cabinet.

Appendix 6.1 – Sample mobile CRC risk assessment

Source of risk	Hazards	Risk	Possible Controls
Activities			
Acceptance of problem waste from householder	Manual handling of large containers of problem wastes resulting in operator injury.	3 / 2 Medium	Provide clear instructions to householder prior to acceptance as to how materials should be presented. Use small loads or a box trolley to move the waste. Safe work procedures. Operator training and behaviour.
	Container failure during transfer from house to mobile CRC, resulting in loss of containment and impact on public health or environment.		Use intermediate container such as a bag, bin or box trolley. Take care not to mix incompatible substances.
	Collision with pedestrian at house acceptance point, resulting in operator or pedestrian injury, or loss of containment, and impact on public health or environment.		Set up advisory signs, safe work procedures, and operator awareness.
Packing and storage of problem waste in mobile CRC	Slips, trips and falls when entering the mobile CRC, resulting in operator injury, or loss of containment.	3 / 2 Medium	Design mobile CRC so that storage receptacles are easily accessible for packing.
	Manual handling of containers whilst loading them into storage receptacles, resulting in operator injury.	3 / 2 Medium	Design CRC so that storage receptacles can be packed to minimise manual handling difficulty.
	Mixing of incompatible substances, resulting in reaction causing injury to operator or impact on public health or environment.	2 / 4 Medium	Use approved segregation devices as storage receptacles. Clear signage indicating where materials are to be placed and if appropriate, how they are to be packed. Proper identification of materials, and labelling of storage receptacles. Incident and emergency preparedness, and response procedures.
	Container failure, resulting in loss of containment and impact on public health or environment.	3 / 2 Medium	Inspect container prior to acceptance and use intermediate containers if necessary.
	Shelf or rack failure.	3 / 3 Medium	Design mobile CRC so that shelving and storage receptacles are adequate for the load they will bear, and they will minimise overloading when used. Safe work procedures and operator training to minimise overloading.

Source of risk	Hazards	Risk	Possible Controls
Transport of problem waste to next location in the mobile CRC	Movement of storage receptacles during transport causing damage to vehicle, receptacle failure and loss of containment.	3 / 3 Medium	Design mobile CRC so that storage receptacles are fixed or can be easily secured.
	Vehicle collision, resulting in loss of containment and impact on public health or environment.	1 / 4 Medium	Driver training and behaviour. Dangerous goods transport licensing. Incident and emergency preparedness, and response procedures.
Intermediate or overnight parking of vehicle	Vehicle is stolen, or storage compartment is accessed and material taken, resulting in loss of containment and impact on public health or environment.	1 / 4 Medium	Ensure mobile CRC can be secured to prevent access to the materials.
Unloading of problem waste materials from mobile CRC and consolidation into storage receptacles suitable for collection by the collection contractor.	Manual handling when moving containers from mobile CRC to storage area, resulting in operator injury.	3 / 3 Medium	Design mobile CRC so that storage receptacles can be unloaded in their entirety by forklift, or can be unpacked to minimise manual handling difficulty.
	Container failure, resulting in loss of containment and impact on public health or environment.	3 / 2 Medium	Design mobile CRC so that storage receptacles can be unloaded in their entirety, or use intermediate containers such as a box trolley.
	Storage receptacle is dropped during forklift unloading.	3 / 2 Medium	Provide forklift of adequate design and capacity appropriate to storage receptacles being used. Forklift operator trained and licensed.
	Forklift collision with operator or other vehicle on site where storage area is located.	1 / 4 High	Design layout of storage area and truck loading area to (as far as possible) limit intersection of forklift, vehicle and operator movements. Implement procedures to provide an exclusion zone around truck loading area.

Source of risk	Hazards	Risk	Possible Controls
Storage of materials	Storage area is accessed and material taken, resulting in loss of containment and impact on public health or environment.	1 / 4 Medium	Ensure storage area can be secured to prevent access to the materials.
Collection of materials	Vehicle collision, resulting in fire, loss of containment and impact on public health or environment.	1 / 4 Medium	Design storage area so that it is separate from other operations, or implement procedures (such as ceasing other operations during collection), to minimise intersection of vehicles during collection.
Materials			
Compressed gas – flammable	Failure of compressed gas cylinder.	3 / 2 Medium	Design mobile CRC so that gas cylinders are not stacked.
	Gas cylinder is dropped.	3 / 2 Medium	Safe work procedures, operator training and behaviour.
	Ignition of gas.	2 / 4 High	Design mobile CRC so that it is ventilated to prevent build-up of flammable gases.
Flammable – liquid	Container failure.	3 / 2 Medium	Design mobile CRC so that flammable materials are stored in a receptacle that is bunded and is an appropriate segregation device. Use appropriate PPE when handling materials. Incident and emergency preparedness, and response procedures.
	Ignition of atmosphere.	2 / 4 High	Add adsorbent material to segregation device / storage receptacle to minimise vapour production. Design mobile CRC so that it is ventilated to prevent build-up of flammable gases. Incident and emergency preparedness, and response procedures. Limit exposure to ignition sources: no smoking; separate flammable liquids from lead acid batteries; do not use mobile phone within the storage compartment of the mobile CRC.

Source of risk	Hazards	Risk	Possible Controls
Corrosives	Container failure.	3 / 3 High	Design mobile CRC so that lead acid batteries (primary corrosive material) are not stacked, and can be secured when packed in an upright position. Use appropriate PPE when handling materials. Incident and emergency preparedness, and response procedures.
	Mixing of incompatible substances.	2 / 4 High	Move corrosive materials to mobile CRC separately, or use intermediate container that provides appropriate segregation. Use approved segregation devices as storage receptacles. Proper identification of materials, and labelling of storage receptacles.
Oxidisers	Container failure.	3 / 2 Medium	Do not accept oxidising materials. Design mobile CRC so that oxidisers are not stacked, and can be segregated appropriately. Incident and emergency preparedness, and response procedures.
	Mixing of incompatible substances.	2 / 4 High	Move oxidisers to mobile CRC on their own, or use intermediate container that provides appropriate segregation. Clear signage indicating where materials are to be placed and, if appropriate, how they are to be packed. Proper identification and labelling of materials.
Toxics (fluoro tubes)	Lamp breakage, release of mercury to the atmosphere, operator injury from broken glass.	2 / 2 Low	Move lamps to the mobile CRC in an separate intermediate container. Consider supply of suitable container or bag to householder prior to collection. Pack lamps in an appropriate storage receptacle that minimises lamp breakage during transport.

Appendix 6.2 – Sample transport document

Transporter:	**Receiver:**
Mobile CRC Operator	Central CRC name
Street Address	Street Address
Suburb State Postcode	Suburb NSW Postcode
Contact Number (02) xxxx xxxx	Contact Number (02) xxxx xxxx
Vehicle Registration:	Date waste delivered:
Waste Transport Licence Number:	Date this record was made:

UN Number	Proper Shipping Name	Class / Division	Packing Group	Container Type	Number of Containers	Aggregate Quantity
1263	Paint-related material (solvent based paint)	3	III			
1263	Paint-related material (solvent based paint)	3	II			
2794	Batteries, wet filled with acid (lead acid batteries)	8	–	Battery		
1075	Petroleum gas, liquefied (gas cylinders)	2.1	–	Bottle (9kg) Bottle (3kg)		
1044	Fire extinguishers	2.2	–	Extinguisher (4 kg)		
	Fluorescent tubes and lamps	Non DG		Tube Lamp box		
	Water-based paint	Non DG				
	Other materials					
					TOTAL	

Appendix 6.3 – Checklist for mobile CRC vehicles

This checklist is to be used for vehicles involved in providing a mobile CRC service that are designed to carry placard loads with individual receptacles with a capacity of less than 500kg or L.

Aspect	Element
1 Design of the service	
1.1 Type of mobile service	• What type of mobile CRC service is being provided? • What type of vehicle is being used to transport problem wastes? • What type of materials is the service designed to collect? • Has a risk assessment of the mobile CRC service been undertaken and documented?
1.2 Preparing materials for acceptance	• What information are householders given about what materials are accepted and how they are to be presented? • What supplies, if any (e.g. bags), are householders provided with prior to collection?
2 Dangerous goods transport requirements	
2.1 Transport documents	• Are procedures in place to ensure transport documents, as required for the transport of dangerous goods, are carried on the vehicle? • Are the transport documents carried in the vehicle's cabin in an emergency information holder?
2.2 Emergency information	• Has emergency information required for the transport of dangerous goods been prepared and is this information carried appropriately on the vehicle? • Is the emergency information carried in an appropriately marked and located emergency information holder?
2.3 Placards and signage	• Does the vehicle have the appropriate placards? • Does the vehicle have CRC program branded signage? • Are signs with pictorial and text descriptors provided on the mobile CRC and on receptacles to allow easy sorting and packing? • Do signs include how materials are to be packed in receptacles?
2.4 Safety and spill response equipment	• Does the vehicle have the following safety equipment: – three double-sided reflector signals that comply with AS 3790 that are clean and in good condition – one 30B dry powder fire extinguisher located in or directly behind the cabin, near the driver's door, or at the front of any trailer – first aid kit – spill response kit appropriate to the materials being carried

Aspect	Element
2.5 Personal protective equipment (PPE)	• Does the vehicle carry the following PPE: – gas tight goggles or full face shield – eye-wash kit – chemical resistant gloves or gauntlets – thermal insulated gloves or gauntlets – chemical resistant suit or coveralls – chemical resistant boots – electric torch complying with AS/NZS 60079.11 or other recognised code.
2.6 Other safety equipment	• What other safety equipment is carried on the vehicle, and has this been informed by a documented risk assessment?
2.7 Maintenance of safety equipment	• Are procedures in place to check and replenish the first aid kit, PPE and spill response equipment?
3 Transport receptacles and material stowage	
3.1 General	• Are materials transported in receptacles appropriate to their type (e.g. bunded receptacles for liquids, cages for gases)? • Is the capacity of individual receptacles less than 500kg or L? • Are receptacles fixed or easily secured to prevent movement during transport? • Are receptacles and shelving in the vehicle adequate for the load? • Are shelves used in a way that minimises over-loading? • Are receptacles easily accessible for packing to minimise manual handling difficulty? • Does the access to the vehicle and the arrangement of receptacles minimise manual handling difficulty, and the potential for slips trips and falls? • Can receptacles be removed in their entirety or be unpacked without manual handling difficulty? • Are intermediate storage containers used when packing and unpacking the receptacles in the vehicle? What type?
3.2 Flammable liquids	• Are flammable liquids kept separate from ignition sources? • Is the material storage area of the vehicle adequately ventilated? • Are flammable liquids stored in a bunded receptacle?
3.3 Gas cylinders	• Are gas cylinders stored in a ventilated area, not stacked, away from sources of heat and other ignition sources? • Are procedures in place to ensure the main valve is closed and any regulator is removed prior to loading a gas cylinder? • Has due consideration been given to transporting gas cylinders separately?

Aspect	Element
3.4 Aerosols	• Where aerosols are carried, are they transported in a cage receptacle that is adequately ventilated and is able to contain exploding cans? • Where aerosols are carried, is the receptacle transported in a part of the vehicle that is adequately ventilated and separated from ignition sources?
3.5 Lead acid batteries	• Are lead acid batteries packed in an upright position in a bunded area of the vehicle, secured and not stacked?
3.6 Household batteries	• Are arrangements in place to ensure lithium batteries are packed to prevent short circuits and the dangerous evolution of heat? • Are lithium batteries packed with other household battery types? • Are household battery receptacles containing lithium batteries labelled appropriately?
3.7 By-catch	• Are appropriate receptacles, that are approved segregation devices, available for the transport of by-catch materials? • Are there separate receptacles for flammable liquids, toxics, oxidising agents, acids and alkalis? • Are these receptacles secured appropriately for transport? • Are these receptacles appropriately labelled?
4 Procedures and training	
4.1 Operating procedures	• Are safe operating procedures, based on the risk assessment, in place for the mobile CRC service?
4.2 Training	• Have all staff involved in the operation of the mobile CRC service been trained in the use of the safe operating procedures?
5 Waste tracking	
5.1 Waste transporter licence	• Has a waste transporter licence been obtained?
5.2 Record keeping	• Are arrangements in place to record the locations from which the waste was collected, the waste type and quantity, and date and time of collection?
6 Security and insurance	
6.1 Security	• Does the vehicle incorporate security features to prevent theft of the the vehicle, access to the storage access to the storage compartment and theft of material?
6.2 Insurance	• Has appropriate insurance cover been obtained for the mobile CRC service?

Appendix 6.4 – Checklist for vehicles transporting from a satellite

This checklist is to be used for vehicles involved in transporting small quantities of problem wastes from satellites to a central storage facility, where these vehicles are designed to carry less than placard loads.

Aspect	Element
1 Design of the service	
1.1 Type of mobile service	• What type of vehicle is being used to transport problem wastes? • What type of materials is the service designed to collect? • Has a risk assessment of the mobile CRC service been undertaken and documented?
1.2 Preparing materials for acceptance	• Are procedures in place to only transport less than 1,000kg or L of dangerous goods, where no flammable gases are transported? • Are procedures in place to ensure that where flammable gases (e.g. gas cylinders or aerosols) are transported, the total quantity of dangerous goods is limited to 250kg or L, and the quantity of flammable gases (gas cylinders plus aerosols, measured by capacity rather than contents) does not exceed 100kg or L? • Do all individual transport containers have a capacity of less than 500kg or L?
2 Dangerous goods transport requirements	
2.1 Transport documents	• Are procedures in place to ensure transport documents, as required for the transport of dangerous goods, are carried on the vehicle? • Are the transport documents carried in the vehicle's cabin?
2.2 Emergency information	• Has emergency information required for the transport of dangerous goods been prepared and is this information carried appropriately on the vehicle?
2.3 Placards and signage	• Does the vehicle have CRC program branded signage? • Are signs with pictorial and text descriptors provided in the mobile CRC and on receptacles to allow easy sorting and packing? • Do signs include how materials are to be packed in receptacles?
2.4 Safety and spill response equipment	• Does the vehicle have the following safety equipment: – one 30B dry powder fire extinguisher located in or directly behind the cabin near the driver's door, or at the front of any trailer – first aid kit – spill response kit appropriate to the materials being carried

Aspect	Element
2.5 Personal protective equipment (PPE)	• Does the vehicle carry the following PPE: – safety glasses – eye-wash kit – chemical resistant gloves or gauntlets – thermal insulated gloves or gauntlets – chemical resistant suit or coveralls – chemical resistant boots – electric torch complying with AS/NZS 60079.11 or other recognised code.
2.6 Other safety equipment	• What other safety equipment is carried on the vehicle, and has this been informed by a documented risk assessment?
2.7 Maintenance of safety equipment	• Are procedures in place to check and replenish the first aid kit, PPE and spill response equipment?
3 Transport receptacles and material stowage	
3.1 General	• Are materials transported in receptacles appropriate to their type (e.g. bunded receptacles for liquids, cages for gases)? • Are receptacles fixed or easily secured to prevent movement during transport? • Are receptacles adequate for the load? • Are receptacles easily accessible for packing to minimise manual handling difficulty? • Does the access to the vehicle and the arrangement of receptacles minimise manual handling difficulty and the potential for slips, trips and falls? • Can receptacles be removed in their entirety or be unpacked without manual handling difficulty? • Are intermediate storage containers used when packing and unpacking the receptacles in the vehicle? What type?
3.2 Flammable liquids	• Are flammable liquids kept separate from ignition sources? • Is the material storage area of the vehicle adequately ventilated? • Are flammable liquids stored in a bunded receptacle?
3.3 Gas cylinders	• Are gas cylinders stored in a ventilated area, not stacked, away from sources of heat and other ignition sources? • Are procedures in place to ensure the main valve is closed and any regulator is removed prior to loading a gas cylinder? • Has due consideration been given to transporting gas cylinders separately?
3.4 Aerosols	• Where aerosols are carried, are they transported in a cage receptacle that is adequately ventilated and is able to contain exploding cans? • Where aerosols are carried, is the receptacle transported in a part of the vehicle that is adequately ventilated and separated from ignition sources?

Aspect	Element
3.5 Lead acid batteries	• Are lead acid batteries packed in an upright position in a bunded area of the vehicle, secured, and not stacked?
3.6 Household batteries	• Are arrangements in place to ensure lithium batteries are packed to prevent short circuits and the dangerous evolution of heat? • Are lithium batteries packed with other household battery types? • Are household battery receptacles containing lithium batteries labelled appropriately?
3.7 By-catch	• Are appropriate receptacles, that are approved segregation devices, available for the transport of by-catch materials? • Are there separate receptacles for flammable liquids, toxics, oxidising agents, acids and alkalis? • Are these receptacles secured appropriately for transport? • Are these receptacles appropriately labelled?
4 Procedures and training	
4.1 Operating procedures	• Are safe operating procedures, based on the risk assessment, in place for the transport of problem wastes using the vehicle?
4.2 Training	• Have all staff involved in using the vehicle to transport problem wastes been trained in the use of the safe operating procedures?
5 Waste tracking	
5.1 Waste transporter licence	• Has a waste transporter licence been obtained?
5.2 Record keeping	• Are arrangements in place to record the locations from which the waste was collected, the waste type and and quantity, and date and time of collection?
6 Security and insurance	
6.1 Security	• Does the vehicle incorporate security features to prevent theft of the vehicle, access to the storage compartment and theft of material?
6.2 Insurance	• Has appropriate insurance cover been obtained for the mobile CRC service?

Appendix 6.5 – Checklist for satellites

This checklist is to be used for satellite drop-off points that are operated as a minor store. Refer to **Section 6.5.7** for the definition of a minor store.

Aspect	Element
Location	• Is the storage area separated by more than 10 metres from any other dangerous goods store? • Is there not more than one minor store per 500 square metres of floor or ground area?
Precautions	• Are materials that are are incompatible, or that might react dangerously, segregated? • Is the storage area located away from heating and ignition sources? • Is the storage area provided with adequate natural or mechanical ventilation? • Are all packages kept closed and there is no decanting on site? • Are appropriate spill control measures in place where packages are opened and their contents transferred? • Are procedures in place to ensure spills or leaks shall be cleaned up immediately and disposed of appropriately? Contaminated, spilled or leaked material shall not be returned to original packaging, except for disposal where it is known that this will not increase the risk. • Are procedures in place to ensure that the transfer of dangerous goods from the store to the transport vehicle are carried out in a manner that minimises the possibility of spillage or fire? • Are personnel who handle dangerous goods informed and aware of the hazards involved? • Are packages stored in a way that avoids spillage? • Is the store kept clear of combustible matter and refuse? • Are packages kept on surfaces that are resistant to attack by their contents if spilt? • Is appropriate PPE provided and worn by personnel involved in movement or clean-up of materials? • Is a fire extinguisher of a suitable type installed in the store, located so that it is immediately accessible in an emergency, along an exit route? • Is a supply of water available at a nearby location for personal hygiene?
Additional precautions for outdoor minor storage	• Is the ground around the storage area clear of combustible vegetation and refuse by at least 3m? • Is any potential flow of spillage prevented from reaching any protected place, watercourse or boundary by such means as the use of natural ground slope, or the provision of a diversion channel, kerb or bund? • Is the store separated from any protected place or property boundary by at least 3m?

7.
Important references

NSW Government agencies and legislation

Australian Standards

EPA2016/0557
ISBN 978-1-76039-493-6

Important references

7.1 NSW Government agencies and legislation 2

7.1.1 NSW EPA 2

7.1.2 SafeWork NSW 3

7.2 Australian standards 3

7.2.1 Guide to standards – Dangerous goods 3

7.2.2 Relevant standards 4

7.1 NSW Government agencies and legislation

7.1.1 NSW EPA

7.1.1.1 Contact details

Website: www.epa.nsw.gov.au

Phone: 131 555 (or (02) 9995 5555 from outside NSW)

Email: info@environment.nsw.gov.au

Post: EPA Head Office, PO Box A290, Sydney South NSW 1232

Fax: (02) 9995 5999

7.1.1.2 Local offices: www.epa.nsw.gov.au/contact/Locations.htm

7.1.1.3 Contact details: EPA Community Recycling Unit

Email: recycling.centres@epa.nsw.gov.au

Post: Community Recycling Unit, PO Box 668, Parramatta NSW 2124

7.1.1.4 Relevant legislation

Available from **www.legislation.nsw.gov.au**.

- Protection of the Environment Operations Act 1997
- Waste Avoidance and Resource Recovery Act 2001
- Protection of the Environment Operations (Waste) Regulation 2014
- Protection of the Environment Operations (General) Regulation 2009

7.1.1.5 Guide to licensing

The guide to licensing will help you determine whether you require an environment protection licence and it provides other licensing information about:

- how and where to apply for a licence
- how much a licence costs
- what you may need to do even if you don't need a licence

Available at **www.epa.nsw.gov.au/licensing/licenceguide.htm**.

7.1.1.6 Handbook for rural and regional transfer stations

The handbook for the design and operation of rural and regional transfer stations helps rural councils understand the challenges, opportunities and unique issues associated with rural transfer station operations. It showcases some of the innovative and practical solutions adopted by rural and regional councils and the experiences of numerous councils in responding to waste management needs.

Available at **www.epa.nsw.gov.au/warrlocal/rural-regional.htm**

7.1.2 SafeWork NSW

7.1.2.1 Managing risks of hazardous chemicals in the workplace code of practice

This code provides practical guidance on how to manage health and safety risks associated chemicals and is for persons conducting a business or undertaking that uses chemicals. The code applies to:

- substances, mixtures and articles used, handled, generated or stored at the workplace, which are defined as hazardous chemicals under the WHS Regulations
- the generation of hazardous chemicals from work processes, for example toxic fumes released during welding.

Available from **www.safework.nsw.gov.au/__data/assets/pdf_file/0018/52155/managing-risks-hazardous-chemicals-code-3837.pdf**.

7.1.2.2 Placarding for storage of hazardous chemicals

A fact sheet on placarding for storage of hazardous chemicals is available from **www.safework.nsw.gov.au/media/publications/health-and-safety/placarding-for-storage-of-hazardous-chemicals**

7.1.2.3 Contact details

Website: www.workcover.nsw.gov.au

Phone: 13 10 50

Email: contact@workcover.nsw.gov.au

Obtain publications online or call **1300 799 003**.

7.1.2.4 Relevant legislation

Available from **www.legislation.nsw.gov.au**.

- Work Health and Safety Act 2011
- Work Health and Safety Regulation 2011

7.2 Australian standards

7.2.1 Guide to standards – Dangerous goods

This document provides information on standards and other industry specific information (including the Australian Dangerous Goods Code) that may be of interest to anyone working with different types of dangerous goods, including manufacturers, importers, suppliers, installers and users.

The publications outlined in this guide cover requirements (including storage and handling) for dangerous goods transported by road and rail in relation to the 7th edition of the Australian Dangerous Goods Code (ADG7).

7.2.1.1 HB76:2010, Dangerous Goods – Initial emergency response guide

This handbook provides information on dealing with accidents, spills, leaks, hazards or fires involving dangerous goods, and the protective clothing to be worn in emergency procedures.

Available from Standards Australia at **www.saiglobal.com/store**.

7.2.1.2 Australian Dangerous Goods Code

The Australian Code for the Transport of Dangerous Goods by Road and Rail, also often referred to as the Australian Dangerous Goods Code (ADGC), sets out the requirements for transporting dangerous goods by road or rail. The current version of the code is edition 7.4, amended 30 June 2016.

Available from **www.ntc.gov.au/heavy-vehicles/safety/australian-dangerous-goods-code/**.

7.2.1.3 Load restraint guide

The load restraint guide (published by the National Transport Commission) details the performance standard for securing loads on vehicles.

Available from **www.ntc.gov.au/heavy-vehicles/safety/load-restraint-guide/**.

7.2.2 Relevant standards

The following Australian Standards are of particular interest in establishing and operating Community Recycling Centres.

Available from Standards Australia at **www.saiglobal.com/store**.

General information

- AS/NZS 3833:2007 The storage and handling of mixed classes of dangerous goods in packages and intermediate bulk containers

Specific classes of dangerous goods

- AS/NZS 1596:2014 The storage and handling of LP Gas
- AS 1940-2004 The storage and handling of flammable and combustible liquids
- AS 3780-2008 The storage and handling of corrosive substances
- AS 4332-2004 The storage and handling of gases in cylinders
- AS/NZS 4452:1997 The storage and handling of toxic substances

Equipment and facilities

- AS 1216-2006 Class labels for dangerous goods
- AS 1319-1994 Safety signs for the occupational environment
- AS 1603 Automatic fire detection and alarm systems
- AS 1670 Fire detection, warning, control and intercom systems
- AS 2444-2001 Portable fire extinguishers and fire blankets: selection and location
- AS 4775-2007 Emergency eyewash and shower equipment

8.
Safety data sheets

Provides safety data sheets for the hazardous materials received at a Community Recycling Centre

EPA2016/0557
ISBN 978-1-76039-493-6

Community Recycling Centres

Safety data sheet for: ACIDS

1. Material and supplier identification

The most common acid dropped off by householders at Community Recycling Centres (CRCs) is **hydrochloric acid** (also known as muriatic acid).

Less often, **sulphuric acid**, **nitric acid** and / or **phosphoric acid** may be dropped off.

These acids have many properties in common, and this is a combined Safety Data Sheet for the common acids presented at CRCs. Since materials delivered by householders to Community Recycling Centres are discarded ("waste") products and may have originated from a variety of manufacturers, full identification or hazard information is not available for each package. In the absence of full identification or hazard information, a precautionary approach must be taken by persons handling or storing the material.

Original suppliers may have included:

- Orica Ltd (now Ixom Operations Pty Ltd) | 1 Nicholson Street, Melbourne VIC 3000 | Tel: **03 9665 7111** | Emergency Tel: **1800 033 111**
- Ajax Finechem | 17/21 Bay Road, Taren Point NSW 2229 | Emergency Tel: **1800 638 556**
- Chem-Supply Pty Ltd | 38-50 Bedford Street, Gillman SA 5013 | Tel: **08 8440 2000**

and many others.

2. Composition information

Common **acids** dropped off at Community Recycling Centres may contain the following chemicals:

	CHEMICAL ENTITY	CAS No
	Hydrochloric acid	7647-01-0
OR	Nitric acid	7697-37-2
OR	Sulphuric acid	7664-93-9
OR	Phosphoric acid	7664-38-2

3. Hazards identification

Emergency Overview
HAZARDOUS CHEMICAL | DANGEROUS GOODS

Acids typically have the following hazardous classifications:

Hazardous Classification	Hazardous chemicals
Australian Dangerous Goods (ADG) Classification	Class 8 Corrosive Substances
SUSMP Classification (Standard for the Uniform Scheduling of Medicines and Poisons or "Poisons Schedule")	Schedule 6
UN No	Hydrochloric acid – 1789 Sulphuric acid >51% – 1830 Sulphuric acid <51% – 2796 Sulphuric acid – fuming (unlikely to be brought in) – 1831 Nitric acid – 1796 Phosphoric acid – 1805
Globally Harmonized System of Classification and Labelling of Chemicals (GHS) Classification	
Signal word	Danger
Hazard Classification	Corrosive to Metals – Category 1 Skin Corrosion – Category 1A or 1B Eye damage – Category 1 Specific Target Organ Toxicity – Category 3
Hazard Statements	H290 May be corrosive to metals H314 Causes severe skin burns and eye damage H335 May cause respiratory irritation

Prevention Precautionary Statements	P234	Keep only in the original container
	P260	Do not breathe mist / vapours / spray
	P264	Wash hands thoroughly after handling
	P280	Wear protective gloves / protective clothing / eye protection
Response Precautionary Statements	P304+P340	If inhaled, remove person to fresh air and keep comfortable for breathing
	P303+P361+P353	If on skin, take off immediately all contaminated clothing. Rinse skin with water / shower
	P305+P351+P338	If in eyes, rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing
	P301+P330+P331	If swallowed, rinse mouth. DO NOT induce vomiting
	P310	Immediately call a poison centre or a doctor / physician
Storage Precautionary Statements	P405	Store locked up
	P403+P233	Store on a well-ventilated place. Keep container tightly closed
	P406	Store in a corrosive resistant container

4. First aid measures

If poisoning occurs, contact a doctor or Poisons Information Centre (Tel: **13 11 26**).

Inhalation	Remove victim from area of exposure – avoid becoming a casualty. Remove contaminated clothing and loosen remaining clothing. Allow patient to assume most comfortable position and keep warm. Keep at rest until fully recovered. If patient finds breathing difficult and develops a bluish discolouration of the skin (which suggests a lack of oxygen in the blood – cyanosis), ensure airways are clear of any obstruction and have a qualified person give oxygen through a face mask. Apply artificial respiration if patient is not breathing. Seek immediate medical advice.
Ingestion	Immediately rinse mouth with water. If swallowed, do NOT induce vomiting. Give a glass of water. Seek immediate medical assistance.
Skin contact	If spilt on large areas of skin or hair, immediately drench with running water and remove clothing. Continue to wash skin and hair with plenty of water until advised to stop by the Poisons Information Centre or a doctor.

Eye contact	Hold eyelids apart and flush the eye continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre or a doctor, or for at least 15 minutes. Continue to wash with large amounts of water until medical help is available.
Note to physician	Treat symptomatically.

5. Fire fighting measures

Specific hazards	Non combustible, but decomposes on heating, emitting toxic fumes.
Suitable extinguishing media	Non combustible, but if involved in a fire, use fine water spray, normal foam or a dry agent (carbon dioxide, dry chemical powder).
Hazards from combustion products	Decomposes on heating, emitting toxic fumes.
Precautions for fire fighters and special protective equipment	Decomposes on heating emitting toxic fumes. Fire fighters to wear self-contained breathing apparatus and suitable protective clothing if risk of exposure to products of decomposition. Heating can cause expansion or decomposition of the material, which can lead to the containers exploding. If safe to do so, remove containers from the path of fire.
Hazchem Code:	**2R**

6. Accidental Release Measures

Wear protective equipment to prevent skin and eye contamination. Alert others in the spill area. Do not touch or walk through the spilled material and avoid breathing vapours. As quickly as possible, dike the spilled liquid to prevent spreading. Use spill pillows, pads or a non-combustible absorbent for this purpose. Do not use sawdust. Neutralise the acid with sodium bicarbonate, lime or soda ash in excess. Add the neutraliser slowly, working from the edges to the centre of the spill. Use caution, as reaction can cause splattering. Sweep up the powder and wash the area gently with water. Use vermiculite to absorb any remaining liquid.

Prevent run-off into waterways or drains. If entry into waterways occurs, inform appropriate authorities.

7. Handling and storage

Handling	Wear appropriate Personal Protective Equipment. Eating, drinking and smoking should be prohibited in areas where this material is handled. Avoid skin or eye contact or inhalation of vapours from any spilled material. Clean up spills immediately (see Section 6 above).
Storage	Follow the storage conditions recommended in the EPA's Operations and Management Handbook for Community Recycling Centres.

8. Acknowledgement

This Safety Data Sheet contains some material from Safety Data Sheets for acids from several manufacturers that are available in the public domain, particularly those by Ixom Operations and Chem-Supply Pty Ltd, whose authorship of that material is acknowledged.

Section 6 on Accidental Release Measures has been adapted from material published by the University of Iowa. Sections 6 and 7 contain material supplied by the current collection contractor for Community Recycling Centres, Toxfree Australia Pty Ltd.

Community Recycling Centres

Safety data sheet for: ALKALIS

1. Material and supplier identification

The most common alkali (base) materials dropped off by householders at Community Recycling Centres (CRCs) include household cleaners such as **bleaches, ammonia solution** and **drain clearing agents** (which may contain **sodium and / or potassium hydroxide**). Alkaline materials dropped off at CRCs may be liquid or solid. They have many properties in common, and this is a combined Safety Data Sheet for the common alkalis presented at CRCs.

Since materials delivered by householders to Community Recycling Centres are discarded ("waste") products and may have originated from a variety of manufacturers, full identification or hazard information is not available for each package. In the absence of full identification or hazard information, a precautionary approach must be taken by persons handling or storing the material.

Original suppliers may have included:

- Orica Ltd (now Ixom Operations Pty Ltd) | 1 Nicholson Street, Melbourne VIC 3000 | Tel: **03 9665 7111** | Emergency Tel: **1800 033 111**
- S C Johnson and Son Pty Ltd | 160 Epping Road, Lane Cove NSW 2066 | Tel: **02 9428 9111**
- Kleenco Australia Pty Ltd | 25 Moxon Road, Punchbowl NSW 2196 | Tel: **02 9707 3333**
- Pental Products Pty Ltd | 390 St Kilda Road, Melbourne VIC 3000 | Tel: **03 9251 2311**

and many others.

2. Composition information

Common **alkalis** dropped off at Community Recycling Centres may contain the following chemicals:

	CHEMICAL ENTITY	CAS No
	Sodium hydroxide	1310-73-2
AND / OR	Potassium hydroxide	1310-58-3
OR	Ammonia, aqueous solution	1336-21-6

3. Hazards identification

Emergency Overview
HAZARDOUS CHEMICAL | DANGEROUS GOODS

Alkalis typically have the following hazardous classifications:

Hazardous Classification	Some of the packages of alkaline materials dropped off at Community Recycling Centres are not classified as Hazardous Substances or Dangerous Goods, some are classified as Hazardous Substances but not Dangerous Goods. Some, particularly **solid drain cleaners**, are classified as both. The precautionary approach is to consider all such materials as Hazardous Substances and Dangerous Goods.
Australian Dangerous Goods (ADG) Classification	Class 8 – Corrosive Substances
SUSMP Classification (Standard for the Uniform Scheduling of Medicines and Poisons or "Poisons Schedule")	Schedule 6
UN No	Sodium hydroxide – solid – 1823 Sodium hydroxide – solution – 1824 Potassium hydroxide – solid – 1813 Potassium hydroxide – solution – 1814 Ammonia aqueous solution with not more than 35% ammonia – 2672
Globally Harmonized System of Classification and Labelling of Chemicals (GHS) Classification	
Signal word	Danger
Hazard Classification	Corrosive to Metals – Category 1 Skin Corrosion – Category 1A or 1C Eye damage – Category 1 Acute Aquatic Toxicity – Category 1

Hazard Statements	H290	May be corrosive to metals
	H314	Causes severe skin burns and eye damage
	H335	May cause respiratory irritation
	H400	Very toxic to aquatic life
Prevention Precautionary Statements	P234	Keep only in the original container
	P260	Do not breathe dust / fume / mist / vapours / spray
	P264	Wash hands thoroughly after handling
	P280	Wear protective gloves / protective clothing / eye protection, face protection
	P273	Avoid release to the environment
Response Precautionary Statements	P304+P340	If inhaled, remove person to fresh air and keep comfortable for breathing
	P303+P361+P353	If on skin, take off immediately all contaminated clothing. Rinse skin with water / shower
	P305+P351+P338	If in eyes, rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing
	P301+P330+P331	If swallowed, rinse mouth. DO NOT induce vomiting
	P310	Immediately call a poison centre or a doctor / physician
	P363	Wash contaminated clothing before re-use
	P390	Absorb spillage to prevent material damage
Storage Precautionary Statements	P405	Store locked up
	P403+P233	Store on a well-ventilated place. Keep container tightly closed
	P406	Store in a corrosive resistant container

4. First aid measures

If poisoning occurs, contact a doctor or Poisons Information Centre (Tel: **13 11 26**).

Inhalation	Remove victim from area of exposure. Remove contaminated clothing and loosen remaining clothing. Allow patient to assume most comfortable position and keep warm. Keep at rest until fully recovered. If patient finds breathing difficult and develops a bluish discolouration of the skin (which suggests a lack of oxygen in the blood – cyanosis), ensure airways are clear of any obstruction and have a qualified person give oxygen through a face mask. Apply artificial respiration if patient is not breathing. Seek immediate medical advice.

Ingestion	Immediately rinse mouth with water. If swallowed, do NOT induce vomiting. Give a glass of water. Seek immediate medical assistance.
Skin contact	If spilt on large areas of skin or hair, immediately drench with running water and remove clothing. Continue to wash skin and hair with plenty of water until advised to stop by the Poisons Information Centre or a doctor.
Eye contact	Immediately wash in and around the eye area with large amounts of water for at least 15 minutes. Eyelids to be held apart. Remove clothing if contaminated and wash skin. Urgently seek medical assistance. Transport promptly to hospital or medical centre.
Note to physician	Treat symptomatically. Can cause corneal burns.

5. Fire fighting measures

Specific hazards	Non combustible. However, containers of aqueous ammonia, if heated, may rupture and release ammonia vapour. Ammonia may decompose into flammable hydrogen gas, forming flammable mixtures with air.
Suitable extinguishing media	Non combustible, but if involved in a fire, use fine water spray, normal foam or a dry agent (carbon dioxide, dry chemical powder).
Hazards from combustion products	Aqueous ammonia may decompose, forming flammable mixtures with air.
Precautions for fire fighters and special protective equipment	Fire fighters to wear self-contained breathing apparatus and suitable protective clothing if risk of exposure to products of decomposition. Heating can cause expansion or decomposition of the material, which can lead to the containers exploding. If safe to do so, remove containers from the path of fire.
Hazchem Code:	**2R**

6. Accidental Release Measures

Wear protective equipment to prevent skin and eye contamination. Alert others in the spill area. Do not touch or walk through the spilled material and avoid breathing vapours. Prevent run-off into waterways or drains. Use absorbent material (soil, sand or other inert material). Neutralise spill with dilute acid. Collect neutralised material into labelled containers for appropriate disposal. If entry into waterways occurs, inform appropriate authorities.

7. Handling and storage

Handling	Wear appropriate Personal Protective Equipment. Eating, drinking and smoking should be prohibited in areas where this material is handled. Avoid skin or eye contact or inhalation of vapours from any spilled material. Clean up spills immediately (see Section 6 above).
Storage	Follow the storage conditions recommended in the EPA's Operations and Management Handbook for Community Recycling Centres.

8. Acknowledgement

This Safety Data Sheet contains some material from Safety Data Sheets for alkaline materials from several manufacturers that are available in the public domain, particularly those by Ixom Operations Pty Ltd, whose authorship of that material is acknowledged.

Section 6 on Accidental Release Measures has been adapted from material published by the University of Iowa.

Community Recycling Centres

Safety data sheet for: FLAMMABLE LIQUIDS (other than solvent based paint)

1. Material and supplier identification

The most common flammable liquids (other than solvent-based paint, for which a separate Safety Data Sheet exists) that are dropped off by householders at Community Recycling Centres (CRCs) include petrol, kerosene, methylated spirits, paint thinners (such as mineral turpentine) and hydrocarbon solvents (such as acetone). These materials have many properties in common, and this is a combined Safety Data Sheet for the common flammable liquids presented at CRCs.

Since materials delivered by householders to Community Recycling Centres are discarded ("waste") products and may have originated from a variety of manufacturers, full identification or hazard information is not available for each package. In the absence of full identification or hazard information, a precautionary approach must be taken by persons handling or storing the material.

Original suppliers may have included:

- Shell Company of Australia Ltd (Now Viva Energy Australia Pty Ltd) | 720 Bourke Street, Docklands VIC 3008 | Tel: **03 882 34444** | Emergency Tel: **1800 651 818**
- Mobil Oil Australia Pty Ltd | 12 Riverside Quay, Southbank VIC 3006 | Tel: **03 8633 8444** | Emergency Tel: **1800 023 005**
- Recochem Inc | 1809 Lytton Road, Lytton QLD 4178 | Tel: **07 3308 5200** | Emergency Tel: **1300 131 001**
- Orica Ltd (now Ixom Operations Pty Ltd) | 1 Nicholson Street, Melbourne VIC 3000 | Tel: **03 9665 7111** | Emergency Tel: **1800 033 111**
- CSR Distilleries Operations Pty Ltd | 265 Whitehall Street, Yarraville VIC 3013 | Tel: **1800 819 618**

and many others.

2. Composition information

Flammable liquids dropped off at Community Recycling Centres may contain the following ingredients:

	CHEMICAL ENTITY	CAS No
	Gasoline	86290-81-5
OR	Kerosene	8008-20-6
OR	Ethanol	64-17-5
OR	Acetone	67-64-1

3. Hazards identification

Emergency Overview
HAZARDOUS CHEMICAL | DANGEROUS GOODS

Flammable liquids dropped off by householders at CRCs typically have the following hazardous classifications:

Hazardous Classification	Hazardous chemicals
Australian Dangerous Goods (ADG) Classification	Class 3 Flammable Liquids
SUSMP Classification (Standard for the Uniform Scheduling of Medicines and Poisons or "Poisons Schedule")	Schedule 5
UN No	Gasoline – 1203 Kerosene – 1223 Ethanol – 1170 Acetone – 1090
Globally Harmonized System of Classification and Labelling of Chemicals (GHS) Classification	
Signal word	Danger
Hazard Classification	Flammable liquid – Category 1 Skin Irritation – Category 2 Eye Irritation – Category 2A Germ Cell Mutagen – Category 1B Carcinogen – Category 1B Specific Target Organ Toxicant (central nervous system) – Category 3 Aspiration Toxicant – Category 1 Chronic Aquatic Toxicity – Category 2

Hazard Statements	H224	Extremely flammable liquid and vapour
	H304	May be fatal if swallowed and enters airways
	H315	Causes skin irritation
	H319	Causes serious eye irritation
	H336	May cause drowsiness or dizziness
	H340	May cause genetic defects
	H350	May cause cancer
	H361	Suspected of damaging the unborn child
	H411	Toxic to aquatic life with long lasting effects
Prevention Precautionary Statements	P210	Keep away from heat / sparks / open flames / hot surfaces – No smoking
	P233	Keep container tightly closed
	P243	Take precautionary measures against static discharge
	P261	Avoid breathing mist / vapours
	P264	Wash skin thoroughly after handling
	P273	Avoid release to the environment
	P280	Wear protective gloves / protective clothing / eye protection / face protection
Response Precautionary Statements	P304+P340	If inhaled, remove person to fresh air and keep comfortable for breathing
	P302+P352	If on skin – wash with plenty of soap and water
	P303+P361+P353	If on skin, take off immediately all contaminated clothing. Rinse skin with water / shower
	P305+P351+P338	If in eyes, rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing
	P301+P310	If swallowed – Immediately call a Poisons Centre or doctor / physician
	P308+P313	If exposed or concerned – Get medical advice / attention
	P363	Wash contaminated clothing before re-use
	P312	Call a Poisons Centre or doctor / physician if you feel unwell
	P331	Do NOT induce vomiting

Response Precautionary Statements (continued)	P332+P313	If skin irritation occurs, get medical advice / attention
	P362+P364	Take off contaminated clothing and wash before re-use
	P370+P378	In case of fire, use water fog, foam, dry chemical or carbon dioxide (CO_2) to extinguish
	P391	Collect spillage
Storage Precautionary Statements	P405	Store locked up
	P403+P235	Store on a well-ventilated place. Keep cool

4. First aid measures

If poisoning occurs, contact a doctor or Poisons Information Centre (Tel: **13 11 26**).

Inhalation	Immediately remove from further exposure. Get immediate medical assistance. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. Give supplemental oxygen, if available. If breathing has stopped, assist ventilation with a mechanical device.
Ingestion	Seek immediate medical assistance. Do NOT induce vomiting.
Skin contact	Wash contact areas with soap and water. Remove contaminated clothing. Launder contaminated clothing before reuse.
Eye contact	Hold eyelids apart and flush the eye continuously with running water. Continue flushing until advised to stop by a Poisons Centre or a doctor, or at least for 15 minutes. If irritation occurs, get medical assistance.
Note to physician	Treat symptomatically.

5. Fire fighting measures

Specific hazards	Extremely flammable. Vapour is flammable and heavier than air. Vapour may travel across the ground and reach remote ignition sources, causing a flashback.
Suitable extinguishing media	Water fog, foam, dry chemical or carbon dioxide (CO_2). DO NOT USE STRAIGHT STREAMS OF WATER.
Hazards from combustion products	May emit aldehydes, products of incomplete combustion, oxides of carbon, sulphur dioxide, smoke, fumes.
Precautions for fire fighters and special protective equipment	Evacuate area. If a leak or spill has not ignited, use water spray to disperse the vapours and to protect personnel attempting to stop a leak. Prevent run-off from fire control or dilution from entering streams, sewers or drinking water supply. Fire-fighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA).
Hazchem Code:	**3[Y]E**

6. Accidental Release Measures

Warn or evacuate occupants in surrounding and downwind areas if required, due to toxicity or flammability of the material. Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do so without risk. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Prevent entry into waterways, sewer, basements or confined areas. Vapour-suppressing foam may be used to reduce vapour. Absorb or cover with dry earth, sand or other non-combustible material and transfer to labelled containers. Use clean non-sparking tools to collect absorbed material. If entry into waterways occurs, inform appropriate authorities.

7. Handling and storage

Handling	Avoid all personal contact. Wash skin thoroughly after handling. Do not eat, drink or smoke in the area. Prevent exposure to ignition sources. Electrostatic charges may be generated during transfer and cause fire. Do not use electronic devices (mobile telephones, pagers, calculators) when handling the material, unless the devices are certified as intrinsically safe.
Storage	Follow the storage conditions recommended in the EPA's Operations and Management Handbook for Community Recycling Centres.

8. Acknowledgement

This Safety Data Sheet contains some material from Safety Data Sheets for flammable liquids from several manufacturers that are available in the public domain, particularly those by Mobil Oil Australia Pty Ltd (petrol), Recochem Inc (kerosene and methylated spirits) and Ixom Operations Pty Ltd (acetone). Their authorship of that material is acknowledged.

Community Recycling Centres

Safety data sheet for: FLUORESCENT LAMPS (tubular and compact)

1. Material and supplier identification

Since materials delivered by householders to Community Recycling Centres are discarded ("waste") products and may have originated from a variety of manufacturers, full identification or hazard information is not available for each item. In the absence of full identification or hazard information, a precautionary approach must be taken by persons handling or storing the material.

Original suppliers may have included:

- GE Lighting Australia Ltd | 32 Phillip Street, Parramatta NSW 2150 | Tel: **1300 762 852**
- Philips Lighting | Locked Bag 30, North Ryde NSW 2113 | Tel: **1300 304404**

and many others.

2. Composition information

Tubular and compact-type fluorescent lamps typically contain very small quantities (20 milligrams per lamp or less) of the following materials:

CHEMICAL ENTITY	CAS No
Mercury	7439-97-6
"Phosphor" (e.g. calcium chloro-fluoro-phosphate, the mineral apatite)	–

3. Hazards identification

Emergency Overview
HAZARDOUS CHEMICAL | DANGEROUS GOODS

Hazardous Classification	Intact tubular and compact-type fluorescent lamps are NOT classified as Hazardous Substances or Dangerous Goods under applicable Australian standards or regulations. However, when broken, they are classified as **Mercury Compounds N.O.S., Class 6 Division 6.1 Toxic Substances.**
Australian Dangerous Goods (ADG) Classification	Division 6.1
SUSMP Classification (Standard for the Uniform Scheduling of Medicines and Poisons or "Poisons Schedule")	Schedule 7
UN No	2025
Globally Harmonized System of Classification and Labelling of Chemicals (GHS) Classification	The information below is taken from the GHS Hazardous Chemical Information List for **inorganic compounds of mercury**. It must be emphasised that, since most fluorescent lamps delivered to and / or stored at Community Recycling Centres are intact (and even if broken, the amounts of mercury compounds present are very small), these statements must be considered as being **extremely conservative**.
Signal word	Danger

Hazard Classification	Acute Toxicity – Category 1 Acute Toxicity – Category 2 Specific Target Organ Toxicity (repeated exposure) – Category 2 Hazardous to the Aquatic Environment (acute) – Category 1 Hazardous to the Aquatic Environment (chronic) – Category 1	
Hazard Statements	H310 H330 H373 H410	Fatal in contact with skin Fatal if inhaled May cause damage to organs through prolonged or repeated exposure Very toxic to aquatic life with long-lasting effects
Prevention Precautionary Statements	P262 P264 P280 P260 P284 P273	Do not get in eyes, on skin or on clothing Wash hands thoroughly after handling Wear protective gloves / protective clothing Do not breathe dust In case of inadequate ventilation, wear respiratory protection Avoid release to the environment
Response Precautionary Statements	P302+P352 P304+P340 P314 P391	If on skin, wash with plenty of water If inhaled, remove person to fresh air and keep comfortable for breathing Get medical advice if you feel unwell Collect spillage
Storage Precautionary Statements	P405 P403	Store locked up Store on a well-ventilated place

4. First aid measures

The measures below are for **broken or damaged** fluorescent lamps, not for intact ones.
If poisoning occurs, contact a doctor or Poisons Information Centre (Tel: **13 11 26**).

Inhalation	Get medical aid immediately. Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Do NOT use mouth-to-mouth resuscitation. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.
Ingestion	This is considered unlikely.

Skin contact	Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Destroy contaminated shoes. Apply normal first aid for glass cuts if such should occur through lamp breakage.
Eye contact	Get medical aid. Do NOT allow victim to rub eyes or keep eyes closed. Irrigate extensively with water (at least 30 minutes).
Note to physician	The concentration of mercury in whole blood is a reasonable measure of the body-burden of mercury and thus is used for monitoring purposes. Treat symptomatically. Persons with kidney disease, chronic respiratory disease, liver disease, or skin disease may be at increased risk from exposure to this substance.

5. Fire fighting measures

Specific hazards	Intact fluorescent tubes and compact lamps are non-combustible. If subjected to extreme heat, the glass, and plastic (if present), components of the lamp may crack or melt and may emit toxic fumes.
Suitable extinguishing media	Use extinguishing media appropriate for combustibles in the area.
Hazards from combustion products	If caught in a surrounding fire, lamps may crack and emit toxic fumes, including minor quantities of mercury compounds.
Precautions for fire fighters and special protective equipment	Fire fighters to wear self-contained breathing apparatus and suitable protective clothing if there is a risk of exposure to vapours.
Hazchem Code:	**2X**

6. Accidental Release Measures

Clean up spills immediately. Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable labelled container for appropriate disposal. Avoid runoff into storm sewers and ditches which lead to waterways.

7. Handling and storage

Handling	Wear protective equipment to prevent skin and eye contamination. Wash hands thoroughly after handling. If any lamps are broken, remove contaminated clothing and wash it before reuse. Minimize dust generation and accumulation. Do not get on skin or in eyes. Do not ingest or inhale.
Storage	Follow the storage conditions recommended in the EPA's Operations and Management Handbook for Community Recycling Centres.

8. Acknowledgement

This Safety Data Sheet contains some material published by GE Consumer and Industrial Lighting (USA) and Philips Lighting Co (USA) available in the public domain, and their authorship of that material is acknowledged.

Community Recycling Centres

Safety data sheet for: LEAD-ACID BATTERIES

1. Material and supplier identification

Other names: Batteries wet filled with acid, Car batteries, Automotive batteries

Since materials delivered by householders to Community Recycling Centres are discarded ("waste") products and may have originated from a variety of manufacturers, full identification or hazard information is not available for each item. In the absence of full identification or hazard information, a precautionary approach must be taken by persons handling or storing the material.

Original suppliers may have included:

- Century Yuasa Batteries | 49–65 Cobalt Street, Carole Park QLD 4300 | Tel: **07 3361 6161** | Emergency | Tel: **07 3361 6707**
- Marshall Power Australia Pty Ltd | 1–5 Winterton Road, Clayton VIC 3168 | Tel: **1300 695 717** | Emergency Tel: **1800 039 008**

and many others.

2. Composition information

Lead-acid batteries typically contain the following materials:

CHEMICAL ENTITY	CAS No
Lead	7439-92-1
Lead oxide	1317-36-8
Sulphuric acid	7664-93-9
Non-hazardous components	–

3. Hazards identification

Emergency Overview
HAZARDOUS CHEMICAL | DANGEROUS GOODS

Hazardous Classification	Lead-acid batteries are classified as a Hazardous Chemical in the NSW WHS Regulation 2011 by virtue of being listed in Part 7.1 Clause 328 as "Any dangerous goods other than those listed above".	
Australian Dangerous Goods (ADG) Classification	Class 8 Corrosive Substances	
SUSMP Classification (Standard for the Uniform Scheduling of Medicines and Poisons or "Poisons Schedule")	Lead-acid batteries *per se* are exempted in SUSMP, but sulphuric acid is a Schedule 6 poison and "lead compounds" are also Schedule 6.	
UN No	2794	
Globally Harmonized System of Classification and Labelling of Chemicals (GHS) Classification	Lead-acid batteries *per se* are not listed in the GHS Hazardous Chemical Information List. The information below is for sulphuric acid.	
Signal word	Danger	
Hazard Classification	Skin Corrosion – Category 1A	
Hazard Statements	H314	Causes severe skin burns and eye damage
Prevention Precautionary Statements	P260 P264 P280	Do not breathe mist / vapours / spray Wash hands thoroughly after handling Wear protective gloves / protective clothing / eye protection

Response Precautionary Statements	P304+P340	If inhaled, remove person to fresh air and keep comfortable for breathing
	P303+P361+P353	If on skin, take off immediately all contaminated clothing. Rinse skin with water / shower
	P305+P351+P338	If in eyes, rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing,
	P301+P330+P331	If swallowed, rinse mouth. DO NOT induce vomiting
	P310	Immediately call a poison centre or a doctor / physician
	P363	Wash contaminated clothing before reuse
Storage Precautionary Statements	P405	Store locked up

4. First aid measures

If poisoning occurs, contact a doctor or Poisons Information Centre (Tel: **13 11 26**).

Inhalation	If fumes of combustion products are inhaled, lay the patient down, keep warm and rested. Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. Apply artificial respiration if not breathing. Transport to hospital, or doctor without delay.
Ingestion	Urgent hospital treatment is likely to be needed. If swallowed do NOT induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. Observe the patient carefully. Give water to rinse out mouth, then provide liquid slowly and as much as the patient can comfortably drink. Transport to hospital or doctor without delay.
Skin contact	Immediately flush body and clothes with large amounts of water, using safety shower if available. Quickly remove all contaminated clothing, including footwear. Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre.

Eye contact	Immediately hold eyelids apart and flush the eye continuously with running water. Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. Transport to hospital or doctor without delay. Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Note to physician	Treat symptomatically for acute or short term exposure to strong acids.

5. Fire fighting measures

Specific hazards	Lead-acid batteries are non-combustible and are not considered to be a significant fire risk. However, heating may cause expansion or decomposition leading to violent rupture of containers. Acids may react with metals to produce hydrogen, a highly flammable and explosive gas.
Suitable extinguishing media	Water spray or fog, Foam, Dry chemical powder, Carbon dioxide.
Hazards from combustion products	Heating may cause expansion or decomposition leading to violent rupture of containers. Acids may react with metals to produce hydrogen, a highly flammable and explosive gas.
Precautions for fire fighters and special protective equipment	Fire fighters to wear breathing apparatus and protective gloves. Prevent spillage or run-off from entering drains or water courses. DO NOT approach batteries suspected to be hot. Cool fire-exposed containers with water spray from a protected location. If safe to do so, remove containers from path of fire. Equipment should be thoroughly decontaminated after use.
Hazchem Code:	**2R**

6. Accidental Release Measures

Wear protective equipment to prevent skin and eye contamination. Alert others in the spill area. Do not touch or walk through the spilled material and avoid breathing vapours. Shut off ignition sources. As quickly as possible, dike the spilled liquid to prevent spreading. Use spill pillows, pads or a non-combustible absorbent for this purpose. Neutralise the acid with sodium bicarbonate in excess. Add the neutraliser slowly, working from the edges to the centre of the spill. Use caution, as reaction can cause splattering. Sweep up the powder and wash the area gently with water. Use vermiculite to absorb any remaining liquid.

Environmental precautions	Contain the spill to prevent entry into drains or waterways. If entry into waterways occurs, inform appropriate authorities.

7. Handling and storage

Handling	Wear appropriate Personal Protective Equipment. Eating, drinking and smoking should be prohibited in areas where this material is handled. Avoid skin or eye contact or inhalation of vapours from any spilled material. Clean up spills immediately (see Section 6 above). Lead acid batteries should always be handled and stacked in an upright position. Stacking should be no more than two-high, with a sheet of cardboard placed between the first and second layers. Avoid dropping. As some batteries may be “live”, there is potential for sparking if dropped or if conducting material is placed across the terminals.
Storage	Follow the storage conditions recommended in the EPA’s Operations and Management Handbook for Community Recycling Centres.

8. Acknowledgement

This Safety Data Sheet contains some material from Safety Data Sheets for lead acid batteries from several manufacturers that are available in the public domain, particularly those by Century Yuasa Batteries and Marshall Power Australia Pty Ltd, whose authorship of that material is acknowledged.

Section 6 on Accidental Release Measures has been adapted from material published by the University of Iowa. Sections 6 and 7 contain material supplied by the current collection contractor for Community Recycling Centres, Toxfree Australia Pty Ltd.

Community Recycling Centres

Safety data sheet for: DOMESTIC LPG CYLINDERS

1. Material and supplier identification

Other names: Propane cylinders, Propane / butane cylinders, Domestic gas bottles, BBQ gas cylinders.

Since materials delivered by householders to Community Recycling Centres are discarded ("waste") products and may have originated from a variety of manufacturers, full identification or hazard information is not available for each cylinder. In the absence of full identification or hazard information, a precautionary approach must be taken by persons handling or storing the material. LPG cylinders delivered by householders to Community Recycling Centres are usually empty; however, as part of the precautionary approach, they are treated as still containing LPG.

Original suppliers may have included:

- Elgas Ltd | 10 Julius Avenue, North Ryde NSW 2113 | Tel: **02 8094 3200** | Emergency Tel: **1800 819 783**
- Origin Energy | 264–278 George Street, Sydney NSW 2000 | Tel: **02 8345 5000** | Emergency Tel: **1800 808 526**
- Supagas NSW | 5 Benson Road, Ingleburn NSW 2565 | Tel: **02 8788 4444** | Emergency Tel: **1300 651 106**

and many others.

2. Composition information

Domestic LPG cylinders may typically contain one or more of the following chemical compounds in varying proportions:

CHEMICAL ENTITY	CAS No
Propane	74-98-6
Propene	115-07-1
n-Butane	106-97-8
Iso-Butane	75-28-5
Ethane	74-84-0
Odorant: Ethyl Mercaptan	75-08-1

3. Hazards identification

Emergency Overview
HAZARDOUS CHEMICAL | DANGEROUS GOODS

Hazardous Classification	Hazardous Chemical (NSW WHS Regulation 2011 Part 7.1 Clause 328)	
Australian Dangerous Goods (ADG) Classification	Class 2 Division 2.1 – Flammable Gases	
SUSMP Classification (Standard for the Uniform Scheduling of Medicines and Poisons or "Poisons Schedule")	Not classified	
UN No	1075	
Globally Harmonized System of Classification and Labelling of Chemicals (GHS) Classification		
Signal word	Danger	
Hazard Classification	Flammable Gases – Category 1 Gases Under Pressure – Liquefied Gas	
Hazard Statements	Extremely flammable gas Contains gas under pressure – may explode if heated	
Prevention Precautionary Statements	P210	Keep away from heat / sparks / open flames / hot surfaces. No smoking
Response Precautionary Statements	P377 P381	Leaking gas fire. Do not extinguish, unless leak can be stopped safely Eliminate all ignition sources if safe to do so

Storage Precautionary Statements	P410+P403	Protect from sunlight. Store in a well-ventilated place
Other hazards	In high concentrations may cause asphyxiation. Contact with liquid may cause cold burns / frostbite	

4. First aid measures

Inhalation	LPG is an asphyxiant. Remove victim to fresh air. Be aware of possible explosive atmospheres. Keep person warm and at rest. If not breathing, or breathing is irregular, provide artificial respiration or oxygen by a trained person.
Ingestion	Due to the volatile nature of the product, this is considered unlikely.
Skin contact	Cold burns: remove contaminated clothing and gently wash affected areas with warm (30°C) water for 15 minutes. Apply non-adhesive sterile dressing and treat as for a thermal burn. For large burns, immerse in warm water for 15 minutes. Seek medical attention.
Eye contact	Cold burns: immediately flush with tepid water or with sterile saline solution. Seek medical advice.
Note to physician	Treat symptomatically.

5. Fire fighting measures

Specific hazards	Extremely flammable gas. May form flammable mixtures with air. Gas may travel considerable distance to a source of ignition. If ignition has occurred, this may weaken cylinder metal from the heat, resulting in an explosion.
Suitable extinguishing media	Evacuate the area, remove all ignition sources. Stop flow of gas if safe to do so, by closing the cylinder valve. DO NOT EXTINGUISH THE FLAME, as this may lead to re-ignition and explosion. If extinguishing the flame is absolutely necessary, use only a dry powder extinguisher. Keep cylinders cool by spraying with fine water spray from a safe distance. Do not move cylinders for at least 24 hours after the fire and avoid shocks to cylinders that have been in a fire.

Hazards from combustion products	On burning, may emit toxic fumes, including oxides of carbon and nitrogen, smoke, and products of incomplete combustion.
Precautions for fire fighters and special protective equipment	Do not approach cylinders suspected of being hot.
Hazchem Code:	**2YE**

6. Accidental Release Measures

Any leak or spill is a fire and / or explosion hazard. If a leak has not ignited, stop gas flow if safe to do so, remove sources of ignition and evacuate personnel. Liquid leaks generate heavier-than-air flammable vapour, which may travel a considerable distance (e.g. through drains) to find a source of ignition. Vapour may collect in confined spaces. Where appropriate, use water spray to disperse the gas or vapour.

7. Handling and storage

Handling	Avoid inhalation of vapour. Avoid contact with liquid and cold storage containers. When handling cylinders wear protective footwear and suitable gloves.
Storage	Follow the storage conditions recommended in the EPA's Operations and Management Handbook for Community Recycling Centres.

8. Acknowledgement

This Safety Data Sheet contains some material from Safety Data Sheets for LPG cylinders from several suppliers that are available in the public domain, particularly those by Elgas Ltd, Origin Energy and Supagas NSW, whose authorship of that material is acknowledged.

Community Recycling Centres

Safety data sheet for: OXIDISING MATERIALS

1. Material and supplier identification

The most common oxidising material dropped off by householders at Community Recycling Centres (CRCs) is the swimming pool chemical **calcium hypochlorite**, which is a granular solid[1]. Other, less common, oxidising materials occasionally presented at CRCs are **potassium permanganate** ("Condy's crystals") and **hydrogen peroxide** (which is only available in solution of varying strengths). These materials have some properties in common, and this is a combined Safety Data Sheet for oxidising materials, which are occasionally presented at CRCs.

Since materials delivered by householders to Community Recycling Centres are discarded ("waste") products and may have originated from a variety of manufacturers, full identification or hazard information is not available for each package. In the absence of full identification or hazard information, a precautionary approach must be taken by persons handling or storing the material.

Original suppliers may have included:

- Kleenco Australia Pty Ltd | 25 Moxon Road, Punchbowl NSW 2196 | Tel: **02 9707 3333** (for calcium hypochlorite)
- Pool Pro Products | 10-12 Cairns Street, Loganholme QLD 4129 | Tel: **07 3209 7884** | Emergency Tel: **1800 033 111** (for calcium hypochlorite)
- Biotech Pharmaceuticals Pty Ltd | 83 Cherry Lane, Laverton North VIC 3026 | Tel: **03 9278 7555** (for potassium permanganate)
- Orica Ltd (now Ixom Operations Pty Ltd) | 1 Nicholson Street, Melbourne VIC 3000 | Tel: **03 9665 7111** | Emergency Tel: **1800 033 111** (for hydrogen peroxide)

and many others.

2. Composition information

Oxidising materials dropped off at Community Recycling Centres may contain the following chemicals:

	CHEMICAL ENTITY	CAS No
	Calcium hypochlorite	7778-54-3
OR	Potassium permanganate	7722-64-7
OR	Hydrogen peroxide	7722-84-1

[1] Another common swimming pool chemical, sodium hypochlorite, (which is only available in solution and is often colloquially, but incorrectly, referred to as "liquid chlorine") is not classified as an oxidising material, but as a corrosive material.

3. Hazards identification

Emergency Overview
HAZARDOUS CHEMICAL | DANGEROUS GOODS

Oxidising materials dropped off by householders at CRCs typically have the following hazardous characteristics:

Hazardous Classification	Hazardous chemicals
Australian Dangerous Goods (ADG) Classification	Class 5 Division 5.1 Oxidising Substances
SUSMP Classification (Standard for the Uniform Scheduling of Medicines and Poisons or "Poisons Schedule")	Schedule 6
UN No	Calcium hypochlorite – 1748 Potassium permanganate – 1490 Hydrogen peroxide – 8 to 20% – 2984 Hydrogen peroxide – 20 to 60% – 2014 Hydrogen peroxide – above 60% – unlikely to be delivered
Globally Harmonized System of Classification and Labelling of Chemicals (GHS) Classification	
Signal word	Danger
Hazard Classification	Oxidising solid – Category 2 (for calcium hypochlorite and solid potassium permanganate) OR Oxidising liquid – Category 2 (for hydrogen peroxide) Skin corrosion – Category 1B Acute toxicity – Category 4 Aquatic Toxicity – Category 1

Hazard Statements	H272	May intensify fire: oxidiser
	H302	Harmful if swallowed
	H314	Causes severe skin burns and eye damage
	H335	May cause respiratory irritation
	H400	Very toxic to aquatic life
Prevention Precautionary Statements	P221	Take any precaution to avoid mixing with combustibles
	P210	Keep away from heat / sparks / open flames / hot surfaces. No smoking
	P220	Keep / store away from clothing / combustible materials
	P273	Avoid release to the environment
	P260	Do not breathe dust / fume / gas / mist / vapours / spray
	P280	Wear protective gloves / protective clothing / eye protection / face protection
Response Precautionary Statements	P304+P340	If inhaled, remove person to fresh air and keep comfortable for breathing
	P303+P361+P353	If on skin, take off immediately all contaminated clothing. Rinse skin with water / shower
	P305+P351+P338	If in eyes, rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing
	P301+P310	If swallowed – Immediately call a Poisons Centre or doctor / physician
	P363	Wash contaminated clothing before re-use
	P312	Call a Poisons Centre or doctor / physician if you feel unwell
	P331	Do NOT induce vomiting
	P332+P313	If skin irritation occurs, get medical advice / attention
	P370+P378	In case of fire, use water fog, foam, dry chemical or carbon dioxide (CO_2) to extinguish
	P391	Collect spillage
Storage Precautionary Statements	P405	Store locked up
	P403+P233	Store on a well-ventilated place Keep container tightly closed

4. First aid measures

Inhalation	Remove person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek immediate medical attention.
Ingestion	Do NOT induce vomiting. Immediately rinse mouth with water. Give a glass of water. Never give anything by mouth to an unconscious person. Seek immediate medical attention.
Skin contact	Remove contaminated clothing and wash affected areas with soap and water. Seek immediate medical attention. Launder clothing before reuse. Skin burns: cover with a clean, dry dressing until medical help is available.
Eye contact	Check for and remove any contact lenses. Immediately irrigate eyes with plenty of running water for at least 15 minutes, keeping eyelids open. Seek immediate medical attention.
Note to physician	Treat symptomatically. Can cause corneal burns. Delayed effects from exposure to chlorine can include shortness of breath, headache, oedema and pneumonia.

5. Fire fighting measures

Specific hazards	Non combustible, but will support combustion of other materials. Calcium hypochlorite is a powerful oxidising agent and decomposes violently upon heating, liberating oxygen and toxic chlorine gas.
Suitable extinguishing media	Water spray (large quantities), foam, dry chemical or carbon dioxide (CO_2).
Hazards from combustion products	Calcium hypochlorite may emit toxic chlorine gas.
Precautions for fire fighters and special protective equipment	Fire-fighters should wear, self-contained breathing apparatus (SCBA) and protective clothing.
Hazchem Code:	**1W**

6. Accidental Release Measures

Wear self-contained breathing apparatus and full protective clothing. Evacuate all non-essential personnel from affected area. Ensure adequate ventilation. Do not breathe dust or fumes. Prevent spillage from entering drains or water courses. For solid oxidisers (calcium hypochlorite and crystalline potassium permanganate) - sweep up the spill, avoiding generation of dust. Immediately spread as a thin layer in uncontaminated, dry, open area to reduce the possibility of forming local hot spots. Do not return spilled material to original container. Do not add small amounts of water to calcium hypochlorite. Where a spill has occurred in a confined space or an inadequately ventilated enclosure and the material is damp and evolving chlorine, the rate of chlorine evolution can be reduced by covering the thinly spread solid with soda ash (sodium carbonate).

For liquid oxidisers – dilute / flood area with water, taking care to prevent entry of contaminated water into stormwater drains or water courses. Contain the spill using non-flammable inorganic materials until decomposition is completed naturally. If entry into drains or watercourses has occurred, inform appropriate authorities.

7. Handling and storage

Handling	Avoid skin and eye contact and breathing in vapour, mists and aerosols. Do not return unused product to original container. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use.
Storage	Follow the storage conditions recommended in the EPA's Operations and Management Handbook for Community Recycling Centres.

8. Acknowledgement

This Safety Data Sheet contains some material from Safety Data Sheets for oxidising materials from several suppliers that are available in the public domain, particularly those by POPS Group Pty Ltd (suppliers of Pool Pro brand of granular calcium hypochlorite) and Ixom Operations Pty Ltd (hydrogen peroxide). Their authorship of that material is acknowledged.

Community Recycling Centres

Safety data sheet for: SOLVENT-BASED PAINT (Oil-based paint)

1. Material and supplier identification

Containers of this paint can generally be identified by having the Flammable Liquids Dangerous Goods sign on them and / or by the text: “Wash brushes and equipment in mineral turpentine” (or similar).

Since materials delivered by householders to Community Recycling Centres are discarded (“waste”) products and may have originated from a variety of manufacturers, full identification or hazard information is not available for each package. In the absence of full identification or hazard information, a precautionary approach must be taken by persons handling or storing the material.

Original suppliers may have included:

- Dulux Australia | 1956 Dandenong Road, Clayton VIC 3168 | Tel: **13 25 25** | Emergency Tel: **1800 033 111**
- Taubmans Paints (now PPG Architectural Coatings) | 9 Birmingham Avenue, Villawood NSW 2163 | Tel: **02 9794 1200** | Emergency Tel: **1800 883 254**
- Wattyl (now Valspar Australia Pty Ltd) | Level 4, 2 Burbank Place, Baulkham Hills NSW 2153 | Tel: **02 8867 3333** | Emergency Tel: **1800 039 008**

and many others.

2. Composition information

Solvent-based (“oil-based”) paint may typically contain one or more of the following solvents in total concentrations of up to 90% by mass, the balance consisting of non-hazardous materials:

CHEMICAL ENTITY	CAS No
White spirit	8052-41-3
Mineral turpentine	–
Kerosene	64742-81-0
Xylene, mixture of isomers	1330-20-7
Toluene	108-88-3
1,2,4-trimethyl benzene	95-63-6
Naphtha (petroleum) light aromatic	64742-95-6
Naphtha (petroleum) medium aliphatic	64742-88-7

3. Hazards identification

Emergency Overview
HAZARDOUS CHEMICAL | DANGEROUS GOODS

Hazardous Classification	Hazardous (Safe Work Australia)
Australian Dangerous Goods (ADG) Classification	Class 3 – Flammable Liquids **Note 1:** Some solvent-based paints presented at a CRC may be Packaging Group II and some may be Packaging Group III **Note 2:** Some solvent-based paints presented at a CRC may contain toxic metals, such as lead; these paints should be stored separately with Class 6 Division 6.1 Toxic Substances
SUSMP Classification (Standard for the Uniform Scheduling of Medicines and Poisons or "Poisons Schedule")	Schedule 5
UN No	1263
Globally Harmonized System of Classification and Labelling of Chemicals (GHS) Classification	
Signal word	Warning
Hazard Classification	Flammable Liquid – Category 3 Aspiration Hazard – Category 2 Sensitisation – Skin – Category 1A Specific Target Organ Toxicity (Single Exposure) – Category 1A
Hazard Statements	H226 Flammable liquid and vapour H305 May be harmful if swallowed and enters airways H317 May cause an allergic skin reaction H336 May cause drowsiness or dizziness

Prevention Precautionary Statements	P102	Keep out of reach of children
	P210	Keep away from all sources of ignition – No smoking
	P233	Keep container tightly closed
	P243	Take precautionary measures against static discharge
	P261	Avoid breathing in mist / vapours
	P272	Contaminated clothing should not be allowed
	P280	Wear protective clothing, gloves, eye / face protection and suitable respirator as required
Response Precautionary Statements	P101	If medical advice is needed, have product container or label at hand
	P304+P340	If inhaled, remove person to fresh air and keep comfortable for breathing
	P303+P361+P353	If on skin, take off immediately all contaminated clothing. Rinse skin with water / shower
	P301+P310	If swallowed – Immediately call a Poisons Centre or doctor / physician
	P331	Do NOT induce vomiting
	P312	Call a Poisons centre or a doctor / physician if you feel unwell
	P363	Wash contaminated clothing before reuse
	P333+P313	If skin irritation or a rash occurs, get medical advice / attention
	P370+P378	In case of fire, use alcohol-resistant foam for extinction
Storage Precautionary Statements	P405	Store locked up
	P403+P235	Store on a well-ventilated place. Keep cool

4. First aid measures

If poisoning occurs, contact a doctor or Poisons Information Centre (Tel: **13 11 26**).

Inhalation	Remove victim to fresh air. Remove contaminated clothing and loosen remaining clothing. Keep person warm and at rest. If not breathing, or breathing is irregular, provide artificial respiration or oxygen by a trained person.
Ingestion	Seek medical advice immediately and show the container or label. Keep person warm and at rest. Do NOT induce vomiting. Rinse mouth with water and give a glass of water to drink. If vomiting occurs, give further water.
Skin contact	Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognised skin cleanser. Do NOT use solvents or thinners.
Eye contact	Remove contact lenses, irrigate eyes copiously with clean, fresh water, holding the eyelids apart for at least 10 minutes and seek immediate medical advice.
Note to physician	Treat symptomatically.

5. Fire fighting measures

Specific hazards	Flammable liquid. May form flammable vapour mixtures with air. Vapour may travel considerable distance to a source of ignition. Heating can cause expansion or decomposition, leading to violent rupture of containers.
Suitable extinguishing media	Dry chemical, CO_2 or foam. Water fog may be used to keep fire-exposed containers cool. DO NOT USE WATER JET.
Hazards from combustion products	On burning, may emit toxic fumes, including oxides of carbon, nitrogen and metals, and products of incomplete combustion.
Precautions for fire fighters and special protective equipment	Fire fighters to wear self-contained breathing apparatus and suitable protective clothing if there is a risk of exposure to vapours or combustion products.
Hazchem Code:	**3Y or 3YE**

6. Accidental Release Measures

Small spills	Wear protective equipment to prevent skin and eye contamination. Soak up with absorbent. Allow absorbent to dry before collecting it for appropriate disposal.
Larger spills	Wear protective equipment to prevent skin and eye contamination. Wear appropriate respirator if ventilation is inadequate. Shut off all possible sources of ignition. Clear area of all unprotected personnel. Prevent further leakage or spillage if able to do so safely. Contain the spill to prevent its spread or entry into drains or waterways. Soak up using absorbent and allow absorbent to dry before collecting it into labelled containers for appropriate disposal.
Environmental precautions	Contain the spill to prevent entry into drains or waterways. If entry into waterways occurs, inform appropriate authorities.

7. Handling and storage

Handling	Wear appropriate Personal Protective Equipment. Eating, drinking and smoking should be prohibited in areas where this material is handled. Avoid skin or eye contact or inhalation of vapours from any spilled material. Clean up spills immediately (see Section 6 above).
Storage	Follow the storage conditions recommended in the EPA's Operations and Management Handbook for Community Recycling Centres.

8. Acknowledgement

This Safety Data Sheet contains some material from Safety Data Sheets for solvent based paints from several manufacturers that are available in the public domain, particularly those by Dulux Australia and PPG Architectural Coatings, whose authorship of that material is acknowledged.

Community Recycling Centres

Safety data sheet for: TOXIC SUBSTANCES

1. Material and supplier identification

Toxic substances (Class 6 Division 6.1 in the Australian Code for the Transport of Goods by Road and Rail) are not included among the materials targeted by the CRC Program. However, small quantities of such materials may be occasionally dropped off at CRCs by householders, despite not being targeted (so-called "by-catch"), and all CRCs have provisions for storing them safely until they are collected for disposal. By far the most common such toxic substances are **garden chemicals** – a wide variety of insecticides, weed killers, **rat and mice poisons**, and other pesticides, current or outdated. These vary widely in their toxicity, and may be solid or in solution or suspension in water or a hydrocarbon. Very occasionally they may include strong poisons (such as cyanides or arsenic), or so-called "Schedule X" chemicals, which are persistent organochlorine compounds that are no longer permitted to be used in Australia. Very occasionally, other "historic" poisons, such as strychnine, may be brought in.

Since materials delivered by householders to Community Recycling Centres are discarded ("waste") products and may have originated from a variety of manufacturers, full identification or hazard information is not available for each package. In the absence of full identification or hazard information, a precautionary approach must be taken by persons handling or storing the material.

Given the wide variety of possible toxic substances that may be dropped off by householders at CRCs, the difficulty of producing a single Safety Data Sheet for them, and as part of the precautionary approach required by the NSW WHS Regulation, this Safety Data Sheet has been prepared for some of the most toxic materials that may be encountered at a CRC.

Original suppliers of toxic substances are too numerous to mention.

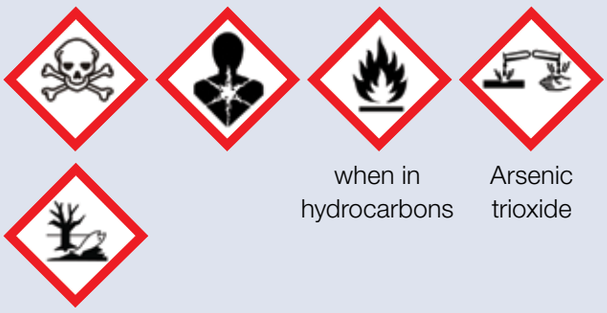
2. Composition information

Some examples of constituents that may be present in **toxic substances** dropped off at Community Recycling Centres are:

	CHEMICAL ENTITY	CAS No
	Sodium cyanide	143-33-9
OR	Potassium cyanide	151-50-8
OR	Arsenic trioxide	1327-53-3
OR	Dimethoate (an organophosphate), active ingredient in "Rogor" pesticide	60-51-5
OR	DDT (1,1,1-trichloro-2,2-bis (4-chlorophenyl) ethane)	50-29-3
OR	Strychnine	57-24-9

3. Hazards identification

Emergency Overview
HAZARDOUS CHEMICAL | DANGEROUS GOODS

Hazardous Classification	Hazardous chemicals
Australian Dangerous Goods (ADG) Classification	Generally – **Class 6 Division 6.1 Toxic Substances** Some pesticides, which are in solution or suspension in a hydrocarbon liquid, are **Class 3 Flammable Liquids**, with Class 6 Division 6.1 being given as a Subsidiary Risk.
SUSMP Classification (Standard for the Uniform Scheduling of Medicines and Poisons or "Poisons Schedule")	Schedule 7 (cyanides, arsenic, DDT, strychnine) Schedule 6 (dimethoate and some other organophosphate pesticides)
UN No	Sodium cyanide – 1689 Arsenic trioxide – 1562 Organophosphorus pesticides – liquid, flammable, toxic – 2784 Organophosphate pesticide – liquid, toxic, flammable – 3017 Organochlorine pesticide – solid, toxic – 2761 Strychnine – 1692
Globally Harmonized System of Classification and Labelling of Chemicals (GHS) Classification	Some of the more toxic substances that may occasionally be dropped off at a CRC have the following GHS classification: 
Signal word	Danger

Hazard Classification	Acute toxicity	– Category 1 or 2 (cyanides, strychnine) – Category 2 or 3 (arsenic trioxide) – Category 2, 3 or 4 (organophosphates) – Category 3 (DDT)
	Carcinogenicity	– Category 1A (arsenic trioxide) – Category 2 (DDT)
	Germ cell mutagenicity	– Category 2 (arsenic trioxide)
	Skin corrosion	– Category 1 (arsenic trioxide)
	Specific target organ toxicity (repeated exposure)	– Category 1 (arsenic trioxide, organophosphates)
	Skin sensitizer	– Category 1 (organophosphates)
	Flammable liquid	– Category 3 (pesticides, when in hydrocarbons)
	Hazardous to the aquatic environment (acute)	– Category 1
	Hazardous to the aquatic environment (chronic)	– Category 1

Hazard Statements	H330	Fatal if inhaled (cyanides)
	H331	Toxic if inhaled (arsenic trioxide)
	H332	Harmful if inhaled (organophosphates)
	H310	Fatal in contact with skin (cyanides, strychnine)
	H311	Toxic in contact with skin (organophosphates)
	H300	Fatal if swallowed (cyanides, arsenic trioxide, some organophosphates, strychnine)
	H301	Toxic if swallowed (DDT)
	H350	May cause cancer (arsenic trioxide)
	H351	Suspected of causing cancer (DDT)
	H341	Suspected of causing genetic defects (arsenic trioxide)
	H314	Causes severe skin burns and eye damage (arsenic trioxide)
	H372	Causes damage to organs through prolonged or repeated exposure (arsenic trioxide, organophosphates, DDT)
	H317	May cause an allergic skin reaction (organophosphates)
	H226	Flammable liquid and vapour (pesticides in solution / suspension in hydrocarbons)
	H410	Very toxic to aquatic life with long lasting effects

Prevention Precautionary Statements	P260	Do not breathe dust / fume / gas / mist / vapours / spray
	P264	Wash hands thoroughly after handling
	P280	Wear protective gloves / protective clothing / eye protection / face protection
	P210 (for pesticides dissolved or suspended in hydrocarbons – generally, but not always, labelled with the Flammable Liquids sign): 	Keep away from heat / sparks / open flames / hot surfaces – No smoking
	P233	Keep container tightly closed
	P243	Take precautionary measures against static discharge
Response Precautionary Statements	P301+P310	If swallowed, immediately call a Poisons Centre or a doctor / physician
	P330	Rinse mouth
	P304+P310	If inhaled, immediately call a Poisons Centre or a doctor / physician
	P304+P340	If inhaled, remove person to fresh air and keep comfortable for breathing
	P302+P352	If on skin, wash with plenty of water
	P305+P351+P338	If in eyes, rinse copiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
	P308+P353 (DDT, arsenic trioxide)	If exposed or concerned, get medical advice / attention
	P363	Wash contaminated clothing before reuse
	P332+P313 (organophosphates)	If skin irritation occurs, get medical advice / attention
Storage Precautionary Statements	P405	Store locked up
	P403+P233	Store on a well-ventilated place. Keep container tightly closed

4. First aid measures

If poisoning occurs, contact a doctor or Poisons Information Centre (Tel: **13 11 26**).

First aid measures for toxic substances other than cyanide:

Inhalation	Remove person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, oxygen may be beneficial, if administered by a trained person, preferably on a doctor's advice. Do not allow the person to move about unnecessarily. In some cases, symptoms of pulmonary oedema may be delayed up to 48 hours after exposure. Seek immediate medical attention.
Ingestion	Do NOT induce vomiting. Immediately rinse mouth with water. Never give anything by mouth to an unconscious person. Seek immediate medical attention. Make every effort to prevent vomit from entering the lungs by careful placement of the patient.
Skin contact	Remove contaminated clothing and wash affected areas with soap and water. Seek immediate medical attention. Launder clothing before reuse.
Eye contact	Check for and remove any contact lenses. Immediately irrigate eyes with plenty of running water for at least 20 minutes, keeping eyelids open. Take care not to rinse contaminated water into unaffected eye or on face. Seek immediate medical attention.

First aid measures for cyanide are provided on the following page.

FIRST AID MEASURES FOR CYANIDE POISONING

This is a special section on cyanide poisoning, since it is extremely serious and requires a somewhat different approach from other forms of poisoning.

T**o be effective, first aid must be prompt.** Sodium and potassium cyanide are poisonous by ingestion and by inhalation of their dust. Contact with skin and eyes may cause irritation of the skin and eyes and poisoning symptoms similar to those for ingestion.

Of prime importance is the protection of the rescuer. No attempt at rescue should be performed until an appropriate hazard assessment of the exposure site is made and appropriate personal protection equipment and personnel are in place.

First aid procedures, equipment, medication and training should be in place BEFORE there is any possibility of exposure. First aid personnel should be aware of the nearest hospitals, which are familiar with the treatment of cyanide exposure.

Equipment and medication in place should be:

- Safety shower and eyewash station immediately accessible
- Fresh, clean, cool drinking water
- Resuscitation bag and mask (or Oxy-Viva)
- Cyanide emergency kit containing amyl nitrite pearls; hydroxycobalamine and sodium thiosulphate
- “Space” or thermal blankets for treating patients for shock

First aid personnel should observe the following precautions:

- Wear protective gloves
- Wear protective goggles
- Wear suitable respiratory protection

IF SWALLOWED

- Remove patient from the source of contamination
- If the patient is not breathing, DO NOT use mouth-to-mouth or mouth-to-nose ventilation, instead use resuscitation bag and mask (Oxy-Viva)
- If pulse is absent, start external cardiac massage and follow standard Advanced Cardiovascular Support guidelines
- Give 100% oxygen by mask (Oxy-Viva) if available
- Remove all contaminated clothing and footwear into a sealable collection bag – launder contaminated clothing thoroughly and wash the affected areas with soap and copious amounts of water
- Arrange for urgent transfer of the patient, accompanied by an attendant with the Cyanide Emergency Kit, to medical professionals
- Persons designated as competent may open the Cyanide Emergency Kit and commence use of amyl nitrite pearls

IF IN EYES

- Immediately irrigate eyes with copious amounts of water, while holding eyelids open, for at least 15 minutes. Seek medical assistance immediately.

IF ON SKIN

- Wash affected area with copious amounts of water for at least 15 minutes. Remove contaminated clothing and launder before reuse. Seek medical assistance.

IF INHALED

- Proceed as in “IF SWALLOWED” above

5. Fire fighting measures

Specific hazards	Toxic substances that may be encountered at a CRC vary widely in their combustion characteristics and behaviour in a fire. Some (e.g. cyanides, arsenic trioxide) are not combustible, while others, particularly pesticides suspended or dissolved in hydrocarbons, are flammable liquids. The precautionary approach would be to treat all toxic substances as flammable.
Suitable extinguishing media	Water fog, foam or dry chemical. Carbon dioxide (CO_2) is not recommended if cyanides are involved in a fire. DO NOT USE STRAIGHT STREAMS OF WATER
Hazards from combustion products	Sodium cyanide, when heated, may emit highly toxic hydrogen cyanide gas. Other toxic substances may also emit toxic decomposition products when involved in a fire.
Precautions for fire fighters and special protective equipment	Fire-fighters should wear self-contained breathing apparatus (SCBA) and protective clothing.
Hazchem Codes:	**2X** Cyanides, solid organophosphorus pesticides, organochlorine pesticides, strychnine **2Z** Arsenic trioxide **3WE** Liquid flammable organophosphorus pesticides **3W** Liquid toxic organophosphorus pesticides

6. Accidental Release Measures

Observe the following general principles in containing and cleaning up a spill

- Evacuate all non-essential and unprotected personnel
- Wear appropriate personal protective equipment, including respiratory protection
- Eliminate all ignition sources (as some of the spilled materials may be flammable)
- Contain the spill by bunding it with sand, soil or vermiculite to prevent it from spreading and / or entering into drains and / or waterways. If entry into a waterway has occurred, ensure that appropriate authorities are notified
- Absorb the spill in an appropriate material that does not interact with the spilt material.
- Collect the spill and contaminated absorbent into appropriately labelled containers for subsequent disposal. Use non-sparking tools.
- Clean the surface(s) that have been affected by the spill.

ADDITIONAL STEPS FOR A CYANIDE SPILL

Because of their extremely high toxicity, cyanide spills require some additional steps. After the spill and the absorbent material have been scooped up, the remaining material should be covered with lime or soda ash, then ferrous sulphate added on top, and mixed in well. After standing for about 30 minutes, the remaining material may be scooped up and placed into labelled containers. The surface should finally be cleaned with a dilute solution of calcium or sodium hypochlorite, to remove the last traces of free cyanide.

7. Handling and storage

Handling	Wear appropriate Personal Protective Equipment. Eating, drinking and smoking should be prohibited in areas where these materials are handled. Avoid skin or eye contact or inhalation of vapours from any spilled material. Clean up spills immediately (see Section 6 above).
Storage	Follow the storage conditions recommended in the EPA's Operations and Management Handbook for Community Recycling Centres.

8. Acknowledgement

This Safety Data Sheet contains some material from Safety Data Sheets for a number of toxic substances from several suppliers that are available in the public domain, particularly those by CSBP Limited (sodium cyanide), ALDI GC Pty Ltd (arsenic trioxide) and FMC Australasia Pty Ltd, Nufarm Australia Ltd and Sipcam Pacific Australia Pty Ltd (organophosphate pesticides). Their authorship of that material is acknowledged.

Community Recycling Centres

Safety data sheet for: WATER-BASED PAINT

1. Material and supplier identification

Other names: Aqueous paint, acrylic paint, latex paint.

Containers of water-based paint can generally be identified by the text “Wash brushes and equipment in water”.

Since materials delivered by householders to Community Recycling Centres are discarded (“waste”) products and may have originated from a variety of manufacturers, full identification or hazard information is not available for each package. In the absence of full identification or hazard information, a precautionary approach must be taken by persons handling or storing the material.

Original suppliers may have included:

- Dulux Australia | 1956 Dandenong Road, Clayton VIC 3168 | Tel: **13 25 25** | Emergency Tel: **1800 033 111**
- Taubmans Paints (now PPG Architectural Coatings) | 9 Birmingham Avenue, Villawood NSW 2163 | Tel: **02 9794 1200** | Emergency Tel: **1800 883 254**
- Wattyl (now Valspar Australia Pty Ltd) | Level 4, 2 Burbank Place, Baulkham Hills NSW 2153 | Tel: **02 8867 3333** | Emergency Tel: **1800 039 008**

and many others.

2. Composition information

CHEMICAL ENTITY	CAS No	Proportion
Ingredients determined to be non-hazardous	–	100%

3. Hazards identification

Emergency Overview
NON-HAZARDOUS SUBSTANCE | NON-DANGEROUS GOODS

Hazardous Classification	Based on available information, water-based paints are not classified as hazardous according to criteria of Safe Work Australia.
Australian Dangerous Goods (ADG) Classification	Non-Dangerous Goods (i.e. not classified)
SUSMP Classification (Standard for the Uniform Scheduling of Medicines and Poisons or "Poisons Schedule")	Not classified
UN No	Not classified
Globally Harmonized System of Classification and Labelling of Chemicals (GHS) Classification	Not classified

4. First aid measures

If poisoning occurs, contact a doctor or Poisons Information Centre (Tel: **13 11 26**).

Inhalation	Remove victim to fresh air. Remove contaminated clothing and loosen remaining clothing. Keep person warm and at rest. If not breathing, or breathing is irregular, provide artificial respiration or oxygen by a trained person.
Ingestion	Seek medical advice and show the container or label. Keep person warm and at rest. Do NOT induce vomiting. Rinse mouth with water and give a glass of water to drink. If vomiting occurs, give further water.
Skin contact	Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognised skin cleanser. Do NOT use solvents or thinners.
Eye contact	Remove contact lenses, irrigate eyes copiously with clean, fresh water, holding the eyelids apart for at least 10 minutes and seek medical advice.
Note to physician	Treat symptomatically.

5. Fire fighting measures

Specific hazards	Non-combustible material. However, if the product is caught in a surrounding fire, residual materials may ignite following evaporation of aqueous components.
Suitable extinguishing media	Use an extinguishing agent suitable for the surrounding fire. Use water fog to keep containers cool.
Hazards from combustion products	If residual materials are ignited after evaporation of the aqueous component, fumes may include smoke, oxides of carbon and metals and products of incomplete combustion.
Precautions for fire fighters and special protective equipment	Fire fighters to wear self-contained breathing apparatus and suitable protective clothing if there is a risk of exposure to vapours or decomposition products.
Hazchem Code:	**Not applicable**

6. Accidental Release Measures

Small spills	Wear protective equipment to prevent skin and eye contamination. Soak up with absorbent. Place contaminated absorbent in an appropriate waste disposal container and dispose of appropriately.
Larger spills	Wear protective equipment to prevent skin and eye contamination. Slippery when spilt. Move containers from spill area. Clear area of all unprotected personnel. Prevent further leakage or spillage if able to do so safely. Contain the spill to prevent its spread or entry into drains or waterways. Soak up using absorbent and place contaminated absorbent it into labelled containers for appropriate disposal.
Environmental precautions	Contain the spill to prevent entry into drains or waterways. If entry into waterways occurs, inform appropriate authorities.

7. Handling and storage

Handling	Wear appropriate personal protection equipment to prevent skin or eye contact or inhalation of vapours from any spilled material.
Storage	Follow the storage conditions recommended in the EPA's Operations and Management Handbook for Community Recycling Centres.

8. Acknowledgement

This Safety Data Sheet contains some material from Safety Data Sheets for water based paints from several manufacturers that are available in the public domain, particularly those by Dulux Australia and PPG Architectural Coatings, whose authorship of that material is acknowledged.

Work Activity Procedures

Work Activity Procedure

This procedure will be reviewed following a major incident, when the activity changes or annually.

Task: Dust Prevention on site		**Area:** Ophir Road Resource Recovery Centre and Euchareena Road Resource Recovery Centre	**WAP:**	RRC 1001
Endorsed by:	Work Health and safety Coordinator or delegate	Nicholas Ruston N.Ruston	**DATE**	26/11/21
	Line Manager	Wayne Davis	**DATE**	30/11/21
	Supervisor	P Ford	**DATE**	29-11-21

Hi Vis							Night Work			
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Equipment / additional PPE: Utility / telescopic handler / water truck

SWMS - RRC 005 – Plant Operation

SWMS - RRC 006 – Telescopic Handler

Step No.	Job Step The activity must be broken up into a sequence of steps/tasks to complete the work activity	Potential Hazard What harm can it do? For each step /task associated with the overall activity the individual hazard must be identified	Controls What can you do to reduce the risk of this hazard? Appropriate controls must be established for all identified hazards in accordance with the hierarchy of controls
1	Toolbox meeting: Workers need to consider the following when presenting to the worksite	Potential Sickness or Fatigue risks - Worker is not in a fit state (physical, mental and emotional) to perform the duties of the job competently	• Workers should stay away from the workplace if they are unwell – Follow any Advice and information from relevant Health Authorities • Follow Council's Fatigue Management Procedure • Supervisors to regularly communicate with staff. • Supervisors / Managers to monitor fatigue levels using the Fatigue Hazard Identification Checklist
		Working in Extreme Weather Conditions – Air Quality, Heat and cold related illness	• If required monitor air quality and follow any health messages • Ensure temperature appropriate PPE clothing is worn • Use of additional PPE (such as Ice vests / bands under standard PPE in extreme heat where appropriate). • Access to appropriate shelter • Take regular rest breaks • Rotation of tasks

			• Access to food and water, (warm drinks in cold temperatures, cool drinks and electrolytes in hot temperatures) • Review the Scheduling of tasks • Monitor temperature and workers' physical responses to environmental conditions
2	Hook tanker/ trailer onto ute (ORRRC) Unlock & start water truck (ERRRC)	Hazardous manual handling - Incorrect lifting, bending twisting and positioning techniques. Lifting unknown weight	• Qualified, competent operator • Safe Manual Handling Techniques - Reduce unnecessary lifting, Consider mechanical aids or two person lift. • Assess the weight and size of the item prior to being moved / lifted
		Crush injury	• Trailer brakes on • No standing between vehicle • Trailer when vehicle reversing
		Slip off step. Slips, trips and falls – uneven ground, unseen objects on ground.	• Maintain clean and tidy work area – good housekeeping practices • Awareness of surroundings
3	Drive to site	Motor vehicle accident	• Licenced driver • Observe vehicle & pedestrian activity • Drive to road conditions
4	Start motor on tanker	Hazardous manual handling - Incorrect lifting, bending twisting and positioning techniques. Lifting unknown weight	• Regular servicing as per manufactures specifications • Qualified, competent operator • Safe Manual Handling Techniques - Reduce unnecessary lifting, Consider mechanical aids or two person lift. • Assess the weight and size of the item prior to being moved / lifted
5	Spray water onto area	Unauthorised access (ORRRC)	• Isolate the area from the public. • Ensure task is only carried out when no one is in the vicinity
6	Fill up tank from stand pipe or hose	Slips, trips and falls – uneven ground, unseen objects on ground	• Maintain clean and tidy work area – good housekeeping practices • Awareness of surroundings
7	Park truck/ trailer and unhook trailer	Hazardous manual handling - Incorrect lifting, bending twisting and positioning techniques. Lifting unknown weight	• Qualified, competent operator • Safe Manual Handling Techniques - Reduce unnecessary lifting, Consider mechanical aids or two person lift. • Assess the weight and size of the item prior to being moved / lifted
		Crush injury	• Trailer brakes on • No standing between vehicle and trailer when vehicle reversing
		Slips, trips and falls – uneven ground, unseen objects on ground - Slip off step	• Maintain clean and tidy work area – good housekeeping practices • Awareness of surroundings

FINAL

I acknowledge that I have been trained in this Work Activity Procedure

Name	Position	Signature	Date
Peter Ford	RRC Supervisor	P Ford.	29-11-2021
GLEN JACKSON	Plant operator		29 11 21
Jason Rees	plant operator		29 11 21
C. THOMAS	CONTRACTOR		29/11/21
VIC BINNIE	PLANT OPERATOR		29/11/21
WAYNE DAVIS	MANAGER WASTE SERVICES & TECHNICAL SUPPORT	Wayne Davis	30/11/21

ORANGE CITY COUNCIL

FINAL

Work Activity Procedure

This procedure will be reviewed following a major incident, when the activity changes or annually.

Task: Bin Closure and Servicing		**Area:** Ophir Road Resource Recovery Centre	**WAP:**	RRC 1002
Endorsed by:	Work Health and safety Coordinator or delegate	Nicholas Ruston	**DATE**	30/11/21
	Line Manager	Wayne Davis	**DATE**	30/11/21
	Supervisor	P. Ford	**DATE**	30/11/21

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Equipment / additional PPE:

Step No.	Job Step The activity must be broken up into a sequence of steps/tasks to complete the work activity	Potential Hazard What harm can it do? For each step /task associated with the overall activity the individual hazard must be identified	Controls What can you do to reduce the risk of this hazard? Appropriate controls must be established for all identified hazards in accordance with the hierarchy of controls
1	Toolbox meeting: Workers need to consider the following when presenting to the worksite	Potential Sickness or Fatigue risks - Worker is not in a fit state (physical, mental and emotional) to perform the duties of the job competently	• Workers should stay away from the workplace if they are unwell – Follow any Advice and information from relevant Health Authorities • Follow Council's Fatigue Management Procedure • Supervisors to regularly communicate with staff. • Supervisors / Managers to monitor fatigue levels using the Fatigue Hazard Identification Checklist
		Working in Extreme Weather Conditions – Air Quality, Heat and cold related illness	• If required monitor air quality and follow any health messages • Ensure temperature appropriate PPE clothing is worn • Use of additional PPE (such as Ice vests / bands under standard PPE in extreme heat where appropriate). • Access to appropriate shelter • Take regular rest breaks • Rotation of tasks • Access to food and water, (warm drinks in cold temperatures, cool drinks and electrolytes in hot temperatures)

			• Review the Scheduling of tasks • Monitor temperature and workers' physical responses to environmental conditions
2	Communicate bin closure/ servicing to Wangarang & JR Richards staff	No answer	• Radio back up for communication or phone call to JR Richards Supervisor
3	OCC staff or Wangarang staff to close the gate	The gate is not closed	• Staff at bin to close gate & reopen at all times when bin is returned • Covid Safe procedures when dealing with public at transfer stations
		Fall into lower level	• Visual awareness of surroundings
4	Advise JR driver safe to go	The bin is being used by another person	• Radio driver. Staff at gate to ensure patrons do not access the area
5 6	Driver to take bin out of the bay and dispose waste/ recyclables to appropriate destination & then return bin to the station	Collision with another vehicle	• Traffic control plan – observe for traffic/ pedestrian activity • Awareness of surroundings
		Public – injury falling to lower level	• Barricades closed and staff directing public. • First Aid available
	Open gate	Bin not in place	• Communicate with JR Richards's driver.
		Public injury	• Ensure bin is returned to station before opening gate.

I acknowledge that I have been trained in this Work Activity Procedure

Name	Position	Signature	Date
WAYNE DAVIS	MANAGER WASTE SERVICES & TECHNICAL SUPPORT	Wayne Davis	30/11/21.
GLEN JACKSON	PLANT OPERATOR		30. 11 21
Peter Ford	RRC Supervisor	P Ford	30-11-2021
Jason Rees	RRC operator		30/11/2021
VIC BIANIE.	RRC OPERATOR		30/11/21
G. THOMAS	CONTRACTOR		30/11/21

ORANGE CITY COUNCIL

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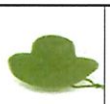
Work Activity Procedure

This procedure will be reviewed following a major incident, when the activity changes or annually.

Task: Manual Handling		**Area:** Ophir Road Resource Recovery Centre and Euchareena Road Resource Recovery Centre	**WAP:**	RRC 1003
Endorsed by:	Work Health and safety Coordinator or delegate	Nicholas Ruston N.Ruston	**DATE**	26/11/21
	Line Manager	Wayne Davis	**DATE**	30/11/2021
	Supervisor	P Ford.	**DATE**	29-11-2021

Hi Vis							Night Work			
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Equipment / additional PPE:

Step No.	Job Step The activity must be broken up into a sequence of steps/tasks to complete the work activity	Potential Hazard What harm can it do? For each step /task associated with the overall activity the individual hazard must be identified	Controls What can you do to reduce the risk of this hazard? Appropriate controls must be established for all identified hazards in accordance with the hierarchy of controls
1	Toolbox meeting: Workers need to consider the following when presenting to the worksite	Potential Sickness or Fatigue risks - Worker is not in a fit state (physical, mental and emotional) to perform the duties of the job competently	• Workers should stay away from the workplace if they are unwell – Follow any Advice and information from relevant Health Authorities • Follow Council's Fatigue Management Procedure • Supervisors to regularly communicate with staff. Supervisors / Managers to monitor fatigue levels using the Fatigue Hazard Identification Checklist
		Working in Extreme Weather Conditions – Air Quality, Heat and cold related illness	• If required monitor air quality and follow any health messages • Ensure temperature appropriate PPE clothing is worn • Use of additional PPE (such as Ice vests / bands under standard PPE in extreme heat where appropriate). • Access to appropriate shelter • Take regular rest breaks • Rotation of tasks • Access to food and water, (warm drinks in cold temperatures, cool drinks and electrolytes in hot temperatures)

			• Review the Scheduling of tasks • Monitor temperature and workers' physical responses to environmental conditions
2	Assess Job Manual Handling requirement	Manual handling injuries	• Undertake Manual Handling Training. • Examine work and work location, note all hazards. Identify the safest path of travel. • Observe other people or workers at the location. • If required communicate with other people the work to be undertaken. If required establish an exclusion zone around work area. Wear appropriate PPE, i.e. gloves for hand protection etc. • Safe manual handling practices - Reduce unnecessary lifting. • Do not lift from a cramped position, move obstacles if required. • Avoid sudden movement during lifting. Consider mechanical aids or two person lift. • Assess the weight and size of the item prior to being moved / lifted. • Follow the following procedures outlined below:
3	Lifting Loads Unloading Truck	Bending	• Bend at the knees, whilst keeping back straight. • Use lifting aids such as straps if necessary. • Get into a comfortable position before lifting.
		Position	• Get as close as possible to load before lifting. • Do not lift from a cramped position, move obstacles if required. Ensure shoulders are over knees when lifting loads off the ground.
		Sudden movement	• Avoid sudden movement during lifting. Ensure loads are lifted in one smooth direction to minimise shock loading.
		Uneven and awkward loads	• Before lifting ensure load is centred. Use two people if the load is too awkward for one person to lift on their own.
		Heavy Loads	• As a guide add a person to assist for every 10kg per load over 20kg. • Use mechanical assistance where possible, i.e. cranes, forklifts or specialised lifting devices such as pit lid handles. • Only qualified operators to use mechanical plant.
4	Carrying Loads Moving Materials to work area	Slips, trips and falls	• Maintain clean and tidy work area • Awareness of surroundings

			• Ensure the path of travel is the most suitable • Assess this route for uneven ground, pot holes or dips in ground level. • If the surface is wet take extra caution.
		Falls	• Stay out of areas where possible hazards exist. • Erect danger tape or fence off any potential areas for falls.
		Heavy Loads	• Ensure the distance of travel is achievable. • Take a rest if required. As a guide add a person to assist for every 10kg per load over 20kg. • Use mechanical assistance where possible, i.e. wheel barrow, cranes, forklifts
5	Set-up and Clean-up work area	Injury to others	• Ensure clear communication between workers and general public is maintained. • Establish an exclusion zone where required.
		Cuts, abrasions and impact injuries	• Wear appropriate PPE for tasks, i.e. gloves for hand protection whilst in contact with sharp objects and safety glasses for eye protection. • Ensure clear communication between workers during movement of plant, equipment and materials
		Slips, trips and falls	• Maintain clean and tidy work area • Awareness of surroundings • Ensure the path of travel is the most suitable • Assess this route for uneven ground, pot holes or dips in ground level. • If the surface is wet take extra caution.
6	Undertake Works	Refer to other WAP and SWMS documents	

I acknowledge that I have been trained in this Work Activity Procedure

Name	Position	Signature	Date
Peter Ford	RRC Supervisor	P Ford.	29-11-2021
GLEN JACKSON	Plant operator		29.11.21
Jason Rees	Plant operator		29 11 21
G. THOMAS	CONTRACTOR		29/11/21
VIC. BIANIC.	PLANT OPERATOR		29/11/21
WAYNE DAVIS	MANAGER WASTE SERVICES & TECHNICAL SUPPORT	Wayne Davis	30/11/21

ORANGE CITY COUNCIL

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Work Activity Procedure

This procedure will be reviewed following a major incident, when the activity changes or annually.

Task: Transfer Oil (oil container to be no larger than 20 litres and inspected at weighbridge)		**Area:** Ophir Road Resource Recovery Centre	**WAP:**	RRC 1004
Endorsed by:	Work Health and safety Coordinator or delegate	Nicholas Ruston N. Ruston	**DATE**	26/11/21
	Line Manager	Wayne Davis	**DATE**	30/11/21
	Supervisor	P Ford	**DATE**	29-11-21

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Equipment / additional PPE: Telescopic Handler / Loader

SWMS - RRC 005 – Plant Operation

SWMS - RRC 006 – Telescopic Handler

Step No.	Job Step The activity must be broken up into a sequence of steps/tasks to complete the work activity	Potential Hazard What harm can it do? For each step /task associated with the overall activity the individual hazard must be identified	Controls What can you do to reduce the risk of this hazard? Appropriate controls must be established for all identified hazards in accordance with the hierarchy of controls
1	Toolbox meeting: Workers need to consider the following when presenting to the worksite	Potential Sickness or Fatigue risks - Worker is not in a fit state (physical, mental and emotional) to perform the duties of the job competently	• Workers should stay away from the workplace if they are unwell – Follow any Advice and information from relevant Health Authorities • Follow Council's Fatigue Management Procedure • Supervisors to regularly communicate with staff. • Supervisors / Managers to monitor fatigue levels using the Fatigue Hazard Identification Checklist • Follow Covid Safe procedures at all times
		Working in Extreme Weather Conditions – Air Quality, Heat and cold related illness	• If required monitor air quality and follow any health messages • Ensure temperature appropriate PPE clothing is worn • Use of additional PPE (such as Ice vests / bands under standard PPE in extreme heat where appropriate). • Access to appropriate shelter • Take regular rest breaks

			• Rotation of tasks • Access to food and water, (warm drinks in cold temperatures, cool drinks and electrolytes in hot temperatures) • Review the Scheduling of tasks • Monitor temperature and workers' physical responses to environmental conditions
2	Lifting oil container up onto platform	Hazardous manual handling - Incorrect lifting, bending twisting and positioning techniques. Lifting unknown weight	• Safe Manual Handling Techniques - Reduce unnecessary lifting, Consider mechanical aids or two person lift. Assess the weight and size of the item prior to being moved / lifted
		Spillage	• Ensure cap is on container
		Accepting too large amount	• No more than 20 litres. • Weighbridge not to accept > 20L containers.
3	Emptying container	Hazardous manual handling - Incorrect lifting, bending twisting and positioning techniques. Lifting unknown weight	• Safe Manual Handling Techniques - Reduce unnecessary lifting, Consider mechanical aids or two person lift. Assess the weight and size of the item prior to being moved / lifted
		Spillage	• Ensure staff wear appropriate PPE, e.g. gloves, long sleeve clothing.
4	Dispose container into recycling bin	Spillage	• Check that container is empty before disposing into the bin
5	MGB (Material garbage bin) – for plastic container disposal	MGB is full	• Check that there are empty and available MGB's before disposing container into bin.
6	Steel stockpile for steel container disposal. Travel container to stockpile via telescopic handler or utility	Spillage	• Check that container is empty before disposing into the steel stockpile.
		Traffic/ pedestrian accident	• Awareness of surroundings • Travel at appropriate speed – do not exceed posted speed limits.

I acknowledge that I have been trained in this Work Activity Procedure

Name	Position	Signature	Date
Peter Ford	RRL Supervisor	P Ford.	29-11-2021
GLEN JACKSON	PLANT		29.11.21
Jason Rees	Plant operator		29-11-21
C-THOMAS	CONTRACTOR		29/11/21
VIC BIRNIE.	PLANT OPERATOR		29/11/21
WAYNE DAVIS	MANAGER WASTE SERVICES & TECHNICAL SUPPORT	Wayne Davis	30/11/21

ORANGE CITY COUNCIL

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Work Activity Procedure

This procedure will be reviewed following a major incident, when the activity changes or annually.

Task: Community Recycling Centre - Household Waste Receipt & Management		**Area:** Ophir Road Resource Recovery Centre	**WAP:**	RRC 1005
Endorsed by:	Work Health and safety Coordinator or delegate	Nicholas Ruston N. Ruston	**DATE**	26/11/21
	Line Manager	Wayne Davis	**DATE**	30/11/21
	Supervisor	P Ford	**DATE**	29-11-21

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Equipment / additional PPE: Telescopic Handler/ Forklift to move storage stillages

Step No.	Job Step The activity must be broken up into a sequence of steps/tasks to complete the work activity	Potential Hazard What harm can it do? For each step /task associated with the overall activity the individual hazard must be identified	Controls What can you do to reduce the risk of this hazard? Appropriate controls must be established for all identified hazards in accordance with the hierarchy of controls
1	Toolbox meeting: Workers need to consider the following when presenting to the worksite	Potential Sickness or Fatigue risks - Worker is not in a fit state (physical, mental and emotional) to perform the duties of the job competently	• Workers should stay away from the workplace if they are unwell – Follow any Advice and information from relevant Health Authorities • Follow Council's Fatigue Management Procedure • Supervisors to regularly communicate with staff. • Supervisors / Managers to monitor fatigue levels using the Fatigue Hazard Identification Checklist
		Working in Extreme Weather Conditions – Air Quality, Heat and cold related illness	• If required monitor air quality and follow any health messages • Ensure temperature appropriate PPE clothing is worn • Use of additional PPE (such as Ice vests / bands under standard PPE in extreme heat where appropriate). • Access to appropriate shelter • Take regular rest breaks • Rotation of tasks • Access to food and water, (warm drinks in cold temperatures, cool drinks and electrolytes in hot temperatures)

			• Review the Scheduling of tasks • Monitor temperature and workers' physical responses to environmental conditions
2	Communicate with public to identify materials to be deposited at Community Recycling Centre	Public deliver waste to wrong location – public contact	• Provide clear instruction at weighbridge to deliver to designated drop off point within the CRC
		Incorrectly Labelled or Unidentified Substances	• Substance to be treated as Hazardous and clear instruction given at weighbridge to deliver to appropriate receptacle - Weighbridge to contact RRC Staff. If substance is not labelled ask customer if they know what the substance is, if not put in toxic stillage
3	Drop off items to appropriate receptacle	Spills & fumes	• Lock up ASAP • PPE • Spill kits
		Slips, trips and falls – uneven ground, unseen objects on ground. Spillage.	• Maintain clean and tidy work area – good housekeeping practices
4	Staff transfer items into appropriate receptacles or storage bins, i.e. gas bottles, lead / water based paints, household and car batteries, light bulbs / fluorescent tubes, non-motor oil, toxic and nontoxic chemicals	Hazardous manual handling - Incorrect lifting, bending twisting and positioning techniques. Lifting unknown weight	• Safe Manual Handling Techniques - Reduce unnecessary lifting • Consider mechanical aids or two person lift. Assess the weight and size of the item prior to being moved / lifted • Wear appropriate PPE
		Cuts & personal injury	• Ensure appropriate PPE is worn e.g. gloves, long sleeve clothing. • Ensure clear & tidy area – good housekeeping practices. • First Aid kit
		Damaged or Leaking Containers	• Transfer to suitable alternate container before placing in appropriate receptacle • Spill kit
		Skin / Eye Contact, inhalation of Chemicals	• Ensure appropriate PPE is worn e.g. gloves, masks, long sleeve clothing.
		Ignition of items / fire	• No Smoking, Fire Extinguisher, Hose. • Careful placement of items – not tossed, Segregation of items into appropriate receptacles
5	Lock up cage & ensure items in storage bins are appropriately stored & not overflowing	Cage unlocked	• Check cage security & bins daily at beginning and end of shift.
		Bins overloaded/ stacked	• Secure products and ensure sufficient capacity/ appropriate servicing. • Replace bins when ¾ full. • Arrange Toxfree to undertake bin collection
6	Staff undertake weekly (Monday morning) inventory stocktake of collected materials and upload onto iPad which is	Pedestrian / traffic conflict while undertaking stocktake	• Visual and audible check of traffic flow prior and during stocktake – awareness of surroundings • Use appropriate PPE

	linked to Toxfree administration centre.		
7	Locating / moving storage stillages within CRC and to and from service truck via telescopic handler / forklift	Pedestrian / Traffic conflict whilst servicing storage bins / receptacles	• Visual and audible check of traffic flow prior and during service of bins / receptacles – awareness of surroundings • Ensure operator has appropriate training and qualifications • Refer to **SWMS RRC 006 – Telescopic Handler** for additional information

I acknowledge that I have been trained in this Work Activity Procedure

Name	Position	Signature	Date
Peter Ford	RRC Supervisor	PFord.	29-11-2021
GLEN JACKSON	Plant operator		29.11.21
Jason Rees	Plant operator		29/11/21
C-THOMAS	CONTRACTOR		29/11/21
VIC BIMMIE	PLANT OPERATOR		29/11/21
WAYNE DAVIS	MANAGER WASTE SERVICES & TECHNICAL SUPPORT	Wayne Davis	30/11/21

Work Activity Procedure

This procedure will be reviewed following a major incident, when the activity changes or annually.

Task: Tyre stockpiling		**Area:** Ophir Road Resource Recovery Centre	**WAP:**	RRC 1006
Endorsed by:	Work Health and safety Coordinator or delegate	Nicholas Ruston N.Ruston	**DATE**	26/11/21
	Line Manager	Wayne Davis	**DATE**	30/11/21
	Supervisor	P Ford	**DATE**	29-11-21

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Equipment / additional PPE: Telescopic Handler / Loader

SWMS - RRC 005 – Plant Operation

SWMS - RRC 006 – Telescopic Handler

Step No.	Job Step The activity must be broken up into a sequence of steps/tasks to complete the work activity	Potential Hazard What harm can it do? For each step /task associated with the overall activity the individual hazard must be identified	Controls What can you do to reduce the risk of this hazard? Appropriate controls must be established for all identified hazards in accordance with the hierarchy of controls
1	Toolbox meeting: Workers need to consider the following when presenting to the worksite	Potential Sickness or Fatigue risks - Worker is not in a fit state (physical, mental and emotional) to perform the duties of the job competently	• Workers should stay away from the workplace if they are unwell – Follow any Advice and information from relevant Health Authorities • Follow Council's Fatigue Management Procedure • Supervisors to regularly communicate with staff. • Supervisors / Managers to monitor fatigue levels using the Fatigue Hazard Identification Checklist
		Working in Extreme Weather Conditions – Air Quality, Heat and cold related illness	• If required monitor air quality and follow any health messages • Ensure temperature appropriate PPE clothing is worn • Use of additional PPE (such as Ice vests / bands under standard PPE in extreme heat where appropriate). • Access to appropriate shelter • Take regular rest breaks • Rotation of tasks • Access to food and water, (warm drinks in cold temperatures, cool

			drinks and electrolytes in hot temperatures) • Review the Scheduling of tasks • Monitor temperature and workers' physical responses to environmental conditions
2	Screen all incoming waste at the weighbridge	Hazardous waste Non-conforming waste	• Follow the procedures identified in **SOP 07- Weighbridge Procedures** to identify whether a load contains tyres.
3	Load from a commercial operator	Habitat for insects/vermin Fire Hazard Environmental impact	• The weighbridge operator must refuse receival of the waste if the load contains more than five whole tyres.
4	Load from a non-commercial operator (residents)	Habitat for insects/vermin Fire Hazard Environmental impact	• Loads with more than five whole tyres delivered by non-commercial operators (i.e. residents) of the Orange Local Government Area are permitted at the premises.
5	Load identified as containing tyres	Poor compaction and taking up valuable airspace in landfill operations	The waste must not be disposed at the premises unless: • The tyre/s have a diameter of less than 1.2 metres; or • The tyre/s have been shredded so that the pieces measure no more than 250 millimetres in any direction; or • The tyre/s have had their walls removed
6	Charges	Load not properly declared	• Charge drivers with the applicable fee and charges schedule for the tyre waste.
7	Stockpiling tyres on the premises	Habitat for insects/vermin Fire Hazard Environmental impact	Resource Centre Operators will ensure that tyres stockpiled on the premises: • Do not exceed five tonnes or 500 tyres at any one time; and • Are located in a clearly defined area away from the waste disposal areas; and • Are managed to control vermin • Are managed to prevent any tyres from catching on fire
8	Storage	Adequate separation between site boundaries, buildings and tyre storages	• Stockpile tyres in the workshop compound or other designated drop off point on the designated storage pallets. Then transfer to recycling cage using appropriate manual handling techniques or load with plant item. • When cage is full ring contractor to swap for an empty cage.

			• Use 4 in 1 bucket to load tyre cage when possible (no manual handling)

RESPONSIBILITIES:

It is the Resource Recovery Centre Supervisor's responsibility to ensure that all incoming waste is screened, and the landfilling operations are monitored to ensure that tyre waste is appropriately stockpiled. The Resource Recovery Centre Supervisor is responsible for ensuring that all Resource Recovery Centre Operators undertaking weighbridge procedures and landfilling of tyre waste are adequately trained in this work procedure.

RECORDS:

Weighbridge records are recorded electronically on the computer within the weighbridge gatehouse. These records are kept for a minimum of four years.

REFERENCES:

Section 3.5 – Waste Receival

Section 9.3 – Waste and Resource Recovery Monitoring Program

I acknowledge that I have been trained in this Work Activity Procedure

Name	Position	Signature	Date
Peter Ford	RRC supervisor	PFord.	29-11-2021
GLEN JACKSON	Plant operator		29.11.21
Jason Rees	Plant operator		29.11.21
C-Thomas	CONTRACTOR		29/11/21
VIC BINNIE.	PLANT OPERATOR		29/11/21
WAYNE DAVIS	MANAGER WASTE SERVICES & TECHNICAL SUPPORT	Wayne Davis	30/11/21

ORANGE CITY COUNCIL

FINAL

Work Activity Procedure

This procedure will be reviewed following a major incident, when the activity changes or annually.

Task: Litter Collection		**Area:** Ophir Road Resource Recovery Centre	**WAP:**	RRC 1007
Endorsed by:	Work Health and safety Coordinator or delegate	Nicholas Ruston N. Ruston	**DATE**	26/11/21
	Line Manager	Wayne Davis	**DATE**	30/11/21
	Supervisor	P Ford	**DATE**	29-11-21

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Equipment / additional PPE: Litter collection tongs

Step No.	Job Step The activity must be broken up into a sequence of steps/tasks to complete the work activity	Potential Hazard What harm can it do? For each step /task associated with the overall activity the individual hazard must be identified	Controls What can you do to reduce the risk of this hazard? Appropriate controls must be established for all identified hazards in accordance with the hierarchy of controls
1	Toolbox meeting: Workers need to consider the following when presenting to the worksite	Potential Sickness or Fatigue risks - Worker is not in a fit state (physical, mental and emotional) to perform the duties of the job competently	• Workers should stay away from the workplace if they are unwell – Follow any Advice and information from relevant Health Authorities • Follow Council's Fatigue Management Procedure • Supervisors to regularly communicate with staff. • Supervisors / Managers to monitor fatigue levels using the Fatigue Hazard Identification Checklist
		Working in Extreme Weather Conditions – Air Quality, Heat and cold related illness	• If required monitor air quality and follow any health messages • Ensure temperature appropriate PPE clothing is worn • Use of additional PPE (such as Ice vests / bands under standard PPE in extreme heat where appropriate). • Access to appropriate shelter • Take regular rest breaks • Rotation of tasks • Access to food and water, (warm drinks in cold temperatures, cool drinks and electrolytes in hot temperatures) • Review the Scheduling of tasks

			• Monitor temperature and workers' physical responses to environmental conditions
2	Obtain collection utensils/ bags and proceed to specific area outside compound, boundary or within the landfill for litter collection	Struck by moving plant/ vehicles	• Wear PPE High visibility or reflective clothing • Appropriate signage • Traffic control plan • Physical barriers, exclusion zones • Site specific training • Supervision
		Slips, trips and falls – uneven ground, unseen objects on ground	• Maintain clean and tidy work area – good housekeeping practices
		Snake bite	• Awareness of surroundings. Be vigilant around grass, shrubs, gardens and stockpiles. • First Aid/ Call 000
3	Waste pickup	Hazardous manual handling - Incorrect lifting, bending twisting and positioning techniques. Lifting unknown weight. Static posture and repetition	• Safe Manual Handling Techniques - Reduce unnecessary lifting, Consider mechanical aids or two person lift. Assess the weight and size of the item prior to being moved / lifted • Wear PPE, non-slip footwear
		Cuts & personal Injury	• Wear appropriate PPE such as sharp resistant gloves; eye protection, protective clothing; • Adequate first aid equipment, facilities and training.
		Hazardous substances/ dangerous goods	• Use appropriate equipment for the task such as litter picking tongs, sharp collection, containers, etc. • Wear appropriate PPE • Training and education
		Working in hot/cold environment	• Adequate facilities onsite e.g. toilet, drinking water, personal storage and shelter
4	Handling/ storage	Cuts and personal injury	• Use appropriate equipment for the task • Wear PPE • Litter should be stored and handled in such a way as to prevent exposure
		Hazardous substances/ dangerous goods	• Training, education and instruction • Use appropriate equipment for the task • Wear appropriate PPE
5	Return to compound/ landfill	Struck by moving plant/ vehicles	• Wear PPE- High visibility or reflective clothing • Signage • Traffic control plan • Physical barriers, exclusion zones • Site specific training • Supervision • Dispose of collected material to appropriate disposal point

ORANGE CITY COUNCIL

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I acknowledge that I have been trained in this Work Activity Procedure

Name	Position	Signature	Date
Peter Ford	RRC Supervisor	P Ford	29-11-2021
GLEN JACKSON	Plant operator		29.11.21
Jason Rees	plant operator		29/11/21
C-THOMAS	CONTRACTOR		29/11/21
Vic BINNIE	PLANT OPERATOR		29/11/21
WAYNE DAVIS	MANAGER WASTE SERVICES & TECHNICAL SUPPORT	Wayne Davis	30/11/21

ORANGE CITY COUNCIL

FINAL

Work Activity Procedure

This procedure will be reviewed following a major incident, when the activity changes or annually.

Task: Plant – Routine Maintenance		**Area:** Ophir Road Resource Recovery Centre	**WAP:**	RRC 1008
Endorsed by:	Work Health and safety Coordinator or delegate	Nicholas Ruston N. Ruston	**DATE**	26/11/21
	Line Manager	Wayne Davis	**DATE**	30/11/21
	Supervisor	P Ford	**DATE**	29-11-21

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Equipment / additional PPE:

Step No.	Job Step The activity must be broken up into a sequence of steps/tasks to complete the work activity	Potential Hazard What harm can it do? For each step /task associated with the overall activity the individual hazard must be identified	Controls What can you do to reduce the risk of this hazard? Appropriate controls must be established for all identified hazards in accordance with the hierarchy of controls
1	Toolbox meeting: Workers need to consider the following when presenting to the worksite	Potential Sickness or Fatigue risks - Worker is not in a fit state (physical, mental and emotional) to perform the duties of the job competently	• Workers should stay away from the workplace if they are unwell – Follow any Advice and information from relevant Health Authorities • Follow Council's Fatigue Management Procedure • Supervisors to regularly communicate with staff. • Supervisors / Managers to monitor fatigue levels using the Fatigue Hazard Identification Checklist
		Working in Extreme Weather Conditions – Air Quality, Heat and cold related illness	• If required monitor air quality and follow any health messages • Ensure temperature appropriate PPE clothing is worn • Use of additional PPE (such as Ice vests / bands under standard PPE in extreme heat where appropriate). • Access to appropriate shelter • Take regular rest breaks • Rotation of tasks • Access to food and water, (warm drinks in cold temperatures, cool drinks and electrolytes in hot temperatures) • Review the Scheduling of tasks • Monitor temperature and workers' physical responses to environmental conditions
2	Secure machine	Uncontrolled	• Shut down engine

		movement	
		Run over	• Isolate power
		Crushed/hit by machine	• Apply handbrake • Drive control in neutral • All attachments lowered to the ground
3	Walk around inspection and engine bay	Pinch points	• Signage • Awareness of surroundings
		Hot items if previously operated	• Signage • Awareness of surroundings • Do not work on hot components until cooled • Ensure appropriate PPE is used
		Slips, trips and falls – unseen items, uneven ground	• 3 points of contact • Maintain clean and tidy work area, good housekeeping practices; • Awareness
4	Greasing machine	Crush	• Ensure boom is supported, use Ram Lock
		Fall from machine	• 3 point contact • Avoid accessing area when wet • Do not access parts of machine that do not have hand rails
		Shearing hazard	• Support boom

I acknowledge that I have been trained in this Work Activity Procedure

Name	Position	Signature	Date
Peter Ford	RRC Supervisor	P Ford	29-11-2021
GLEN JACKSON	Plant operator		29.11.21
~~Plant~~ Jason Rees	Plant operator		29.11.21
G-THOMAS	CONTRACTOR		29/11/21
VIC BIANIC	PLANT OPERATOR		29/11/21
WAYNE DAVIS	MANAGER WASTE SERVICES & TECHNICAL SUPPORT	Wayne Davis	30/11/21

ORANGE CITY COUNCIL

FINAL

Work Activity Procedure

This procedure will be reviewed following a major incident, when the activity changes or annually.

Task: Handling Contaminated Soil at ORRRC		**Area:** Ophir Road Resource Recovery Centre	**WAP:**	RRC 1009
Endorsed by:	Work Health and safety Coordinator or delegate	Nicholas Ruston N. Ruston	**DATE**	26/11/21
	Line Manager	Wayne Davis	**DATE**	30/11/21
	Supervisor	P Ford	**DATE**	29-11-21

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Equipment / additional PPE: Utility / telescopic handler / water truck

SWMS - RRC 005 – Plant Operation

SWMS - RRC 006 – Telescopic Handler

Step No.	Job Step The activity must be broken up into a sequence of steps/tasks to complete the work activity	Potential Hazard What harm can it do? For each step /task associated with the overall activity the individual hazard must be identified	Controls What can you do to reduce the risk of this hazard? Appropriate controls must be established for all identified hazards in accordance with the hierarchy of controls
1	Toolbox meeting: Workers need to consider the following when presenting to the worksite	Potential Sickness or Fatigue risks - Worker is not in a fit state (physical, mental and emotional) to perform the duties of the job competently	• Workers should stay away from the workplace if they are unwell – Follow any Advice and information from relevant Health Authorities • Follow Council's Fatigue Management Procedure • Supervisors to regularly communicate with staff. • Supervisors / Managers to monitor fatigue levels using the Fatigue Hazard Identification Checklist
		Working in Extreme Weather Conditions – Air Quality, Heat and cold related illness	• If required monitor air quality and follow any health messages • Ensure temperature appropriate PPE clothing is worn • Use of additional PPE (such as Ice vests / bands under standard PPE in extreme heat where appropriate). • Access to appropriate shelter • Take regular rest breaks • Rotation of tasks • Access to food and water, (warm drinks in cold temperatures, cool drinks and electrolytes in hot temperatures) • Review the Scheduling of tasks • Monitor temperature and workers' physical

			responses to environmental conditions
2	Treating soils contaminated with petroleum hydrocarbons	Hazardous Waste	• As per condition L5 of EPL No. 5956 only soils contaminated with petroleum hydrocarbons can be treated at the premises.
3	Delivery of hydrocarbon contaminated soil	Hazardous Waste	• Direct all enquires to the Manager Waste Services and Technical Support for approval prior to receipt at ORRRC. Lab analysis result assists with acceptance deliberation
4	Receipt of hydrocarbon contaminated soil	Hazardous Waste	• Record in the waste data records and direct transporter to nominated disposal point.
5	Managing contaminated soil	Hazardous Waste	• Contaminated soil will be managed in an area adjacent to the active disposal pits on the top of the Stage 3 landfill cell (refer to **Figure 3.4.1 in Operational Environmental Management Plan**).
6	Soils contaminated with petroleum hydrocarbons	Hazardous Waste	• Place in windrows in an area that will not be required for at least two (2) months. • The soil windrows will have a maximum height of 1.5m and base width of 4m. • The soil windrows will be turned once every two weeks for a minimum of two (2) months or until there is no significant hydrocarbon odour remaining in the soil. • The soil stockpile is sign posted "contaminated soil".
7	Management of hydrocarbon contaminated soil	Hazardous Waste	• When there is no significant hydrocarbon odour remaining in the soil it can be used as cover material. • Management of hydrocarbon contaminated soil shall be included in staff training.

RESPONSIBILITIES:

Manager Waste Services and Technical Support will be responsible for approving receipt of hydrocarbon contaminated soil.

The Resource Recovery Centre Supervisor is responsible for the receipt and management of hydrocarbon contaminated soil.

RECORDS:

Receipt of hydrocarbon contaminated soil will be recorded in the waste data records.

ORANGE CITY COUNCIL

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I acknowledge that I have been trained in this Work Activity Procedure

Name	Position	Signature	Date
Peter Ford	RAC Supervisor	PFord	24-11-2021
GLEN JACKSON	Plant operator		29 11 21
Jason Rees	Plant operator		29 11 21
G-THOMAS	CONTRACTOR		29/11/21
VIC BIRNIE	PLANT OPERATOR		29/11/21
WAYNE DAVIS	MANAGER WASTE SERVICES & TECHNICAL SUPPORT	Wayne Davis	30/11/21

FINAL

Work Activity Procedure

This procedure will be reviewed following a major incident, when the activity changes or annually.

Task: Beekeeping Equipment and Honey Containers		**Area:** Ophir Road Resource Recovery Centre	**WAP:**	RRC 1010
Endorsed by:	Work Health and safety Coordinator or delegate	Nicholas Ruston N.Ruston	**DATE**	26/11/21
	Line Manager	Wayne Davis	**DATE**	30/11/21
	Supervisor	P Ford	**DATE**	29-11-21

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Equipment / additional PPE:

Step No.	Job Step The activity must be broken up into a sequence of steps/tasks to complete the work activity	Potential Hazard What harm can it do? For each step /task associated with the overall activity the individual hazard must be identified	Controls What can you do to reduce the risk of this hazard? Appropriate controls must be established for all identified hazards in accordance with the hierarchy of controls
It is noted Beekeeping is also known as 'Apiculture'. There are many various items of equipment used in the collection and production of honey which have the potential to enter waste streams. Some of these items can easily be identified while others may take a more detailed examination, refer to **References** for more information on identification.			
1	Toolbox meeting: Workers need to consider the following when presenting to the worksite	Potential Sickness or Fatigue risks - Worker is not in a fit state (physical, mental and emotional) to perform the duties of the job competently	• Workers should stay away from the workplace if they are unwell – Follow any Advice and information from relevant Health Authorities • Follow Council's Fatigue Management Procedure • Supervisors to regularly communicate with staff. • Supervisors / Managers to monitor fatigue levels using the Fatigue Hazard Identification Checklist
		Working in Extreme Weather Conditions – Air Quality, Heat and cold related illness	• If required monitor air quality and follow any health messages • Ensure temperature appropriate PPE clothing is worn • Use of additional PPE (such as Ice vests / bands under standard PPE in extreme heat where appropriate). • Access to appropriate shelter • Take regular rest breaks • Rotation of tasks • Access to food and water, (warm drinks in cold temperatures, cool drinks and electrolytes in hot temperatures)

			• Review the Scheduling of tasks • Monitor temperature and workers' physical responses to environmental conditions
2	Inspect all incoming waste loads entering Ophir Road Site at the weighbridge for beekeeping equipment	Bacteria / Disease	Reject any equipment detected and advise the person to seek alternative means of disposal. Record all rejections of bee related material on record sheet Form 6.01- Rejected Apiculture Product Register. Provide a hand out outlining alternative means of disposal options to the driver- Form 6.02 Disposal of Apiculture Equipment Handout.
3	Inspect waste being unloaded at the baling facility for beekeeping equipment and containers which had contained honey or bi-products.	Bacteria / Disease	• If beekeeping equipment is identified, place it in the designated MGB (mobile garbage bin) and take to the weighbridge for burial onsite as soon as possible. • Place used honey containers in the designated MGB (mobile garbage bins) and take to the MTF (material transfer facility) for recycling
4	Inspect the waste stream	Bacteria / Disease	• If any bee keeping equipment, containers or infected timber is found, record all bee related material and actions taken on Form 6.03- Found Apiculture product Register.
5	Inspect logs greater than 250mm diameter	Bacteria / Disease	• Visually inspect all logs between 250mm and 500mm diameter for bee activity prior to processing. • Split and inspect logs over 500mm diameter • All pieces of timber found containing evidence of live or dead bees, larvae and/or colonies must be placed in a segregated location and processed separately. • Infected logs along with any infected processed material must not be transported to the ERRRC but disposed of at the Ophir Road facility or another Council approved site.

6	Record Keeping and Reporting		• Keep a record for all feral colonies (alive or dead) found in tree logs, recorded as rejected or found waste on Form 6.01- Rejected Apiculture Project Register or Form 6.03 – Found Apiculture Project Register. • Processing, storage and disposal records for all infected material. • If any bee keeping equipment, containers, or infected timber is found within the waste stream at the ORRRC, this is to be noted on the ORRRC Daily Checklist (refer SOP 15) as well as Form 6.03 – Found Apiculture Product Register. • Each time a beekeeping related product or infected log is identified Form 6.01 Rejected Apiculture Product Register or Form 6.03- Found Apiculture Product Register is to be sent to the Manager Waste Services and Technical Support.
7	Notification		• The Manager Waste Services and Technical Support is to notify the members of the OWP (Orange Waste Project) Apiculture Committee and additional representatives at Department of Primary Industries when apiculture products are identified within the waste stream. The following people are to be notified: • Orange Waste Project Apiculture Committee Member: - Ms Jane Frances – jane.frances@dpi.nsw.gov.au - Mr Mal Porter – malp380@hotmail.com - Mr Jon Lockwood – jon@goldfieldshoney.com

RESPONSIBILITIES:

It is the Resource Recovery Centre Supervisor's and Operator's responsibility to ensure that all incoming waste is screened, and the landfilling operations are monitored to ensure that no beekeeping equipment, containers or infected logs are transported to the ERRRC for disposal.

The Resource Recovery Centre Supervisor is responsible for ensuring the Resource Recovery Centre Operators are adequately trained in this work procedure.

It is also the responsibility of the Resource Recovery Centre Supervisor and Operators to complete the necessary documentation, including:

- **Form 06.01 – Rejected Apiculture Product Register**
- **Form 06.03 – Found Apiculture Product Register**
- **Form 15.01 – ORRRC Daily Checklist**

RECORDS:

Records are to be kept using:

- **Form 06.01 – Rejected Apiculture Product Register** for products, containers or infected timber found by RRC

operators screening incoming self-haul waste.

- **Form 06.03 – Found Apiculture Product Register** for products, containers or infected timber found by RRC operators found in waste being unloaded at the bailing facility.
- **Form 15.01 – ORRRC Daily Checklist** is to note the incidence of any bee related products rejected from or found at the site.

Each time a beekeeping product or infected log is identified, **Form 06.01** or **Form 06.03** (whichever is appropriate) is to be sent to the Manager Waste Services and Technical Support.

REFERENCES:

Used Beekeeping Equipment

Used beekeeping equipment is any fitting, utensil, apparatus or implement that is used, or has been used, for the purposes of, or in connection with beekeeping, or in processing, handling or storing apiary products which include but are not limited to: beeswax, honey, cut comb honey, comb sections, honeydew, bee collected pollen, propolis or royal jelly, supers, frames, hive lids, floorboards, queen excluders, feeders, division boards, honey tins, buckets, drums and IBC's or any other substance considered to be an apiary product including slum gum.

Included in this definition is any cavity which has contained bees. This includes but is not limited to: bird nesting boxes, buckets, tyres and cavities in construction waste (e.g. in a wall).

Used honey containers are defined as being any receptacle that contains or has contained honey in consumer ready packaging.

It is accepted most used honey containers will be commercial retail packs, although some could be from hobby beekeepers or farmers markets, and may include non-conventional packaging.

Hand operated Extractor (plastic or metal)

Motorised Extractor

Extractor Buckets

Beeswax Foundation

Frames

Split Frames

Box Frames

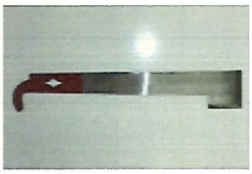
Storage tanks

Boxes

Gloves

Suits

Scraper



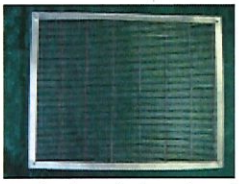
Hive Tool

Bee Brushes

Smoker

Strainer

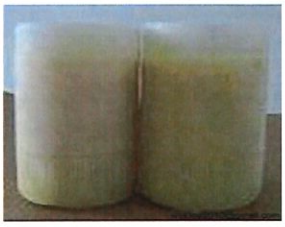
Excluder Cleaner



Steel Excluder (also in plastic)

Honey comb

Pollen



Royal Jelly

Honey Containers

Bees Wax

Slumgum

FINAL

I acknowledge that I have been trained in this Work Activity Procedure

Name	Position	Signature	Date
Peter Ford	RRC Supervisor	P Ford	29-11-2021
GLEN JACKSON	Plant Operator		29.11.21
Jason Rees	plant operator		29.11.21
G-THOMAS	CONTRACTOR		29/11/21
VIC BIRNIE.	PLANT OPERATOR		29 11 21
WAYNE DAVIS	MANAGER WASTE SERVICES & TECHNICAL SUPPORT	Wayne Davis	30/11/21

ORANGE CITY COUNCIL

FINAL

Work Activity Procedure

This procedure will be reviewed following a major incident, when the activity changes or annually.

Task: Weighbridge Procedures		**Area:** Ophir Road Resource Recovery Centre	**WAP:**	RRC 1011
Endorsed by:	Work Health and safety Coordinator or delegate	Nicholas Ruston N. Ruston	**DATE**	26/11/21
	Line Manager	Wayne Davis	**DATE**	30/11/21
	Supervisor	P Ford	**DATE**	29-11-21

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Equipment / additional PPE:

Step No.	Job Step The activity must be broken up into a sequence of steps/tasks to complete the work activity	Potential Hazard What harm can it do? For each step /task associated with the overall activity the individual hazard must be identified	Controls What can you do to reduce the risk of this hazard? Appropriate controls must be established for all identified hazards in accordance with the hierarchy of controls
1	Toolbox meeting: Workers need to consider the following when presenting to the worksite	Potential Sickness or Fatigue risks - Worker is not in a fit state (physical, mental and emotional) to perform the duties of the job competently	• Workers should stay away from the workplace if they are unwell – Follow any Advice and information from relevant Health Authorities • Follow Council's Fatigue Management Procedure • Supervisors to regularly communicate with staff. • Supervisors / Managers to monitor fatigue levels using the Fatigue Hazard Identification Checklist • Covid Safe procedures to be followed at all times
		Working in Extreme Weather Conditions – Air Quality, Heat and cold related illness	• If required monitor air quality and follow any health messages • Ensure temperature appropriate PPE clothing is worn • Use of additional PPE (such as Ice vests / bands under standard PPE in extreme heat where appropriate). • Access to appropriate shelter • Take regular rest breaks • Rotation of tasks • Access to food and water, (warm drinks in cold temperatures, cool drinks and electrolytes in hot temperatures) • Review the Scheduling of tasks • Monitor temperature and workers' physical responses to environmental conditions

2	Vehicle entering ORRRC	Vehicle/ Pedestrian accident	Every vehicle entering into the ORRRC is recorded by the weighbridge operators. Records are electronically recorded and include: a. Date/ Time b. Vehicle Type (including registration number for heavy vehicles) c. Waste type d. Waste source e. Weight (or vehicle type where applicable) Signage directs patrons Adherence to ORRRC Traffic Management Plan.
3	Waste load is viewed & recorded	Patron abuse to RRC operator	• Explain Council's charging protocols, i.e. The waste load of light vehicles and single axled trailers is calculated using a multiplication factor to estimate the weight. • The waste load of heavy vehicles and double axled trailers is calculated using the calibrated weighbridge.
4	Fees and charges	Inappropriate application of disposal fee to patron	• Fees and charges applicable to incoming self-haul loads are listed in the OCC Delivery Plan, located in the site office. • The correct tipping fee is calculated and requested (for self-haul drivers). • A receipt is given to all vehicles.
5	Screening of incoming waste	Excluded wastes or bee keeping equipment is presented at the weighbridge	• The following practices apply to the screening of incoming waste: a. Public access is only permitted during opening hours b. Drivers are asked to describe the type of waste to be deposited on entry to the facility c. Inspections of waste loads are to be made as required. d. Look specifically for bee keeping equipment, containers, infected timber products when screening e. Non approved (excluded wastes) refer to Section 3.5.1.6 of the OEMP for a complete list of excluded wastes. • If bee related products, or excluded wastes are identified, the vehicle is to be refused entry to the site.
		Hazardous substances – Asbestos	• If the load contains asbestos – follow procedures outlined in SWMS RRC 001 'Asbestos Disposal'.

6	Reporting Excluded Waste		• If any excluded waste is detected during the screening, waste deposition, waste spreading and compacting, during sorting of waste in the baling shed or during the baling, the Resource Recovery Centre Operators are required to immediately notify the Resource Recovery Centre Supervisor. • Any identified excluded waste is to be transported to the lockup household hazardous waste storage facility. • Record the incident on the Daily Checklist (refer to **SOP 15- ORRRC Daily Checklist** with reference to an Incident Report Number, and an Incident Report is to be prepared as per **SOP 13- Pollution Incident Response Management.** Including details of the type of waste, the source of the waste and the vehicle and driver identification (if applicable). Also refer to SOP 7 for detailed procedures.
7	Direct traffic	Inappropriate disposal of waste to wrong area	• Direct traffic to the appropriate drop off zone & refer to on site signage
8	Monitoring / Inspection	Hidden waste in delivered loads	• Wastes are monitored and inspected as they are being discharged to ensure excluded non approved wastes are not being disposed. Drivers are asked to uncover their load if required & viewed at the weighbridge.
9	Internal waste movements		• Internal waste movements will be recorded over the weighbridge in accordance with **Table 3.3**. Electronic records will include: a. Date/time b. Waste type c. Waste source, and d. Weight
10	Vehicle leaving ORRRC	Load spillage	• Every vehicle leaving the ORRRC with any waste will be recorded by the weighbridge operators. Electronic records will include: a. Date/ Time b. Vehicle Type c. Waste type d. Waste source e. Weight • Patrons loaded with mulch/ compost must have loads covered • Other loads to be secured.

Table 3.3 – Internal waste movements

Type	Waste Movement		How measured
	From	To	
Mixed self-haul waste (municipal, C&I and C&D)	Receival station bins	Baling shed	Weighed
Select non-recoverable C&D Waste	Baler/shredding shed	ERRRC	Weighed

Table 3.3 – Internal waste movements

Type	Waste Movement		How measured
	From	To	
Recoverable C&D waste	Baling/shredding shed	Storage areas	Weighed
Garden organics	Green drop off	ERRRC AWT	Weighed
Recycling	Recovered from mixed waste in baling shed	Recovered Material	Weighed
Recycling	Recovered from organics in shredding shed	Recovered Material	Weighed
Mixed waste	Waste from MTF	Baling shed	Weighed
Mixed waste	Contamination from organics	Baling shed	Weighed

RESPONSIBILITIES:

It is the Resource Recovery Centre Supervisor's responsibility to ensure that the Recovery Centre Operators are adequately trained in this work procedure, including operating the weighbridge computer and identifying excluded wastes.

It is the responsibility of the Resource Recovery Centre Operators to undertake the correct weighbridge procedures.

RECORDS:

Weighbridge records are recorded electronically on the computer within the weighbridge gatehouse. These records are kept for a minimum of four years.

The identification of excluded wastes is to be recorded as per **SOP 13 – Pollution Incident Response Management,** and the incident number recorded on the **ORRRC Daily Checklist** (refer **SOP 15**).

REFERENCES:

Section 3.5 – Waste Receival

Section 9.3 – Waste and Resource Recovery Monitoring Program

SOP 13 – Pollution Incident Response Management

SOP 15 – ORRRC Daily Checklist

Traffic Management Plan

I acknowledge that I have been trained in this Work Activity Procedure

Name	Position	Signature	Date
Peter Ford	RRC Supervisor	PFord	29-11-2021
ELLEN JACKSON	Plant operator		29.11.21
Jason Rees	Plant operator		29.11.21
C-THOMAS	CONTRACTOR		29/11/21
VIC-BIANIE.	PLANT OPERATOR		29/11/21
WAYNE DAVIS	MANAGER WASTE SERVICES & TECHNICAL SUPPORT	Wayne Davis	30/11/21

ORANGE CITY COUNCIL

FINAL

Work Activity Procedure

This procedure will be reviewed following a major incident, when the activity changes or annually.

Task: ERRRC Traffic Management		**Area:** Ophir Road Resource Recovery Centre	**WAP:**	RRC 1012
Endorsed by:	Work Health and safety Coordinator or delegate	Nicholas Ruston N. Ruston	**DATE**	26/11/21
	Line Manager	Wayne Davis	**DATE**	30/11/21
	Supervisor	P Ford	**DATE**	29-11-21

Hi Vis							Night Work			
☒	☒	☒	☒	☒	☐	☐	☐	☐	☐	☐

Equipment / additional PPE:

Step No.	Job Step The activity must be broken up into a sequence of steps/tasks to complete the work activity	Potential Hazard What harm can it do? For each step /task associated with the overall activity the individual hazard must be identified	Controls What can you do to reduce the risk of this hazard? Appropriate controls must be established for all identified hazards in accordance with the hierarchy of controls
1	Toolbox meeting: Workers need to consider the following when presenting to the worksite	Potential Sickness or Fatigue risks - Worker is not in a fit state (physical, mental and emotional) to perform the duties of the job competently	• Workers should stay away from the workplace if they are unwell – Follow any Advice and information from relevant Health Authorities • Follow Council's Fatigue Management Procedure • Supervisors to regularly communicate with staff. • Supervisors / Managers to monitor fatigue levels using the Fatigue Hazard Identification Checklist
		Working in Extreme Weather Conditions – Air Quality, Heat and cold related illness	• If required monitor air quality and follow any health messages • Ensure temperature appropriate PPE clothing is worn • Use of additional PPE (such as Ice vests / bands under standard PPE in extreme heat where appropriate). • Access to appropriate shelter • Take regular rest breaks • Rotation of tasks • Access to food and water, (warm drinks in cold temperatures, cool drinks and electrolytes in hot temperatures) • Review the Scheduling of tasks • Monitor temperature and workers' physical responses to environmental conditions
2	Operating at ERRRC	Disruption to public	• General public vehicles, heavy vehicles and other

			equipment to comply with site speed limits and any directional signage. • Traffic movement will be restricted to established all weather access roads unless otherwise approved by the Manager Waste Services and Technical Support.
3	Heavy vehicles transporting waste to ERRRC	Motor vehicle accidents	• Heavy vehicles to comply with road speed limits and signs, and any directions given by Police, Roads and Maritime Services (RMS), or other authorities. • Heavy vehicles must not travel in the hours specified below: 7.00am – 7.15am Mon to Friday (School Days) 8.28am – 8.37am Mon to Friday (School Days) 3.28pm – 3.40pm Mon to Friday (School Days) 4.40pm – 5.00pm Mon to Friday (School Days)
4	Heavy vehicle movements at ERRRC	Disruption to public	• Not generate more than 40 heavy vehicle movements in any one day, and not more than 30 heavy vehicle movements a day when averaged over a 7 day period.
5	Visitors to ERRRC	Interfere with the flow of traffic	• Park in the designated parking area
6	Operational staff		• Provided with appropriate site induction and traffic management training
7	JR Richards & Sons Pty Ltd	Disruption to public	• Adhere to their *Transport Code of Conduct* to ensure safe conduct at ERRRC, including appropriate licensing, safe vehicle operation and interactions and necessary maintenance (refer – **Section 9.5**) • New drivers are required to sign the *Code of Conduct* during their first visit. • Geo-tracked to ensure heavy vehicle restrictions are followed and to ensure JR Richards & Sons Pty Ltd vehicles are not on Euchareena Road during the hours specified in point (3) above. Geo-tracking will record the date and time each vehicle enters Euchareena Road and enters the ERRRC site.

RESPONSIBILTIES:

It is the responsibility of individual staff and contractors to ensure the correct procedures are followed when operating vehicles or machinery at the site, or transporting waste to the site.

RECORDS:

Any incidents are recorded on **Form 16** from **SOP 16 - ERRRC Daily Checklist**.

REFERENCES:

SOP 16 – ERRRC Daily Checklist

ORANGE CITY COUNCIL

FINAL

I acknowledge that I have been trained in this Work Activity Procedure

Name	Position	Signature	Date
Peter Ford	RRC Supervisor	PFord	29-11-2021
ELEN JACKSON	Plant operator		29.11.21
Jason Rees	Plant operator		29 11 21
C-THOMAS	CONTRACTOR		29/11/21
VIC BIANIE.	PLANT OPERATOR		29 11 21
WAYNE DAVIS	MANAGER WASTE SERVICES & TECHNICAL SUPPORT	Wayne Davis	30/11/21.

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Work Activity Procedure

This procedure will be reviewed following a major incident, when the activity changes or annually.

Task: ORRRC Traffic Management		**Area:** Ophir Road Resource Recovery Centre	**WAP:**	RRC 1013
Endorsed by:	Work Health and safety Coordinator or delegate	Nicholas Ruston N.Ruston	**DATE**	26/11/21
	Line Manager	Wayne Davis	**DATE**	30/11/21
	Supervisor	P Ford	**DATE**	29-11-21

Hi Vis							Night Work			
☒	☒	☒	☒	☒	☐	☐	☐	☐	☐	☐

Equipment / additional PPE:

Step No.	Job Step The activity must be broken up into a sequence of steps/tasks to complete the work activity	Potential Hazard What harm can it do? For each step /task associated with the overall activity the individual hazard must be identified	Controls What can you do to reduce the risk of this hazard? Appropriate controls must be established for all identified hazards in accordance with the hierarchy of controls
1	Toolbox meeting: Workers need to consider the following when presenting to the worksite	Potential Sickness or Fatigue risks - Worker is not in a fit state (physical, mental and emotional) to perform the duties of the job competently	• Workers should stay away from the workplace if they are unwell – Follow any Advice and information from relevant Health Authorities • Follow Council's Fatigue Management Procedure • Supervisors to regularly communicate with staff. • Supervisors / Managers to monitor fatigue levels using the Fatigue Hazard Identification Checklist
		Working in Extreme Weather Conditions – Air Quality, Heat and cold related illness	• If required monitor air quality and follow any health messages • Ensure temperature appropriate PPE clothing is worn • Use of additional PPE (such as Ice vests / bands under standard PPE in extreme heat where appropriate). • Access to appropriate shelter • Take regular rest breaks • Rotation of tasks • Access to food and water, (warm drinks in cold temperatures, cool drinks and electrolytes in hot temperatures) • Review the Scheduling of tasks • Monitor temperature and workers' physical responses to environmental conditions
2	Operating at ORRRC	Disruption to public	• All traffic to adhere to ORRRC Traffic Management

			Plan • General public vehicles, heavy vehicles and other equipment to comply with site speed limits and any directional signage. • Traffic movement will be restricted to established all weather access roads, unless otherwise approved by the Manager Waste Services and Technical Support.
3	Visitors to site	Interfere with the flow of traffic	• Park in the designated parking areas
4	Weighbridge staff		• Direct all patrons of the facility to the appropriate end disposal point subject to the nature of the material presented (refer to **Section 3.5**).
5	Incoming patrons of ORRRC	Conflict with exiting heavy vehicles being weighed off the weighbridge	• Operational staff will coordinate with the weighbridge operator to provide traffic control, in order to maintain sufficient space for large trucks to egress off the weighbridge in an easterly direction.
6	JR Richards & Sons Pty Ltd	Disruption to public	• Adhere to *Transport Code of Conduct* to ensure safe conduct at ORRRC, including appropriate licensing, safe vehicle operation and interactions, and necessary maintenance (refer – **Section 9.5**) • New drivers are required to sign the Code of Conduct during their first visit
7	Operational staff		• Site induction and traffic management training
8	Incident Reporting		• Recorded on **Form 15,** detailed in **SOP 15 - ORRRC Daily Checklist.**

RESPONSIBILITIES:

It is the responsibility of individual staff and contractors to ensure the correct procedures are followed by all vehicles and machinery operating at ORRRC.

RECORDS:

Any incidents are recorded on **Form 15** from **SOP 15 - ORRRC Daily Checklist**.

REFERENCES:

SOP 15 – ORRRC Daily Checklist

Traffic Management Plan

ORANGE CITY COUNCIL

FINAL

I acknowledge that I have been trained in this Work Activity Procedure

Name	Position	Signature	Date
Peter Ford	RRC Supervisor	PFord.	29-11-2021
GLEN JACKSON	Plant operator		29.11.21
Jason Rees	plant operator		29 11 21
C. THOMAS	CONTRACTOR		29/11/21
Vic. BIRNIE.	~~PLANT~~ OPERATOR		29/11/21
WAYNE DAVIS	MANAGER WASTE SERVICES & TECHNICAL SUPPORT	Wayne Davis	30/11/21

Safe Work Method Statements

ORANGE CITY COUNCIL

FINAL

Company	Orange City Council	**Address**	P O Box 35, Orange NSW 2800	**ABN**	85 985 402 386
Work activity description	Asbestos Disposal			**SWMS No.**	**RRC 001**
This is a generic SWMS and any site specific hazards must be assessed and added to this SWMS prior to commencement of the activity, dated and signed off at the end of the SWMS.					
Work area	Ophir Road Resource Recovery Centre			**Revision No.**	*Rev 1 / November 2021*
Endorsed by	Nicholas Ruston Work Health and Safety Coordinator or delegate	N. Ruston		**Date**	26/11/21
	Line Manager:	Wayne Davis		**Date**	30/11/21
	Supervisor:	P Ford		**Date**	29-11-21
Person responsible for ensuring compliance with SWMS	Most senior staff member on site: i.e. Supervisor – Team Leader - Leader (in that order).				
Measures to ensure compliance with SWMS	Daily toolbox meetings, direct supervision & or spot checks				

SWMS control measures shall be reviewed by the supervisor:

- When the task/ activity relates to a site specific project; When a significant change to the task/ activity is identified; if an incident occurs or a hazard is identified relating to the activity; periodically as per Council's policies and procedures

Mandatory PPE				**Site and Task Specific Personal Protective Equipment Required** ***(Check boxes below for required PPE)***							
Hi Vis											**Additional site specific PPE:**
☒	☒	☒	☒	☒	☐	☐	☒	☐	☐	☐	

Safety Data Sheets relating to this activity **PPE & first aid as per SDS**	SDS sheets located in work vehicle and or site office	**Qualifications/competencies/licences required for this task.** (Available from the HR Learning and Development Officer)	Asbestos Awareness Training, Loader and Telescopic Handler Competency **SWMS - RRC 005 – Plant Operation**

			SWMS - RRC 006 – Telescopic Handler
Plant / equipment required	Heavy duty plastic, duct tape, Loader to cover delivered asbestos, telescopic handler	**Plant / equipment inspection and maintenance checks**	As per manufacturers specifications Daily Plant Check Ausfleet maintenance on boarding
Emergency Response (Please select one)	☒As per Council's site emergency evacuation plans ☐Projects OCCWHS 008 Site Specific Emergency Management Plan ☐As specified for non-council worksites as per OP 084 Section 6		

Legislation & Standards	**Codes of Practice**	**Other**
• Work Health and Safety Act 2011 • Work Health and Safety Regulation 2017 • Workers Compensation Act 1987 • AS 1885.1:1990 National Standard for workplace Injury and Disease Recording • AS/NZS 4801:2001 Occupational Health and Safety Management • AS1716;2009 use and maintenance of respirators • AS 4964 – 2004 Method for the qualitative identification of asbestos in bulk samples	• How to Manage Work Health and Safety Risks • Work Health and Safety Consultation, Cooperation and Coordination • First Aid in the Workplace • Hazardous Manual Tasks • Managing Risks of Plant in the Workplace • Managing Electrical Risks at the Workplace • Construction Work	• Asbestos Management Plan – Orange City Council

No	Task (Basic steps in logical sequence – what is to be done – not how)	Potential Hazard	Initial Risk	Controls Controls must be established using the Hierarchy of Controls Eliminate (E), Isolate (I), Substitute (S), Engineering (EC), PPE, Administration (A)	Residual Risk	Responsibility
1	Toolbox meeting: Workers need to consider the following when presenting to the worksite	Asbestos	1	• If there is reasonable cause for Asbestos material, treat it as Asbestos. Do not disturb Asbestos material.	4	All Staff

No	Task (Basic steps in logical sequence – what is to be done – not how)	Potential Hazard	Initial Risk	Controls Controls must be established using the Hierarchy of Controls Eliminate (E), Isolate (I), Substitute (S), Engineering (EC), PPE, Administration (A)	Residual Risk	Responsibility
				• Asbestos Management Plan required for removal of ACM. • Asbestos Awareness training necessary if required to identify or handle asbestos containing materials.		
		Potential Sickness or Fatigue risks - Worker is not in a fit state (physical, mental and emotional) to perform the duties of the job competently	2	• Workers should stay away from the workplace if they are unwell – Follow any Advice and information from relevant Health Authorities • Supervisors / Managers to monitor fatigue levels using the Fatigue Hazard Identification Checklist	5	All staff Supervisors and Managers,
		Working in Extreme Weather Conditions – Air Quality, Heat and cold related illness	3	• If required monitor air quality and follow any health messages • Ensure temperature appropriate PPE clothing is worn • Use of additional PPE (such as Ice vests / bands under standard PPE in extreme heat where appropriate). • Access to appropriate shelter • Take regular rest breaks • Rotation of tasks • Access to food and water, (warm drinks in cold temperatures, cool drinks and electrolytes in hot temperatures) • Review the Scheduling of tasks • Monitor temperature and workers' physical responses to environmental conditions.	5	All Staff Supervisor

No	Task (Basic steps in logical sequence – what is to be done – not how)	Potential Hazard	Initial Risk	Controls Controls must be established using the Hierarchy of Controls Eliminate (E), Isolate (I), Substitute (S), Engineering (EC), PPE, Administration (A)	Residual Risk	Responsibility
2	Screen all incoming waste at the weighbridge	Hazardous Substance Airborne debris	2	• Drivers are obliged to notify weighbridge operators if their load contains asbestos. • If the load is identified as containing asbestos, the waste may only be received (as per the provisions of the Protection of the Environment Operations (Waste) Regulation 2014) if: - Bonded asbestos material is securely packaged (e.g. with heavy duty plastic); - Friable asbestos is in a sealed container; and/or - Asbestos contaminated soils are wetted down	5	RRC Weighbridge & Plant Operator
		Load non-compliance with conditions	2	• If the load does not comply with the conditions noted above, the waste is to be rejected by weighbridge operators and drivers issued with the EPA handout ***Safely disposing of asbestos waste from your home.***	5	
3	Rejected loads	Hazardous Substance Airborne debris	2	• If asbestos waste is rejected at the weighbridge, the following details need to be recorded by weighbridge operators on **Form 08** within SOP 8- **Driver/ Transport company details for rejected asbestos waste loads:** a. Name and contact details of the driver/ transport company; b. Origin of the asbestos or asbestos containing material; c. Amount and type of asbestos or asbestos containing material d. Reasons why the asbestos waste was not properly packaged, disclosed or transported; and	4	Weighbridge Operators

No	Task (Basic steps in logical sequence – what is to be done – not how)	Potential Hazard	Initial Risk	Controls Controls must be established using the Hierarchy of Controls Eliminate (E), Isolate (I), Substitute (S), Engineering (EC), PPE, Administration (A)	Residual Risk	Responsibility
				e. Development consent details (if applicable)		
4	Asbestos waste not returned to the ORRRC for disposal	Environmental contamination	5	• If evidence of appropriate disposal of the waste cannot be provided, the Resource Recovery Centre Supervisor is required to notify the Manager Waste Services and Technical Support who will report the driver/ transport company to the EPA.	5	Weighbridge Operators
5	Previously rejected asbestos waste		5	• When a driver who has previously been rejected returns with the asbestos waste appropriately packaged, **Form 08** within SOP 8 is used to check off the date the driver returned and waste received.	5	Weighbridge Operators
6	Receipt of asbestos waste		5	• Weighbridge operators are required to issue a receipt to drivers for asbestos waste received. • The receipt will note the time, date, location of disposal, weight of asbestos containing material disposed, and a receipt number.	5	Weighbridge Operators
7	Handling asbestos waste	Hazardous Substance Airborne debris	2	• Handle asbestos waste in a manner to minimise the chance of damage to the wrapping, breakage and or dust/generation. Immediately place in the active asbestos landfill cell and cover with a minimum of 500mm of VEM (Virgin Excavated Material) using Councils loader plant. • Ensure PPE is worn including disposable face masks, gloves and overalls – use plastic to wrap any asbestos with duct tape.	5	RRC Plant Operators
8	Disposal of contaminated PPE	Hazardous Substance Airborne debris	2	• Seal, label and dispose of contaminated PPE upon completion of the asbestos work	5	RRC Plant Operators

No	Task (Basic steps in logical sequence – what is to be done – not how)	Potential Hazard	Initial Risk	Controls Controls must be established using the Hierarchy of Controls Eliminate (E), Isolate (I), Substitute (S), Engineering (EC), PPE, Administration (A)	Residual Risk	Responsibility
9	Incident reporting	Failure to report	4	• Notify supervisor immediately and use council incident reporting form for found asbestos at the site.	5	RRC Plant Operators

Responsibilities

It is the Resource Recovery Centre Supervisor's responsibility to ensure that all incoming waste is screened, and the landfilling operations are monitored to ensure that asbestos waste is appropriately handled.

If asbestos waste is not adequately packaged and the load is consequently rejected at the weighbridge, the weighbridge operators are required to complete **Form 08 – Driver/Transport Company details for rejected asbestos waste loads.**

It is the Resource Recovery Centre Supervisors responsibility to follow up all entries listed on **Form 08** to ensure that waste is adequately packaged and returned to the ORRRC for disposal. If evidence of appropriate disposal of the waste is not provided, the Manager Waste Services and Technical Support is to be notified, who is then responsible for notifying the EPA.

The Resource Recovery Centre Supervisor is responsible for ensuring that all Resource Recovery Centre Operators undertaking weighbridge procedures and landfilling of asbestos waste are adequately trained in this work procedure.

Records

Form 08 – Driver/Transport Company details for rejected asbestos waste loads is to be completed each time a load of asbestos is rejected at the weighbridge. When the driver returns with the waste appropriately packaged, the form is to reflect the date the waste is received.

Note: 'Bonded asbestos material' means any material (other than friable asbestos material) that contains asbestos. 'Friable asbestos material' means any material that contains asbestos and is in the form of a powder or can be crumbled, pulverised or reduced to powder by hand pressure when dry.

FINAL

I agree, that I have been consulted in the development of this SWMS, understand and accept my responsibilities as a worker or contractor on this site including my contribution to hazard identification, risk assessment and controls as per legislative compliance outlined in this SWMS.

Generic SWMS					
Name	Signature	Date	Name	Signature	Date
Peter Ford	P Ford	29-11-2021			
GLEN JACKSON		29.11.21			
Jason Lees		29/11/21			
G-THOMAS		29/11/21			
VIC BIANIE		29/11/21			
WAYNE DAVIS	Wayne Davis	30/11/21			

Project Site Specific SWMS			
Person responsible for ensuring compliance with SWMS & inducting workers into SWMS: Name _____ Position _____ Date _____			
Site		Approved by:	Date:
Developed by Names/positions			Date

Other Safe Systems of Work – Not captured in generic SWMS

(Taking into account new hazards identified, information from subject matter experts, OEM Manuals, plant risk assessments & other risks associated with nature of plant and operation)

No	Task	Potential Hazard	Initial Risk	Controls	Residual Risk	Responsibility
1						
2						
3						

Name	Signature	Date	Name	Signature	Date
I agree, that I have been consulted in the development of this SWMS, understand and accept my responsibilities as a worker or contractor on this site including my contribution to hazard identification, risk assessment and controls as per legislative compliance outlined in this SWMS.					

Risk Matrix

Likely hood	Description
Almost certain	Will happen: imminent or will occur within 1 to 6 months
Likely	Expected to happen: Expected to occur at least once in a 6 to 12 month period
Possible	Could happen: will probably occur between 1 to 5 years
Unlikely	Not expected to happen: may occur only once every 5 - 10 years
Rare	uncommon, unusual: not likely to occur within a 10 year period

Consequence	Description
Severe	Death or serious disability
Major	Serious injury – long term hospital
Moderate	Significant injury – short term hospital
Minor	Injury may require first aid
Negligible	No injuries

RISK RATING TABLE

Likelihood					
Almost certain	5	4	2	1	1
Likely	5	4	2	1	1
Possible	5	5	3	1	1
Unlikely	5	5	4	2	2
Rare	5	5	4	3	3
	Negligible	Minor	Moderate	Major	Severe
	Consequences				

RISK ACTION TABLE

Risk Level	Description
1	**Severe risk** - this task **MUST NOT** proceed until the supervisor reviews the task or process and risks adequately controlled.. Firstly eliminate the risk, and if not possible introduce measures to control the risk by reducing the level to the lowest level achievable. Actions must be recorded in the SMWS (if required) and monitor / review controls
2	**Major risk** – Urgent action to reduce/eliminate the risk. Supervisor may give permission for staff to undertake some high risk activities, provided the system of work is clearly documented, specific training given and adequate review of the task / controls undertaken. Record actions in SMWS (if required) and monitor / review controls
3	**Moderate risk** – action to eliminate/reduce the risk within a specified period. Record actions in SMWS (if required) and monitor / review controls
4	**Minor risk** - assess the risk, determine whether current controls are adequate or if further action is needed. Monitor and review as required
5	**Negligible risk** – manage by routine procedures. Monitor and review as required

Copy of completed SWMS held on site for the duration of the works
All staff is to be trained in this SWMS, training is to be recorded on the Toolbox Meeting Record
All SWMS are endorsed by the WHS Coordinator and retained by the WHS team electronically

ORANGE CITY COUNCIL

FINAL

Company	Orange City Council	**Address**	P O Box 35, Orange NSW 2800	**ABN**	85 985 402 386
Work activity description	Lone Worker			**SWMS No.**	**RRC 002**
This is a generic SWMS and any site specific hazards must be assessed and added to this SWMS prior to commencement of the activity, dated and signed off at the end of the SWMS.					
Work area	Ophir Road Resource Recovery Centre			**Revision No.**	*Rev 1 / November 2021*
Endorsed by	Nicholas Ruston Work Health and Safety Coordinator or delegate	N. Ruston		**Date**	26/11/21
	Line Manager:	Wayne Davis		**Date**	30/11/21
	Supervisor:	P Ford		**Date**	29-11-2021
Person responsible for ensuring compliance with SWMS	Most senior staff member on site: i.e. Supervisor – Team Leader - Leader (in that order).				
Measures to ensure compliance with SWMS	Daily toolbox meetings, direct supervision & or spot checks				

SWMS control measures shall be reviewed by the supervisor:

- When the task/ activity relates to a site specific project; When a significant change to the task/ activity is identified; if an incident occurs or a hazard is identified relating to the activity; periodically as per Council's policies and procedures

Mandatory PPE				**Site and Task Specific Personal Protective Equipment Required** ***(Check boxes below for required PPE)***							
Hi Vis											**Additional site specific PPE:** Sunscreen, CRC respiratory device @ ORRC
☒	☒	☒	☒	☐	☐	☐	☒	☐	☐	☒	

Safety Data Sheets relating to this activity **PPE & first aid as per SDS**	SDS sheets located in work vehicle and or site office	**Qualifications/competencies/licences required for this task.** (Available from the HR Learning and Development Officer)	Drivers Licence, construction induction (white card)
Plant / equipment required	Charged mobile phone, two way radio, Stocked first aid kit	**Plant / equipment inspection and maintenance checks**	As per manufacturers specifications Daily Plant Check Ausfleet maintenance on boarding
Emergency Response (Please select one)	☒As per Council's site emergency evacuation plans ☐Projects OCCWHS 008 Site Specific Emergency Management Plan ☐As specified for non-council worksites as per OP 084 Section 6		

Legislation & Standards	Codes of Practice	Other
• Work Health and Safety Act 2011 • Work Health and Safety Regulation 2017 • Workers Compensation Act 1987	• How to Manage Work Health and Safety Risks • Work Health and Safety Consultation, Cooperation and Coordination • First Aid in the Workplace • Hazardous Manual Tasks • Managing Risks of Plant in the Workplace • Managing Electrical Risks at the Workplace • Construction Work	

No	Task (Basic steps in logical sequence – what is to be done – not how)	Potential Hazard	Initial Risk	Controls Controls must be established using the Hierarchy of Controls Eliminate (E), Isolate (I), Substitute (S), Engineering (EC), PPE, Administration (A)	Residual Risk	Responsibility
1	Toolbox meeting: Workers need to consider the following when presenting to the worksite	Asbestos	1	• If there is reasonable cause for Asbestos material, treat it as Asbestos. Do not disturb Asbestos material.	4	All Staff

No	Task (Basic steps in logical sequence – what is to be done – not how)	Potential Hazard	Initial Risk	Controls Controls must be established using the Hierarchy of Controls Eliminate (E), Isolate (I), Substitute (S), Engineering (EC), PPE, Administration (A)	Residual Risk	Responsibility
				• Asbestos Management Plan required for removal of ACM. • Asbestos Awareness training necessary if required to identify or handle asbestos containing materials.		
		Potential Sickness or Fatigue risks - Worker is not in a fit state (physical, mental and emotional) to perform the duties of the job competently	2	• Workers should stay away from the workplace if they are unwell – Follow any Advice and information from relevant Health Authorities • Supervisors / Managers to monitor fatigue levels using the Fatigue Hazard Identification Checklist	5	All staff Supervisors and Managers,
		Working in Extreme Weather Conditions – Air Quality, Heat and cold related illness	3	• If required monitor air quality and follow any health messages • Ensure temperature appropriate PPE clothing is worn • Use of additional PPE (such as Ice vests / bands under standard PPE in extreme heat where appropriate). • Access to appropriate shelter • Take regular rest breaks • Rotation of tasks • Access to food and water, (warm drinks in cold temperatures, cool drinks and electrolytes in hot temperatures) • Review the Scheduling of tasks • Monitor temperature and workers' physical responses to environmental conditions.	5	All Staff Supervisor

No	Task (Basic steps in logical sequence – what is to be done – not how)	Potential Hazard	Initial Risk	Controls Controls must be established using the Hierarchy of Controls Eliminate (E), Isolate (I), Substitute (S), Engineering (EC), PPE, Administration (A)	Residual Risk	Responsibility
2	Site Establishment	Unknown Site procedures	1	• All workers are required to attend the OCC Site inductions and/or tool box meeting before starting work on site	5	All staff
		Incompetent persons	1	• All workers must hold a General Construction Induction Card (White Card)	5	All staff
		Unforeseen hazards	1	• Toolbox meeting to be conducted before starting work each day, Awareness of Surroundings	5	All staff
		Not being seen by others	1	• All workers are to wear hi visibility clothing. • Construction vehicles to be fitted with UHF and flashing lights. Flashing lights to be on at all times • Notify others when passing. • Ensure positive communication has been received before approaching plant & equipment. • Awareness of surroundings	5	All staff
		Emergency situations	1	• Follow all emergency procedures implemented on-site.	5	All staff
3	Working Alone	Selection of tasks/jobs	1	• Assess task – does it need to be done when alone – seek assistance • Avoid use of excavator • Avoid use of ladders • Avoid use of chainsaw • Check with supervisor first if unsure of tasks • Ensure operator has appropriate training and qualifications to undertake task • Avoid performing high risk construction activities alone. List of high risk activities - Chapter 6.1 in the WHS Regulations 2017	3	Worker

No	Task (Basic steps in logical sequence – what is to be done – not how)	Potential Hazard	Initial Risk	Controls Controls must be established using the Hierarchy of Controls Eliminate (E), Isolate (I), Substitute (S), Engineering (EC), PPE, Administration (A)	Residual Risk	Responsibility
				• Follow SWMS for the work task		
		Risk of Traffic, pedestrians	2	• Awareness of surroundings, public and traffic	4	Worker
		Risk of being left alone if injured	1	• Access to mobile phone: GPS unit or satellite phone; two way radios – relevant training in communications system • Develop procedure for regular contact between lone worker and Supervisor • Vehicle availability	4	Worker
		Lack of communication / information	1	• Determine exact whereabouts, expected arrival times and expected timeframe to complete tasks • Develop procedure for regular contact between lone worker and Supervisor • Determine once on site if coverage is available. If not return to an area where coverage is available and discuss with supervisor • Notify Supervisor upon arrival / departure	4	Worker
		Verbal abuse/threats and assault from members of the public	2	• Immediately notify police and supervisor of situation • Access to mobile phone • Lock yourself in vehicle • Remove yourself from the scene	4	Worker
		Operation of machinery – personal injury, injury to others	1	• Ensure appropriate PPE is worn • Staff signed off on relevant SWMS/WAPs/SOPs • Competent and qualified operator • Awareness of surroundings	4	Worker
		Working outside normal hours of work	3	• Discuss with supervisor prior commencing • Take regular rest breaks • Follow Fatigue Management Policy	5	Worker

No	Task (Basic steps in logical sequence – what is to be done – not how)	Potential Hazard	Initial Risk	Controls Controls must be established using the Hierarchy of Controls Eliminate (E), Isolate (I), Substitute (S), Engineering (EC), PPE, Administration (A)	Residual Risk	Responsibility
				• Access to food and water		
		Potential Sickness or Fatigue risks - Worker is not in a fit state (physical, mental and emotional) to perform the duties of the job competently	2	• Workers should stay away from the workplace if they are unwell – Follow any Advice and information from relevant Health Authorities • Follow Council's Fatigue Management Procedure • Supervisors to regularly communicate with staff. Supervisors / Managers to monitor fatigue levels using the Fatigue Hazard Identification Checklist	5	All staff Supervisors and Managers,
		Working in Extreme Weather Conditions – Air Quality, Heat and cold related illness	3	• If required monitor air quality and follow any health messages • Ensure temperature appropriate PPE clothing is worn • Use of additional PPE (such as Ice vests / bands under standard PPE in extreme heat where appropriate). • Access to appropriate shelter • Take regular rest breaks • Rotation of tasks • Access to food and water, (warm drinks in cold temperatures, cool drinks and electrolytes in hot temperatures) • Review the Scheduling of tasks Monitor temperature and workers' physical responses to environmental conditions	5	All Staff Supervisor
		Attack by animal, insects	3	• Use of mobile phone to contact ranger / police and or supervisor • Lock yourself in vehicle • 1st Aid Kit	5	Worker

No	Task (Basic steps in logical sequence – what is to be done – not how)	Potential Hazard	Initial Risk	Controls Controls must be established using the Hierarchy of Controls Eliminate (E), Isolate (I), Substitute (S), Engineering (EC), PPE, Administration (A)	Residual Risk	Responsibility
				• Awareness of surroundings		
		Access to emergency equipment	4	• Tool Box meeting • Ensure 1st Aid kit / fire extinguishers are in date and in vehicles • Portable 1st Aid kits • Ensure PPE is in good working order	5	Worker
		Access and Egress to buildings	4	• Ensure you are familiar with Emergency Evacuation plan for the site and muster points • Participate in emergency drills • Sign in / out of buildings	5	Worker
		Working in the dark	4	• Vehicle lights / hire of lights • Torches • Building Lights	5	Worker
		Vehicle Breakdown	4	• Use of mobile phone • Contact Supervisor	5	Worker
		Vehicle bogged	4	• Awareness of surrounding and conditions - Avoid going off road • Use of mobile phone	5	Worker
4	Departure from the site	Workers or pedestrians not visible being struck by a vehicle Vehicle collision	2	• Competent and qualified operator • Awareness of surroundings • Obey Road Rules	4	Worker

I agree, that I have been consulted in the development of this SWMS, understand and accept my responsibilities as a worker or contractor on this site including my contribution to hazard identification, risk assessment and controls as per legislative compliance outlined in this SWMS.

Generic SWMS					
Name	Signature	Date	Name	Signature	Date
Peter Ford	P Ford	29-11-2021			
GLEN JACKSON		29 11. 21			
Jason Rees		29 11 21			
C. Thomas		29/11/21			
Vic BIRNIE		29/11/21			
WAYNE DAVIS	Wayne Davis	30/11/21.			

Project Site Specific SWMS			
Person responsible for ensuring compliance with SWMS & inducting workers into SWMS:			
Name		**Position**	**Date**
Site		**Approved by:**	**Date:**
Developed by **Names/positions**			**Date**

Other Safe Systems of Work – Not captured in generic SWMS

(Taking into account new hazards identified, information from subject matter experts, OEM Manuals, plant risk assessments & other risks associated with nature of plant and operation)

No	Task	Potential Hazard	Initial Risk	Controls	Residual Risk	Responsibility
1						
2						
3						

Name	Signature	Date	Name	Signature	Date
I agree, that I have been consulted in the development of this SWMS, understand and accept my responsibilities as a worker or contractor on this site including my contribution to hazard identification, risk assessment and controls as per legislative compliance outlined in this SWMS.					

Risk Matrix

Likely hood	Description
Almost certain	Will happen: imminent or will occur within 1 to 6 months
Likely	Expected to happen: Expected to occur at least once in a 6 to 12 month period
Possible	Could happen: will probably occur between 1 to 5 years
Unlikely	Not expected to happen: may occur only once every 5 - 10 years
Rare	uncommon, unusual: not likely to occur within a 10 year period

Consequence	Description
Severe	Death or serious disability
Major	Serious injury – long term hospital
Moderate	Significant injury – short term hospital
Minor	Injury may require first aid
Negligible	No injuries

RISK RATING TABLE

Likelihood					
Almost certain	5	4	2	1	1
Likely	5	4	2	1	1
Possible	5	5	3	1	1
Unlikely	5	5	4	2	2
Rare	5	5	4	3	3
	Negligible	Minor	Moderate	Major	Severe
	Consequences				

RISK ACTION TABLE

Risk Level	Description
1	**Severe risk** - this task **MUST NOT** proceed until the supervisor reviews the task or process and risks adequately controlled.. Firstly eliminate the risk, and if not possible introduce measures to control the risk by reducing the level to the lowest level achievable. Actions must be recorded in the SMWS (if required) and monitor / review controls
2	**Major risk** – Urgent action to reduce/eliminate the risk. Supervisor may give permission for staff to undertake some high risk activities, provided the system of work is clearly documented, specific training given and adequate review of the task / controls undertaken. Record actions in SMWS (if required) and monitor / review controls
3	**Moderate risk** – action to eliminate/reduce the risk within a specified period. Record actions in SMWS (if required) and monitor / review controls
4	**Minor risk** - assess the risk, determine whether current controls are adequate or if further action is needed. Monitor and review as required
5	**Negligible risk** – manage by routine procedures. Monitor and review as required

Copy of completed SWMS held on site for the duration of the works
All staff is to be trained in this SWMS, training is to be recorded on the Toolbox Meeting Record
All SWMS are endorsed by the WHS Coordinator and retained by the WHS team electronically

ORANGE CITY COUNCIL

FINAL

Company	Orange City Council	**Address**	P O Box 35, Orange NSW 2800	**ABN**	85 985 402 386
Work activity description	Load Mulch / Compost			**SWMS No.**	**RRC 003**

This is a generic SWMS and any site specific hazards must be assessed and added to this SWMS prior to commencement of the activity, dated and signed off at the end of the SWMS.

Work area	Ophir Road Resource Recovery Centre		**Revision No.**	*Rev 1 /* November *2021*
Endorsed by	Nicholas Ruston Work Health and Safety Coordinator or delegate	N. Ruston	**Date**	26/11/21
	Line Manager:	Wayne Davis.	**Date**	30/11/21.
	Supervisor:	P Ford	**Date**	29-11-21
Person responsible for ensuring compliance with SWMS	Most senior staff member on site: i.e. Supervisor – Team Leader - Leader (in that order).			
Measures to ensure compliance with SWMS	Daily toolbox meetings, direct supervision & or spot checks			

SWMS control measures shall be reviewed by the supervisor:

- When the task/ activity relates to a site specific project; When a significant change to the task/ activity is identified; if an incident occurs or a hazard is identified relating to the activity; periodically as per Council's policies and procedures

Mandatory PPE				**Site and Task Specific Personal Protective Equipment Required** ***(Check boxes below for required PPE)***							
Hi Vis											**Additional site specific PPE:**
☒	☒	☒	☒	☐	☐	☐	☐	☐	☐	☐	

Safety Data Sheets relating to this activity **PPE & first aid as per SDS**	SDS sheets located in work vehicle and or site office	**Qualifications/competencies/licences required for this task.** (Available from the HR Learning and Development Officer)	

Plant / equipment required	*Loader with bucket*	**Plant / equipment inspection and maintenance checks**	As per manufacturers specifications Daily Plant Check Ausfleet maintenance on boarding
Emergency Response (Please select one)	☒As per Council's site emergency evacuation plans ☐Projects OCCWHS 008 Site Specific Emergency Management Plan ☐As specified for non-council worksites as per OP 084 Section 6		

Legislation & Standards	Codes of Practice	Other
• Work Health and Safety Act 2011 • Work Health and Safety Regulation 2017 • Workers Compensation Act 1987	• How to Manage Work Health and Safety Risks • Work Health and Safety Consultation, Cooperation and Coordination • First Aid in the Workplace • Hazardous Manual Tasks • Managing Risks of Plant in the Workplace • Managing Electrical Risks at the Workplace • Construction Work	

No	Task (Basic steps in logical sequence – what is to be done – not how)	Potential Hazard	Initial Risk	Controls Controls must be established using the Hierarchy of Controls Eliminate (E), Isolate (I), Substitute (S), Engineering (EC), PPE, Administration (A)	Residual Risk	Responsibility
1	Toolbox meeting: Workers need to consider the following when presenting to the worksite	Asbestos	1	• If there is reasonable cause for Asbestos material, treat it as Asbestos. Do not disturb Asbestos material. • Asbestos Management Plan required for removal of ACM. • Asbestos Awareness training necessary if required to identify or handle asbestos containing materials.	4	All Staff

No	Task (Basic steps in logical sequence – what is to be done – not how)	Potential Hazard	Initial Risk	Controls Controls must be established using the Hierarchy of Controls Eliminate (E), Isolate (I), Substitute (S), Engineering (EC), PPE, Administration (A)	Residual Risk	Responsibility
		Potential Sickness or Fatigue risks - Worker is not in a fit state (physical, mental and emotional) to perform the duties of the job competently	2	• Workers should stay away from the workplace if they are unwell – Follow any Advice and information from relevant Health Authorities • Supervisors / Managers to monitor fatigue levels using the Fatigue Hazard Identification Checklist	5	All staff Supervisors and Managers,
		Working in Extreme Weather Conditions – Air Quality, Heat and cold related illness	3	• If required monitor air quality and follow any health messages • Ensure temperature appropriate PPE clothing is worn • Use of additional PPE (such as Ice vests / bands under standard PPE in extreme heat where appropriate). • Access to appropriate shelter • Take regular rest breaks • Rotation of tasks • Access to food and water, (warm drinks in cold temperatures, cool drinks and electrolytes in hot temperatures) • Review the Scheduling of tasks • Monitor temperature and workers' physical responses to environmental conditions.	5	All Staff Supervisor
2	Site Establishment	Unknown Site procedures	1	• All workers are required to attend the OCC Site inductions and/or tool box meeting before starting work on site	5	All staff
		Incompetent persons	1	• All workers must hold a General Construction Induction Card (White Card)	5	All staff

No	Task (Basic steps in logical sequence – what is to be done – not how)	Potential Hazard	Initial Risk	Controls Controls must be established using the Hierarchy of Controls Eliminate (E), Isolate (I), Substitute (S), Engineering (EC), PPE, Administration (A)	Residual Risk	Responsibility
		Unforeseen hazards	1	• Toolbox meeting to be conducted before starting work each day, Awareness of Surroundings	5	All staff
		Not being seen by others	1	• All workers are to wear hi visibility clothing. • Construction vehicles to be fitted with UHF and flashing lights. Flashing lights to be on at all times • Notify others when passing. • Ensure positive communication has been received before approaching plant & equipment. • Awareness of surroundings	5	All staff
		Emergency situations	1	• Follow all emergency procedures implemented on-site.	5	All staff
3	Operation of plant	Plant failure, Fall from plant, Incompetent operator, Struck by plant	1	• Refer to SWMS for "Plant Operation"	4	Plant Operator
4	Proceed to mulch pile / compost pile	Injury to public	1	• Isolate the area • Do not exceed facility speed limit. • Obey facility signage • Observe customer activity and ensure no one is downwind of mulch / compost when loading	4	Plant Operator
5	Loading and Unloading of mulch	Damage to vehicles	1	• Advise the customer of the safety procedures and movement of vehicles. • Ticketed and competent operator • *Members of the public/customers are encouraged to stay within their parked vehicles with park brakes engaged.*	4	Plant Operator

No	Task (Basic steps in logical sequence – what is to be done – not how)	Potential Hazard	Initial Risk	Controls Controls must be established using the Hierarchy of Controls Eliminate (E), Isolate (I), Substitute (S), Engineering (EC), PPE, Administration (A)	Residual Risk	Responsibility
				• *Members of the public/customers must always stay outside of plant zone of influence and areas where plant operates.*		
		Overloading the vehicle/trailer	1	• Train operators on correct loading procedures • If there is concern over the condition of vehicle or trailer, loading should not occur until such a time that these concerns are addressed.	4	Plant operator
		Load spilling onto the road	1	• Do not overload vehicles • Never load above the wall of the vehicle/trailer. • Ensure customer covers the load where required.	4	Plant operator

FINAL

I agree, that I have been consulted in the development of this SWMS, understand and accept my responsibilities as a worker or contractor on this site including my contribution to hazard identification, risk assessment and controls as per legislative compliance outlined in this SWMS.

Generic SWMS					
Name	Signature	Date	Name	Signature	Date
Peter Ford	P Ford	29-11-2021			
ELEN JACKSON		29.11.21			
Jason Rees		29/11/21			
C-THOMAS		29/11/21			
VIC-BIANCO		29/11/21			
WAYNE DAVIS	Wayne Davis	30/11/21			

Project Site Specific SWMS			
Person responsible for ensuring compliance with SWMS & inducting workers into SWMS:			
Name		**Position**	**Date**
Site		**Approved by:**	**Date:**
Developed by **Names/positions**			**Date**

Other Safe Systems of Work – Not captured in generic SWMS

(Taking into account new hazards identified, information from subject matter experts, OEM Manuals, plant risk assessments & other risks associated with nature of plant and operation)

No	Task	Potential Hazard	Initial Risk	Controls	Residual Risk	Responsibility
1						
2						
3						

Name	Signature	Date	Name	Signature	Date
I agree, that I have been consulted in the development of this SWMS, understand and accept my responsibilities as a worker or contractor on this site including my contribution to hazard identification, risk assessment and controls as per legislative compliance outlined in this SWMS.					

Risk Matrix

Likely hood	Description
Almost certain	Will happen: imminent or will occur within 1 to 6 months
Likely	Expected to happen: Expected to occur at least once in a 6 to 12 month period
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Rare	uncommon, unusual: not likely to occur within a 10 year period

Consequence	Description
Severe	Death or serious disability
Major	Serious injury – long term hospital
Moderate	Significant injury – short term hospital
Minor	Injury may require first aid
Negligible	No injuries

RISK RATING TABLE

Likelihood					
Almost certain	5	4	2	1	1
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Possible	5	5	3	1	1
Unlikely	5	5	4	2	2
Rare	5	5	4	3	3
	Negligible	Minor	Moderate	Major	Severe
	Consequences				

RISK ACTION TABLE

Risk Level	Description
1	**Severe risk** - this task **MUST NOT** proceed until the supervisor reviews the task or process and risks adequately controlled.. Firstly eliminate the risk, and if not possible introduce measures to control the risk by reducing the level to the lowest level achievable. Actions must be recorded in the SMWS (if required) and monitor / review controls
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5	**Negligible risk** – manage by routine procedures. Monitor and review as required

Copy of completed SWMS held on site for the duration of the works
All staff is to be trained in this SWMS, training is to be recorded on the Toolbox Meeting Record
All SWMS are endorsed by the WHS Coordinator and retained by the WHS team electronically

ORANGE CITY COUNCIL

FINAL

Company	Orange City Council	**Address**	P O Box 35, Orange NSW 2800	**ABN**	85 985 402 386
Work activity description	Landfill Waste Disposal			**SWMS No.**	**RRC 004**
This is a generic SWMS and any site specific hazards must be assessed and added to this SWMS prior to commencement of the activity, dated and signed off at the end of the SWMS.					
Work area	Resource Recovery Centre, Ophir Road			**Revision No.**	*Rev 1 / November 2021*
Endorsed by	Nicholas Ruston Work Health and Safety Coordinator or delegate	N. Ruston		**Date**	26/11/21
	Line Manager:	Wayne Davis		**Date**	30/11/21.
	Supervisor:	P Ford		**Date**	29-11-21
Person responsible for ensuring compliance with SWMS	Most senior staff member on site: i.e. Supervisor – Team Leader - Leader (in that order).				
Measures to ensure compliance with SWMS	Daily toolbox meetings, direct supervision & or spot checks				

SWMS control measures shall be reviewed by the supervisor:

- When the task/ activity relates to a site specific project; When a significant change to the task/ activity is identified; if an incident occurs or a hazard is identified relating to the activity; periodically as per Council's policies and procedures

Mandatory PPE				**Site and Task Specific Personal Protective Equipment Required** ***(Check boxes below for required PPE)***							
Hi Vis											**Additional site specific PPE:**
☒	☒	☒	☒	☐	☐	☐	☐	☐	☐	☐	

Safety Data Sheets relating to this activity **PPE & first aid as per SDS**	SDS sheets located in work vehicle and or site office	**Qualifications/competencies/licences required for this task.** (Available from the HR Learning and Development Officer)	
Plant / equipment required		**Plant / equipment inspection and maintenance checks**	As per manufacturers specifications Daily Plant Check Ausfleet maintenance on boarding
Emergency Response (Please select one)	☒As per Council's site emergency evacuation plans ☐Projects OCCWHS 008 Site Specific Emergency Management Plan ☐As specified for non-council worksites as per OP 084 Section 6		

Legislation & Standards	Codes of Practice	Other
• Work Health and Safety Act 2011 • Work Health and Safety Regulation 2017 • Workers Compensation Act 1987	• How to Manage Work Health and Safety Risks • Work Health and Safety Consultation, Cooperation and Coordination • First Aid in the Workplace • Hazardous Manual Tasks • Managing Risks of Plant in the Workplace • Managing Electrical Risks at the Workplace • Construction Work	• SOP Stump Grinder 827 • SOP Chainsaw

No	Task (Basic steps in logical sequence – what is to be done – not how)	Potential Hazard	Initial Risk	Controls must be established using the Hierarchy of Controls Eliminate (E), Isolate (I), Substitute (S), Engineering (EC), PPE, Administration (A)	Residual Risk	Responsibility
1	Toolbox meeting: Workers need to consider the following when presenting to the worksite	Asbestos	1	• If there is reasonable cause for Asbestos material, treat it as Asbestos. Do not disturb Asbestos material.	4	All Staff

No	Task (Basic steps in logical sequence – what is to be done – not how)	Potential Hazard	Initial Risk	Controls Controls must be established using the Hierarchy of Controls Eliminate (E), Isolate (I), Substitute (S), Engineering (EC), PPE, Administration (A)	Residual Risk	Responsibility
				• Asbestos Management Plan required for removal of ACM. • Asbestos Awareness training necessary if required to identify or handle asbestos containing materials.		
		Potential Sickness or Fatigue risks - Worker is not in a fit state (physical, mental and emotional) to perform the duties of the job competently	2	• Workers should stay away from the workplace if they are unwell – Follow any Advice and information from relevant Health Authorities • Supervisors / Managers to monitor fatigue levels using the Fatigue Hazard Identification Checklist	5	All staff Supervisors and Managers,
		Working in Extreme Weather Conditions – Air Quality, Heat and cold related illness	3	• If required monitor air quality and follow any health messages • Ensure temperature appropriate PPE clothing is worn • Use of additional PPE (such as Ice vests / bands under standard PPE in extreme heat where appropriate). • Access to appropriate shelter • Take regular rest breaks • Rotation of tasks • Access to food and water, (warm drinks in cold temperatures, cool drinks and electrolytes in hot temperatures) • Review the Scheduling of tasks • Monitor temperature and workers' physical responses to environmental conditions.	5	All Staff Supervisor

No	Task (Basic steps in logical sequence – what is to be done – not how)	Potential Hazard	Initial Risk	Controls Controls must be established using the Hierarchy of Controls Eliminate (E), Isolate (I), Substitute (S), Engineering (EC), PPE, Administration (A)	Residual Risk	Responsibility
2	Site Establishment	Unknown Site procedures	1	• All workers are required to attend the OCC Site inductions and/or tool box meeting before starting work on site	5	All staff
		Incompetent persons	1	• All workers must hold a General Construction Induction Card (White Card)	5	All staff
		Unforeseen hazards	1	• Toolbox meeting to be conducted before starting work each day, Awareness of Surroundings	5	All staff
		Not being seen by others	1	• All workers are to wear hi visibility clothing. • Construction vehicles to be fitted with UHF and flashing lights. Flashing lights to be on at all times • Notify others when passing. • Ensure positive communication has been received before approaching plant & equipment. • Awareness of surroundings	5	All staff
		Emergency situations	1	• Follow all emergency procedures implemented on-site.	5	All staff
2	Machinery Inspection	Failure of the Machinery to operate to the manufactures requirements. Environmental damage	4	The Pre – Start inspection: - Check for oil, water & hydraulic leaks. Tyre inflation. That the safety shields are in place. Body damage to the Plant. Grease where required. Post – Start Inspection: - Check the brake pedal function, for strong vibrations, for noise levels and that the instruments are operational. Any FAILURES during the inspection must be repaired prior to use or Tagged Off not for use and reported to the Supervisor to arrange repairs.	5	

No	Task (Basic steps in logical sequence – what is to be done – not how)	Potential Hazard	Initial Risk	Controls Controls must be established using the Hierarchy of Controls Eliminate (E), Isolate (I), Substitute (S), Engineering (EC), PPE, Administration (A)	Residual Risk	Responsibility
				Re-fuelling the machine: - Only in the designated area in the machinery shed where the fuel is on a spill pallet and a Chemical Spill kit is available. If refuelling in the field, avoid close proximity to storm water drains and water courses. • CONTRACTORS MACHINERY – must be inspected by the mechanics from the Council Workshop prior to any work taking place on a Council site.		
5	Site Establishment	Unknown Site procedures	3	• All workers are required to attend the OCC Site inductions and/or tool box meeting before starting work on site	5	All staff
		Incompetent persons	3	• All workers must hold a General Construction Induction Card (White Card)	5	All staff
		Unforeseen hazards	3	• Toolbox meeting to be conducted before starting work each day • Awareness of Surroundings	5	All staff
		Not being seen by others	3	• All workers are to wear hi visibility clothing. • Construction vehicles to be fitted with UHF and flashing lights. Flashing lights to be on at all times • Notify others when passing. • Ensure positive communication has been received before approaching plant & equipment. Awareness of surroundings	5	All staff
		Emergency situations	3	• Follow all emergency procedures implemented on-site.	5	All staff
3		Collapse of bale/ Fall from trailer		• Ensure no one is near truck or telehandler whilst unloading and conveying bales to the landfill		All staff

No	Task (Basic steps in logical sequence – what is to be done – not how)	Potential Hazard	Initial Risk	Controls Controls must be established using the Hierarchy of Controls Eliminate (E), Isolate (I), Substitute (S), Engineering (EC), PPE, Administration (A)	Residual Risk	Responsibility
	Unload semi-trailer with waste bales and deposit bales to current cell	Damage to plant	1	• All plant & equipment used on site must be fitted with the following safety devices: - UHF Radio - lashing Light - Reverse Beeper • When approaching another item of plant to pass, notify the operator using the UHF and wait for a positive communication to be received before passing • Plant to keep a safe distance from one another	3	All staff
		Operator working with obstructed view.	2	• Keep clear of mobile plant when in use and any loads being moved. • Keep in operators view at all times. • Awareness of surroundings	5	
		Working around machinery - Machinery /persons collision	3	• Use machinery as per operator's instructions. • Awareness of surroundings	5	All staff
4	Compact loose waste	Roll over of plant	3	• Check integrity of ground prior to undertaking task • Operate plant within manufactures specifications • Operate plant on safe grades and in layers of 150mm	4	All staff
5	Provide cover to waste	Reversing over other nearby operators	3	• Keep clear of mobile plant when in use and any loads being moved. Plant operator to maintain safe distance. • Keep in operators view at all times • Awareness of surroundings	4	All staff

No	Task (Basic steps in logical sequence – what is to be done – not how)	Potential Hazard	Initial Risk	Controls Controls must be established using the Hierarchy of Controls Eliminate (E), Isolate (I), Substitute (S), Engineering (EC), PPE, Administration (A)	Residual Risk	Responsibility
		Roll over of plant		• Check integrity of ground prior to undertaking task • Operate plant within manufactures specifications • Operate plant on safe grades and in layers of 150mm	4	All staff
6	Load out cover material from soil stockpile and deliver to landfill cell	Roll over of plant	3	• Check integrity of ground prior to undertaking task • Operate plant within manufactures specifications • Operate plant on safe grades and in layers of 150mm	4	All staff
		Damage to plant	1	• All plant & equipment used on site must be fitted with the following safety devices: - UHF Radio - lashing Light - Reverse Beeper • When approaching another item of plant to pass, notify the operator using the UHF and wait for a positive communication to be received before passing • Plant to keep a safe distance from one another	4	All staff
		Working around machinery - Machinery /persons collision	3	• Use machinery as per operator's instructions. • Awareness of surroundings	4	All staff

I agree, that I have been consulted in the development of this SWMS, understand and accept my responsibilities as a worker or contractor on this site including my contribution to hazard identification, risk assessment and controls as per legislative compliance outlined in this SWMS.

Generic SWMS					
Name	Signature	Date	Name	Signature	Date
Peter Ford	P Ford	29-11-2021			
CLE H JACKSON		29.11.21			
Jason Rees		29-11-21			
G. THOMSON		29/11/21			
VIC BIRNIE		29/11/21			
WAYNE DAVIS	Wayne Davis	30/11/21.			

Project Site Specific SWMS			
Person responsible for ensuring compliance with SWMS & inducting workers into SWMS:			
Name		**Position**	**Date**
Site		**Approved by:**	**Date:**
Developed by **Names/positions**			**Date**

Other Safe Systems of Work – Not captured in generic SWMS

(Taking into account new hazards identified, information from subject matter experts, OEM Manuals, plant risk assessments & other risks associated with nature of plant and operation)

No	Task	Potential Hazard	Initial Risk	Controls	Residual Risk	Responsibility
1						
2						
3						

Name	Signature	Date	Name	Signature	Date
I agree, that I have been consulted in the development of this SWMS, understand and accept my responsibilities as a worker or contractor on this site including my contribution to hazard identification, risk assessment and controls as per legislative compliance outlined in this SWMS.					

Risk Matrix

Likely hood	Description
Almost certain	Will happen: imminent or will occur within 1 to 6 months
Likely	Expected to happen: Expected to occur at least once in a 6 to 12 month period
Possible	Could happen: will probably occur between 1 to 5 years
Unlikely	Not expected to happen: may occur only once every 5 - 10 years
Rare	uncommon, unusual: not likely to occur within a 10 year period

Consequence	Description
Severe	Death or serious disability
Major	Serious injury – long term hospital
Moderate	Significant injury – short term hospital
Minor	Injury may require first aid
Negligible	No injuries

RISK RATING TABLE

Likelihood	Negligible	Minor	Moderate	Major	Severe
Almost certain	5	4	2	1	1
Likely	5	4	2	1	1
Possible	5	5	3	1	1
Unlikely	5	5	4	2	2
Rare	5	5	4	3	3
	Consequences				

RISK ACTION TABLE

Risk Level	Description
1	**Severe risk** - this task **MUST NOT** proceed until the supervisor reviews the task or process and risks adequately controlled.. Firstly eliminate the risk, and if not possible introduce measures to control the risk by reducing the level to the lowest level achievable. Actions must be recorded in the SMWS (if required) and monitor / review controls
2	**Major risk** – Urgent action to reduce/eliminate the risk. Supervisor may give permission for staff to undertake some high risk activities, provided the system of work is clearly documented, specific training given and adequate review of the task / controls undertaken. Record actions in SMWS (if required) and monitor / review controls
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Copy of completed SWMS held on site for the duration of the works
All staff is to be trained in this SWMS, training is to be recorded on the Toolbox Meeting Record
All SWMS are endorsed by the WHS Coordinator and retained by the WHS team electronically

ORANGE CITY COUNCIL

FINAL

Company	Orange City Council	**Address**	P O Box 35, Orange NSW 2800	**ABN**	85 985 402 386
Work activity description	Plant Operation			**SWMS No.**	**RRC 005**
This is a generic SWMS and any site specific hazards must be assessed and added to this SWMS prior to commencement of the activity, dated and signed off at the end of the SWMS.					
Work area	Resource Recovery Centre			**Revision No.**	*Rev 1 / November 2021*
Endorsed by	Nicholas Ruston Work Health and Safety Coordinator or delegate	N. Ruston		**Date**	26/11/21
	Line Manager:	Wayne Davis		**Date**	30/11/21.
	Supervisor:	P Ford		**Date**	29-11-21
Person responsible for ensuring compliance with SWMS	Most senior staff member on site: i.e. Supervisor – Team Leader - Leader (in that order).				
Measures to ensure compliance with SWMS	Daily toolbox meetings, direct supervision & or spot checks				

SWMS control measures shall be reviewed by the supervisor:

- When the task/ activity relates to a site specific project; When a significant change to the task/ activity is identified; if an incident occurs or a hazard is identified relating to the activity; periodically as per Council's policies and procedures

Mandatory PPE				**Site and Task Specific Personal Protective Equipment Required *(Check boxes below for required PPE)***							
Hi Vis											**Additional site specific PPE:** Eye protection (as required)
☒	☒	☒	☒	☐	☐	☐	☐	☐	☐	☐	

Safety Data Sheets relating to this activity **PPE & first aid as per SDS**	In work vehicle	**Qualifications/competencies/licences required for this task.** (Available from the HR Learning and Development Officer)	Appropriate licence/ competency to operate machinery, Construction Induction (White Card)
Plant / equipment required	Light vehicle, silt fencing apparatus/ attachment, loader, backhoe, excavator, grader, truck, other earth moving equipment, Stocked First Aid Kit, Charged Mobile Phone	**Plant / equipment inspection and maintenance checks**	As per manufacturers specifications Daily Plant Check Ausfleet maintenance on boarding
Emergency Response (Please select one)	☒As per Council's site emergency evacuation plans ☐Projects OCCWHS 008 Site Specific Emergency Management Plan ☐As specified for non-council worksites as per OP 084 Section 6		

Legislation & Standards	**Codes of Practice**	**Other**
• Work Health and Safety Act 2011 • Work Health and Safety Regulation 2017 • Workers Compensation Act 1987 • Heavy Vehicle Law	• How to Manage Work Health and Safety Risks • Work Health and Safety Consultation, Cooperation and Coordination • First Aid in the Workplace • Hazardous Manual Tasks • Managing Risks of Plant in the Workplace • Managing Electrical Risks at the Workplace • Construction Work	• Orange City Council Asbestos Management Plan • General Guide for Workplace Traffic Management • T 007 RTA Tip Sheet Construction Plant and Equipment • Guide to measuring and assessing workplace exposure to whole body vibration (General Guidance SafeWork Australia • Guide to managing the risks of exposure to hand arm vibration in workplaces (General Guidance SafeWork Australia) • State-wide Mutual Best Practice Manual Roads • TFNSW Traffic Control at Worksites V6 • Working in the Vicinity of Overhead & Underground Electric Lines – Safe Work ***Other documents reviewed in development of SWMS*** • Plant Risk Assessments • Original Equipment Manufacturers Manual

No	Task (Basic steps in logical sequence – what is to be done – not how)	Potential Hazard	Initial Risk	Controls Controls must be established using the Hierarchy of Controls Eliminate (E), Isolate (I), Substitute (S), Engineering (EC), PPE, Administration (A)	Residual Risk	Responsibility
1	Toolbox meeting: Workers need to consider the following when presenting to the worksite	Asbestos	1	• If there is reasonable cause for Asbestos material, treat it as Asbestos. Do not disturb Asbestos material. • Asbestos Management Plan required for removal of ACM. • Asbestos Awareness training necessary if required to identify or handle asbestos containing materials.	4	All Staff
		Potential Sickness or Fatigue risks - Worker is not in a fit state (physical, mental and emotional) to perform the duties of the job competently	2	• Workers should stay away from the workplace if they are unwell – Follow any Advice and information from relevant Health Authorities • Supervisors / Managers to monitor fatigue levels using the Fatigue Hazard Identification Checklist • Stretch breaks should be taken about each 2 hours	5	All staff Supervisors and Managers
		Working in Extreme Weather Conditions – Air Quality, Heat and cold related illness	3	• If required monitor air quality and follow any health messages • Ensure temperature appropriate PPE clothing is worn • Use of additional PPE (such as Ice vests / bands under standard PPE in extreme heat where appropriate). • Access to appropriate shelter • Take regular rest breaks • Rotation of tasks • Access to food and water, (warm drinks in cold temperatures, cool drinks and electrolytes in hot temperatures) • Review the Scheduling of tasks • Monitor temperature and workers' physical responses to environmental conditions.	5	All Staff Supervisor

No	Task (Basic steps in logical sequence – what is to be done – not how)	Potential Hazard	Initial Risk	Controls Controls must be established using the Hierarchy of Controls Eliminate (E), Isolate (I), Substitute (S), Engineering (EC), PPE, Administration (A)	Residual Risk	Responsibility
2	Site Establishment	Unknown Site procedures	1	• All workers are required to attend the OCC Site inductions and/or tool box meeting before starting work on site	5	All staff
		Incompetent persons	1	• All workers must hold a General Construction Induction Card (White Card)	5	All staff
		Unforeseen hazards	1	• Toolbox meeting to be conducted before starting work each day, Awareness of Surroundings	5	All staff
		Not being seen by others	1	• All workers are to wear hi visibility clothing. • Construction vehicles to be fitted with UHF and flashing lights. Flashing lights to be on at all times • Notify others when passing. • Ensure positive communication has been received before approaching plant & equipment. • Awareness of surroundings	5	All staff
		Emergency situations	1	• Follow all emergency procedures implemented on-site.	5	All staff
3	Plant Inspection	Faulty Plant	3	• Pre Start Check – Tag Out if Unsafe	5	All Staff
4	Traffic Control	Collision/Injury	3	• Ensure appropriate Traffic Control in place prior to commencing	5	All staff
5	Plant on Plant and Plant on Person interaction (applicable to all tasks below)	Damage to plant	1	• All plant & equipment used on site must be fitted with the following safety devices: - UHF Radio - Flashing Light - Reverse Beeper • When approaching another item of plant to pass, notify the operator using the UHF and wait for a positive communication to be received before passing • Plant to keep a safe distance from one another	3	All staff
		Injury to person	1	• If you notice a worker in your work area that should not be there, stop work and notify your supervisor.	3	All staff

No	Task (Basic steps in logical sequence – what is to be done – not how)	Potential Hazard	Initial Risk	Controls Controls must be established using the Hierarchy of Controls Eliminate (E), Isolate (I), Substitute (S), Engineering (EC), PPE, Administration (A)	Residual Risk	Responsibility
				• If a worker has signalled that they need to approach your machine, stop work, lower all Ground Engaging Tools (GET Gear) such as buckets, blades, rippers • Once worker has exited your work radius you may continue to work • Before moving off always check mirrors for unexpected workers		
6	Check lifting or pulling gear (if required)	Hazardous manual handling - Incorrect lifting, lending twisting and positioning techniques. Lifting unknown weight	3	• Safe Manual Handling Techniques - Reduce unnecessary lifting, Consider mechanical aids or two person lift. Assess the weight and size of the item prior to being moved / lifted	4	All staff
7	Check location of utilities	Gas explosion	1	• All underground /overhead services have been located prior to commencing work and checked on site using detectors or locaters where possible • Dial Before You Dig, potholing	5	All Staff
		Electricity	1		5	All Staff
		Water	1		5	All Staff
		Sewer	4		5	All Staff
		Communications	5		5	All Staff
8	Operate machine or truck	Collision or rollover	1	• Competent operators • Seat belt to be worn at all times and avoid uneven or soft work platform • Step down off equipment, do not jump • All loads to be covered • Awareness of surroundings	3	All Staff

FINAL

I agree, that I have been consulted in the development of this SWMS, understand and accept my responsibilities as a worker or contractor on this site including my contribution to hazard identification, risk assessment and controls as per legislative compliance outlined in this SWMS.

Generic SWMS					
Name	Signature	Date	Name	Signature	Date
Peter Ford	P Ford	29-11-2021			
GLEN JACKSON		29.11.21			
Jason Rees		29.11.21			
G. THOMAS		29/11/21			
VIC BIRNIE		29/11/21			
WAYNE DAVIS	Wayne Davis	30/11/21			

Project Site Specific SWMS

Person responsible for ensuring compliance with SWMS & inducting workers into SWMS:		
Name	**Position**	**Date**

Site		**Approved by:**	**Date:**
Developed by **Names/positions**			**Date**

Other Safe Systems of Work – Not captured in generic SWMS

(Taking into account new hazards identified, information from subject matter experts, OEM Manuals, plant risk assessments, Rops/Fops & other risks associated with nature of plant and operation)

No	Task	Potential Hazard	Initial Risk	Controls	Residual Risk	Responsibility
1						
2						
3						

Name	Signature	Date	Name	Signature	Date
I agree, that I have been consulted in the development of this SWMS, understand and accept my responsibilities as a worker or contractor on this site including my contribution to hazard identification, risk assessment and controls as per legislative compliance outlined in this SWMS.					

Risk Matrix

Likely hood	Description
Almost certain	Will happen: imminent or will occur within 1 to 6 months
Likely	Expected to happen: Expected to occur at least once in a 6 to 12 month period
Possible	Could happen: will probably occur between 1 to 5 years
Unlikely	Not expected to happen: may occur only once every 5 - 10 years
Rare	uncommon, unusual: not likely to occur within a 10 year period

Consequence	Description
Severe	Death or serious disability
Major	Serious injury – long term hospital
Moderate	Significant injury – short term hospital
Minor	Injury may require first aid
Negligible	No injuries

RISK RATING TABLE

Likelihood					
Almost certain	5	4	2	1	1
Likely	5	4	2	1	1
Possible	5	5	3	1	1
Unlikely	5	5	4	2	2
Rare	5	5	4	3	3
	Negligible	Minor	Moderate	Major	Severe
	Consequences				

RISK ACTION TABLE

Risk Level	Description
1	**Severe risk** - this task **MUST NOT** proceed until the supervisor reviews the task or process and risks adequately controlled.. Firstly eliminate the risk, and if not possible introduce measures to control the risk by reducing the level to the lowest level achievable. Actions must be recorded in the SMWS (if required) and monitor / review controls
2	**Major risk** – Urgent action to reduce/eliminate the risk. Supervisor may give permission for staff to undertake some high risk activities, provided the system of work is clearly documented, specific training given and adequate review of the task / controls undertaken. Record actions in SMWS (if required) and monitor / review controls
3	**Moderate risk** – action to eliminate/reduce the risk within a specified period. Record actions in SMWS (if required) and monitor / review controls
4	**Minor risk** - assess the risk, determine whether current controls are adequate or if further action is needed. Monitor and review as required
5	**Negligible risk** – manage by routine procedures. Monitor and review as required

Copy of completed SWMS held on site for the duration of the works
All staff is to be trained in this SWMS, training is to be recorded on the Toolbox Meeting Record
All SWMS are endorsed by the WHS Coordinator and retained by the WHS team electronically

ORANGE CITY COUNCIL

FINAL

Company	Orange City Council	**Address**	P O Box 35, Orange NSW 2800	**ABN**	85 985 402 386
Work activity description	Telescopic handler Operation			**SWMS No.**	**RRC 006**
This is a generic SWMS and any site specific hazards must be assessed and added to this SWMS prior to commencement of the activity, dated and signed off at the end of the SWMS.					
Work area	Resource Recovery Centre			**Revision No.**	*Rev 1 / November 2021*
Endorsed by	Nicholas Ruston Work Health and Safety Coordinator or delegate	N. Ruston		**Date**	26/11/21
	Line Manager:	Wayne Davis		**Date**	30/11/21.
	Supervisor:	P Ford		**Date**	29/11/21
Person responsible for ensuring compliance with SWMS	Most senior staff member on site: i.e. Supervisor – Team Leader - Leader (in that order).				
Measures to ensure compliance with SWMS	Daily toolbox meetings, direct supervision & or spot checks				

SWMS control measures shall be reviewed by the supervisor:

- When the task/ activity relates to a site specific project; When a significant change to the task/ activity is identified; if an incident occurs or a hazard is identified relating to the activity; periodically as per Council's policies and procedures

Mandatory PPE				**Site and Task Specific Personal Protective Equipment Required** ***(Check boxes below for required PPE)***							
Hi Vis											**Additional site specific PPE:** Gloves and glasses for cleaning/maintenance of machine
☒	☒	☒	☒	☒	☐	☐	☐	☒	☐	☐	

Safety Data Sheets relating to this activity **PPE & first aid as per SDS**	SDS sheets located in work vehicle and or site office	**Qualifications/competencies/licences required for this task.** (Available from the HR Learning and Development Officer)	A person must hold a Certificate of Competency for a Non-slewing mobile crane (class CN) to operate a telehandler fitted with a lifting jib with a lifting capacity greater than 3t. Persons operating or maintaining a telehandler must be competent in its use, and have access to and be familiar with all operational and safety instructions provided in the manufacturer's manuals
Plant / equipment required		**Plant / equipment inspection and maintenance checks**	As per manufacturers specifications Daily Plant Check Ausfleet maintenance on boarding
Emergency Response (Please select one)	☒As per Council's site emergency evacuation plans ☐Projects OCCWHS 008 Site Specific Emergency Management Plan ☐As specified for non-council worksites as per OP 084 Section 6		

Legislation & Standards	**Codes of Practice**	**Other**
• Work Health and Safety Act 2011 • Work Health and Safety Regulation 2017 • Workers Compensation Act 1987	• How to Manage Work Health and Safety Risks • Work Health and Safety Consultation, Cooperation and Coordination • First Aid in the Workplace • Hazardous Manual Tasks • Managing Risks of Plant in the Workplace • Managing Electrical Risks at the Workplace • Construction Work	

No	Task (Basic steps in logical sequence – what is to be done – not how)	Potential Hazard	Initial Risk	Controls Controls must be established using the Hierarchy of Controls Eliminate (E), Isolate (I), Substitute (S), Engineering (EC), PPE, Administration (A)	Residual Risk	Responsibility
1	Toolbox meeting: Workers need to consider the following when presenting to the worksite	Asbestos	1	• If there is reasonable cause for Asbestos material, treat it as Asbestos. Do not disturb Asbestos material. • Asbestos Management Plan required for removal of ACM. • Asbestos Awareness training necessary if required to identify or handle asbestos containing materials.	4	All Staff
		Potential Sickness or Fatigue risks - Worker is not in a fit state (physical, mental and emotional) to perform the duties of the job competently	2	• Workers should stay away from the workplace if they are unwell – Follow any Advice and information from relevant Health Authorities • Supervisors / Managers to monitor fatigue levels using the Fatigue Hazard Identification Checklist	5	All staff Supervisors and Managers,
		Working in Extreme Weather Conditions – Air Quality, Heat and cold related illness	3	• If required monitor air quality and follow any health messages • Ensure temperature appropriate PPE clothing is worn • Use of additional PPE (such as Ice vests / bands under standard PPE in extreme heat where appropriate). • Access to appropriate shelter • Take regular rest breaks • Rotation of tasks • Access to food and water, (warm drinks in cold temperatures, cool drinks and electrolytes in hot temperatures) • Review the Scheduling of tasks • Monitor temperature and workers' physical responses to environmental conditions.	5	All Staff Supervisor
2	Site Establishment	Unknown Site procedures	1	• All workers are required to attend the OCC Site inductions and/or tool box meeting before starting work on site	5	All staff

No	Task (Basic steps in logical sequence – what is to be done – not how)	Potential Hazard	Initial Risk	Controls Controls must be established using the Hierarchy of Controls Eliminate (E), Isolate (I), Substitute (S), Engineering (EC), PPE, Administration (A)	Residual Risk	Responsibility
		Incompetent persons	1	• All workers must hold a General Construction Induction Card (White Card)	5	All staff
		Unforeseen hazards	1	• Toolbox meeting to be conducted before starting work each day, Awareness of Surroundings	5	All staff
		Not being seen by others	1	• All workers are to wear hi visibility clothing. • Construction vehicles to be fitted with UHF and flashing lights. Flashing lights to be on at all times • Notify others when passing. • Ensure positive communication has been received before approaching plant & equipment. • Awareness of surroundings	5	All staff
		Emergency situations	1	• Follow all emergency procedures implemented on-site.	5	All staff
3	General precautions	Incorrect or unauthorised use		• Persons operating or maintaining a telehandler must be competent in its use, and have access to and be familiar with all operational and safety instructions provided in the manufacturer's manuals • Do not use machine for purposes other than approved by manufacturer. • Do not carry passengers in cabin or on exterior of machine or attachments.		All staff
		Overloading		• Do not attempt to lift or carry loads greater than those defined on the load charts applied to the inside of the cabin of the machine. Always observe safe load limits. • Do not attempt to carry out operations other than those for which machine is intended.		All staff
4	Pre-start checks	Wheels and tyres		• Inspect for damage, and ensure tyres are inflated to specified pressures. • Replace with correct size tyres.		All staff
		Mirrors and windows		• Ensure good all-round vision		All staff

No	Task (Basic steps in logical sequence – what is to be done – not how)	Potential Hazard	Initial Risk	Controls Controls must be established using the Hierarchy of Controls Eliminate (E), Isolate (I), Substitute (S), Engineering (EC), PPE, Administration (A)	Residual Risk	Responsibility
				- Adjust mirrors for best vision - Clean windows if vision is affected.		
		Seat and seat belt		• Do not operate without seat belt. • Adjust seat to optimum operating position • Inspect seat belt and fittings.		All staff
		Attachments		• Use approved attachments only • Ensure that correct attachment is securely fitted for work to be carried out.		All staff
5	After-start checks	Controls Lights and signals		• Check for correct operation of all controls, including load limiter system. • Check operation of all lights, horn, reversing signal, and flashing beacon. • Do not use machine if controls, lights or signals malfunction.		All staff
		Steering and brakes		• Do not operate if brakes faulty. • Check operation of steering and brakes, including park brake.		All staff
		Boom and attachments		• Check boom extension and retraction, and lifting and fork tine operation. • Check for hydraulic oil leaks		All staff
6	Site safety	Collision, damage to machine		• Check area where machine will be operated for obstructions, adverse ground conditions, overhanging or low structures, and vehicle and pedestrian traffic. • Operators must wear PPE as required for site, and protective gloves when handling loads, slings or attachments. • Identify holes, drains, ditches, loose or uncompacted ground		All staff

No	Task (Basic steps in logical sequence – what is to be done – not how)	Potential Hazard	Initial Risk	Controls Controls must be established using the Hierarchy of Controls Eliminate (E), Isolate (I), Substitute (S), Engineering (EC), PPE, Administration (A)	Residual Risk	Responsibility
		Personal injury		• Wear safety vest, safety boots, and safety cap on construction sites. • Keep sleeves buttoned, and contain long hair, etc.		All staff
		Entanglement		• Persons must not wear loose clothing, jewellery or unrestrained long hair in vicinity of moving parts of machinery		All staff
7	Attachments	Incompatibility of attachment		• Use only attachments provided with machine or approved by manufacturer. • Ensure that attachment is compatible with machine model		All staff
		Failure of attachment		• Do not use faulty equipment. • Refer to operator's manuals. • Do not attempt unauthorised repairs to load bearing parts • Worn, broken, cracked or distorted components must not be used. • Inspect fork tines for wear, cracks or distortion, and have inspected by a competent person to assess risk of failure before using if faults detected. • Ensure that attachments are securely fixed to machine, and cannot be accidentally dislodged during operation of machine.		All staff
		Movement of attachments		• Check attachments daily or before use if used less frequently. • Use approved lifting gear only. Hook must be securely attached • Follow specified procedures when fitting or removing attachments.		All staff

No	Task (Basic steps in logical sequence – what is to be done – not how)	Potential Hazard	Initial Risk	Controls Controls must be established using the Hierarchy of Controls Eliminate (E), Isolate (I), Substitute (S), Engineering (EC), PPE, Administration (A)	Residual Risk	Responsibility
		Failure under load		• Load bearing attachments must be regularly inspected for wear or damage. • Where lifting hook is attached, hook and attaching ring must be of an approved type and hook must be fitted with operable safety latch system		All staff
8	Operation - general	Incorrect fork position		• Space forks to suit the load to be shifted, with the centre of gravity halfway between the forks. • Space forks as wide as possible. • Do not overtighten locking screws.		All staff
		Pedestrian and or traffic/plant collision Striking against or collision		• Prevent vehicle and pedestrian traffic into work areas. Prevent entry into work area. • Ensure that persons are kept well clear of machine when operating. • Area where handler is to operate should be kept clear of other traffic. • Ensure that handler has adequate space to operate and manoeuvre safely.		All staff
		Overloading		• Monitor load gauge to ensure that safe load is not exceeded. • Always refer to load charts. • Ensure that load is easily moved. • Refer to load charts if boom is extended to avoid overloading. • Always check the weight of the load before attempting to handle.		All staff
		Instability and overturning		• Keep load low and close to machine to maintain stability. • Avoid operating on side slopes. Monitor overturning warning system, and avoid shutdown.		All staff

No	Task (Basic steps in logical sequence – what is to be done – not how)	Potential Hazard	Initial Risk	Controls Controls must be established using the Hierarchy of Controls Eliminate (E), Isolate (I), Substitute (S), Engineering (EC), PPE, Administration (A)	Residual Risk	Responsibility
				• Do not raise boom on unstable or sloping ground • Do not jerk load when lifting – observe load limiter while lifting load. • Ensure that load is not snagged or held down and is free to be lifted. • Retract boom as far as possible before commencing load shifting operation. • Ensure tines or locked or clamped before moving loads. • Keep boom retracted when traversing with load on boom. Travel with load 20 to 30 cm from ground, and at no more than 5 km/h. • Do not carry load up or down slope exceeding 14o (1 in 4), or across side slope greater than 5o (1 in 11) (load must be less than 30 cm from ground). • Do not operate machine on slope greater than 22o (1 in 2.5). (NO load).		
		Use of alternative attachments		• Attachments such as hook and jibs may extend load centre beyond those shown on load charts – ensure that boom is not overloaded.		All staff
		Unauthorised operation or accidental movement		• Before leaving cab ensure: - transmission is in neutral - park brake is on - any load is placed on ground - ignition switch is off - key removed • Lock all doors when leaving Telehandler unattended		All staff
9	Operation – shifting/lifting the load	Being crushed by material falling off the equipment.		• Ensure that the Telehandler is level before raising load		All staff

No	Task (Basic steps in logical sequence – what is to be done – not how)	Potential Hazard	Initial Risk	Controls Controls must be established using the Hierarchy of Controls Eliminate (E), Isolate (I), Substitute (S), Engineering (EC), PPE, Administration (A)	Residual Risk	Responsibility
		Being thrown off or under the equipment		• Do not allow other person(s) to ride on, travel on, drive or steer the equipment designed to carry one person only		All staff
		Being trapped under or between the plant & materials, or fixed structures		• Avoid congested work areas. Keep all personnel clear of work area. • Do not get on or off moving equipment • Never operate near an obstruction that can enter the operators 'cab' area		All staff
		Driving into bystanders & unexpected Movement of Plant.		• Clearly identify defined work area. • Keep Personnel clear.		All staff
		Driving into Overhead Objects		• Be Alert. Look up as well as down. • Operate at a speed appropriate to the ground conditions		All staff
		Lack of capacity for Equipment to be slowed, stopped or immobilised		• Operator must not exceed gradeability of equipment both up & down hill.		All staff
		Parts of the equipment collapsing		• Do not overload. • Maintain and check lifting system as per Manufacturers requirements. • Keep all personnel clear when loading, unloading and during transportation.		All staff
		Equipment tipping or rolling over or Operator being ejected.		• Only use buckets/attachments approved for the specific model Telehandler that is being used. Non approved buckets/attachments may cause the Telehandler to become unstable & tip over. • Never exceed the rated load and limits for the Telehandler and/or attachment(s) shown on the Manufacturers Load Chart.		All staff

No	Task (Basic steps in logical sequence – what is to be done – not how)	Potential Hazard	Initial Risk	Controls Controls must be established using the Hierarchy of Controls Eliminate (E), Isolate (I), Substitute (S), Engineering (EC), PPE, Administration (A)	Residual Risk	Responsibility
				• Use Telehandler only on stable surfaces capable of supporting its weight. • Ensure ground under stabiliser pad is capable of supporting the combined weight of the Telehandler and the load. • Where fitted always set the stabilisers before lifting the load. • Always wear seat belt and fasten until comfortable. • Always drive Telehandler at a safe speed relative to the terrain and working environment i.e. cornering & driving across rough ground with potholes. • Always carry loads close to the ground with the telescopic boom fully retracted. • When driving at higher speeds or on public roads, select front wheel steering mode. Other steering modes (if applicable) may make high speed driving more difficult. Always operate within the design limitations of the specific Telehandler. • Do not override the Telehandler load management system. • Ensure that if it is necessary to drive near the edges of formations where there is a drop off that a complete Risk Assessment has been carried out. • When going up or down an incline whilst loaded, keep the forks low to the ground. • Drive forward up an Incline and in Reverse down an incline. • Go directly up or down a slope, not across a slope. • If the Telehandler does become unstable and starts to tip over, do not attempt to jump out of the cab.		

No	Task (Basic steps in logical sequence – what is to be done – not how)	Potential Hazard	Initial Risk	Controls Controls must be established using the Hierarchy of Controls Eliminate (E), Isolate (I), Substitute (S), Engineering (EC), PPE, Administration (A)	Residual Risk	Responsibility
				• Doing so may result in death or serious injury. Instead, hold on firmly and lean away from the point of impact, keeping your body inside the cab.		
		Electrocution from Overhead Powerlines		• Do not operate where an electrical hazard exists. 'Look up and Live' • Use a spotter when required		All staff
		Electrocution from Underground cabling.		• Undertake Dial Before You Dig – 1100 • All services have been located prior to commencing work and checked on site using detectors or locaters where possible		All staff
		Explosion: Explosion caused by puncturing underground gas pipe.		• Undertake Dial Before You Dig – 1100 • All services have been located prior to commencing work and checked on site using detectors or locaters where possible		All staff
		Telehandler coming in contact with "live" electrical lines.		• If the Telehandler does come in contact with 'live' electrical lines - DO NOT get out of the Telehandler - Drive the machine away from the Electrical Hazard if safe to do so. If this is not possible, remain in the cab, keep bystanders away and have the power to the electrical line turned off before getting out of the Telehandler		All staff
		Entanglement: Becoming entangled in moving parts of Telehandler (forks, fork attachments, wheels etc)		• Clearly define work area • Keep personnel clear • Maintain situational awareness		All staff
		Equipment Controls & Operation: Unexpected Movement of Plant.		• Do not wear loose fitting clothing as they can catch on control levers		All staff

No	Task (Basic steps in logical sequence – what is to be done – not how)	Potential Hazard	Initial Risk	Controls Controls must be established using the Hierarchy of Controls Eliminate (E), Isolate (I), Substitute (S), Engineering (EC), PPE, Administration (A)	Residual Risk	Responsibility
		High Temperature or Fire: Coming in contact with hot parts.		• Keep clear of engine and exhaust outlet.		All staff
		Refuelling: When refuelling, sparks, flames, hot engine can ignite fuel.		• Operator is responsible to shut engine down prior to refuelling. • Refuel in a well ventilated area. • Ensure mobile phone is turned off and that there are no naked flames in the area. • DO NOT SMOKE.		All staff
		Exposure to Noise.		• Wearing appropriate Hearing Protection.		All staff
		Slipping, Tripping & Falling: Slipping on handrails, steps or floor.		• Keep handrails, steps and floor clean and clear of oil, grease, mud, rubbish and tools. • Always use proper steps and hand tools when climbing onto, or lighting from machine-3 POINT CONTACT RULE.		All staff
		Suffocation: Exposure to exhaust fumes. Suffocation due to lack of oxygen.		• If working in poorly ventilated areas monitor exhaust fumes at regular intervals.		All staff
		Bucket Attachments: Crushing (Squashing): Plant tipping or rolling over.		• Only buckets approved by the manufacturer for the specific model of Telehandler are to be used. • Do not exceed the rated capacity of the Telehandler with a bucket attached or extend the load beyond the limits of the allowable loading zones. • Always refer to the 'Load Capacity Chart' for the specific make/model bucket being used. • Retract boom fully before loading bucket. • Ensure Telehandler is level before raising loaded bucket. • Do not travel across a slope with a loaded bucket.		All staff

No	Task (Basic steps in logical sequence – what is to be done – not how)	Potential Hazard	Initial Risk	Controls Controls must be established using the Hierarchy of Controls Eliminate (E), Isolate (I), Substitute (S), Engineering (EC), PPE, Administration (A)	Residual Risk	Responsibility
		Shearing (Cutting) Bucket shearing limbs		• Clearly define work area. • Keep personnel clear		All staff
		Lifting Jib Attachments: Crushing (Squashing) Plant tipping or rolling over.		• Only use lifting jibs approved by the manufacturer for the specific Telehandler you are operating. On approved lifting jibs may cause the Telehandler to become unstable and tip over. • Never exceed the rated capacity of the Telehandler with a lifting jib attached or extend the load beyond the limits of the loading zones. • The weight of all lifting chains, slings etc. must be included as part of the load. • Ensure Telehandler is level before raising load. • Do not travel across a slope with a load attached to the lifting jib. • The lifting jib hook must be vertically above the load at all times. Never drag the load horizontally. • Use a tag line to steady a suspended load, ensuring that it is long enough to keep the person holding the tag line clear of the Telehandler and the load. • Beware of suspending loads in strong winds. • Start, Travel, turn and stop slowly to prevent load from swinging.		All staff
10	Use of stabilisers	Instability or overturning		• Use stabilisers only to increase the stability of the machine. Improper use of stabilisers can cause instability. Level the machine by means of the level indicator before raising any load. Ensure that the stabiliser indicator lamp is on before using the boom.		All staff

No	Task (Basic steps in logical sequence – what is to be done – not how)	Potential Hazard	Initial Risk	Controls Controls must be established using the Hierarchy of Controls Eliminate (E), Isolate (I), Substitute (S), Engineering (EC), PPE, Administration (A)	Residual Risk	Responsibility
				• Never use stabilisers if load is already raised. Ensure that stabilisers are in contact with a firm, stable surface.		
11	Cleaning and maintenance	Moving parts		• Always observe precautions in operator's manuals when cleaning and washing machines and attachments. • Inspect all parts of machine for wear, damage or loose or missing parts. • Use only approved parts and lubricants when maintaining and servicing. • Ensure that machine is out of gear and park brake engaged before working. • Avoid contact with hot parts – allow machine to cool down if practicable. • Wear eye and hand protection when handling and using cleaners and lubricants, etc. • Do not carry out unauthorised repairs on load shifting equipment. • Wear hand protection.		All staff
12	Parking/overnight storage	Equipment not in use: Unexpected Movement of Plant.		• Park Telehandler on firm level ground. • Never leave the Telehandler without first lowering the bucket or attachment to the ground and applying the hand brake. • Never leave the Telehandler unattended with engine running.		All staff
		Unauthorised Use		• Before leaving cab ensure: - transmission is in neutral - park brake is on - any load is placed on ground		All staff

No	Task (Basic steps in logical sequence – what is to be done – not how)	Potential Hazard	Initial Risk	Controls Controls must be established using the Hierarchy of Controls Eliminate (E), Isolate (I), Substitute (S), Engineering (EC), PPE, Administration (A)	Residual Risk	Responsibility
				- ignition switch is off - key removed • Lock all doors when leaving the Telehandler unattended.		

I agree, that I have been consulted in the development of this SWMS, understand and accept my responsibilities as a worker or contractor on this site including my contribution to hazard identification, risk assessment and controls as per legislative compliance outlined in this SWMS.

Generic SWMS					
Name	Signature	Date	Name	Signature	Date
Peter Ford	P Ford	29-11-2021			
GLEN JACKSON		29.11.21			
Jason Rees		29/11/21			
C. THOMAS		29/11/21			
VIC BIRKIE		29/11/21			
Wayne Davis	Wayne Davis	30/11/21.			

Project Site Specific SWMS			
Person responsible for ensuring compliance with SWMS & inducting workers into SWMS:			
Name		**Position**	**Date**
Site		**Approved by:**	**Date:**
Developed by **Names/positions**			**Date**

Other Safe Systems of Work – Not captured in generic SWMS

(Taking into account new hazards identified, information from subject matter experts, OEM Manuals, plant risk assessments, Rops/Fops & other risks associated with nature of plant and operation)

No	Task	Potential Hazard	Initial Risk	Controls	Residual Risk	Responsibility
1						
2						
3						

Name	Signature	Date	Name	Signature	Date
I agree, that I have been consulted in the development of this SWMS, understand and accept my responsibilities as a worker or contractor on this site including my contribution to hazard identification, risk assessment and controls as per legislative compliance outlined in this SWMS.					

Risk Matrix

Likely hood	Description
Almost certain	Will happen: imminent or will occur within 1 to 6 months
Likely	Expected to happen: Expected to occur at least once in a 6 to 12 month period
Possible	Could happen: will probably occur between 1 to 5 years
Unlikely	Not expected to happen: may occur only once every 5 - 10 years
Rare	uncommon, unusual: not likely to occur within a 10 year period

Consequence	Description
Severe	Death or serious disability
Major	Serious injury – long term hospital
Moderate	Significant injury – short term hospital
Minor	Injury may require first aid
Negligible	No injuries

RISK RATING TABLE

Likelihood					
Almost certain	5	4	2	1	1
Likely	5	4	2	1	1
Possible	5	5	3	1	1
Unlikely	5	5	4	2	2
Rare	5	5	4	3	3
	Negligible	Minor	Moderate	Major	Severe
	Consequences				

RISK ACTION TABLE

Risk Level	Description
1	**Severe risk** - this task **MUST NOT** proceed until the supervisor reviews the task or process and risks adequately controlled.. Firstly eliminate the risk, and if not possible introduce measures to control the risk by reducing the level to the lowest level achievable. Actions must be recorded in the SMWS (if required) and monitor / review controls
2	**Major risk** – Urgent action to reduce/eliminate the risk. Supervisor may give permission for staff to undertake some high risk activities, provided the system of work is clearly documented, specific training given and adequate review of the task / controls undertaken. Record actions in SMWS (if required) and monitor / review controls
3	**Moderate risk** – action to eliminate/reduce the risk within a specified period. Record actions in SMWS (if required) and monitor / review controls
4	**Minor risk** - assess the risk, determine whether current controls are adequate or if further action is needed. Monitor and review as required
5	**Negligible risk** – manage by routine procedures. Monitor and review as required

Copy of completed SWMS held on site for the duration of the works
All staff is to be trained in this SWMS, training is to be recorded on the Toolbox Meeting Record
All SWMS are endorsed by the WHS Coordinator and retained by the WHS team electronically