



REMONDIS AUSTRALIA PTY LTD

Resource Recovery Facility and Truck Parking Depot -

Air Quality and Odour Management Plan

Tomago, NSW

Version 0

June 2022

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This document is the **ODOUR MANAGEMENT PLAN** for the **REMONDIS AUSTRALIA PTY LTD RESOURCE RECOVERY FACILITY AND TRUCK PARKING DEPOT** located at 21D and 21F School Drive, Tomago (Lot 11 on DP270328, Lot 8 on DP270328 and part of Lot 301 on DP634536). It may only be used for the purpose for which it was commissioned and in accordance with the Terms of Engagement for the commission. This document should not be used, reproduced, or copied without written authorisation from **REMONDIS AUSTRALIA PTY LTD** and **THE ODOUR UNIT PTY LTD**.

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LIST OF ABBREVIATIONS AND DEFINITIONS

AQOMP	Air Quality and Odour Management Plan
CBF	Cardboard Baling Facility
CPA	Copper Processing Area; and
DMRF	Drill Mud Recycling Facility
EIS	Environmental Impact Statement
EPL	environment protection licence
FAOA	field ambient odour assessment
GOPPP	Garden Organics Primary Processing Plant
HWRF	Hazardous Waste Recycling Facility
Metals RF	Metals Recycling Facility
MRF	Materials Recycling Facility
NSW EPA	New South Wales Environment Protection Authority
PFRP	Packaged Food Recycling Plant;
PS Council	Port Stephens Council
PVC	polyvinyl chloride
RDF	Refuse-derived fuel
REMONDIS	Remondis Australia Pty Ltd
REMONDIS IMP	The Remondis Integrated Management Plan
RRF	Resource Recovery Facility
SEARs	Secretary's Environmental Requirements
SOP	Standard Operating Procedure
SSD	State Significant Development
the AQA Report	Air Noise Environment report titled <i>Air Quality Assessment Proposed Resource Recovery Facility & Truck Parking Depot</i> dated 27 August Report 2020
the AQA Verification Report	Trinity Consultants Australia report titled <i>Remondis Resource Recovery Facility, Tomago – Air Quality Verification Assessment</i> dated 10 February 2022

Tomago Facility	21D and 21F School Drive, Tomago (Lot 11 on DP270328, Lot 8 on DP270328 and part of Lot 301 on DP634536)
TOU	The Odour Unit Pty Ltd
TPD	Truck Parking Depot
VOCs	volatile organic compounds
WMMP	<i>Waste Minimisation and Management Plan</i> as prepared by Jackson Environment and Planning dated 12 August 2021

UNITS OF MEASUREMENT

L	litres
km	kilometres
m	Metres
ou	odour units
PM₁	particulate matter with an aerodynamic diameter of up to 1 micrometers
PM_{2.5}	particulate matter with an aerodynamic diameter of up to 2.5 micrometers
PM₁₀	particulate matter with an aerodynamic diameter of up to 10 micrometers

1 Introduction

The following document is a site-specific air quality and odour management plan (**AQOMP**) for the proposed Resource Recovery Facility (**RRF**) and Truck Parking Depot (**TPD**) works, located at Lot 11 on DP270328, Lot 8 on DP270328 and part of Lot 301 on DP634536, 21D and 21F School Drive, Tomago, New South Wales (the **Tomago Facility**). It has been prepared by The Odour Unit Pty Ltd (**TOU**) on behalf of REMONDIS Australia Pty Ltd (**REMONDIS**) for the Tomago Facility.

1.1 Relevant Background and Context

The Tomago Facility was assessed as a State Significant Development (**SSD**) and approved by the Minister for Planning and Public Spaces on 21 October 2021. As part of *Part B – Specific Environmental Conditions* of the development consent approval (**SSD 10447**), the following is required:

B36. Prior to the commencement of operation, the Applicant must prepare an Air Quality Management Plan (AQMP) for the development, to the satisfaction of the Planning Secretary. The AQMP must form part of the OEMP required by Condition C5 and must:

- (a) be prepared by a suitably qualified and experienced person(s);*
- (b) detail and rank all significant emission sources from the development;*
- (c) identify the control measures, including proactive and reactive mitigation measures that will be implemented for each emission source;*
- (d) include the following for each emission source:*
 - (i) risk assessment;*
 - (ii) key performance indicator;*
 - (iii) monitoring method;*
 - (iv) location, frequency and duration of monitoring;*
 - (v) record keeping;*
 - (vi) response mechanism and contingency measures; and*
 - (vii) compliance reporting.*

B37. The Applicant must:

- (a) not commence operation until the AQMP required by Condition B36 is approved by the Planning Secretary; and*
- (b) implement the most recent version of the AQMP approved by the Planning Secretary for the duration of operation.*

With the above in mind, the AQOMP addresses the following matters:

- Identification and characterisation of all sources of potential air emissions;
- The location of the emission for each pollution source as well as characteristics including emission frequency, timing, duration, and likely chemical composition;
- A qualitative assessment of the risk rating for each key activity;
- Identification of all nearby receptors potentially affected by air emissions;
- Consideration of the Tomago Aluminium Buffer Area and whether the proposed development would result in the release of sulphur;
- Details of proposed mitigation, management, and monitoring measures, during normal and upset conditions; and

- The reporting requirements with respect to air quality and odour as part of the RRF operations.

1.2 Purpose of this Odour Management Plan

Following the details outlined in **Section 1.1**, the AQOMP should be considered a documented operational management system for the Tomago Facility that addresses the following key matters:

- Accepted waste streams and description of process operations;
- Standard operating procedures (**SOP**) that are employed in each key process area to anticipate the formation of emissions and minimise their potential impact on the local airshed;
- An outline of how the production and migration of emissions is minimised at the Tomago facility, including design (where applicable) and operating practices;
- The monitoring and control protocols required to assist in the management of emissions;
- Critical odour emissions risk and control points;
- An outline of the key staff and responsibilities with respect to odour management; and
- An outline of the reporting requirements with respect to emissions present

Put simply, the sole purpose of the AQOMP is to eliminate, prevent or minimise the potential release of adverse levels of air pollutants and odour at the Tomago Facility through a hierarchy of controls, in the form of, but not limited to, engineered, administration and/or management practices. The AQOMP seeks to find a practical balance between maintaining the quality of process operations designed to yield a high-quality product and the ability to control emissions to air.

1.3 Document Control Protocol

This is Version 0 of the AQOMP and should be regarded as a 'live' manual during the refurbishment works. This means the AQOMP will be changed as/if required, to reflect the current operations and odour control measures in use during the refurbishment works. All updates/modifications to the AQOMP should be recorded in the *Document Revisions* table on the second page of this document and approved by REMONDIS, the relevant stakeholders, and TOU.

1.4 Regulatory Requirements

1.4.1 Accepted Waste Streams

The Tomago Facility is a RRF capable of processing up to 98,201 tonnes per annum of solid and liquid waste from municipal, commercial, industrial and construction sources for reuse and recycling. The receipt, management, handling, and storage of all waste streams are detailed in the *Waste Minimisation and Management Plan* as prepared by Jackson Environment and Planning dated 12 August 2021 (the **WMMP**).

1.4.2 Environment Protection Licence

The Tomago Facility is permissible under environment protection licence (**EPL**) 4571 as issued by the New South Wales Environment Protection Authority (**NSW EPA**).

1.5 Supplied Information

As part of the preparation of the AQOMP, TOU has relied upon the following information as supplied by REMONDIS:

- Jackson Environment and Planning Pty Ltd report titled Environmental Impact Statement – REMONDIS Australia Pty Ltd dated 1 December 2020 (the **EIS**);

- Air Noise Environment report titled Air Quality Assessment Proposed Resource Recovery Facility & Truck Parking Depot dated 27 August Report 2020 (the **AQA Report**);
- Architectural drawings as prepared by EJE Architecture dated 2 October 2020; and
- Trinity Consultants Australia report titled *Remondis Resource Recovery Facility, Tomago – Air Quality Verification Assessment* dated 10 February 2022 (the **AQA Verification Report**).

The AQOMP should be read in conjunction with the latest version of the REMONDIS Integrated Management Plan for the Tomago Facility (the **REMONDIS IMP**).

2 Description of Process Operations

2.1 Site Locality and Context

The Tomago Facility is located on a land parcel that is approximately 3 kilometres (**km**) to the east of the Tomago township and is bound by School Drive (south). The site location and surrounding area is currently zoned as General Industry under the Port Stephens Local Environment Plan 2013. It is also surrounded by other industries, most significantly, the Tomago Aluminium Smelter, as shown in **Figure 2.1**.

2.1.1 Identification of Sensitive Receptors

An aerial map highlighting all identified nearby sensitive receptors relative to the Tomago Facility is provided in **Figure 2.2**. Based on the AQA Report, the nearest sensitive receptors include:

- 1.2 km from the eastern property boundary to the rural residential dwellings to the northeast;
- 500 m from the southern property boundary to Tomago House, a historical house that is open to visitors (no permanent residents);
- 1.1 km from the southern boundary of the property to the Hunter Corrective Services Academy;
- 1.5 km from the western boundary of the property to the Tomago Bowling Club; and
- 2.7 km from the north-western boundary of the property to the Tomago Village Van Park.

2.2 Tomago Facility Concept of Operations

As shown in **Figure 2.3**, the site layout for the Tomago Facility consists of two formerly disused warehouse buildings and a workshop building. The proposal for the Tomago Facility is to re-use the existing buildings located on 21D School Drive for the RRF operations, which will include:

- Receive dry domestic, commercial, and industrial non-putrescible waste;
- Receive small amounts of putrescible waste from packaging of food and drinks;
- Receive and recycle of liquid wastes, including drill muds from hydro-excavation; and
- Receive and recycle of oily wastes from mining and industrial activities.

The RRF operations is proposed to be undertaken within the existing buildings (Building 1 and Building 2, as shown in **Figure 2.3**) at the Tomago Facility. Each RRF operation will occur in discrete areas within either Building 1 and Building 2, which is described in **Figure 2.4** and **Figure 2.5**, respectively. The Tomago Facility is proposed to operate 24 hours per day, 7 days per week.

2.3 Building 1 Concept of Operations

Based on the information contained in the EIS and as shown in **Figure 2.4**, Building 1 will have the house the Materials Recycling Facility (**MRF**) for sorting and recycling non-putrescible commercial and industrial mixed general solid waste via front-lift bin collections (approximately 60% of total waste received) and construction building waste from residential and commercial construction, including office fit-outs (approximately 40% of total waste received). The MRF is expected to process up to 31,000 tonnes per annum.

2.4 Building 2 Concept of Operations

Based on the information contained in the EIS and as shown in **Figure 2.5**, Building 2 will house the following activities;

- Drill Mud Recycling Facility (**DMRF**);

- Packaged Food Recycling Plant (**PFRP**);
- Garden Organics Primary Processing Plant (**GOPPP**);
- Hazardous Waste Recycling Facility (**HWRF**);
- Copper Processing Area (**CPA**); and
- Metals Recycling Facility (**Metals RF**).

A Truck depot is also proposed to be constructed on the currently vacant land at 21F School Drive. The truck depot will include paved parking for the collection fleet (24 rigid trucks and 9 semi-trailers), a maintenance workshop (located in the existing workshop building) and self-bunded storage tanks for liquid waste, fuels, and oils.

2.4.1 Drill Mud Recycling Facility

Drill mud is currently generated by various commercial activities, including hydro-excavation or non-destructive digging, exploration drilling and horizontal boring. Drill mud is a mixture of water, clays, fluid loss control additives, density control additives and viscosifiers. Drill mud and internal truck wash water will be pumped from trucks into a 50,000 L holding tank. The contents of the drill mud holding tank will be pumped at a specific rate into an on-site drill mud centrifuge, which will separate the solids (soil) from the liquid phase (mainly water). The solid portion will be transferred to a storage area for sampling and testing. The liquid portion will be pumped into a holding tank for testing and may be sent off-site for treatment or recycling at a licenced facility. The DMRF is expected to process up to 5,000 tonnes per year of drill mud.

2.4.2 Packaged Food Recycling Plant

The PFRP will receive, de-package and recycle foods, drinks and associated packaging collected from retailers and manufacturers. It will separate foods from their packaging, to enable the recovery of the food fraction (such as through off-site composting or soil injection) and packaging, including steel, aluminium, plastics, and liquid paperboard. The packaged food will arrive on pallets and stored in a storage bay. The contents of the pallets will be transferred from the food depackaging unit, which grind and press the contents of the food or drink item, separating the packaging from the food contents. The liquidised food will be discharged and stored in 20,000 L holding tank for twice weekly collection and transfer. The packaging will be stored and transferred to the MRF for processing. The PFRP is expected to process up to 2,000 tonnes per annum.

2.4.3 Garden Organics Primary Processing Plant

The GOPPP area will receive, shred, and send off-site primary processed garden organics to licenced composting facilities for processing and manufacturing into compost. The trucks will deposit garden organics into a concrete bunker receival area, and any contamination removed prior to transfer to pre-processing storage concrete bunker. The decontaminated garden organics will be loaded into shredding plant that will grind the garden organics to less than 180 mm in particle size. The shredded garden organics will be held in storage bunker until truck removal. The GOPPP is expected to process up to 5,000 tonnes per year.

2.4.4 Hazardous Waste Recycling Facility

A range of spent solid materials and liquids containing oils and chemicals will be received, aggregated, and stored according to chemical group within the HWRF. These materials are collected from mining and manufacturing in the Hunter region. The sorting and aggregation of the materials by type enables these materials to be efficiently collected and transported for off-site processing, recycling, or disposal at a licenced facility. The HWRF is expected to process up to 20,201 tonnes per year of hazardous waste.

2.4.5 Copper Processing Area

The CPA involves the processing of electrical cabling sources from mine sites, building and communications centre decommissioning to enable the recovery of copper wire and plastics. The trucks will deposit copper wire within a concrete bunker receival area, and any contamination removed. The wire will then be cut with a shear and placed

into storage bins for off-site transport and further processing. The CPA is expected to process up to 1,000 tonnes per year.

2.4.6 Metals Recycling Facility

The Metals RF will receive, sort, cut and potentially bale ferrous and non-ferrous metals from commercial and industrial collections. The trucks will deposit metals within a concrete bunker receival area for decontamination with a material handler, stripped using an electric cable stripper (if required), and removal of ferrous material via a magnet. The metals will be cut with a hydraulic cable shear and placed into a baling area or directly into hook lift bins for off-site processing and recycling. The Metals RF is expected to process up to 4,000 tonnes per year of ferrous and non-ferrous metals.




Date	Revision	Drawn By	Site description	Jackson Environment and Planning Pty Ltd Strategy Infrastructure Compliance Procurement A: Suite 102, Level 1, 25-29 Berry St, North Sydney NSW 2060 E: admin@jacksonenvironment.com.au T: 02 8056 1849 W: http://www.jacksonenvironment.com.au	 JACKSON ENVIRONMENT AND PLANNING STRATEGY INFRASTRUCTURE COMPLIANCE PROCUREMENT	Client	REMONDIS Australia Pty Ltd
30/10/19	Revision A	R. Loemker	21D and 21F School Drive Tomago, and part of Lot 301, DP634536			Project	Environmental Impact Assessment
04/02/20	Revision B	M.Jackson				Title	General Locality
30/04/20	Revision C	R. Loemker				Scale	As shown
						Source	Google Maps

Figure 2.1 – The Tomago Facility: Locality and Context (approximate site boundaries shown for 21D School Drive in yellow and 21F School Drive in blue). Source: the EIS

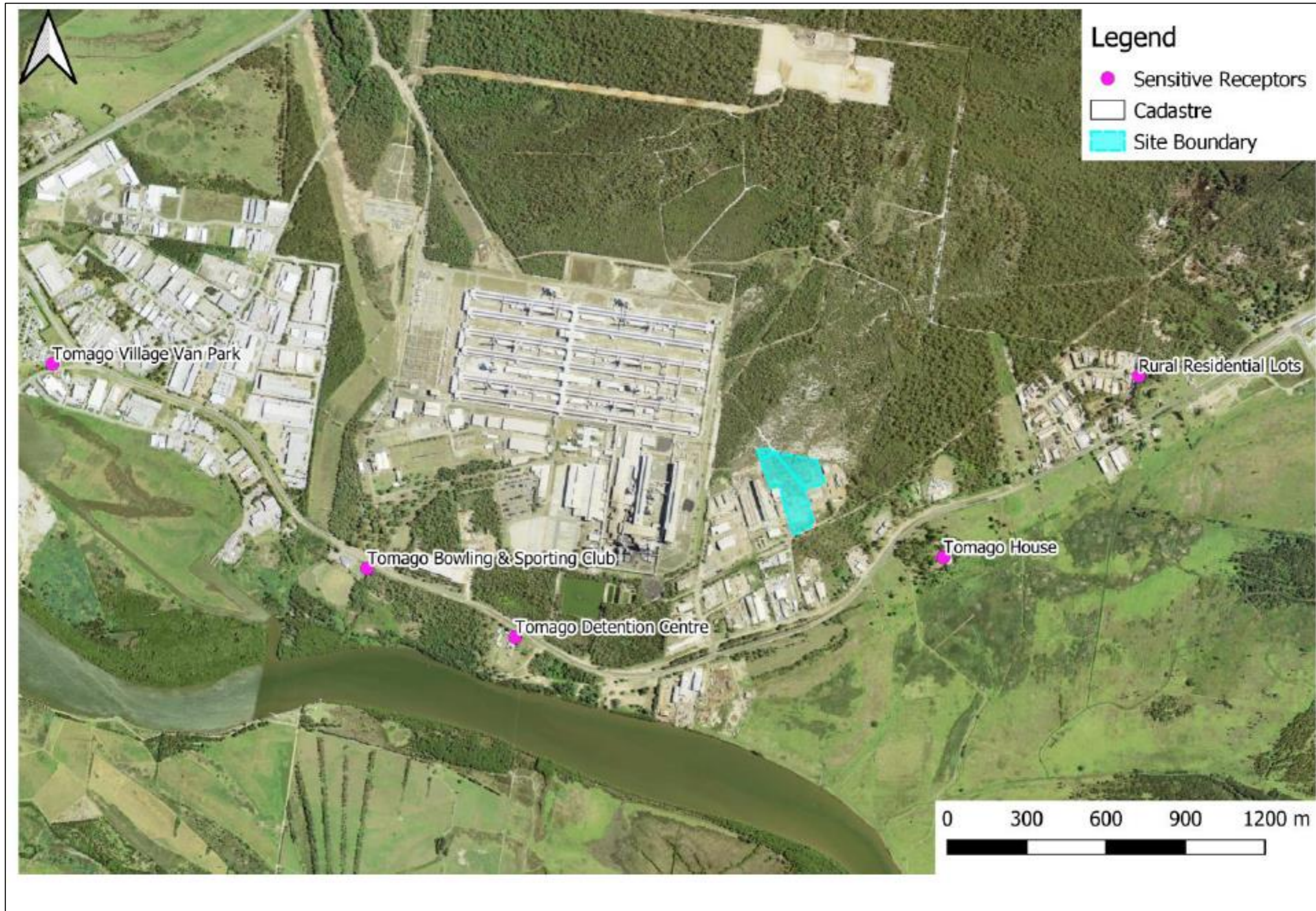


Figure 2.2 – An aerial map highlighting all identified nearby sensitive receptors (Source: The AQA Report)

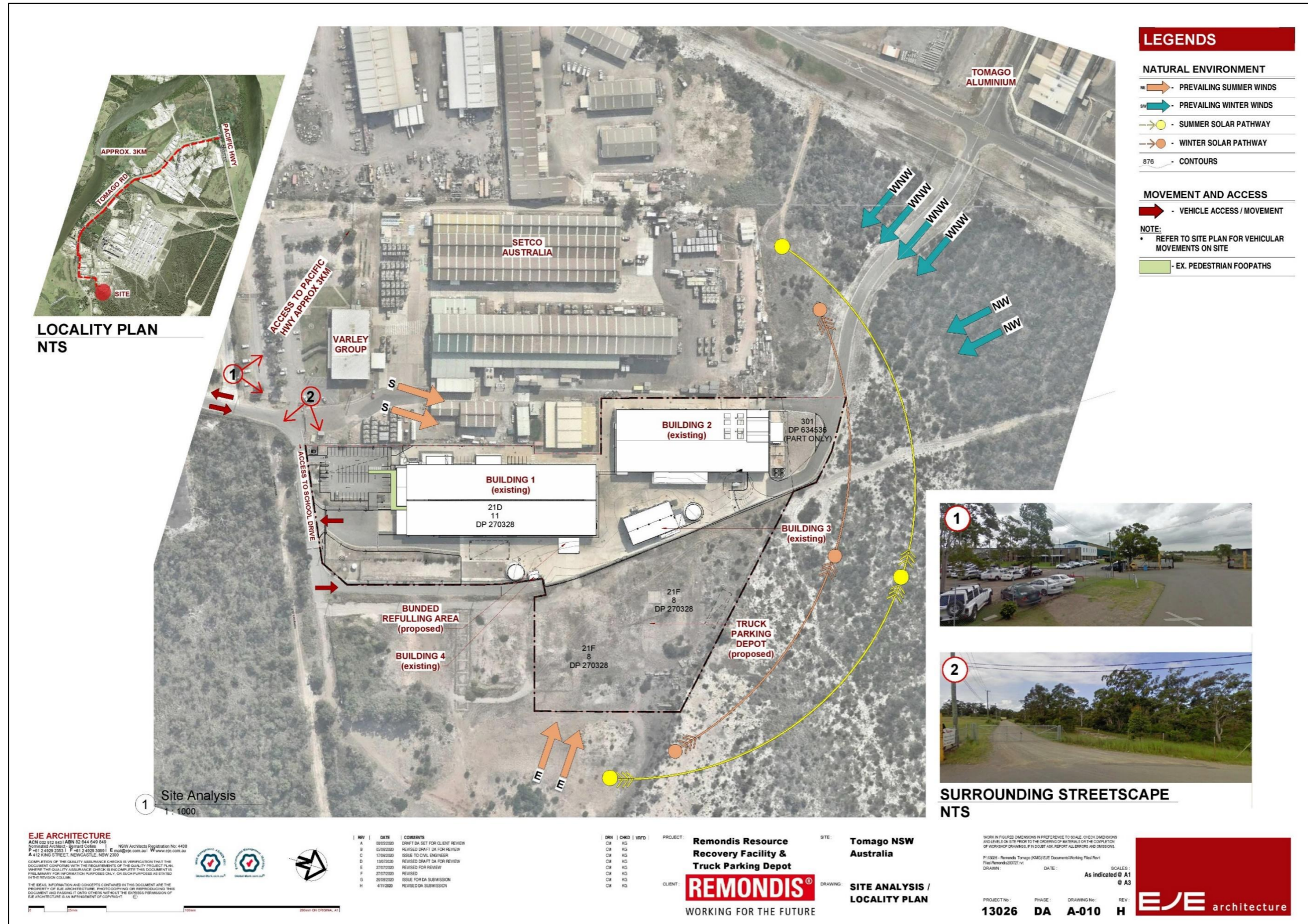


Figure 2.3 – The Tomago Facility: Proposed Site Layout

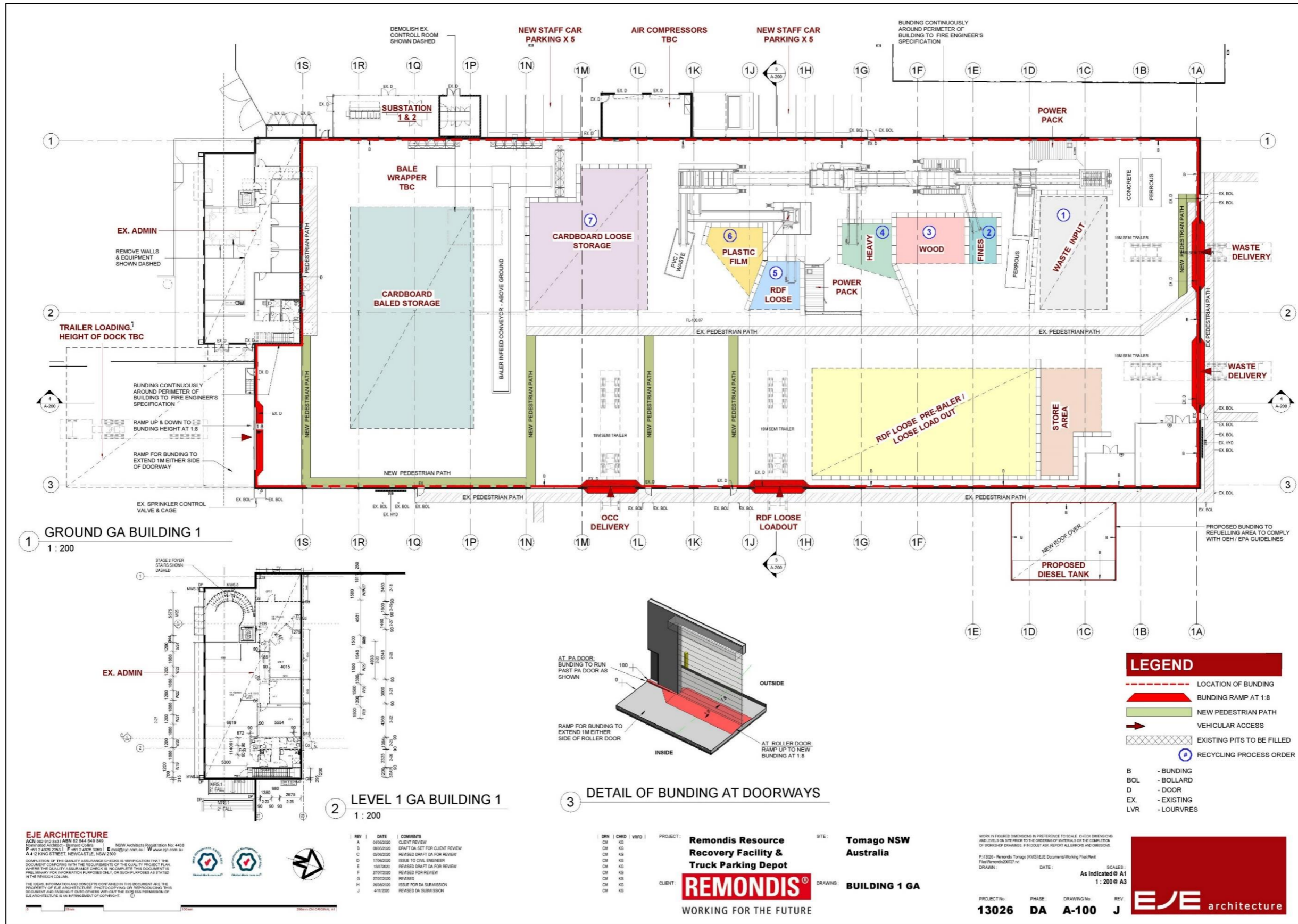


Figure 2.4 – The Tomago Facility: Building 1 General Arrangement

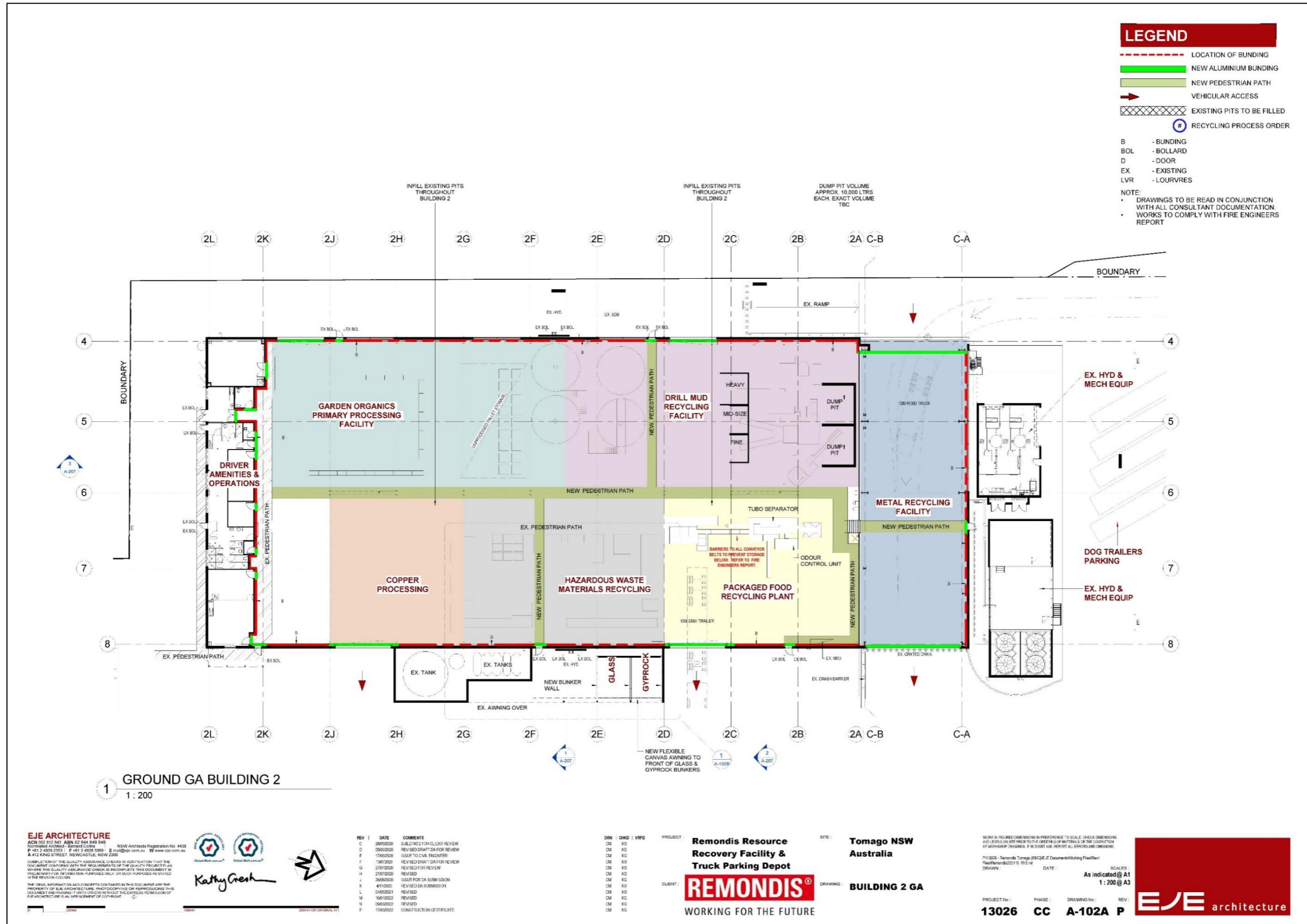


Figure 2.5 – The Tomago Facility: Building 2 General Arrangement (1 of 2)

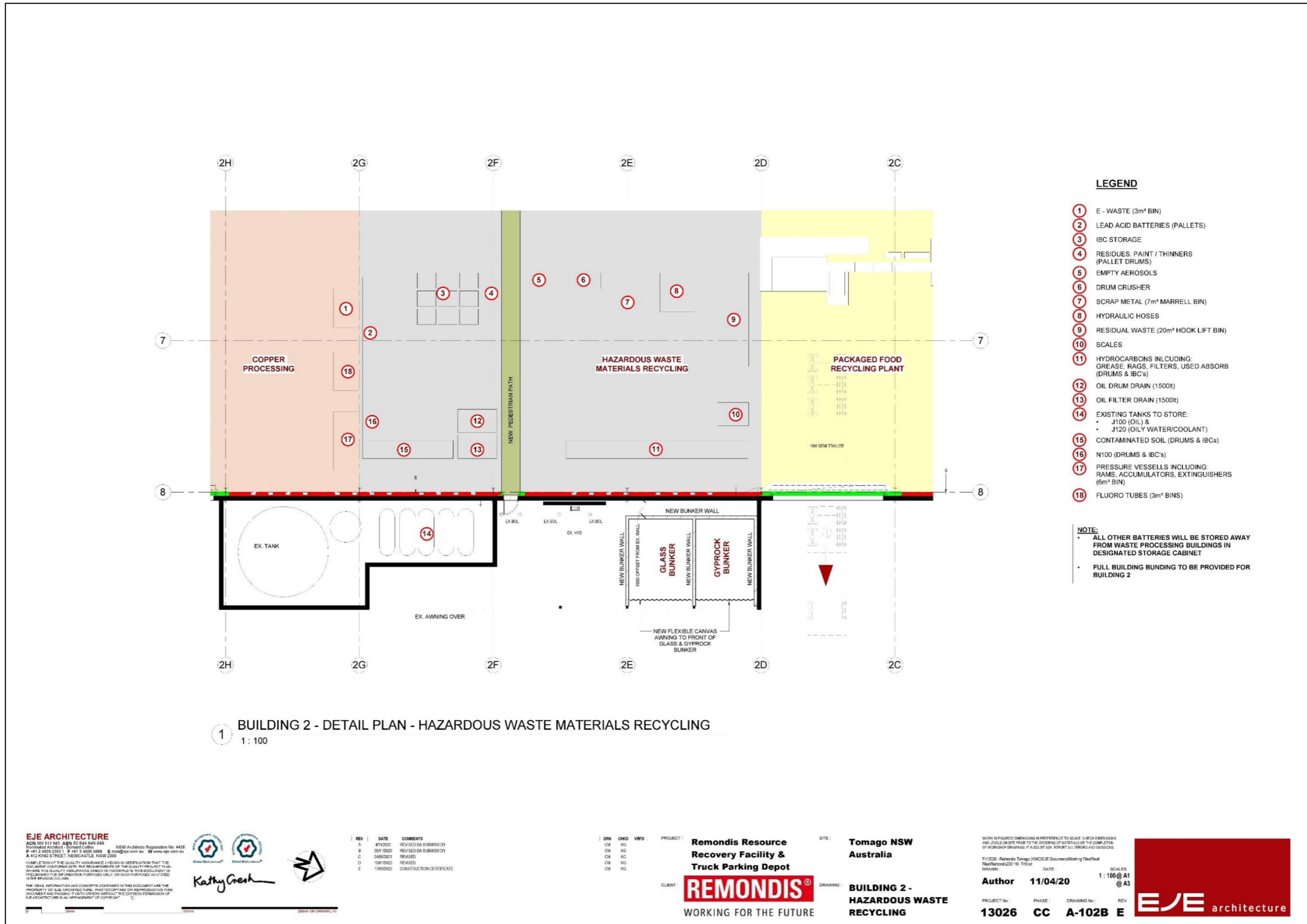


Figure 2.6 – The Tomago Facility: Building 2 General Arrangement (2 of 2)

3 Air Emission Characterisation and Standard Operating Procedures

As described in **Section 2.3** and **Section 2.4** of the AQOMP, based on the process operations at the Tomago Facility, the following air emission parameters are addressed as part of the AQOMP:

- Particulate and dust emissions are described as Total Suspended Particulates and fine particulate matter with an equivalent aerodynamic diameter of less than 10, 2.5 or 1 micrometres, respectively (referred to as PM₁₀, PM_{2.5} and PM₁, respectively). At the Tomago Facility, the potential source for particulate emissions will include, but not be limited to, material unloading and handling, material sorting, shredding and truck movements over paved surfaces and during the construction phase of the Tomago Facility; and
- The activity that will lead to odour emission generation will include the PFRP, DMRF (soil and water mixture), GOPPP, and waste oil unloading and recovery from the heavy vehicle workshop.

The SOP and management protocol for air emissions management from these activities and areas are discussed in **Section 3.1.1** to **Section 3.1.5**.

3.1 Particulate and Dust Emissions and Standard Operating Procedure

3.1.1 Material Unloading and Handling

The collection vehicles deliver and unload the waste materials into their respective recycling facility to be processed. In relation to particulate and dust emissions, a best practice approach is proposed, whereby all processing operations will occur undercover within the warehouse buildings. These building structures will assist in containing emissions and wind-blown particulate emissions. The areas that have the potential to generate particulate / dust emissions include MRF, CBF, and GOPPP.

3.1.2 Material Sorting

The sorting of materials will predominately occur within the RRF, which will receive mixed general solid waste. The machinal sorting by material type is conducted by a hopper with the waste stored separately. The material sorting also occurs when waste is screened for contamination. As mentioned in **Section 3.1.1**, all processing will occur undercover within the warehouse buildings.

3.1.3 Shredding

All shredding activities will occur within the MRF and GOPPP. The solid shredding of loose RDF (includes plastics, timber, paper, cardboard, rubber, and textiles) and organic matter all occur within the existing building structure. The shredded RDF will be wrapped for transport, reducing particulate emissions for this activity. The GOPPP will grind garden organics to less than 180 mm prior to transfer via a front-end loader to a storage bunker for regular transport to an off-site licenced facility for compost processing.

3.1.4 Truck Movement Over Paved Surfaces

An estimated 171 truck movements per day will occur at the Tomago Facility at normal operating capacity. All haul routes will be paved, reducing particulate emission generation. The haul routes will be regularly cleaned (e.g., street sweeper) to minimise the silt loading content, which has an impact on the total particulate emissions from paved surfaces.

3.2 Odour Characterisation and Standard Operating Procedures

As described in **Section 2.3** and **Section 2.4** of the AQOMP, based on the process operations at the Tomago Facility, the potential odour emission sources at the Tomago Facility include:

- The activities associated with the FDP;
- The activities associated with the DMRF;
- The activities associated with the GOPPP; and

- The activities associated with the waste oil unloading and recovery from the heavy vehicle workshop.

The SOP and management protocol for odour emission minimisation and prevention from these activities and areas are discussed in **Section 3.2.1** and **Section 3.2.3**.

3.2.1 Packaged Food Recycling Plant

Based on the operational understanding as documented in the EIS, AQA Report and AQOMP, the PFRP activities will consist primarily of mechanical separation of solid and liquid components and storage and transfer of raw feedstock and separated waste components. Furthermore, based on the units of operation for the PFRP, there is no thermal, biological, or chemical processing of the raw feedstock and separated waste components. As such, the relevant air pollutants that are likely to be associated with mechanical separation is odour. The other air pollutants, including particulate matter are very unlikely to be realised in such operations given the function of a PFRP i.e., separate a range of packaging and containers from solid and liquid product to produce a mixed liquid waste stream, which will produce a separated food waste and packaging feedstocks suitable to be further processing, disposal of landfill, composting, soil injection or alternative method of management/disposal at a licenced facility. The fate of the separated waste products is not considered as part of the AQOMP, as they will be processed off-site.

3.2.2 Drill Mud Recycling Facility

The expected emissions include odour emissions from the holding tank, centrifuge, dewatered solids bin, and supernatant holding tank.

3.2.3 Garden Organics Primary Processing Plant

Based on the operational understanding as documented in EIS, AQA Report and AQOMP, the GOPPP activities will consist primarily of the shredding and temporary storage of garden organics. Furthermore, based on the units of operation occurring within the GOPPP, there will be no thermal, biological, or chemical processing of the garden organics such as composting. It is understood that shredded garden organics will be transported off-site for external processing within 24 hours. To that end, the relevant air pollutants that are likely to be associated with GOPPP activities relate to odour.

3.2.4 Waste Oil Unloading and Recovery from Heavy Vehicle Workshop

The maintenance workshop is proposed for vehicle maintain and will store fuels, oils, and cleaning chemicals. The waste oil unloading and recovery will likely release volatile organic compounds (**VOCs**), which can be both odorous and pose a hazard to human health via inhalation. Therefore, the relevant air pollutants that are likely to be associated with waste oil unloading and recovery will include VOCs and odour.

4 Management of Atypical and Upset conditions

In operating the Tomago Facility, there are several mitigation measures and management practices, both preventative and remedial, that are available to operators either on a day-to-day basis or able to be called upon when required to manage upset and atypical conditions. This is described in the following sections of the AQOMP.

4.1 Existing Emission Sources

The Tomago Facility and surrounds are currently zoned as General Industrial under the Port Stephens Local Environment Plan 2013. There is anticipated to be an overlap with the odour and particulate sources with surrounding industries. The most significant industry in the area is the Tomago Aluminium smelting facility which has a 4 km buffer zone which aims to reduce sensitive uses around the aluminium smelter. Any proposed development within the buffer zone with the potential to increase sulphur concentration must be assessed cumulatively with the Tomago Aluminium facility. The Tomago Facility is expected to produce negligible sulphur emissions from the diesel machinery (i.e., forklifts, loaders, and material handlers) and trucks operating on site.

4.1.1 Particulate / Dust Emissions

The AQA Report noted cumulative predictions exceed the annual average criteria for both PM₁₀ and PM_{2.5}. This exceedance is due to the annual background concentration of PM₁₀ and PM_{2.5} already being above the criteria. The predicted cumulative 24-hour average of PM₁₀ and PM_{2.5} are noted to also exceed the air criteria. Where exceedances are already occurring, the NSW EPA air quality guidelines require that no additional exceedances are occurring as a result of the new development and that a demonstration of best practices measures is implemented as far as practicable. The predicted 24-hour average time series was extracted from the predictive modelling to determine any exceedances for each sensitive receptor. It is noted that no additional exceedances of the 24-hour average criteria are predicted at the modelled sensitive receptors as a result of the Tomago Facility.

4.1.2 Odour Emissions

As per the AQA Report, the expected odour emissions from the Tomago Facility have been assessed in accordance with the odour criteria presented in NSW EPA odour guidelines. The nearest residential or community uses are located in isolated areas at least 500 metres from the site, as shown in **Figure 2.2**.

The predicted odour concentrations at the sensitive receptors are noted to be well below the adopted 2 odour unit (ou) criteria. It is, therefore, noted that there are unlikely to be cumulative impacts as a result of the proposed development. It is noted that the neighbouring properties are not considered to be sensitive uses given they are occupied by industrial uses. Nonetheless, the predicted odour concentrations at the property boundary are noted to be a maximum of 5.2 OU, below the maximum criteria of 7 OU adopted for residential receptors within NSW EPA. As such, the management and monitoring protocols adopted in the AQOMP to address these risks aim to achieve good practice (refer to **Section 5**).

4.2 Equipment Failure

Any equipment failure within the various areas should be replaced and/or repaired within a reasonable and practicable timeframe. There should be spare parts located in the maintenance building to enable repairs to be conducted in a practical time frame. Attention should be placed on key machinery, particularly surrounding preventative and reactive maintenance. This will ensure a consistent material flow at the Tomago Facility and minimise the risk of unnecessary material stocking, particularly at the PFRF and GOPPP.

4.3 Field Odour Monitoring

During an upset and atypical condition, the undertaking of an odour monitoring survey is to be completed, in the form of Field Ambient Odour Assessments (**FAOA**), by suitably trained and calibrated REMONDIS personnel. Such an exercise will allow for real-time monitoring of actual ambient odour levels under these conditions. As a minimum, these should be undertaken at the Tomago Facility boundary. The FAOA surveys could also be a response protocol to an odour complaint (provided the odour complaint has been logged the same day and within a reasonable timeframe since the odour episode).

The surveys must record whether there is a detection of odour, and in the event of the positive detection record the following:

- Date and time;
- Location;
- Intensity, according to the 7-point odour intensity scale (refer to **Table 4.1**); and
- Meteorological conditions including weather conditions, wind direction and wind speed.

An example of a FAOA log sheet template that is to be employed is shown in **Figure 5.2**. These log sheets should be kept in a separate file at the Main Office or attached to the corresponding logged complaint in the environmental complaints database for the Tomago Facility.

EXAMPLE ONLY									
Location	Date	Time (hrs)	Local Wind Direction	Wind Velocity (m/s)	Odour Present (Y/N)	Odour Character ID	Odour Character Description	Odour Intensity	Comments
RRF South-West boundary	25/04/2022	0900	NNE	1-2	Y	A	Rotting Vegetables	3	New product delivery

Figure 4.1 - An example template of an FAOA Log Sheet

4.3.1 Odour Intensity Scale

A 7-point odour intensity scale will be used to score the perceived odour intensity. This scale is lifted from the German Standard VDI 33940 “*Determination of Odorants in Ambient Air by Field Inspections*” and is shown in **Table 4.1**.

Table 4.1 - VDI 3882 (Part 1) Odour Intensity Categories		
Odour Strength	Intensity Rank (code)	TOU Interpretation (meaning)
Not detectable	0	No odour detected
Very Weak	1	Odour recognised and where possible assigned to the odour source
Weak	2	Odour is weak but not yet distinct
Distinct	3	Odour is clearly distinct
Strong	4	Strong odour detectable
Very Strong	5	Very strong odour detectable
Extremely Strong	6	Extremely strong odour detectable

An odour is clearly recognised (category of intensity 1) when the odour quality can be clearly assigned.

4.3.2 Odour Character

The odour descriptors shall be recorded on odour complaint log sheets and FAOA log sheets. A list of possible odour descriptors relevant to the Tomago Facility is shown in **Table 4.2**.

Table 4.2 – A list of possible odour descriptors relevant to the Tomago Facility	
Character ID	Odour description
A	fermented, fruity, garbage juice
B	rotten egg
C	oily, chemical, gasoline, acrid
D	herbaceous, tobacco, pungent
E	muddy, earthy, dirt

4.3.3 Odour Communication and Response Strategy

4.3.3.1 Odour Diaries

The odour diaries can assist complainants in providing details of their perception of the suspected nuisance odours and any effects that the odour has on their behaviour. The details are recorded using a standard diary record sheet on a daily or weekly basis and particularly whenever an odour episode occurs. A simple local wind or weather condition record can also help identify or confirm the source of alleged nuisance odours. The intensity chart and odour descriptors should be provided to concerned neighbouring receptors, as shown in **Table 4.1** and **Table 4.2**, respectively.

The odour diaries will be a valuable communication tool between the community, NSW EPA and the Tomago Facility operations, as it provides feedback on what the complainant is experiencing in real-time during an odour episode, especially in the event where they do not have the opportunity to lodge a complaint in real-time. The NSW EPA has

released a publication that assists the community with reporting odour (a snap of this publication is shown in **Figure 4.2** and **Figure 4.3**). The Tomago Facility should be aware of how the community reports odour to facilitate in any community liaison engagement.

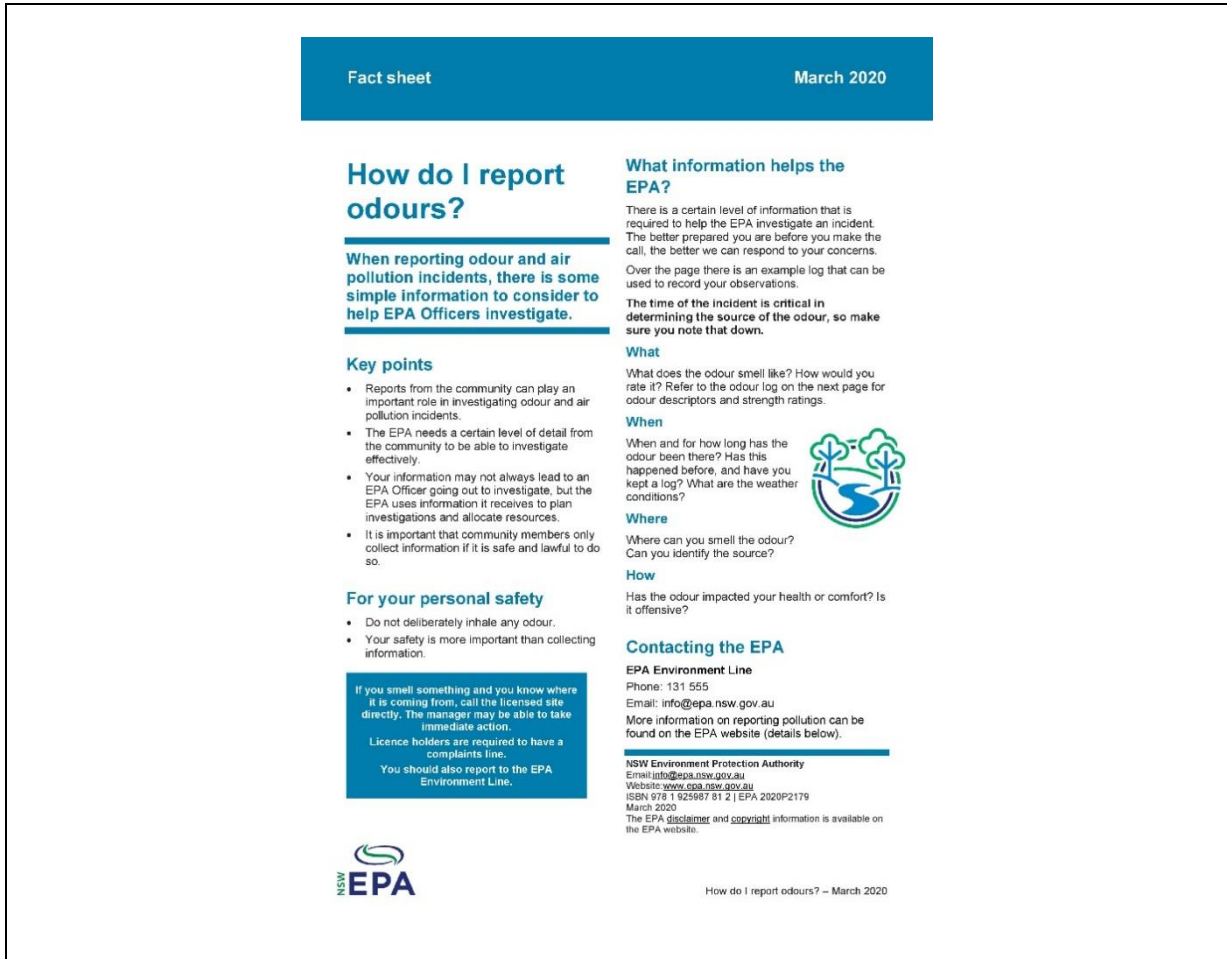


Figure 4.2 – NSW EPA publication: How do I report odours (1 of 2)

Odour log sheet

Only collect information if it is safe to do so. Do not deliberately inhale any odour. Your safety is more important than collecting information.

Name		Location of observations (e.g. work or home address)								

Date	Time odour first noticed	Duration of odour event (hours)	Continuity of odour (tick one)			Character of odour (see list below)	Strength of odour (see list below)	Other comments. How did the odour affect you?	Wind direction (optional)	Wind strength (optional)
			Constant	Most of the time (> 50%)	< 50% of the time					

Please note any other observations or details.

Odour character descriptors

01 fragrant
 02 household gas
 03 burnt, smoky
 04 herbal, green, cut grass
 05 oily, fatty
 06 rotten eggs or sulfide
 07 sour or body-odour type smell
 08 meaty


09 faecal, manure, sewer
 10 fishy
 11 diesel or car fumes
 12 seaweed or mangroves
 13 compost
 14 musty, earthy or mouldy
 15 other (add descriptors)

Odour strength descriptors

1 very weak
 2 weak
 3 distinct
 4 strong
 5 very strong

Wind strength descriptors

0 smoke rises vertically
 1 smoke drift indicates wind direction
 2 wind felt on face; leaves rustle
 3 leaves, small twigs in motion
 4 dust and leaves raised up; branches move
 5 small trees begin to sway
 6 large branches of trees in motion



How do I report odours? – March 2020

Figure 4.3 - NSW EPA publication: How do I report odours (2 of 2)

A copy of this publication can be found at:

<https://www.epa.nsw.gov.au/publications/air/how-do-i-report-odours>

This publication can be provided to concerned community members for regular feedback to the Tomago Facility.

5 Management and Monitoring Protocols

The odour management and monitoring protocols at the Tomago are designed to mitigate particulate / dust and odour emission generation and control the sources of emissions.

5.1 Best Practice Approach

In relation to particulate / dust emissions being exceeded prior to the proposed development going ahead, best practice measures are to be adopted to minimise impacts of the proposed development. This method will involve all processing operations to be conducted undercover within the warehouse buildings. These building structures will assist in containing emissions, with wind-blown particulate emissions expected to be negligible under this configuration. Additionally, all haul routes are proposed to be paved, reducing particulate emissions further. The haul routes will be regularly cleaned (e.g., street sweeper) to minimise silt loading content, which has impacts on the total particulate emissions from paved surfaces.

5.2 Odour Control Strategy

As mentioned in **Section 4.1**, an odour emission control unit is required within the PFRP. The suggestion of an activated carbon system has been put forward as a control method. An odour control unit will minimise impacts to the nearby sensitive receptors during normal operations and should upset conditions occur.

5.3 Engineered Controls and Monitoring

The proposed engineering controls in the AQOMP are designed to address areas that are deemed to be at a medium to high risk of generating emissions that could adversely impact the local airshed in terms of air quality and odour. As such, the following engineered controls are recommended for the management of medium to high risks areas at the Tomago Facility:

- The waste oil unloading and recovery activities occurring within the HWRF will consist of a suitably designed activated carbon filter system that will manage VOC and odour emissions from the following key points of generations prior to atmospheric release via an elevated stack:
 - a. Truck unloading;
 - b. Passively vented emissions from the tank storage farm; and
 - c. Truck loading.

The life of the carbon filter will be managed based on operating hours and regularly checks via a handheld VOC instrument. The established operating hours and replacement will need to be established based on VOC outlet trends and the outcomes from the validation assessments (refer to **Section 5.5** of the AQOMP).

5.4 Management Practices

The day-to-day management measures that will be adopted at the Tomago Facility will include:

- Implementation of a waste acceptance evaluation procedure to ensure all waste received on site meets the relevant criteria;
- PFRP, including the use of a surfactant-based odour masking agent near the depackaging and processing system to control particulate, dust, and odour emissions within the internal building airspace;
- DMRP, including the use of a water mist to control particulate, dust, and odour emissions from the dump pit;
- GOPPP, including the use of a surfactant-based odour masking agent to control particulate, dust, and odour emissions from garden organics shredding and storage within the internal building airspace;

- Availability of spill kits to allow for prompt containment of spills that can lead to localised air emissions such as odour;
- The activities at the site with regards to both the loading and unloading of waste as well as the processing activities have the potential to generate dust. To mitigate this risk the following controls have been implemented;
- all processing activities will be conducted inside the buildings;
- the site is hardstand;
- weekly street sweeper conducted by a third party; and
- trucks entering and leaving the premises that are carrying loads will be covered.

5.5 AQA Verification Report

The AQA Verification Report concluded that the proposed odour control unit, which includes the adoption of a FiltaCarb FC75 Activated Carbon system venting internally into Building 2 (which is subsequently ventilated through a ridge vent), is a suitable design with respect to minimising odour from the PFRP. The details for the PFRP odour control unit are as follows:

- The odour control unit will be connected to key odorous points along with the food de-packaging unit (i.e. receival containers);
- The odour control unit will be located within Building 2 adjacent to the food-depackaging unit;
- The odour control unit exhaust air details include:
 - Location – within building at odour control unit location, 2.2 m above ground, discharge horizontally in two directions (via T-shaped outlet);
 - Flow rate – 5 litres per second, equivalent to 18,000 m³/hr; and
 - Diameter – 170 mm of each opening.

Waste oil for recovery may also generate odour in the handling activities. As such, REMONDIS has designed and installed an odour control unit for this activity, the FiltaCarb FC75 Activated Carbon system installed in Building 2 (i.e. similar to the PFRP odour control unit).

5.5.1 Additional Odour Control Measures

To further control odour emissions at the Tomago Facility, the following additional reactive and proactive measures will be implemented:

- all processing activities will be conducted inside the buildings;
- availability of spill kits to allow for prompt containment of spills that could be odorous; and
- Review of the engineered controls and management practices upon mature adoption of the GOPPP activities to ensure they are consistent with a low emission risk profile.

5.5.2 Dust Control Measures

The activities at the Tomago Facility with regards to both the loading and unloading of waste as well as the processing activities have the potential to generate dust. To mitigate this risk, the following controls have been implemented:

- all processing activities will be conducted inside the buildings;
- the site is hardstand, which will inherently minimise dust emissions;
- weekly street sweeper conducted by a third party; and
- trucks entering and leaving the Tomago Facility that are carrying loads will be covered waste.

6 Air Quality and Odour Complaint/Incident Management and Responses

The Tomago Facility will establish the following procedure for managing and acting on environmental complaints, including air quality and odour complaints. The following documented procedure is to be followed when handling a complaint.

6.1 Procedures for Responding to Odour Complaints

The Shift Supervisor and Operations Manager of the Tomago Facility have ownership of the management system and authority and responsibility to ensure that necessary corrective actions are taken. The Operations Manager will provide the necessary support to operations.

All environmental complaints can be received through any of the following avenues:

1. NSW EPA.
2. Ringing Environmental Complaints Line on 1300 110 638.

The following procedure is to be followed when a complaint is received:

1. All environmental/odour complaints must be directed immediately to the Shift Supervisor / Operations Manager. In the event both are not present, the process operator on-duty will handle the complaint.
2. The environmental complaints database for REMONDIS and the Tomago Facility. As a minimum standard, the following details are to be recorded in the environmental complaints database for an air quality or odour-related complaint:
 - a. Name of complainant and contact details (if they want to be identified). Details are required to enable the Tomago Facility to report back to the person once the complaint is investigated. The method by which the complaint was made should also be recorded.
 - b. Nature of complaint – noise, dust/smoke, odour, spill, incident, etc.
 - c. Duration of the problem (dates and times).
 - d. Where an odour complaint is lodged, the recording of odour descriptors is strongly encouraged. Also, if possible, an indication of the strength of the odour on a scale of 1 to 10 (with 1 being very faint and 10 being very strong and leading to a physical reaction) is beneficial.
3. The Shift Supervisor / Operations Manager must investigate the complaint and, if applicable, initiate corrective action. The information is to be recorded in the environmental complaints database, with a response provided within three business days after confirmed receipt of the complaint.
4. The Operations Manager must then distribute a copy of the complaint to the following personnel:
 - a. NSW EPA; and
 - b. Process operators.
5. Complaints received directly from the NSW EPA are to be sent to the Regional Manager for investigation in consultation with the Operations Manager. The action taken by operations in response to the complaint, including any follow-up contact with the complainant, must be recorded. If no action was taken, the reasons why no action was taken must also be recorded.

6. The Operations Manager / Regional Manager must review the complaints and enter the complaints into the environmental complaints database. If the complaint is the same as one received directly by the company, then the NSW EPA Reference Number is to be added to the existing complaint (so doubling up does not occur).

Figure 6.1 illustrates the complaints handling process flow at the Tomago Facility.

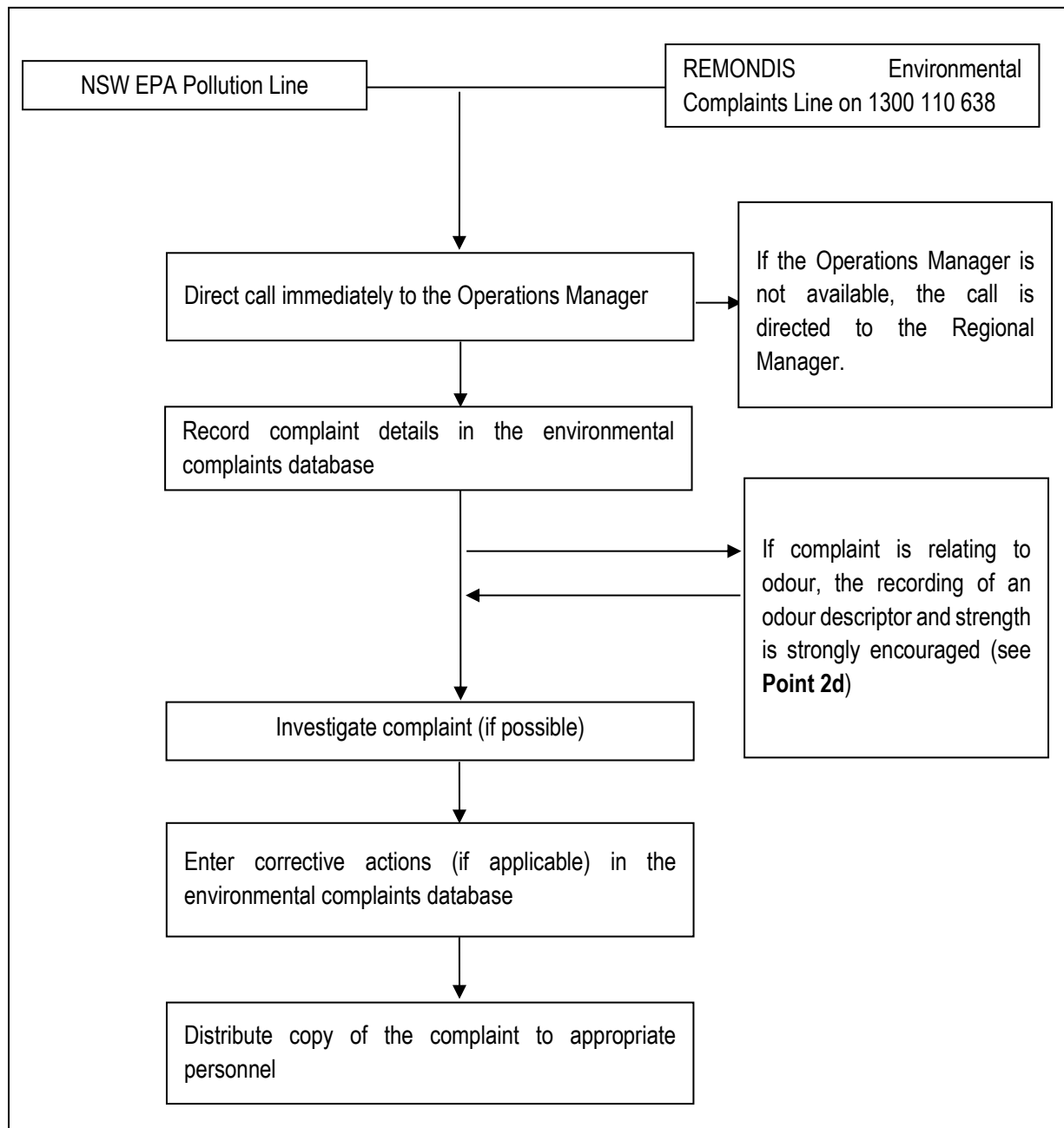


Figure 6.1 – The Tomago Facility complaints handling procedure

7 Key Staff and Responsibilities

This section summarises the key staff and responsibilities for ensuring that the AQOMP is valid, up to date and seek its overall implementation. The key staff responsible for the AQOMP at the Tomago Facility operations include:

- Shift Supervisor;
- Operations Manager; and
- Regional Manager.

7.1 Shift Supervisor

The Shift Supervisor responsibilities are as follows:

- The environmental sustainability, continuity of the RRF process operations and business operations of the Tomago Facility;
- Oversees the operators during a normal shift period, ensuring that all activities and operations are conducted in compliance with management plans and operating systems, including supervision of those relating to environmental management (including odour);
- Reports to Operations Manager on operational and performance matters that require infrastructure support; and
- Implementation of the AQOMP on a day-to-day basis at the Tomago Facility.

7.2 Operations Manager

The Operations Manager responsibilities are as follows:

- Overall responsibility for the management of operational activities for the Tomago Facility, including the oversight of the odour management and control systems;
- Oversees management of the Tomago Facility, ensuring that all activities and operations are conducted in compliance with management plans and operating systems, including supervision of those relating to environmental management (including air quality and odour);
- Implementation of the AQOMP on a day-to-day basis at the Tomago Facility; and
- Responsible for the maintenance of the monitoring records.

7.3 Regional Manager

The Area Manager responsibilities are as follows:

- Overall responsibility for administrative controls and environmental management systems for the Tomago Facility;
- Is advised of any relevant air quality and/or odour complaints; and
- Overall responsibility for the environmental safety and diligent management of the accepted waste streams.

8 Reporting Obligations and Continuous Improvement

The AQOMP should be read in conjunction with the REMONDIS IMP and reporting obligations as specified in EPL 4571. All updates/modifications to the operations at the Tomago Facility will be reflected in the AQOMP. These updates/modifications should be recorded in the Document Revisions table on the second page of this document and approved by REMONDIS, the relevant stakeholders, and TOU.

As part of continuous improvement, REMONDIS will establish a culture where regular review of all air quality and odour management and mitigation measures are undertaken, particularly during the mature adoption of the activities at the Tomago Facility, to ensure a low emission risk profile performance is operationally achieved at all times.

End of Document