Air Quality and Odour Management Plan

ReDirect Recycling Pty Ltd
Resource Recovery and Recycling Facility

24 Davis Road Wetherill Park, NSW

Date: 10/01/2024
Prepared by: reDirect Recycling
Version: Rev 2

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1 Introduction

1.1 Project Approval

Advanced Environmental Dynamics Pty Ltd (AED) was commissioned by Redirect Recycling to prepare an Air Quality and Odour Management Plan (AQOMP) for the Resource Recovery and Recycling Centre located at 24 Davis Road Wetherill Park, NSW (the Site).

It is noted that the following key elements have been considered when preparing this AQOMP:

- Stage 1 operations only (as per SSD-7401-Mod-3) are to be undertaken at the Site by ReDirect Recycling at this time. Hence, only dust impact associated with these operations have been included in this AQOMP.
- The management measures recommended for the bulk landscape storage area are conceptual at this stage as the proposed enclosures is not complete and proposed operations will not be implemented at the time of commissioning. This AQOMP will be reviewed if / when storage of bulk landscape supplies occurs and subsequently submitted for approval.
- The Stage 2 organics operations at the FLD and FGO buildings will not be conducted at this time and thus the AQOMP does not include management of odour impacts from these facilities.
- The AQOMP will require to be updated prior to the commencement of operations at the FLD and FGO buildings to include management of odour impacts.
- The AQOMP has been prepared in accordance with Condition B24 of SSD-7401-Mod-3:

> B24. Prior to commencement of operation, the Applicant must prepare an Air Quality and Odour Management Plan (AQOMP) to the satisfaction of the Planning Secretary. The AQOMP must form part of the OEMP required by Condition C4 and be prepared in accordance with Condition C7. The AQOMP must:
> (a) be prepared by a suitably qualified and experienced person(s) in consultation with the EPA;
> (b) describe the measures that would be implemented on site to ensure all reasonable and feasible measures are employed to minimise air quality and odour emissions, including details of the odour management system and all other operational air quality mitigation measures;
> (c) detail on a site plan the location of any air quality and odour management infrastructure;
> (d) include an ongoing odour monitoring program with details of location, frequency and duration of monitoring activities;
> (e) detail the contingency measures to be deployed to minimise air quality and odour impacts with well-defined triggers for their deployment; and
> (f) include a system for monitoring and responding to any odour complaints.

2 Project Background and Project Information

2.1 Site Location

ReDirect Recycling currently operate the resource recovery and recycling centre at 24 Davis Road, Wetherill Park NSW (Lot 18, DP249417) as shown in Figure 1.

The site is approximately 10 kilometres (km) north of Liverpool, 10 km west of Parramatta, and 7 km south of Blacktown. The site covers an area of approximately 20,292 m2 and is located within the Fairfield Local Government Area (LGA).

Figure 1.Site Location.

2.2 Project Description

Approval for SSD-7401 permitted the construction and operation of a resource recovery facility to process up to 160,000 tonnes per year (tpa) of waste comprising of:

- 60,000 tpa of hydro-excavation, drill muds and fluids.
- 70,000 tpa of food and garden organics.
- 30,000 tpa of packaged and bulk food and liquids.

In addition, the approval for SSD-7401 allowed for the operation of a landscaping material supplies facility for the storage and sale of up to 40,000 tpa of landscaping supplies.

Approval of SSD-7401-Mod-3 allowed for the increase of processing capacity to 350,000 tpa in conjunction with the following:

- Introduction of additional waste streams.

- Demolition of existing structures.
- Construction of a partially enclosed shed.

The recovered resources will be transferred either directly to end use markets or to other facilities or processors for value adding to achieve maximum value for beneficial use. The facility will further act as a distribution center for the consolidation and distribution of bulk landscape supplies including barks, soils, sands and aggregates.

Figure 2 and Figure 3 show the approved Site layout for Stage 1 and Stage 2 operations. Stage 1 operations include:

- mid-level – the bulk landscaping supplies facility and a portion of the drill mud processing plant
- lower level – the remainder of the drill mud processing plant.

Stage 2 operations include:

- upper level – the food and organics (FGO) processing facility and the food and liquid depackaging (FLD) facility

It is noted that this AQOMP covers facility operations conducted under Stage 1 of SSD -7404-Mod-3 only. Operation of Stage 2 will require a revision / addendum to this AQOMP.

Figure 2.Site Layout.

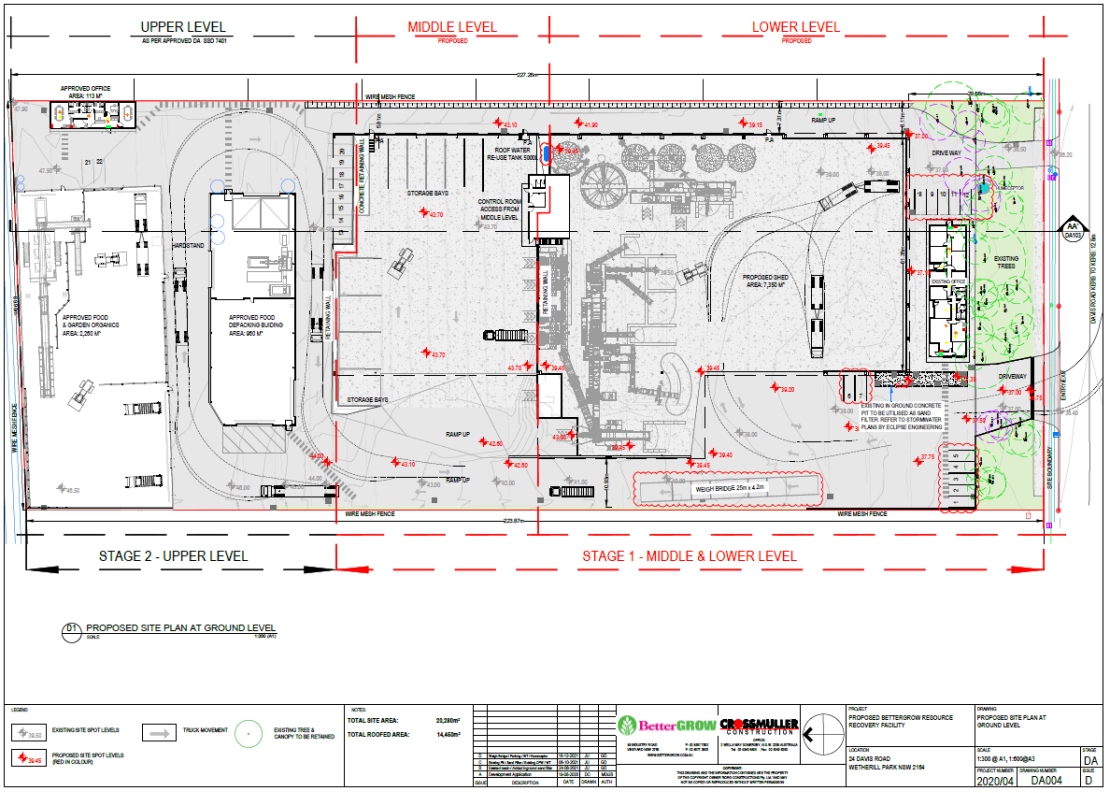
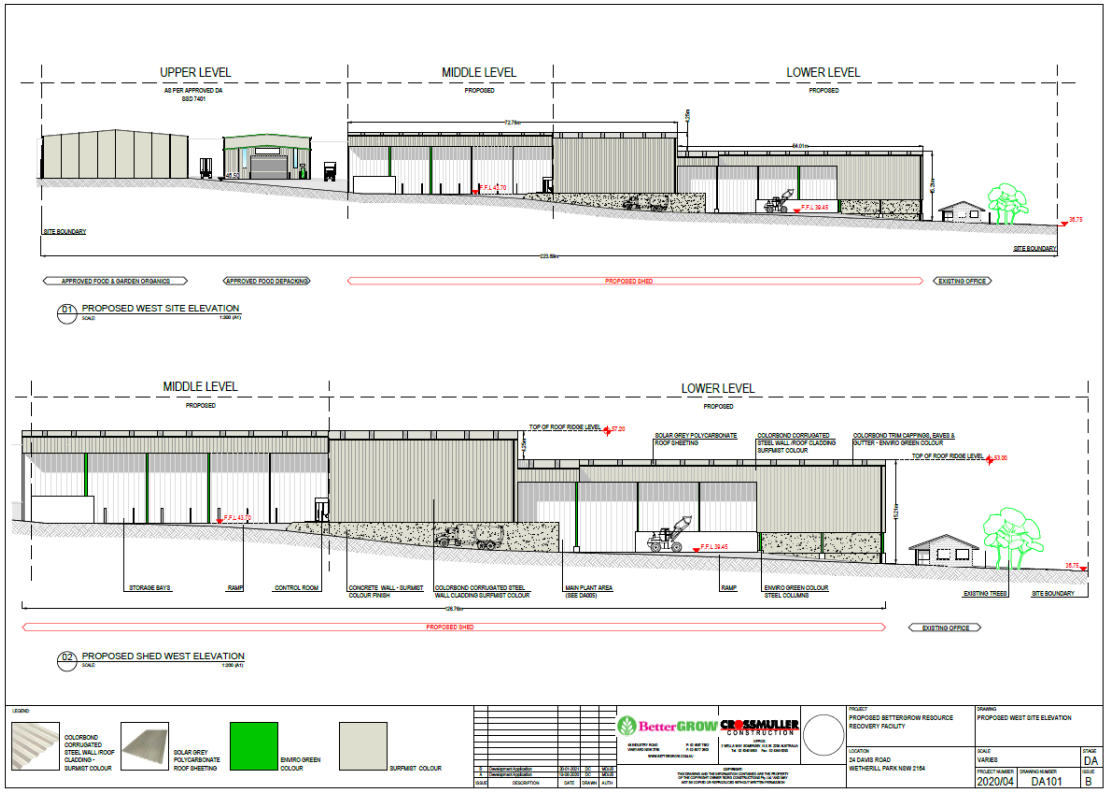


Figure 3.Site Layout-West Side Elevation.



2.3 Emission Sources

As mentioned in Section 2.2, Stage 1 operations will be limited to bulk landscaping supplies facility and the drill mud processing plant, thus the only air quality impacts anticipated with this stage are dust emissions.

A review of the activities suggests that dust emission sources associated with material handling and storage of bulk landscaping supplies at the Site will have the largest potential to generate dust. However, dust emissions associated with the bulk landscaping materials will be significantly reduced due to their containment within a partially enclosed shed. It is noted that the shed is currently under construction and whilst the bulk landscape supplies are included as part of Stage 1, ReDirect will not undertake this activity at the time of commissioning until the enclosure is complete. Thus, controls included for storage of bulk landscape supplies are conceptual at this stage and this AQOMP will need to be reviewed when storage of bulk landscape supplies occurs and subsequently submitted for approval.

Specifically, potential dust emission sources associated with the handling and storage of bulk landscaping material may include:

- Truck dumping of bulk landscaping material;
- The movement of material by front end loader (FEL) to the storage bays;
- The unloading of storage bays by the FEL;
- The loading of trucks by the FEL; and
- Wind erosion of stockpiles within the partially enclosed shed.

Material handled and processing in the drill mud processing plant are anticipated to have a very high moisture content, thus minimal fugitive dust emissions are anticipated from these processes.

With the road surfaces at the Site sealed and potential dust generating activities undertaken within the partially enclosed sheds, the potential for significant emissions of dust associated with vehicle movements will be minimal as long as housekeeping procedures are strictly adhered to.

3 Environmental Values

3.1 Ambient Air Quality Objectives

Assessment criteria related to dust as prescribed in NSW DEC (2016) include dust deposition, total suspended particulates (TSP), particulate matter with an aerodynamic diameter less than 10 micrometres (PM10) and particulate matter with an aerodynamic diameter less than 2.5 micrometres (PM2.5) (Table 1).

Table 1: **Impact Assessment Criteria (NSW, 2016)**

Pollutant	Averaging Period	Project Goal	Source
TSP	Annual	90 µg/m^3	NHMRC (1996)
PM10	24 hour	50 µg/m^3	DoE (2016)
	Annual	25 µg/m^3	DoE (2016)
PM2.5	24 hour	25 µg/m^3	DoE (2016)
	Annual	8 µg/m^3	DoE (2016)
Dust deposition	Monthly(1)	2 mg/m^2/day	NERDDC (1988)
	Monthly(2)	4 mg/m^2/day	NERDDC (1988)

Note (1): Maximum increase in deposited dust levels

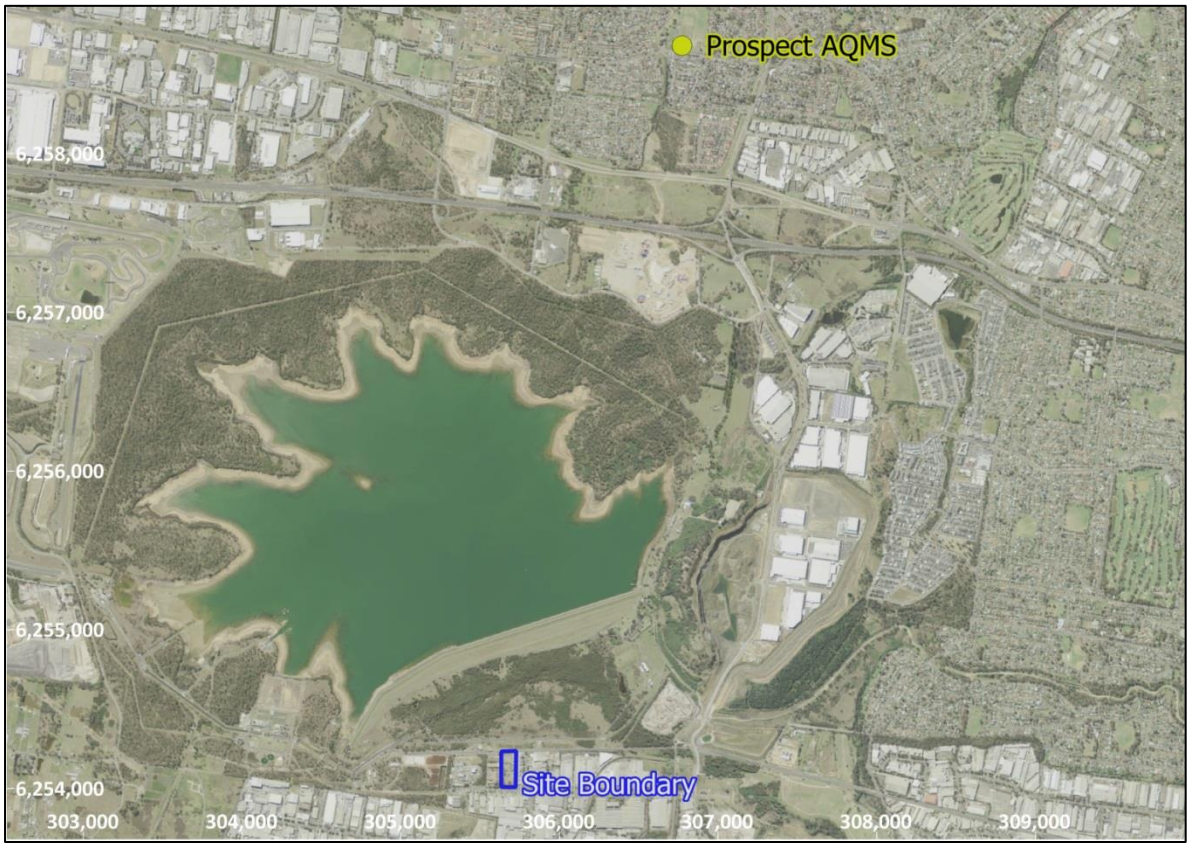
(2): Maximum total deposited dust level

3.2 Existing Air Quality

The nearest dust monitoring location to the Site is the NSW Office of Environment and Heritage's (OEH) Prospect monitoring station located in William Lawson Park to the north of the Site (Figure 4). The Prospect monitoring station was commissioned in 2007 and replaced the Blacktown Station. With respect to particulate matter only PM_{10} is measured at this location (NSW OEH, 2017) i.e. neither TSP nor $PM_{2.5}$ is measured at Prospect monitoring station.

Although the air quality within the industrial area surrounding the Site may differ from that at the Prospect monitoring station, in the absence of site-specific monitoring data, data from this location has been used to investigate background levels of PM_{10} at the Site.

Figure 4.Location of the Prospect Monitoring Station relative to the Site



3.2.1 Estimates of the Background-Level (PM_{10} and TSP)

In theory, background-levels of pollutants are the concentrations that would occur in the absence of anthropogenic emission sources. In practice, the practicalities and limitations associated with the establishment of an ambient air monitoring stations means that they are rarely sited at locations which are not influence to some degree by anthropogenic emission sources.

Estimating background-levels is further complicated by the fact that in reality background-levels will be spatially and temporally varying as the emission rate of pollutants from natural sources are often functions of a number of factors including for example, frequency of rain, wind speed, atmospheric stability etc.

AED performed a review of PM_{10} data from the Prospect monitoring station specifically for 2013, 2014 and 2015 as part of a previously conducted air quality impact assessment (AED, 2020). Background data from this study is summarised below and is provided in Table 2 through Table 4. Notably:

- The maximum 24 hour average concentration of PM_{10} during 2013 and 2015 was greater than the project goal of 50 µg/m^3.
- In total, 4 exceedance days occurred during 2013 with only 1 exceedance day during 2015. Although AED has not investigated the nature of the exceedances during 2013 or 2015, likely causes may include bush fires, dust storms, localised sources, etc.
- There were no exceedances of the project goals for the annual average concentration of TSP and PM_{10} during these three years.

Table 2: **Prospect Data: Percentiles of the 24 Hour Average Concentration of PM_{10}**

Percentile	2013	2014	2015
100th	**81.8**	44.3	**68.7**
99th	49.9	35.0	37.0
95th	33.3	30.2	29.7
90th	29.9	25.6	26.1
80th	24.5	22.7	23.0
70th	21.9	20.2	20.0

Table 3: **Prospect Data: 24 Hour Average Concentration of PM_{10}**

Pollutant	Averaging Period	Parameter	2013	2014	2015
PM_{10}	24 hour	Number of days of data	345	341	347
		Number of Exceedances of the project objective of 50 µg/m^3	4	0	1

Table 4: **Prospect Data: Annual Average Concentration of PM_{10}**

Pollutant	Averaging period	2013	2014	2015
PM_{10}	Annual	19.2	17.6	17.6

The annual average concentration of TSP (Table 5) has been inferred from the Prospect monitoring station PM_{10} data assuming that the ratio of PM_{10} to TSP is approximately equal to one half (based on NWS OEH concurrent TSP and PM_{10} monitoring data obtained during 2003 and 2004.)

Table 5: Annual Average Concentration of TSP (inferred from PM_{10} data)

Pollutant	Averaging period	2013	2014	2015
TSP	Annual	38.4	35.1	35.1

3.3 Receptor Locations

Depicted in Figure 5 are the locations of neighbouring representative sensitive receptor locations.

Figure 5.Receptor Locations

Table 6: Receptor Locations

Location	Easting (m) MGA56	Northing (m) MGA56
R01	306433	6252686
R02	307459	6252910
R03	307888	6253093
R04	307927	6254369
R05	303814	6253800
R06	304149	6252128

4 Air Quality Management Plan

This AQOMP is designed to assist the Site Manager to routinely consider air quality emissions from the site and their potential for adverse impact. As noted in Section 2.2, dust has been identified as the key air quality emission associated with Stage 1 operations.

Objectives

The specific objectives of this AQOMP are as follows:

- To assist in ensuring that standards of air quality during operations comply with relevant authority conditions and requirements;
- To ensure that management practices are in accordance with the conditions applicable to the operation at the Site;
- To reduce the generation of dust on site and accordingly reduce associated impact on adjacent premises to an acceptable level;
- To define the roles, responsibilities and tasks to be performed in regard to the control and monitoring of dust emissions from the Site; and
- To compile relevant information in a manner which will provide ongoing guidance to all parties regarding work planning and dust emission controls.

Implementation of AQOMP

The measures detailed in this plan are regarded as the minimum requirements to comply with the relevant approvals and meet the objectives described within the Environmental Investigation Report.

It is the responsibility of the Safety, Health, and Environment Officer to review this AQOMP on a monthly basis to ensure that all mitigation measures outlined in the Environmental Investigation Report are minimising dust levels effectively. Any deficiencies of the AQOMP are to be brought to the attention of the Site Manger and procedures modified by the Site Manager as required.

Dust Management Plan Summary Table

The Dust Management Plan is provided in Table 7.

Table 7: Air Quality Management Plan

Item	Description	Persons Responsible	Time Frame for Review of Compliance with AQOMP objectives and Effectiveness of mitigation measure	Action(s) to be implemented if required
Issue of Significance	To prevent adverse dust impacts outside the boundaries of the Site.	All staff & visitors	Daily	Reinforce training of staff & visitors of the requirements and objectives of this AQOMP
Dust Sources	Dust sources associated with the site as follows: • Bulk landscaping supplies facility • Drill mud processing plant • Vehicle movement onto and from the site • Erosion from exposed areas including stockpiles			
Performance Standard	Comply with project goals contained in Error! Reference source not found.. Minimise dust emissions at all times.	All staff & visitors	Daily	Reinforce training of staff & visitors of the requirements and objectives of this AQOMP
Site Activity and Control Measures				
Processing Activities	All internal and external surfaces are to be sealed	Site Manager	Prior to commencement	-
	An on-site weather station will be installed at the facility to monitor local wind speed, wind direction, and temperature to assist with onsite dust management.	Site Manager	Prior to commencement	-
	The bulk landscape storage and load-out area will be fully sealed with a two-coat tar seal to reduce the generation of dust.	Site Manager	Prior to commencement	-
	Bulk landscaping supply stockpiles will be maintained through the use sprinklers and sprays supplied with water from the sites recycled water system	Operations Manager	As needed	Increase water sprays Use chemical suppressants
	Good dust management procedures will be implemented within the building including sweeping and moistening of paved areas, as required.	Operations Manager	Daily	Increase frequency to twice a day if needed.
	Good dust management procedures outside of the building, and the general Site including sweeping to remove dust and other debris.	Operations Manager	Daily	Increase frequency to twice a day if needed.

Item	Description	Persons Responsible	Time Frame for Review of Compliance with AQOMP objectives and Effectiveness of mitigation measure	Action(s) to be implemented if required
	Driveways and onsite haulage paths will be regularly swept.	Operations Manager	Daily	Increase frequency to twice a day if needed.
	Dust-causing activities will be stopped when visible dust is observed leaving the subject site. Works will not re-commence until additional mitigation measures are applied to achieve compliance or more favourable weather occurs.	Operations Manager	On-going	Cease operations that are causing significant dust emissions.
	All waste to be contained in appropriate 3-sided storage bays	Site Manager	Daily	Reinforce by providing staff training.
	Toolbox meetings to discuss any safety and compliance issues, including dust issues that have arisen since the previous meeting.	Site Manager	Monthly	Increase frequency to weekly if needed
	Dust on site will be visually monitored by the Site Manager and process area supervisors. Should weather forecasting indicate adverse weather conditions, activities with the potential to produce dust will be reduced or ceased until conditions become more favourable.	Site Manager	As needed	Cease any major dust emitting activities and apply appropriate mitigation measures prior to commencement.
Vehicles	All vehicles to comply with strict speed limit of 20km/hr internal and external to the building	Operations Manager	Continuous	Reinforce by providing driver training and additional signage.
	All trucks entering and leaving the premises carrying loads must be covered at all times, except during loading and unloading.	Truck drivers, Operations Manager	Daily	Reinforce by providing driver training.
	Limit load sizes to ensure material is not above the level of truck sidewalls	Truck drivers, Operations Manager	Daily	Reinforce by providing driver training.
Complaints Monitoring	Maintain a complaints register to record the following information: • Location of complainant • Time and date of complaint • Predominant wind direction and wind speed when complainant was impacted • If possible identify source of dust emissions	Site Manager	As needed	Reinforce by providing staff training.

Item	Description	Persons Responsible	Time Frame for Review of Compliance with AQOMP objectives and Effectiveness of mitigation measure	Action(s) to be implemented if required
	Review of any complaints received relating to dust and reports from monitoring conducted as a result.	Site Manager	Monthly	Investigate case for complaints and add additional mitigation measures. Increase review frequency to weekly if large number of complaints are being recorded.
General comments	Operations to be limited to the nominated hours of operation.	Site Manager, Operations Manager	Daily	Reinforce training of staff.
	Training of all staff and personnel accessing the Site in the need to minimise dust generation.	Site Manager	Inductions prior to commencing employment / contract. Regular / as needed toolbox talks	Include biannual training sessions if necessary
	All contractors and staff will receive an onsite environmental induction at the commencement of their employment at the development.	Operations Manager	On-going	Reinforce training of staff.
	Clean up spillages	Operations Manager	Weekly	Increase inspections to bi-weekly or daily. Reinforce training of staff.
	No burning of material on site	Operations Manager	As required	Reinforce training of staff.
	Revegetate any permanently exposed areas as soon as possible	Site Manager, Operations Manager	As soon as practicable	Reinforce training of staff.
	Maintain appropriate buffer distances between dust generating activities and sensitive receptors.	Site Manager, Operations Manager	Daily	Reinforce training of staff.
Corrective Action	If corrective action for a dust source is deemed necessary, attempt the following in order: • Repair the item of plant if deemed to be faulty, to ensure good working order • Locate the activity behind a dust screen or enclosure	Site Manager, Operations Manager	As required	Register issue with the Incident Management System (if available) and cease operations if necessary until appropriate corrective actions have been performed.

Item	Description	Persons Responsible	Time Frame for Review of Compliance with AQOMP objectives and Effectiveness of mitigation measure	Action(s) to be implemented if required
	• Eliminate the dust source by substitution with another plant/method with lower dust emission • Seek advice of an air quality specialist if a solution is not found.			

5 Summary

AED was commissioned by Redirect Recycling to prepare an Air Quality and Odour Management Plan for the Stage 1 operations of the Resource Recovery and Recycling Centre located at 24 Davis Road Wetherill Park, NSW.

As Stage 1 operations only involves the bulk landscaping supplies facility and drill mud processing plant, dust emissions have been identified as the only air quality impact associated with these operations. Prior to commencement of Stage 2 operations, this AQOMP will need to be updated to incorporate odour emissions from these activities.

This AQOMP has been prepared in accordance with Condition B24 of SSD-7401-Mod-3 and presents a management plan in order to control any potential dust emissions from the Site. It also identifies persons responsible for implementing this AQOMP as well as the frequency with which management measures are to be implemented.

In summary, procedures outlined in this AQOMP are likely to result in compliance with the regulatory requirements for dust impacts at neighbouring receptors.

6 References

- AED (2017): Bettergrow Wetherill Park, Dust Assessment. Report # 959516. 5 April 2017.
- AED (2020): Bettergrow Wetherill Park, Dust Assessment. Report # 959516.2.1. September 2020.
- NSW Department of Environment and Conservation (DEC) (2016): Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales.
- NSW Office of Environment and Heritage (2017): New South Wales Annual Compliance Report 2015. National Environment Protection (Ambient Air Quality) Measure. May 2017.
- NSW Government Planning Portal:
  - https://www.planningportal.nsw.gov.au/major-projects/projects/mod-3-amendment-weighbridges-carparking-and-stormwater