Re.Group Dunmore FOGO - Statement of Environmental Effects

44 Buckleys Road, Dunmore NSW

S4.55(2) Modification Application (DA 523/2014)

August 2024

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Our Ref:

30206881

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Version Control

Revision No.	Date Issued	Description	Author	Approver
1	11/03/2024	First draft	MD	GD
2	05/08/2024	Final draft	MD	GD
3	23/08/2024	Final	MD	GD

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Acronyms and Abbreviations

Acronym	Definition
BAU	Business As Usual
Current Approval	The approval for the site at present, DA523/2014
DCP	Development Control Plan
DPE	Department of Planning and Environment (NSW)
EIS	Environmental Impact Statement
EP&A Act	Environmental Planning and Assessment Act 1979
EPA	NSW Environment Protection Agency
EPL	Environment Protection Licence
FEL	Front End Loader
FTE	Full Time Equivalent
LEP	Local Environmental Plan
LGA	Local Government Area
POEO Act	Protection of the Environment Operations Act 2000
S4.55(2)	Section 4.55(2) Modification
SEE	Statement of Environmental Effects
SEPP	State Environment Protection Policy
SSD	State Significant Development
tpa	Tonnes per annum
tph	Tonnes per hour

Executive summary

Introduction

This modification application has been prepared on behalf of Re.Grow Pty Ltd [as owned by Re.Hold Pty Ltd (Re.Group)] who is seeking approval to modify the development consent (DA 523/2014) for the existing food and garden organics waste processing facility (FOGO facility) at 44 Buckleys Road, Dunmore NSW (the Modification Proposal).

Re.Grow has operated the Dunmore FOGO facility since 2017. The facility is licensed to receive up to 50,000 tonnes per annum (tpa) under Environment Protection License (EPL) number 12903. The site forms part of the Shellharbour Council-owned and operated Dunmore Recycling and Waste Disposal Depot (DRWDD).

Re.Group has been engaging with Council and NSW EPA regarding the management of external stockpiles of maturing compost material and finished compost product.

In order to better manage the volumes of externally stored material, Re.Group is seeking to extend the approved hours of operation at the facility (the subject of this Modification Proposal).

Site description

The site is located at 44 Buckleys Road, Dunmore NSW. The site is accessed by both vehicles and pedestrians from Buckleys Road. The site is located within the Shellharbour LGA, and is located about four kilometres from the Shellharbour city centre.

Site surrounds

The area to the immediate east, north and west consists of land developed for waste management use. The land immediately south consists of undeveloped dense vegetation.

Development consent and Environment Protection Licence

The site operates under DA 523/2014, which limits the site to the receival of 50,000 tonnes of organics material per annum. EPL 12903 for the site was acquired by Shellharbour Council in 2008, and limits the site to receive no more than 50,000 tonnes of organics per year, and limits the storage of no more than 10,000 tonnes of processed and unprocessed food, garden and wood waste at any one time.

Current operation

The site currently employs five staff for one shift per day.

The site produces compost products through the following steps:

- Acceptance, pre-sort (contamination picking) and pre-processing (shredding)
- Composting in enclosed tunnels (two weeks) with monitoring of temperature, oxygen and air pressure. Odour produced by organic material is managed through a biofilter and aeration.
- Maturation on an external maturation pad (six weeks), during which time the piles are turned by machinery, with temperature and moisture recorded daily.
- Testing of compost in accordance with the NSW EPA Resource Recovery Order (The compost order 2016). Any batches that fail this test undergo further composting and maturation until compliance is achieved.
- Screening of compost to separate fine material from coarse material, followed by offtake of finished compost products.
- Residual waste (separated contamination) is stored separately to organic material and is disposed of at a suitably licensed facility.

Description of the proposed modification

Construction, demolition and installation

No construction, demolition or installation works are proposed at the site.

Operation at the site

The operation at the site would largely remain the same, utilising the same equipment with material undergoing the same process.

To allow for sufficient processing utilising existing plant and equipment at the site, Re.Group proposes to extend the hours of operation of the FOGO processing facility as shown in the table below.

Table 1-1: Proposed changes to hours of operation

Day	Current hours of operation	Proposed hours of operation	Difference
Monday to Friday	Between 7:30am and 4pm, both internal and external	External operations: 7am to 6pm Internal operations: 6am to 6pm	Increase by 1.5 hours in the AM and two hours in the PM
Saturday, Sunday and public holidays (excluding Christmas Day and Good Friday)	Between 8am and 4pm, both internal and external	External operations: 7am to 4pm Internal operations: 6am to 6pm	Increase by two hours in the AM and two hours in the PM

Extending the hours of operation externally at the site would allow:

- **Tunnel downloads**: This gives operators a greater opportunity to remove all materials from composting tunnels and frees up a tunnel for new pre-processed material. By completing a full download during extended hours of operation, a new batch of pre-processed organic material gains an additional eight hours of composting while the facility is not operating between 6pm and 6am. This task would occur where a tunnel download is not able to be completed during normal operating hours. This task is usually performed between 7am and 8am, and 3:30pm and 6pm as it avoids potential traffic conflicts with trucks manoeuvring within the Site.
- **Refining of material**: Oversized material is removed from piles using a loader and a trommel. As mentioned in section 3, oversized material can be reprocessed through the shredding and composting processes. This is the main task to be performed during the extended external hours of operation.
- **Turning of material**: Additional turning of maturing piles allows for a greater quality of compost to be produced, as it further improves aeration that allows aerobic bacteria to further break down organic matter. Significantly, additional turning is pivotal in mitigating odour issues. Turning would be done by a Mulchmuster and loader.

A Best Management Practice Implementation Plan (BMPIP) has been developed by Jackson Environment and Planning, to set out the proposed infrastructure and performance measures that will be implemented at the site. Under this plan, composting operations at the site will be optimised to produce a higher quality compost output, manage oversize fractions of organic material, and comply with the Pollution Reduction Program set by the NSW EPA. This proposal to increase the hours of operation at the site will allow Re.Group to achieve the performance measures in the BMPIP. This Plan is available in Appendix E.

The recommended Conditions of Consent are provided in Appendix A.

Proposal need and strategic justification

The site services the Shellharbour LGA municipal FOGO collection as well as self-haul green waste disposal. Effective management of composting operations at the site allows municipal and state waste reduction targets to be achieved, ensures ongoing public confidence in recycling and waste reduction initiatives. Through

composting activities at the site, Council is able to prevent organics from being disposed to landfill where these materials would otherwise decompose anaerobically, generating greenhouse gases.

Business As Usual has been deemed an undesirable outcome for the site, given the recent consultation with the EPA and the concerns surrounding stockpile management, environmental performance, and odour emissions. These risks can be mitigated through the more efficient processing of organics material at the site, which is enabled by extending hours of operation.

Increasing the hours of operation at the site allows for more efficient processing – it permits operators more time to perform tunnel downloads, refinement of material, and turning of material on the maturation pad.

Statutory context

The modification proposal involves an operational change that would result in an environmental impact that is more than a 'minimal environmental impact', and therefore falls under EP&A Act Section 4.55(2). The modification proposal is considered to be 'substantially the same' as the development for which the consent was originally granted.

Consultation

Re.Group have consulted with Shellharbour Council on this modification proposal through a formal pre-lodgement meeting, receiving written comments on the proposal. A response to these comments is provided in section 7.

Environmental assessment

Noise

A noise impact assessment (NIA) was prepared for the modification proposal by SoundIN in February 2024. As there are no significant sources of vibration associated with the facility, vibration impacts were not assessed in this assessment. The NIA was prepared in accordance with the NSW Noise Policy for Industry (NPfI) 2017 (NSW EPA) and uses the SoundPLAN noise modelling software.

Two operational scenarios have been developed for assessment purposes, representing "internal operations" only and "all operations". The results of each scenario indicate that worst-case noise levels associated with internal and all operations are predicted to comply with the Project Noise Trigger Level at all nearby residential receivers.

No mitigation measures are proposed in addition to existing noise mitigation measures as set out in the site conditions of consent.

Odour

An odour assessment (OA) was prepared by SLR Consulting in June 2024. The OA involved the review of existing odour audits and air quality impact assessments, and a qualitative assessment of potential odour impacts arising from the proposal.

The OA considered that there are no proposed changes to the amount and type of organic waste received at the site, as well as type of process under the Modification Proposal. Further, and importantly, as the dispersion modelling was conducted representing the sources as emitting odour emission continuously (i.e., 24/7), an extension of the hours of operations would not have implications on the predicted downwind odour impacts.

The OA concludes that the conclusions drawn in the previous air quality impact assessment (prepared by Wilkinson Murray in 2014), which found that potential off-site odour impacts were unlikely to exceed relevant assessment criteria at nearby sensitive receivers, was still valid.

Therefore, it was concluded that the proposed modification would not present any greater odour impact to nearby sensitive receivers. As a result, no mitigation measures are proposed additional to existing odour mitigation measures as set out in the site conditions of consent.

Other matters

Other environmental and amenity matters have been assessed, including traffic, air quality (dust and vehicle emissions), waste management, water quality, and hazard and risk. The assessment concluded that the proposed modification would not result in any substantial impact. Please refer to section 8.3 for further information.

Cumulative impact assessment

A review of the Shellharbour Council Development Tracker, Southern Regional Planning Panel, and NSW Major Projects websites was undertaken to find relevant surrounding projects for this cumulative impact assessment. Three proposed developments were identified, however given the minor nature of this proposed modification, a cumulative impact was not considered likely.

Environmental risk assessment

An environmental risk assessment was prepared to consider the impacts of the proposal on environmental factors, both with and without mitigation. This assessment concluded that with mitigation, the residual risk of the proposal would be low or negligible.

Summary of mitigation measures

The modification proposal would not result in any increased risk of impact to the environment or amenity in the local area. As a result, no additional mitigation measures to those in the current conditions of consent are proposed.

Justification and conclusion

This Statement of Environmental Effects report assesses the potential impacts of the Modification Proposal and concludes it would result in substantially the same impact to that presented within the existing environmental assessments (and other supporting documentation) for the Current Approval.

1 Introduction

This modification application has been prepared on behalf of Re.Grow Pty Ltd [as owned by Re.Hold Pty Ltd (Re.Group)] who is seeking approval to modify the development consent (DA 523/2014) for the existing food and garden organics waste processing facility (FOGO facility) at 44 Buckleys Road, Dunmore NSW (the Modification Proposal). This application has been prepared pursuant to Section 4.55 (2) of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

1.1 Proposal background

Re.Grow has operated the Dunmore FOGO facility since 2017. The site operates under DA523/2014. The facility is licensed to receive up to 50,000 tonnes per annum (tpa) under Environment Protection License (EPL) number 12903.

The site forms part of the Shellharbour Council-owned and operated Dunmore Recycling and Waste Disposal Depot (DRWDD), which consists of a tip shop (also referred to as Reviva Dunmore, formerly the Revolve Centre), a transfer station for mixed waste as well as self-haul separate streams such as metals, electronic waste, mattresses, batteries and oils, a putrescible and non-putrescible landfill, and the FOGO processing facility.

Re.Group has been engaging with Council and NSW EPA regarding the management of external stockpiles of maturing compost material and finished compost product. In 2022, the NSW EPA completed a compliance audit of the premises. A consistent issue identified during the audit was the “excessive quantity of material on the maturation pad”, which “limits equipment access and proper aeration and turning of material.” NSW EPA enacted a Pollution Reduction Program (further detailed in section 2.4.2) to reduce the volume of externally stored material to less than 7,400 cubic metres, which was met at the end of February 2024. Whilst developing the program, Council, NSW EPA, and Re.Group discussed how stockpiles could be reduced expeditiously and the option to extend the permitted operating hours was, in principle, noted as a potential solution.

In order to better manage the volumes of externally stored material, Re.Group is seeking to extend the approved hours of operation at the facility (the subject of this Modification Proposal).

1.2 The Applicant

The Applicant for this modification, Re.Grow, is an entity of Re.Group, a privately-owned Australian recycling company which has one of the largest network of recycling facilities in Australia. Re.Group has operations across NSW, Victoria, Queensland, Western Australia, South Australia, and the ACT. Re.Group and its related entities (including Re.Grow) employ over 600 people and provide recycling services for more than four million Australians across upwards of 35 local government areas (LGAs). In addition to processing food organics ad garden organics through Re.Grow, the group processes over 500,000 tpa of recyclables including glass, paper and cardboard, plastics, steel, and aluminium.

Re.Group’s overall objectives are to design, build, operate, and optimise infrastructure that enables the maximum amount of waste to be diverted from disposal and positively re-used as a renewable resource.

2 Site description

2.1 Location

The site is located at 44 Buckleys Road, Dunmore NSW (refer to Figure 2-1). The site is accessed by both vehicles and pedestrians from Buckleys Road.
The site is located within the Shellharbour LGA, and is located about four kilometres from the Shellharbour city centre. The site is located in the suburb of Dunmore, adjacent to the densely populated suburb of Shell Cove. The site is located in proximity to other waste and resource facilities that service the Shellharbour LGA.

2.1.1 Sensitive receivers

The nearest sensitive receivers to the site are summarised in Table 2-1 and shown in Figure 2-2.

Table 2-1: Sensitive receivers near the Site

Type of receiver	Distance	Direction
Residential dwellings on Dunmore Road	540 m	Northwest
Residential dwellings on Augusta Parkway	790 m	Northeast
Killalea campground	470 m	East
Residential dwelling at 21 Buckleys Road	430 m	North

2.1.2 Surrounding environment

The area to the immediate east, north and west consists of land developed for waste management use. The land immediately south consists of undeveloped dense vegetation.

The site is in proximity to Rocklow Creek, a waterway that joins the Minnamurra River and leads to the Pacific Ocean.

The following land uses immediately surround the site (Table 2-2).

Table 2-2: Nearby land use

Type of use	Location	Name	Address
Waste management – landfill	North and west of site	Dunmore Recycling and Waste Disposal Depot Reviva Dunmore (tip shop) Transfer station for mixed waste and self-haul separate waste streams. Putrescible and non-putrescible landfill	44 Buckleys Road, Dunmore
Waste management – skip bin recycling Landscape supply	East of site	Dunmore Resources and Recycling	57 Buckleys Road, Dunmore
Undeveloped – vegetation	South and southeast of site	N/A	N/A

Figure 2-1: Site in context with region

Figure 2-2: Site in context with sensitive receivers

2.2 Site features

The site is located on 3 hectares (ha) of land and comprises the following features:

- Shed for FOGO receival, decontamination and shredding (pre-processing)
- Biofilter for four enclosed composting tunnels
- Ancillary office and staff parking
- Compost loading area
- Compost screening area
- Maturation pad (6,700 m^2)
- Evaporation pond (1,350 m^2)

The site features some screening vegetation and landscaped areas and is not visible from public roads or other public areas.

An overview of the site's features is shown in Figure 2-3.

Figure 2-3: Site features

2.3 Site history and current operations

2.3.1 Previous ownership and use

The DRWDD was established in 1945 and has been operating as a waste management facility since the early 1970s. Shellharbour City Council own and manage the DRWDD, within which Re.Grow holds the contract to operate the FOGO facility.

A summary of site history is provided in Table 2-3.

Table 2-3: Site approvals history

Date	Activity
1945	DRWDD site established
Early 1970s	Commencement of waste operations at the DRWDD
1983	Shellharbour Council commences management of DRWDD site
2015	Approval of composting operations by the Joint Regional Planning Panel
2017	Re.Grow awarded operations contract for the FOGO facility
2017	Modification of development consent approved for redevelopment of the site, consisting of: – removing a compost storage building, – reconfiguring the site, – inclusion of the maturation pad, – internal road realignment, – establishment of the above-ground leachate management system, and – modification to the pre-treatment building.

2.4 Current approvals

2.4.1 Development consent

The site operates under DA 523/2014, which limits the site to the receival of 50,000 tonnes of organics material per annum.

2.4.2 Environment Protection Licence (EPL) 12903

EPL 12903 for the site was acquired by Shellharbour Council in 2008.

Table 2-4: Environment Protection License 12903

Environment Protection License	Fee Based Activity	Scale
EPL 12903	Composting	>5,000-50,000t annual capacity to receive organics
	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
	Waste storage – waste tyres	> Any tyres stored

The licence limits the site to receive no more than 50,000 tonnes of organics per year. The licence also limits the amount of processed and unprocessed food, garden and wood waste permitted on the premises to 10,000 tonnes at any one time.

Pollution Reduction Program

EPL 12903 for the site sets out a pollution reduction program under Section 8, U1.

This program includes the following requirements:

U1.1

1. *Material Limits*

By 29 February 2024 the Licensee must:

a. *Reduce and maintain total material on the maturation pad to no more than 7,400m3, not including final product.*
b. *Reduce and maintain the oversize stockpile on the maturation pad (>40mm fraction) to no more than 470 m3.*
c. *Ensure no more than 800 tonnes is stored in the Receivals Hall.*
d. *Provide the EPA with a maturation pad stockpile, oversize stockpile, and Receivals Hall survey by the 10th day of each month (commencing 2024), prepared by an appropriately qualified surveyor to demonstrate compliance with limits (a) – (c).*

The program also notes:

The EPA will review the limits set out in (1) above if the licensee is able to demonstrate completion of the above actions. The EPA proposes to review the operations at the Premises against these outcomes in June 2024, or earlier if requested by the Licensee.

Re.Group has been complying with conditions (a) – (d), and confirmed its compliance with (a) to (c) in its February 2024 report submitted to the EPA on 4 March 2024; this report included the summary tables (Table 2-5 and Table 2-6) and LandTeam aerial survey imagery (Figure 2-4).

Table 2-5: Summary table of products

Pile number	Material type	Volume (m^3)
1	**Finished Product**	**300**
2	**Finished Product**	**38**
3	Batch Oversize (pre-secondary Refining)	48
4	Unrefined (Batch) Material	302
5	Unrefined (Batch) Material	348
6	Unrefined (Batch) Material	58
7	Unrefined (Batch) Material	300
8	Unrefined (Batch) Material	100
9	Residual Oversize	327
10	Residual Oversize	9
11	Residual Oversize	2
12	Residual Oversize	292
13	**Finished Product**	**173**
14	**Finished Product**	**159**
15	**Finished Product**	**96**
16	**Finished Product**	**1052**
17	Batch Oversize (pre-secondary Refining)	3862
18	Shredded Oversize	267
TOTAL on pad including finished Product		**7733**

Table 2-6: Results of latest volumetric survey

Area	Limit	Volume EOM
Receivals	800t	1019m^3 – Bulk density ranges between 0.436t/m3 and 0.515t/m3 Therefore, we estimate based on the volume the stock in the receivals to be between 444 tonnes and 525 tonnes
Maturation Pad (total) – excluding finished product	7,400m3	5915m3
Finished Product	No Limit	1818m3
Oversize >40mm	470m3	0 (zero)

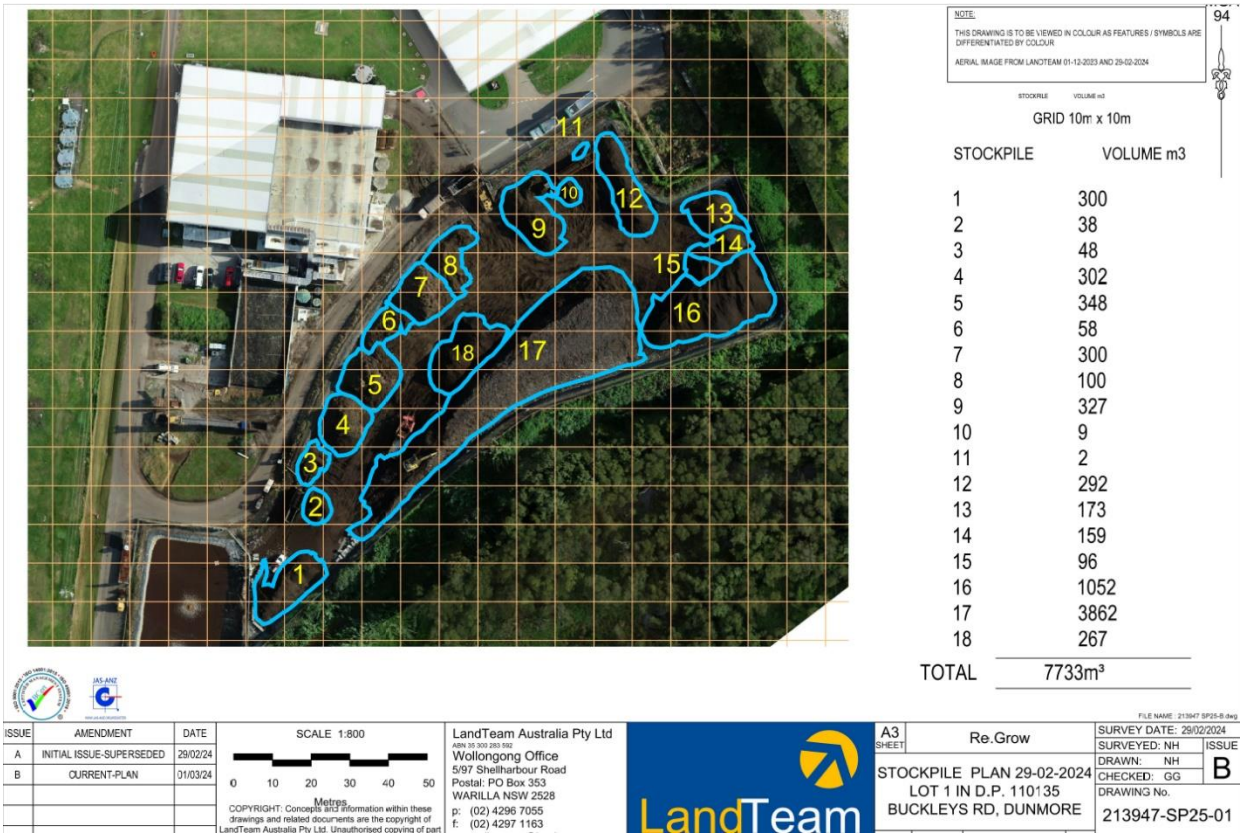

Figure 2-4: Stockpile aerial survey

3 Current operation

The site has a licence to process up to 50,000tpa of domestic food and garden organic waste material, including self-haul garden organics. Waste acceptance and operation of the site is managed under an Operational Environmental Management Plan (OEMP) and a Quality Management Plan.

3.1 Organics processing

The site composts organics through the following process (Table 3-1). A diagram of the receival hall and pre-processing equipment is shown in Figure 3-1 and a diagram illustrating material flow with mass loss is shown in Figure 3-2.

Table 3-1: Description of current site operation

Stage of operation	Description
Weighbridge, receival and acceptance	Vehicles enter the site via the weighbridge from Buckleys Road. Organics material is brought to the site primarily by Council's waste collection fleet, being rear-loading medium rigid vehicles. Self-haul garden organics is also aggregated at the DRWDD in the shed north of the organics processing shed and brought to the site on smaller trucks. Receival of organics occurs solely in the site shed, in a receival area marked in Figure 2-3. Vehicle drivers are directed by the operator of the front-end loader (FEL) in this receival area to unload. Waste loads are inspected visually for contamination. If unacceptable levels of contamination are detected, the truck would be re-loaded and directed to a suitably licensed facility for disposal. Load rejections are recorded and feedback is provided to Council on the nature and type of contamination in deliveries. When vehicles are leaving the premises following offloading, the vehicle enters the same weighbridge where the weighbridge operator will record the tare weight of the vehicle, the date of delivery, and the origin and type of waste delivered. Weighbridge operations are managed by Council.
Pre-processing	Received material is pre-processed through decontamination to remove non-organic material, which is done by hand-picking visible contamination. Contaminants are transferred into a bunker within the building for temporary storage. Metals are separated and stored in a bin. The remaining organic material is shredded to end up with pre-processed organics of a uniform size. Pre-processed material is directly and immediately loaded into the enclosed compost tunnels.
Composting	There are four enclosed tunnels of 720m^3 capacity each for composting of pre-processed organic material. Tunnels are loaded using a FEL and are monitored via temperature probes, oxygen probes, and air pressure monitoring. Material is loaded into tunnels for composting where key variables are monitored to ensure pasteurisation occurs in the tunnels. The material in the tunnels is aerated using aeration pipes in order to prevent anaerobic breakdown of organic material (i.e. rotting, which produces methane – a potent greenhouse gas). Odour emissions from composting are prevented by the biofilter, which captures odours. Compost piles remain in the enclosed tunnels for a period averaging two weeks. Unloading of tunnels is done by FEL, and successfully composted material is transferred to the external maturation pad via FEL. Compost material is tested in accordance with the NSW EPA Resource Recovery Order (The compost order 2016). Should any batch fail this testing, the batch would remain in the tunnel for further composting.
Maturation	Composted materials are stored on the maturation pad in defined batches, which are monitored for moisture and temperature for a further four weeks, with turning of the batches

Stage of operation	Description
	occurring to manage the stockpiles. Total maturation time on the maturation pad is six weeks, following which time, the product is ready for sale. Turning of the materials is undertaken by a Mulchmuster or FEL and staff monitor and record temperatures daily; moisture is also monitored and maintained. As the movement of compost to the maturation area and the turning of windrows are key odour risk activities for the site, these activities may be restricted during periods of inappropriate weather conditions, such as inversion layers or very light southerly winds. Successful piles are screened using a trommel to separate oversized material. Oversized material is transferred to the receival hall to undergo another round of pre-processing, composting and maturation. Finished compost product (< 15 mm) is separately stored for offtake, marked on Figure 2-3.
Offtake of compost	Finished compost material is loaded onto a truck and dog. Approximately 33 trucks are loaded for off-take a month, amounting 1,000 tonnes of compost.
Offtake of other material	Residual waste is stored in a bunker and collected by a local site truck as required. This is then disposed of at an appropriately licensed landfill facility.

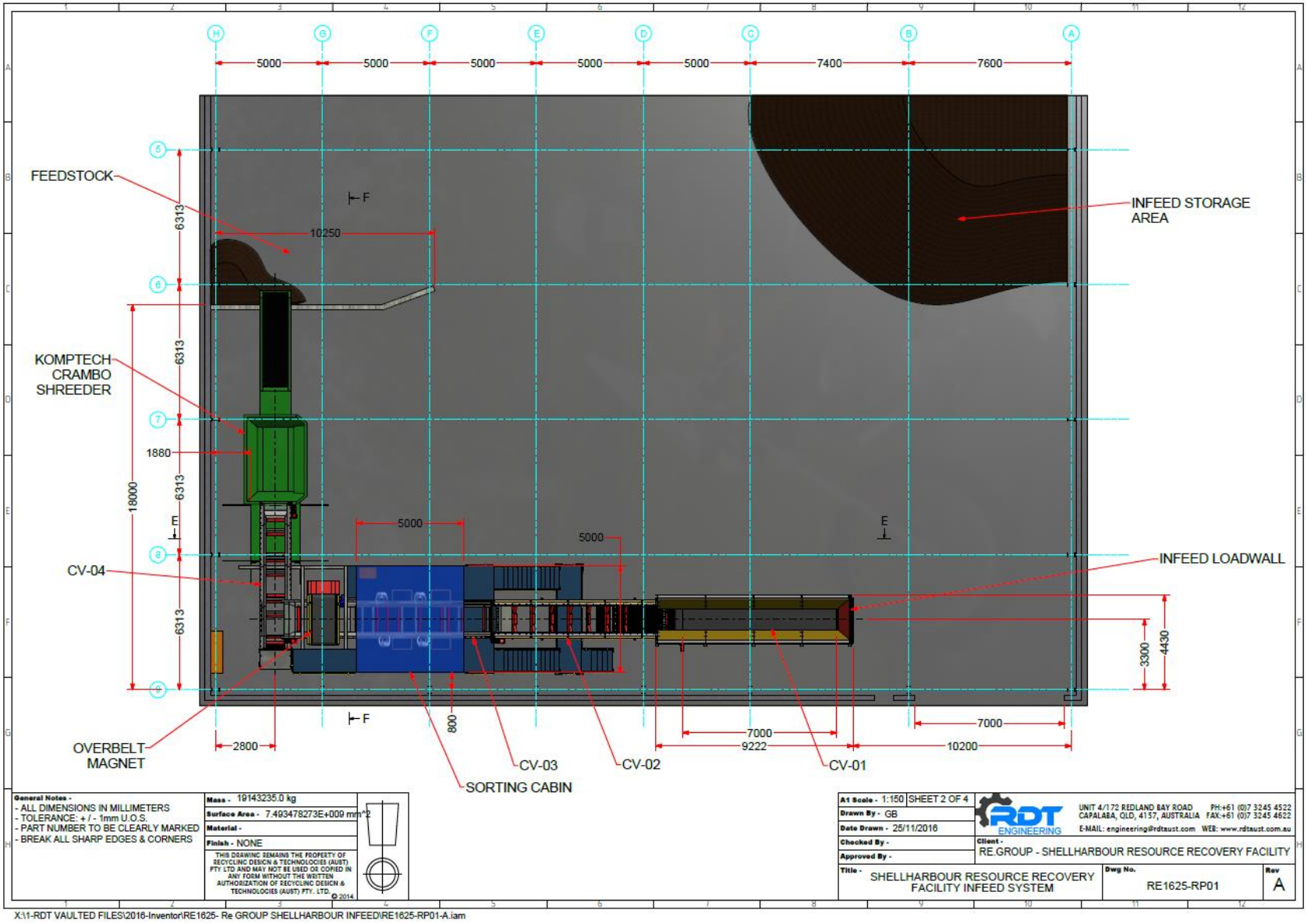

Figure 3-1: Site shed layout

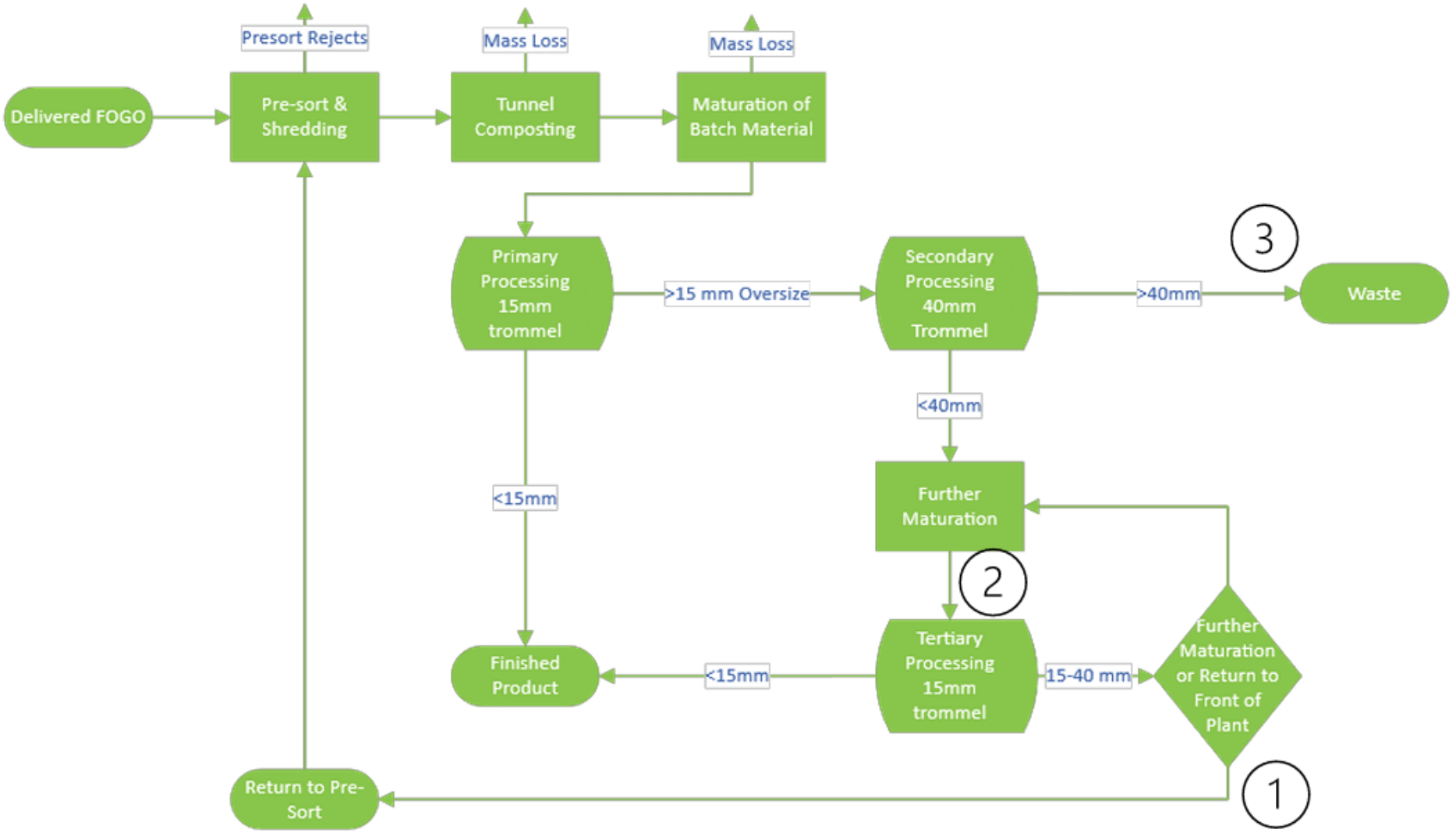

Figure 3-2: Mass loss flow diagram

3.2 Site storage

The site features storage of the following materials and volumes.

Table 3-2: Site storage summary

Material	Location	Volume
Unprocessed organics	Receival hall	Maximum 600 tonnes
Composting organics	Enclosed composting tunnels	1,200 tonnes (average)
Maturing organics	Maturation pad (external)	7,400m^3 including oversize fraction
Processed organics	Stockpiles near loading area (external)	No limit; total tonnes on site cannot exceed 10,000t
Residual (waste)	Bunkers in the receival hall	6-7 tonnes

3.3 Plant and equipment

The existing plant and equipment at the site for each of the processing stages is summarised in Table 3-3.

Table 3-3: Existing plant and equipment for each stage of operation at the Site

Stage	Plant and equipment
Weighbridge, acceptance and receival	• Weighbridge • Front-end loader
Processing	• Manual picking station • Slow speed shredder
Composting tunnels	• Probes and monitors • Front-end loader • Fans
Maturation	• Compost turner (Mulchmuster) • Film removal wind sifter • Trommel • Front-end loader
Loading of finished compost	• Front-end loader • Truck and dog
Disposal of non-recyclable residual waste	• Local site truck

3.4 Hours of operation

The site currently holds the hours of operation for receival, processing, and dispatch as summarised in Table 3-4. Equipment and plant maintenance is able to be carried out while the facility is operating and occurs in accordance with Re.Grow's asset management plan.

Table 3-4: Current hours of operation

Processing Facility	Type of Activity	Hours of Operation	Days of Operation
FOGO facility	Receipt of incoming material Processing of material Dispatch of material	Between 7:30am and 4pm, both internal and external	Monday to Friday
FOGO facility	Receipt of incoming material Processing of material Dispatch of material	Between 8am and 4pm, both internal and external	Saturday, Sunday, and Public Holidays (excluding Good Friday and Christmas Day)
DRWDD	Weighbridge	7:30am – 4:00pm	Monday to Friday
DRWDD	Weighbridge	8:00am – 4:00pm	Saturday, Sunday, and Public Holidays (excluding Good Friday and Christmas Day)

3.5 Employment

The site currently employs five staff for one shift per day.

4 Description of the Proposed Modification

4.1 Construction and installation

Under this Modification Proposal, no construction works are proposed at the site. Similarly, there is no requirement for additional equipment or plant and as such, no installation works are proposed at the site. No changes are proposed to the built form of the facility.

4.2 Operations

The operation at the site would largely remain the same, utilising the same equipment with material undergoing the same process (refer to Section 3).

4.2.1 Hours of operation

To allow for sufficient processing utilising existing plant and equipment at the site, Re.Group proposes to extend the hours of operation of the FOGO processing facility as shown in Table 4-1.

Table 4-1: Proposed hours of operation (FOGO processing facility only)

Type of Activity	Hours of Operation	Days of Operation
Receipt of incoming material Processing of material Dispatch of material	External operations: 7am to 6pm Internal operations: 6am to 6pm	Monday to Friday
Receipt of incoming material Processing of material Dispatch of material	External operations: 7am to 4pm Internal operations: 6am to 6pm	Saturday, Sunday, and Public Holidays (excluding Good Friday and Christmas Day)

No changes to hours of operation for the weighbridge, landfill, disposal depot or Reviva tip shop are proposed; these are owned and operated by Council.

4.2.2 Activity at the Site

Extending the hours of operation internally at the site would allow operators to use this time to process new incoming FOGO material. This involves decontaminating, shredding, and loading material into the enclosed composting tunnels.

Extending the hours of operation externally at the site would allow:

- **Tunnel downloads**: This gives operators a greater opportunity to remove all materials from composting tunnels and frees up a tunnel for new pre-processed material. By completing a full download during extended hours of operation, a new batch of pre-processed organic material gains an additional eight hours of composting while the facility is not operating between 6pm and 6am. This task would occur where a tunnel download is not able to be completed during normal operating hours. This task is usually performed between 7am and 8am, and 3:30pm and 6pm as it avoids potential traffic conflicts with trucks manoeuvring within the Site.
- **Refining of material**: Oversized material is removed from piles using a loader and a trommel. As mentioned in section 3, oversized material can be reprocessed through the shredding and composting processes. This is the main task to be performed during the extended external hours of operation.

- **Turning of material**: Additional turning of maturing piles allows for a greater quality of compost to be produced, as it further improves aeration that allows aerobic bacteria to further break down organic matter. Significantly, additional turning is pivotal in mitigating odour issues. Turning would be done by a Mulchmuster and loader.

A Best Management Practice Implementation Plan (BMPIP) has been developed by Jackson Environment and Planning, to set out the proposed infrastructure and performance measures that will be implemented at the site. Under this plan, composting operations at the site will be optimised to produce a higher quality compost output, manage oversize fractions of organic material, and comply with the Pollution Reduction Program set by the NSW EPA. This proposal to increase the hours of operation at the site will allow Re.Group to achieve the performance measures in the BMPIP. This Plan is available in Appendix E.

4.2.3 Other operations

The table below summarises the other aspects of site operation and how the Modification Proposal would impact.

Table 4-2: Other operation aspects under the Modification Proposal

Aspect of operations	Proposed change
Processing capacity	The processing capacity for the site is not proposed to change.
Truck numbers	The number of trucks dropping off material and offloading material from the site would not change under this proposal. The timing of truck entry and exit from the site is subject to the hours of operation of the weighbridge, which are: • 7:30 am to 4:00 pm Monday to Friday • 8:00 am to 4:00 pm Saturday, Sunday and Public Holidays (excluding Christmas Day and Good Friday) The hours of operation of the weighbridge, which is operated by Council, will not change under this modification. Therefore, the number and distribution of trucks entering and exiting the site will not change.
Storage of received unprocessed organics material	The location, size, and volume of existing unprocessed organics storage areas would not change under the Modification Proposal.
Volumes of finished product	The volume of finished product would not change under the Modification.
Storage of finished product	The location, size, and volume of existing storage areas would not change under the Modification Proposal.
Employment	No additional shifts or staff are required under this proposal. Employment levels and number of shifts at the site would not change under this proposal.

4.3 Cost of works

As there is no proposed construction or installation works required, and no additional plant or equipment required, the cost of works for the Modification Proposal is $0.

4.4 Proposed Conditions of Consent

The recommended Conditions of Consent are provided in Appendix A.

5 Proposal need and strategic justification

It is evident that FOGO is a significant piece in Council's waste management and resource recovery puzzle, with Council successfully securing grants in 2021-22 from the EPA to increase the proportion of food waste put into the green bin rather than disposed to landfill. Council has rolled out the Scrap Together FOGO education program in 2022-23 which included providing more than 30,000 compostable caddy liners to households to encourage FOGO collection. The site is at the heart of Council's FOGO efforts and serves as a critical component of the region's waste management system, receiving and processing domestic municipal FOGO and self-haul garden waste from the LGA into a finished compost product.

Effective management of composting operations at the site allows municipal and state waste reduction targets to be achieved, ensures ongoing public confidence in recycling and waste reduction initiatives. Through composting activities at the site, Council is able to prevent organics from being disposed to landfill where these materials would otherwise decompose anaerobically, generating greenhouse gases.

By extending the hours of operation for the site, Re.Group will be able to produce a higher-quality compost product and roll-out operational improvements, which would both allow for stockpiles to be reduced expeditiously as well as accommodate for periodic restrictions to windrow turning due to inappropriate weather conditions.

5.1 Options analysis

5.1.1 No change to hours of operation at the Site ('Do-Nothing')

Maintaining Business as Usual (BAU), under the existing hours of operation would not provide the opportunity to improve efficiency at the site. The quality of the produced compost would remain the same as the site staff would have limited time for effective stockpile management and to turn and monitor maturation piles. During heavy rainfall events, this would exacerbate the issues relating to odour as overly moist piles are more prone to anaerobic activity, which produces ammonia and other odorous compounds.

BAU has been deemed an undesirable outcome for the site, given the recent consultation with the EPA and the concerns surrounding stockpile management, environmental performance, and odour emissions. These risks can be mitigated through the more efficient processing of organics material at the site, which is enabled by extending hours of operation.

Re.Group have effectively reduced the volume of material stored on the maturation pad, in compliance with direction by the NSW EPA. This however, represents a shift in BAU and it is not a sustainable long-term solution for the region and Council's ongoing domestic collection services of FOGO. The site needs to be able maximise its processing and maturation capacity in order to manage current domestic FOGO generation for the LGA.

5.1.2 Increase hours of operation at the Site

Increasing the hours of operation at the site allows for more efficient processing – it permits operators more time to perform tunnel downloads, refinement of material, and turning of material on the maturation pad. More detail on these activities is available in section 4.2.2.

Currently the site is able to meet the FOGO generation trends of the LGA, albeit is restricted by operating hours that result in inefficiencies – such as only being able to partially download a composting tunnel in one day. This results in the loss of overnight hours to compost the next batch of organic material, and as a whole the site would operate below efficiency and performance measures as set out in the BPIMP. Compost products from the site would be of better quality, as increased pile turning allows for greater aeration and

aerobic microbe breakdown of organic matter. Importantly, increased pile turning mitigates odour issues at the site, as it prevents anaerobic activity within piles.

Extending hours of operation also permit Re.Group to more effectively manage and mitigate amenity risk.

6 Statutory context

The following sections consider the legislation and plans relevant to the Modification Proposal.

6.1 Environmental Planning and Assessment Act 1979

The pathway of the Modification Proposal is subject to the EP&A Act Section 4.55. As the Proposal involves an operational change that would result in an environmental impact that is more than a 'minimal environmental impact', EP&A Act Section 4.55(2) would apply to the modification application.
Table 6-2 provides a summary of how the Modification Proposal conforms with the requirements of Section 4.55 of the EP&A Act (as well as Section 4.15 of the EP&A Act). Further detail appraising the Modification Proposal as substantially the same development is provided in Table 6-1. Notably, the Modification Proposal is considered to be substantially the same development as the development for which the consent was originally granted as:

- The essence of the development – the structures, activities, and equipment – remains a FOGO composting facility. The proposal does not include any increase of tonnes received or processed, nor does it involve an intensification of operations. The proposal is to run the same processes as current operation, more efficiently for slightly extended hours if approved.
- The 'substantially the same' test relates to the impacts of a modification, particularly impacts on neighbours and the general public outside of the property. The modification would result in negligible offsite impacts (refer to Section 8).
- The Modification Proposal is consistent with existing activities and processes on site and is considered 'substantially the same' development in accordance with Section 4.55(2) of the EP&A Act.

Table 6-1: Comparative analysis - 'substantially the same development'

Characteristic	Modification Proposal	Substantially the same?
Development size, scale, and footprint	There would be no changes to the site footprint or layout under this Proposal.	✓
Intensity including rates of production	The Modification Proposal would not seek to increase the tonnes per annum of organic waste received or processed. The processes and activities undertaken at the site would not change under the Modification Proposal.	✓
Primary, secondary, and ancillary use	No secondary or ancillary uses are proposed as part of the Modification Proposal	✓
Project life and hours of operation	Minor changes to the operational hours of the site are proposed as part of the Modification Proposal. The project life would not change under the Modification Proposal.	✓
Extent, duration, and severity of impacts	Environmental impacts associated with the Modification Proposal are outlined in Section 8 and have been found to be minor in nature.	✓

An assessment of the permissibility of the Modification Proposal against the requirements of the EP&A Act as described above is presented in Table 6-2.

Table 6-2: Assessment of the Modification Proposal against the requirements of the EP&A Act

Clause	Requirement	Applicability to the Modification Proposal
Section 4.55(2) Other modifications A consent authority may, on application being made by the applicant or any other person entitled to act on a consent granted by the consent authority and subject to and in accordance with the regulations, modify the consent if—		
(a)	it is satisfied that the development to which the consent as modified relates is substantially the same development as the development for which consent was originally granted and before that consent as originally granted was modified (if at all), and	While the Modification Proposal involves some change, the development as modified would be 'essentially or materially' the same and would have 'the same essence' as the approved development. Table 6-1 provides a comparative assessment of whether the development as modified meets the substantially the same development test, based on Department of Planning and Environment (DPE) guidance and legal precedent. Considered as a whole, the Modification Proposal would not alter the essential characteristics or substance of the approved development. The site would remain a resource recovery facility with the same characteristics as the approved operations. In this context the development to which consent as modified relates is considered substantially the same development as that currently approved.
(b)	it has consulted with the relevant Minister, public authority or approval body (within the meaning of Division 4.8) in respect of a condition imposed as a requirement of a concurrence to the consent or in accordance with the general terms of an approval proposed to be granted by the approval body and that Minister, authority or body has not, within 21 days after being consulted, objected to the modification of that consent, and	A discussion of consultation with relevant stakeholders is provided in Section 7.
(c)	it has notified the application in accordance with— i. the regulations, if the regulations so require, or ii. a development control plan, if the consent authority is a council that has made a development control plan that requires the notification or advertising of applications for modification of a development consent, and	The regulations have been considered within the environmental assessment as required. Assessment against the Development Control Plan (DCP) for Shellharbour is provided in Table 6-3
(d)	it has considered any submissions made concerning the proposed modification within the period prescribed by the regulations or provided by the development control plan, as the case may be.	Council may publish this Modification Proposal and accompanying plans and documents. Any submissions received by authorities, stakeholders, and members of the public will be responded to by Re.Group.

Clause	Requirement	Applicability to the Modification Proposal
Section 4.15(1)		
(a)	The provision of	
(i)	any environmental planning instrument, and	Consideration of the Modification Proposal against the Shellharbour Local Environment Plan (LEP) (2013) has been provided in Table 6-3. Consideration of the Modification Proposal against the Planning Systems State Environmental Planning Policy 2021 (Planning Systems SEPP) has been provided in Section 5.
(ii)	any proposed instrument that is or has been the subject of public consultation under this Act and that has been notified to the consent authority (unless the Planning Secretary has notified the consent authority that the making of the proposed instrument has been deferred indefinitely or has not been approved), and	
(iii)	any development control plan, and	
(iii a)	any planning agreement that has been entered into under section 7.4, or any draft planning agreement that a developer has offered to enter into under section 7.4, and	The site is not subject to any voluntary planning agreements.
(iv)	The regulations (to the extent that they prescribe matters for the purposes of this paragraph)	The regulations have been considered within the environmental assessment as required.
(b)	the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality,	The likely impacts of the Modification Proposal have been detailed in Section 8.
(c)	the suitability of the site for the development,	The site is considered suitable for the proposed development as it is located on an existing waste facility and is already operating as a FOGO processing facility. The site is located on land zoned RU1 Primary, which permits use of the land as a waste facility under Division 23, Part 3 of the Transport and Infrastructure State Environment Planning Policy. There are no environmental constraints that preclude the Modification Proposal.
(d)	any submissions made in accordance with this Act or the regulations,	Council will consider any planning issues raised in submissions as part of the assessment of the application. Submissions raised by the public or authorities would be addressed by Re.Group if required.
(e)	the public interest.	The Modification Proposal is considered to be in the public interest as it supports the ongoing and effective management of waste and resource recovery in NSW. The

Clause	Requirement	Applicability to the Modification Proposal
		Modification Proposal enables Re.Group to manage the site in accordance with the requirements set out by the NSW EPA, while also improving the quality of its compost product output.

6.2 Other relevant legislation

A summary of the federal, State and local Government legislation which are relevant to the Modification Proposal are summarised in Table 6-3.

Table 6-3: Legislation applicable to the Modification Proposal

Legislation	Associated Environmental Concerns	Approval or Assessment Requirement
Federal		
Environment Protection and Biodiversity Conservation Act (EPBC Act) 1999	Impacts to Matters of National Environmental Significance (MNES), particularly disturbance to listed threatened species, ecological communities and/or migratory species, and impact(s) on Commonwealth land.	The site is predominantly hardstand with a historical waste-related land use since the early 1970s. Given the relatively minor nature of the Modification Proposal, it would not result in impacts to MNES.
State		
Environmental Planning and Assessment Act (EP&A Act) 1979 *EP&A Regulation 2021* *State Environmental Planning Policy (Planning Systems) 2021* *State Environmental Planning Policy (Transport and Infrastructure) 2021*	Planning approval pathway determination and any potential impacts on the environment.	Under Division 23 of the Transport and Infrastructure SEPP, RU1 zoned land is considered a *prescribed zone* and resource recovery land use is permitted with consent. Modification to the Current Approval is sought under s4.55(2) of the EP&A Act. The Modification Proposal is considered 'substantially the same development' for which consent was originally granted' as defined under s4.55(2) of the EP&A Act. An assessment against s4.55(2) of the EP&A Act is detailed in Table 6-1 and Table 6-2.
Protection of the Environment Operations Act (POEO Act) 1997	Impacts of the operation of the Modification Proposal relating to air quality, noise emissions, and traffic movements.	EPL (12903) was issued for the premises 44 Buckleys Road, Dunmore under s55 of the POEO Act. The EPL allows composting activities to take place on site as a scheduled activity with a limit of 50,000 tpa. The EPL also stipulates the hours of operation for the site. The Modification Proposal includes an extension to hours of operation, in addition to those conditioned in the EPL. Therefore, a modification to the EPL will be required to allow a change to hours of operation. This will be sought following approval of the Modification Application.
National Parks and Wildlife Act (NPW Act) 1974	Disturbance of any objects or places of Aboriginal heritage significance.	The site is already developed and located in an existing waste facility, and no earthworks are proposed. The Modification Proposal is entirely operational, with no proposed physical works. Therefore, disturbance to objects or places of Aboriginal heritage is considered unlikely.

Legislation	Associated Environmental Concerns	Approval or Assessment Requirement
Biodiversity Act 2016 *Biosecurity Act 2015* *Fisheries Management Act 1994*	Disturbance to listed threatened species and ecological communities. Spread and impact of weeds. Disturbance to aquatic flora and fauna.	The changes proposed relate to hours of operation. No excavation or disturbance to ground/soils is required and no changes to existing landscaping are proposed. There are no anticipated impacts to ecological communities or listed threatened species as a result of this Proposal. The Modification Proposal would not result in any disturbance to aquatic flora and fauna.
Water Act 1912 *Water Management Act 2000*	Disturbance of groundwater aquifers, impacts to flooding behaviour and/or water quality of surrounding water bodies.	The Modification Proposal would not result in any impacts to nearby waterways.
Roads Act 1993	Impacts on the construction and/or operation of the Proposal on traffic flows and works to public and private roads.	The Modification Proposal would not result in any increase of trucks or other vehicles entering, exiting, and manoeuvring around the site. The DRWDD weighbridge hours of operation would not change under this proposal, and the timing and distribution of truck movements at the site or on nearby roads would not change.
Heritage Act 1977	Disturbance to any object that is of state or local heritage significance	No excavation or disturbance to ground/soils is required. Disturbance to objects or places of non-Aboriginal heritage is considered unlikely.
Waste Avoidance and Resource Recovery Act (WARR Act) 2001 *Protection of the Environment Operations (Waste) Regulation 2014*	Waste management and potential opportunities for diversion of waste from landfill.	The Modification Proposal does not include any demolition works or vegetation clearance. The volume of organic material received at the site would not change from existing limits as stated in the development consent and EPL. The volume of contamination in received organics waste loads is not anticipated to change. The residual waste generated from decontaminating organics loads is not expected to increase, and management of this waste would not change from existing operations. This residual waste material would be transferred to a suitably licenced landfill for disposal.
Rural Fires Act 1997	Bushfire management/prevention and ensuring the site is suitably protected from the threat of bushfires.	The site is partially located on land mapped as Vegetation Buffer. This largely relates to the maturation pad and evaporation pond on the southern portion of the site.

Legislation	Associated Environmental Concerns	Approval or Assessment Requirement
		The Modification Proposal would not increase the risk of bushfire from site activities, nor would it increase the vulnerability of the site to bushfire. As such, further assessment or approval as part of the *Rural Fires Act 1997* is not considered necessary for this modification.
State Environmental Planning Policy No. 33 – Hazardous and Offensive Development (SEPP 33)	Management of hazardous and dangerous goods.	Hazard and risk are assessed in Section 8.3 of this report. In-vessel composting is considered a relatively low risk operation in terms of fire. Increasing the hours of operation is not expected to increase the risk of fire from the site. Stockpiles of material would be more closely managed with an increase in hours of operation, and the risk of spontaneous combustion of composting or maturing material would decrease. The site does not store large quantities of potentially hazardous materials. Fuel storage and automotive oils are stored within the site for the purpose of fuelling and maintaining plant (such as FEL and compost turners). The quantities and handling of these materials would not increase or change as a result of this Modification Proposal.
State Environmental Planning Policy No. 64 – Advertising and Signage (SEPP 64)	Location and design of the signage and impact on the surrounding visual environment.	The Modification Proposal does not propose changes to signage at the site.
Local		
Shellharbour Local Environmental Plan (Shellharbour LEP) 2013	Impact on the environment and the built form of the Shellharbour Local Government Area	The site is located on land zoned RU1 – Primary Production in the Shellharbour LEP (refer to Figure 6-1). As there are no changes to the existing structures, there is no further assessment required against the principal development standards of the LEP.
Shellharbour Development Control Plan (Shellharbour DCP) 2013	Impact on the environment and the built form of the Shellharbour Local Government Area	As there are no changes to the existing buildings, there is no further assessment required against the DCP.

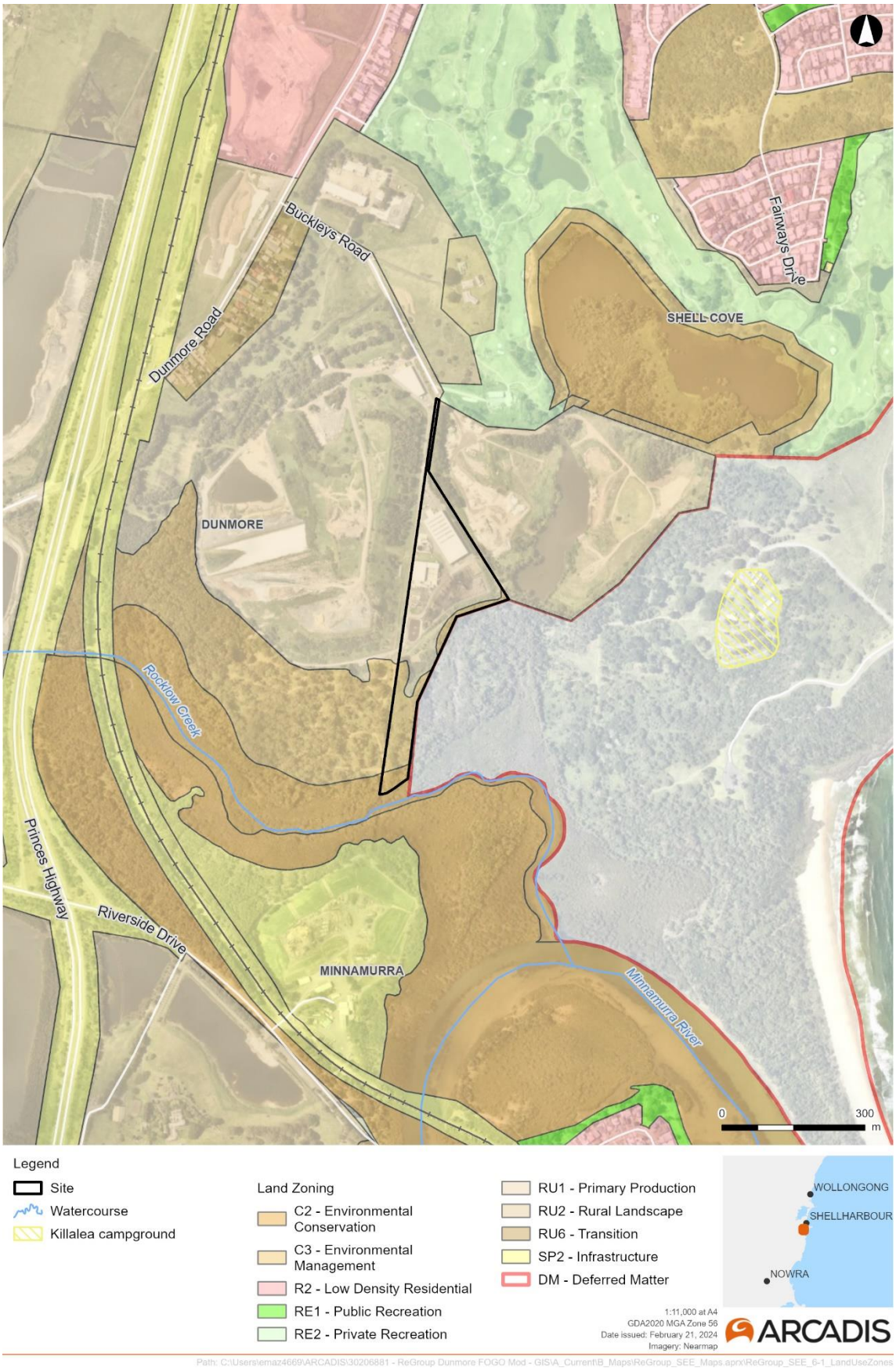

Figure 6-1: Land zones of site and surrounding area

7 Consultation

7.1.1 Shellharbour Council

A formal pre-lodgement meeting with Council occurred on 28 February 2024 with members of Council's planning and development team. Following this meeting, Council provided written comments on the Proposal (refer to Appendix B) and requested the items detailed in Table 7-1 to be included in the SEE.

Table 7-1: Key requirements to be included within the SEE as requested by Council

Matter	Key Requirements	Comment	Location within SEE
Town planning	A modification statement is required to be submitted with the application that fully describes the modification and assesses it against all relevant environmental planning instruments, development control plans and policies applicable to the site and development. These include (but may not be strictly limited to): • State Environmental Planning Policy (Planning Systems) 2021. • State Environmental Planning Policy (Resilience and Hazards) 2021. • State Environmental Planning Policy (Transport and Infrastructure) 2021. • Shellharbour Local Environmental Plan 2013 • Shellharbour Development Control Plan	An assessment of the modification proposal against relevant legislation, regulations and guidelines has been prepared as part of this report.	Section 5 Table 6-3
	The modification statement is to provide a detailed table that clearly sets out how the modified development is substantially the same development as the development for which consent was originally granted and before that consent as originally granted was modified (if at all) as per the EP&A Act section 2.55 (2) (a).	An assessment of the proposal against the 'substantially the same' criteria has been prepared as part of this report.	Section 5 Table 6-1
Noise	In accordance with the Noise Policy for Industry 2017 the additional hours proposed to operations are noted to bring the operation into the night time noise criteria (10 pm – 7 am). These night time criteria sets a lower noise level and is more onerous to comply with. It would considered more appropriate to avoid the night time period given the proximity of sensitive noise receivers from the facility. A detailed acoustic assessment is required to support the modification which provides details of the existing noise impacts of the facility and the proposed impact of the increased operating hours. The report also needs to: separate internal and external noise impacts so Council can clearly differentiate between the two, and	SoundIN consulting has prepared a Noise Impact Assessment to consider the acoustic impacts of the proposal.	Section 8.1 Appendix D

Matter	Key Requirements	Comment	Location within SEE
	provide discussion regarding noise level acceptability against industry standards and recommendations to reduce noise levels as necessary.		
Increased truck movements	It is understood that there will be no additional truck movements and the weighbridge will be closed at 4.30 so no change to existing operations. Please ensure this is demonstrated clearly in the supporting documentation.	No additional trucks movements will be required under this proposed modification.	Section 4.2
Odour control and impact	Whilst it is understood that increased turning of the material will ultimately reduce odour, Council is aware that there has been an increased number of complaints regarding odour this summer. It is acknowledged that there are various factors that affect the dispersion of odour, however it is understood that there are a variety of ways that the stockpiles can be managed to reduce the odour impact which are currently not being followed.	Re.Group acknowledge that odour complaints have been received over a short period of time in December 2023 and January 2024. Assessment of the proposed modification by SLR Consulting has however concluded that odour impacts can be suitably managed through existing odour controls implemented at the site.	Section 8.2 Appendix C
	Council requires that all recommendations and requirements from the Environmental Protection Agency relating processing of FOGO waste is followed to ensure that odour is kept to a minimum.	Re.Group have engaged Jackson Environmental Partners (JEP) to prepare a Best Management Practice Implementation Plan to manage the flow of organic material through the site to minimise potential impacts to amenity, while complying with the NSW EPA PRP.	Appendix E
	It is recommended that an initial modification to increase operating hours is submitted for internal operations only (minimal increased impacts likely) and once management of the site is seen to be improving in line with the requirements of the EPA then a second modification can then be considered to increase the external operating hours, if necessary.	Re.Group acknowledge Council's suggestion and concerns relating to extending operating hours at the site. Consultation with subject matter experts has however provided suitable measures to extend operating hours as described in Section 4 and Appendix E.	Section 4 Appendix E
	The modification application as proposed would need to be supported by a report from a suitably qualified person to indicate the current odour impacts of the way the stockpile is managed and how that complies with the existing consent and EPA licence. The report will also need to include the additional odour impact of the new management of the stockpile and increased hours and consideration if these levels are acceptable against industry standards and recommendations to improve odour levels.	SLR Consulting have prepared an odour assessment to consider the impacts of the modification proposal on neighbouring residents. Stockpile management, in line with the PRP and conditions of consent, will be managed under the JEP Best Management Practice Implementation Plan.	Section 8.2 Appendix C Appendix E

8 Environmental assessment

Following consultation with the NSW EPA and Shellharbour Council, Re.Group acknowledge that noise and odour impacts that may arise from extended hours of operation require assessment. Technical assessments of these environmental factors have been carried out by subject matter experts, which are summarised in section 8.1 and 8.2. Consideration of other matters relating to the proposed modification is provided in section 8.3.

8.1 Noise

The pre-lodgement meeting with Council identified the need for a noise assessment to reflect any additional impacts to noise and vibration caused by an extension of hour of operation as described in Section 4.

The pre-lodgement comments from Council included the following remarks regarding noise at the site:

> *In accordance with the Noise Policy for Industry 2017 the additional hours proposed to operations are noted to bring the operation into the night time noise criteria (10 pm – 7 am). These night time criteria sets a lower noise level and is more onerous to comply with. It would considered more appropriate to avoid the night time period given the proximity of sensitive noise receivers from the facility.*
>
> *A detailed acoustic assessment is required to support the modification which provides details of the existing noise impacts of the facility and the proposed impact of the increased operating hours. The report also needs to:*
>
> *i separate internal and external noise impacts so Council can clearly differentiate between the two, and*
>
> *ii provide discussion regarding noise level acceptability against industry standards and recommendations to reduce noise levels as necessary.*

A noise impact assessment (NIA) has been prepared for the Modification Proposal by SoundIN in February 2024. As there are no significant sources of vibration associated with the facility, vibration impacts were not assessed in this assessment. The following sections have been summarised from the NIA, which is available in Appendix C.

8.1.1 Methodology

The NIA was prepared in accordance with the NSW Noise Policy for Industry (NPfI) 2017 (NSW EPA).

Site visit

A site visit was conducted on 11 December 2023 to identify major noise sources associated with the operation of the FOGO facility.

Sensitive receiver identification

The NIA identified nearby sensitive receivers, as described in Table 8-1 and shown in Figure 8-1.

Table 8-1: Noise assessment sensitive receivers

Receiver ID	Description	Distance[1]	Direction
R1	Dunmore Road residences	590 m	Northwest
R2	Residences at 21 Buckleys Road	550 m	North
R3	Augusta Parkway residences	890 m	Northeast
R4	Killalea Campground	530 m	East

[1] Distance measured from pre-treatment building to nearest receiver.

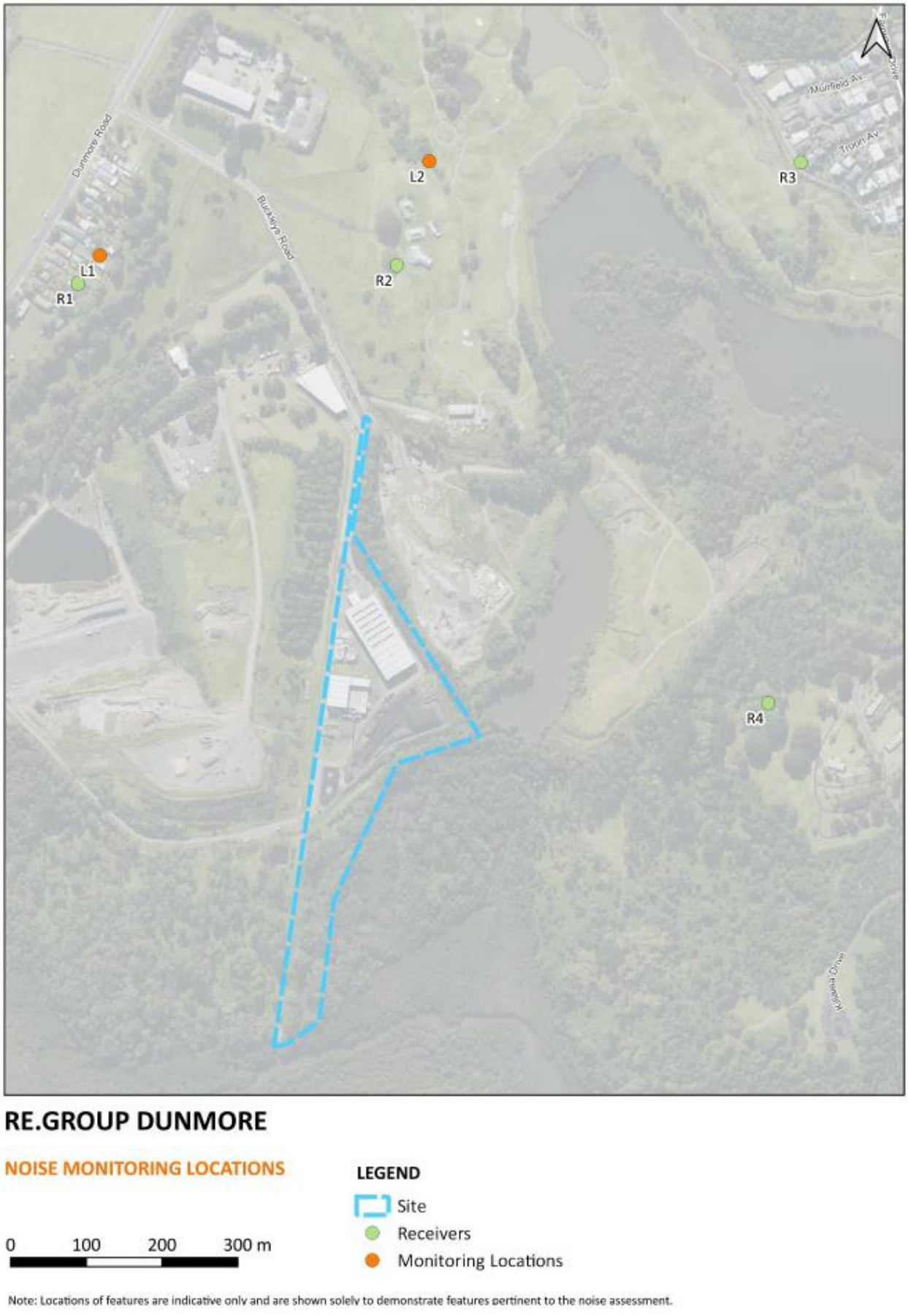

Figure 8-1: Location of sensitive receivers and noise monitoring locations (source: SoundIN Noise Impact Assessment no. 17247, April 2024)

Background noise monitoring

Unattended noise monitoring was conducted between Friday the 8th and Tuesday the 19th of December 2023. Monitoring was conducted at 33 Dunmore Road (L1) and 21 Buckleys Road (L2). Location L1 is considered representative of residences along Dunmore Road (subject to noise from Princes Highway), and location L2 is considered representative of residences further east (set back from Princes Highway).

From the background noise levels (LA90) the Rating Background Levels (RBLs) were determined using the methodology recommended in the NPfI and are presented in Table 8-2 and shown in Figure 8-1.

Table 8-2: Rating background levels (RBL), dBA

Monitoring location	Morning shoulder (6am – 7am)	Day (7am – 6pm)	Evening (6pm – 10pm)	Night (10pm – 6am)
33 Dunmore Road (L1)	44	42	41	33
21 Buckleys Road (L2)	39	38	37	35

The current development consent (DA523/2014) does not define a shoulder period for the site. To comply with the NPfI, a shoulder period between 6am and 7am has been defined. As shown in Table 8-2, the RBLs calculated for the morning shoulder period are slightly higher than the daytime RBLs at both monitoring locations.

These higher RBL in the morning shoulder period would lead to higher (i.e. less stringent) noise criteria in the morning shoulder period than during the remainder of the daytime period. For simplicity of assessment, rather than defining a morning shoulder period, a conservative approach has been taken where the daytime assessment period is taken to begin at 6am.

Project Intrusiveness Noise Level

The intrusiveness noise level is the noise level 5 dBA above the RBL for each time period (daytime, evening or night time) of interest at a residential receiver. The RBL is derived from the measured LA90 noise levels.

The NPfI stipulates that project intrusiveness noise levels should not be set below 40 dBA during the daytime and 35 dBA in the evening and night time. Additionally, the NPfI recommends that the project intrusiveness noise level for evening is set at no greater than that for the daytime, and that the project intrusiveness level for night time is set at no greater than that for the evening and daytime.

The project intrusiveness noise levels for the Modification Proposal are summarised in Table 8-3.

Table 8-3: Project intrusiveness noise level

Receiver	Time of day (day = 6am to 6pm)	RBL (dBA)	Project intrusiveness noise level – $L_{Aeq,\ 15\ min}$ (dBA)
R1	Day	42	47
R2, R3	Day	38	43

Project amenity noise levels

Project amenity noise levels aim to set a limit on continuing increases in noise levels from all industrial noise sources affecting a variety of receiver types. This serves to ensure that the ambient noise level in an area from all industrial noise sources remains below recommended amenity noise levels.

To prevent increases in industrial noise due to the cumulative effect of several developments, the project amenity noise level for each new source of industrial noise is set at 5 dBA below the recommended amenity noise level.

Residential receivers near the Modification Proposal are classified as being in a “suburban” noise amenity area. Recommended amenity noise levels for holiday accommodation and permanent resident caravan parks have been applied to the Killalea Campground.

The project amenity noise levels defined in Table 8-4.

Table 8-4: Project amenity noise levels

Receiver	Time of day (day = 6am to 6pm)	Recommended amenity noise level – $L_{Aeq, period}$ (dBA)	Project amenity noise level – $L_{Aeq, 15min}$ (dBA)
R1, R2, R3	Day	55	53
R4	Day	60	58

Project noise trigger levels

The Project Noise Trigger Levels (PNTLs) are the lower values of the project intrusiveness noise levels and the project amenity noise levels and are shown in bold in Table 8-5.

Table 8-5: Project noise trigger levels

Receiver	Time of day (day = 6am to 6pm)	Project intrusiveness noise level – $L_{Aeq, 15min}$ (dBA)	Project amenity noise level – $L_{Aeq, 15min}$ (dBA)
R1	Day	**47**	53
R2, R3	Day	**43**	53
R4	Day	-	**58**

Noise model

A noise model was developed for the site using SoundPLAN v8.2, using the CONCAWE prediction algorithm. The CONCAWE noise propagation model is used around the world and is widely accepted as an appropriate model for predicting noise over significant distances. Factors addressed in the noise modelling are:

- Equipment noise level emissions and locations
- Shielding from structures
- Noise attenuation due to geometric spreading
- Meteorological conditions
- Ground absorption

- Atmospheric absorption.

Meteorological effects

In accordance with the NPfI, the following default conditions have been modelled to account for potential noise-enhancing meteorology:

- Stability category F with 2.0 m/s source-to-receiver winds during the early morning (i.e. during internal operations).
- Stability category D with 3.0 m/s source-to-receiver winds during the remainder of the daytime period (i.e. for all operations)

The SoundPLAN noise modelling software includes a feature that allows the model to be run with the "worst-case wind direction". This option produces the highest noise level for each receiver due to noise-enhancing winds and has been used in the modelling.

Operational noise sources

The major operational noise sources are presented in Table 8-6 as well as their continuous sound power levels (SWL), based on attended noise measurements.

Table 8-6: Measured noise sources

Source	Continuous SWL (dBA)
Front end loader	107
Biofilter blower motor	98
Trommel	100
Trommel dust collector	109
Mulchmaster	105
Pre-treatment building	95
Truck – idling	95
Truck – moving	103

8.1.2 Impact assessment

Two operational scenarios have been developed for assessment purposes, representing "internal operations" only and "all operations".

- During the "internal operations" scenario, the pre-treatment building is operational along with the biofilter blower motor, which is located outside, on the southern side of the pre-treatment building.
- During the "all operations" scenario, all sources identified in Table 8-6 are operating simultaneously.

This is a conservative modelling approach since it would be unlikely that all mobile plant on the site would be operating at the same time.

Internal operations scenario

The predicted $L_{Aeq,15min}$ noise levels at nearby residential receivers associated with internal operations are presented in Table 8-7.

Table 8-7: Predicted $L_{Aeq,15min}$ Noise Levels – Internal Operations

	Predicted Noise Level (dBA)		PNTL (dBA)	Complies?
Receiver	Calm	Noise enhancing		
R1	<20	<20	47	Yes
R2	26	30	43	Yes
R3	<20	23	43	Yes
R4	28	32	58	Yes

The results in Table 8-7 indicate that worst-case $L_{Aeq,15min}$ noise levels associated with internal operations are predicted to comply with the PNTL at all nearby residential receivers.

All operations scenario

The predicted $L_{Aeq,15min}$ noise levels at nearby residential receivers associated with all operations are presented in Table 8-8.

Table 8-8: Predicted $L_{Aeq,15min}$ Noise Levels – All Operations

	Predicted Noise Level (dBA)		PNTL (dBA)	Complies?
Receiver	Calm	Noise enhancing		
R1	30	35	47	Yes
R2	39	43	43	Yes
R3	34	39	43	Yes
R4	42	47	58	Yes

The results in Table 8-8 indicate that worst-case $L_{Aeq,15min}$ noise levels associated with all operations are predicted comply with the PNTL at all nearby residential receivers.

8.1.3 Mitigation measures

No mitigation measures are proposed in addition to existing noise mitigation measures as set out in the site conditions of consent.

8.2 Odour

A pre-lodgement meeting with Council, held on the 28 February 2024, identified concerns held by Council about odour emissions from site operation.

The pre-lodgement comments from Council included the following remarks regarding odour at the site:

> *Whilst it is understood that increased turning of the material will ultimately reduce odour, Council is aware that there has been an increased number of complaints regarding odour this summer. It is acknowledged that there are various factors that affect the dispersion of odour, however it is understood that there are a variety of ways that the stockpiles can be managed to reduce the odour impact which are currently not being followed.*
>
> *Council requires that all recommendations and requirements from the Environmental Protection Agency relating processing of FOGO waste is followed to ensure that odour is kept to a minimum.*
>
> *It is recommended that an initial modification to increase operating hours is submitted for internal operations only (minimal increased impacts likely) and once management of the site is seen to be improving in lie with the requirements of the EPA then a second modification can then be considered to increase the external operating hours, if necessary.*
>
> *The modification application as proposed would need to be supported by a report from a suitably qualified person to indicate the current odour impacts of the way the stockpile is managed and how that complies with the existing consent and EPA licence. The report will also need to include the additional odour impact of the new management of the stockpile and increased hours and consideration if these levels are acceptable against industry standards and recommendations to improve odour levels.*

To assess the potential impacts generated by the Modification Proposal an odour assessment (OA) was prepared by SLR Consulting in June 2024. The following sections have been summarised from the OA, which is available in Appendix C.

8.2.1 Methodology

The OA prepared for this Modification Proposal involved the following assessments:

- Review of existing odour audits and air quality impact assessments, and
- Qualitative assessment of potential odour impacts arising from the proposal.

The SLR OA considered the following parameters that would influence odour emissions from the site:

- Odour emissions from the biofilter are influenced by airflow rate, temperature, moisture levels, retention time, and the type of biofilter media used.
- Odour emissions from waste composting windrows depend on the feedstock composition, moisture content, temperature, aeration practices, turnover frequency, and the size and design of the composting facility.
- Odour emissions from the transfer station vary based on the type and composition of waste, moisture content, temperature, ventilation effectiveness, handling and storage methods, and the duration of material storage.

8.2.2 Existing environment

Wilkinson Murray Pty Ltd prepared an air quality impact assessment (AQIA) in 2014 for construction and operation of the site. The AQIA included emission modelling using CALPUFF, which models transport and

dispersion of ‘puffs’ of material emission from modelled sources. This assessment found that potential off-site odour impacts were unlikely to exceed relevant assessment criteria at nearby sensitive receivers. Notably, this assessment considers the impact of continuous (24 hours, seven days a week) odour emission from the site in the odour dispersion modelling. The contour plot of this assessment is shown in Figure 8-2.

Figure 8-2: Predicted 99th percentile nose-response average ground level odour concentrations (OU), source: Wilkinson Murray (2014)

Re.Group have previously engaged The Odour Unit to prepare odour audits in June 2022 and April 2024. The June 2022 audit did not detect odour typical of site operation at nearby sensitive receivers. The April 2024 audit detected a “*very weak*” odour of “*compost, fertiliser*” at one location near residential dwellings. This observation was attributed to “*a non-waste-based source at the time originating from local agricultural and/or gardening activities at the time*” (Page 3, Field Ambient Odour Assessment, The Odour Unit, March 2024).

Re.Group acknowledge that a number of odour complaints were received by Council, the EPA, and the site between December 2023 and January 2024.

8.2.3 Impact assessment

The OA considered that there are no proposed changes to the amount and type of organic waste received at the site, as well as type of process under the Modification Proposal. Further, and importantly, as the dispersion modelling was conducted representing the sources as emitting odour emission continuously (i.e., 24 hours a day, seven days a week), an extension of the hours of operations would not have implications on the predicted downwind odour impacts, and the conclusions of the Wilkinson Murray 2014 odour impact assessment are still valid.

8.2.4 Mitigation measures

No mitigation measures are proposed additional to existing odour mitigation measures as set out in the site conditions of consent.

8.3 Other matters

Table 8-9: Summary of assessment of other environmental matters

Environmental aspect	Existing environment	Impact assessment
Traffic, access and parking	Trucks access the site to deliver domestic green waste, transfer general waste (from site operation offices as well as the contaminant fraction of organic waste) to an appropriately licensed facility for disposal, and to offtake finished compost product. Staff largely commute to the site via personal car, with suitable parking provisions for shift changeovers and visitors.	No additional truck movements will be generated under this modification proposal. No additional staff or shifts would be required under this modification proposal. Therefore, traffic, access and parking at the site and in surrounding areas would not change.
Air quality	Dust emissions at the site are managed through misting and spraying of external stockpiles. Vehicle emissions are minor at the site, and largely are due to short truck idling periods during loading and unloading. Plant and equipment such as front end loaders also operate at the site and produce minor amounts of emissions	Dust emissions from the site would continue to be managed through misting of external stockpiles. Vehicle emissions at the site would be minimal, and the number of trucks, plant and equipment, and passenger vehicles at the site would not change.
Waste management	Waste managed by the Site is described in Section 3. The Site currently generates minor volumes of waste (in the form of residual waste separated from organic material, as well as staff office general waste).	The risk of waste management impact is low as there are no construction or demolition works associated with the Modification Proposal. No additional throughput is proposed for the site, and as a result the volume of general waste separated from the organic material as contamination would not increase. An Operational Waste Management Plan for the site will be implemented at all times to mitigate any potential waste impacts.
Water quality	The Site is located on a land parcel dedicated to waste management that consists predominantly of impervious surfaces. There are no watercourses that intersect the Site. All waste processing occurs internally within the Site's buildings and the Site currently has water collection and stormwater management infrastructure in place.	No construction works, or changes to built form, are proposed as part of the Modification Proposal. Consequently, no changes to the current flow regimes or water quality outcomes would be likely to arise as a result of the Modification Proposal. Current water management infrastructure is considered suitable for managing water quality and quantity.
Hazard and risk	The current operations at the Site involve the use of multiple diesel fuelled plant such as front-end loaders and forklifts.	The process of organics composting and maturation at the Site would not change under the Modification Proposal.

Environmental aspect	Existing environment	Impact assessment
	The Site retains a self-bunded diesel fuel tank for refilling of these plant. The Site features a fire detection system including CCTV, heat detection systems and firefighting equipment such as fire hose reels and fire extinguishers.	General waste storage would be in line with existing conditions. The transfer of general waste to the Council landfill would continue to occur on a regular basis. The volume of potentially hazardous liquids at the Site (for example, fuels) would not change under this Proposal.
Biodiversity	The Site is located on a land parcel dedicated to waste management. This is a highly modified environment developed for industrial use and consisting of predominantly impervious surfaces and buildings. Given this highly modified environment, the Site is highly unlikely to provide good quality habitat to flora or fauna. The Site is not located on land identified as Coastal Wetland or Littoral Rainforest under the Resilience and Hazards SEPP (2021).	The risk of encountering biodiversity factors is considered low as the Modification Proposal does not propose any vegetation clearing. Therefore, the Modification Proposal would have no additional impacts to biodiversity at the Site.
Soils and contamination	The Site is located on land identified as Class 3 Acid Sulfate Soil.	The risk of encountering Acid Sulfate Soils is considered negligible as there is no proposed construction or demolition works at the Site. Therefore, the Modification Proposal would have no additional impacts to soils and contamination at the site. Existing controls would be utilised to minimise potential risk of the Site causing contamination (e.g., bunding of the diesel fuel tank).
Heritage	The nearest item of heritage significance to the Site is Killarney Complex, a Victorian farmhouse (item I021 in the Shellharbour LEP), which is located 480 m northeast of the Site.	Given the distance to the nearest heritage item, the risk of impacting items of heritage significance is considered negligible. As no construction works or excavations are proposed it is not considered possible that any unexpected finds would be encountered onsite. Therefore, the Modification Proposal would have no additional impacts to items of heritage.
Socioeconomic impact	The Site currently employs five staff across one shift per day	The Modification Proposal would not result in a change to staffing or number of shifts at the site.
Landscape character and visual amenity	The Site is located within a land parcel dedicated to waste management and consists of buildings and concrete hardstand and is screened from public areas by vegetation.	The risk of impacting landscape character and visual amenity is considered low as the Modification Proposal does not propose to extend the Site's facilities or remove amenity plantings. Therefore, the Modification Proposal would have no additional impacts to landscape and visual amenity.

9 Cumulative impact assessment

The Modification Proposal has been considered in accordance with relevant guidelines, such as the *Cumulative Impact Assessment Guidelines for State Significant Projects* and *Social Impact Assessment Guidelines for State Significant Projects* (NSW DPE, 2021).

9.1 Proposed and approved development

Screening criteria were developed as shown in Table 9-1 and applied to determine whether each project that may have the potential to result in cumulative impact with the project should be included in the cumulative impact assessment.

Table 9-1: Cumulative impacts assessment criteria

Criteria	Triggers
Location A project was considered relevant for consideration where the project met one of the triggers	Direct overlap: construction footprints intersect with the Proposal
	In the area: within one kilometre of the Proposal construction footprint
Timeframe A project was considered relevant where the project met one of the triggers	Concurrent construction programs
	Consecutive construction programs (less than 18 months between the Proposal and the projects' construction programs)
Status A project was considered relevant where the project was at one of the following stages of the statutory assessment and approval process	Approved projects (statutory approvals received), including approved projects that have not started construction, projects currently under construction, and recently completed projects
	Proposed projects (currently under statutory environmental impact assessment which includes where an application has been lodged)
Scale of potential impact A project was considered relevant where the project involved substantial impacts to one or more of the following	• Noise and Vibration • Air Quality • Traffic and Access

The Shellharbour Council Development Tracker, Southern Regional Planning Panel, and NSW Major Projects websites were searched on the 25th of July 2024 to find relevant surrounding projects for this cumulative impact assessment.

Table 9-2: Cumulative Impact Assessment for proposed and approved developments in the local area

Database Searched	Relevant Surrounding Development	Location	Timeframe	Status	Scale of potential impact	Comment
Shellharbour Council DA Register	DA0171/2024 Single storey dwelling – Lot 2 DP 609762, Lot 24 DP 3710 57 Buckleys Road, Dunmore 2529	✓	✓	✓	x	The proposed development is located within one kilometre from the Site. The scale of development is very minor and is unlikely to generate any significant cumulative impacts.
Southern Regional Planning Panel	No relevant projects under assessment or determined in the last 12 months, located within 1 kilometre OR of a potential scale to generate cumulative impacts were noted.					
Major Projects	SSD-57064458 50 and 86 Dunmore Road, Dunmore Construction and operation of a new hospital development including landscaping, internal roads and access, at-grade and multi deck car parking, utility/service connections and supporting infrastructure.	✓	✓	✓	✓	The proposed hospital development is located about 670 metres northwest of the site. The SSD is currently in the assessment stage, with further information requested by the assessment authority. The hospital development, if approved, would generate traffic, air quality, and noise impacts throughout the construction phase. The environmental assessment for this proposed modification concludes that the site would not generate additional noise or air quality impacts during operation, and that traffic numbers and distribution would not change. The proposed modification would not present cumulative impacts to those that may occur as a result of construction or operation of the hospital.
	MP08_0143-Mod-6 Bass Point Quarry Importation of up to 200,000 tpa of waste concrete and other materials to the Bass Point Quarry site for processing as recycled aggregate.	x	x	x	✓	An application to modify the approved volume of received construction waste (in the form of concrete waste) and processing by crushing, into a recycled aggregate product. The location of the quarry is 2.4 kilometres to the northeast of the site.

Database Searched	Relevant Surrounding Development	Location	Timeframe	Status	Scale of potential impact	Comment
						Given the separation distance of the quarry from the site, cumulative traffic and air quality impacts are considered unlikely. Noise generation at the quarry has been assessed to not exceed criteria set out within the Noise Policy for Industry. As a result, cumulative impacts are considered unlikely.

9.2 Neighbouring properties and land uses

Neighbouring properties to the site include:

- Dunmore recycling and waste depot (Council operated waste and recycling facility, including landfill)
- Dunmore resources and recycling (recycling facility)
- Undeveloped dense vegetation part of Dunmore wetlands.

The assessment provided in section 8 conclude that the risk of cumulative environmental impact from the Site under proposal conditions, and the surrounding industrial land uses, are considered low. Therefore, it is concluded that the Modification Proposal would not incur substantial cumulative impacts on neighbouring properties or residential areas.

9.3 Conclusion

Due to the limited environmental impacts of the Modification Proposal, there is a low risk of cumulative impacts on the surrounding land uses and road network.

10 Environmental risk assessment

10.1 Proposal risk assessment

A qualitative risk assessment has been prepared to assess the likelihood and severity of risks that may arise as a result of this Modification Proposal. The assessment considers both the likelihood of a risk occurring, as well as the consequence of the risk should it occur.

Table 10-1: Qualitative Risk Assessment Factors

Rating	Assessment
Likelihood	
1	Unlikely to occur
2	Lower chance of occurrence
3	Medium chance of occurrence
4	Higher chance of occurrence
5	Likely to occur
Consequence	
A	Mild injury or harm, chance of financial loss, or loss of amenity
B	Mild-moderate injury or harm, chance of financial loss, or loss of amenity
C	Moderate injury or harm, chance of financial loss, or loss of amenity
D	Moderate-severe injury or harm, chance of financial loss, or loss of amenity
E	Severe injury or death, chance of financial loss, or loss of amenity

The following table assigns a colour code to identify the cumulative risk impact, using both likelihood and consequence assessments.

Table 10-2: Qualitative Risk Assessment Matrix

		Consequence				
		A Mild	B Mild-Moderate	C Moderate	D Moderate-Severe	E Severe
Likelihood	1 Unlikely	Low	Low	Low	Medium	High
	2 Low Chance	Low	Low	Medium	High	High
	3 Medium Chance	Low	Medium	Medium	High	Very High
	4 High Chance	Medium	High	High	Very High	Very High
	5 Likely	High	High	Very High	Very High	Very High

Table 10-3: Residual Risk Assessment

Environmental Factor	Risk	Comment	Preliminary Risk Rating	Control or Mitigation Measure	Residual Risk Rating
Traffic, Access and Parking	Adverse impacts on local traffic and roadways during site operation	No additional truck movements are proposed.	N/A	No additional mitigation is required.	N/A
	Adverse impacts on local traffic and roadways during construction/installation phase	No construction works will be required under this proposal	N/A	No construction works will be required under this proposal	N/A
	Risk to pedestrians at the Site as a result of increased truck movements	No additional truck movements are proposed.	N/A	No additional mitigation is required.	N/A
Air Quality and Odour	Increase dust generation from the Site as a result of construction works	No construction works will be required under this proposal	N/A	No construction works will be required under this proposal	N/A
	Increased dust generation from the Site as a result of site operation	Extending the hours of operation may cause an increase in dust from external operations over a longer period of time	Low	Dust emissions would be managed through existing mitigation measures such as misting. No increase in volumes of material would occur as part of this modification proposal. Therefore, the risk of additional dust impacts is low.	Low
	Increased risk of odour impacts on neighbouring sites and residences	Increasing the hours of operation would not incur higher risk of odour impacts. The throughput of material is not going to increase, nor are the existing mitigation measures for odour at the site going to change. Re.Group would continue to manage odour in line with its OEMP and best practice guidelines.	Low	Odour impacts would be mitigated by existing measures employed at the site. The additional time proposed as part of this modification proposal would allow compost material to be turned more frequently. This would reduce the risk of anaerobic breakdown and associated undesirable odours.	Low
	Increased vehicle emissions at the Site during operation	No additional truck movements are proposed.	N/A	No additional mitigation is required.	N/A
Noise and Vibration	Noise and vibration impact during the construction and installation phase	No construction works are under this Proposal	N/A	No construction works will be required under this proposal	N/A

Environmental Factor	Risk	Comment	Preliminary Risk Rating	Control or Mitigation Measure	Residual Risk Rating
	Noise and vibration impact during site operation	As described in section 8.1, the Modification Proposal has been assessed to not generate acoustic impacts at nearby receivers.	Low	As described in section 8.1, the Modification Proposal has been assessed to not generate acoustic impacts at nearby receivers.	Low
Waste Management	Windblown litter at the Site, in the local area, and at neighbouring businesses and residential areas	Waste materials being dispersed in and around the Site as a result of being unsecured.	Low	All waste materials will be stored within the shed, with roller doors shut where practical. No waste material will be stored outside, whether unprocessed incoming material or separated contaminants.	Low
	Waste from site entering waterways and soils	Unprocessed or processed recycling or residual material entering waterways and soils in and around the Site.	Low	All contaminant waste material is stored internally within the shed, and unprocessed recycling material is unloaded and stored within the shed. The risk of waste entering waterways and soils is therefore low.	Low
	Risk of contamination in finished product	Contamination occurring in finished product outputs.	Low	The proposal would result in a greater level of processing of material, with a resulting lower risk of contaminants remaining in product output. The volume of organic material being processed would not increase under the Modification Proposal.	Low
Water and Soil	Risk of leachate entering waterways	Leachate from maturing compost entering waterways.	Low	The Site features a stormwater management system that captures stormwater runoff. The maturation pad has a leachate collection system that prevents leachate from running off and into waterways.	Low
	Sedimentation entering waterways	Disturbed soil entering waterways.	Low	No ground-breaking activity will occur as part of the Modification Proposal.	Low

Environmental Factor	Risk	Comment	Preliminary Risk Rating	Control or Mitigation Measure	Residual Risk Rating
				All trafficked surfaces are hardstand which flow to an onsite stormwater management system.	
Soil and Contamination	Disturbance of acid sulfate soils (ASS) or potential acid sulfate soils (PASS)	No construction works are under this Proposal	N/A	No construction works will be required under this proposal	N/A
	Impacts of firefighting chemicals on local soils and waterways. Any fire occurring at the Site that requires extinguishing through firefighting chemicals that may run off and contaminate soils or waterways.	The modification proposal would not increase the risk of fire at the site or surrounding areas.	Low	Chemicals are stored in secure, bunded areas or double walled containers. Onsite stormwater management system includes detention that can capture any firefighting liquids. These detained liquids can then be vacuumed out for treatment at a suitably licensed facility.	Low
Hazards and Risks	Bushfire impact at the Site	Death, injury, and damage to property as a result of bushfire.	Low	While the site is on land mapped as bushfire prone, the proposed modification would not inherently increase risk of bushfire to the site or surrounding land.	Low
	Fire at the Site	Death, injury, and damage to property as a result of fire originating from the Site plant, machinery, or other sources.	Low	Suitable measures are in place to mitigate and minimise the risk of fire and to protect life, property, and the environment. The Site satisfies relevant fire safety requirements. The risk of fire at the site is therefore considered low.	Low
	Spill of fuels, chemicals, or oils	Death, injury, damage to property or impact on the environment as a result of spills or infiltration of potentially hazardous liquids.	Low	Fuels, chemicals, and oils are stored in bunded areas and undercover where possible. The Site is provided with spill kits and staff training for spill management.	Low

Environmental Factor	Risk	Comment	Preliminary Risk Rating	Control or Mitigation Measure	Residual Risk Rating
				The risk of hazardous liquid impact at the site is therefore considered low.	
Biodiversity	Risk to native flora and fauna as a result of Proposal	Disturbance, injury or death of native flora and fauna as a result of increased truck movements around the Site.	N/A	There are no construction works proposed and risk to fauna is considered low.	N/A
Heritage	Risk to Aboriginal Heritage	No construction works are under this Proposal	N/A	No construction works will be required under this proposal	N/A
	Risk to non-Aboriginal Heritage	No construction works are under this Proposal	N/A		N/A
Socioeconomic Impact	Impacts on local employment	The modification proposal would not result in any changes to rates of employment either at the site or at other Re Group facilities. The proposal is unlikely to have any impact on employment in the local area.	N/A	No changes to employment at the site.	N/A
	Impacts on local businesses	Negative impacts on local businesses through loss of amenity – visual, traffic, noise, or air quality.	Low	The Site is situated in industrially zoned land and the development fits the character of the area. Odour and noise impacts would be managed through mitigation described in section 8.	Low
	Impacts on local residents	The Site is an existing waste facility that is located within a larger waste and resource recovery facility. The DRWDD has operated since 1945, and the proposed modification would not increase the risk of amenity impact to nearby properties.	Low	Noise and odour mitigation is detailed in section 8, and residual impacts are considered negligible.	Low
Landscape character and visual amenity	Negative impact on visual amenity and landscape character as a result of Proposal	No building work or construction proposed.	N/A	The Site is located on existing industrial zoned land. The Site is screened from public view.	N/A

11 Summary of mitigation measures

The modification proposal would not result in any increased risk of impact to the environment or amenity in the local area. As a result, no additional mitigation measures to those in the current conditions of consent are proposed.

12 Justification and conclusion

The Modification Proposal seeks to extend the hours of operation at the site to improve the quality of compost product outputs from the site, while enabling greater efficiency of operations and minimise the risk of odour impacts to neighbouring residential properties.

The Modification Proposal would directly support progress towards Commonwealth and NSW Government resource recovery targets, and contributes to Council environmental objectives as detailed in its annual reports.

This Statement of Environmental Effects report assesses the potential impacts of the Modification Proposal and concludes it would result in substantially the same impact to that presented within the existing environmental assessments (and other supporting documentation) for the Current Approval.

Appendix A – Proposed conditions of consent

The proposed changes to the conditions of consent prescribed for DA523/2015 are shown below. These may be refined during the preparation of the modification application.

Proposed changes are shown in ***bold italics.*** Items proposed for removal are shown with ~~a strikethrough~~.

Amendment to existing condition

Condition A7 NSW Environmental Protection Authority

Modified Condition – DA No. 523/2014 (Part 2)

The development must comply with the General Terms of Approval and advice of the NSW Environmental Protection Authority ***(with the exception of the hours of operation for the organics processing facility, which will operate as per condition A9)***, as contained in their letter dated 07 May 2015 (Reference: EF15/798, Notice no. 15279880), consisting of seven (7) pages, and as attached to this Notice of Determination.

The recommended conditions of consent, A, B, and C on page 6, are to be taken as conditions of this development consent.

This development consent includes the construction of an organics processing facility which will include the receiving, processing, treatment and composting of food waste.

The modifications approved under this consent ~~(Part 2)~~ will require variations made to Environment Protection Licence No.12903 (the Licence) which may include changes to discharge and monitoring requirements. Council will need to submit an application to the Environment Protection Authority to seek approval to vary the Licence.

New condition

Condition A9 Organics facility hours of operation

The organics processing facility will only operate between:

Day	***Hours of operation***
Monday to Friday	***External operations: 7am to 6pm*** ***Internal operations: 6am to 6pm***
Saturday, Sunday and public holidays (excluding Christmas Day and Good Friday)	***External operations: 7am to 4pm*** ***Internal operations: 6am to 6pm***

Appendix B – Pre-DA meeting minutes – Shellharbour Council

Address all communication to the Chief Executive Officer
Shellharbour City Council,
Dharawal Country
Locked Bag 155, Shellharbour City Centre, NSW 2529
DX 26402 Shellharbour City Centre
p. 02 4221 6111 **f.** 02 4221 6016
council@shellharbour.nsw.gov.au
www.shellharbour.nsw.gov.au

SUBJECT:	PRELODGEMENT ADVICE
PROPOSED DEVELOPMENT:	**Proposed S4.55(2) modification to DA523/2014 (Dunmore Resource Recovery Redevelopment) to extend the fogo facility hours of operation** Lot 1 DP 110135 Lot 21 DP 653009, 58 Buckleys Road DUNMORE NSW 2529
OUR REFERENCE:	PR0005/2024
MEETING DATE:	28 February 2024
PRESENT:	Madeline Cartwright – Principal Planner - SCC Mathew Rawson – Manager Planning - SCC Kirsten Gilbert - Senior Biodiversity and Environmental Planning Officer – SCC Ryan Stirling – Executive Manager Waste Services - SCC
ADDRESS FOR MAILING:	Re.Group Pty Ltd Level19 100 Miller Street Margaret NORTH SYDNEY NSW 2060

Disclaimer/Notes - please read carefully:

Will I get an approval from Council?

These notes should not be construed as a guarantee that consent will be granted.

The advice in these notes is not a comprehensive assessment. Additional issues may emerge as a result of a detailed assessment, which will only be made upon receipt of a development application. Council will take into account relevant statutory requirements and merit issues when assessing a proposal as required under the provisions of the *Environmental Planning & Assessment Act 1979,* as amended.

Policy departures, variations to development controls contained in Environmental Planning Instruments

Any departure from 'policy', eg Development Control Plans or a Development Standard must be identified by the applicant and supported in the form of a written statement.

The statement must demonstrate that there will be no adverse impacts as a result of the departure. No guarantee is given that a departure from policy will be supported.

In the case of a Planning Instrument such as the *Shellharbour Local Environmental Plan 2013*, a variation must be requested under clause 4.6 (where this clause can be applied).

How is your application assessed?

Please also be aware that legislation and Council's planning controls are periodically reviewed. A development application will be assessed under the planning controls as they apply at the time of lodgement.

Address all communication to the Chief Executive Officer
Shellharbour City Council,
Dharawal Country
Locked Bag 155, Shellharbour City Centre, NSW 2529
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council@shellharbour.nsw.gov.au
www.shellharbour.nsw.gov.au

In this regard, it is important to check the currency of planning controls when preparing a development application and when lodging an application.

Any zoning advice should ideally be checked by viewing relevant maps and verified by obtaining a Section 149 Certificate. For more complex proposals, it may be prudent to engage the services of a suitably qualified professional to prepare and lodge a development application.

<u>Restrictions on Land Title</u>

This advice is provided without the benefit of a site inspection or title search. Title restrictions and site characteristics may raise other issues which warrant further investigation or restrict/prevent development.

Thank you for attending the meeting at Council and considering development in Shellharbour City. These notes are intended to assist you and if you require any further information, please do not hesitate to contact the undersigned.

Proposal

Proposed S4.55(2) modification to DA523/2014 (Dunmore Resource Recovery Redevelopment) to extend the fogo facility hours of operation as shown below:

Day	Current hours of operation	Proposed hours of operation	Difference
Monday to Friday	Between 7:30am and 4pm, both internal and external	External operations: 7am to 6pm Internal operations: 6am to 6pm	Increase by 1.5 hours in the AM and two hours in the PM
Saturday, Sunday and public holidays (excluding Christmas Day and Good Friday)	Between 8am and 4pm, both internal and external	External operations: 7am to 4pm Internal operations: 6am to 6pm	Increase by two hours in the AM and two hours in the PM

Issues to be discussed as follows:

1. Proposed changes and need for modification application
2. Confirmation of DA modification pathway (project is both a designated and integrated development
3. Clarification and discussion of any potential impacts, issues and/or concerns.

Summary of Advice

The proposed modification to increase the operating hours is likely to meet with concerns due to the number of existing complaints from the community regarding the current impact of the fogo facility. Council would need to be satisfied that impacts such as odour and noise impacts would not be exacerbated as a result of the increased operating hours. This may be difficult to achieve for external operations and it is suggested that the operating hours for internal operations are considered to be modified only.

Accordingly, it is recommended that you proceed with the preparation and submission of a modification to the internal operations only.

Town Planning Advice

1. The existing waste facility was approved under DA0523/2014 and operates under Environmental Protection Licence 12903. Council is aware that there have been a number of complaints over the past few months relating to odour specifically and the Environmental Protection Agency is currently providing assistance regarding the operation and management of the facility.

   It has been suggested that changes are required to the FOGO stockpiles which involve more staff management of the piles in terms of turning and processing. This requires an increase in hours both for internal and external operations.

2. The proposed application would request the modification of condition A7 relating to NSW Environmental Protection Authority which stipulated the hours of operation for the facility. The modification to operating hours would require notification and concurrence to NSW EPA as per section 4.55(2) (b) of the EP&A Act.

3. A modification statement is required to be submitted with the application that fully describes the modification and assesses it against all relevant environmental planning instruments, development control plans and policies applicable to the site and development. These include (but may not be strictly limited to):

   - State Environmental Planning Policy (Planning Systems) 2021.
   - State Environmental Planning Policy (Resilience and Hazards) 2021.
   - State Environmental Planning Policy (Transport and Infrastructure) 2021.
   - Shellharbour Local Environmental Plan 2013
   - Shellharbour Development Control Plan

4. The modification statement is to provide a detailed table that clearly sets out how the modified development is substantially the same development as the development for which consent was originally granted and before that consent as originally granted was modified (if at all) as per the EP&A Act section 2.55 (2) (a). Council staff have identified the following potential variations and/or matters which warrant detailed consideration:

   a. <u>Noise impact</u>

      In accordance with the Noise Policy for Industry 2017 the additional hours proposed to operations are noted to bring the operation into the night time noise criteria (10 pm – 7 am). These night time criteria sets a lower noise level and is more onerous to comply with. It would considered more appropriate to avoid the night time period given the proximity of sensitive noise receivers from the facility.

      A detailed acoustic assessment is required to support the modification which provides details of the existing noise impacts of the facility and the proposed impact of the increased operating hours. The report also needs to:

      i. separate internal and external noise impacts so Council can clearly differentiate between the two, and
      ii. provide discussion regarding noise level acceptability against industry standards and recommendations to reduce noise levels as necessary.

   b. <u>Increased truck movements</u>

      It is understood that there will be no additional truck movements and the weighbridge will be closed at 4.30 so no change to existing operations. Please ensure this is demonstrated clearly in the supporting documentation.

   c. <u>Odour control and impact</u>

      Whilst it is understood that increased turning of the material will ultimately reduce odour, Council is aware that there has been an increased number of complaints regarding odour this summer. It is acknowledged that there are various factors that affect the dispersion of odour, however it is understood that there are a variety of

ways that the stockpiles can be managed to reduce the odour impact which are currently not being followed.

Council requires that all recommendations and requirements from the Environmental Protection Agency relating processing of FOGO waste is followed to ensure that odour is kept to a minimum.

It is recommended that an initial modification to increase operating hours is submitted for internal operations only (minimal increased impacts likely) and once management of the site is seen to be improving in lie with the requirements of the EPA then a second modification can then be considered to increase the external operating hours, if necessary.

The modification application as proposed would need to be supported by a report from a suitably qualified person to indicate the current odour impacts of the way the stockpile is managed and how that complies with the existing consent and EPA licence. The report will also need to include the additional odour impact of the new management of the stockpile and increased hours and consideration if these levels are acceptable against industry standards and recommendations to improve odour levels.

5. Owners consent will need to be obtained prior to lodgement. Please contact Council's Property Services to arrange this.

6. The DA will be publicly exhibited in accordance with the Shellharbour Public Participation Plan 2021. The pubic exhibition period will be for a minimum of 28 days. As per the requirements of the EP&A Regs 2021 all original submitters will be notified of the modification.

7. The original application was determined by the Southern Regional Planning Panel, typically Council can determine the application however as Council is the land owner for the site the Southern Regional Planning Panel must also determine a modification application under Section 4.55(2) of the Act.

External Referrals

1. The DA will be referred to the NSW Environment Protection Agency as the modification will include changes to the General Terms of Approval issued by the EPA on 7.05.2015.

2. The DA will be referred to DPIE – Water as per the original application.

What Do You Need To Lodge With A Modification Application?

Each application is slightly different and the information that is required to support a proposal can be varied. The *Environmental Planning and Assessment Regulation 2021* provides more detail.

For this proposal, the following information should be submitted. Please note that a well prepared and detailed application is likely to be assessed and processed more quickly by Council. In the event that additional information is required, you will be contacted and given the opportunity to reply.

You should note that a delayed response by the applicant and multiple requests for information adversely impact on processing of a development application.

- Modification Statement
- Register of conditions proposed to be modified
- Register of plans/documents proposed to be modified
- Acoustic Report
- Odour Report
- Prescribed fee
- Councils Owner's consent form.

Please note that Council now requires all application forms, plans and associated documentation required for Development Applications, Section 4.55 Modifications and Amended Plans to be lodged via the NSW Planning Portal.

For any further assistance, please contact the undersigned on 02 4221 6109.

Madeline Cartwright
Principal Town Planner – Statutory Planning

Appendix C – Odour impact assessment

SLR Consulting Australia
Tenancy 202 Submarine School, Sub Base Platypus, 120 High Street, North Sydney NSW 2060, Australia

22 August 2024

SLR Ref No.: 610.031958-L01-v1.0-20240822.docx

Attention: Jacqueline Ong
Re Group
Level 19, 100 Miller Street
North Sydney NSW 2060

SLR Project No.: 610.031958

RE: Shellharbour FOGO Odour Assessment

1.0 Introduction

Re.Group Pty Ltd (Re: Group) has managed an organic waste reception and processing facility (the Facility) on behalf of Shellharbour City Council at 44 Buckleys Road, Dunmore (the Site) since 2017. The Facility primarily accepts residentially sourced food and garden organics (FOGO), which undergo decontamination, shredding, and loading into enclosed compost tunnels. Following this, the compost matures on an external pad before being stockpiled for distribution.

Re Group has proposed a s4.55(2) modification to the original consent DA523/2014 for the Facility, specifically proposing to increase the hours of operation for external and internal operations.

The Shellharbour City Council (the Council) in their pre-lodgement meeting advice (28 February 2024) has requested a report be accompanied with the modification application summarising the proposed changes and the resultant odour impacts. Specifically, the Council states (4[c] – Odour Control and Impact):

"The modification application as proposed would need to be supported by a report from a suitably qualified person to indicate the current odour impacts of the way the stockpile is managed and how that complies with the existing consent and EPA licence. The report will also need to include the additional odour impact of the new management of the stockpile and increased hours and consideration if these levels are acceptable against industry standards and recommendations to improve odour levels."

The information contained in this letter presents a review of the implications of the proposed changes on the impacts from the Site the surrounding areas.

2.0 Background

In 2014, Wilkinson Murray Pty Limited prepared and an air quality impact assessment (hereafter the 2014 AQIA) (Wilkinson Murray, 2014) for the construction and operation of the Facility including the following scope of work:

- A review of the local meteorology and ambient air quality.
- A qualitative assessment of potential dust impacts associated with construction.
- A quantitative assessment of potential odour impacts associated with the operation.
- Provision of recommendations for appropriate dust and odour mitigation measures and management practices, where required; and
- Provision of a statement of potential odour and dust impacts.

2.1 2014 AQIA Methodology

Emissions from the Facility were modelled using the CALPUFF model. CALPUFF is a transport and dispersion model that ejects 'puffs' of material emitted from modelled sources, simulating dispersion and transformation processes along the way. In doing so, it typically uses the fields generated by a meteorological pre-processor CALMET. Temporal and spatial variations in the meteorological fields selected are explicitly incorporated in the resulting distribution of puffs throughout a simulation period. The primary output files from CALPUFF contain hourly concentration evaluated at selected receptor locations. The CALPOST post-processor was then used to process these files, producing tabulations that summarise results of the simulation for user-selected averaging periods.

The Project has a number of potential odour sources that have been assessed in the 2014 AQIA including the following:

- The bio-filter servicing the FOGO tunnel composting facility;
- The FOGO and garden waste composting windrows; and
- Odour generated from putrescible material received at the transfer station.

Odour emission rates from each source were estimated conservatively and were subsequently employed to model the 99th percentile 1-hour average odor concentrations at nearby sensitive receptors, in line with the Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (EPA, 2022). **Table 1** presents the specific odour emission rates used in the modeling study.

Table 1 Odour Emission Rates used in Dispersion Modelling

Source	Type	Odour Emission Rate ($OU.m^3/m^2/s$)	Area (m^2)
Bio-filter	Area	3.50	200
Windrows	Area	5.65	3,848
Transfer station	Area	3.65	50

Source: (Wilkinson Murray, 2014)

It is important to note that all the three sources were modelled in the assessment as sources 'emitting continuously for the modelling period' (i.e. 24/7) (Wilkinson Murray, 2014).

2.2 2014 AQIA Findings

Potential off-site odour impacts from the potential odour generating sources were predicted and presented in the form of contour plots as shown in **Figure 1**. The dispersion modelling results indicate that the predicted ground level odour concentrations are unlikely to exceed the applicable assessment criteria at the nearby discrete receptors.

Figure 1 Predicted 99th percentile nose-response average ground level odour concentrations (OU)

The modelling report also recommended a range of odour mitigation and management strategies and good composting practices, to minimise any offsite odour impacts.

3.0 Description of the Changes

To enable staff at the Site to manage stockpiles efficiently and reduce the volume of material on the maturation pad, an extension to the existing hours of operation is proposed. The existing hours of operation, proposed hours of operation, and the difference is summarised in **Table 2**.

It is noted that:

- there are no proposed changes to the material process operations aside from additional movement of finished compost stockpiles within the Site.
- no changes to the building form are proposed. The staffing level, number of shifts, and parking allocation at the Site would not change.
- no changes to the best practice management practice measures proposed for the Facility.

According to the Best Management Practice (BMP) Implementation plan prepared by Jackson Environment and Planning Pty Ltd (JEP) for the Facility (JEP, 2024), the following infrastructure and performance measures will continue to be implemented:

- Windrows will be shaped to a peak to direct runoff to drainage lines. During dry periods with low moisture (<40%), windrows may be flattened or made concave to promote infiltration but will still be maintained as windrows rather than large piles.
- Material on the pad must stay below 60% moisture content. Compost will be checked weekly and after heavy rain (>30mm) and confirmed with weighing and drying if necessary. Windrows exceeding 60% moisture will be turned, and drainage lines will be inspected and cleared.
- The maturation and storage area will accommodate 8 windrows up to 40m long, with a maximum height of 3m, width of 6.5m, and 0.5m gaps for aeration. The hardstand will be upgraded to ensure even drainage towards the leachate pond and avoid ponding. Screened products will be stored upslope from other materials, and high-traffic areas will be maintained for proper drainage.
- The maturation pad will be resurfaced with a cement-stabilised compacted road base to support material and machinery without damage.
- The annual quantity of organics processed should be based on current trends or production plans for the upcoming year.

Table 2 Proposed Changes to Hours of Operation

Day	Current hours of operation	Proposed hours of operation	Difference
Monday to Friday	Between 7:30am and 4pm, both internal and external	External operations: 7am to 6pm Internal operations: 6am to 6pm	Increase by 1.5 hours in the AM and 2 hours in the PM
Saturday, Sunday, and public holidays (excluding Christmas Day and Good Friday)	Between 8am and 4pm, both internal and external	External operations: 7am to 4pm Internal operations: 6am to 6pm	Increase by 2 hours in the AM and 2 hours in the PM

4.0 Implications of Changes on the Findings of Previous Assessment

The potential for odour emissions during the operation of the Facility is directly influenced by the nature of the activities conducted at any given time. Odour emissions from each identified source within the facility depend on several parameters outlined below:

- Odour emissions from the biofilter are influenced by airflow rate, temperature, moisture levels, retention time, and the type of biofilter media used.
- Odour emissions from waste composting windrows depend on the feedstock composition, moisture content, temperature, aeration practices, turnover frequency, and the size and design of the composting facility.
- Odour emissions from the transfer station vary based on the type and composition of waste, moisture content, temperature, ventilation effectiveness, handling and storage methods, and the duration of material storage.

It is noted that no changes are proposed to the waste volume, the waste types processed or the best management practice measures at the Facility, and that the proposed operational changes (ie extending hours of operation) are to facilitate efficient management of windrows.

Importantly, as discussed in **Section 2.1**, the dispersion modelling study was conducted representing these sources as emitting odour emission continuously (i.e. 24/7), therefore extending the hours of operations does not have implications on the predicted downwind odour impacts, and the conclusions of the odour impact assessment are still valid and additional mitigation measures are not warranted at this stage.

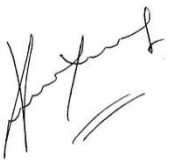
5.0 Conclusions

SLR was commissioned by Re Group to assess the implications of proposed changes to the operating hours of the Shellharbour FOGO facility on the offsite odour impacts. Considering that there will be no alterations to the waste intake volume, facility layout, material types, or processing procedures, and importantly the odour sources were modelled as sources emitting continuously, the findings of the 2014 Air Quality Impact Assessment (Wilkinson Murray, 2014) for the facility will remain largely unchanged following the proposed modifications. The 2014 dispersion modelling results concluded that the predicted offsite ground level odour concentrations were unlikely to be exceed the applicable assessment criteria at the nearby discrete receptors.

Given the above, it is concluded that extending operational hours is unlikely to increase the potential for odour emissions from the Facility.

If you require any further information, please feel free to contact the undersigned.

SLR Consulting Australia



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6.0 References

EPA. (2022). *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales.* Environment Protection Authority NSW.

JEP. (2024). *Best Management Practice Implementation Plan.* Sydney: Jackson Environment and Planning.

Wilkinson Murray. (2014). Dunmore Recycling Waste & Disposal Depot (DRWDD) Air Quality Impact Assessment.

Appendix D – Noise impact assessment

RE.GROUP DUNMORE

NOISE IMPACT ASSESSMENT

REPORT NO. 17247
VERSION 1.0

AUGUST 2024

PREPARED FOR

ARCADIS
LEVEL 16, 580 GEORGE STREET
SYDNEY NSW 2000

DOCUMENT CONTROL

Version	Notes	Status	Date	Prepared	Reviewed	Approved
0.1	-	Draft	19/04/2024	NH		NH
1.0	-	Final	19/08/2024	NH		NH

TABLE OF CONTENTS

APPENDIX A – NOISE MONITORING RESULTS

GLOSSARY OF ACOUSTIC TERMS

Most environments are affected by environmental noise which continuously varies. To describe the overall noise environment, a number of noise descriptors have been developed and these involve statistical and other analysis of the varying noise over sampling periods, typically taken as 15 minutes. The most common of these noise descriptors are defined below.

L_{Amax} The maximum noise level over a sample period is the maximum level, measured on fast response, during the sample period.

L_{A1} The L_{A1} level is the noise level which is exceeded for 1% of the sample period. During the sample period, the noise level is below the L_{A1} level for 99% of the time.

L_{A10} The L_{A10} level is the noise level which is exceeded for 10% of the sample period. During the sample period, the noise level is below the L_{A10} level for 90% of the time.

L_{A90} The L_{A90} level is the noise level which is exceeded for 90% of the sample period. During the sample period, the noise level is below the L_{A90} level for 10% of the time. This measure is commonly referred to as the background noise level.

L_{Aeq} The equivalent continuous sound level (L_{Aeq}) is the energy average of the varying noise over the sample period and is equivalent to the level of a constant noise which contains the same energy as the varying noise environment. This descriptor is a common measure of environmental noise.

ABL The Assessment Background Level is the single figure background level representing each assessment period (daytime, evening and night time) for each day.

RBL The Rating Background Level for each period is the median value of the ABL values for the period over all of the days measured. There is therefore an RBL value for each period – daytime, evening and night time.

1 INTRODUCTION

A modification application has been prepared on behalf of Re.Grow Pty Ltd [as owned by Re.Hold Pty Ltd (Re.Group)] who is seeking approval to modify the development consent (DA 523/2014) for the existing food and garden organics waste processing facility (FOGO facility) at 44 Buckleys Road, Dunmore NSW (the Modification Proposal). This modification application has been prepared pursuant to Section 4.55 (2) of the Environmental Planning and Assessment Act 1979 (EP&A Act).

1.1 Proposal Background

Re.Grow has operated the Dunmore FOGO facility since 2017. The site operates under DA523/2014. The facility is licensed to receive up to 50,000 tonnes per annum under Environment Protection License (EPL) number 12903.

The site forms part of the Council-owned and operated Dunmore Recycling and Waste Disposal Depot (DRWDD), which consists of a tip shop (also referred to as Reviva Dunmore, formerly the Revolve Centre), a transfer station for mixed waste as well as self-haul separate streams such as metals, electronic waste, mattresses, batteries and oils, a putrescible and non-putrescible landfill, and the FOGO processing facility.

Re.Group has been engaging with Council and NSW EPA regarding the management of external stockpiles of maturing compost material and finished compost product. In 2022, the EPA completed a compliance audit of the premises and a consistent issue identified was the “excessive quantity of material on the maturation pad”, which “limits equipment access and proper aeration and turning of material.” NSW EPA enacted a Pollution Reduction Program to reduce the volume of externally stored material to less than 7,400 cubic metres, which was met at the end of February 2024. Whilst developing the program, Council, NSW EPA, and Re.Group discussed how the latter could reduce stockpiles expeditiously and the option to extend the permitted operating hours was, in principle, noted as a potential solution.

In order to better manage the volumes of externally stored material, Re.Group is seeking to extend the approved hours of operation at the facility (the subject of this Modification Proposal).

Under this Modification Proposal, no construction works are proposed at the site. Similarly, there is no requirement for additional equipment or plant and as such, no installation works are proposed at the site. No changes are proposed to the built form of the facility.

1.2 Purpose of this Report

SoundIN Pty Ltd (SoundIN) has been engaged by Arcadis, on behalf of Re.Group to prepare a Noise Impact Assessment for the Modification Proposal.

This report presents an assessment of potential noise impacts associated with the operation of the FOGO facility at nearby sensitive receivers. The assessment has been conducted in general accordance with the *Noise Policy for Industry* (EPA, 2017).

No significant sources of vibration are associated with the operation of the FOGO facility. Accordingly, no detailed assessment of vibration impacts is warranted.

2 THE SITE

2.1 Site Description

The site is located at 44 Buckleys Road, Dunmore NSW (refer to **Figure 2-1**). The site is accessed by both vehicles and pedestrians from Buckleys Road.

2.2 Surrounding Land Use and Sensitive Receivers

The nearest and most potentially affected sensitive receivers to the site are summarised in **Table 2-1** and shown in **Figure 2-1**.

Table 2-1 Sensitive receivers

Receiver ID	Description	Distance [1]	Direction
R1	Dunmore Road residences	590	Northwest
R2	Residence at 21 Buckleys Road	550	North
R3	Augusta Parkway residences	890	Northeast
R4	Killalea campgrounds	530	East

1. Distance measured from pre-treatment building to nearest receiver.

2.3 Site Features

The site is located on 3 hectares (ha) of land and comprises the following features:

- Gatehouse and two weighbridges
- Shed for FOGO receival, decontamination and shredding, with four enclosed composting tunnels and an ancillary office
- External storage bunkers
- Maturation pad (6,700 m^2)
- Detention pond (1,350 m^2)
- Car parking areas

The site features some screening vegetation and landscaped areas and is not visible from public roads or other public areas.

An overview of the site's features is shown in **Figure 2-2**.

Figure 2-1 Site and Sensitive Receivers

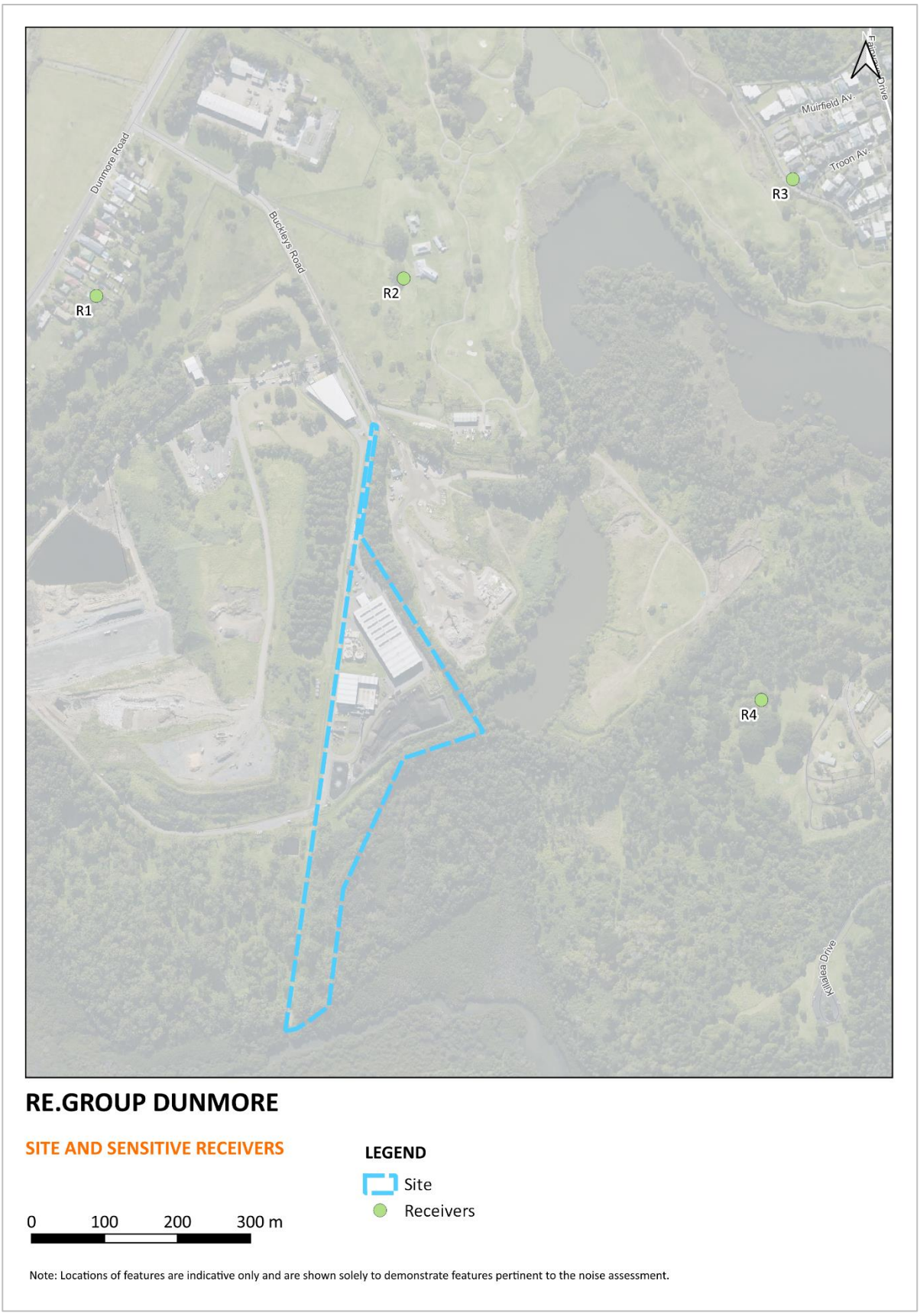


Figure 2-2 Site Features

3 CURRENT OPERATION

The site processes up to 50,000tpa of domestic food and garden organic waste material, including self-haul garden organics. Waste acceptance and operation of the site is managed under an Operational Environmental Management Plan (OEMP) and a Quality Management Plan.

Current site operations are described in **Table 3-1**.

Table 3-1 Description of current site operation

Stage of operation	Description
Weighbridge, receival and acceptance	Vehicles enter the site via the weighbridge from Buckleys Road. Organics material is brought to the site primarily by Council's waste collection fleet, being rear-loading medium rigid vehicles. Self-haul garden organics is also aggregated at the DRWDD in the shed north of the organics processing shed and brought to the site on smaller trucks. Receival of organics occurs solely in the site shed, in a receival area marked in **Figure 2-2**. Vehicle drivers are directed by the operator of the front-end loader (FEL) in this receival area to unload. Waste loads are inspected visually for contamination. If unacceptable levels of contamination are detected, the truck would be re-loaded and directed to a suitably licensed facility for disposal. Load rejections are recorded and feedback is provided to Council on the nature and type of contamination in deliveries. When vehicles are leaving the premises following offloading, the vehicle enters the same weighbridge where the weighbridge operator will record the tare weight of the vehicle, the date of delivery, and the origin and type of waste delivered. Weighbridge operations are managed by Council.
Pre-processing	Received material is pre-processed through decontamination to remove non-organic material, which is done by hand-picking visible contamination. Contaminants are transferred into a bunker within the building for temporary storage. Metals are separated and stored in a bin. The remaining organic material is shredded to end up with pre-processed organics of a uniform size. Pre-processed material is directly and immediately loaded into the enclosed compost tunnels.
Composting	There are four enclosed tunnels of 720m^3 capacity each for composting of pre-processed organic material. Tunnels are loaded using a FEL and are

Stage of operation	Description
	monitored via temperature probes, oxygen probes, air pressure monitoring. Material is loaded into tunnels for composting where key variables are monitored to ensure pasteurisation occurs in the tunnels. The material in the tunnels is aerated using aeration pipes in order to prevent anaerobic breakdown of organic material (i.e. rotting, which produces methane – a potent greenhouse gas). Odour emissions from composting are prevented by the biofilter, which captures odours. Compost piles remain in the enclosed tunnels for a period averaging two weeks. Unloading of tunnels is done by FEL, and successfully composted material is transferred to the external maturation pad via FEL. Compost material is tested in accordance with the NSW EPA Resource Recovery Order (The compost order 2016). Should any batch fail this testing, the batch would remain in the tunnel for further composting.
Maturation	Composted materials are stored on the maturation pad in defined batches, which are monitored for moisture and temperature for a further four weeks, with turning of the batches occurring to manage the stockpiles. Total maturation time on the maturation pad is six, following which time, the product is ready for sale. Turning of the materials is undertaken by a Mulchmuster or FEL and staff monitor and record temperatures daily; moisture is also monitored and maintained. As the movement of compost to the maturation area and the turning of windrows are key odour risk activities for the site, these activities may be restricted during periods of inappropriate weather conditions, such as inversion layers or very light southerly winds. Successful piles are screened using a trommel to separate oversized material. Oversized material is transferred to the receival hall to undergo another round of pre-processing, composting and maturation. Finished compost product (< 15 mm) is separately stored for offtake, marked on **Figure 2-2**.
Offtake of compost	Finished compost material is loaded onto a truck and dog. Approximately 33 trucks are loaded for off-take a month, amounting 1,000t of compost.
Offtake of other material	Residual waste is stored in a bunker and collected by a local site truck as required. This is then disposed of at an appropriately licensed landfill facility.

4 THE PROPOSAL

4.1 Construction and Installation

Under this Modification Proposal, no construction works are proposed at the site. Similarly, there is no requirement for additional equipment or plant and as such, no installation works are proposed at the site. No changes are proposed to the built form of the facility.

4.2 Operations

The operation at the site would largely remain the same, utilising the same equipment with material undergoing the same process (refer to Section 3).

4.2.1 Hours of Operation

To allow for sufficient processing utilising existing plant and equipment at the site, Re.Group proposes to extend the hours of operation of the FOGO processing facility as shown in **Table 4-1**.

Table 4-1 Proposed hours of operation (FOGO processing facility only)

Type of Activity	Hours of Operation	Days of Operation
Receipt of incoming material Processing of material Dispatch of material	External operations: 7am to 6pm Internal operations: 6am to 6pm	Monday to Friday
Receipt of incoming material Processing of material Dispatch of material	External operations: 7am to 4pm Internal operations: 6am to 6pm	Saturday, Sunday, and Public Holidays (excluding Good Friday and Christmas Day)

No changes to hours of operation for the weighbridge, landfill, disposal depot or Reviva tip shop are proposed; these are owned and operated by Council.

5 EXISTING NOISE ENVIRONMENT

Unattended noise monitoring was conducted between Friday 8 and Tuesday 19 December 2023 to establish the existing background noise levels at the most potentially affected nearby receivers. Monitoring was conducted at 33 Dunmore Road (L1) and 21 Buckleys Road (L2). Location L1 is considered representative of residences along Dunmore Road, which are subject to noise from the Princes Highway, such as R1. Location L2 is considered representative of residences further east and well set back from the Princes Highway such as R2 and R3.

The noise monitoring locations are shown in **Figure 5-1**.

The noise monitoring equipment used for these measurements consisted of environmental noise loggers set to A-weighted, fast response. This equipment is capable of remotely monitoring and storing noise level descriptors for later detailed analysis. The equipment calibration was checked before and after the survey and no significant drift was noted.

From the background noise levels (L_{A90}) the Rating Background Levels (RBLs) were determined using the methodology recommended in the *Noise Policy for Industry* (NPfI) and are presented in **Table 5-1**.

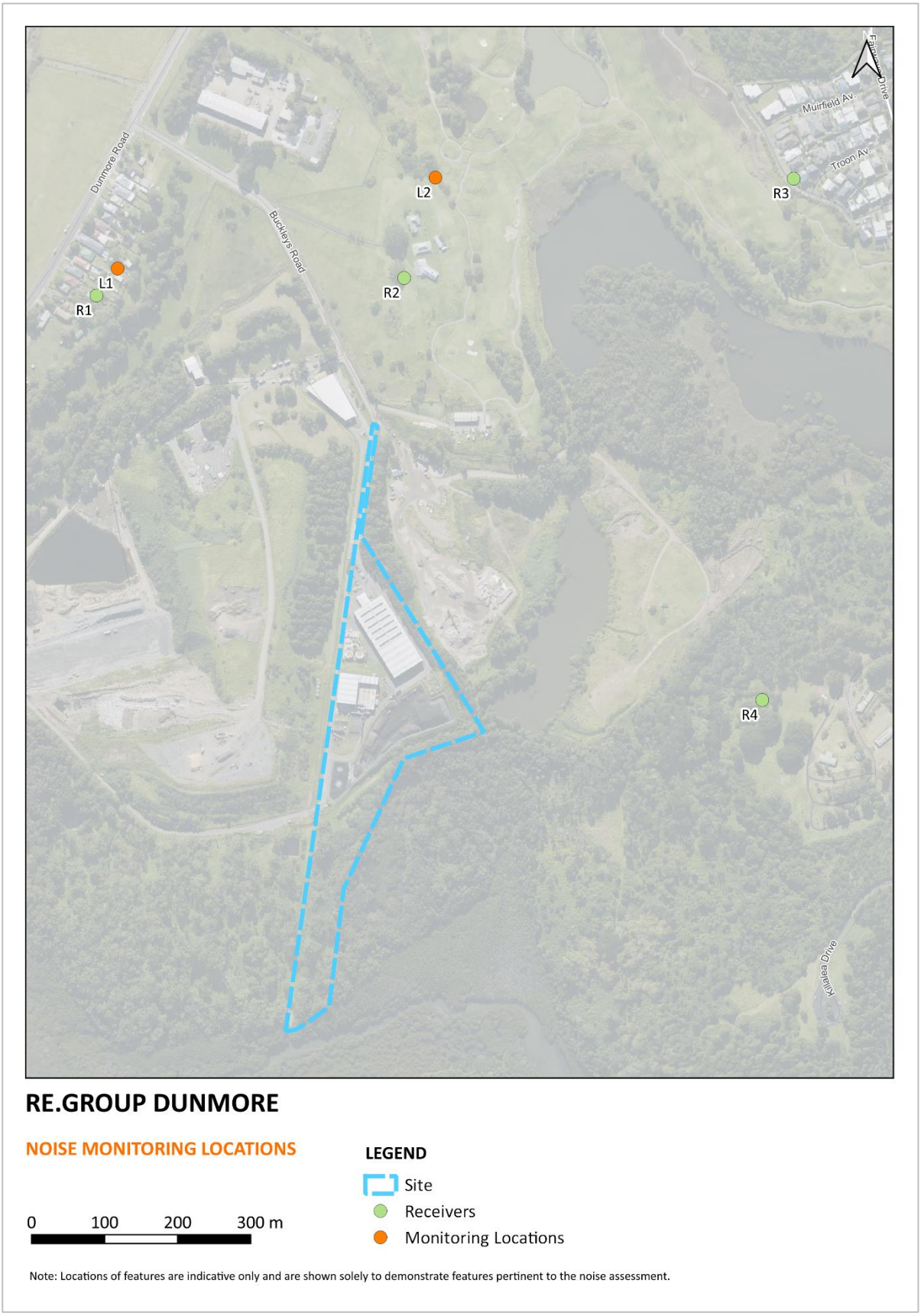
As outlined in Section 4.2.1, operations are proposed to commence from 6am. In accordance with the NPfI, a "shoulder period" has been defined to cover the period between 6am and 7am. As shown in Table 5-1, the RBLs calculated for the morning shoulder period are slightly higher than the daytime RBLs at both monitoring locations. These higher RBL in the morning shoulder period would lead to higher (i.e. less stringent) noise criteria in the morning shoulder period than during the remainder of the daytime period. For simplicity of assessment, rather than defining a morning shoulder period, a conservative approach has been taken where the daytime assessment period is taken to begin at 6am.

Table 5-1 Rating Background Levels (RBL)

Monitoring Location	Rating background level (dBA)			
	Morning Shoulder (6am – 7am)	Day (7am – 6pm)	Evening (6pm – 10pm)	Night (10pm – 6am)
33 Dunmore Road (L1)	44	42	41	33
21 Buckleys Road (L2)	39	38	37	35

Daily plots of the noise logger data are provided in Appendix A.

Figure 5-1 Noise Monitoring Locations



6 OPERATIONAL NOISE ASSESSMENT

6.1 Operational Noise Trigger Levels

The *Noise Policy for Industry* (NPfI) (EPA, 2017) provides a framework for assessing environmental noise impacts from industrial premises and industrial development proposals in New South Wales.

The NPfI recommends the development of project noise trigger levels, which provide a benchmark for assessing a proposal or site. The project noise trigger levels should not be interpreted as mandatory noise criteria but, rather, as noise levels that, if exceeded, would indicate a potential noise impact on the community.

The project noise trigger level is the lower value of the project intrusiveness noise level and the project amenity noise level. The project intrusiveness noise level assesses the likelihood of noise being intrusive above the ambient noise level and is applied to residential receivers only. The project amenity noise level ensures the total industrial noise from all sources in the area does not rise above a maximum acceptable level.

The NPfI stipulates that project noise trigger levels are determined for the daytime (7am – 6pm), evening (6pm – 10pm) and night time (10pm – 7am) periods, as relevant. The determined trigger levels typically apply at the most affected point on or within the receiver property boundary.

6.1.1 Project Intrusiveness Noise Level

The intrusiveness noise level is the noise level 5 dBA above the rating background noise level (RBL) for each time period (daytime, evening or night time) of interest at a residential receiver. The RBL is derived from the measured L_{A90} noise levels.

The NPfI stipulates that project intrusiveness noise levels should not be set below 40 dBA during the daytime and 35 dBA in the evening and night time. Additionally, the NPfI recommends that the project intrusiveness noise level for evening is set at no greater than that for the daytime, and that the project intrusiveness level for night time is set at no greater than that for the evening and daytime.

Project intrusiveness noise levels, based on the RBL presented in Section **Table 5-1**, are summarised in **Table 6-1**.

Table 6-1 Project Intrusiveness Noise Levels

Receiver	Time of day [1]	RBL (dBA)	Project Intrusiveness noise level – $L_{Aeq,15min}$ (dBA)
R1	Day	42	47
R2, R3	Day	38	43

1. Day – 6am – 6pm.

6.1.2 Project Amenity Noise Levels

Project amenity noise levels aim to set a limit on continuing increases in noise levels from all industrial noise sources affecting a variety of receiver types; that is, the ambient noise level in an area from all industrial noise sources remains below recommended amenity noise levels.

The amenity assessment is based on noise criteria specific to land use and associated activities. The criteria relate only to industrial-type noise and do not include transportation noise (when on public transport corridors), noise from motor sport, construction noise, community noise, blasting, shooting ranges, occupational workplace noise, wind farms, amplified music/patron noise.

The amenity noise level aims to limit continuing increases in noise levels which may occur if the intrusiveness level alone is applied to successive development within an area.

The recommended amenity noise level represents the objective for total industrial noise at a receiver location. The project amenity noise level represents the objective for noise from a single industrial development at a receiver location.

To prevent increases in industrial noise due to the cumulative effect of several developments, the project amenity noise level for each new source of industrial noise is set at 5dBA below the recommended amenity noise level.

The following exceptions apply to determining the project amenity noise level:

- For high-traffic areas the amenity criterion for industrial noise becomes the $L_{Aeq,period(traffic)}$ minus 15dBA.
- In proposed developments in major industrial clusters.
- If the resulting project amenity noise level is at least 10 dB lower than the existing industrial noise level, the project amenity noise level can be set at 10 dB below existing industrial noise levels if it can be demonstrated that existing industrial noise levels are unlikely to reduce over time.
- Where cumulative industrial noise is not a consideration because no other industries are present in, or likely to be introduced into the area, the relevant amenity noise level is assigned as the project amenity noise level for the development.

Amenity noise levels are not used directly as regulatory limits. They are used in combination with the

project intrusiveness noise level to assess the potential impact of noise, assess mitigation options and determine achievable noise requirements.

The project amenity noise levels are calculated from the recommended amenity noise levels presented in **Table 6-2**.

Table 6-2 Recommended Amenity Noise Levels

Receiver	Noise amenity area	Time of day [1]	Recommended amenity noise level – $L_{Aeq,period}$ (dBA)
Residential	Rural	Day	50
		Evening	45
		Night	40
	Suburban	Day	55
		Evening	45
		Night	40
	Urban	Day	60
		Evening	50
		Night	45
Hotels, motels, caretaker's quarters, holiday accommodation, permanent resident caravan parks	See column 4	See column 4	5 dBA above the recommended amenity noise level for a residence for the relevant noise amenity area and time of day.
School classroom (internal)	All	Noisiest 1-hour period when in use	35
Hospital ward:			
Internal	All	Noisiest 1-hour	35
External	All	Noisiest 1-hour	50
Place of worship (internal)	All	When in use	40
Area specifically reserved for passive recreation (e.g., national park)	All	When in use	50

Receiver	Noise amenity area	Time of day [1]	Recommended amenity noise level – $L_{Aeq,period}$ (dBA)
Active recreation area (e.g., school playground, golf course)	All	When in use	55
Commercial premises	All	When in use	65
Industrial premises	All	When in use	70
Industrial interface (applicable only to residential noise amenity areas)	All	All	Add 5 dBA to recommended noise amenity area

1. Day – 7am – 6pm; Evening = 6pm – 10pm; Night = 10pm – 7am.

Recommended amenity noise levels presented in **Table 6-2** represent the objective for total industrial noise at a receiver location. In the case of a single new noise source being proposed, the project amenity noise level represents the objective for noise from a single industrial development at the receiver location. This is typically calculated as the recommended amenity noise level minus 5 dBA.

Due to different averaging periods for the $L_{Aeq,15min}$ and $L_{Aeq,period}$ noise descriptors, the values of project intrusiveness and amenity noise levels cannot be compared directly when identifying noise trigger levels i.e. the most stringent values of each category. To make a comparison between descriptors, the NPfI assumes that the $L_{Aeq,15min}$ equivalent of an $L_{Aeq,period}$ noise level is equal to the $L_{Aeq,15min}$ level plus 3dB.

Residential receivers near the Proposal are classified as being in a “suburban” noise amenity area.

Recommended amenity noise levels for holiday accommodation and permanent resident caravan parks have been applied to the Killalea Campground

The project amenity noise levels for the Proposal are presented in **Table 6-3**.

Table 6-3 Project Amenity Noise Levels

Receiver	Time of day [1]	Recommended amenity noise level – $L_{Aeq,period}$ (dBA)	Project amenity noise level – $L_{Aeq,15min}$ (dBA)
R1, R2, R3	Day	55	53
R4	Day	60	58

1. Day – 6am – 6pm.

6.1.3 Project Noise Trigger Levels

The project intrusiveness noise levels and project amenity noise levels for sensitive receivers are summarised in **Table 6-4**. The project noise trigger levels (PNTL) – which are the lower values of the project intrusiveness noise levels and the project amenity noise levels – are highlighted in bold.

Table 6-4 Project Noise Trigger Levels

Receiver	Time of day [1]	Project intrusiveness noise level – $L_{Aeq,15min}$ (dBA)	Project amenity noise level – $L_{Aeq,15min}$ (dBA)
R1	Day	**47**	53
R2, R3	Day	**43**	53
R4	Day	-	**58**

1. Day – 6am – 6pm.

6.2 Noise Modelling Methodology and Assumptions

Operational noise emissions from the Proposal have been modelled using SoundPLAN v8.2, using the CONCAWE prediction algorithm. The CONCAWE noise propagation model is used around the world and is widely accepted as an appropriate model for predicting noise over significant distances. Factors addressed in the noise modelling are:

- Equipment noise level emissions and locations
- Shielding from structures
- Noise attenuation due to geometric spreading
- Meteorological conditions
- Ground absorption
- Atmospheric absorption.

6.2.1 Meteorological Effects

At relatively large distances from a source, the resultant noise levels at receivers can be influenced by meteorological conditions, particularly temperature inversions and gradient winds. Where these factors are a feature of an area, their effect on resultant noise levels should be taken into account.

In accordance with the NPfI, the following default conditions have been modelled to account for potential noise-enhancing meteorology:

- Stability category F with 2.0 m/s source-to-receiver winds during the early morning (i.e. during internal operations).

- Stability category D with 3.0 m/s source-to-receiver winds during the remainder of the daytime period (i.e. for all operations)

The SoundPLAN noise modelling software includes a feature that allows the model to be run with the "worst-case wind direction". This option produces the highest noise level for each receiver due to noise-enhancing winds and has been used in the modelling.

6.3 Operational Noise Sources

A site visit was conducted on 11 December 2023 to identify major noise sources associated with the operation of the FOGO facility. **Table 6-5** presents the major operational noise sources and their continuous sound power levels (SWL) based on attended noise measurements.

Table 6-5 Measured Noise Sources

Source	Continuous SWL (dBA)
Front End Loader (FEL)	107
Biofilter blower motor	98
Trommel	100
Trommel dust collector	109
Mulchmaster	105
Pre-treatment building	95
Truck – idling	95
Truck – moving	103

6.4 Assessment Scenarios

Two operational scenarios have been developed for assessment purposes, representing "internal operations" only and "all operations".

During the "internal operations" scenario, the pre-treatment building is operational along with the biofilter blower motor, which is located outside, on the southern side of the pre-treatment building.

During the "all operations" scenario, all sources identified in **Table 6-5** are operating simultaneously. This is a very conservative modelling approach since it would be most unlikely that all mobile plant on the site would be operating at the same time.

6.5 Predicted Noise Levels

The predicted $L_{Aeq,15min}$ noise levels at nearby residential receivers associated with internal operations are presented in **Table 6-6**.

Table 6-6 Predicted $L_{Aeq,15min}$ Noise Levels – Internal Operations

Receiver	Predicted Noise Level (dBA)		PNTL (dBA)	Complies?
	Calm	Noise Enhancing		
R1	<20	<20	47	Yes
R2	26	30	43	Yes
R3	<20	23	43	Yes
R4	28	32	58	Yes

The results in **Table 6-6** indicate that worst-case $L_{Aeq,15min}$ noise levels associated with internal operations are predicted to comply with the PNTL at all nearby residential receivers.

The predicted $L_{Aeq,15min}$ noise levels at nearby residential receivers associated with all operations are presented in **Table 6-7**.

Table 6-7 Predicted $L_{Aeq,15min}$ Noise Levels – All Operations

Receiver	Predicted Noise Level (dBA)		PNTL (dBA)	Complies?
	Calm	Noise Enhancing		
R1	30	35	47	Yes
R2	39	43	43	Yes
R3	34	39	43	Yes
R4	42	47	58	Yes

The results in **Table 6-7** indicate that worst-case $L_{Aeq,15min}$ noise levels associated with all operations are predicted to comply with the PNTL at all nearby residential receivers.

7 CONCLUSION

Re.Group has operated the Dunmore FOGO facility since 2017. The site operates under DA523/2014. The facility is licensed to receive up to 50,000 tonnes per annum under EPL #12903.

In order to better manage the volumes of externally stored material, Re.Group is seeking to extend the approved hours of operation at the facility (the subject of this Modification Proposal).

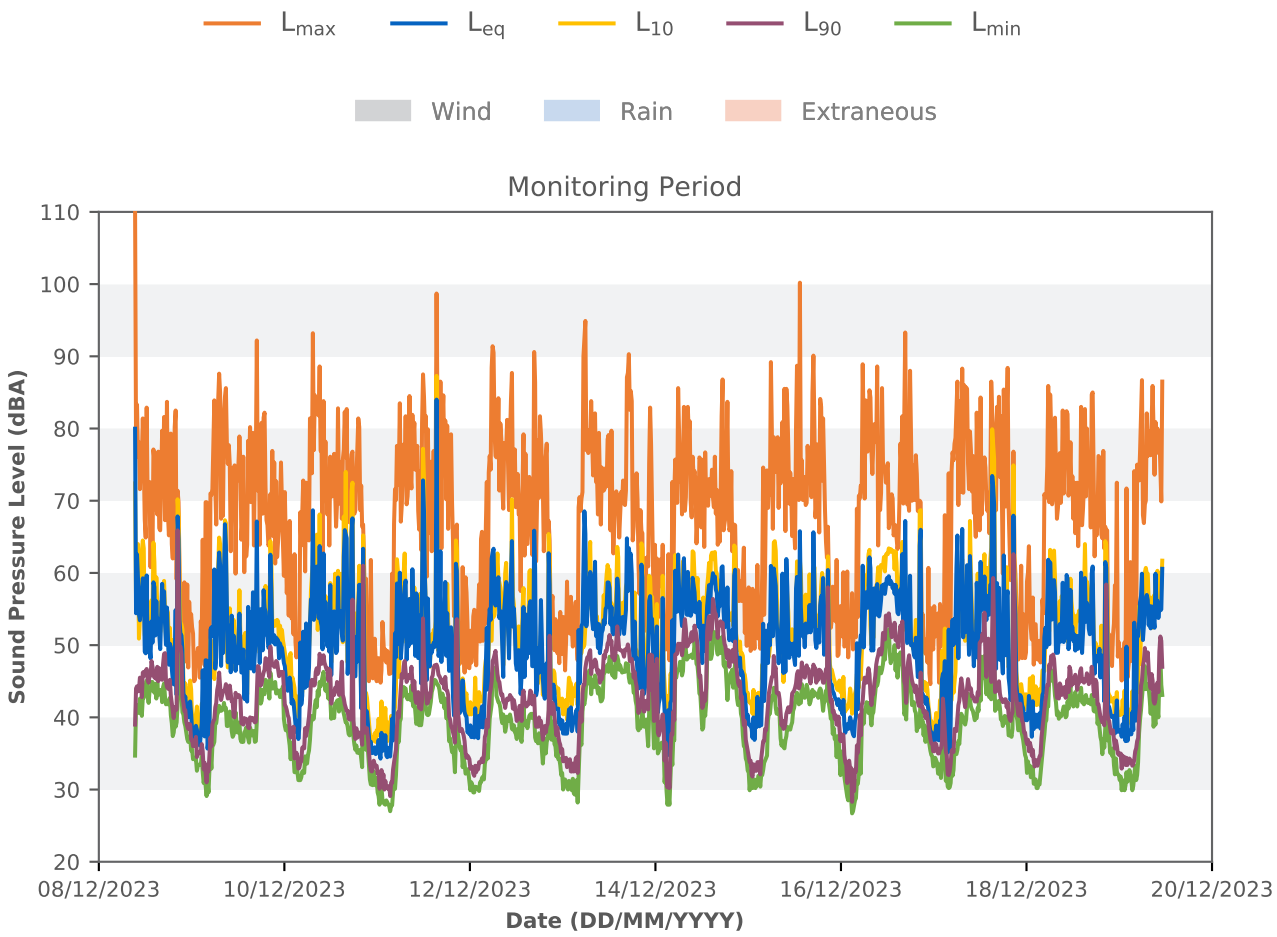
SoundIN has been engaged by Arcadis, on behalf of Re.Group, to prepare a Noise Impact Assessment for the Modification Proposal.

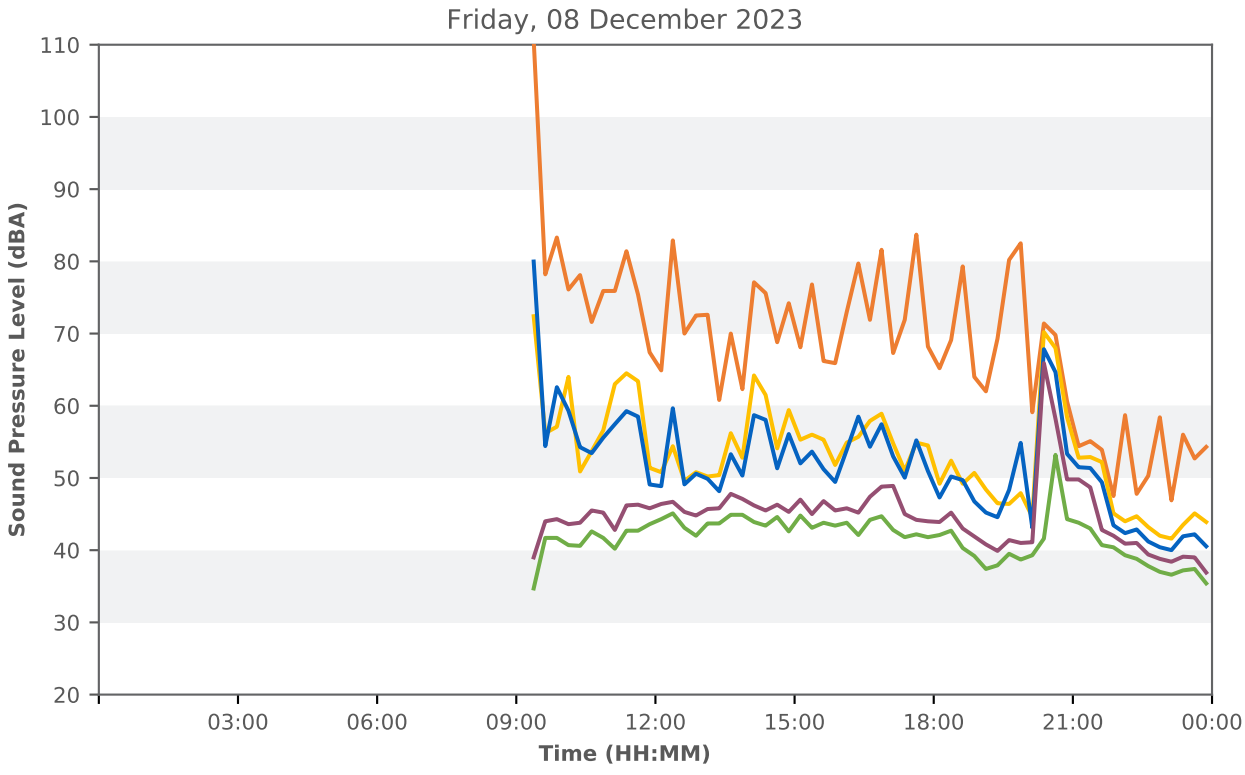
Noise impacts associated with the operation of the FOGO facility, under the Modification Proposal, have been assessed in general accordance with the NPfI. A computer noise model has been developed to predict operational noise levels at sensitive receivers. Noise modelling indicates that worst-case $L_{Aeq,15min}$ noise levels are predicted to comply with the PNTL at all nearby receivers. On this basis, the noise mitigation and management measures currently employed at the site are considered appropriate for both the existing operations and those proposed under the Modification Proposal, and no additional measures are recommended.

APPENDIX A

NOISE MONITORING RESULTS

Location A - 33 Dunmore Road





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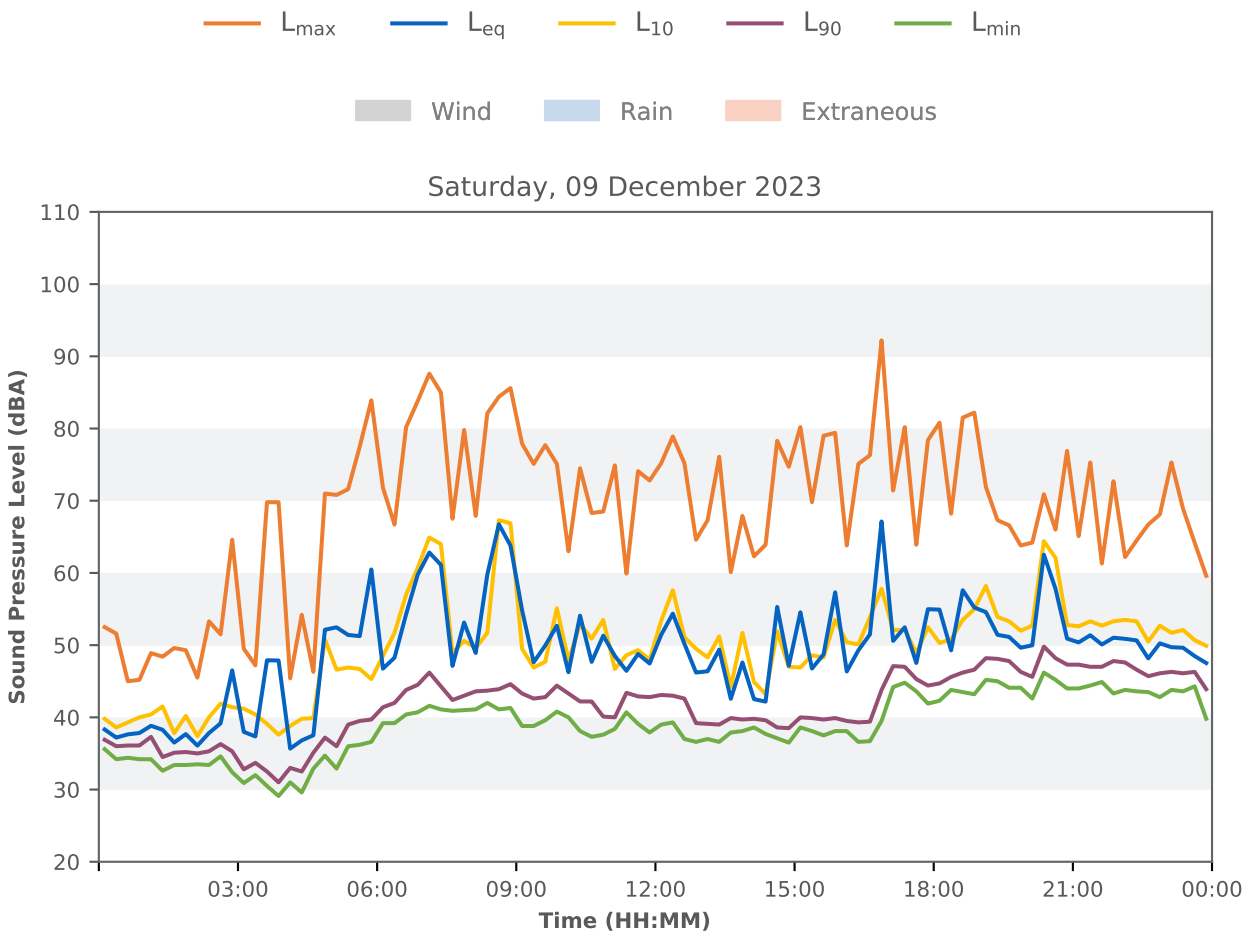
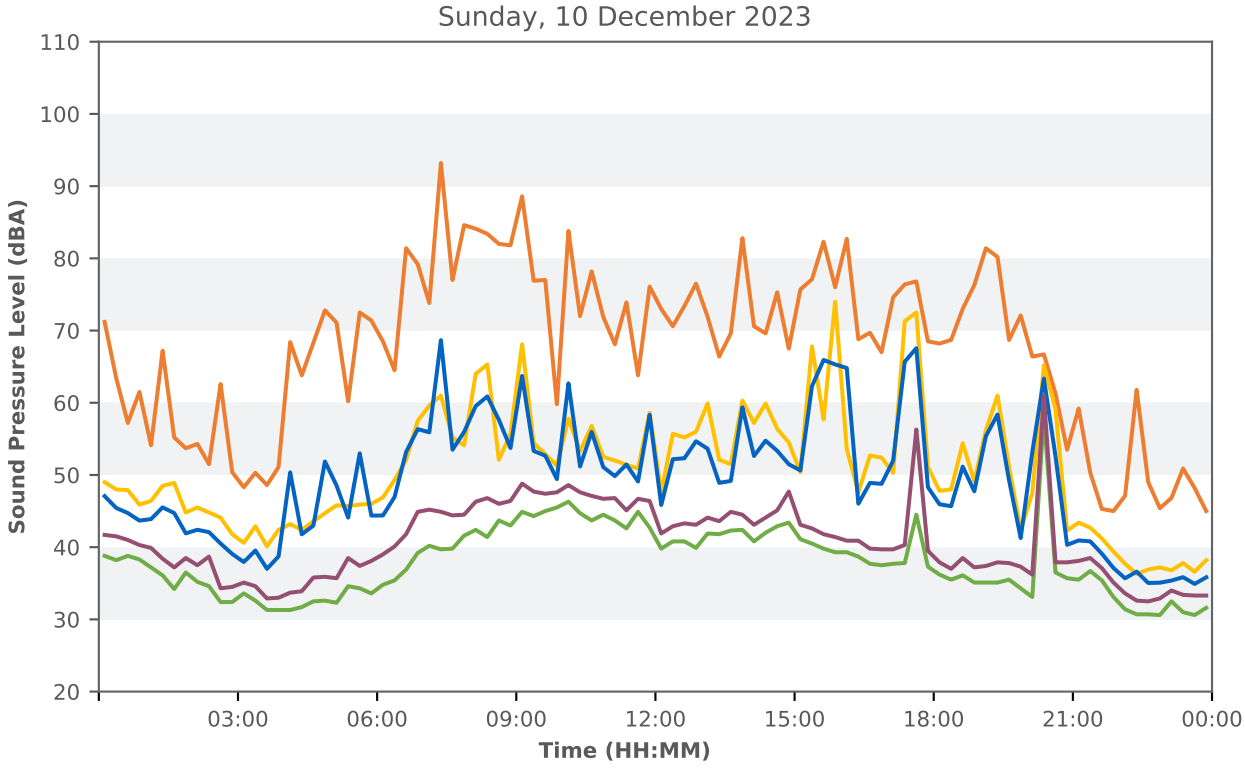
Location A - 33 Dunmore Road





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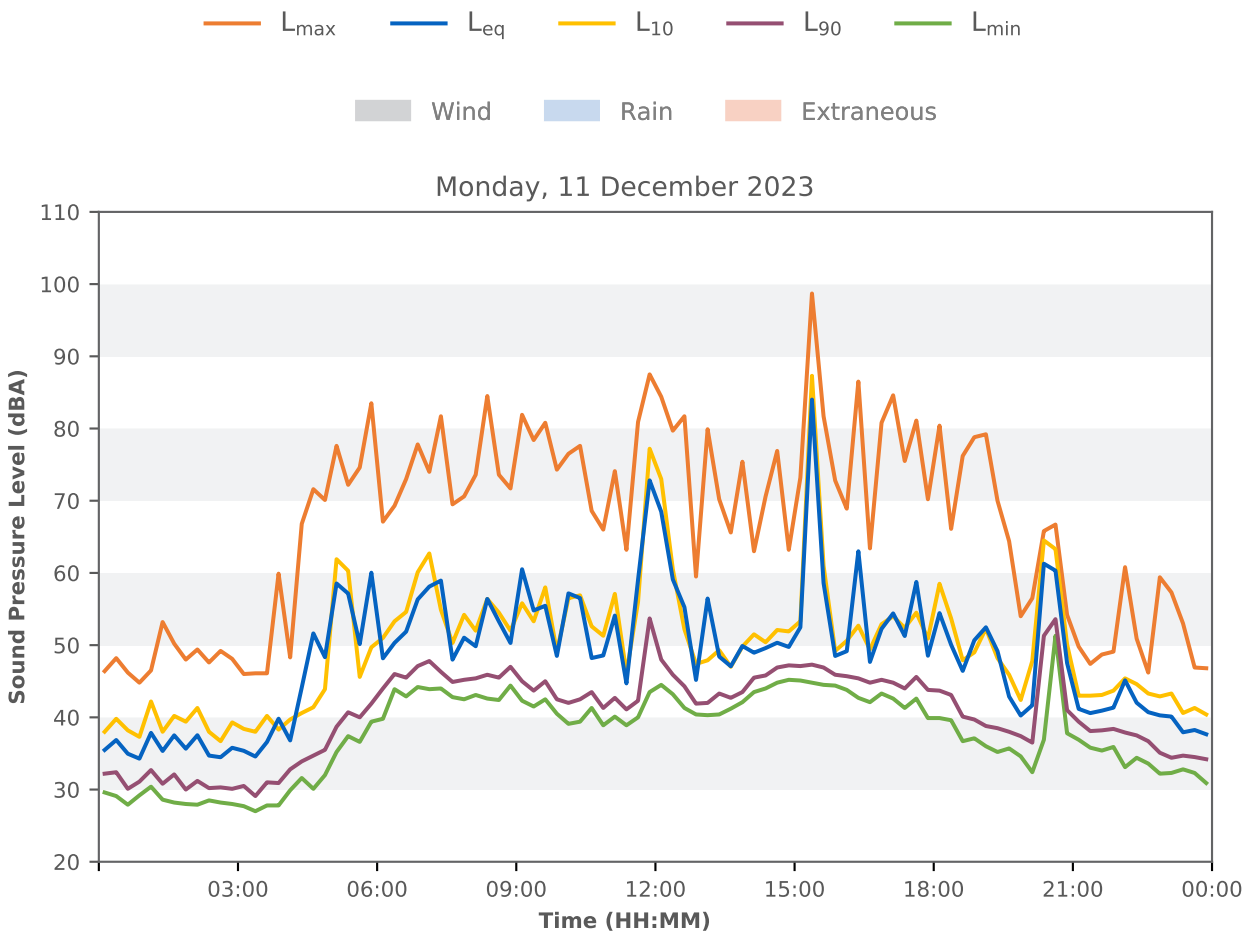

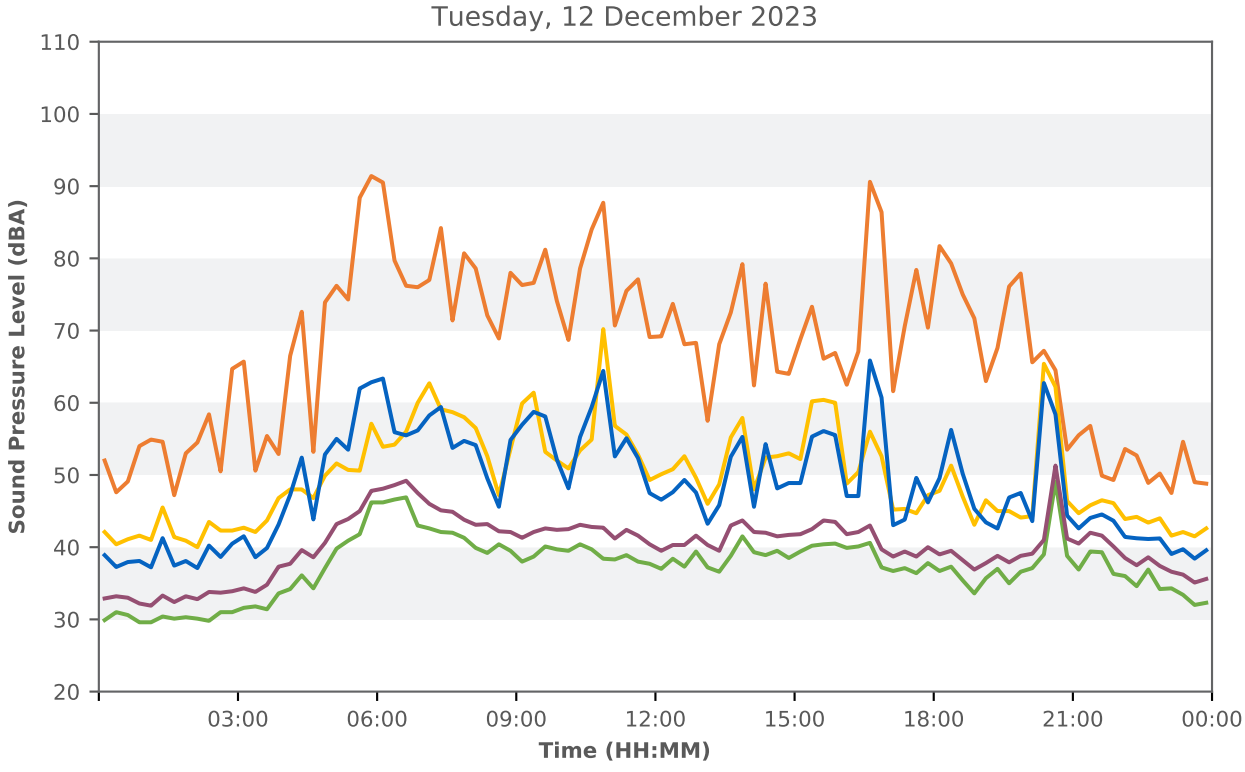

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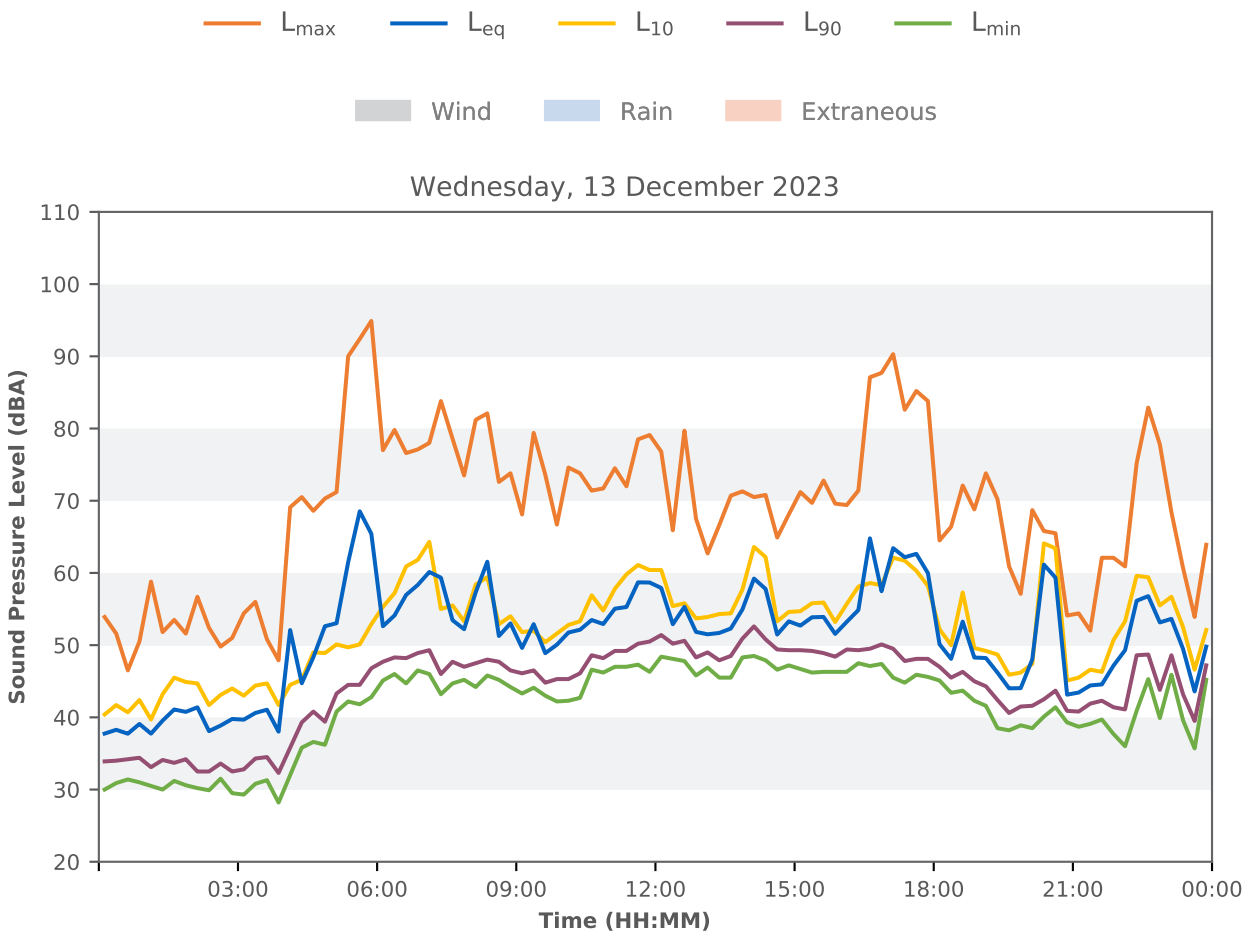

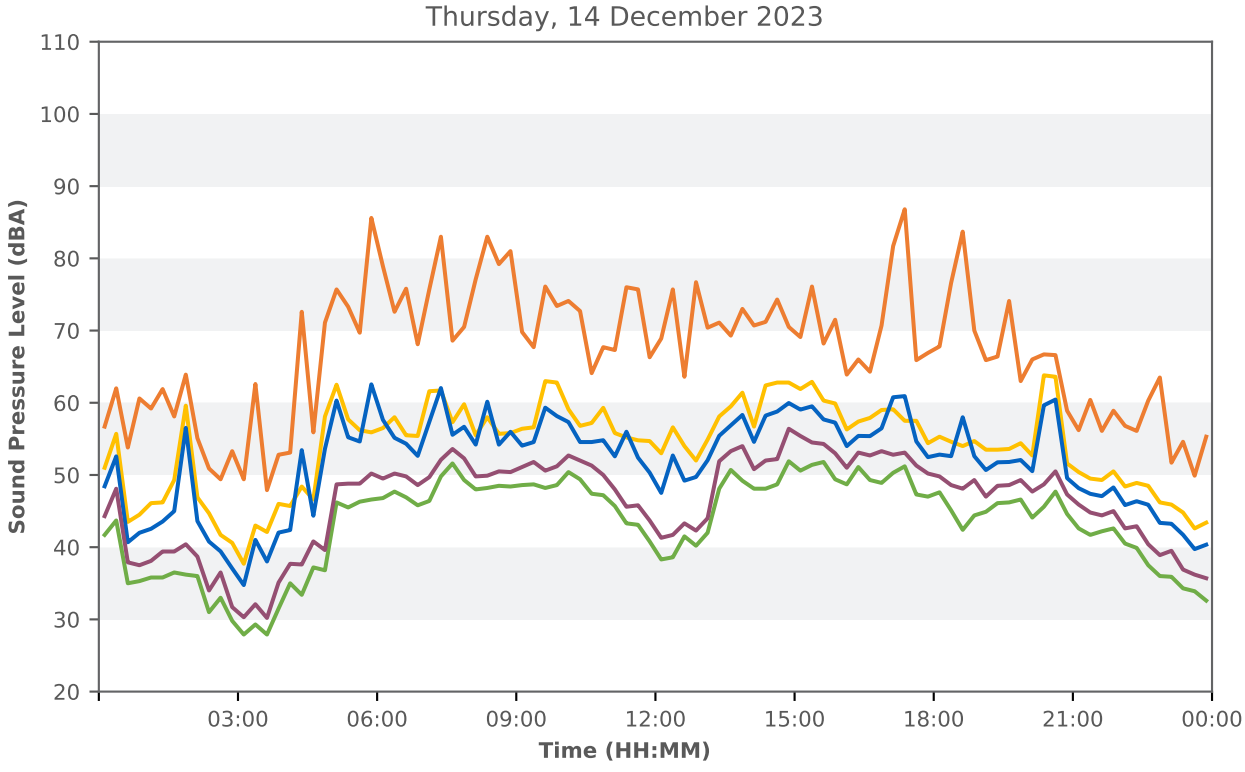

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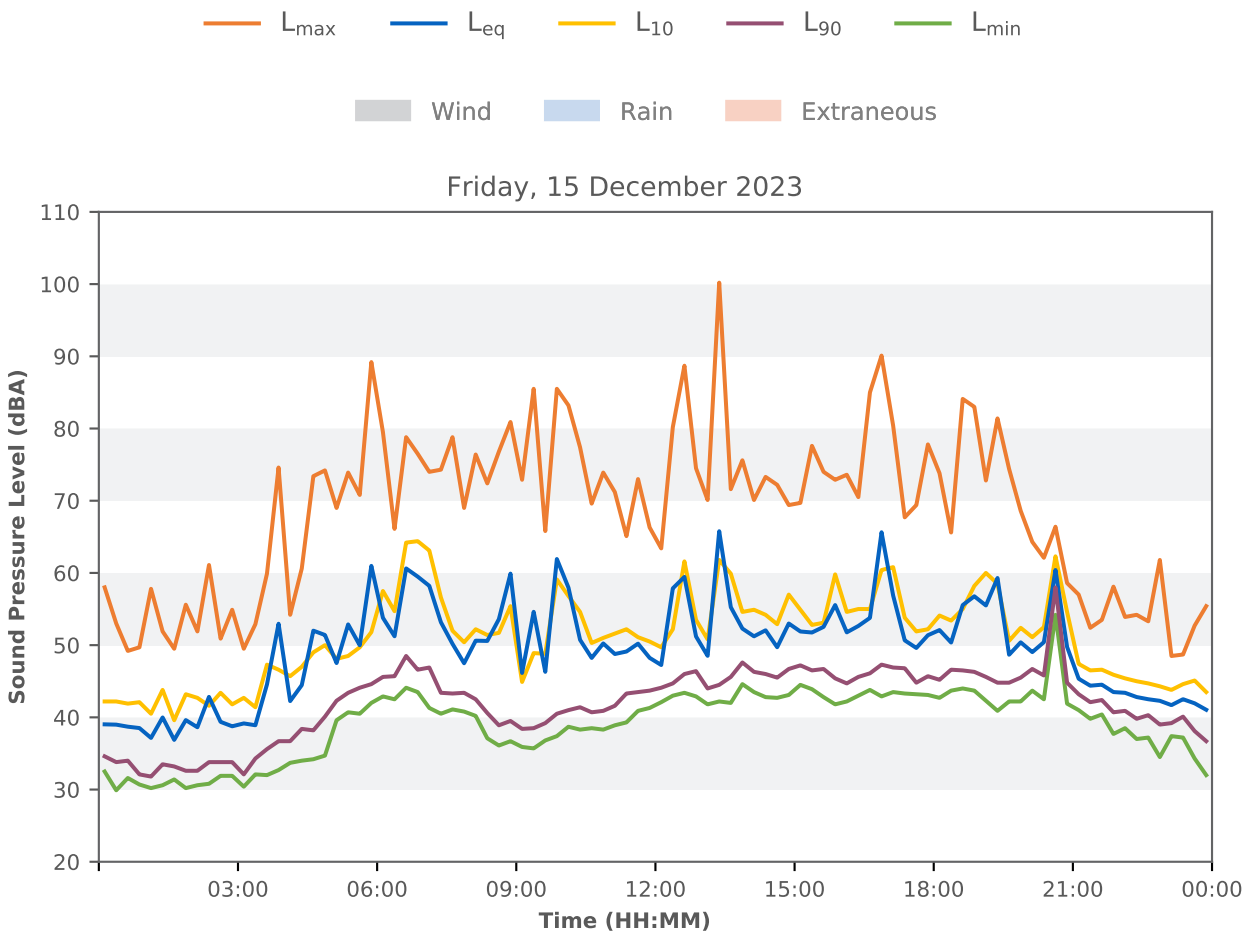

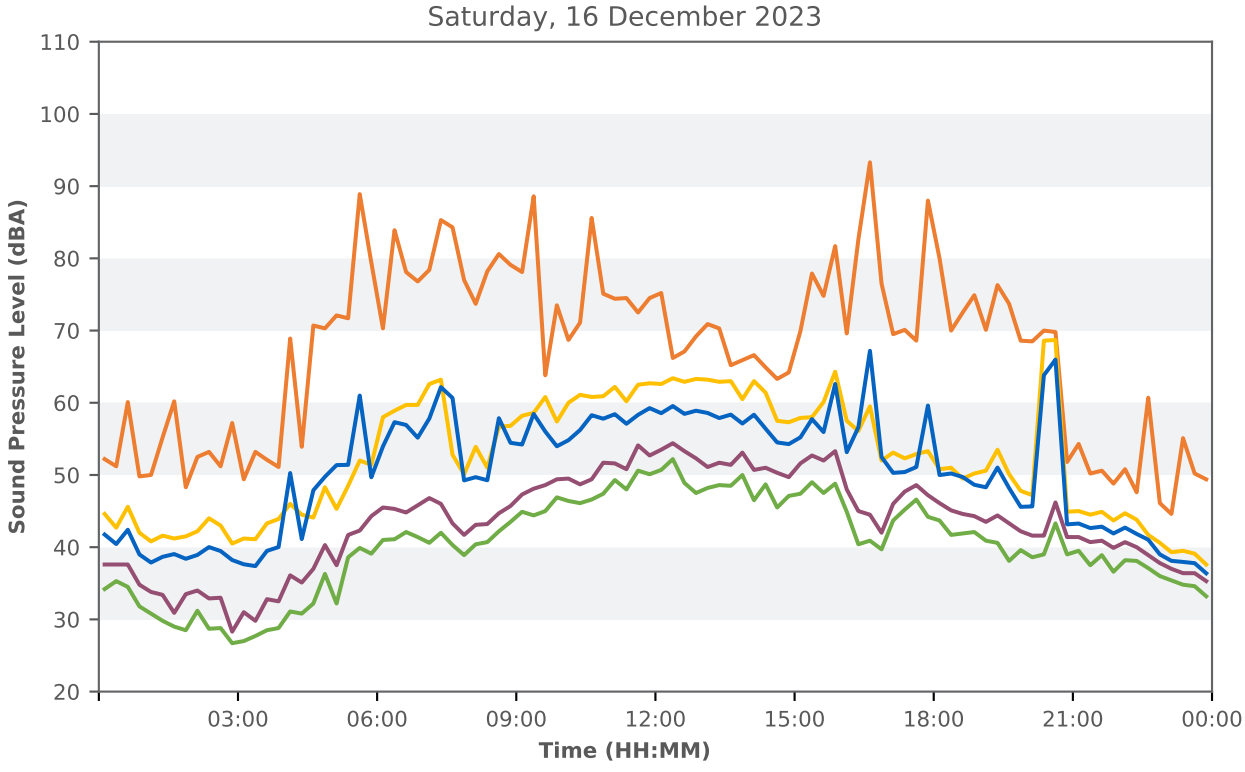

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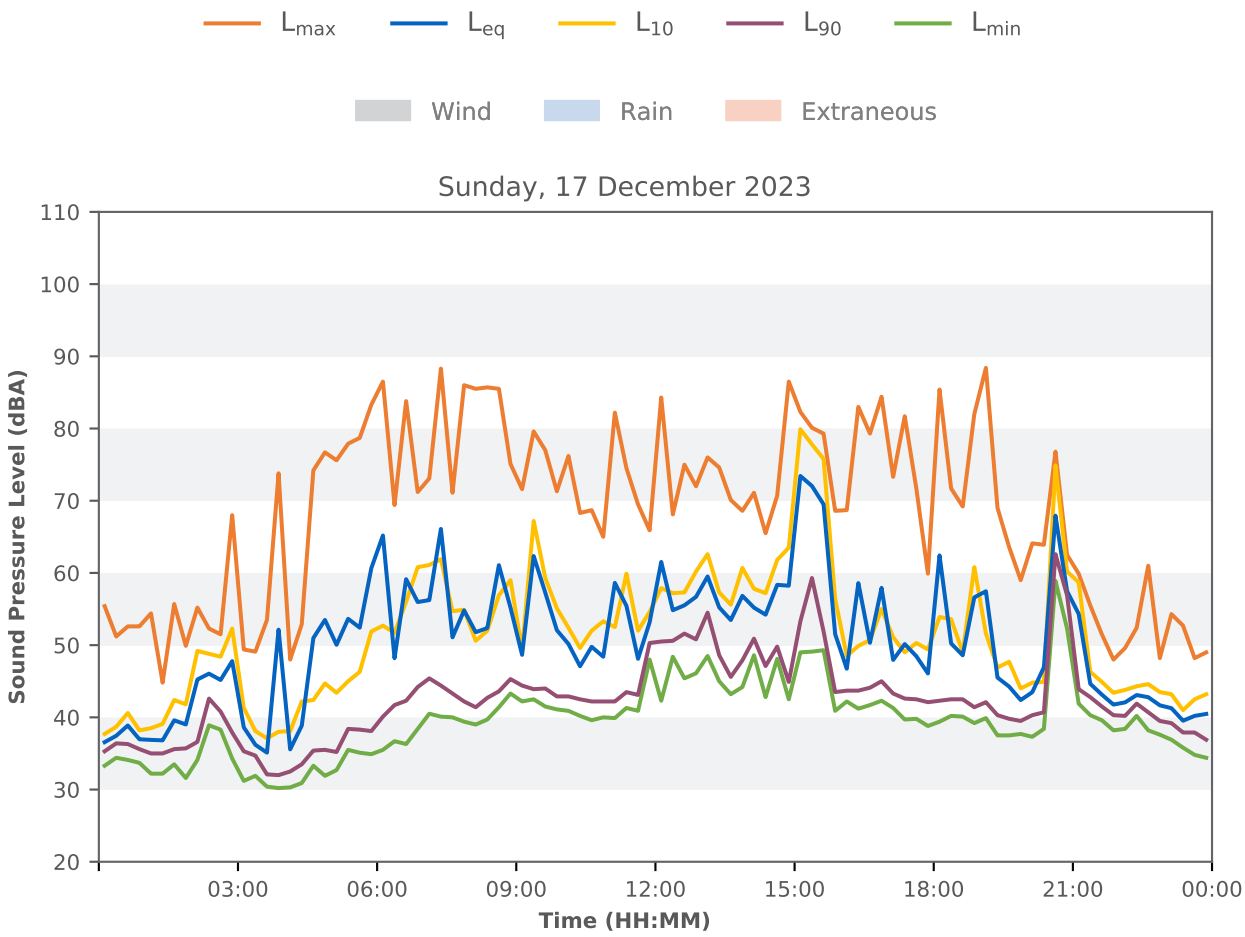

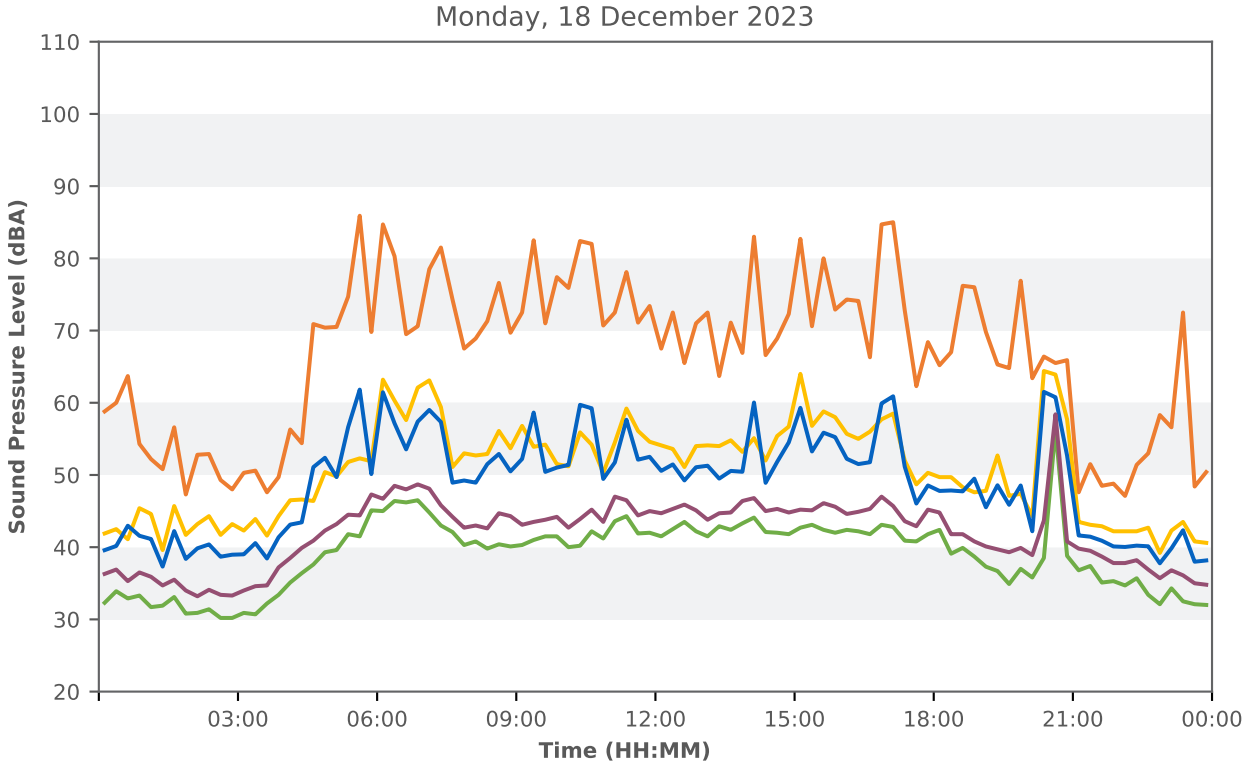

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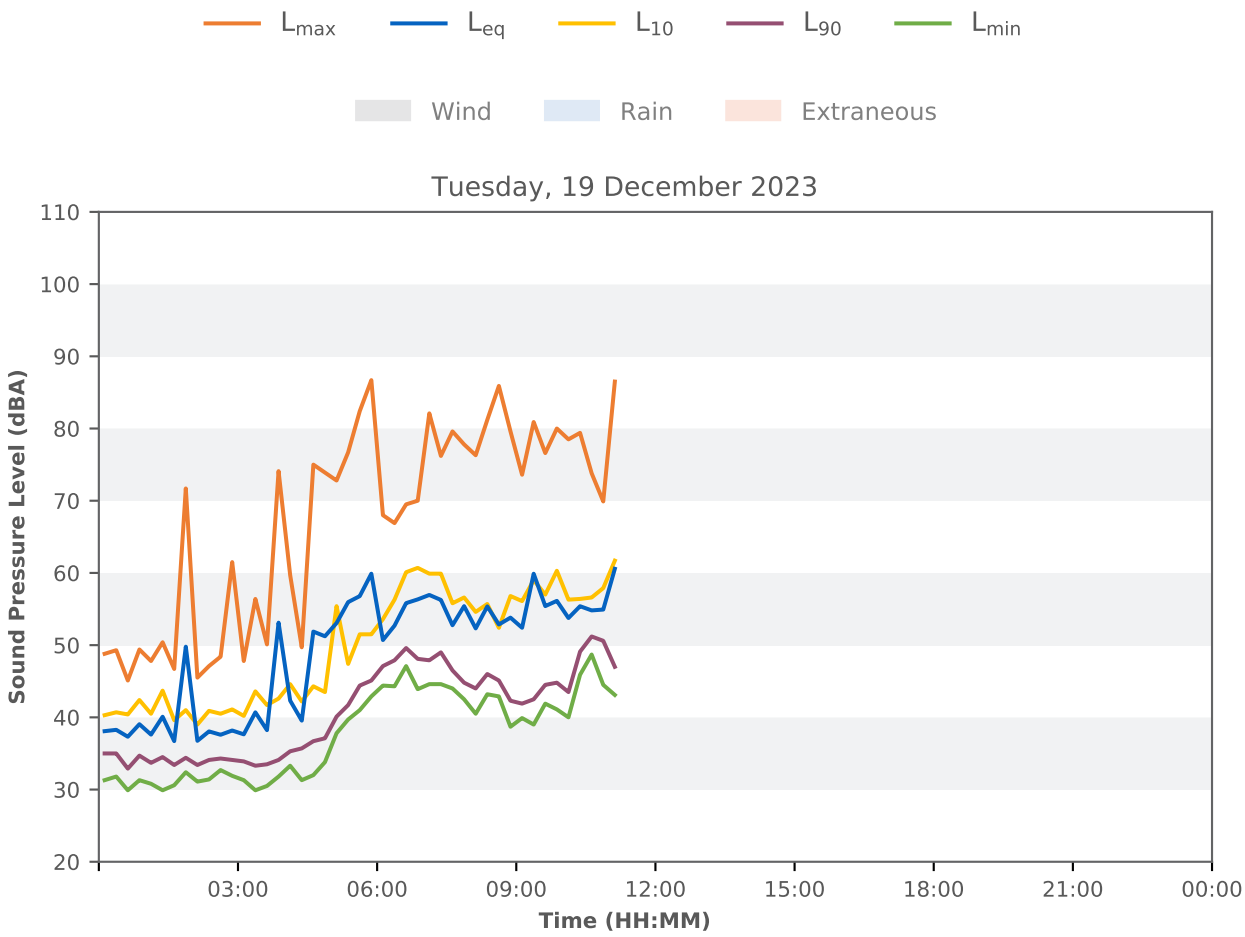
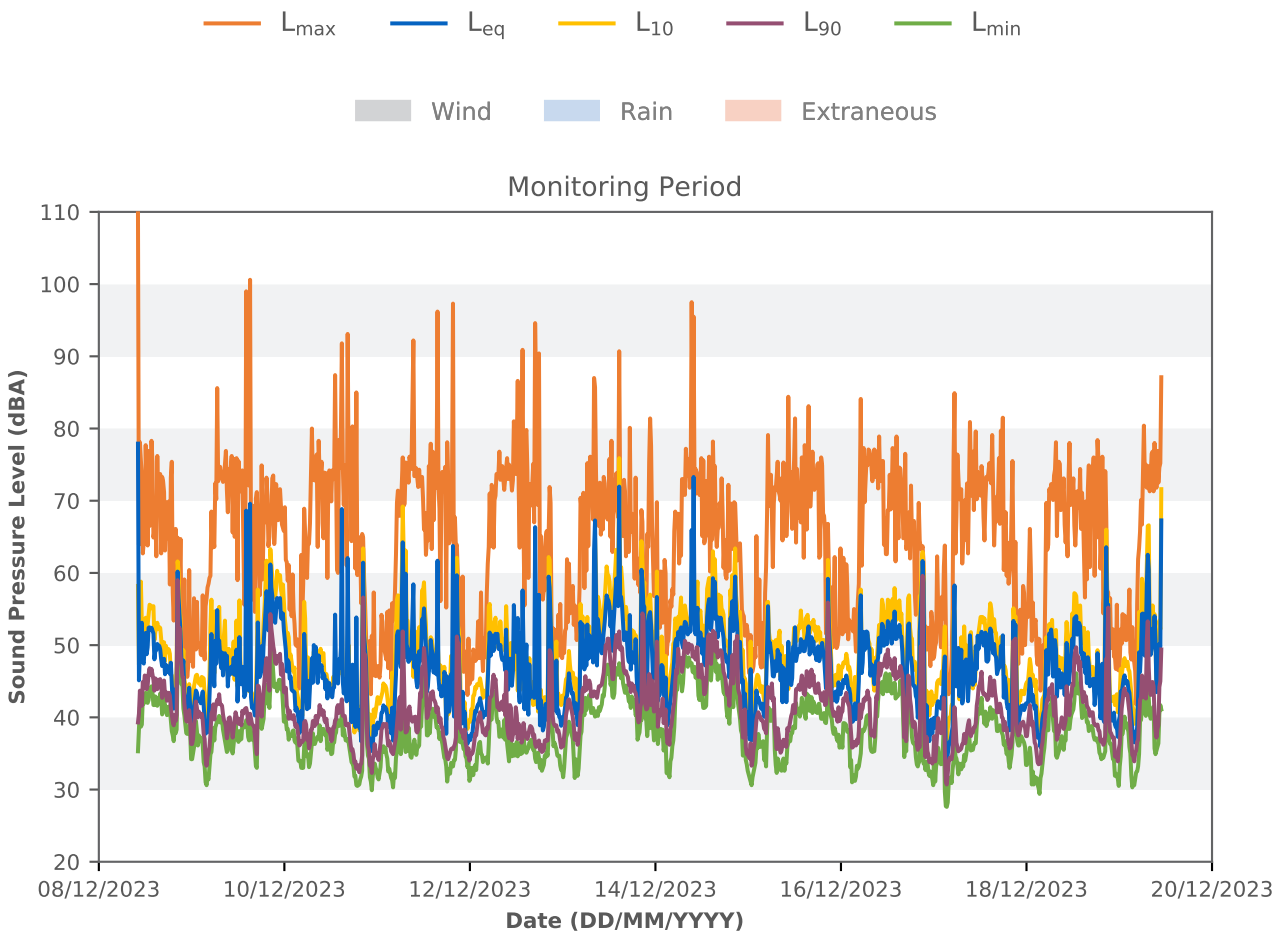
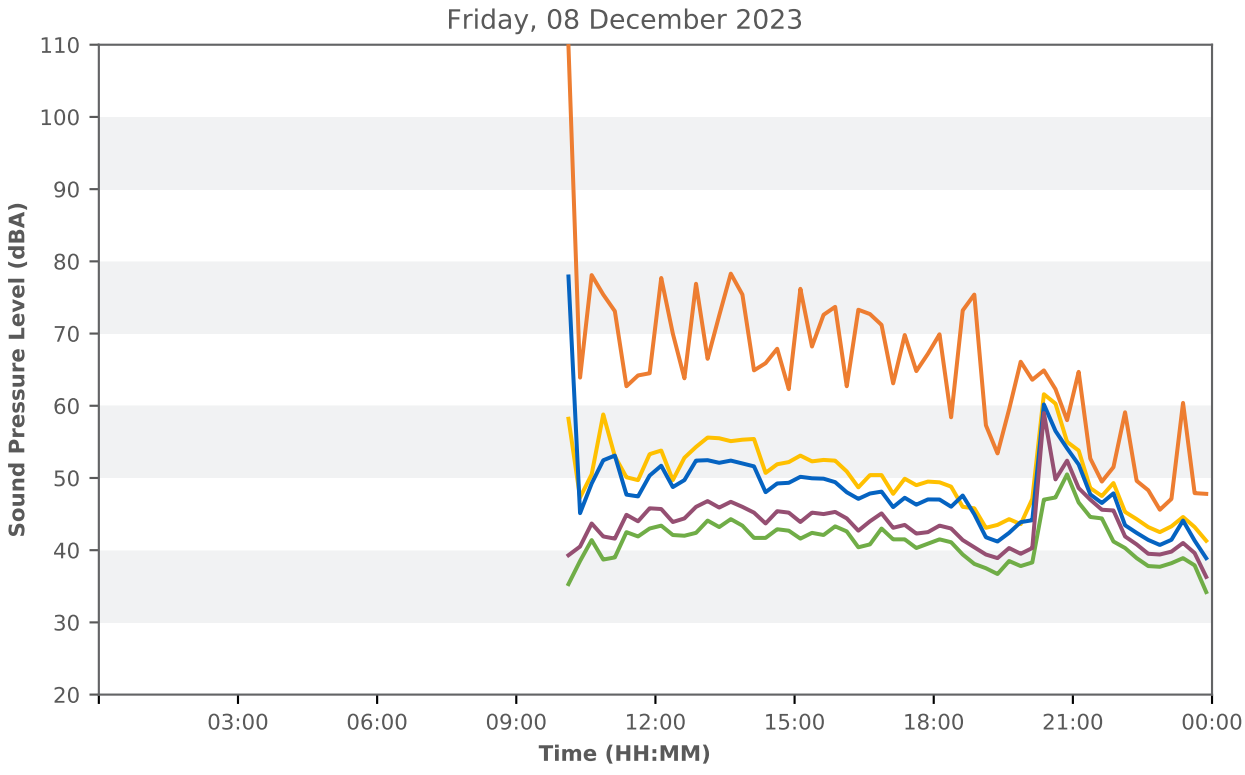


Location B - 21 Buckleys Road





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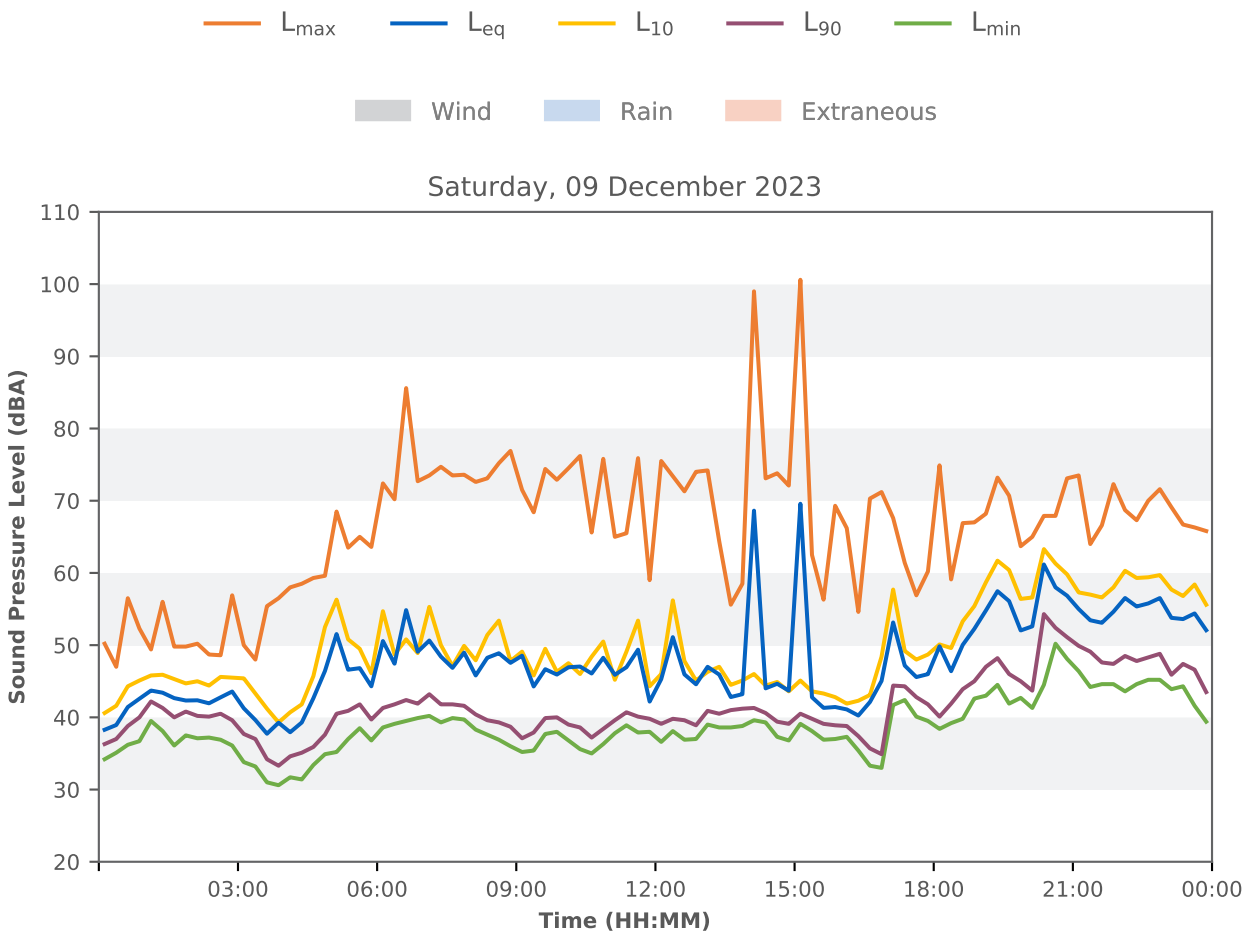

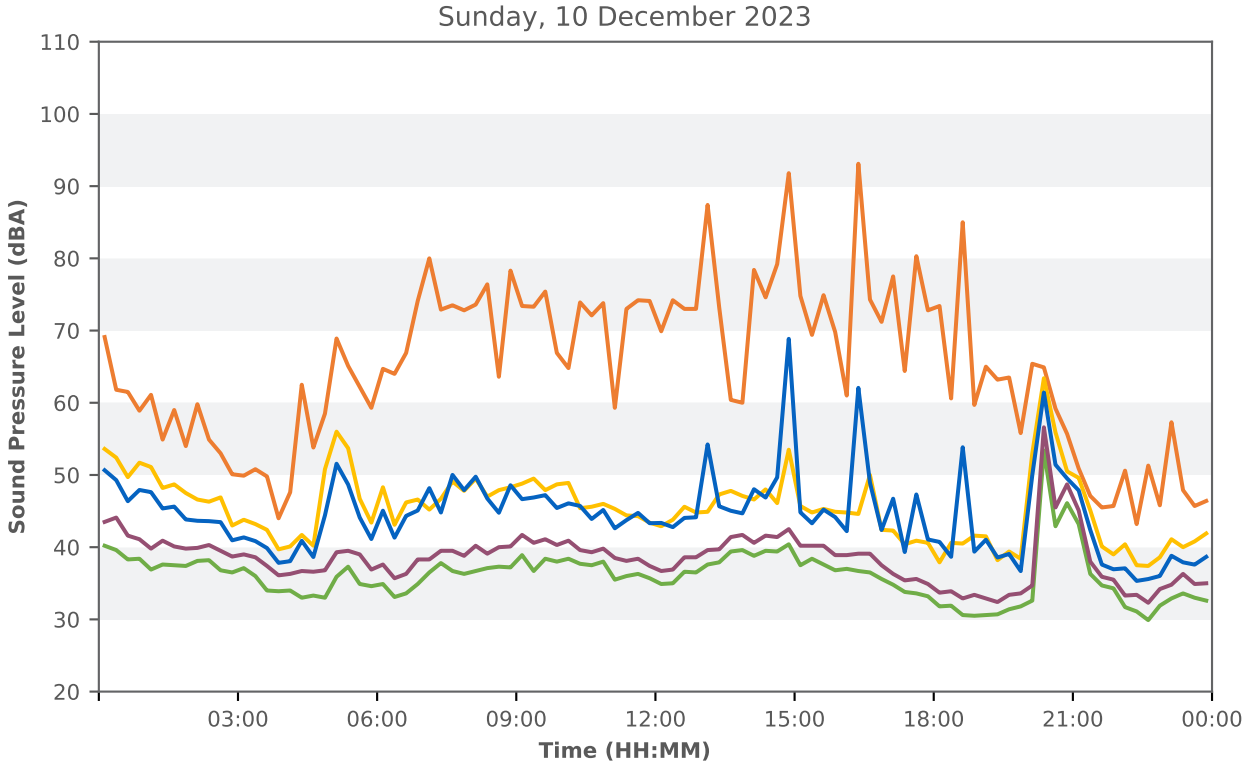

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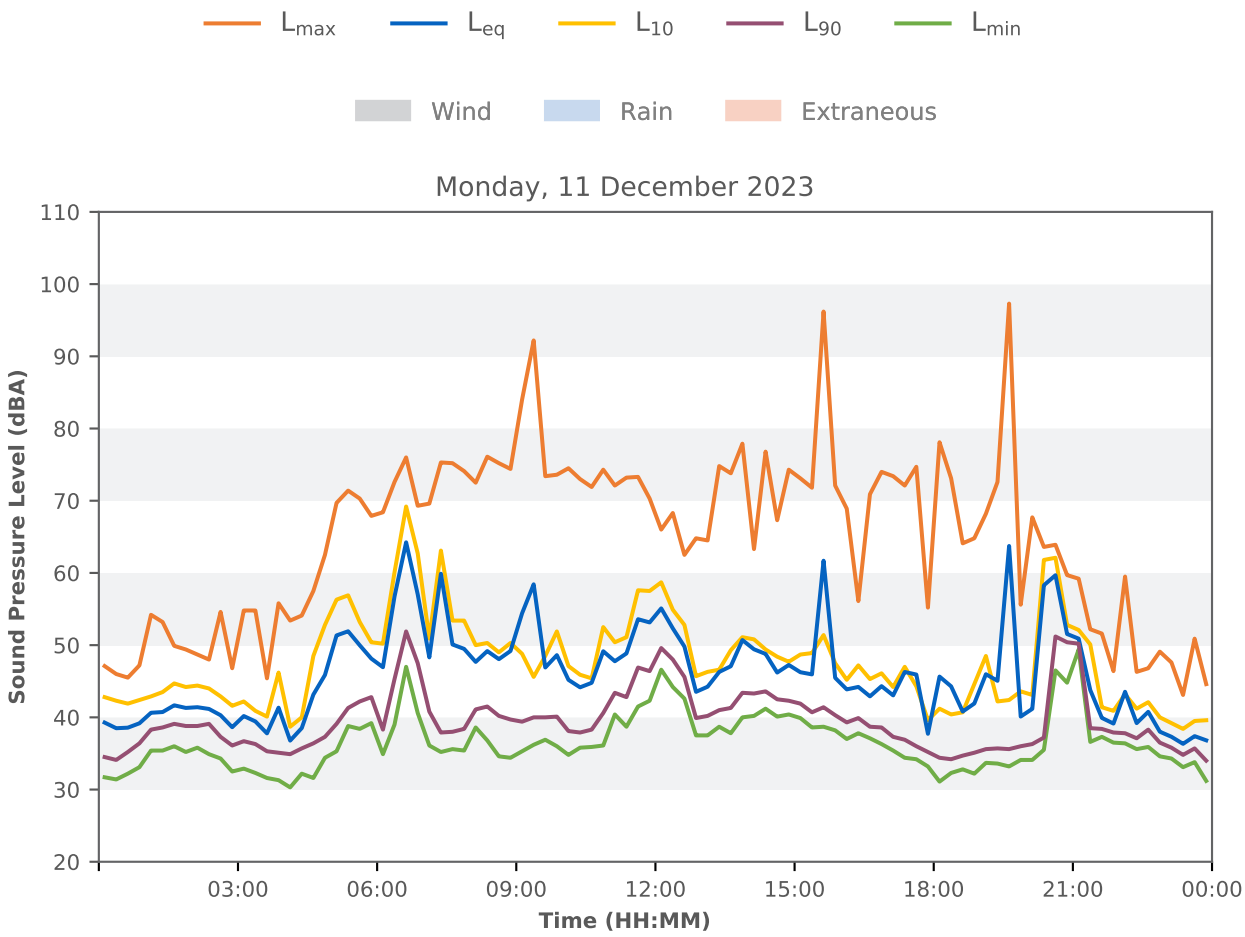

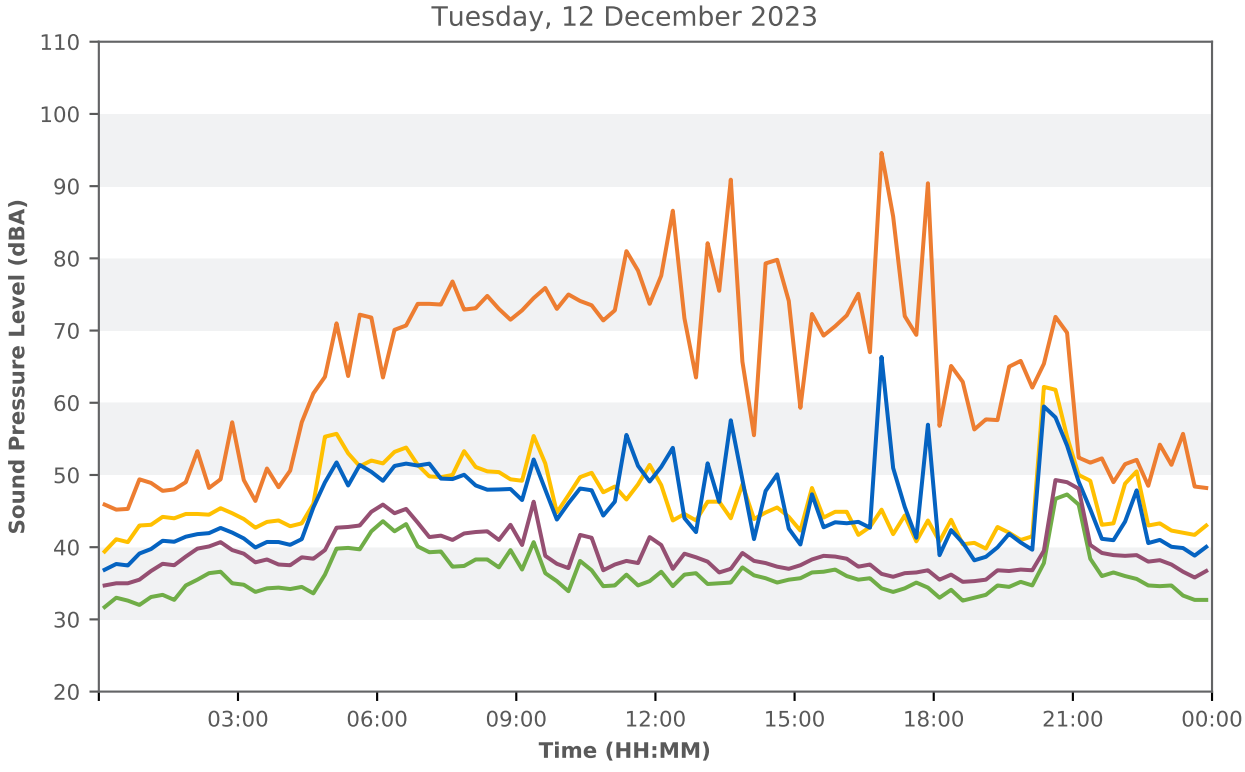

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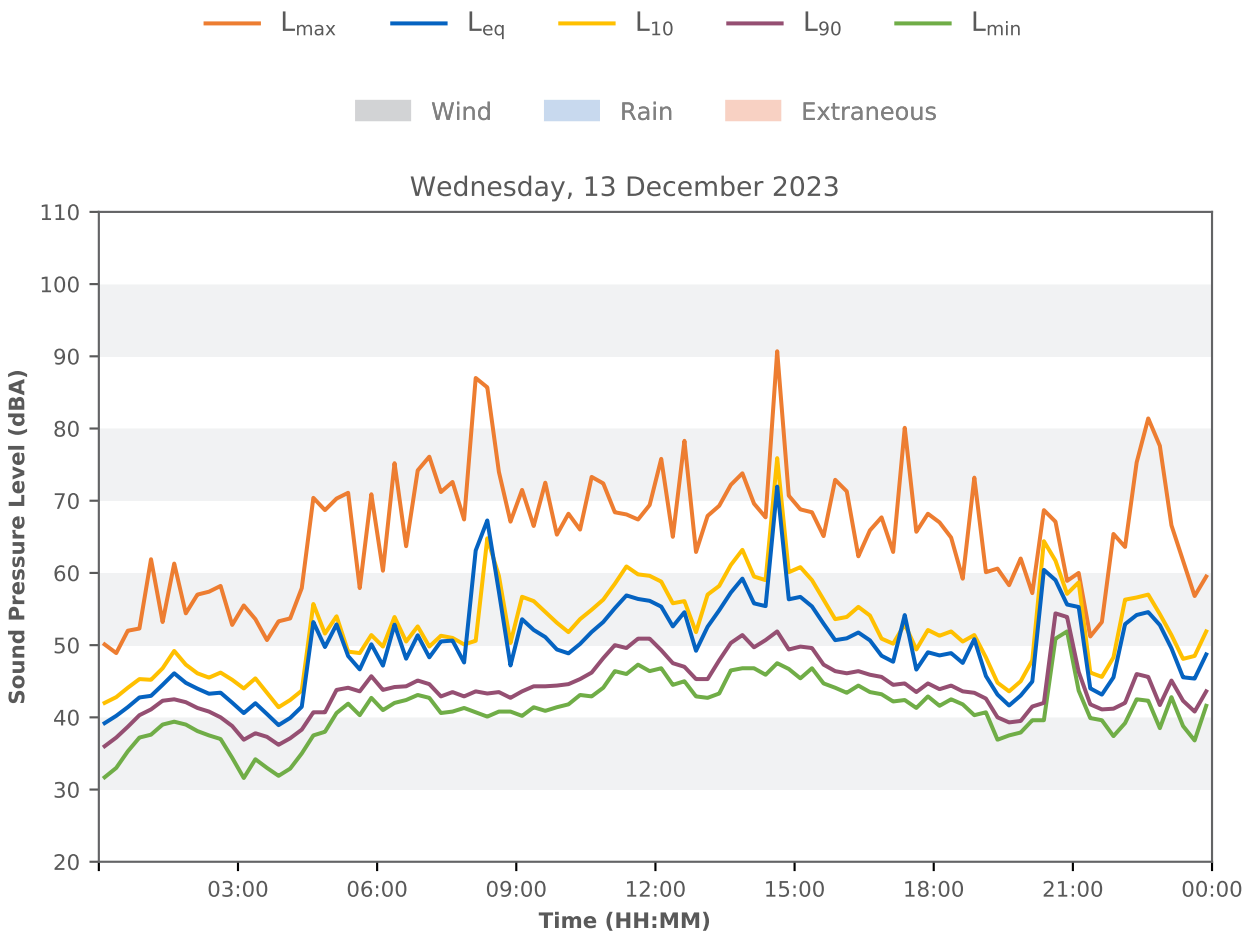

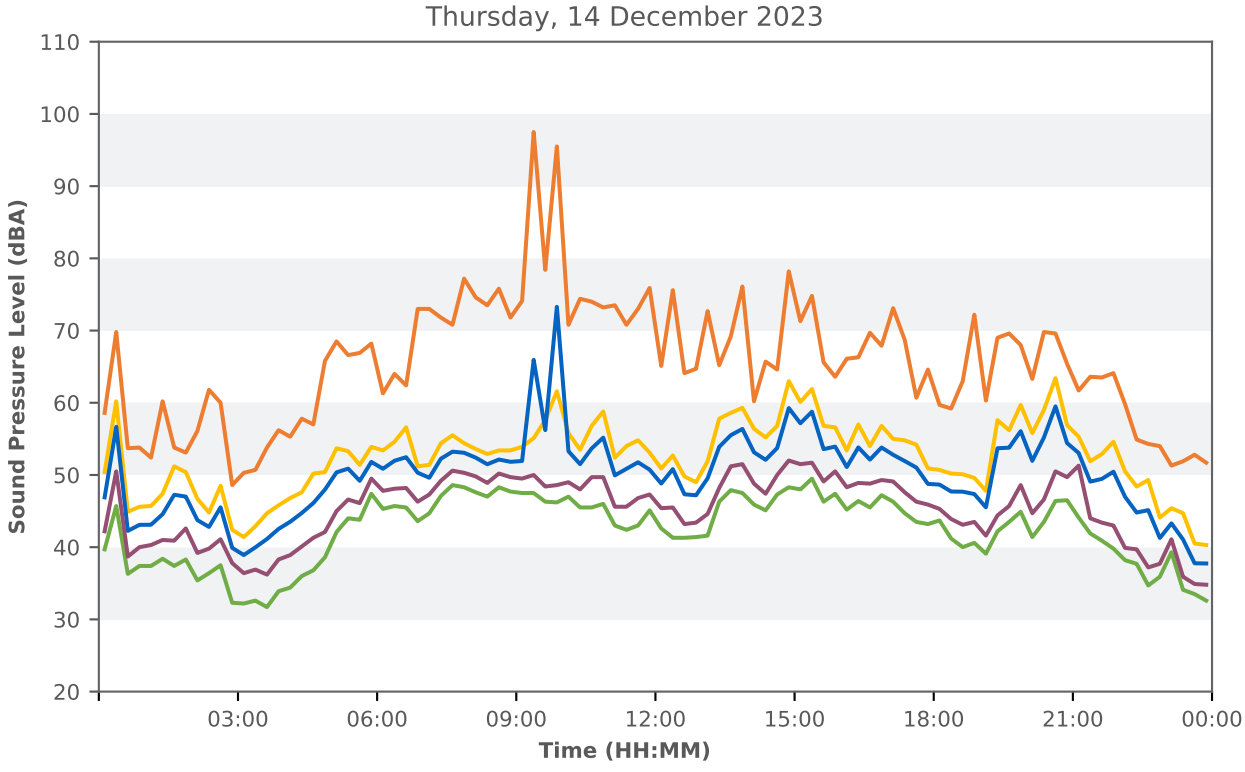

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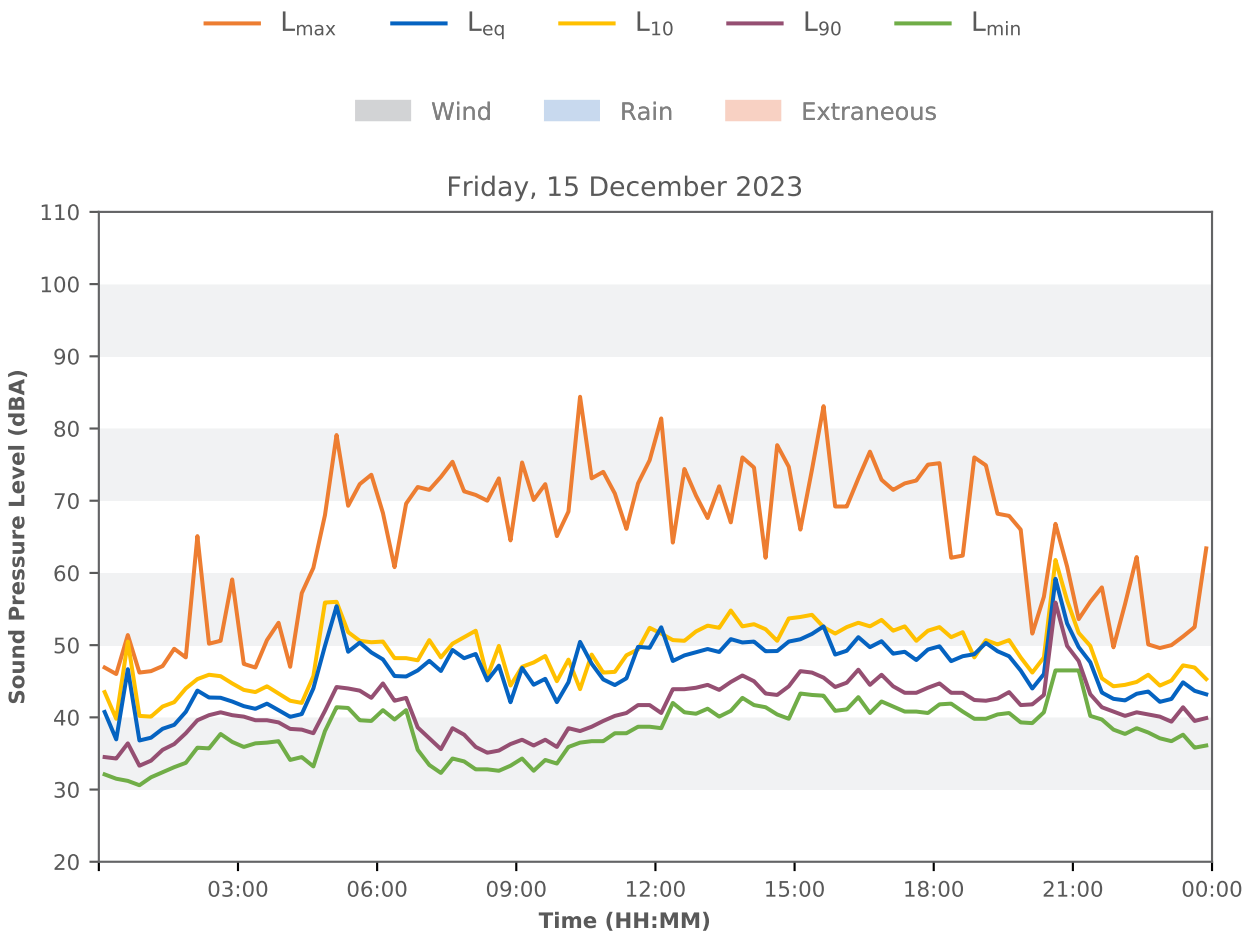

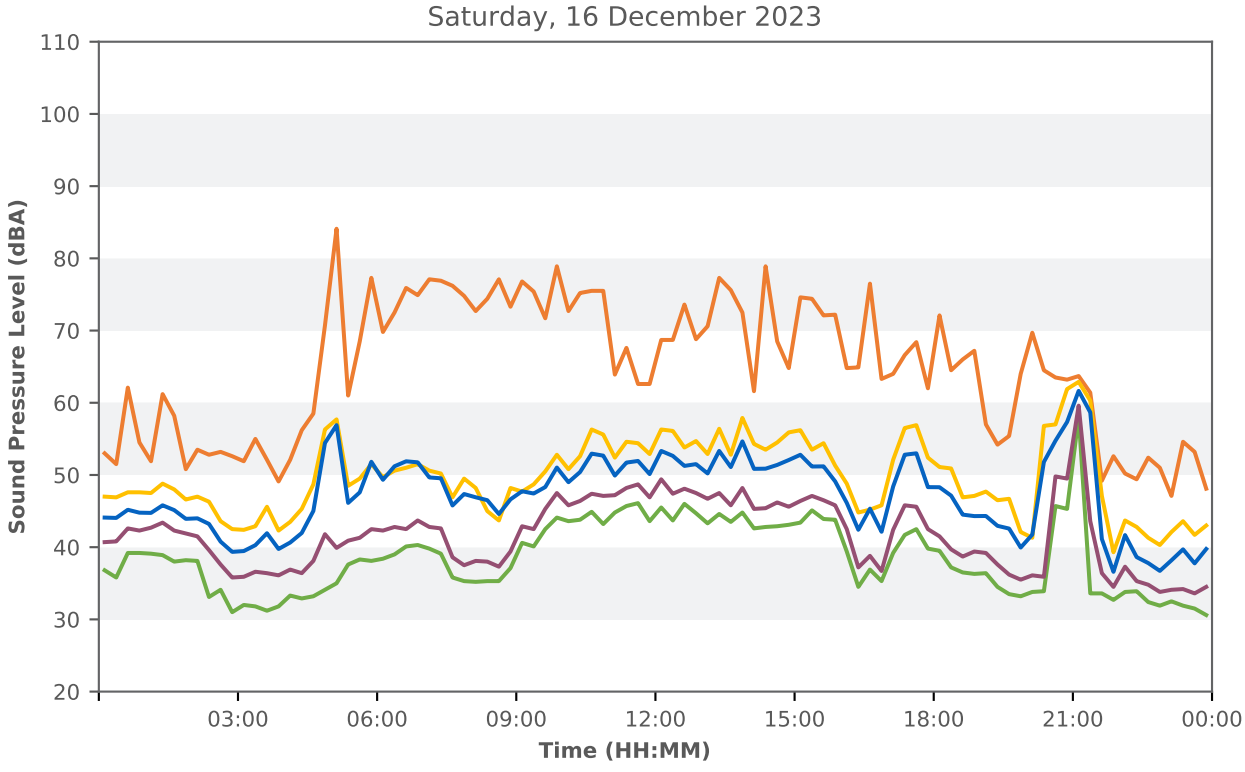

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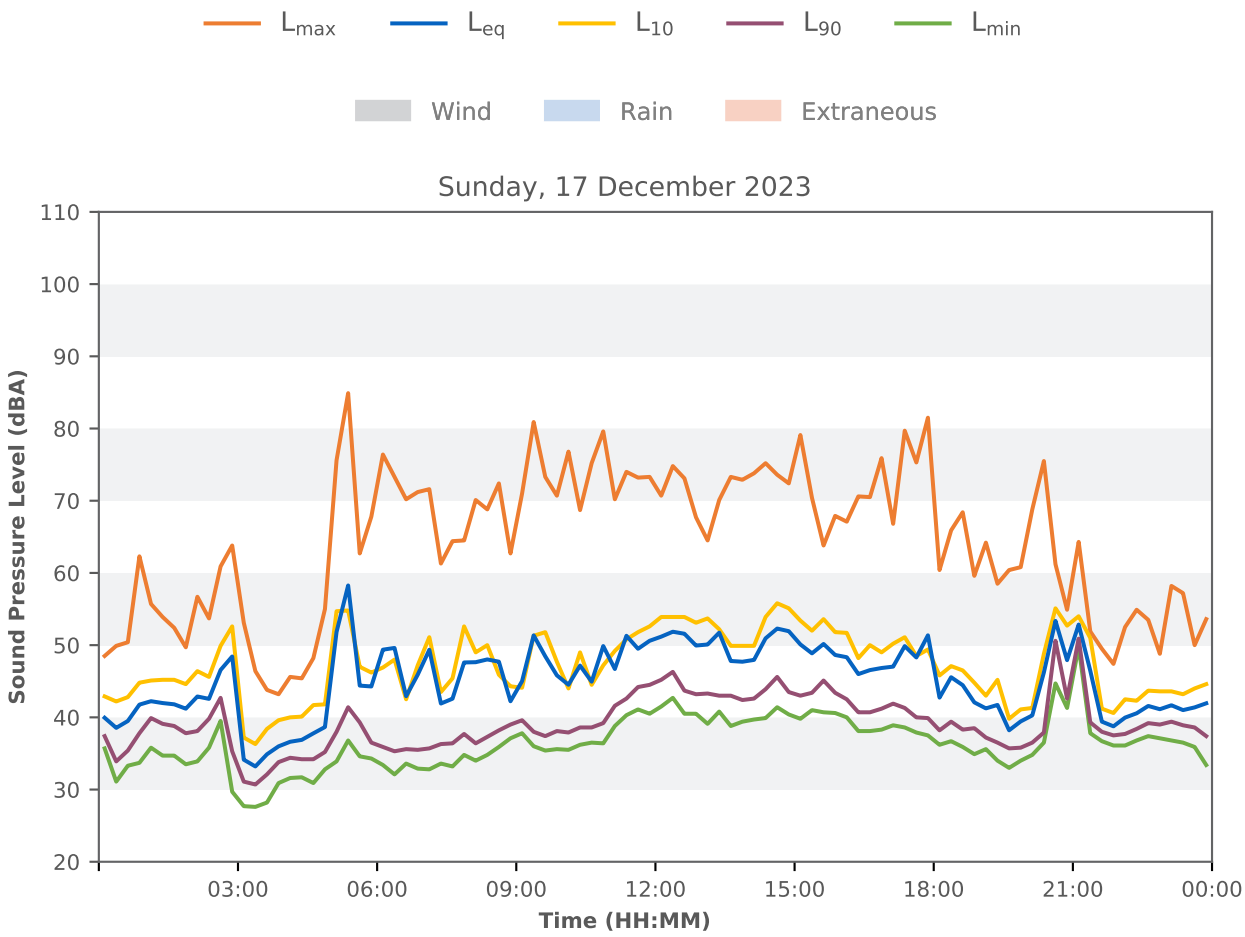

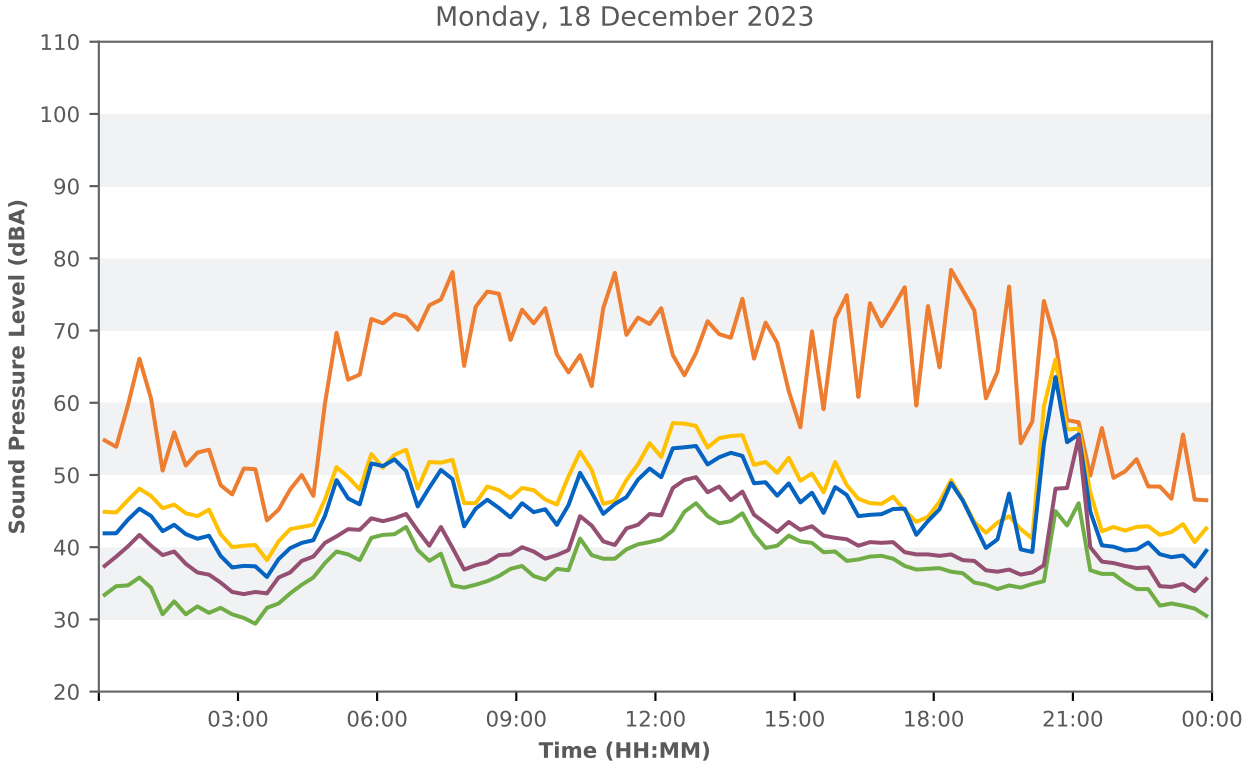

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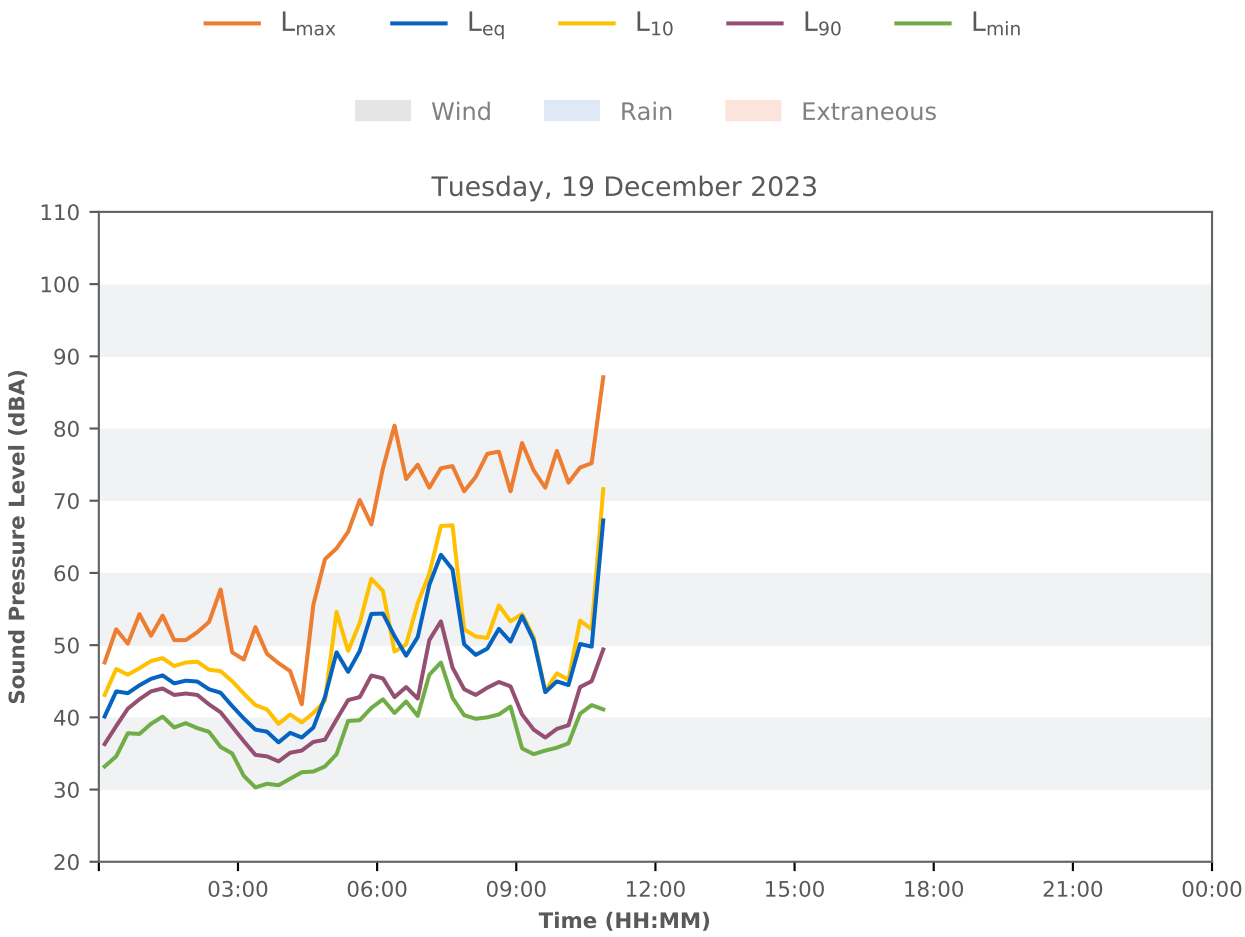


Appendix E – Best Management Practice Implementation Plan

JACKSON
ENVIRONMENT AND PLANNING
STRATEGY | INFRASTRUCTURE | COMPLIANCE | PROCUREMENT

18 June 2024

Mr Romily Webster
Technical Manager
Re.Group Pty Ltd
Suite 1, Level 27
20 Bond Street
Sydney NSW 2000

By email to: romily.webster@re-group.com
Cc: aaron.azzopardi@re-group.com

Dear Mr Webster,

Re: Best Management Practice Implementation Plan

On 10 November 2023, the NSW EPA imposed a Pollution Reduction Program (PRP) on the Dunmore Organic Recycling Facility (the Dunmore ORF). The Dunmore ORF is located within the Shellharbour City Council (SCC) owned Resource Recovery Centre on Buckleys Road, Dunmore (EPL 12903). Re.Group Pty Ltd (as Re.Grow) operates the Dunmore ORF, under contract with SCC and is therefore obliged, under contract, to implement the PRP for the Dunmore ORF.

Jackson Environment and Planning Pty Ltd (JEP) have been commissioned to develop a Best Management Practice (BMP) Implementation Plan that sets out the proposed infrastructure and performance measures that will be implemented at the Dunmore ORF. This BMP Implementation Plan has also been developed to facilitate consultation with the NSW EPA to ensure that the proposed infrastructure and performance measures are sufficient to satisfy the requirements of the PRP, prior to implementation.

Following implementation of this BMP Implementation Plan, JEP will undertake a site inspection to evaluate and confirm the implementation of the plan. A BMP Implementation Report will then be prepared to demonstrate that the planned infrastructure and performance measures have been successfully implemented.

Table 1 addresses the specific requirements of the PRP by documenting how Re.Grow propose to implement each of the planned infrastructure and performance measures. Reference is made to Figure 1 which shows the proposed changes to the maturation and storage area at the Dunmore ORF.

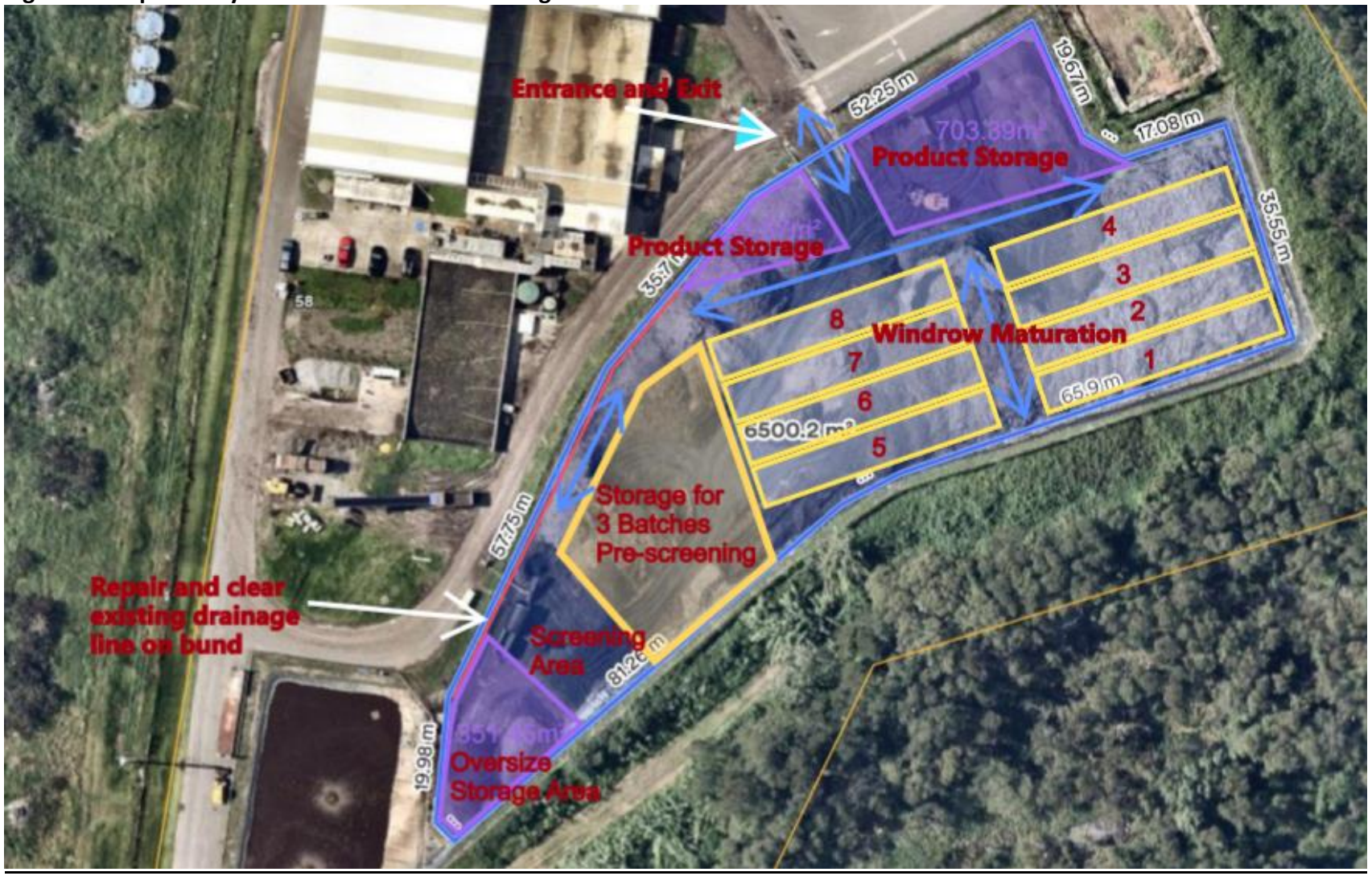
Table 1. Pollution Reduction Program Requirements and BMP Implementation Plan.

Ref.	PRP Requirement	Response
1	Shaping of windrows to maximise run-off and hence reduce infiltration.	This is appropriate when windrow moisture content is normal (40-60%) or high (>60%). Since Dunmore is generally wet, standard practice will be to shape the windrows to a peak to encourage run-off to the formalized drainage lines (refer to Figure 1). During extended periods dry weather resulting in low moisture content (<40%), windrows may be shaped to encourage infiltration (flat or concave tops). They will still be formed into windrows rather than large 'block' piles.
2	All remaining material on the pad is kept under 60% moisture content (supported by sampling data).	Maturing compost will be monitored and recorded weekly and after daily rainfall >30mm using the 'squeeze test' as detailed in The Composting Handbook (2022) p517 and where suspected to be >60% confirmed on-site using weighing and drying procedure pp517-521. If confirmed to be over 60%, the windrow will be turned, and all drainage lines checked/cleared.
3	The slope and orientation of windrows and/or leachate drains is maintained such that free drainage of leachate to a collection drain is permitted and ponding of leachate is avoided.	Figure 1 shows the proposed layout of the maturation and storage area. The key features of the layout include: - Sufficient storage for 8 windrows up to 40m long - Each batch is a distinct windrow with maximum height 3m, width 6.5m and gap between windrows of 0.5m to maximise passive aeration - Upgraded hardstand to fall evenly from east to west sump and leachate pond - Graded hardstand to drainage line along bund to enable effective drainage of leachate to the leachate pond and to avoid inappropriate ponding. - Store screened product up-slope from all other material on the hardstand - Maintain and repair high traffic areas as required to maintain free drainage
4	Windrows are shaped to maximise run-off and hence reduce infiltration.	Refer to Point 1 above.
5	The maturation pad surface is redesigned and constructed from an inert low-permeability material such as compacted clay, modified soil, asphalt or concrete over a compacted base able to support, without sustained damage, the	The maturation and storage area will be re-instated to ensure the pad can support, without sustained damage, the load of material on it and the load of any machinery used in the composting facility. Re.Grow will resurface the entire maturation pad using a cement stabilised compacted road base.

Ref.	PRP Requirement	Response
	load of material on it and the load of any machinery used in the composting facility.	
6	The maturation pad is able to support all structures, machinery and vehicles as applicable and allow access to any utilised part of the processing site, irrespective of the weather conditions; vehicles may include: a. Transport vehicles used for the delivery of organics and the transport of finished products; b. Mobile equipment used in all phases of all the processes operated on the site; and c. Fire-fighting vehicles and equipment.	Refer to Point 5 above.
7	The quantity of organics received for processing each year should be based on either current trends, where available, or on production plans for the forthcoming year. (Jackson report)	Re.Grow will process up to 25,000 tonnes per year at the facility. This is based on an average 2083 tonne/month processing capacity and a minimum 14-day cycle within the tunnels. At capacity, controlled maturation of material in windrows will be 4 weeks duration to satisfy a minimum 6-week composting process. Up to 3 batches can be stored in the pre-screening area (an additional 3 weeks at capacity).
8	A management procedure has been developed for improved composting on the maturation pad. This should include clear specifications or the maximum size and location of windrows and stockpiles. (This plan should include access for windrow turning equipment).	With assistance from JEP, Re.Grow will develop and implement an management procedure suitable for inclusion in their existing management system. We have calculated the following areas / volumes for each activity on the maturation and storage area are required.

<table>
<tr><th>Ref.</th><th>PRP Requirement</th><th>Response</th></tr>
<tr><td></td><td></td><td>
<table>
<tr><th>Activity within Maturation& Storage Area</th><th>Area</th><th>Volume</th><th>Weight</th></tr>
<tr><th>Units:</th><th>m^2</th><th>m^3</th><th>tonnes</th></tr>
<tr><td>Product Storage</td><td>900</td><td>900</td><td>450</td></tr>
<tr><td>Maturation</td><td>2240</td><td>3813</td><td>1907</td></tr>
<tr><td>Storage (pre-screening)</td><td>930</td><td>2790</td><td>1395</td></tr>
<tr><td>Oversize storage</td><td>350</td><td>875</td><td>350</td></tr>
<tr><td>TOTALs</td><td>4420</td><td>8378</td><td>4102</td></tr>
<tr><td>Total Bunded Area</td><td>6500</td><td></td><td></td></tr>
<tr><td>Area required for access</td><td>2080</td><td></td><td></td></tr>
</table>
Windrows in the maturation area will be maximum 40m in length, 3m in height and 6.5m in width. Windrows will be formed and moved “end-on” with a front-end-loader and, if necessary, further shaped with an excavator.
Compost stored in the pre-screening storage area will be formed into maximum 4 m high and 8m wide windrows running north to south. They will be formed “end-on” with a loader from the north. When required, they will loaded into the screen.</td></tr>
<tr><td>9</td><td>A management procedure has been developed for operational control and management of oversize, to avoid stockpiling and resulting fire risk.</td><td>With assistance from JEP Re.Grow will develop and implement an management procedure suitable for inclusion in their existing management system.
Maintaining capacity limits and maximising breakdown through more effective maturation will reduce the amount of oversize produced. Regardless, there will always be some oversize that will require management. Oversize is estimated to be approximately 10% by weight of inputs. Stored oversize will be evaluated for suitability to recirculate and/or rescreen. If not suitable, it will be landfilled.
Re.Grow is exploring other options for oversize management, including:
- Installation of a decontamination line (subject to Council approval); and
- Use of oversize as a base layer in new waste cells in the adjoining landfill (subject to approval from the NSW EPA)
Discussions around these options is ongoing, however implementation may occur after completion of this BMP and resolution of the current PRP.</td></tr>
</table>

Figure 1. Proposed layout of maturation and storage area and additional infrastructure



We trust that the above BMP Implementation Plan satisfies the requirements of the PRP and NSW EPA. Re.Grow proposed to implement the BMP Implementation Plan between July 2024 and November 2024.

The site inspection will be carried out in November 2024 to evaluate and confirm the implementation of the plan. A BMP Implementation Report will then be prepared to demonstrate that the planned infrastructure and performance measures have been successfully implemented.

If you have any queries in relation to the BMP Implementation Plan, please do not hesitate to contact the undersigned.

Yours sincerely,

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