

Compliance Noise Monitoring

Byron Resource Recovery Centre
The Manse Road
Myocum

HEALTH SCIENCE ENVIROMENTAL EDUCATION
ENVIRONMENTAL AUDITOR

Compliance Noise Monitoring

Byron Resource Recovery Centre
The Manse Road
Myocum

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1. Introduction

1.1 Purpose

Tim Fitzroy & Associates (TFA) were engaged by Byron Shire Council (BSC) to undertake an operational noise assessment at the Byron Resource Recovery Centre (BRRC) (former Myocum Landfill), The Manse Road Myocum. Key components of the noise assessment were to:

- undertake compliance noise monitoring during:
 - Operation mulching of stockpiled green waste at the BRRC; and
 - Routine operations at Myocum Quarry.
- provide an updated noise assessment of site operations.

The focus of compliance noise monitoring undertaken on the 23 August 2024 was the Peterson 2710D green waste grinder and associated excavator. Unfortunately, due to elevated wind noise monitoring was limited to two locations (N1 and N4) on this occasion. N1 and N4 represent to the two closest sensitive receptors to the green waste grinding operations.

1.2 Site Description and Surrounds

The subject site is described as Lot 1 DP 1052900 The Manse Road, Myocum. The BRCC is established between two remnant ridgelines. The BRCC is located at Myocum around 6km south of Mullumbimby and 9km southwest of Brunswick Heads. The Myocum quarry is located immediately to the west of the site on Lot 1 DP591441.

The Resource Recovery Area is located on the crest of a hill. The surrounding area is undulating.

Several residences are within close proximity of the BRCC. Residences R1 to R5 (inclusive) are identified in **Illustration 2.1**. Residences R1, R3 and R4 are owned by BSC, while the other residences are privately owned. Residences R1 and R5 are two storey dwelling houses while the other dwellings are single storey.

A BSC operated quarry is located to the immediate west of the BRCC, while Leela Quarry (privately operated) is located to the north (see **Illustration 2.1**). Vegetation provides a visual screen from the BRCC to residences R1, R2, R3 and R5.

2. Resource Recovery Operations

2.1 Typical Operations

Byron Resource Recovery operations are carried out in the transfer station and public drop off areas. The Byron Resource Recovery Centre operating hours are 7:30 am to 4:00pm (Monday to Friday) and 8:30am to 11:30am (Saturday and Sunday). Landfilling operations ceased in late September 2013. Additional infrastructure has been installed at the existing transfer station for the temporary storage and bulk transfer of waste to South east Queensland. A green waste and Metals Recycling Area has been established on a level area between the redundant northern and southern landfill cells.

Council operates a single body, dual axle, hook lift truck for the purpose of transporting water and roll on roll off bins (RORO). The water tank is used for dust suppression and firefighting while the RORO bins (e.g. 10m) are used for the transfer of waste and recycling. Council operates a Backhoe (Cat 432D) for the management of green waste, metals recycling and putrescible waste.

An excavator is used to load the putrescible waste at the transfer station, load the metal recycling and green waste and construction and demolition waste into a RORO bin (e.g. 60m).

The Litter bins (L-bins) in the public drop-off area are emptied using a loader. The loader is also used for loading the organics in the pasteurisation process. Waste is deposited into L-bins at the public drop-off area.

A variety of vehicles including private vehicles, mini skips, council rubbish trucks (up to 8 per day), deposit waste either at the transfer station or the resource recovery area. Semi-trailers operate in the Resource Recovery area with RORO bins. Walking floor trucks operate in the transfer station. Average movements are four a day, Monday to Friday.

To the northwest face are the weighbridge, waste transfer station and second-hand shop. This area is not in a direct line of site to residences R1, R2, R4 and R5.

2.2 Intermittent Operations

Intermittent noise generating activities include grinding of green waste (every 6 to 8 weeks) and loading out of metals recycling (every 2 weeks).

The following corrective actions are employed by BSC to reduce noise impacts from intermittent noise generating activities:

- Green waste and metal processing do not occur on weekends and public holidays.
- Commencement of these operational activities shall take place on weekdays only, commencing no earlier than 9:00 a.m. and ceasing no later than 4:00 p.m.
- Dates for green waste processing will be scheduled at least two weeks in advance of commencement, and potentially affected resident neighbours will be notified by a letter box drop.

2.3 Licence Conditions

The NSW Environment Protection Authority (EPA) has issued licence conditions for the Myocum Landfill and the Byron Resource Recovery Centre. Noise Monitoring locations are to be located within 30m of Residence R1 to R5 (inclusive) are identified in **Table 2.1**.

Condition L3.1 of EPL 13127 states

Noise from the premises must not exceed an LAeq(15 minute) noise emission criterion of 43 dB(A) at monitoring points 8 (N1), 9 (N2), 11 (N4) and 12 (N5) and an LAeq(15 minute) noise emission criterion of 39 dB(A) at monitoring point 10 (N3) during operations at the premises.

L3.2 of EPL 13127 states that:

To determine compliance with condition L3.1 noise must be measured at, or computed for, the most affected point on or within the boundary of the residential property (N1, N2, N3, N4, N5), or if this is more than 30m from the residence, at the most affected point within 30m of the residence. A modifying factor correction must be applied for tonal, impulsive or intermittent noise in accordance with the "Noise Policy for Industry (NSW EPA 2017)".

L4.1 of EPL 6057 states that noise from the premises must not exceed:

a) An LAeq(15 minute) noise emission criterion of 43 dB(A) at monitoring points 20 (N1), 21 (N2), 27 (N4) and 28 (N5) and an LAeq(15 minute) noise emission criterion of 39 dB(A) at monitoring point 22 (N3) during operations at the landfill. Where LAeq means the equivalent continuous noise level – the level of noise equivalent to the energy-average of noise levels occurring over a measurement period.

L4.2 To determine compliance with condition L4.1 noise must be measured at, or computed for, the most affected point on or within the boundary of the residential property (N1, N2, N3, N4, N5), or if this is more than 30m from the residence, at the most affected point within 30m of the residence. A modifying factor correction must be applied for tonal, impulsive or intermittent noise in accordance with the "Environmental Noise Management - NSW Industrial Noise Policy (January 2000)".

Other Monitoring and Recording Conditions:

Condition M6 of EPL 13127:

M6 of EPL 13127 states:

- M6.1 The licensee must monitor noise at noise monitoring points 8, 9, 10, 11 and 12 during high noise impact activities such as the processing of green waste, during the activities, using a noise meter and dB(A) as the unit of measure.
- M6.2 Condition M6.1 only applies to noise monitoring points N1, N3 and N4 if the residences to which the monitoring points relate are sold, leased or otherwise lawfully occupied, and in any case of lease or occupation, for the full term of the lease or occupation.

Variation to EPL 13127 , dated 5 May 20-23 states that:
 The noise limits identified in L3.1 do not apply at residential properties (N1, N2, N3, N4, N5) subject to a current written noise level agreement between the licensee and the property occupier. A Noise Agreement has been signed between BSC and the residents at N1, N2, N3 ,N4 and N5 to allow a maximum level of 70dB(A) Leq (15mintes) during grinding operations (see **Appendix A**).

L4.3 od EPL 6057 states that the noise limits identified in L4.1 do not apply at residential properties (N1, N2, N3, N4, N5) where conditions of a current noise level agreement between the licensee of EPL13127 and the property occupier are met.

Table 2.1 Noise Monitoring Locations in EPL 30m from dwellings

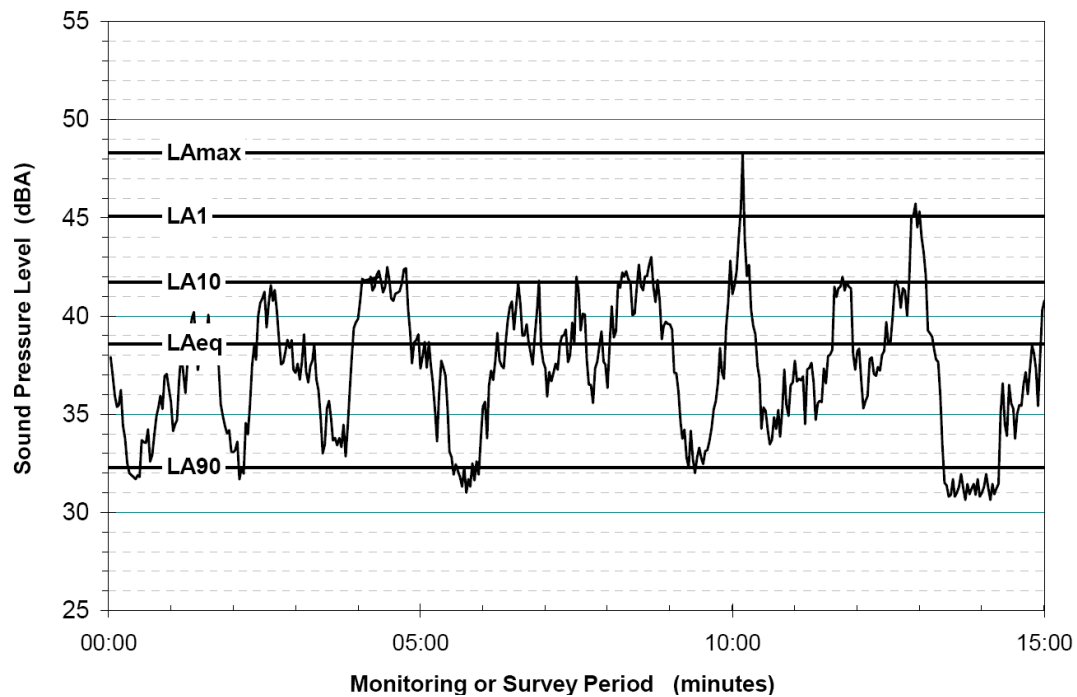
Location	Description	Distance from BRRC (m)
N1	Council owned house, 127 Manse Rd, southeast of BRRC	200
N2	Private House, 110 Manse Road, south of BRRC	300
N3	Council owned house, 1 Dingo Lane, west of quarry and BRRC	700
N4	Council owned house, 147 The Manse Road, east of BRRC	200
N5	Private house, 149 Manse Road, south east of BRRC	250

This report refers to a number of different acoustical terms. Particularly the L_{Aeq} , L_{Amax} , L_{A10} and L_{A90} descriptors. Each descriptor is briefly explained below.

- The L_{Aeq} is essentially the average sound level. It is defined as the steady sound level that contains the same amount of acoustical energy as a given time, varying sound over a defined measurement period.
- The L_{Amax} noise level is the maximum A-weighted noise level.
- The L_{A10} is the A-weighted sound pressure level exceeded 10% of a given measurement period and is utilised normally to characterise typical maximum noise levels.
- The L_{A90} noise level is the A-weighted sound pressure level exceeded 90% of a given measurement period and is representative of the average minimum background sound level (in the absence of the source under consideration), or simply the “background” level.

Sound power level is the **acoustic energy** emitted by a source which produces a **sound pressure level** at some distance. While the **sound power level** of a source is fixed, the **sound pressure level** depends upon the distance from the source and the **acoustic** characteristics of the area in which it is located.

Figure 2.1 Graphical Display of Typical Noise Indices



The L_{Aeq} is essentially the average sound level. It is defined as the steady sound level that contains the same amount of acoustical energy at a given time, varying sound over a defined measurement period.

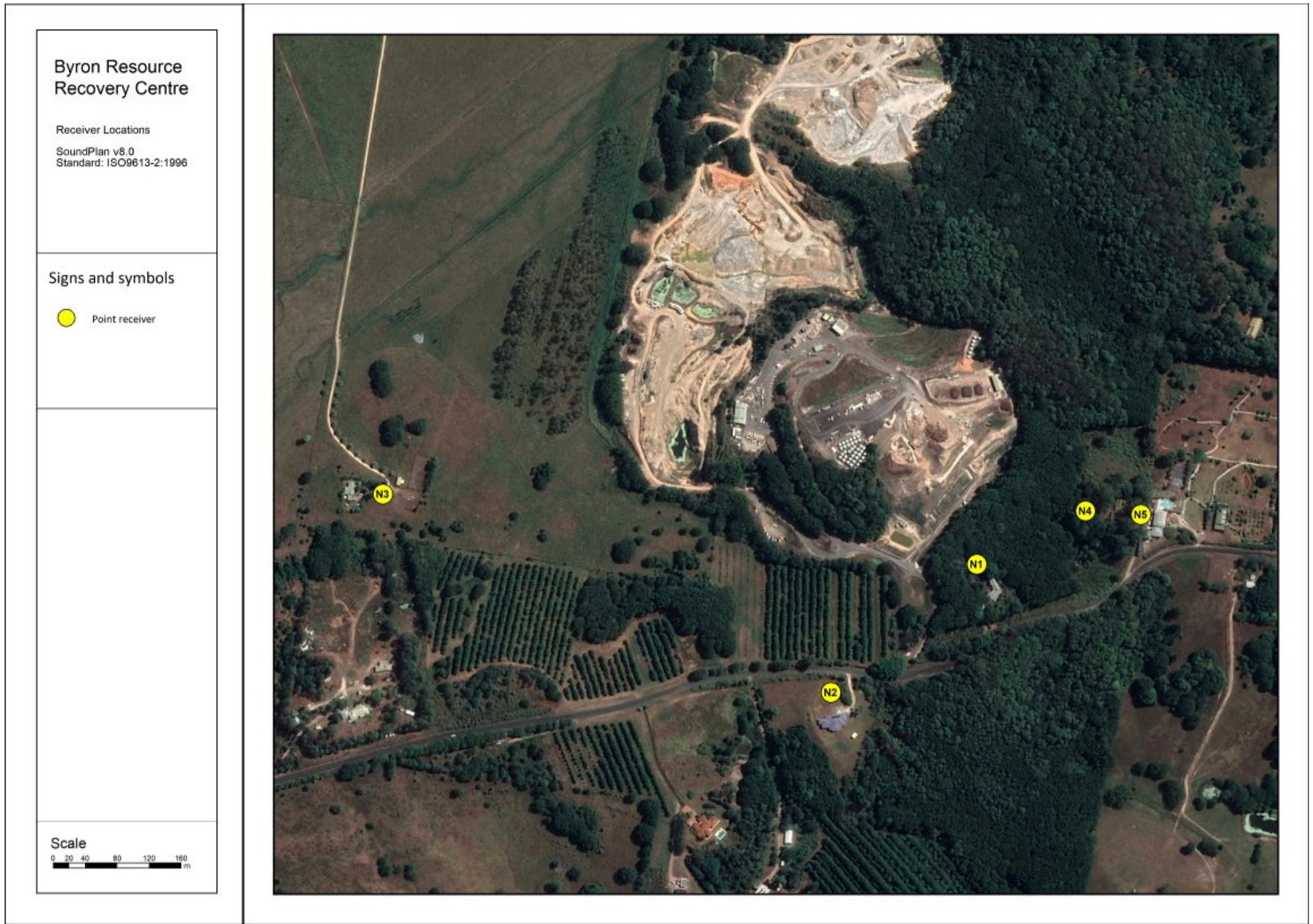
In accordance with the NSW Industrial Noise Policy (INP) (NSW EPA 2000), the BRRC is classified as an industrial/commercial noise source. The assessment procedure for an industrial noise source should comprise of:

- Controlling intrusive noise impacts in the short term for surrounding residences; and
- Maintaining noise level amenity for particular land uses for residences and other land uses.

In assessing the noise impact of the BRRC on the surrounding land use, both components must be considered for residential receivers, but, in most cases, only one will become the limiting factor forming the project-specific noise level. The intrusiveness of an industrial noise source may be generally considered to be acceptable if the equivalent continuous A-weighted level of noise from the source, measured over a 15-minute period, does not exceed the background noise level by more than 5dB. Therefore, the limiting criteria for the control of intrusive noise impacts is if the $L_{Aeq,15\text{-minute}}$ descriptor is $< RBL + 5 \text{ dB}$.

In accordance with the INP, the project specific noise criteria are the lesser of either the amenity or intrusiveness criterion. The work to derive the PSNL was carried out previously, endorsed by the EPA and has resulted in the licence conditions imposed in EPL 13127 and EPL 6057.

Illustration 2.1 Prescribed Noise Monitoring Locations and Dwelling Sites



3. Noise Assessment

3.1 Acoustical Equipment

Tim Fitzroy & Associates utilised the following equipment in this Noise Impact Assessment:

- A Type 1, 1/3 Octave Band Larson Davis Noise Meter with sound recording and event trigger features.

Calibration of the noise monitoring equipment was undertaken prior to use. To ensure no significant tonal drift occurred over the monitoring period, the calibration was checked before and after each measurement period.

3.2 Monitoring Methodology

Noise monitoring was undertaken during typical resource recovery operations.

Typical operations include the operation of the excavator and unloading activities at the transfer station and resource recovery area plus vehicular movements.

Ambient sound pressure levels were measured generally in accordance with Australian Standard AS1055.1:1997 - *'Acoustics-Description and measurement of environmental noise - Part 1: General procedures*. The monitoring locations reflect as much as possible the requirement for monitoring at the most affected point within 30m of each dwelling.

Noise monitoring of green waste mulching operations was carried out on Friday 23 August 2024 between 8:45am and 9:30am. Unfortunately, due to elevated wind noise monitoring was limited to two locations (N1 and N4) on this occasion. N1 and N4 represent to the two closest sensitive receptors to the green waste griding operations.

15-minute samples were taken at each of the monitoring locations N1 and N4 using a Larson Davis, type 1 Sound Level Meter. The Fast and A weighting settings were used. The microphone at each location was 1.35m above ground level.

The weather during the noise monitoring was fine. Winds conditions ranged from calm light northerly winds during monitoring at N1 and N4.

Photographs of the Grinder in operation are provided in **Appendix A**.

3.3 Noise Monitoring Results

The noise monitoring results (nmr) are provided in Table 3.1.

During green waste mulching operations, the main sources of noise from the BRCC was the mulching operation and excavator tracking and feeding the mulcher in the resource recovery area and in the transfer area. Other sources of noise included vehicle entering and leaving the BRCC and vehicle movements on the site and along The Manse Road. Environmental noise including crows was significant in some locations. During monitoring wind speed varied up to 5km/hr from the north.

In addition, there was audible noise emanating from the Myocum Quarry during the monitoring period.

Table 3.1 Monitoring Results at N1 & N4 during Green waste Mulching

Date	Location	Time	Measured L _{Aeq(15min)} dB(A)	Estimated BRCC Contribution	Comments	Licence Condition dB(A)
23/08/2024	N1	8:47am- 9:04am	56	56	Main noise the mulcher coupled with excavator operation in the Resource Recovery Area. Secondary noises included bird calls.	43
23/08/2024	N4	9:13am— 9:28am	60	60	Main noise. The mulcher coupled with excavator and vehicle operation in the Resource Recovery Area can be heard in the distance. Secondary noises intermittent bird calls.	43

Note: Full noise monitoring results are in **Appendix B**.

3.4 Green Waste Mulching

At location N1, the measured LAeq was 56 dB(A). The dominant noise was the mulcher coupled with excavator operation in the Resource Recovery Area. Secondary noises included bird calls. The estimated contribution from Resource Recovery Operations was 56 dB (A). This is above the noise limit of 43dB (A) Leq however below the noise agreement level of 70dBA Leq during daytime (9am to 3pm) grinding operation. The residence, R1 is owned by BSC, the operator of the Byron Resource Recovery Centre.

At location N4, the measured LAeq was 60dB (A) with the green waste mulcher and excavator operation. Noise estimated from Resource Recovery operations account for 60dB (A). This is above the noise limit of 43dB (A) however below the noise agreement level of 70dBA Leq during daytime (9am to 3pm) grinding operation. The residence, R4 is owned by BSC, the operator of Byron Resource Recovery Centre.

Following noise monitoring at N4 the wind elevated, and noise monitoring was abandoned. Given the noise levels experienced at the nearest affected sensitive receptors (N1 and N4) were within the below the noise agreement level of 70dBA Leq during daytime (9am to 3pm) it is predicted that the noise impacts from greenwaste grinding on 23 August 2024 at the more remote monitoring locations (N2, N3, and N5) would also have followed the 70dBA Leq noise agreement level.

Note: Full noise monitoring results are in **Appendix B**.

3.5 Noise Model

Noise Modelling was previously undertaken in June 2019 and is replicated below to illustrate the predicted noise impacts from greenwaste grinding on all sensitive receivers but in particular, N2, N3 and N5 which were not monitored due to elevated wind on 23 August 2024.

Noise levels from the mulcher at Byron Resource Recovery Centre have been predicted to the specified sensitive receptors using SoundPLAN v8.0 and the prediction methodology ISO 9613-2: 1996. Sound power levels used in the noise model have been calculated from on-site noise measurements conducted by Tim Fitzroy on 17th June 2019.

All prediction models have limits to their accuracy of prediction. This is due to the inherent nature of the calculation algorithms that go into the design of the models, the assumptions made in the implementation of the model, and the availability of good source sound power data. Various researchers have suggested that an un-calibrated model has an accuracy of ± 5 dB while a calibrated model has an accuracy of ± 2 dB. Calibration means that the model has been established with reference to measured sound levels at a receiver, known source levels and tightly defined propagation variables (wind speed and direction, for example). Alternatively, a series of predictions with different programs but the same assumption variables can be used for verification purposes. The source levels used in this noise model are validated to on-site measurements and therefore the model is considered to be calibrated as shown in **Section 3.3**.

3.6 Noise Source Levels

It is understood that the primary noise source of interest at the site is the mulcher. The noise model predicts the propagation of mulcher noise to the specified sensitive receptors for the purpose of predicting compliance / non-compliance.

The noise source levels used in the model to represent the mulcher has been calculated from on-site noise measurements that were undertaken at various distances from the source. An average sound power level was calculated for the mulcher, which is presented in **Table 3.2**.

The location of the noise source is shown in **Illustration 3.1**.

Table 3.2 Noise Sources

Description	dB(Z)								Sum dB(A)
	31.5 Hz	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	
Mulcher (dB SWL)	120	121	131	118	113	112	109	103	119

Illustration 3.1 Location of noise sources – existing configuration



3.7 Weather Conditions

Noise modeling has been made using the prediction methodology *ISO9613-2: 1996* which, by default, presents noise levels at the receiver for meteorological conditions which are favorable for propagation from the sound source to the receiver.

The predicted noise levels are considered to represent the average propagation under meteorological conditions including wind and temperature inversion.

3.8 Model Verification

The noise model has been validated to on-site noise measurements surrounding the mulcher at known locations. The model predicts the noise level from the mulcher to a point receiver representing each measurement location from the site survey on 17th June 2019. The comparison demonstrates a satisfactory fit between the measured and predicted noise levels, with an expected variation in noise level of ± 3 dB(A), as presented in **Table 3.3**.

Table 3.3 Model Verification

Location	Distance to Source (m)	Measured dB(A) Leq	SoundPLAN dB(A) Leq	Difference (dB(A))
NML3	30	81	78	-3
NML5	10	86	89	+3
NML6	20	83	82	-1
NML8	10	91	89	-2
NML9	20	74	76	+2

3.9 Calculation of Noise Levels

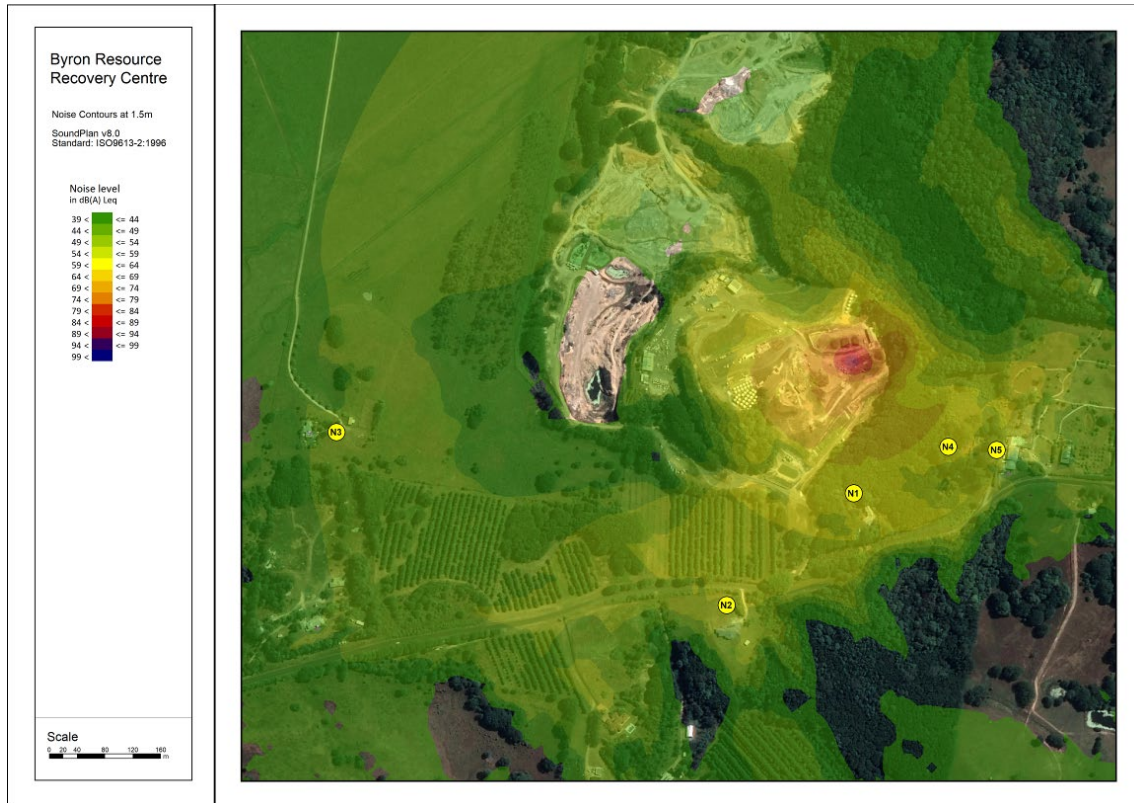
Noise levels from the mulcher have been predicted to the receptors from the location presented in **Illustration 3.1**. Predicted noise levels include screening from existing topography and structures. Topographic information was sourced from Geoscience Australia (1m contours). Predicted noise levels and assessment are presented in **Table 3.4**. Visual noise contours are presented in **Illustration 3.2**.

Table 3.4 Predicted noise levels. Levels are in dB(A), Leq, free-field

Receiver	Predicted Noise Level (dB(A))	License Condition (dB(A))	Assessment
N1	62 ± 3	43	+22
N2	53 ± 3	43	+13
N3	45 ± 3	39	+9
N4	62 ± 3	43	+22
N5	56 ± 3	43	+16

Illustration 3.2

Noise contours at 1.5m above ground. Levels are in dB(A), free field



3.10 Noise Model Outcomes

Noise modelling in June 2019 concluded that –

- A noise model has been constructed to predict the propagation of noise from the mulcher. The model includes shielding effects from topography and existing structures. Topography information included in the model was sourced from Geoscience Australia.
- Noise levels from the mulcher are predicted to exceed license conditions by up to 22 dB(A) at the worst affected Council owned dwellings.
- Noise levels from the mulcher are predicted to exceed license conditions by up to 16 dB(A) at the worst affected privately owned dwellings.

4. Conclusions & Recommendations

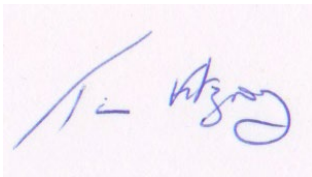
It is concluded from the noise monitoring carried at sensitive receivers during green waste mulching on 28 August 2024 that at:

- Location N1:
 - the measured LAeq was 56dB(A).
 - the estimated contribution from Resource Recovery Operations was 56dB (A) Leq. This is above the noise limit of 43dB (A) Leq however below the noise agreement level of 70dBA Leq during daytime (9am to 3pm) grinding operation.
- Location N4:
 - the measured LAeq was 60dB (A).
 - noise estimated from Resource Recovery operations account for LAeq 60dB (A) which is above the noise limit of LAeq 43dB (A) and below the noise agreement level of 70dBA) LAeq during daytime (9am to 3pm) grinding operations, with the dominant noise being the green waste mulcher and excavator operation.

Noise modelling in June 2019 predicted:

- The noise limit at location N2 exceeded the noise limit of 43 dB(A) by between 10 and 13dB;
- The noise limit at location N3 exceeded the noise limit of 39 dB(A) by between 6 and 9dB; and
- The noise limit at location N5 exceeded the noise limit of 43 dB(A) by between 13 and 16dB.

Residence R1, R3 and R4 are owned by Byron Shire Council.



Tim Fitzroy
Environmental Health Scientist
Environmental Auditor

References

- NSW DECC, 2009 Noise Guide for Local Government, Department of Environment, Climate Change & Water, Sydney
- NSW EPA, 2017 Noise Policy for Industry. Environmental Protection Authority, Sydney

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A Noise Agreements

Negotiated Noise Agreement

The Byron Resource Recovery Centre would like to acknowledge a Negotiated Noise Agreement with the below receiver:

127 the Manse Road
Myocum, NSW 2481

Or otherwise identified as RECEIVER N1 in Appendix A of the Myocum Landfill Remediation Plan – Landfill Environmental Management Plan revised 15 May 2008.

The terms of this agreement are outlined below:

1. Increase in Noise Emission Criterion for EPL 13127:

- a. An increase to the maximum LAeq (15min) noise emission criterion in Section L3.1 of EPL 13127 to a measured 70 db. This increased level is to be verified for compliance by noise monitoring as outlined in Section L3.2 of EPL 13127.

2. Timing of Grinding Operations

- a. Grinding will only occur between the hours of 9:00 am and 4:00pm weekdays;
and
b. Grinding will only occur once a calendar month for no more than 4 days in a row.

I, Made Astawa (name of resident) of

Lot 3 - 127 The Manse Rd (address)

agree to the following terms outlined above in this Negotiated Noise Agreement.

Kind Regards,



Danielle Hanigan
Manager, Resource Recovery

Negotiated Noise Agreement

The Byron Resource Recovery Centre would like to acknowledge a Negotiated Noise Agreement with the below receiver:

1 Dingo Lane
Myocum, NSW 2481

Or otherwise identified as RECEIVER N3 in Appendix A of the Myocum Landfill Remediation Plan – Landfill Environmental Management Plan revised 15 May 2008.

The terms of this agreement are outlined below:

1. Increase in Noise Emission Criterion for EPL 13127:

- a. An increase to the maximum LAeq (15min) noise emission criterion in Section L3.1 of EPL 13127 to a measured 70 db. This increased level is to be verified for compliance by noise monitoring as outlined in Section L3.2 of EPL 13127.

2. Timing of Grinding Operations

- a. Grinding will only occur between the hours of 9:00 am and 4:00pm weekdays;
and
b. Grinding will only occur once a calendar month for no more than 4 days in a row.

I, April Rose (name of resident) of
1 dingo lane east, Myocum. (address)

agree to the following terms outlined above in this Negotiated Noise Agreement.

Kind Regards,



Danielle Hanigan
Manager, Resource Recovery

Negotiated Noise Agreement

The Byron Resource Recovery Centre would like to acknowledge a Negotiated Noise Agreement with the below receiver:

147 the Manse Road
Myocum, NSW 2481

Or otherwise identified as RECEIVER N4 in Appendix A of the Myocum Landfill Remediation Plan – Landfill Environmental Management Plan revised 15 May 2008.

The terms of this agreement are outlined below:

1. Increase in Noise Emission Criterion for EPL 13127:
 - a. *An increase to the maximum LAeq (15min) noise emission criterion in Section L3.1 of EPL 13127 to a measured 70 db. This increased level is to be verified for compliance by noise monitoring as outlined in Section L3.2 of EPL 13127.*
2. Timing of Grinding Operations
 - a. *Grinding will only occur between the hours of 9:00 am and 4:00pm weekdays;
and*
 - b. *Grinding will only occur once a calendar month for no more than 4 days in a row.*

I, Kaisey Simmonds (name of resident) of
147 The Manse Rd, Myocum (address)

agree to the following terms outlined above in this Negotiated Noise Agreement.

Kind Regards,



Danielle Hanigan
Manager, Resource Recovery

Negotiated Noise Agreement

The Byron Resource Recovery Centre would like to acknowledge a Negotiated Noise Agreement with the below receiver:

110 the Manse Road
Myocum, NSW 2481

Or otherwise identified as RECEIVER N2 in Appendix A of the Myocum Landfill Remediation Plan – Landfill Environmental Management Plan revised 15 May 2008.

The terms of this agreement are outlined below:

1. Increase in Noise Emission Criterion for EPL 13127:

- a. An increase to the maximum LAeq (15min) noise emission criterion in Section L3.1 of EPL 13127 to a measured 70 db. This increased level is to be verified for compliance by noise monitoring as outlined in Section L3.2 of EPL 13127.

2. Timing of Grinding Operations

- a. Grinding will only occur between the hours of 9:00 am and 4:00pm weekdays;
and
b. Grinding will only occur once a calendar month for no more than 4 days in a row.

I, Barry Stenros (name of resident) of
110 Manse Rd. (address)

agree to the following terms outlined above in this Negotiated Noise Agreement.

NB. We haven't heard any noise whilst grinding
is in progress. *[Signature]*
Kind Regards,

[Signature]

Danielle Hanigan
Manager, Resource Recovery

B Photographs



Photo A Green Waste Mulching



Photo B Excavator feeding Mulcher

C Noise Data

SoundExpert 821 Summary

Meter General Information

	Model	Serial
Meter	SoundExpert 821	40014
Preamp	PRM821	
Microphone	377B02	
Unique File Id	J009C4E:66C84C83:00004329	

Measurement Notes

User
Location
Job Description
Note

Overall Measurement

Start Time	2024-08-23 08:46:59	
Stop Time	2024-08-23 09:02:02	
Run Time	00:15:03	
Pre-Calibration		
Date/Time	2024-08-23 08:46:41	
Calibrator Level	94.0 dB	
Meter Sensitivity	-26.14 dB re 1V/Pa	49.32 mV/Pa
Post-Calibration		
Date/Time	---	
Calibrator Level	---	
Meter Sensitivity	---	
Sensitivity Delta	---	

	A	C	Z
Lweq	54.9 dB	63.8 dB	65.7 dB
Lwupk	86.9 dB	87.2 dB	87.8 dB
	2024-08-23 09:01:59	2024-08-23 09:01:58	2024-08-23 09:01:58
LwSmin	44.8 dB	60.0 dB	62.1 dB
	2024-08-23 09:01:45	2024-08-23 08:50:07	2024-08-23 08:59:59
LwSmax	70.4 dB	69.8 dB	73.3 dB
	2024-08-23 09:01:59	2024-08-23 08:56:46	2024-08-23 08:55:10
LwFmin	43.7 dB	58.3 dB	60.1 dB
	2024-08-23 09:01:50	2024-08-23 08:51:50	2024-08-23 08:59:58
LwFmax	74.3 dB	73.2 dB	75.8 dB
	2024-08-23 09:01:59	2024-08-23 09:01:59	2024-08-23 08:55:10
LwLmin	46.1 dB	61.8 dB	63.9 dB
	2024-08-23 09:01:45	2024-08-23 08:50:07	2024-08-23 08:53:01
LwLmax	78.7 dB	92.6 dB	94.1 dB
	2024-08-23 08:46:59	2024-08-23 08:46:59	2024-08-23 08:46:59

ω = frequency weighting (A, C or Z)

Community Noise	LDN	LDay 07:00-22:00	LNight 22:00-07:00	LDEN	LDay 07:00-19:00	LEvening 19:00-22:00	LNight 22:00-07:00	
	54.9	54.9	-99.9	54.9	54.9	-99.9	-99.9	dB
LCeq - LAeq	8.9 dB							
LALeq	59.2 dB							
Overload Count	0							
Overload Duration	00:00:00							
	A	C	Z					
Under Range Peak	50.0	50.0	62.0 dB					
Under Range Limit	24.0	27.0	37.0 dB					
Noise Floor	17.0	18.0	25.0 dB					

Ln Percentiles

LAF 1.0	59.7 dB
LAF 5.0	56.5 dB
LAF 10.0	55.9 dB
LAF 50.0	54.0 dB
LAF 90.0	51.4 dB
LAF 95.0	48.7 dB

Exceedances

	Exceedance Counts	Duration
LAS > 85 dB	0	0 s
LAS > 95 dB	0	0 s
LCpk > 135 dB	0	0 s
LCpk > 137 dB	0	0 s
LCpk > 140 dB	0	0 s

Exposure

SELA	84.5 dB
Ex (Pa ² s)	0.1 Pa ² s

SoundExpert 821 Summary

Meter General Information

	Model	Serial
Meter	SoundExpert 821	40014
Preamp	PRM821	
Microphone	377B02	
Unique File Id	I009C4E:66C852CA:0000432D	

Measurement Notes

User
Location
Job Description
Note

Overall Measurement

Start Time	2024-08-23 09:13:46	
Stop Time	2024-08-23 09:28:54	
Run Time	00:15:08	
Pre-Calibration		
Date/Time	2024-08-23 08:46:41	
Calibrator Level	94.0 dB	
Meter Sensitivity	-26.14 dB re 1V/Pa	49.32 mV/Pa
Post-Calibration		
Date/Time	---	
Calibrator Level	---	
Meter Sensitivity	---	
Sensitivity Delta	---	

	A	C	Z
L _{Leq}	60.1 dB	66.4 dB	71.0 dB
L _{Wpk}	93.9 dB	92.1 dB	96.8 dB
	2024-08-23 09:21:00	2024-08-23 09:21:00	2024-08-23 09:18:17
L _{W5min}	52.9 dB	61.0 dB	62.2 dB
	2024-08-23 09:13:46	2024-08-23 09:25:03	2024-08-23 09:25:03
L _{W5max}	66.7 dB	73.7 dB	86.3 dB
	2024-08-23 09:28:42	2024-08-23 09:18:15	2024-08-23 09:18:18
L _{WFmin}	53.2 dB	60.2 dB	61.2 dB
	2024-08-23 09:13:46	2024-08-23 09:13:46	2024-08-23 09:25:03
L _{WFmax}	68.1 dB	78.1 dB	91.5 dB
	2024-08-23 09:28:42	2024-08-23 09:18:15	2024-08-23 09:18:51
L _{Wlmin}	54.5 dB	62.0 dB	63.9 dB
	2024-08-23 09:13:46	2024-08-23 09:25:03	2024-08-23 09:25:03
L _{Wlmax}	70.3 dB	80.7 dB	93.9 dB
	2024-08-23 09:21:00	2024-08-23 09:18:15	2024-08-23 09:18:51

ω = frequency weighting (A, C or Z)

Community Noise	LDN	LDay 07:00-22:00	LNight 22:00-07:00	LDEN	LDay 07:00-19:00	LEvening 19:00-22:00	LNight 22:00-07:00	dB
	60.1	60.1	-99.9	60.1	60.1	-99.9	-99.9	
L _{Ceq} - L _{Aeq}	6.3 dB							
L _{Aleq}	62.2 dB							
Overload Count	0							
Overload Duration	00:00:00							
	A	C	Z					
Under Range Peak	50.0	50.0	62.0 dB					
Under Range Limit	24.0	27.0	37.0 dB					
Noise Floor	17.0	18.0	25.0 dB					

Ln Percentiles

LAF 1.0	65.1 dB
LAF 5.0	62.5 dB
LAF 10.0	61.7 dB
LAF 50.0	59.7 dB
LAF 90.0	57.1 dB
LAF 95.0	56.3 dB

Exceedances

	Exceedance Counts	Duration
LAS > 85 dB	0	0 s
LAS > 95 dB	0	0 s