



Lidsdale Siding

Modification report for the modification to development consent
08_0223

Prepared for Ivanhoe Coal Pty Ltd
April 2020





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SYDNEY

Ground Floor, 20 Chandos Street
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T 02 9493 9500

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Level 3, 175 Scott Street
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Spring Hill QLD 4000
T 07 3648 1200

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Level 1, 70 Pirie Street
Adelaide SA 5000
T 08 8232 2253

MELBOURNE

Ground Floor, 188 Normanby Road
Southbank VIC 3006
T 03 9993 1905

PERTH

Suite 9.02, Level 9, 109 St Georges Terrace
Perth WA 6000
T 02 9339 3184

CANBERRA

Level 8, 121 Marcus Street
Canberra ACT 2600

Lidsdale Siding

Modification report for the modification to development consent 08_0223

Report Number

J200173 RP#2

Client

Ivanhoe Coal Pty Ltd

Date

14 April 2020

Version

v1 Final

Prepared by**Approved by**

**Eden Miles**

Environmental Engineer

14 April 2020

**Phil Towler**

Associate Director

14 April 2020

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Executive Summary

Lidsdale Siding (the facility) is a rail loading facility which automates the transfer and dispatch of coal from Centennial Coal Pty Limited's (Centennial's) Western Coal Services (WCS) Project to domestic and international markets via rail. The facility is located approximately 500 metres (m) north of Wallerawang and approximately 9 kilometres (km) north-west of Lithgow. It is in the Lithgow local government area (LGA) of New South Wales (NSW).

The facility operates under Development Consent 08_0223 (the consent) which was granted in 2013 under Part 3A of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) by the then Minister for Planning and Infrastructure. The original consent has since been declared a State significant development (SSD) under clause 6 of Schedule 2 of the NSW Environmental Planning and Assessment (Savings, Transitional and Other Provisions) Regulation 2017. The facility is owned and operated by Ivanhoe Coal Pty Ltd (Ivanhoe Coal), a subsidiary of Centennial. The consent has been modified twice.

The consent (as modified) allows coal to be received and dispatched from the facility by rail, and the transfer of coal to the WCS site for use at Mount Piper Power Station (MPPS) in emergency situations. A trigger action response plan (TARP) is used to define the emergency situations when rail unloading activities at the facility are required.

Ivanhoe Coal is seeking to modify the consent, pursuant to Section 4.55(1A) of the EP&A Act, to remove the TARP, thereby allowing the facility to receive coal outside of the emergency situations defined in the TARP. Trains will continue to be unloaded utilising the approved temporary unloading infrastructure.

The proposed modification is not seeking to increase the number of trains able to be received at the facility. There will be no increase in the number of daily or annual train movements to/from the facility.

Acceptance and transfer of coal from the facility is critical to guaranteeing ongoing supply of suitable quality coal to MPPS. The proposed modification will allow for ongoing supplies of supplementary coal to MPPS and remove risks associated with coal supplies being provided by a single mining operation. The continued supply of coal from the facility will help support the efficient operation of MPPS and continued supply of electricity to NSW.

No other modifications to the consent are required. Consistent with the consent, unloading activities will not occur on the same day as loading activities. The proposed modification will not increase the currently approved coal handling rate at the facility of 6.3 million tonnes per annum (Mtpa).

The NSW Department of Planning, Industry and Environment (DPIE) and key stakeholders have been consulted regarding the proposed modification to assist in identifying all of the relevant issues to be assessed. This modification report (MR) examines the potential impacts from the proposed modification and includes a quantitative assessment of potential noise impacts.

Noise emissions from the facility are predicted to be the same as the noise emissions from the currently approved operations. Noise emissions are declining over time due to improvements to unloading methodology and the implementation of noise mitigation measures. On-site attended noise measurements show that the optimisation of train unloading activities by Ivanhoe Coal has effectively reduced noise emissions from wagons, wagon shunting and locomotives.

The proposed modification will not result in significant biophysical, social or economic impacts and any residual impacts can be appropriately managed in accordance with Ivanhoe Coal's existing approved environmental management system.

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1 Introduction

1.1 Overview

Lidsdale Siding (the facility) is an existing rail loading facility that automates the transfer and dispatch of coal from Centennial Coal Pty Limited's (Centennial's) Western Coal Services (WCS) Project. The facility operates under Development Consent 08_0223 (the consent) as modified. The facility is approximately 500 metres (m) north of Wallerawang and approximately 9 kilometres (km) north-west of Lithgow. It is in the Lithgow local government area (LGA) of New South Wales (NSW) (refer Figure 1.1). The facility is owned and operated by Ivanhoe Coal Pty Ltd (Ivanhoe Coal), a subsidiary of Centennial.

EMM Consulting Pty Limited (EMM) has been engaged by Ivanhoe Coal to prepare a modification report (MR) to accompany an application to modify the consent.

The consent relates to the facility and surrounding study area as shown in Figure 1.2. The consent allows the facility to receive 6.3 million tonnes per annum (Mtpa) of coal via overland conveyors and via train utilising temporary unloading infrastructure. Coal is transported from the facility by rail to various destinations across the rail network, and to Mount Piper Power Station (MPPS) when required via overland conveyors.

The consent allows coal to be received and dispatched from the facility by rail, and the transfer of coal to the WCS site for use at MPPS in emergency situations. A trigger action response plan (TARP) is used to define the emergency situations when rail unloading activities at the facility are required, ie when coal supplies at MPPS are insufficient to ensure ongoing power generation (Table 1.1).

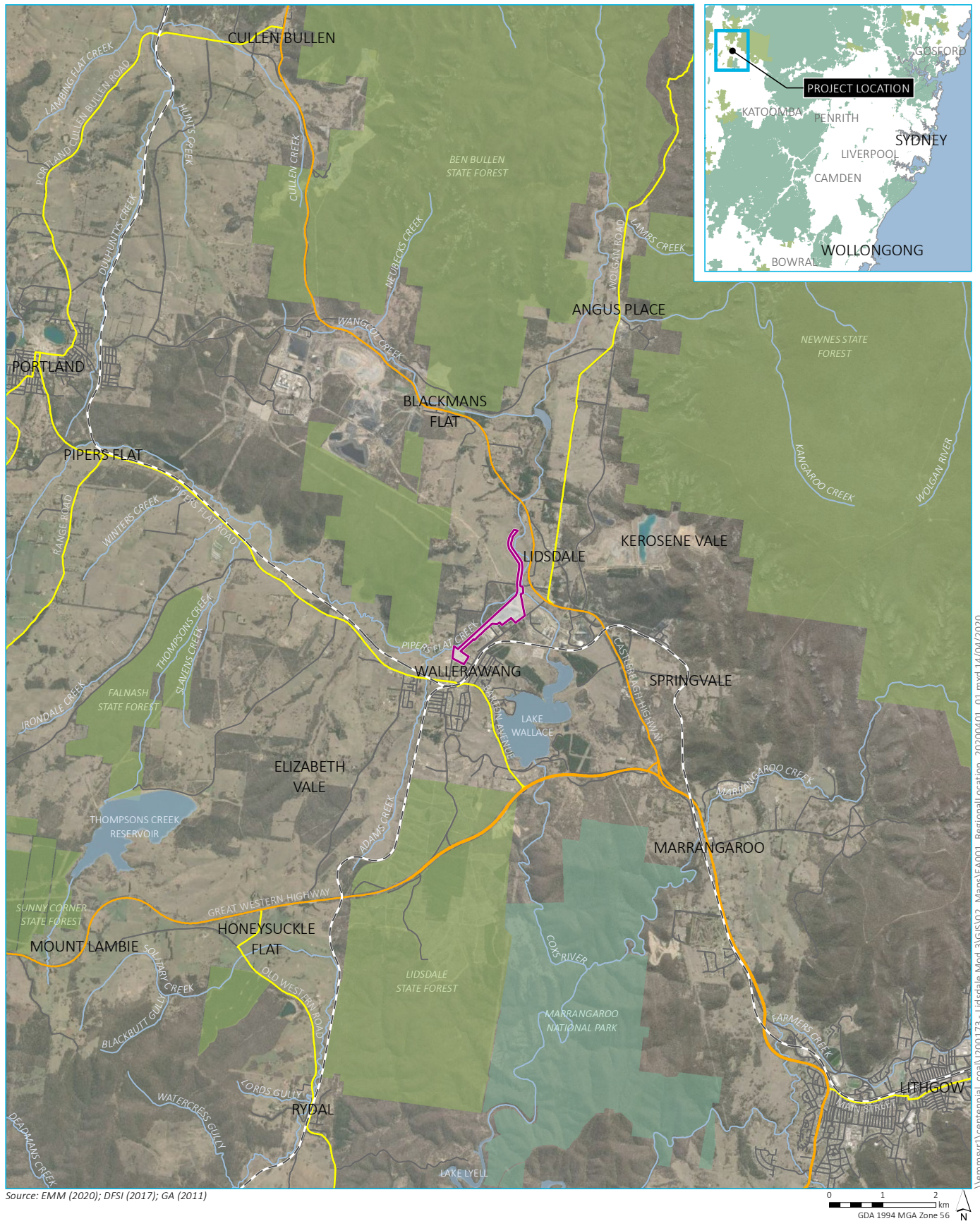
A modification to the consent, under Section 4.55(1A) of the NSW *Environmental Protection and Assessment Act 1979* (EP&A Act), is sought to remove the TARP from the consent, thereby allowing coal to be received at any time within approved hours, ie outside of the emergency situations currently defined in the TARP. Trains will continue to be unloaded using the approved temporary unloading infrastructure.

Consistent with the approved operations, unloading activities will not occur on the same day as loading activities. No increase to the currently approved coal handling rate at the facility, 6.3 Mtpa, is proposed.

The proposed modification is not seeking to increase the number of trains that are approved to be received at the facility. Accordingly, there will be no increase in the number of daily or annual train movements to/from the facility.

Acceptance and transfer of coal from the facility is critical to guaranteeing an ongoing supply of suitable quality coal to MPPS. The proposed modification will allow for ongoing supply of supplementary coal from a range of mines to be delivered to the facility and on to MPPS and remove the risks associated with coal supplies being provided by a single mining operation (currently Springvale Mine, and in the future Angus Place Colliery). The continued supply of coal from the facility will help support the efficient operation of MPPS and continued supply of electricity to NSW.

This MR assesses the impacts of the proposed modification and proposes mitigation measures, where required, to minimise potential impacts.



KEY

- Project site
- Rail line
- Highway
- Main road
- Local road
- Named watercourse
- Waterbody

- NPWS reserve
- State forest

Regional context

Lidsdale Siding Modification 3
Modification report
Figure 1.1

1.2 Proponent

Ivanhoe Coal Pty Limited (Ivanhoe Coal) is a wholly owned subsidiary of Centennial. Centennial is a wholly owned subsidiary of Banpu Public Company Limited (Banpu).

Ivanhoe Coal is the proponent for the modification. The relevant address is:

Ivanhoe Coal Pty Limited
Level 18, 1 Market Street
Sydney NSW 2000

1.3 Background

The facility is on Main Street, approximately 500 m north of Wallerawang, 9 km north-west of Lithgow and 120 km west of Sydney in the Lithgow LGA (refer Figure 1.1 and Figure 1.2).

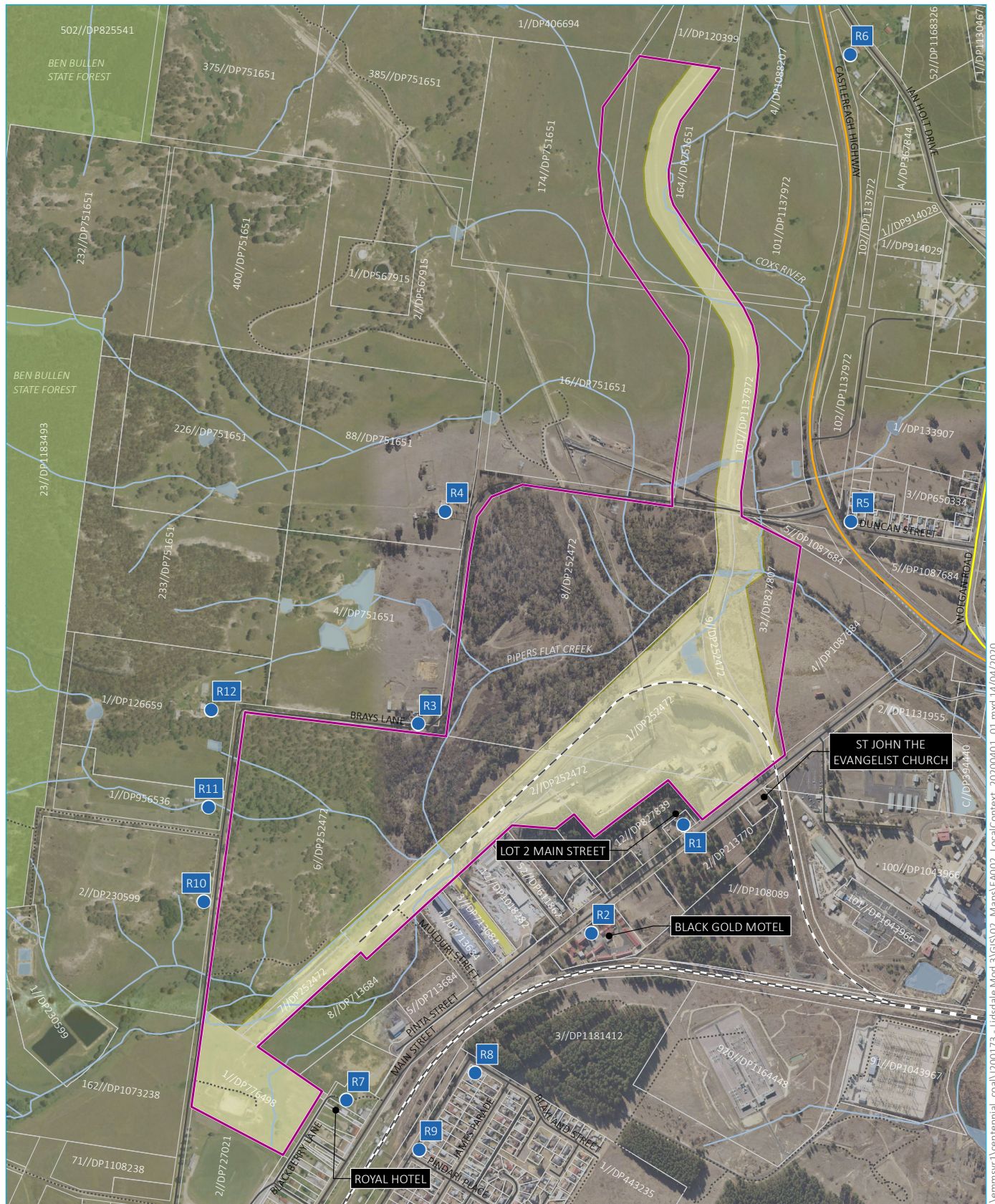
The primary operations of the facility are:

- receiving coal from the WCS currently via overland conveyor;
- transferring coal to an elevating stockpile conveyor;
- depositing coal in an elongated conical stockpile;
- reclaiming coal from the stockpile via gravity fed reclaimers;
- transferring coal to a train loading bin via conveyor;
- loading coal into train wagons for distribution; and
- when coal stockpiles at MPPS are low (as defined by the existing TARP):
 - receiving coal via train and utilising rail unloading infrastructure; and
 - transferring coal from the facility to the WCS site via conveyor.

Under the consent, up to seven laden trains are permitted to arrive at or to leave the site each day, with up to five laden trains permitted to arrive at or to leave the site each day, when averaged over a calendar year. Coal train loading operations cannot be undertaken on the same day as coal train unloading operations and the facility can only receive and unload trains during the daytime period (ie 7.00 am–6.00 pm Monday to Saturday and 8.00 am–6.00 pm Sundays and public holidays).

The facility and operations are described in Chapter 3.

The consent was granted in May 2013 under Part 3A of the EP&A Act. The original consent has since been declared a state significant development (SSD) under Clause 6 of Schedule 2 to the Environmental Planning and Assessment (Savings, Transitional and Other Provisions) Regulation 2017. The facility also operates under Environment Protection Licence (EPL) 5129. The consent has been modified twice previously (ie Mod 1 and Mod 2), with approval granted on 23 August 2019 (Mod 1) and 14 October 2019 (Mod 2), respectively.



Source: EMM (2020); DFSI (2017); GA (2011)

KEY

- Study area
- Project site
- Noise receptor
- Rail line
- Highway
- Main road
- Local road
- Vehicular track
- Watercourse/drainage line
- Waterbody
- Cadastral boundary
- State forest

Local context

Lidsdale Siding Modification 3
Modification report
Figure 1.2

1.4 Objectives

It is proposed to modify the consent, to remove the TARP, under Section 4.55(1A) of the EP&A Act. The TARP was developed as part of Mod 1 and outlined the necessary actions to be undertaken prior to the commencement of rail unloading activities at the facility (refer Table 1.1).

Table 1.1 Trigger action response plan for rail unloading activities

Operations	Trigger	Action and response
Typical (ie rail loading)	Coal stockpiles at MPPS are greater than 400,000 t.	No action or response required – continue typical operations.
	Forecast coal stockpiles expected to remain at, or above, 400,000 t.	No action or response required – continue typical operations.
Emergency (ie rail unloading required)	Coal stockpiles at MPPS are forecast to fall below 400,000 t for two consecutive months.	Procure temporary rail unloading infrastructure and commence rail unloading activities. Notify DPE of intent to commence temporary rail unloading activities.

Notes: Rail unloading activities will continue until coal stockpiles at MPPS are greater than 400,000 t and the forecast coal stockpile is likely to remain above 400,000 t for a six month period.

The removal of the TARP will allow the facility to receive coal outside of the emergency situations defined in Table 1.1. No changes to the following consent conditions are proposed as part of this modification:

- no more than seven laden trains will arrive at or leave the site each day;
- no more than five laden trains will arrive at or leave the site each day, when averaged over a calendar year;
- either loading or unloading will occur on a given day (not both); and
- the site will receive and unload trains during the daytime period only.

The proposed modification will utilise previously approved unloading infrastructure and no additional construction works are required.

Additional details regarding the modification are provided in Chapter 4.

1.5 Justification and alternatives

As described in the *Environmental Assessment for Modification to Development Consent 08-0223* for Mod 1 (EMM 2019a), Springvale Mine is the primary source of coal for MPPS. In early 2019, due to continued lower coal yields from Springvale Mine, associated with the commencement of mining in the southern longwall blocks, a potential shortfall in coal supply to MPPS was identified. As a result, Centennial implemented supplementary coal supply measures to ensure MPPS coal demands could continue to be met. As an immediate, short-term measure, Centennial also received approval for a modification to Clarence Colliery's development consent (DA 504-00) to:

- increase total allowable coal haulage off-site from Clarence Colliery by road from 200,000 tonnes (t) to 300,000 t for a limited period of time up to 31 December 2020; and
- increase total allowable coal haulage off-site from Clarence Colliery to the west by road from 100,000 t to 200,000 t for a limited period of time up to 31 December 2020.

These supplementary coal supply measures are a short-term, temporary solution and are not a long-term option to supply additional coal to MPPS. This is due to the limited volume of coal that can be transported by road from Clarence Colliery and the potential impacts associated with a sustained increase in heavy vehicle movements on the local and regional road network.

As a result, Centennial and EnergyAustralia NSW Pty Ltd (EnergyAustralia) investigated other opportunities to supplement coal supplies to MPPS should there be another coal supply shortfall. The alternatives considered included:

- Road haulage of coal from Airly Mine. Airly Mine has sufficient available coal; however, this was not considered a viable alternative due to potential impacts on the local and regional road network and the outcomes of community engagement during previous environmental assessments.
- Coal extraction and transfer from Angus Place. Angus Place was placed on care and maintenance in 2015 and additional approvals under the EP&A Act would be required to facilitate the transfer of coal from Angus Place to MPPS. This is not a viable alternative to meet predicted shortfalls in coal supply to MPPS due to the length of time required to obtain additional approvals.
- Other historical local suppliers. None of the other mines that have historically supplied coal to MPPS are currently operational. Even if it was technically and commercially feasible to reopen these mines, there would be long lead times (years) to complete the necessary design work and obtain approvals so this is not a viable alternative to meet predicted shortfalls in coal supply to MPPS.
- Other rail unloading and coal transfer options. EnergyAustralia received approval for the construction of the Pipers Flat rail unloader facility in 2009 and a modification to the consent in 2019 included a revised design to improve efficiency and reduce the environmental impacts of the development, as well as a request to extend the required start date of the approval permit. Construction of the Pipers Flat rail unloader facility is anticipated to take a number of years so the Pipers Flat rail unloader facility is not considered an option to meet predicted shortfalls in coal supply to MPPS.
- Road haulage of coal from other operations in NSW. The additional heavy vehicle traffic required to meet predicted shortfalls in coal supply to MPPS would be significant and it is anticipated that associated impacts to the local and regional road network is unlikely to be considered acceptable by affected local communities or regulatory stakeholders.

Mod 1 to Lidsdale Siding's consent was approved on 23 August 2019. It allowed the receipt and unloading of up to one coal-laden train to the facility and construction of supporting infrastructure to facilitate unloading activities at the facility. This modification was considered to be the most viable option for the supply of coal to MPPS under emergency situations, as it allows coal to be unloaded, handled and transported off-site to MPPS using the existing overland conveyor system via the WCS site and existing approved infrastructure at Lidsdale Siding.

Mod 2 to Lidsdale Siding's consent was approved on 14 October 2019. It allowed an increase in the number of laden trains being unloaded at the site. This modification enabled an increase in the volume of coal that can be unloaded at, and transferred from, the facility to MPPS.

The proposed modification would allow an ongoing supply of supplementary coal to MPPS and remove risks associated with coal supplies being provided by a single mining operation. The continued supply of coal from the facility will help support the ongoing and efficient operation of MPPS and continued supply of electricity to NSW.

The proposed modification is within the objectives of the facility's consent, being the handling and transportation of coal with a reduced reliance on road transport for coal deliveries, and thus is substantially the same development as the original project, as discussed in Chapter 5.

The proposed modification does not trigger a requirement for any further modifications to the development consent for the WCS Project (SSD-5579). Centennial Ivanhoe do not propose to transfer more than the currently approved 1.5 Mtpa of coal from the facility to the WCS site.

1.6 Report contents

This MR describes the project site, surrounding area, existing operations at the facility, details of the proposed modification, legislative framework, stakeholder consultation and provides an environmental assessment and justification of the proposed modification.

2 Site description

2.1 Site location and land ownership

The facility is north of Wallerawang within the Lithgow LGA (refer Figure 1.2). The project site is on land leased by Ivanhoe Coal from Delta Electricity and the State Rail Authority.

The project site is zoned IN1 General Industrial and RU1 Primary Production under the Lithgow Local Environmental Plan 2014 (Lithgow LEP).

The project site and broader study area, as defined in Appendix 1 of the consent, is located on:

- Lot 1 of DP 776498;
- Lots 1, 2, 6, 7, 8 and 9 of DP 252472;
- Lot 13 of DP 827839;
- Lot 32 of DP 827807;
- Lot 101 of DP 1137972; and
- Lots 16, 164 and 174 of DP 751651.

2.2 Surrounding land uses

The surrounding environment generally consists of low-density development and rural uses. The primary land uses immediately around the facility include community, commercial and industrial uses (refer Figure 1.2), notably:

- Black Gold Motel (approximately 250 m to the south);
- St John the Evangelist Church, Wallerawang (approximately 250 m to the south-east); and
- residences approximately 300 m to the west, 500 m to the north and 600 m to the south.

The decommissioned Wallerawang Power Station is approximately 200 m east of the facility.

Sensitive receivers, including regional receivers, and potential impacts on those receivers are discussed in Chapter 7.

2.3 Environmental setting

The project site has generally been cleared of vegetation. The site contains internal roads, stockpiles, conveyors, train loading infrastructure and environmental management measures. An approximately 30-m-wide vegetation screen towards the southern end of the project site serves as a visual amenity buffer for motorists and sensitive receptors.

2.4 Historical and current uses

The facility has been used for coal storage and rail loading since 1974. Historically, coal was received at the project site via the overland conveyor and road. Stockpiled coal was loaded onto trains by front end loaders (FELs) for transport via the Main Western Railway line. Stockpiles were formed by moving coal from the overland conveyor and truck stockpiles to a train stockpile by FELs.

Development Consent 08_0223 allowed for the extension of the rail line and establishment of a purpose-built train loading facility. Deliveries by truck have ceased, with conveyors and reclaimers being installed between the overland conveyor and train loading facility to largely automate the handling and transport of coal. Front end loaders are still required for the clearing of sumps and general stockpile management.

Works associated with Mod 1 included:

- modification of the train loading facility to allow for the unloading of coal wagons into a hopper in the existing under-rail sump;
- installation of hopper-feeder conveyors within the existing under-rail sump to extract the unloaded coal;
- installation of conveyors and a radial stacker to stockpile the coal;
- establishment of a temporary coal stockpile and tunnel reclaimers within the approved push out area; and
- installation of a conveyor system and second stacker between the temporary coal stockpile and overland conveyor.

Mod 1 works were approved in August 2019 and construction of the approved infrastructure was completed in October 2019. No physical works were required at the facility as part of Mod 2.

Environmental management measures, including air quality, noise and surface water management measures, have been implemented across the project site (see chapters 3 and 7).

3 Existing operations

3.1 Development consent

The facility currently operates under Development Consent 08_0223 (as modified), as supported by:

- *Lidsdale Siding Upgrade Project Environmental Assessment* (RPS Australia East 2012) (ie the original EA);
- *Lidsdale Siding Upgrade Response to EA Submissions* (Centennial 2012) (RTS);
- *Lidsdale Siding Environmental Assessment for Modification to Development Consent 08_0223* (EMM 2019a) (Mod 1 EA);
- *Lidsdale Siding Mod 1 – Response to Submissions* (Centennial 2019a) (Mod 1 RTS);
- *Lidsdale Siding Modification Report for Modification to Development Consent 08_0223* (EMM 2019b) (Mod 2 MR); and
- *Lidsdale Siding Mod 2 – Submissions Report* (Centennial 2019b) (Mod 2 RTS).

3.2 Overview of operations

The facility is designed to supply coal across the regional rail network and is capable of supplying coal to domestic and international markets via rail. The rate of stockpiling and distribution of coal is based on a combination of market forces and production capabilities and is therefore variable.

As a result of Mod 1, the facility is permitted to receive coal and dispatch via the existing overland conveyor system to the WCS site. Mod 2 allows no more than seven trains to arrive at or leave the site each day (a maximum of 14 movements per day), and no more than five trains to arrive at or leave the site when averaged over a calendar year.

The existing operations at the facility were considered in the original EA, Mod 1 EA and Mod 2 MR, with key aspects of the facility's operations summarised in Table 3.1.

Table 3.1 **Approved development summary**

Component	Approved development
Lifespan	Coal handling and train loading operations may occur until 31 December 2042.
Coal receipt and dispatch	6.3 Mtpa (all coal to be delivered to and from the facility by the existing overland conveyor system).
Operational hours	24-hours a day, seven days a week.
Stockpile capacity	50,000 t.
Train movements (absolute daily maximum)	No more than seven trains arrive at or leave the site each day (ie a maximum of 14 movements per day). No dispatching by truck.
Train movements (average daily maximum)	No more than five trains arrive at or leave the site each day, when averaged over a calendar year. No dispatching by truck.

Table 3.1 **Approved development summary**

Component	Approved development
Unloading/loading	Loading operations are not undertaken on the same day as unloading operations. Loading and unloading operations are undertaken only during the daytime period (ie 7.00 am6.00 pm Monday to Saturday and 8.00 am6.00 pm Sundays and public holidays).
Site infrastructure	Approved infrastructure as part of the original consent includes: • diversion chute at the end of the existing overland conveyor; • stockpiling conveyor; • auxiliary stockpile under the existing overland conveyor; • elongated conical stockpile and associated push-out area (50,000 t); • elongated conveyor to elongated conical stockpile; • underground tunnel with reclaimers beneath the elongated conical stockpile; • conveyor from reclaim tunnel to train loading bin; • modular reclaiming; • train loading bin; • spillage reclaim pit beneath the train loading bin; • control room adjacent to the train loading bin; • track extension and adjacent shunt; • dust suppression and supporting water management infrastructure (ie improved clean water diversion channels); • landscaping and bunding; • power upgrades; • lighting for night operations and security; • site security fencing; • storage infrastructure; and • refuelling infrastructure. Mod 1 approved infrastructure for unloading and transportation of coal to the WCS site includes: • wagon trigger, coal hopper and hopper feeder conveyors to accept coal in existing under-rail sump; • hopper-feeder conveyor within existing under-rail sump to extract unloaded coal to stockpile; • conveyors and 8,500 t conical/radial stacker to stockpile the coal; • temporary coal stockpile and tunnel reclaimers; • modular reclaiming; and • conveyor system and second stacker between the temporary coal stockpile and overland conveyor. Key components of the existing approved infrastructure are identified on Figure 3.1.
Miscellaneous operations	Miscellaneous operations at the facility include: • storage, provisioning and minor maintenance of locomotives and wagons; • maintenance of infrastructure and amenities; and • fuelling of plant and locomotives from mobile tanks/transportable fuel tanks.
Employees	10 employees.
Rehabilitation	Rehabilitation is to be in accordance with the existing <i>Rehabilitation and Closure Plan – Lidsdale Siding</i> (Centennial 2018). The site is to be safe, stable and non-polluting, with the final land use compatible with surrounding land uses. Closure is to ensure public safety, with minimal adverse socio-economic effects associated with the closure of the facility.

3.3 Environmental management

The facility's environmental and planning compliance is managed under a suite of management plans approved by the Director General/Secretary of the NSW Department of Planning, Industry and Environment (DPIE), including:

- *Western Region – Noise Management Plan (2018) (NMP);*
- *Western Region – Air Quality and Greenhouse Gas Management Plan (2018);*
- *Western Region – Historic Heritage Management Plan (2018) (HHMP);*
- *Western Region – Aboriginal Cultural Heritage Management Plan (2017) (ACHMP);*
- *Environmental Management Strategy: Lidsdale Siding (2017) (EMS);*
- *Lidsdale Siding: Water Management Plan (2014) (WMP);*
- *Biodiversity Management Plan: Lidsdale Siding (2013) (BMP);*
- *Lidsdale Siding: Site Specific Particulate Matter Control Best Practice Assessment (2012);*
- *Rehabilitation and Closure Plan – Lidsdale Siding (2018);*
- *Lidsdale Coal Loader Project – Construction Traffic Management Plan (2013); and*
- *Lidsdale Siding Pollution Incident Response Management Plan (2017) (PIRMP).*

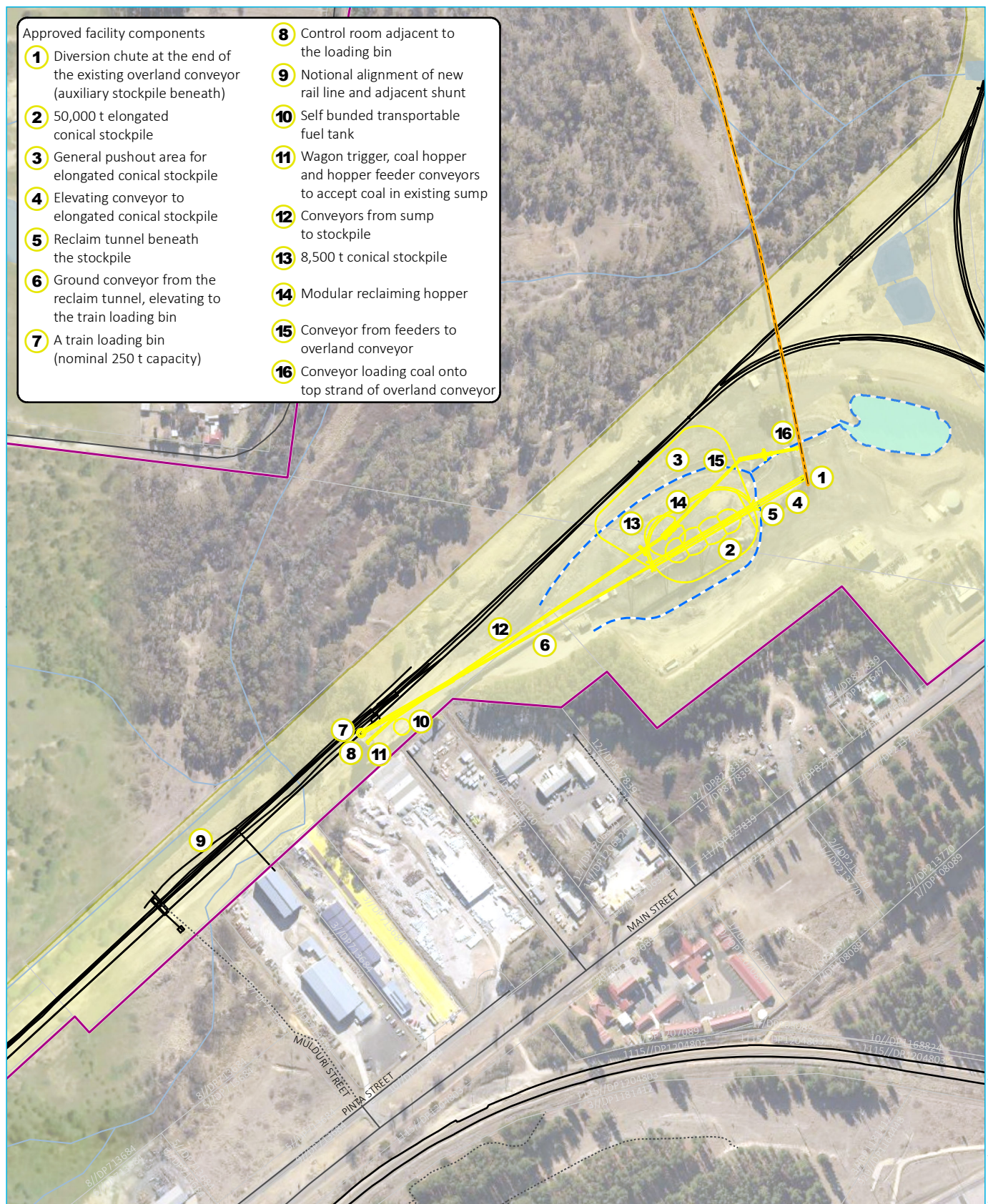
3.4 Environment protection licence

The facility is a 'premises-based scheduled activity' under Schedule 1 (10) and (28) of the NSW *Protection of the Environment Operations Act 1997* (POEO Act). The facility operates under EPL 5129, which is administered by the NSW Environment Protection Authority (EPA) under Sections 43(b) and 48 of the POEO Act.

The licence allows for 'Coal works' as a scheduled and fee-based activity of a scale between 2,000,000 t and 5,000,000 t handled per annum. The EPL also regulates several aspects of the facility, including, but not limited to air quality and noise limits and monitoring and recording requirements.

The proposed modification does not require amendment of the EPL, as stockpiles will be within assessed and approved stockpile areas and handling of coal will not exceed approved limits.

Potential noise and air quality impacts from the proposed modification are described in Chapter 7.



Lidsdale Siding Modification 3
Modification report
Figure 3.1

4 Proposed modification

4.1 Proposed activities

As noted in Section 1.4, Ivanhoe Coal propose to modify the consent under Section 4.55(1A) of the EP&A Act to remove the TARP from the consent, thereby allowing the facility to receive coal outside of the emergency situations defined in the TARP.

No increase to the currently approved coal handling rate at the facility, 6.3 Mtpa, is proposed.

The proposed modification will allow for ongoing supply of supplementary coal from a range of mines to be delivered to the facility and on to MPPS and remove the risks associated with coal supplies being provided by a single mining operation (currently Springvale Mine, and in the future Angus Place Colliery).

The proposed modification will utilise previously approved unloading infrastructure and no additional construction works are required.

4.2 Management measures

The proposed modification will continue to utilise the facility's existing air quality, surface water and noise management measures, including but not limited to:

- dust suppression via water sprays;
- surface water discharge management via the existing drainage system and dirty water dam;
- loading and unloading operations are undertaken only during the daytime period; and
- noise management via processes and procedures detailed in the approved NMP.

No additional management measures are required to address the potential impacts associated with the proposed modification.

4.3 Conditions of consent

No changes to the consent are required as part of the proposed modification.

The definition of 'EA' within the consent includes reference to the original EA (RPS 2012), as well as documentation submitted in support of Mod 1 (EMM 2019a; Centennial 2019a) and Mod 2 (EMM 2019b; Centennial 2019b). This definition should be updated to include reference to this modification report.

5 Legislation and policy

5.1 Introduction

This chapter describes the relevant Commonwealth and State legislation and regulatory framework under which the proposed modification will be assessed and determined.

5.2 Commonwealth legislation

The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is administered by the Commonwealth Department of the Environment and Energy (DoEE). It provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places defined as ‘matters of national environmental significance’ (MNES). If significant impacts are considered likely, and the action is deemed to be a ‘controlled action’, the proponent may be asked to provide further information about the proposal.

Ecological and heritage impacts are summarised in Table 7.1. The project site is generally clear of vegetation and is heavily disturbed. The proposed modification will not result in further clearing. The original EA did not identify non-Aboriginal or Aboriginal cultural heritage sites within the project site.

As there are no proposed changes to infrastructure at the facility, the proposed modification will not have a significant impact on any MNES listed under the EPBC Act and consequently has not been referred to DoEE.

5.3 NSW State legislation

5.3.1 NSW Environmental Planning and Assessment Act 1979

i Section 4.55(1A) modification

The original application for the facility was approved under Part 3A of the EP&A Act in May 2013. Modifications to Part 3A projects are available to projects that had been declared as SSD under Clause 6 of Schedule 2 to the Environmental Planning and Assessment (Savings, Transitional and Other Provisions) Regulation 2017. The order of transition for the original project was published in the Government Gazette on 3 October 2018.

Ivanhoe Coal is seeking to modify the consent under Section 4.55(1A) of the EP&A Act. Compliance of the proposed modification with the requirements of Section 4.55(1A) is summarised in Table 5.1.

Table 5.1 Compliance with Section 4.55(1A) requirements

Section 4.55 (1A) requirements	Comment
(a) it is satisfied that the proposed modification is of minimal environmental impact, and	The environmental assessment in Chapter 7 found that the proposed modification will have minimal environmental impact.
(b) it is satisfied that the development to which the consent as modified relates is substantially the same development as the development for which the consent was originally granted and before that consent as originally granted was modified (if at all), and	The proposed modification is consistent with the objectives of the facility's approval, being the handling and transportation of coal, with a reduced reliance on road transport for coal deliveries, and thus is considered substantially the same development as the development for which the consent was originally granted. The proposed modification is seeking to remove the TARP, thereby allowing the facility to receive coal outside of the previously defined emergency situations. The proposed modification will allow for ongoing supplies of supplementary coal to MPPS and remove risks associated with coal supplies being provided by a single mining operation.
(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	Notice of the application must be published in a local newspaper by DPIE. DPIE must also cause notice of the proposed modification to be given to each person who made a submission in relation to the original development application.
(d) it has considered any submissions made concerning the proposed modification within any period prescribed by the regulations or provided by the development control plan, as the case may be.	Any submissions made concerning the proposed modification will be reviewed by DPIE and forwarded to Ivanhoe Coal to consider and respond to (via a submissions report).

ii Matters for consideration

Modification applications under Section 4.55(1A) of Division 4.9 are required to take into consideration the relevant matters referred to in Section 4.15 of the EP&A Act which include:

- (a) the provisions of:
 - (i) any environmental planning instrument, and
 - (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
 - (iiia) 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
 - (iv) the regulations (to the extent that they prescribe matters for the purposes of this paragraph), and
 - (v) (Repealed)

that apply to the land to which the development application relates,

- (b) the likely impacts of that development, including environmental impacts on both the natural and built environment, and social and economic impacts in the locality,
- (c) the suitability of the site for the development,
- (d) any submissions made in accordance with this Act or the regulations,
- (e) the public interest.

Matters (a) (i), (iii) and (iv) have been addressed in the following sections of this chapter. Matters (b) to (e) are addressed in Chapters 6, 7 and 8. There are no proposed instruments (matter (ii)) that require consideration.

5.3.2 NSW Environmental Planning and Assessment Regulation 2000

Clause 115 of the EP&A Regulation lists the information required with an application for a modification under Section 4.55(1A) of the EP&A Act. Table 5.2 summarises where this information is provided.

The modification is not considered to be designated development under the EP&A Regulation.

Table 5.2 EP&A Regulation Clause 115 information requirements

Clause 115 information requirement	Where addressed
(a) the name and address of application	Section 1.2 of this MR.
(b) a description of the development to be carried out under the consent (as previously modified)	Chapter 3 of this MR.
(c) the address, and formal particulars of title, of the land on which the development is to be carried out,	Section 2.1 of this MR.
(d) a description of the proposed modification to the development consent,	Chapter 4 of this MR.
(e) a statement that indicates either: i. that the modification is merely intended to correct a minor error, misdescription or miscalculation, or ii. that the modification is intended to have some other effect, as specified in the statement,	Section 4.1 of this MR.
(f) a description of the expected impacts of the modification,	Chapter 7 of this MR.
(g) an undertaking to the effect that the development (as to be modified) will remain substantially the same as the development that was originally approved,	Chapter 7 of this MR.
(g1) in the case of an application that is accompanied by a biodiversity development assessment report, the reasonable steps taken to obtain the like-for-like biodiversity credits required to be retired under the report to offset the residual impacts on biodiversity values if different biodiversity credits are proposed to be used as offsets in accordance with the variation rules under the <i>Biodiversity Conservation Act 2016</i> ,	There will be no increase in impacts to biodiversity values (refer Appendix A). A biodiversity development assessment report (BDAR) waiver request is provided as Appendix A.

Table 5.2 EP&A Regulation Clause 115 information requirements

Clause 115 information requirement	Where addressed
(h) if the applicant is not the owner of the land, a statement signed by the owner of the land to the effect that the owner consents to the making of the application (except where the application for the consent the subject of the modification was made, or could have been made, without the consent of the owner),	Landowner's consent is not required for an application for public notification development if the application instead gives notice of the application by written notice to the owner of the land before the application is made or by advertisement published in a newspaper circulating in the area in which the development is to be carried out no later than 14 days after the application is made.
(i) a statement as to whether the application is being made to the Court (under Section 4.55) or to the consent authority (under Section 4.56)	The proposed modification application is not being made to the NSW Land and Environment Court.
and, if the consent authority so requires, must be in the form approved by that authority.	The form of this application is consistent with DPIE's requirements.

5.3.3 NSW Protection of the Environment Operations Act 1997

As discussed in Section 3.4, the facility is a 'premises-based scheduled activity' under the POEO Act and is therefore required to operate under an EPL.

Licensed activities are detailed in Condition O1.1 of the EPL, which comprise the processing, handling, movement and storage of materials. These activities are inclusive of the activities related to the proposed modification and would not require a variation to the EPL.

As discussed in Chapter 7, the environmental impacts of the proposed modification are predicted to be within the thresholds of the original project. As such, the remaining conditions of the EPL do not require variation.

5.4 Application environmental planning instruments

5.4.1 State Environment Planning Policies

The following State Environment Planning Policies (SEPPs) are considered relevant for the facility and considered in the original EA:

- State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007 (Mining SEPP);
- State Environmental Planning Policy No 33 – Hazardous and Offensive Development;
- State Environmental Planning Policy No. 44 – Koala Habitat Protection;
- State Environmental Planning Policy No 55 – Remediation of Land; and
- State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011.

As noted in Chapter 4, the proposed modification does not seek to expand the development footprint of the project site, excavate, or clear vegetation. The currently approved stockpile will not change. The primary land use, being the receipt, handling, stockpiling and transport of coal will remain. As such, the findings of the original EA, the Mod 1 EA and Mod 2 MR (ie that the facility is consistent with these SEPPs) continues to apply to the proposed modification.

Of specific relevance is Clause 7(1)(b)(i) of the Mining SEPP, which allows for mining to be carried out on land where development for the purposes of agriculture or industry may be carried out (with or without development consent). Further, it defines mining thus:

mining means the winning or removal of materials by methods such as excavating, dredging, or tunnelling for the purpose of obtaining minerals, and includes:

- (a) the construction, operation and decommissioning of associated works, and
- (b) the stockpiling, processing, treatment and transportation of materials extracted, and
- (c) the rehabilitation of land affected by mining.

As noted below, on this basis any provision in the Lithgow LEP that would otherwise operate to prohibit the proposed modification has no effect. The proposed modification is permissible with development consent.

5.4.2 Lithgow Local Environmental Plan 2014

At the time of the original development application in 2012, the relevant environmental planning instrument was Lithgow Local Environmental Plan 1994, with the project site and larger project area zoned as Rural (General) (1a) and Village 2(v). The original application was permissible as the land use was permissible under Rural (General) (1a), and while it was prohibited within the Village 2(v) zone, Clause 7 of the Mining SEPP overruled that prohibition.

As noted in Section 2.1, the Lithgow LEP is the relevant LEP for the project site, with the project site being zoned as IN1 General Industrial and RU1 Primary Production. The objectives and relevant permitted uses of those zones are provided in Table 5.3.

Table 5.3 Lithgow LEP 2014 Land use zoning extract

Zone	Objectives	Relevant permitted uses
IN1 General Industrial	To provide a wide range of industrial and warehouse land uses. To encourage employment opportunities. To minimise any adverse effect of industry on other land uses. To support and protect industrial land for industrial uses. To maintain or improve the water quality of receiving water catchments.	General industries.

Table 5.3 **Lithgow LEP 2014 Land use zoning extract**

Zone	Objectives	Relevant permitted uses
RU1 Primary Production	To encourage sustainable primary industry production by maintaining and enhancing the natural resource base. To encourage diversity in primary industry enterprises and systems appropriate for the area. To minimise the fragmentation and alienation of resource lands. To minimise conflict between land uses within this zone and land uses within adjoining zones. To minimise the environmental and visual impact of development on the rural landscape. To provide for recreational and tourist development and activities of an appropriate type and scale that do not detract from the economic resource, environmental or conservation value of the land. To maintain or improve the water quality of receiving water catchments.	Aquaculture; intensive livestock agriculture; Intensive plant agriculture.

As noted in Section 5.4.1, the Mining SEPP allows for mining, including the stockpiling, processing, treatment and transportation of materials extracted on land where agriculture or industry is permitted. The uses of industry and agriculture are both permitted on land associated with the project site. As such, the continued stockpiling and transportation of coal, as per the proposed modification, continues to be permissible on the project site with development consent.

6 Stakeholder consultation

6.1 NSW Department of Planning, Industry and Environment

Ivanhoe Coal wrote to DPIE on 18 March 2020 to introduce the proposed modification and seek advice with regard to the assessment pathway and scope of this MR. DPIE responded on 21 March 2020 to confirm the assessment scope and nominated application under Section 4.55(1A) of the EP&A Act as the appropriate approval pathway. A copy of this correspondence is provided in Appendix B. Feedback provided by DPIE and how this has been addressed is summarised in Table 6.1.

Table 6.1 Feedback from DPIE and how it has been addressed

Matter raised	Response
DPIE confirms that the appropriate approval pathway for the modification application is Section 4.55(1A) of the EP&A Act.	The appropriate approval pathway for the modification is nominated and described in Section 5.3.1 of this MR.
DPIE confirmed that the issues identified in the Ivanhoe Coal letter to DPIE (18 March 2020) need to be addressed in the MR.	A quantitative assessment of noise has been undertaken as part of the MR (refer Section 7.2 and Appendix C). A BDAR waiver request is provided in Appendix A. Other environmental matters have been addressed in Table 7.1.

6.2 Lithgow City Council

A letter was sent to Lithgow City Council (LCC) on 30 March 2020 to introduce the proposed modification and notify LCC that a MR will be submitted to DPIE (Appendix B). A representative from LCC acknowledged receipt of the letter on 1 April 2020. No feedback regarding the proposed modification has been received to date.

6.3 Wallerawang Lidsdale Progress Association

A letter was sent to Wallerawang Lidsdale Progress Association (WLPA) on 30 March 2020 to introduce the proposed modification and notify WLPA that a MR will be submitted to DPIE. No feedback regarding the proposed modification has been received to date.

6.4 Sensitive receivers

A letter was sent to sensitive receivers surrounding the facility on 30 March 2020 to introduce the proposed modification. No issues were raised regarding the proposed modification.

6.5 Western Region Combined Community Consultative Committee

The Western Region Combined Community Consultative Committee (CCC) was notified of the proposed modification on 30 March 2020. No feedback regarding the proposed modification has been received to date.

6.6 Other stakeholders

Registered Aboriginal parties, Airly CCC, Clarence CCC, Lithgow Environment Group, Lithgow Branch of the National Trust and the Editor of the Village Voice were also notified of the proposed modification in March 2020. Lithgow Branch of the National Trust acknowledged receipt of the correspondence on 3 April 2020.

The Chairperson of Clarence CCC submitted a letter in support of the proposed modification on 7 April 2020 (Appendix B). The letter acknowledges the role the proposed modification will play in guaranteeing the ongoing supply of suitable quality coal to MPPS.

Lithgow Environment Group acknowledged receipt of the correspondence and noted that it would be circulated to their members on 31 March 2020. A subsequent phone conversation was held on 1 April 2020 between a representative from Centennial and Lithgow Environment Group. A subsequent email was sent to Lithgow Environment Group to confirm the scope of the proposed modification and acknowledge that a specific origin for coal arriving at the facility had not been nominated in order to provide operational flexibility.

7 Environmental assessment

This section addresses the potential impacts of the proposed modification.

7.1 Overview of impacts

The proposed modification has been compared to existing operations, as assessed in the original EA (RPS 2012), as summarised in Table 7.1.

Table 7.1 Potential impacts of the proposed modification

Environmental consideration	Impact assessment
Surface water/groundwater	There are no proposed changes to existing and approved site infrastructure. No surface water or groundwater impacts are anticipated as part of the proposed modification. Surface water and groundwater will continue to be managed in accordance with the WMP.
Biodiversity	As requested in consultation with DPIE, a BDAR waiver request has been prepared as part of the proposed modification (refer Appendix A). The proposed modification is sited at an existing rail loading facility within a heavily disturbed area. The likelihood of impacts on native vegetation as a result of the proposed modification is considered to be negligible. Ecology monitoring, assessment and reporting are currently managed through the facility's EMS and BMP. The EMS and BMP will continue to operate under the proposed modification.
Aboriginal archaeology/historical heritage	The proposed modification does not require any clearing or excavation. Therefore, there is negligible potential for the proposed modification to impact heritage sites. Heritage will continue to be managed in accordance with the HHMP and ACHMP.
Visual amenity	The facility is currently required to minimise visual impacts, including off-site lighting impacts. The facility can only receive and unload trains during the daytime period (ie 7.00 am-6.00 pm Monday to Saturday and 8.00 am-6.00 pm Sundays and public holidays). The proposed modification will not result in additional lighting impacts.
Waste	No waste product is predicted to increase during the operation of the proposed modification. The proposed modification does not require any additional construction activities. Waste will continue to be managed in accordance with the EMS with all waste disposed of at a licenced waste management facility.

Table 7.1 Potential impacts of the proposed modification

Environmental consideration	Impact assessment
Traffic and transport	A traffic and rail impact assessment was prepared by Barnson (2012) as part of the EA for the Lidsdale Siding Upgrade Project. The assessment addressed impacts associated with road and rail movements, including potential impacts at the Main Street and Brays Lane level crossing. The assessment concluded that queuing at the Main Street level crossing would be minimal. Further, during the peak hour period a train could block the crossing only once due to the anticipated number of trains (average of five per day and maximum seven per day). However, some upgrading to the current road line marking at this location was proposed to satisfy Australian Standard 1742.7-2007 Manual of uniform traffic control devices – Part 7: Railway crossings. The assessment also concluded that the potential for traffic queues at the Brays Lane level crossing would be minimal due to the low level of local traffic associated with this land. No additional train safety mitigation measures were recommended and the impact on the existing rail network was considered negligible. As discussed in the Mod 1 EA (EMM 2019a), the delay caused by slow moving trains at the Main Street level crossing was identified as a concern during stakeholder engagement. In response, notification boards were approved to be installed at appropriate locations, to identify when trains will be accessing the facility and, consequently, when there could be potential delays at the Main Street level crossing. These notification boards were installed in December 2019 and will continue to be utilised as part of the proposed modification. The proposed modification will operate within the current assessed and approved limits for rail movements. All rail movements will continue to operate within the constraints of the John Holland Rail (JHR) EPL 13421 for the subject rail line. The proposed modification will operate in accordance with the Safety Interface Agreement between JHR and Centennial and Registered Lease Q596012. These agreements are in addition to the consent issued under the EP&A Act. Consequently, it is considered that the proposed modification will not significantly change traffic or transport impacts compared to the approved operations.
Air quality	An air quality impact assessment (AQIA) was completed by SLR (2012) as part of the EIS for the Lidsdale Siding Upgrade Project. The AQIA quantified emissions of particulate matter, specifically: • total suspended particulate matter (TSP); • particulate matter less than 10 microns in aerodynamic diameter (PM₁₀); and • particulate matter less than 2.5 microns in aerodynamic diameter (PM₂₅). The dispersion modelling conducted for the operation of the facility predicted compliance for all assessed particulate matter air pollutants at all surrounding sensitive receptor locations. The proposed modification will allow the facility to receive coal outside of the previously defined emergency situations. There will be no change to the total approved coal handling rate at the facility of 6.3 Mtpa. Further, there will be no change to the procedure that wagon loading operations are not undertaken on the same day as wagon unloading operations. Therefore, there will be no change in the maximum number of trains incoming or outgoing under the proposed modification. With regards to particulate matter emission estimation, the same emission factor is used for wagon loading and wagon unloading. As there is no change to the maximum amount of coal to be transferred through the facility in a single day (ie maximum of seven trains) or year (ie 6.3 Mtpa), there will be no material change in particulate matter emissions generated by the facility as part of the proposed modification relative to existing approved operations. Consequently, it is considered that the proposed modification will not significantly change air quality impacts from those currently generated by the approved operation of the facility.

Table 7.1 Potential impacts of the proposed modification

Environmental consideration	Impact assessment
Social	A social impact assessment (SIA) was prepared by Centennial as part of the Mod 1 EA (EMM 2019a). The scoping tool utilised by the SIA noted the following social impacts from Mod 1, which are still relevant for the proposed modification: • noise; • air quality; and • increased rail movements at Main Street level crossing. All three potential social impacts resulting from Mod 1 were awarded a high social risk. Noise impacts were considered likely to occur but were anticipated to be minor in nature. Air quality and traffic impacts from the interface between trains and vehicles at the Main Street level crossing were also considered likely to occur but to be moderate in nature. Mitigation and management measures relevant to Mod 1 included: • continued noise monitoring as per the NMP; • continued air quality monitoring as per the <i>Western Region – Air Quality and Greenhouse Gas Management Plan</i> (2018); and • implementation of a roadside notification board identifying approximate times when trains will be accessing the facility and when there may be delays at the Main Street level crossing. Noise and air quality monitoring will continue as part of the proposed modification. The proposed modification will not result in any significant change to air quality and noise impacts than those concluded in previous modifications and the original EA. The unloading of trains has been optimised by Ivanhoe Coal, with the aim to reduce noise emissions from wagons and eliminate noise from wagon shunting (Section 5.3 of Appendix C). Noise emissions from train operations have since been measured to be significantly lower than those considered in the Mod 1 EA (EMM 2019a). The proposed modification will sustain the current workforce at the facility, as well as support existing employment levels at MPPS. The proposed modification will secure the ongoing operation of MPPS, as well as train operators and local operational staff. Overall, the proposed modification will not result in a significant social impact. As described in Chapter 6, stakeholder groups did not raise any concerns regarding the proposed modification.
Economic	An economic effects analysis (EEA) was completed by Aigis Group as part of the Mod 1 EA (EMM 2019a). The assessment adopted a qualitative approach to determine the potential positive economic outcomes for the local and regional economy resulting from Mod 1. The EEA found that neither noise nor traffic impacts associated with Mod 1 would have a material economic effect. The proposed modification will not increase the maximum number of trains per day, nor will it change the condition that either unloading or loading activities are to occur in a single day, not both. A broader material benefit was identified as Mod 1 was anticipated to facilitate the continued operation of MPPS and therefore provide energy security for NSW. This can be extended to the proposed modification, as it will secure the continued operation of MPPS. During operation, it is likely that local train crew for the driving of trains and local contractors for the operation of the conveyer system will continue under the proposed modification. The proposed modification will also support existing employment levels at MPPS.

7.2 Noise

7.2.1 Overview

A noise impact assessment (NIA) was prepared by EMM (Appendix C) for the proposed modification taking into consideration the noise assessments completed for the original EA (Hatch 2012) and the Mod 1 EA (EMM 2019c). The assessment was prepared with reference to the methods outlined in the *Noise Policy for Industry* (NPfI) (EPA 2017). The assessment also fulfilled the commitment made by Ivanhoe Coal as part of Mod 1 to verify noise emission levels from the facility during train unloading activities.

7.2.2 Existing environment

i Ambient noise

Unattended noise monitoring was completed by EMM at four locations surrounding the facility in 2019. The locations of the long-term noise loggers, short-term operator-attended noise monitoring locations and the facility's automatic weather station are shown in Figure 7.1.

Noise levels in areas surrounding the facility are typically dominated by local and distant traffic and natural sounds. These observations were considered in determining the representative background noise levels, and ultimately for the project noise trigger levels (PNTLs) for all assessment locations.

ii Assessment locations

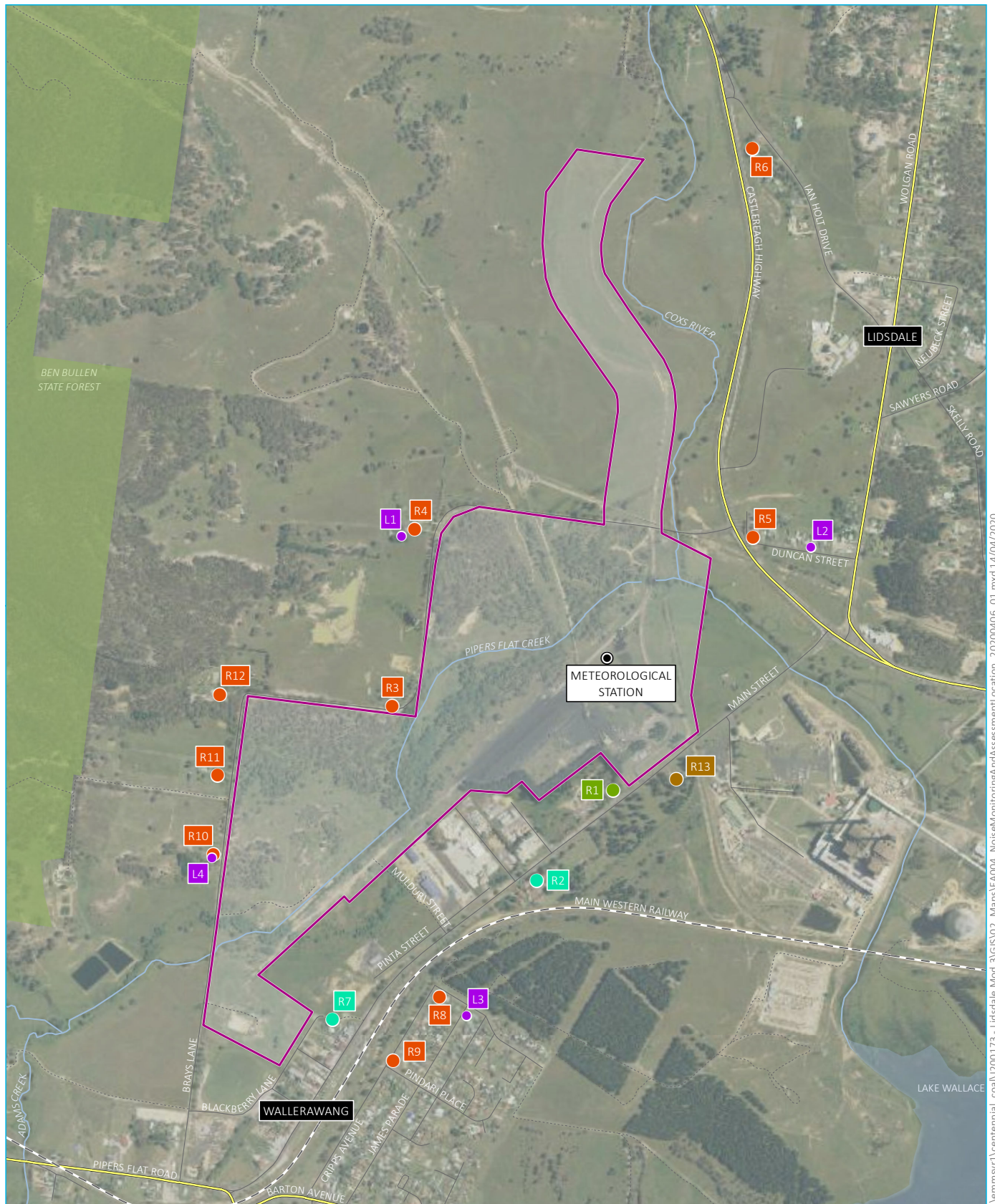
The nearest noise sensitive receptors (herein referred to as assessment locations) are shown in Figure 7.1. The numbering of these assessment locations is consistent with that utilised in the consent with the exception of R13 (St John the Evangelist Church) which was added for completeness for the purpose of the assessment.

iii Existing noise emissions

The NIA completed for the original EA (Hatch 2012) predicted that noise emissions from the facility would be dominated by trains (locomotive and wagon noise) manoeuvring in and out of the rail siding and noise from the mobile plant (dozer or front end loader) working on the coal stockpiles. Noise emissions from all conveyors and conveyor drives were predicted to be negligible at the nearest residences when trains and mobile equipment are operational.

A subsequent NIA was completed for the Mod 1 EA (EMM 2019c) to consider potential noise impacts associated with the delivery of coal to the facility by train, coal unloading, handling and stockpiling and coal dispatch using the existing overland conveyor network. It was concluded that operational noise emissions from the facility would likely reduce or remain unchanged from loading operations.

With the exception of an isolated complaint in 2016 (relating to noise from a train horn), no noise complaints have been made since the facility was upgraded in 2014.



Source: EMM (2020); DFSI (2017)

KEY

- | | |
|--|---|
| Study area | — Named watercourse |
| ● Noise monitoring location | Named waterbody |
| Meteorological station | State forest |
| --- Rail line | Noise assessment location |
| — Major road | ● Hotel/motel |
| — Minor road | ● Isolated residence in industrial zone |
| --- Vehicular track | ● Place of worship |
| | ● Residence |

Noise monitoring and
assessment locations

Lidsdale Siding Modification 3
Modification report
Figure 7.1

iv Rail unloading activities

A commitment was made by Ivanhoe Coal as part of the Mod 1 EA to measure noise levels generated by the facility during train unloading activities and pursue additional feasible and reasonable noise mitigation options should they be required. The results have been used to calibrate and validate the operational noise model (Section 7.2.3).

The unloading of trains has been optimised by Ivanhoe Coal, with the aim to reduce noise emissions from wagons and eliminate noise from wagon shunting (Section 5.3 of Appendix C). Near-field noise measurements were undertaken on-site after the implementation of additional measures to reduce noise from train unloading operations.

Noise emissions from train operations were measured to be significantly lower than those considered as part of the Mod 1 EA. The measured noise levels are 2 dB and 9 dB lower for locomotives and train wagons, respectively, as compared to previous measurements applied in the Mod 1 EA.

v Existing noise criteria

Noise criteria for the facility for the daytime, evening and night periods are listed in Condition 2 of Schedule 3 of the consent and Condition L4.1 of EPL 5129.

7.2.3 Assessment of impacts

i Noise criteria

The NPfI provides a methodology for the assessment of noise from existing industrial sites. As per the NPfI, PNTLs are the more stringent of either the project intrusive or amenity noise levels.

The NPfI derived project intrusive noise levels are $L_{Aeq,15\text{minute}}$ 40 dB and 35 dB for the daytime and evening/night respectively at all residential assessment locations. For non-residential locations (ie R2, R7 and R13), the PNTLs are the project amenity levels:

- 58 dB (R2 and R7); and
- 38 dB (internal) and 48 dB (external) (R13).

As specified in Section 6.1 of the NPfI, PNTLs should not be applied as mandatory noise limits.

ii Operational noise assessment

The operational noise assessment adopted equipment noise emission values measured on-site during unloading activities and the results of the sound power survey performed by Global Acoustics (2018). Noise predictions were carried out using *iNoise* software, which calculates total noise levels at assessment locations from concurrent operation of multiple noise sources.

Calculated noise levels from train unloading operations are compared with the relevant consent conditions, Mod 1 EA (EMM 2019c) and PNTLs in Table 7.2.

Table 7.2 Predicted noise levels

Assessment location	Description	Mod 1 EA noise prediction	Calculated existing daytime noise levels		Consent and EPL daytime limit	PNTL
		L _{Aeq,15 minute} (dB)	L _{Aeq,15 minute} (dB)		L _{Aeq,15 minute} (dB)	L _{Aeq,15 minute} (dB)
		Standard	Standard	Noise enhancing		
R1	Lot 2 Main Street, Wallerawang	52	50	52	50	68
R2	Black Gold Cabins, Main Street, Wallerawang	49	48	50	46	58
R3	“Killarney”, Brays Lane, Wallerawang	51	49	51	47	40
R4	“Fairview”, Brays Lane, Wallerawang	44	43	45	43	40
R5	Duncan Street, Lidsdale	41	39	42	46	40
R6	Old Castlereagh Highway, Lidsdale	<30	<30	<30	43	40
R7	Royal Hotel, Main Street, Wallerawang	49	44	47	41	58
R8	Corner of Heel Street and Cripps Avenue, Wallerawang	46	43	46	40	40
R9	Corner of Cripps Avenue and Pindari Place, Wallerawang	44	40	43	39	40
R10	Brays Lane South, Wallerawang	47	43	45	45	40
R11	“Tara”, Brays Lane, Wallerawang	44	41	44	45	40
R12	Brays Lane Corner, Wallerawang	43	40	43	43	40
R13	St John the Evangelist Church, 140 Main Street, Wallerawang	53	51	52	N/A	48

Notes: Noise emissions from the facility have been predicted for both standard and noise-enhancing conditions (Section 5.2 of Appendix C). Exceedances of consent and EPL daytime limits shown in **bold**.

Results of the noise modelling demonstrate that exceedances of the consent and EPL limits and PNTLs are predicted to occur at a number of assessment locations. These exceedances are historical and are not a result of the unloading operations at the facility or the proposed modification.

Noise emissions from the facility are predicted to be the same as for currently approved operations. Noise emissions are declining over time as a result of improvements to unloading methodology and implementation of noise mitigation measures.

On-site attended noise measurements showed that the optimisation of train unloading activities by Ivanhoe Coal has effectively reduced noise emissions from wagons, wagon shunting and locomotives.

Noise emissions at the nearest residential assessment locations are predicted to be up to 5 dB lower than noise predictions provided in the Mod 1 EA (EMM 2019c).

7.2.4 Mitigation and management

Noise will continue to be managed in accordance with the NMP.

8 Conclusion

A description of the need and justification for the proposed modification is provided below with regard to biophysical, social and economic factors; the principles of ecologically sustainable development (ESD); and the consistency of the proposed modification with the objects of the EP&A Act.

8.1 Modification impacts

This MR examines the potential impacts that may result from the proposed modification. The assessment of environmental issues has been multi-disciplinary and involved consultation with DPIE and other key stakeholders (including LCC, WLPA, the Western Region Combined CCC, sensitive receivers and other stakeholders).

The proposed modification will not result in significant biophysical, social or economic impacts and the MR has identified that any residual impacts can be appropriately managed.

8.2 Modification benefits

The proposed modification is seeking to remove the TARP, thereby allowing the facility to receive coal outside of the previously defined emergency situations.

The proposed modification will allow for ongoing supply of supplementary coal from a range of mines to be delivered to the facility and on to MPPS and remove the risks associated with coal supplies being provided by a single mining operation (currently Springvale Mine, and in the future Angus Place Colliery).

The ongoing supply of supplementary coal to MPPS will provide indirect social and economic benefits through increased job security for MPPS employees and subsequent benefits to the local and regional economy through income and expenditure, and more widely in NSW in assisting to secure the current electricity supply. In addition, a potential minor increase to employment will result in minor economic benefits relating to household consumption and investment activities in the surrounding local and regional economies in which they reside.

The proposed modification is an alteration with minimal environmental impact to an approved facility, which allows an orderly and economic use of a resource approved for extraction for use in domestic power generation.

All aspects relating to environmental management will continue in accordance with the consent, EPL 5129 and the approved management plans.

8.3 Ecological sustainable development

Under Section 516A of the EPBC Act, Commonwealth organisations have a statutory requirement to report on their environmental performance and how they accord with, and advance, the principles of ESD.

Australia's *National Strategy for Ecologically Sustainable Development* (AGESDSC 1992), defines ESD as “using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased”.

The principles of ESD, for the purposes of the EP&A Act, are provided in Clause 7(4) of Schedule 2 of the EP&A Regulation. The four principles of ESD are:

- precautionary principle – the precautionary principle states that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation;

- inter-generational equity – the principle of inter-generational equity is that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations;
- conservation of biological diversity and maintenance of ecological integrity – the conservation of biological diversity and ecological integrity should be a fundamental consideration in decision-making; and
- improved valuation and pricing of environmental resources – improved valuation, pricing and incentive mechanisms should be promoted.

The overall objectives of ESD are to use, conserve and enhance natural resources. This ensures that ecological processes are maintained facilitating improved quality of life, now and into the future. Centennial is committed to the principles of ESD and understands that biophysical, social and economic objectives are interdependent. Centennial acknowledges that a well-designed and effectively managed operation will avoid significant and/or costly environmental impacts or degradation.

The proposed modification has been designed to reduce impacts to a level which is as low as is reasonably practicable. As noted previously, the proposed modification does not increase the total number of trains per day (seven) to or from the facility, and the approved unloading activities will not occur on the same day as approved loading activities. No additional management measures are therefore required to mitigate residual impacts. No additional management measures are required to mitigate residual impacts.

Consideration has been given to appropriately identifying, avoiding, mitigating and managing environmental risks. This demonstrates environmental due diligence and will provide for ongoing and adaptive monitoring and management of the operation in line with the principles of ESD outlined in the following sections.

8.3.1 Precautionary principle

This MR has enabled an understanding of the potential impacts of the proposed modification on biophysical, social and economic factors. The proposed modification will not result in significant biophysical, social or economic impacts and any residual impacts can be appropriately managed in accordance with Ivanhoe Coal's existing approved environmental management system. No additional safeguards are warranted to monitor, mitigate and/or manage the potential impacts or residual impacts.

8.3.2 Inter-generational equity

Centennial undertakes ongoing environmental monitoring with mitigation measures to provide effective environmental management across its existing operations. This management is provided through planning, communication, documentation, review and feedback. These environmental management measures ensure that the health, diversity and productivity of the environment is maintained or enhanced for future generations.

8.3.3 Conservation of biological diversity and maintenance of ecological integrity

The potential environmental impacts of the proposed modification are detailed in this MR. The proposed modification is not expected to cause any impacts to threatened species or endangered ecological communities.

8.3.4 Improved valuation and pricing of environmental resources

Centennial will optimise the valuation and pricing of receiving coal resources to the facility by efficiently transporting coal by conveyer to the WCS site for use at MPPS. The proposed modification promotes the objectives of the facility's approval, being the handling and transportation of coal with a reduced reliance on road transport

for coal deliveries. The proposed modification will support the ongoing, efficient operation of MPPS and the supply of electricity to NSW.

8.4 Conclusion

All aspects relating to environmental management will continue in accordance with the consent, EPL 5129, the various approved management plans and other elements of the consent.

The proposed modification has been designed to avoid and minimise adverse biophysical, social and economic impacts, where possible and is anticipated to result in minimal environmental impacts beyond those previously assessed and approved under the consent.

The proposed modification will support the ongoing, efficient operation of MPPS thereby providing a number of benefits to the local community, region and NSW. It is consistent with the relevant objects of the EP&A Act, including Section 4.55(1A) and the principles of ESD, demonstrating that the proposed modification involves minimal environmental impact, and will minimally change the nature of the development originally approved.

References

Australian Government Ecologically Sustainable Development Steering Committee (AGESDSC) 1992, *National Strategy for Ecologically Sustainable Development*, Ecologically Sustainable Development Steering Committee.

Barnson Pty Ltd (Barnson) 2012, *Traffic and rail impact assessment – Lidsdale Siding Upgrade Project*, prepared for Centennial.

Centennial 2019a, *Lidsdale Siding Modification 1 – Response to Submissions*.

- 2019b, *Lidsdale Siding Mod 2 – Submissions Report*.
- 2018, *Rehabilitation and Closure Plan – Lidsdale Siding*.
- 2012, *Lidsdale Siding Upgrade Response to EA Submissions*.

EMM Consulting 2019a, *Environmental Assessment for Modification to Development Consent 08-0223*.

- 2019b, *Lidsdale Siding Modification Report for Modification to Development Consent 08_0223*.
- 2019c, *Lidsdale Rail Siding Modification – Noise Assessment*.

Global Acoustics 2018, *Lidsdale Siding – Sound Power Survey*.

Hatch Associates 2012, *Lidsdale Siding Upgrade Project – Environmental Noise Impact Assessment*, prepared for Centennial by Hatch Associates.

NSW Department of Planning and Environment (DPE) 2017, *Social impact assessment guideline for State significant mining, petroleum production and extractive industry development*.

RPS Australia East (RPS) 2012, *Lidsdale Siding Upgrade Project Environmental Assessment*, prepared for Centennial by RPS Australia East.

SLR 2012, *Lidsdale Siding Loading Facility Air Quality Impact Assessment and Greenhouse Gas Assessment*, prepared for Centennial by SLR Consulting Australia Pty Ltd.

Abbreviations

ACHMP	<i>Western Region – Aboriginal Cultural Heritage Management Plan (Centennial 2017)</i>
AQIA	air quality impact assessment
Banpu	Banpu Public Company Limited
BC Act	<i>NSW Biodiversity Conservation Act 2016</i>
BMP	<i>Biodiversity Management Plan: Lidsdale Siding (Centennial 2013)</i>
Centennial	Centennial Coal Company Limited
CCC	Community Consultative Committee
DoEE	Commonwealth Department of the Environment and Energy
EA	environmental assessment
EEA	economic effects analysis
EMM	EMM Consulting Pty Limited
EnergyAustralia	EnergyAustralia Pty Ltd
EPA	NSW Environment Protection Authority
EPBC Act	Commonwealth <i>Environment Protection and Biodiversity Conservation Act 1999</i>
EPL	environment protection licence
EP&A Act	<i>NSW Environmental Planning and Assessment Act 1979</i>
ESD	ecologically sustainable development
EMS	<i>Environmental Management Strategy: Lidsdale Siding (Centennial 2017)</i>
ha	hectares
HHMP	<i>Western Region – Historic Heritage Management Plan (Centennial 2018)</i>
Ivanhoe Coal	Ivanhoe Coal Pty Ltd
km	kilometres
LCC	Lithgow City Council
LGA	local government area
Lithgow LEP	Lithgow Local Environmental Plan 2014
Mining SEPP	State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007
mm	millimetres
MNES	matters of national environmental significance
MPPS	Mount Piper Power Station

MR	modification report
Mtpa	million tonnes per annum
MW	megawatts
NSW	New South Wales
PIRMP	<i>Lidsdale Siding Pollution Incident Response Management Plan</i> (Centennial 2017)
POEO Act	<i>NSW Protection of the Environment Operations Act 1997</i>
ROM	run-of-mine
RTS	response to submissions
SEPP	State Environment Planning Policy
SEPP 33	State Environmental Planning Policy No 33 – Hazardous and Offensive Development
SSD	State significant development
Springvale Coal	Springvale Coal Pty Limited
t	tonnes
TARP	trigger action response plan
the consent	development consent 08_0223
the facility	Lidsdale Siding
tpa	tonnes per annum
WCS	Western Coal Services Project
WLPA	Wallerawang Lidsdale Progress Association
WMP	<i>Water Management Plan</i> (Centennial 2015)



Appendix A

Biodiversity development assessment report waiver request



LIDSDALE SIDING MODIFICATION 3

BDAR Waiver Request



144273
Lidsdale Siding MOD
3
09 April 2020

REPORT

Document status

Version	Purpose of document	Authored by	Reviewed by	Approved by	Review date
1	Draft for client review	Arne Bishop	Hayden Beck	Arne Bishop	09/04/2020

Approval for issue

Arne Bishop



9 April 2020

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Prepared by:

RPS

Arne Bishop

Service Line Leader - Terrestrial & Aquatic Ecology

Unit 2A, 45 Fitzroy Street
Carrington NSW 2294

T +61 2 4940 4200

E arne.bishop@rpsgroup.com.au

Prepared for:

Centennial Coal

James Wearne

Group Manager of Approvals

1384 Castlereagh Highway,
Lidsdale NSW 2790 Australia

T +61 (0) 407 207 530

E james.wearne@centennialcoal.com.au

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1 INTRODUCTION

Lidsdale Siding (the facility) is a rail loading facility which automates the transfer and dispatch of coal from Centennial Coal Pty Limited's (Centennial Coal's) Western Coal Services Project (WCS) to domestic and international markets via rail. The facility is located approximately 500 metres (m) north of Wallerawang and approximately 9 kilometres (km) north-west of Lithgow within the Lithgow Local Government Area (LGA) of New South Wales (NSW).

The facility operates under development consent 08_0223 (the consent) which was granted in 2013 under Part 3A of the NSW *Environmental Planning and Assessment Act* 1979 (EP&A Act) by the Department of Planning and Environment (DPE). The original consent has since been declared a State Significant Development (SSD) under clause 6 of Schedule 2 to the Environmental Planning and Assessment (Savings, Transitional and Other Provisions) Regulation 2017. The facility is owned and operated by Ivanhoe Coal Pty Ltd (Ivanhoe Coal).

This report seeks to provide information to support the application for to waive the requirements of a Biodiversity Development Assessment Report (BDAR) for Modification 3 (MOD 3) to consent 08_0223.

1.1 Background

Modification 1 (MOD 1) to Lidsdale Siding's consent was approved on 23 August 2019 and allowed for the receipt and unloading of up to one coal-laden train to the facility and construction of supporting infrastructure to facilitate unloading activities at the facility. This modification was considered to be the most viable option for the supply of coal to Mount Piper Power Station (MPPS) under emergency situations, as it allows coal to be unloaded, handled and transported off-site to MPPS using the existing overland conveyor system via the WCS site and existing approved infrastructure at Lidsdale Siding.

Modification 2 (MOD 2) to Lidsdale Siding's consent was approved on 14 October 2019 and allowed for an increase in the number of laden trains being unloaded at the site. This modification enabled an increase in the volume of coal that can be unloaded at, and transferred from, the facility to MPPS.

Trains are currently unloaded utilising temporary unloading infrastructure. The acceptance and transfer of coal from the facility is critical to guaranteeing ongoing supply of suitable quality coal to MPPS.

1.2 Proposed Modification

The current consent includes allowance for receiving and dispatching coal from the facility by rail and the transfer of coal to the WCS site for use at MPPS when triggered by the existing trigger action response plan (TARP), when coal supplies at MPPS are low.

A modification to the consent (MOD 3), under Section 4.55(1A) of the EP&A Act, is sought to remove the TARP from the consent, thereby allowing the facility to receive coal outside of the previously defined emergency situations (hereafter the 'Proposal'). Trains will continue to be unloaded utilising temporary unloading infrastructure.

Consistent with MOD 1 and MOD 2, unloading activities will not occur on the same day as approved loading activities and no increase to the currently approved coal handling rate at the facility of 6.3 million tonnes per annum (Mtpa) is proposed.

The Proposal is not seeking to increase the number of trains able to be received at the facility and there will be no increase in the number of daily or annual train movements to/from the facility.

Acceptance and transfer of coal from the facility is critical to guaranteeing ongoing supply of suitable quality coal to MPPS. The Proposal will allow for ongoing supplies of supplementary coal to MPPS and remove risks associated with coal supplies being provided by a single mining operation. The continued supply of coal from the facility will help support the efficient operation of MPPS and continued supply of electricity to NSW.

The Proposal will not:

- Change the operational hours that coal receipt, unloading and handling activities at the site occur;

- Require any additional infrastructure to be installed or constructed above what has previously been approved; or
- Increase the number of approved rail movements that occur to and from the facility as no loading of trains will be undertaken on days when rail unloading activities at the site occur.

1.3 Proponent name and contact details

Proponent Name: Ivanhoe Coal Pty Limited

Proponent Contact: James Wearne (Group Manager of Approvals – Centennial Coal)

Proponent Contact Number: +61 (0) 2 4935 8944

Proponent Address: Centennial Coal Company Limited | Fassifern
100 Miller Road, Fassifern NSW 2283

Project ID: Ivanhoe Coal Pty Limited is proposing a second modification (MOD 2) to Lidsdale Siding development consent (08_0223), under Section 4.55(1A) of the EP&A Act

1.4 Persons preparing the application

This report was prepared by Arne Bishop (B.Env.Sc.), updated by Giorginna Xu (B.Env.Sc.) and reviewed by Hayden Beck (PhD).

Arne has over 18 years' experience in the ecology sector, subsequently gaining an extensive knowledge of exotic and endemic NSW flora, fauna, ecological communities and migratory species. He conducts ecological impact assessments and monitoring programs on a daily basis. Arne is accredited under the Biodiversity Assessment Methodology (BAM; BAAS17065). He has conducted BioBanking assessments for State Significant Infrastructure, State Significant Developments, and smaller developments, as well as EPBC offset calculations.

Giorginna is a field ecologist with expertise in flora and fauna identification and the preparation of a variety of ecology-based report types.

1.5 Site Details

Street Address: Wallerawang, NSW 2845

LGA: Lithgow City Council

1.6 Description of existing development site

The Proposal is situated at Lidsdale Siding within a heavily disturbed and cleared Mining Infrastructure Area (MIA).

MOD 3 plans to remove the TARP from the consent, thereby allowing the facility to receive coal outside of the previously defined emergency situations. This will use temporary unloading infrastructure and will be implemented within an existing, pre-disturbed MIA. Areas of existing infrastructure to be used include the existing under-rail sump, the proposed stockpile area and an overland conveyer. The existing infrastructure areas are shown below in **Figure 1**. Photos of the existing development site are displayed in **Appendix A**.

1.7 Definitions

Table 1: Terms and definitions used in report

Term	Definition
BAM	Biodiversity Assessment Method
BDAR	Biodiversity Development Assessment Report
BOS	Biodiversity Offset Scheme
LGA	Local Government Area
MIA	Mining Infrastructure Area
MOD	Modification
MPPS	Mount Piper Power Station
Proposal	MOD 3
SSD	State Significant Development
TARP	Trigger Action Response Plan
TECs	Threatened Ecological Communities

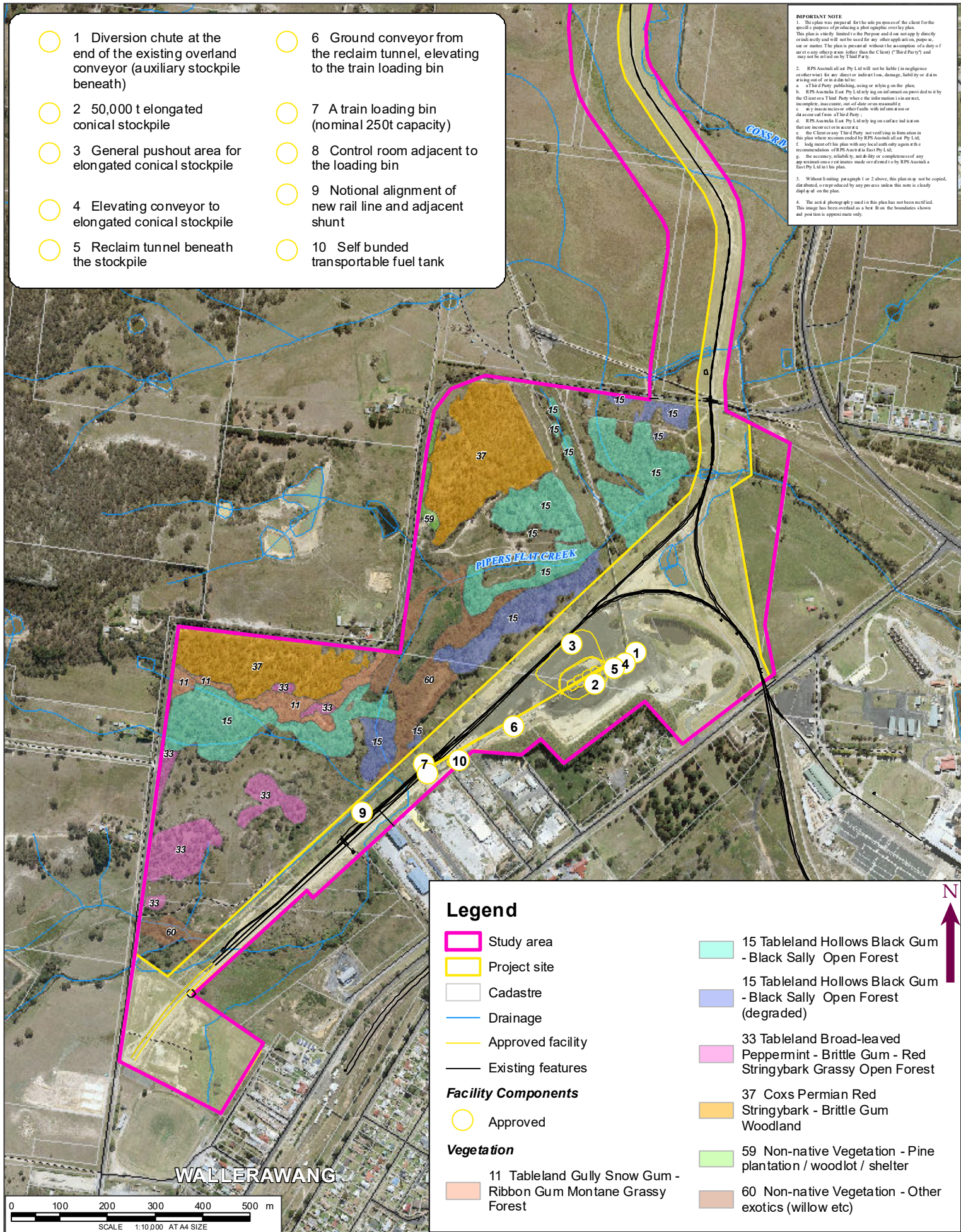


FIGURE 1: APPROVED INFRASTRUCTURE

LOCATION:	LIDSDALE	DATUM: GDA94
JOB NO.:	PR 144273	PROJECTION: MGA Zone 56
PURPOSE: ECOLOGY		Data Sources: RPS, EMM and Client
Technician: Natalie Wood	Date: 14/06/2019	

2 IMPACTS ON BIODIVERSITY VALUES

Recent native vegetation mapping and field survey data (collected as part of MOD 1; on 11 June 2019) was reviewed in combination with aerial imagery to analyse the extent of vegetation cover. The NSW Vegetation Types database was used as the standard for classifying native vegetation cover (DPIE 2019).

Impacts on biodiversity values are addressed in the following section of this report, as detailed in **Table 1**.

Table 2 Impacts on biodiversity values from the Proposal

Biodiversity Value	Meaning	Relevance	Section addressed
Vegetation abundance	Occurrence and abundance of vegetation at a particular site	None	2.1
Vegetation integrity	Degree to which the composition, structure and function of vegetation at a particular site and the surrounding landscape has been altered from a near natural state	None	2.2
Habitat suitability	Degree to which the habitat needs of threatened species are present at a particular site	None	2.3
Threatened species abundance	Occurrence and abundance of threatened species or threatened ecological communities (TECs), or their habitat, at a particular site	None	2.3
Habitat connectivity	Degree to which a particular site connects different areas of habitat of threatened species to facilitate the movement of those species across their range	None	2.4
Threatened species movement	Degree to which a particular site contributes to the movement of threatened species to maintain their lifecycle	None	2.4
Flight path integrity	Degree to which the flight paths of protected animals over a particular site are free from interference	None	2.5
Water sustainability	Degree to which water quality, water bodies and hydrological processes sustain threatened species and threatened ecological communities at a particular site	None	2.6

2.1 Occurrence and abundance of vegetation within the Lidsdale Siding MOD 3 Proposal Area

The proposed TARP removal (MOD 3) to receive coal by rail outside of the previously defined emergency situations will operate within existing approved disturbance areas outlined in MOD 1 and MOD 2 (see **Section 1.6**).

Previous field surveys conducted for MOD 1 by an RPS Ecologist on the 11 June 2019 identified the area as primarily void of native vegetation. A few scattered areas of sparse groundcover vegetation were found to be dominated by exotic weed species of low ecological value.

2.1.1 Impact avoidance

No clearing of native vegetation is anticipated as a result of the Proposal. The proposed removal of the TARP (MOD 3) only seeks to allow the facility to receive coal outside of the previously defined emergency situations within a heavily disturbed MIA almost entirely void of native vegetation. As such, the likelihood of impacts on native flora and fauna as a result of the Proposal are considered to be negligible.

2.2 Vegetation Integrity

The composition, structure and function of vegetation within the MOD 3 and adjacent areas has been subject to a history of disturbance and land clearing greatly altering it from a natural state.

The site has been continually used as a coal storage and rail loading facility since 1974. As such, much of the surrounding area has been subject to land degradation for 35 years. As a result, the vegetation within the MOD 3 persists in a cleared and highly disturbed state.

2.3 Habitat Suitability and Threatened Species Abundance

No threatened species or ecological communities are considered likely to occur within the MIA, to be used for MOD 3 (see **Section 1.6**).

The area is also void of karsts, cliffs, rocks and other geological features of significance. As such, there are no anticipated potential impacts on these habitat features.

2.4 Habitat Connectivity and Threatened Species Movement

The MOD 3 seeks to remove the TARP from the consent, thereby allowing the facility to receive coal outside of the previously defined emergency situations. As such, there will be no physical disturbances to support the Proposal. Therefore, it is not considered that MOD 3 would contribute to a loss of habitat connectivity of remnant vegetation or fragment the movement of threatened species across their ranges.

2.5 Fauna Flight Path Integrity

Flight paths of protected species are not likely to occur over the Proposal Area. Due to the disturbed nature of the Proposal Area, and isolation from remnant native vegetation which may constitute suitable foraging habitat for fauna, it is not expected that the MOD 3 would disturb any active flyway or flight path for avifauna or bat species.

2.6 Water Sustainability

MOD 3 will operate within the constraints of the existing water management system and utilise existing approved coal stockpile areas. Therefore, the Proposal is not expected to cause significant alteration to existing natural water bodies or hydrological processes that sustain threatened species or TECs.

3 CONCLUSION

This report seeks to demonstrate the likely negligible impact to biodiversity values that may be impacted by MOD 3, and hence the case for an exemption of a BDAR.

As the Proposal would use a pre-existing MIA exempt of biodiversity values (apart from scattered native ground cover), it is not expected that MOD 3 would have a significant impact on the following biodiversity values since:

- The Proposal does not require clearing of native vegetation, due to the already highly-disturbed nature of the Proposal Area (see **Section 1.6**);
- No threatened species or ecological communities or their habitat, nor TECs, were identified within the Proposal Area;
- The Proposal is not considered likely to contribute to a loss of habitat connectivity of remnant vegetation or communities or fragment the movement of threatened species across their range;
- The Proposal is not expected to impact upon the development or movement of threatened species that maintains their lifecycle or cause significant alteration to existing natural water bodies or hydrological processes that sustain threatened species or TECs;
- The Proposal is not expected to present a barrier to the movement of native fauna or impact potential flight path integrity;
- There are no anticipated impacts on potential habitat features within the Proposal Area, including karsts, cliffs, rocks and other geological features of significance; and
- The Proposal is not expected to cause significant alteration to existing natural water bodies or hydrological processes that sustain threatened species or TECs.

Hence, due to the nature of MOD 3 and highly disturbed nature of the Proposal Area, it is considered that the Project is not likely to have any significant impact on biodiversity values as a result of the Proposal. As such, it is considered that entry into the Biodiversity Offset Scheme (BOS) is not required in the case of MOD 3, hence a BDAR does not need to be lodged with the SSD application.

4 REFERENCES

Department of Environment and Conservation (2006) The Vegetation of the Western Blue Mountains.
Unpublished report funded by the Hawkesbury-Nepean Catchment Management Authority.
Department of Environment and Conservation NSW, Hurstville.

Department of Planning, Industry and Environment (2019) Threatened Species Wildlife Atlas Database.
Office of Environment and Heritage, NSW State Government, Accessed online June 2019.

Appendix A

Site Photographs - 11 June 2019









Appendix B

Stakeholder correspondence



18 March 2020

Stephen O'Donoghue
Director Resource Assessments
NSW Department of Planning, Industry and Environment
12 Darcy Street
Parramatta NSW 2124

Ground floor, 20 Chandos Street
St Leonards NSW 2065
PO Box 21
St Leonards NSW 1590

T 02 9493 9500
E info@emmconsulting.com.au
www.emmconsulting.com.au

Re: J200173 - Lidsdale Siding - Proposed modification to development consent 08_0223

Dear Stephen,

1 Introduction

Lidsdale Siding (the facility) is a rail loading facility which automates the transfer and dispatch of coal from Centennial Coal Pty Limited's (Centennial Coal's) Western Coal Services (WCS) Project to domestic and international markets via rail. The facility is located approximately 500 metres (m) north of Wallerawang and approximately 9 kilometres (km) north-west of Lithgow within the Lithgow local government area (LGA). The facility is owned and operated by Ivanhoe Coal Pty Ltd (Ivanhoe Coal).

The facility operates under development consent 08_0223 (the consent) which was granted in 2013 under Part 3A of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) by the then Minister for Planning and Infrastructure. The original consent has since been declared a State significant development (SSD) under Clause 6 of Schedule 2 of the NSW Environmental Planning and Assessment (Savings, Transitional and Other Provisions) Regulation 2017.

The consent was modified twice in 2019 under Section 4.55 of the EP&A Act to allow for:

- the unloading of coal by train at the facility, including the construction of supporting infrastructure (Mod 1); and
- an increase in the number of laden trains being unloaded at the site (Mod 2).

Ivanhoe Coal is seeking to modify the consent, pursuant to Section 4.55(1A) of the EP&A Act to remove a trigger action response plan (TARP) from DA 08_0223, thereby allowing the facility to receive coal outside of the previously defined emergency situations. Trains will continue to be unloaded using the temporary infrastructure approved as part of Mod 1.

This letter has been prepared to inform the NSW Department of Planning, Industry and Environment (DPIE) of the proposed modification to the consent. It provides a brief description of the proposed modification and a summary of the proposed assessment approach. It seeks DPIE's feedback on the approval pathway and proposed content of the modification report (MR).

2 Proposed modification

In June 2019, coal stockpiles at Mount Piper Power Station (MPPS) were forecast to decline below 400,000 tonnes (t) for an extended period. Mod 1 sought approval to allow Ivanhoe Coal to provide an alternative source of coal of suitable quality to MPPS to supplement coal supply shortfalls.

An indicative TARP was developed to define the emergency situations when rail unloading activities would be required at the facility. As part of the TARP, a commitment was made that rail unloading activities would only continue until coal stockpiles at MPPS were greater than 400,000 t and the forecast coal stockpiles were likely to remain above 400,000 t for a six month period.

Ivanhoe Coal is seeking to modify the consent to remove the TARP from DA 08_0223, thereby allowing the facility to receive coal outside of the previously defined emergency situations. This will allow for ongoing supplies of supplementary coal to MPPS and remove risks associated with coal supplies being provided by a single mining operation.

No changes to the following conditions under DA 08_0223 are proposed as part of the modification:

- no more than seven trains will arrive at or leave the site each day;
- no more than five trains will arrive at or leave the site each day, when averaged over a calendar year;
- either loading or unloading occurs on a given day (not both); and
- the site will receive and unload trains during the daytime period only.

Surface facilities approved for construction as part of Mod 1 will be utilised for the unloading of coal at the facility. The continued supply of coal from the facility will help support the efficient operation of MPPS and continued supply of electricity to NSW.

3 Approval pathway

Development consents may be modified under Section 4.55 of the EP&A Act provided that the development as modified will be substantially the same development as the development for which consent was originally granted.

Ivanhoe Coal is seeking to modify the consent, pursuant to Section 4.55(1A) of the EP&A Act, to remove the TARP from DA 08_0223, thereby allowing the facility to receive coal outside of the previously defined emergency situations.

The proposed modification is not seeking to increase the number of trains able to be received at the facility and there will be no increase in the number of daily or annual train movements to/from the facility.

The proposed modification does not require a modification to the amount of coal handled by the facility, an expansion of the developed or cleared portion of the project site, or an increase in approved stockpile locations.

Confirmation is sought from DPIE on the approval pathway for this modification.

4 Proposed environmental assessment requirements

Assuming confirmation of the proposed approval pathway, it is proposed to prepare a MR to support the modification application. The MR will include:

- an overview of the proposed modification;
- strategic context for the proposed modification;
- justification for the proposed modification; and
- alternatives considered.

A quantitative assessment of noise will be undertaken with reference to existing noise limits as well as noise criteria established in accordance with the *Noise Policy for Industry* (EPA 2017). The assessment will include revised modelling to account for the outcomes of on-site noise levels measured during unloading activities and will be appended to the MR.

As the project will not require any new surface disturbance, it is assumed no biodiversity, heritage or bushfire assessment will be required. A Biodiversity Development Assessment Report (BDAR) Waiver will be prepared and submitted as an appendix to the MR.

Consultation with relevant stakeholders will be undertaken including Lithgow City Council, surrounding receptors, Wallerawang Lidsdale Progress Association and Western Region Combined Community Consultative Committee. Outcomes of this consultation will be described within the MR.

5 Conclusion

Ivanhoe Coal seeks confirmation from DPIE on the proposed approval pathway and the proposed environmental assessments to be prepared to support the MR. If you require any additional information or have any queries please do not hesitate to contact James Wearne on 0407 207 530 or via email james.wearne@centennialcoal.com.au.

Yours sincerely



David Richards
Senior Environmental Scientist
drichards@emmconsulting.com.au

Mr James Wearne
Group Approvals Manager
Ivanhoe Coal Pty Limited
PO Box 1000
TORONTO NSW 2283

21 March 2020

Dear Mr Wearne

Lidsdale Siding Coal Loader (08_0223) – Proposed Modification 3

I refer to your letter dated 18 March 2020 regarding a proposed modification to the Lidsdale Siding Coal Loader (08_0223 Mod 3).

The Department can confirm that the appropriate approval pathway for the modification application would be under section 4.55 of the *Environmental Planning and Assessment Act 1979*.

I can also confirm that the Department is satisfied with the issues identified in your letter to be addressed in the Modification Report and with the level of assessment and community engagement proposed.

The next step in the process will be for you to lodge a Modification Report through your dashboard on the Department's major projects website (<http://www.planningportal.nsw.gov.au/major-projects>).

If your proposal is likely to have a significant impact on matters of National Environmental Significance, it will require an approval under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

This approval would be in addition to any approvals required under NSW legislation and it is your responsibility to contact the Commonwealth Department of the Environment to determine if an approval under the EPBC Act is required (<http://www.environment.gov.au> or 6274 1111).

To discuss this matter further, please contact Andrew Rode on 02 8289 6744 or at andrew.rod@planning.nsw.gov.au.

Yours If you wish sincerely,



Director – Resource Assessments

30 March 2020

Mr Andrew Muir
Director Economic Development and Environment
Lithgow City Council
Via email: andrew.muir@lithgow.nsw.gov.au

Dear Andrew

Lidsdale Siding Modification 3

Lidsdale Siding is a rail loading facility which dispatches coal to domestic and international markets via rail. Because of interruptions in coal supply to Mount Piper Power Station from Springvale Mine throughout 2019, the Lidsdale Siding consent was modified to allow the facility to receive coal from other sources and transfer the coal via overland conveyor to Mount Piper Power Station (MPPS).

The 2019 modification permits rail unloading activities to occur when the following criteria is reached:

- The coal stockpile at MPPS is forecast to fall below 400,000t for two consecutive months.
- Rail unloading activities would continue until coal stockpile capacity at MPPS are greater than 400,000t and the 6 month forecast coal stockpile capacity is to remain greater than 400,000t.

Lidsdale Siding are seeking a further modification (Mod 3) to remove the above criteria and therefore allowing for rail loading activities to be undertaken without this constraint. The modification will then allow for ongoing supplies of supplementary coal to MPPS and remove risks associated with coal supplies being provided by a single mining operation and therefore ensuring energy security to the state of NSW.

No other changes to the consent are proposed as part of this modification which are summarised below:

- No more than seven trains will arrive at or leave the site each day;
- No more than five trains will arrive at or leave site each day when averaged over a calendar year;
- Either loading or unloading occurs on a given day (not both); and
- The site will receive and unload trains during the daytime period only.

The proposed modification does not require a modification to the amount of coal handled by the facility, an expansion of the developed or cleared portion of the project site, or an increase in approved stockpile locations.

Centennial has notified the Department of Planning, Industry and Environment (DPIE) of the proposed modification and seek their advice of the approval pathway. A Modification Report will be prepared in relation to the above,

Given the risks associated with COVID-19 Centennial will not be conducting community based consultation. However, your feedback is important and I invite to contact the undersigned via phone (0423 605 324) or email (james.marshall@centennialcoal.com.au) if you have any comments and or questions in relation to the proposed modification. All comments and feedback will be acknowledged and included in the Modification Report that will be submitted to the DPIE.

If you can provide any comments / feedback by Thursday 9 April 2020 it would be appreciated. This will allow us the necessary time to review, respond and incorporate feedback into the Modification Report.

Yours sincerely

A handwritten signature in black ink that reads "James Marshall". The signature is written in a cursive, flowing style.

James Marshall
Group Manager Stakeholder Engagement

Sue Graves

45 Railway Pde
Lithgow NSW 2790
0427101827
graves.sm37@gmail.com

7 April 2000

Mr James Marshall
Group Manager Stakeholder Engagement
Centennial Coal Company Limited

Support for Lidsdale Siding Modification 3

I write to support the above proposal. It is an essential necessity to ensure that Mount Piper Power Station will maintain a continual supply of coal for its operation to supply electricity to its consumers. It is very important that a continual supply is ensured for its ongoing operation and for its electricity consumers.

You would be aware that Springvale Mine in 2019 had an interrupted supply to Mount Piper. The consent was modified to draw in coal from other areas and in some instances use the overland conveyor belt to transfer coal to the Mount Piper Power Station.

My understanding is that Centennial Coal is seeking an exemption from the 2019 modification which permits rail unloading activities to occur:

- the stockpile at Mount Piper Power Station is forecast to fall below 400,000 tonnes for two consecutive months and
- that rail unloading activities would continue until coal supply capacity at Mt Piper Power Station are greater than the 400,000 tonnes and that the six month forecast coal stockpile capacity is to remain greater than 400,000 tonnes.

It is important for an uninterrupted supply of electricity be ensured to all Mt Piper's consumers. We are living in very unprecedented times with an inability to forecast what COVID19 will do to our people and our economy. I am sure that these circumstances will make it very difficult for everyone concerned.

At this present time it is, in my opinion, absolutely essential to grant Centennial's request for the Modification 3 to be approved.

As chairperson for several years of Clarence Colliery Community Consultative Committee - a coal mine owned by Centennial - I am aware that the Clarence Colliery does everything it can to ensure environmental matters are continually on our agenda and show that everything is being done to keep these issues below acceptable levels.

An example of this is the underground water flowing into the Wollamgambie River which is treated by the Clarence Colliery to above acceptable drinking water standards. This stringent standard is set by the EPA.

My understanding is that all Centennial Coal's mines are operated in the same ethical way.

Yours faithfully

Sue Graves. Chairperson Clarence Community Consultative Committee



Appendix C

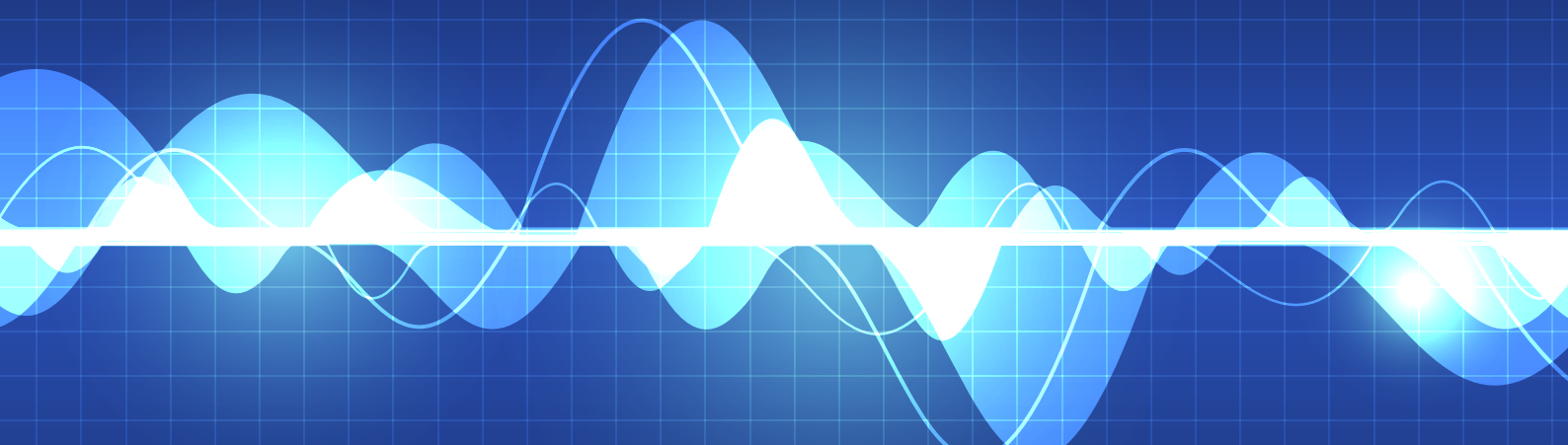
Noise impact assessment



Lidsdale Siding - Modification 3

Noise Impact Assessment

Prepared for Centennial Coal Pty Limited
April 2020





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SYDNEY

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Spring Hill QLD 4000
T 07 3648 1200

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Level 1, 70 Pirie Street
Adelaide SA 5000
T 08 8232 2253

MELBOURNE

Ground Floor, 188 Normanby Road
Southbank VIC 3006
T 03 9993 1905

PERTH

Level 6, 191 St Georges Terrace
Perth WA 6000

CANBERRA

Level 8, 121 Marcus Street
Canberra ACT 2600

Lidsdale Siding - Modification 3

Noise Impact Assessment

Report Number

J190123 RP#2

Client

Centennial Coal Pty Limited

Date

9 April 2020

Version

v2-0 Final

Prepared by



Lucas Adamson

Senior Acoustic Consultant

9 April 2020

Approved by



Najah Ishac

Director

9 April 2020

This report has been prepared in accordance with the brief provided by the client and has relied upon the information collected at the time and under the conditions specified in the report. All findings, conclusions or recommendations contained in the report are based on the aforementioned circumstances. The report is for the use of the client and no responsibility will be taken for its use by other parties. The client may, at its discretion, use the report to inform regulators and the public.

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1 Introduction

1.1 Background

Lidsdale Siding (the facility) is a rail loading facility which automates the transfer and dispatch of coal from Centennial Coal Pty Limited's (Centennial Coal's) Western Coal Services (WCS) Project to domestic and international markets via rail. The facility is located approximately 500 metres (m) north of Wallerawang and approximately 9 kilometres (km) north-west of Lithgow within the Lithgow local government area (LGA). The facility is owned and operated by Ivanhoe Coal Pty Ltd (Ivanhoe Coal).

The facility operates under development consent 08_0223 (the consent) which was granted in 2013 under Part 3A of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) by the then Minister for Planning and Infrastructure. The original development has since been declared a State Significant Development (SSD) under Clause 6 of Schedule 2 of the NSW Environmental Planning and Assessment (Savings, Transitional and Other Provisions) Regulation 2017.

The consent was modified twice in 2019 under Section 4.55 of the EP&A Act to allow for:

- the unloading of coal by train at the facility, including the construction of supporting infrastructure (Mod 1); and
- an increase in the number of laden trains being unloaded at the site (to two trains per day) (Mod 2).

Ivanhoe Coal is seeking to modify the consent, pursuant to Section 4.55(1A) of the EP&A Act to remove a trigger action response plan (TARP) from DA 08_0223, thereby allowing the facility to receive coal outside of the previously defined emergency situations. Trains will continue to be unloaded using the temporary infrastructure approved as part of Mod 1.

This noise impact assessment (NIA) has been prepared to accompany the modification report and assesses the noise impacts of the modification on existing noise-sensitive receptors in the surrounding area. This assessment is further relevant to fulfil a commitment made by Ivanhoe Coal during Modification 1 to verify noise emission levels from the facility during train unloading activities and pursue additional feasible and reasonable noise mitigation options should they be required.

This NIA has been completed with reference to the following guidelines and policies:

- NSW Environment Protection Authority (EPA) (2017), *Noise Policy for Industry* (NPfI); and
- NSW Government (2018), *Voluntary Land Acquisition and Mitigation Policy* (VLAMP).

A number of technical terms have been utilised throughout the report for the discussion of noise. These are explained in the Glossary.

1.2 Proposed modification

In June 2019, coal stockpiles at Mount Piper Power Station (MPPS) were forecast to decline below 400,000 tonnes (t) for an extended period. Mod 1 sought approval to allow Ivanhoe Coal to provide an alternative source of coal of suitable quality to MPPS to supplement coal supply shortfalls.

An indicative TARP was developed to define the emergency situations when rail unloading of coal would be required at the facility. As part of the TARP, a commitment was made that rail unloading of coal would only continue until coal stockpiles at MPPS were greater than 400,000 t and the forecast coal stockpiles were likely to remain above 400,000 t for a six month period.

Ivanhoe Coal is seeking to modify the consent to remove the TARP from DA 08_0223, thereby allowing the facility to receive coal outside of the previously defined emergency situations.

No changes to the following conditions under DA 08_0223 are proposed as part of the modification:

- no more than seven laden trains will arrive at or leave the site each day;
- no more than five laden trains will arrive at or leave the site each day, when averaged over a calendar year; and
- either loading or unloading occurs on a given day (not both).

Surface facilities approved for construction as part of Mod 1 will be utilised for the unloading of coal at the facility. Noise emissions from the site will not change as a result of this modification.

The continued supply of coal from the facility will help support the efficient operation of MPPS and continued supply of electricity to NSW.

2 Assessment methodology

2.1 Applying the NPfI to existing sites

The NPfI provides a methodology for the assessment of noise from existing industrial sites. The NPfI acknowledges that some industrial sites were designed for higher allowable noise emissions than those outlined in current NSW noise policy and may have been in existence before neighbouring noise-sensitive developments. The range of mitigation options available for such sites can be limited or otherwise not feasible and reasonable.

Section 6.1 of the NPfI states that:

The project noise trigger levels should not be applied as mandatory noise limits. The project noise trigger level is the level used to assess noise impact and drive the process of assessing all feasible and reasonable control measures.

Where noise emissions from the existing site exceed the project noise trigger levels (PNTLs) as defined in the NPfI, the relevant regulatory authorities and proponent will determine achievable noise limits for the site through negotiation and discussion with relevant stakeholders as required.

The process for applying the NPfI to existing sites is outlined in Section 6.1.1 of the NPfI and is summarised as follows as applicable to the amended project:

1. Undertake an initial evaluation, including whether approvals/licences include noise limits and whether they are being met.
2. Establish relevant PNTLs, in accordance with the NPfI, to establish a benchmark level to assess the need to consider noise mitigation.
3. Measure and/or predict the noise levels produced by the source in question, having regard to meteorological effects such as wind and temperature inversions.
4. Compare the measured/predicted noise levels with the PNTLs.
5. Where the PNTLs are exceeded, assess feasible and reasonable noise mitigation strategies.
6. Develop and refine achievable noise limits that will become goals for the project. This may involve interaction between the regulator and proponent as well as consultation with the community.
7. Monitor compliance with the agreed noise limits, and review and amend the noise performance of the site as required.

2.2 Operational noise limits - NPfI

Noise from industrial sites or processes in NSW is regulated by the local council, DPIE and/or the EPA and usually have a licence and/or development consent conditions stipulating noise limits. These limits are normally derived from operational noise levels applied at assessment locations. They are based on EPA guidelines (ie NPfI) or noise levels that can be achieved at a specific site following the application of all feasible and reasonable noise mitigation measures.

The reaction to noise is highly subjective. Hence, it is not possible to adopt noise levels that will guarantee that no one will experience an impact. Adherence with the PNTLs should not be interpreted to mean that industrial noise will be inaudible, or that all members of the community will find the noise acceptable. The PNTLs for industry provide a benchmark for assessing a proposed or existing industrial development.

Both the increase in noise level above background levels (ie the intrusiveness of a source) as well as the absolute level of noise are important factors in how a community will respond to noise from industrial sources. To ensure both of these factors are considered, the EPA provides two separate noise trigger levels: intrusiveness and amenity. The fundamental difference being intrusiveness noise levels apply over 15 minutes in any period (day, evening or night), whereas the amenity noise levels apply to the entire assessment period (day, evening or night).

2.2.1 Assessing intrusiveness

The intrusive noise trigger levels require that $L_{Aeq,15\text{ minute}}$ noise levels from the site during the relevant operational periods (ie day, evening and night) do not exceed the rating background level (RBL) by more than 5 dB. The NPfI recommends that the intrusive noise trigger level for evening be set at no greater than the intrusive noise level for daytime and that the intrusive noise level for night-time should be no greater than the intrusive noise level for day or evening. Intrusive noise trigger levels are applicable at residential assessment locations only.

A long-term, unattended ambient noise survey was undertaken during October-November 2019 to determine RBLs for the surrounding area and to determine relevant intrusive noise levels for the site. This is described further in Section 3.2.

2.2.2 Assessing amenity

The amenity assessment is based on noise targets specific to land use and associated activities. The targets relate only to industrial-type noise and do not include public road, public rail and/or community noise. In this case, noise from trains manoeuvring on-site and the loading of trains have been assessed as industrial-type noise as per the requirements of the NPfI. Where the measured existing industrial noise approaches the recommended amenity noise level, it needs to be demonstrated that noise levels from new industry will not contribute to existing industrial noise such that amenity noise levels are exceeded.

To ensure that total industrial noise levels remain within the recommended amenity noise levels for an area, the project amenity noise level for the subject development is the recommended amenity noise level (outlined in Table 2.2 of the NPfI) minus 5 dB.

Residences have typically been categorised in the NPfI as rural, suburban or urban amenity categories as per the definitions provided in the NPfI. The exception is R1 (refer Figure 3.1) which is a residence located in an industrial zoning. For the purpose of this assessment the industrial amenity criteria applies at this residence in accordance with the methodology provided in the NPfI.

An extract from the NPfI that relates to the amenity noise levels relevant to the proposed modification is given in Table 2.1.

Table 2.1 **Amenity noise levels - Recommended L_{Aeq} noise levels from industrial noise sources**

Type of receptor	Noise amenity area	Time of day ¹	Recommended $L_{Aeq,Period}$ noise level, dB
Residence	Rural	Day	50
		Evening	45
		Night	40
	Suburban	Day	55
		Evening	45
		Night	40
	Urban	Day	60
		Evening	50
		Night	45
Industrial	All	When in use	70
Place of worship	All	When in use	40 (internal) 50 (external) ²

Notes: 1. Daytime 7 am to 6 pm; Evening 6 pm to 10 pm; Night-time 10 pm to 7 am. On Sundays and Public Holidays, Daytime 8 am - 6 pm; Evening 6 pm - 10 pm; Night-time 10 pm - 8 am.
2. External level based on an external-to-internal noise reduction of 10 dB, in accordance with the NPfI.
The L_{Aeq} index corresponds to the level of noise equivalent to the energy average of noise levels occurring over a measurement period.

2.2.3 Project noise trigger levels

PNTLs are the lower of the derived intrusiveness and amenity levels.

It is commonly acknowledged and accepted amongst regulators and industry that average noise levels are typically 3 dB higher over a 15-minute worst case assessment period when compared to an entire day (11 hour), evening (4 hour) and night (9 hour) assessment period. This assumption is outlined in the NPfI and has been used in this assessment to standardise the time periods for the intrusive and amenity noise levels.

2.2.4 Low frequency noise

Fact sheet C of the NPfI (EPA 2017) provides guidelines for applying modifying factor corrections to account for low frequency noise emissions. The NPfI specifies that a difference of 15 dB or more between site 'C-weighted' and site 'A-weighted' noise emission levels identifies the potential for an unbalanced spectrum and potential increased annoyance.

Where a difference of 15 dB or more between site 'C-weighted' and site 'A-weighted' noise emission levels is identified, the one-third octave noise levels recorded should be compared to the values in Table C2 of the NPfI (EPA 2017), which has been reproduced in Table 2.2 below.

Table 2.2 **One-third octave low-frequency noise thresholds**

One-third octave $L_{Zeq,15\text{ minute}}$ threshold level													
Frequency (Hz)	10	12.5	16	20	25	31.5	40	50	63	80	100	125	160
dB (Z)	92	89	86	77	69	61	54	50	50	48	48	46	44

The following modifying factor correction is to be applied where the site 'C-weighted' and site 'A-weighted' noise emission level is 15 dB or more and:

- where any of the one-third octave noise levels in Table 2.2 are exceeded by up to and including 5 dB and cannot be mitigated, a 2 dB positive adjustment to measured/predicted A-weighted levels applies for the evening/night period; or
- where any of the one-third octave noise levels in Table 2.2 are exceeded by more than 5 dB and cannot be mitigated, a 5 dB positive adjustment to measured/predicted A-weighted levels applies for the evening/night period and a 2 dB positive adjustment applies for the daytime period.

2.3 Voluntary Land Acquisition and Mitigation Policy

VLAMP (DPE 2018) has been applied to the modification in relation to the assessment of residual noise impacts. Page 17 of VLAMP states the following with regard to the application of voluntary mitigation and voluntary land acquisition:

A consent authority can apply voluntary mitigation and voluntary land acquisition rights to reduce:

- operational noise impacts of a development on privately owned land; and
- rail noise impacts of a development on privately owned land near a non-network rail line (private rail line), that is on, or exclusively servicing and industrial site (see Appendix 3 of the RING);

But not:

- construction noise impacts, as these impacts are shorter term and can be controlled;
- noise impacts on the public road or rail network; or
- modifications of existing developments with legacy noise issues, where the modification would have beneficial or negligible noise impacts¹³.

¹³ Noise issues for existing premises may be addressed through site-specific pollution reduction programs under the NSW *Protection of the Environment Operations Act 1997*.

Of note here is the final dot-point above relating to legacy noise issues and the relative noise impact of the proposed modification. The facility has legacy noise issues; however, as this report shows, the noise emissions from the site are predicted to be the same as approved operations. Further, noise emissions from the site have been shown to be reducing over time as a result of new unloading methodology and mitigation measures implemented at the site.

The characterisation of the noise impacts (as outlined in the VLAMP) are generally based on human perception to changes in noise levels as explained in the glossary of the acoustic terms in this report. For example, a change in noise level of 1 to 2 dB is typically indiscernible to the human ear. The characterisation of a residual noise impact of 0 to 2 dB above the PNTL is therefore considered negligible. This characterisation of residual noise impacts is outlined further in Table 2.3.

Table 2.3 VLAMP characterisation of noise impacts and potential treatments

If the predicted noise level minus the project noise trigger level is:	And the total cumulative industrial noise level is:	Characterisation of impacts	Potential treatment
All time periods 0-2 dB	Not applicable	Impacts are considered to be negligible	The exceedances would not be discernible by the average listener and therefore would not warrant receiver-based treatments or controls.
All time periods 3-5 dB	< recommended amenity noise level > recommended amenity noise level but the increase in total cumulative industrial noise level resulting from development is <1 dB	Impacts are considered to be marginal	Provide mechanical ventilation/comfort condition systems to enable windows to be closed without compromising internal air quality/amenity.
All time periods 3-5 dB	> recommended amenity noise level and the increase in total cumulative industrial noise level resulting from the development is >1 dB	Impacts are considered to be moderate	As for marginal impacts but also upgraded façade elements like windows, doors or roof insulation, to further increase the ability of the building façade to reduce noise levels.
Day and evening > 5 dB	< recommended amenity noise level	Impacts are considered to be moderate	As for marginal impacts but also upgraded façade elements like windows, doors or roof insulation, to further increase the ability of the building façade to reduce noise levels.
Day and evening > 5 dB	> recommended amenity noise level	Impacts are considered to be significant	Provide mitigation as for moderate impacts and refer voluntary land acquisition provisions
Night > 5 dB	Not applicable	Impacts are considered to be significant	Provide mitigation as for moderate impacts and refer voluntary land acquisition provisions

Source: VLAMP (NSW Government 2018)

3 Existing acoustic environment

3.1 Assessment locations

The nearest noise sensitive receptors (herein referred to as assessment locations) are shown in Figure 3.1 and described in Table 3.1. The numbering of these assessment locations is consistent with that utilised in the development consent with the exception of R13 (St John the Evangelist Church) which has been added for completeness for the purpose of this assessment.

Table 3.1 **Assessment locations**

Assessment location	Address	Type	Easting	Northing
R1	134 Main Street, Wallerawang	Isolated residence in Industrial zoning	228037	6300413
R2	Black Gold Country Cabins and Motel 121-123 Main Street Wallerawang	Motel	227825	6300163
R3	173 Brays Lane, Wallerawang	Residence	227425	6300646
R4	233 Brays Lane, Wallerawang	Residence	227487	6301136
R5	25 Duncan Street, Lidsdale	Residence	228424	6301113
R6	70 Ian Holt Drive, Lidsdale	Residence	228422	6302191
R7	Royal Hotel 72 Main Street, Wallerawang	Hotel	227259	6299777
R8	57 Cripps Avenue, Wallerawang	Residence	227556	6299840
R9	35 Cripps Avenue, Wallerawang	Residence	227427	6299663
R10	91 Brays Lane, Wallerawang	Residence	226930	6300235
R11	113 Brays Lane, Wallerawang	Residence	226941	6300454
R12	137 Brays Lane, Wallerawang	Residence	226947	6300678
R13	140 Main Street, Wallerawang	Place of worship	228210	6300453

3.2 Existing ambient noise levels

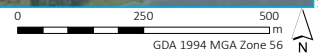
Unattended noise monitoring was completed by EMM at four locations surrounding the site in October-November 2019.

The noise loggers were in place from 18 October to 1 November 2019 and were programmed to record statistical noise level indices continuously in 15-minute intervals. Calibration of each noise logger was checked prior to and following unattended noise monitoring. The equipment carried appropriate and current NATA calibration certificates. Weather data for the unattended noise monitoring period was obtained from the on-site automatic weather station. The wind speed and rainfall data were used to exclude noise data during periods of any rainfall and/or wind speeds in excess of 5 m/s (approximately 9 knots) in accordance with the methodology provided in the NPfI.

Figure 3.1 provides the location of all relevant long-term noise logger and short-term operator-attended noise monitoring locations as well as the location of the facility's automatic weather station.



Source: EMM (2020); DFSI (2017); GA (2011); ASGC (2006)



KEY

- Study area
- Noise monitoring location
- Meteorological station
- Rail line
- Major road
- Minor road
- Vehicular track
- Named watercourse
- Named waterbody
- State forest
- Noise assessment location
- Hotel/motel
- Isolated residence in industrial zone
- Place of worship
- Residence

INSET KEY

- NPWS reserve
- State forest

Noise monitoring and assessment locations

Lidsdale Siding Modification 3
Noise impact assessment
Figure 3.1

A summary of the background and ambient noise monitoring results is provided in Table 3.2. Detailed daily summaries and graphs of the data obtained by EMM are provided in Appendix A.

Table 3.2 Summary of existing measured background and ambient noise levels (October 2019)

Monitoring location	Period ¹	RBL ² , dB	L _{Aeq, period} noise level ³ , dB
L1 – 233 Brays Lane, Wallerawang	Day	28	45
	Evening	25	37
	Night	21	41
L2 – 9 Duncan Street, Lidsdale	Day	35	52
	Evening	27	46
	Night	23	49
L3 – 57 James Parade, Lidsdale	Day	29	46
	Evening	23	42
	Night	21	39
L4 – 91 Brays Lane, Wallerawang	Day	29	47
	Evening	28	42
	Night	24	42

Notes: 1. Day: 7 am to 6 pm Monday to Saturday; 8 am to 6 pm Sundays and public holidays; Evening: 6 pm to 10 pm; Night: 10 pm to 7 am.
2. The RBL is an NPfI term and is used represent the background noise level.
3. The energy averaged noise level over the measurement period and representative of general ambient noise.

Results of ambient noise monitoring indicate that background noise levels are at or below the NPfI minimum rating background levels at all monitoring locations. Based on observations, the main contributors to overall ambient levels are as follows:

- L1 - natural sounds and distant traffic on the Castlereagh Highway;
- L2 - traffic on the Castlereagh Highway;
- L3 - distant traffic on the Castlereagh Highway; and
- L4 - local traffic on Brays Lane and distant traffic on the Castlereagh Highway;

Operator-attended noise monitoring was also completed by EMM at the unattended noise logger locations (refer Figure 3.1) during the unattended noise monitoring program. A summary of the attended noise monitoring results is provided in Table 3.3. These surveys were undertaken using a Brüel & Kjær 2250 Type 1 sound analyser (serial number 3008201).

Table 3.3 **Summary of attended noise monitoring results**

Monitoring location	Date	Time	Total measured noise levels (dB)			Comments
			L _{Aeq}	L _{A90}	L _{Amax}	
L1	18/10/2019	11:45	46	39	77	Wind in foliage Distant traffic on the Castlereagh Highway
L2	18/10/2019	12:30	51	40	69	Traffic on the Castlereagh Highway Bird noise Dogs barking
L3	18/10/2019	13:15	43	35	73	Distant traffic on the Castlereagh Highway Car passbys Bird noise Wind in trees
L4	18/10/2019	11:00	46	37	67	Car passbys Bird noise Distant traffic on the Castlereagh Highway Dogs barking

Noise levels in areas surrounding the site are typically dominated by local and distant traffic and natural sounds. These observations were considered in the assignment of representative background noise levels and ultimately for the PNTLs for all areas.

3.3 Existing noise criteria

3.3.1 Development consent

The most recent development consent relating to existing operations at the facility with respect to noise criteria is Development Consent 08_0223, which was last modified in October 2019 (Modification 2). The noise conditions imposed are set out in Condition 2 of Schedule 3. The consent contains the following conditions relating to noise emissions:

- 2.The Proponent must ensure that the noise generated by the project does not exceed the criteria in Table 1.

Table 1: Noise criteria dB(A)

Location	Day	Evening	Night	
	<i>L_{Aeq}(15 min)</i>	<i>L_{Aeq}(15 min)</i>	<i>L_{Aeq}(15 min)</i>	<i>L_{A1}(1 min)</i>
1- Lot 2 Main St, Wallerawang	50	50	50	55
2 – Black Gold Cabins, Main St, Wallerawang	46	46	46	49
3 – “Killarney”, Brays Lane, Wallerawang	47	47	47	56
4 – “Fairview”, Brays Lane, Wallerawang	43	43	43	54
5 – Duncan Street, Lidsdale	46	46	46	57
6 – Old Castlereagh Highway, Lidsdale	43	43	43	56
7 – Royal Hotel, Main St, Wallerawang	41	41	41	49
8 – Cnr Heel St & Cripps Ave, Wallerawang	40	40	40	45
9 – Cnr Cripps Ave & Pindari Pl, Wallerawang	39	39	39	45
10 – Brays Lane South, Wallerawang	45	45	45	50
11 – “Tara” Brays Lane, Wallerawang	45	45	45	51
12 – Brays Lane Corner, Wallerawang	43	43	43	51

Appendix 4 sets out the meteorological conditions under which these criteria apply and the requirements for evaluating compliance with these criteria.

However, these criteria do not apply if the Proponent has a written agreement with the relevant landowner to exceed the criteria, and the Proponent has advised the Department in writing of the terms of this agreement.

3.3.2 Environment Protection Licence 5129

Environment Protection Licence 5129 (EPL 5129) also contains noise limits relevant to the site which are set out in Condition L4.1 and are consistent with those provided in the consent. Condition L4.1 is reproduced as follows:

L4 Noise limits

L4.1 Noise generated at the premises must not exceed the noise limits presented in the table below.

Location	Day	Evening	Night	Night
	LAeq(15 minute)	LAeq(15 minute)	LAeq(15 minute)	LA1(1 minute)
1. Lot 2 Main St, Wallerawang	50	50	50	55
2. Black Gold Cabins, Main St Wallerawang	46	46	46	49
3. "Killamey", Brays Lane, Wallerawang	47	47	47	56
4. "Fairview", Brays Lane, Wallerawang	43	43	43	54
5. Duncan Street, Lidsdale	46	46	46	57
6. Old Castlereagh Highway, Lidsdale	43	43	43	56
7. Royal Hotel, Main St, Wallerawang	41	41	41	49
8. Corner Heel St & Cripps Ave, Wallerawang	40	40	40	45
9. Corner of Cripps Ave & Pindari Place, Wallerawang	39	39	39	45
10. Brays Lane South, Wallerawang	45	45	45	50
11. "Tara", Brays Lane, Wallerawang	45	45	45	51
12. Brays Lane Corner, Wallerawang	43	43	43	51

Note: The above noise limits do not apply at properties where the licensee has a written agreement with the landowner to exceed the noise limits.

3.4 Existing noise emissions

A NIA was completed for the original environmental assessment (EA) (Hatch 2012). The assessment predicted that noise emissions from the facility would be dominated by trains (locomotive and wagon noise) manoeuvring in and out of the rail siding and noise from the mobile plant (dozer or front end loader) working on the coal stockpiles. Noise emissions from all conveyors and conveyor drives were predicted to be negligible at the nearest residences whilst trains and mobile equipment are operational.

A subsequent NIA was completed for the Mod 1 EA (EMM 2019) to consider potential noise impacts associated with the delivery of coal to the facility by train, coal unloading, handling and stockpiling and coal dispatch using the existing overland conveyor network. It was concluded that operational noise emissions would likely reduce or remain unchanged from loading operations.

A commitment was made by Ivanhoe Coal as part of this modification to check noise emission levels from the facility during train unloading activities and pursue additional feasible and reasonable noise mitigation options should they be required. This has been undertaken and reported herein (refer Section 5.3). The results of such measurements have been used to calibrate and validate the operational noise model (Chapter 5).

3.5 Complaints history

It is understood that the site does not have a history of noise complaints. Except for an isolated complaint in 2016 (regarding noise from a train horn), no other noise complaints have been received since the facility was upgraded in 2014.

4 Operational noise targets

4.1 Project noise trigger levels

4.1.1 Intrusiveness

The intrusiveness noise levels require that $L_{Aeq,15\text{ minute}}$ noise levels from site during the relevant operational periods (ie day, evening and night) do not exceed the relevant RBL by more than 5 dB. Ivanhoe Coal propose to continue the self-imposed operational hours restrictions and, as such, the site is proposed to be used for rail loading and unloading activity during the daytime period only.

As provided in Section 3.2, the measured RBL was lower than the minimum thresholds as provided in the NPfI and, as such, the minimum RBL applies under the NPfI approach at all residential assessment locations. These being 35 dB and 30 dB for the daytime and evening/night respectively. Hence, the NPfI derived project intrusive noise levels are $L_{Aeq,15\text{ minute}}$ 40 dB and 35 dB for the daytime and evening/night respectively at residential assessment locations.

4.1.2 Amenity

The assessment of amenity is based on noise levels specific to the land use. Assessment locations R3 to R6 and R8 to R12 have been categorised in the suburban amenity category in accordance with the NPfI definition of a suburban receiver type (ie an area that has local traffic with characteristically intermittent traffic flows or with some limited commerce or industry). Assessment location R1 has been categorised in the NPfI industrial amenity category as it is an isolated residence in an industrial zoning. Assessment locations R2 and R7 are hotel or motel accommodation. The NPfI states that, for these types of receivers, the recommended amenity level should be 5 dB above the recommended amenity noise level for a residence in the same noise amenity area.

To ensure that total industrial noise levels remain within the recommended amenity noise levels for an area, the project amenity noise level for the amended development is typically the recommended amenity noise level (outlined in Table 2.2 of the NPfI) minus 5 dB where there is a possibility of contribution from other industrial noise sources in the area.

It is commonly acknowledged and accepted amongst regulators and industry that average noise levels are typically 3 dB higher over a 15-minute worst case assessment period when compared to an entire day (11 hour), evening (4 hour) and night (9 hour) assessment period. This assumption is outlined in the NPfI and has been used in this assessment to standardise the time periods for the intrusive and amenity noise levels.

The corresponding recommended amenity levels for all assessment locations are given in Table 4.1.

Table 4.1 Project amenity noise levels

Assessment location	Indicative noise amenity area	Project amenity noise level (L _{Aeq,15 minute}) dB
		Day
R1	Residential – Industrial zone	68
R2 & R7	Hotel/Motel - Suburban	58
R3 to R6; R8 to R12	Residential - Suburban	53
R13	Place of worship	38 (internal)
		48 (external) ²

Notes: 1. Day: 7 am to 6 pm Monday to Saturday; 8 am to 6 pm Sundays and public holidays; evening: 6 pm to 10 pm; night: all remaining periods.
2. External level based on an external-to-internal noise reduction of 10 dB, in accordance with the NPfI.

4.1.3 Project noise trigger levels

As per the NPfI, PNTLs are the more stringent of either the project intrusive or amenity noise levels. For residential assessment locations the PNTLs are the intrusive noise levels described in Section 4.1.1, while for non-residential locations, the PNTLs are the project amenity levels shown in Table 4.1.

5 Operational noise assessment

5.1 Overview

This section presents the methods and base parameters used to model noise emissions from the facility, including the effects of noise-enhancing meteorological conditions.

Noise predictions were carried out using the ISO9613 algorithms within *iNoise* software, created by the same developers of B&K's Predictor software. *iNoise* calculates total noise levels at assessment locations from concurrent operation of multiple noise sources. The model considers factors such as the lateral and vertical location of plant, source-to-receptor distances, ground effects, atmospheric absorption, topography of the site and surrounding area and applicable meteorological conditions.

5.2 Meteorology

During certain weather conditions, noise emissions at assessment locations may increase or decrease compared with noise during calm conditions. This is due to refraction caused by the varying speed of sound with increasing height above the ground that occurs during winds or where air temperature changes with height. A simple yet conservative approach has been selected for the consideration of potentially noise-enhancing weather conditions with reference to Fact Sheet D of the NPfI. Noise emissions from the facility have been predicted for both standard and noise-enhancing conditions as provided in Table 5.1.

Table 5.1 Modelled meteorological parameters

Assessment condition	Period	Temperature	Wind speed / Direction	Relative humidity	Stability Class
Standard	Day	20°C	n/a (≤ 0.5 m/s)	70%	D
Noise-enhancing	Day	20°C	3 m/s Source to receiver	70%	D

This provides a conservative approach since the noise emissions predicted under noise-enhancing conditions are expected to represent the upper range of noise emissions from the facility.

5.3 Acoustically significant plant and equipment

A noise impact assessment was completed for the Mod 1 EA (EMM 2019) to consider potential noise impacts associated with the delivery of coal to the facility by train, coal unloading, handling and stockpiling, and coal dispatch using the existing overland conveyor network. It was concluded that operational noise emissions would likely reduce (as a result of improvements to train management whilst on-site) or remain unchanged from approved loading operations.

A commitment was made by Ivanhoe Coal during the modification to check noise emission levels from the facility during train unloading activities.

The unloading of trains has been optimised by Ivanhoe Coal, with the aim to reduce noise emissions from wagons and eliminate noise from wagon shunting. The specialised method for train unloading is detailed as follows:

- trains are approximately 850 m long and arrive with three locomotives at the head of the train;

- once the train reaches the siding, two locomotives detach from the head of the train, with one remaining non-operational off the rail siding and one reattaching to the rear of the train to establish a push/pull configuration (ie one locomotive at each end of the train).
- the driver idles the train into the rail siding, while setting the track in the required configuration, eliminating unnecessary stopping and the possibility of wagon stretch or come together; and
- locomotive power is reduced to approximately 30% and the train unloads at a speed of approximately 0.2 km/hour. Electronically controlled pneumatic (ECP) brakes are utilised to keep the train in a “stretched” configuration which aids in the avoidance of stop/start operations and minimises noise from shunting of wagons.

In addition to train unloading, there are also several other noise sources operating concurrently, including:

- hopper-feeder conveyors within the under-rail sump extracting the unloaded coal;
- a series of conveyors and a radial stacker to stockpile the coal;
- tunnel reclaimers within the approved push out area;
- a conveyor system and second stacker between the coal stockpile and overland conveyor; and
- operation of a dozer or front end loader (FEL) for stockpile management.

On 27 February 2020 near-field noise measurements were undertaken by EMM on-site after the implementation of additional measures to reduce noise from train unloading operations. Table 5.2 summarises the operational noise sources and associated sound power levels used in the noise model. Figures showing the indicative locations of modelled noise sources are provided in Appendix B.

Table 5.2 Acoustically significant plant and equipment and sound power levels

Item	Quantity	Sound power level per item, dB(A)
Dozer	1	113 ¹
Conveyor drives	10	98 ²
Conveyors	Various	75/m ²
Train wagons	1	77/m ¹
Locomotive	3	105 ¹

Notes: 1. Measured during approved train unloading operations.
2. Sourced from *Lidsdale Siding – Sound power survey 2018*, Global Acoustics dated 2 November 2018

Noise emissions from train operations were measured to be significantly lower than those measured for the Mod 1 NIA. The measured noise levels shown in Table 5.2 are 2 dB and 9 dB lower from locomotives and train wagons, respectively, as compared to previous measurements applied in the Mod 1 NIA.

Noise emissions from mobile equipment (stockpile dozer) and all other fixed equipment (conveyors, conveyor drives, etc) were assumed or measured to be similar to those in the Mod 1 NIA.

5.4 Results and discussion

Calculated noise levels from train unloading operations (based upon recent measurements of the approved train unloading operations) are compared with the relevant consent conditions and PNTLs in Table 5.3.

Table 5.3 **Calculated noise levels**

Assessment location	Description	Mod 1 noise levels	Calculated existing daytime noise levels		Consent/EPL daytime limits	PNTL
		L _{Aeq,15 minute} , dB	L _{Aeq,15 minute} , dB	L _{Aeq,15 minute} , dB	L _{Aeq,15 minute} , dB	L _{Aeq,15 minute} , dB
		Standard	Standard	Noise enhancing		
R1	Lot 2 Main Street, Wallerawang	52	50	52	50	68
R2	Black Gold Cabins Main Street, Wallerawang	49	48	50	46	58
R3	“Killarney”, Brays Lane, Wallerawang	51	49	51	47	40
R4	“Fairview”, Brays Lane, Wallerawang	44	43	45	43	40
R5	Duncan Street, Lidsdale	41	39	42	46	40
R6	Old Castlereagh Highway, Lidsdale	<30	<30	<30	43	40
R7	Royal Hotel Main Street, Wallerawang	49	44	47	41	58
R8	Cnr Heel Street & Cripps Avenue, Wallerawang	46	43	46	40	40
R9	Cnr Cripps Avenue & Pindari Place, Wallerawang	44	40	43	39	40
R10	Brays Lane South, Wallerawang	47	43	45	45	40
R11	“Tara”, Brays Lane, Wallerawang	44	41	44	45	40
R12	Brays Lane Corner, Wallerawang	43	40	43	43	40
R13	St John the Evangelist Church 140 Main Street, Wallerawang	53	51	52	N/A	48

Results of the noise modelling demonstrate that exceedances are predicted to occur at a number of assessment locations of both the development consent and EPL limits and the PNTLs. However, it is of note that these exceedances are historical and are not a result of the recent modifications.

As this report shows, the noise emissions from the site are predicted to be the same as currently approved operations and have been shown to be reducing over time as a result of new unloading methodology and mitigation measures implemented at the site.

The on-site attended noise measurements show that the optimisation of the train unloading by Ivanhoe Coal has been effective at reducing noise, with noise emissions from the wagons, wagon shunting and locomotives being significantly reduced as described earlier.

Noise emissions at the nearest residences are predicted to reduce by up to 5 dB when compared to predicted noise levels provided in the Mod 1 NIA. Further, noise emissions associated with unloading activities are expected to be unchanged from those associated with loading activities.

6 Conclusion

EMM has completed an NIA to accompany a modification application to Development Consent 08_0223. A quantitative assessment of noise emissions associated with operations has been undertaken. This assessment is further relevant to fulfil a commitment made by Ivanhoe Coal during Modification 1 to verify noise emission levels from the facility during train unloading activities.

Results of the noise modelling demonstrate that exceedances are predicted to occur at a number of assessment locations of both the approved noise criteria and the PNTLs. However, it is of note that these exceedances are historical and are not a result of the recent or proposed modification.

As this report shows, the noise emissions from the site are predicted to be the same as currently approved operations and have been shown to be reducing over time as a result of new unloading methodology and mitigation measures implemented at the site.

The on-site attended noise measurements show that the optimisation of the train unloading by Ivanhoe Coal has been effective at reducing noise, with noise emissions from the wagons, wagon shunting and locomotives being significantly reduced as described earlier.

Noise emissions at the nearest residences are predicted to reduce by up to 5 dB when compared to predicted noise levels provided in the Mod 1 NIA. Further, noise emissions associated with unloading activities are expected to be unchanged from those associated with loading activities.

Glossary

Technical terms typically utilised in a noise assessment report are explained in Table G.1.

Table G.1 Glossary of acoustic terms and abbreviations

Abbreviation or term	Definition
ABL	The assessment background level (ABL) is defined in the INP as a single figure background level for each assessment period (day, evening and night). It is the tenth percentile of the measured L_{A90} statistical noise levels.
Amenity noise level	The amenity noise levels relate to the overall level of industrial noise subject to land zoning or use
A-weighting	There are several different weightings utilised for describing noise, the most common being the 'A-weighting'. This attempts to closely approximate the frequency response of the human ear.
Day period	Monday–Saturday: 7.00 am to 6.00 pm, on Sundays and public holidays: 8.00 am to 6.00 pm.
dB	Noise is measured in units called decibels (dB).
DPIE	NSW Department of Planning, Industry and Environment
EA	Environmental assessment
EMM	EMM Consulting Pty Limited
EP&A Act	NSW <i>Environmental and Planning Assessment Act 1979</i> (NSW)
EPA	NSW Environment Protection Authority (formerly the Department of Environment, Climate Change and Water).
Evening period	Monday–Saturday: 6.00 pm to 10.00 pm, on Sundays and public holidays
ICNG	Interim Construction Noise Guideline
Intrusive noise level	The intrusive noise level refers to noise that intrudes above the background level by more than 5 dB.
L_{A1}	The A-weighted noise level exceeded for 1% of the time.
L_{A10}	The A-weighted noise level which is exceeded 10% of the time. It is roughly equivalent to the average of maximum noise level.
L_{A90}	The A-weighted noise level that is exceeded 90% of the time. Commonly referred to as the background noise level.
L_{Aeq}	The A-weighted energy average noise level. This is the equivalent continuous sound pressure level over a given period. The $L_{Aeq(15\text{-minute})}$ descriptor refers to an L_{Aeq} noise level measured over a 15 minute period.
L_{Amax}	The maximum A-weighted sound pressure level received during a measurement interval.
Night period	Monday–Saturday: 10.00 pm to 7.00 am, on Sundays and public holidays: 10.00 pm to 8.00 am.
NMP	Noise management plan
PNTL	The project noise trigger levels (PNTLs) are targets for a particular industrial noise source or industry. The PNTLs are the lower of either the project intrusive noise level or project amenity noise level.
POEO Act	NSW <i>Protection of the Environment Operations Act 1997</i> (NSW)
RBL	The rating background level (RBL) is an overall single value background level representing each assessment period over the whole monitoring period. The RBL is used to determine the intrusiveness criteria for noise assessment purposes and is the median of the average background levels.
RNP	Road Noise Policy

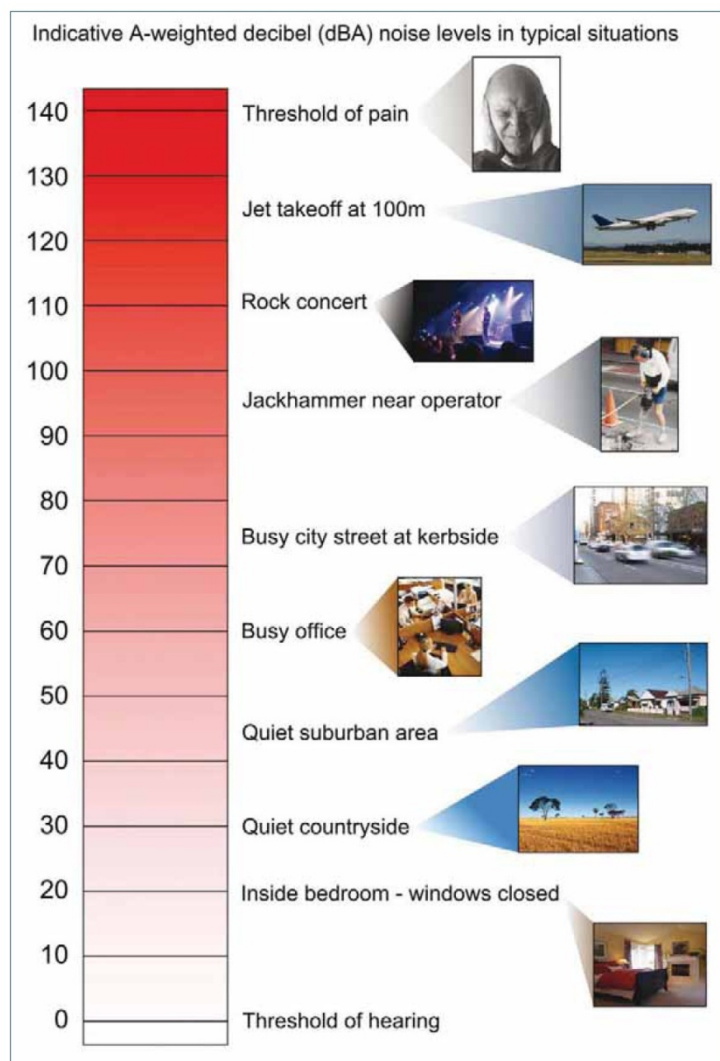
Table G.1 **Glossary of acoustic terms and abbreviations**

Abbreviation or term	Definition
Sound power level (L _w)	A measure of the total power radiated by a source. The sound power of a source is a fundamental property of the source and is independent of the surrounding environment.
Temperature inversion	A meteorological condition where the atmospheric temperature increases with altitude.

It is useful to have an appreciation of decibels (dB), the unit of noise measurement. Table G.2 gives an indication as to what an average person perceives about changes in noise levels. Examples of common noise levels are provided in Figure G.1.

Table G.2 **Perceived change in noise**

Change in sound level (dB)	Perceived change in noise
3	just perceptible
5	noticeable difference
10	twice (or half) as loud
15	large change
20	four times (or quarter) as loud



Source: Road Noise Policy (Department of Environment, Climate Change and Water 2011)

Figure G.1 Common noise levels

References

Australian Standard AS 1055-2018, Acoustics - Description and Measurement of Environmental Noise.

Centennial Coal, Western Region – Noise Management Plan, 2018.

EMM Consulting, Lidsdale Rail Siding Modification 1 – Noise Impact Assessment, 2019. Report prepared by EMM for Centennial Ivanhoe.

Hatch, Centennial Ivanhoe Proposed Lidsdale Siding Upgrade Project – Environmental Noise Impact Assessment, 2012.

NSW Department of Planning, Industry and Environment, Development Consent 08_0223, 2019.

NSW Environment Protection Authority, Environment Protection License 5129, 2019.

NSW Environment Protection Authority, Industrial Noise Policy Application notes, 2017.

NSW Environment Protection Authority, Industrial Noise Policy, 2000.

NSW Environment Protection Authority, Noise Policy for Industry, 2017.

NSW Government, Voluntary Land Acquisition and Mitigation Policy, 2018.

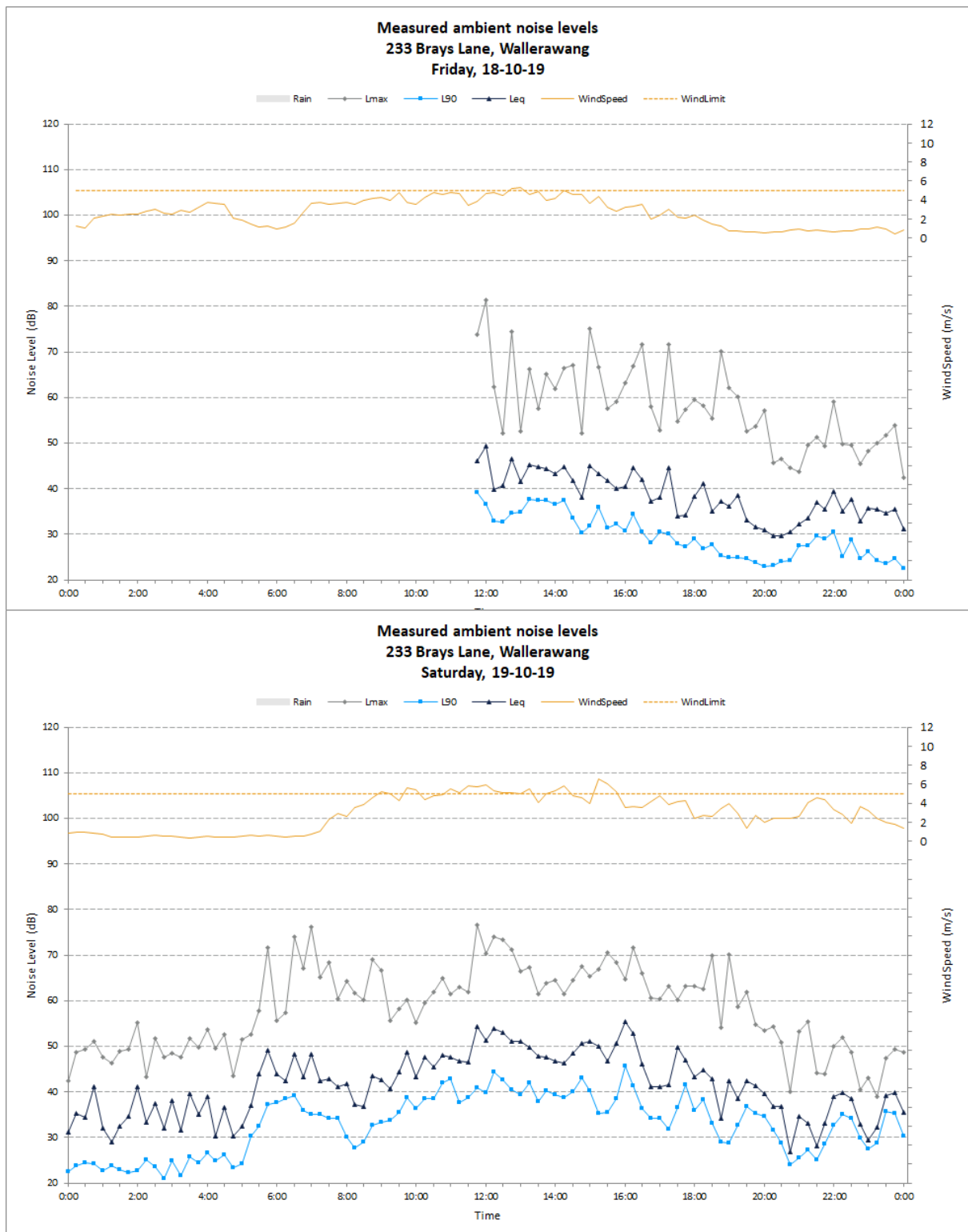
Appendix A

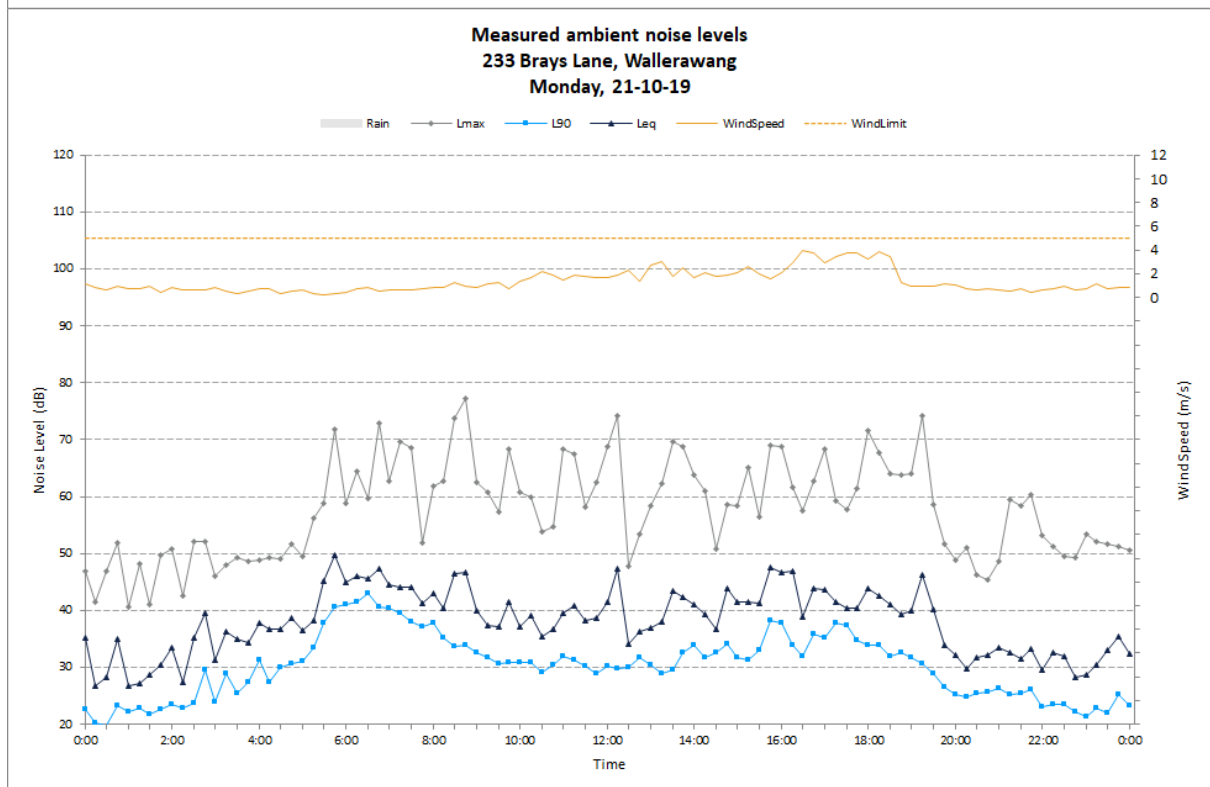
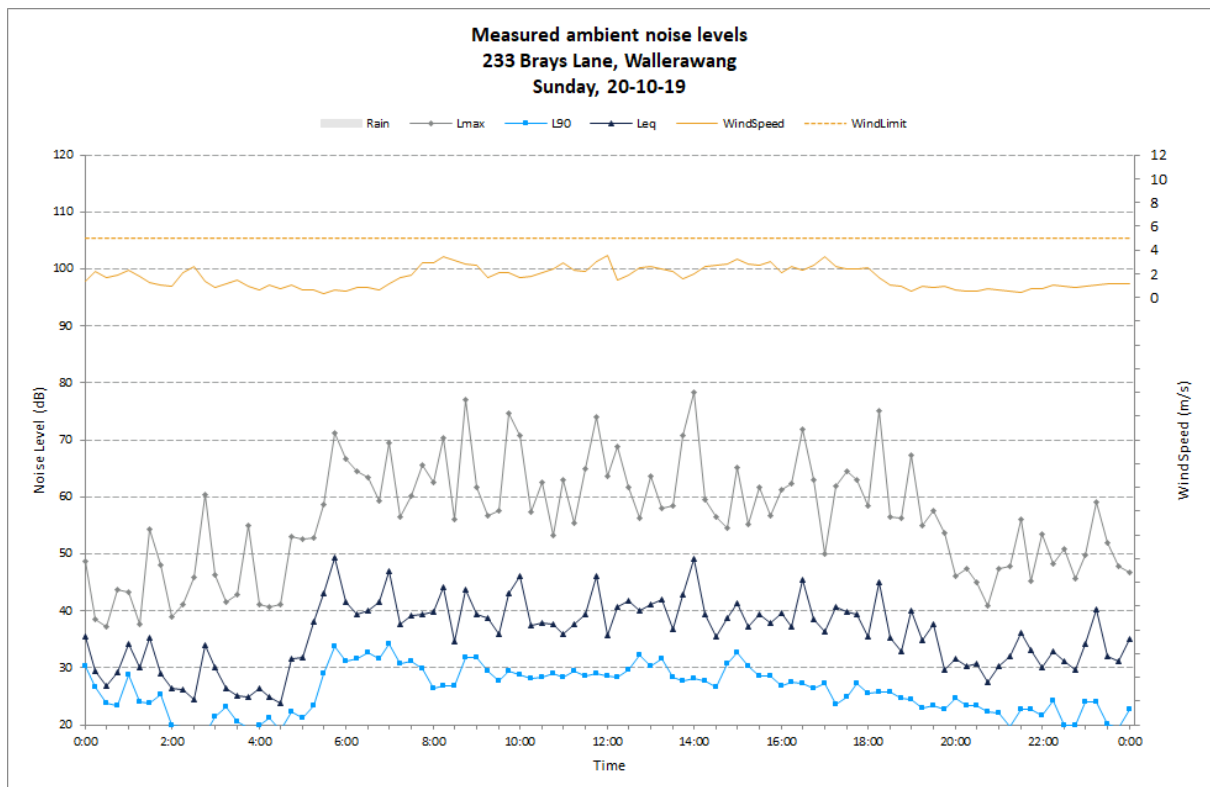
Unattended noise monitoring results and charts

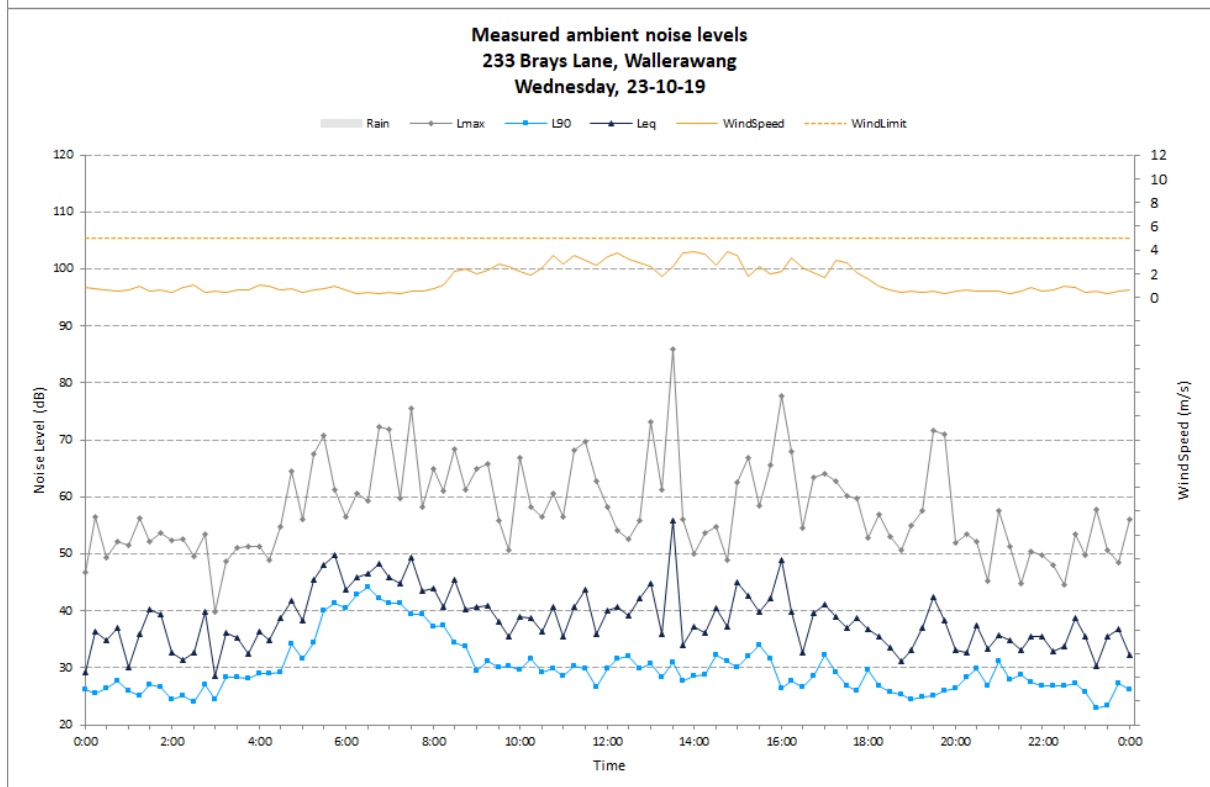
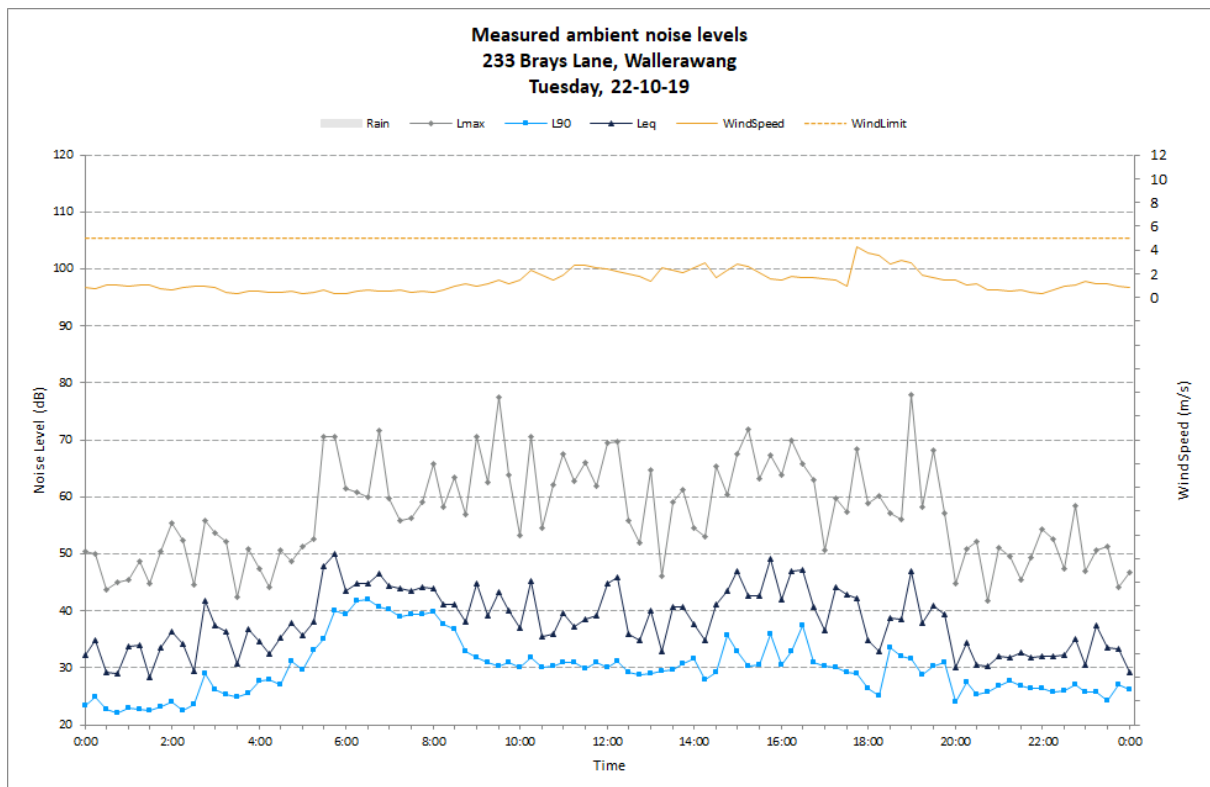
Table A.1 Summary of daily noise logging results – L1

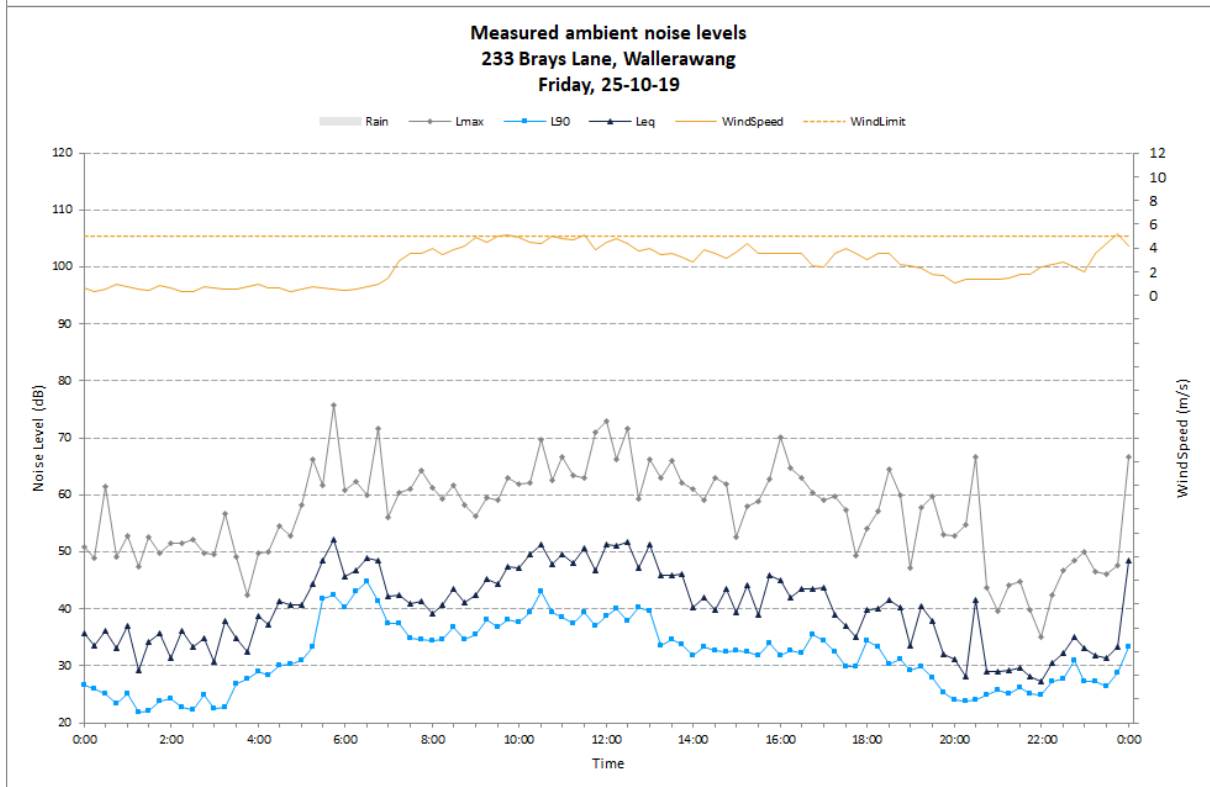
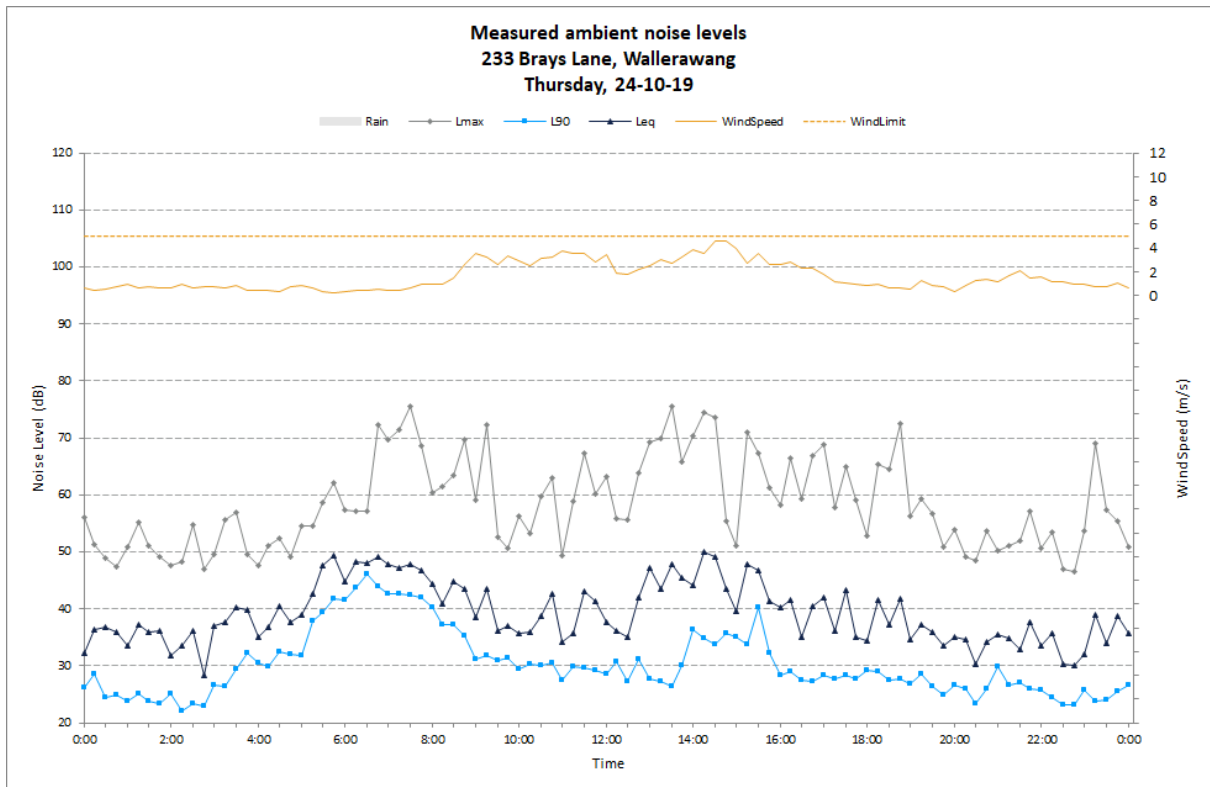
Date	RBL (Day)	RBL (Evening)	RBL (Night)	L _{Aeq,15 hour} , dB (Day)	L _{Aeq,4 hour} , dB (Evening)	L _{Aeq,9 hour} , dB (Night)
Friday, 18-10-19	0	23	23	0	36	41
Saturday, 19-10-19	0	25	20	0	40	39
Sunday, 20-10-19	27	22	20	41	37	41
Monday, 21-10-19	30	25	22	42	39	41
Tuesday, 22-10-19	29	25	25	43	38	42
Wednesday, 23-10-19	27	25	23	44	36	42
Thursday, 24-10-19	27	25	23	44	37	43
Friday, 25-10-19	32	24	0	46	37	0
Saturday, 26-10-19	0	26	18	0	38	38
Sunday, 27-10-19	26	23	20	42	34	42
Monday, 28-10-19	32	25	21	43	38	40
Tuesday, 29-10-19	28	23	21	44	35	42
Wednesday, 30-10-19	27	26	21	49	35	42
Thursday, 31-10-19	31	23	23	49	38	42
Friday, 01-11-19	0	0	0	0	0	0
Overall	28	25	21	45	37	41

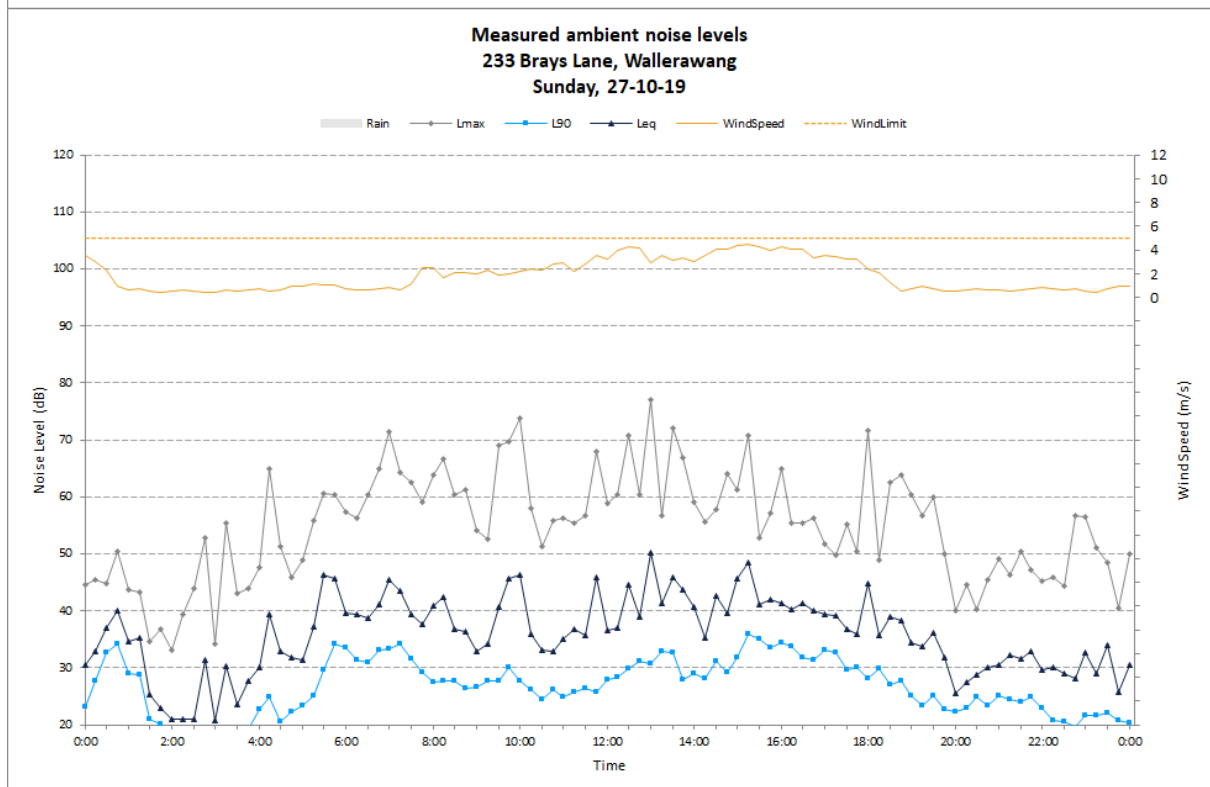
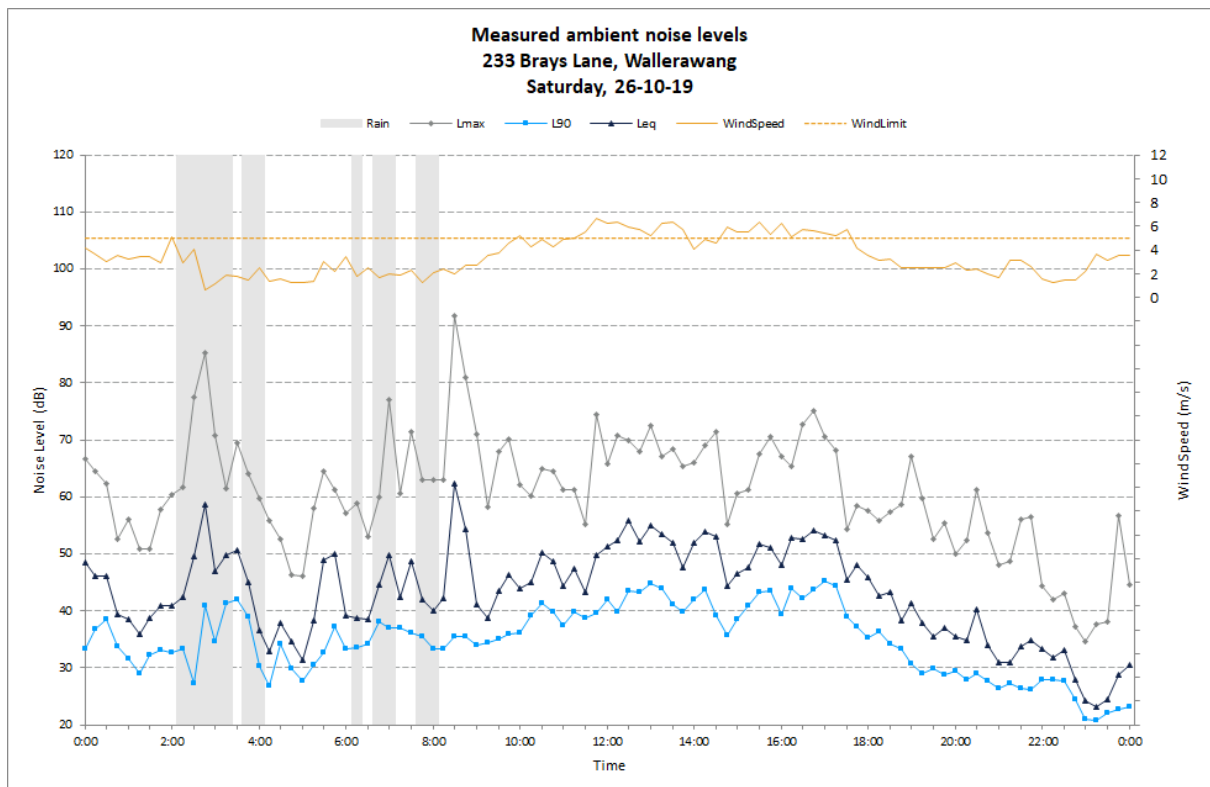
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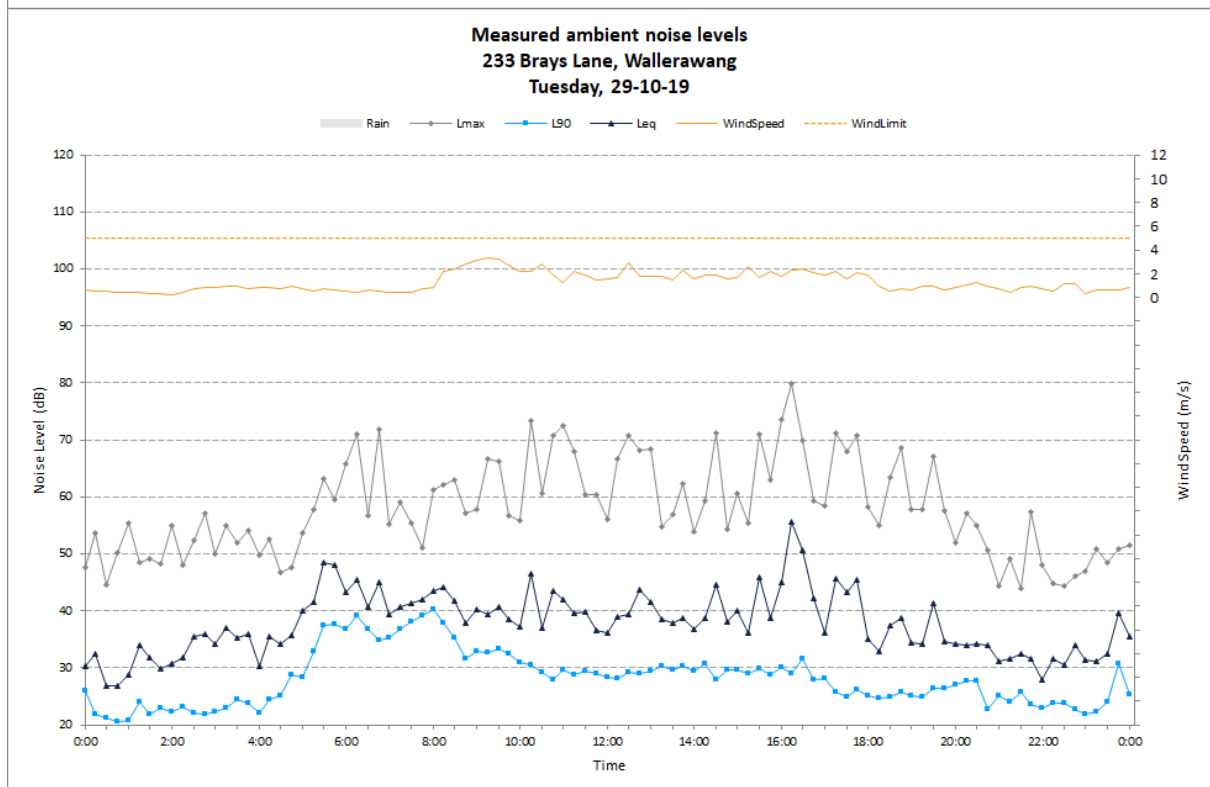
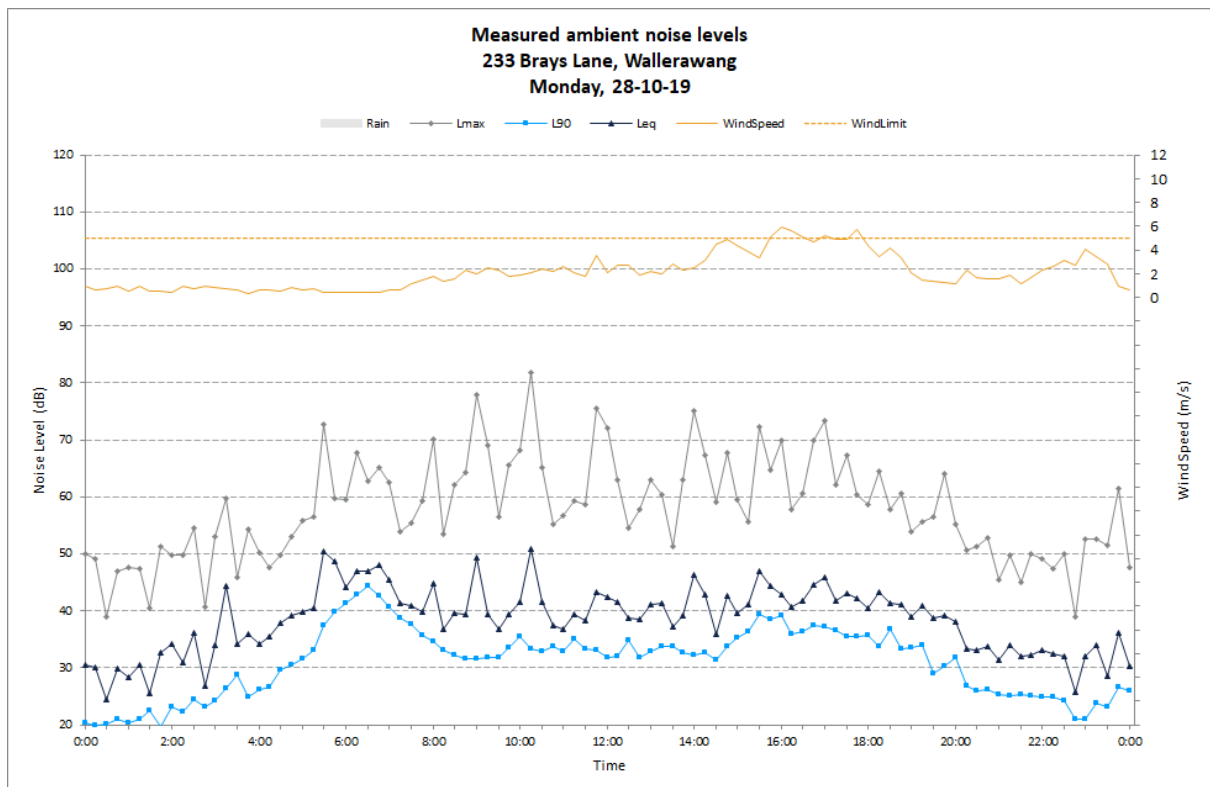


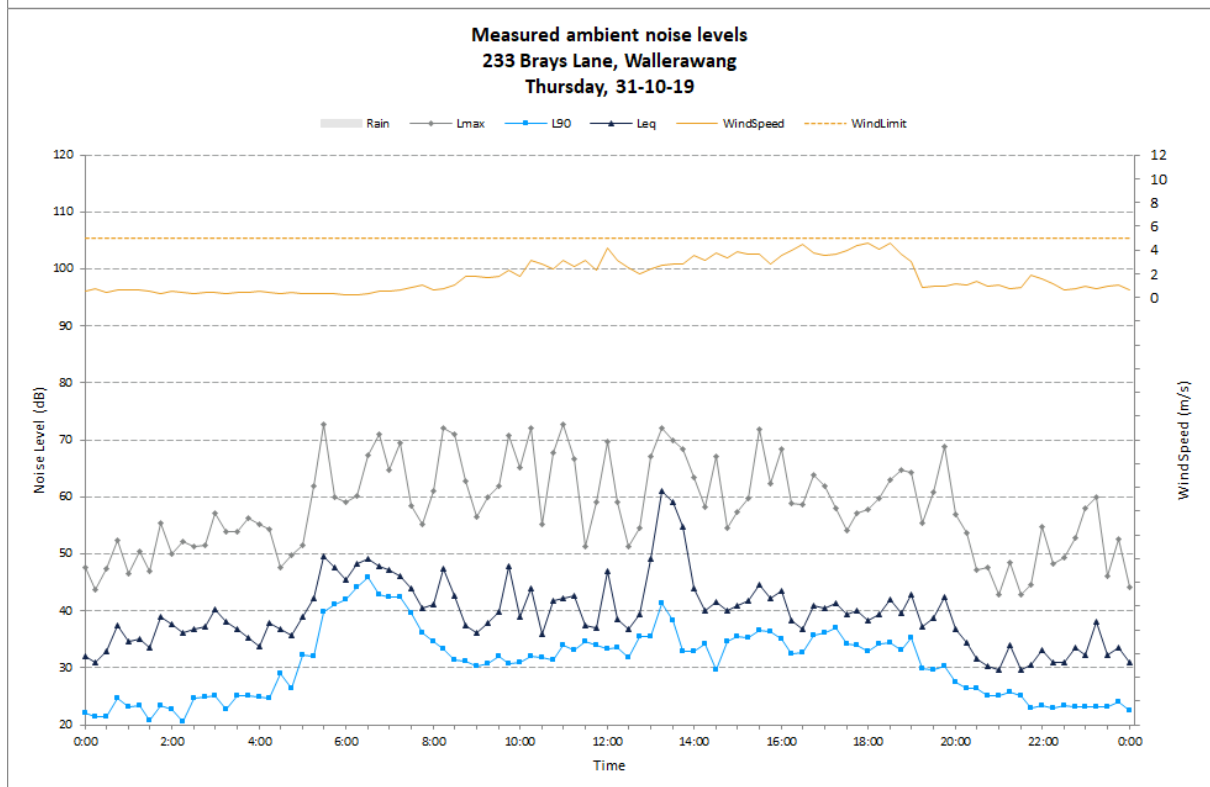
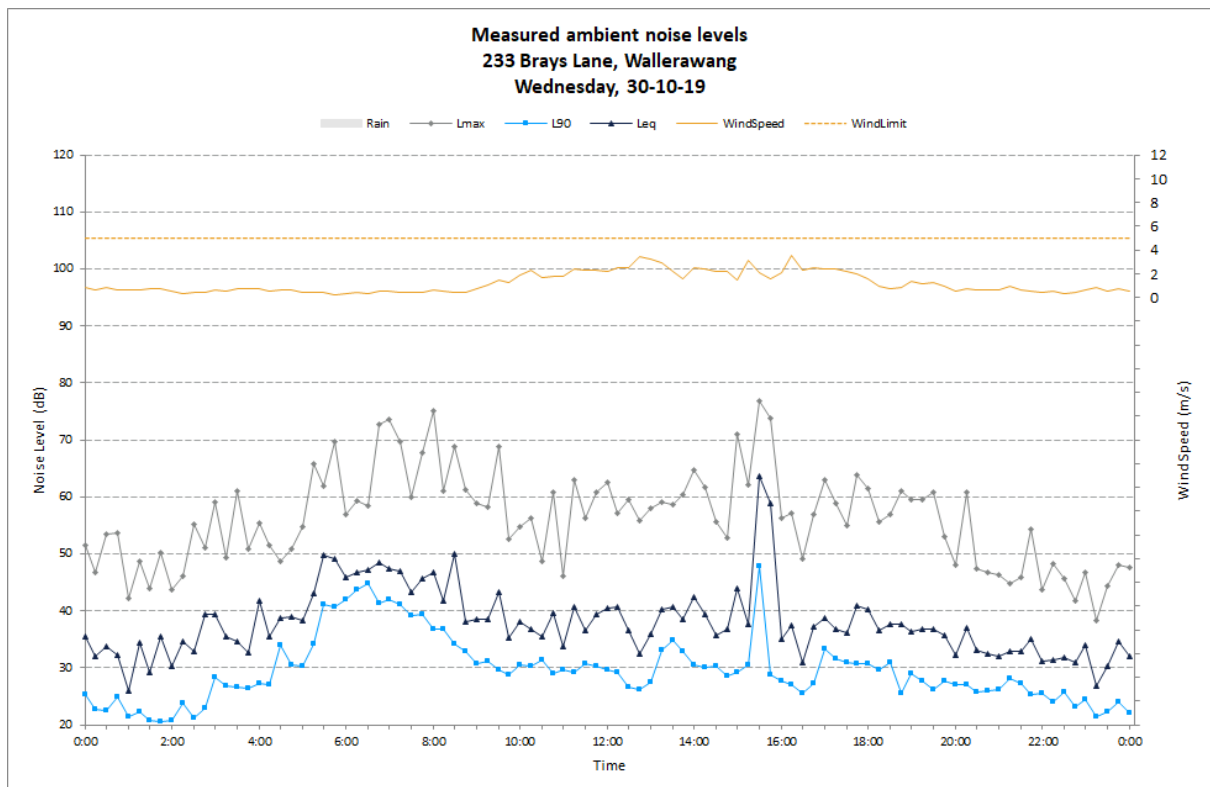












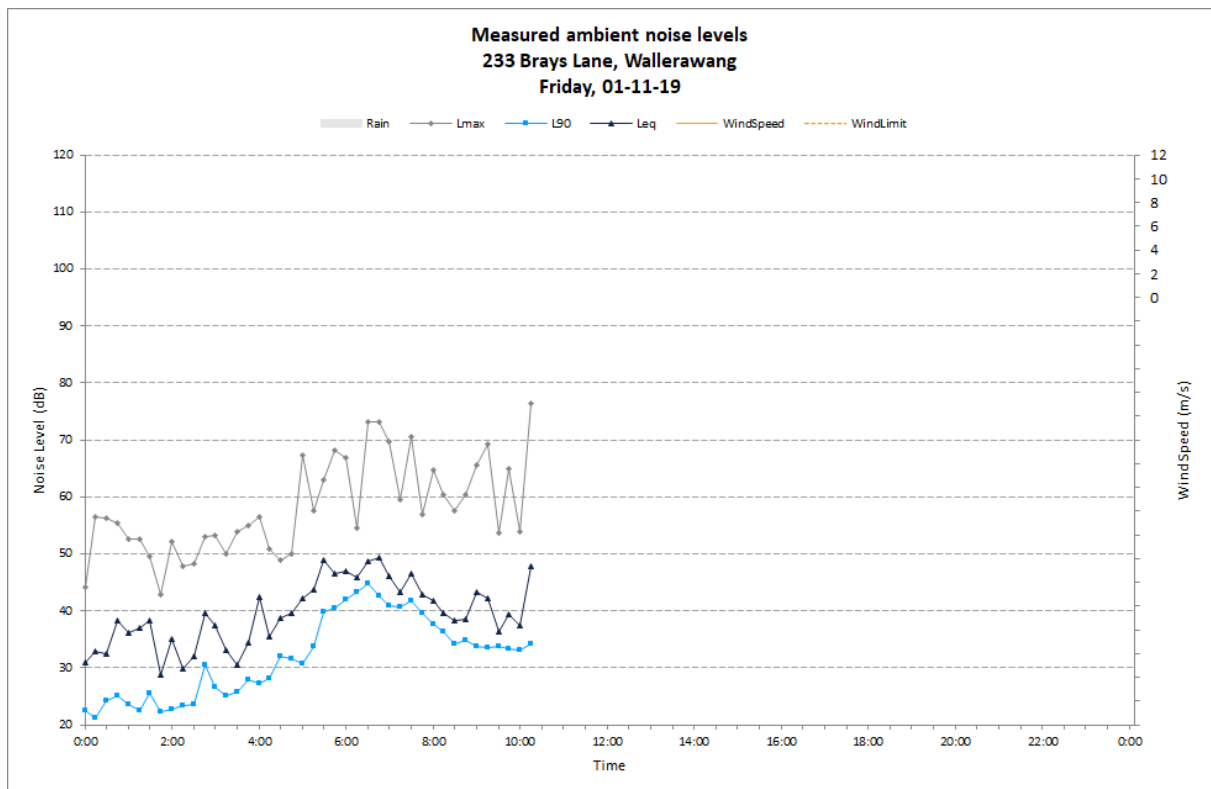
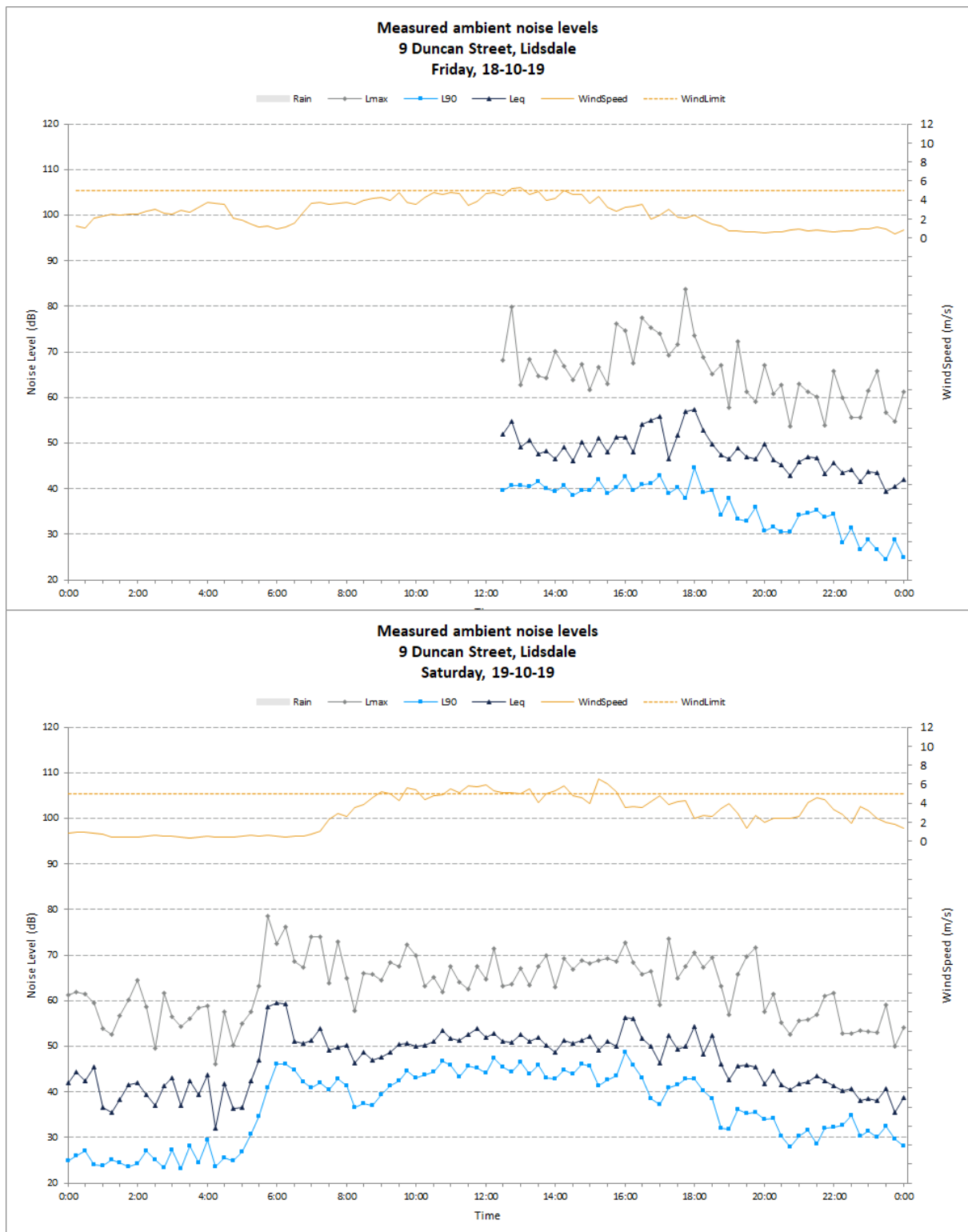
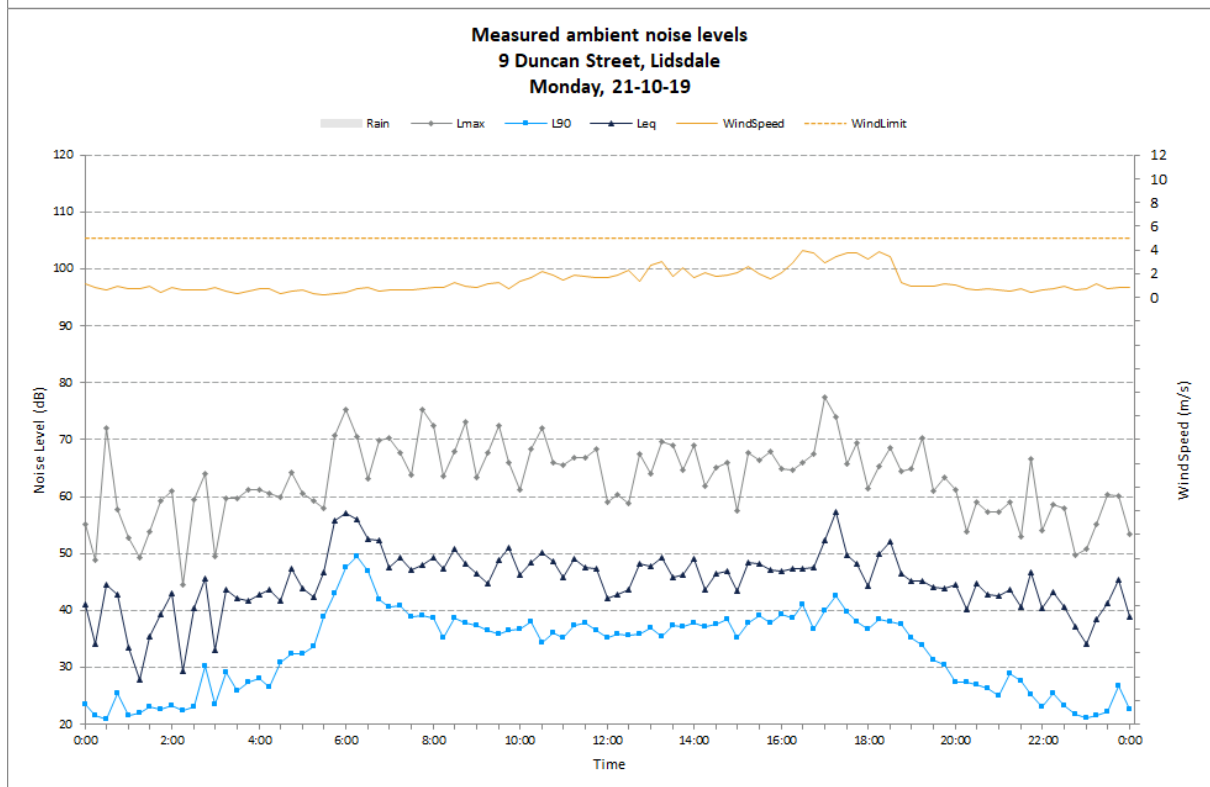
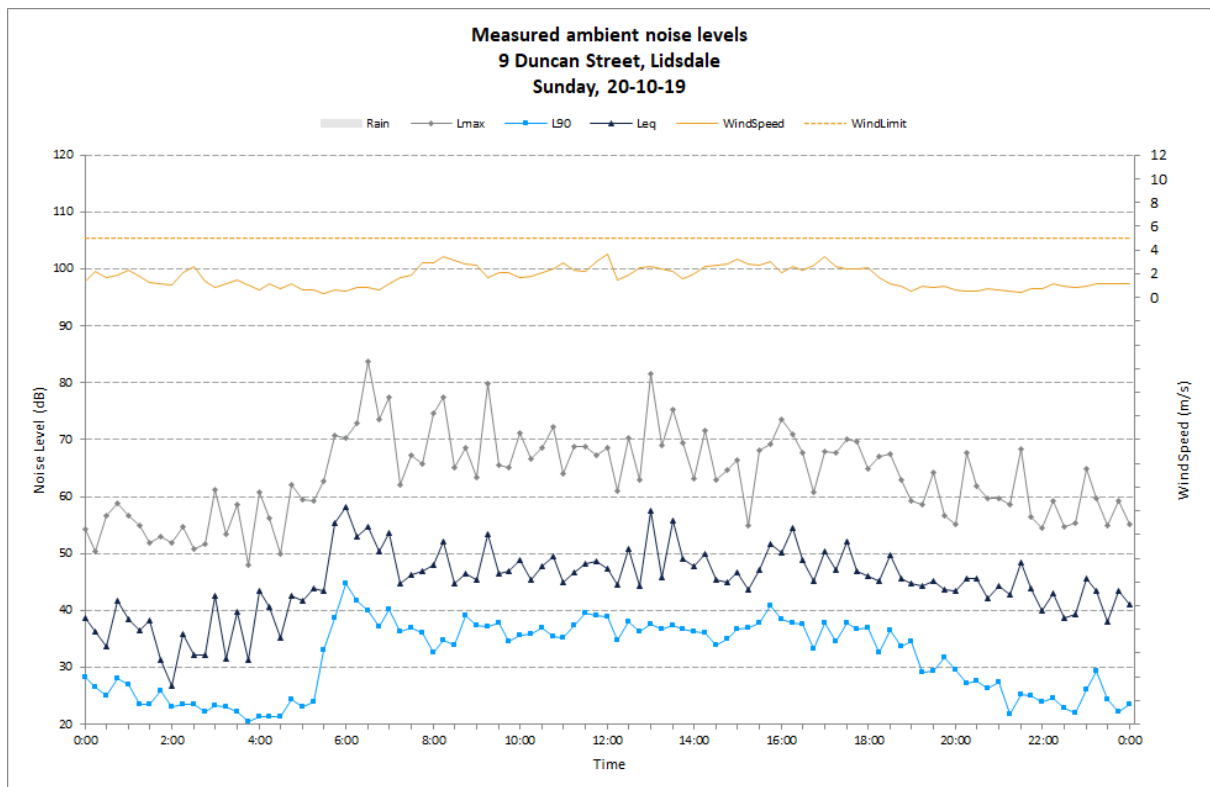


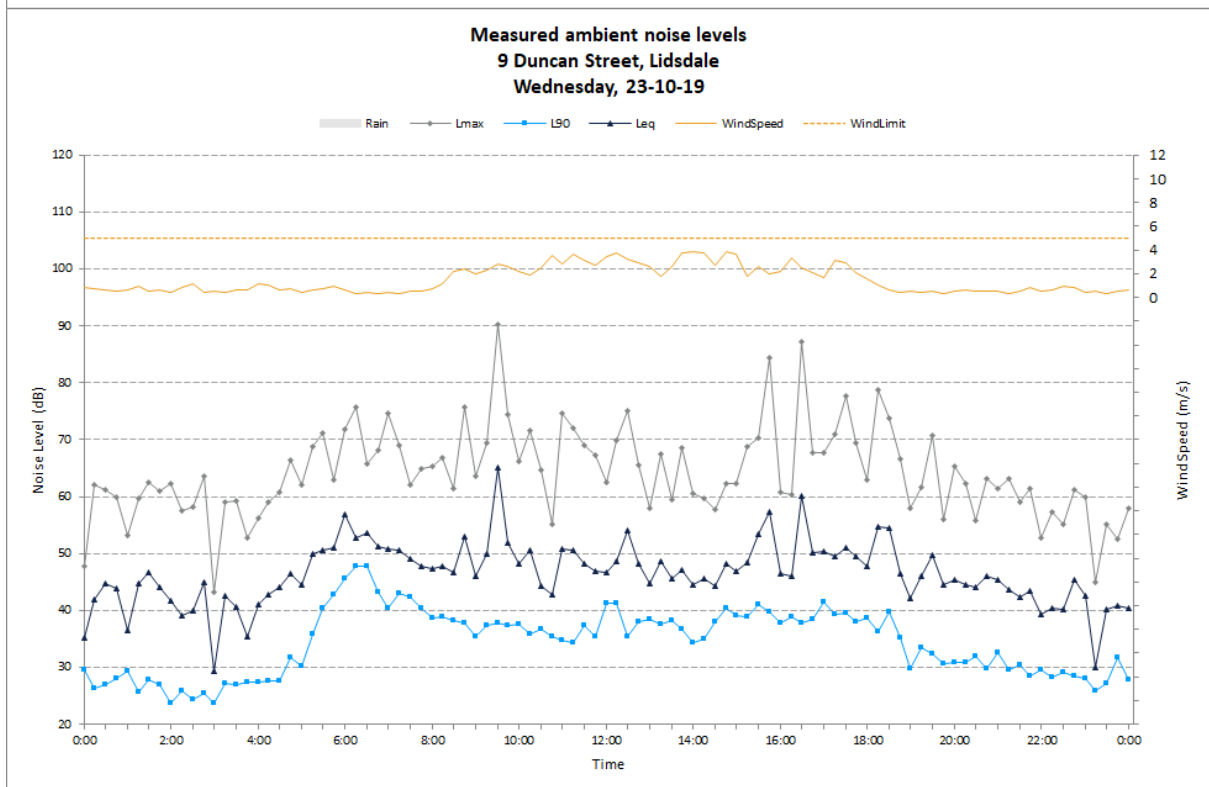
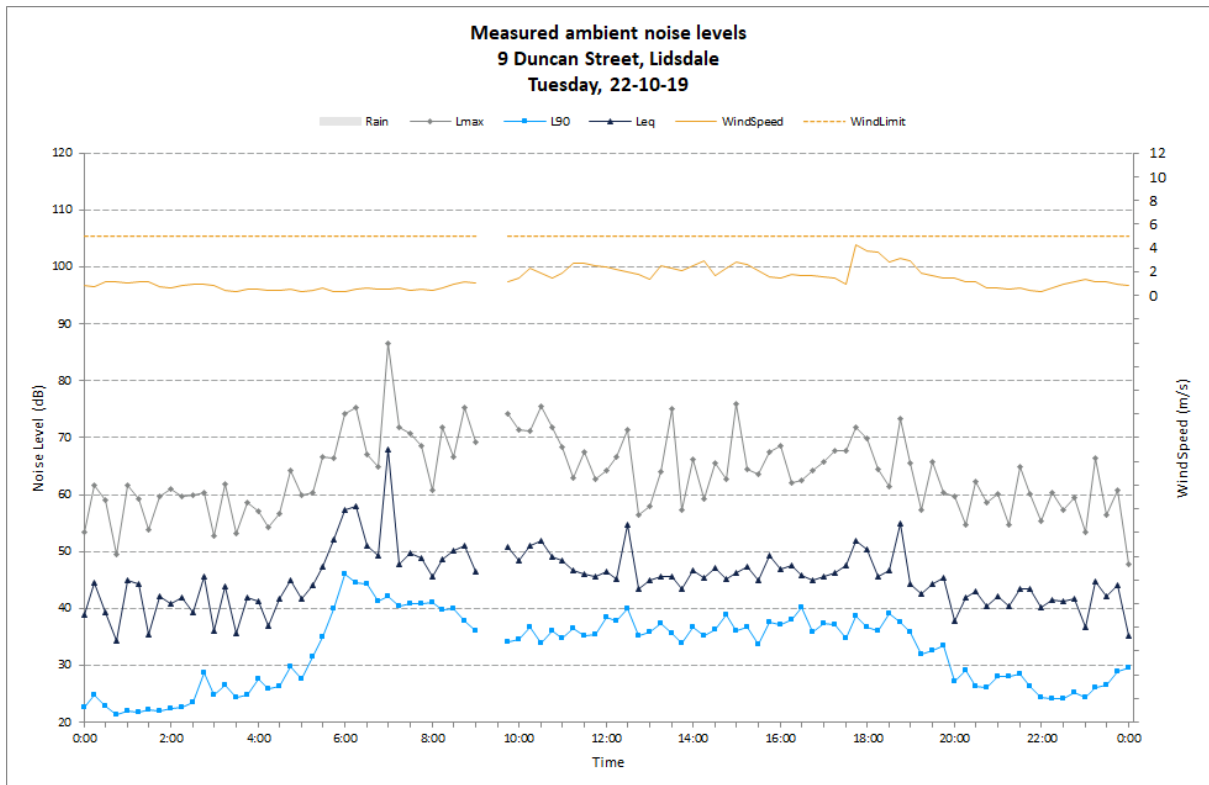
Table A.2 Summary of daily noise logging results – L2

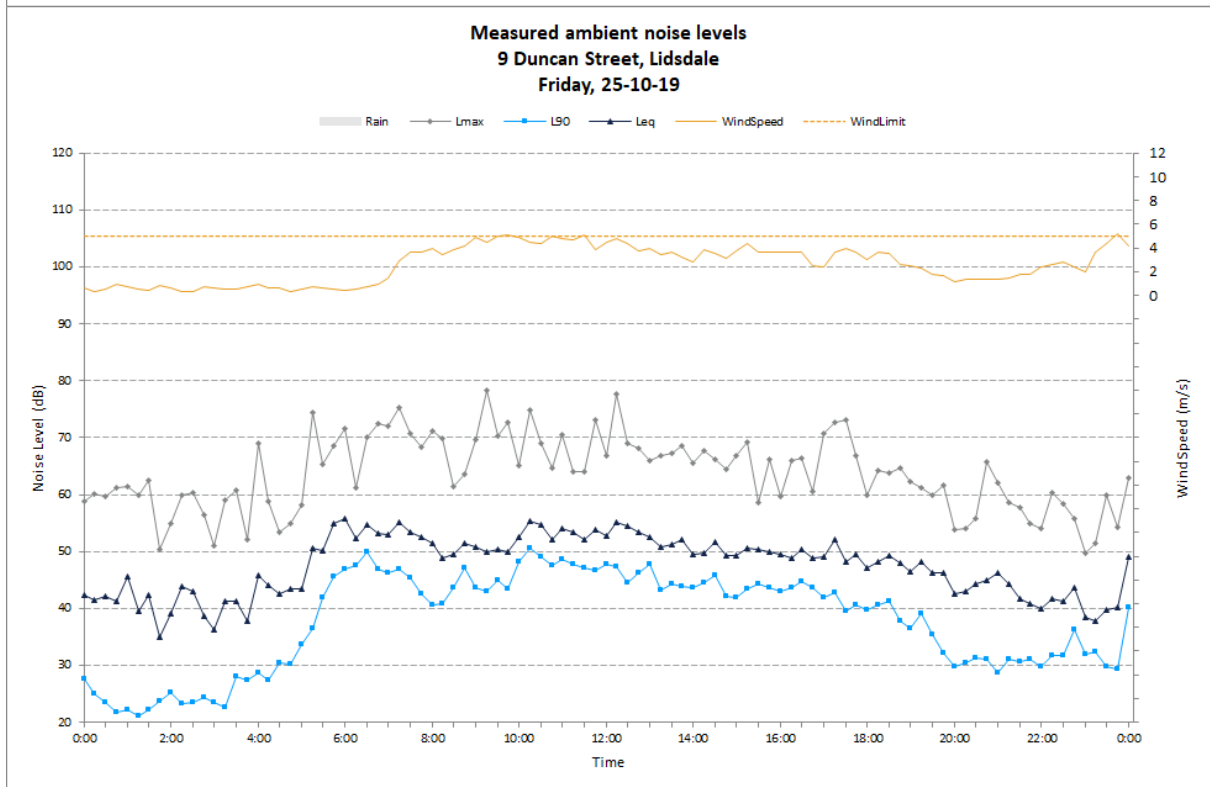
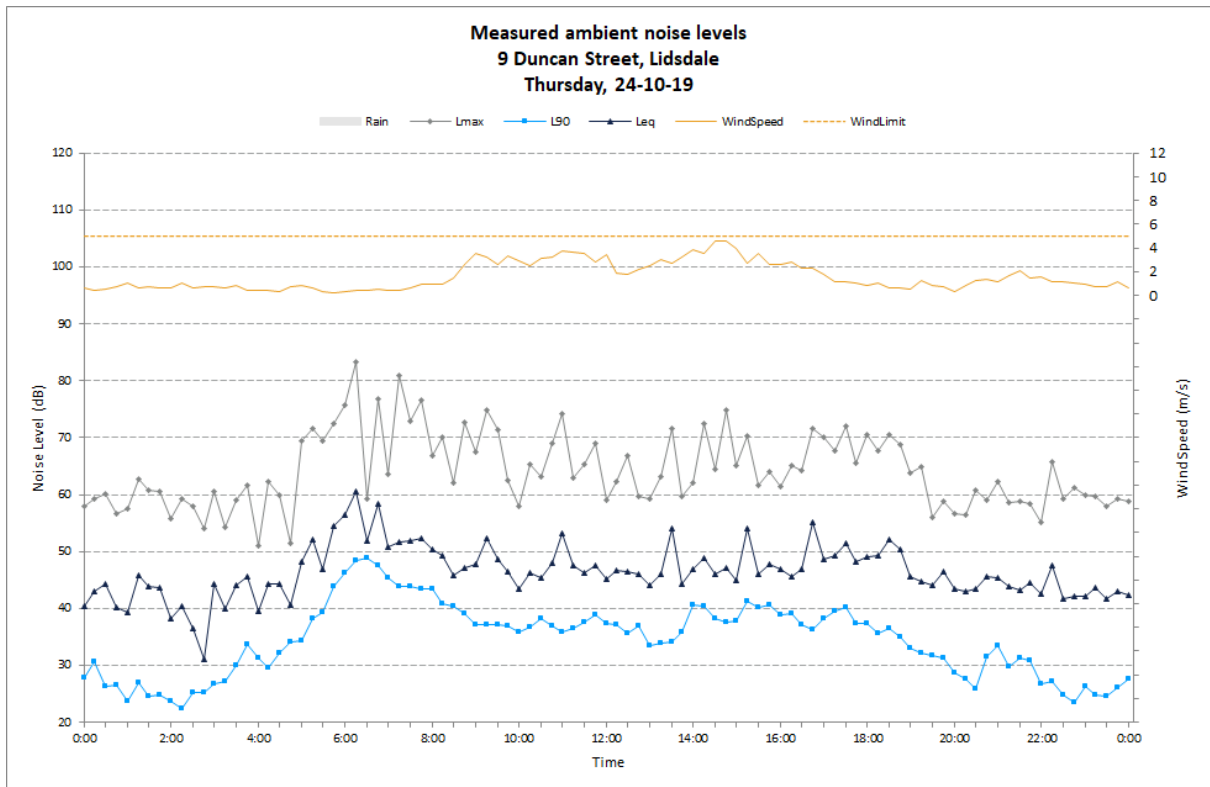
Date	RBL (Day)	RBL (Evening)	RBL (Night)	L _{Aeq,15 hour} , dB (Day)	L _{Aeq,4 hour} , dB (Evening)	L _{Aeq,9 hour} , dB (Night)
Friday, 18-10-19	0	31	24	0	48	50
Saturday, 19-10-19	0	29	21	0	45	48
Sunday, 20-10-19	35	24	22	50	45	48
Monday, 21-10-19	35	25	22	49	46	54
Tuesday, 22-10-19	35	26	24	59	46	48
Wednesday, 23-10-19	35	30	25	53	48	50
Thursday, 24-10-19	36	27	22	49	47	48
Friday, 25-10-19	41	30	0	52	46	0
Saturday, 26-10-19	0	30	21	0	45	45
Sunday, 27-10-19	33	26	23	47	45	47
Monday, 28-10-19	37	25	21	49	44	46
Tuesday, 29-10-19	34	25	23	51	45	50
Wednesday, 30-10-19	35	27	23	49	46	50
Thursday, 31-10-19	36	27	23	48	47	50
Friday, 01-11-19	0	0	0	0	0	0
Overall	35	27	23	52	46	49

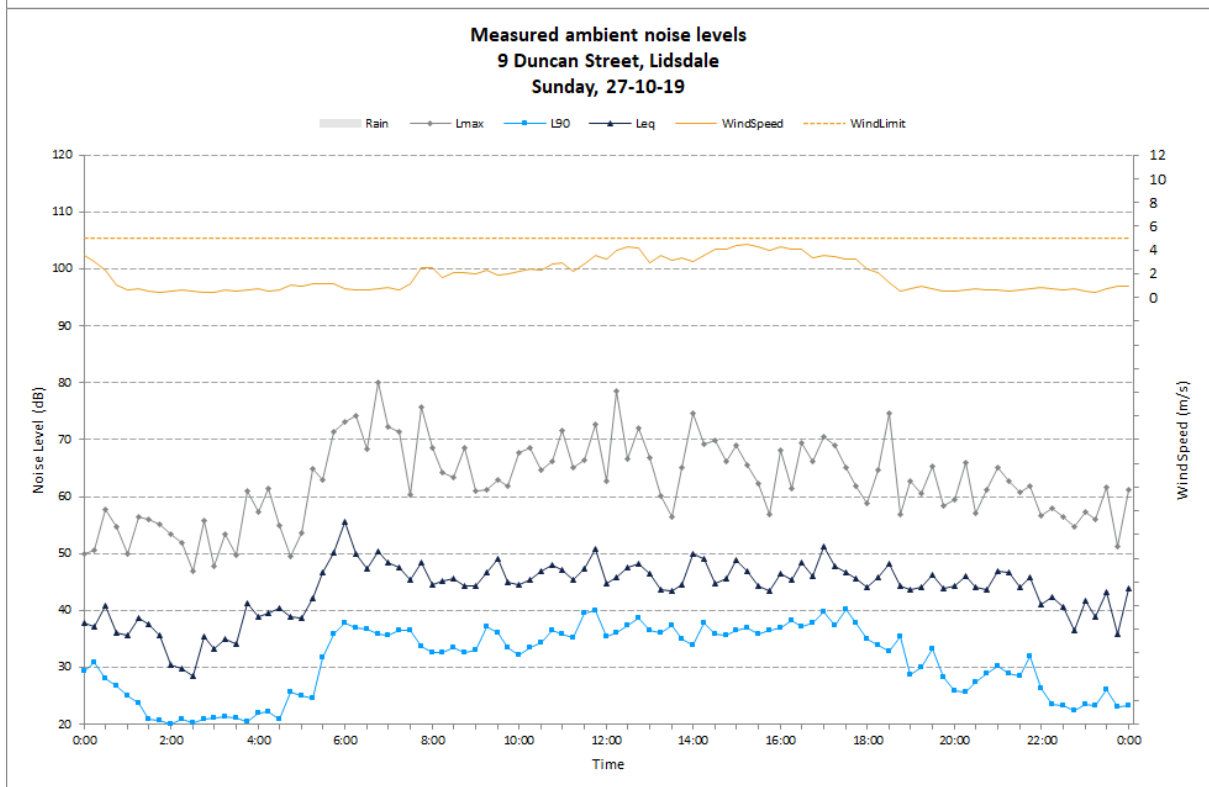
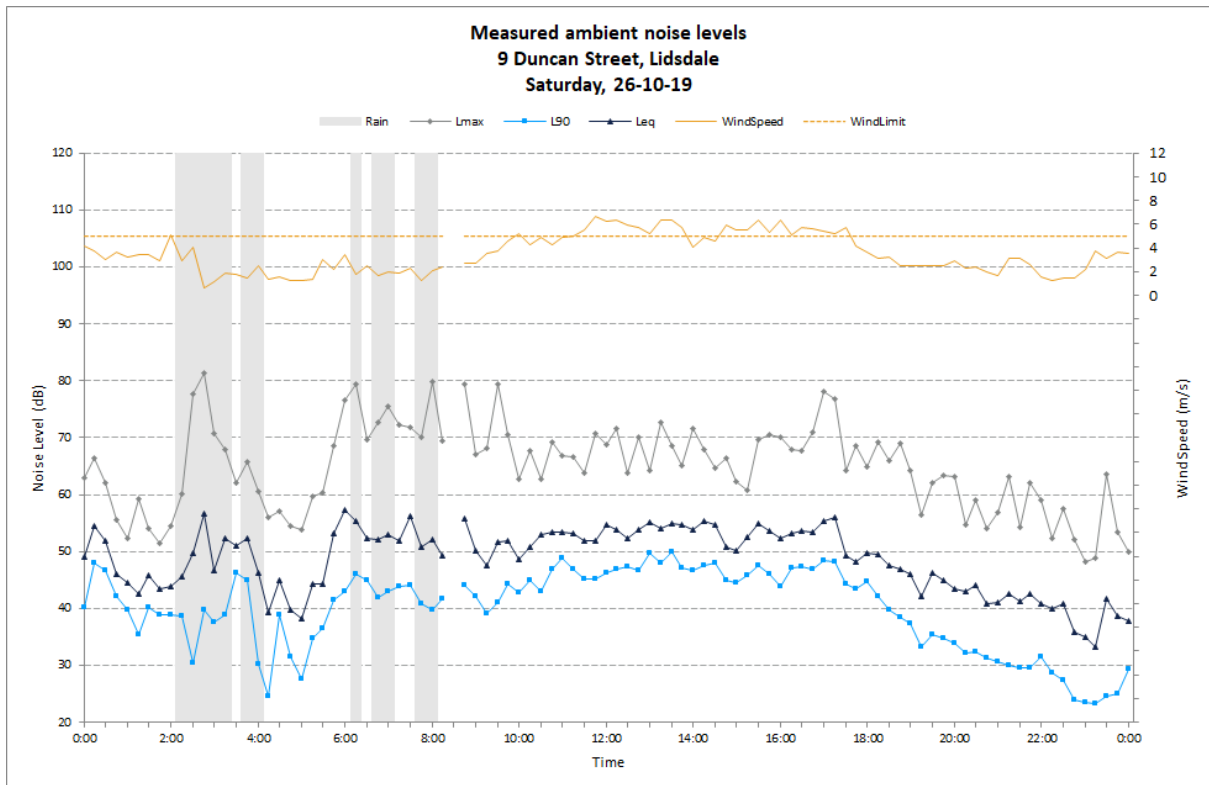
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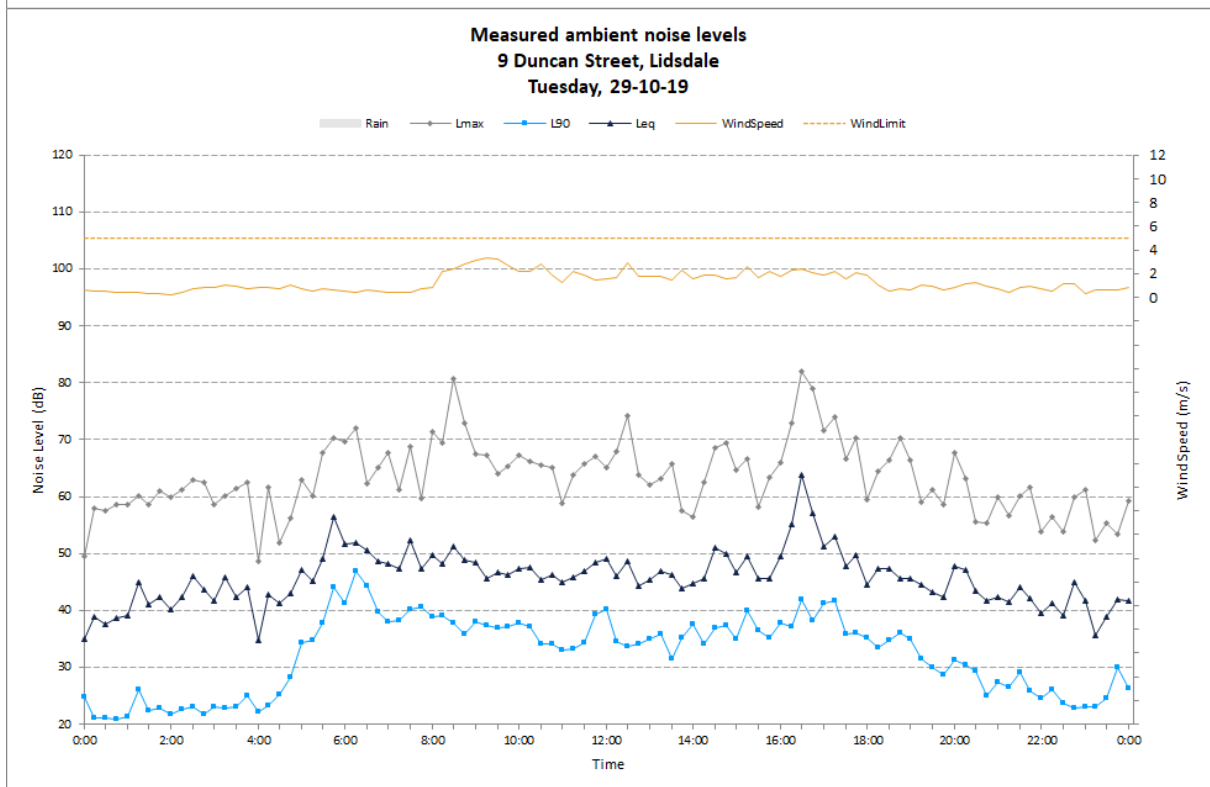
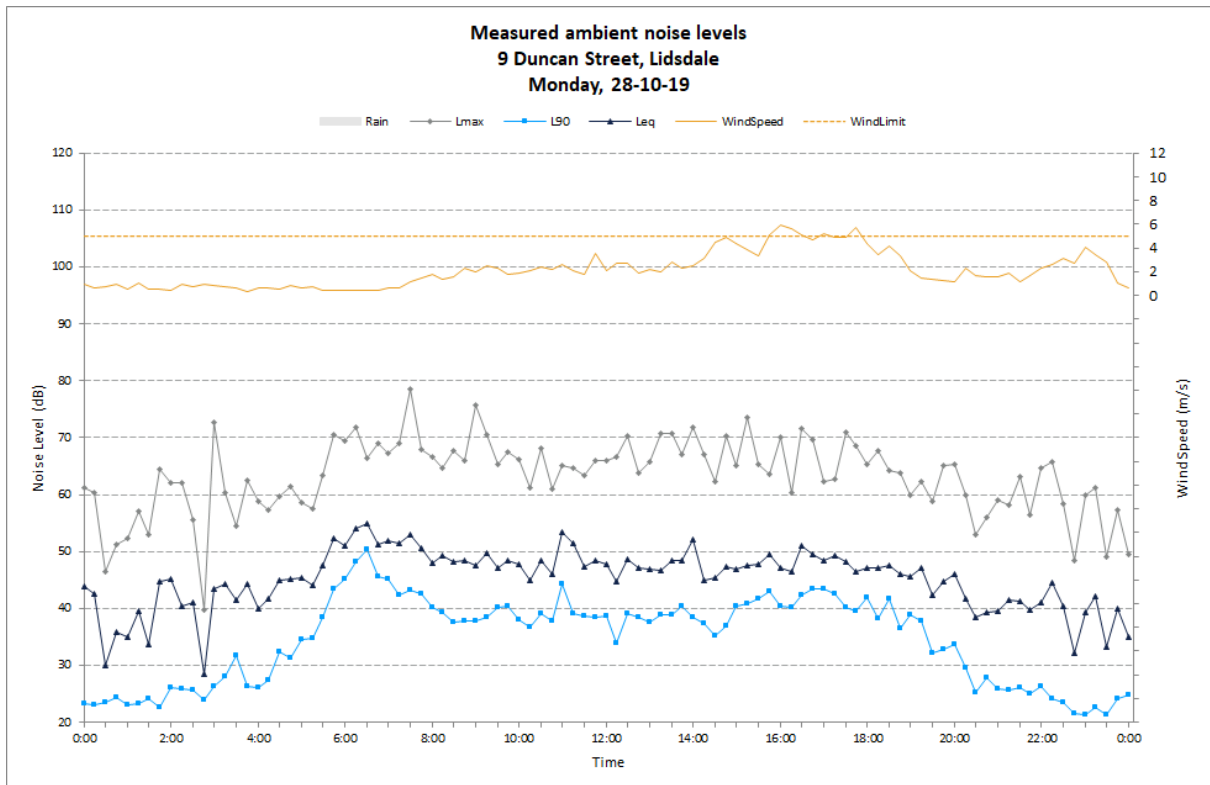


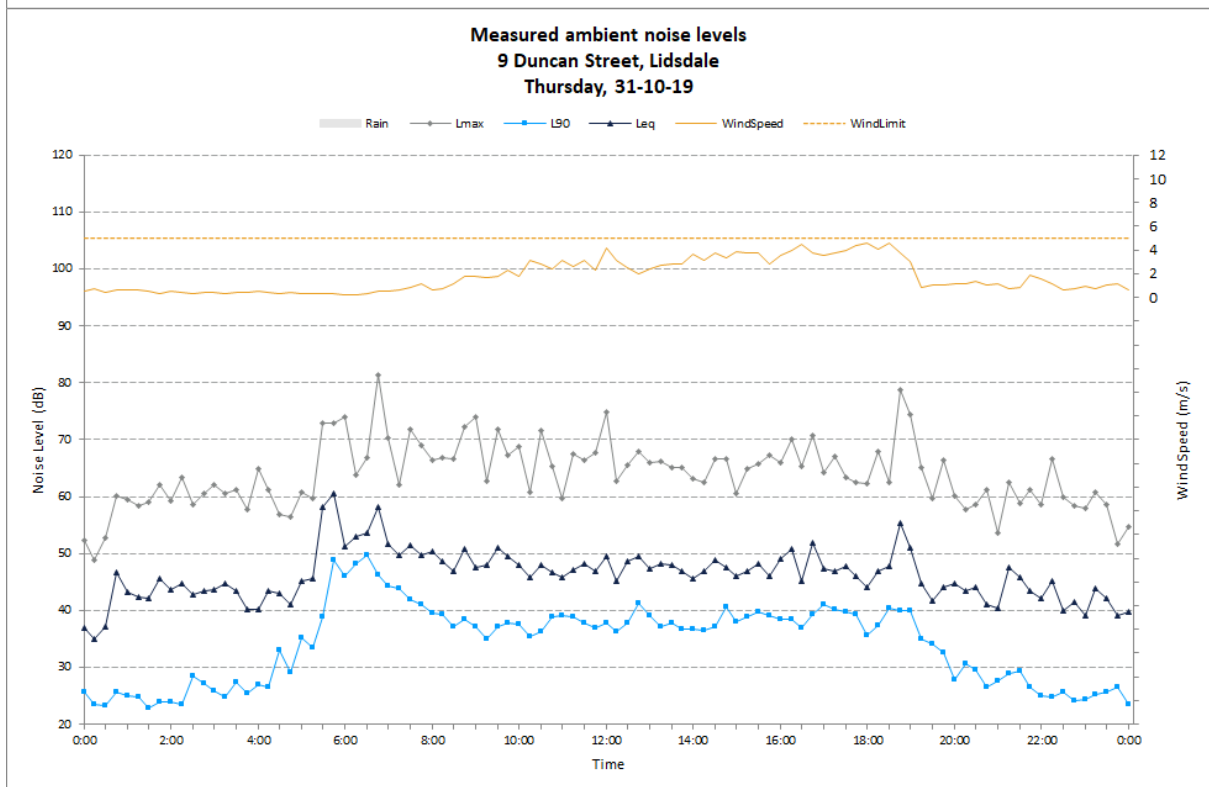
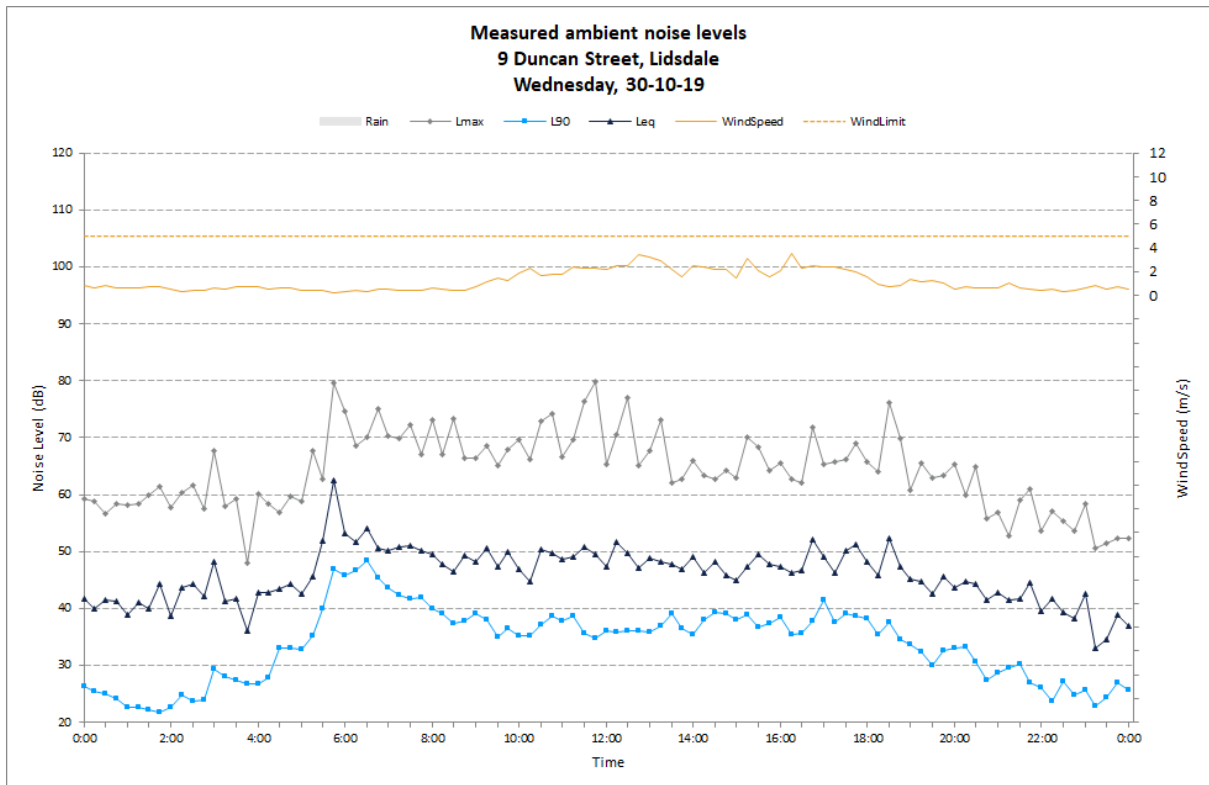












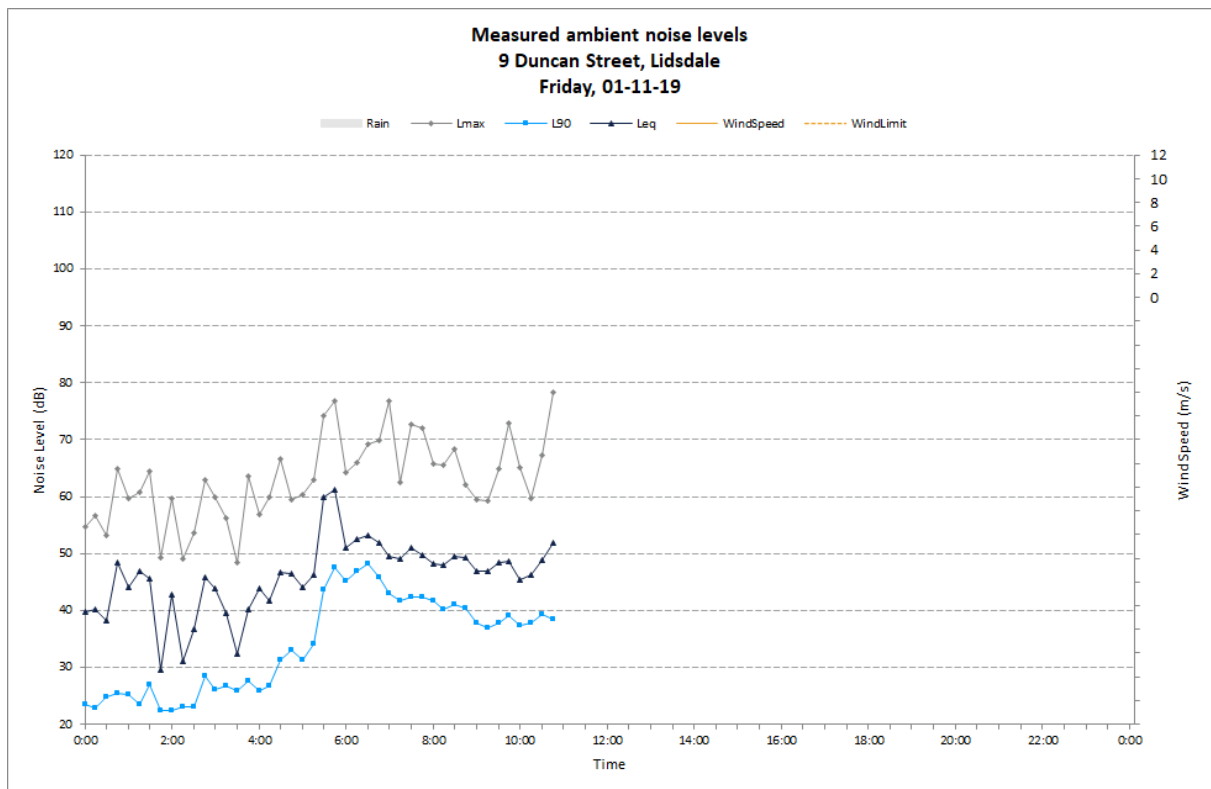
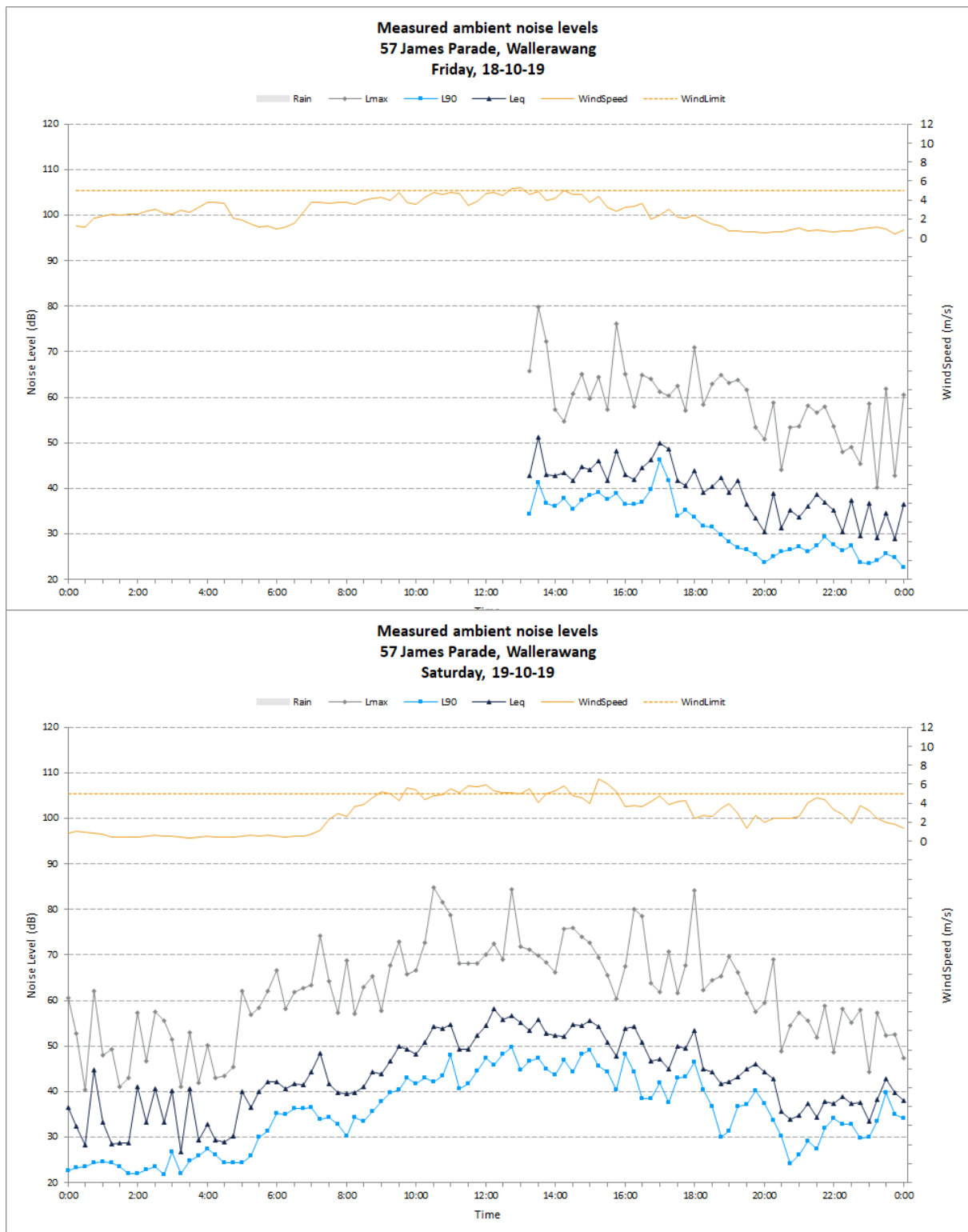
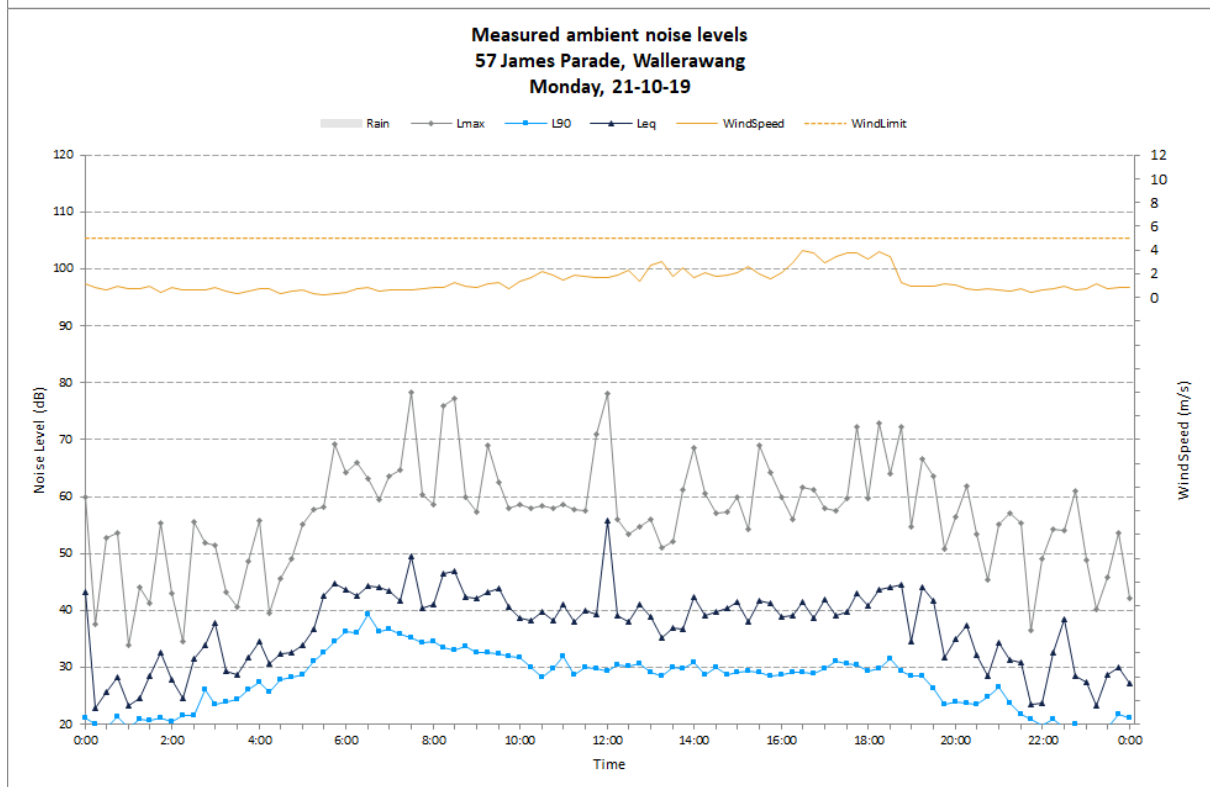
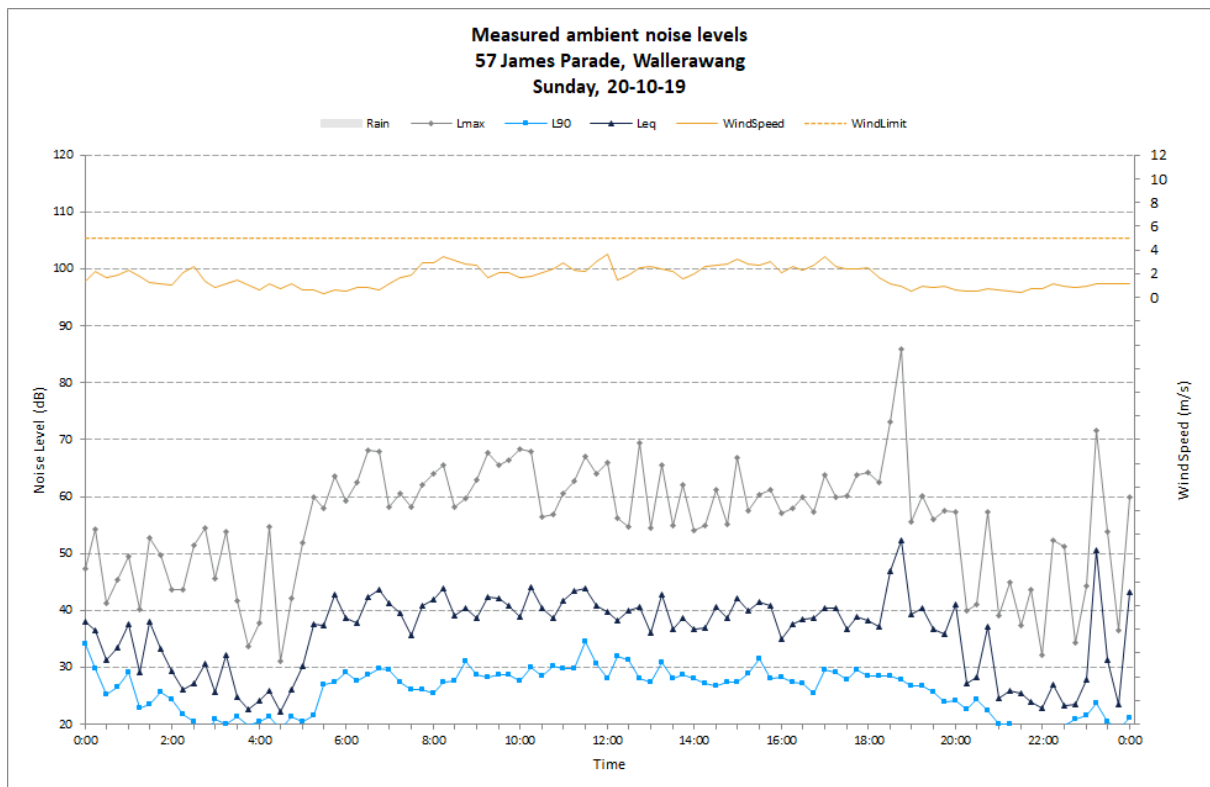


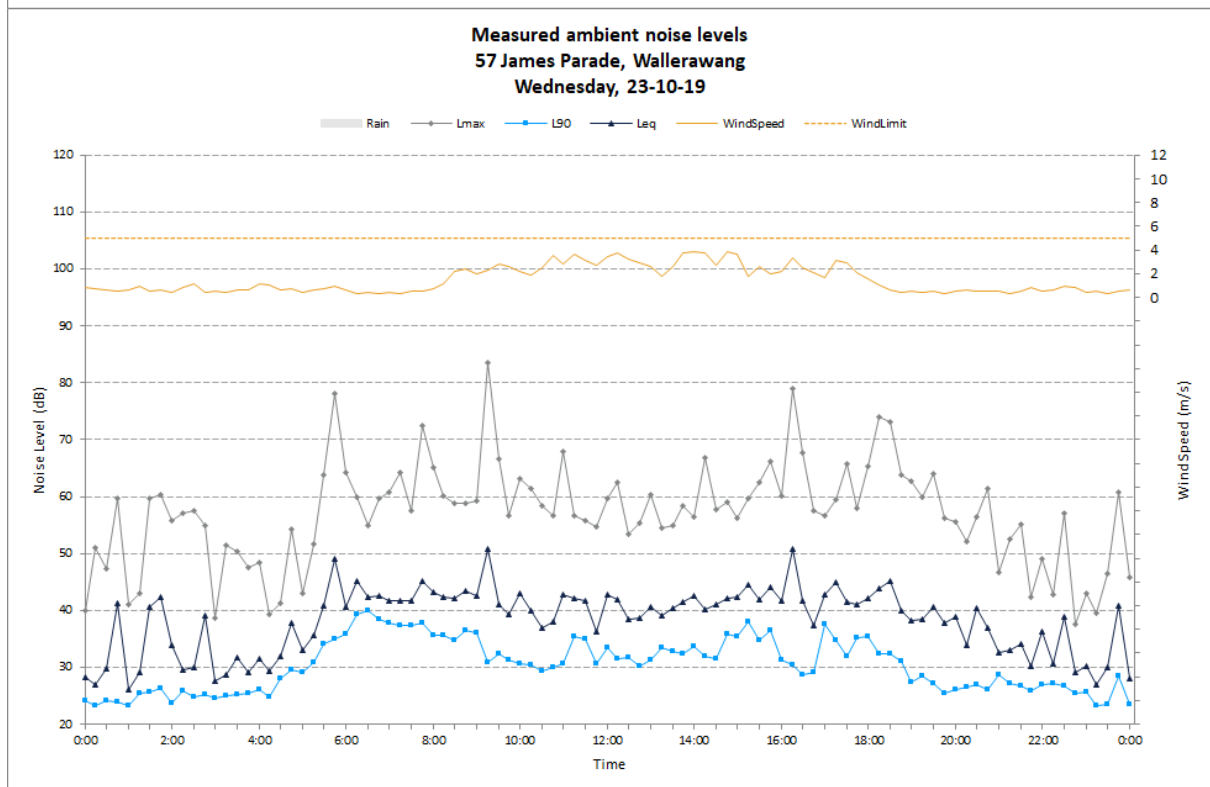
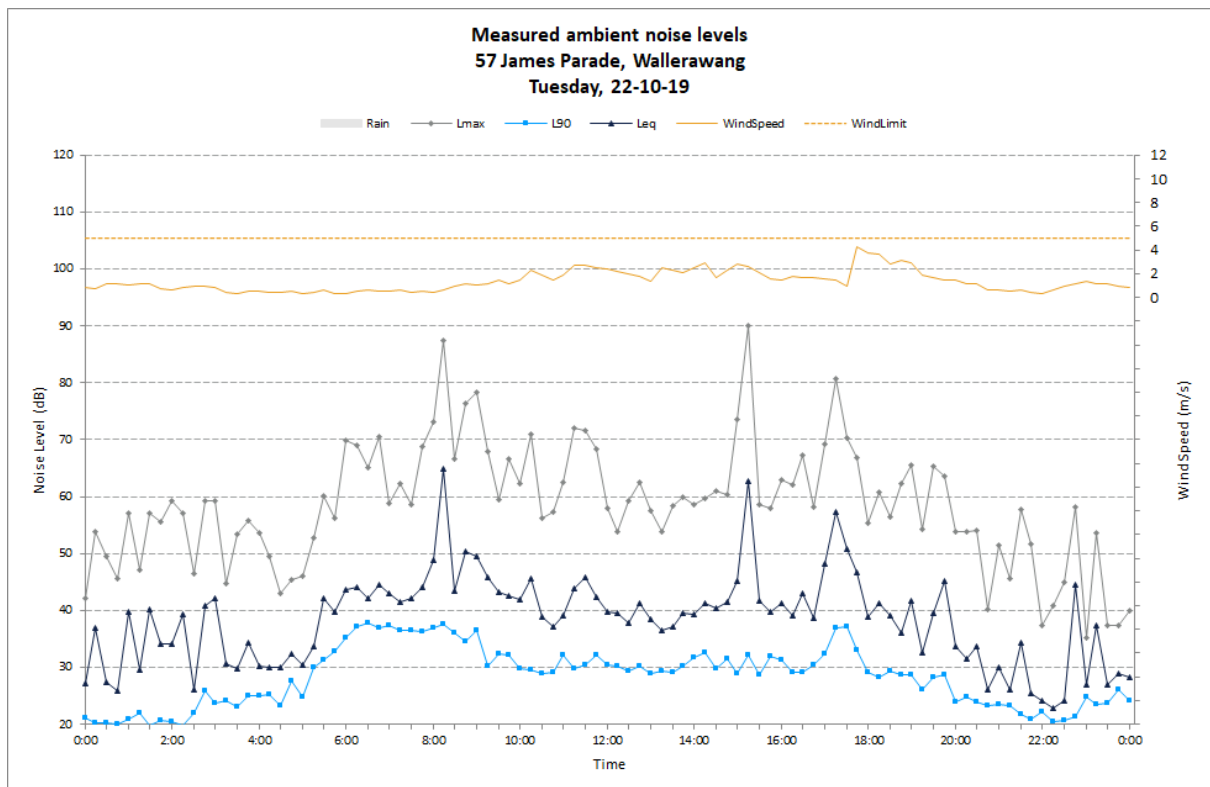
Table A.3 Summary of daily noise logging results – L3

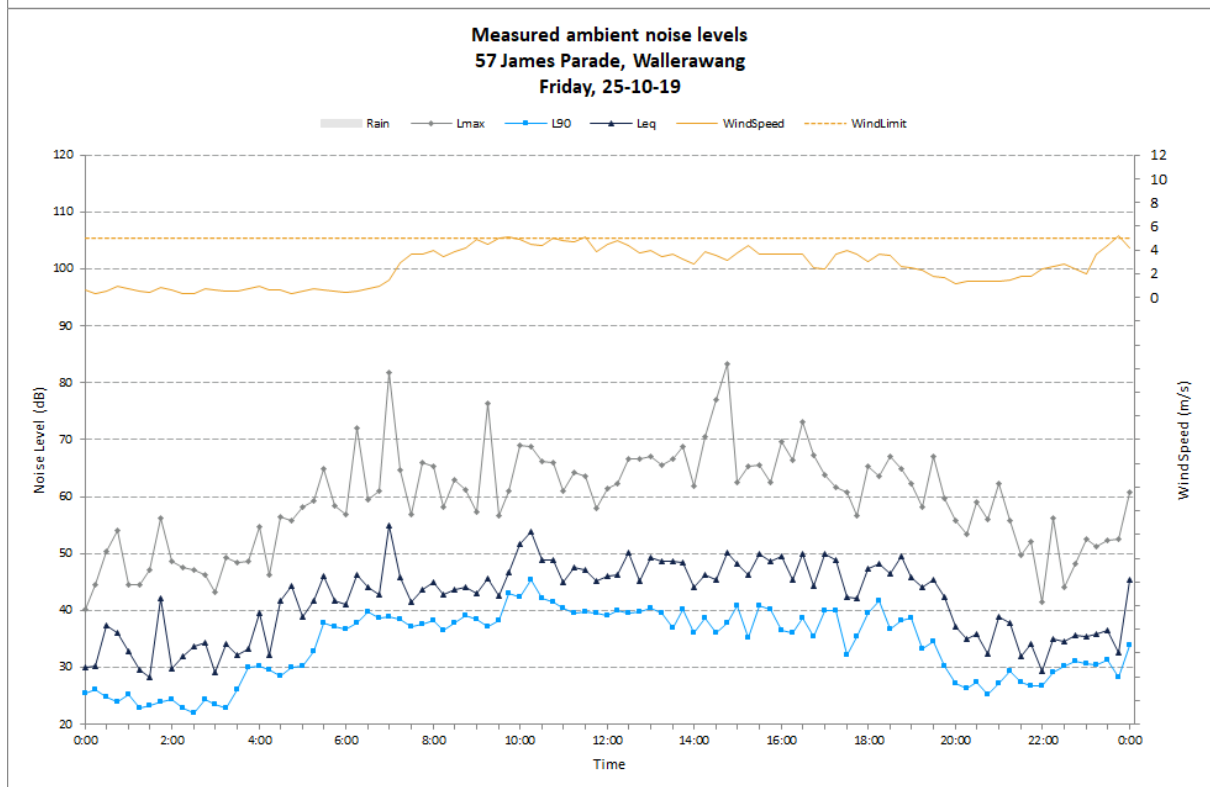
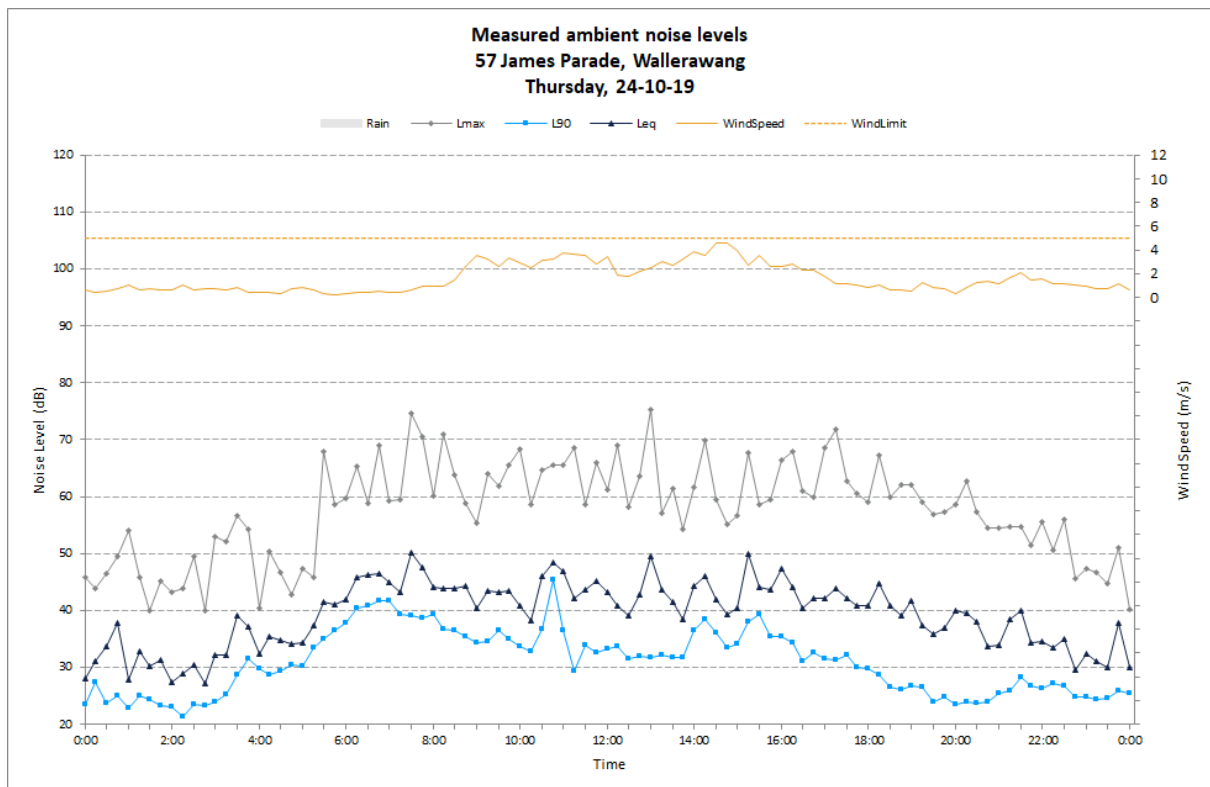
Date	RBL (Day)	RBL (Evening)	RBL (Night)	L _{Aeq,15 hour} , dB (Day)	L _{Aeq,4 hour} , dB (Evening)	L _{Aeq,9 hour} , dB (Night)
Friday, 18-10-19	0	25	22	0	38	38
Saturday, 19-10-19	0	26	20	0	42	37
Sunday, 20-10-19	27	19	19	40	42	40
Monday, 21-10-19	29	21	19	44	39	38
Tuesday, 22-10-19	29	22	23	52	38	39
Wednesday, 23-10-19	30	26	23	43	39	39
Thursday, 24-10-19	31	24	23	45	39	42
Friday, 25-10-19	36	26	0	48	43	0
Saturday, 26-10-19	0	28	19	0	45	36
Sunday, 27-10-19	27	23	21	42	41	39
Monday, 28-10-19	29	22	19	45	40	40
Tuesday, 29-10-19	30	22	21	49	42	40
Wednesday, 30-10-19	30	23	22	45	46	39
Thursday, 31-10-19	29	23	22	43	39	39
Friday, 01-11-19	0	0	0	0	0	0
Overall	29	23	21	46	42	39

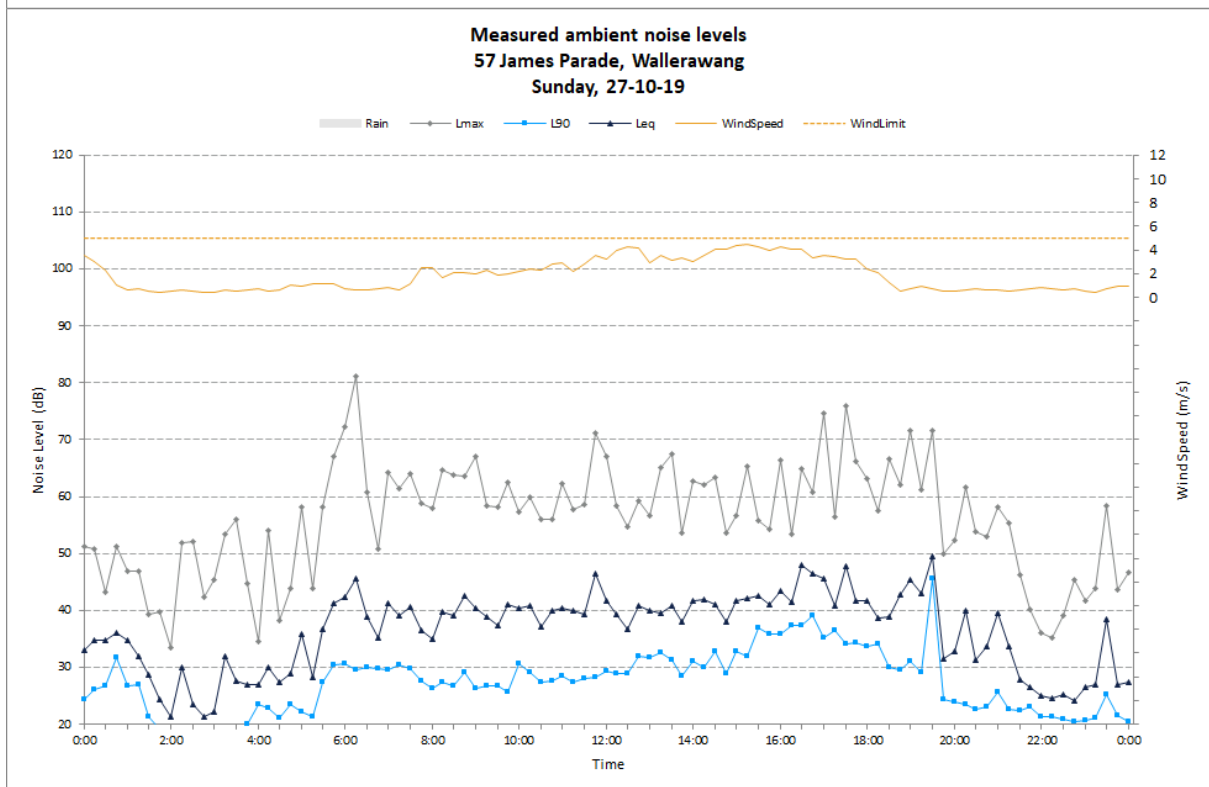
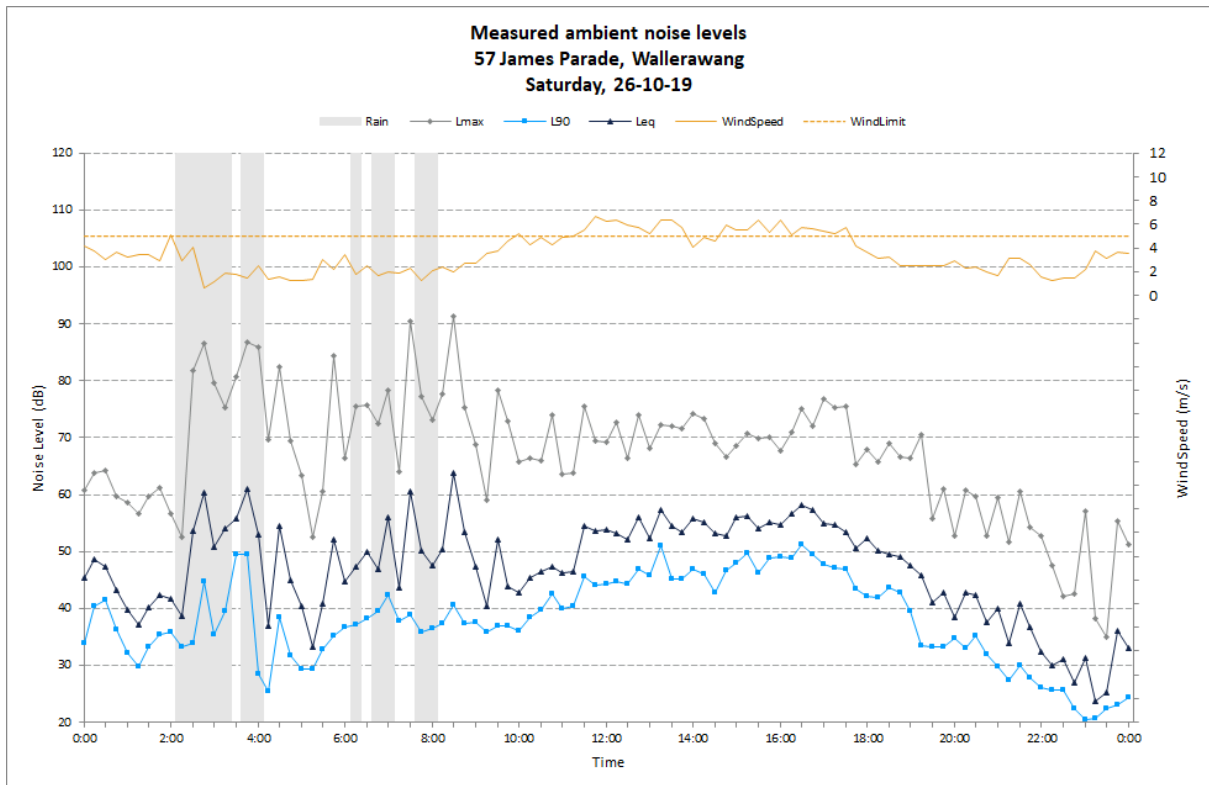
Notes: “0” indicates periods with too few valid samples due to weather or logger operation

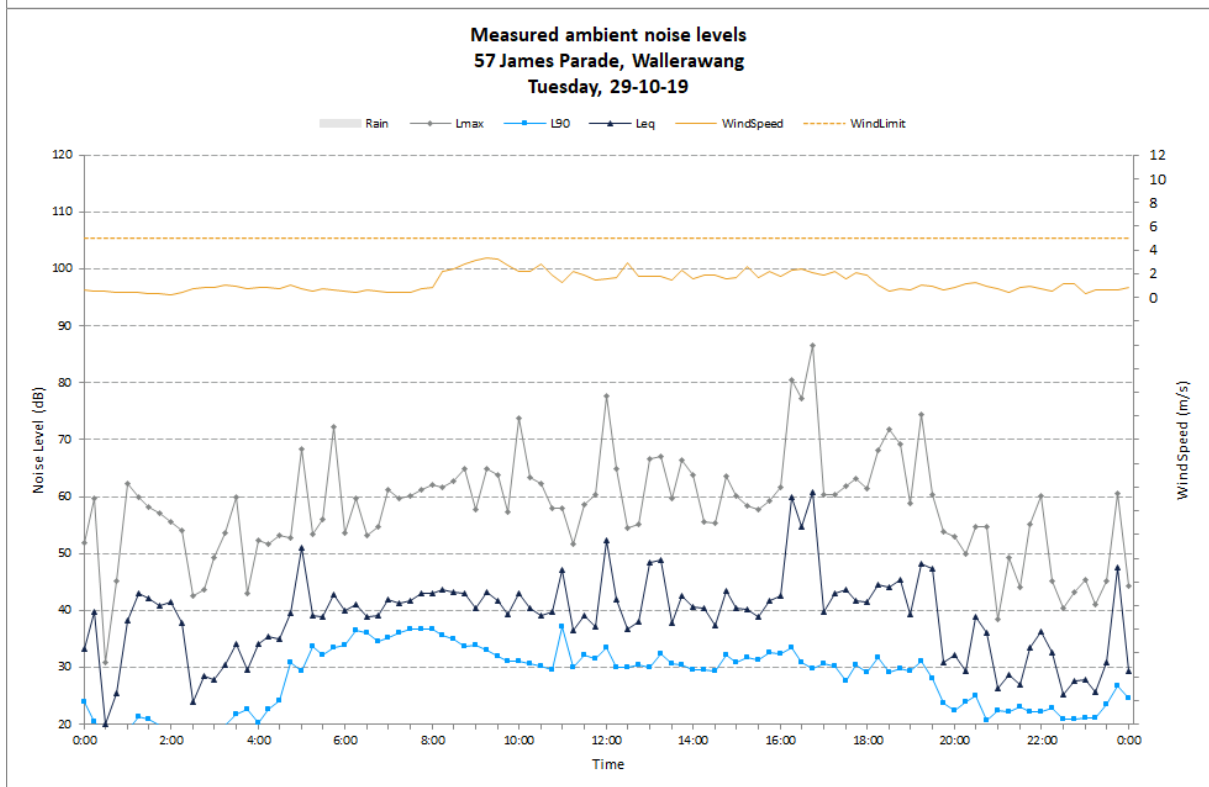
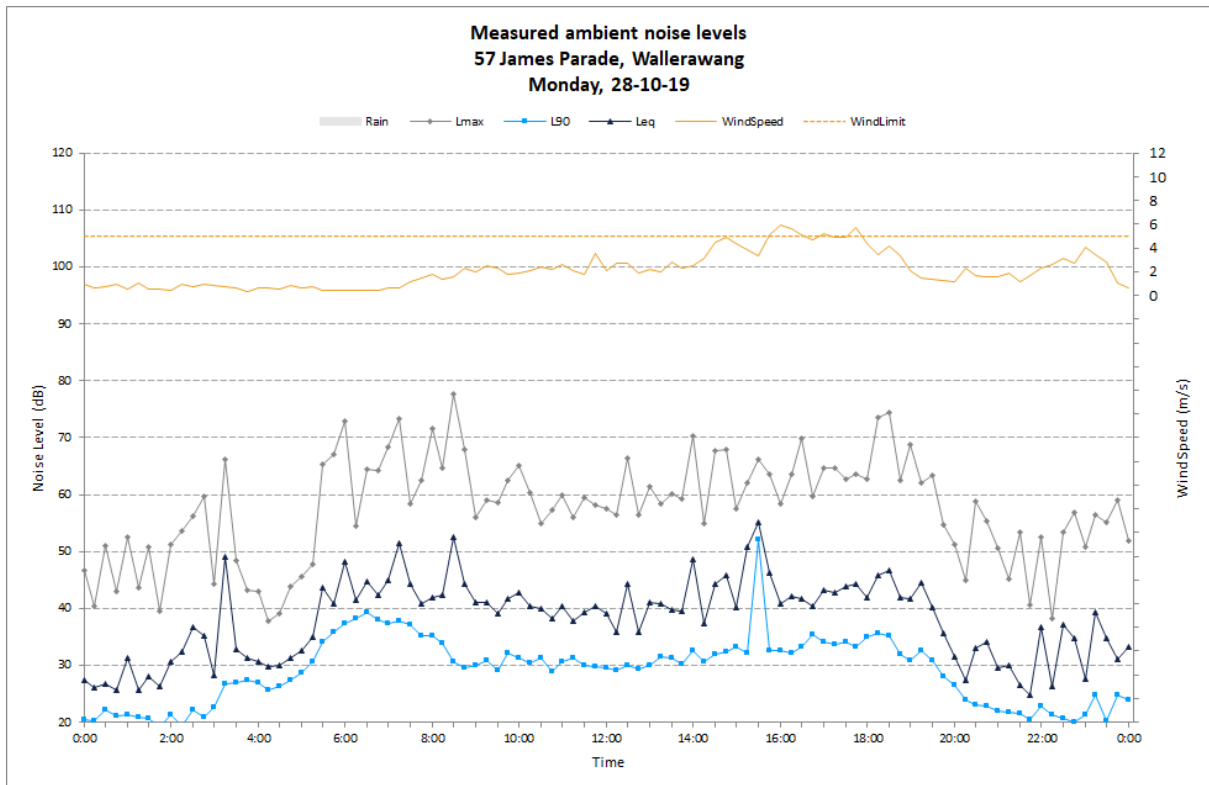


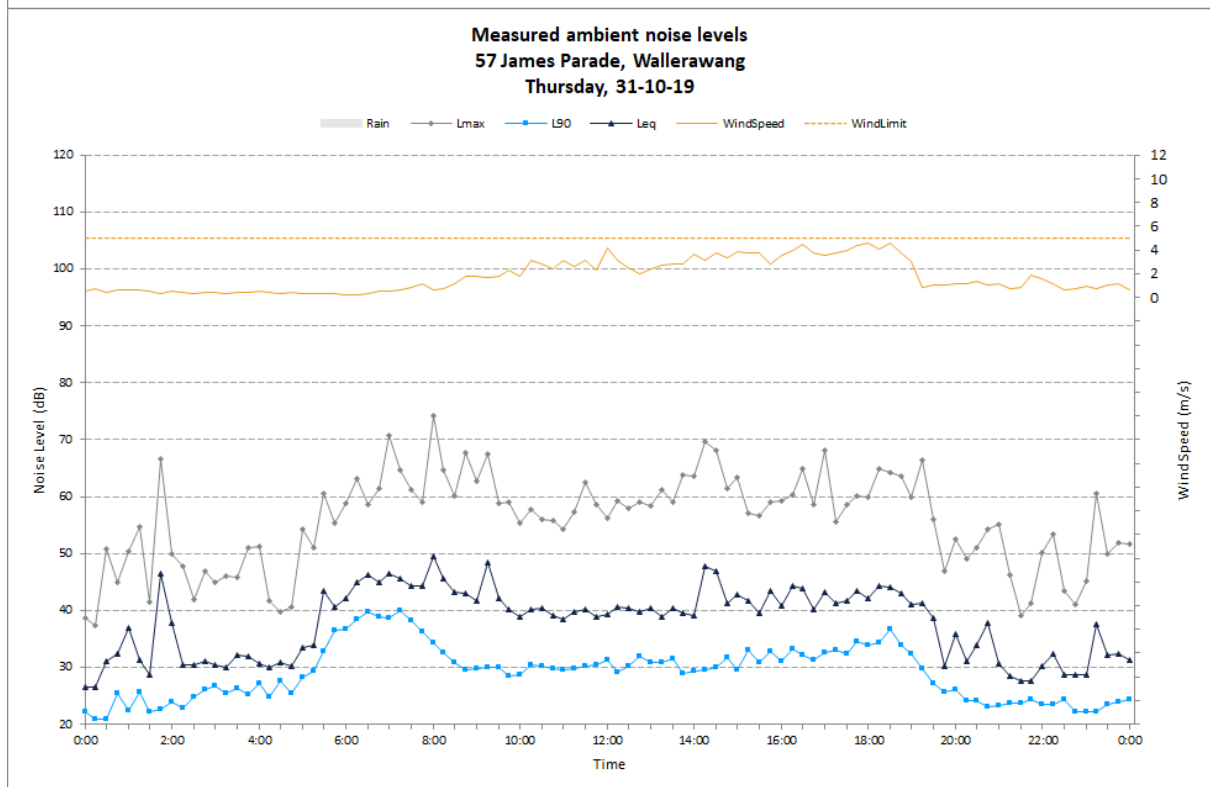
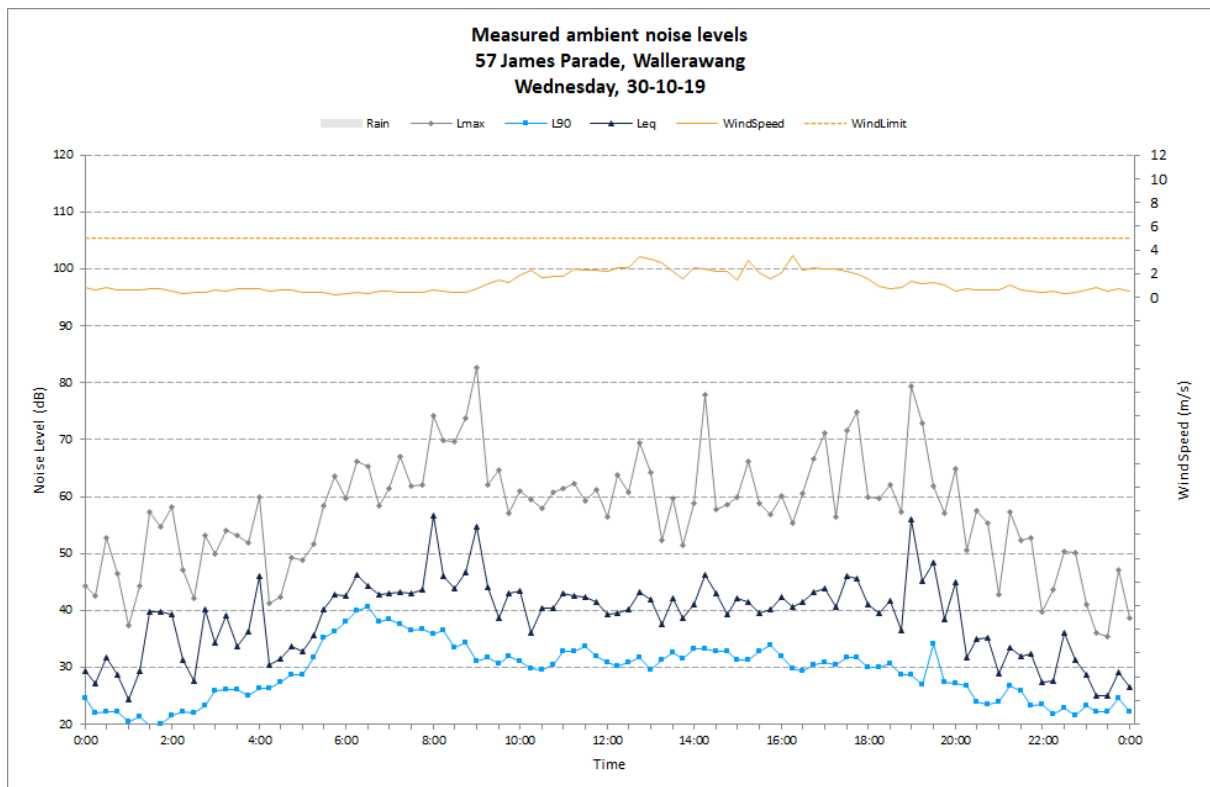












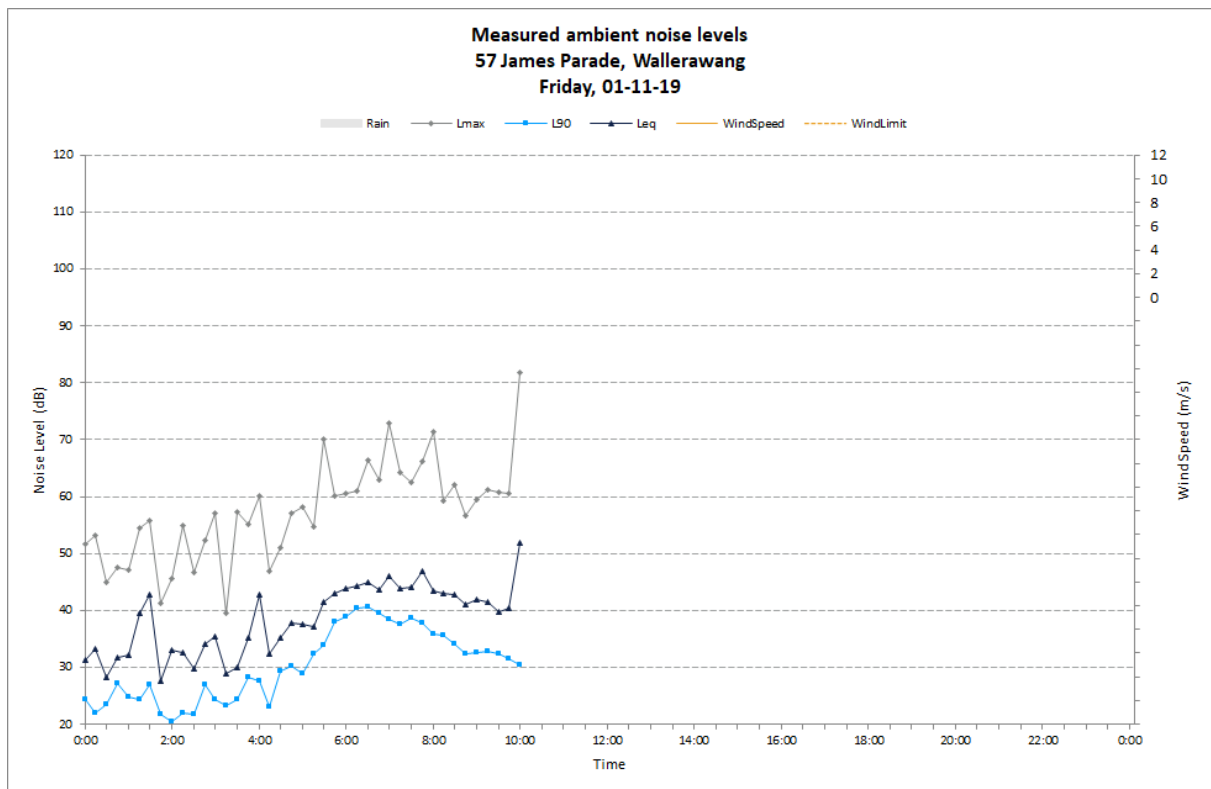
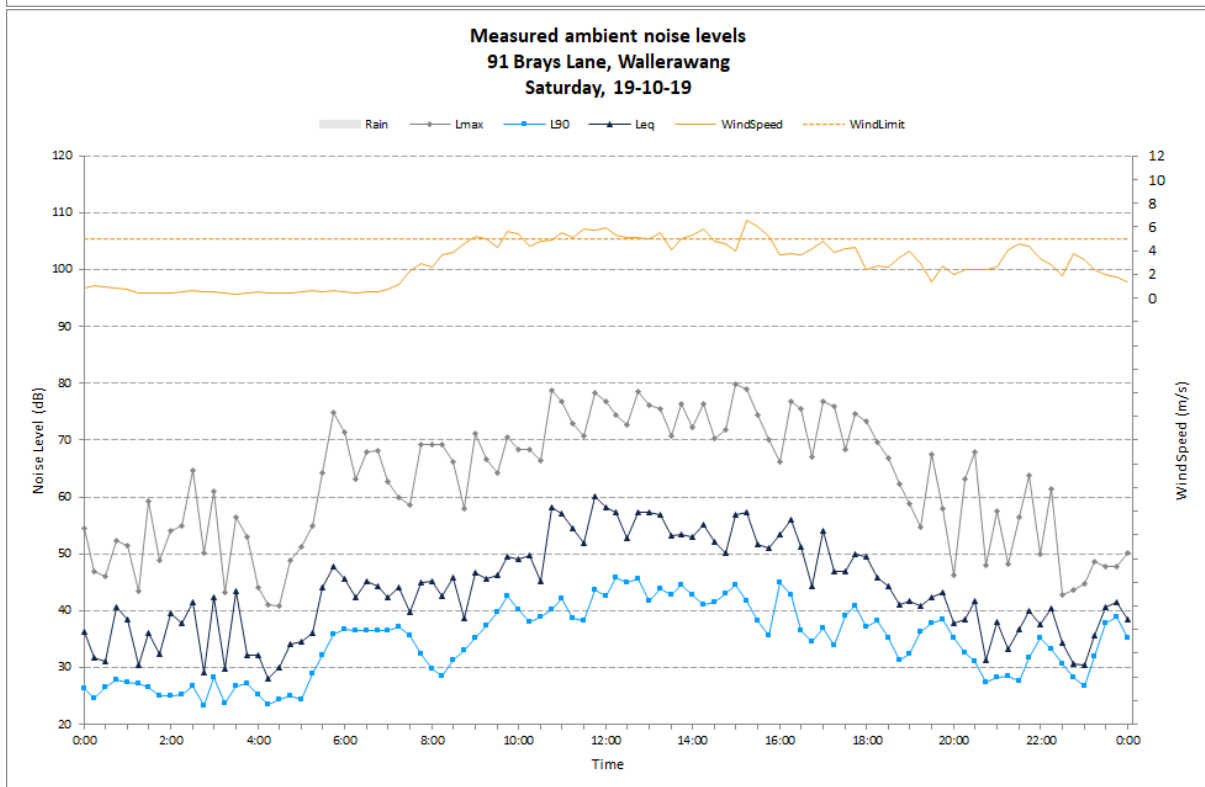
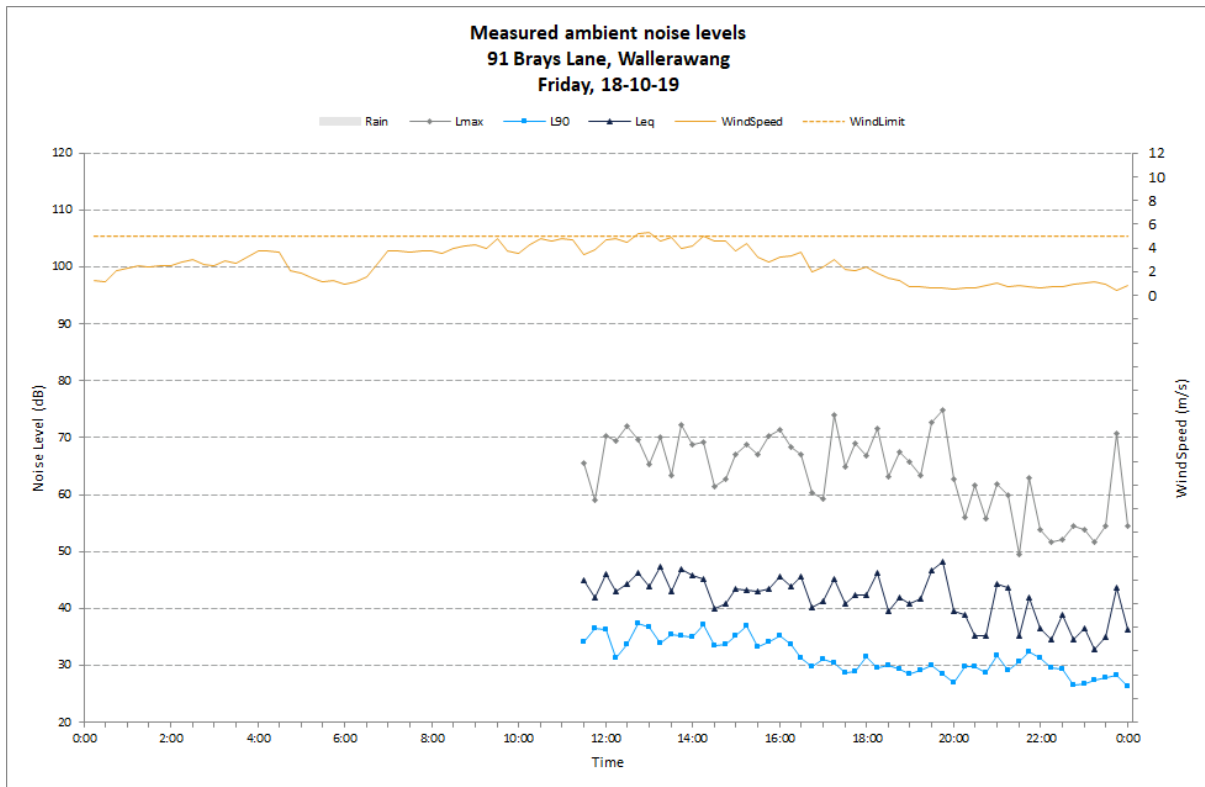
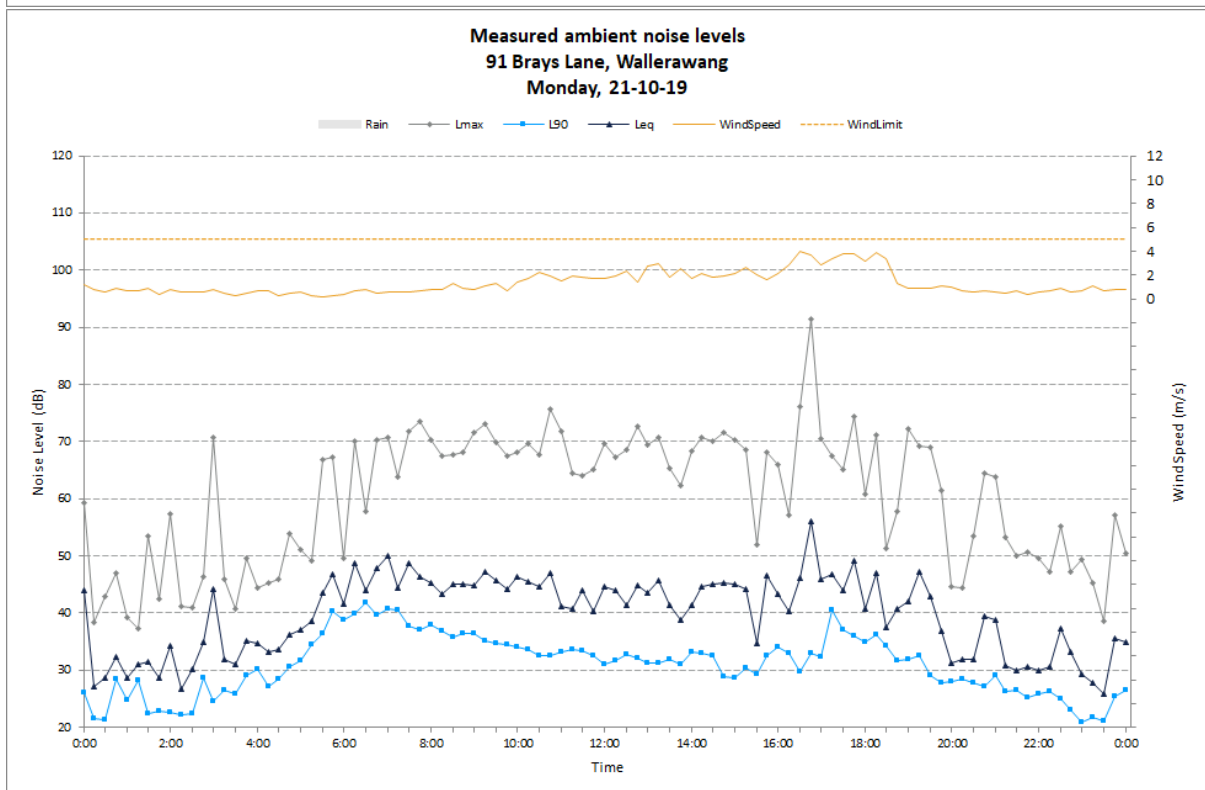
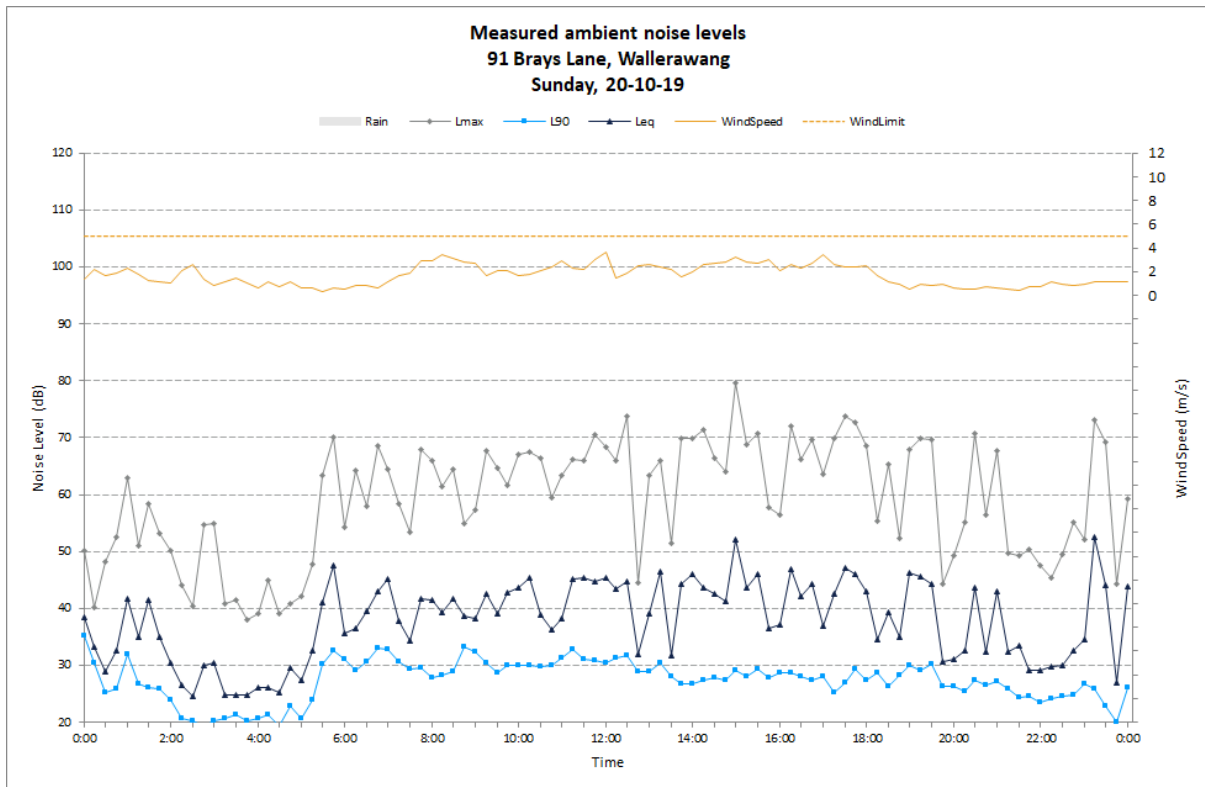


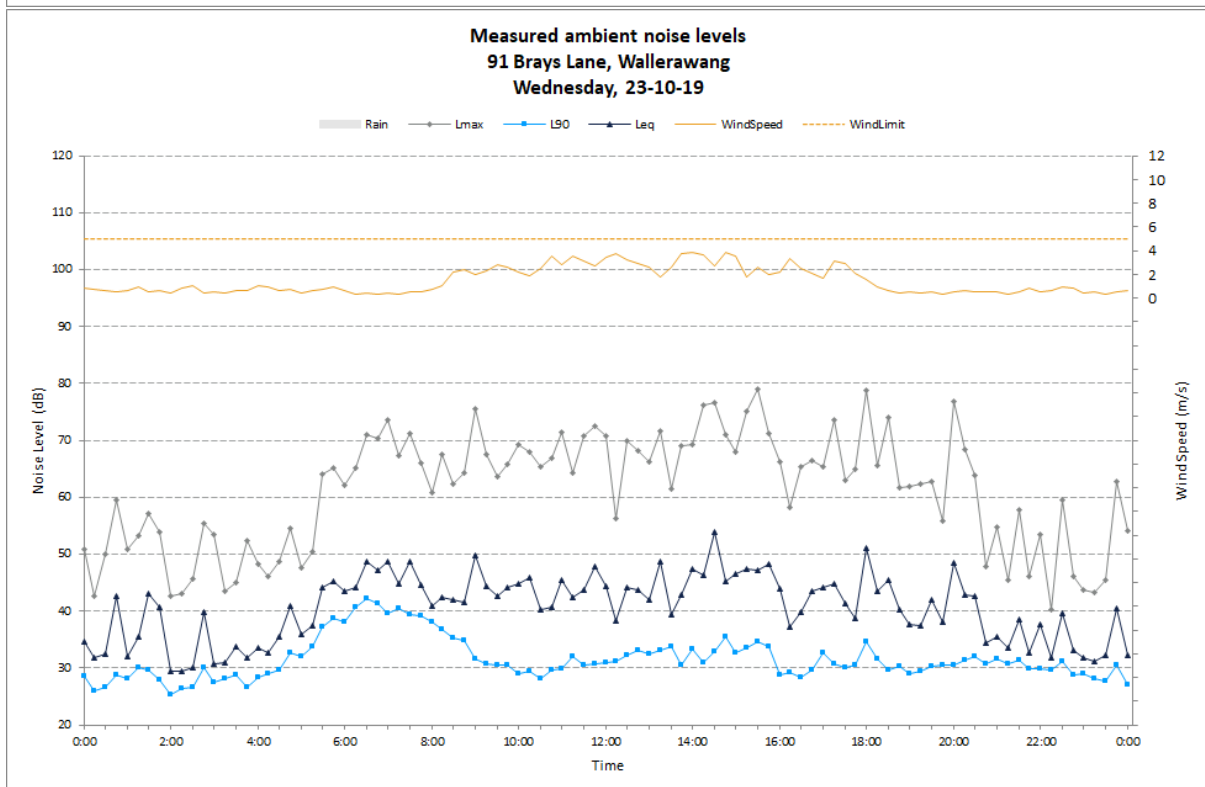
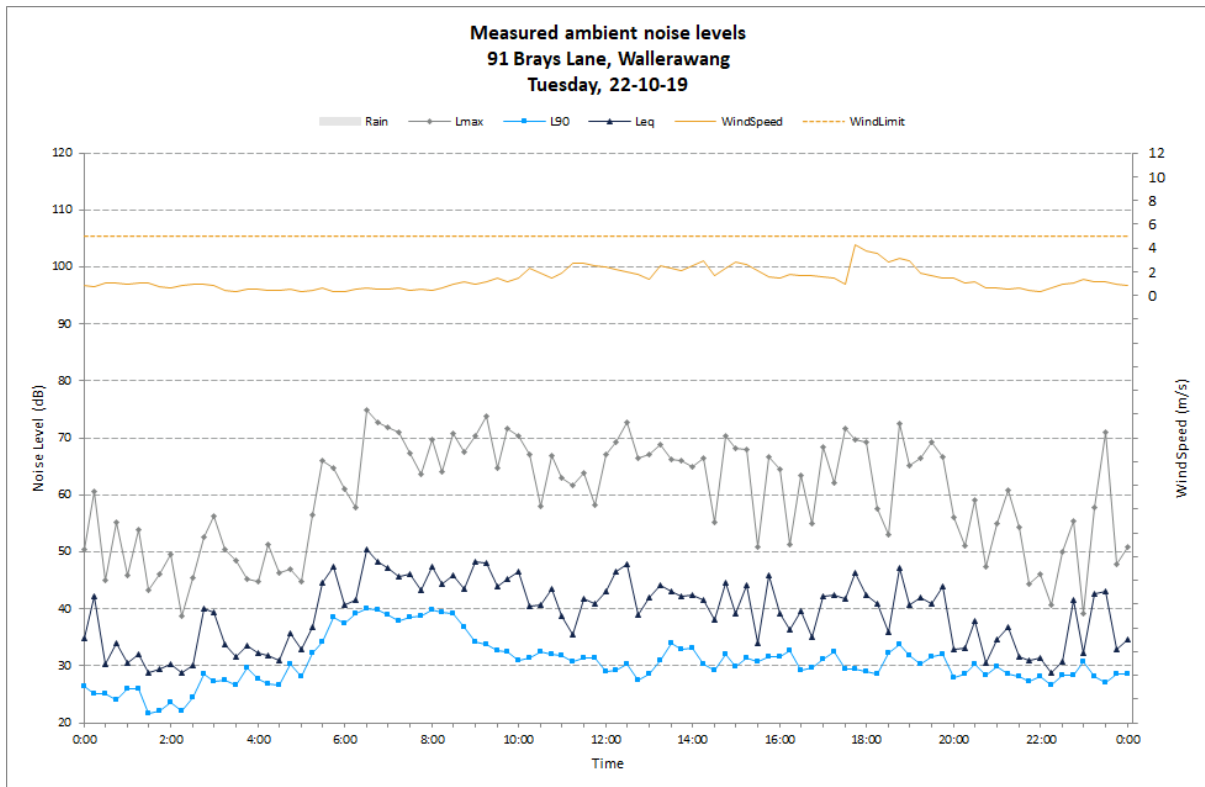
Table A.4 Summary of daily noise logging results – L4

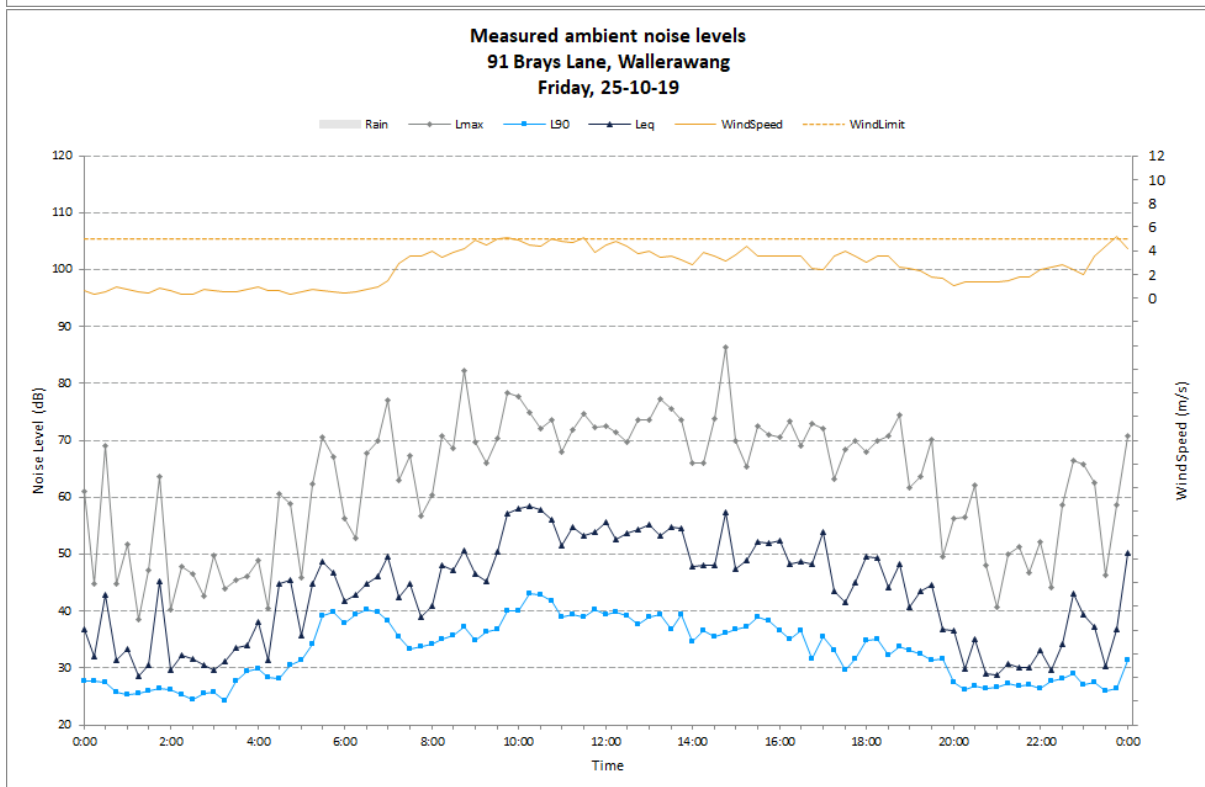
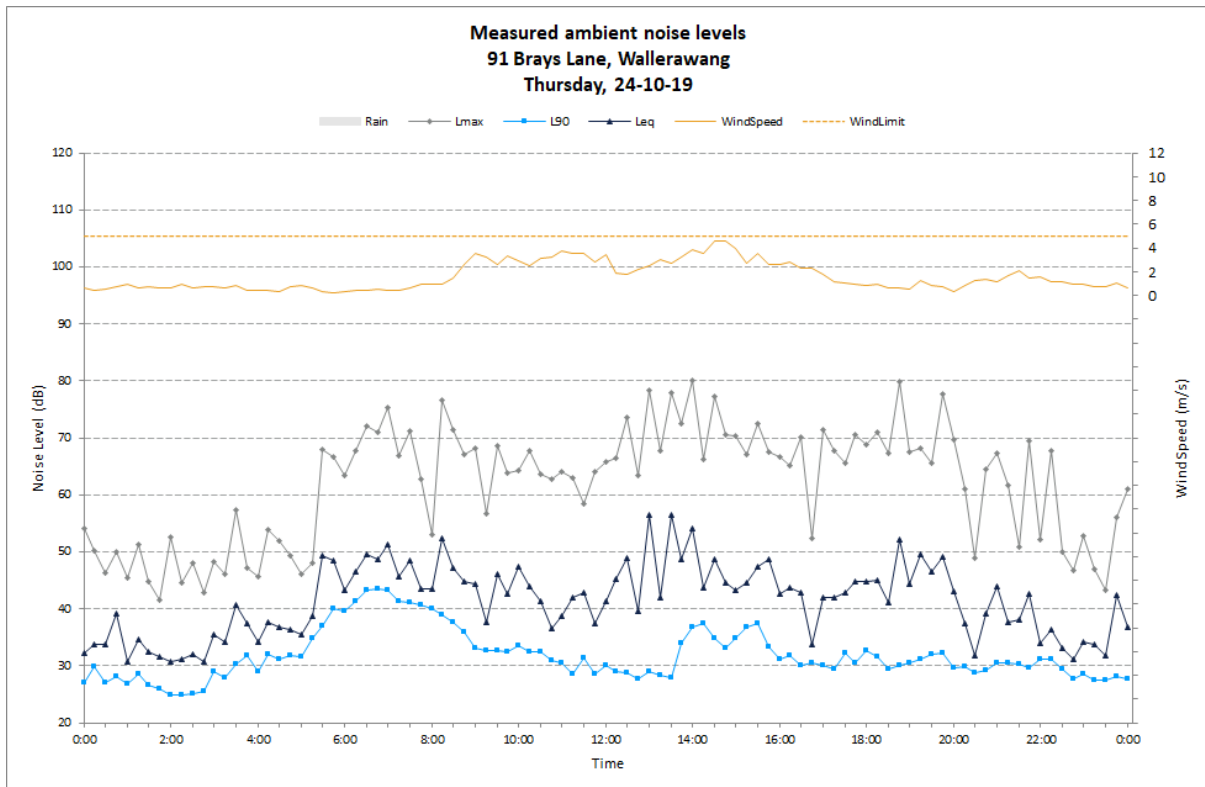
Date	RBL (Day)	RBL (Evening)	RBL (Night)	L _{Aeq,15 hour} , dB (Day)	L _{Aeq,4 hour} , dB (Evening)	L _{Aeq,9 hour} , dB (Night)
Friday, 18-10-19	0	28	24	0	43	40
Saturday, 19-10-19	0	28	20	0	41	38
Sunday, 20-10-19	27	24	22	44	40	43
Monday, 21-10-19	30	26	22	46	41	41
Tuesday, 22-10-19	29	28	27	44	40	41
Wednesday, 23-10-19	29	29	26	46	42	42
Thursday, 24-10-19	29	29	25	48	45	42
Friday, 25-10-19	33	26	0	53	42	0
Saturday, 26-10-19	0	29	22	0	47	40
Sunday, 27-10-19	28	26	24	44	40	44
Monday, 28-10-19	33	25	22	45	42	40
Tuesday, 29-10-19	29	27	24	46	40	42
Wednesday, 30-10-19	29	27	25	47	38	42
Thursday, 31-10-19	33	28	25	46	43	41
Friday, 01-11-19	0	0	0	0	0	0
Overall	29	28	24	47	42	42

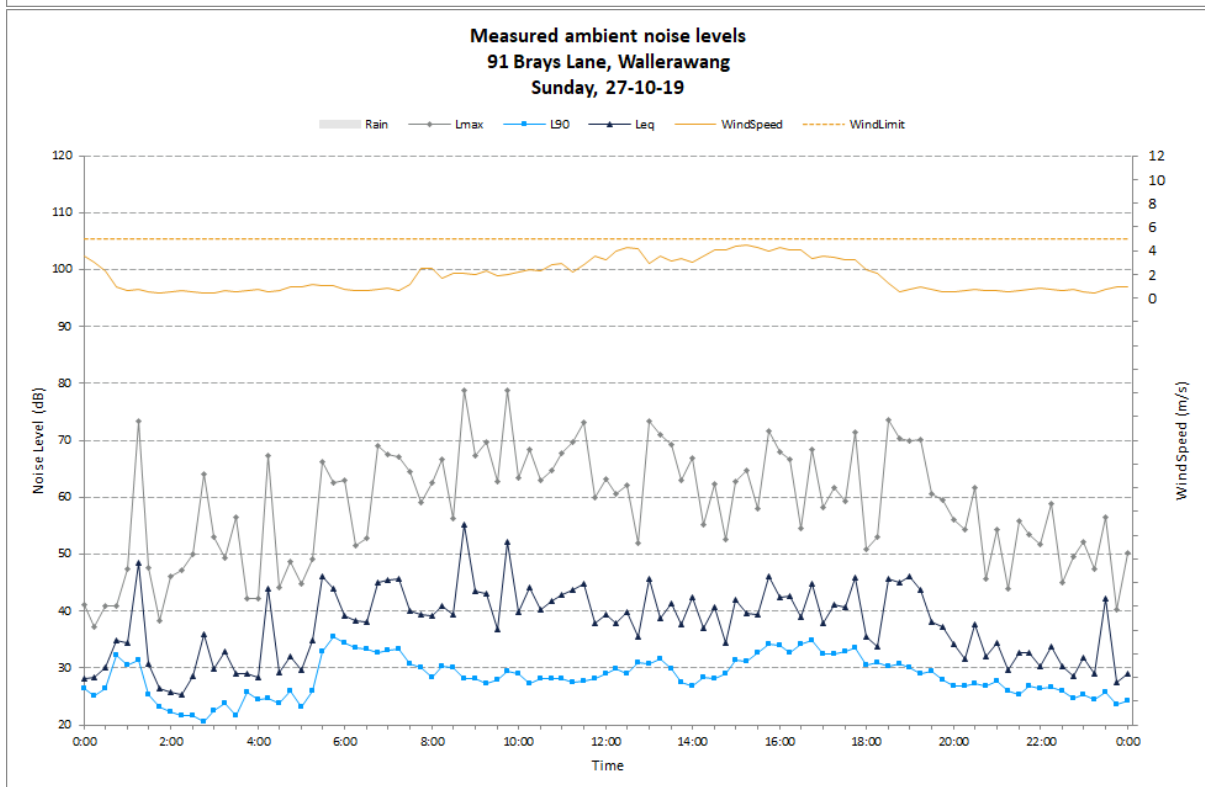
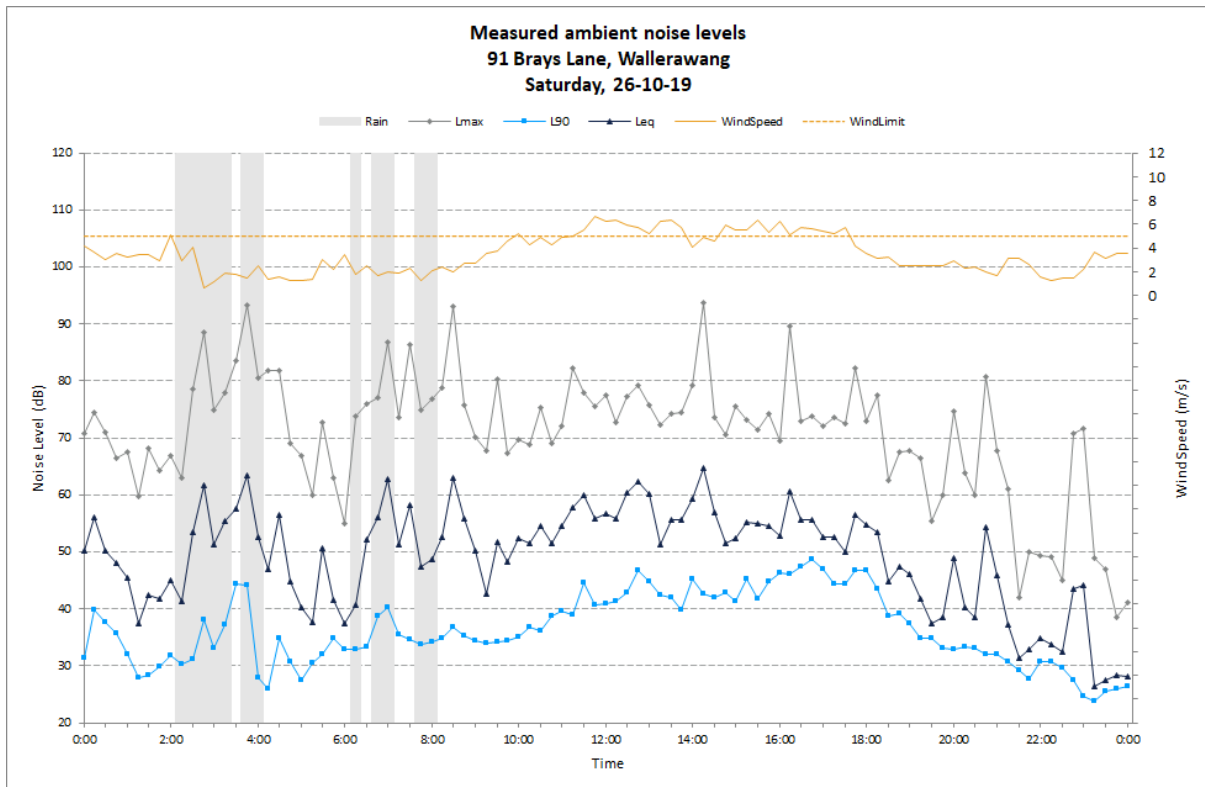
Notes: "0" indicates periods with too few valid samples due to weather or logger operation

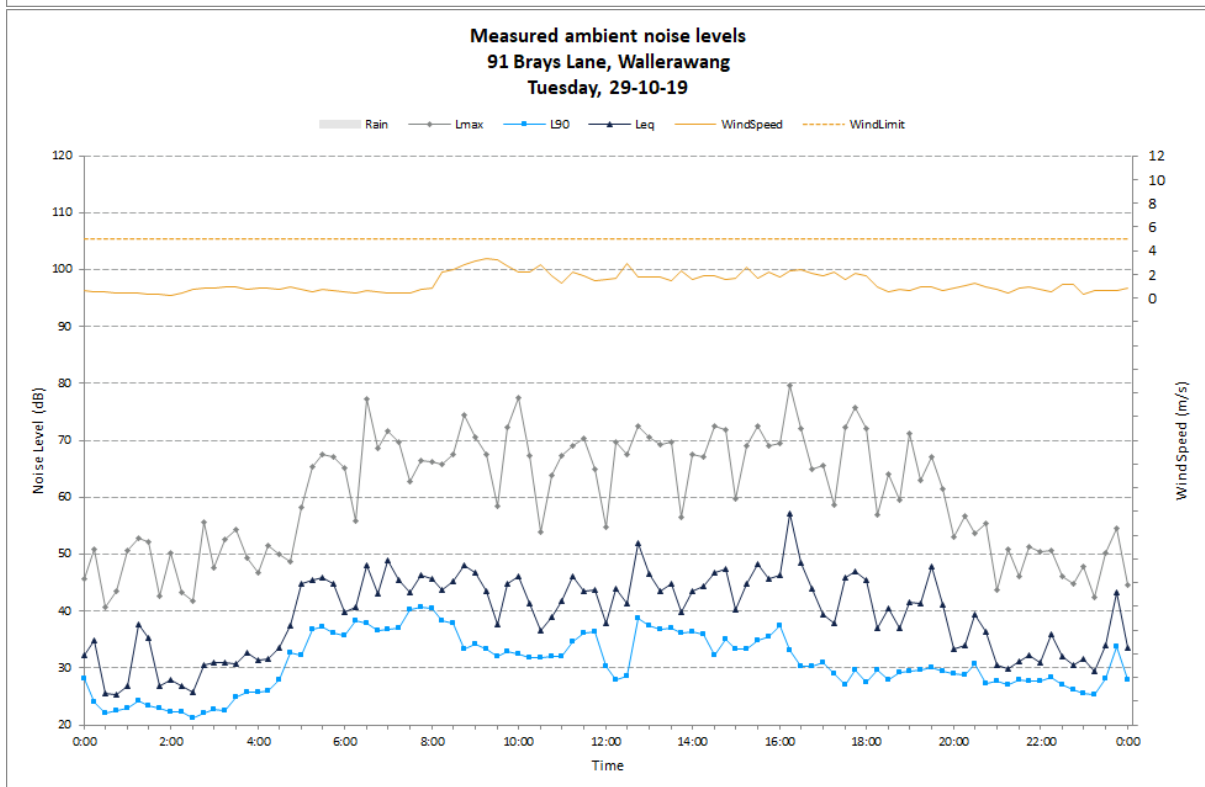
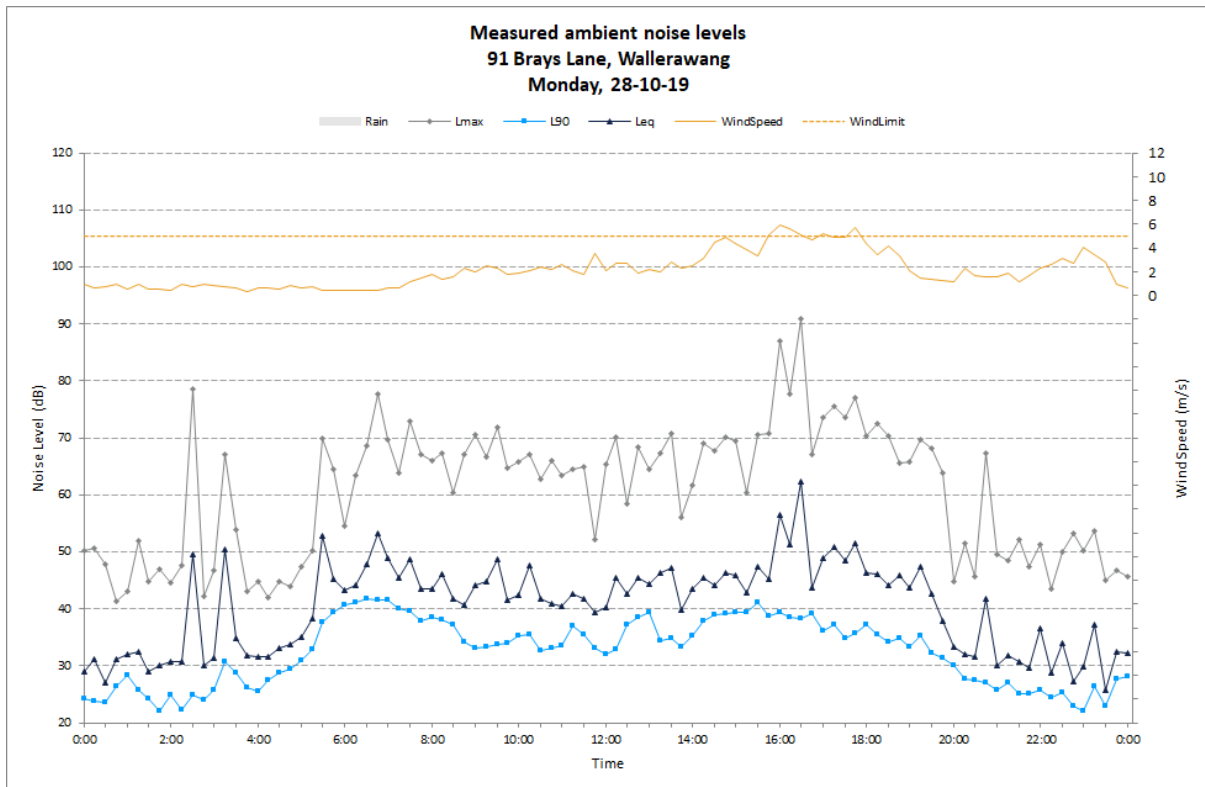


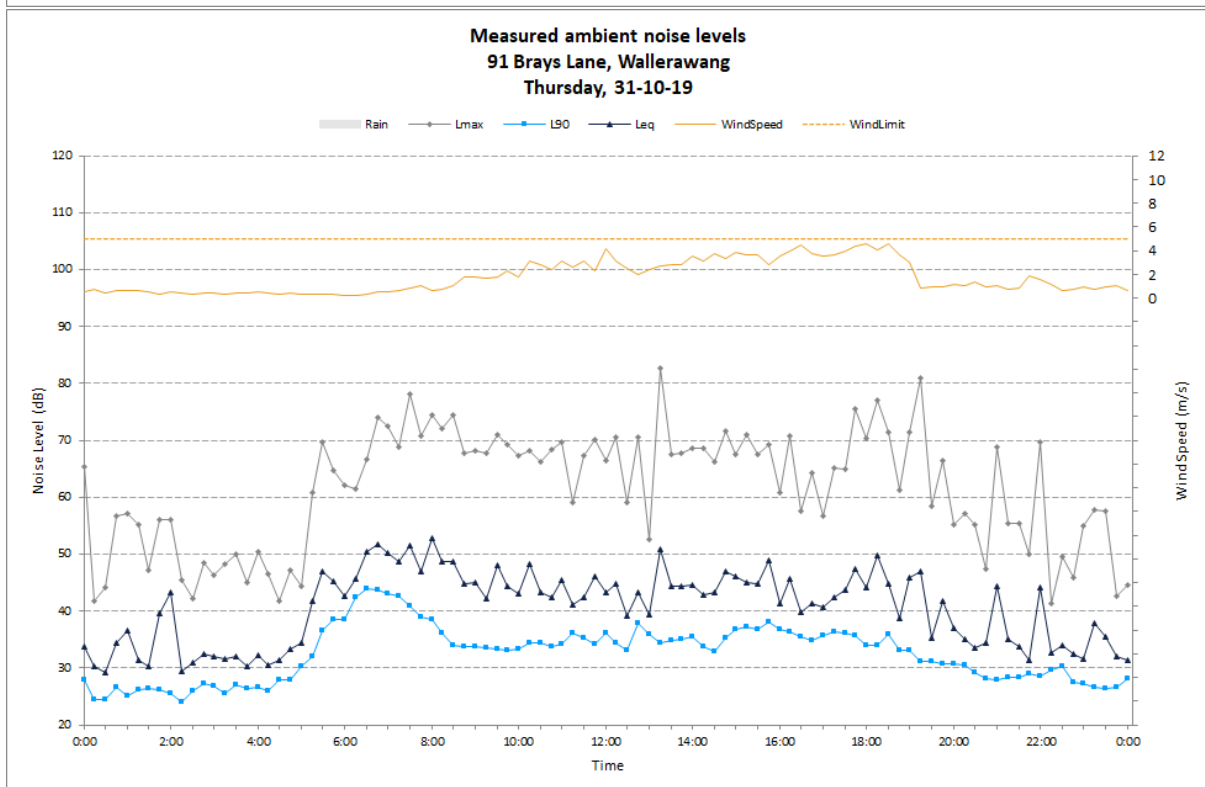
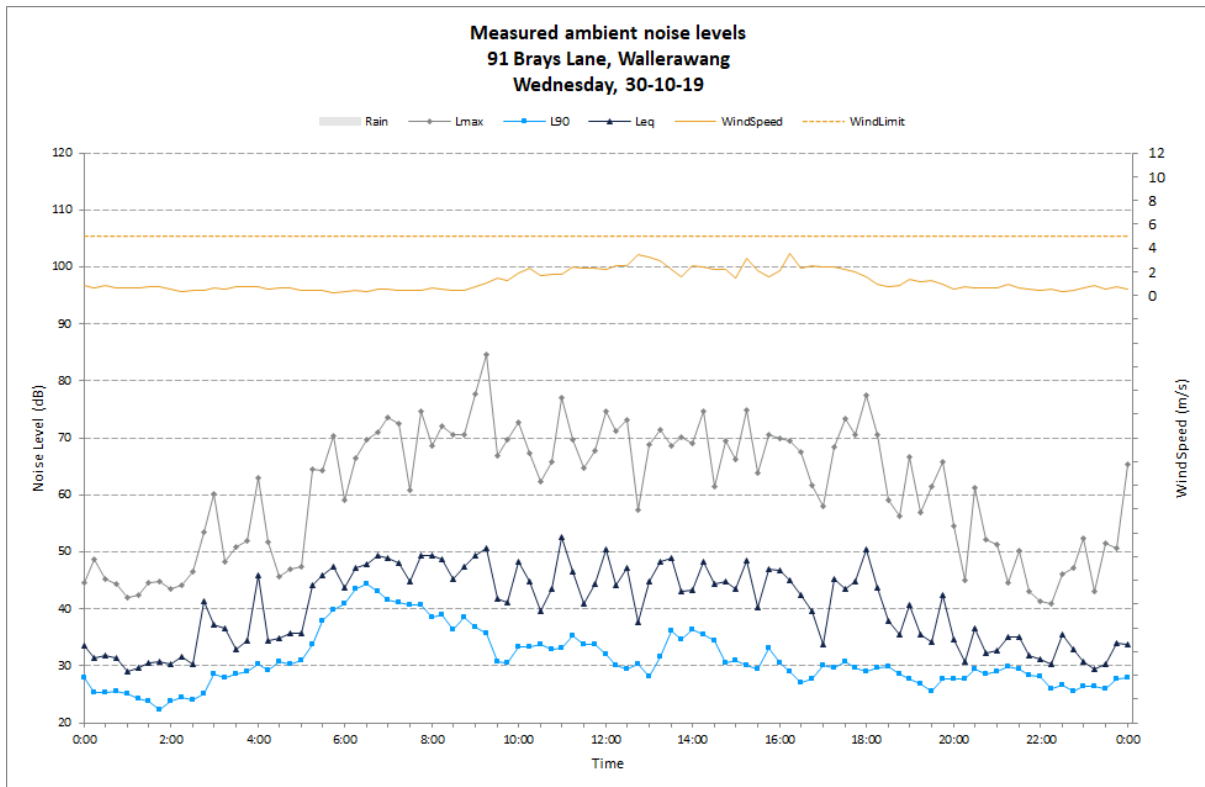


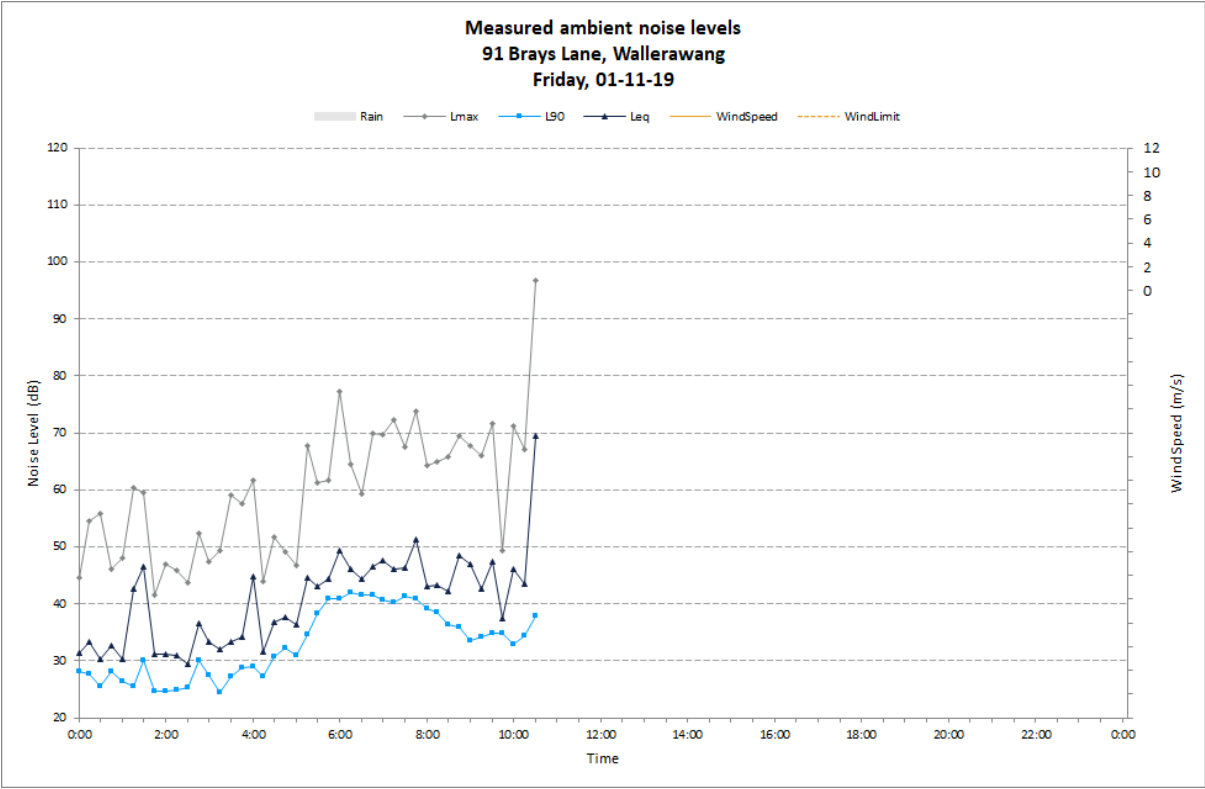












Appendix B

Operational noise modelling assumptions

