

BATTERY RECYCLING FACILITY

NOISE AND VIBRATION IMPACT ASSESSMENT

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PREPARED FOR

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GLOSSARY OF ACOUSTIC TERMS

Most environments are affected by environmental noise which continuously varies, largely as a result of road traffic. To describe the overall noise environment, a number of noise descriptors have been developed and these involve statistical and other analysis of the varying noise over sampling periods, typically taken as 15 minutes. These descriptors, which are demonstrated in the graph below, are here defined.

Maximum Noise Level (L_{Amax}) – The maximum noise level over a sample period is the maximum level, measured on fast response, during the sample period.

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

L_{A10} – The L_{A10} level is the noise level which is exceeded for 10% of the sample period. During the sample period, the noise level is below the L_{A10} level for 90% of the time. The L_{A10} is a common noise descriptor for environmental noise and road traffic noise.

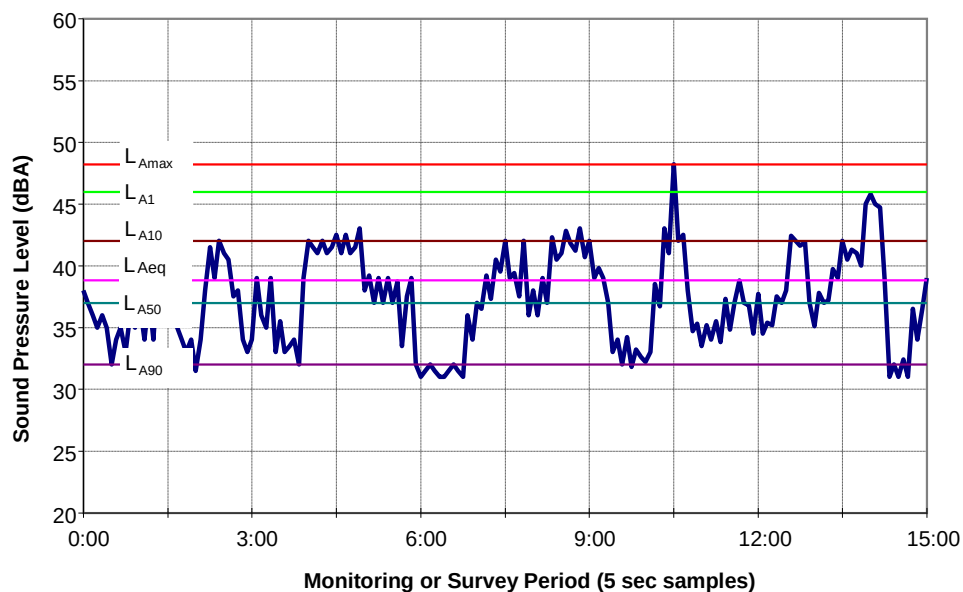
L_{A90} – The L_{A90} level is the noise level which is exceeded for 90% of the sample period. During the sample period, the noise level is below the L_{A90} level for 10% of the time. This measure is commonly referred to as the background noise level.

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

ABL – The Assessment Background Level is the single figure background level representing each assessment period (daytime, evening and night time) for each day. It is determined by calculating the 10th percentile (lowest 10th percent) background level (L_{A90}) for each period.

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

Typical Graph of Sound Pressure Level vs Time



1 INTRODUCTION

Ledox Australia Pty Ltd (Ledox) is seeking approval under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) for the construction of a Battery Recycling Facility (the Project) at 10 Lancaster Street Ingleburn (the site). The site location is shown in Figure 1-1.

The Project was declared to be State Significant Development (SSD). Assessment and approval is being pursued in accordance with the EP&A Act. The Secretary's Environmental Assessment Requirements (SEARs) for the project have been issued and set out the environmental assessment requirements for the project.

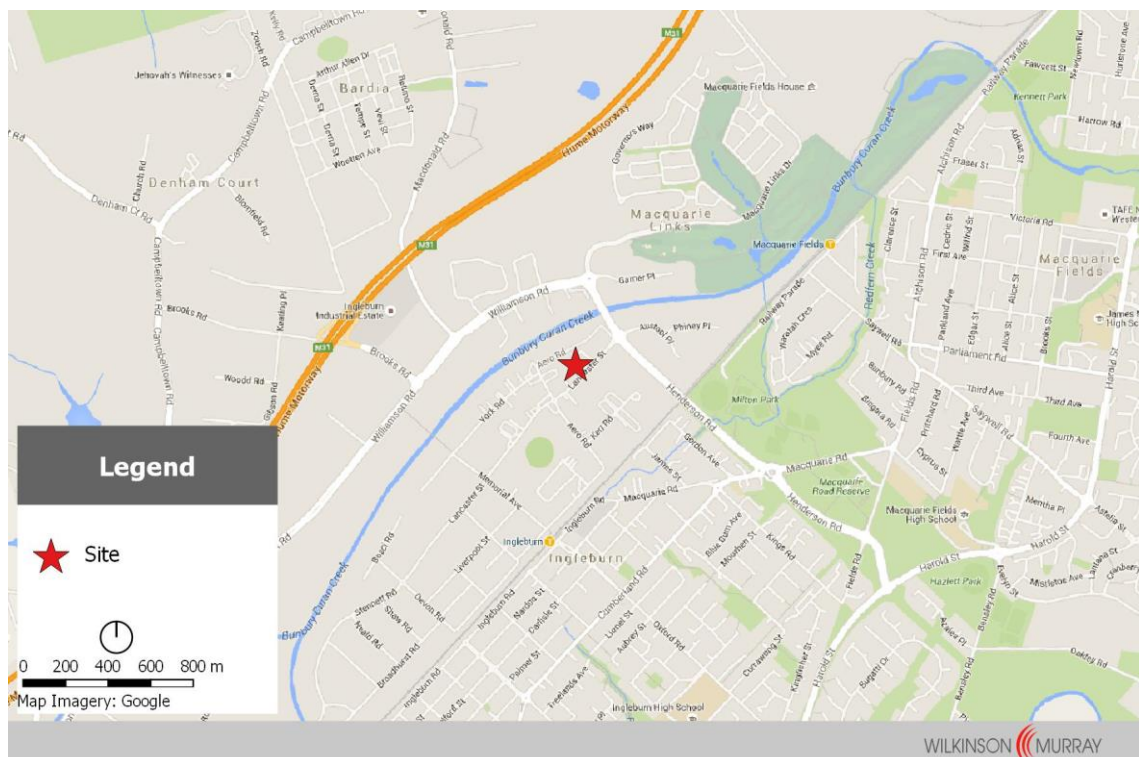
This Noise and Vibration Impact Assessment (NVIA) has been prepared to address the relevant SEARs in relation to the preparation of the Environmental Impact Statement (EIS) for the project, and was conducted in general accordance with the following NSW Government guidelines:

- *NSW Industrial Noise Policy* (EPA, 2000);
- *Noise Guide for Local Government* (EPA, 2013); and,
- *Interim Construction Noise Guideline* (DECC, 2009).

No significant sources of vibration have been identified for the Project, and therefore, a detailed assessment of potential vibration impacts is not considered necessary.

As presented in Section 2.1.2 and Section 2.2.2, the Project is anticipated to generate very small amounts of additional traffic on the surrounding road network, and all heavy vehicle movements will be along approved B-Double routes. Therefore, a detailed quantitative assessment of road traffic noise impacts is not considered necessary.

Figure 1-1 Site Location



2 THE PROJECT

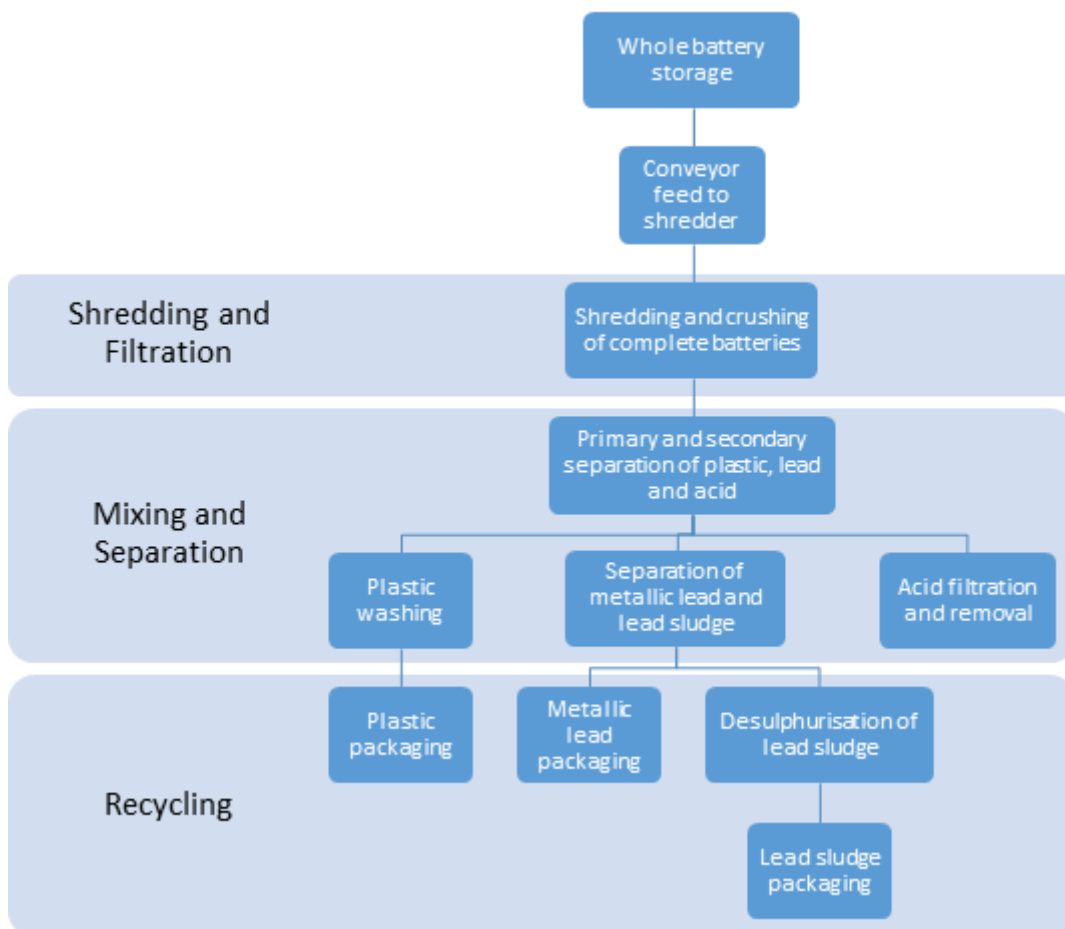
2.1 Operational Overview

The DA will seek consent for a battery recycling facility at the site. The proposed battery recycling facility will receive car batteries and the like, from distribution agents. The batteries will be broken down and recoverable components extracted for recycling and/or re-use. A diagram of the process and flow chart is shown in Figure 2-1.

The battery recycling process can be broken down into the following key stages:

1. Primary separation of plastic, lead and acid;
2. Washing and packaging of plastic;
3. Acid filtration and storage;
4. Separation and packaging of metallic lead; and
5. De-sulphurisation and packaging of lead paste.

Figure 2-1 Process Flow



Source: Boo Yeung Engineering

Only used car batteries will be recycled on site. Each battery comprises of recoverable lead and plastics which will be collected for reuse and waste materials that will require disposal. The facility will break down the batteries and output the following four materials:

- Plastic;
- Acid (sodium sulphate, Na_2SO_4);
- Metallic lead; and
- Lead paste.

The approximate breakdown of the components within the batteries is as follows (by weight) as shown in Table 2-1:

- Approximately 80% of the battery comprises lead plates and lead sludge that can be collected for reuse (40% being lead metal, 60% being lead paste);
- Approximately 5% of the battery comprises plastics that are recoverable for recycling; and,
- Approximately 15% of the battery is made of sulphuric acid.

Table 2-1 Battery Composition

Material	Weight (%)
Electrolyte (sulphuric acid)	15
Lead Sulphate	10
Lead Oxide	40
Lead Grid or Metal	30
Polypropylene	3
Heavy Plastics, Paper, Fibres etc.	2

The lead and plastic will be stored on site and exported overseas. The acid will be stored in a storage tank outside of the main building, and will be emptied by a private contracting company (HydroMet via UHM) who will handle the waste offsite.

It is intended to recover the lead plates and lead sludge to be transported to Korea for re-processing into new car batteries. The processing capacity of the facility means that approximately 1,800 tonnes of lead could be recovered for recycling per month (where one tonne is approximately 60 batteries).

The residual waste materials will be removed by a suitably licenced contractor for disposal. Residual plastics may also be recycled, where appropriate recycling schemes are available locally.

2.1.1 Hours of Operation

The proposed operating hours for the development are:

- 7:00am – 7:00pm Monday to Friday; and,
- 9:00am – 3:00pm Saturday.

2.1.2 Operational Traffic Generation

During the operation of the Project, up to 14 light vehicle movements are anticipated during the day; comprising seven movements in both the am and pm peak periods.

The Project is also expected to generate up to 10 heavy vehicle movement per week, associated with the delivery of batteries, and the outward shipping of recycled materials. All heavy vehicles would access the site via Roads and Maritime Services (RMS) approved B-Double routes along Lancaster Road, Henderson Road, Williamsons Road, Brooks Road, and the Hume Motorway.

2.2 Construction Overview

The Project will use the existing building on the site, and the existing entry and exit points onto Lancaster Street. Accordingly, the construction activities associated with the development will be minor, and will be primarily associated with the delivery and installation of the recycling plant.

There is potential for sections of the roof to be removed temporarily to facilitate the installation of large plant that cannot fit through the existing roller doors. Additionally, a small area within the building may be excavated by up to one metre to facilitate the installation of the battery shredder.

The construction of the Project is anticipated to take place over a period of approximately 6 months.

2.2.1 Construction Hours

All construction activities are proposed to be undertaken within the following standard construction hours:

- 7:00am – 6:00pm Monday to Friday;
- 8:00am – 1:00pm Saturday; and,
- No work on Sundays or public holidays.

2.2.2 Construction Traffic

The anticipated maximum daily traffic, generated by the construction of the Project, would be 10 vehicle movements.

All heavy construction vehicles would access the site via RMS approved B-Double routes, as identified in Section 2.1.2.

3 SITE DESCRIPTION

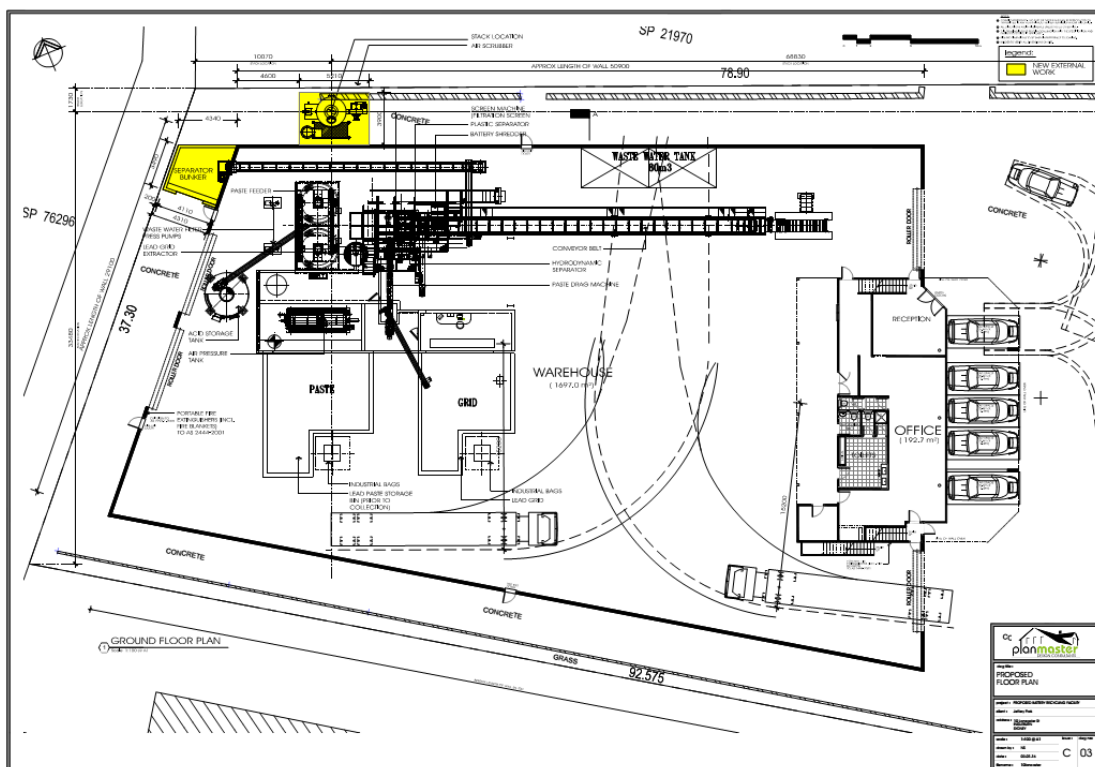
3.1 Site Location and Layout

The Site is located along the northern side of Lancaster Street, near the intersection with Henderson Road. The site is 0.38 hectares in size.

The existing building on the site features cast concrete walls, and a steel roof. Offices are located at the front of the building. Two large roller doors, one on either side of the offices, provide access to the main internal area.

The site layout is shown in Figure 3-1.

Figure 3-1 Site Layout



3.2 Surrounding Land Use and Sensitive Receivers

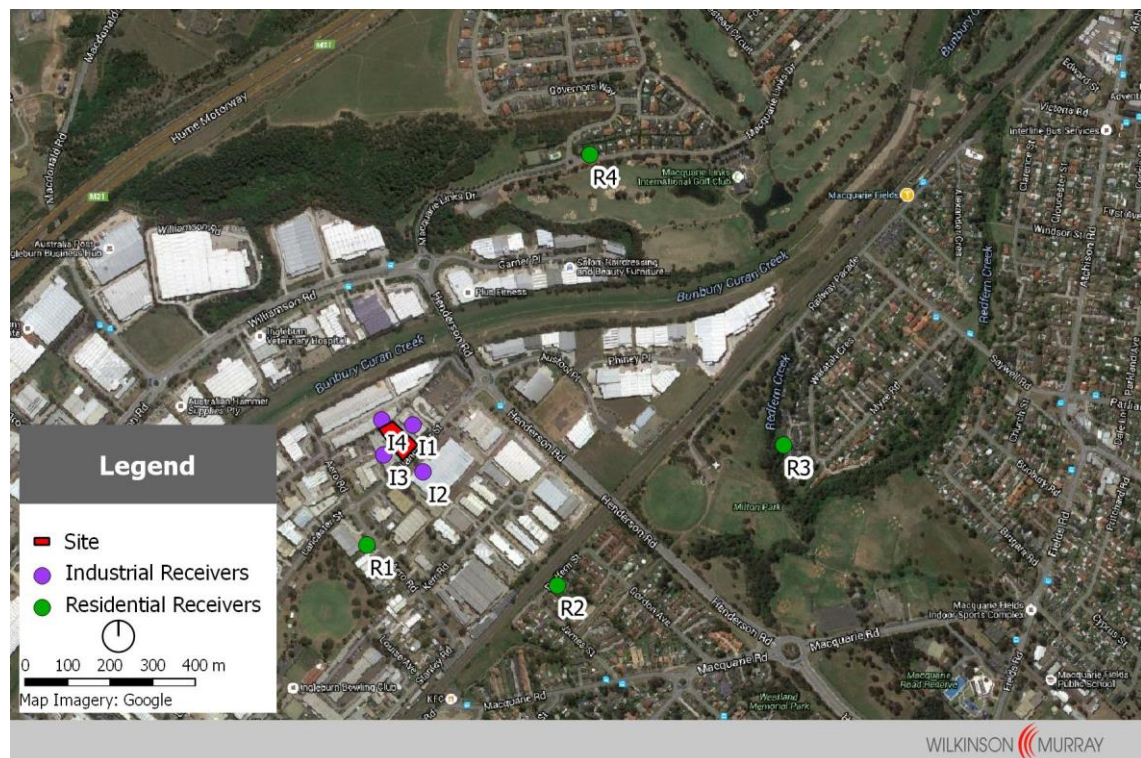
The land use immediately surrounding the site is industrial. Industrial receivers are located immediately adjacent to the site to the north, east and west; and across Lancaster Street to the south. The nearest, and most potentially affected industrial receivers are identified in Table 3-1 and shown in Figure 3-2.

The nearest residential receiver is located at 34 Aero Road, approximately 240 metres south of the Site. A number of additional sensitive residential receivers have been identified in the area surrounding the site. These are identified in Table 3-1 and shown in Figure 3-2.

Table 3-1 Sensitive Receivers

Receiver	Address	Distance from Site
I1	8 Lancaster Street, Ingleburn	Boundary
I2	5-7 Lancaster Street, Ingleburn	Boundary
I3	14 Lancaster Street, Ingleburn	Boundary
I4	19 Aero Road, Ingleburn	30 m
R1	34 Aero Road, Ingleburn	240 m
R2	13 Redfern Street, Ingleburn	480 m
R3	27-29 Waratah Crescent, Macquarie Fields	890 m
R4	1 Macquarie Links Drive, Macquarie Links	790 m

Figure 3-2 Sensitive Receivers

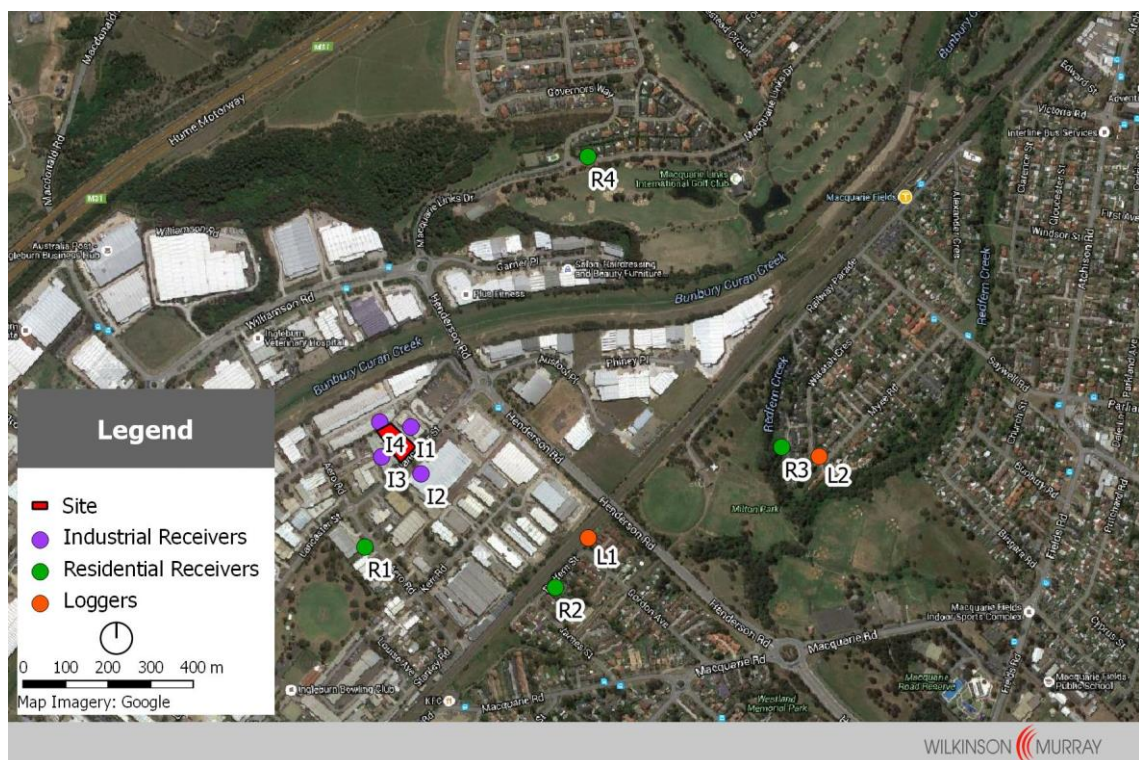


4 EXISTING NOISE ENVIRONMENT

To establish existing noise levels in the areas surrounding the development, unattended noise monitoring was conducted between 1 and 14 October 2015. Noise monitoring was conducted at 2 Gordon Avenue, Ingleburn (L1) and 34 Myee Road, Macquarie Fields (L2). The monitoring locations are presented in Figure 4-1.

Monitoring location L1 is considered representative of the most potentially affected residential receivers in the vicinity of R1 and R2. Monitoring location L2 is considered representative of the most potentially affected residential receivers in the vicinity of R3 and R4.

Figure 4-1 Noise monitoring locations



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

From the background noise levels (L_{A90}) the Rating Background Levels (RBLs) were determined using the methodology recommended in the NSW *Industrial Noise Policy*.

The existing ambient noise levels are presented in Table 4-1. Daily plots of the noise logger data are presented in Appendix A.

The dominant sources of noise at L1 were associated with transportation, specifically road traffic along the Hume Highway, Henderson Road; and rail traffic along the Southern Sydney Freight Line and the Cumberland passenger rail line.

Table 4-1 Existing ambient noise levels

Monitoring location	Represented receivers	Time period*	Noise Levels (dBA)	
			RBL	L _{Aeq}
L1	R1 & R2	Day	43	63
		Evening	40	63
		Night	34	63
L2	R3 & R4	Day	39	53
		Evening	38	49
		Night	35	49

* Day = 7:00am – 6:00pm, Evening = 6:00pm – 10:00pm, Night = 10:00pm – 7:00am

5 NOISE CRITERIA

5.1 Operational Noise Criteria

The NSW *Industrial Noise Policy* (INP) provides the framework for establishing noise criteria and assessing impacts from sources of industrial noise. This policy seeks to promote environmental well-being through preventing and minimising noise.

There are two noise criteria which should be satisfied under the INP. The first being the "intrusiveness" criterion which assesses the likelihood of noise being intrusive above the ambient noise level. The intrusiveness criterion applies for residential receivers only.

The second noise criterion, known as the "amenity" criterion, ensures the total industrial noise from all sources in the area does not rise above a maximum acceptable level.

The INP stipulates that intrusiveness and amenity criteria are determined for the daytime (7:00am 6:00pm), evening (6:00pm 10:00pm) and night time (10:00pm 7:00am) periods, as relevant. The determined criteria apply at the most affected point on or within the receiver property boundary. As presented in Section 2.1.1, the Project will only operate during the daytime and evening. Accordingly, operational noise criteria will be established for these periods only.

5.1.1 INP Intrusiveness Criteria

The intrusiveness criterion requires that the L_{Aeq} noise level from the source being assessed, when measured over 15 minutes, should not exceed the Rating Background Noise Level (RBL) by more than 5 dBA.

Based on the established background noise levels, Table 5-1 summarises the intrusiveness noise criteria which apply to the identified receivers.

Table 5-1 Project specific intrusiveness criteria

Receiver	$L_{Aeq,15min}$ Intrusiveness Criterion (dBA)	
	Day*	Evening*
R1 & R2	43+5 = 48	40+5 = 45
R3 & R4	39+5 = 44	38+5 = 43

* Day = 7:00am – 6:00pm, Evening = 6:00pm – 10:00pm.

It should be noted that residential receivers along Aero Road, in the vicinity of R1, are located on land which is zoned for industrial use. In strict accordance with the INP, the intrusiveness criterion would not be applied at these receivers, and they would only be assessed against the applicable amenity criteria. However, a conservative approach has been taken in this assessment, and the intrusiveness criterion will be applied to these receivers.

5.1.2 INP Amenity Criteria

The amenity criterion sets a limit on the total noise level from *all industrial noise sources* affecting a receiver. Different criteria apply for different types of receiver (e.g. residence, school classroom); different areas (e.g. rural, suburban); and different time periods, namely daytime (7:00am-6:00pm), evening (6:00pm-10:00pm) and night time (10:00pm-7:00am).

The noise level to be compared with this criterion is the L_{Aeq} noise level, measured over the time period in question, due to all industrial noise sources, but excluding non-industrial sources such as transportation.

Where a new noise source is proposed in an area with negligible existing industrial noise, the amenity criterion for that source may be taken as being equal to the overall amenity criterion. However, if there is significant existing industrial noise, the amenity criterion for any new source must be set at a lower value. If existing industrial noise already exceeds the relevant amenity criterion, noise from any new source must be set well below the overall criterion to ensure that any increase in noise levels is negligible. Methods for determining a source-specific amenity criterion where there is existing industrial noise are set out in the *INP*.

The INP amenity criteria are shown in Table 5-2.

Table 5-2 Amenity Criteria

Type of Receiver	Indicative Noise Amenity Area	Time of Day*	Recommended $L_{Aeq, period}$ Noise Level, (dBA)	
			Acceptable	Recommended Maximum
Residence	Rural	Day	50	55
		Evening	45	50
		Night	40	45
	Suburban	Day	55	60
		Evening	45	50
		Night	40	45
	Urban	Day	60	65
		Evening	50	55
		Night	45	50
School classroom – internal	All	Noisiest 1-hour period when in use	35	40
Hospital Ward				
Internal	All	Noisiest 1-hour	35	40
External	All	Noisiest 1-hour	50	55
Place of Worship – internal	All	When in use	40	45
Passive recreation area (e.g. National park)	All	When in use	50	55
Active recreation area (e.g. playground, golf course)	All	When in use	55	60
Commercial premises	All	When in use	65	70
Industrial premises	All	When in use	70	75

* Day = 7:00am – 6:00pm, Evening = 6:00pm – 10:00pm, Night = 10:00pm – 7:00am

In accordance with the INP, residential receivers R1 and R2 are classified as 'urban' residential receivers. R3 and R4 are classified as 'suburban' residential receivers, and I1 through I4 are classified as industrial receivers.

The land use surrounding the project site and sensitive receivers features a number of industrial developments. However during site visits, significant levels of industrial noise were not audible at sensitive receiver locations. This is primarily due to the significant levels of transportation noise in the area. It is estimated that the existing level of industrial noise at residential receivers in the vicinity of the Ingleburn industrial area, represented by R1 and R2, is less than 45 dBA during the daytime and evening. Due to the increased separation from industrial land use, the existing level of industrial noise at receivers near R3 and R4 are estimated to be less than 40 dBA during the daytime and evening.

The amenity criteria for sensitive residential receivers in proximity to the project have been adjusted, in accordance with the INP, to account for the existing levels of industrial noise, and are presented in Table 5-3.

Table 5-3 Project Specific Amenity Criteria for Residential Receivers

Receiver	Time Period	Existing Industrial Noise (dBA – $L_{Aeq, period}$)	Adjusted Amenity Criteria (dBA – $L_{Aeq, period}$)
R1 & R2	Day	45	60
	Evening	45	48
R3 & R4	Day	40	55
	Evening	40	43

* Day = 7:00am – 6:00pm, Evening = 6:00pm – 10:00pm.

5.1.3 Project-Specific Noise Levels

To simplify operational noise assessments, it is desirable to establish a single set of criteria for the relevant assessment periods. These criteria are referred to as the Project Specific Noise Levels (PSNL) and are equal to the most stringent of the established intrusiveness and amenity criteria for each assessment period.

Since $L_{Aeq, 15min}$ noise levels are higher than $L_{Aeq, period}$ noise levels, care must be taken when establishing PSNL. For example, $L_{Aeq, 15min}$ noise levels from this project would be approximately 3 – 5 dB higher than $L_{Aeq, period}$ noise levels at the most affected receivers.

Table 5-4 presents the INP criteria for this project, along with the PSNL.

Table 5-4 INP Criteria and Project Specific Noise Levels

Receiver	Time Period	Criteria (dBA)		PSNL ($L_{Aeq, 15min}$)
		Intrusiveness ($L_{Aeq, 15min}$)	Amenity ($L_{Aeq, period}$)	
R1 & R2	Day	48	60	48
	Evening	45	48	45
R3 & R4	Day	44	55	44
	Evening	43	43	43
I1 – I4	When in use	n/a	70	73

* Day = 7:00am – 6:00pm, Evening = 6:00pm – 10:00pm, Night = 10:00pm – 7:00am

It is worth noting that another advantage of establishing PSNL using the $L_{Aeq, 15min}$ noise descriptor is the additional ease of confirming compliance with the criteria since noise compliance measurements conducted in accordance with the INP are done so using the $L_{Aeq, 15min}$ descriptor.

To this end, an equivalent $L_{Aeq, 15min}$ PSNL has been developed for industrial receivers I1 – I4. Since $L_{Aeq, 15min}$ noise levels from the development would typically be 3 – 5 dB higher than $L_{Aeq, period}$ noise levels, an $L_{Aeq, 15min}$ PSNL of 73 dBA has been established for industrial receivers near the development.

5.2 Construction Noise Criteria

The NSW EPA's *Interim Construction Noise Guidelines (ICNG)* recommends noise management levels (NML) to reduce the likelihood of noise impacts arising from construction activities. The ICNG NML for residential receivers are shown in Table 5-5.

It is expected that all construction activities will be conducted within standard construction hours. Based on the RBLs in Table 4-1, the construction noise management levels for this project are presented in Table 5-6.

The ICNG also recommends an $L_{Aeq, 15min}$ construction noise management level of 75 dBA for industrial premises.

Table 5-5 ICNG Noise Management Levels for Residential Receivers

Time of Day	Management Level $L_{Aeq,15min}$	How to Apply
Recommended Standard Hours: Monday to Friday 7am to 6pm Saturday 8am to 1pm No work on Sundays or Public Holidays	Noise affected RBL + 10 dBA	The noise affected level represents the point above which there may be some community reaction to noise. - Where the predicted or measured $L_{Aeq, 15min}$ is greater than the noise affected level, the proponent should apply all feasible and reasonable work practices to meet the noise affected level. - The proponent should also inform all potentially impacted residents of the nature of works to be carried out, the expected noise levels and duration, as well as contact details.
	Highly noise affected 75 dBA	The highly noise affected level represents the point above which there may be strong community reaction to noise. - Where noise is above this level, the relevant authority (consent, determining or regulatory) may require respite periods by restricting the hours that the very noisy activities can occur, taking into account: - times identified by the community when they are less sensitive to noise (such as before and after school for works near schools, or mid-morning or mid-afternoon for works near residences; - if the community is prepared to accept a longer period of construction in exchange for restrictions on construction times.
	Outside recommended standard hours	- A strong justification would typically be required for works outside the recommended standard hours. - The proponent should apply all feasible and reasonable work practices to meet the noise affected level. - Where all feasible and reasonable practices have been applied and noise is more than 5dB(A) above the noise affected level, the proponent should negotiate with the community.

Table 5-6 Project specific construction NML

Receiver	Acceptable $L_{Aeq, 15min}$ Noise Level (Standard daytime construction hours)
R1 & R2	58
R3 & R4	54
I1 – I4	75

6 ASSESSMENT OF IMPACTS

6.1 Noise Modelling Methodology and Assumptions

6.1.1 Noise Prediction Software

To predict the potential noise impacts from the operation and construction of the project an acoustic model, implementing the CONCAWE algorithms, has been prepared using the CadnaA environmental noise modelling software. Factors addressed in the noise model are:

- Equipment noise emissions and locations;
- Shielding from structures;
- Noise attenuation due to geometric spreading;
- Ground absorption; and,
- Atmospheric absorption.

6.2 Operational Noise Impacts

The following section identifies equipment and activities, associated with the operation of the development, which are likely to generate significant noise emissions and presents the predicted noise levels at nearby receivers.

6.2.1 Sources of Operational Noise

The most significant sources of operational noise associated with the Project are the recycling plant, operating within the building, and truck and forklift movements on the hardstand in front of the building.

Based on information from the manufacturer of the recycling plant, and from an inspection of the building, it is estimated that the worst-case $L_{Aeq, 15min}$ reverberant sound pressure level inside the building would be approximately 85 dBA. It is assumed that the two large roller doors at the front of the main building would remain open during operations.

As presented in Section 2.1.2, approximately 5 trucks would visit the site per week, therefore a single truck and a forklift are considered a reasonable estimate of the worst-case activities on the hard stand area.

In addition to the noise sources identified above, air conditioning for the offices would be installed on the roof of the building, and a scrubber would be installed on the external wall of the building, near the northern corner of the site. Based on previous measurements by Wilkinson Murray, the sound power level of the air conditioning unit and the scrubber is estimated to be 75 dBA and 85 dBA, respectively.

6.2.2 Predicted Operational Noise Levels at Nearby Receivers

Noise levels at sensitive receivers have been predicted as outlined above, and are presented in Table 6-1. The predicted noise levels are based on the assumption that the facility is operating at peak, worst-case conditions.

Table 6-1 Predicted $L_{Aeq, 15min}$ Noise Levels – Opening Hours

Receiver	Predicted $L_{Aeq, 15min}$ Noise Level (dBA)	Criterion		Complies?
		Daytime	Evening	
R1	28	48	45	Yes
R2	21	48	45	Yes
R3	<20	44	43	Yes
R4	<20	44	43	Yes
I1	66	73	73	Yes
I2	55	73	73	Yes
I3	69	73	73	Yes
I4	53	73	73	Yes

Review of Table 6-1 indicates that the predicted operational noise levels at nearby receivers comply with the established criteria during the proposed hours of operation.

6.3 Cumulative Operational Noise Impacts

The INP amenity criterion places an upper limit on the acceptable total level of industrial noise from all nearby sources. As presented in Section 5.1.2, the project specific amenity criteria account for the existing levels of industrial noise at sensitive receivers.

Therefore, since the project specific amenity criteria are considered when establishing the Project Specific Noise Levels (PSNL); a cumulative noise assessment has implicitly been conducted in any assessment of operational noise, conducted in accordance with the INP.

6.4 Construction Noise Impacts

6.4.1 Construction Activities, Hours and Equipment

The construction of the Project involves a number of minor modifications to the existing building and the installation of the battery processing plant.

All construction activities are proposed to be undertaken within the following standard construction hours:

- 7:00am – 6:00pm Monday to Friday;
- 8:00am – 1:00pm Saturday; and,
- No work on Sundays or public holidays.

Significant sources of construction noise include trucks, cranes and hand tools. The total $L_{Aeq, 15min}$ Sound Power Level of the construction plant and equipment anticipated to be used is 110 dBA.

6.4.2 Predicted Construction Noise Levels at Nearby Receivers

The predicted $L_{Aeq, 15min}$ noise levels at nearby receivers during the construction of the Project are presented in Table 6-2.

Table 6-2 Predicted Construction Noise Levels at Nearby Receivers

Receiver	Predicted Noise Level	NML	Complies?
R1	36	58	Yes
R2	27	58	Yes
R3	20	54	Yes
R4	20	54	Yes
I1	70	75	Yes
I2	64	75	Yes
I3	72	75	Yes
I4	65	75	Yes

Review of Table 6-2 indicates that $L_{Aeq, 15min}$ construction noise levels comply with the established NML at all receivers.

7 CONCLUSION

A Noise and Vibration Impact Assessment (NVIA) has been conducted for the proposed Battery Recycling Facility at 10 Lancaster Street, Ingleburn.

Potential noise and vibration impacts associated with the development have been assessed consistent with the Secretary's Environmental Assessment Requirements issued for the project. The assessment investigates potential impacts associated with operations and construction, and has been conducted in general accordance with relevant NSW Government guidelines.

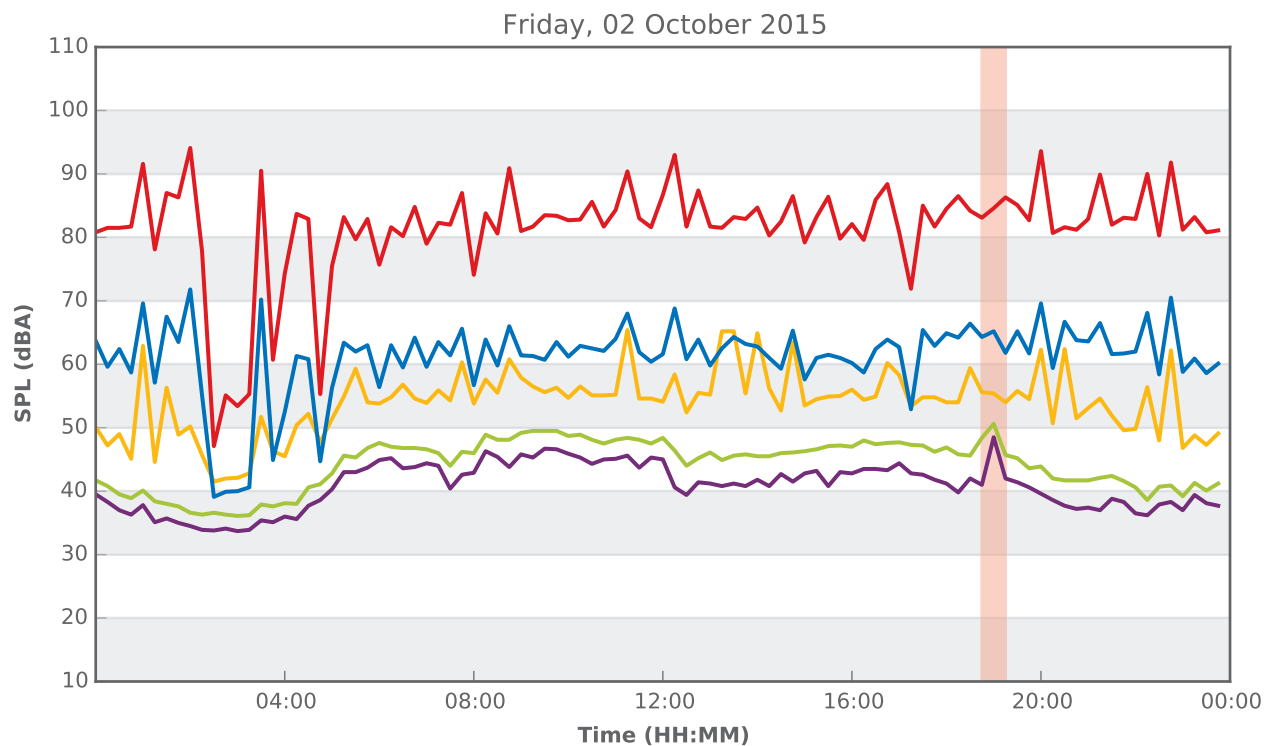
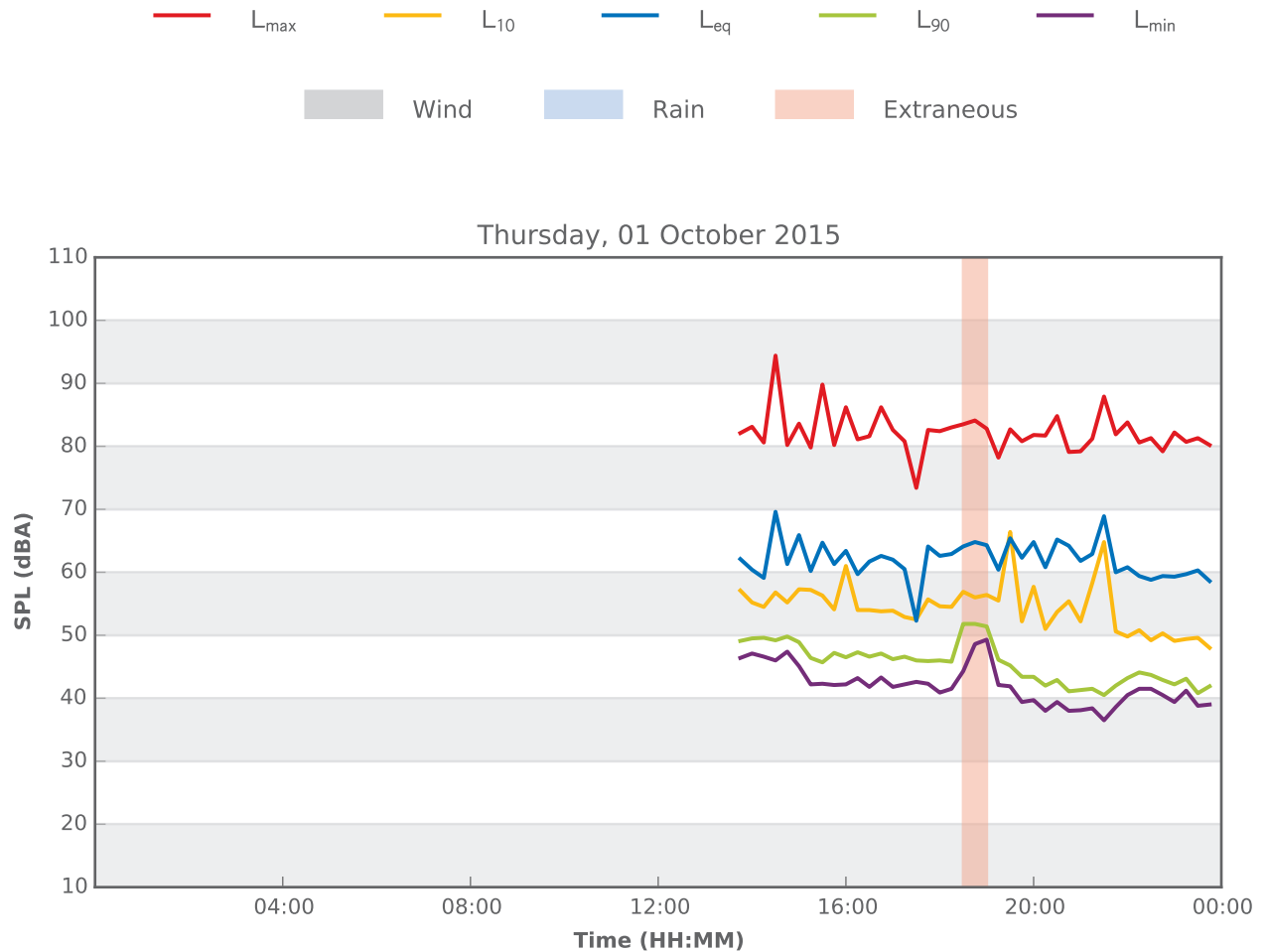
The predicted levels of operational, and construction noise comply with established goals at all nearby receivers.

Cumulative noise levels due to the project and existing industrial sources have been assessed against the INP amenity criteria and are predicted to comply at all receivers.

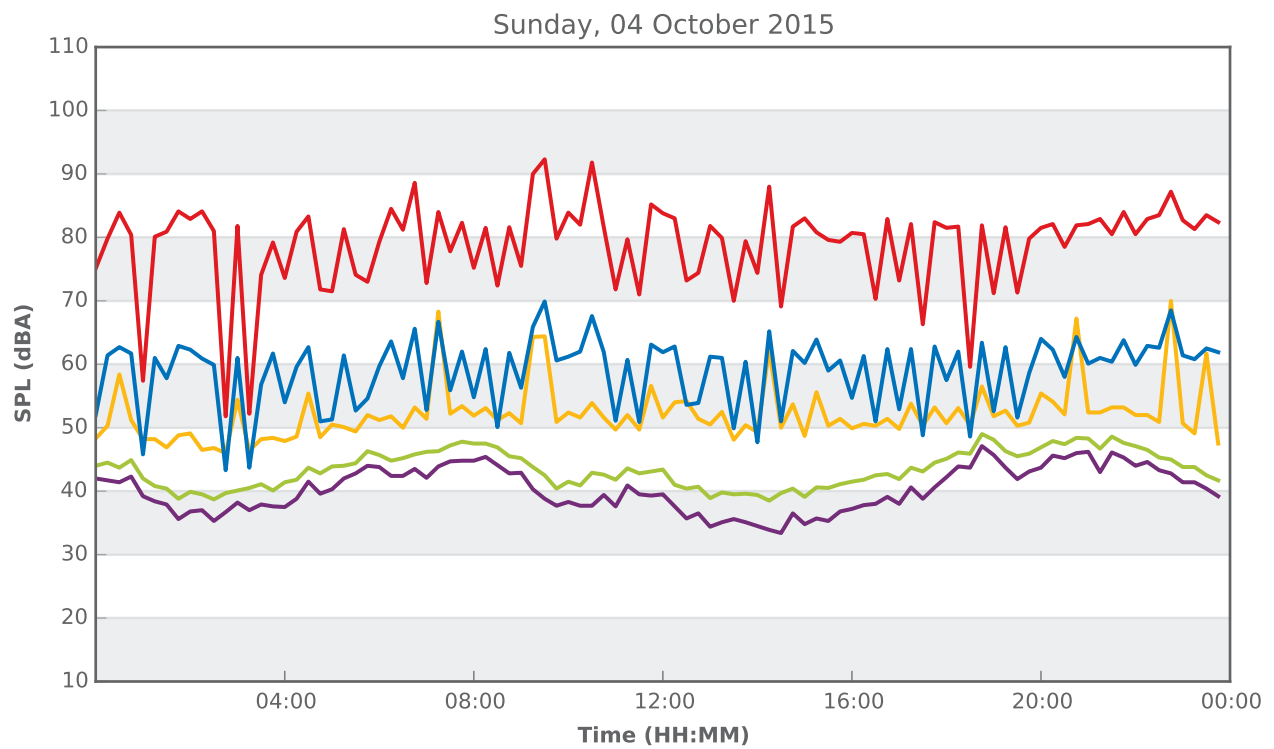
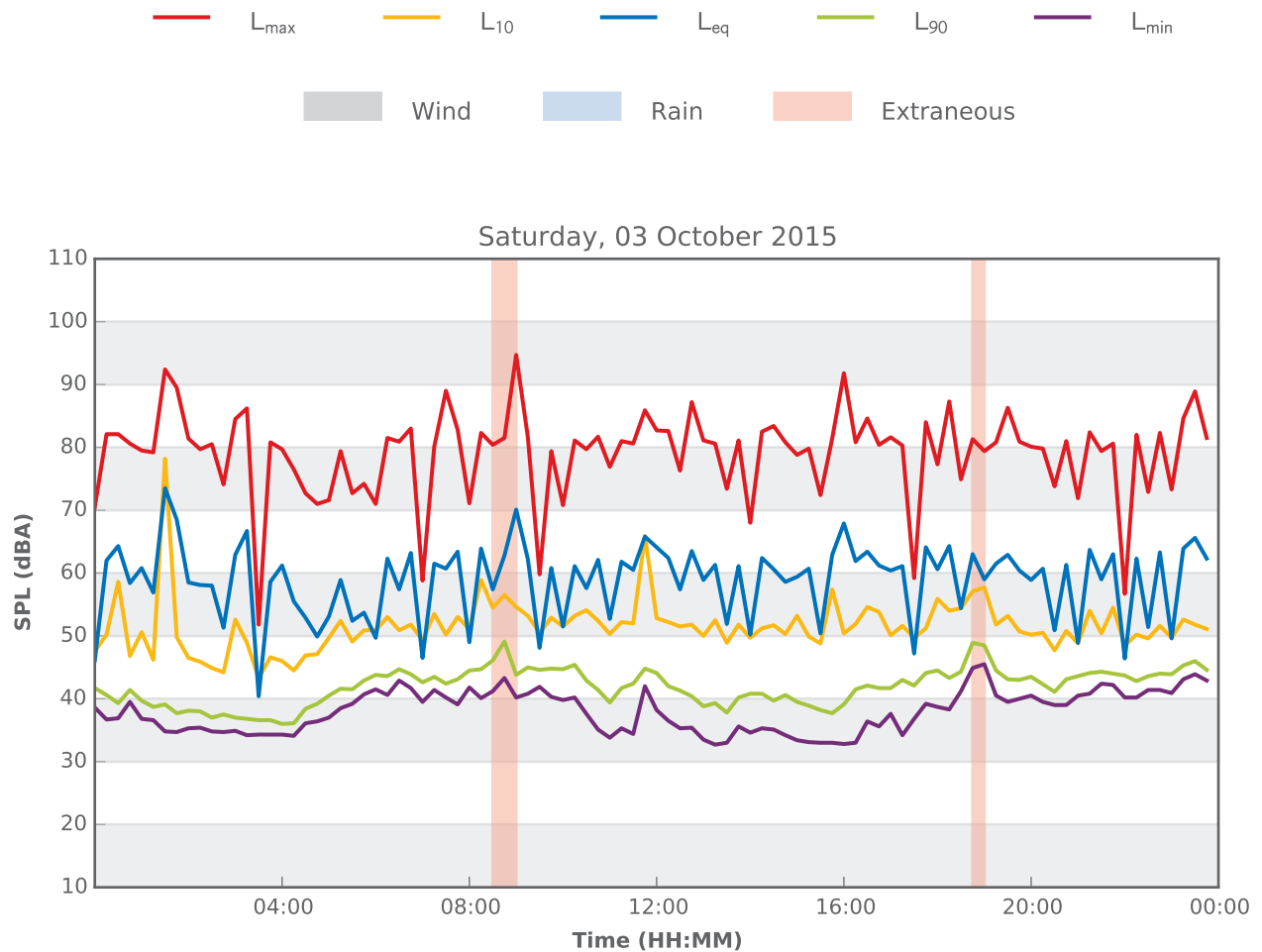
APPENDIX A

NOISE MEASUREMENT RESULTS

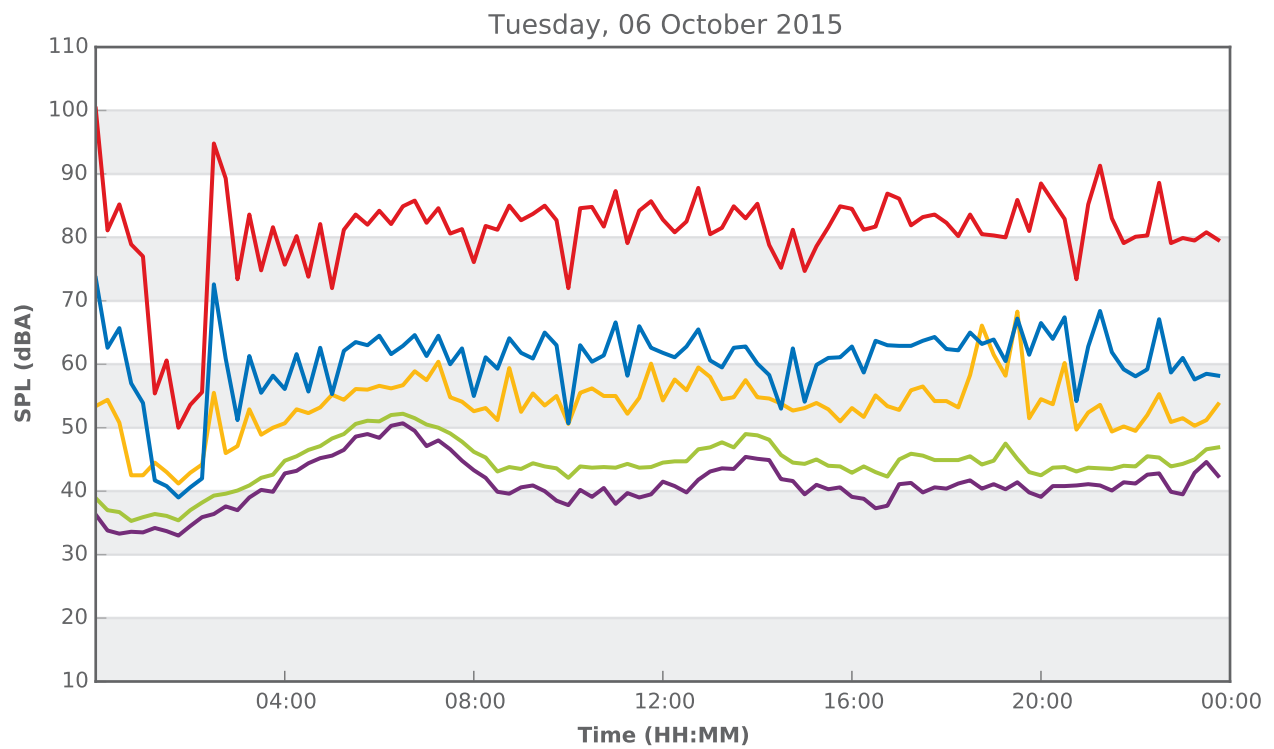
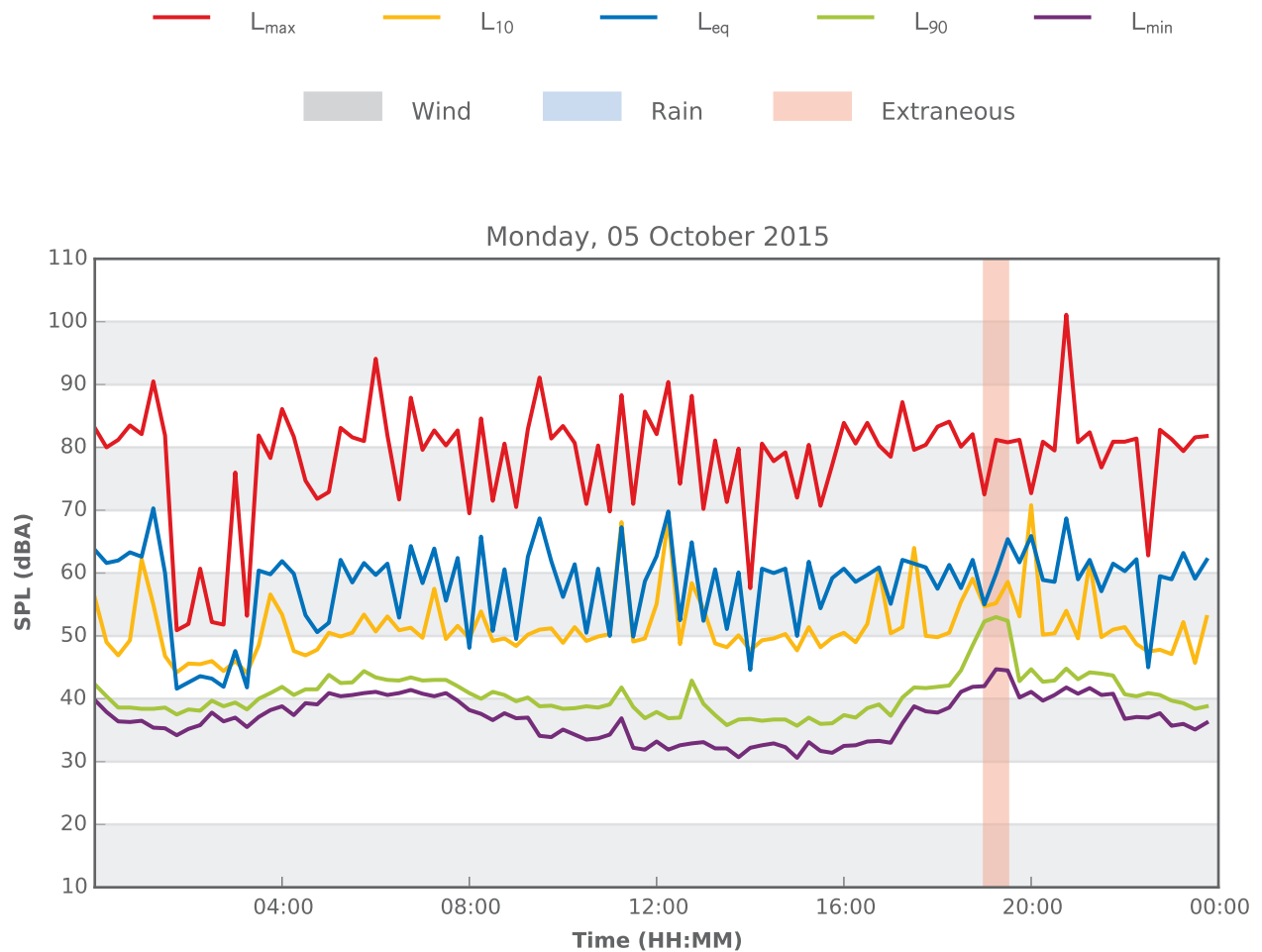
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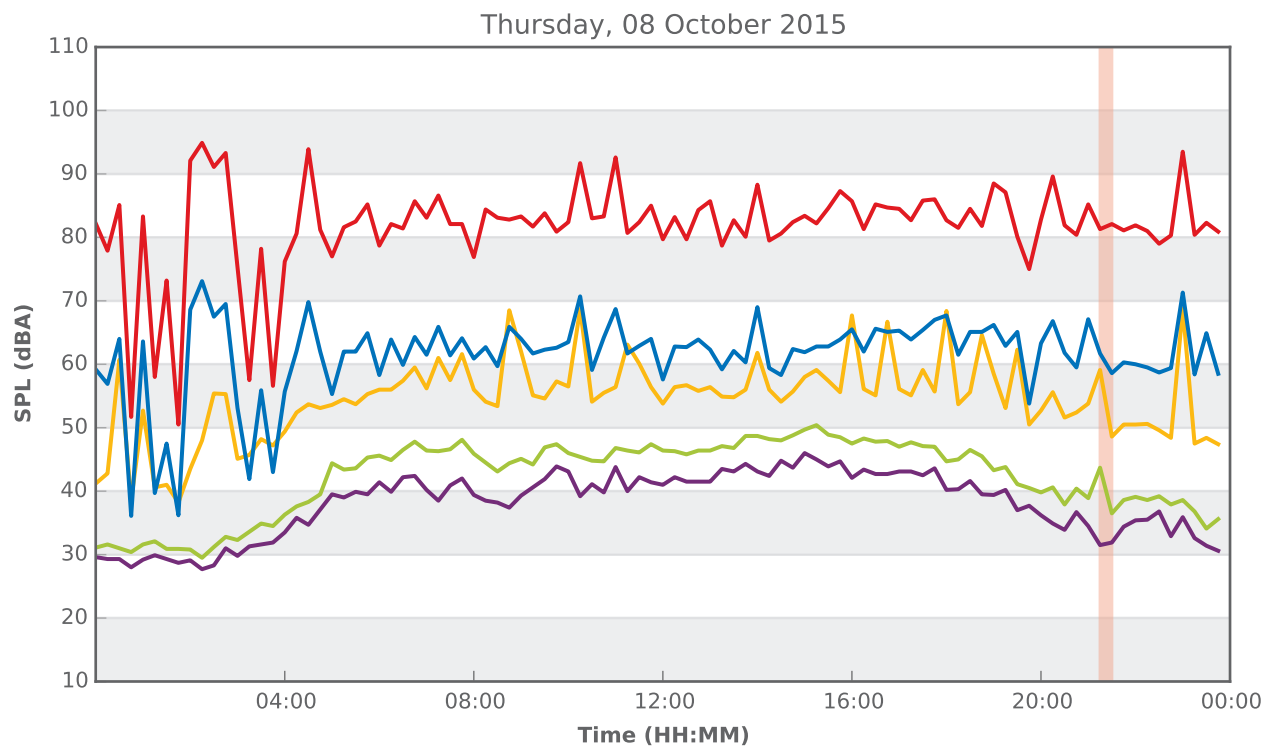
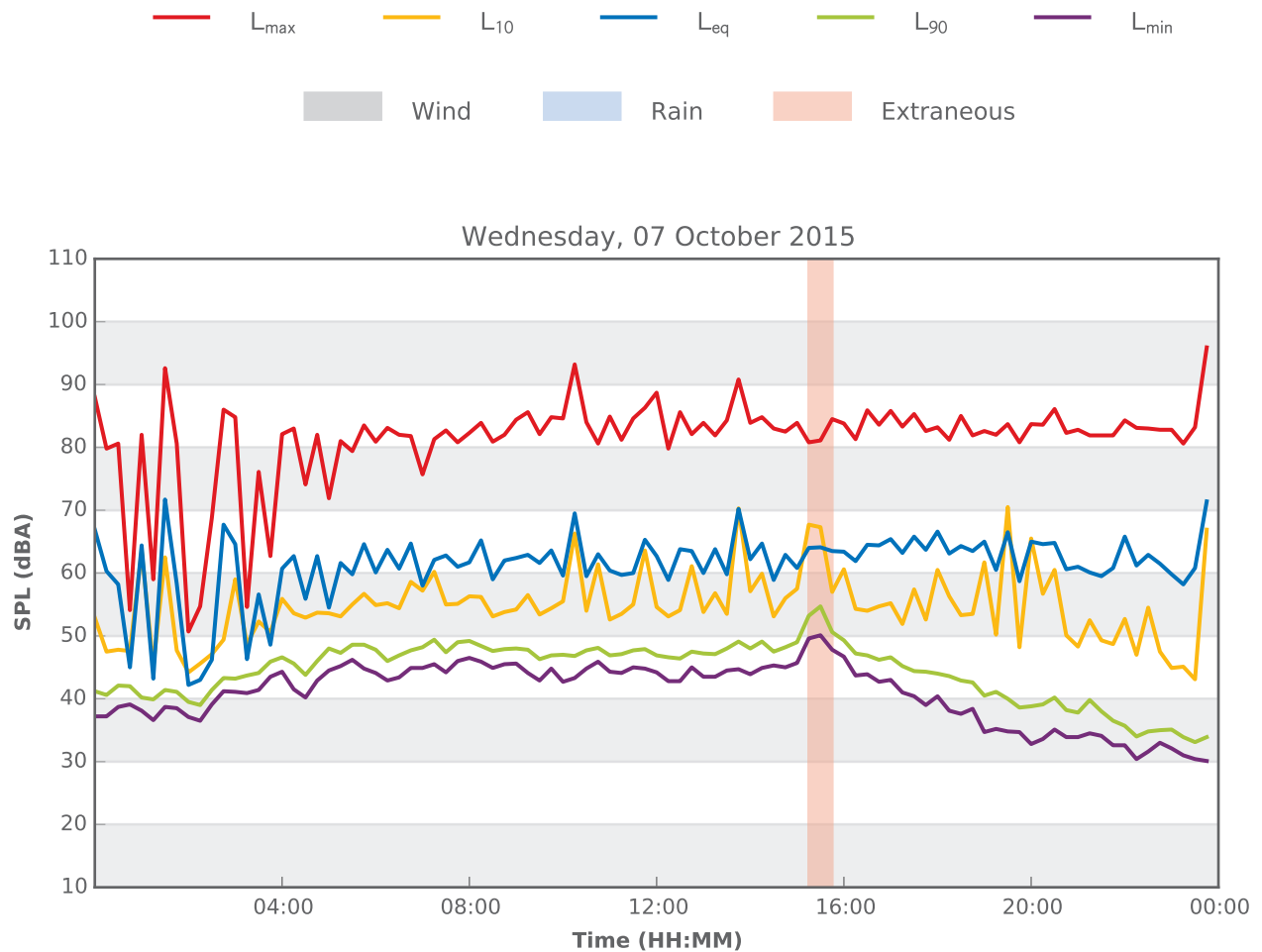
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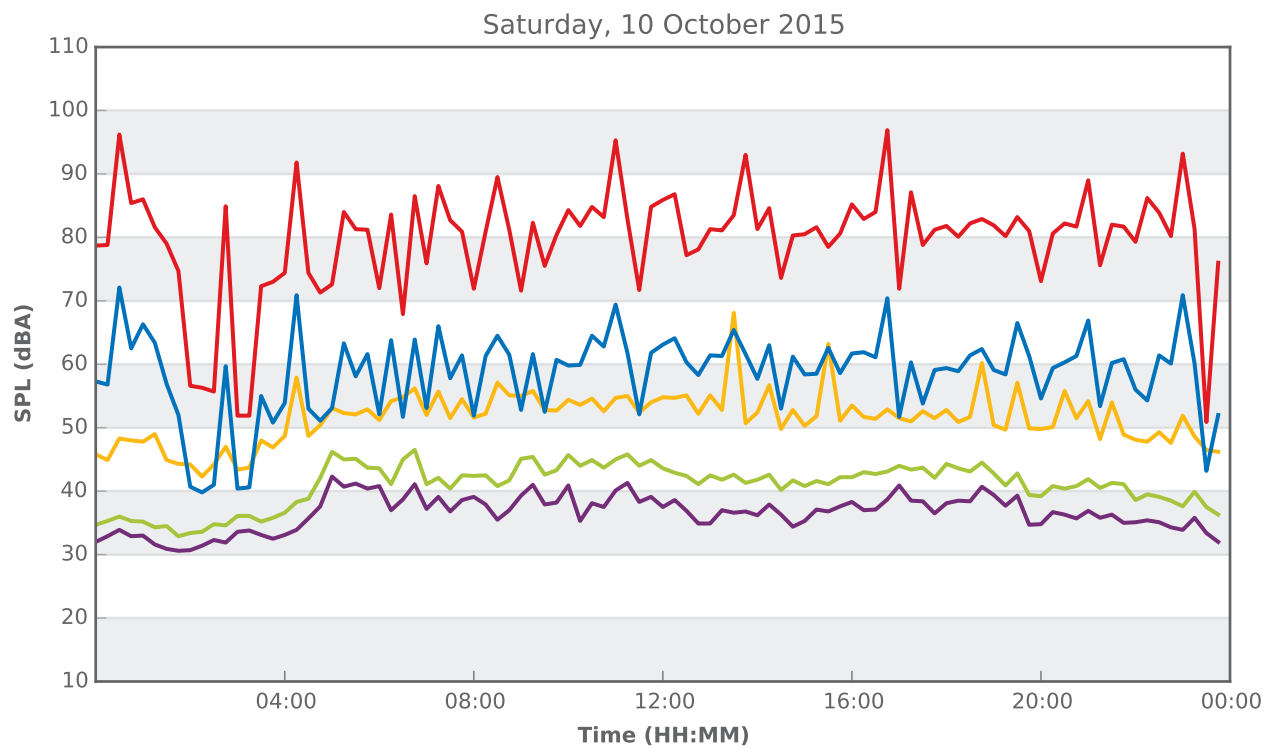
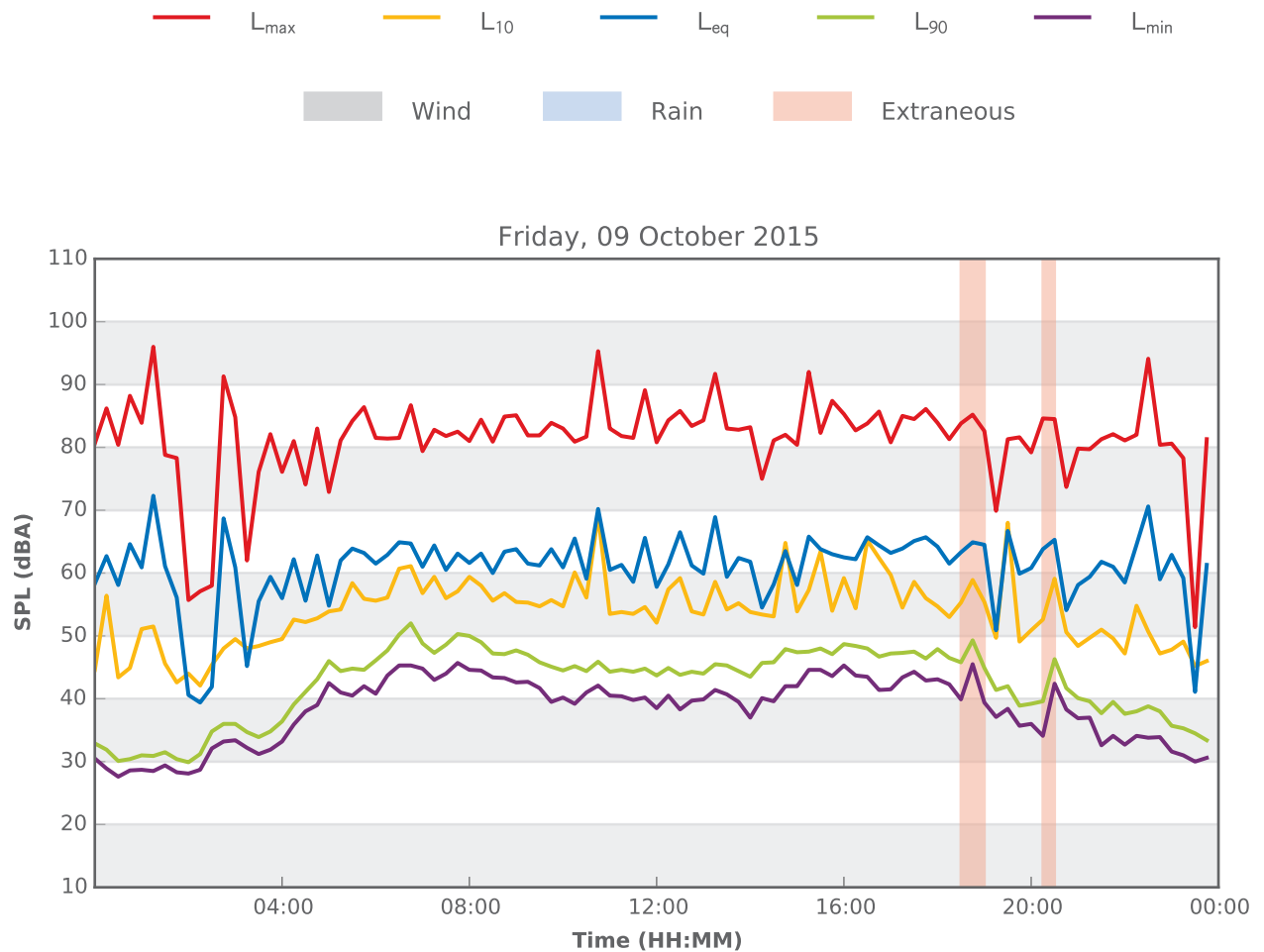
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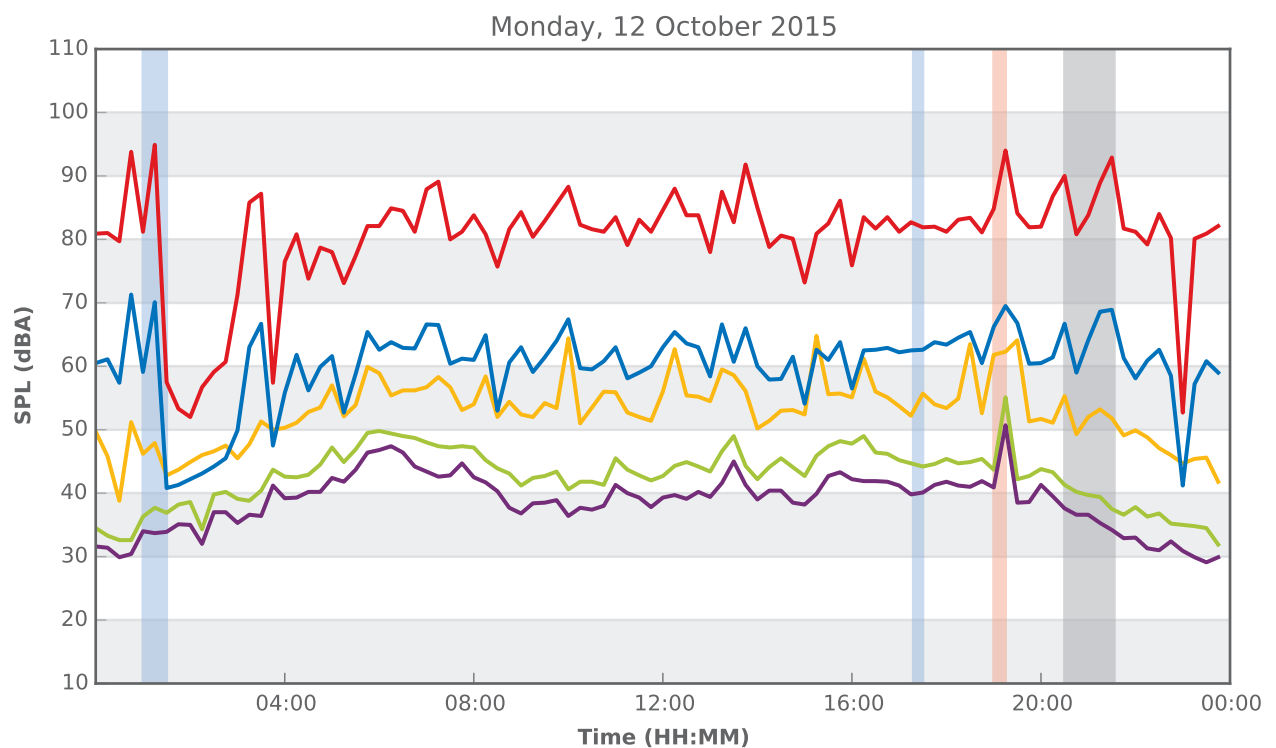
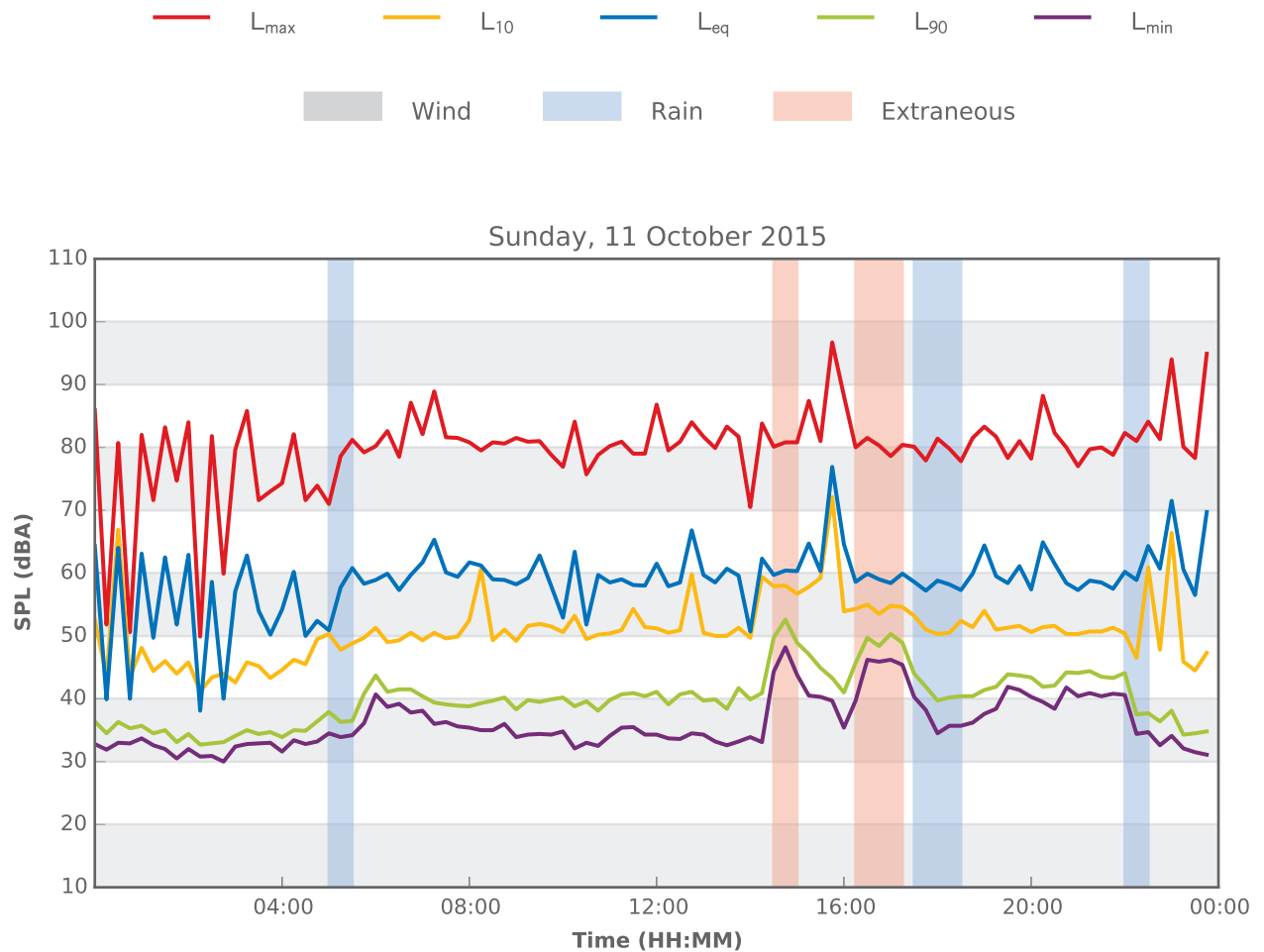
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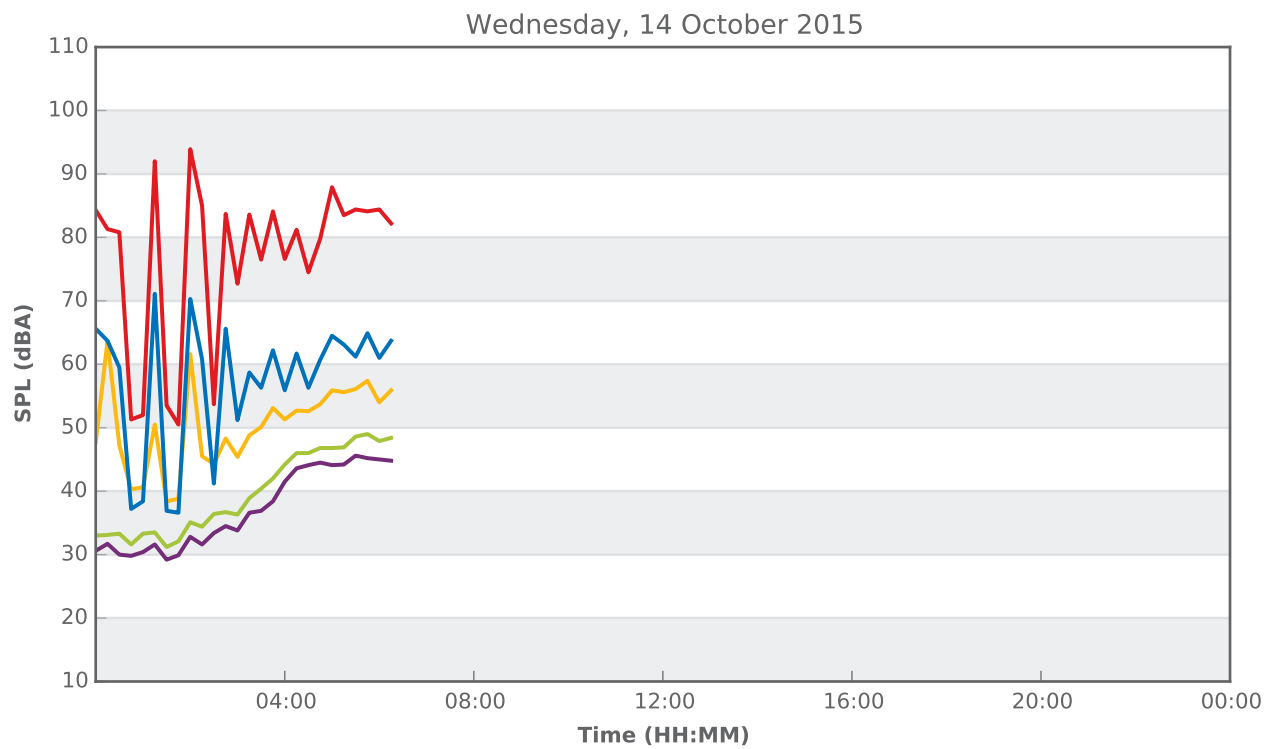
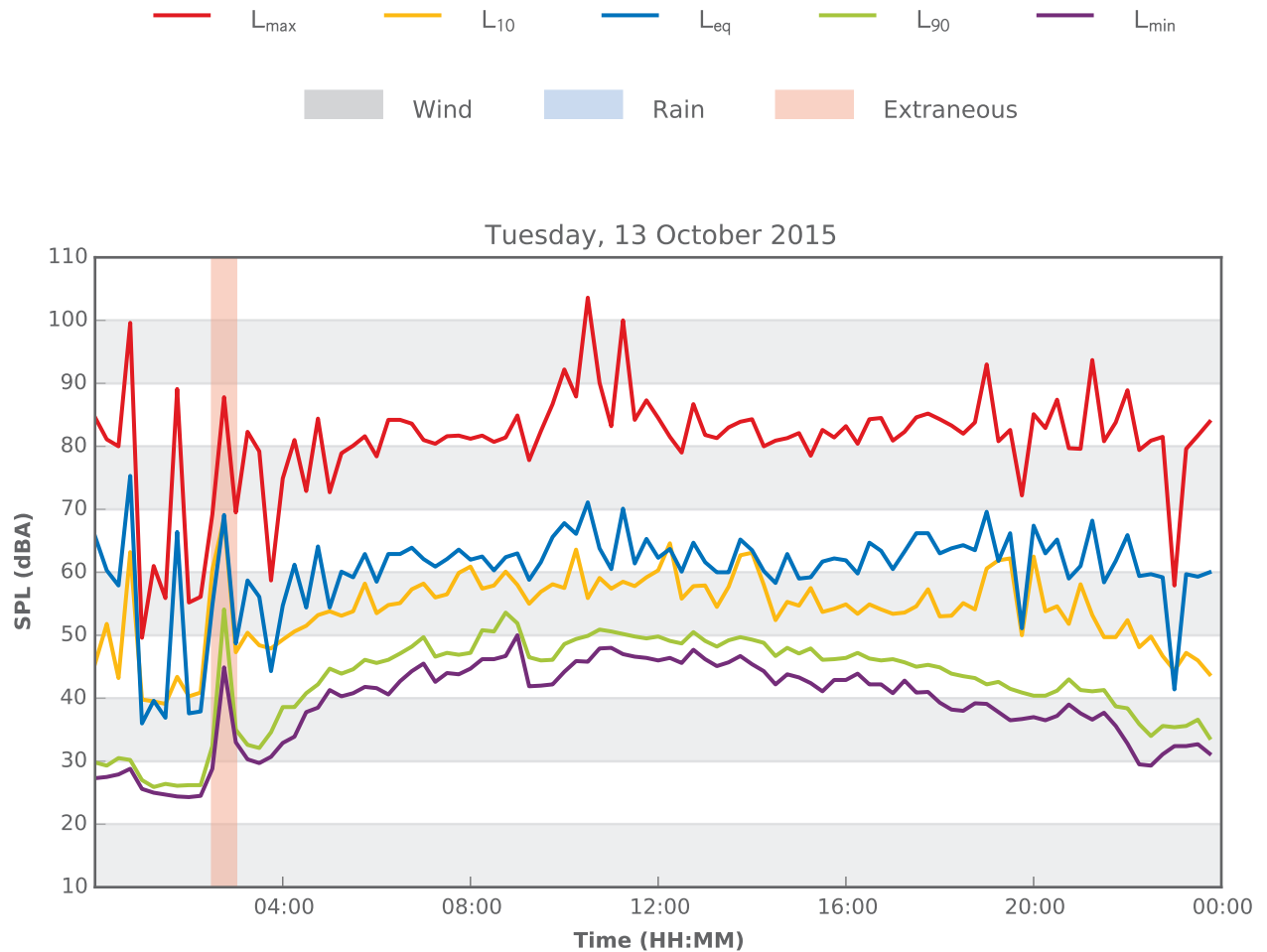
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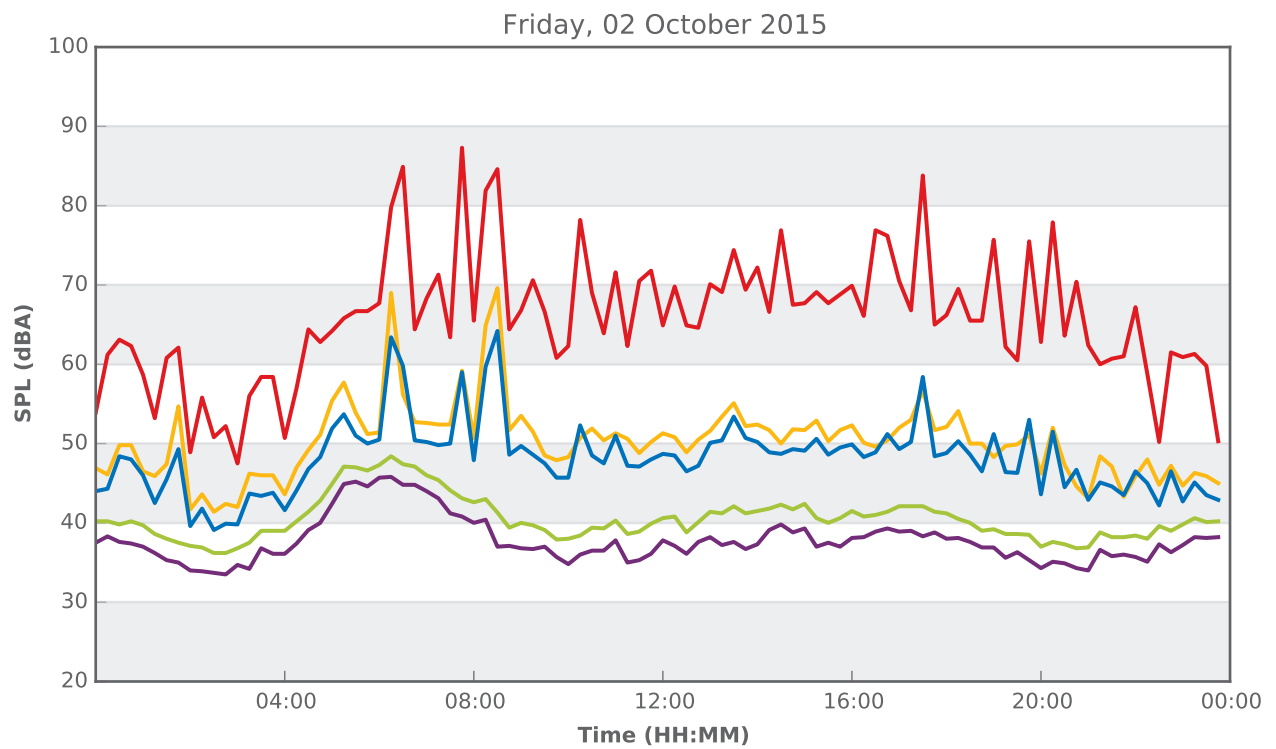
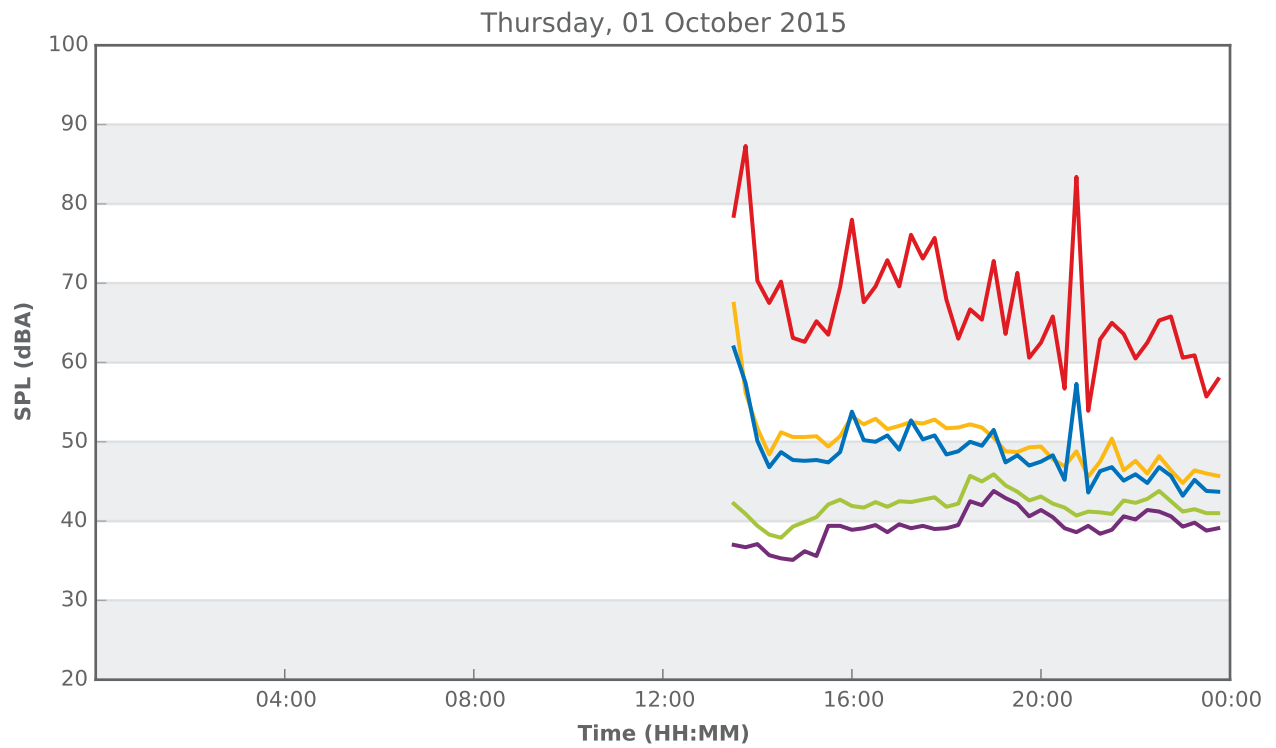
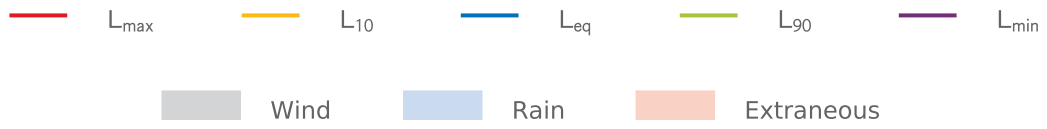
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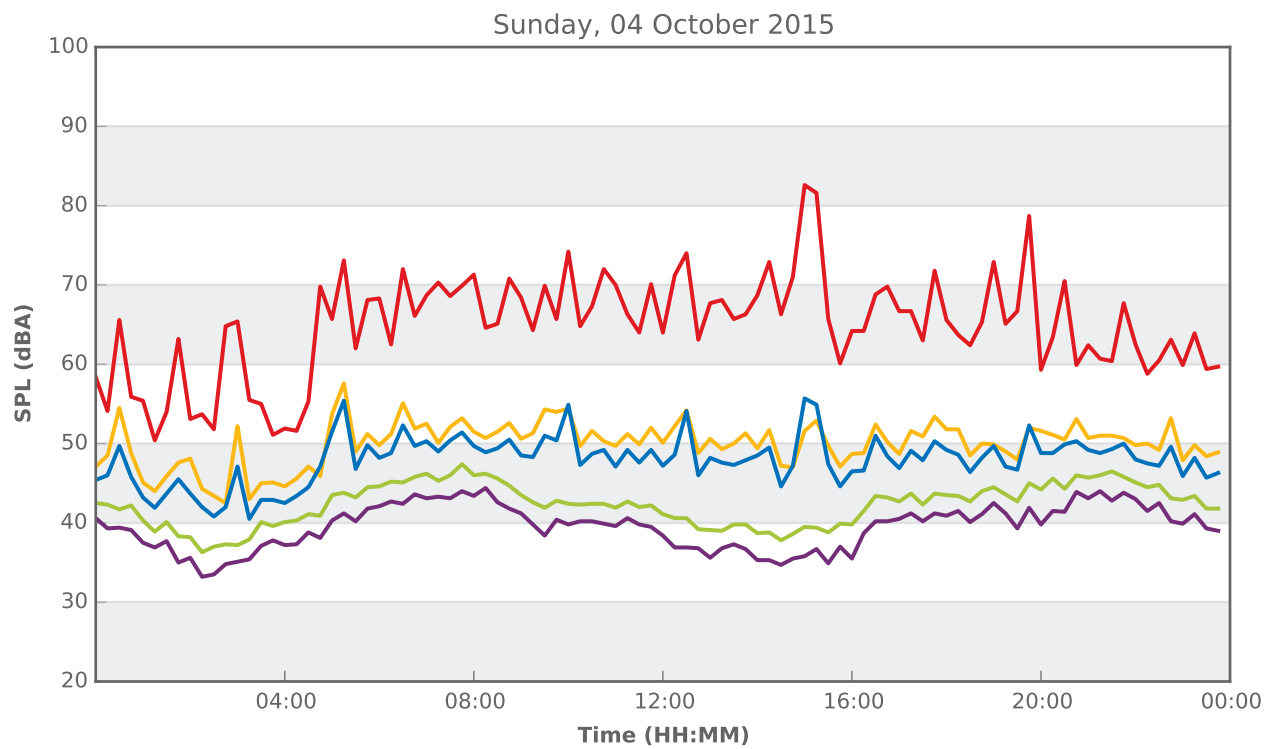
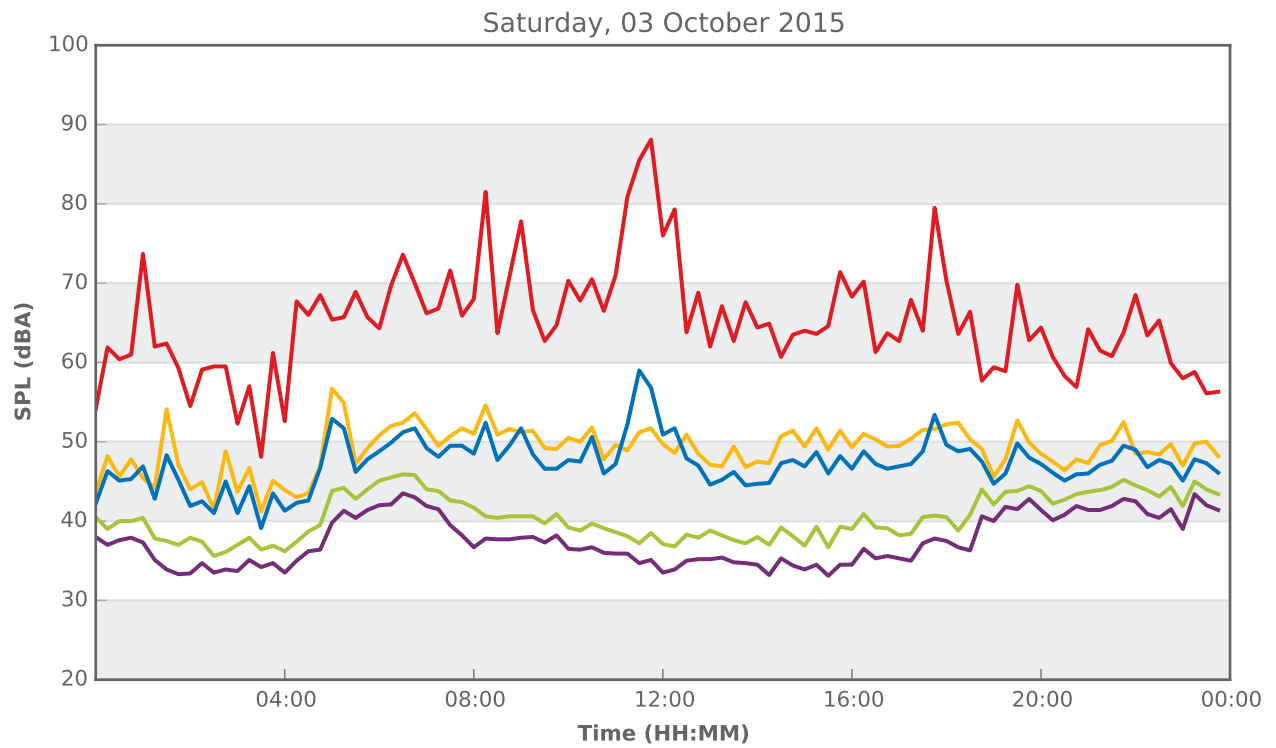
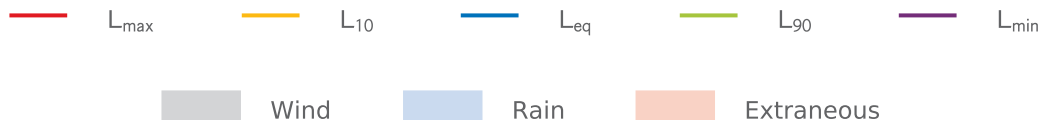
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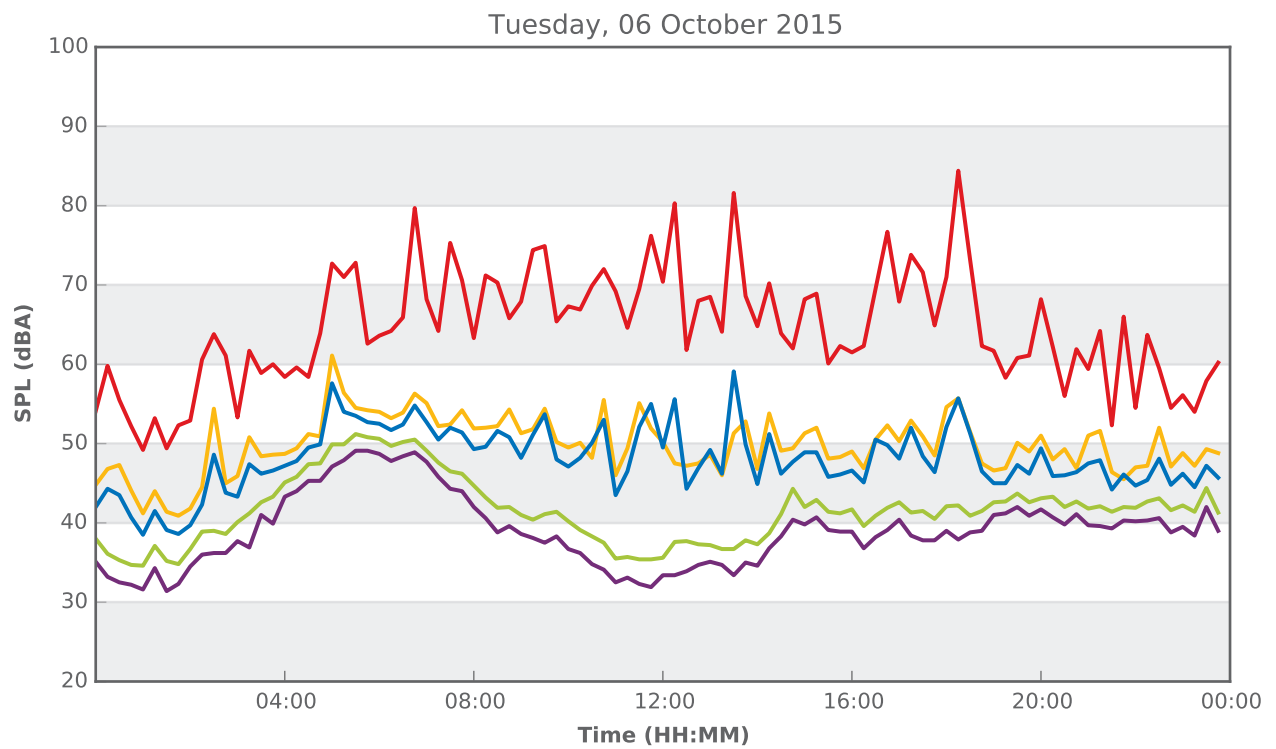
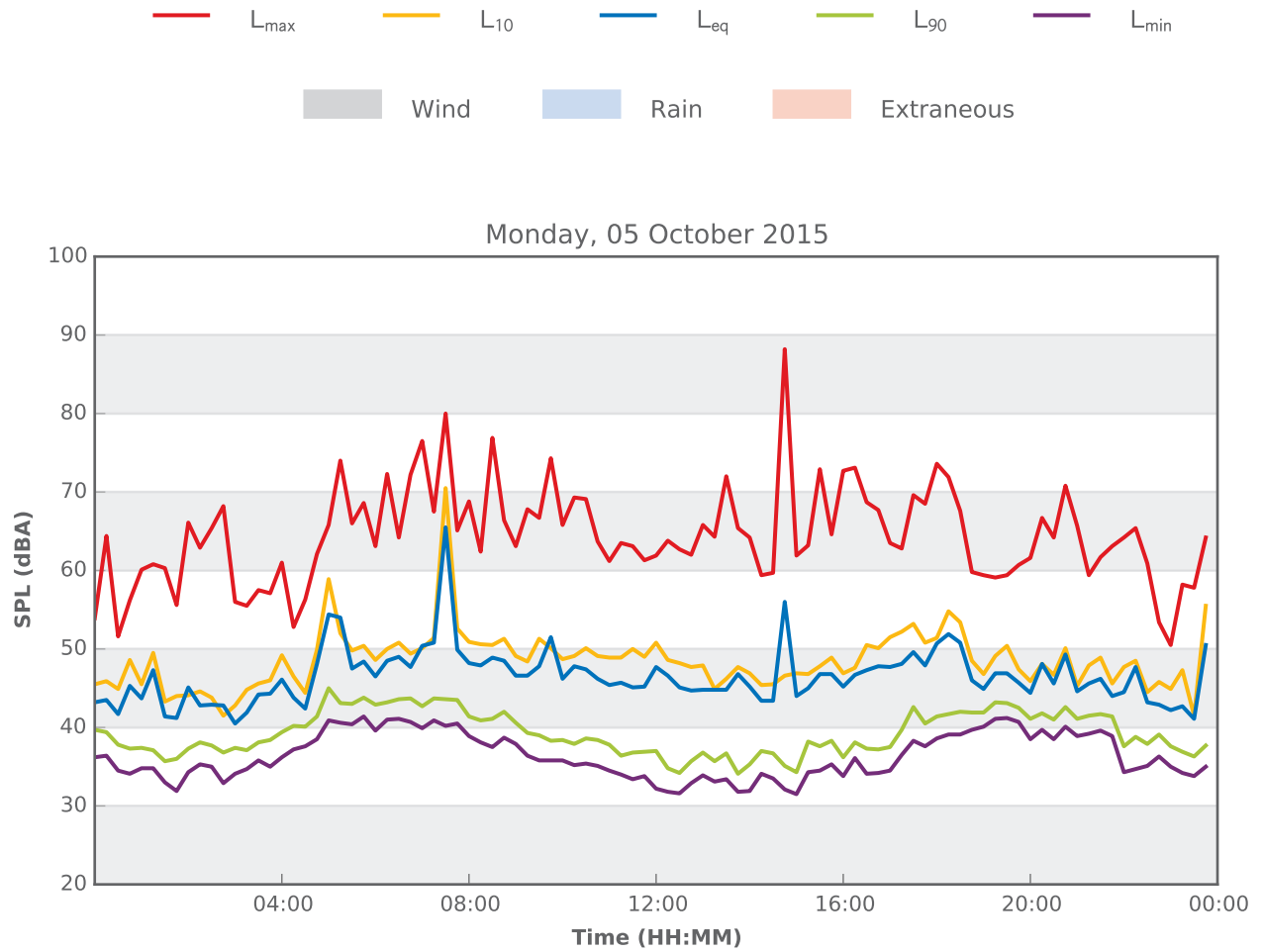
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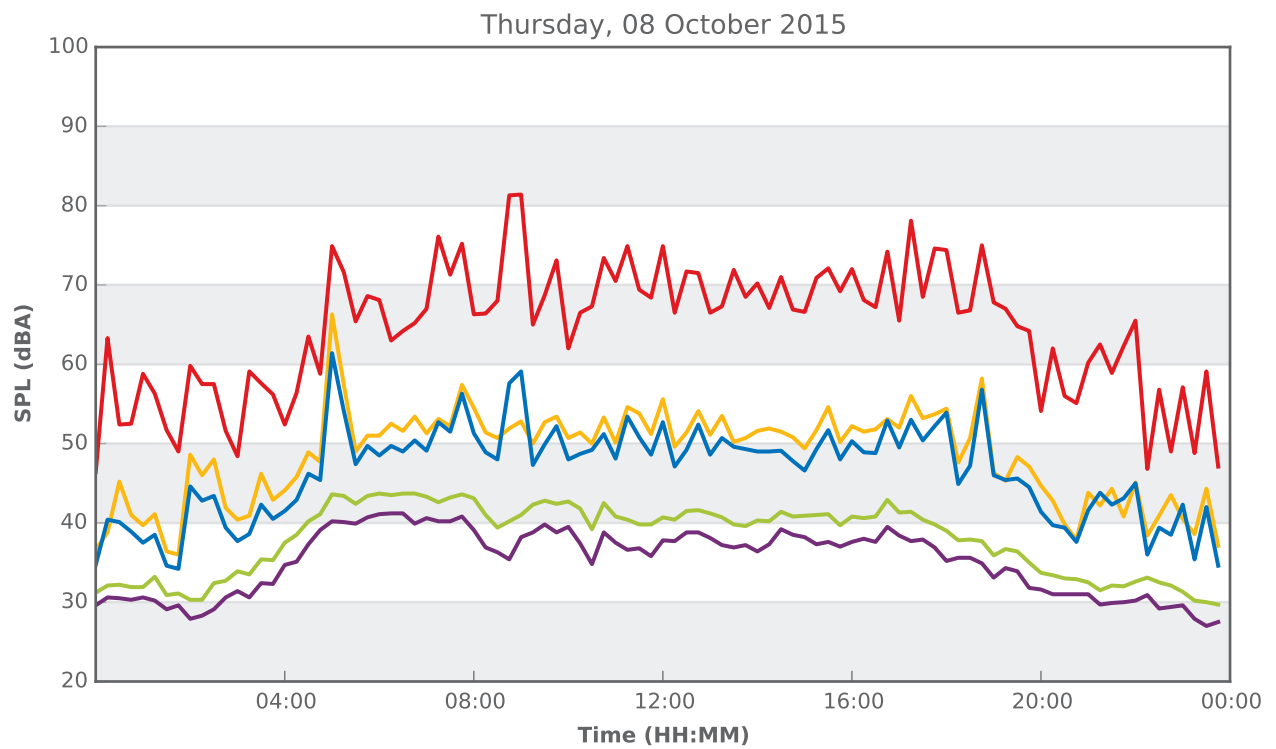
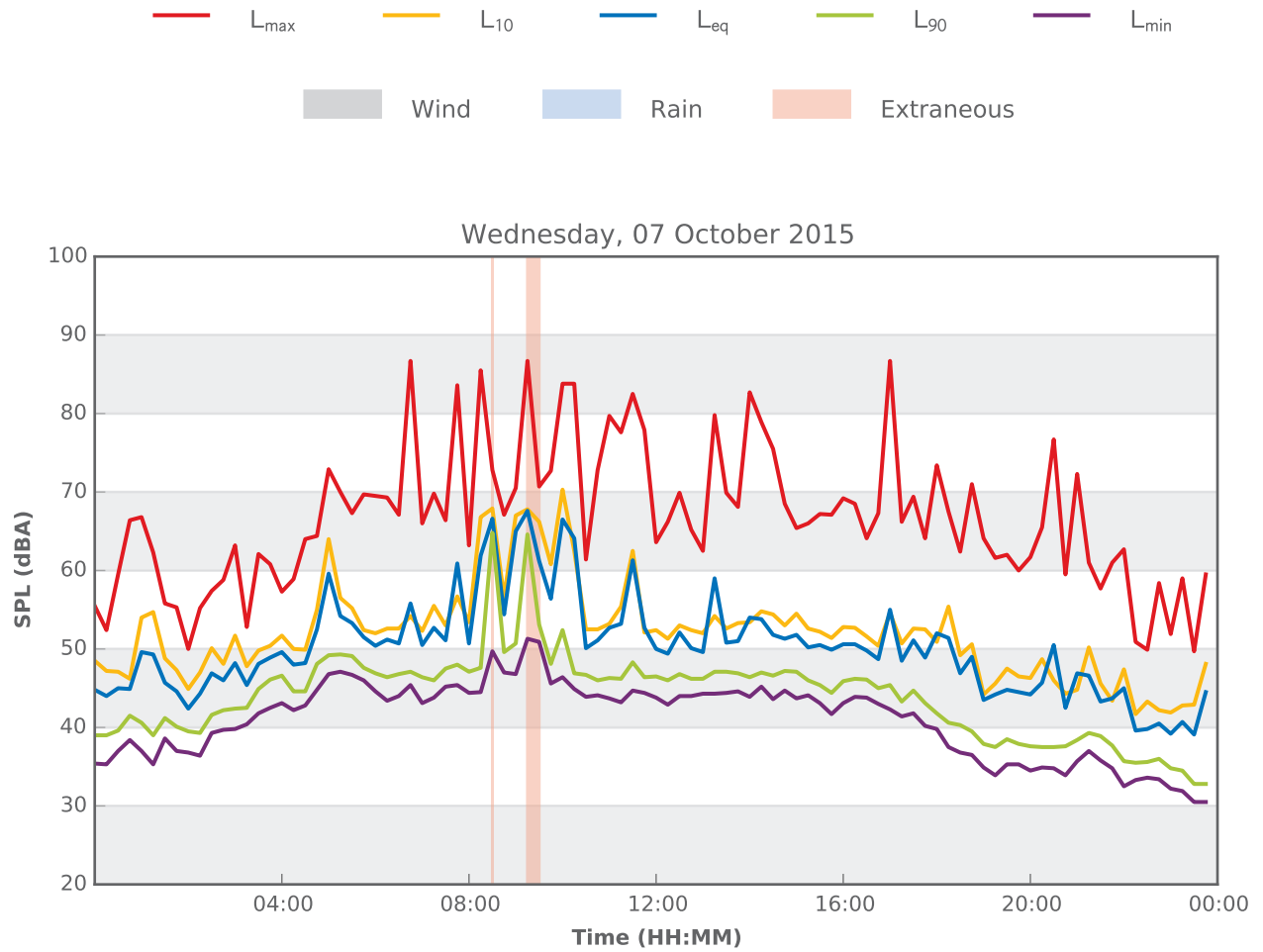
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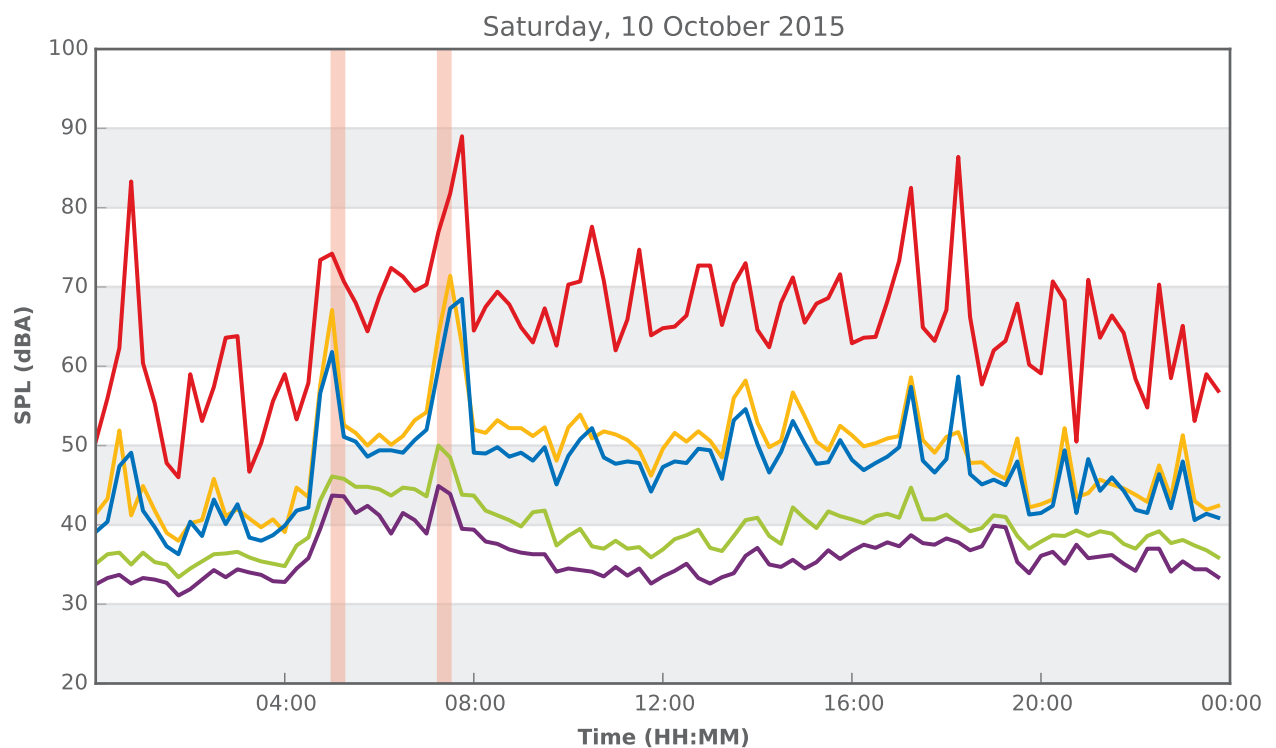
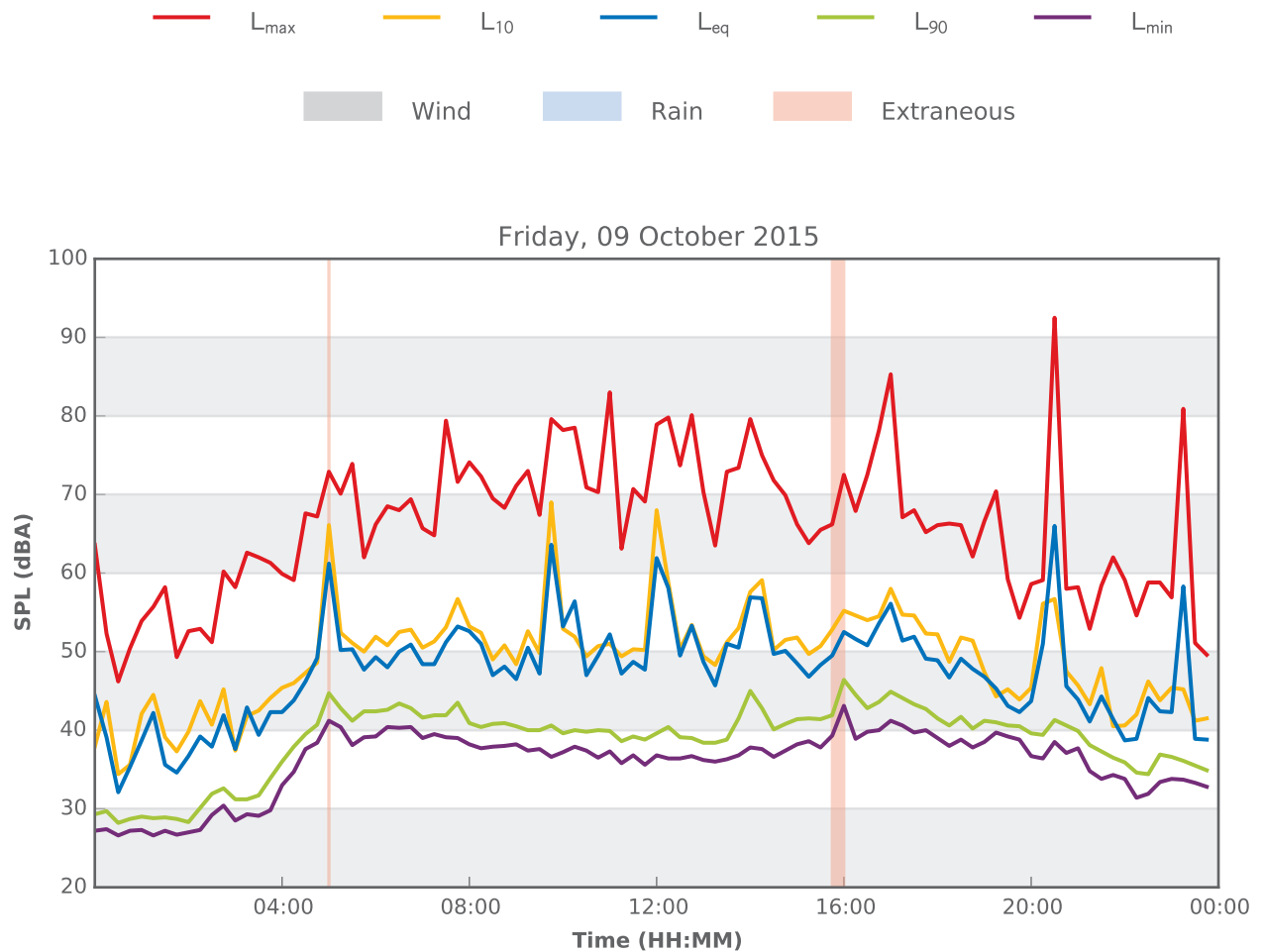
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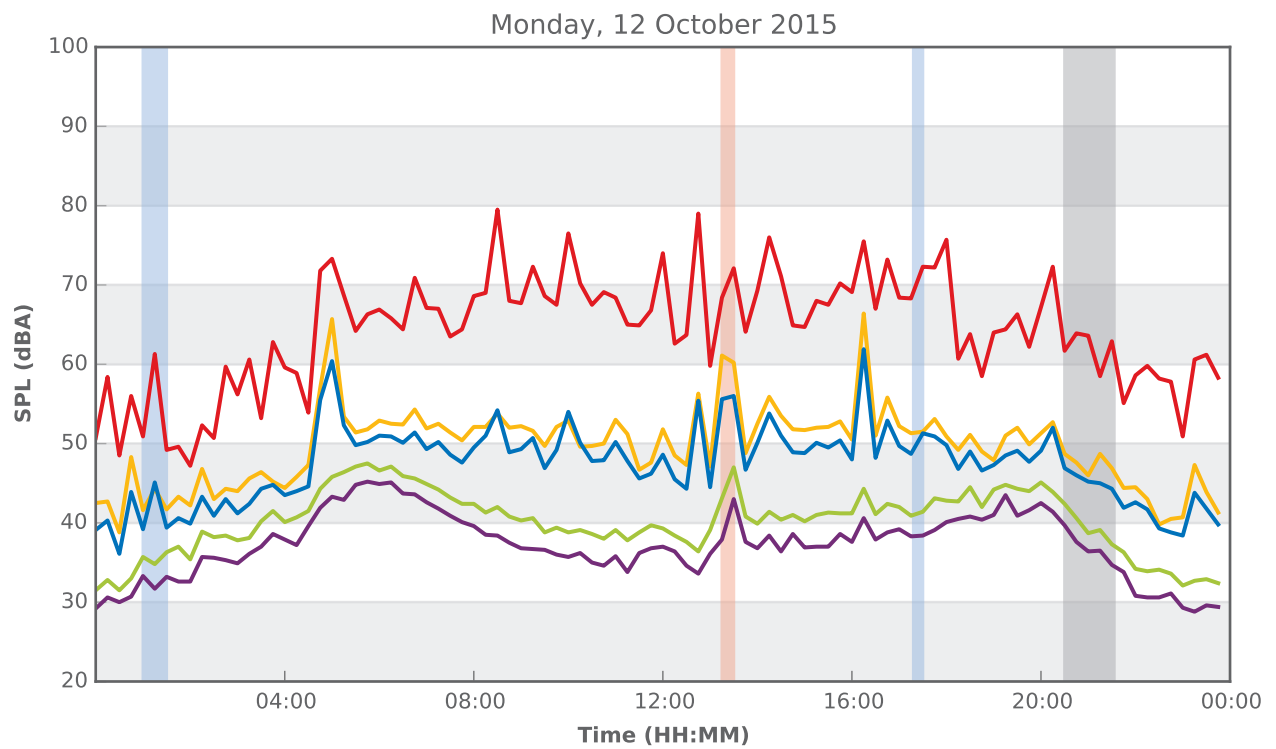
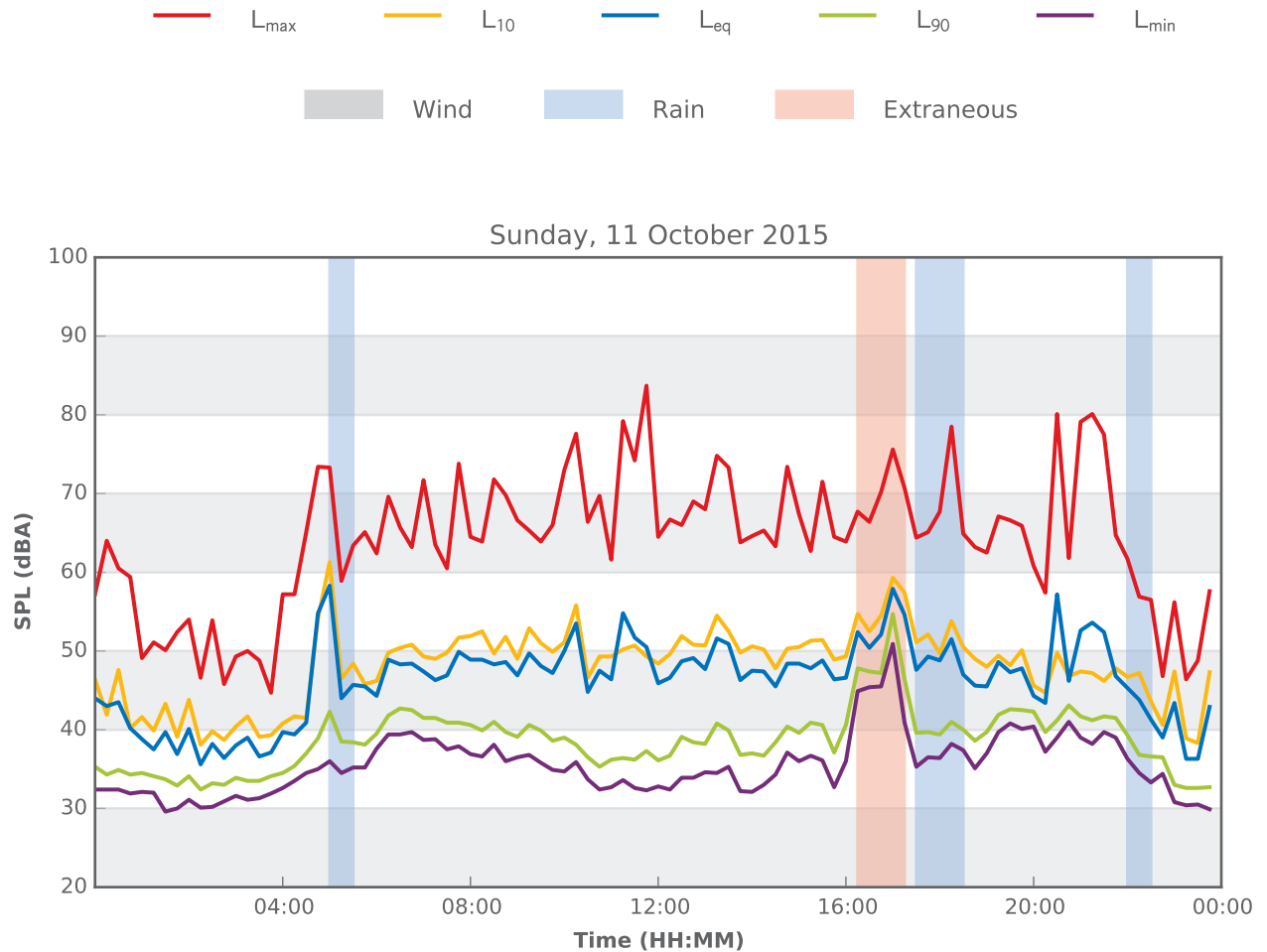
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