



Monthly compliance noise monitoring report

Glebe Island / White Bay

Port Authority of New South Wales

May 2022



→ The Power of Commitment

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Client name	Port Authority of New South Wales
Document title	Monthly compliance noise monitoring report – May 2022
Revision version	Rev 0
Project number	12540862

Document status

Status Code	Revision	Author	Reviewer		Approved for issue		
			Name	Signature	Name	Signature	Date
S4	0	C Gordon	V Lau		E Milton		20/07/2022

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1. Introduction

GHD Pty Ltd (GHD) has been engaged by Port Authority of New South Wales (Port Authority) to undertake compliance noise monitoring, as required by the *Port Noise Policy (Port Authority, 2020)*.

This report provides the details of the compliance noise monitoring for all vessels at berth during May 2022, as determined using the noise monitoring system. A detailed description of the permanent noise monitoring system including a map of monitoring locations is provided in the Noise Monitoring Plan, available on Port Authority's website.

2. Noise monitoring details and vessel schedule

Client	Company details	Noise monitor name	Noise monitor location	Noise monitor details / settings	Noise monitor serial numbers	Monthly calibration variance
Port Authority of New South Wales	GHD Pty Ltd	L01	Grafton Street, Balmain	Meter details Norsonic Nor145 Sound Level Meter with Nor1297 Noise Compass	14529640	Initial calibration level 92.6 dBA Min. deviation = 0.2 dB Max. deviation = 0.3 dB
	Member of the Association of Australasian Acoustical Consultants (AAAC)	L02	Maintenance Building on White Bay		14529642	Initial calibration level 91.5 dBA Min. deviation = 0.1 dB Max. deviation = 0.3 dB
	Lead staff are Members of the Australian Acoustical Society (AAS)	L03	Adjacent to White Bay 2	Meter settings A-weighted Fast time response 15 minute intervals	14529643	Initial calibration level 91.7 dBA Min. deviation = 0.0 dB Max. deviation = 0.2 dB
		L04	Onsite at Glebe Island		14529644	Initial calibration level 91.4 dBA Min. deviation = 0.2 dB Max. deviation = 0.5 dB
Vessel name	Arrival date and time	Departure date and time		Berth location	Applicable noise monitoring location/s	
Mareeba	May 1, 2022 / 20:37	May 6, 2022 / 04:45		GLB7	L03	
Hoshin Maru No. 35	May 3, 2022 / 09:01	May 5, 2022 / 10:00		WHT5	L01	
Luga	May 23, 2022 / 13:25	May 25, 2022 / 20:00		GLB8	L03	
Mareeba	May 28, 2022 / 20:28	June 1, 2022 / 18:30		GLB7	L03	
<p>Note 1: Pacific Explorer was at berth during the following times, however based on previous measurements it is unlikely that the noise from this vessel contributed to the other measured levels:</p> <ul style="list-style-type: none"> - WBT4 until May 7 2022 - WBT5 from May 12 to May 26 2022 <p>Note 2: Hoshin Maru No. 81 (May 3 11:40 to May 7 13:30) and Hoshin Maru No. 62 (May 11 12:56 to May 15 08:00) were also present during this month, however were berthed at GLB1. Based on the measured levels of Hoshin Maru No. 35, these vessels would be likely to be complaint at the nearest receivers to berth GLB1. It is noted these vessels are fishing vessels, and not bulk material vessels.</p>						

3. Compliance summary

Vessel	Dates at berth	Monitor location	Vessel Noise Level, dBA (inclusive of any modifying factor penalties)			Vessel Noise Trigger Levels, dBA			Compliance ¹	
			Day ² L _{Aeq} (15 hr)	Night ³ L _{Aeq} (1 hr)	Night ³ L _{Amax}	Day ² L _{Aeq} (15 hr)	Night ³ L _{Aeq} (1 hr)	Night ³ L _{Amax}	Day	Night
Mareeba	May 1 – May 6	L03	54	53	64	60	55	65	Yes	Yes
Hoshin Maru No. 35	May 3 – May 5	L01	53	51	56	60	55	65	Yes	Yes
Luga	May 23 – May 25	L03	57	56	64	60	55	65	Yes	No ⁴
Mareeba	May 28 – Jun 1	L03	56	53	64	60	55	65	Yes	Yes

Note: 1) If non-compliance is detected, a detailed investigation of the results will be undertaken and reported separately if required

Note: 2) Daytime period (7 am to 10 pm) – 15 hour logarithmic average

Note: 3) Night-time (10 pm to 7 am) – worst case 1 hour period

Note: 4) See Section 4.3.3 for discussion regarding this exceedance

4. Detailed results

4.1 Mareeba – May 1 – May 6, 2022 (GLB7)

4.1.1 Daily noise monitoring results

Date	Time period	Monitor location	Noise descriptor	Vessel noise level dBA ²	Tonal	LFN ³	Vessel Noise Trigger Levels, dBA	Compliance
May 1, 2022	Day	L03	L _{Aeq} , 15 hour ¹	50	No	No	60	Yes
	Night		L _{Aeq} , 1 hour ¹	51	No	No	55	Yes
			L _{Amax}	56	-	-	65	Yes
May 2, 2022	Day	L03	L _{Aeq} , 15 hour ¹	53	No	No	60	Yes
	Night		L _{Aeq} , 1 hour ¹	52	No	No	55	Yes
			L _{Amax}	63	-	-	65	Yes
May 3, 2022	Day	L03	L _{Aeq} , 15 hour ¹	54	No	No	60	Yes
	Night		L _{Aeq} , 1 hour ¹	53	No	No	55	Yes
			L _{Amax}	57	-	-	65	Yes
May 4, 2022	Day	L03	L _{Aeq} , 15 hour ¹	54	No	Yes ⁴	60	Yes
	Night		L _{Aeq} , 1 hour ¹	52	No	No	55	Yes
			L _{Amax}	64	-	-	65	Yes
May 5, 2022	Day	L03	L _{Aeq} , 15 hour ¹	53	No	Yes ⁴	60	Yes
	Night		L _{Aeq} , 1 hour ¹	50	No	No	55	Yes
			L _{Amax}	64	-	-	65	Yes

Notes

1) Daytime period (7 am to 10 pm) – 15 hours

Night-time period (10 pm to 7 am) – worst case 1 hour

2) Inclusive of any penalties for modifying factors

3) LFN = Low Frequency Noise

4) The Port Noise Policy does not currently apply the Noise Policy for Industry (NPI) method modifying factor for low frequency noise. A 2 dB penalty for daytime and a 5 dB penalty for the evening/night-time period would apply when assessed in accordance with Fact Sheet 3 Corrections for annoying noise characteristics from the EPA's Noise Policy for Industry Further investigation is currently being undertaken to determine impacts from low frequency noise from vessels.

4.1.2 Additional information

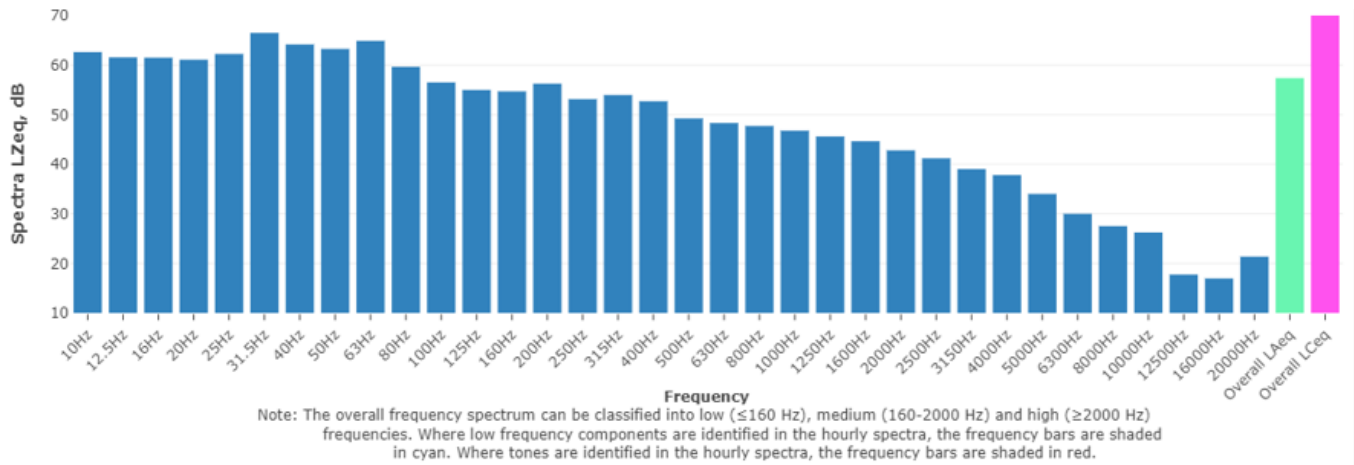


Figure 4.1 Typical vessel spectrum – noise level at L03

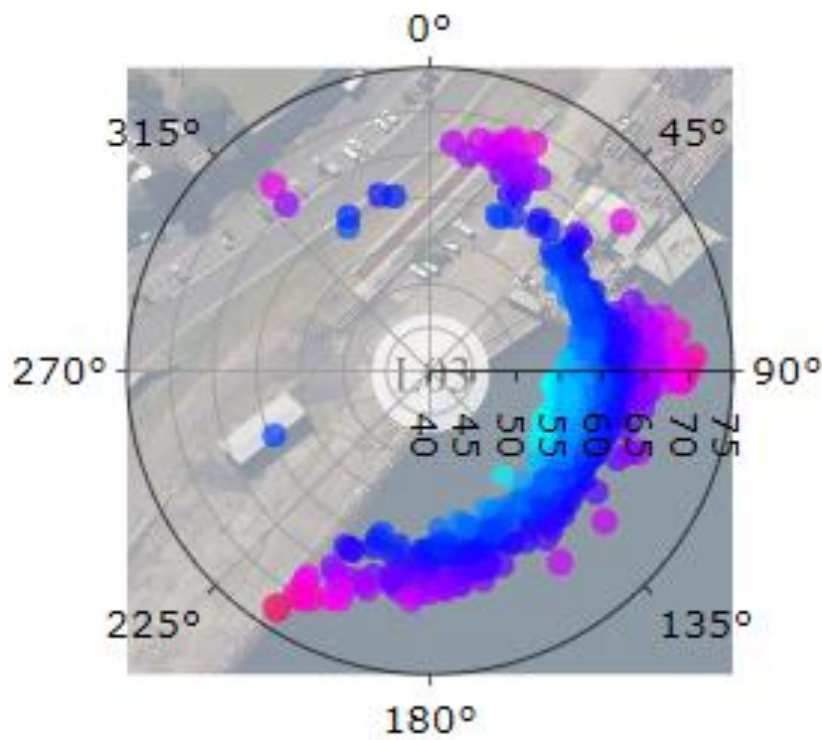


Figure 4.2 Typical vessel polar (directional) plot

4.2 Hoshin Maru No. 35 – May 3 – May 5, 2022 (WHT5)

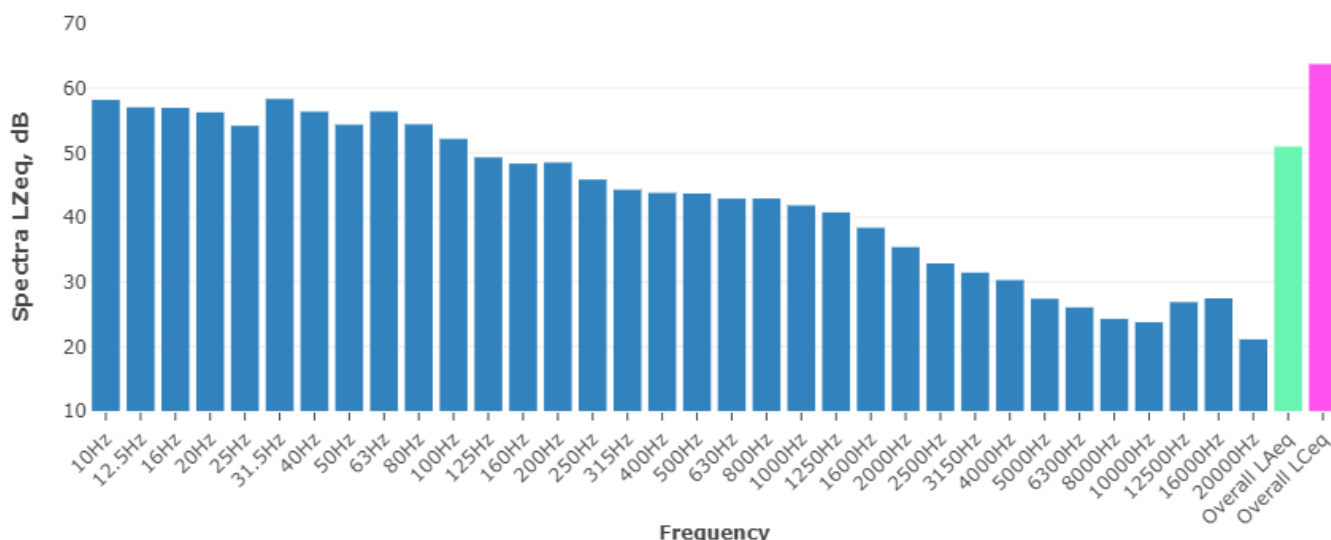
4.2.1 Daily noise monitoring results

Date	Time period	Monitor location	Noise descriptor	Vessel noise level dBA ²	Tonal	LFN ³	Vessel Noise Trigger Levels, dBA	Compliance
May 4, 2022	Day	L01	L _{Aeq} , 15 hour ¹	50	No	Yes ⁴	60	Yes
	Night		L _{Aeq} , 1 hour ¹	51	No	Yes ⁴	55	Yes
			L _{Amax}	56	-	-	65	Yes
May 5, 2022	Day	L01	L _{Aeq} , 15 hour ¹	53	No	Yes ⁴	60	Yes
	Night		L _{Aeq} , 1 hour ¹	-	-	-	55	Yes
			L _{Amax}	-	-	-	65	Yes

Notes

- Daytime period (7 am to 10 pm)– 15 hours
Night-time period (10 pm to 7 am) – worst case 1 hour
- Inclusive of any penalties for modifying factors
- LFN = Low Frequency Noise
- The Port Noise Policy does not currently apply the Noise Policy for Industry (NPI) method modifying factor for low frequency noise. A 2 dB penalty for daytime and a 5 dB penalty for the evening/night-time period would apply when assessed in accordance with Fact Sheet 3 Corrections for annoying noise characteristics from the EPA's Noise Policy for Industry Further investigation is currently being undertaken to determine impacts from low frequency noise from vessels.

4.2.2 Additional information



Note: The overall frequency spectrum can be classified into low (≤ 160 Hz), medium (160-2000 Hz) and high (≥ 2000 Hz) frequencies. Where low frequency components are identified in the hourly spectra, the frequency bars are shaded in cyan. Where tones are identified in the hourly spectra, the frequency bars are shaded in red.

Figure 4.3 Typical vessel spectrum – noise level at L03

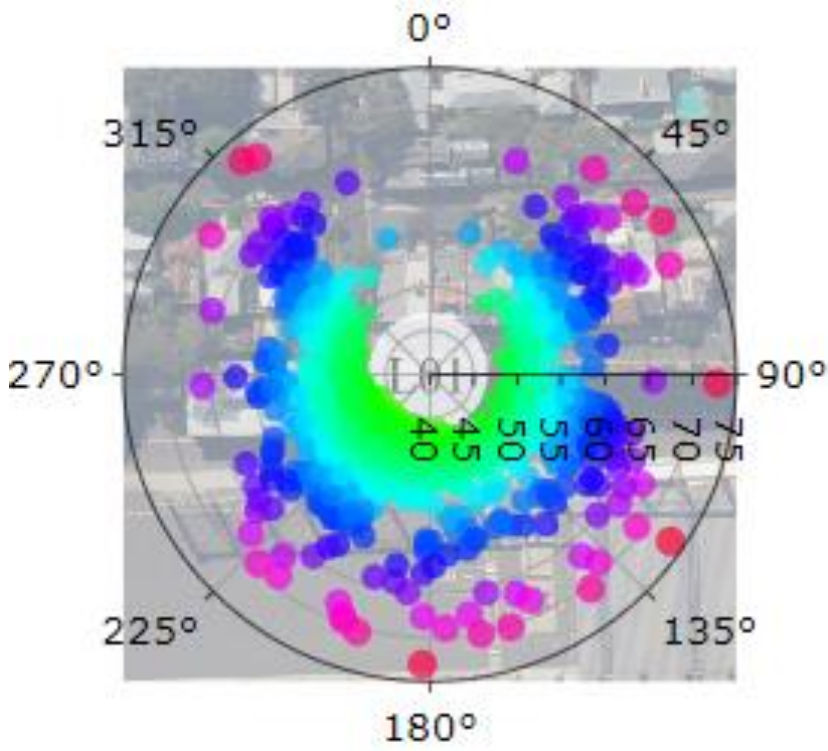


Figure 4.4 Typical vessel polar (directional) plot

4.3 Luga – May 23 – May 25, 2022 (GLB8)

4.3.1 Daily noise monitoring results

Date	Time period	Monitor location	Noise descriptor	Vessel noise level dBA ²	Tonal	LFN ³	Vessel Noise Trigger Levels, dBA	Compliance
May 23, 2022 ⁴	Day	L03	L _{Aeq} , 15 hour ¹	56	No	Yes ⁴	60	Yes
	Night		L _{Aeq} , 1 hour ¹	56	No	No	55	No ⁵
			L _{Amax}	59	-	-	65	Yes
May 24, 2022 ⁴	Day	L03	L _{Aeq} , 15 hour ¹	56	No	No	60	Yes
	Night		L _{Aeq} , 1 hour ¹	56	No	No	55	No ⁵
			L _{Amax}	64	-	-	65	Yes
May 25, 2022 ⁴	Day	L03	L _{Aeq} , 15 hour ¹	57	No	No	60	Yes
	Night		L _{Aeq} , 1 hour ¹	-	-	-	55	-
			L _{Amax}	-	-	-	65	-

Notes

1) Daytime period (7 am to 10 pm)– 15 hours

Night-time period (10 pm to 7 am) – worst case 1 hour

2) Inclusive of any penalties for modifying factors

3) LFN = Low Frequency Noise

4) The Port Noise Policy does not currently apply the Noise Policy for Industry (NPII) method modifying factor for low frequency noise. A 2 dB penalty for daytime and a 5 dB penalty for the evening/night-time period would apply when assessed in accordance with Fact Sheet 3 Corrections for annoying noise characteristics from the EPA's Noise Policy for Industry Further investigation is currently being undertaken to determine impacts from low frequency noise from vessels.

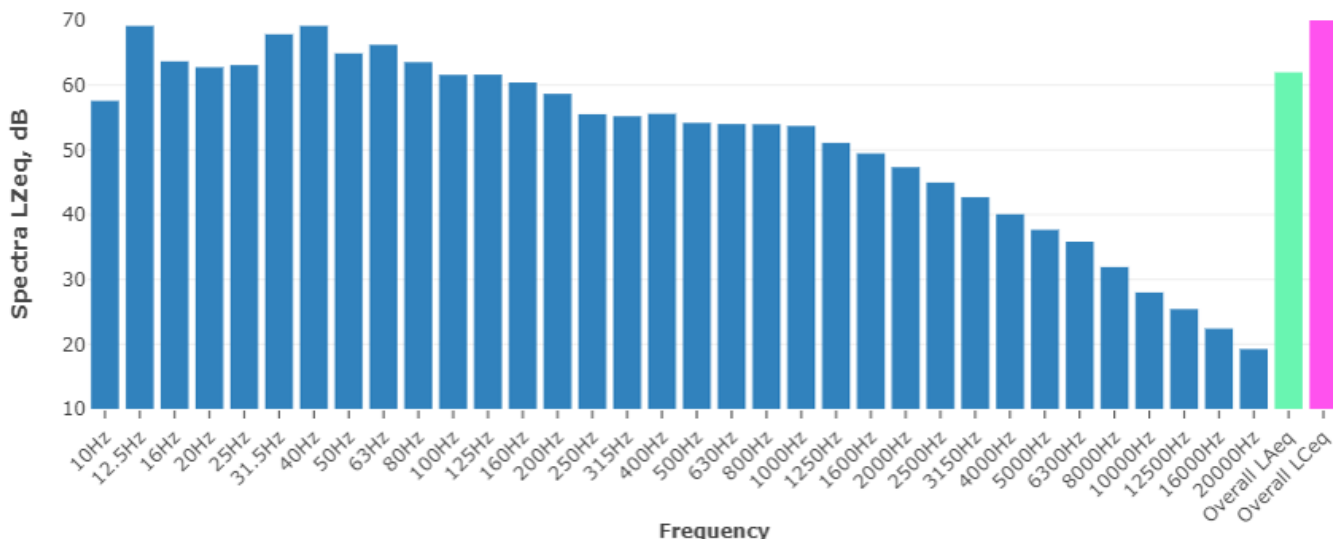
5) See discussion in Section 4.3.2 below.

4.3.2 Discussion regarding exceedances

The permanent noise monitoring system identified that noise levels from the Luga exceeded the trigger levels during the night-time period. A review of each hour was undertaken to determine the significance of the exceedance, and whether further detailed assessment was required.

Exceedance occurred regularly throughout the night-time period, however was < 1.0 dB over the night-time criteria (with the exception of 2 hours between 5 am and 7 am on May 25, which was 1.4 and 1.2 dB over the night-time criteria

4.3.3 Additional information



Note: The overall frequency spectrum can be classified into low (≤ 160 Hz), medium (160-2000 Hz) and high (≥ 2000 Hz) frequencies. Where low frequency components are identified in the hourly spectra, the frequency bars are shaded in cyan. Where tones are identified in the hourly spectra, the frequency bars are shaded in red.

Figure 4.5 Typical vessel spectrum – noise level at L03

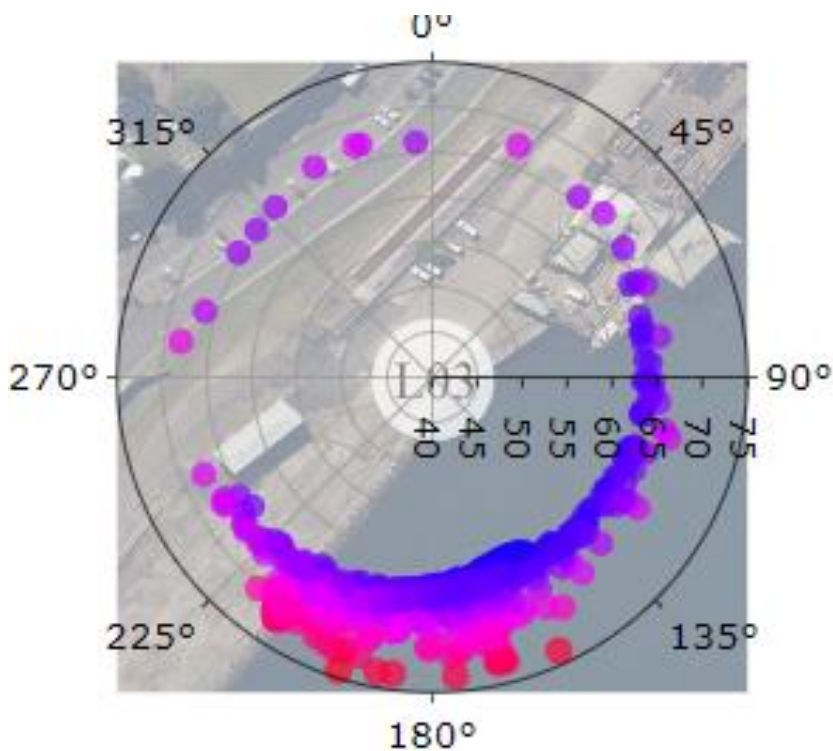


Figure 4.6 Typical vessel polar (directional) plot

4.4 Mareeba – May 28 – June 1, 2022 (GLB7)

4.4.1 Daily noise monitoring results

Date	Time period	Monitor location	Noise descriptor	Vessel noise level dBA ²	Tonal	LFN ³	Vessel Noise Trigger Levels, dBA	Compliance
May 28, 2022	Day	L03	L _{Aeq, 15 hour} ¹	48	No	No	60	Yes
	Night		L _{Aeq, 1 hour} ¹	51	No	No	55	Yes
			L _{Amax}	60	-	-	65	Yes
May 29, 2022	Day	L03	L _{Aeq, 15 hour} ¹	52	No	Yes ⁴	60	Yes
	Night		L _{Aeq, 1 hour} ¹	51	No	No	55	Yes
			L _{Amax}	64	-	-	65	Yes
May 30, 2022	Day	L03	L _{Aeq, 15 hour} ¹	53	No	Yes ⁴	60	Yes
	Night		L _{Aeq, 1 hour} ¹	53	No	Yes ⁴	55	Yes
			L _{Amax}	58	-	-	65	Yes
May 31, 2022	Day	L03	L _{Aeq, 15 hour} ¹	56	No	No	60	Yes
	Night		L _{Aeq, 1 hour} ¹	53	No	No	55	Yes
			L _{Amax}	58	-	-	65	Yes
June 1, 2022	Day	L03	L _{Aeq, 15 hour} ¹	55	No	Yes ⁴	60	Yes
	Night		L _{Aeq, 1 hour} ¹	-	-	-	55	Yes
			L _{Amax}	-	-	-	65	Yes

Notes

1) Daytime period (7 am to 10 pm) – 15 hours

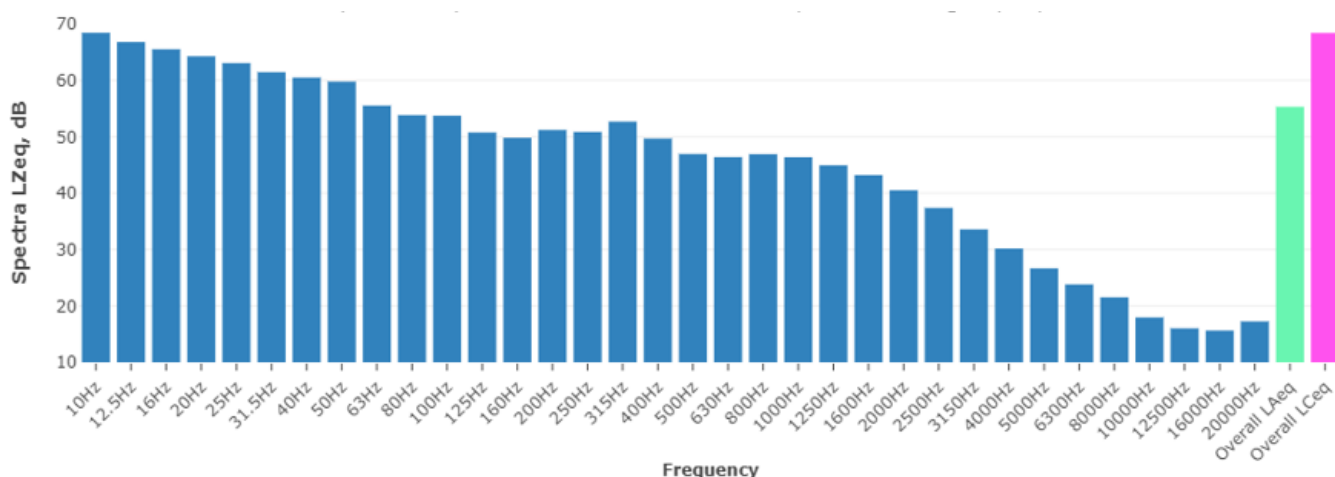
Night-time period (10 pm to 7 am) – worst case 1 hour

2) Inclusive of any penalties for modifying factors

3) LFN = Low Frequency Noise

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Figure 4.7 Typical vessel spectrum – noise level at L03

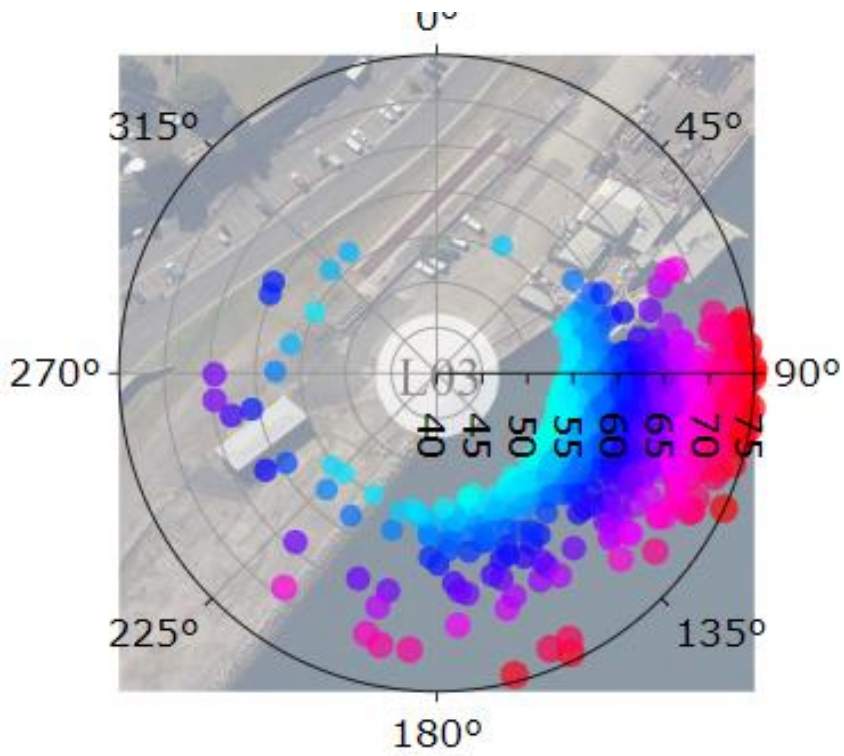


Figure 4.8 Typical vessel polar (directional) plot



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