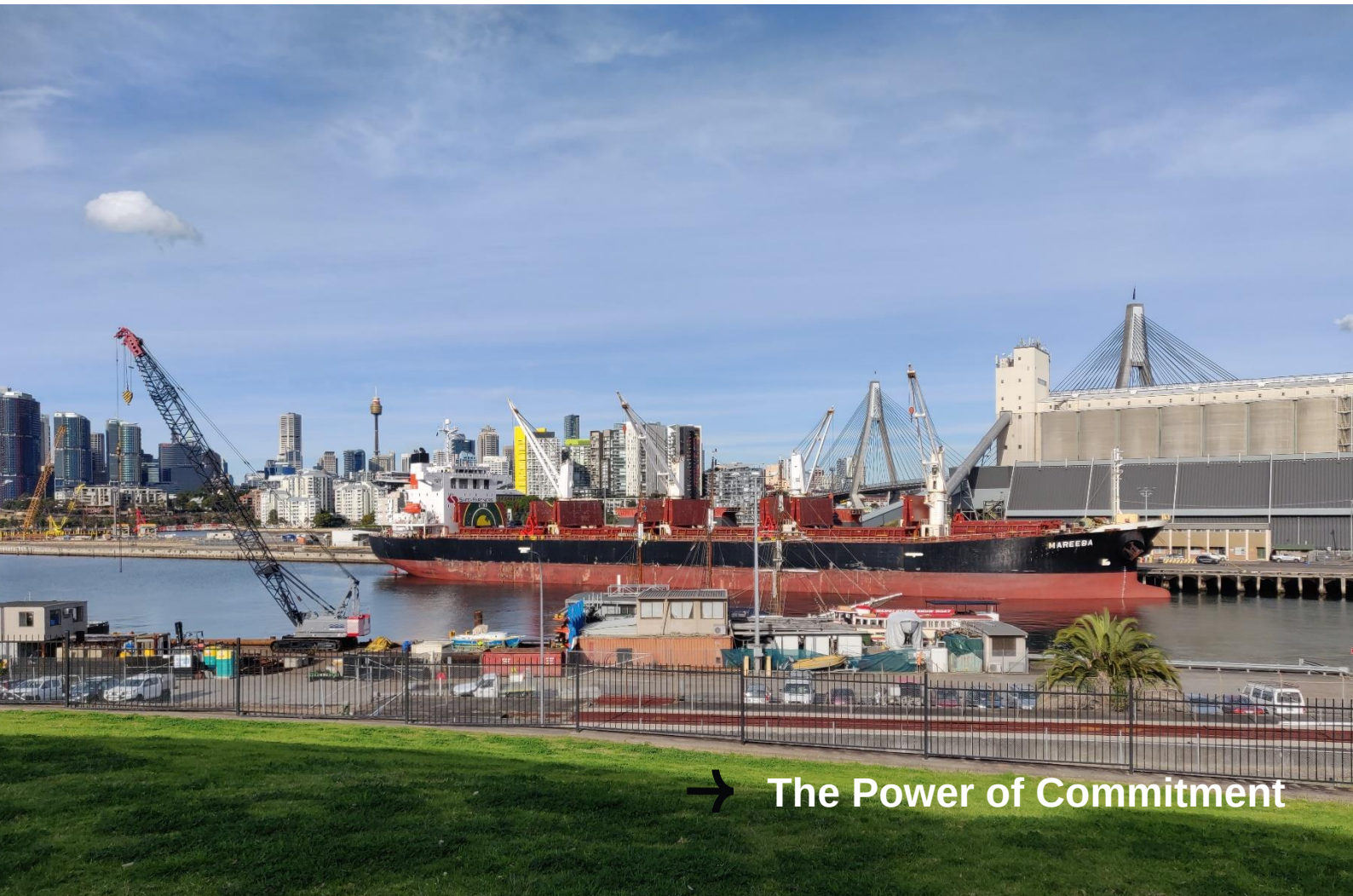
Monthly compliance noise monitoring report

Glebe Island / White Bay

Port Authority of New South Wales

November 2024



The Power of Commitment

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			Name	Signature	Name	Signature	Date
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S4	1	C Gordon	C Doyle		E Milton		04/02/2025

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 November 2024, 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 Member of the Association of Australasian Acoustical Consultants (AAAC) Lead staff are Members of the Australian Acoustical Society (AAS)	L01	Grafton Street, Balmain	**Meter details** Norsonic Nor145 Sound Level Meter with Nor1297 Noise Compass **Meter settings** A-weighted Fast time response 15 minute intervals	14529646	**Initial calibration level 90.7 dBA** Min. deviation = 0.0 dB Max. deviation = 0.1 dB
		L02	Maintenance Building on White Bay		14529643	**Initial calibration level 91.9 dBA** Min. deviation = 0.3 dB Max. deviation = 0.3 dB
		L03	Adjacent to White Bay 2		14529645	**Initial calibration level 92.5 dBA** Min. deviation = 0.2 dB Max. deviation = 0.2 dB
		L04	Onsite at Glebe Island		14529640	**Initial calibration level 93.9 dBA** Min. deviation = -0.1 dB Max. deviation = 0 dB

Vessel name	Arrival date and time	Departure date and time	Berth location	Applicable noise monitoring location/s
Bulk vessels				
Pioneer[1]	November 6, 2024 / 06:21	November 8, 2024 / 22:58	GLB7	L03
Kondili	November 7, 2024 / 19:09	November 10, 2024 / 05:57	GLB8	L03

Vessel name	Arrival date and time	Departure date and time	Berth location	Applicable noise monitoring location/s
Akuna	November 12, 2024 / 05:54	November 13, 2024 / 07:30	GLB8	L03
Pioneer[2]	November 18, 2024 / 17:21	November 23, 2024 / 17:09	GLB7	L03
Akuna	November 21, 2024 / 10:34	November 25, 2024 / 00:13	GLB8	L03
Elanora	November 25, 2024 / 04:10	November 27, 2024 / 14:56	GLB7	L03
Cruise vessel				
Pacific Adventure[3,4]	November 2, 2024 / 06:55	November 2, 2024 / 16:09	WBCT	L01
Disney Wonder[5]	November 6, 2024 / 07:22	November 6, 2024 / 18:00	WBCT	L01
Westerdam	November 17, 2024 / 06:26	November 17, 2024 / 17:05	WBCT	L01
Silver Muse	November 22, 2024 / 07:09	November 22, 2024 / 18:52	WBCT	L01
Europa 2[6]	November 27, 2024 / 07:09	November 27, 2024 / 20:35	WBCT	L01
Viking Orion	November 29, 2024 / 05:43	November 30, 2024 / 18:09	WBCT	L01

Note: 1) On 07/11/2024 at 17:29, Pioneer moved from GLB7 to WHT4. Then, it moved back to GLB7 on 07/11/2024 at 19:51.

Note: 2) On 21/11/2024 at 09:16, Pioneer moved from GLB7 to GLB1. Then, it moved back to GLB7 on 21/11/2024 at 11:18.

Note: 3) Complaint received about pumping/buzzing noise at 07:45 on 02/11/2024. Review of data did not show any exceedance.

Note: 4) The Pacific Adventure arrived 5 minutes prior to 7 am in the night time period. As such, no night time result has been provided.

Note: 5) Disney Wonder informed Port Authority they would conduct a Full Abandon Ship Crew Drill at 09:30 on 06/11/2024. This is permissible under the policy.

Note: 6) Europa 2 informed Port Authority they would conduct an AMSA testing of ship's alarm between 10:30 and 11:20 on 27/11/2024. This is allowed under the policy.

2.1 Compliance summary

2.2 Bulk vessels

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
Pioneer	Nov 6 – Nov 8	L03	52	51	64	60	55	65	Yes	Yes
Kondili	Nov 7 – Nov 10	L03	55	54	68[4]	60	55	65	Yes	No[4]
Akuna	Nov 12 – Nov 13	L03	62[5]	62[5]	69[6]	60	55	65	No[5]	No[6]
Pioneer	Nov 18 – Nov 23	L03	50	51	64	60	55	65	Yes	Yes
Akuna	Nov 21 – Nov 25	L03	54	50	65	60	55	65	Yes	Yes
Elanora	Nov 25 – Nov 27	L03	56	51	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) – loudest 1 hour period

Note: 4) This maximum level event only occurred once during the entire night time period of November 7, and at 6:57 am. Given it only occurred once, this is not considered an adverse impact and no detailed investigation is warranted. The vessel was compliant with the night time vessel noise trigger level at all other times during the visit.

Note: 5) From 6 am on November 13, there was a significant increase in the L_{Aeq} noise level, as well as the noise from the vessel being determined as tonal at 1000 Hz. As such as 5 dB correction has been applied to the day and night L_{Aeq} levels due to the tonal noise. This increase in noise level and tonal noise lasted until 7:30 am before departing.

Note: 6) This maximum level event only occurred once during the entire night time period of November 13, and at 4:13 am. Given it only occurred once, this is not considered an adverse impact and no detailed investigation is warranted. The vessel was compliant with the night time vessel noise trigger level at all other times during the visit.

2.3 Cruise vessels

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] $L_{Aeq(9\ hr)}$	Day[2] $L_{Aeq(15\ hr)}$	Night[3] $L_{Aeq(9\ hr)}$	Day[4]	Night
Pacific Adventure	Nov 2	L01	57	-	N/A	58	N/A	-
Disney Wonder	Nov 6	L01	57	-	N/A	58	N/A	-
Westerdam	Nov 17	L01	58	53	N/A	58	N/A	Yes
Silver Muse	Nov 22	L01	54	-	N/A	58	N/A	-
Europa 2	Nov 27	L01	56	-	N/A	58	N/A	-

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] $L_{Aeq(9\ hr)}$	Day[2] $L_{Aeq(15\ hr)}$	Night[3] $L_{Aeq(9\ hr)}$	Day[4]	Night
Viking Orion	Nov 29	L01	54	53	N/A	58	N/A	Yes
	Nov 30	L01	52	-	N/A	58	N/A	-

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) – 9 hour logarithmic average

Note: 4) Port Authority provides attenuation to a defined area of residences where noise modelling indicates that current noise levels reach or exceed 55 dBA **at night** ('attenuation eligibility trigger'). Under the White Bay Cruise Terminal Noise Restriction Policy, cruise ship noise which causes further residences than those currently identified to exceed the attenuation eligibility trigger is considered to be Excessive Noise. Hence under the Noise Restriction Policy a day time trigger level does not apply. The area of residences currently offered attenuation (ie meeting the 'attenuation eligibility trigger') is based on a reference cruise vessel intrusive noise level of 58 dBA at the nearest residence, which sets the Vessel Noise Trigger Level for assessing compliance at night.

Excessive noise is defined as "any noise including but not limited to engine, generator or ventilation noise which causes further residences than those currently identified to exceed the attenuation eligibility trigger."

3. Detailed results – bulk vessels

3.1 Pioneer (GLB7) – November 6 – November 8, 2024

3.1.1 Daily noise monitoring results

Date	Time period[1]	Monitor location	Noise descriptor	Vessel noise level dBA[2]	Tonal	LFN[3]	Vessel Noise Trigger Levels, dBA	Compliance
November 5, 2024	Day	L03	$L_{Aeq,\ 15\ hour}$[1]	-	No	Yes	60	-
	Night		$L_{Aeq,\ 1\ hour}$[1]	51	No	Yes	55	Yes
			L_{Amax}	56	-	-	65	Yes
November 6, 2024	Day	L03	$L_{Aeq,\ 15\ hour}$[1]	52	No	Yes	60	Yes
	Night		$L_{Aeq,\ 1\ hour}$[1]	48	No	Yes	55	Yes
			L_{Amax}	64	-	-	65	Yes
November 7, 2024	Day	L03	$L_{Aeq,\ 15\ hour}$[1]	Pioneer and Kondili were berthed simultaneously at Glebe Island 7 and 8. Noise levels determined by the online noise system were assigned to the Kondili during this period, as this was the dominant noise source at the time. Note that noise from both vessels was compliant with the daytime $L_{Aeq\ (15\ hour)}$ and the $L_{Aeq\ (1hour)}$ criteria, therefore no detailed analysis has been undertaken.				
	Night		$L_{Aeq,\ 1\ hour}$[1]					
			L_{Amax}					
November 8, 2024	Day	L03	$L_{Aeq,\ 15\ hour}$[1]					
	Night		$L_{Aeq,\ 1\ hour}$[1]					
			L_{Amax}					

Notes

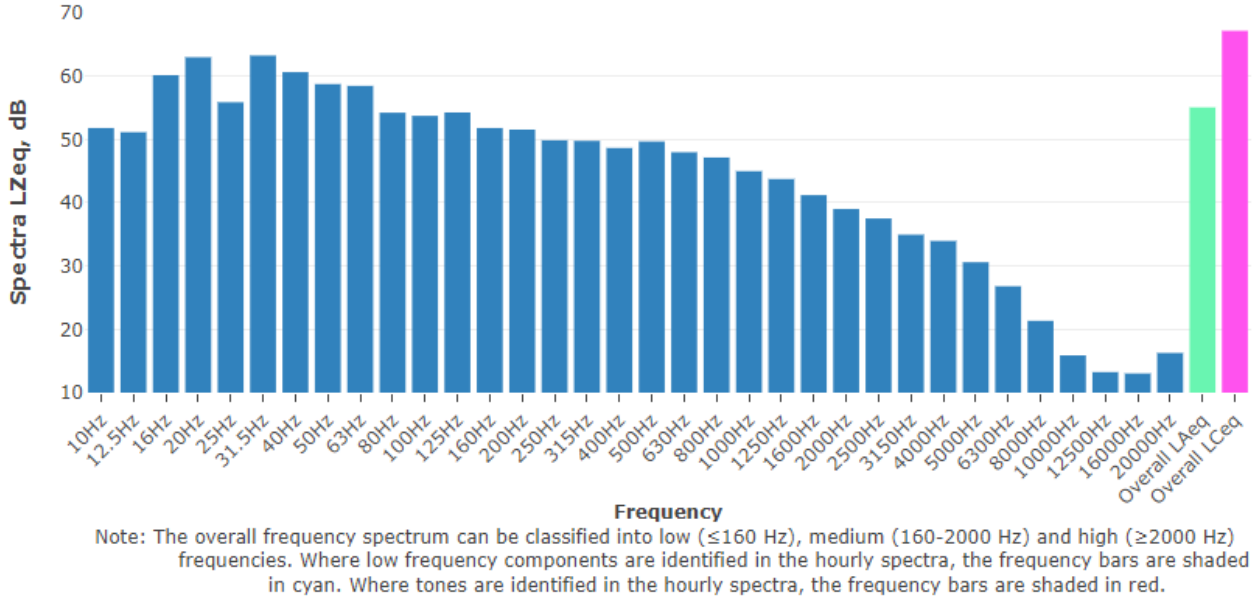
1) Daytime period (7 am to 10 pm) – 15 hours
Night-time period (10 pm to 7 am) – worst case 1 hour

2) Inclusive of any penalties for modifying factors

3) LFN = Low Frequency Noise

4) Note that the system classifies November 5 as the period from 7 am on November 5 to 7 am on November 6. The Pioneer arrived at 6:21 am on November 6, and has been incorporated in the data for November 5.

3.1.2 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 3.1 Typical vessel spectrum – noise level at L03

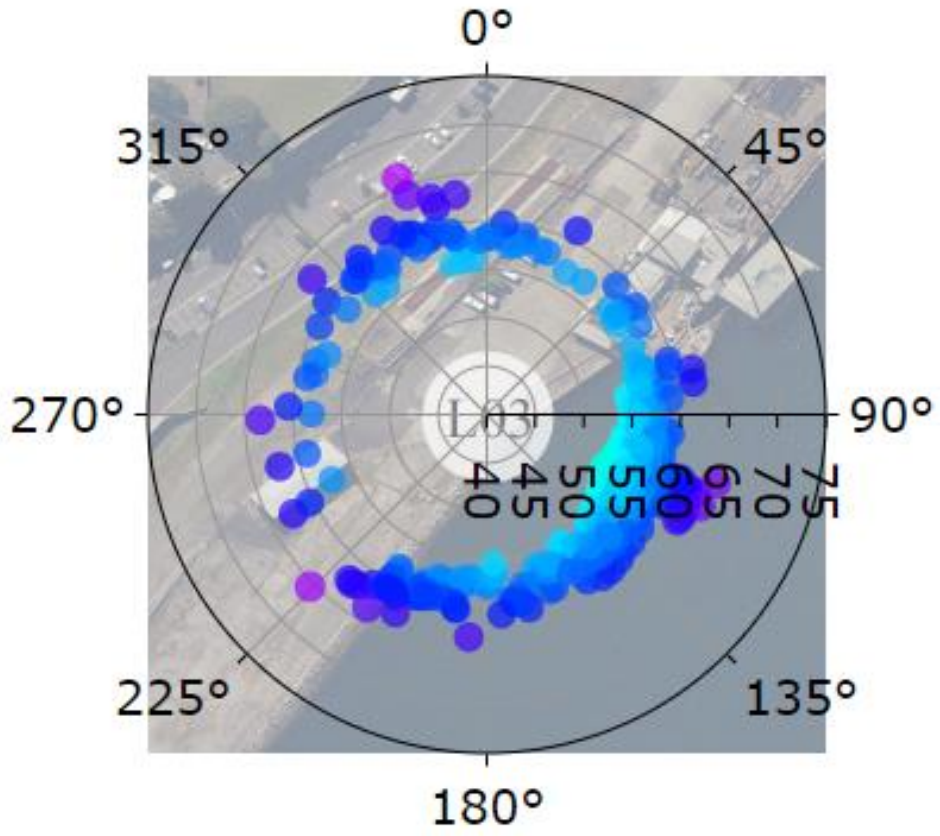


Figure 3.2 Typical vessel polar (directional) plot

3.2 Kondili (GLB8) – November 7 – November 10, 2024

3.2.1 Daily noise monitoring results

Date	Time period[1]	Monitor location	Noise descriptor	Vessel noise level dBA[2]	Tonal	LFN[3]	Vessel Noise Trigger Levels, dBA	Compliance
November 7, 2024	Day	L03	$L_{Aeq, 15\ hour}$[1]	51	No	Yes	60	Yes
	Night		$L_{Aeq, 1\ hour}$[1]	53	No	Yes	55	Yes
			L_{Amax}	68[4]	-	-	65	No[4]
November 8, 2024	Day	L03	$L_{Aeq, 15\ hour}$[1]	55	Yes	Yes	60	Yes
	Night		$L_{Aeq, 1\ hour}$[1]	54	No	Yes	55	Yes
			L_{Amax}	65	-	-	65	Yes
November 9/10, 2024	Day	L03	$L_{Aeq, 15\ hour}$[1]	53	No	Yes	60	Yes
	Night		$L_{Aeq, 1\ hour}$[1]	50	No	Yes	55	Yes
			L_{Amax}	63	-	-	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) This maximum level event occurred twice during the entire night time period of November 7. The vessel was compliant with the night time vessel noise trigger level at all other times during the visit.

3.2.2 Additional information

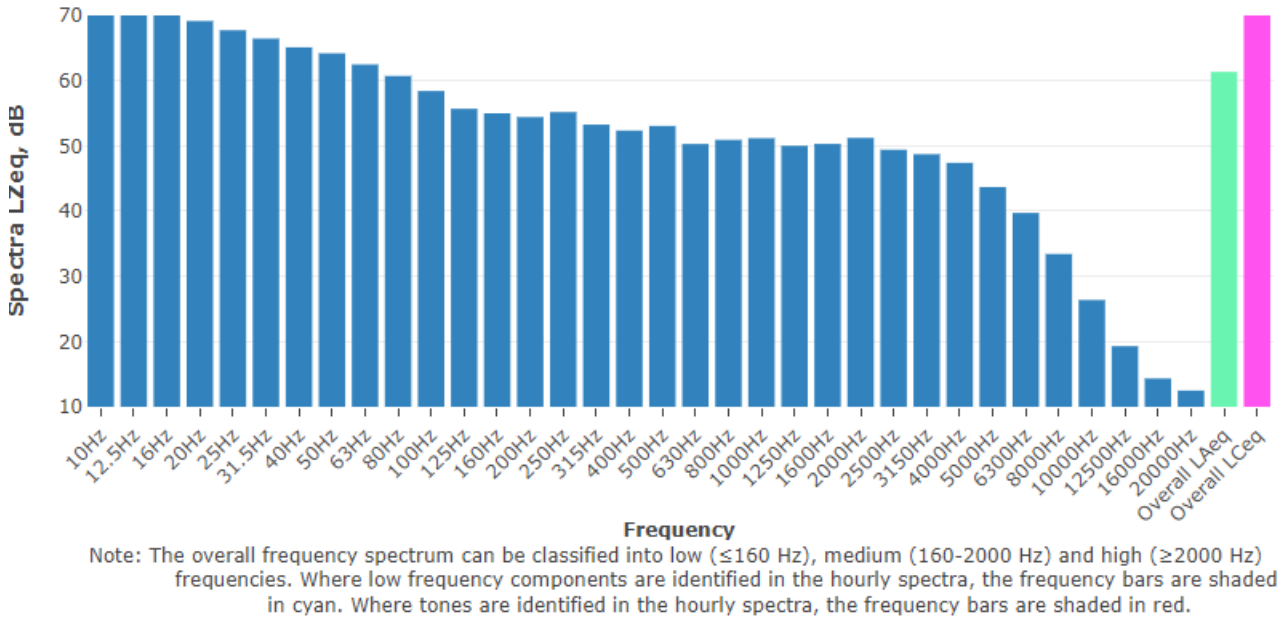


Figure 3.3 Typical vessel spectrum – noise level at L03

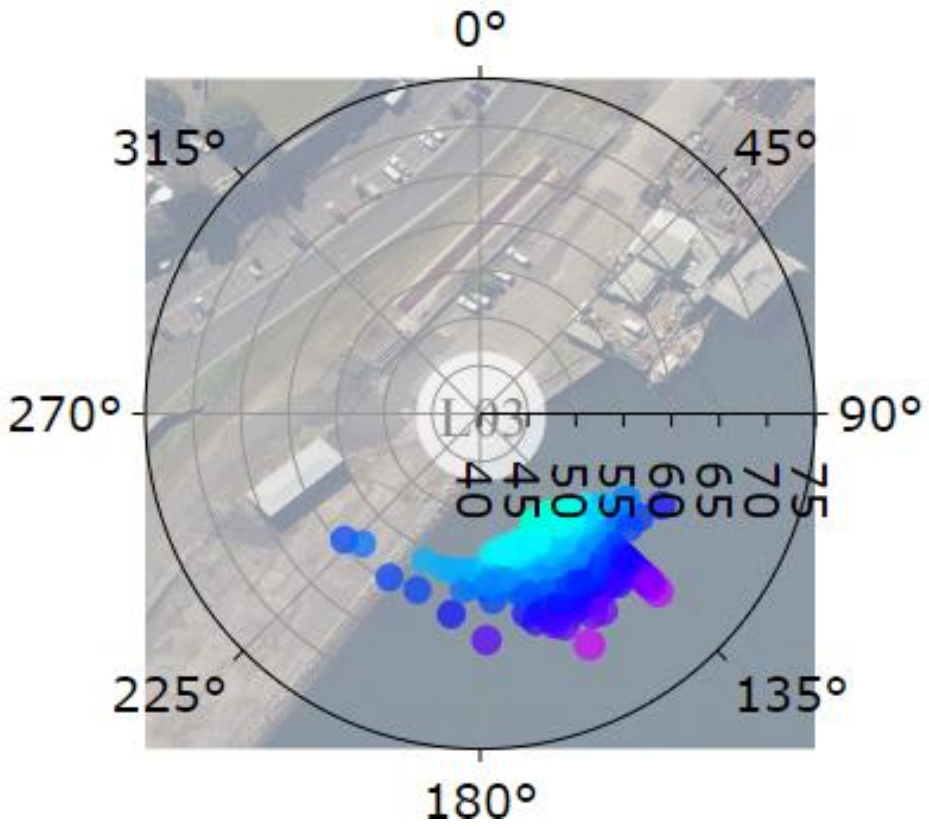


Figure 3.4 Typical vessel polar (directional) plot

3.3 Akuna (GLB8) – November 12 – November 13, 2024

3.3.1 Daily noise monitoring results

Date	Time period[1]	Monitor location	Noise descriptor	Vessel noise level dBA[2]	Tonal	LFN[3]	Vessel Noise Trigger Levels, dBA	Compliance
November 11, 2024[4]	Day	L03	$L_{Aeq,\ 15\ hour}$[1]	-	-	-	60	-
	Night		$L_{Aeq,\ 1\ hour}$[1]	53	No	No	55	Yes
			L_{Amax}	62	-	-	65	Yes
November 12, 2024	Day	L03	$L_{Aeq,\ 15\ hour}$[1]	56	No	Yes	60	Yes
	Night		$L_{Aeq,\ 1\ hour}$[1]	62[5]	Yes	Yes	55	No[5]
			L_{Amax}	69[6]	-	-	65	No[6]
November 13, 2024	Day	L03	$L_{Aeq,\ 15\ hour}$[1]	62[5]	Yes	No	60	No[5]
	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

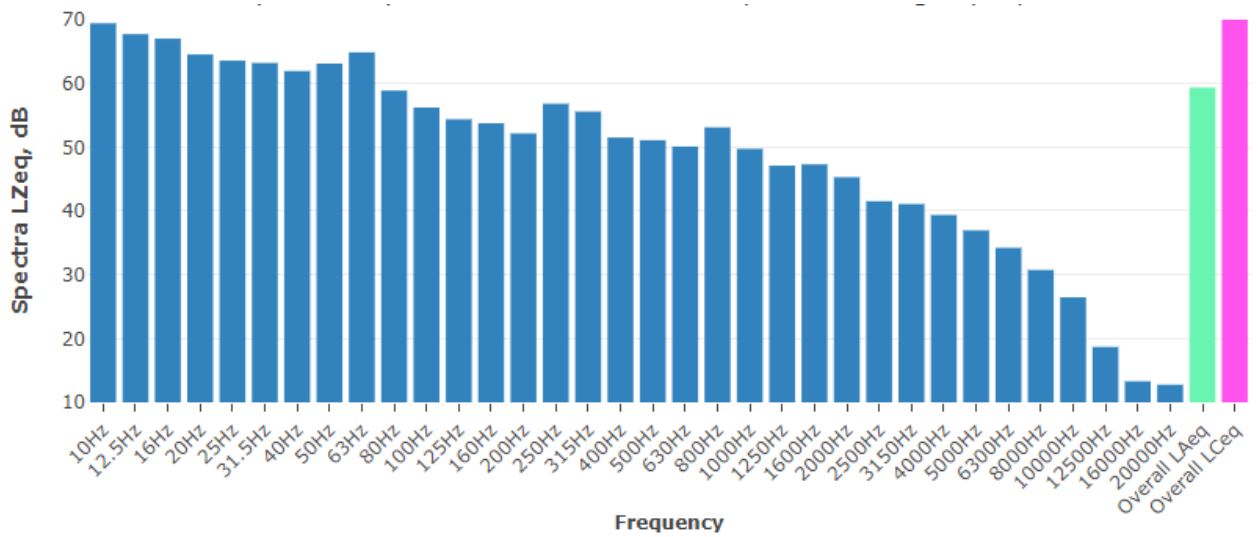
3) LFN = Low Frequency Noise

4) Note that the system classifies November 11 as the period from 7 am on November 11 to 7 am on November 12. The Akuna arrived at 5:54 am on November 12, and has been incorporated in the data for November 11.

5) From 6 am on November 13, there was a significant increase in the L_{Aeq} noise level, as well as the noise from the vessel being determined as tonal at 1000 Hz. As such as 5 dB correction has been applied to the day and night L_{Aeq} levels due to the tonal noise. This increase in noise level and tonal noise lasted until 7:30 am before departing.

6) This maximum level event only occurred once during the entire night time period of November 13, and at 4:13 am. Given it only occurred once, this is not considered an adverse impact and no detailed investigation is warranted. The vessel was compliant with the night time vessel noise trigger level at all other times during the visit

3.3.2 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 3.5 Typical vessel spectrum – noise level at L03

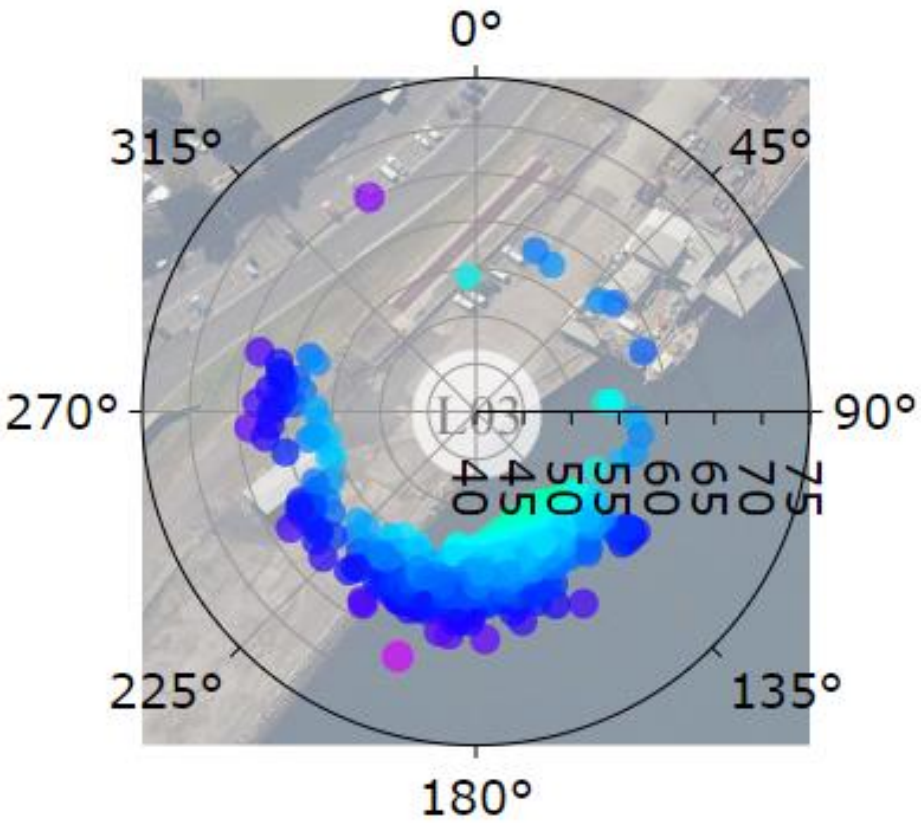


Figure 3.6 Typical vessel polar (directional) plot

3.4 Pioneer (GLB7) – November 18 – November 23, 2024

3.4.1 Daily noise monitoring results

Date	Time period[1]	Monitor location	Noise descriptor	Vessel noise level dBA[2]	Tonal	LFN[3]	Vessel Noise Trigger Levels, dBA	Compliance
November 18, 2024	Day	L03	$L_{Aeq,\ 15\ hour}$[1]	50	No	Yes	60	-
	Night		$L_{Aeq,\ 1\ hour}$[1]	51	No	Yes	55	Yes
			L_{Amax}	64	-	-	65	Yes
November 19, 2024	Day	L03	$L_{Aeq,\ 15\ hour}$[1]	50	No	Yes	60	Yes
	Night		$L_{Aeq,\ 1\ hour}$[1]	49	No	Yes	55	Yes
			L_{Amax}	72[4]	-	-	65	Yes[4]
November 20, 2024	Day	L03	$L_{Aeq,\ 15\ hour}$[1]	50	No	Yes	60	Yes
	Night		$L_{Aeq,\ 1\ hour}$[1]	47	No	Yes	55	Yes
			L_{Amax}	58	-	-	65	Yes
November 21, 2024	Day	L03	$L_{Aeq,\ 15\ hour}$[1]	52	No	Yes	60	Yes
	Night		$L_{Aeq,\ 1\ hour}$[1]	Pioneer and Akuna were berthed simultaneously at Glebe Island 7 and 8. Noise levels determined by the online noise system were assigned to the Akuna during this period, as this was the dominant noise source at the time. Note that noise from both vessels was compliant with the daytime $L_{Aeq\ (15\ hour)}$ and the $L_{Aeq\ (1hour)}$ criteria, therefore no detailed analysis has been undertaken.				
			L_{Amax}					
November 22, 2024	Day	L03	$L_{Aeq,\ 15\ hour}$[1]					
	Night		$L_{Aeq,\ 1\ hour}$[1]					
			L_{Amax}					
November 23, 2024	Day	L03	$L_{Aeq,\ 15\ hour}$[1]					
	Night		$L_{Aeq,\ 1\ hour}$[1]					
			L_{Amax}					

Notes

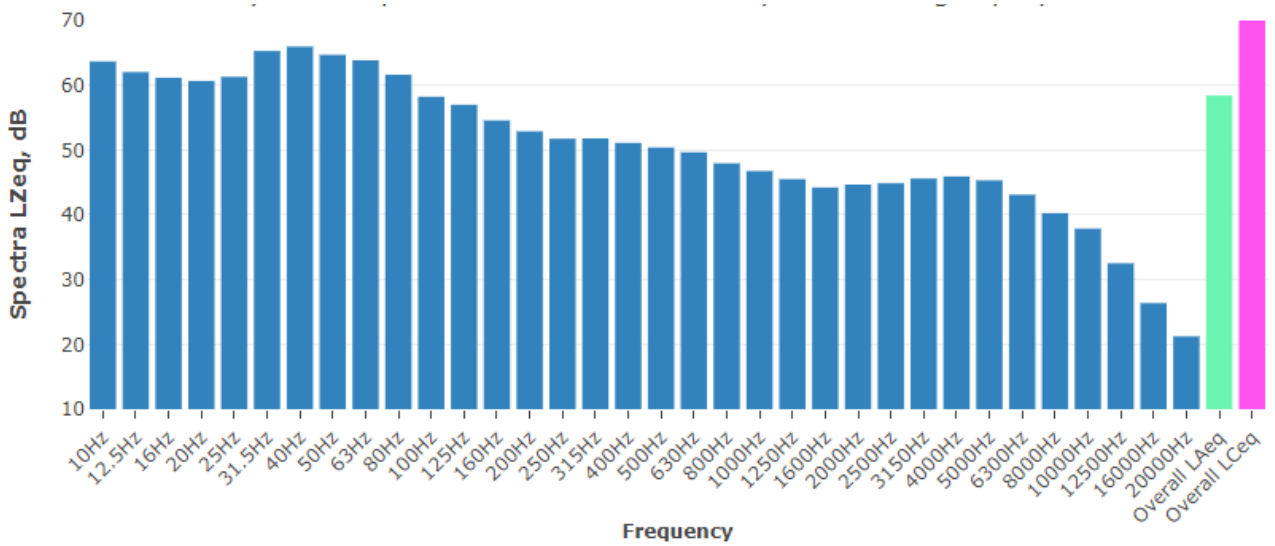
1) Daytime period (7 am to 10 pm) – 15 hours
Night-time period (10 pm to 7 am) – worst case 1 hour

2) Inclusive of any penalties for modifying factors

3) LFN = Low Frequency Noise

4) This maximum level event only occurred once during the entire night time period of November 20. The data shows that the event occurred did not occur from towards the ships location, and as such was not associated with the Pioneer. There were no other exceedances and as such, the vessel is considered compliant.

3.4.2 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 3.7 Typical vessel spectrum – noise level at L03

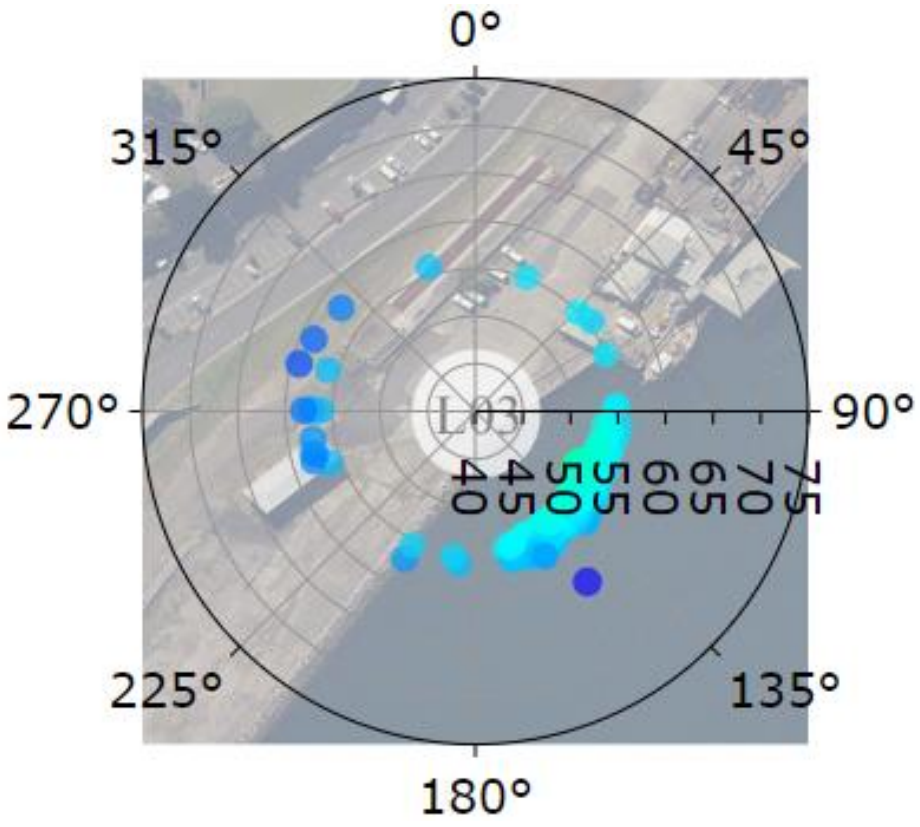


Figure 3.8 Typical vessel polar (directional) plot

3.5 Akuna (GLB8) – November 21 – November 25, 2024

3.5.1 Daily noise monitoring results

Date	Time period[1]	Monitor location	Noise descriptor	Vessel noise level dBA[2]	Tonal	LFN[3]	Vessel Noise Trigger Levels, dBA	Compliance
November 21, 2024	Day	L03	$L_{Aeq,\ 15\ hour}$[1]	54	No	Yes	60	Yes
	Night		$L_{Aeq,\ 1\ hour}$[1]	50	No	Yes	55	Yes
			L_{Amax}	61	-	-	65	Yes
November 22, 2024	Day	L03	$L_{Aeq,\ 15\ hour}$[1]	54	No	Yes	60	Yes
	Night		$L_{Aeq,\ 1\ hour}$[1]	49[4]	No	Yes	55	Yes
			L_{Amax}	65	-	-	65	Yes
November 23, 2024	Day	L03	$L_{Aeq,\ 15\ hour}$[1]	52	No	Yes	60	Yes
	Night		$L_{Aeq,\ 1\ hour}$[1]	49[4]	No	Yes	55	Yes
			L_{Amax}	63	-	-	65	Yes
November 24/25, 2024	Day	L03	$L_{Aeq,\ 15\ hour}$[1]	50	No	Yes	60	Yes
	Night		$L_{Aeq,\ 1\ hour}$[1]	50[4]	No	Yes	55	Yes
			L_{Amax}	56	-	-	65	Yes

Notes

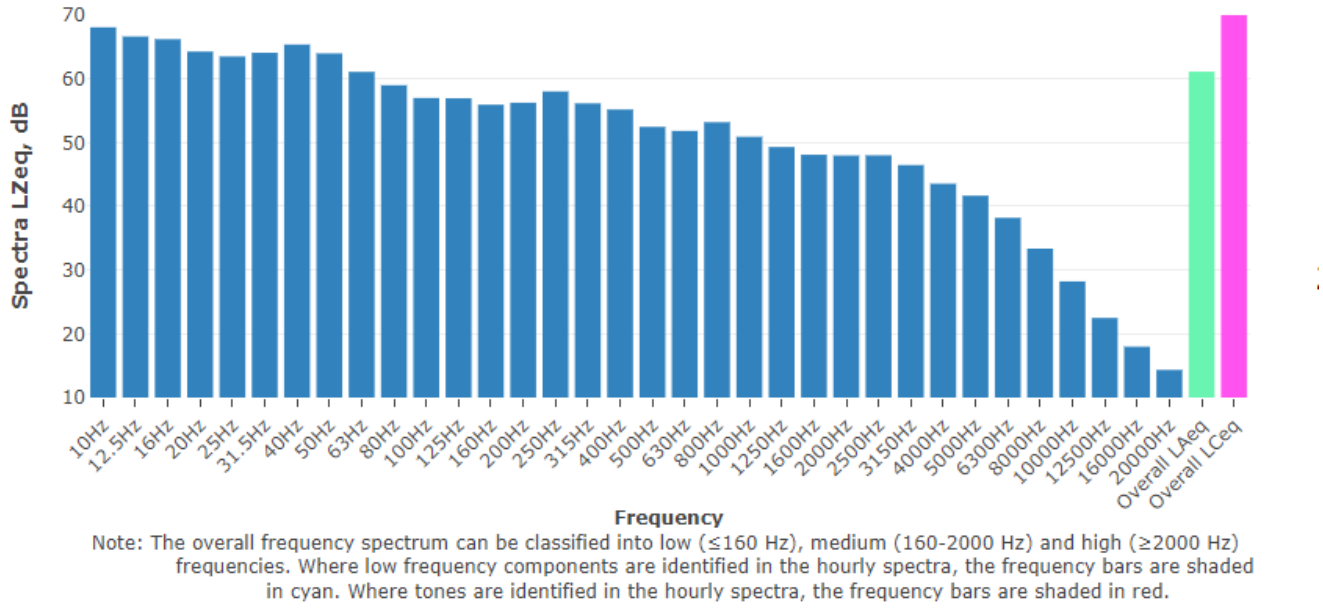
1) Daytime period (7 am to 10 pm) – 15 hours
Night-time period (10 pm to 7 am) – worst case 1 hour

2) Inclusive of any penalties for modifying factors

3) LFN = Low Frequency Noise

4) Measurements determined that noise was tonal at 6,300 Hz for periods during this night time period. A further review into the data determined that this was likely associated with extraneous noise in the area rather than the vessel. As such, no tonal correction has been applied.

3.5.2 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 3.9 Typical vessel spectrum – noise level at L03

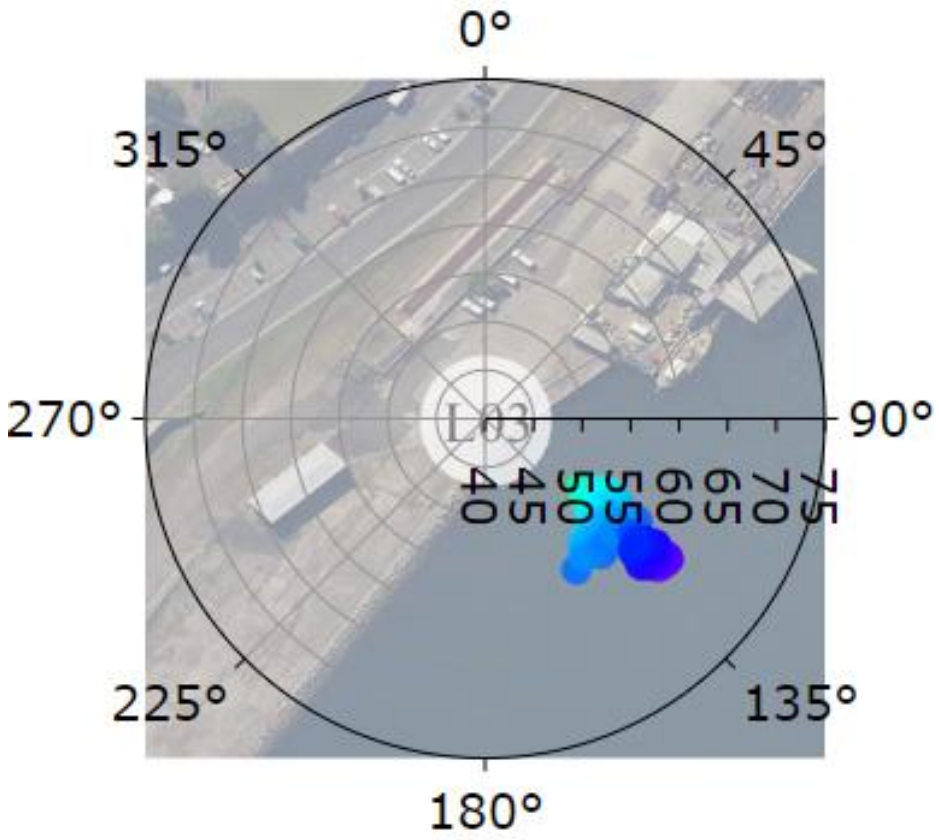


Figure 3.10 Typical vessel polar (directional) plot

3.6 Elanora (GLB7) – November 25 – November 27, 2024

3.6.1 Daily noise monitoring results

Date	Time period[1]	Monitor location	Noise descriptor	Vessel noise level dBA[2]	Tonal	LFN[3]	Vessel Noise Trigger Levels, dBA	Compliance
November 25, 2024	Day	L03	$L_{Aeq, 15\ hour}$[1]	56	No	Yes	60	Yes
	Night		$L_{Aeq, 1\ hour}$[1]	51[4]	No	Yes	55	Yes
			L_{Amax}	58	-	-	65	Yes
November 26, 2024	Day	L03	$L_{Aeq, 15\ hour}$[1]	55	No	Yes	60	Yes
	Night		$L_{Aeq, 1\ hour}$[1]	51[4]	No	Yes	55	Yes
			L_{Amax}	64	-	-	65	Yes
November 27, 2024	Day	L03	$L_{Aeq, 15\ hour}$[1]	53	No	Yes	60	Yes
	Night		$L_{Aeq, 1\ hour}$[1]	-	-	-	55	-
			L_{Amax}	-	-	-	65	-

Notes

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

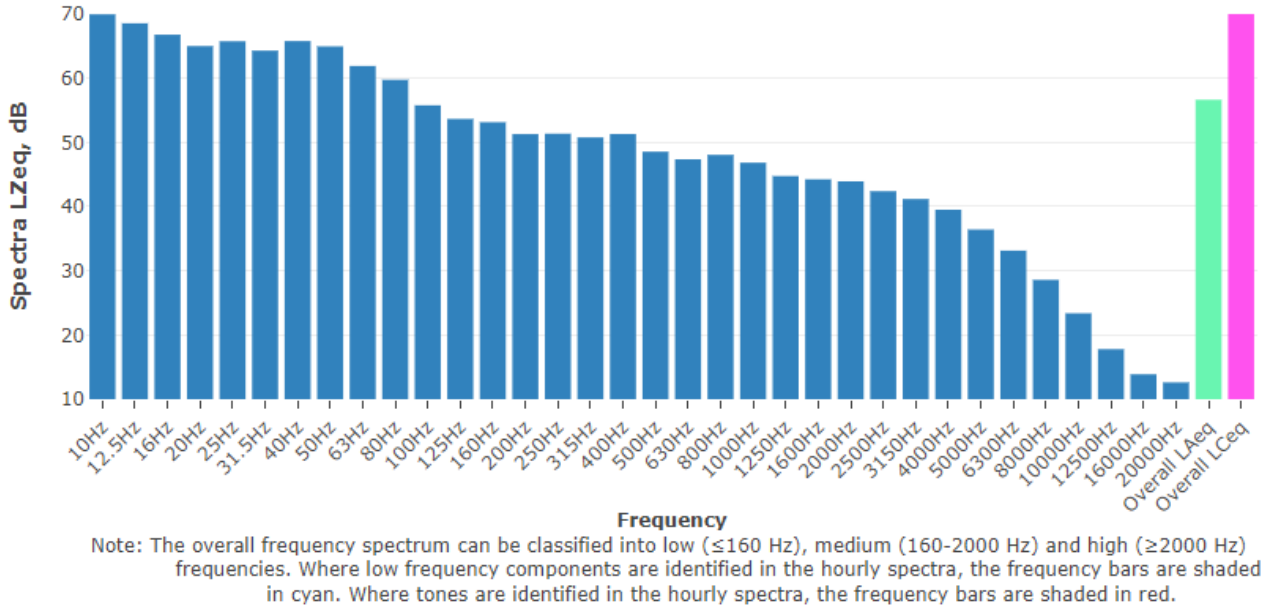
Night-time period (10 pm to 7 am) – worst case 1 hour

2) Inclusive of any penalties for modifying factors

3) LFN = Low Frequency Noise

4) Measurements determined that noise was tonal at 6,300 Hz for periods during this night time period. A further review into the data determined that this was likely associated with extraneous noise in the area rather than the vessel. As such, no tonal correction has been applied.

3.6.2 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 3.11 Typical vessel spectrum – noise level at L03

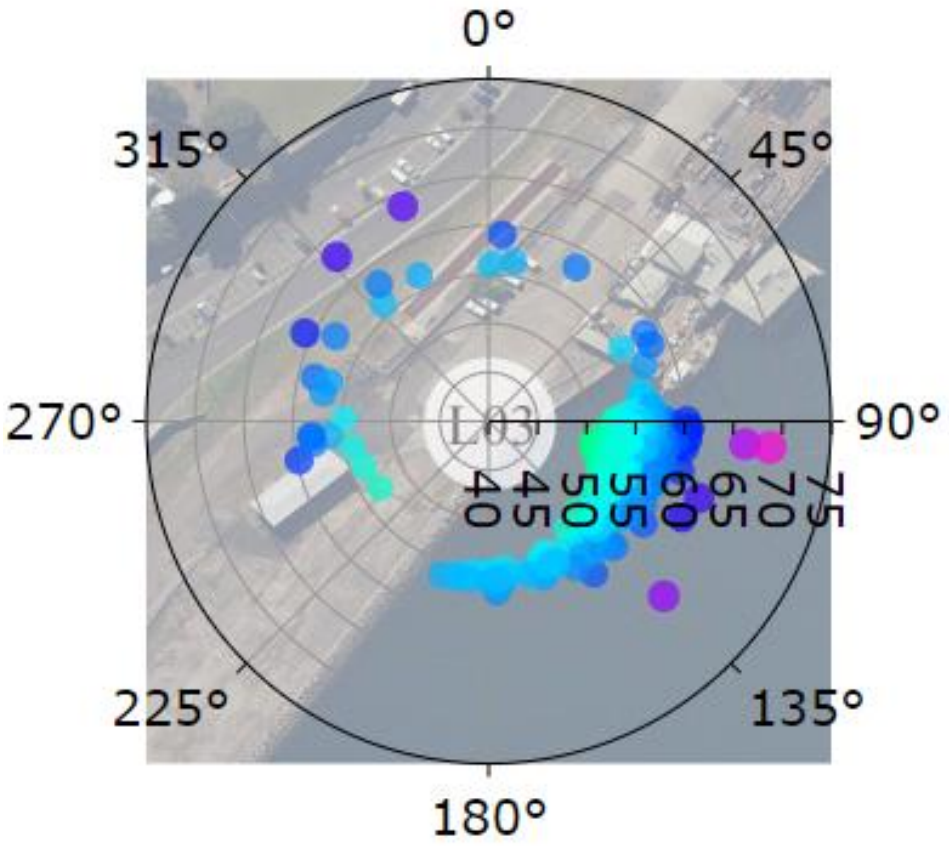


Figure 3.12 Typical vessel polar (directional) plot

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