Submitted to:

David Clark
Karpowership SA

Submitted by:

Tim Mason
Subacoustech Environmental Ltd
Unit 2, Muira Industrial Estate
William Street
Southampton
SO14 5QH
United Kingdom

Tel: +44 (0)23 80 236 330

E-mail: tim.mason@subacoustech.com
Website: www.subacoustech.com

Background noise monitoring – Port of Richards Bay

Tim Mason

07 December 2021

Subacoustech Environmental Report No. P292R0501

Document No.	*Date*	*Written*	*Approved*	*Distribution*
P292R0501	*07/12/2021*	*T Mason*	*S East*	*D Clark (KPS)*

This report is a controlled document. The report documentation page lists the version number, record of changes, referencing information, abstract and other documentation details.

Contents

1 Introduction

As part of the consents process prior to the proposed installation of Powerships and associated vessels at the Port of Richards Bay, KwaZulu Natal, South Africa, Karpowership SA have commissioned Subacoustech Environmental Ltd to carry out underwater noise measurements in and around the Port of Richard's Bay. These measurements are intended to establish a baseline in the local environment for underwater noise before the installation of any noise generating equipment.

Subacoustech Environmental visited the Port of Richard's Bay on 15th to 17th November 2021 to sample an indicative underwater noise baseline at Richard's Bay prior to more detailed long-term monitoring. This represents the first step before undertaking a comprehensive long-term baseline survey at the site.

This report provides a summary of the ambient noise levels sampled on this visit.

2 Underwater acoustics terminology

2.1 Units of measurement

Sound measurements underwater are usually expressed using the decibel (dB) scale, which is a logarithmic measure of sound. A logarithmic scale is used because, rather than equal increments of sound having an equal increase in effect, typically each doubling of sound level will cause a roughly equal increase of "loudness."

Any quantity expressed in this scale is termed a "level." If the unit is sound pressure, expressed on the dB scale, it will be termed a "sound pressure level."

The fundamental definition of the dB scale is given by:

$$Level = 10 \times \log_{10}\left(\frac{Q}{Q_{ref}}\right)$$

where Q is the quantity being expressed on the scale, and Q_{ref} is the reference quantity.

The dB scale represents a ratio. It is therefore used with a reference unit, which expresses the base from which the ratio is expressed. The reference quantity is conventionally smaller than the smallest value to be expressed on the scale so that any level quoted is positive. For example, a reference quantity of 20 µPa is used for sound in air since that is the lower threshold of human hearing.

When used with sound pressure, the pressure value is squared. So that variations in the units agree, the sound pressure must be specified as units of Root Mean Square (RMS) pressure squared. This is equivalent to expressing the sound as:

$$Sound\ pressure\ level = 20 \times \log_{10}\left(\frac{P_{RMS}}{P_{ref}}\right)$$

For underwater sound, a unit of 1 µPa is typically used as the reference unit (P_{ref}); a Pascal is equal to the pressure exerted by one Newton over one square metre, one micropascal equals one millionth of this.

2.2 Sound pressure level (SPL)

The SPL is normally used to characterise noise of a continuous nature such as drilling, boring, continuous wave sonar, or background sea and river noise levels. To calculate the SPL, the variation in sound pressure is measured over a specific period to determine the RMS level of the time-varying sound. The SPL can therefore be considered a measure of the average level of sound over the measurement period. It is often presented as a single figure overall broadband noise level, e.g. 95.0 dB SPL_{RMS} re 1 µPa. Unless stated otherwise, all SPL_{RMS} values in this report are referenced to 1 µPa.

Based on the equation above, a doubling of sound pressure (P_{RMS}) is equivalent to a 6 dB increase in sound pressure level (SPL_{RMS}).

3 Measurement procedure

Underwater noise levels were sampled around the Port of Richard's Bay using two techniques.

3.1 Static Monitoring

3.1.1 Equipment

- Hydrophone: Ocean Sonics icListen RB9 digital hydrophone
- Sensitivity: -178.2 dB re. 1V/µPa
- Sample rate: 64 kS/s
- Bit-depth: 24 bit
- Recording: Continuous uncompressed WAV format

3.1.2 Procedure

A static monitor was installed in a representative, secure location near to the proposed site of the one of the Powership auxiliary vessels, the FSRU, the site chosen to represent a position in the water with 'line-of-sight' to much of the port. This site was chosen to be most representative of the general noise level at the port, to which the Powerships and associated vessels could contribute, avoiding shipping channels.

The static monitor was moored to the seabed and floated approximately 2 m above it at the location LTM (Long Term Monitor) shown in Figure 3-2. A J-shaped mooring was used, whereby a hydrophone, for monitoring underwater sound, is held on the seabed by a clump weight, and a ground line links to another weight that secures a surface buoy for identification and future collection. This setup minimises any noise caused by waves at the surface affecting the monitor and is shown in Figure 3-1 below. This monitoring setup is a widely accepted acoustic mooring technique detailed in (for example) ISO 18406:2017[1] and Dudzinski *et al.* 2011[2].

The monitoring was undertaken using a high-sensitivity hydrophone suitable for the measurement of background noise levels in this environment. The transducer used at the static monitor was a low-noise OceanSonics icListen RB9 digital hydrophone (s/n: #1445). This measurement station sampled continuously over a period of approximately 48 hours day and night, sufficient to capture a variation over complete tidal cycles and any influence from the movement of bulk carrier ships and any other small craft passing nearby, such as tugs.

[1] ISO18406:2017 - *Underwater acoustics — Measurement of radiated underwater sound from percussive pile driving*. International Organization for Standardization, Geneva

[2] Dudzinski K.M., Brown S.J., Lammers M., Lucke K., Mann D.A., Simard P. *Trouble-shooting deployment and recovery options for various stationary passive acoustic monitoring devices in both shallow and deep water applications*. J. Acoust. Soc. Am. 2011, 129 pp. 436–448

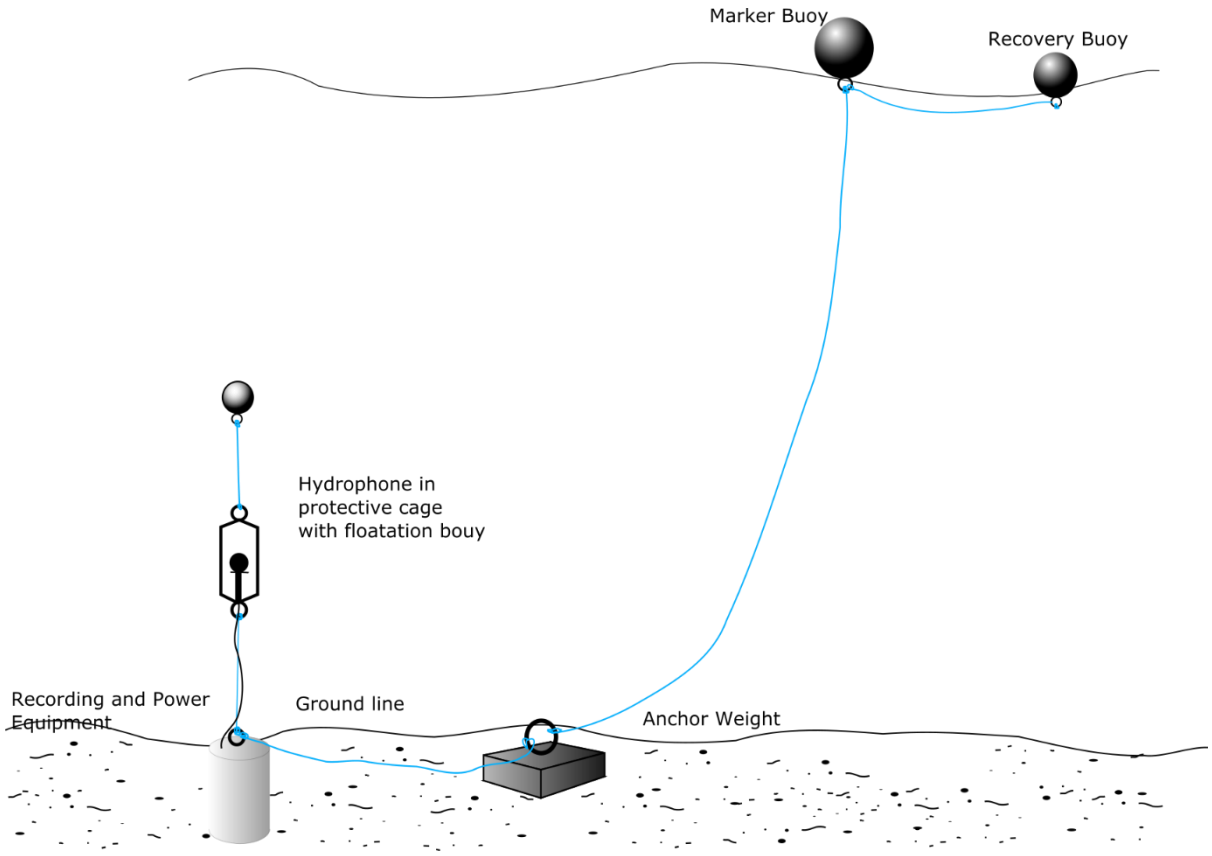


Figure 3-1 – Sketch showing setup of the static monitor, not to scale

3.2 Attended Boat-based Monitoring

3.2.1 Equipment

- Hydrophone: Reson TC4014 s/n: 4005037
- Sensitivity: -185.5 dB re. 1V/µPa
- Pre-amplifier: Subacoustech 4 channel amplifier
- DAQ: National Instruments USB-6216
- Recording: 10 second samples – Subacoustech uncompressed SUB format.

3.2.2 Procedure

An attended survey was carried out by Subacoustech acoustic consultants on board a survey vessel. Operating simultaneously to the static monitor, a series of spot measurements were taken at positions around the Port of Richard's Bay, as well as outside the port towards open water and the entrance to Tuzi Gazi Waterfront marina, to provide a representative sample of the noise levels throughout the wider area. The location of each measurement is shown in Figure 3-2. The locations are provided as an approximate position rather than a specific point on the map, as there was always some drift in position during the measurements. No measurements were taken closer than 100 m to any vessel unless explicitly stated.

Measurements at these positions were conducted on five sets or circuits over the three days at different times of the day. One set was sampled on 15/11, three sets were sampled on 16/11 and one further set was sampled on 17/11 before collecting the static monitor.

When the measurement location was reached, the vessel engine and any other noise generating equipment was shut down and the vessel was allowed to drift with the current to minimise flow noise. The hydrophone was deployed over the side and allowed to float away from the boat beneath a surface

buoy, approximately at mid-water depth, from a long cable. The hydrophone used from the survey vessel was a low-noise, high sensitivity Reson TC4014, coupled to Subacoustech-designed amplification and National Instruments DAQ hardware. This surface-suspended hydrophone system is ideal for a vessel-based survey that requires a quick deployment and retrieval with a drifting vessel.

Typically, at least three 10-second samples were taken at each visit to a location, before the engines were restarted and the vessel moved to the next location.

Together, these two measurement processes show a spatial and temporal variation for the baseline underwater noise in and around the Port of Richard's Bay over the sampled period. While it is not possible to represent every location in the area, the locations were chosen to provide a reasonable distribution of noise level monitoring. Away from major noise sources, no significant variation in noise is expected.

All equipment was calibrated before and after measurements. No drift in calibration was observed. Full calibration certificates are provided in Appendix A.

Figure 3-2 - Measurement locations at Port of Richard's Bay, KwaZulu Natal, South Africa. The static monitor location is labelled "LTM"

4 Results

4.1 Overview

The noise sampled at and around the Port of Richard's Bay was primarily influenced by a combination of large vessels at berth, biological snapping sounds and surface wave action against the boat, generated by wind-blown chop. Shipping noise was greatest in the harbour itself, where large container and bulk carrier vessels were loading or unloading. Berthed vessels dominated the background noise around the port. The highest noise levels were found at the north of the port and by the Coal Terminal to the south, specifically in the shipping channels close to the bulk carrier vessels loading or unloading. All measurements unless specifically focused on a particular vessel were a minimum of 100 m from any individual noise source. Outside the port and away from any direct influence from nearby berthed vessels, the ambient noise was found to dominated by biological snaps of unknown origin, possibly snapping shrimp.

Conditions throughout the survey period were without precipitation and wind speeds varied between 3 knots to over 20 knots, with wind speeds greatest on 15th November. Waves were generally below 0.5 m, except on a limited number of occasions and locations.

Time of survey	Wind speed	Wave height	General
15th Nov, afternoon 12:30-14:00	12 – 16 kts NE	<0.5 m, 0.5 m - 1.0 m in Harbour Entrance Channel	Sunny, no precipitation
16th Nov, morning 09:00-12:00	5 – 15 kts SW	<0.5 m, up to 1.0 m in Harbour Entrance Channel in last 30 mins	Overcast, rain starts in last 30 mins
16th Nov, afternoon 16:00-18:00	4 – 8 kts S	<0.5 m in all locations	Mostly sunny, no precipitation
17th Nov, morning 10:30-14:30	3 – 7 kts E	<0.5 m in all locations	Overcast and calm, no precipitation

Table 4-1 Weather conditions at the time of survey

4.2 Static location long term monitor

The noise levels from the static monitor are presented in Figure 4-1, showing the variation in noise over 48 hours. There were four clear events when noise levels substantially increase and then return quickly to the ambient (assumed to be the passing of bulk carrier vessels and accompanying tugs), usually lasting for less than an hour. Aside from these, the ambient noise level at the static monitor gently increased over the monitoring period, appearing to reach a maximum of just under 130 dB SPL_{RMS} in the mid-morning of the final day.

Table 4-2 shows the overall summary with the minimum, maximum and mean SPL_{RMS} for the entire sampled period at the static monitor.

Position	Minimum SPL_{RMS} (dB re 1 µPa)	Maximum SPL_{RMS} (dB re 1 µPa)	Mean SPL_{RMS} (dB re 1 µPa)
Including all events	125.2	144.1	131.6
Excluding specific events	125.2	129.7	127.8

Table 4-2 - Overall maximum, minimum and mean SPL_{RMS} levels recorded by the static monitor in Port of Richard's Bay between 15th and 17th November, based on 15-minute sample periods

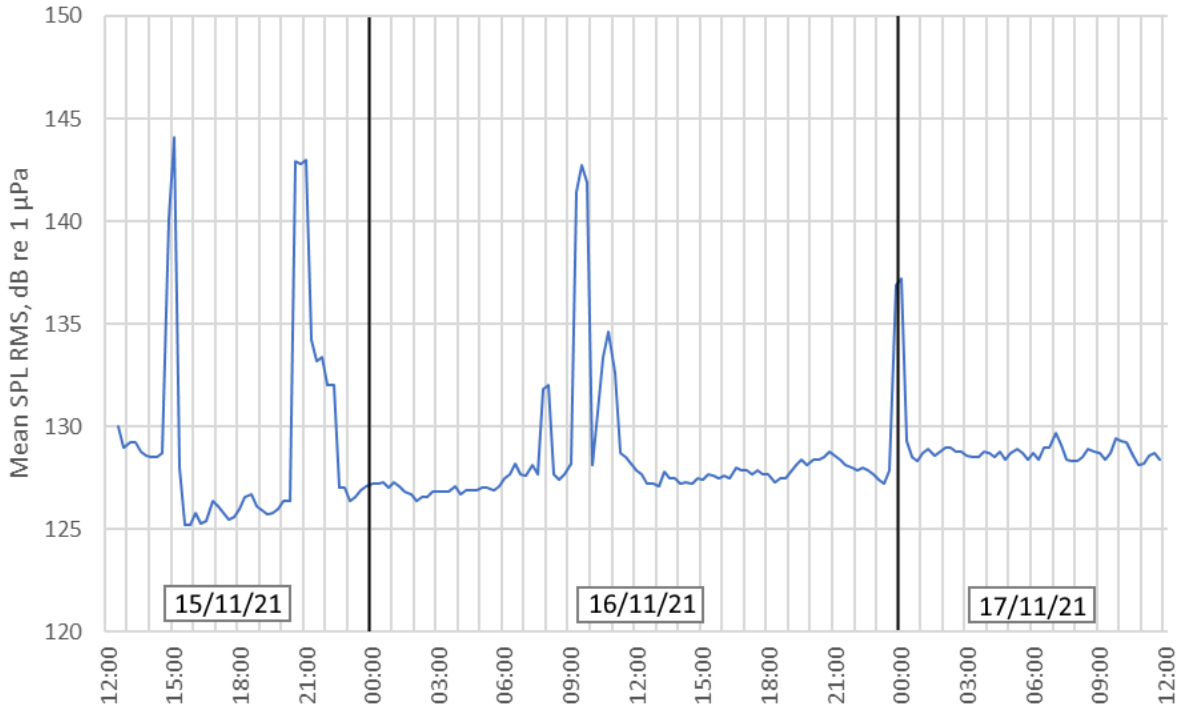


Figure 4-1 - SPL_{RMS} levels recorded by the static monitor in Port of Richard's Bay between 15th and 17th November 2021, 15-minute sample periods

Noise levels in this location were influenced by bulk carrier vessels on the Bulk Cargo Quay, or other bulk carriers passing with tugs and pilot vessels. This is expected to lead to the occasional spikes seen on Figure 4-1. The Subacoustech survey vessel, a small rigid hulled inflatable vessel (RHIB) was near the static monitor for the event at 10:30-11:00 on 16/11/21 (the third spike in the series on that day) and observed the Mineral Subic, a bulk carrier, and two escorting tugs, passing at that time. Subacoustech was not present at any other time to identify a specific source for other noise events.

The frequency spectra of underwater noise samples at the static monitor as a power spectral density (PSD), (narrow-band frequency plot in Figure 4-2. This plot shows that the frequency of the noise at a period of relative quiet (20:00 on 15th November 2021), followed shortly by the noisy event at 21:00.

Detailed spectrograms of the entire 48 hour period are provided in Appendix A, in which events are clearly visible, but with greater detail.

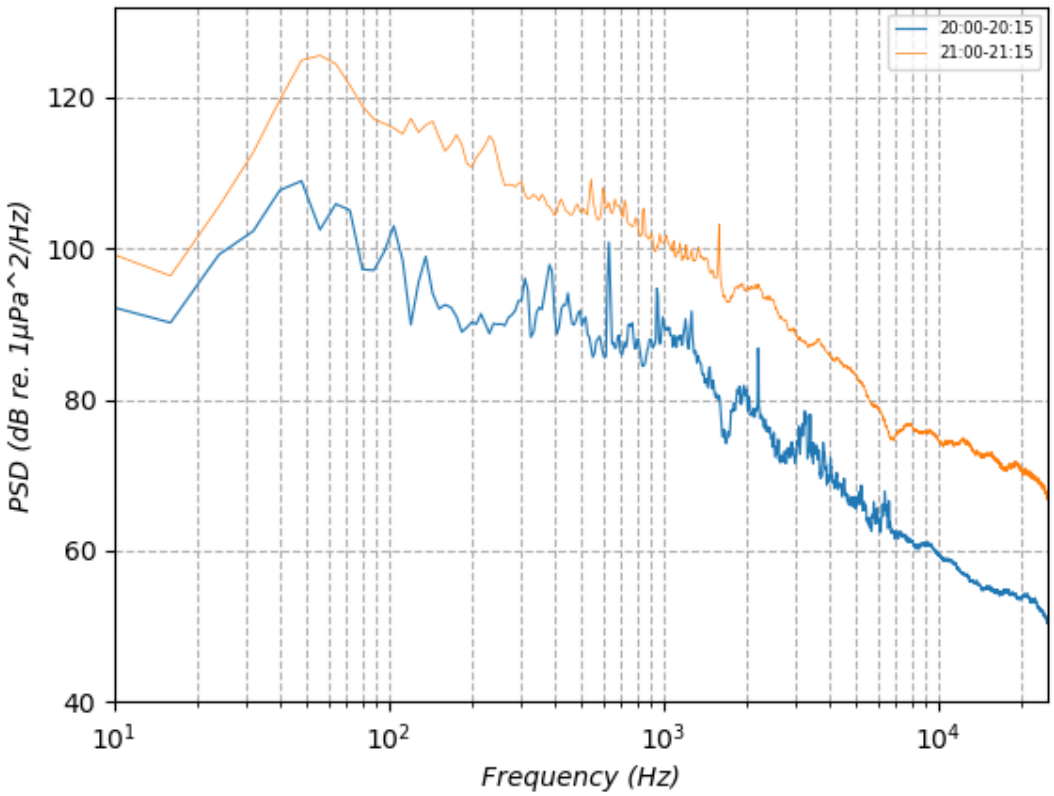


Figure 4-2 – Narrow-band frequency plot of a 15 minute sample period at the static monitor on 16th November 2021. 20:00-20:15 – relative quiet. 21:00-21:15 – vessel passing

4.3 Attended boat-based monitoring survey

Table 4-3 provides the minimum, maximum and mean SPL_{RMS} of the samples taken at each location for the attended measurements. A more detailed summary with divisions for each day are provided in Appendix D.

In summary, the locations are as follows:

- 1, 6 and 7: Close to the northern cargo and bulk terminal
- 2 and 3: Shallow and sheltered location southwest of the sand bar
- 4, 5 and 8: Near and influenced by the Coal Terminal
- 9-12: Entrance channel and Tuzi Gazi marina

Location	SPL_{RMS} (dB re 1 µPa)		
	Min	Max	Mean
1	123.2	126.4	124.5
2	109.6	119.1	115.5
3	108.2	123.5	115.2
4	123.1	134.4	129.7
5	120.8	130.7	125.5
6	121.5	129.1	125.3
7	126.4	131.4	128.4
8	120.8	133.4	126.9
9	112.3	135.7	123.3
10	110.0	121.3	116.3
11	111.0	129.5	119.1
12	110.5	113.5	111.8

Table 4-3 The maximum, minimum and mean SPL_{RMS} levels recorded at each location during the attended survey in Port of Richard's Bay between 15th and 17th November, typically based on three 10-second samples at each position

The highest noise levels were found at Locations 4-8, where bulk carrier vessels were berthed. The quietest noise levels were in sheltered locations, away from the large vessels.

Noise in the port of Richard's Bay during the survey was always controlled by machinery onboard ships docked at one of the terminals. Outside the harbour, from location 9 in the Harbour Entrance Channel to the breakwaters to the east, the ambient noise is generally dominated by snapping noise from marine wildlife, likely to be fish, shrimp and other crustaceans, unless a ship is passing into or out of the port.

The highest noise levels were identified at the Coal Terminal and off the end of the jetty at Location 7. This was influenced by vessels berthed and loading/unloading, with noise levels up to 134.4 dB SPL_{RMS} off the Coal Terminal, approximately 400 m from a loading ship. The average noise level in this location was lower at 129.7 dB SPL_{RMS}, and therefore it remains the location with the greatest mean noise level in Port of Richard's Bay as measured. This will however vary with the vessel that is at the Terminal and the distance of the measurement from it.

Figure 4-3 shows the mean average of the sampled noise levels in each location. The long-term monitoring location average noise level includes the specific events identified on the chart in Figure 4-1 as such vessel movements are deemed generally representative of the area, and is thus higher than the nearest attended monitoring location to it, Location 6.

Figure 4-3 shows clearly the reduction in noise levels from those closest to berthed vessels, to those in more sheltered areas in the harbour, to the lowest outside the main harbour. The lowest levels were found at the entrance to the Tuzi Gazi marina. Noise at the west of Richard's Bay is clearly protected from the noise levels in the main harbour space by the sand bar and greater attenuation in the shallow water here.

The mean measurements at the long-term monitor by the static monitor were relatively high compared to surrounding attended measurements, which is thought to be due to the contribution from tugs and pilot boats passing regularly by the monitoring position. Such influences were not generally included in the attended measurements (unless noted), which sought a general background noise level. In the absence of these short-term events, noise levels varied between 120 and 127 dB SPL_{RMS}.

Figure 4-3 – Average dB SPL_{RMS} levels from attended measurements in Port of Richard's Bay between 15th and 17th November 2021

4.4 Monitoring of specific vessels

Monitoring of three bulk carrier vessels was undertaken to sample representative underwater noise levels of typical ships present in Richard's Bay. Two vessels, the *Mineral Subic* (approaching dock) and the *Golden Magnum* (leaving, fully laden), were sampled separately as they approached and passed the survey vessel. These bulk carriers were also flanked by tugs on either side, which will also have influenced the noise levels.

A series of measurements at linear distances were also taken while the survey vessel moved towards the *Freedom*, while loading, at the Coal Terminal.

Multiple and repeated 10 s samples were taken at various distances from the vessels. By nature, the measurements of transiting vessels were opportunistic and measurements were possible only at a limited number of ranges. These distances are approximated from the side of the moving vessel, specifically the accommodation block at the stern (where much of the noisy machinery is situated). Vessels passed at a speed of approximately 4-5 kts.

For completeness, the direction of travel relative to the survey vessel is noted as the propeller is likely to be a significant source of noise and could be louder from the stern.

Distance	Dir.	SPL_{RMS} (dB re 1 µPa)		
		Mineral Subic **(approaching dock)**	***Golden Magnum*** **(leaving, fully laden)**	***Freedom*** **(berthed, loading)**
400	Approach / static	-	-	124.0
300		144.4	-	-
200		140.1	-	126.0
120		-	140.9	-
100		142.8	141.4	130.5
80		-	142.4	-
50		142.6	-	132.3
100	Away	147.3	141.9	-
200		146.4	138.8	-
300		147.7	138.1	-
400		144.7	-	-

Table 4-4 The SPL_{RMS} levels recorded at distances from moving and berthed vessels, 10s samples

The *Mineral Subic* appeared to be changing its engine power as it passed, which is the likely cause of changes in the noise level that did not correlate with the expected increase or decrease as it came closer or moved further from the measurement position.

All measurements of the three vessels were taken on 16th November. Measurements of the *Mineral Subic* (vessel port side) were taken at approximately Location 8. Measurements of the *Golden Magnum* were taken at approximately Location 5, (vessel port side). *Freedom* was situated at the north end of the Coal Terminal with measurements taken off its starboard.

These results show that the noise levels in the port regularly exceed 140 dB re 1 µPa SPL_{RMS} when vessels pass within 400 m.

5 Conclusions

Underwater noise levels at the Port of Richard's Bay have been measured over a 48 hour period in November 2021, as an indicative sample baseline of the conditions prior to the proposed installation of Powerships. This report provides an initial assessment of the underwater noise levels around the harbour prior to a comprehensive future study. Noise levels at a static monitor located in the middle of the harbour, near the sand bar, were subject to significant variation due to vessels passing, reaching up to 144 dB SPL_{RMS} re 1 µPa. In the absence of vessels passing, the underwater noise generally varied between 125 dB and 130 dB SPL_{RMS} re 1 µPa.

In other locations, especially in the vicinity of the berthed bulk carrier vessels, or the Container Terminal, noise levels were dominated by these vessels, whether moving or stationary, and varied with location and distance from the vessels of 125 dB to 130 dB SPL_{RMS} re 1 µPa. Outside the main port area and away from berthed vessels, noise levels were 100 to 125 dB SPL_{RMS} re 1 µPa and the source of noise controlling the ambient conditions was biological snapping sound, thought to be caused by fish, shrimp or crustaceans.

Measurements were also taken of vessels while moving to or from a quayside. Although all vessels are slightly different, the highest noise level sampled was 147.7 dB SPL_{RMS} re 1 µPa. Measurements were sampled of passing vessels between 50 and 400 m.

Appendix A Calibration certificates

OCEAN SONICS

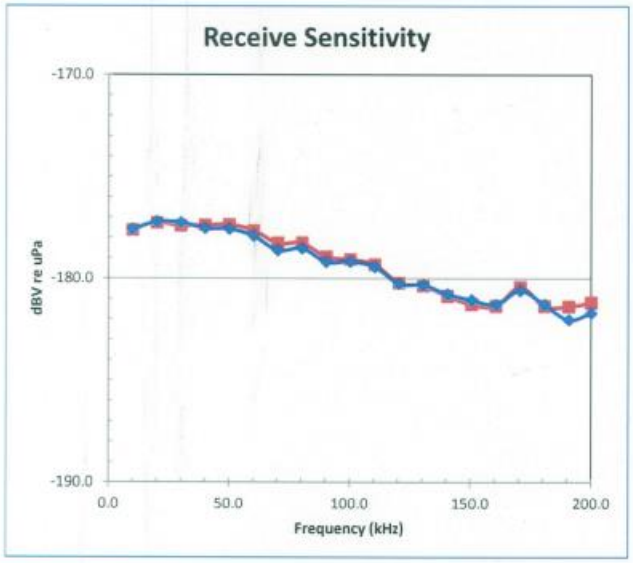
Certificate of Calibration

Ocean Sonics, Ltd.

Calibration Certificate Number: C5243

Test Result: 10 kHz to 100 kHz: -178.2 ± 1.0
10 kHz to 200 kHz: -179.6 ± 2.4

Model Number	RB9-ETH	Projector Manufacturer	Ocean Sonics
Serial Number	1445	Projector Model	TH2-SER-4F
Manufacture Date	16-Mar-2016	Projector Serial	2225
Measurement Date	3-Jul-2020	Measurement Distance	1 m
Certificate Date	3-Jul-2020	Output Level	130 dB re uPa @ 1 m
Sensitivity @ 250 Hz	-176.4 dB re V / uPa	Tone Burst	100.0 us / 300 ms
Case Type	R-Type	Reference Manufacturer	Ocean Sonics
Element Manufacturer	Reson	Reference Model	RB9-ETH
Element Model	TC4059-1	Reference Serial	2080
Element Serial	5114020	Primary Calibration	20-Jan-2020
Preamp Model	04-300434-01	Preamp Manufacturer	Ocean Sonics
Calibrated By	Cody Ellis	Preamp Model	04-300449-01
Work Order Number	W1234	Preamp Serial	M58
Test Type	RX Sensitivity	Preamp Gain	36 dB
Test Procedure	Complex RMS	ADC Manufacturer	Ocean Sonics
Test Location	Tank #3, 1 m	ADC Model Number	04-300426-01
Water Temperature	16 °C	ADC Serial Number	M59



Frequency	Sensitivity [dBV re µPa]	
kHz	0 deg	90 deg
10.0	-177.6	-177.6
20.1	-177.3	-177.2
30.1	-177.4	-177.3
40.2	-177.4	-177.6
50.2	-177.3	-177.6
60.2	-177.6	-177.9
70.3	-178.3	-178.6
80.3	-178.2	-178.5
90.4	-178.9	-179.2
100.4	-179.1	-179.2
110.4	-179.3	-179.4
120.5	-180.2	-180.3
130.5	-180.4	-180.3
140.5	-180.8	-180.8
150.6	-181.2	-181.1
160.6	-181.3	-181.3
170.7	-180.4	-180.6
180.7	-181.3	-181.3
190.7	-181.3	-182.0
200.0	-181.2	-181.7

Ocean Sonics Ltd, Truro, Nova Scotia Certificate of Calibration V1.02 © 2015

Figure 5-1 – Calibration certificate for static monitor transducer, IC Listen RB9 (serial number #1445)

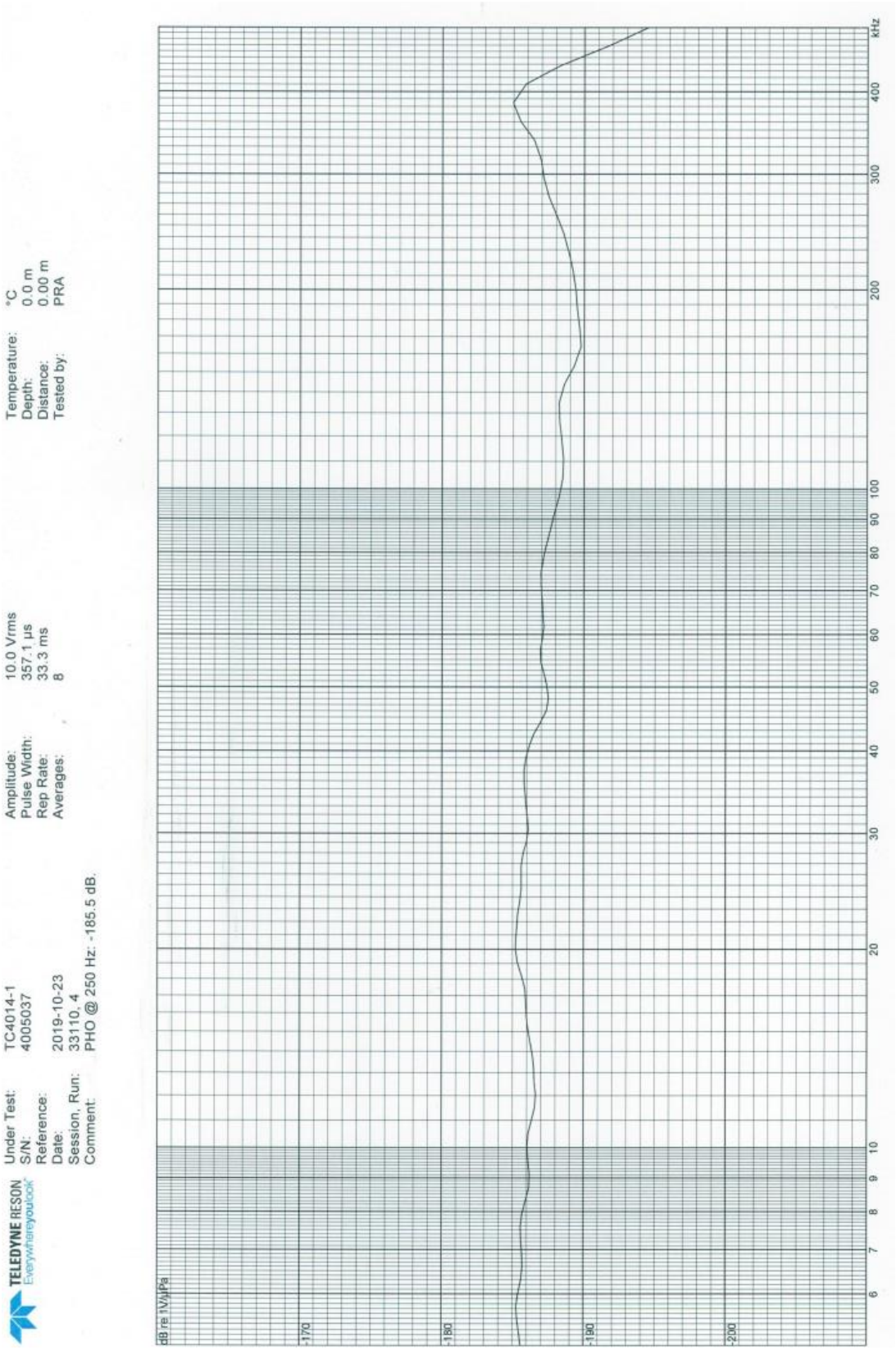


Figure 5-2 – Calibration certificate for attended monitor transducer, Teledyne Reson TC-4014-1 (serial number #4005037)

Appendix B Detailed sound frequency data at the long-term monitor

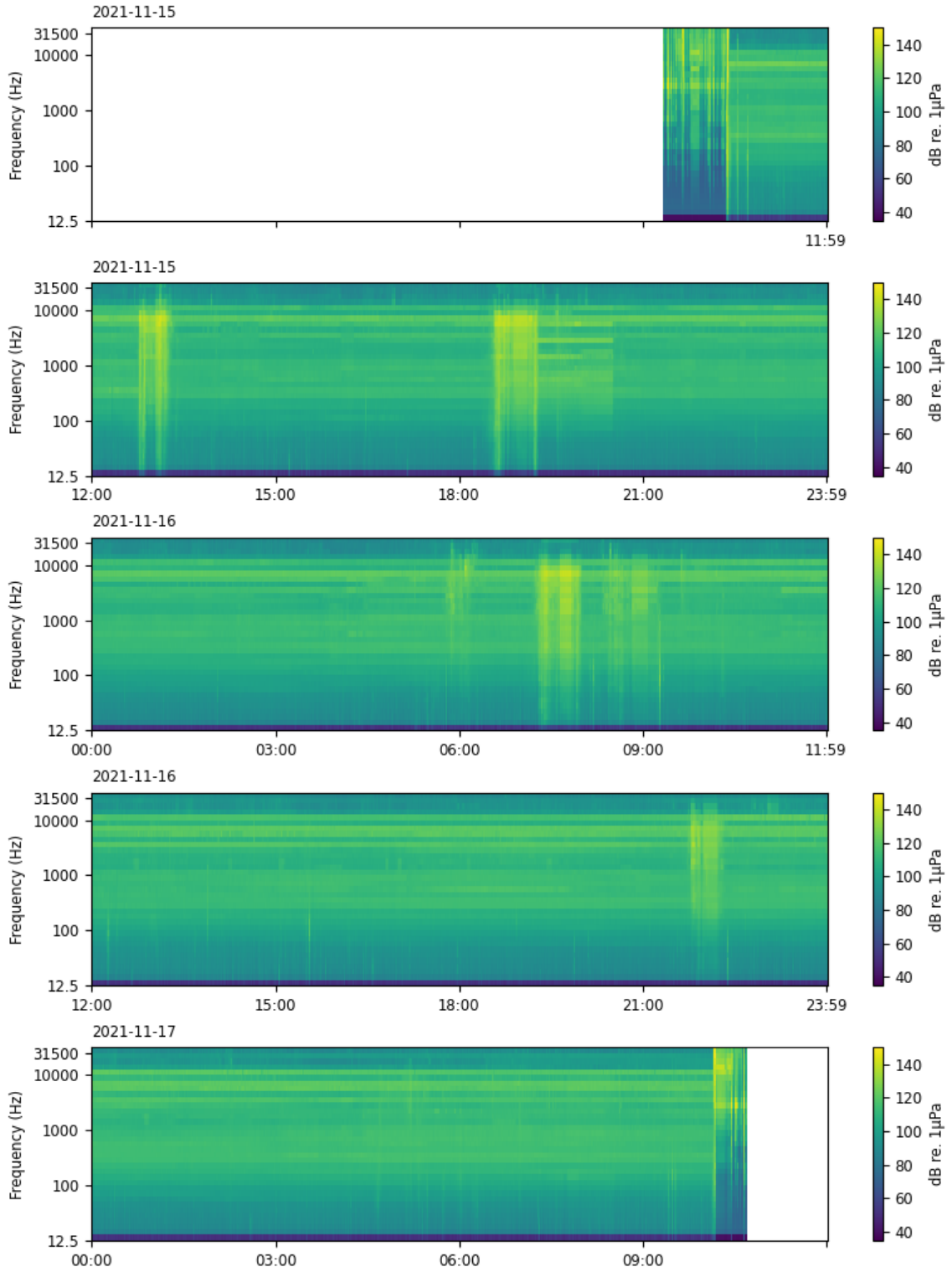


Figure 5-3 – Spectrograms showing the noise levels based on 1/3rd octave band data, measured at the long-term monitoring location at Richard's Bay over 48 hours, 15-17/11/2021. Short periods at the start and end of the period are when the monitor was out of the water and can be ignored.

Appendix C Photographs taken on the survey

Figure 5-4 – Mineral Subic passing with tugs, survey vessel near Location 8

Figure 5-5 – Freedom, loading at the Coal Terminal

Figure 5-6 – Vessels berthed at the Coal Terminal, from Location 8

Figure 5-7 – Survey RHIB, provided by Subtech

Figure 5-8 – Jetty to the north, from Location 7

Figure 5-9 – Static monitor, ropes, buoys and weights on deck

Appendix D Attended measurement summary

The underwater noise levels, minimum maximum and mean for each day of monitoring are presented in the table below. Each measurement is typically based on three 10-second samples at each location. Samples could not be taken at some locations: for example the conditions at Location 11 on the first day were too choppy to acquire 'clean' measurements, and on the last day the measurement at Location 12 was subject to significant interference from a nearby vessel's echosounder.

Location	15/11/2021			16/11/2021			17/11/2021		
	SPL_{RMS} (dB re 1 µPa)			SPL_{RMS} (dB re 1 µPa)			SPL_{RMS} (dB re 1 µPa)		
	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean
1	124.7	125.3	125.0	123.2	126.4	124.3	124.6	125.6	125.1
2	114.5	114.5	114.5	109.6	119.1	115.1	116.8	118.0	117.3
3	111.9	115.2	113.0	108.2	118.2	113.9	119.8	123.5	122.0
4	123.1	126.9	125.2	129.1	134.4	131.3	129.1	129.6	129.4
5	120.8	122.7	121.8	122.7	130.7	126.0	129.5	129.9	129.7
6	121.5	122.1	121.8	125.1	129.1	126.7	121.5	124.5	123.5
7	128.7	131.4	129.7	126.8	130.9	128.7	126.4	127.4	126.8
8	122.6	125.1	123.6	122.7	133.4	128.6	120.7	120.8	120.8
9	126.6	135.7	132.0	116.5	127.1	121.4	112.3	112.4	112.3
10	115.1	116.5	115.8	114.5	121.3	117.9	109.9	115.2	111.8
11	-	-	-	114.8	129.5	120.9	111.0	113.8	112.3
12	-	-	-	110.5	113.5	111.8	-	-	-

Table 5-1 The maximum, minimum and mean SPL_{RMS} based on attended measurement samples at each location, by day of sample

Report documentation page

- This is a controlled document.
- Additional copies should be obtained through the Subacoustech Environmental librarian.
- If copied locally, each document must be marked “Uncontrolled copy”.
- Amendment shall be by whole document replacement.
- Proposals for change to this document should be forwarded to Subacoustech Environmental.

Document No.	Draft	Date	Details of change
P292R0500_02	01	06/12/2021	Initial writing and internal review
P292R0501	-	07/12/2021	First issue

Originator’s current report number	P292R0501
Originator’s name and location	T Mason; Subacoustech Environmental Ltd.
Contract number and period covered	P292; October 2021 to December 2021
Sponsor’s name and location	David Clark, Karpowership SA
Report classification and caveats in use	FOR ISSUE
Date written	November - December 2021
Pagination	Cover + i + 21
References	
Report title	Background noise monitoring – Port of Richards Bay
Translation/Conference details (if translation, give foreign title/if part of a conference, give conference particulars)	
Title classification	Unclassified
Author(s)	Tim Mason
Descriptors/keywords	
Abstract	
Abstract classification	Unclassified; Unlimited distribution

environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

DETAILS OF THE SPECIALIST, DECLARATION OF INTEREST AND UNDERTAKING UNDER OATH

	(For official use only)
File Reference Number:	
NEAS Reference Number:	DEA/EIA/14/12/16/3/3/2007
Date Received:	02 November 2020

Application for authorisation in terms of the National Environmental Management Act, Act No. 107 of 1998, as amended and the Environmental Impact Assessment (EIA) Regulations, 2014, as amended (the Regulations)

PROJECT TITLE

The Proposed Gas to Power Powership Project at the Port of Richards Bay, Umhlathuze Local Municipality, King Cetshwayo District, Kwazulu-Natal.

Kindly note the following:

1. This form must always be used for applications that must be subjected to Basic Assessment or Scoping & Environmental Impact Reporting where this Department is the Competent Authority.
2. This form is current as of 01 September 2018. It is the responsibility of the Applicant / Environmental Assessment Practitioner (EAP) to ascertain whether subsequent versions of the form have been published or produced by the Competent Authority. The latest available Departmental templates are available at https://www.environment.gov.za/documents/forms.
3. A copy of this form containing original signatures must be appended to all Draft and Final Reports submitted to the department for consideration.
4. All documentation delivered to the physical address contained in this form must be delivered during the official Departmental Officer Hours which is visible on the Departmental gate.
5. All EIA related documents (includes application forms, reports or any EIA related submissions) that are faxed; emailed; delivered to Security or placed in the Departmental Tender Box will not be accepted, only hardcopy submissions are accepted.

Departmental Details

Postal address:
Department of Environmental Affairs
Attention: Chief Director: Integrated Environmental Authorisations
Private Bag X447
Pretoria
0001

Physical address:
Department of Environmental Affairs
Attention: Chief Director: Integrated Environmental Authorisations
Environment House
473 Steve Biko Road
Arcadia

Queries must be directed to the Directorate: Coordination, Strategic Planning and Support at:
Email: EIAAdmin@environment.gov.za

1. SPECIALIST INFORMATION

Specialist Company Name:	Subacoustech Environmental Limited			
B-BBEE	Contribution level (indicate 1 to 8 or non-compliant)	n/a (UK based)	Percentage Procurement recognition	n/a (UK based)
Specialist name:	Tim Mason			
Specialist Qualifications:	BEng(Hons) Acoustic Engineering			
Professional affiliation/registration:	Member of the Institute of Acoustics (UK) (MIOA)			
Physical address:	Unit 2 Muira Industrial Estate, William Street, Southampton, Hampshire, UK			
Postal address:	Unit 2 Muira Industrial Estate, William Street, Southampton, Hampshire, UK			
Postal code:	SO14 5QH	Cell:	n/a	
Telephone:	+44 2380 236330	Fax:	n/a	
E-mail:	tim.mason@subacoustech.com			

2. DECLARATION BY THE SPECIALIST

I, Tim Mason, declare that –

- I act as the independent specialist in this application;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, Regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- all the particulars furnished by me in this form are true and correct; and
- I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.

Signature of the Specialist

Subacoustech Environmental Limited

Name of Company:

31/10/2022

Date

3. UNDERTAKING UNDER OATH/ AFFIRMATION

I, Tim Mason, swear under oath / affirm that all the information submitted or to be submitted for the purposes of this application is true and correct.

Signature of the Specialist

Subacoustech Environmental Limited

Name of Company

31/10/2022

Date

Signature of the Commissioner of Oaths FIONA WOOLFE

31st October 2022.

Date

Signed before me, Fiona Woolfe, notary public of England and Wales, having an office at 39 Granadier Road, Winchester, Hants, SO22 6GH by Timothy Mason, whose identity I verified by sight of his original UK passport with number 542493480, on this 31st October 2022.