

**BEFORE THE ENVIRONMENTAL PROTECTION AUTHORITY**

**IN THE MATTER** of the Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2012

**AND**

**IN THE MATTER** of an Application under Section 38 of the Act for Marine Consents by Trans-Tasman Resources Limited

---

**Noise Conditions**

**Dated 11 April 2014**

---

## Introduction

1. A set of noise conditions were submitted to the hearing during the session on *effects on marine mammals including noise*. At the hearing the issue was raised regarding the absence of an absolute level of noise across all frequency bands. Subsequently an amended set of conditions has been agreed and are provided below. The change is within condition 23i).

### 23 Noise Conditions

- i) The combined noise from the FPSO and Crawler operating under representative full production conditions shall be measured nominally 10m below the sea surface at 300m, 500m, 750m and 1000m from the port or starboard side of the FPSO. The overall combined noise level at 500m shall not exceed 130dB re 1µPa RMS linear in any of the following frequency ranges: low frequency 10-100 Hz, mid-frequency 100-10,000 Hz, and high frequency >10,000 Hz and that the overall combined noise level at 500m across all frequencies shall not exceed a sound pressure level of 135 dB re 1µPa RMS linear;
- ii) Measurements shall be undertaken in calm sea conditions (e.g. Beaufort sea state less than 3 (beginning of white-capping)), with no precipitation and no external noise sources (e.g. passing ships);
- iii) The monitoring equipment shall be calibrated before and after measurements;
- iv) The combined noise shall be monitored:
  - a) within one month of commencement of mining operations and if less than 80% full production conditions of 8,000t/hr, a further measurement will be made within one month of mining operations reaching 90% full production conditions of 8,000t/hr;
  - b) An additional two times in the first 12 months of the commencement of 90% full production conditions of 8000t/hr. Each measurement being separated by a period of at least 6 months;
  - c) Annually for the following four years;
  - d) Every 5 years thereafter; and
  - e) At any time reasonably requested by the EPA.
- v) Should the operation of the FPSO and crawler be altered in any way which may change the magnitude or character of the underwater noise production, the noise shall be monitored within one month of the change to demonstrate compliance with condition 23i) has been maintained;
- vi) In the event weather or sea conditions prevent monitoring within the specified time frame, the monitoring shall be undertaken as soon as practical after the specified time;
- vii) Within two weeks of the monitoring, a detailed report on the monitoring and results shall be provided to the EPA. As a minimum, this report shall include details on the equipment used, calibration methods used, measurement conditions and location, and a summary of the noise levels measured, including broadband and one third octave band frequency data and compliance of the operation with respect to the noise standards specified in condition 23i).
- viii) Any startup of the mining operation shall be undertaken as a "soft start" whereby equipment shall be gradually increased in power over a minimum of 20 minutes. For clarity, a "soft start" includes noise from the FPSO, Crawler and associated plant.

#### Notes:

- 300m, 750m & 1000m are to be used to check the level at 500m;
- The minimum distance of 300m has been adopted to ensure all site safety requirements are complied with;
- Measurements of the combined noise of the crawler and FPSO are to be made for a minimum period of 2 minutes and once the sound pressure level has stabilised.

**Signatures**



---

Mr Darran Humpheson (EPA)

---

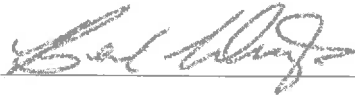
Dr Simon Childerhouse (TTR)

[unavailable for signature but email agreement 10 April 2014]



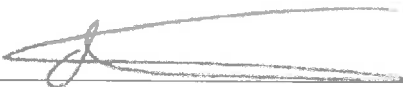
---

Mr Nevil Hegley (TTR)



---

Professor Bernd Würsig (D-G)



---

Mr Andrew Baxter (D-G)

---

Associate Professor Slooten (KASM)

[not signed for reasons set out in statement dated 11 April 2014]

