



10 December 2014

Ref: 14954/5527

Mr Ben Geroff

Neumann Contractors

PO Box 2185

Dangar NSW 2309

RE: NOISE MONITORING – SWANSEA CHANNEL DREDGING

Dear Sir,

This letter report presents the results of attended noise monitoring conducted for the above project on 28 November 2014. Attended monitoring is required in Conditions L4.2 and M7.1 of EPL 20489. Condition M7.1 is reproduced below.

M7 Noise monitoring

M7.1 Within one week of commencement of operation at evening or night as defined by Condition L4.1a the licensee must determine compliance with Condition L4 and undertake attended noise monitoring:

- a) at a residential boundary closest to the operation of the dredge;
- b) at the closest residential boundary to all pump stations;
- c) occur during the period defined as evening and night; and
- d) and for a minimum of 1 hour at each location.

Note: This condition is only required if the licensee operates outside of standard construction hours as defined by the *Interim Construction Noise Guideline 2009*.

Monitoring was conducted near 57 Haddon Crescent between 9:30 pm and 10:30 pm as the dredge and pump were closest to this residential area at the time. The adopted noise criterion for this time period is 37 dB(A), $L_{eq(15\text{minute})}$.

Access to the residence at 57 Haddon Crescent was not available so monitoring was conducted at nearby representative locations as indicated in Figure 1.



Figure 1. Noise monitoring locations

Measured noise levels

Attended noise monitoring was conducted with a Brüel & Kjær Type 2250 Precision Sound Analyser. This instrument has Class 1 characteristics as defined in AS IEC61672.1-2004 and has current NATA calibration. Field calibration is carried out at the start and end of the monitoring period.

A-weighted noise levels were measured over the 15-minute monitoring periods with data acquired at 1 second statistical intervals and the meter set to “fast” response. Each 1 second measurement is accompanied by a third-octave band spectrum from 20 - 20k Hz which is required for analysing INP ‘modifying factors’. Time based field notes allow for determination of the relative contributions to the overall noise level of all significant noise sources.

<u>Location</u>	<u>Start time</u>	<u>LAeq(15minute)</u>	<u>Sources (contribution)</u>
Location 1	9:31 pm	45	Traffic (41), Pipe (41), Insects (33), Pump (28)
Location 2	10:03 pm	46	Traffic (45), Insects (31), Pump (<25)

Measurement Location 1 was immediately adjacent (2m) to the pipeline to Blacksmiths beach and consequently the flow noise was significant. Noise from the pump was audible as a low hum centred around 160Hz and frequency analysis determined a noise contribution of 28 dB(A).

The second measurement was taken at the entrance to 57 Haddon Crescent where there was no noise from the pipeline. Pump noise was inaudible at this location, but was measurable at no more than 25 dB(A).

The attended monitoring has found noise levels well below the criterion of 37 dB(A), $L_{eq}(15\text{minute})$ at locations representative of the nearest residential area to the dredge and booster pumps.

Yours faithfully,

SPECTRUM ACOUSTICS PTY LIMITED



Neil Pennington

B.Sc., B.Math.(Hons), MAAS, MASA

Principal/Director