



# EfW CHP Facility, Devonport

Non-Destructive Testing  
Noise Report

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## EXECUTIVE SUMMARY

On Thursday 24<sup>th</sup> July 2014 noise monitoring was undertaken for MVV Environment Devonport Ltd (MVV) at two sensitive residential receptors close to the site boundary, to determine the noise levels during Non-Destructive Testing (NDT).

The following noise levels were recorded:

- At R3 (Savage Road): 51 dB  $L_{Aeq,50min}$  (façade): equal to the baseline; and
- At R15 (Talbot Gardens): 39 dB  $L_{Aeq,50min}$  (façade): 4 dB below the baseline.

Noise levels recorded were within the Plymouth City Council's Code of Construction Practice noise limits for weekday evening work; with R3 equal to the baseline; and R15 4 dB below the baseline. No site noises were recorded at either Savage Road or Talbot Gardens during the monitoring period. Noise was instead dominated by road traffic; noise from adjacent residential properties; and from the adjacent naval base.

## 1. INTRODUCTION

MVV Environment Devonport Ltd (MVV) undertook Non-Destructive Testing (NDT) outside usual working hours on Thursday 24<sup>th</sup> July 2014, between 18:00 and 22:00. MVV commissioned URS to undertake noise monitoring at two sensitive residential receptors close to the site boundary.

This report describes the methodology and findings of the noise survey undertaken on this day.

### 1.1 Baseline Noise Limits

Baseline noise levels were monitored prior to NDT works commencing; with noise limits set based on Plymouth City Council's Code of Construction Practice. Table 1 shows baseline noise levels and the noise limits.

TABLE 1: BASELINE NOISE LEVELS AND NOISE LIMITS FOR NDT					
Location	Time	Ambient L <sub>Aeq,4hr</sub> (dB)		Noise Limits (based on façade measurement)	
		Free Field	Façade	L <sub>Aeq,4hr</sub> <sup>*1</sup> dB	L <sub>Aeq,1hr</sub> dB
R3 (Savage Road)	Weekend	-	54	64	67
	Weekday	-	51	61	64
R15 (Talbot Gardens)	Weekend	-	45	60	63
	Weekday	-	43	58	61

<sup>\*1</sup> The L<sub>Aeq,4hr</sub> noise limit shall be applied to all noise measurements of NDT

## 2. SITE DESCRIPTION

The EfW CHP facility is currently being constructed in the North Yard of Her Majesty's Naval Base (HMNB), beside Camels Head junction (the junction between the A3064 and Wolseley Road). The development is located close to a number of residential properties, most noticeably those in Barne Barton to the north of the site.

## 3. METHODOLOGY AND ASSESSMENT CRITERIA

The monitoring procedure conformed to BS 7445: 2003 'Description and Measurement of Environmental Noise', with measurements at Savage Road and Talbot Gardens taken 1 metre from the façade of residential receptors at a height of 1.5 metres. Average wind speeds were below 5 ms<sup>-1</sup>.

## 4. NON-DESTRUCTIVE TESTING NOISE SURVEY

### 4.1 Protocol

Due to the lack of secure monitoring locations, it was not possible to leave equipment unattended. Consequently, manned noise monitoring has been undertaken.

Monitoring was undertaken for a 50 minute period at each of the two locations representative of the closest receptors to the site. The measurements at the two locations were carried out consecutively; logging  $L_{Aeq}$  and  $L_{AFmax}$  levels in contiguous 5-minute periods.

Table 1 lists the noise monitoring locations as well as the time monitoring was undertaken.

TABLE 2: NOISE MONITORING LOCATION AND TIMINGS				
Location*	Road	Details	Date	Time
R3	Savage Road	Representative of the closest noise sensitive properties to the north west (approx. 100 metres from the Site).	Thursday 24th July 2014 (weekday)	18:00 – 18:50
R15	Talbot Gardens	Representative of the closest noise sensitive properties to the north (approx. 60 metres from the Site).	Thursday 24th July 2014 (weekday)	18:55– 19:45

\* Correlates with residential receptors for the Environmental Statement for the EfW CHP facility (11/00750/FUL)

### 4.2 Instrumentation

The sound level meter utilised for the monitoring:

- A B&K 2238 sound level meter, serial number 2562627 was used

Full calibration details are available upon request.

The calibration levels were checked prior to and following the measurements with a:

- B&K 4231 field calibrator, serial number 2217876 and no significant drift was noted (+/- 0.1 dB).

### 4.3 Meteorological Conditions

Weather conditions during the measurements were as shown below in Table 3.

TABLE 3: WEATHER CONDITIONS DURING NOISE MONITORING					
Location	Date/Time	Max Wind Speed (m/s)	Wind Direction	Temperature	Precipitation
R3	24/07/2014 18:00 – 18:50	0.5	N	23°C	None
R15	24/07/2014 18:55– 19:45	0.1	N	22°C	None

### 4.4 Commentary

The following observations of local noise sources were made whilst at the site during monitoring:

- At R3 (Savage Road) the noise climate was dominated by local road traffic noise on Savage Road (vehicles and motorbikes) and other surrounding roads (particularly Wolseley Road); and residential noise. Residential noise consisted of noise from within the properties besides the SLM (e.g. TV, music, conversation). Noise from the naval base also contributed to the noise climate, with a humming noise (presumed to be engine noise from a ship), as well as numerous loudspeaker announcements. In addition there was also noise from passing trains; residents and pedestrians parking up and/or walking past; children playing in the play park on Savage Road; as well as bird song. No site noise was noticeable at the receptor.
- At R15 (Talbot Gardens) the noise climate was dominated by local road traffic noise on Savage Road (vehicles and motorbikes) and other surrounding roads (particularly Wolseley Road); as well as residential noise. Noise from the naval base also contributed to the noise climate, with a humming noise (presumed to be engine noise from a ship), as well as numerous loudspeaker announcements. In addition there was also noise from passing trains and bird song. No site noise was noticeable at the receptor.

### 4.5 Results

The results of noise monitoring undertaken on 24<sup>th</sup> July 2014 are given below in Table 4.

The full noise survey data for both sites are provided in Appendix A, Tables A1 and A2.



**TABLE 4: BASELINE NOISE LEVELS AND NOISE LIMITS FOR NDT**

Location	Date & Time	NDT Noise Level L <sub>Aeq,50min</sub> (dB)		NDT Noise Level L <sub>AFmax</sub> (dB)	Baseline Noise Level L <sub>Aeq,4hr</sub> (dB)		Noise Limits (based on façade measurement)	Difference between NDT Noise Level (L <sub>Aeq,50min</sub> ) and Baseline (L <sub>Aeq,4hr</sub> ) (dB)
		Free Field	Façade	Façade	Free Field	Façade	L <sub>Aeq,4hr</sub> dB	
R3	24/07/2014 18:00 – 18:50	-	51	77	-	51	61	0
R15	24/07/2014 18:55– 19:45	-	39	60	-	43	58	-4

Noise levels recorded were within the Plymouth City Council's Code of Construction Practice noise limits for weekday evening work; with R3 equal to the baseline; and R15 4 dB below the baseline. The  $L_{AFmax}$  events included in Table 4 were not a result of NDT testing, but instead due to off-site noises.

No site noises were recorded at either Savage Road or Talbot Gardens during the monitoring period, instead noise was dominated by road traffic; noise from adjacent residential properties; and noise from the adjacent naval base.

Full monitoring results, complete with surveyor notes on the noise climate and extraneous noises, are recorded in Appendix A, Table A1 (Savage Road) and A2 (Talbot Gardens).

## APPENDIX A: FULL NOISE MONITORING RESULTS

Tables A1 and A2 list the full suite of measured noise data.

TABLE A1: SAVAGE ROAD MEASURED NOISE LEVELS					
Date & Start time	Duration	L <sub>Aeq</sub> (dB)	L <sub>AFmax</sub> (dB)	L <sub>AF90</sub> (dB)	Notes
24/07/2014 18:00	05:00.0	53.9	71.4	41.5	Numerous HMNB loudspeaker announcements; Child screaming in flat close to SLM; Moped starting up and leaving below SLM; Residents leaving block and talking.
24/07/2014 18:05	05:00.0	48.4	63.3	41.5	HMNB loudspeaker announcement.
24/07/2014 18:10	05:00.0	49.2	65.4	41.5	Train.
24/07/2014 18:15	05:00.0	53.5	70.6	43.5	Train; Numerous HMNB loudspeaker announcements; Child shouting in play park on Savage Road; Ambulance passing on Savage Road (no siren).
24/07/2014 18:20	05:00.0	49.9	71.6	40.5	Music in flat close to SLM
24/07/2014 18:25	05:00.0	52.2	77.2	41.5	Distant emergency siren; car passing with loud music playing; car horn on Savage Road; Car pulls up below SLM with loud music playing.
24/07/2014 18:30	05:00.0	46	65.9	39.5	Train.
24/07/2014 18:35	05:00.0	49.3	63	40	Visitors phone ringing and person talking; Visitor leaves in car with loud music playing.
24/07/2014 18:40	05:00.0	48.3	62.4	40	Train; HMNB loudspeaker announcement.
24/07/2014 18:45	05:00.0	49.7	64.1	39.5	HMNB loudspeaker announcement.

**TABLE A2: TALBOT GARDENS MEASURED NOISE LEVELS**

Date & Start time	Duration	L <sub>Aeq</sub> (dB)	L <sub>AFmax</sub> (dB)	L <sub>AF90</sub> (dB)	Notes
24/07/2014 18:55	05:00.0	38.5	54.7	35.5	Numerous HMNB loudspeaker announcements.
24/07/2014 19:00	05:00.0	41.3	54.1	36	Resident hoovering in flat close to SLM; Train.
24/07/2014 19:05	05:00.0	38.4	59.9	35.5	
24/07/2014 19:10	05:00.0	37	55.2	35	Noise in Blackie Woods – presumed to be animal/bird.
24/07/2014 19:15	05:00.0	39.2	59.1	34	Dog barking in the distance; Train; Numerous HMNB loudspeaker announcements.
24/07/2014 19:20	05:00.0	38.6	56.1	33.5	HMNB loudspeaker announcement.
24/07/2014 19:25	05:00.0	37	51.9	33.5	
24/07/2014 19:30	05:00.0	36.9	50.6	33.5	
24/07/2014 19:35	05:00.0	37.3	54.1	34	
24/07/2014 19:40	05:00.0	41.2	56.2	34.5	Train; HMNB loudspeaker announcement.