

# URS

## EfW CHP Facility, Devonport

Non-Destructive Testing  
Noise Report

14<sup>th</sup> July 2014

Prepared for:



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**EXECUTIVE SUMMARY**

On Thursday 10<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): 50 dB  $L_{Aeq,50min}$  (façade): 1 dB below the baseline; and
- At R15 (Talbot Gardens): 41 dB  $L_{Aeq,50min}$  (façade): 2 dB below the baseline.

The noise levels recorded at both receptors were below the baseline noise level, and therefore within the Plymouth City Council's Code of Construction Practice noise limits for weekday evening work. Minor site noises were recorded at Savage Road; however the noise climate was dominated by noise from road traffic and residential properties. It was noted by surveyors that if residents were unaware of NDT occurring, they would unlikely have noticed these minor site noises.

## 1. INTRODUCTION

MVV Environment Devonport Ltd (MVV) undertook Non-Destructive Testing (NDT) outside usual working hours on Thursday 10<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> *1 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

\*1 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 10th 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 10th 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	10/07/2014 18:00 – 18:50	1.0	NW	18°C	None
R15	10/07/2014 18:55 – 19:45	0.5	N	17°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), throughout the duration of the measurement. In addition there was also noise from passing trains; residents and pedestrians parking up and/or walking past; as well as noise from the play area further along Savage Road. In addition there was also bird song and noise from leaves rustling on the trees in the wind. There was one recorded noise which was presumed to originate from site, however these were unobtrusive and no louder than other background noises, and potentially unnoticeable to those unaware that NDT was occurring.
- 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. 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 10<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)  L <sub>Aeq,4hr</sub> dB	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		
R3	10/07/2014 18:00 – 18:50	-	50	72	-	51	61	-1
R15	10/07/2014 18:55 – 19:45	-	41	62	-	43	58	-2

The noise levels recorded at both receptors were 1-2 dB below the baseline noise level, and therefore within the Plymouth City Council's Code of Construction Practice noise limits for weekday evening work.

Minor site noises were recorded at Savage Road; however these were unobtrusive, and noted as being below background noise levels. The  $L_{AFmax}$  events included in Table 4 were not a result of NDT testing, but instead due to off-site noises. The noise climate was instead dominated by road traffic and noise from adjacent residential properties. No site noise was recorded at Talbot Gardens.

It was noted by surveyors that if residents were unaware of NDT occurring, they would unlikely have noticed these minor site noises.

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
10/07/2014 18:00	05:00.0	48.3	62.8	41	
10/07/2014 18:05	05:00.0	49.5	62.1	40	Car horns, presumed to be from HMNB; Clattering noise, presumed to be from site.
10/07/2014 18:10	05:00.0	49	61.6	40	Car passing with loud music.
10/07/2014 18:15	05:00.0	50.3	62.6	41	
10/07/2014 18:20	05:00.0	49.5	63.1	41	
10/07/2014 18:25	05:00.0	51.8	62.6	40	
10/07/2014 18:30	05:00.0	48.4	61.5	39.5	
10/07/2014 18:35	05:00.0	51.8	69.5	39.5	Moped leaving from below SLM; Loud unknown noise from residential property close to SLM.
10/07/2014 18:40	05:00.0	53.6	71.7	39	Loud motorbike and van passing simultaneously.
10/07/2014 18:45	05:00.0	49.3	64.9	39	

**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
10/07/2014 18:55	05:00.0	39.7	51.1	37	
10/07/2014 19:00	05:00.0	39.3	46.5	37.5	
10/07/2014 19:05	05:00.0	42.1	60.5	37.5	Train; Residents talking outside near to SLM.
10/07/2014 19:10	05:00.0	41.2	53.2	37.5	
10/07/2014 19:15	05:00.0	40.4	54	37.5	Train; Noise from residential property close to SLM; Loudspeaker announcement in HMNB.
10/07/2014 19:20	05:00.0	42.6	57.8	38.5	
10/07/2014 19:25	05:00.0	40.4	62.3	37.5	Shouting noise from residential property close to SLM.
10/07/2014 19:30	05:00.0	39.9	51.4	37.5	Shouting noise from residential property close to SLM.
10/07/2014 19:35	05:00.0	41.3	54.3	37.5	Train.
10/07/2014 19:40	05:00.0	39.9	52.6	37	Car horn in distance; Loudspeaker announcement in HMNB.