

17 October 2013

 OneSteel Recycling Pty Ltd
 55 – 57 Riverside Road,
 Chipping Norton, NSW 2170
 Attention Roger Baines

By email

Dear Roger

RE Attended Surveys at Hexham Shredder

This letter report provides the results of attended surveys conducted on the days of the 20th & 29th of August and the 27th of September 2013 to assess the noise impact of operations at the OneSteel Recycling Pty Ltd facility located at No. 14 and No. 41 Sparke Street, Hexham. The surveys have been conducted in response to the noise monitoring requirements in the Environment Protection License for the site and have been conducted in accordance with the requirements of AS 1055 - Acoustics - Description and Measurement of Environmental Noise. The target noise goals for the premises are set out in **Table 1** below.

This report also contains logged 15 minute sound level data recorded over this reporting period at the permanent noise monitoring station located at the St. Joseph's Retirement Village.

Table 1 Target Noise Goals

Location	Day L _{Aeq} (15min)	Evening L _{Aeq} (15min)	Night L _{Aeq} (15min)
Any residence in Shamrock Street	47	48	45
St. Joseph's Retirement Village & any associated residence on Old Maitland Road	53	42	41

Table 2 Weather Conditions

Survey Date	Start Time	Location	Cloud	Temp	Wind Speed	Wind Direction	Effects of Weather
20 August 2013	13:33	St. Joseph's	3 Octa	20 °C	1 to 1.5 m/s	WSW	Slightly Reduced OneSteel Levels
29 August 2013	13:30	Shamrock St	7 Octa	25 °C	0.5 to 1 m/s	ESE	Slightly Reduced OneSteel Levels
27 September 2013	09:40	St. Joseph's	0 Octa	23 °C	NIL	NIL	NIL
27 September 2013	10:21	Shamrock St	0 Octa	25 °C	0 to 0.5 m/s	NNW	Slightly Reduced OneSteel Levels

Table 3 *Measured Noise Levels*

Survey Date	Survey Start Time	Location	Overall			OneSteel $L_{Aeq\ 15min}$ Contribution	OneSteel $L_{Aeq\ 15min}$ Limit	Trains & Aircraft $L_{Aeq\ 15min}$ Contribution	Traffic & Other $L_{Aeq\ 15min}$ Contribution	Noise Sources and Level Range dB(A)	
			$L_{Aeq\ 15min}$	$L_{A10\ 15min}$	$L_{A90\ 15min}$						
20 August 2013	13:33	St. Joseph's	48.9	52.1	44.0	39.1	53	48.1	37.4	OneSteel	41 to 50
										Trains	43 to 60
										Traffic & Other	43 to 53
20 August 2013	13:48	St. Joseph's	50.6	52.7	44.3	44.8	53	48.1	43.0	OneSteel	41 to 54
										Trains	45 to 73
										Traffic & Other	41 to 62
29 August 2013	13:30	Shamrock St	53.2	53.9	46.9	42.4	47	48.2	50.9	OneSteel	47 to 58
										Trains	52 to 76
										Traffic & Other	43 to 65
29 August 2013	13:45	Shamrock St	55	55.6	49.2	45.1	47	50.9	52.0	OneSteel	46 to 61
										Trains	49 to 76
										Traffic & Other	47 to 69
27 September 2013	09:40	St. Joseph's	51.2	53.5	41.6	36.8	53	50.1	43.9	OneSteel	41 to 52
										Trains	41 to 68
										Traffic & Other	40 to 71
27 September 2013	09:55	St. Joseph's	51	53.5	45.3	43.2	53	49.1	43.7	OneSteel	43 to 54
										Trains	43 to 67
										Traffic & Other	43 to 70
27 September 2013	10:21	Shamrock St	56.1	57.2	42.0	21.5	47	55.8	44.0	OneSteel	40 to 45
										Trains & Aircraft	42 to 77
										Traffic & Other	40 to 65
27 September 2013	10:36	Shamrock St	55.9	59.5	42.3	27.4	47	55.6	45.1	OneSteel	42 to 46
										Trains & Aircraft	39 to 80
										Traffic & Other	39 to 66

Operating Equipment and Noise Source Identification

The equipment that was observed to be operating at the OneSteel Recycling plant and the Sound Pressure Levels associated with that equipment are listed in **Table 4** below.

Table 4 *Plant Activity*

Activity	20 August 2013 St. Joseph's dB(A)	29 August 2013 Shamrock St dB(A)	27 September 2013 St. Joseph's dB(A)	27 September 2013 Shamrock St dB(A)
Metal Handling	Barely Audible 45 – 52	Barely Audible 49 – 55	Barely Audible 43 – 50	Barely Audible 44 – 46
Mill	Barely Audible 43 – 49	Not Audible	Barely Audible 44 – 47	Not Audible
Loader Beepers	Barely Audible 46 – 50	Not Audible	Barely Audible 43 – 46	Not Audible
Z-Box Conveyor	Barely Audible 44 – 52	54 – 59	Barely Audible 48 – 49	Barely Audible 44 – 46
Mag Drum	Not Audible	56 – 58	Barely Audible 44 – 48	Not Audible
Mill Siren	Not Audible	Barely Audible 50 – 54	Not Audible	Not Audible
Trucks Unloading/Loading	Not Audible	Not Audible	Not Audible	Not Audible

Discussion

Survey on the 20th of August, 2013

The survey on the 20th of August, 2013 at St. Joseph's Retirement Village showed that Trains were the dominant noise source over the survey period with $L_{Aeq\ 15min}$ contributions of 48 dB(A) for both 15 minute periods. OneSteel Recycling was seen to be operational over the entire survey period, with metal handling and the Z-box conveyor audible intermittently over the survey period. OneSteel Recycling had $L_{Aeq\ 15min}$ contributions of 39 & 45 dB(A) for the 15 minute periods of the survey. Traffic & Other noise were intermittently audible with $L_{Aeq\ 15min}$ contributions of 37 & 43 dB(A) for the 15 minute periods of the survey.

Survey on the 29th of August, 2013

The survey on the 29th of August, 2013 at Shamrock Street showed that Traffic and Trains both dominated the acoustic climate throughout the two 15 minute periods of the survey, while OneSteel Recycling was intermittently audible over the entire survey period. The mill at OneSteel Recycling was seen to be operational for the entire survey period, with metal handling, mag drum, mill siren and the Z-box conveyor intermittently audible for most of the survey period. OneSteel Recycling had $L_{Aeq\ 15min}$ contributions of 42 & 45 dB(A). Traffic noise was constantly audible over the survey period with $L_{Aeq\ 15min}$ contributions of 51 & 52 dB(A). Trains were intermittently audible over the survey with $L_{Aeq\ 15min}$ contributions ranging between 48 & 51 dB(A) over the survey period.

Surveys on 27th of September, 2013

The survey on the 27th of September, 2013 at St. Joseph's Retirement Village showed that Trains were the dominant noise source over the survey period with $L_{Aeq\ 15min}$ contributions of 49 dB(A) & 50 dB(A) for the two 15 minute periods. The mill at OneSteel Recycling was audible and seen to be operational for the entire survey period, with the metal handling, mag drum, mill siren, loader beepers and z-box conveyor all intermittently audible. OneSteel Recycling had $L_{Aeq\ 15min}$ contributions of 37 dB(A) & 43 dB(A) for the two 15 minute periods of the survey. Traffic was intermittently audible over the entire survey, with $L_{Aeq\ 15min}$ contributions of 44 dB(A) for both 15 minute periods.

The survey on the 27th of September, 2013 at Shamrock Street showed that Trains were the dominant noise source over the survey period with $L_{Aeq\ 15min}$ contributions of 56 dB(A) for both 15 minute periods. OneSteel Recycling had $L_{Aeq\ 15min}$ contributions of 22 & 27 dB(A) for both 15 minute periods and was seen to be operational for the entire survey period. Both metal handling and the Z-box conveyor were barely audible yet levels were not measurable. Traffic noise was intermittently audible over the entire survey period with $L_{Aeq\ 15min}$ contributions of 44 & 45 dB(A).

Logged Sound Level Data

Regular downloading of the data is undertaken during each reporting period, which includes the downloading of the data to a laptop, test calibration of the microphone and the clearing of the logger's internal memory before resuming data logging.

Time traces of the logged $L_{Aeq\ 15min}$ and $L_{A90\ 15min}$ sound pressure levels at the permanent noise monitoring station located at St. Joseph's Retirement Village are shown below by month in **Figures 5 to 7** for the months of July to September 2013 respectively.

Data from the permanent sound logger at the St. Joseph's Retirement Village has been intermittently operational for the July to September 2013 reporting period.

The following actions (with comments) were undertaken by RCA Acoustics to identify the fault and restore the logger to service:-

August 27th:

- Upon opening the logger case to download the logged data, it was observed that the logger screen was frozen on the RTA02-018 unit and would not communicate with the laptop used for downloading. The screen would not clear/reset nor communicate remotely after numerous attempts to restart the monitor which included removing power to the logger for a substantial period of time. The voltage of the external battery within the logger case and charging rate of the solar controller were tested and found to be satisfactory at the time.
- OneSteel Recycling OHSE Officer Mark Perriman was immediately contacted and informed, followed by the removal of the RTA02-018 unit/microphone and the installation of the spare logger/microphone (RTA02-010) which is stored at the Hexham OneSteel Recycling offices. The 12 volt battery within the permanent logger case was not replaced with the battery from the spare logger due to low battery voltage, resulting from the self discharge of the unused battery when in storage over a long period time without maintenance.

- A test download was conducted after approximately 15 minutes to ensure the replacement unit was operating satisfactorily. The test was successful and so the unit was left to continue logging until the end of the quarterly noise survey period.
- The RTA02-018 monitor was returned to the manufacturer for data retrieval and inspection/repair the following day as no change was observed on the monitor despite no power applied overnight.

8th of October:

- Upon opening the permanent logger case to download the remaining data of the quarter, it was observed that the logger screen display was not functioning. The battery voltage and solar charging rates were immediately tested and found to be good, despite the logger appearing to not be working.
- The logger (RTA02-010) was removed and returned to the RCA Acoustic office, where a 240V power supply was connected to the unit and tested again without success. The logger (RTA02-010) was also sent back for repair and data retrieval after a few days of no change from testing conducted in the office.
- The original logger (RTA02-018) and data from it arrived at the RCA offices shortly after the removal of the spare logger (RTA02-010).
- Upon inspection of the data that returned with the original logger, it was noted that the logger was generally logging during the hours of daylight and not operating during the night, or during days with substantial cloud cover. It was concluded that the solar controller was operating satisfactorily, but the 12 volt battery within the permanent logger case was not sufficiently holding charge to allow continuous operation in the absence of sunlight.
- The original logger (RTA02-018) was returned to service, replacing the temporary logger (That was in service from 28/8 to 8/10), with the failed battery replaced by a new battery.

15th of October:

- Data and the spare logger (RTA02-010) returned from manufacturer. The data returned shows a similar operation pattern, attributable to a failed battery.

From the above, it can be seen that the reason for non-continuous data at the permanent sound logger located at the St. Joseph's Retirement Village is that the 12 volt/18 Amp hour battery within the logger case had failed to the point where it was no longer able to hold a sufficient charge voltage to allow operation over the night and taking a few hours of the early morning to be charged to the point where the logger is able to resume logging operations. It is unfortunate that whenever service calls were made to the logging station, the weather was good and sunny, therefore, resulting in battery voltages and solar charge rates within the ranges of normal operations.

Since replacement of the 12 volt logger battery, the original logger has been operating satisfactorily and shows continuous 15 minute logged periods from reinstallation on the 8th of October to present.

Sound levels from the available non-continuous logged data show that the $L_{Aeq\ 15min}$ values during the daytime period are generally consistent with the noise level target of 53 dB(A) at St. Joseph's Retirement Village, with several periods exceeding the target which are likely attributable to wind conditions - increasing the received noise levels of either OneSteel Recycling or traffic noise from Maitland Road.

October 17, 2013

Compliance with noise limits

All surveys at St. Joseph's Retirement Village and Shamrock Street show that OneSteel Recycling complies with its Environment Protection Licence during this reporting period and, in our opinion is unlikely to be a consistent source of offensive or intrusive noise at nearby residential receptors.

Thank you for the opportunity to provide this assessment please do not hesitate to contact the undersigned if you have any questions regarding this report or any other acoustic matter.

Yours Sincerely
RCA Acoustics

Document Control

Prepared by



*Matthew Weston MDesSc (Audio & Acoustics)
Acoustics Technician*

Reviewed and Authorised by



*Matthew Bain MDesSc (Audio & Acoustics)
Acoustic Consultant*

Date 17 October 2013

Figure 1 Sound Level Chart, Attended Survey at St Joseph's Retirement Village

20/08/2013

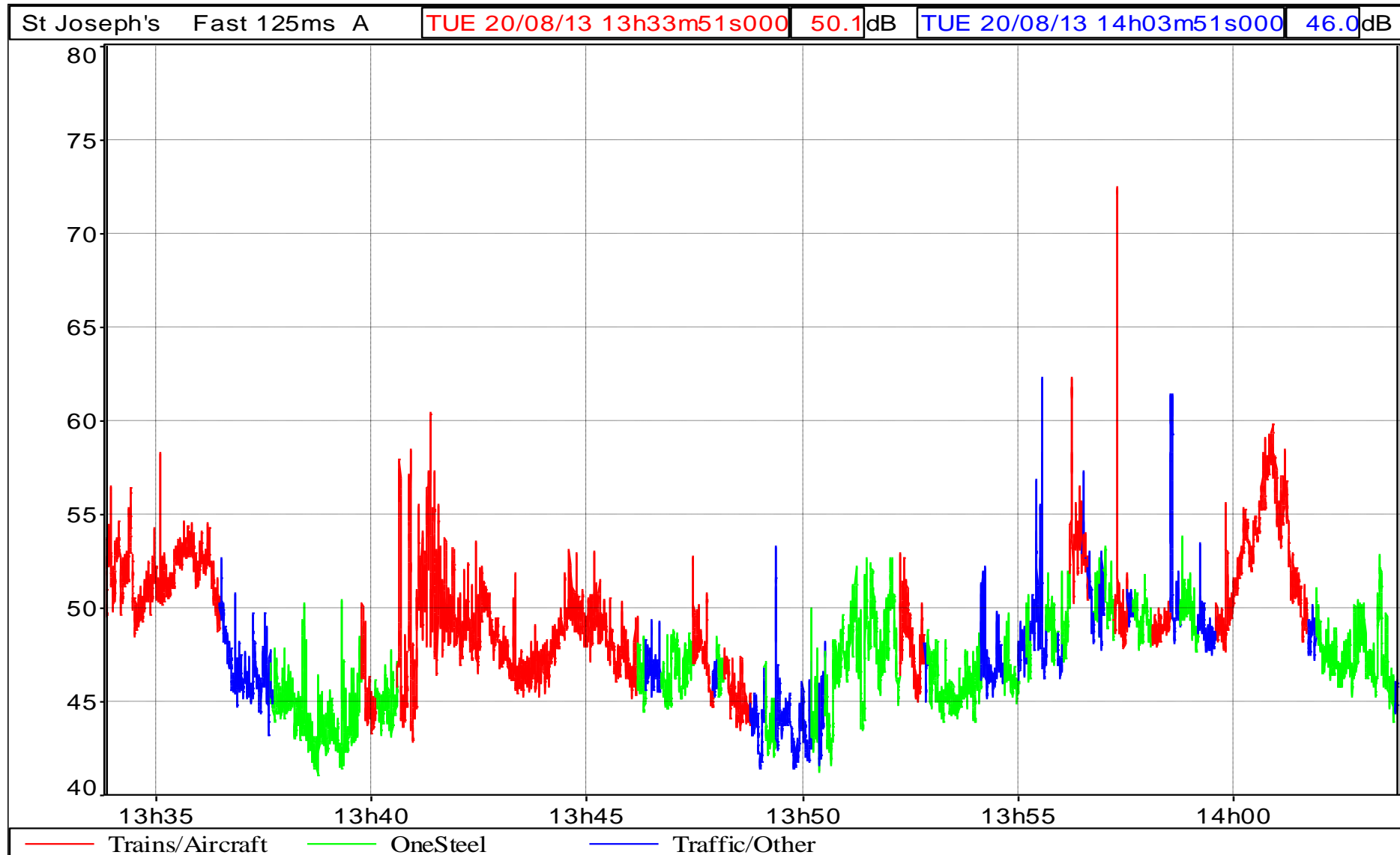


Figure 2 Sound Level Chart, Attended Survey at Shamrock Street 29/08/2013

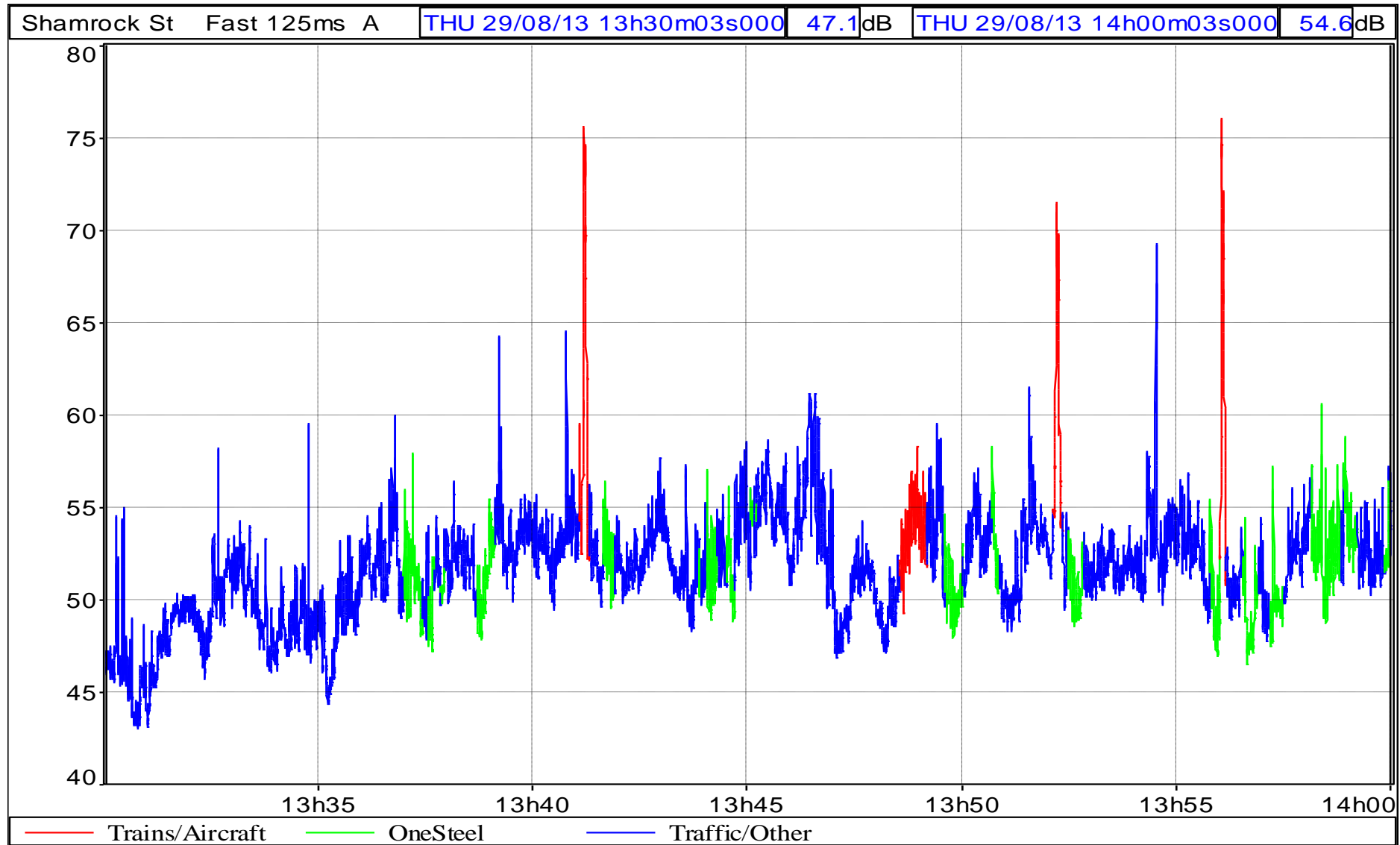


Figure 3 Sound Level Chart, Attended Survey at St Joseph's Retirement Village

27/09/2013

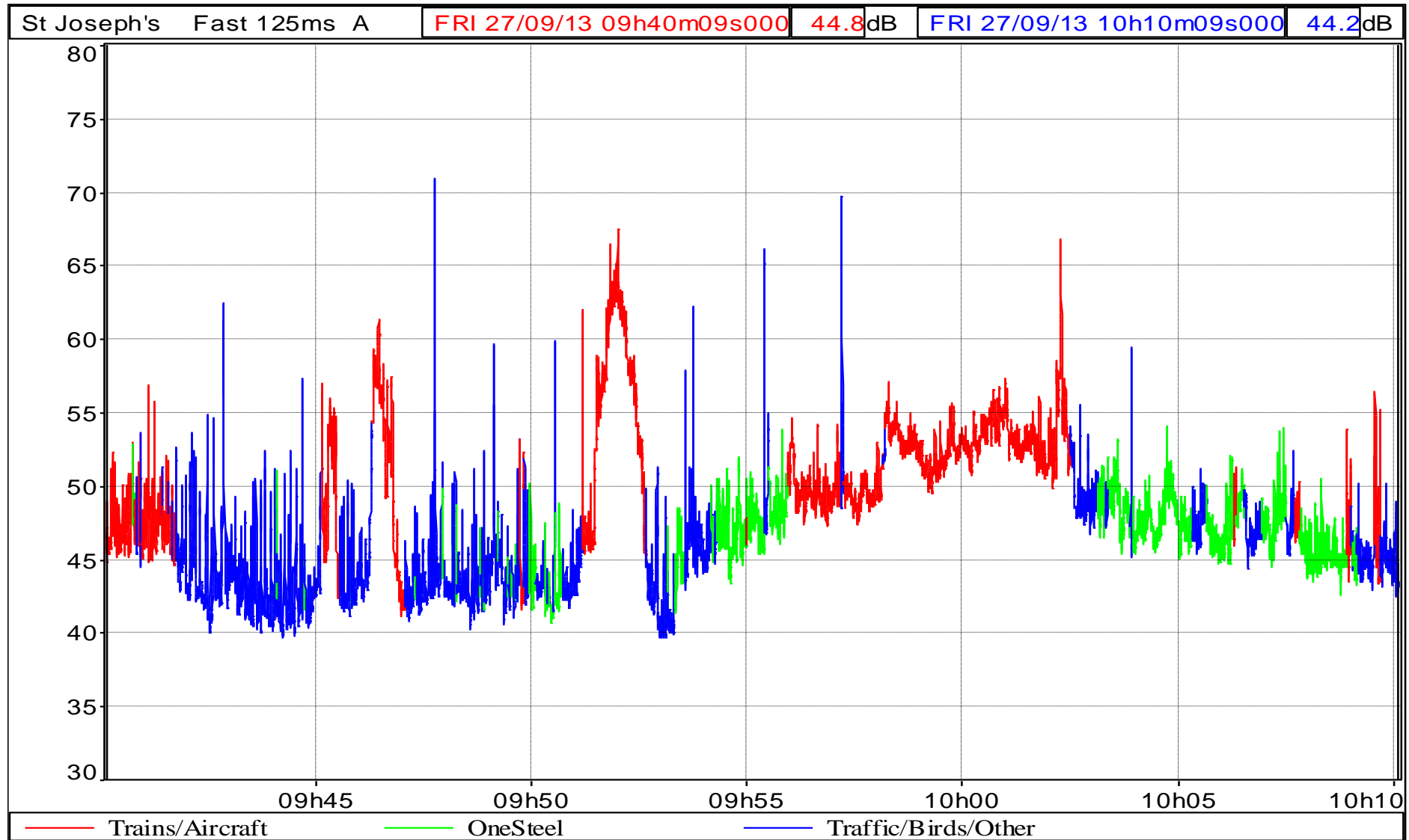


Figure 4 Sound Level Chart, Attended Survey at Shamrock Street 27/09/2013

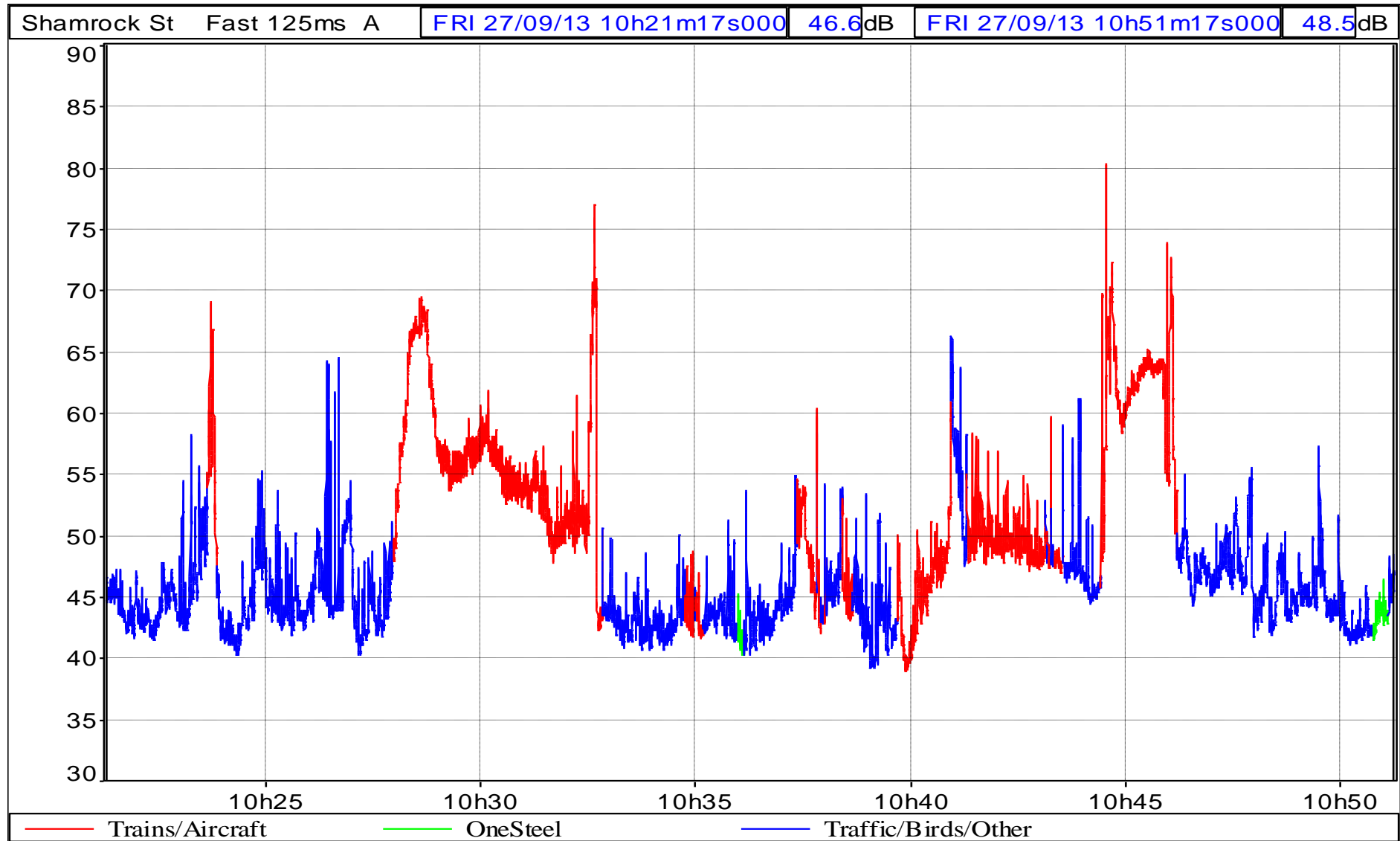


Figure 5 Sound Level Chart, St. Joseph's Retirement Village Noise Logger Data for July, 2013

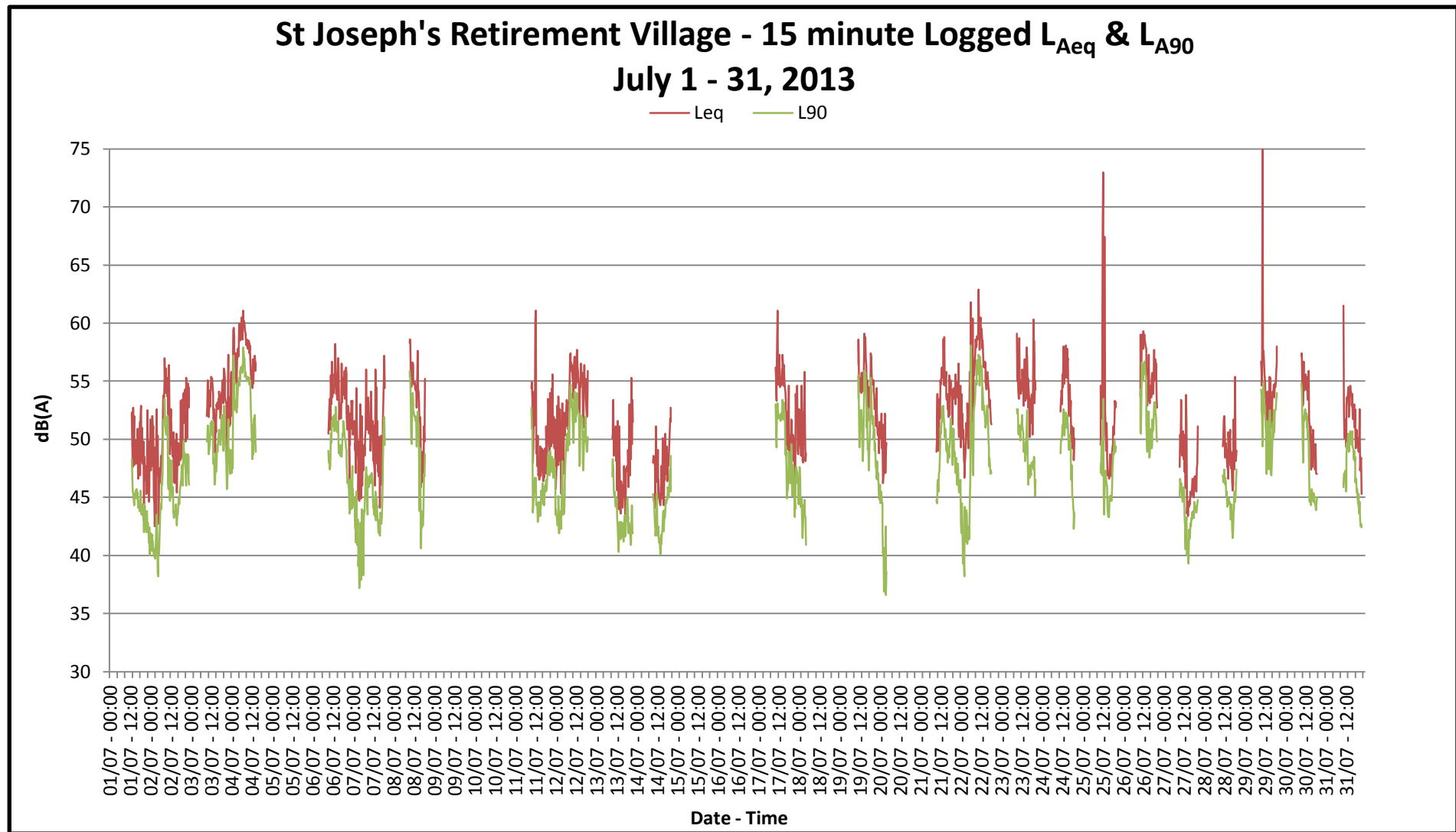


Figure 6 Sound Level Chart, St. Joseph's Retirement Village Noise Logger Data for August, 2013

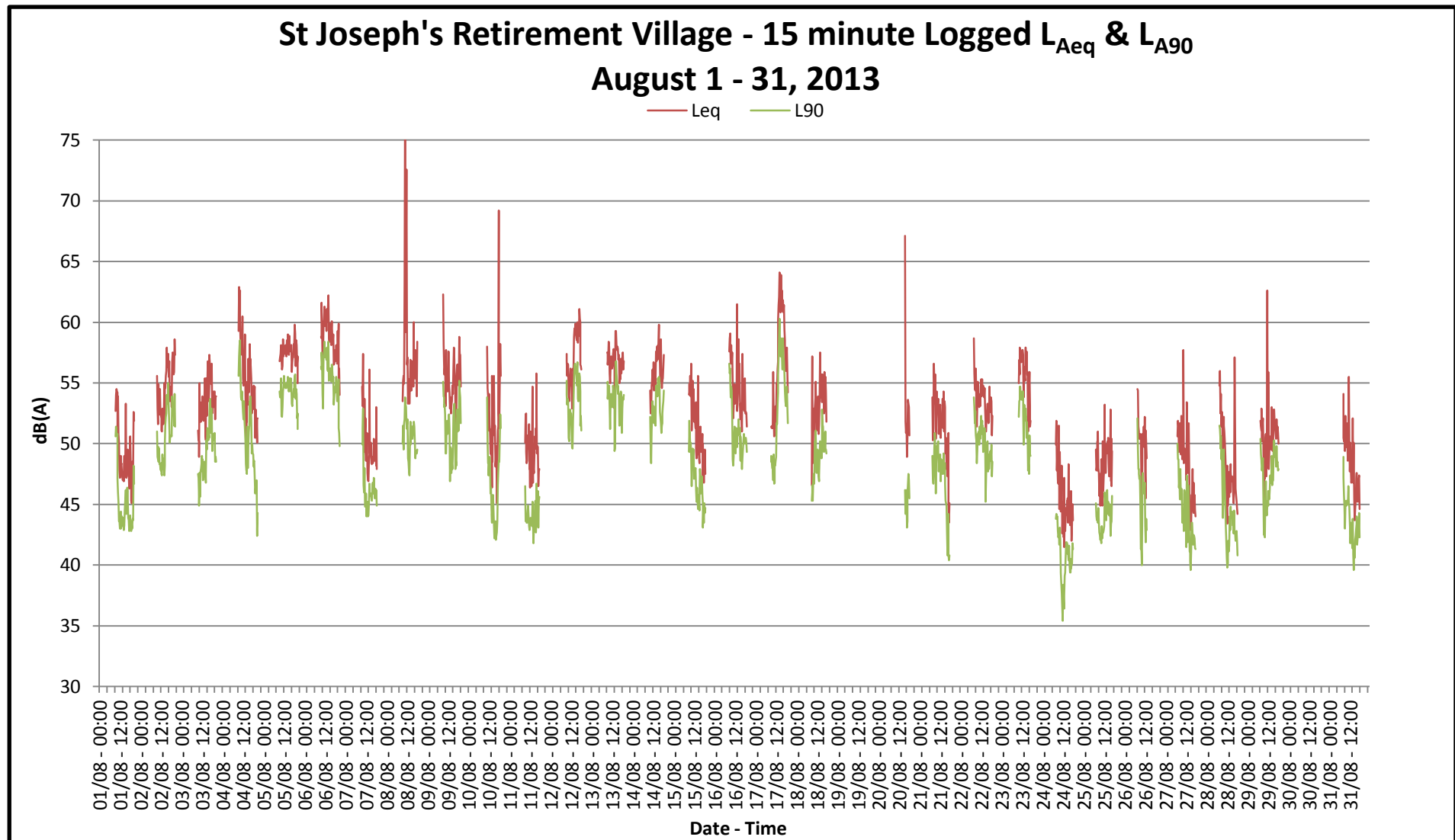


Figure 7 Sound Level Chart, St. Joseph's Retirement Village Noise Logger Data for September, 2013

