Forth Replacement Crossing

Employer's Delivery Team
Construction Noise Monitoring Report

Principal Contract and M9J1a Contract
(June 2012)

TRANSPORT SCOTLAND

An agency of The Scottish Government

FORTH REPLACEMENT CROSSING

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EMPLOYER'S DELIVERY TEAM
CONSTRUCTION NOISE MONITORING REPORT

PRINCIPAL CONTRACT AND M9J1A CONTRACT
(JUNE 2012)

Revision Status

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FORTH REPLACEMENT CROSSING

EMPLOYER'S DELIVERY TEAM
CONSTRUCTION NOISE MONITORING REPORT

CONTENTS

1. INTRODUCTION

1.1 This report sets out the results of the construction noise monitoring undertaken on the Forth Replacement Crossing project.

1.2 The noise monitoring periods covered in this report are as follows:

- Principal Contract: June 2012 – refer to Section 2 of this report.
- M9 Junction 1a Contract: June 2012 – refer to Section 3 of this report.

1.3 Noise monitoring from the Fife ITS Contract is reported separately.

2. PRINCIPAL CONTRACT NOISE MONITORING

NOISE MONITORING LOCATIONS

2.1 Continuous noise monitoring was carried out at the fixed monitor locations in Table 2.1 below. The main construction activities carried out adjacent to the monitor locations are also listed.

Monitoring Location	Monitoring Period	Main Construction Activities
Whinny Hill (M1)	June 2012	• Drilling for blasting • Blasting • Rock removal • Break out rock
Tigh-Na-Grian (M3)	June 2012	• Milling and excavation at Beamer Rock • Dredging • Caisson placement • Excavation at N1 • Drilling and blasting and rock removal at North Abutment
Port Edgar (M6)	June 2012	• Milling and excavation at Beamer Rock • Dredging • Excavation at S5 • Caisson placement • Site clearance
Butlaw Fisheries (M7)	June 2012	• Excavation at Beamer Rock • Dredging at South Shore • Excavation at S5 • Caisson placement
Inchgarvie Lodge (M10)	June 2012	• Milling and excavation at Beamer Rock • Dredging • Caisson Placement • S5 excavation • Utility works • Earthworks • Drainage works • Rock excavation
Linn Mill (M11)	June 2012	• Utility works • Earthworks • Drainage works • Fencing • Soil stripping • Rock excavation
Clufflat Brae (M13)	June 2012	• Utility works • Earthworks

		• Drainage works
Springfield (M14)	June 2012	• Works at Southern Compound • Utility works • Drainage works • Earthworks • Soil stripping • Rock excavation
Echline Field (M15)	June 2012	• Works at Southern Compound • Utility works • Drainage works • Earthworks • Soil stripping • Rock excavation
Scotstoun (M16)	June 2012	• Wheel bath installation • Soil stripping • Importing Rock • Drainage Works
Dundas Home Farm (M17)	June 2012	• Utilities works
Newton	June 2012	• No works within 1.75 km

Table 2.1 Principal Contract – Long Term Monitoring Locations

NOISE MONITORING RESULTS

2.2 Monitoring results from the Principal contract are contained in Appendix A of this report. The results are presented in a report containing noise charts using the template contained in the Construction Noise Monitoring Information Note which is available on the project website at http://www.transportscotland.gov.uk/files/documents/projects/forth-replacement/FRC_Construction_Noise_Monitoring_Information_Note_2_.pdf.

2.3 Some exceedances of the maximum noise level thresholds occurred in June, however the majority of these are not considered to be due to construction works being carried out. Exceedances of the maximum noise level threshold at Butlaw Fisheries, Clufflat Brae and Tigh-Na-Grian were attributed to construction works.

2.4 Exceedances of the monthly average threshold occurred at Scotstoun, Butlaw Fisheries, Clufflat Brae, Inchgarvie Lodge and Linn Mill, however these are not considered to be due to construction works being carried out.

2.5 All exceedances were investigated in accordance with the project Code of Construction Practice.

2.6 A large quantity of non-construction related exceedance reports were generated in June, therefore only construction related exceedance reports are included in this report. All exceedance reports are available on request from the FRC Team, contactable via email at enquiries@forthreplacementcrossing.info. A summary of the information included in the exceedance reports is provided in Table 2.2 below.

Monitoring Location	**Contractor's Exceedance Report Reference**	**Exceedance**
Butlaw Fisheries (M7)	NVIRs	During June the maximum noise threshold was exceeded on 49 occasions (daytime, 10; evening, 10; night time, 29). The majority of exceedances were attributed to a range of non-construction factors, including birds (particularly during the early hours of the morning), water on the shore and ship horns. Three exceedances were attributable to dredging works.
Clufflat Brae (M13)	NVIRs	During June the maximum noise threshold was exceeded on 60 occasions (daytime, 14; evening, 16; night time, 30). A number of the exceedances were found to be due to birds and people at the nearby properties, in particular children playing. One exceedance was found to be due to the intermittent noise of plant operating in close proximity to the meter.
Inchgarvie Lodge (M10)	NVIRs	During June the maximum noise threshold was exceeded on 54 occasions (daytime, 9; evening, 15; night time, 30). Investigations found birds to be the main contributing factor to the exceedances at this location. Other exceedances were caused by ship horns and DIY works at the property.
Linn Mill (M11)	NVIRs	During June the maximum noise threshold was exceeded on 48 occasions (daytime, 12; evening, 8; night time, 28). No exceedances were due to construction works. Exceedances were caused by a number of non-construction factors, including birds, animals and adverse weather conditions.
Tigh-Na-Grian (M3)	NVIRs	During June the maximum noise threshold was exceeded on 46 occasions (daytime, 18; evening, 3; night time, 28). The night time threshold was exceeded on one occasion due

Monitoring Location	Contractor's Exceedance Report Reference	Exceedance
		to dredging works. However the majority of exceedances were attributable to other factors, unrelated to construction works, such as birds and ship horns in the estuary.
Dundas Home Farm (M17)	NVIRs	During June the maximum noise threshold was exceeded on 6 occasions. Exceedances were not attributable to construction works. Exceedances were the result of vehicle noises (car horns) and the use of lawnmowers near the monitor.
Echline Field (M15)	NVIRs	No information available due to sound level meter malfunction.
Springfield (M14)	NVIRs	During June the maximum noise threshold was exceeded on 12 occasions. Exceedances were not due to construction activities. Exceedances were attributed to a number of non-construction related factors, including birds and activities at the nearby properties.
Scotstoun (M16)	NVIRs	During June the maximum noise threshold was exceeded on 21 occasions. Exceedances were attributed to vehicles passing by on the adjacent road.
Whinny Hill (M1)	NVIRs	During June the maximum noise threshold was exceeded on 11 occasions. Exceedances were not due to construction activities. A range of factors were found to cause exceedances at this location, including use of a lawnmower, birds, children playing and other activities at the nearby properties.

Table 2.2 Principal Contract – Summary of Noise Threshold Exceedances

3. M9 J1A CONTRACT NOISE MONITORING

NOISE MONITORING LOCATIONS

3.1 Continuous noise monitoring was carried out at the fixed monitor locations in Table 3.1 below. The main construction activities carried out adjacent to the monitor locations are also listed.

Monitoring Location	Monitoring Period	Main Construction Activities
93/95 King Edwards Way (CNV02)	June 2012	• Erection of environmental barrier • Directional drilling • M9 pavement works • Utilities works
15-17 Buie Rigg (CNV07)	June 2012	• Drainage works • Directional drilling • Backfill at Newmains Bridge
8 Kirklands Park Grove (CNV16)	June 2012	• Drainage works • Backfill at Newmains Bridge

Table 3.1 M9 J1a Contract – Long Term Monitoring Locations

NOISE MONITORING RESULTS

3.2 Monitoring results from the M9 Junction 1a contract are contained in Appendix B of this report. The results are presented in charts using the template contained in the Construction Noise Monitoring Information Note which is available on the project website at http://www.transportscotland.gov.uk/files/documents/projects/forth-replacement/FRC_Construction_Noise_Monitoring_Information_Note_2_.pdf.

3.3 The results of the constriction noise monitoring provided in the M9 Junction 1a reports indicate that all construction activities were carried out in accordance with the thresholds set out in the project Code of Construction Practice.

3.4 Some exceedences of the maximum noise level thresholds occurred, although the exceedences are not considered to be due to the construction works being carried out. Formal exceedance reports were prepared by the contractor for June 2012 and the investigations identified that the exceedances were not due to construction related factors. Summary information regarding the exceedances of the maximum

noise level thresholds is provided In Table 3.2 below. Copies of the exceedance reports are contained in Appendix B to this report.

Monitoring Location	**Contractor's Exceedance Report Reference**	**Exceedance**
93/95 King Edwards Way (CNV02)	NERs 71 - 84	During June the maximum noise threshold was exceeded on 14 occasions (daytime, 8; evening, 3; night time, 3). However, no exceedances were attributed to construction related activities. The exceedances were attributed to dogs barking, motorcycle engine noise and children shouting.
15-17 Buie Rigg (CNV07)	NER 91 - 93	During June the maximum noise threshold was exceeded on 5 occasions (daytime, 2; night time, 3). However, the exceedances are not attributed to construction related activities as no works were being carried out on the M9J1a site at the time of the exceedance.
8 Kirklands Park Grove (CNV16)	NERs 88 - 90	During June the maximum noise threshold was exceeded on 4 occasions (night time). However, the exceedances are not attributed to construction related activities as no works were being carried out on in the vicinity of the receptor at the time of the exceedances.

Table 3.2 M9 J1a Contract – Summary of Noise Threshold Exceedances

APPENDIX A - PRINCIPAL CONTRACT - CONSTRUCTION NOISE MONITORING REPORTS

Contractor

Forth Crossing Bridge Constructors

HOCHTIEF Solutions
American Bridge International
DRAGADOS
Morrison Construction

Project

FORTH REPLACEMENT CROSSING

Document title

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Contents

1 Introduction

1.1 Monitoring of construction noise is being undertaken by FCBC during the construction of the new Forth Crossing and the associated road network. This report covers the month of June 2012. The objective of this report is to detail the monitoring that has been undertaken across the site during this period and to present the construction noise monitoring results acquired for June 2012.

1.2 Monitoring of construction noise has been undertaken in accordance with the Code of Construction Practice (CoCP) and the Noise and Vibration Management Plan (NVMP).

2 Noise Monitoring Locations

2.1 During June 2012, construction noise was monitored using permanent, continuous noise monitoring devices at the locations listed in Table 1. The majority of the monitors were installed throughout November and December 2011, with two additional monitors installed at Scotstoun Park (Arup's Office) and Newton during February and a further sound level meter was installed at Whinny Hill during March.

2.2 At some monitoring locations, the noise monitoring devices are accompanied by an associated weather station. Weather stations are present at Echline Field, Tigh-Na-Grian, Clufflat Brae, Dundas Home Farm, Butlaw Fisheries, Linn Mill and Whinny Hill.

2.3 Various construction works were undertaken across the site during June 2012. The main construction activities undertaken in the locality of each of the noise meters during the period have been listed in Table 1.

Table 1: Monitoring Locations

Ref.	Monitoring Location	Crossing or Network	Main Construction Activities During June 2012
M1	Whinny Hill	Network	Drilling for blasting Blasting Rock Removal Breaking out rock N.B. No evening, night time, Saturday or Sunday daytime construction in vicinity.
M3	Tigh-Na-Grian	Crossing	On-going works at Beamer Rock including milling and excavation Dredging North and South shores Caisson Placement N1 excavation Drilling and Blasting at North Abutment and associated rock removal
M6	Port Edgar	Crossing	On-going works at Beamer Rock including milling and excavation Dredging at North and South shores S5 excavation Caisson Placement Site Clearance
M7	Butlaw Fisheries	Crossing	On-going works at Beamer Rock including milling and excavation Dredging at North and South shores Caisson Placement S5 excavation Utility works Site clearance at Society Road
M10	Inchgarvie Lodge	Crossing	On-going works at Beamer Rock including milling and excavation Dredging at North and South shores Caisson Placement S5 excavation Utility works Earthworks Drainage works Rock excavation
M11	Linn Mill	Network (close proximity to Crossing)	Utility works Earthworks Drainage works Fencing Soil stripping Rock excavation
M13	Clufflat Brae	Network (close proximity to Crossing)	Utility works Earthworks Drainage works

M14	Springfield	Network	Works at Southern Compound Utility works Drainage works Earthworks Soil stripping Rock excavation N.B. No evening, night time or Sunday daytime construction in vicinity.
M15	Echline Field	Network	Works at Southern Compound Utility works Drainage works Earthworks Soil stripping Rock excavation N.B. No evening, night time or Sunday daytime construction in vicinity.
M16	Scotstoun	Network	Wheel bath installation Soil stripping Importing Rock Drainage Works N.B. No evening, night time, Saturday or Sunday daytime construction in vicinity.
M17	Dundas Home Farm	Network	Utilities works N.B. No evening, night time, Saturday or Sunday daytime construction in vicinity.
M18	Newton	Network	No works

3 Noise Monitoring Results

3.1 All noise monitoring results for construction days have been presented in charts using the template provided in the Construction Noise Monitoring Information Note, as available on the project website (http://www.transportscotland.gov.uk/files/documents/projects/forth-replacement/FRC_Construction_Noise_Monitoring_Information_Note_2_.pdf). All charts can be found in the appendices of this report.

3.2 With regard to the noise monitoring results charts, the following should be noted:

- All locations are considered as either 'Main Crossing' or 'Network Connections', as set out in Table 1. Main Crossing works are undertaken during the day, evening and night time periods. Network connection works, however, are undertaken during the daytime only. The inclusion of data in the graphs reflects this. Although Linn Mill and Clufflat Brae are considered as network locations, the potential for marine works near the south shore to be heard has been recognised. As a result, evening and night time data has been included for these locations although no network connection construction activities have been undertaken during these periods.

- Noise data for days, evening and nights on which no construction works were conducted have been excluded from the monthly average results presented in the graph. However, noise results (L_{Aeq} and $L_{Amax,\ F}$) for any days, evenings and nights on which no construction works have been conducted have been presented in the graphs in greyed out areas.

- An average for Sunday construction noise data for June has been included on the graphs where applicable; in locations where no Sunday works have been undertaken no average is shown.

- As set out in the CoCP, the assessment time for evening, nights and Sunday daytime is 1 hour periods. To present the construction noise results for these periods, therefore, the maximum $L_{Amax,\ F}$ (fast time response) and maximum L_{Aeq} within the overall evening/night time period has been taken. It should be noted, therefore, that the average shown for these periods is an average of only the highest L_{Aeq} results.

- Where noise data is missing for days, evening or nights during which construction works were conducted, this has been indicated. Due to a loss of power supply to the meter at Echline, no data is available for this monitoring location for June 2012. Two minor incidences of missing data occurred during June at Butlaw and Linn Mill, although these device errors were quickly resolved. Furthermore, data is missing at Newton for the first three days of June due to a loss of power supply at this location for a four week period.

3.3 Results demonstrate that the monthly average total construction noise results for daytime were within the threshold limits for all monitoring locations for June 2012, with the exception of Scotstoun. The monthly average total construction noise results for the evening period were within the threshold for all locations throughout June 2012. For night-time, results show exceedances of the threshold at Butlaw Fisheries, Clufflat Brae, Inchgarvie Lodge and Linn Mill, with all other monitoring locations within the threshold. The Sunday average (for applicable monitoring locations) was found to be within the threshold for all monitoring locations during June 2012, with the exception of Butlaw Fisheries for both the daytime and night time periods.

3.4 However, the exceedances of the monthly average total construction noise and the Sunday average are not considered to be attributable to construction works. With regard to the exceedances of the night time averages, it should be noted that night time averages represent only the highest 1 hour periods recorded within the period. The highest 1 hour L_{Aeqs} are generally recorded during the early hours of the morning, during which background noise levels are increased due to birds; this has, therefore, caused the monthly average to exceed the threshold. Additionally, at Butlaw Fisheries a period of adverse weather on the night of the 7 June was also found to significantly influence the monthly average.

3.5 The exceedances of the Sunday averages at Butlaw Fisheries are also not considered to be attributable to construction works. As with the exceedances of the monthly night time average, the exceedance of the Sunday average for the night time period at Butlaw Fisheries is also considered to be due to birds in the early hours of the morning. As the daytime Sunday average is also represented by the highest 1 hour period, this was also found to influence the daytime average at Butlaw.

3.6 The exceedance of the daytime average at Scotstoun is due to increased background noise levels due to the location of the meter directly adjacent to the road. Traffic noise at this location is further increased during periods of wet weather which were frequent throughout June.

3.7 During June 2012, some exceedances of the maximum noise thresholds also occurred. Each exceedance of the threshold was investigated using triggered audio recordings, records of construction works (i.e. site programmes and diaries, daily marine reports and dredging reports) and analysis of weather station data. Wind speeds greater than 5 meters per second (m/s) are considered to have the potential to affect noise levels (recognised level by the Institute of Acoustics). Therefore, where necessary, wind speed data was assessed in order to determine whether wind speed may have contributed to noise level threshold exceedances. A Noise and Vibration Investigative Report (NVIR) spread sheet has been produced detailing the results of the investigation for each exceedance. Where the exceedances are due to construction works, a detailed NVIR has been completed which detail the results of the investigation in addition to any additional mitigation measures required.

3.8 Investigations of the exceedances of the maximum noise level thresholds show the majority to have occurred as a result of non-construction related noise. A significant number of the exceedances, particularly those occurring between dawn and 8 am, were due to bird calls. Adverse weather conditions, ship horns and local noises at nearby properties were also found to be contributing factors to maximum noise level exceedances. Additionally, at some locations, notably Scotstoun, existing traffic noise had an effect on maximum noise levels during the period covered in this report.

3.9 Where an exceedance due to construction works was identified, the works were investigated as soon as practicably reasonable and a detailed NVIR was completed, within which any additional mitigation measures were recognised.

3.10 One exceedance of the daytime threshold at Clufflat Brae during this period occurred as a result of construction works; intermittent noise from plant operating in close proximity to the noise meter was found to cause an exceedance on 15 June.

3.11 Some exceedances due to marine works were also recorded. Works within the caisson at the north tower caused the night-time threshold to be exceeded on 18 June at Tigh-Na-Grian. Furthermore, the dredging works at the southern shore were also found to cause three exceedances at Butlaw Fisheries on 17, 18 and 19 June.

3.12 A summary of the findings for exceedances occurring at each of the locations can be found in Table 2.

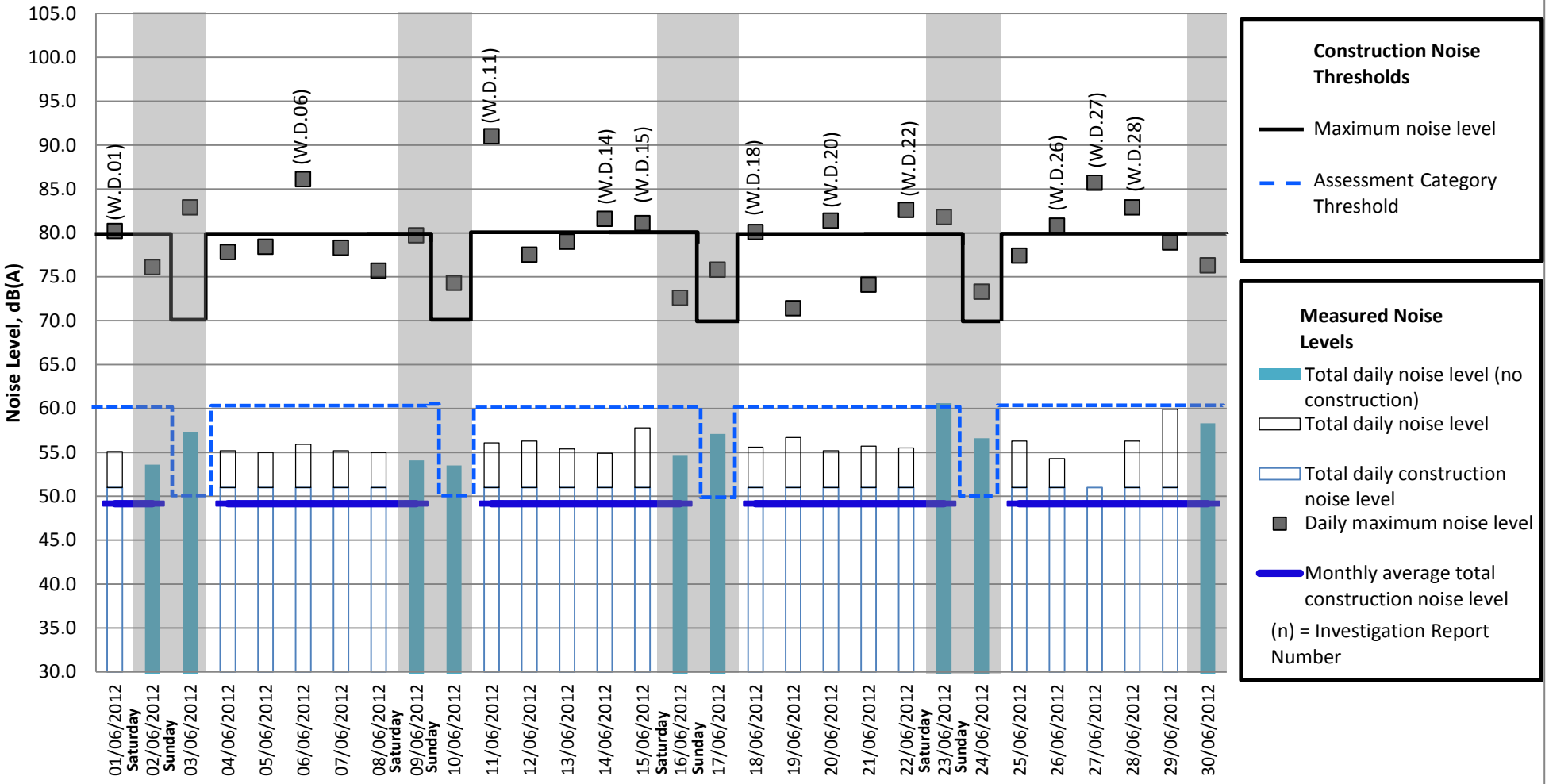
Table 2: Summary of Exceedances at Monitoring Locations

Monitoring Location	Summary of Exceedance Details
Butlaw Fisheries	During June the maximum noise threshold was exceeded on 49 occasions (daytime, 10; evening, 10; night time, 29). The majority of exceedances were attributed to a range of non-construction factors, including birds (particularly during the early hours of the morning), water on the shore and ship horns. Three exceedances were due to dredging works.
Clufflat Brae	During June the maximum noise threshold was exceeded on 60 occasions (daytime, 14; evening, 16; night time, 30). A number of the exceedances were found to be due to birds and people at the nearby properties, in particular children playing. One exceedance was found to be due to the intermittent noise of plant operating in close proximity to the meter.
Inchgarvie Lodge	During June the maximum noise threshold was exceeded on 54 occasions (daytime, 9; evening, 15; night time, 30). Investigations found birds to be the main contributing factor to the exceedances at this location. Other exceedances were caused by ship horns and DIY works at the property.
Linn Mill	During June the maximum noise threshold was exceeded on 48 occasions (daytime, 12; evening, 8; night time, 28). No exceedances were due to construction works. Exceedances were caused by a number of non-construction factors, including birds, animals and adverse weather conditions.
Tigh-Na-Grian	During June the maximum noise threshold was exceeded on 46 occasions (daytime, 18; evening, 3; night time, 28). The night time threshold was exceeded on one occasion due to dredging works. However the majority of exceedances were due to other factors, unrelated to construction works, such as birds and ship horns in the estuary.
Dundas Home Farm	During June the maximum noise threshold was exceeded on 6 occasions. Exceedances were not attributable to construction works. Exceedances were the result of vehicle noises (car horns) and the use of lawnmowers near the monitor.
Springfield	During June the maximum noise threshold was exceeded on 12 occasions. Exceedances were not due to construction activities. Exceedances were attributed to a number of non-construction related factors, including birds and local noises at the nearby properties.

Scotstoun	During June the maximum noise threshold was exceeded on 21 occasions. Exceedances were attributed to vehicles passing by on the adjacent road.
Whinny Hill	During June the maximum noise threshold was exceeded on 11 occasions. Exceedances were not due to construction activities. A range of factors were found to cause exceedances at this location, including use of a lawnmower, birds, children playing and other noises from the nearby property.

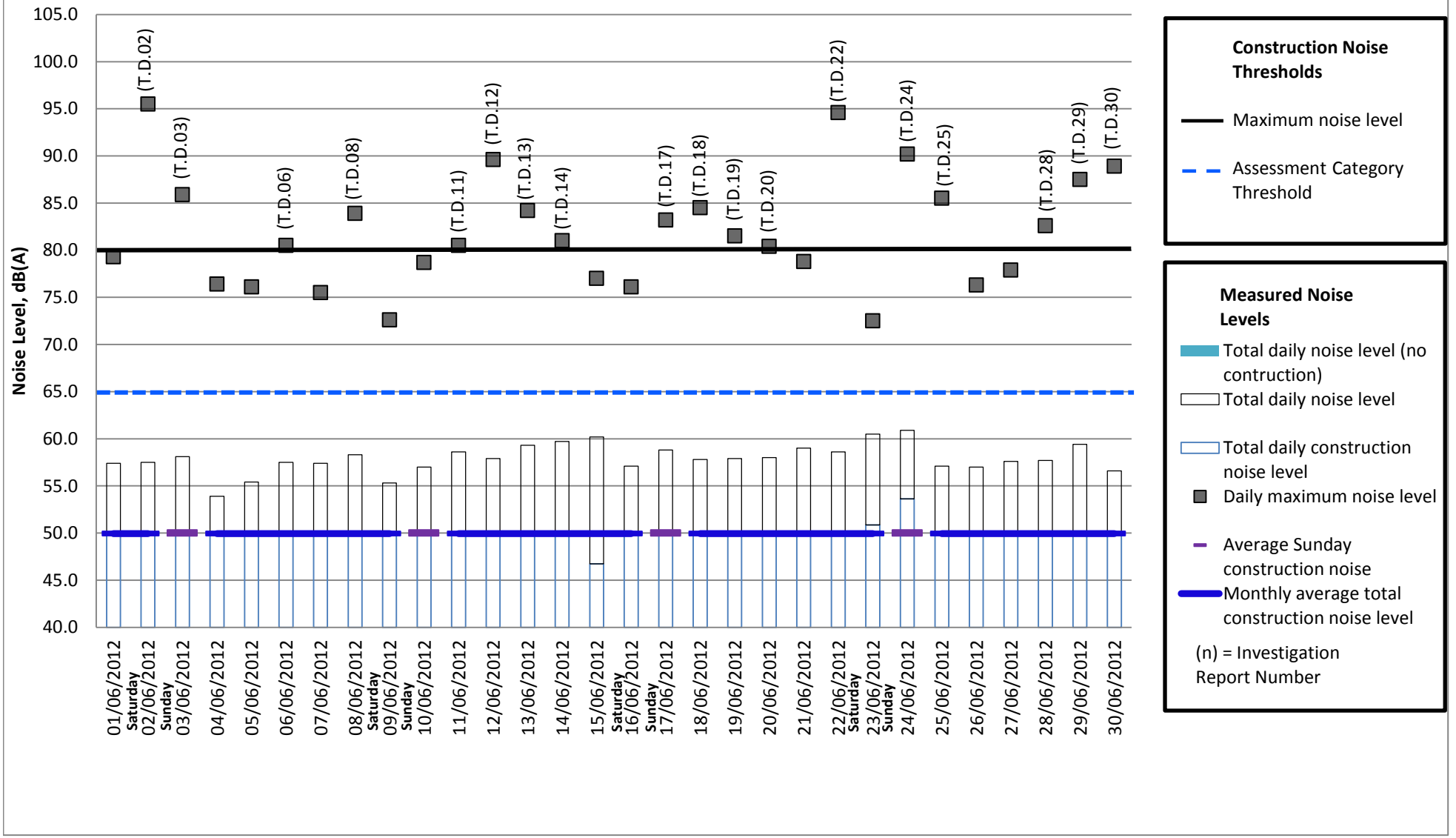
APPENDICES

Measured Daytime Noise Levels at Whinny Hill
Measurement period: June 2012

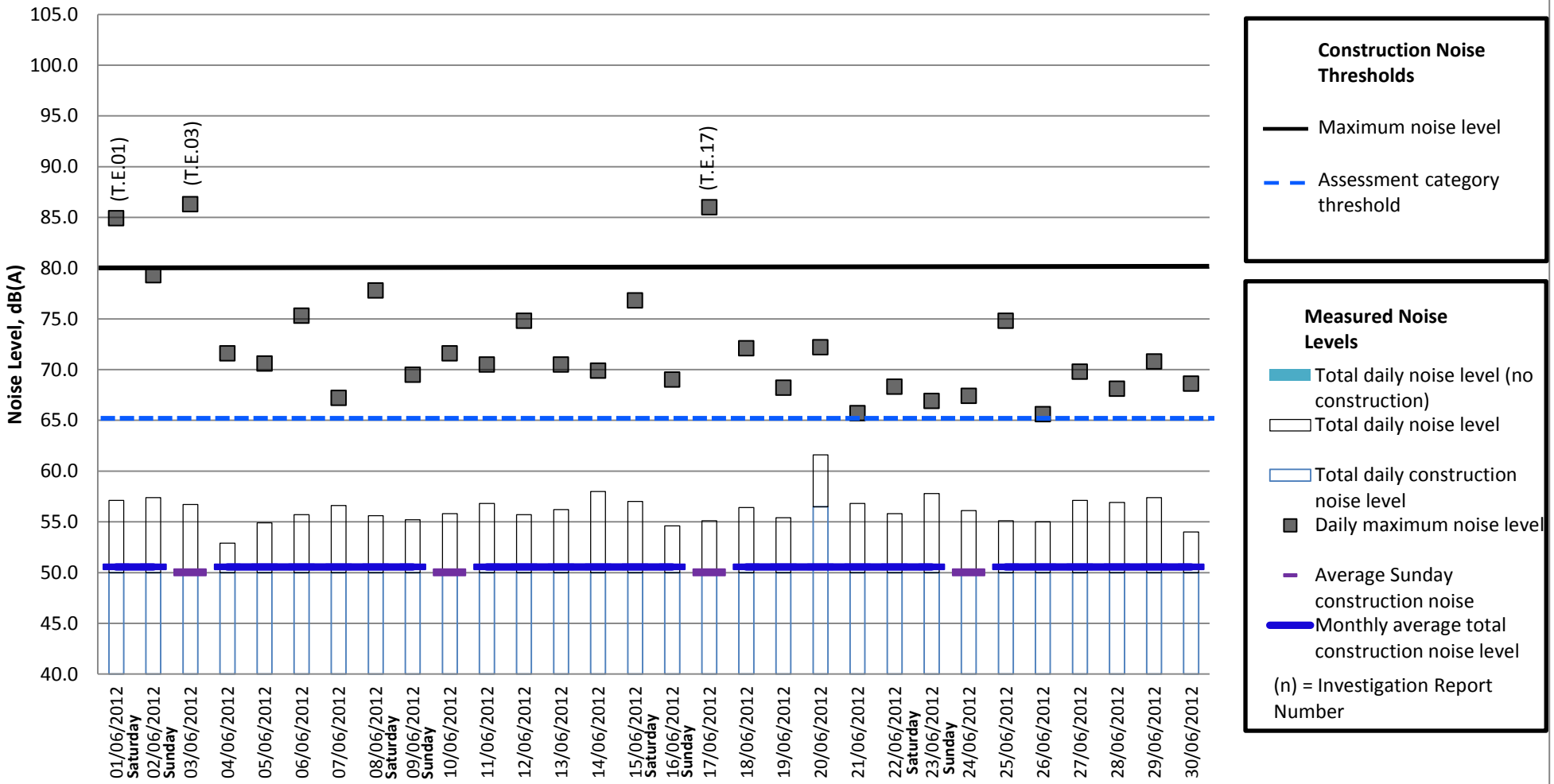


Note: The grey areas of the chart represent days on which no construction works have been conducted; no Saturday or Sunday construction works have been conducted at this location. The monthly average construction noise for Sunday has not been included as no Sunday works have been conducted at this location during this period.

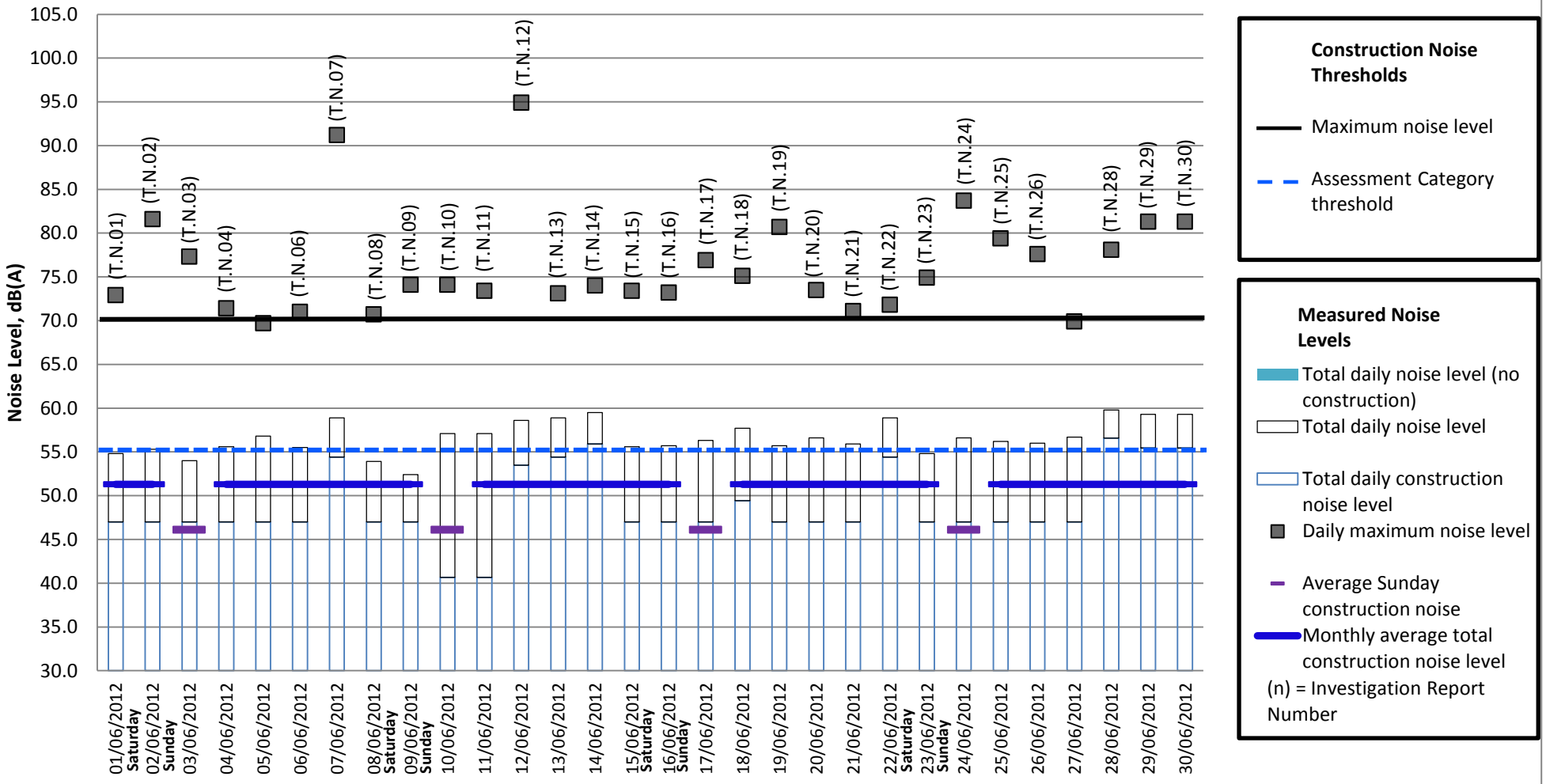
Measured Daytime Noise Levels at Tigh-Na-Grian
Measurement period: June 2012



Measured Evening Noise Levels at Tigh-Na-Grian
Measurement period: June 2012



Measured Night-time Noise Levels at Tigh-Na-Grian
Measurement period: June 2012



Construction Noise Thresholds

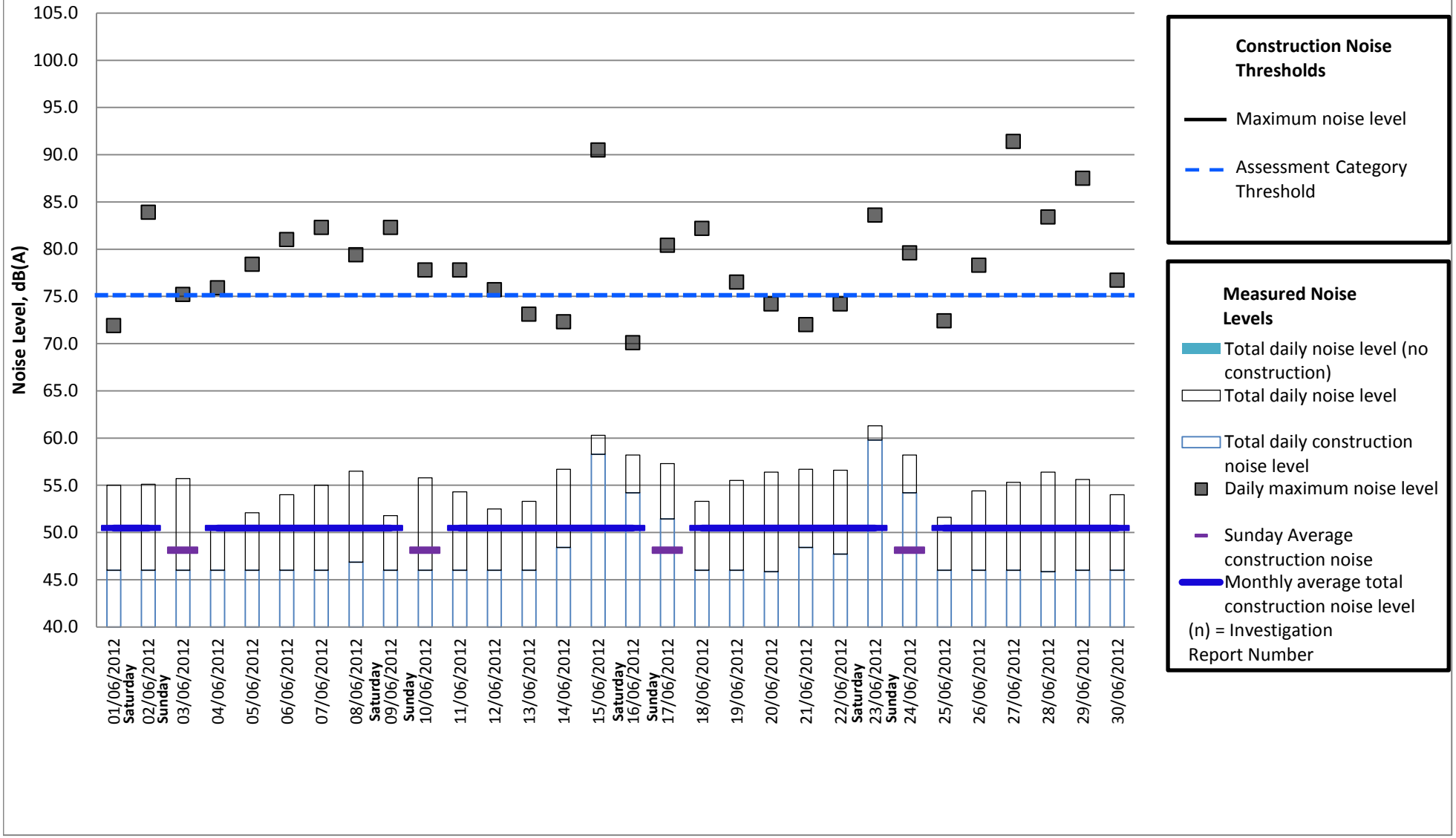
- Maximum noise level
- Assessment Category threshold

Measured Noise Levels

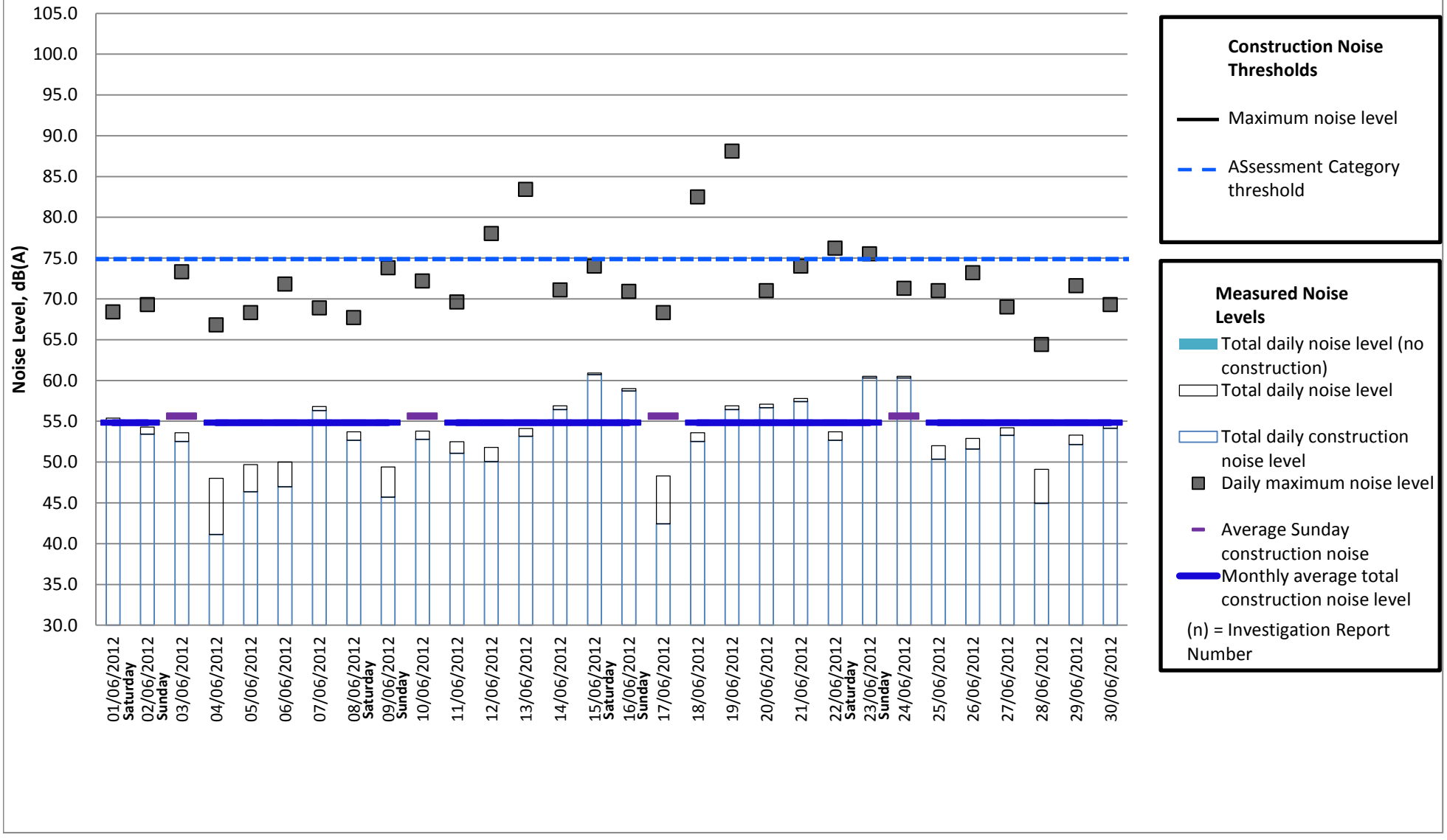
- Total daily noise level (no construction)
- Total daily noise level
- Total daily construction noise level
- Daily maximum noise level
- Average Sunday construction noise
- Monthly average total construction noise level

(n) = Investigation Report Number

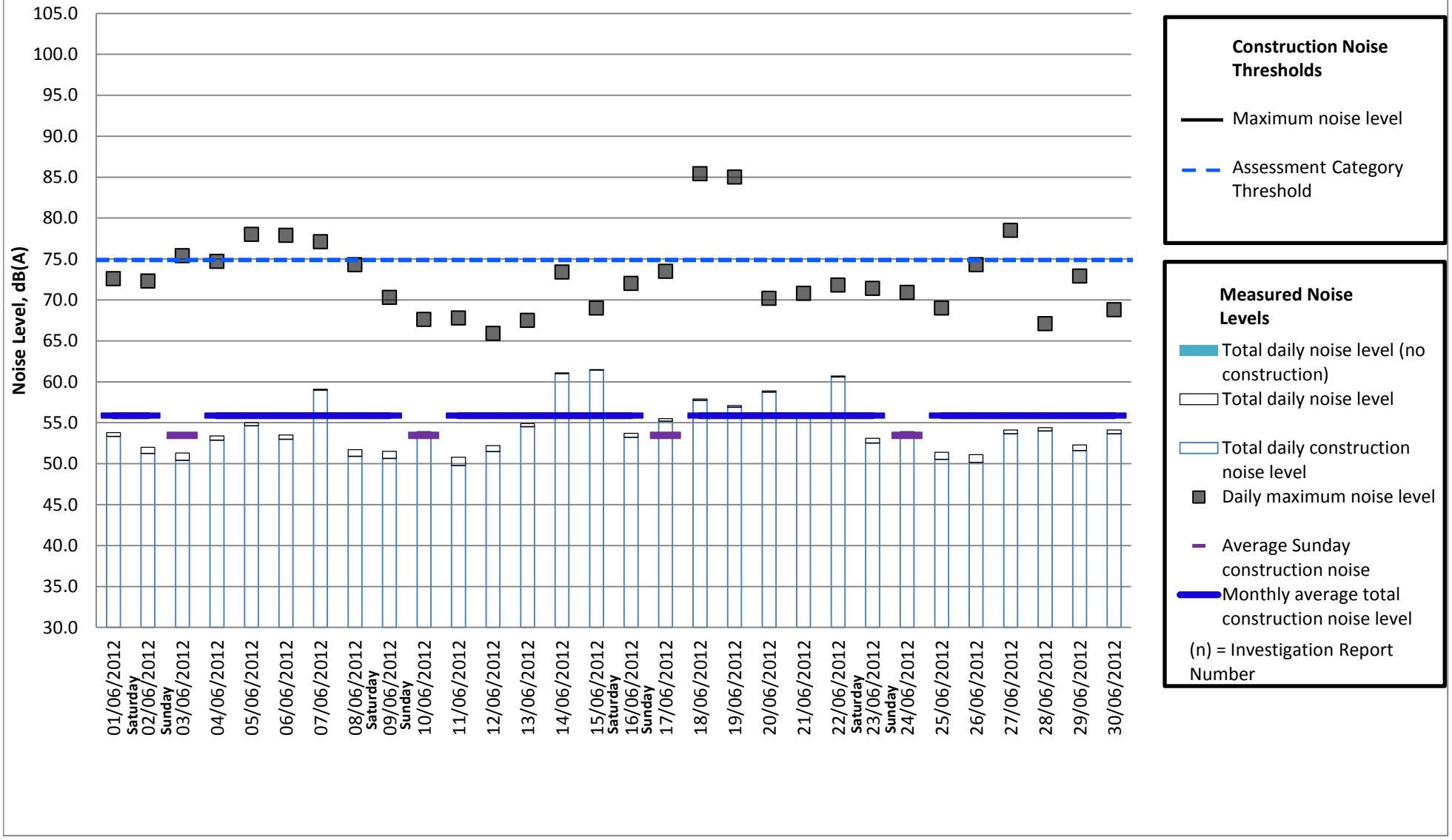
Measured Daytime Noise Levels at Port Edgar
Measurement period: June 2012



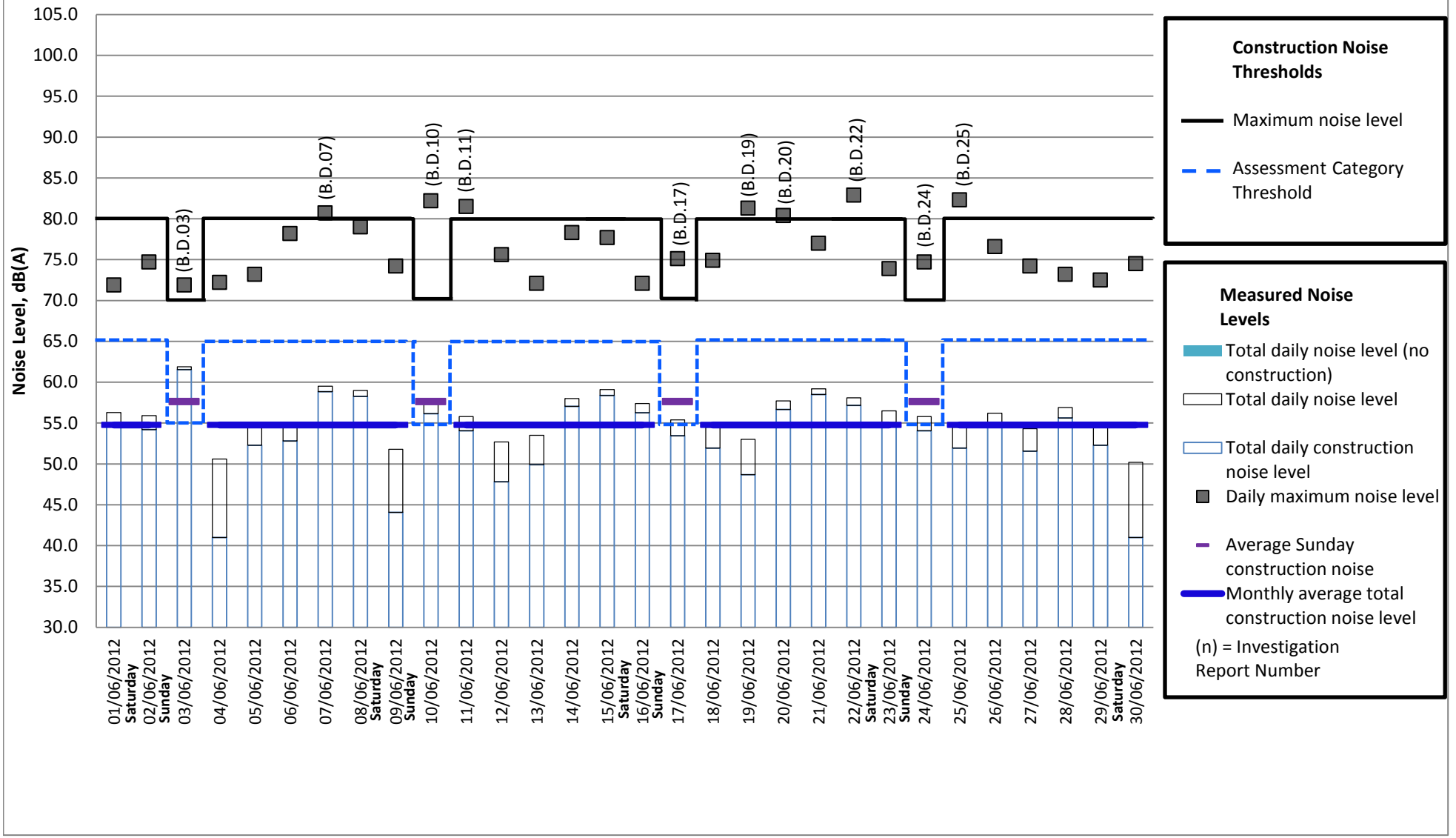
Measured Evening Noise Levels at Port Edgar
Measurement period: June 2012



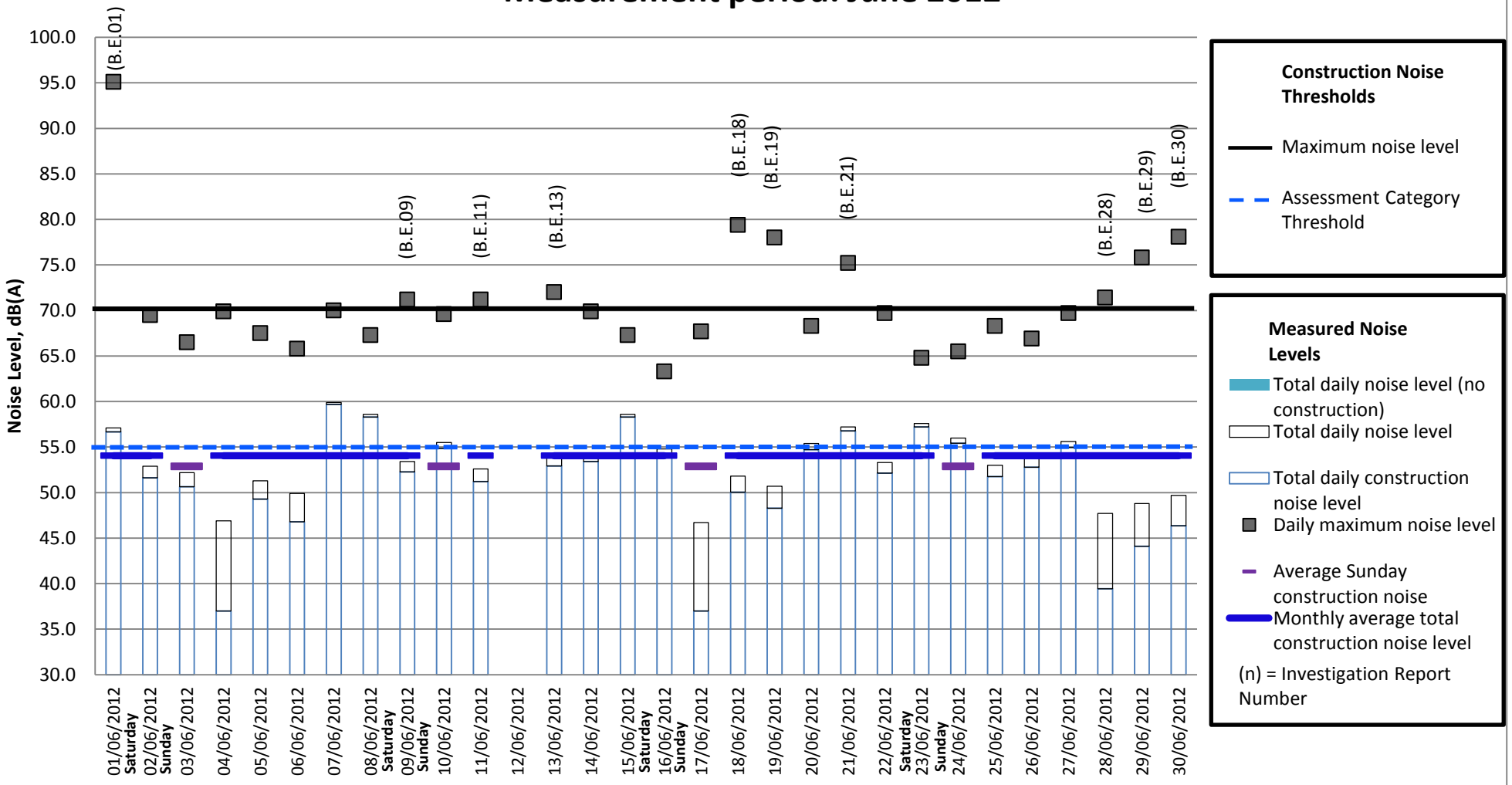
Measured Night-time Noise Levels at Port Edgar
Measurement period: June 2012



Measured Daytime Noise Levels at Butlaw Fisheries
Measurement period: June 2012

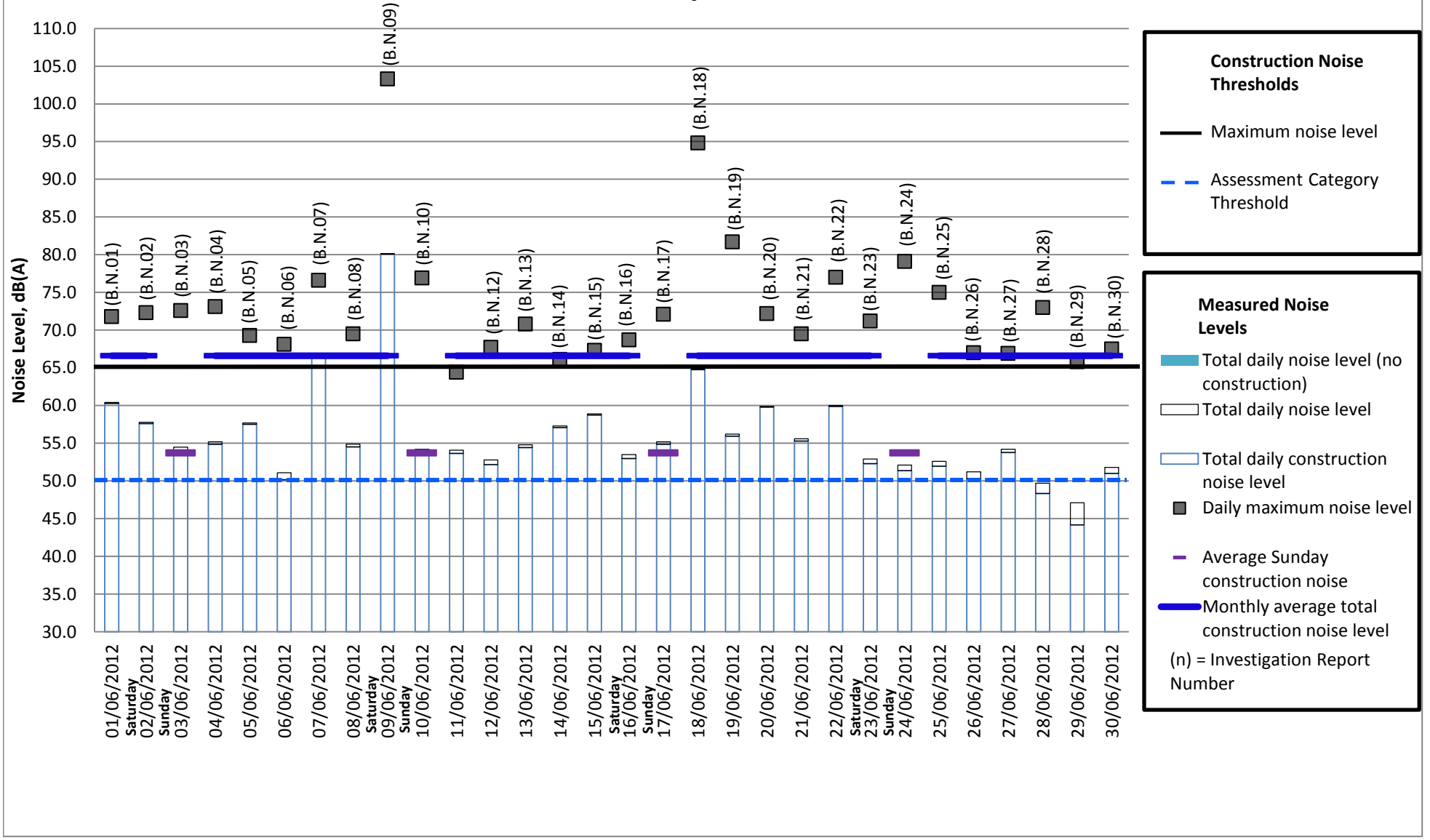


Measured Evening Noise Levels at Butlaw Fisheries
Measurement period: June 2012

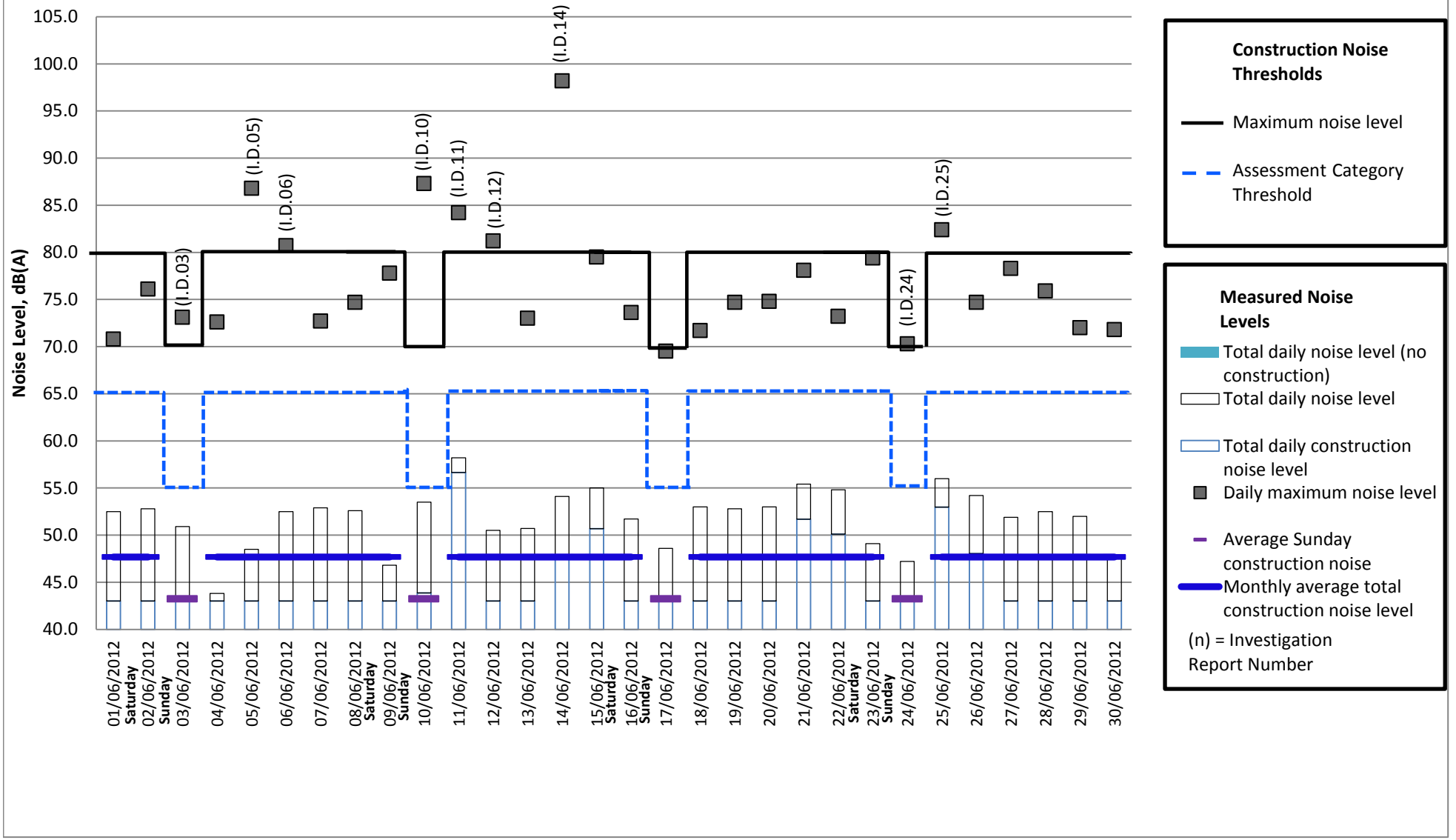


Note: Data is missing for 12/06/12 due to device error

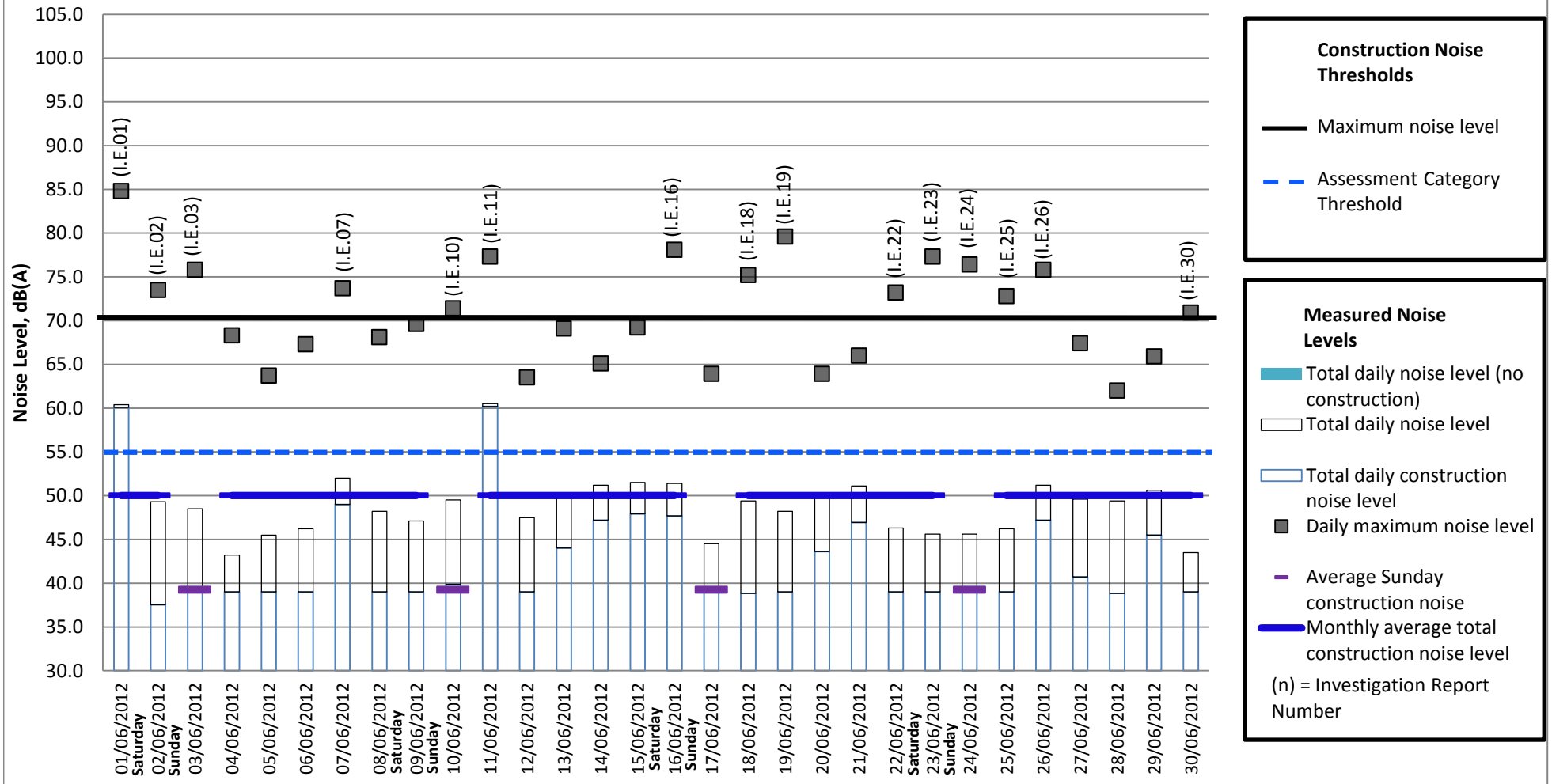
Measured Night time Noise Levels at Butlaw Fisheries
Measurement period: June 2012



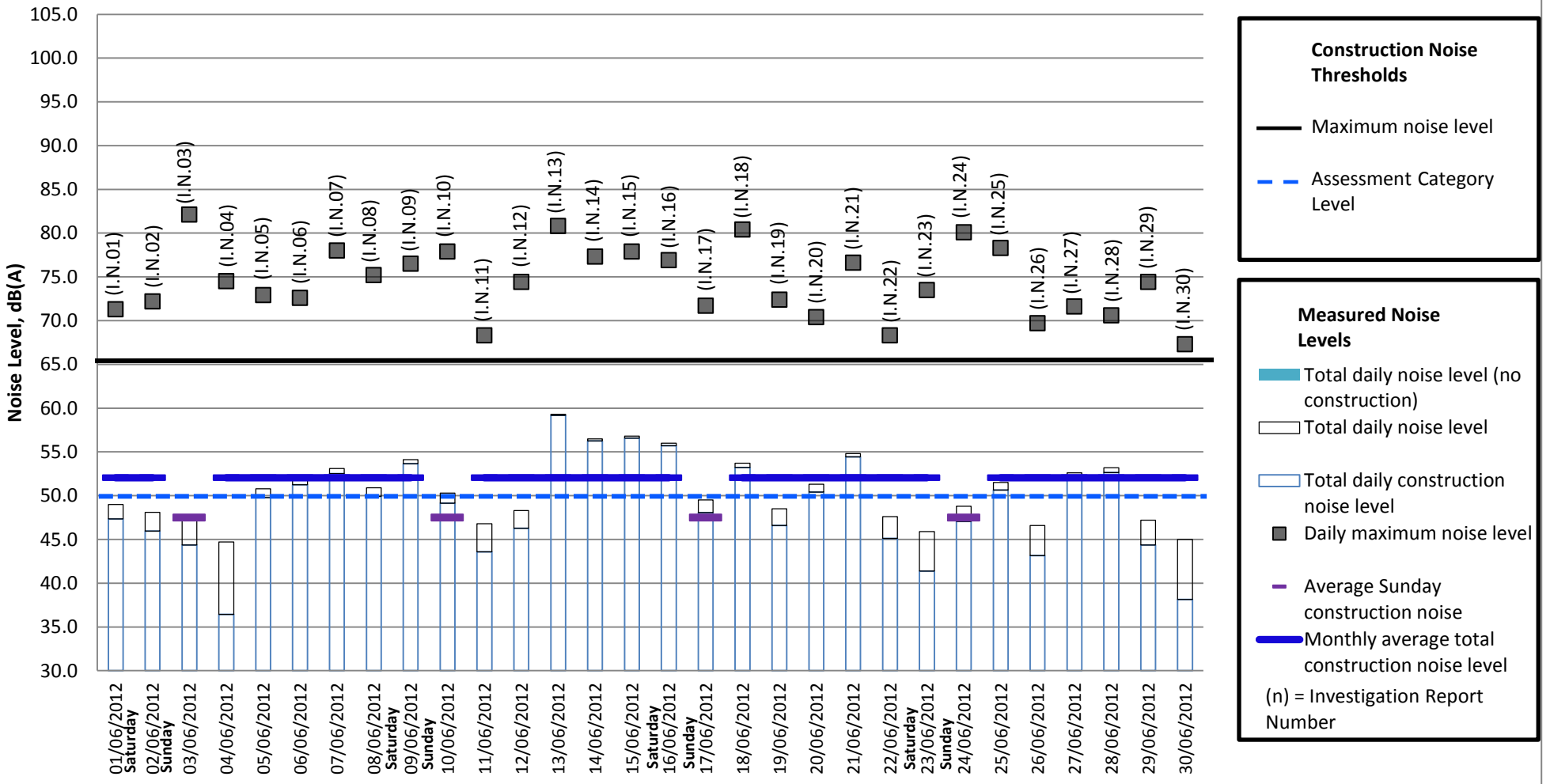
Measured Daytime Noise Levels at Inchgarvie
Measurement period: June 2012



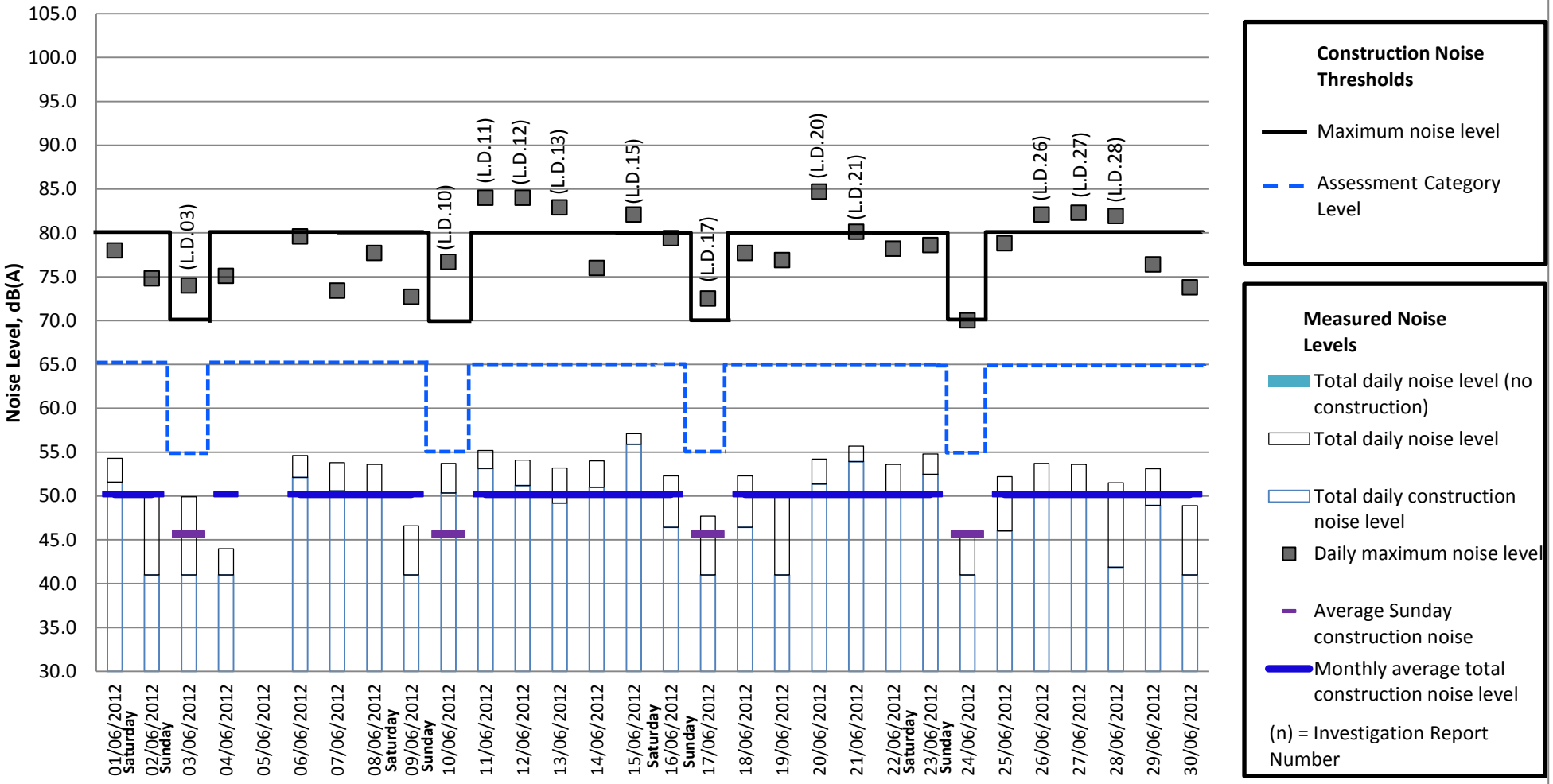
Measured Evening Noise Levels at Inchgarvie
Measurement period: June 2012



Measured Night-time Noise Levels at Inchgarvie
Measurement period: June 2012

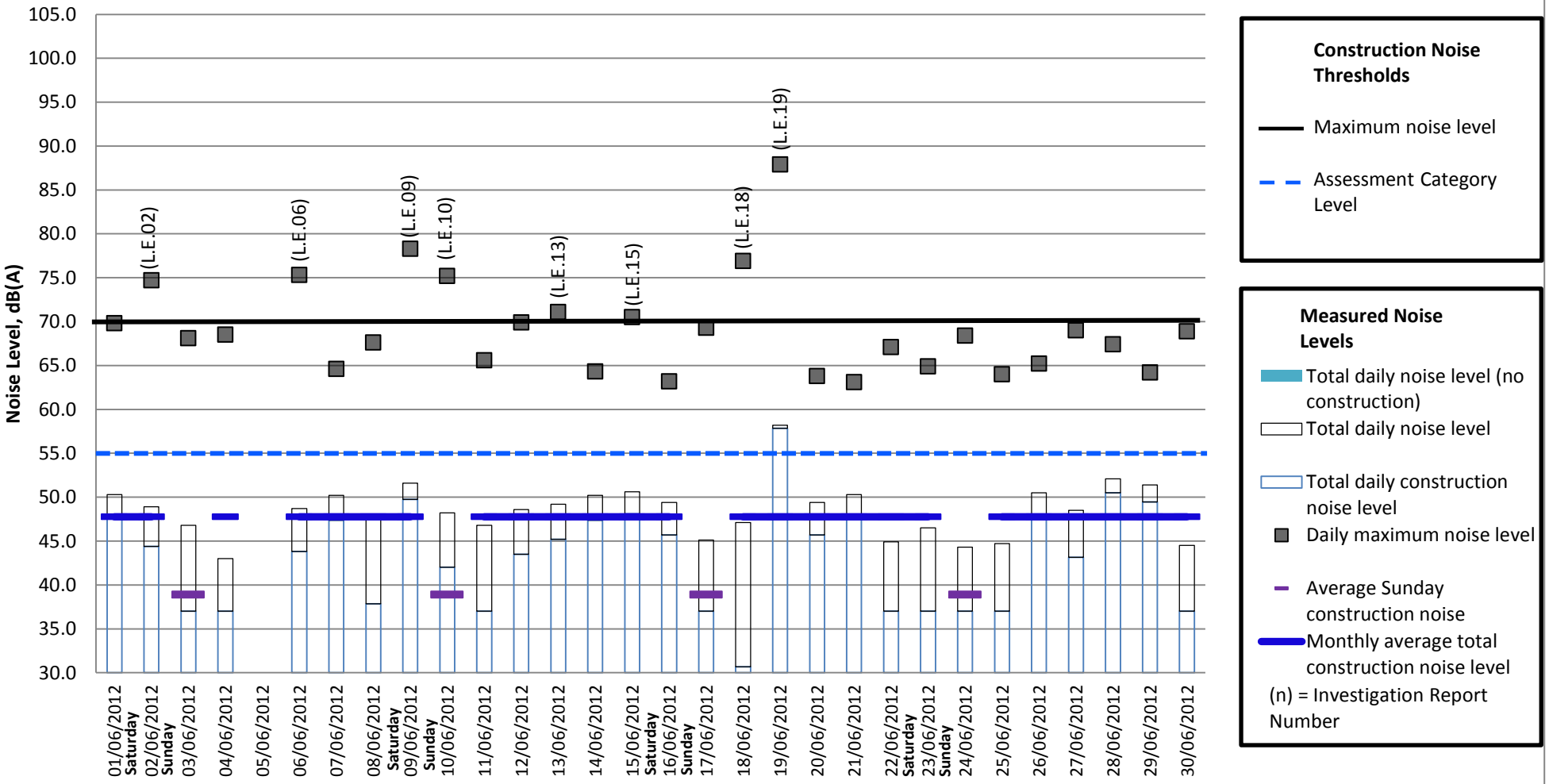


Measured Daytime Noise levels at Linn Mill
Measurement period: June 2012



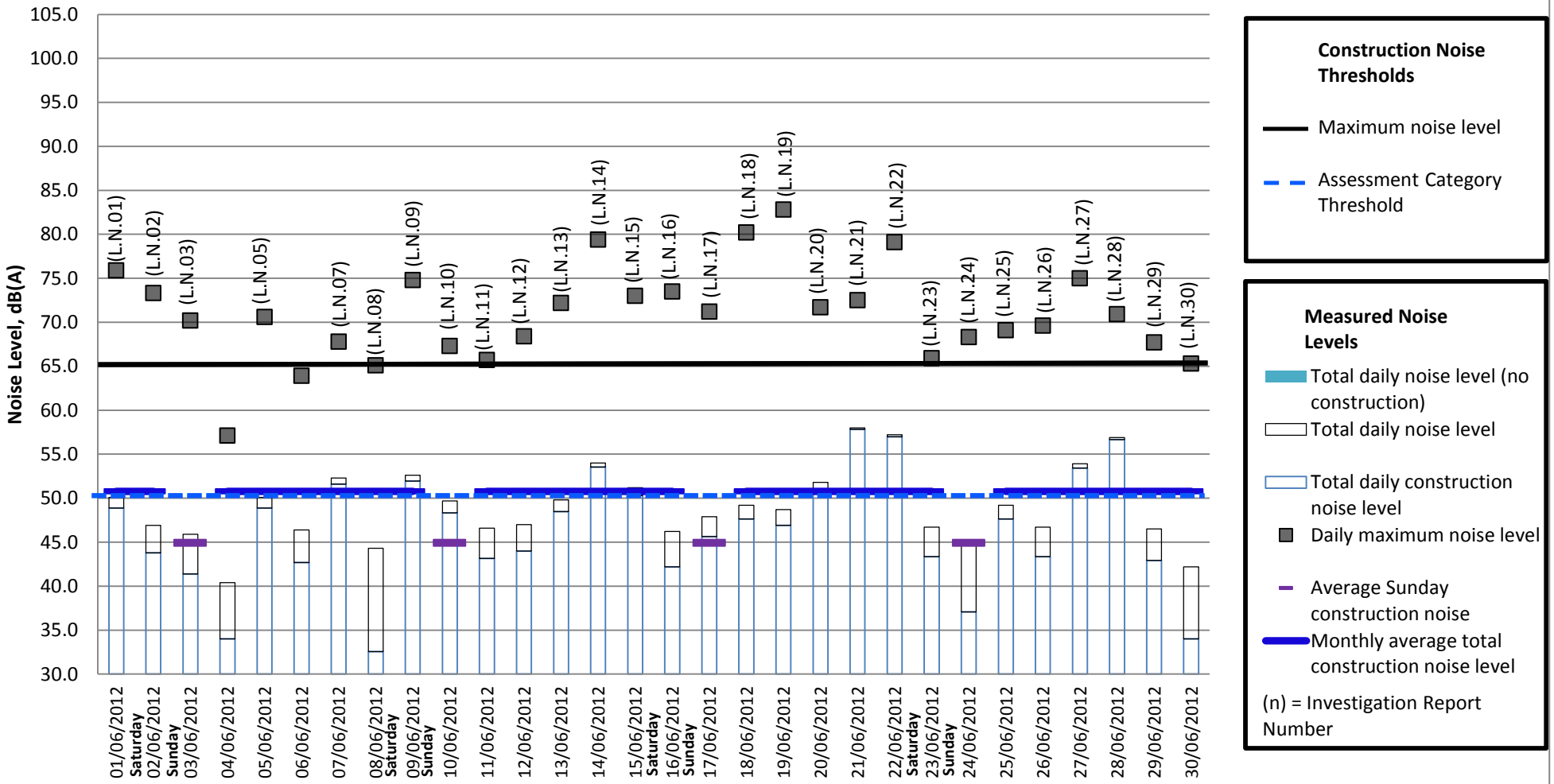
Note: Data is misisng for 05/06/12 due to device error.

Measured Evening Noise Levels at Linn Mill
Measurement period: June 2012

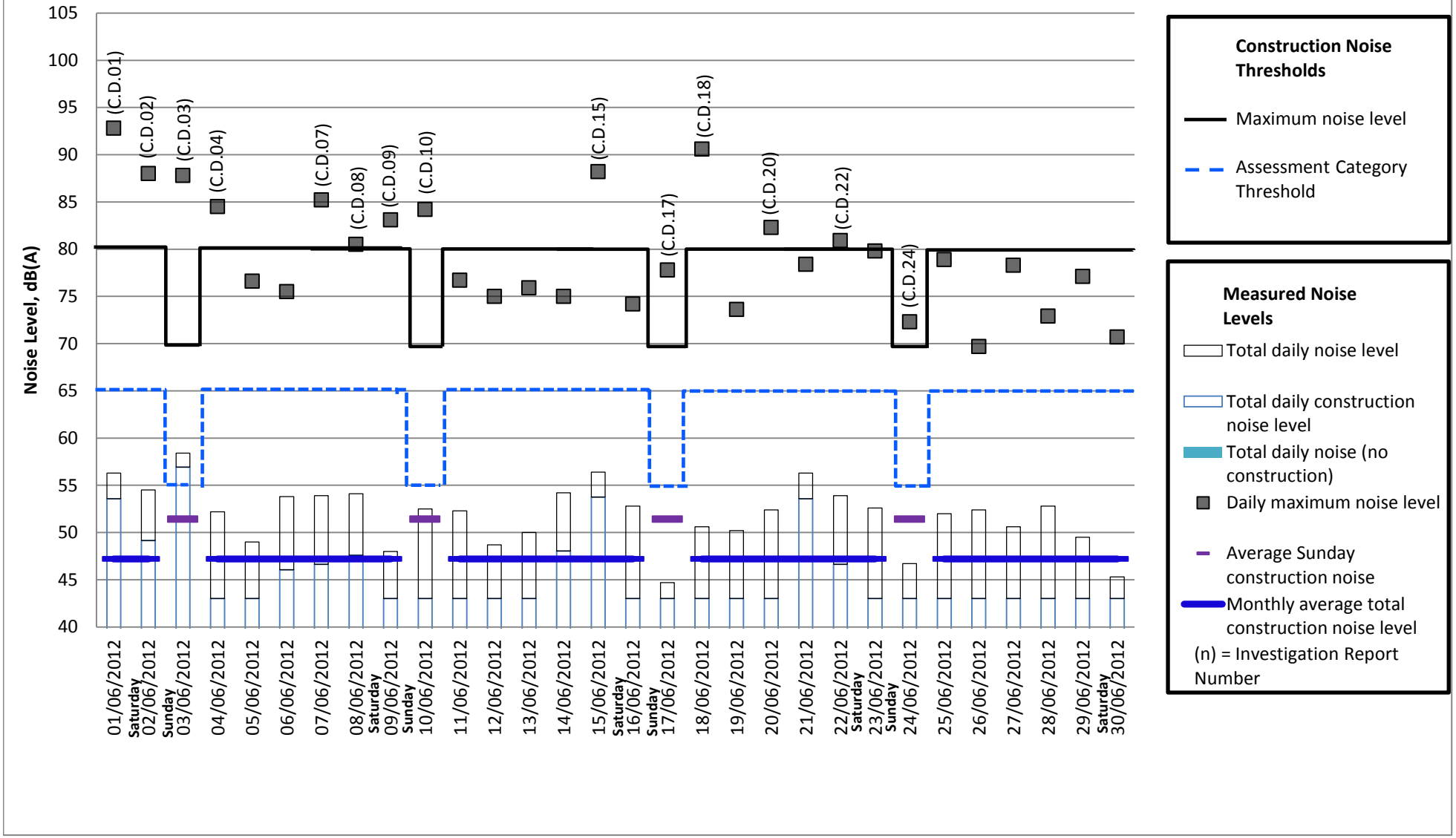


Note: Data is misisng for 05/06/12 due to device error.

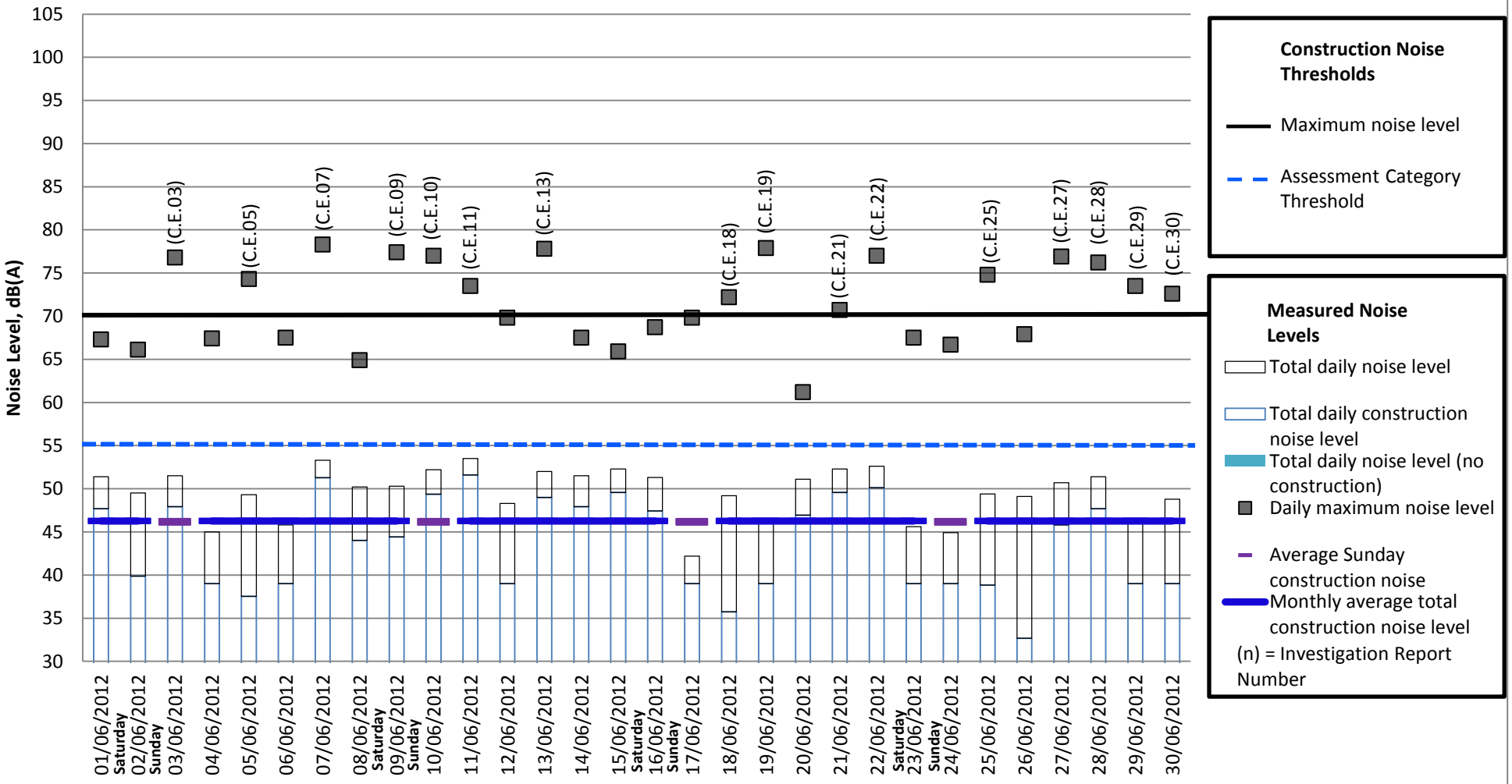
Measured Night-time Noise Levels at Linn Mill
Measurement period: June 2012



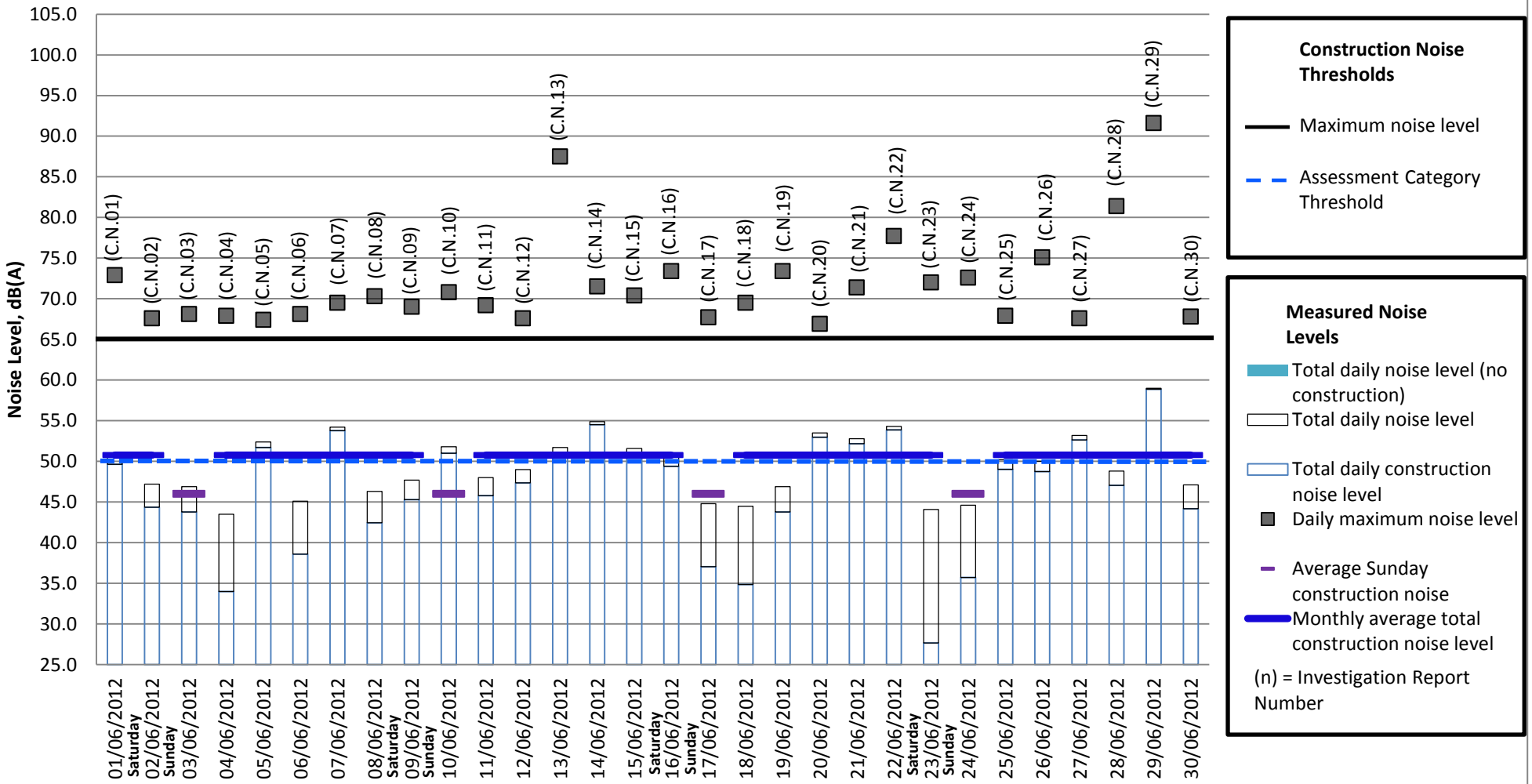
Measured Daytime Noise Levels at Clufflat Brae
Measurement period: June 2012



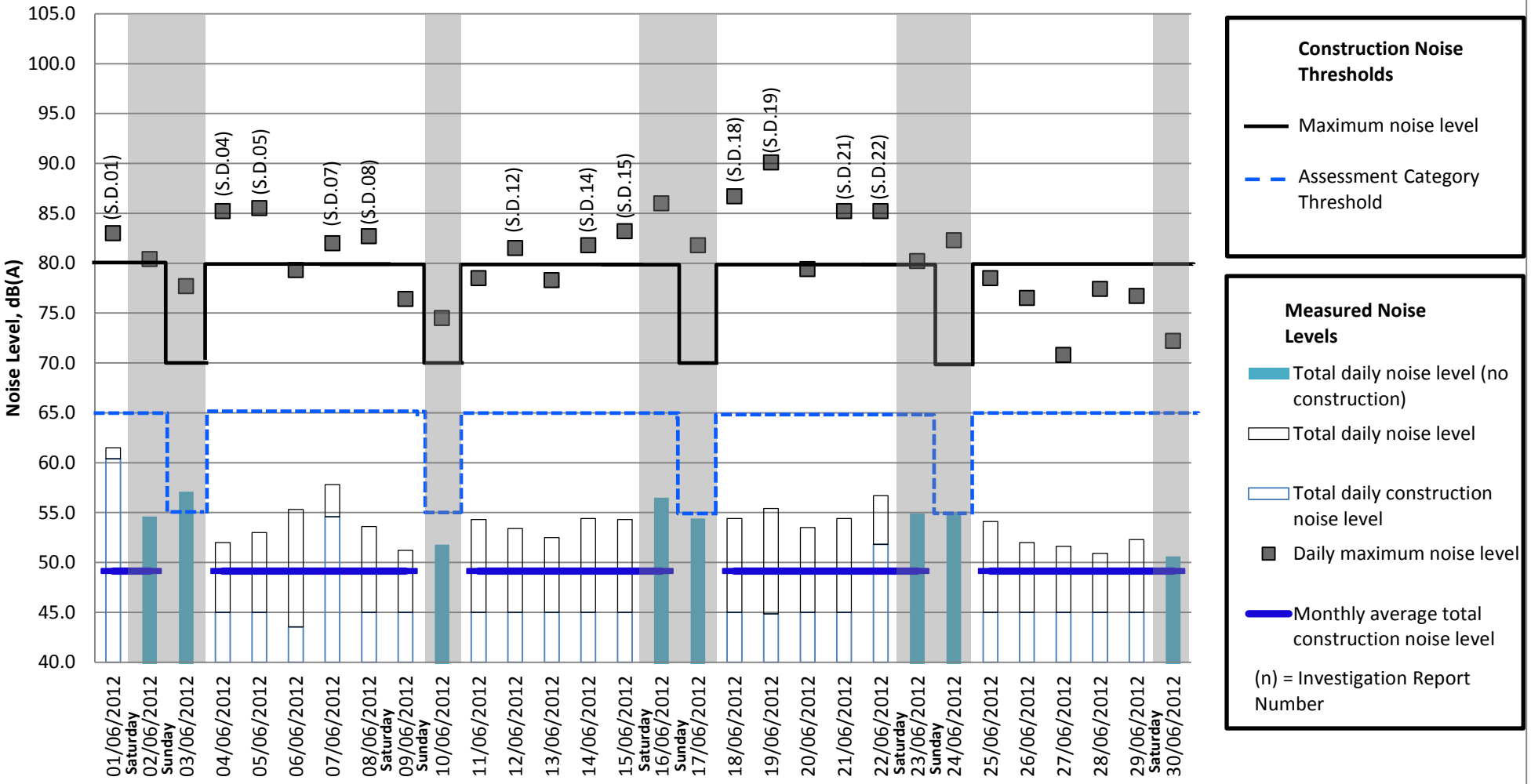
Measured Evening Noise Levels at Clufflat Brae
Measurement period: June 2012



Measured Night-time Noise Levels at Clufflat Brae
Measurement period: June 2012

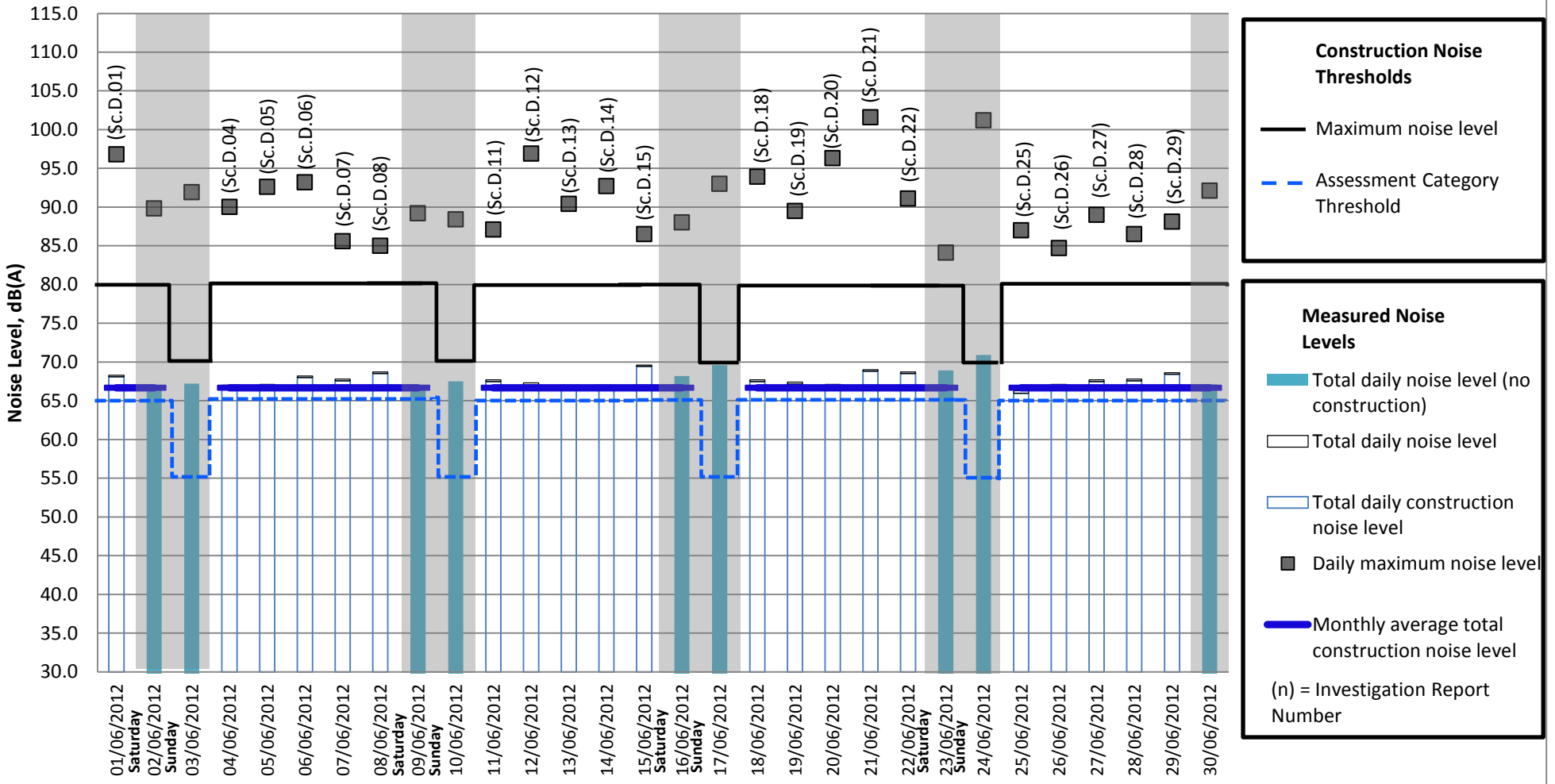


Measured Daytime Noise Levels at Springfield
Measurement period: June 2012



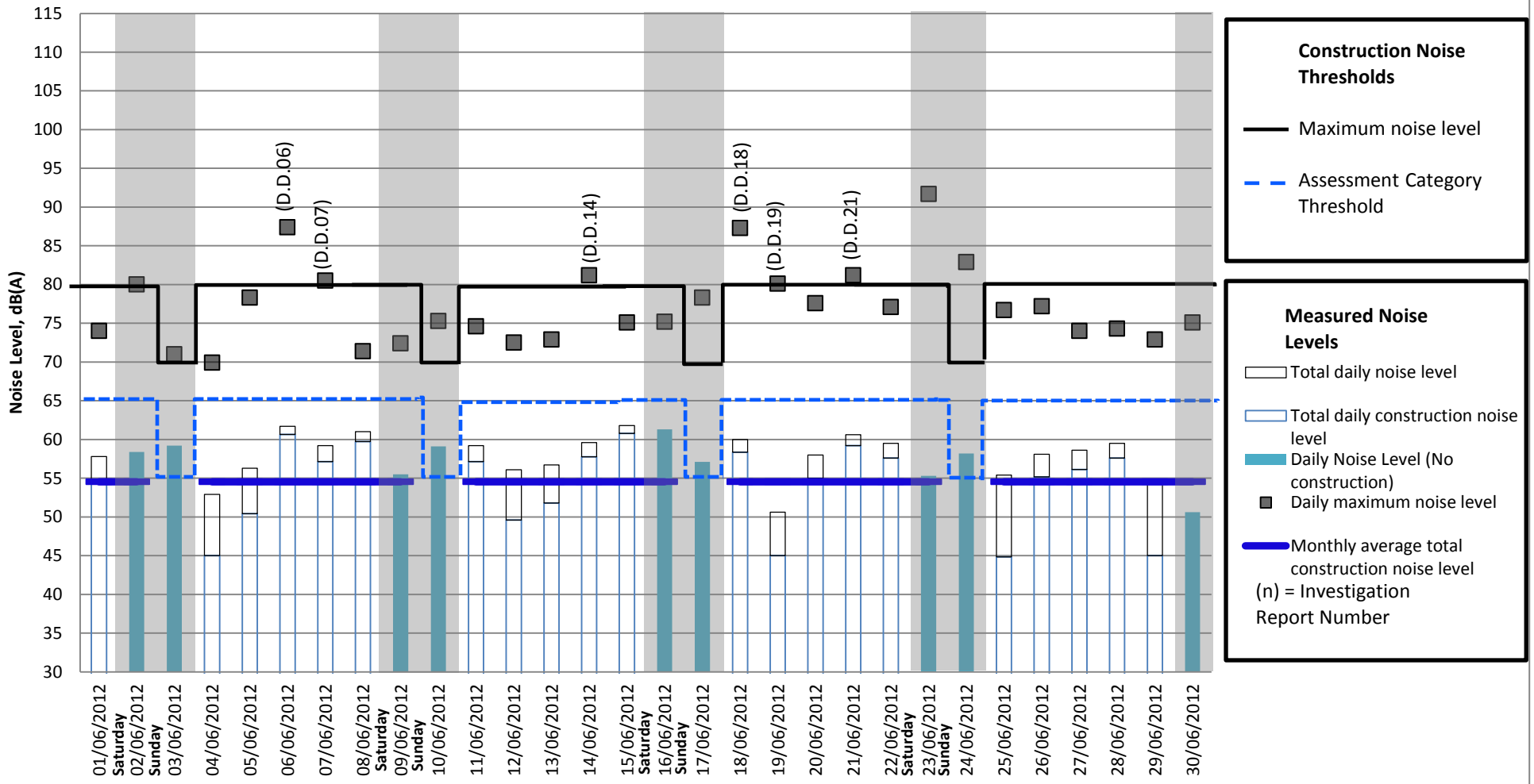
Note: The grey areas of the chart represent days on which no construction works have been conducted.

Measured Daytime Noise Levels at Scotstoun
Measurement period: June 2012



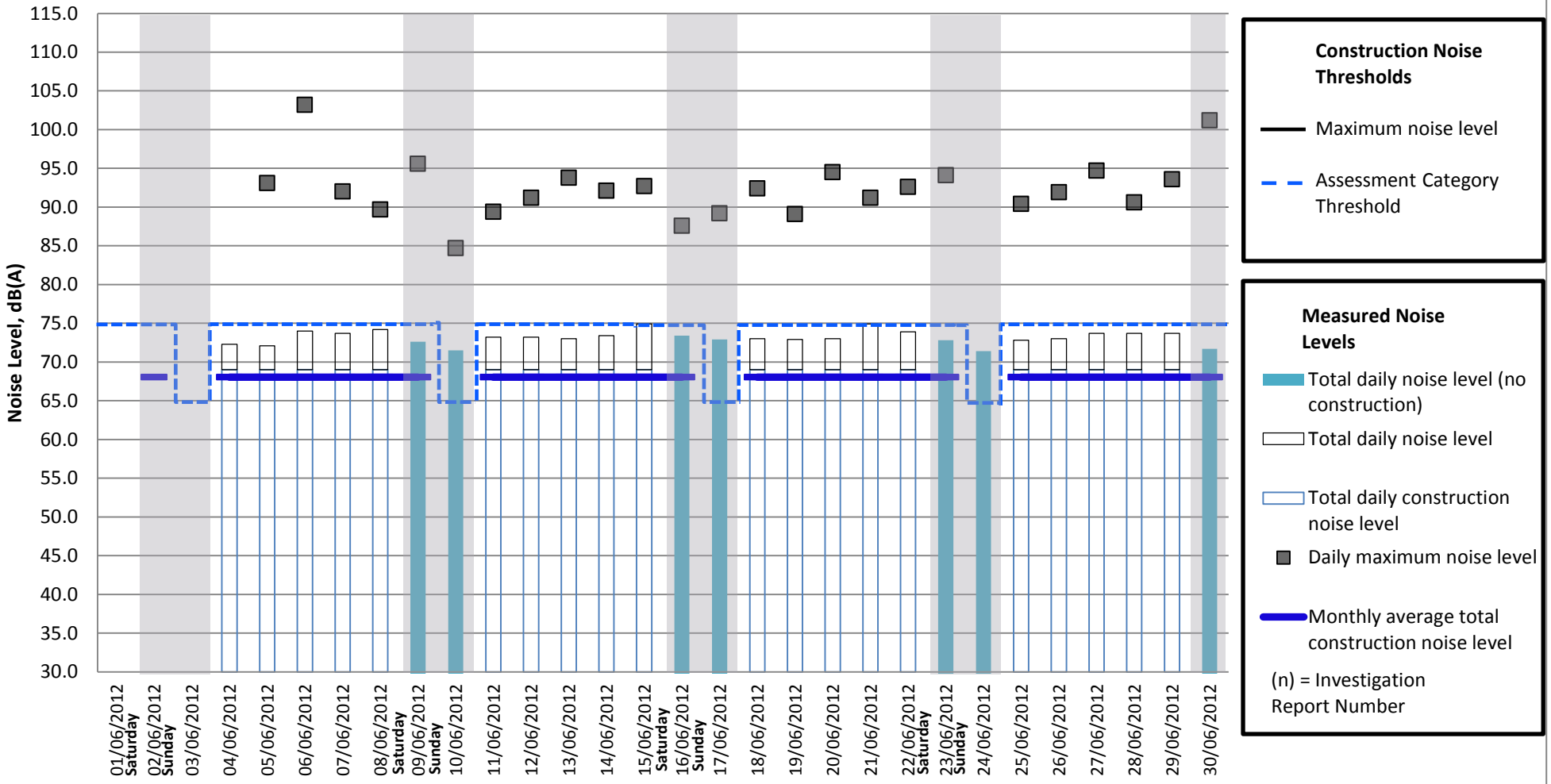
Note: The grey areas of the chart represent days on which no construction works have been conducted; no Saturday or Sunday construction works have been conducted at this location. The monthly average construction noise for Sunday has not been included as no Sunday works have been conducted at this location .

Measured Daytime Noise Levels at Dundas Home Farm
Measurement period: June 2012



Note: The grey areas of the chart represent days on which no construction works have been undertaken at this location; no Saturday or Sunday works have been undertaken at this location during June.

Measured Daytime Noise Levels at Newton
Measurement period: June 2012



Note: The grey areas of the chart represent days on which no construction works have been conducted; no works have been conducted near this location on Saturday or Sunday. It should be noted that the measured noise levels Mon - Fri can not be attributed to construction works due to the considerable distance (1.75 kilometers) between this monitoring location and the closest construction works. Data is missing for 01/06/12 to 03/06/12 due to a loss of power at this location. Lmax values are missing for 04/06/12 and 24/06/12 due to device error.

Forth Crossing Bridge Constructors
HOCHTIEF Solutions
American Bridge International
DRAGADOS
Morrison Construction

Noise and Vibration Investigative Report

FM-ENV-400

Doc. Reference	Form Ref	Work Element	Location	Loc ID	Unique number	Initiator's Initials	Date initiated
FRC-P-FCBC	NVIR	0300	PW	GEN000	00000	MW	19/06/2012

LOCATION:	**Tigh-Na-Grian**		DATE:	**19/06/12**	
RAISED BY:	**Martin Wilson**	REPORT BY:	**Martin Wilson**	REFERENCE:	**NVIR T.180612**

RELEVANT MONITORING POINTS:	Tigh-Na-Grian
NOISE LEVEL SUMMARY:	Exceedance on the 18/06/12 at Tigh-Na-Grian. Level recorded (Fast Max dB(A) - Lmax) Period start Lmax 22:00:00 75.1 The exceedance was investigated immediately and the audio listened to. Due to the nature of the sound (reverberant bang) the exceedance was considered likely to be attributable to construction noise within the caisson at the North Tower.

ATTRIBUTABLE TO CONSTRUCTION NOISE?	**Yes**	NOISE LEVELS EXCEEDED?	**YES**

NOTE: IF THE ANSWER TO EITHER OF THE ABOVE QUESTIONS IS NO, NO FURTHER ACTION IS NECESSARY AND THE FORM SHOULD BE ARCHIVED. IF THE ANSWER IS 'YES' FOR BOTH, PROCEED TO COMPLETE THE PROFORMA

ARE MEASURES IN PCNV CORRECTLY IMPLEMENTED?	Yes
IS ADDITIONAL MITIGATION REQUIRED?	Further attended monitoring required.
IS IT NECESSARY FOR THE CONSTRUCTION TEAM TO STOP WORKS?	No.
MEASURES TO BE IMPLEMENTED AND DATE TO BE IMPLEMENTED?	Additional night time attended monitoring on north shore to be conducted in the coming days, so as to establish noise level due to local construction activities, and attempt to establish source of above exceedance and whether or not it was construction related. The team responsible for the night time works in this vicinity has been made aware of the exceedance and is aware of the importance of remaining within specified thresholds at all receptor locations.

PREVENTIVE ACTION/LESSONS LEARNED/FURTHER ACTIONS:

ENVIRONMENTAL MANAGER APPROVAL:		**DATE:**	

Forth Crossing Bridge Constructors
HOCHTIEF Solutions
American Bridge International
DRAGADOS
Morrison Construction

Noise and Vibration Investigative Report

FM-ENV-400

Doc. Reference	Form Ref	Work Element	Location	Loc ID	Unique number	Initiator's Initials	Date initiated
FRC-P-FCBC	NVIR	0300	PW	GEN000	00000	MW	18/06/2012

LOCATION:	**Butlaw Fisheries**		DATE:	**18/06/2012**	
RAISED BY:	**Martin Wilson**	REPORT BY:	**Martin Wilson**	REFERENCE:	**NVIR B.N.170612**

RELEVANT MONITORING POINTS:	Butlaw Fisheries		
NOISE LEVEL SUMMARY:	Exceedance on the 17/05/12 at Butlaw Fisheries. Level recorded (Fast Max db - Lmax) Period start Lmax 22:00:00 72.1 The exceedance was investigated immediately and the audio listened to. It was found that the exceedance was attributable to dredging on the south side of the forth close to the receptor. In particular the clang of a falling rock on the digger bucket.		
ATTRIBUTABLE TO CONSTRUCTION NOISE?	**YES**	NOISE LEVELS EXCEEDED?	**YES**

NOTE: IF THE ANSWER TO EITHER OF THE ABOVE QUESTIONS IS NO, NO FURTHER ACTION IS NECESSARY AND THE FORM SHOULD BE ARCHIVED. IF THE ANSWER IS 'YES' FOR BOTH, PROCEED TO COMPLETE THE PROFORMA

ARE MEASURES IN PCNV CORRECTLY IMPLEMENTED?	Yes
IS ADDITIONAL MITIGATION REQUIRED?	No – The level, due to this exceedance, at the nearest sensitive receptor (Butlaw Cottages), when taking into account natural screening and added distance attenuation would be within the specified threshold for this period.
IS IT NECESSARY FOR THE CONSTRUCTION TEAM TO STOP WORKS?	No
MEASURES TO BE IMPLEMENTED AND DATE TO BE IMPLEMENTED?	The dredging team has been made aware of the exceedance and is aware of the importance of remaining within specified thresholds at all receptor locations.

PREVENTIVE ACTION/LESSONS LEARNED/FURTHER ACTIONS:

ENVIRONMENTAL MANAGER APPROVAL:		**DATE:**	

Noise and Vibration Investigative Report

FM-ENV-400

Doc. Reference	Form Ref	Work Element	Location	Loc ID	Unique number	Initiator's Initials	Date initiated
FRC-P-FCBC	NVIR	0300	PW	GEN000	00000	MW	18/06/2012

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Doc. Reference	Form Ref	Work Element	Location	Loc ID	Unique number	Initiator's Initials	Date initiated
FRC-P-FCBC	NVIR	0300	PW	GEN000	00000	MW	19/06/2012

LOCATION:	**Butlaw Fisheries**		DATE:	**19/06/2012**	
RAISED BY:	**Martin Wilson**	REPORT BY:	**Martin Wilson**	REFERENCE:	**NVIR B.N.180612**

RELEVANT MONITORING POINTS:	Butlaw Fisheries
NOISE LEVEL SUMMARY:	Exceedance on the 18/05/12 at Butlaw Fisheries. Level recorded (Fast Max dB(A) - Lmax) Period start Lmax 22:00:00 94.0 The exceedance was investigated immediately and the audio listened to. It was found that the exceedance was attributable to dredging on the south side of the forth close to the receptor. In particular the clang of a falling rock on the digger bucket. It should be noted that the L_{Amax} noted above represents the highest L_{Amax} within the period; on the night beginning the 18 June 2012, the cause of the highest L_{Amax} was a ship horn (03:45). The exceedance due to dredging (03:27) was 65.5 dB(A).

ATTRIBUTABLE TO CONSTRUCTION NOISE?	**YES**	NOISE LEVELS EXCEEDED?	**YES**

NOTE: IF THE ANSWER TO EITHER OF THE ABOVE QUESTIONS IS NO, NO FURTHER ACTION IS NECESSARY AND THE FORM SHOULD BE ARCHIVED. IF THE ANSWER IS 'YES' FOR BOTH, PROCEED TO COMPLETE THE PROFORMA

ARE MEASURES IN PCNV CORRECTLY IMPLEMENTED?	Yes
IS ADDITIONAL MITIGATION REQUIRED?	No – The level, due to this exceedance, at the nearest sensitive receptor (Butlaw Cottages), when taking into account natural screening and added distance attenuation would be within the specified threshold for this period.
IS IT NECESSARY FOR THE CONSTRUCTION TEAM TO STOP WORKS?	No
MEASURES TO BE IMPLEMENTED AND DATE TO BE IMPLEMENTED?	Additional night time attended monitoring on south shore (adjacent to Butlaw Cottages) to be conducted in the coming days, so as to establish/confirm noise level due to local construction activities at nearest sensitive receptor.

Noise and Vibration Investigative Report

FM-ENV-400

Doc. Reference	Form Ref	Work Element	Location	Loc ID	Unique number	Initiator's Initials	Date initiated
FRC-P-FCBC	NVIR	0300	PW	GEN000	00000	MW	19/06/2012

LOCATION:	**Butlaw Fisheries**		DATE:	**19/06/2012**	
RAISED BY:	**Martin Wilson**	REPORT BY:	**Martin Wilson**	REFERENCE:	**NVIR B.N.180612**

PREVENTIVE ACTION/LESSONS LEARNED/FURTHER ACTIONS:

ENVIRONMENTAL MANAGER APPROVAL:		**DATE:**	

Forth Crossing Bridge Constructors
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Morrison Construction

Noise and Vibration Investigative Report

FM-ENV-400

Doc. Reference	Form Ref	Work Element	Location	Loc ID	Unique number	Initiator's Initials	Date initiated
FRC-P-FCBC	NVIR	0300	PW	GEN000	00000	ES	15/06/12

LOCATION:	**Clufflat Brae**		DATE:	**15/06/12**	
RAISED BY:	**Ellie Slee**	REPORT BY:	**Ellie Slee**	REFERENCE:	**NVIR C.D.150612**

RELEVANT MONITORING POINTS:	Clufflat Brae
NOISE LEVEL SUMMARY:	Exceedance on the 15/06/12 at Clufflat Brae. Level recorded (Fast Max db - Lmax) Period start Lmax 08:00:00 88.2 The exceedance was investigated immediately and the audio listened to. It was found that the exceedance was due to plant operating close to the noise meter intermittently for a short period.

ATTRIBUTABLE TO CONSTRUCTION NOISE?	**YES**	NOISE LEVELS EXCEEDED?	**YES**

NOTE: IF THE ANSWER TO EITHER OF THE ABOVE QUESTIONS IS NO, NO FURTHER ACTION IS NECESSARY AND THE FORM SHOULD BE ARCHIVED. IF THE ANSWER IS 'YES' FOR BOTH, PROCEED TO COMPLETE THE PROFORMA

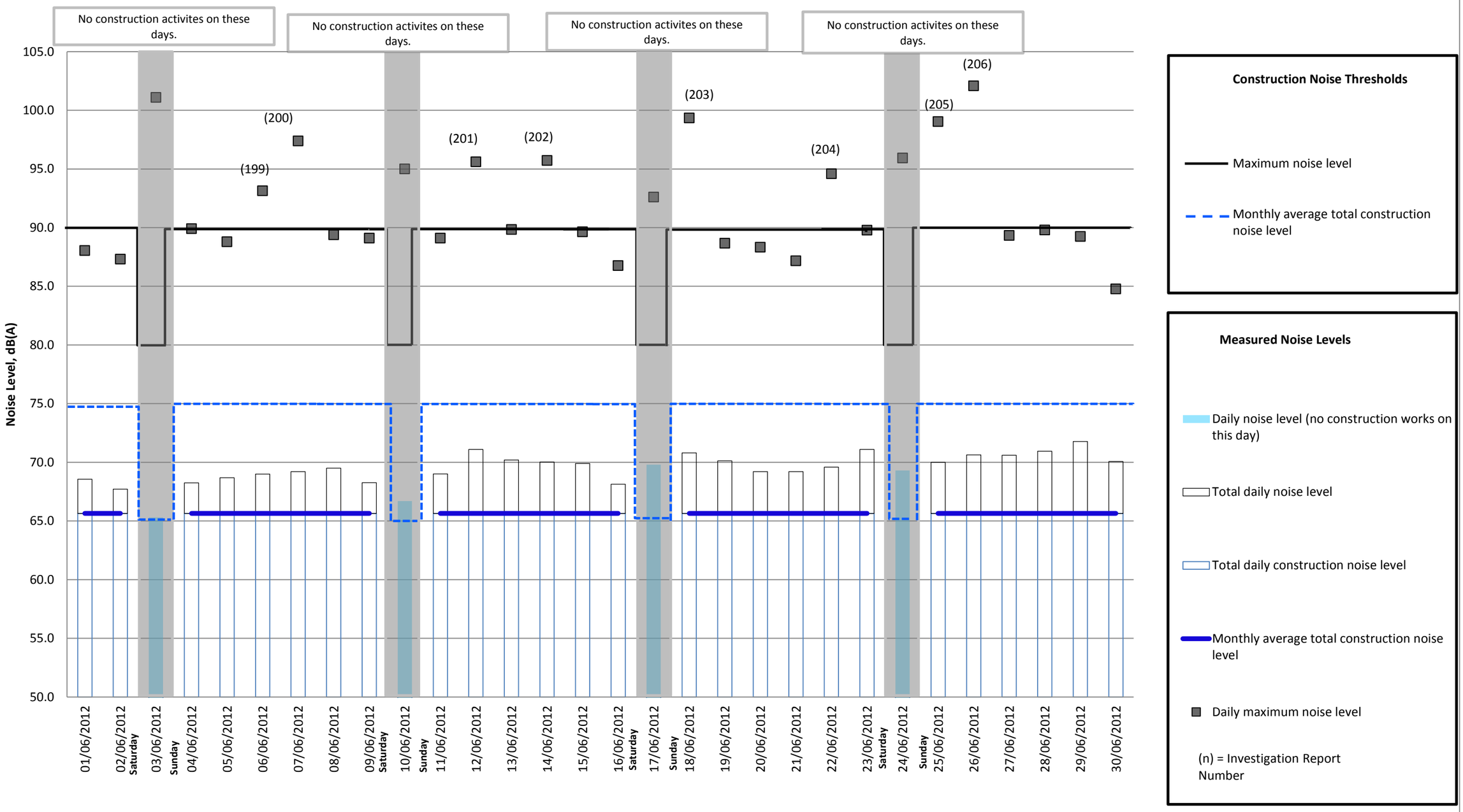
ARE MEASURES IN PCNV CORRECTLY IMPLEMENTED?	Yes
IS ADDITIONAL MITIGATION REQUIRED?	No
IS IT NECESSARY FOR THE CONSTRUCTION TEAM TO STOP WORKS?	No
MEASURES TO BE IMPLEMENTED AND DATE TO BE IMPLEMENTED?	None. These works were for a short period of time only.

PREVENTIVE ACTION/LESSONS LEARNED/FURTHER ACTIONS:

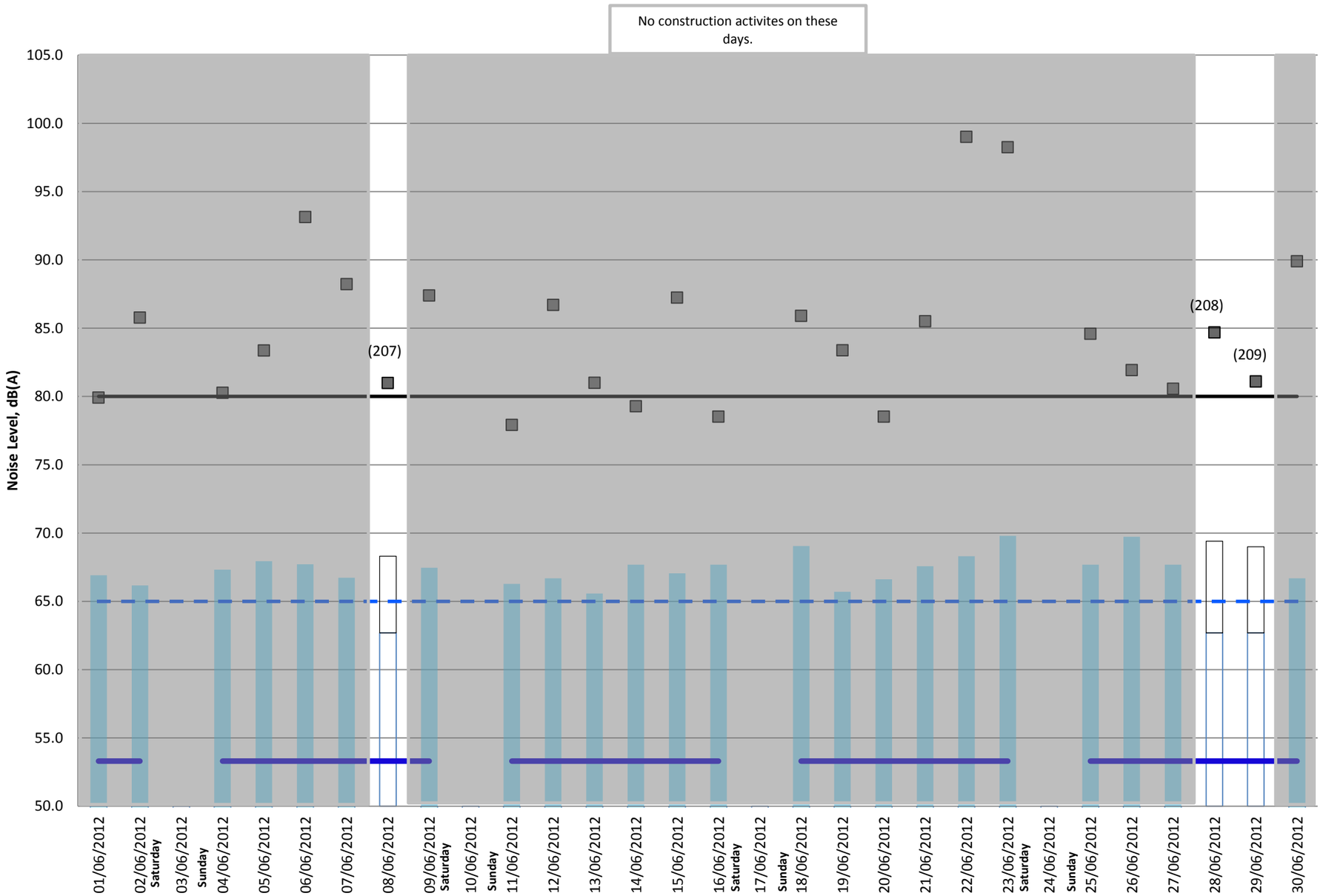
ENVIRONMENTAL MANAGER APPROVAL:		**DATE:**	

APPENDIX B - **M9 J1A CONTRACT - CONSTRUCTION NOISE MONITORING REPORTS**

Measured daytime noise levels, 93/95 King Edwards Way (CNV02)
Measurement period 1st June to 30th June 2012



Measured evening noise levels, 93/95 King Edwards Way (CNV02)
Measurement period 1st June to 30th June 2012



Construction Noise Thresholds

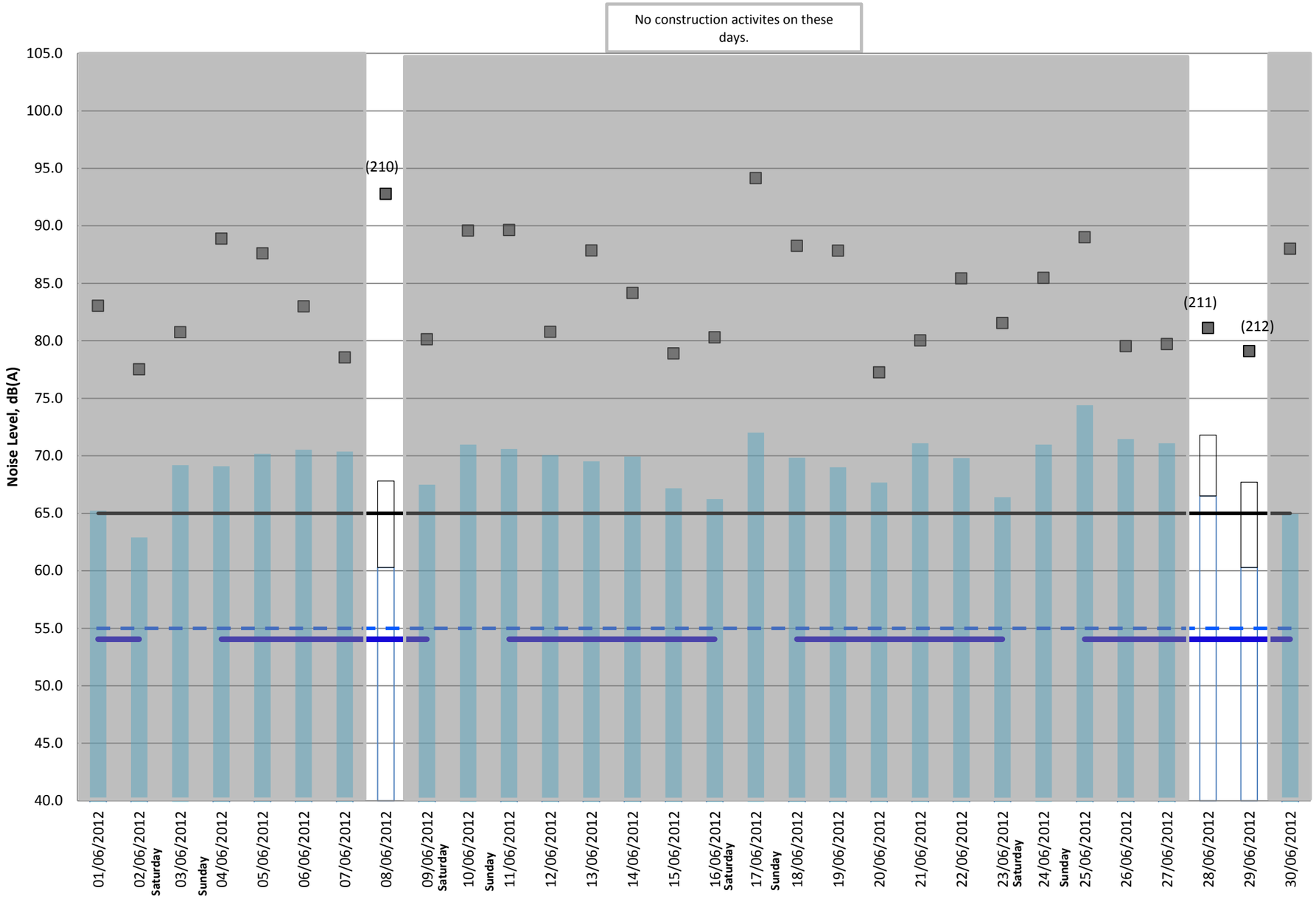
- Maximum noise level
- Monthly average total construction noise level

Measured Noise Levels

- Daily noise level (no construction works on this day)
- Total daily noise level
- Total daily construction noise level
- Monthly average total construction noise level
- Daily maximum noise level

(n) = Investigation Report Number

Measured night-time noise levels, 93/95 King Edwards Way (CNV02)
Measurement period 1st June to 30th June 2012



Construction Noise Thresholds

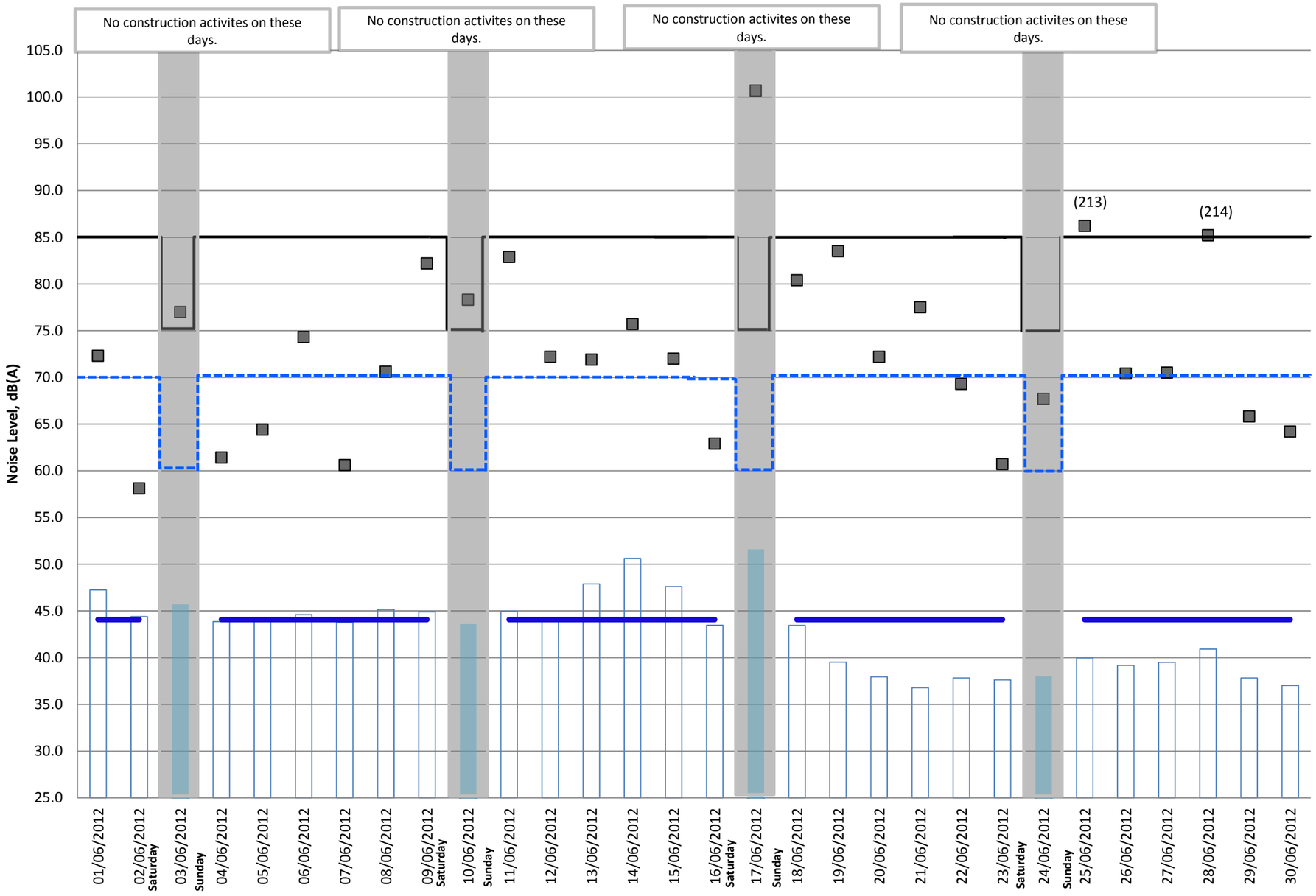
- Maximum noise level
- Monthly average total construction noise level

Measured Noise Levels

- Daily noise level (no construction works on this day)
- Total daily noise level
- Total daily construction noise level
- Monthly average total construction noise level
- Daily maximum noise level

(n) = Investigation Report Number

Measured daytime noise levels, Buie Rigg (CNV07)
Measurement period 1st June to 30th June 2012



Construction Noise Thresholds

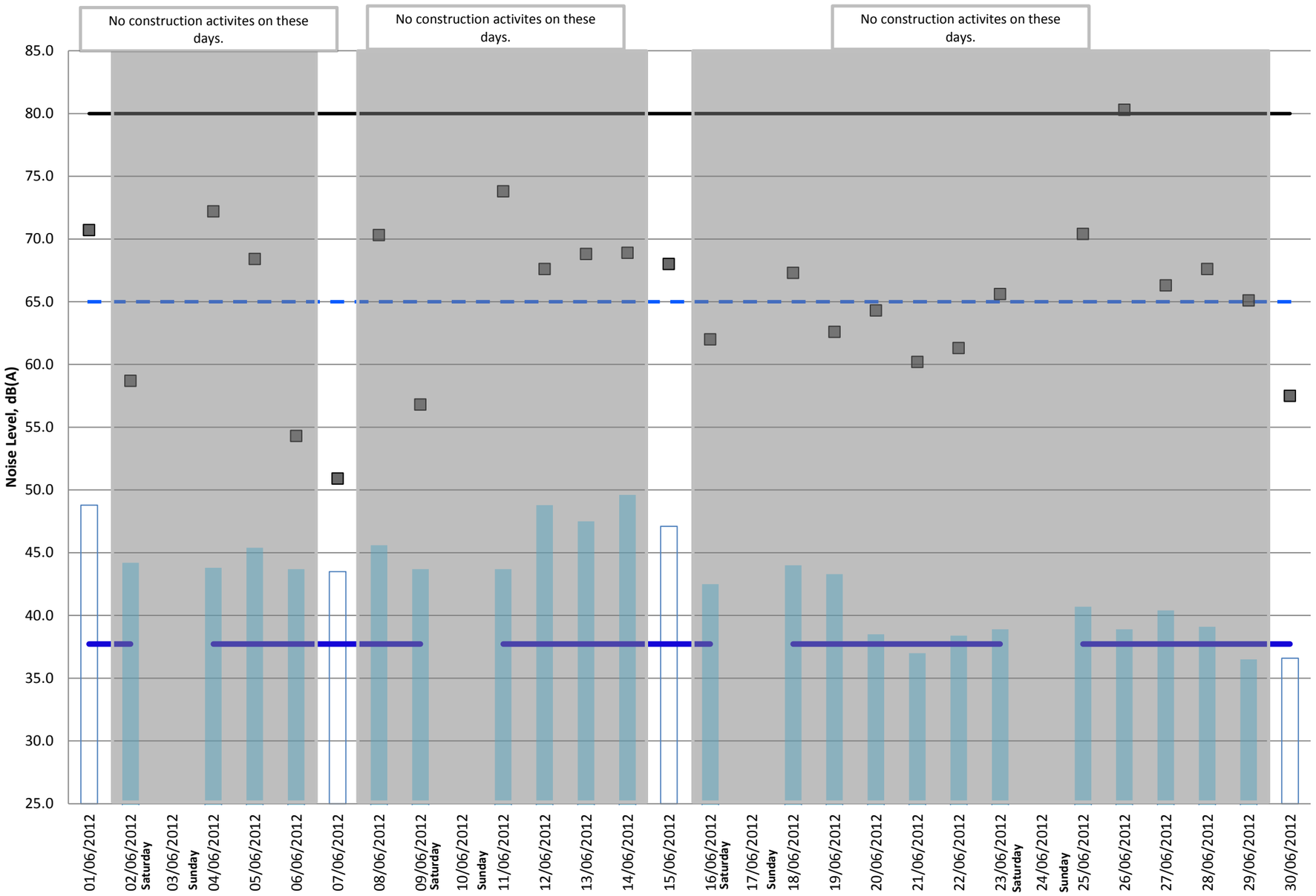
- Maximum noise level
- Monthly average total construction noise level

Measured Noise Levels

- Daily noise level (no construction works on this day)
- Total daily noise level
- Total daily construction noise level
- Monthly average total construction noise level
- Daily maximum noise level

(n) = Investigation Report Number

Measured evening noise levels, Buie Rigg (CNV07)
Measurement period 1st June to 30th June 2012



Construction Noise Thresholds

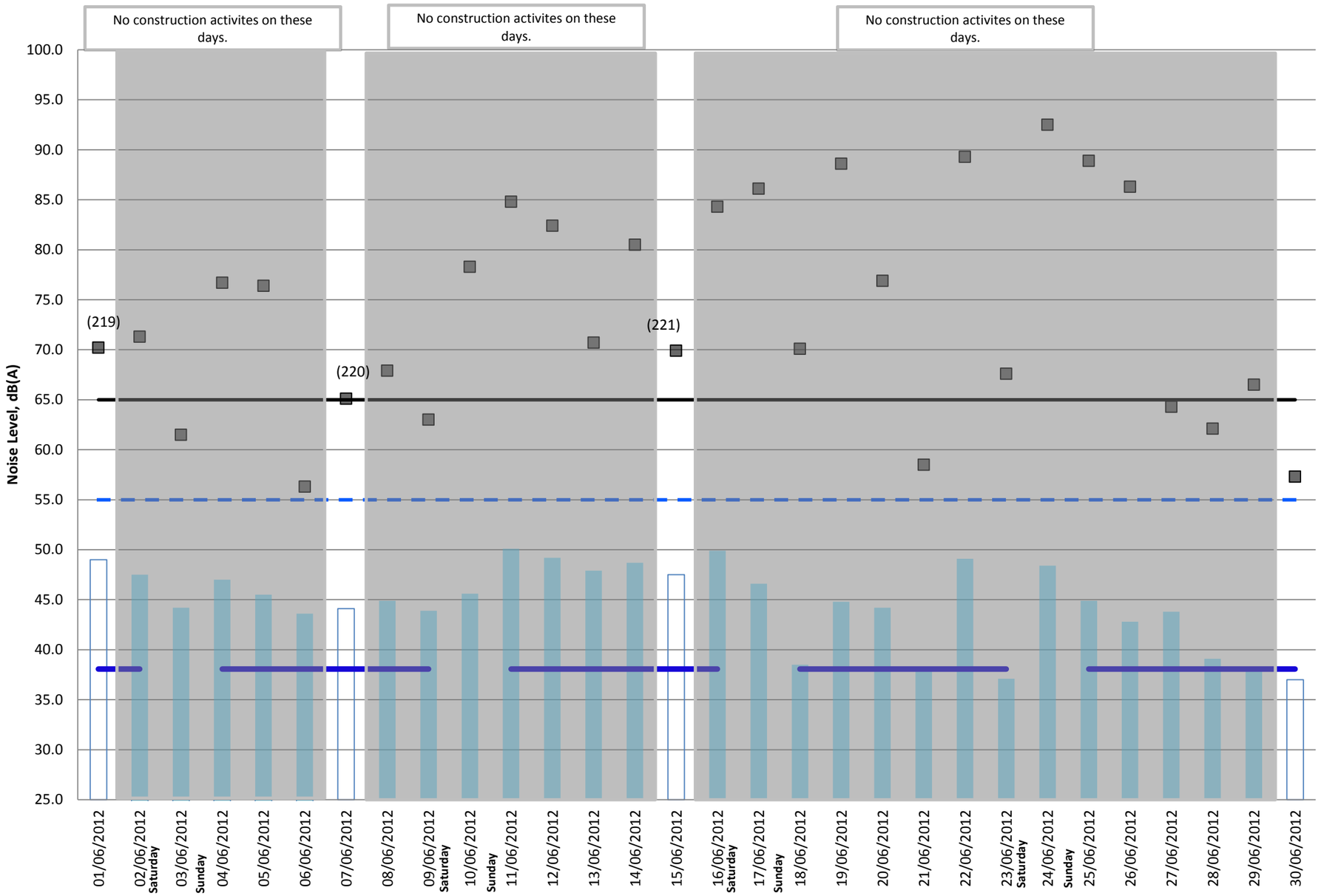
- Maximum noise level
- Monthly average total construction noise level

Measured Noise Levels

- Daily noise level (no construction works on this day)
- Total daily noise level
- Total daily construction noise level
- Monthly average total construction noise level
- Daily maximum noise level

(n) = Investigation Report Number

Measured night-time noise levels, Buie Rigg (CNV07)
Measurement period 1st June to 30th June 2012



Construction Noise Thresholds

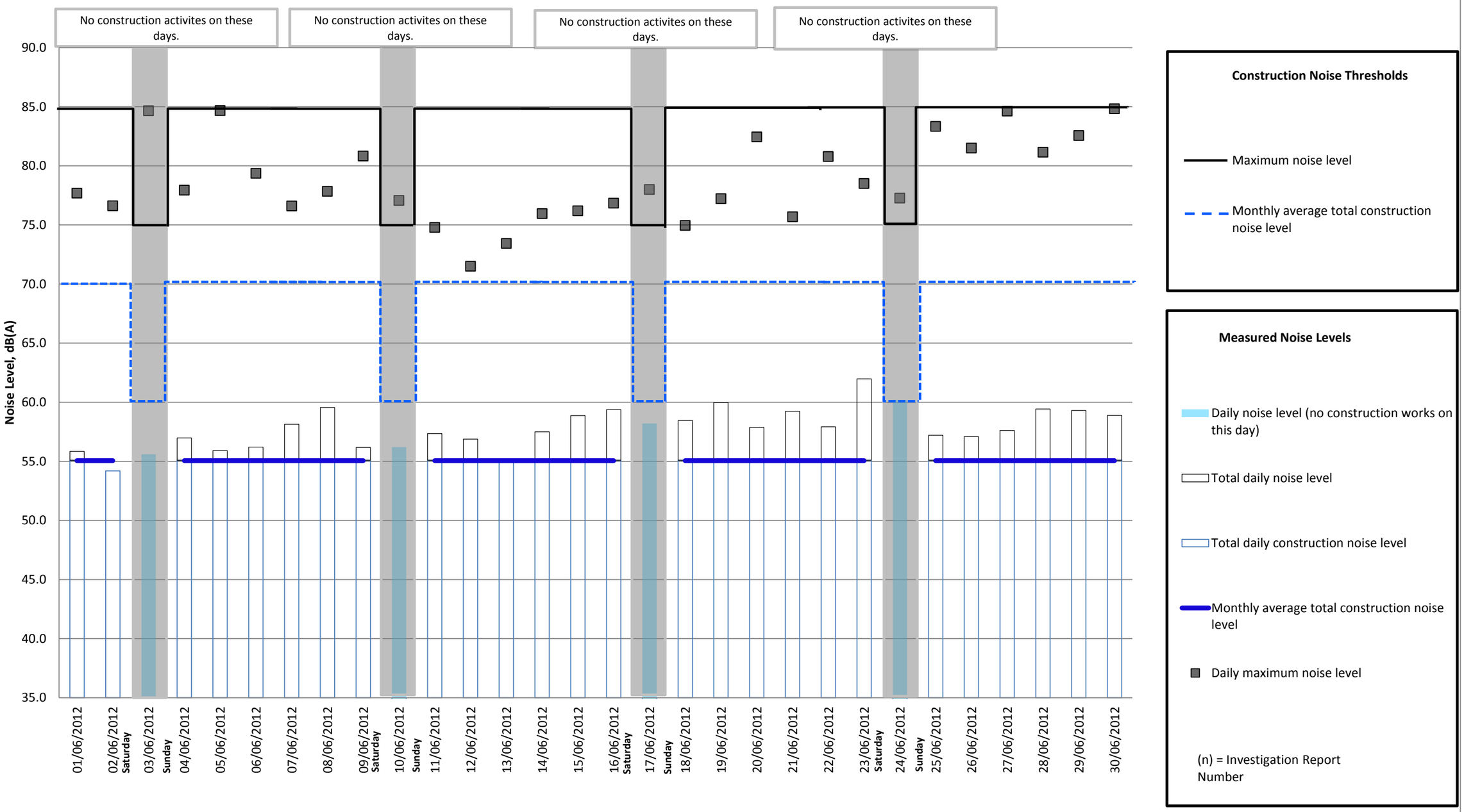
- Maximum noise level
- Monthly average total construction noise level

Measured Noise Levels

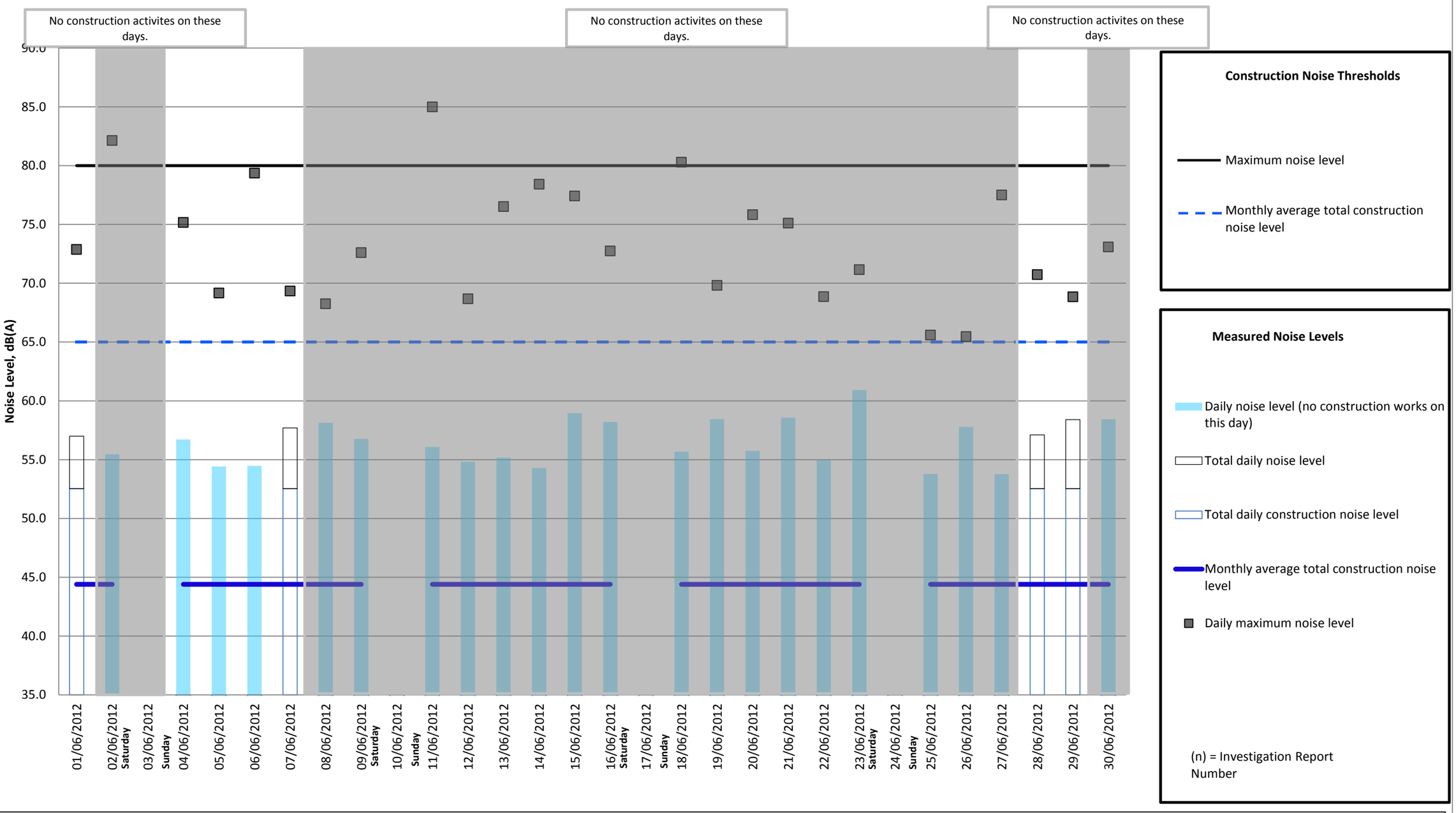
- Daily noise level (no construction works on this day)
- Total daily noise level
- Total daily construction noise level
- Monthly average total construction noise level
- Daily maximum noise level

(n) = Investigation Report Number

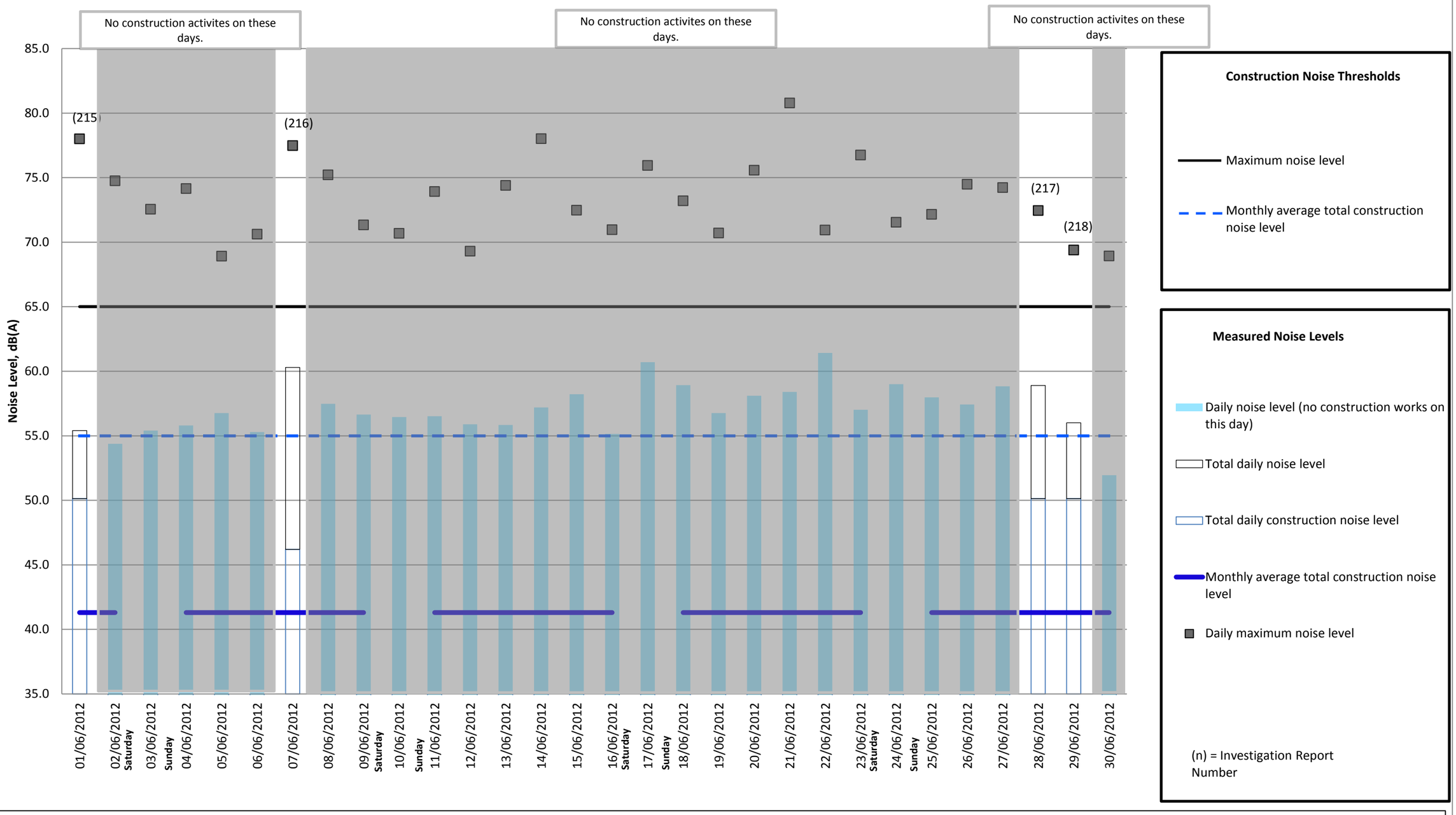
Measured daytime noise levels, 8 Kirklands Park Grove (CNV16)
Measurement period 1st June to 30th June 2012



Measured evening noise levels, 8 Kirklands Park Grove (CNV16)
Measurement period 1st June to 30th June 2012



Measured night-time noise levels, 8 Kirklands Park Grove (CNV16)
Measurement period 1st June to 30th June 2012



SRB Civil Engineering Limited ROADBRIDGE SISK	Project Title: **FORTH REPLACEMENT CROSSING** **M9 Junction 1A**	**Project Number:** **208**
	Contractor: **SRB** / Date: **07-06-12**	**NER. 71**
QUALITY MANAGEMENT SYSTEM	**NOISE EXCEEDENCE REPORT**	

Summary of Finding(s): June 06th 2012 Wednesday – CNV02

Exceedence 199: Maximum Noise Level: 93.1 dB (A) at 21.38pm

Analysis:

An analysis was carried out using the following data:

- Recorded Noise Logs and Noise Data
- Noise type
- Site Diaries / Weather Data
- Inspections by Senior Engineer (Roland Tarrant)

Findings:

Analysis of the Site Diary confirms that the exceedence is due to dogs barking in this area. See attached noise file. It is considered unlikely that the exceedence is caused by construction activities in this area.

Corrective Action Required:

Maintain current monitoring and surveillance levels

Signature ……Roland Tarrant…….. Date ……07-06-12……

NER Closed

Works have been inspected and completed as described above.

Signature ……Seamus O'Brien……Date ……07-06-12…

Project Manager ~~/ Assist Project Manager~~

Noise Exceedence 199.wav

SRB Civil Engineering Limited ROADBRIDGE SISK	Project Title: **FORTH REPLACEMENT CROSSING** **M9 Junction 1A**		**Project Number:** **208**
	Contractor: **SRB**	Date: **08-06-12**	**NER. 72**
QUALITY MANAGEMENT SYSTEM	**NOISE EXCEEDENCE REPORT**		

Summary of Finding(s): June 07th 2012 Thursday – CNV02

Exceedence 200: Maximum Noise Level: 97.4dB (A) at 16.07pm

Analysis:

An analysis was carried out using the following data:

- Recorded Noise Logs and Noise Data
- Noise type
- Site Diaries / Weather Data
- Inspections by Senior Engineer (Roland Tarrant)

Findings:

Analysis of the Site Diary confirms that the exceedence is due to dogs barking in this area. See attached noise file. It is considered unlikely that the exceedence is caused by construction activities in this area.

Corrective Action Required:

Maintain current monitoring and surveillance levels

Signature ……Roland Tarrant…….. Date ……08-06-12……

NER Closed

Works have been inspected and completed as described above.

Signature ……Seamus O'Brien……Date ……08-06-12…

Project Manager ~~/ Assist Project Manager~~

Noise Exceedence 200.wav

SRB Civil Engineering Limited ROADBRIDGE SISK	Project Title: **FORTH REPLACEMENT CROSSING** **M9 Junction 1A**		**Project Number:** **208**
	Contractor: **SRB**	Date: **14-06-12**	**NER. 73**
QUALITY MANAGEMENT SYSTEM	**NOISE EXCEEDENCE REPORT**		

Summary of Finding(s): June 12th 2012 Tuesday – CNV02

Exceedence 201: Maximum Noise Level: 95.6dB (A) at 8.55am

Analysis:

An analysis was carried out using the following data:

- Recorded Noise Logs and Noise Data
- Noise type
- Site Diaries / Weather Data
- Inspections by Senior Engineer (Roland Tarrant)

Findings:

Analysis of the Site Diary confirms that the exceedence is due to dogs barking in this area. See attached noise file. It is considered unlikely that the exceedence is caused by construction activities in this area.

Corrective Action Required:

Maintain current monitoring and surveillance levels

Signature ……Roland Tarrant…….. Date ……14-06-12……

NER Closed

Works have been inspected and completed as described above.

Signature ……Seamus O'Brien……Date ……14-06-12…

Project Manager ~~/ Assist Project Manager~~

Noise Exceedence 201.wav

SRB Civil Engineering Limited ROADBRIDGE SISK	Project Title: **FORTH REPLACEMENT CROSSING** **M9 Junction 1A**		**Project Number:** **208**
	Contractor: **SRB**	Date: **18-06-12**	**NER. 74**
QUALITY MANAGEMENT SYSTEM	**NOISE EXCEEDENCE REPORT**		

Summary of Finding(s): June 14th 2012 Thursday – CNV02

Exceedence 202: Maximum Noise Level: 95.7dB (A) at 04.07pm

Analysis:

An analysis was carried out using the following data:

- Recorded Noise Logs and Noise Data
- Noise type
- Site Diaries / Weather Data
- Inspections by Senior Engineer (Roland Tarrant)

Findings:

Analysis of the Site Diary confirms that the exceedence is due to dogs barking in this area. See attached noise file. It is considered unlikely that the exceedence is caused by construction activities in this area.

Corrective Action Required:

Maintain current monitoring and surveillance levels

Signature ……Roland Tarrant…….. Date …….18-06-12……

NER Closed

Works have been inspected and completed as described above.

Signature ……Seamus O'Brien……Date ……18-06-12…

Project Manager ~~/ Assist Project Manager~~

Noise Exceedence 202.wav

SRB Civil Engineering Limited ROADBRIDGE SISK	Project Title: **FORTH REPLACEMENT CROSSING** **M9 Junction 1A**		**Project Number:** **208**
	Contractor: **SRB**	Date: **19-06-12**	**NER. 75**
QUALITY MANAGEMENT SYSTEM	**NOISE EXCEEDENCE REPORT**		

Summary of Finding(s): June 18th 2012 Monday – CNV02

Exceedence 203: Maximum Noise Level: 99.3dB (A) at 04.34pm

Analysis:

An analysis was carried out using the following data:

- Recorded Noise Logs and Noise Data
- Noise type
- Site Diaries / Weather Data
- Inspections by Senior Engineer (Roland Tarrant)

Findings:

Analysis of the Site Diary confirms that the exceedence is due to dogs barking in this area. See attached noise file. It is considered unlikely that the exceedence is caused by construction activities in this area.

Corrective Action Required:

Maintain current monitoring and surveillance levels

Signature ……Roland Tarrant…….. Date ……19-06-12……

NER Closed

Works have been inspected and completed as described above.

Signature ……Seamus O'Brien……Date ……19-06-12…

Project Manager ~~/ Assist Project Manager~~

Noise Exceedence 203.wav

SRB Civil Engineering Limited ROADBRIDGE SISK	Project Title: **FORTH REPLACEMENT CROSSING** **M9 Junction 1A**		**Project Number:** **208**
	Contractor: **SRB**	Date: **25-06-12**	**NER. 76**
QUALITY MANAGEMENT SYSTEM	**NOISE EXCEEDENCE REPORT**		

Summary of Finding(s): June 22nd 2012 Thursday – CNV02

Exceedence 204: Maximum Noise Level: 94.6dB (A) at 01.27pm

Analysis:

An analysis was carried out using the following data:

- Recorded Noise Logs and Noise Data
- Noise type
- Site Diaries / Weather Data
- Inspections by Senior Engineer (Roland Tarrant)

Findings:

Analysis of the Site Diary confirms that the exceedence is due to a motorbike revving neat the receptor (most likely from the M9 Motorway). See attached noise file. It is considered unlikely that the exceedence is caused by construction activities in this area.

Corrective Action Required:

Maintain current monitoring and surveillance levels

Signature ……Roland Tarrant…….. Date ……25-06-12…….

NER Closed

Works have been inspected and completed as described above.

Signature ……Seamus O'Brien……Date ……25-06-12…

Project Manager ~~/ Assist Project Manager~~

WAV

Noise Exceedence 204.wav

SRB Civil Engineering Limited ROADBRIDGE SISK	Project Title: **FORTH REPLACEMENT CROSSING** **M9 Junction 1A**		**Project Number:** **208**
	Contractor: **SRB**	Date: **26-06-12**	**NER. 77**
QUALITY MANAGEMENT SYSTEM	**NOISE EXCEEDENCE REPORT**		

Summary of Finding(s): June 25th 2012 Monday – CNV02

Exceedence 205: Maximum Noise Level: 99dB (A) at 05.42pm

Analysis:

An analysis was carried out using the following data:

- Recorded Noise Logs and Noise Data
- Noise type
- Site Diaries / Weather Data
- Inspections by Senior Engineer (Roland Tarrant)

Findings:

Analysis of the Site Diary confirms that the exceedence is due to dogs barking and kids shouting in this area. See attached noise file. It is considered unlikely that the exceedence is caused by construction activities in this area.

Corrective Action Required:

Maintain current monitoring and surveillance levels

Signature ……Roland Tarrant…….. Date ……26-06-12…….

NER Closed

Works have been inspected and completed as described above.

Signature ……Seamus O'Brien……Date ……26-06-12…

Project Manager ~~/ Assist Project Manager~~

WAV

Noise Exceedence 205.wav

SRB Civil Engineering Limited ROADBRIDGE SISK	Project Title: **FORTH REPLACEMENT CROSSING** **M9 Junction 1A**		**Project Number:** **208**
	Contractor: **SRB**	Date: **27-06-12**	**NER. 78**
QUALITY MANAGEMENT SYSTEM	**NOISE EXCEEDENCE REPORT**		

Summary of Finding(s): June 26th 2012 Tuesday – CNV02

Exceedence 206: Maximum Noise Level: 102.1dB (A) at 06.49pm

Analysis:

An analysis was carried out using the following data:

- Recorded Noise Logs and Noise Data
- Noise type
- Site Diaries / Weather Data
- Inspections by Senior Engineer (Roland Tarrant)

Findings:

Analysis of the Site Diary confirms that the exceedence is due to dogs barking in this area. See attached noise file. It is considered unlikely that the exceedence is caused by construction activities in this area.

Corrective Action Required:

Maintain current monitoring and surveillance levels

Signature ……Roland Tarrant…….. Date ……27-06-12……

NER Closed

Works have been inspected and completed as described above.

Signature ……Seamus O'Brien……Date ……27-06-12…

Project Manager ~~/ Assist Project Manager~~

WAV

Noise Exceedence 206.wav

SRB Civil Engineering Limited ROADBRIDGE SISK	Project Title: **FORTH REPLACEMENT CROSSING** **M9 Junction 1A**		**Project Number:** **208**
	Contractor: **SRB**	Date: **11-06-12**	**NER. 79**
QUALITY MANAGEMENT SYSTEM	**NOISE EXCEEDENCE REPORT**		

Summary of Finding(s): June 8th 2012 Friday – CNV02

Exceedence 207: Maximum Noise Level: 81.1dB (A) at 7.52pm

Analysis:

An analysis was carried out using the following data:

- Recorded Noise Logs and Noise Data
- Noise type
- Site Diaries / Weather Data
- Inspections by Senior Engineer (Roland Tarrant)

Findings:

Analysis of the Site Diary confirms that works took place overnight on the M9 to remove the existing overhead power line adjacent to Gateside/ Niddry Burn and also to erect steel beams on the backspan of M901 Overbridge. However the traffic management that was deployed in order to facilitate these works did not mobilise on until 8pm and commenced deployment at Newbridge some distance from CNV02. At 7-8pm there were no operations being carried out near this receptor.

Therefore it is considered that it is unlikely that construction activities caused this exceedence

Corrective Action Required:

Maintain current monitoring and surveillance levels

Signature ……Roland Tarrant…….. Date ……11-06-12…….

NER Closed

Works have been inspected and completed as described above.

Signature ……Seamus O'Brien……Date ……11-06-12…

Project Manager ~~/ Assist Project Manager~~

SRB Civil Engineering Limited ROADBRIDGE SISK	Project Title: **FORTH REPLACEMENT CROSSING** **M9 Junction 1A**		**Project Number:** **208**
	Contractor: **SRB**	Date: **29-06-12**	**NER. 80**
QUALITY MANAGEMENT SYSTEM	**NOISE EXCEEDENCE REPORT**		

Summary of Finding(s): June 28th 2012 Thursday – CNV02

Exceedence 208: Maximum Noise Level: 84.7dB (A) at 9.55pm

Analysis:

An analysis was carried out using the following data:

- Recorded Noise Logs and Noise Data
- Noise type
- Site Diaries / Weather Data
- Inspections by Senior Engineer (Roland Tarrant)

Findings:

Analysis of the Site Diary confirms that works took place overnight on the M9 to facilitate the installation of Varioguard. These works were deployed in the vicinity of M905E Overton Bridge almost 500m from this receptor.

There were no operations being carried out near this receptor during this period.

Therefore it is considered that it is unlikely that construction activities caused this exceedence

Corrective Action Required:

Maintain current monitoring and surveillance levels

Signature ……Roland Tarrant…….. Date ……29-06-12…….

NER Closed

Works have been inspected and completed as described above.

Signature ……Seamus O'Brien……Date ……29-06-12…

Project Manager ~~/ Assist Project Manager~~

SRB Civil Engineering Limited ROADBRIDGE SISK	Project Title: **FORTH REPLACEMENT CROSSING** **M9 Junction 1A**		**Project Number:** **208**
	Contractor: **SRB**	Date: **30-06-12**	**NER. 81**
QUALITY MANAGEMENT SYSTEM	**NOISE EXCEEDENCE REPORT**		

Summary of Finding(s): June 29th 2012 Friday – CNV02

Exceedence 209: Maximum Noise Level: 81.1dB (A) at 8.58pm

Analysis:

An analysis was carried out using the following data:

- Recorded Noise Logs and Noise Data
- Noise type
- Site Diaries / Weather Data
- Inspections by Senior Engineer (Roland Tarrant)

Findings:

Analysis of the Site Diary confirms that works took place overnight on the M9 to facilitate the installation of Varioguard. These works were deployed in the vicinity of M905E Overton Bridge almost 500m from this receptor.

There were no operations being carried out near this receptor during this period.

Therefore it is considered that it is unlikely that construction activities caused this exceedence

Corrective Action Required:

Maintain current monitoring and surveillance levels

Signature ……Roland Tarrant…….. Date ……30-06-12……

NER Closed

Works have been inspected and completed as described above.

Signature ……Seamus O'Brien……Date ……30-06-12…

Project Manager ~~/ Assist Project Manager~~

SRB Civil Engineering Limited ROADBRIDGE SISK	Project Title: **FORTH REPLACEMENT CROSSING** **M9 Junction 1A**		**Project Number:** **208**
	Contractor: **SRB**	Date: **11-06-12**	**NER. 82**
QUALITY MANAGEMENT SYSTEM	**NOISE EXCEEDENCE REPORT**		

Summary of Finding(s): June 8th 2012 Friday – CNV02

Exceedence 210: Maximum Noise Level: 92.8dB (A) at 6.28pm

Analysis:

An analysis was carried out using the following data:

- Recorded Noise Logs and Noise Data
- Noise type
- Site Diaries / Weather Data
- Inspections by Senior Engineer (Roland Tarrant)

Findings:

Analysis of the Site Diary confirms that works took place overnight on the M9 to remove the existing overhead line adjacent to Gateside/Niddry Burn and also to erect steel beams on the backspan of M901 Overbridge. However the traffic management that was deployed in order to facilitate these works did not mobilise on until 8pm and commenced deployment at Newbridge some distance from CNV02. At 7-8pm there were no operations being carried out near this receptor.

Therefore it is considered that it is unlikely that construction activities caused this exceedence

Corrective Action Required:

Maintain current monitoring and surveillance levels

Signature ……Roland Tarrant…….. Date ……11-06-12…….

NER Closed

Works have been inspected and completed as described above.

Signature ……Seamus O'Brien……Date ……11-06-12…

Project Manager ~~/ Assist Project Manager~~

SRB Civil Engineering Limited ROADBRIDGE SISK	Project Title: **FORTH REPLACEMENT CROSSING** **M9 Junction 1A**		**Project Number:** **208**
	Contractor: **SRB**	Date: **29-06-12**	**NER. 83**
QUALITY MANAGEMENT SYSTEM	**NOISE EXCEEDENCE REPORT**		

Summary of Finding(s): June 28th 2012 Thursday – CNV02

Exceedence 211: Maximum Noise Level: 81.1dB (A) at 6.08pm

Analysis:

An analysis was carried out using the following data:

- Recorded Noise Logs and Noise Data
- Noise type
- Site Diaries / Weather Data
- Inspections by Senior Engineer (Roland Tarrant)

Findings:

Analysis of the Site Diary confirms that works took place overnight on the M9 to facilitate the installation of Varioguard. These works were deployed in the vicinity of M905E Overton Bridge almost 500m from this receptor.

There were no operations being carried out near this receptor during this period.

Therefore it is considered that it is unlikely that construction activities caused this exceedence

Corrective Action Required:

Maintain current monitoring and surveillance levels

Signature ……Roland Tarrant…….. Date ……29-06-12…….

NER Closed

Works have been inspected and completed as described above.

Signature ……Seamus O'Brien……Date ……29-06-12…

Project Manager ~~/ Assist Project Manager~~

SRB Civil Engineering Limited ROADBRIDGE SISK	Project Title: **FORTH REPLACEMENT CROSSING** **M9 Junction 1A**		**Project Number:** **208**
	Contractor: **SRB**	Date: **30-06-12**	**NER. 84**
QUALITY MANAGEMENT SYSTEM	**NOISE EXCEEDENCE REPORT**		

Summary of Finding(s): June 29th 2012 Friday – CNV02

Exceedence 212: Maximum Noise Level: 79.1dB (A) at 7.01am

Analysis:

An analysis was carried out using the following data:

- Recorded Noise Logs and Noise Data
- Noise type
- Site Diaries / Weather Data
- Inspections by Senior Engineer (Roland Tarrant)

Findings:

Analysis of the Site Diary confirms that works took place overnight on the M9 to facilitate the installation of Varioguard. These works were deployed in the vicinity of M905E Overton Bridge almost 500m from this receptor.

There were no operations being carried out near this receptor during this period.

Therefore it is considered that it is unlikely that construction activities caused this exceedence

Corrective Action Required:

Maintain current monitoring and surveillance levels

Signature ……Roland Tarrant…….. Date ……30-06-12…….

NER Closed

Works have been inspected and completed as described above.

Signature ……Seamus O'Brien……Date ……30-06-12…

Project Manager ~~/ Assist Project Manager~~

SRB Civil Engineering Limited ROADBRIDGE SISK	Project Title: **FORTH REPLACEMENT CROSSING** **M9 Junction 1A**		**Project Number:** **208**
	Contractor: **SRB**	Date: **02-06-12**	**NER. 91**
QUALITY MANAGEMENT SYSTEM	**NOISE EXCEEDENCE REPORT**		

Summary of Finding(s): June 01st 2012 Thursday – CNV7

Exceedence 219: Maximum Noise Level: 70.2dB (A) at 23.00pm

Analysis:

An analysis was carried out using the following data:

- Recorded Noise Logs and Noise Data
- Noise type
- Site Diaries / Weather Data
- Inspections by Senior Engineer (Roland Tarrant)

Findings:

Analysis of the Site Diary confirms that works took place overnight on the M9 Spur N/B to facilitate the removal of the Varioguard.

Traffic management was not operational in this area at the time of the exceedence as the operation started from the farther end nearest the Forth Bridge around 11pm.

Therefore it is considered that it is unlikely that construction activities caused this exceedence

Corrective Action Required:

Maintain current monitoring and surveillance levels

Signature ……Roland Tarrant…….. Date ……..02-06-12……

NER Closed

Works have been inspected and completed as described above.

Signature ……Seamus O'Brien……Date ……..02-06-12…

Project Manager ~~/ Assist Project Manager~~

SRB Civil Engineering Limited ROADBRIDGE SISK	Project Title: **FORTH REPLACEMENT CROSSING** **M9 Junction 1A**		**Project Number:** **208**
	Contractor: **SRB**	Date: **08-06-12**	**NER. 92**
QUALITY MANAGEMENT SYSTEM	**NOISE EXCEEDENCE REPORT**		

Summary of Finding(s): June 07th 2012 Thursday – CNV7

Exceedence 220: Maximum Noise Level: 65.1dB (A) at 06.00am on the morning of the 8th

Analysis:

An analysis was carried out using the following data:

- Recorded Noise Logs and Noise Data
- Noise type
- Site Diaries / Weather Data
- Inspections by Senior Engineer (Roland Tarrant)

Findings:

Analysis of the Site Diary confirms that works took place overnight on the M9 Spur S/B to facilitate the removal of the Varioguard.

Traffic management was removed from the section of road at approximately 4.00 am.

Therefore it is considered that it is unlikely that construction activities caused this exceedence

Corrective Action Required:

Maintain current monitoring and surveillance levels

Signature ……Roland Tarrant…….. Date …….08-06-12……

NER Closed

Works have been inspected and completed as described above.

Signature ……Seamus O'Brien……Date ……..08-06-12…

Project Manager ~~/ Assist Project Manager~~

SRB Civil Engineering Limited ROADBRIDGE SISK	Project Title: **FORTH REPLACEMENT CROSSING** **M9 Junction 1A**		**Project Number:** **208**
	Contractor: **SRB**	Date: **16-06-12**	**NER. 93**
QUALITY MANAGEMENT SYSTEM	**NOISE EXCEEDENCE REPORT**		

Summary of Finding(s): June 15th 2012 Thursday – CNV7

Exceedence 221: Maximum Noise Level: 69.9dB (A) at 04.00am on the morning of the 16th

Analysis:

An analysis was carried out using the following data:

- Recorded Noise Logs and Noise Data
- Noise type
- Site Diaries / Weather Data
- Inspections by Senior Engineer (Roland Tarrant)

Findings:

Analysis of the Site Diary confirms that a beam lift too place at the M9 Overbridge

The beam lift operations ended after 2am on the night.

Therefore it is considered that it is unlikely that construction activities caused this exceedence

Corrective Action Required:

Maintain current monitoring and surveillance levels

Signature ……Roland Tarrant…….. Date ……16-06-12……

NER Closed

Works have been inspected and completed as described above.

Signature ……Seamus O'Brien……Date ……..16-06-12…

Project Manager ~~/ Assist Project Manager~~

SRB Civil Engineering Limited ROADBRIDGE SISK	Project Title: **FORTH REPLACEMENT CROSSING** **M9 Junction 1A**		**Project Number:** **208**
	Contractor: **SRB**	Date: **08-06-12**	**NER. 88**
QUALITY MANAGEMENT SYSTEM	**NOISE EXCEEDENCE REPORT**		

Summary of Finding(s): June 07th 2012 Thursday – CNV16

Exceedence 216: Maximum Noise Level: 77.5dB (A) at 4.47am

Analysis:

An analysis was carried out using the following data:

- Recorded Noise Logs and Noise Data
- Noise type
- Site Diaries / Weather Data
- Inspections by Senior Engineer (Roland Tarrant)

Findings:

Analysis of the Site Diary confirms that works took place overnight on the M9 Spur S/B to facilitate the removal of the Varioguard.

Traffic management was removed from the section of road at approximately 4.00 am.

Therefore it is considered that it is unlikely that construction activities caused this exceedence

Corrective Action Required:

Maintain current monitoring and surveillance levels

Signature ……Roland Tarrant…….. Date ……08-06-12……

NER Closed

Works have been inspected and completed as described above.

Signature ……Seamus O'Brien……Date ……08-06-12…

Project Manager ~~/ Assist Project Manager~~

SRB Civil Engineering Limited ROADBRIDGE SISK	Project Title: **FORTH REPLACEMENT CROSSING** **M9 Junction 1A**		**Project Number:** **208**
	Contractor: **SRB**	Date: **29-06-12**	**NER. 89**
QUALITY MANAGEMENT SYSTEM	**NOISE EXCEEDENCE REPORT**		

Summary of Finding(s): <u>June 28th 2012 Thursday – CNV16</u>

Exceedence 217: Maximum Noise Level: 72.4dB (A) at 11.22pm

Analysis:

An analysis was carried out using the following data:

- Recorded Noise Logs and Noise Data
- Noise type
- Site Diaries / Weather Data
- Inspections by Senior Engineer (Roland Tarrant)

Findings:

Analysis of the Site Diary confirms that works took place overnight on the M9 to facilitate the installation of Varioguard. These works were deployed in the vicinity of M905E Overton Bridge over 500m from this receptor.

There were no operations being carried out near this receptor during this period.

Therefore it is considered that it is unlikely that construction activities caused this exceedence

Corrective Action Required:

Maintain current monitoring and surveillance levels

Signature ……Roland Tarrant…….. Date ……29-06-12…….

NER Closed

Works have been inspected and completed as described above.

Signature ……Seamus O'Brien……Date ……29-06-12…

Project Manager ~~/ Assist Project Manager~~

SRB Civil Engineering Limited ROADBRIDGE SISK	Project Title: **FORTH REPLACEMENT CROSSING** **M9 Junction 1A**		**Project Number:** **208**
	Contractor: **SRB**	Date: **30-06-12**	**NER. 90**
QUALITY MANAGEMENT SYSTEM	**NOISE EXCEEDENCE REPORT**		

Summary of Finding(s): June 29th 2012 Friday – CNV16

Exceedence 218: Maximum Noise Level: 69.4dB (A) at 06.09pm

Analysis:

An analysis was carried out using the following data:

- Recorded Noise Logs and Noise Data
- Noise type
- Site Diaries / Weather Data
- Inspections by Senior Engineer (Roland Tarrant)

Findings:

Analysis of the Site Diary confirms that works took place overnight on the M9 to facilitate the installation of Varioguard. These works were deployed in the vicinity of M905E Overton Bridge over 500m from this receptor.

There were no operations being carried out near this receptor during this period.

Therefore it is considered that it is unlikely that construction activities caused this exceedence

Corrective Action Required:

Maintain current monitoring and surveillance levels

Signature ……Roland Tarrant…….. Date ……30-06-12…….

NER Closed

Works have been inspected and completed as described above.

Signature ……Seamus O'Brien……Date ……30-06-12…

Project Manager ~~/ Assist Project Manager~~