A8.2: Detailed Baseline Noise Survey Results

1 Introduction

1.1 This appendix provides additional details of the baseline noise surveys which were undertaken as part of the DMRB Stage 3 Environmental Impact Assessment.

1.2 Noise monitoring was undertaken between Tuesday 19 January 2016 and Thursday 10 March 2016 and consisted of unattended noise level measurements at 27 locations, regular site visits at unattended noise monitoring locations and additional short term spot measurements at some of the locations.

1.3 The following equipment was used when undertaking noise measurements:

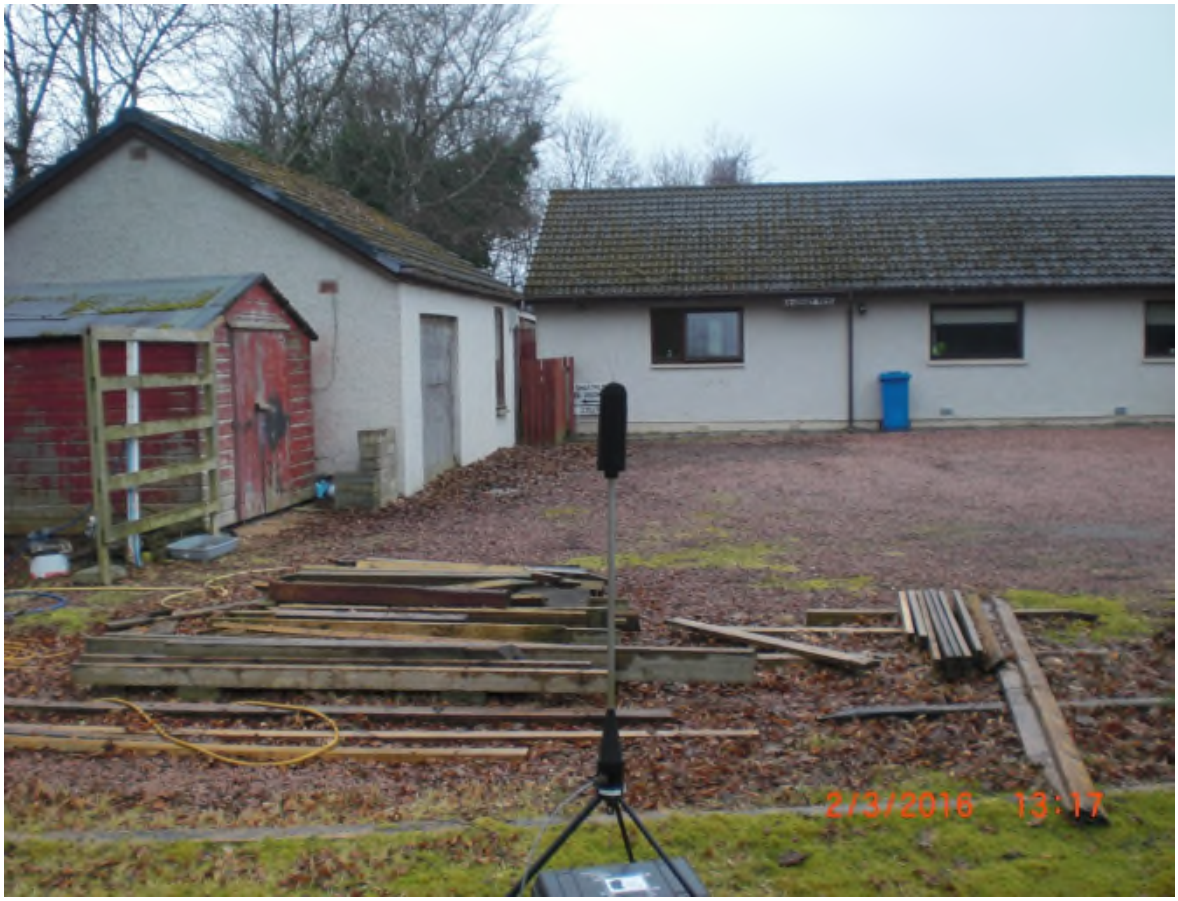
- Cirrus CR:811B Class 1 Data Logging Sound Level Meter serial number (s/n) C17206FD:
  - Cirrus MK:224 Microphone s/n 20046250; and
  - Cirrus CR511E Acoustic Calibrator s/n 43254.
- Cirrus CR:811B Class 1 Data Logging Sound Level Meter serial number (s/n) C19031FD:
  - Cirrus MK:224 Microphone s/n 201290A; and
  - Cirrus CR511E Acoustic Calibrator s/n 40145.
- Cirrus CR:811B Class 1 Data Logging Sound Level Meter serial number (s/n) C19032FD:
  - Cirrus MK:224 Microphone s/n 201285A; and
  - Cirrus CR511E Acoustic Calibrator s/n 43256.
- Cirrus Optimus Green CR:171C1 Class 1 Sound Level Meter serial number (s/n) G061729:
  - Cirrus MK:224 Microphone s/n 606466B; and
  - Pulsar Instruments Model 105 Calibrator s/n 50857.
- Rion NL-52 Class 1 Sound Level Meter s/n 00821105:
  - Rion UC-59 Microphone s/n 04086; and
  - Rion NC-74 Calibrator 34536109.
- Rion NL-52 Class 1 Sound Level Meter s/n 00410083:
  - Rion UC-59 Microphone s/n 02432; and
  - Rion NC-74 Calibrator 34235943.
- Rion NL-32 Class 1 Sound Level Meter s/n 00751323:
  - Rion UC-53A Microphone s/n 308645; and
  - Rion NC-74 Calibrator 34257024.
- Rion NL-52 Class 1 Sound Level Meter s/n 00482602:
  - Rion UC-53A Microphone s/n 321107; and
  - Rion NC-74 Calibrator 34257024.

2 Summary of Unattended Long Term Measurements

Measurement Location NV001 – Roseacre, Stratton, Inverness, IV2 7NS

2.1 The measurement location was as shown in Photograph 1. A Cirrus CR811B Class 1 sound level meter (s/n C19302FD) was positioned at a height of 1.5m in free-field conditions. The equipment was approximately 23m on the south-eastern façade of the property.

Photograph 1: Noise Monitoring Equipment at Roseacre



2.2 The monitoring equipment was calibrated both before and after the measurement period using an acoustic calibrator, which has itself been calibrated against a reference set traceable to National and International Standards. There was no significant shift in the observed calibration level.

2.3 At this location the noise climate was dominated by road traffic noise on the existing A96 to the north, birdsong, occasional activity at the property, occasional train pass bys on the Aberdeen to Inverness Railway Line and occasional aircraft noise.

2.4 On average, wind speed measurements ranged between 0.5ms^{-1} and 4.0ms^{-1} throughout the measurement period. Wind speeds peaked at 17:00 hours (2 March) and 12:00 hours (8 March), where levels up to 5ms^{-1} were recorded. In general, when rainfall occurred, the total hourly precipitation did not exceed 0.5mm, but higher levels of precipitation (up to 4.7mm) were recorded on 4 March (09:00 – 12:00 hours). No precipitation was recorded during the 2 March and 10 March.

2.5 Table 1 provides the measured daily noise levels at this location for the following time periods:

- The 16 hour daytime period (between 07:00 and 23:00), which corresponds to the time period used in the World Health Organisation and BS 8233 when describing the daytime period.
- The eight hour night-time period (between 23:00 and 07:00), this corresponds to the time period used in WHO and BS82333 when describing the night-time noise period.

- The 18 hour daytime period (between 06:00 and 00:00), this is the time period that is used to define road traffic noise in the Calculation of Road Traffic Noise (CRTN).

Table 1: Daily Summarised Noise Levels at Roseacre

Date	Day	Daytime (between 06:00 – 00:00) 18 Hour Time Period			Daytime (between 07:00 – 23:00) 16 Hour Time Period			Night-time (between 23:00 – 07:00) 8 Hour Time Period		
		$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)	$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)	$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)
02/03/16	Wed	-	-	-	-	-	-	53.4	55.6	38.3
03/03/16	Thurs	58.3	59.3	53.3	58.5	59.4	54.0	54.0	56.0	39.3
04/03/16	Friday	59.7	61.0	55.4	59.9	61.2	56.1	51.9	54.3	39.7
05/03/16	Sat	55.9	57.6	51.3	56.1	57.6	51.9	52.9	55.7	40.8
08/03/16	Tues		-		-	-	-	52.1	53.9	38.2
09/03/16	Wed	58.6	59.7	53.4	58.8	59.8	54.0	-	-	-

2.6 It should be noted that in Table 1 the reported $L_{Aeq,T}$ value is the logarithmically averaged noise level. Whereas, the $L_{A10,T}$ and $L_{A90,T}$ value is the arithmetically averaged noise level.

2.7 In addition to long term measurements a series of short term attended measurements were also undertaken and the results are provided in Table 2. A Cirrus Optimus Green CR:171C1 sound level meter (s/n G061729) was positioned at a height of 1.5m in free-field conditions adjacent to the long term monitoring equipment. The monitoring equipment was calibrated both before and after the measurement period using an acoustic calibrator, which has itself been calibrated against a reference set traceable to National and International Standards. There was no significant shift in the observed calibration level.

Table 2: Additional Attended Noise Level Measurements at Roseacre

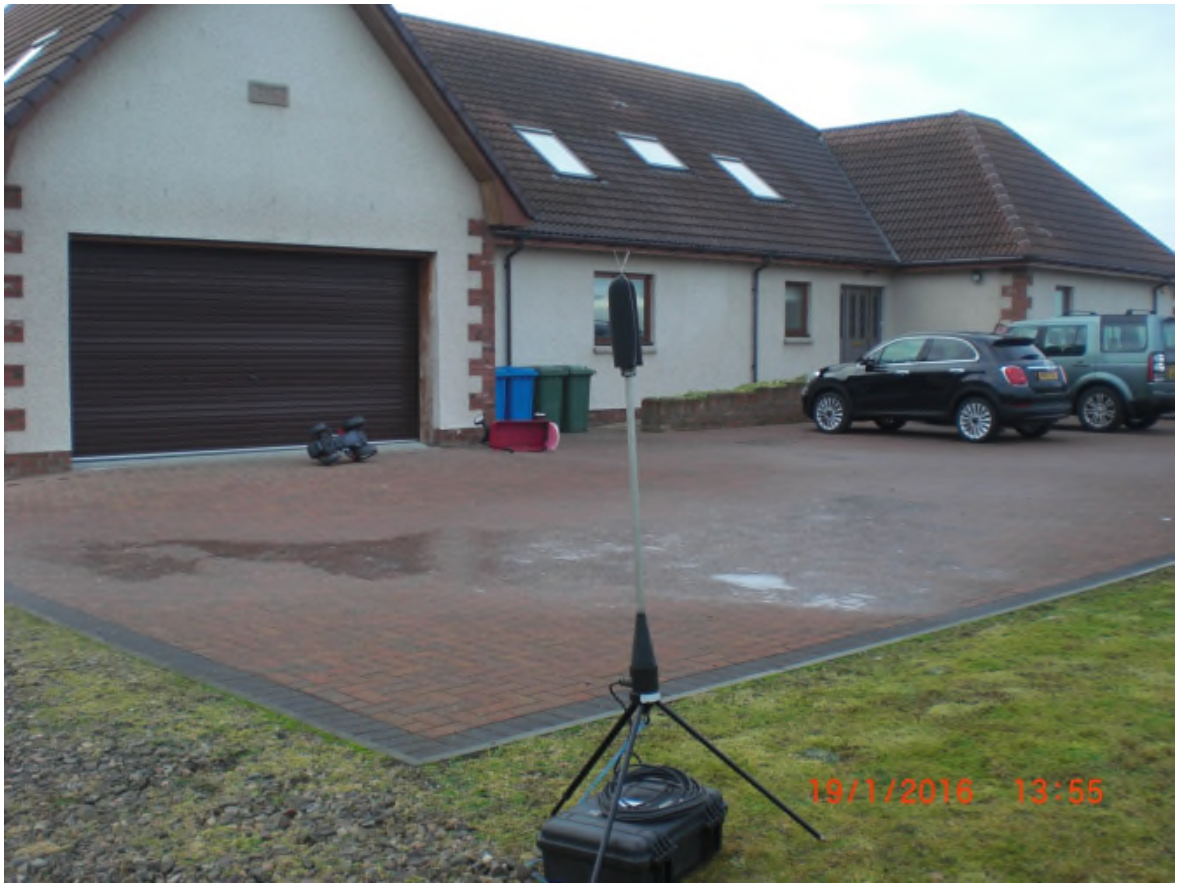
Start Date	Start Time (hh:mm)	Duration (hh:mm)	Noise Levels (dB)			Comments
			$L_{Aeq,T}$	$L_{A10,T}$	$L_{A90,T}$	
03/03/16	12:17	00:15	53.7	55.6	50.4	Calm, 60% cloud cover, dry. Noise climate dominated by road traffic noise on the existing A96 and occasional activity at the property. Car horn at 12:19. Car in driveway at 12:31.
03/03/16	15:54	00:15	60.2	61.7	58.1	Light breeze, 80% cloud cover, dry. Noise climate dominated by road traffic noise on the existing A96 and occasional train pass bys. Train pass by at 15:57 (just audible above traffic noise). “Bang” from HGV on A96 at 16:03.
03/03/16	19:17	00:15	58.7	60.3	55.6	Calm, 100% cloud cover, dry. Noise climate dominated by road traffic noise on the existing A96 and occasional aircraft noise. Aircraft at 19:18.
09/03/16	17:33	00:15	61.2	62.1	58.2	Calm, 30% cloud cover, dry. Noise climate dominated by road traffic noise on the existing and occasional train pass bys. Train pass by at 17:43. Ambulance siren at 17:44.

Measurement Location NV002 – Brambly Hedge, Milton of Culloden, Inverness, IV2 7NU

2.8 Noise monitoring equipment was installed at Brambly Hedge between 19 January 2016 and 22 January 2016.

2.9 The measurement location was as shown in Photograph 2. A Cirrus CR:811B Class 1 sound level meter (s/n C19301FD) was positioned at a height of 1.5m in free field conditions. The equipment was approximately 12m on the south-eastern corner of the building.

Photograph 2: Noise Monitoring Equipment at Brambly Hedge



2.10 The monitoring equipment was calibrated both before and after the measurement period using an acoustic calibrator, which has itself been calibrated against a reference set traceable to National and International Standards. There was no significant shift in the observed calibration level.

2.11 At this location the noise climate was dominated by road traffic noise on the existing A96 to the south, birdsong, occasional activity at the property and surrounding properties, occasional train pass bys on. the Aberdeen to Inverness Railway Line to the south, occasional aircraft and occasional vehicle pass bys on a local road to the north.

2.12 Throughout the monitoring period, wind speeds did not exceed 2.0ms^{-1}. For the majority of the monitoring period, light wind speeds (up to 1ms^{-1}) were recorded, but wind speeds increased to levels up to 2.0ms^{-1} on the 21 and 22 January. With the exception of the recorded precipitation on 20 January (09:00 hours), no precipitation was recorded between 19 January 15:00 hours and 21 January 11:00 hours. The latter part of the monitoring period experienced occasional rainfall, where total precipitation ranged between 0.1mm and 1.1mm during the 21 January and 22 January.

2.13 Table 3 provides the measured daily noise levels at this location. It should be noted that due to a malfunction with the sound level meter a contiguous 18 hour and 16 hour measurement period between 06:00 and 00:00 was not captured. Accordingly, the reported 16 hour and 18 hour noise levels reported in Table 3 have been calculated based on the measured noise level data between

14:00 and 00:00 hours on Tuesday 19 January 2016 and between 06:00 and 14:00 on Wednesday 20 January 2016.

Table 3: Daily Summarised Noise Levels at Brambly Hedge

Date	Day	Daytime (between 06:00 – 00:00) 18 Hour Time Period			Daytime (between 07:00 – 23:00) 16 Hour Time Period			Night-time (between 23:00 – 07:00) 8 Hour Time Period		
		$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)	$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)	$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)
19/01/16	Tues	-	-	-	-	-	-	47.3	48.1	31.8
20/01/16	Wed	52.6	52.4	44.6	52.8	52.7	45.5	-	-	-
21/01/16	Thurs	-	-	-	-	-	-	48.5	50.2	35.2

2.14 Although no additional noise level measurements were undertaken at this location the property was visited on several occasions, for a period of approximately 20 minutes, during the measurement period in order to subjectively characterise the noise climate. Table 6 provides a summary of the on-site observations.

Table 4: Observations Noted at Brambly Hedge

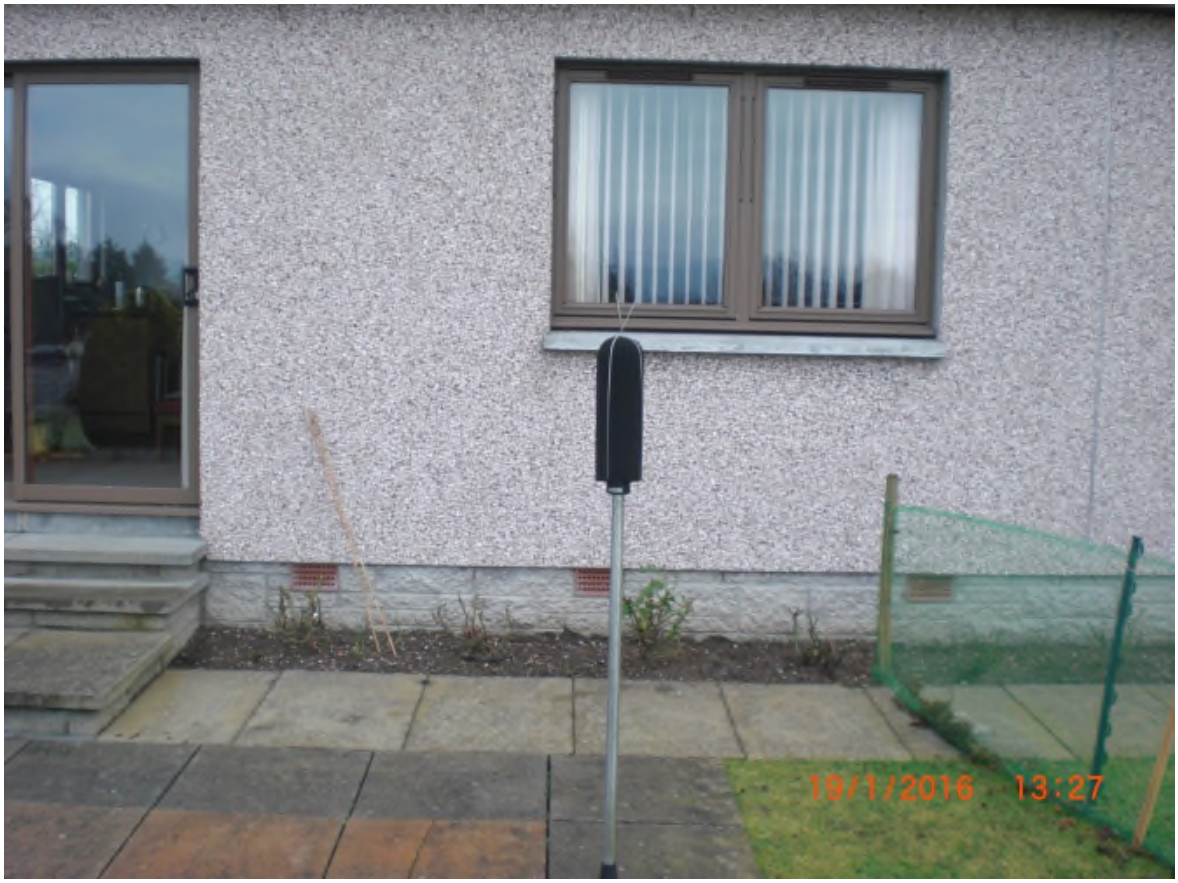
Start Date	Time of Visit (hh:mm)	Comments
19/01/16	13:48	Calm, 100% cloud cover, dry but ground slightly damp. Noise climate dominated by road traffic noise on the existing A96, birdsong, occasional noise from dogs barking, occasional aircraft noise, occasional noise from train pass bys and occasional activity at surrounding properties.
20/01/16	11:14	Light breeze, 90% cloud cover, dry but ground slightly damp. Noise climate dominated by road traffic noise on the existing A96, birdsong, occasional noise from dogs barking, occasional aircraft noise, occasional noise from vehicle pass bys on the local road to the north. Helicopter at 11:14. Car entering driveway and people taking at property at 11:20. Car on local road to north at 11:35.
20/01/16	14:54	Calm, 80% cloud cover, dry but ground slightly damp. Noise climate dominated by road traffic noise on the existing A96, birdsong, occasional aircraft noise and occasional activity at surrounding properties. Aircraft at 15:03. Car entering driveway at 15:11. Children playing at 15:11. People speaking at property at 15:12.
20/01/16	19:30	Calm, 100% overcast, dry but ground slightly damp. Noise climate dominated by road traffic noise on the existing A96, occasional noise from seabirds and occasional train pass bys. Train pass by at 19:41.
21/01/16	09:10	Calm, 100% cloud cover, dry but ground damp and frozen in places. Noise climate dominated by road traffic noise on the existing A96, birdsong and occasional activity at surrounding properties. Car entering driveway and people talking at 09:25.
21/01/16	12:57	Light breeze, 80% cloud cover, light rain drops and ground slightly damp. Noise climate dominated by road traffic noise on the existing A96, birdsong and occasional aircraft noise. Aircraft at 13:01.
21/01/16	17:38	Calm, 100% cloud cover, dry but ground slightly damp. Noise climate dominated by road traffic noise on the existing A96 and occasional noise from seabirds.

Measurement Location NV003 – 6 Milton of Culloden, Inverness, IV2 7NX

2.15 Noise monitoring equipment was installed at 6 Milton of Culloden between 19 January 2016 and 22 January 2016.

2.16 The measurement location was as shown in Photograph 3. A Cirrus CR:811B Class 1 sound level meter (s/n C19302FD) was positioned at a height of 1.5m in free-field conditions. The equipment was approximately 3.8m on the north-western façade of the building.

Photograph 3: Noise Monitoring Equipment at 6 Milton of Culloden



2.17 The monitoring equipment was calibrated both before and after the measurement period using an acoustic calibrator, which has itself been calibrated against a reference set traceable to National and International Standards. There was no significant shift in the observed calibration level.

2.18 At this location the noise climate was dominated by road traffic noise on the existing A96 to the south, birdsong, occasional activity at the property, occasional aircraft noise, occasional vehicle pass bys on the local road to the east and occasional train pass bys on the Aberdeen to Inverness Railway Line to the north. During the evening site visits it was noted that noise from a small watercourse to the west of the measurement location was only just audible during lulls in the traffic flow on the A96.

2.19 Throughout the monitoring period, wind speeds did not exceed 2.0ms^{-1}. For the majority of the monitoring period, light wind speeds (up to 1ms^{-1}) were recorded, but wind speeds increased to levels up to 2.0ms^{-1} on the 21 and 22 January. With the exception of the recorded precipitation on 20 January (09:00 hours), no precipitation was recorded between 19 January 15:00 hours and 21 January 11:00 hours. The latter part of the monitoring period experienced occasional rainfall, where total precipitation ranged between 0.1mm and 1.1mm during the 21 and 22 January.

2.20 Table 5 provides the measured daily noise levels at this location.

Table 5: Daily Summarised Noise Levels at 6 Milton of Culloden

Date	Day	Daytime (between 06:00 – 00:00) 18 Hour Time Period			Daytime (between 07:00 – 23:00) 16 Hour Time Period			Night-time (between 23:00 – 07:00) 8 Hour Time Period		
		$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)	$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)	$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)
19/01/16	Tues	-	-	-	-	-	-	55.6	59.1	37.7
20/01/16	Wed	61.4	64.2	51.7	61.7	64.5	52.7	56.7	59.6	38.8
21/01/16	Thurs	62.2	65.2	53.0	62.5	65.5	54.1	57.2	59.7	39.3

2.21 Although no additional noise level measurements were undertaken at this location the property was visited on several occasions, for a period of approximately 20 minutes, during the measurement period in order to subjectively characterise the noise climate. Table 6 provides a summary of the on-site observations.

Table 6: Observations Noted at 6 Milton of Culloden

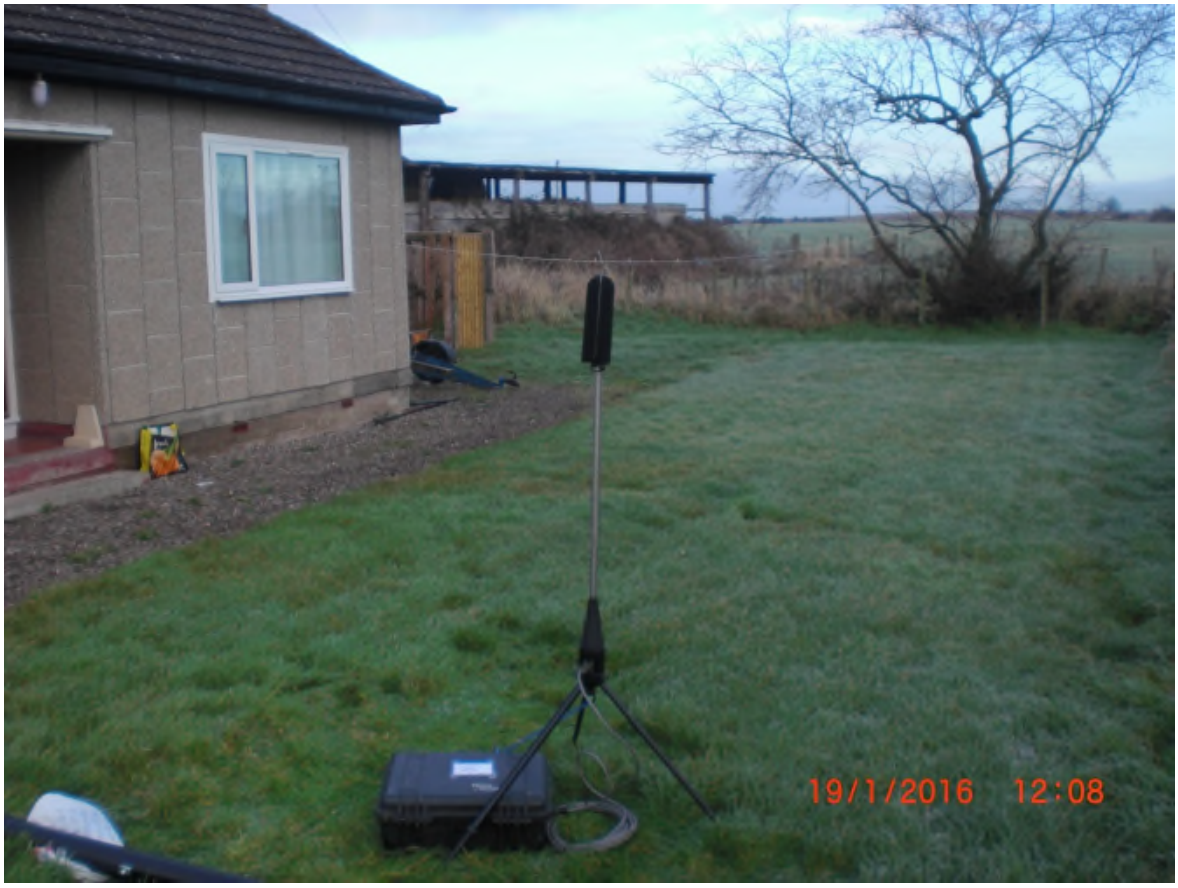
Start Date	Time of Visit (hh:mm)	Comments
19/01/16	13:00	Calm, 100% cloud cover, dry but ground slightly damp. Noise climate dominated by road traffic noise on the existing A96.
20/01/16	10:45	Calm, 95% cloud cover, dry and ground slightly damp. Noise climate dominated by road traffic noise on the existing A96, occasional vehicle pass bys on the local road to the east and occasional train pass bys. Train at 11:00. Car on local road at 11:03.
20/01/16	14:28	Light breeze, 80% cloud cover, dry but ground slightly damp. Noise climate dominated by road traffic noise on the existing A96, occasional vehicle pass bys on the local road to the east and occasional aircraft noise. Car on local road at 14:40. Aircraft at 14:47.
20/01/16	19:01	Calm, 100% cloud cover, dry but ground slightly damp. Noise climate dominated by road traffic noise on the existing A96, noise from small watercourse just audible during lulls in traffic flow.
21/01/16	09:50	Calm, 90% cloud cover, dry but ground damp and frozen in places. Noise climate dominated by road traffic noise on the existing A96, birdsong also audible during lulls in traffic flow.
21/01/16	13:28	Light Breeze, 100% cloud cover, very light rain between 13:30 and 13:35. Noise climate dominated by road traffic noise on the existing A96.
21/01/16	18:00	Calm, 70% cloud cover, dry but ground damp. Nosie climate dominated by road traffic noise on the existing A96. Aircraft and train at 18:10.

Measurement Location NV004 – The Bungalow, Allanfearn, Inverness, IV2 7HX

2.22 Noise monitoring equipment was installed at The Bungalow between 19 January 2016 and 22 January 2016.

2.23 The measurement location was as shown in Photograph 4. A Cirrus CR:811B Class 1 sound level meter (s/n C17206FD) was positioned at a height of 1.5m in free-field conditions. The equipment was approximately 5.3m on the south-eastern façade of the building.

Photograph 4: Noise Monitoring Equipment at The Bungalow



2.24 The monitoring equipment was calibrated both before and after the measurement period using an acoustic calibrator, which has itself been calibrated against a reference set traceable to National and International Standards. There was no significant shift in the observed calibration level.

2.25 At this location the noise climate was dominated by distant road traffic noise on the existing A96 to the north, birdsong, activity at the property and surrounding properties, agricultural vehicles in surrounding fields, people walking in surrounding fields, occasional train pass bys on the Highland Main Line to the south and occasional aircraft noise.

2.26 Throughout the monitoring period, wind speeds did not exceed 2.0ms^{-1}. For the majority of the monitoring period, light wind speeds (up to 1ms^{-1}) were recorded, but wind speeds increased to levels up to 2.0ms^{-1} on the 21 and 22 January. With the exception of the recorded precipitation on 20 January (09:00 hours), no precipitation was recorded between 19 January 15:00 hours and 21 January 11:00 hours. The latter part of the monitoring period experienced occasional rainfall, where total precipitation ranged between 0.1mm and 1.1mm during the 21 and 22 January.

2.27 Table 7 provides the measured daily noise levels at this location.

Table 7: Daily Summarised Noise Levels at The Bungalow

Date	Day	Daytime (between 06:00 – 00:00) 18 Hour Time Period			Daytime (between 07:00 – 23:00) 16 Hour Time Period			Night-time (between 23:00 – 07:00) 8 Hour Time Period		
		$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)	$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)	$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)
19/01/16	Tues	-	-	-	-	-	-	43.4	44.1	32.4
20/01/16	Wed	49.7	51.0	42.6	49.8	51.0	43.3	45.7	47.2	35.0
21/01/16	Thurs	52.1	53.2	46.4	52.4	53.8	47.1	43.0	44.8	34.8

2.28 Although no additional noise level measurements were undertaken at this location the property was visited on several occasions, for a period of approximately 20 minutes, during the measurement period in order to subjectively characterise the noise climate. Table 8 provides a summary of the on-site observations.

Table 8: Observations Noted at The Bungalow

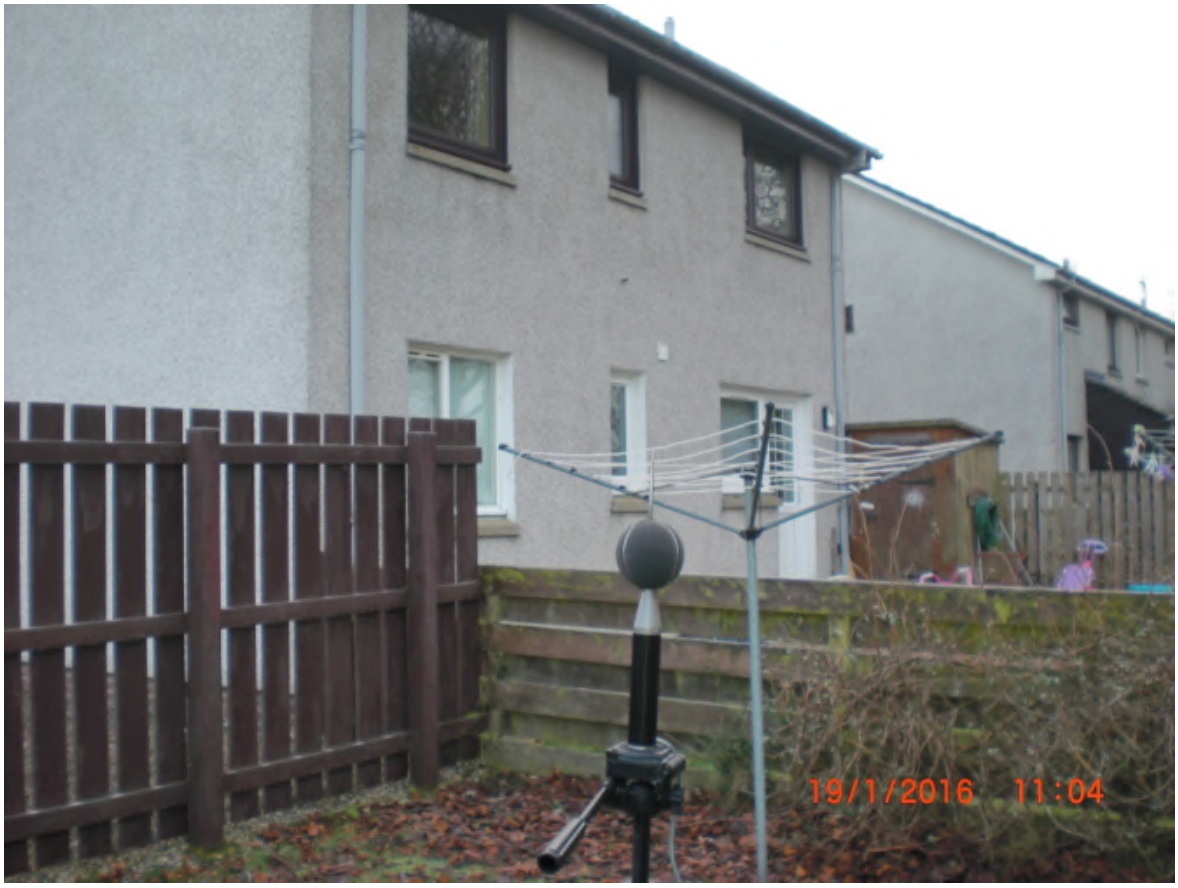
Start Date	Time of Visit (hh:mm)	Comments
19/01/16	12:03	Calm, 80% cloud cover, dry but ground slightly damp. Noise climate dominated by distant road traffic noise on the existing A96, agricultural vehicles in surrounding fields and birdsong.
20/01/16	10:12	Calm, 95% cloud cover dry but ground slightly damp. Noise climate dominated by distant road traffic noise on the existing A96, birdsong and occasional activity in the surrounding area. Dog barking in field to south at 10:20.
20/01/16	14:03	Calm, 90% cloud cover, dry but ground slightly damp. Noise climate dominated by road traffic on the existing A96, birdsong, occasional aircraft and activity in surrounding area. Person speaking at house at 14:10. People walking on path to west at 14:17.
20/01/16	18:38	Calm, 100% cloud cover, dry but ground slightly damp. Noise climate dominated by distant road traffic noise on the existing A96 and noise from car engines revving in Culloden to the south.
21/01/16	10:14	Calm, 100% cloud cover, dry but ground slightly damp. Noise climate dominated by distant road traffic noise on the existing A96, birdsong, occasional aircraft noise, occasional train pass by and agricultural vehicles in the surrounding fields. Aircraft at 10:20. Tractor in adjacent field moving about at 10:23. Car horn at 10:27. Train on hill to south audible at 10:32.
21/01/16	14:13	Calm, 80% cloud cover, very light rain. Noise climate dominated by distant road traffic noise on the existing A96, birdsong and occasional aircraft noise. Aircraft at 14:27.
21/01/16	18:28	Calm, 100% cloud cover, dry but ground slightly damp. Noise climate dominated by distant road traffic noise on the existing A96 and occasional aircraft noise. Aircraft at 18:28.

Measurement Location NV005 – 117 Hazel Avenue, Culloden, Inverness, IV2 7JX

2.29 Noise monitoring equipment was installed at 117 Hazel Avenue between 19 January 2016 and 22 January 2016.

2.30 The measurement location was as shown in Photograph 5. A Cirrus Optimus Green CR:171C Class 1 sound level meter (s/n G061729) was positioned at a height of 1.5m in free-field conditions. The equipment was approximately 5.3m on the north-western corner of the building.

Photograph 5: Noise Monitoring Equipment at 117 Hazel Avenue



2.31 The monitoring equipment was calibrated both before and after the measurement period using an acoustic calibrator, which has itself been calibrated against a reference set traceable to National and International Standards. There was no significant shift in the observed calibration level.

2.32 At this location the noise climate was dominated by distant road traffic noise on the existing A96 to the north, birdsong, activity at the property and surrounding properties, agricultural vehicles in surrounding fields, people walking in surrounding fields, occasional train pass bys on the Highland Main Line to the south and occasional aircraft noise.

2.33 Throughout the monitoring period, wind speeds did not exceed 2.0ms^{-1}. For the majority of the monitoring period, light wind speeds (up to 1ms^{-1}) were recorded, but wind speeds increased to levels up to 2ms^{-1} on the 21 and 22 January. With the exception of the recorded precipitation on 20th January (09:00 hours), no precipitation was recorded between 19 January 15:00 hours and 21 January 11:00 hours. The latter part of the monitoring period experienced occasional rainfall, where total precipitation ranged between 0.1mm and 1.1mm during the 21 and 22 January.

2.34 Table 9 provides the measured daily noise levels at this location.

Table 9: Daily Summarised Noise Levels at 117 Hazel Avenue

Date	Day	Daytime (between 06:00 – 00:00) 18 Hour Time Period			Daytime (between 07:00 – 23:00) 16 Hour Time Period			Night-time (between 23:00 – 07:00) 8 Hour Time Period		
		$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)	$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)	$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)
19/01/16	Tues	-	-	-	-	-	-	42.8	42.3	31.1
20/01/16	Wed	50.5	48.8	41.2	50.7	49.0	41.8	43.5	44.5	33.8
21/01/16	Thurs	49.8	50.5	45.0	50.1	51.1	45.7	42.4	43.3	33.9

2.35 Although no additional noise level measurements were undertaken at this location the property was visited on several occasions, for a period of approximately 20 minutes, during the measurement period in order to subjectively characterise the noise climate. Table 10 provides a summary of the on-site observations.

Table 10: Observations Noted at 117 Hazel Avenue

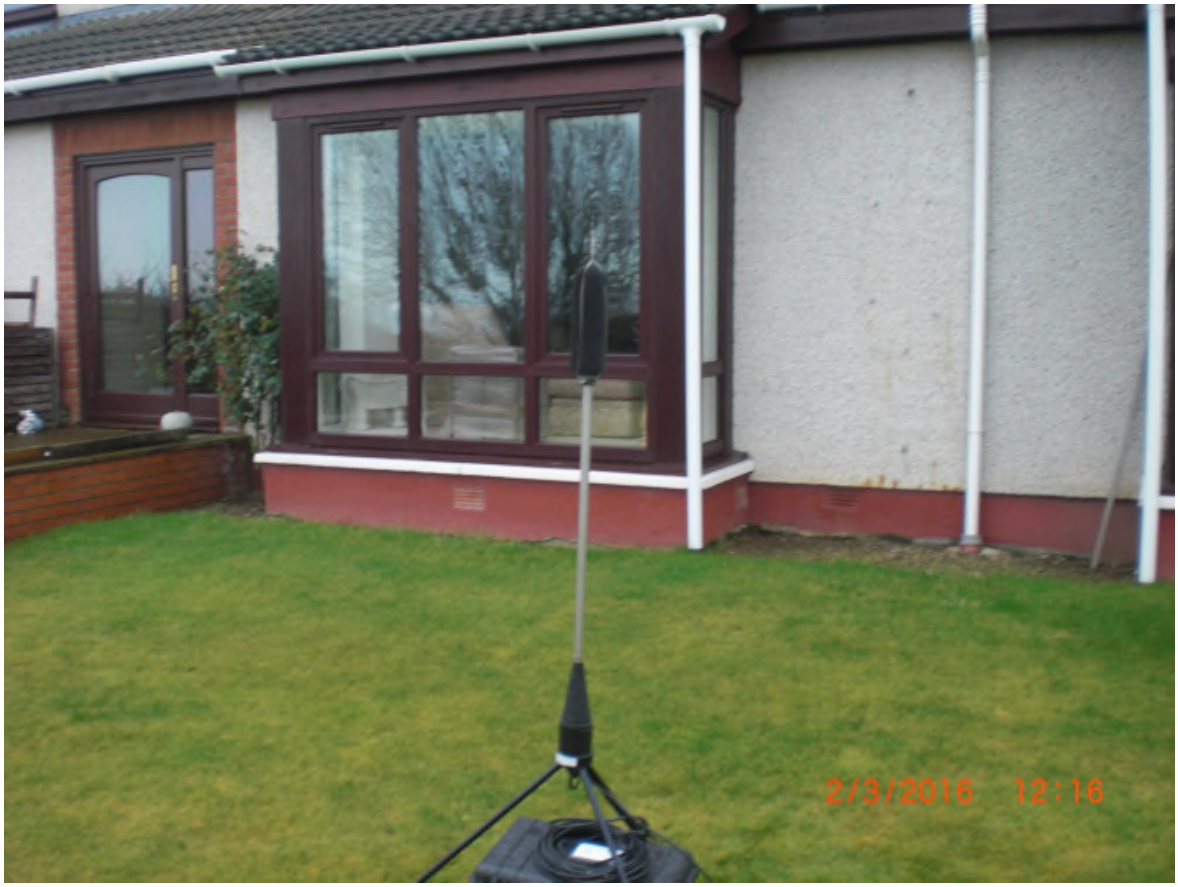
Start Date	Time of Visit (hh:mm)	Comments
19/01/16	11:17	Calm, 80% cloud cover, dry but ground slightly damp. Noise climate dominated by distant road traffic noise on the existing A96, agricultural vehicles in surrounding fields, birdsong and residents at surrounding properties.
20/01/16	9:35	Calm, 100% cloud cover, very light sleet. Noise climate dominated by distant road traffic noise on the existing A96, birdsong, agricultural vehicles in surrounding fields, people in surrounding properties. Car in driveway to south of measurement position at 09:40. Aircraft at 09:52.
20/01/16	13:36	Light breeze, 75% cloud cover, dry but ground slightly damp. Noise climate dominated by birdsong and distant road traffic noise on the existing A96. Intermittent noise from farm to the north-west and activity at surrounding properties. Aircraft overhead at 13:50.
20/01/16	18:11	Calm, 100% cloud cover, dry but ground slightly damp. Noise climate dominated by distant road traffic noise on the existing A96 and occasional noise from cars within housing estate.
21/01/16	10:47	Calm, 100% cloud cover, dry but ground slightly damp. Noise climate dominated by birdsong, distant road traffic noise from the existing A96. Occasional noise from agricultural vehicles at farm to north-west, aircraft and trains. Train to south at 11:00. Aircraft overhead at 11:06
21/01/16	14:44	Calm, 100% overcast, very light rain (stopped at 14:58). Noise climate dominated by birdsong, distant road traffic noise on the existing A96 and occasional aircraft noise. Aircraft at 14:47. Helicopter at 14:59.
21/01/16	19:00	Calm, 70% cloud cover, dry but ground slightly damp. Noise climate dominated by distant road traffic noise on the existing A96 and occasional noise from surrounding houses. Car alarm at 19:12.

Measurement Location NV006 – Thornhill, Cullernie Road, Balloch, Inverness, IV2 7HU

2.36 Noise monitoring equipment was installed at Thornhill between 2 March 2016 and 10 March 2016.

2.37 The measurement location was as shown in Photograph 6. A Cirrus CR:811B Class 1 sound level meter (s/n C17206FD) was positioned at a height of 1.5m in free-field conditions, The equipment was approximately 5.1m on the north-western façade of the building.

Photograph.6: Noise Monitoring Equipment at Thornhill



2.38 The monitoring equipment was calibrated both before and after the measurement period using an acoustic calibrator, which has itself been calibrated against a reference set traceable to National and International Standards. There was no significant shift in the observed calibration level.

2.39 At this location the noise climate was dominated by road traffic noise on the existing A96 and Barn Church Road to the north, birdsong, activity at the property and surrounding properties, occasional train pass bys on the Aberdeen to Inverness Railway Line and occasional aircraft noise.

2.40 . On average, wind speed measurements ranged between 0.5ms^{-1} and 4.0ms^{-1} throughout the measurement period, but higher wind speeds were recorded at 17:00 hours (2 March) and 12:00 hours (8 March), where levels up to 5ms^{-1} were recorded. In general, when rainfall occurred, the total hourly precipitation did not exceed 0.5mm. Higher levels of precipitation (up to 4.7mm) were recorded on 4 March (09:00 – 12:00 hours). No precipitation was recorded during the 2 and 6 March.

2.41 Table 11 provides the measured daily noise levels at this location.

Table 11: Daily Summarised Noise Levels at Thornhill

Date	Day	Daytime (between 06:00 – 00:00) 18 Hour Time Period			Daytime (between 07:00 – 23:00) 16 Hour Time Period			Night-time (between 23:00 – 07:00) 8 Hour Time Period		
		$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)	$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)	$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)
02/03/16	Wed	-	-	-	-	-	-	50.8	51.0	33.3
03/03/16	Thurs	54.1	56.3	41.2	54.1	56.8	41.6	44.4	45.0	27.1
04/03/16	Fri	52.7	56.1	43.0	52.9	56.5	44.0	48.8	50.6	33.1
05/03/16	Sat	54.2	57.1	45.5	54.6	57.7	46.4	47.8	49.1	32.2
06/13/16	Sun	53.9	56.6	42.2	54.2	57.1	43.3	50.2	50.0	32.0
08/03/16	Tues	-	-	-	-	-	-	48.6	46.6	30.7

2.42 In addition to long term measurements a series of short term attended measurements were also undertaken and the results are provided in Table 12. A Cirrus Optimus Green CR:171C1 sound level meter (s/n G061729) was positioned at a height of 1.5m in free-field conditions adjacent to the long term monitoring equipment. The monitoring equipment was calibrated both before and after the measurement period using an acoustic calibrator, which has itself been calibrated against a reference set traceable to National and International Standards. There was no significant shift in the observed calibration level.

Table 12: Additional Attended Noise Level Measurements at Thornhill

Start Date	Start Time (hh:mm)	Duration (hh:mm)	Noise Levels (dB)			Comments
			$L_{Aeq,T}$	$L_{A10,T}$	$L_{A90,T}$	
03/03/16	11:53	00:15	50.8	55.3	39.7	Calm, 60% cloud cover, dry but ground slightly damp. Noise climate dominated by road traffic noise on the existing A96 and Barn Church Road, birdsong, activity at the surrounding properties and occasional aircraft noise. Child crying on footpath to the west at 12:06.
03/03/16	15:45	00:15	51.4	56.1	37.3	Light westerly breeze, 50% cloud cover, dry. Noise climate dominated by road traffic noise on the existing A96 and Barn Church Road and birdsong.
03/03/16	18:54	00:15	50.6	54.5	42.4	Light breeze, 100% cloud cover, dry. Noise climate dominated by road traffic noise on the existing A96 and Barn Church Road.
09/03/16	17:33	00:15	54.4	58.4	43.7	Calm, 30% cloud cover, dry. Noise climate dominated by road traffic noise on the existing A96 and Barn Church Road and birdsong.

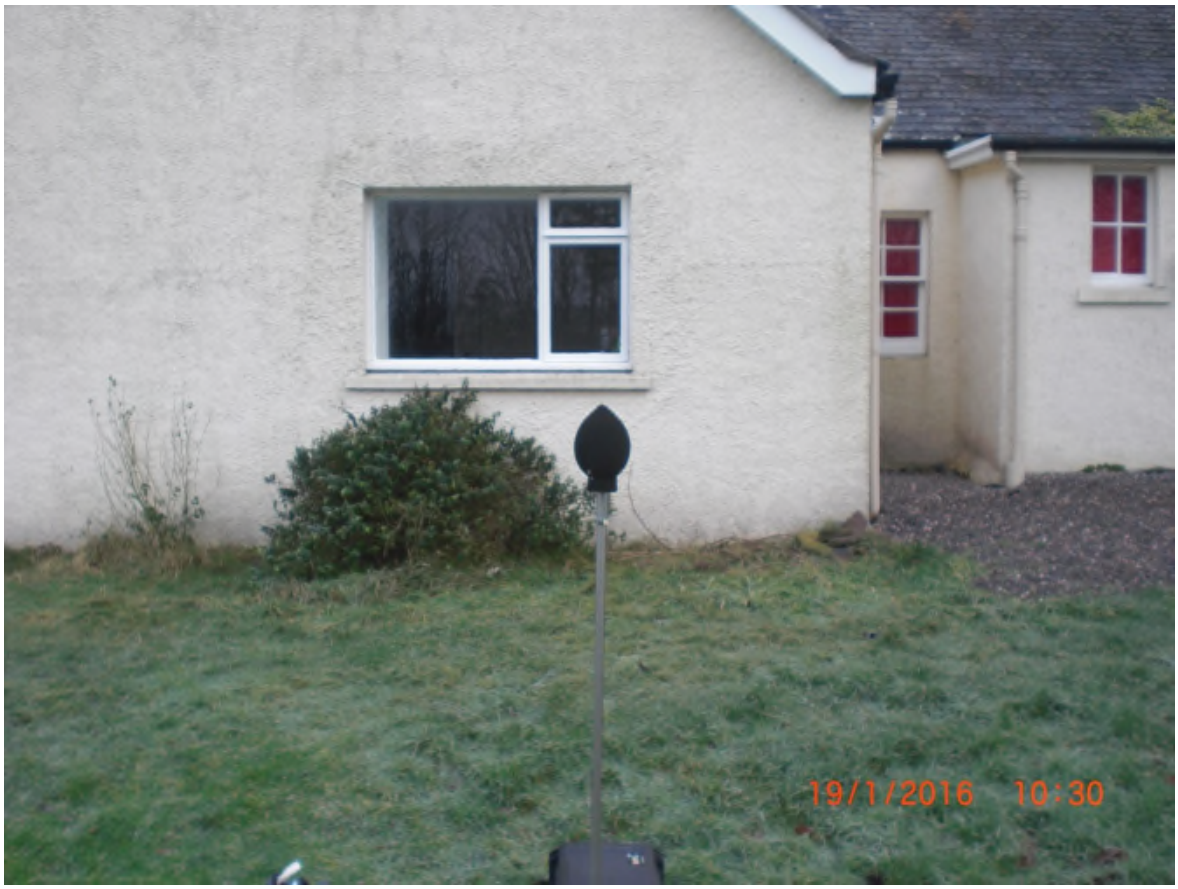
Measurement Location NV007 – Morayston Farmhouse, Dalcross, Inverness, IV2 7JQ

2.43 Noise monitoring equipment was installed at Morayston Farmhouse between 19 January 2016 and 22 January 2016.

2.44 The measurement location was as shown in Photograph 7. A Rion NL-52 Class 1 sound level meter (s/n 00821105) was positioned at a height of 1.5m in free-field conditions. The equipment was approximately 5.5m on the north-western façade of the building.

2.45 In addition, a weather station was installed at this location to capture local weather conditions during the measurement period.

Photograph 7: Noise Monitoring Equipment at Morayston Farmhouse



2.46 The monitoring equipment was calibrated both before and after the measurement period using an acoustic calibrator, which has itself been calibrated against a reference set traceable to National and International Standards. There was no significant shift in the observed calibration level.

2.47 At this location the noise climate was dominated by road traffic noise on the existing A96 to the north, noise from the Norbod Factory to the north east, birdsong, occasional aircraft noise, activity from vehicles and people at a barn to the east of the measurement location (during the daytime period). It was also noted that on Tuesday 20 January 2016 that some work was been undertaken at Morayston Farmhouse which included clearing gutters and raking leaves within the garden area of the property.

2.48 At this location a Lufft WS600 weather station was installed and set up to capture meteorological readings, including wind speed, direction and precipitation every 5 minutes.

2.49 Throughout the monitoring period, wind speeds did not exceed 2.0ms^{-1}. For the majority of the monitoring period, light wind speeds (up to 1.0ms^{-1}) were recorded, but wind speeds increased to levels up to 2.0ms^{-1} on the 21 and 22 January. With the exception of the recorded precipitation on 20 January (09:00 hours), no precipitation was recorded between 19 January 15:00 hours and 21

January 11:00 hours. The latter part of the monitoring period experienced occasional rainfall, where total precipitation ranged between 0.1mm and 1.1mm during the 21 and 22 January.

2.50 Table 13 provides the measured daily noise levels at this location.

Table 13: Daily Summarised Noise Levels at Morayston Farmhouse

Date	Day	Daytime (between 06:00 – 00:00) 18 Hour Time Period			Daytime (between 07:00 – 23:00) 16 Hour Time Period			Night-time (between 23:00 – 07:00) 8 Hour Time Period		
		$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)	$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)	$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)
19/01/16	Tues	-	-	-	-	-	-	49.0	51.1	32.2
20/01/16	Wed	54.6	55.7	45.8	54.9	56.1	46.7	49.2	49.1	33.7
21/01/16	Thurs	55.8	57.8	48.0	56.0	58.3	48.9	47.7	49.1	35.6

2.51 Although no additional noise level measurements were undertaken at this location the property was visited on several occasions, for a period of approximately 20 minutes, during the measurement period in order to subjectively characterise the noise climate. Table 14 provides a summary of the on-site observations.

Table 14: Observations Noted at Morayston Farmhouse

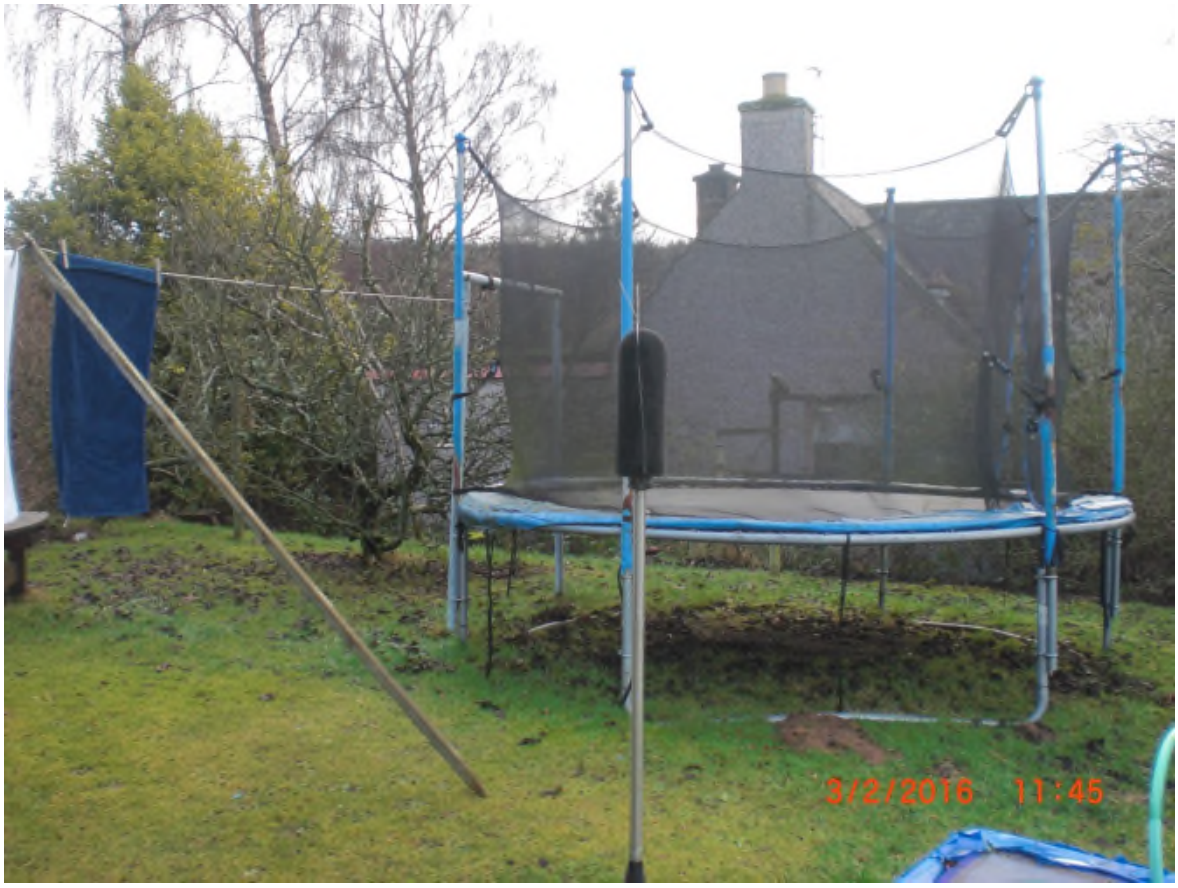
Start Date	Time of Visit (hh:mm)	Comments
19/01/16	10:30	Calm, 80% cloud cover, dry but ground slightly damp. Noise climate dominated by road traffic noise on the existing A96, bird song, agricultural vehicles at barn to west of measurement location, occasional aircraft noise and occasional vehicle movements on local road to property.
20/01/16	09:07	Calm, 100% cloud cover, very light snow until 09:30. Noise climate dominated by road traffic noise on the existing A96, faint noise from engine running in the barn to the east and faint noise from the Norbod Factory to the north east. Tractor with white noise reversing alarm at 09:10. Door of barn being shut at 09:16.
20/01/16	13:04	Calm, 70% cloud cover, dry but ground slightly damp. Noise climate dominated by road traffic noise on the existing A96, birdsong and occasional aircraft overhead. It was noted that at this time there was some activity being undertaken at the property including the raking of leaves and talking upon investigation it is work took place between 09:30 and 15:30. Aircraft overhead at 13:20. Cockerel crowing at 13:25.
20/01/16	17:38	Calm, 100% cloud cover, dry but ground slightly damp. Noise climate dominated by road traffic noise on the existing A96 and noise from the Norbod Factory. Car on local road entering property to the north at 18:17.
21/01/16	11:15	Light westerly/ south westerly breeze, 100% cloud cover, very light drizzle. Noise climate dominated by road traffic noise on the existing A96, birdsong and faint noise from the Norbod Factory.
21/01/16	15:10	Light westerly/ south westerly breeze, 95% cloud cover, dry but ground slightly damp. Noise climate dominated by road traffic noise on the existing A96, birdsong and faint noise from the Norbod Factory.
21/01/16	18:25	Calm, 70% cloud cover, dry but ground slightly damp. Noise climate dominated by road traffic noise on the existing A96 and faint noise from the Norbod Factory.

Measurement Location NV008 – 3 Kerrowaird Cottages, Dalcross, Inverness IV2 7JQ

2.52 Noise monitoring equipment was installed at 3 Kerrowaird Cottages between 2 February 2016 and 11 February 2016.

2.53 The measurement location was as shown in Photograph 8. A Cirrus CR:811B Class 1 sound level meter (s/n C19302FD) was positioned at a height of 1.5m in free-field conditions. The equipment was approximately 13m on the north-western façade of the building.

Photograph 8: Noise Monitoring Equipment at 3 Kerrowaird Cottages



2.54 The monitoring equipment was calibrated both before and after the measurement period using an acoustic calibrator, which has itself been calibrated against a reference set traceable to National and International Standards. There was no significant shift in the observed calibration level.

2.55 At this location the noise climate was dominated by road traffic noise on the existing A96 to the south, birdsong, noise from the Norbod Factory to the west, occasional aircraft noise and occasional activity at the property and surrounding properties.

2.56 Wind speeds vary throughout the measurement period. On average, wind speeds were generally below 3.0ms^{-1}, but higher wind speeds were recorded up to a speed of 4.3ms^{-1} on 2, 5 and 6 February. With the exception of the precipitation recorded on 2 February at 23.00 hours, precipitation levels did not exceed 2.0mm. No precipitation was recorded on 6 February.

2.57 Table 15 provides the measured daily noise levels at this location.

Table 15: Daily Summarised Noise Levels at 3 Kerrowaird Cottages

Date	Day	Daytime (between 06:00 – 00:00) 18 Hour Time Period			Daytime (between 07:00 – 23:00) 16 Hour Time Period			Night-time (between 23:00 – 07:00) 8 Hour Time Period		
		$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)	$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)	$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)
02/02/16	Tues	-	-	-	-	-	-	55.8	57.3	40.7
03/02/16	Wed	60.6	63.1	51.2	60.8	63.4	52.1	54.1	56.4	36.6
04/02/16	Thurs	60.2	62.8	51.8	60.5	63.1	52.4	55.5	57.6	43.6
05/02/16	Fri	61.3	63.9	52.1	61.5	64.2	52.9	55.3	58.3	40.2
06/02/16	Sat	61.7	64.6	49.5	62.0	65.0	50.5	53.9	57.5	37.9

2.58 The property was visited on several occasions, for a period of approximately 20 minutes, during the measurement period in order to subjectively characterise the noise climate. Table 16 provides a summary of the on-site observations.

Table 16: Observations Noted at 3 Kerrowaird Cottages

Start Date	Time of Visit (hh:mm)	Comments
03/02/16	11:30	Light west/north westerly breeze, 70% cloud cover, dry but ground slightly damp. Noise climate dominated by road traffic noise on the existing A96. During lulls in traffic flow the noise climate comprised of birdsong, noise from the Norbod Factory to the west and occasional aircraft. Aircraft overhead at 11:40.
03/02/16	15:18	Light north/north westerly breeze, 50% cloud cover, dry but ground slightly damp. Noise climate dominated by road traffic noise on the existing A96. During lulls in traffic flow the noise climate comprised of birdsong and noise from the Norbod Factory to the west.
03/02/16	19:32	Calm, 100% cloud cover, dry but ground slightly damp. Noise climate dominated by road traffic noise on the existing A96. During lulls in traffic flow the noise climate comprised of birdsong, noise from the Norbod Factory to the west and occasional aircraft noise. Aircraft overhead at 19:43.
04/02/16	13:45	Light westerly breeze, 100% cloud cover, dry but ground slightly damp. Noise climate dominated by road traffic noise on the existing A96. During lulls in traffic flow the noise climate comprised of birdsong, noise from the Norbod Factory to the west and occasional aircraft noise. Aircraft overhead at 13:53. Aircraft overhead at 14:00.
04/02/16	17:39	Light westerly breeze, 90% cloud cover, dry but ground slightly damp. Noise climate dominated by road traffic noise on the existing A96. During lulls in traffic flow the noise climate comprised of birdsong, noise from the Norbod Factory to the west and occasional activity at the property. Car entering driveway at 17:47.

2.59 In addition to the long term measurements and property visits a short term noise measurement was also undertaken and the results are provided in Table 17. A Rion NL32 sound level meter (s/n 00751323) was positioned at a height of 1.5m in free-field conditions adjacent to the long term monitoring equipment. The monitoring equipment was calibrated both before and after the measurement period using an acoustic calibrator, which has itself been calibrated against a reference set traceable to National and International Standards. There was no significant shift in the observed calibration level.

Table 17: Additional Attended Noise Level Measurements at 3 Kerrowaird Cottages

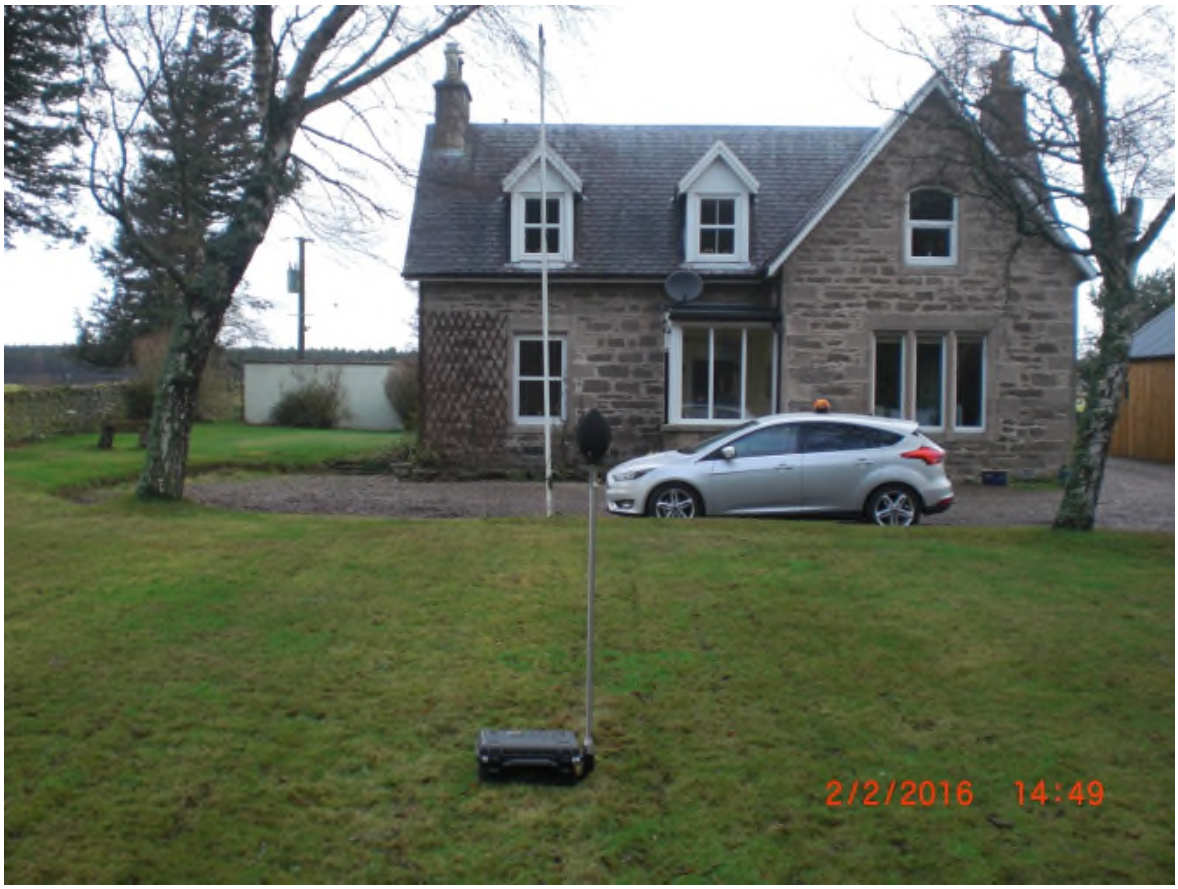
Start Date	Start Time (hh:mm)	Duration (hh:mm)	Noise Levels (dB)			Comments
			$L_{Aeq,T}$	$L_{A10,T}$	$L_{A90,T}$	
10/02/16	17:44	00:10	61.8	64.0	58.0	Light westerly breeze, 50% cloud cover, dry but ground slightly damp. Noise climate dominated by road traffic noise on the existing A96. During lulls in traffic flow the noise climate comprised of birdsong, noise from the Norbod factory to the west and occasional aircraft. Aircraft overhead at 17:52.
10/02/16	17:54	00:10	60.8	63.1	55.3	

Measurement Location NV009 – Woodend House, Dalcross, IV2 7JJ

2.60 Noise monitoring equipment was installed at Woodend House between 2 February 2016 and 11 February 2016.

2.61 The measurement location was as shown in Photograph 9. A Rion NL-52 Class 1 sound level meter (s/n 00410083) was positioned at a height of 1.5m in free-field conditions. The equipment was approximately 16m on the south-eastern façade of the building.

Photograph 9: Noise Monitoring Equipment at Woodend House



2.62 The monitoring equipment was calibrated both before and after the measurement period using an acoustic calibrator, which has itself been calibrated against a reference set traceable to National and International Standards. There was no significant shift in the observed calibration level.

2.63 At this location the noise climate was dominated by distant road traffic noise from the A96 to the south, birdsong, noise from the Norbod Factory to the west, occasional activity at the property, occasional aircraft noise and occasional noise from livestock in surrounding fields. The Aberdeen to Inverness Railway Line is located to the north of the property at the end of the front garden and train pass bys were the dominant noise source when they occurred.

2.64 At this location a Lufft WS600 weather station was installed and set up to capture meteorological readings, including wind speed, direction and precipitation every 5 minutes.

2.65 Wind speeds vary throughout the measurement period. On average, wind speeds were generally below 3.0ms^{-1}, but higher wind speeds were recorded up to a speed of 4.3ms^{-1} on 2, 4, 5 and 7 February. With the exception of the precipitation recorded on 2 February at 23.00 hours and 9th February at 17.00 hours, precipitation levels did not exceed 2.0mm. No precipitation was recorded on 6, 8 and 10 February.

2.66 Table 18 provides the measured daily noise levels at this location.

Table 18: Daily Summarised Noise Levels at Woodend House

Date	Day	Daytime (between 06:00 – 00:00) 18 Hour Time Period			Daytime (between 07:00 – 23:00) 16 Hour Time Period			Night-time (between 23:00 – 07:00) 8 Hour Time Period		
		$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)	$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)	$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)
02/02/16	Tues	-	-	-	-	-	-	48.0	41.2	33.8
03/02/16	Wed	53.1	47.2	39.8	53.1	47.7	40.5	48.8	40.6	32.4
04/02/16	Thurs	53.8	48.5	42.1	53.7	48.6	42.4	51.5	52.0	41.5
05/02/16	Fri	54.1	48.7	42.2	54.1	49.1	42.5	49.3	43.6	35.7
06/02/16	Sat	52.9	46.6	38.9	52.7	46.6	39.2	46.0	42.7	34.8
07/02/16	Sun	53.1	49.0	41.7	53.1	49.6	42.3	49.5	41.8	34.2
08/02/16	Mon	53.2	46.1	39.8	53.2	46.4	40.2	48.9	41.4	33.6
09/02/16	Tues	53.9	49.0	40.4	53.9	49.7	40.9	48.5	41.2	33.8
10/02/16	Wed	54.0	47.4	40.9	54.1	47.8	41.3	45.6	42.9	36.7

2.67 The property was visited on several occasions, for a period of approximately 20 minutes, during the measurement period in order to subjectively characterise the noise climate. Table 19 provides a summary of the on-site observations.

Table 19: Observations Noted at The Woodend House

Start Date	Time of Visit (hh:mm)	Comments
03/02/16	11:30	Westerly wind peaking at 3.5ms^{-1}, averaging at 2.0ms^{-1}, 70% cloud cover, dry but ground slightly damp. Noise climate dominated by distant road traffic noise on the existing A96, birdsong, noise from the Norbod Factory to the west, occasional aircraft noise, occasional train pass bys and wind in the surrounding vegetation. Train pass by at 11:03. Resident talking at house 11:07. Wheelie bins being taken up gravel path at 11:09 and 11:11.
03/02/16	14:51	Westerly wind peaking a 4.0ms^{-1} averaging at 2.0ms^{-1}, 90% cloud cover, dry but ground slightly damp. Noise climate dominated by distant road traffic noise on the existing A96, birdsong, noise from the Norbod Factory, occasional aircraft noise and wind in the surrounding vegetation. Aircraft overhead at 14:56.
03/02/16	19:03	Calm, 100% cloud cover, dry but ground slightly damp. Noise climate dominated by distant road traffic noise on the existing A96, noise from the Norbod Factory and occasional train pass bys. Train pass by at 19:14.
04/02/16	09:55	Light westerly breeze, 100% cloud cover, light rainfall. Noise climate dominated by distant road traffic noise on the existing A96, birdsong, noise from the Norbod Factory, occasional aircraft noise and activity on the owner of the property. Talking next to property between 10:00 and 10:05. Resident chopping wood between 10:08 and 10:12. Aircraft overhead at 10:08. Post van and taxi idling in driveway to south of measurement position.

Start Date	Time of Visit (hh:mm)	Comments
04/02/16	14:06	Light westerly breeze, 100% cloud cover, light rainfall. Noise climate dominated by distant road traffic noise on the existing A96, birdsong, noise from the Norbod Factory, occasional aircraft noise, occasional train pass bys and occasional noise from livestock in field to northwest. Helicopter overhead 14:05. Agricultural vehicle on road to west at 14:17 and 14:23. Aircraft overhead at 14:24.
04/02/16	18:02	Westerly wind peaking at 2.0ms^{-1} and averaging at 1.0ms^{-1} 90% cloud cover, dry but ground slightly damp. Noise climate dominated by distant road traffic noise on the existing A96, noise from the Norbod Factory, occasional aircraft noise and occasional train pass bys. Aircraft overhead at 18:07. Level crossing alarm and then train passing by to south at 18:19. Aircraft overhead at 18:20.
05/02/16	11:00	Westerly wind peaking at 2.8ms^{-1} and averaging at 1.5ms^{-1}, 100% cloud cover, light drops of rain. Noise climate dominated by distant road traffic noise on the existing A96, birdsong, noise from the Norbod Factory, occasional aircraft noise, occasional train pass bys and occasional noise from livestock in field to northwest.

2.68 In addition to the long term measurements and property visits a short term noise measurement was also undertaken and the results are provided in Table 20. A Rion NL32 sound level meter (s/n 00751323) was positioned at a height of 1.5m in free-field conditions adjacent to the long term monitoring equipment. The monitoring equipment was calibrated both before and after the measurement period using an acoustic calibrator, which has itself been calibrated against a reference set traceable to National and International Standards. There was no significant shift in the observed calibration level.

Table 20: Additional Attended Noise Level Measurements at Woodend House

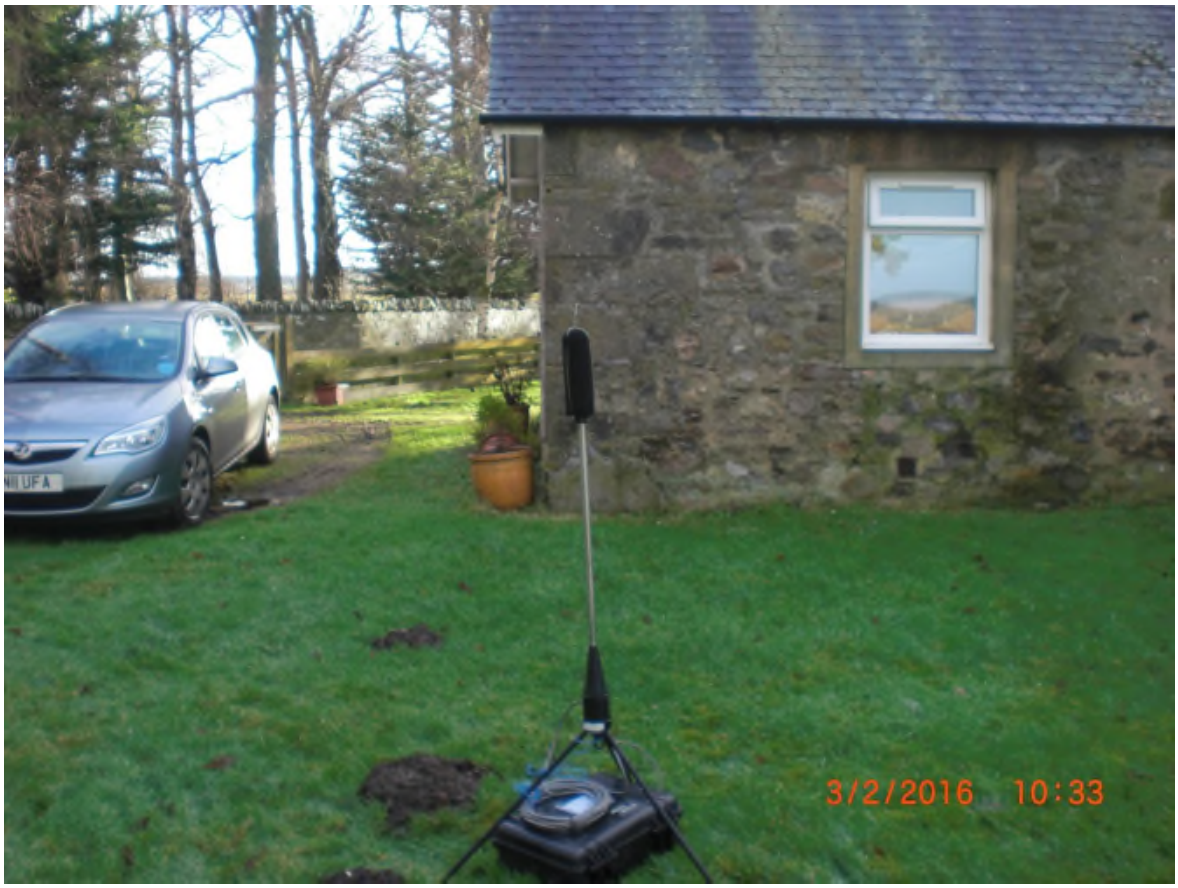
Start Date	Start Time (hh:mm)	Duration (hh:mm)	Noise Levels (dB)			Comments
			$L_{Aeq,T}$	$L_{A10,T}$	$L_{A90,T}$	
10/02/16	18:16	00:10	57.9	49.6	42.3	Light westerly breeze, 25% cloud cover, dry. Noise climate dominated by road traffic noise on the existing A96. During lulls in traffic flow the noise climate comprised of birdsong, noise from the Norbod factory to the west and occasional aircraft. Train passing by at 18:20.
10/02/16	18:26	00:10	44.9	46.9	42.4	

Measurement Location NV010 – 1 Culblair Farm Cottages, Dalcross, Inverness, IV2 7JJ

2.69 Noise monitoring equipment was installed at 1 Culblair Farm Cottages between 2 February 2016 and 11 February 2016.

2.70 The measurement location was as shown in Photograph 10. A Cirrus CR:811B Class 1 sound level meter (s/n C17206FD) was positioned at a height of 1.5m in free-field conditions. The equipment was approximately 6.0m on the north-western façade of the building.

Photograph 10: Noise Monitoring Equipment at 1 Culblair Farm Cottages



2.71 The monitoring equipment was calibrated both before and after the measurement period using an acoustic calibrator, which has itself been calibrated against a reference set traceable to National and International Standards. There was no significant shift in the observed calibration level.

2.72 At this location the noise climate was dominated by activity at Inverness Airport to the north, distant road traffic noise on the existing A96 to the south, birdsong, occasional vehicle pass bys on the local road, occasional train pass bys on the Aberdeen to Inverness Railway Line to the south, occasional activity at the property and surrounding properties and wind in vegetation.

2.73 Wind speeds vary throughout the measurement period. On average, wind speeds were generally below 3.0ms^{-1}, but higher wind speeds were recorded up to a speed of 4.3ms^{-1} on 2, 4, 5 and 7 February. With the exception of the precipitation recorded on 2 February at 23.00 hours and 9 February at 17.00 hours, precipitation levels did not exceed 2.0mm. No precipitation was recorded on 6, 8 and 10 February.

2.74 Table 21 provides the measured daily noise levels at this location.

Table 21: Daily Summarised Noise Levels at 1 Culblair Farm Cottages

Date	Day	Daytime (between 06:00 – 00:00) 18 Hour Time Period			Daytime (between 07:00 – 23:00) 16 Hour Time Period			Night-time (between 23:00 – 07:00) 8 Hour Time Period		
		$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)	$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)	$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)
02/02/16	Tues	-	-	-	-	-	-	46.1	45.0	36.3
03/02/16	Wed	53.1	53.1	41.1	53.4	54.0	41.7	44.8	42.5	31.5
04/02/16	Thurs	52.3	53.2	42.9	52.4	53.3	43.1	53.4	56.1	42.2
05/02/16	Fri	52.0	52.7	43.3	52.1	53.1	43.7	46.4	44.5	33.4
06/02/16	Sat	49.7	51.4	40.5	49.5	51.5	40.9	47.1	47.3	33.7
07/02/16	Sun	52.1	53.4	41.7	52.1	53.3	42.3	46.3	44.1	33.0
08/02/16	Mon	53.1	53.9	41.0	53.3	54.7	41.4	46.9	43.5	33.1
10/02/16	Wed	-	-	-	-	-	-	45.5	44.8	37.6

2.75 The property was visited on several occasions, for a period of approximately 20 minutes, during the measurement period in order to subjectively characterise the noise climate. Table 22 provides a summary of the on-site observations.

Table 22: Observations Noted at 1 Culblair Farm Cottages

Start Date	Time of Visit (hh:mm)	Comments
03/02/16	10:35	Westerly/north westerly wind peaking at 4.0ms^{-1}, averaging at 1.0ms^{-1}, 60% cloud cover, dry but ground slightly damp. Noise climate dominated by distant road traffic noise on the existing A96, birdsong, aircraft at Inverness Airport, occasional vehicle pass by on local road and wind in vegetation. Aircraft overhead at 10:37. Car passing on local road to east of measurement location and idling outside property at 10:40. Helicopter overhead 10:48.
03/02/16	14:03	Westerly/north westerly wind peaking at 2.5ms^{-1}, averaging at 1.0ms^{-1}, 80% cloud cover, light rain. Noise climate dominated by distant road traffic noise on the existing A96, birdsong and aircraft at Inverness Airport.
03/02/16	18:40	Light westerly/north westerly breeze, 100% cloud cover, dry but ground slightly damp. Noise dominated by activity at Inverness Airport and aircraft noise. Aircraft taking off from Inverness Airport at 18:50.
04/02/16	10:25	Westerly/north westerly wind peaking at 1.6ms^{-1}, averaging at 0.7ms^{-1}, 100% cloud cover, very light drizzle. Noise climate dominated by distant road traffic noise on the existing A96, birdsong and aircraft at Inverness Airport.
04/02/16	14:33	Calm, 100% cloud cover, light rain. Noise climate dominated by distant road traffic noise on the existing A96, birdsong, aircraft at Inverness Airport and train pass bys. Train pass by to north at 14:34. Aircraft Engine at Inverness Airport at 14:40. Plane taking off at 14:45.
04/02/16	18:40	Light westerly breeze, 100% cloud cover, dry but ground damp. Noise climate dominated by distant road traffic noise on the existing A96 and aircraft noise at Inverness Airport. Aircraft engine at Inverness Airport at 18:45. Car passing on local road to east of measurement position at 18:46. Aircraft overhead at 18:50.
05/02/16	10:30	Westerly/north westerly wind peaking at 2.5ms^{-1}, averaging at 1.2ms^{-1}, 100% cloud cover, dry but ground slightly damp. Noise climate dominated by distant road traffic noise on the existing A96, birdsong and aircraft at Inverness Airport.

2.76 In addition to the long term measurements and property visits a short term noise measurement was also undertaken and the results are provided in Table 23. A Rion NL32 sound level meter (s/n 00751323) was positioned at a height of 1.5m in free-field conditions adjacent to the long term monitoring equipment. The monitoring equipment was calibrated both before and after the measurement period using an acoustic calibrator, which has itself been calibrated against a

reference set traceable to National and International Standards. There was no significant shift in the observed calibration level.

Table 23: Additional Attended Noise Level Measurements at 1 Culblair Farm Cottages

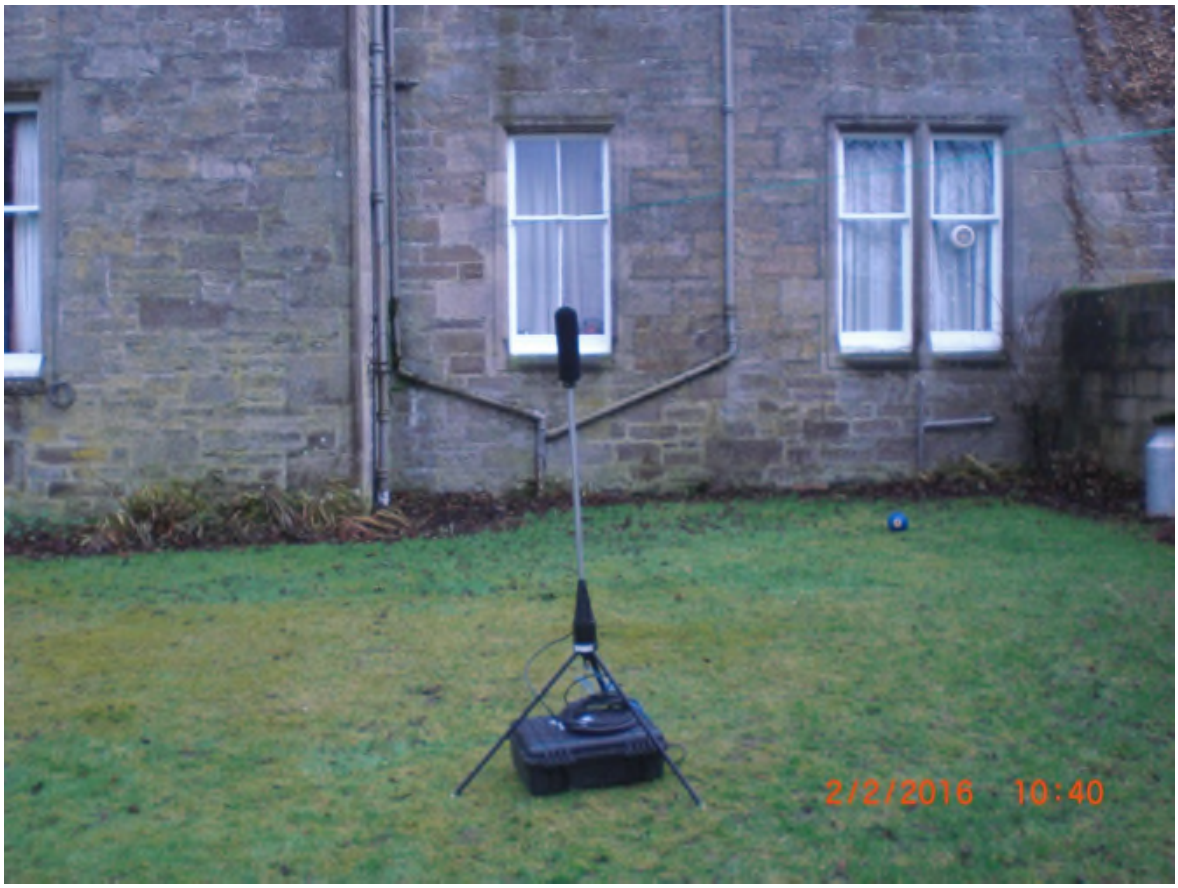
Start Date	Start Time (hh:mm)	Duration (hh:mm)	Noise Levels (dB)			Comments
			$L_{Aeq,T}$	$L_{A10,T}$	$L_{A90,T}$	
10/02/16	19:36	00:10	43.1	45.2	39.7	Light westerly breeze, 25% cloud cover, dry. Noise climate dominated by road traffic noise on the existing A96. And aircraft overhead. Aircraft overhead at 19:50.
10/02/16	19:46	00:10	51.3	56.0	40.4	

Measurement Location NV011 – Milton of Braichlaich Farm, Inverness, IV2 7QT

2.77 Noise monitoring equipment was installed at Milton of Braichlaich Farm between 2 February 2016 and 11 February 2016.

2.78 The measurement location was as shown in Photograph 11. A Cirrus CR:811B Class 1 sound level meter (s/n C19301FD) was positioned at a height of 1.5m in free-field conditions. The equipment was approximately 9.0m on the north-eastern façade of the building.

Photograph 11: Noise Monitoring Equipment at Milton of Braichlaich Farm



2.79 The monitoring equipment was calibrated both before and after the measurement period using an acoustic calibrator, which has itself been calibrated against a reference set traceable to National and International Standards. There was no significant shift in the observed calibration level.

2.80 At this location the noise climate was dominated by activity at Inverness Airport to the north, distant road traffic noise on the existing A96 to the south, birdsong, occasional vehicle pass bys on local roads, occasional activity at the property and surrounding farm buildings and wind in vegetation. It

was noted that on Wednesday 2 February 2016 a tree was being felled at the other side of the property between 10:00 until 15:45 which occasionally increased noise levels when power tools were operating.

2.81 Wind speeds vary throughout the measurement period. On average, wind speeds were generally below 3.0ms^{-1}, but higher wind speeds were recorded up to a speed of 4.3ms^{-1} on 2, 5 and 6 February. With the exception of the precipitation recorded on 2 February at 23.00 hours, precipitation levels did not exceed 2.0mm. No precipitation was recorded on 6 February.

2.82 Table 24 provides the measured daily noise levels at this location.

Table 24: Daily Summarised Noise Levels at Milton of Braichlaich Farm

Date	Day	Daytime (between 06:00 – 00:00) 18 Hour Time Period			Daytime (between 07:00 – 23:00) 16 Hour Time Period			Night-time (between 23:00 – 07:00) 8 Hour Time Period		
		$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)	$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)	$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)
02/02/16	Tues	-	-	-	-	-	-	41.8	40.7	35.4
03/02/16	Wed	58.7	53.8	39.0	59.2	55.1	39.5	40.0	40.9	33.9
04/02/16	Thurs	51.9	52.5	40.0	51.9	52.7	40.4	49.4	50.6	37.9
05/02/16	Fri	50.7	51.4	40.8	51.1	52.4	41.4	40.7	40.5	33.0
06/02/16	Sat	51.4	51.6	41.5	51.8	52.6	42.4	41.0	41.9	33.0

2.83 The property was visited on several occasions, for a period of approximately 20 minutes, during the measurement period in order to subjectively characterise the noise climate. Table 25 provides a summary of the on-site observations.

Table 25: Observations Noted at Milton of Braichlaich Farm

Start Date	Time of Visit (hh:mm)	Comments
03/02/16	10:08	Westerly/north westerly wind peaking at 3.0ms^{-1}, averaging at 1.5ms^{-1}, 20% cloud cover, dry but ground slightly damp. Noise climate dominated by activity at Inverness Airport to the north. Distant road traffic noise on the existing A96 was also just audible and was more noticeable when there was less activity at Inverness Airport. Noise climate was also comprised of birdsong, occasional activity at the farm buildings, cattle in nearby shed, wind in vegetation and dogs barking intermittently. It was also observed that a tree was being felled in at the other side of the house although this activity was less apparent due to the shielding on the property. Helicopter landing at Inverness Airport at 10:10. Car engine starting up at 10:11. Aircraft noise at Inverness Airport at 10:23.
03/02/16	13:49	Westerly/north westerly wind peaking at 3.5ms^{-1}, averaging at 1.2ms^{-1}, 80% cloud cover, dry but ground slightly damp. Noise climate was dominated by activity at Inverness Airport and from tree felling occurring at the opposite side of the property. Distant road traffic noise on the existing A96 and birdsong was more apparent when activity at Inverness Airport stopped. People talking at other part of the garden at 13:51. Power tools operating at opposite side of property at 13:52. Aircraft taking off at 13:54.
03/02/16	15:45	Light westerly/ north westerly breeze, 70% cloud cover, dry but ground slightly damp. Noise climate dominated by distant road traffic noise on the existing A96, intermittent activity at Inverness Airport and birdsong. Activity from tree felling observed earlier had stopped.
03/02/16	18:15	Calm, 100% cloud cover, dry but ground slightly damp. Noise climate dominated by distant road traffic noise on the existing A96, intermittent activity at Inverness Airport, occasional noise from cattle in nearby farm building, dog intermittently barking and occasional noise from train pass bys on the Inverness to Aberdeen Railway line to the North. Train pass by to the north at 18:20. Aircraft engine at Inverness Airport at 18:26.
04/02/16	10:50	Light breeze, 100% cloud cover, dry but ground slightly damp. Noise climate was dominated by distant road traffic on the existing A96, intermittent activity at Inverness Airport, birdsong and occasional noise from cattle in nearby farm building. Activity from aircraft engine at Inverness Airport at 10:59 and 11:03. Aircraft taking off at 11:05.

Start Date	Time of Visit (hh:mm)	Comments
04/02/16	15:00	Calm, 100% cloud cover, light rainfall. Noise climate dominated by distant road traffic noise on the existing A96, birdsong, intermittent activity at inverness Airport, birdsong and occasional noise from cattle in nearby farm building. Aircraft landing at Inverness Airport at 15:09. Aircraft landing at Inverness Airport at 15:13. Phone ringing at house at 15:18.
04/02/16	18:55	Light westerly breeze, 90% cloud cover, dry but ground slightly damp. Noise climate dominated by distant road traffic noise on the existing A96, dog intermittently barking, occasional noise from cattle in nearby farm building and occasional vehicle pass by on local road. Car on local road at 19:13.

2.84 In addition to the long term measurements and property visits a short term noise measurement was also undertaken and the results are provided in Table 26. A Rion NL32 sound level meter (s/n 00751323) was positioned at a height of 1.5m in free-field conditions adjacent to the long term monitoring equipment. The monitoring equipment was calibrated both before and after the measurement period using an acoustic calibrator, which has itself been calibrated against a reference set traceable to National and International Standards. There was no significant shift in the observed calibration level.

Table 26: Additional Attended Noise Level Measurements at Milton of Braichlaich Farm

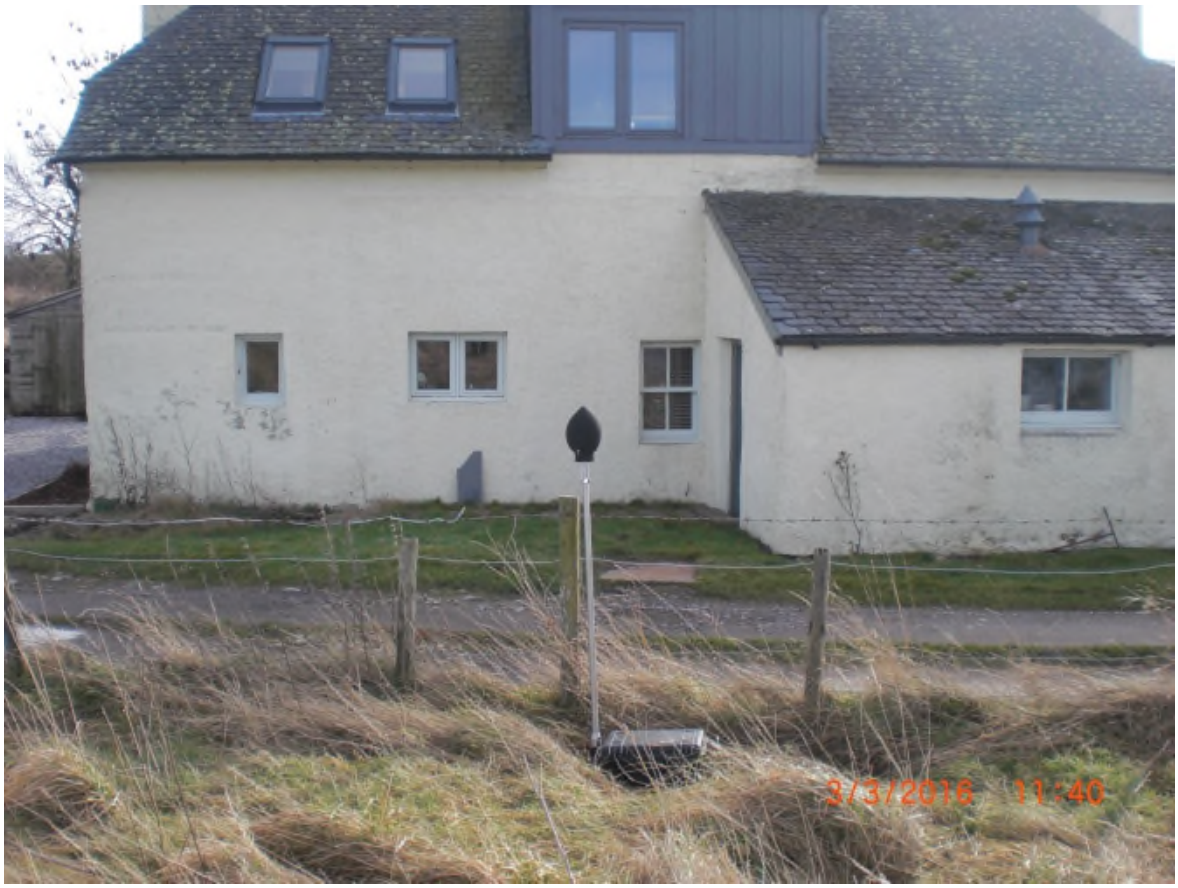
Start Date	Start Time (hh:mm)	Duration (hh:mm)	Noise Levels (dB)			Comments
			$L_{Aeq,T}$	$L_{A10,T}$	$L_{A90,T}$	
10/02/16	11:56	00:10	46.5	49.5	39.9	Light westerly breeze, 25% cloud cover, dry. Noise climate dominated by road traffic noise on the existing A96. And aircraft overhead. Aircraft overhead at 19:50.
10/02/16	12:06	00:10	48.6	52.1	41.2	
10/02/16	12:16	00:10	49.6	52.8	44.9	

Measurement Location NV012 – Brackley Farmhouse, Gollanfield, Inverness, IV2 7QT

2.85 Noise monitoring equipment was installed at Brackley Farmhouse between 2 March 2016 and 10 March 2016.

2.86 The measurement location was as shown in Photograph 12. A Rion NL-52 Class 1 sound level meter (s/n 00410083) was positioned at a height of 1.5m in free-field conditions. The equipment was approximately 6.0m on the north-western façade of the building.

Photograph 12: Noise Monitoring Equipment at Brackley Farmhouse



2.87 The monitoring equipment was calibrated both before and after the measurement period using an acoustic calibrator, which has itself been calibrated against a reference set traceable to National and International Standards. There was no significant shift in the observed calibration level.

2.88 At this location the noise climate was dominated by road traffic noise from the existing A96 to the north, occasional road traffic noise on the B9006 to the east, occasional aircraft noise, birdsong and occasional activity at the property and surrounding properties.

2.89 On average, wind speed measurements ranged between 0.5ms^{-1} and 4.0ms^{-1} throughout the measurement period, but higher wind speeds were recorded at 17:00 hours (2 March) and 12:00 hours (8 March), where levels up to 4.7ms^{-1} were recorded. In general, the total hourly precipitation did not exceed 0.5mm, but higher levels of precipitation (up to 4.7mm) were recorded on 4th March (09:00 – 12:00 hours). No precipitation was recorded during the 2, 6, 7 and 10 March.

2.90 Table 27 provides the measured daily noise levels at this location.

Table 27: Daily Summarised Noise Levels at Brackley Farmhouse

Date	Day	Daytime (between 06:00 – 00:00) 18 Hour Time Period			Daytime (between 07:00 – 23:00) 16 Hour Time Period			Night-time (between 23:00 – 07:00) 8 Hour Time Period		
		$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)	$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)	$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)
02/03/16	Wed	-	-	-	-	-	-	52.6	54.6	31.7
03/03/16	Thurs	53.9	55.2	42.7	53.7	55.2	43.5	45.2	47.5	26.6
04/03/16	Fri	56.9	59.5	47.1	57.0	59.7	48.1	52.6	56.0	32.4
05/03/16	Sat	57.2	59.9	45.8	57.5	60.3	47.2	47.4	51.1	26.5
06/03/16	Sun	53.8	56.4	41.6	54.2	56.9	43.2	49.9	50.3	30.4
07/03/16	Mon	53.6	55.6	43.2	53.6	55.6	44.0	49.1	51.2	31.4
08/03/16	Tues	55.1	57.5	45.5	55.4	58.1	46.6	47.0	48.5	29.1
09/03/16	Wed	53.9	55.8	43.4	54.1	56.0	44.3	51.8	53.7	29.2

2.91 In addition to long term measurements a series of short term attended measurements were also undertaken and the results are provided in Table 28. A Cirrus Optimus Green CR:171C1 sound level meter (s/n G061729) was positioned at a height of 1.5m in free-field conditions adjacent to the long term monitoring equipment. The monitoring equipment was calibrated both before and after the measurement period using an acoustic calibrator, which has itself been calibrated against a reference set traceable to National and International Standards. There was no significant shift in the observed calibration level.

Table 28: Additional Attended Noise Level Measurements at Brackley Farmhouse

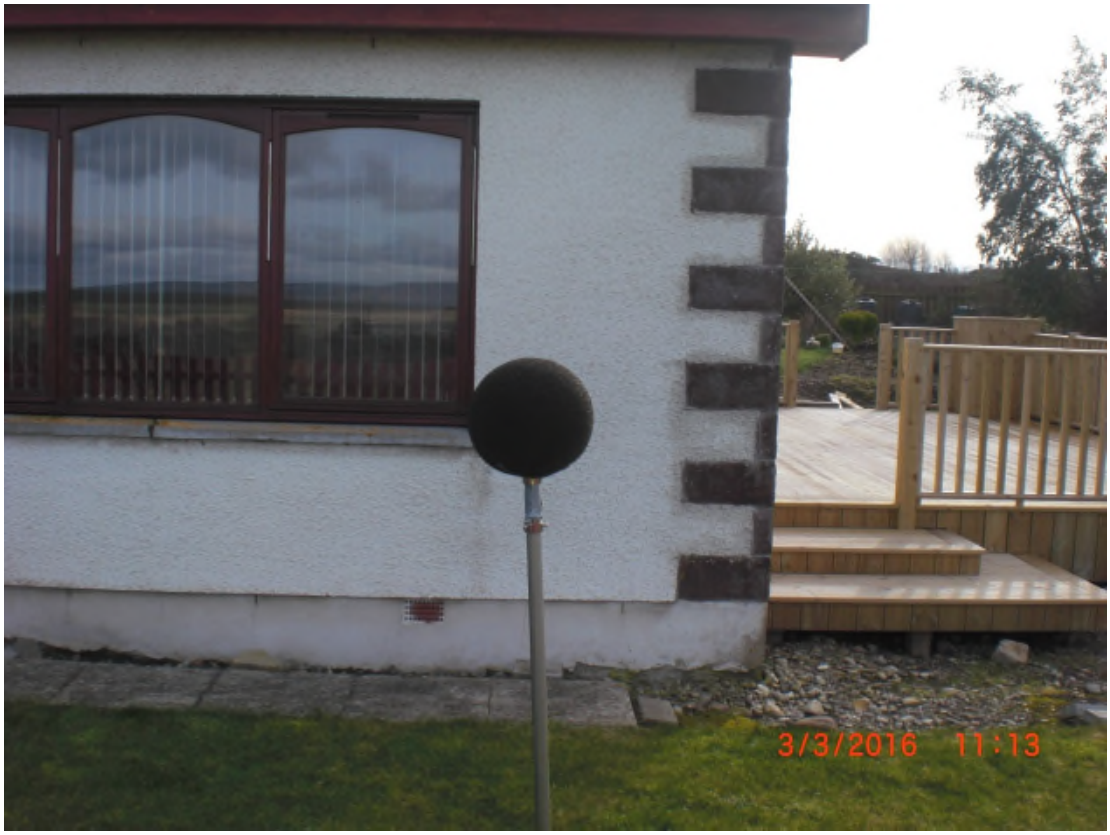
Start Date	Start Time (hh:mm)	Duration (hh:mm)	Noise Levels (dB)			Comments
			$L_{Aeq,T}$	$L_{A10,T}$	$L_{A90,T}$	
03/03/16	11:23	00:15	52.3	55.4	45.2	Westerly wind peaking at 1.8ms^{-1} averaging at 0.8ms^{-1}, 60% cloud cover, dry. Noise climate dominated by road traffic noise on the existing A96, occasional road traffic noise on the B9006 and occasional aircraft noise. Tractor on B9006 at 11:26. Tractor and HGV on B9006 at 11:30. Tractor on B9006 at 11:32. Tractor on B9006 at 11:36.
03/03/16	15:03	00:15	51.5	54.0	46.5	Light westerly breeze, 60% cloud cover, dry. Noise climate dominated by road traffic noise on the existing A96, road traffic noise on the B9006, birdsong, occasional activity at property and surrounding properties and occasional aircraft noise. Car driving to property at 15:07. Aircraft overhead at 15:16.
09/03/16	18:25	00:15	57.3	59.6	49.7	Calm, 30% cloud cover, dry. Noise climate dominated by road traffic noise on the existing A96, road traffic noise on the B9006, birdsong and occasional aircraft noise. Aircraft overhead at 18:32.

Measurement Location NV013 – New House, Easter Glackton Road, Gollanfield, Inverness, IV2 7UR

2.92 Noise monitoring equipment was installed at New House, Easter Glackton Road between 2 March 2016 and 10 March 2016.

2.93 The measurement location was as shown in Photograph 13. A Rion NL-32 Class 1 sound level meter (s/n 00482602) was positioned at a height of 1.5m in free-field conditions. The equipment was approximately 3.7m on the north-western façade of the building.

Photograph 13: Noise Monitoring Equipment at New House, Easter Glackton Road



2.94 The monitoring equipment was calibrated both before and after the measurement period using an acoustic calibrator, which has itself been calibrated against a reference set traceable to National and International Standards. There was no significant shift in the observed calibration level.

2.95 At this location the noise climate was dominated by road traffic noise on the existing A96 to the north, birdsong, occasional aircraft noise, occasional train pass bys on the Aberdeen to Inverness Railway Line to the north of the measurement location, occasional vehicle pass bys on the local road to the north of the measurement location and occasional activity at property and surrounding properties.

2.96 At this location a Lufft WS600 weather station was installed and set up to capture meteorological readings, including wind speed, direction and precipitation every 5 minutes.

2.97 On average, wind speed measurements ranged between 0.5ms^{-1} and 4.0ms^{-1} throughout the measurement period. But higher wind speeds occurred at 17:00 hours (2 March) and 12:00 hours (8 March), where levels up to 5.0ms^{-1} were recorded. In general, the total hourly precipitation did not exceed 0.5mm. Higher levels of precipitation (up to 4.7mm) were recorded on 4 March (09:00 – 12:00 hours). No precipitation was recorded during the 2, 6, 7 and 10 March.

2.98 Table 29 provides the measured daily noise levels at this location.

Table 29: Daily Summarised Noise Levels at New House, Easter Glackton Road

Date	Day	Daytime (between 06:00 – 00:00) 18 Hour Time Period			Daytime (between 07:00 – 23:00) 16 Hour Time Period			Night-time (between 23:00 – 07:00) 8 Hour Time Period		
		$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)	$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)	$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)
02/03/16	Wed	-	-	-	-	-	-	48.0	49.8	33.1
03/03/16	Thurs	53.0	53.0	41.6	53.3	53.3	42.3	47.3	47.2	29.3
04/03/16	Fri	56.3	56.8	46.9	56.5	56.9	47.6	49.8	51.5	34.6
05/03/16	Sat	55.1	55.2	44.4	55.3	55.6	45.4	44.3	45.8	29.3
06/03/16	Sun	51.9	51.8	41.0	52.3	52.3	42.0	45.0	45.7	32.6
07/03/16	Mon	52.3	51.7	41.3	52.7	52.0	42.1	45.7	46.7	30.5
08/03/16	Tues	52.4	53.0	43.0	52.6	53.4	44.0	45.1	46.7	26.7
09/03/16	Wed	52.9	53.1	41.8	53.2	53.4	42.7	46.0	47.7	27.8

2.99 In addition to long term measurements a series of short term attended measurements were also undertaken and the results are provided in Table 30. A Cirrus Optimus Green CR:171C1 sound level meter (s/n G061729) was positioned at a height of 1.5m in free-field conditions adjacent to the long term monitoring equipment. The monitoring equipment was calibrated both before and after the measurement period using an acoustic calibrator, which has itself been calibrated against a reference set traceable to National and International Standards. There was no significant shift in the observed calibration level.

Table 30: Additional Attended Noise Level Measurements at New House, Easter Glackton Road

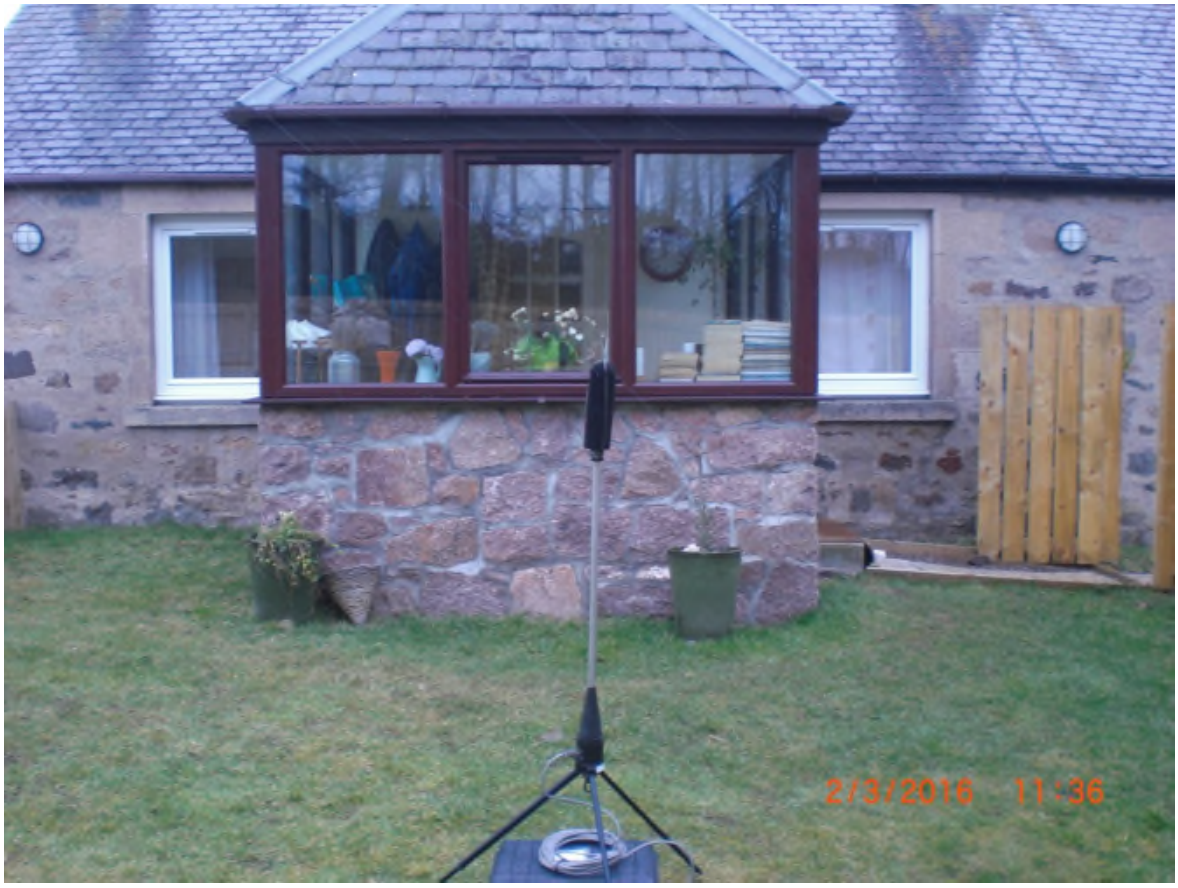
Start Date	Start Time (hh:mm)	Duration (hh:mm)	Noise Levels (dB)			Comments
			$L_{Aeq,T}$	$L_{A10,T}$	$L_{A90,T}$	
03/03/16	10:56	00:15	54.7	54.6	42.6	Westerly wind peaking at 1.3ms^{-1} averaging at 0.6ms^{-1}, 50% cloud cover, dry but ground slightly damp. Noise climate dominated by road traffic noise on the existing A96, birdsong, occasional aircraft noise, occasional train pass bys and occasional vehicle pass bys on the local road. Aircraft overhead at 11:04. Car on local road at 11:04. Train pass by at 11:06. Helicopter overhead at 11:06. Car on local road at 11:08. Car on local road at 11:09. HGV on local road at 11:11.
03/03/16	14:39	00:15	46.1	49.5	38.0	Very light westerly breeze, 60% cloud cover, dry. Noise climate dominated by road traffic noise on the existing A96 and birdsong.
03/03/16	18:24	00:15	51.4	51.8	42.8	Light breeze, 90% cloud cover, dry. Noise dominated by road traffic noise on the existing A96, occasional aircraft noise and occasional vehicle pass bys on the local road. Aircraft overhead at 18:25. Car on local road at 18:25. Car on local road at 18:26. Car on local road at 18:31. Car on local road at 18:33.
09/03/16	18:49	00:15	52.5	54.4	45.2	Calm, 30% cloud cover, dry. Noise climate dominated by road traffic on A96 and occasional vehicle pass by on local road. Car on local road at 19:02.

Measurement Location NV014 – Blackcastle Cottage, Inverness Road, Nairn, IV2 7QP

2.100 Noise monitoring equipment was installed at Blackcastle Cottage between 2 March 2016 and 10 March 2016.

2.101 The measurement location was as shown in Photograph 14. A Cirrus CR:811B Class 1 sound level meter (s/n C19301FD) was positioned at a height of 1.5m in free-field conditions. The equipment was approximately 3.5m on the south-eastern façade of the building.

Photograph 14: Noise Monitoring Equipment at Blackcastle Cottage



2.102 The monitoring equipment was calibrated both before and after the measurement period using an acoustic calibrator, which has itself been calibrated against a reference set traceable to National and International Standards. There was no significant shift in the observed calibration level.

2.103 At this location the noise climate was dominated by road traffic noise on the existing A96 located to the north of the property, which was partially shielded by the property itself. The noise climate also consisted of birdsong, occasional activity at the property, occasional noise from livestock in surrounding fields and occasional vehicle pass bys on the local road to the east of the measurement location. Although not observed during site visits to this location, aircraft overhead within the area were noted at other locations and would be expected to also influence the noise climate at this property.

2.104 On average, wind speed measurements ranged between 0.5ms^{-1} and 4.0ms^{-1} throughout the measurement period but wind speeds up to 5.0ms^{-1} were recorded at 17:00 hours (2 March) and 12:00 hours (8 March). The highest level of total precipitation was recorded on 4 March (09:00 – 12:00 hours), but in general, the total hourly precipitation did not exceed 0.5mm. No precipitation was recorded during the 2, 6 and 7 March.

2.105 Table 31 provides the measured daily noise levels at this location.

Table 31: Daily Summarised Noise Levels at Blackcastle Cottage

Date	Day	Daytime (between 06:00 – 00:00) 18 Hour Time Period			Daytime (between 07:00 – 23:00) 16 Hour Time Period			Night-time (between 23:00 – 07:00) 8 Hour Time Period		
		$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)	$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)	$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)
02/03/16	Wed	-	-	-	-	-	-	49.5	50.7	33.0
03/03/16	Thurs	52.7	52.0	39.7	52.7	52.2	40.2	47.9	45.6	28.8
04/03/16	Fri	52.5	54.0	42.3	52.3	53.9	43.2	48.7	50.3	36.5
05/03/16	Sat	52.1	54.5	40.2	52.1	54.7	40.9	47.5	49.4	29.0
06/13/16	Sun	51.1	52.9	37.1	51.2	53.1	38.0	48.3	48.9	30.8
07/13/16	Mon	53.0	55.1	42.0	53.2	55.4	42.9	47.3	48.9	30.5
08/03/16	Tues	55.5	57.3	44.9	55.9	58.2	46.2	47.0	45.9	27.5

2.106 In addition to long term measurements a series of short term attended measurements were also undertaken and the results are provided in Table 32. A Cirrus Optimus Green CR:171C1 sound level meter (s/n G061729) was positioned at a height of 1.5m in free-field conditions adjacent to the long term monitoring equipment. The monitoring equipment was calibrated both before and after the measurement period using an acoustic calibrator, which has itself been calibrated against a reference set traceable to National and International Standards. There was no significant shift in the observed calibration level.

Table 32: Additional Attended Noise Level Measurements at Blackcastle Cottage

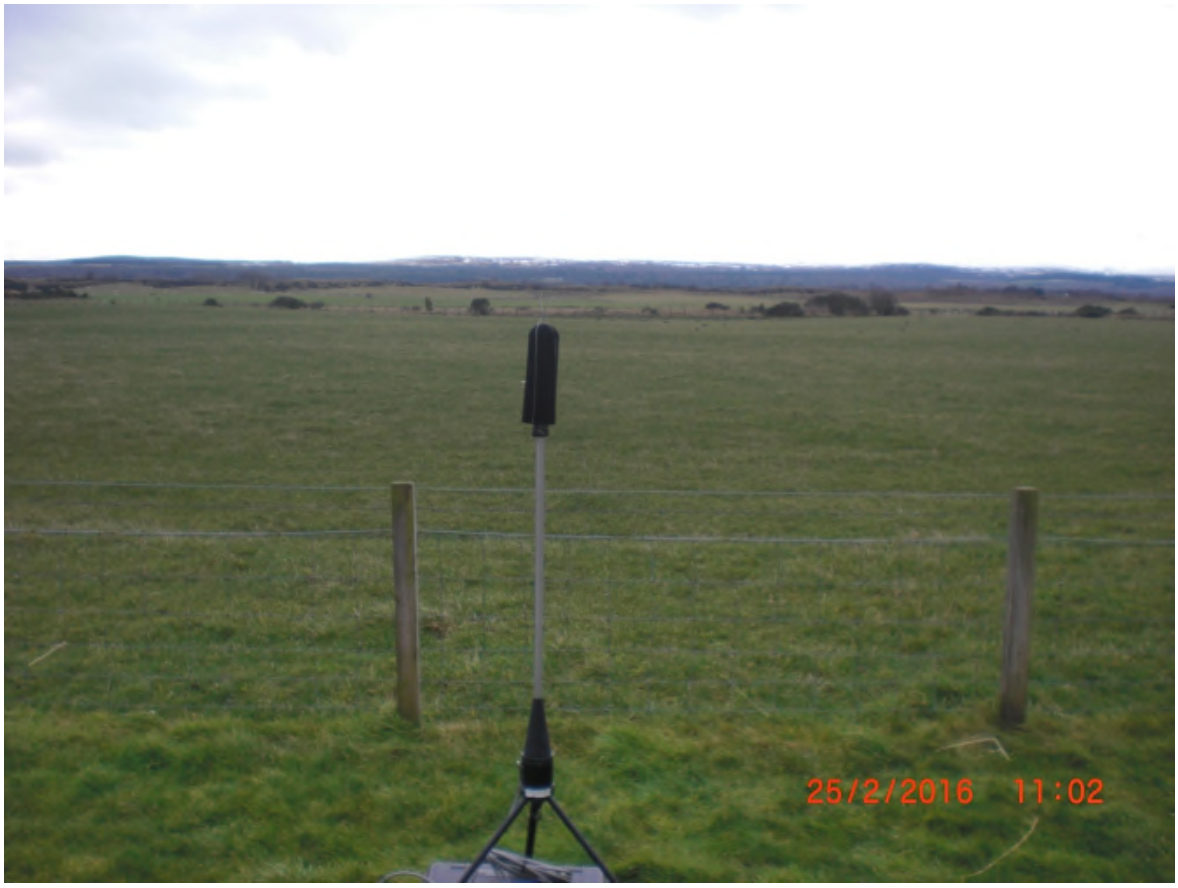
Start Date	Start Time (hh:mm)	Duration (hh:mm)	Noise Levels (dB)			Comments
			$L_{Aeq,T}$	$L_{A10,T}$	$L_{A90,T}$	
03/03/16	10:07	00:15	55.1	58.9	42.6	Light westerly breeze, 40% cloud cover, dry but ground slightly damp. Noise climate dominated by road traffic noise on the existing A96, birdsong, dog intermittently barking inside property, occasional noise from livestock in surrounding fields. Car stopped on local road to east of measurement location at 10:22.
03/03/16	13:50	00:15	47.4	50.6	37.8	Very light westerly breeze, 40% cloud cover, dry. Noise climate dominated by road traffic noise on the existing A96 and birdsong.
03/03/16	17:40	00:15	49.1	50.8	41.9	Light westerly breeze, 60% cloud cover, dry. Noise climate dominated by road traffic noise on the existing A96, birdsong and occasional vehicles on local road. Car on local road at 17:46.
09/03/16	19:35	00:15	47.9	50.7	39.9	Calm, 50% cloud cover, dry. Noise climate dominated by road traffic noise on the existing A96 and occasional vehicles on local road. Car on local road at 19:48.

Measurement Location NV015 – New House, North Kildrummie Farm, Narin, IV2 5NZ

2.107 Noise monitoring equipment was installed at New House, North Kildrummie Farm between 25 February 2016 and 1 March 2016.

2.108 The measurement location was as shown in Photograph 15. A Cirrus CR:811B Class 1 sound level meter (s/n C19301FD) was positioned at a height of 1.5m in free-field conditions. The equipment was approximately 6.5m on the southern façade of the building.

Photograph 15: Noise Monitoring Equipment at New House, North Kildrummie Farm



2.109 The monitoring equipment was calibrated both before and after the measurement period using an acoustic calibrator, which has itself been calibrated against a reference set traceable to National and International Standards. There was no significant shift in the observed calibration level.

2.110 At this location the noise climate was dominated by birdsong, road traffic noise on the local road to the east of the measurement location, occasional aircraft noise, noise from livestock in surrounding fields and distant road traffic noise on the existing A96 and Nairn to the north.

2.111 Light winds are generally recorded throughout the measurement period, where with the exception of two time periods; wind speeds do not exceed 3.0ms^{-1}. A peak wind speed of 3.3ms^{-1} was recorded on the 28 February. No precipitation was recorded during the measurement period.

2.112 Table 33 provides the measured daily noise levels at this location.

Table 33: Daily Summarised Noise Levels at New House, North Kildrummie Farm

Date	Day	Daytime (between 06:00 – 00:00) 18 Hour Time Period			Daytime (between 07:00 – 23:00) 16 Hour Time Period			Night-time (between 23:00 – 07:00) 8 Hour Time Period		
		$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)	$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)	$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)
25/02/16	Thurs	-	-	-	-	-	-	41.2	35.8	27.5
26/02/16	Fri	47.8	45.8	32.4	47.9	46.2	32.2	37.3	35.3	28.9
27/02/16	Sat	49.5	44.1	30.8	50.0	44.9	31.0	36.6	34.5	27.4
28/02/16	Sun	47.5	42.0	30.8	47.9	43.0	31.3	39.8	35.6	27.8

2.113 In addition to long term measurements a series of short term attended measurements were also undertaken and the results are provided in Table 34. A Cirrus Optimus Green CR:171C1 sound level meter (s/n G061729) was positioned at a height of 1.5m in free-field conditions adjacent to the long term monitoring equipment. The monitoring equipment was calibrated both before and after the measurement period using an acoustic calibrator, which has itself been calibrated against a reference set traceable to National and International Standards. There was no significant shift in the observed calibration level.

Table 34: Additional Attended Noise Level Measurements at New House, North Kildrummie Farm

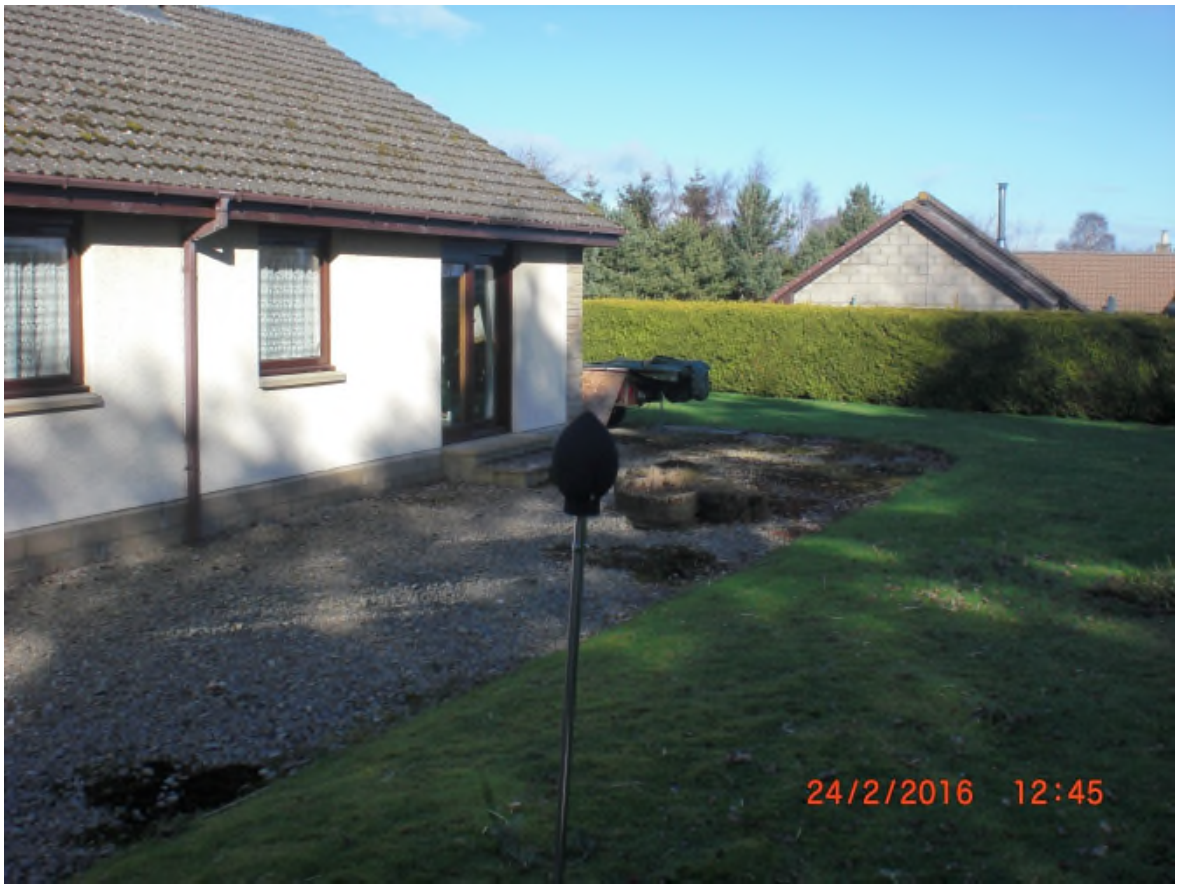
Start Date	Start Time (hh:mm)	Duration (hh:mm)	Noise Levels (dB)			Comments
			$L_{Aeq,T}$	$L_{A10,T}$	$L_{A90,T}$	
25/02/16	13:39	00:15	47.0	47.4	27.0	Calm, 90% cloud cover, dry but ground slightly damp. Noise climate was dominated by birdsong, occasional vehicle pass bys on local road, occasional aircraft noise and very faint and distant road traffic noise on the existing A96/Nairn. Bang in distance to north at 13:42. Car on local road at 13:43. Aircraft overhead at 13:44. Car on local road at 13:45. Two cars on local road at 13:48 car on local road at 13:49. Aircraft overhead at 13:49. Truck on local road at 13:50. Car on local road at 13:51. 2 cars on local road at 13:52. JCB vehicle on local road at 13:53. Truck on local road at 13:54.
26/02/16	11:15	00:15	47.2	47.3	31.6	Light northerly breeze, 10% cloud cover, dry. Noise climate was dominated by birdsong, livestock in surrounding fields, occasional vehicle pass bys on local road, occasional aircraft noise, very faint and distant road traffic noise on the existing A96/Nairn and noise from a vehicle in an adjacent field. Vehicle in adjacent field passing measurement location to the south at 11:16. Car on local road at 11:18. Car on local road at 11:21. HGV on local road at 11:23. HGV on local road at 11:24. Motorbike on local road at 11:24. " HGVs on local road at 11:28.

Measurement Location NV016 – Athenry, Balnaspirach, Nairn, IV12 5NY

2.114 Noise monitoring equipment was installed at Athenry between 24 February 2016 and 1 March 2016.

2.115 The measurement location was as shown in Photograph 16. A Rion NL-52 Class 1 sound level meter (s/n 00410083) was positioned at a height of 1.5m in free-field conditions. The equipment was approximately 4.5m on the south-eastern façade of the building.

Photograph 16: Noise Monitoring Equipment at Athenry



2.116 The monitoring equipment was calibrated both before and after the measurement period using an acoustic calibrator, which has itself been calibrated against a reference set traceable to National and International Standards. There was no significant shift in the observed calibration level.

2.117 At this location the noise climate was dominated by birdsong, road traffic noise on the local road to the west/south west of the measurement location, occasional aircraft noise, noise from livestock in surrounding fields, distant road traffic noise from surrounding local roads, distant road traffic noise from Nairn to the north and occasional train pass bys on the Aberdeen to Inverness Railway Line located to the north.

2.118 A period of low wind speeds was recorded between 25 February and 28 February, where wind speeds do not generally exceed 3.0ms^{-1} (with the exception of the wind speeds recorded 15:00 hours on 24 February – 3.3ms^{-1}). Following this period, the recorded wind speeds generally increase to levels up to 5ms^{-1}. But a peak wind speed of 6.6ms^{-1} is recorded on 29 February, 14:00 hours. With the exception of the rainfall on 29 February, no precipitation was recorded during the measurement period.

2.119 Table 35 provides the measured daily noise levels at this location.

Table 35: Daily Summarised Noise Levels at Athenry

Date	Day	Daytime (between 06:00 – 00:00) 18 Hour Time Period			Daytime (between 07:00 – 23:00) 16 Hour Time Period			Night-time (between 23:00 – 07:00) 8 Hour Time Period		
		$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)	$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)	$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)
24/02/16	Wed	-	-	-	-	-	-	38.3	33.7	27.4
25/02/16	Thurs	45.0	42.9	30.4	45.4	43.4	30.9	38.7	32.0	25.0
26/02/16	Fri	45.7	44.3	32.0	45.9	44.9	32.2	39.0	34.5	26.4
27/02/16	Sat	44.3	43.4	29.1	44.3	43.4	29.1	37.2	32.4	24.7
28/02/16	Sun	44.4	41.6	28.5	44.6	42.0	29.0	38.5	36.8	27.2
29/02/16	Mon	47.3	47.3	35.9	47.6	47.5	36.0	41.8	41.7	29.7

2.120 In addition to long term measurements a series of short term attended measurements were also undertaken and the results are provided in Table 36. A Cirrus Optimus Green CR:171C1 sound level meter (s/n G061729) was positioned at a height of 1.5m in free-field conditions adjacent to the long term monitoring equipment. The monitoring equipment was calibrated both before and after the measurement period using an acoustic calibrator, which has itself been calibrated against a reference set traceable to National and International Standards. There was no significant shift in the observed calibration level.

Table 36: Additional Attended Noise Level Measurements at Athenry

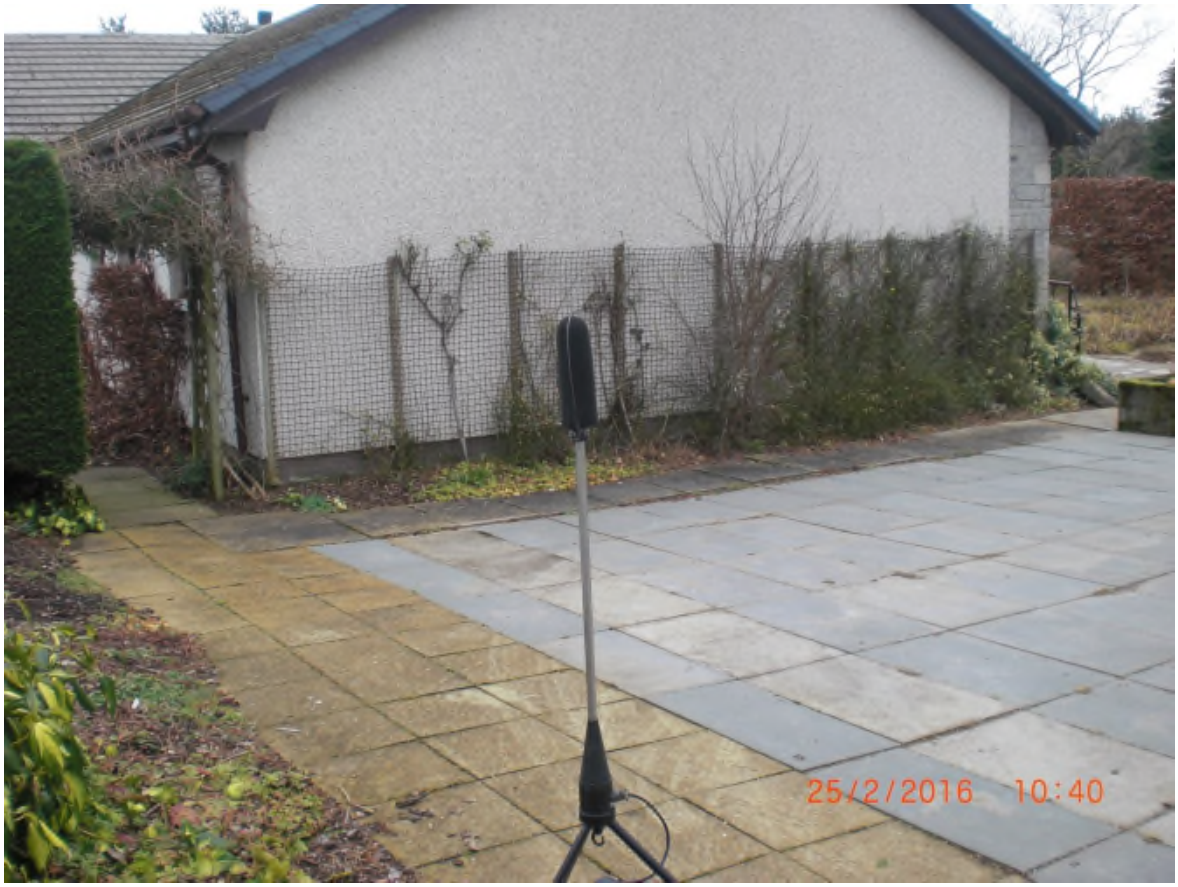
Start Date	Start Time (hh:mm)	Duration (hh:mm)	Noise Levels (dB)			Comments
			$L_{Aeq,T}$	$L_{A10,T}$	$L_{A90,T}$	
25/02/16	13:14	00:15	40.1	43.5	30.9	Light westerly breeze, 100% cloud cover, dry but light drizzle and light hail towards end of measurement period. Noise climate dominated by birdsong, occasional vehicle pass bys on local roads and occasional aircraft noise. Distant noise from road traffic to the north in Nairn was only just noticeable during periods where other activity was minimal. Aircraft at 13:15. Car entering driveway at 13:15. Car on local road to southwest of measurement location at 13:26.
25/02/16	20:11	00:15	37.5	38.5	27.4	Calm, 70% cloud cover, dry. Noise climate dominated by occasional livestock noise, occasional aircraft noise, occasional activity at surrounding houses and occasional train pass bys Distant road traffic noise to the North in Nairn was only just noticeable. Aircraft to North at 20:15. Train pass by to north at 20:17. Door opening at adjacent property at 20:19. Train pass by to North at 20:24.
26/02/16	11:40	00:15	46.8	50.6	30.8	Calm, 10% cloud cover, dry. Noise climate dominated by birdsong, noise from agricultural vehicles in the field to the south, occasional noise from surrounding properties and very distant road traffic noise to the North. Flock of geese passing to the east at 11:46.
26/02/16	14:56	00:15	36.4	39.2	31.0	Light westerly breeze, 80% cloud cover, dry. Noise climate dominated by birdsong, occasional vehicle pass bys on local roads, occasional aircraft noise and occasional noise from surrounding properties. Distant noise from road traffic to the north in Nairn was only just noticeable during periods where other activity was minimal. Flock of geese passing to east at 15:00. Plane to north at 15:00. Bang from adjacent house at 15:04. Aircraft in distance at 15:06.

Measurement Location NV017 – Fonn, Cawdor Road, Nairn, IV12 5QU

2.121 Noise monitoring equipment was installed at Fonn between 25 February 2016 and 1 March 2016.

2.122 The measurement location was as shown in Photograph 17. A Cirrus CR:811B Class 1 sound level meter (s/n C17206FD) was positioned at a height of 1.5m in free-field conditions. The equipment was approximately 5.0m on the north-western corner of the building.

Photograph 17: Noise Monitoring Equipment at Fonn



2.123 The monitoring equipment was calibrated both before and after the measurement period using an acoustic calibrator, which has itself been calibrated against a reference set traceable to National and International Standards. There was no significant shift in the observed calibration level.

2.124 At this location the noise climate was dominated by birdsong, occasional vehicle pass bys on the local road to the north of the measurement location, occasional noise from agricultural vehicles and livestock in the fields to the north, occasional activity at the property and surrounding properties, occasional distant train noise on the Aberdeen to Inverness Railway Line to the North and occasional distant traffic noise from surrounding local roads.

2.125 A period of low wind speeds was recorded between 25 February and 28 February, where wind speeds do not generally exceed 3.0ms^{-1}. Following this period, the recorded wind speeds generally increase to levels up to 5.0ms^{-1}. But a peak wind speed of 6.6ms^{-1} is recorded on 29 February, 14:00 hours. With the exception of the rainfall on 29 February, no precipitation was recorded during the measurement period.

2.126 Table 37 provides the measured daily noise levels at this location.

Table 37: Daily Summarised Noise Levels at Fonn

Date	Day	Daytime (between 06:00 – 00:00) 18 Hour Time Period			Daytime (between 07:00 – 23:00) 16 Hour Time Period			Night-time (between 23:00 – 07:00) 8 Hour Time Period		
		$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)	$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)	$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)
25/02/16	Thurs	-	-	-	-	-	-	36.5	32.8	28.6
26/02/16	Fri	47.9	45.5	32.0	48.3	46.2	32.1	38.0	35.3	29.2
27/02/16	Sat	45.8	44.9	30.0	46.1	45.4	29.9	36.7	34.5	30.0
28/02/16	Sun	45.3	43.8	30.3	45.7	44.7	30.5	38.8	37.5	30.5
29/02/16	Mon	47.5	48.1	36.0	47.9	48.6	36.2	40.9	41.4	30.9

2.127 In addition to long term measurements a series of short term attended measurements were also undertaken and the results are provided in Table 38. A Cirrus Optimus Green CR:171C1 sound level meter (s/n G061729) was positioned at a height of 1.5m in free-field conditions adjacent to the long term monitoring equipment. The monitoring equipment was calibrated both before and after the measurement period using an acoustic calibrator, which has itself been calibrated against a reference set traceable to National and International Standards. There was no significant shift in the observed calibration level.

Table 38: Additional Attended Noise Level Measurements at Fonn

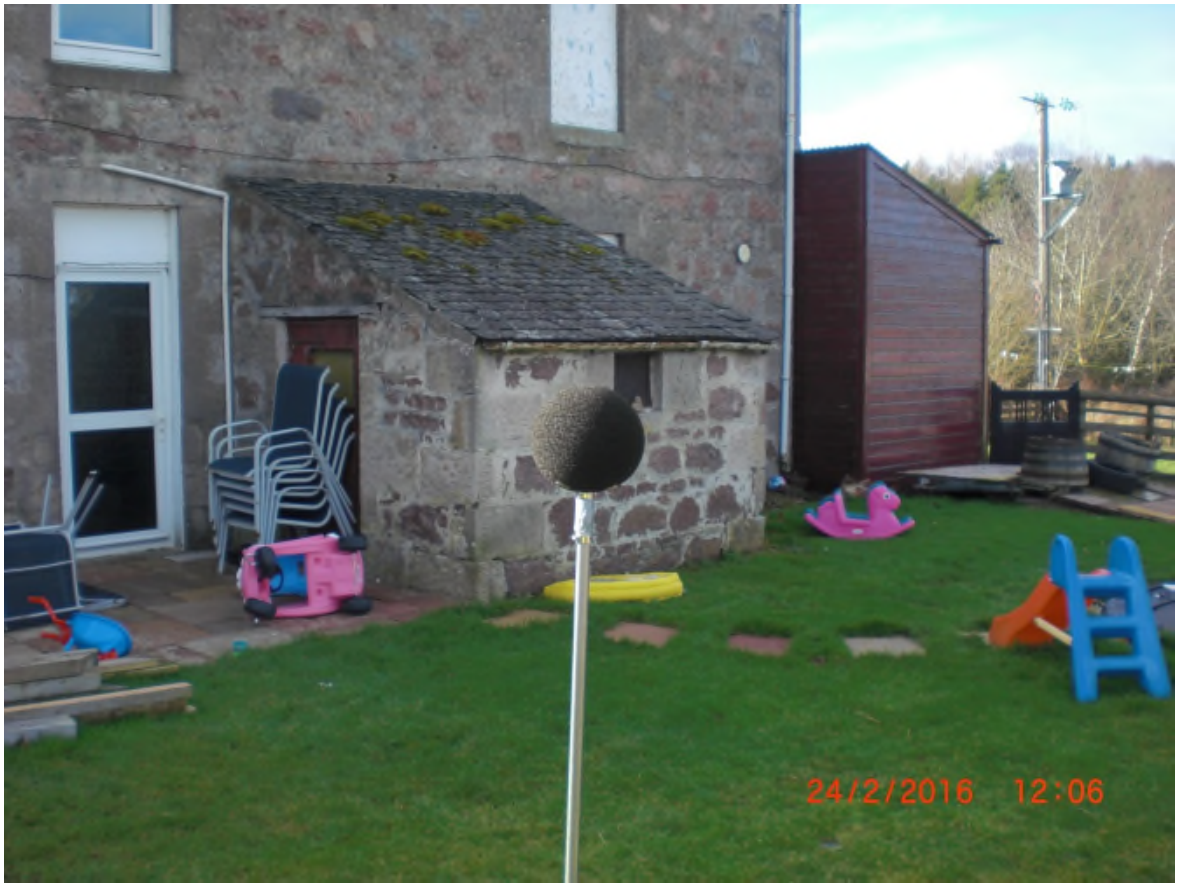
Start Date	Start Time (hh:mm)	Duration (hh:mm)	Noise Levels (dB)			Comments
			$L_{Aeq,T}$	$L_{A10,T}$	$L_{A90,T}$	
25/02/16	14:48	00:15	51.5	50.2	32.0	Light westerly wind peaking at 1.0ms^{-1} averaging at 0.4ms^{-1}, 90% cloud cover, dry. Noise climate dominated by birdsong, occasional vehicle pass bys on the local road, agricultural vehicle operating in fields to the west and occasional noise from livestock in surrounding fields. Two cars on local road at 14:53. Tractor on local road at 14:54. Car on local road at 15:00. Car entering driveway at 15:01. Car on local road at 15:03. Noise from people in garage adjacent to measurement location at 15:04.
25/02/16	19:46	00:15	36.2	33.6	29.6	Calm, 50% cloud cover, dry. Noise climate dominated by occasional very distant road traffic noise from Nairn to the north and other surrounding roads, occasional noise from livestock in surrounding fields and occasional vehicle pass bys on the local road. Car on local road at 20:00.
26/02/16	12:05	00:15	48.7	53.0	33.9	Light breeze, 30% cloud cover, dry. Noise climate dominated by birdsong, very distant road traffic noise on surrounding roads, occasional noise from livestock in surrounding fields and occasional vehicle pass bys on local road. Car on local road at 12:07. Car on local road at 12:12. Car on local road at 12:13. Car on local road at 12:18.
26/02/16	14:33	00:15	49.5	49.4	34.7	Light breeze, 90% cloud cover, dry. Noise climate dominated by birdsong, occasional very distant road traffic noise from surrounding roads, occasional noise from vehicle pass bys on the local road, noise from people at surrounding properties, occasional aircraft and occasional distant train pass bys. Aircraft at 14:37. Car on local road at 14:38. Car on local road at 14:39. Train horn and pass by to north at 14:39. People speaking car door closing and vehicle exiting driveway at 14:42. Car on local road at 14:44.

Measurement Location NV018 – Skenepark Farmhouse, Nairn, IV12 5RY

2.128 Noise monitoring equipment was installed at Skenepark Farmhouse between 24 February 2016 and 1 March 2016.

2.129 The measurement location was as shown in Photograph 18. A Rion NL-32 Class 1 sound level meter (s/n 00482602) was positioned at a height of 1.5m in free-field conditions. The equipment was approximately 6.0m on the north-eastern façade of the building.

Photograph 18: Noise Monitoring Equipment at Skenepark Farmhouse



2.130 The monitoring equipment was calibrated both before and after the measurement period using an acoustic calibrator, which has itself been calibrated against a reference set traceable to National and International Standards. There was no significant shift in the observed calibration level.

2.131 At this location the noise climate was dominated by road traffic noise on the A939 to the east of the measurement location, industrial/commercial activity to the north east, birdsong, occasional aircraft noise and occasional activity at the property and surrounding properties.

2.132 . A period of low wind speeds was recorded between 25 February and 28 February, where wind speeds do not generally exceed 3.0ms^{-1} (with the exception of the wind speeds recorded 15:00 hours on 24 February – 3.3ms^{-1}). Following this period, the recorded wind speeds generally increase to levels up to 5.0ms^{-1}. But a peak wind speed of 6.6ms^{-1} is recorded on 29 February, 14:00 hours. With the exception of the rainfall on 29 February, no precipitation was recorded during the measurement period.

2.133 Table 39 provides the measured daily noise levels at this location.

Table 39: Daily Summarised Noise Levels at Skenepark Farmhouse

Date	Day	Daytime (between 06:00 – 00:00) 18 Hour Time Period			Daytime (between 07:00 – 23:00) 16 Hour Time Period			Night-time (between 23:00 – 07:00) 8 Hour Time Period		
		$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)	$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)	$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)
24/02/16	Wed	-	-	-	-	-	-	38.8	38.3	33.0
25/02/16	Thurs	42.0	41.8	33.4	42.3	42.3	33.7	35.5	35.8	27.4
26/02/16	Fri	43.8	45.5	36.0	44.2	46.0	36.4	36.3	37.4	30.4
27/02/16	Sat	41.1	42.4	32.2	41.3	42.6	32.2	35.5	36.3	29.6
28/02/16	Sun	43.6	41.6	29.0	44.0	42.1	29.3	34.6	34.9	24.8
29/02/16	Mon	42.8	43.4	35.8	43.1	43.8	36.2	36.2	38.0	29.5

2.134 In addition to long term measurements a series of short term attended measurements were also undertaken and the results are provided in Table 40. A Cirrus Optimus Green CR:171C1 sound level meter (s/n G061729) was positioned at a height of 1.5m in free-field conditions adjacent to the long term monitoring equipment. The monitoring equipment was calibrated both before and after the measurement period using an acoustic calibrator, which has itself been calibrated against a reference set traceable to National and International Standards. There was no significant shift in the observed calibration level.

Table 40: Additional Attended Noise Level Measurements at Skenepark Farmhouse

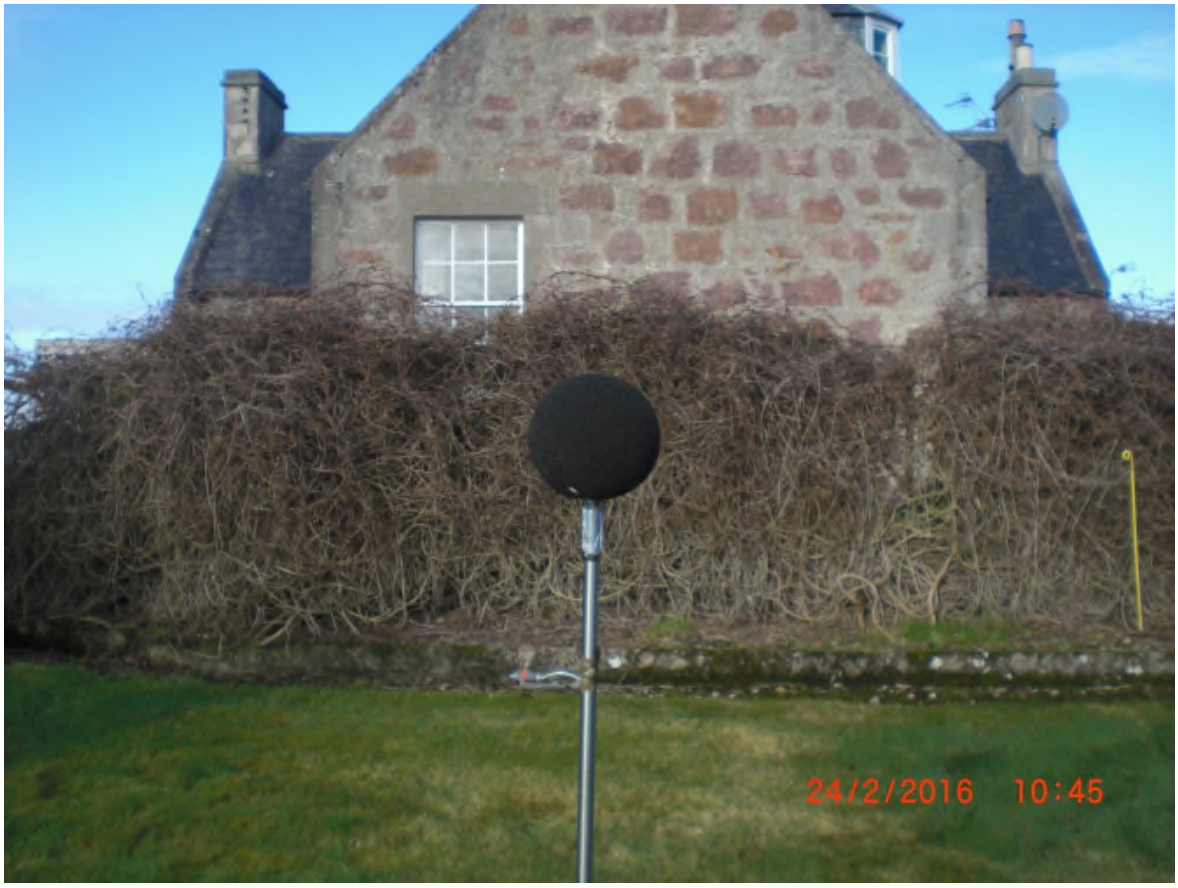
Start Date	Start Time (hh:mm)	Duration (hh:mm)	Noise Levels (dB)			Comments
			$L_{Aeq,T}$	$L_{A10,T}$	$L_{A90,T}$	
25/02/16	12:41	00:15	38.5	40.3	34.0	Calm, 100% cloud cover, dry but very light flakes of snow noted. Noise climate dominated by road traffic noise on the A939 to the east, industrial/commercial activity to the north east, birdsong and occasional noise from dogs barking at other side of property. 12:50 increased activity at industrial/commercial property to northeast.
25/02/16	15:14	00:15	50.1	44.2	32.2	Calm, 100% cloud cover, dry. Noise climate dominated by road traffic noise on the A939 to the east, birdsong, occasional noise from dogs barking at other side of property, occasional aircraft noise and faint noise from industrial/commercial premises to north. Aircraft to north at 15:23. Bus at driveway to south entering and exiting at property boundary at 15:24.
25/02/16	19:19	00:15	45.5	44.1	31.0	Light breeze, 40% cloud cover, dry. Noise climate dominated by road traffic noise on the A939 to the east, occasional aircraft noise and occasional noise from dogs moving at opposite side of property. Aircraft to east at 19:25. Aircraft to north at 19:27.
26/02/16	12:32	00:15	39.3	42.0	33.8	Calm, 50% cloud cover, dry. Noise climate dominated by road traffic noise on A939 to the east, noise from industrial/commercial premises to the north east and birdsong.

Measurement Location NV019 – Blackpark Farmhouse, Kinstreay, Auldearn Nairn, IV12 5HY

2.135 Noise monitoring equipment was installed at Blackpark Farmhouse between 24 February 2016 and 1 March 2016,

2.136 The measurement location was as shown in Photograph 19. A Rion NL-32 Class 1 sound level meter (s/n 00751323) was positioned at a height of 1.5m in free-field conditions. The equipment was approximately 10.0m on the south-eastern façade of the building.

Photograph 19: Noise Monitoring Equipment at Blackpark Farmhouse



2.137 The monitoring equipment was calibrated both before and after the measurement period using an acoustic calibrator, which has itself been calibrated against a reference set traceable to National and International Standards. There was no significant shift in the observed calibration level.

2.138 At this location the noise climate was dominated by birdsong, faint noise from industrial/commercial premises to the north east, distant road traffic noise from surrounding local roads, occasional noise from livestock in the surrounding fields, occasional aircraft noise, occasional noise from a building site to the north east and occasional activity at the property and surrounding properties.

2.139 A period of low wind speeds was recorded between 25 February and 28 February, where wind speeds do not generally exceed 3.0ms^{-1} (with the exception of the wind speeds recorded 15:00 hours on 24 February – 3.3ms^{-1}). Following this period, the recorded wind speeds generally increase to levels up to 5.0ms^{-1}. But a peak wind speed of 6.6ms^{-1} is recorded on 29 February, 14:00 hours. With the exception of the rainfall on 29 February, no precipitation was recorded during the measurement period.

2.140 Table 41 provides the measured daily noise levels at this location.

Table 41: Daily Summarised Noise Levels at Blackpark Farmhouse

Date	Day	Daytime (between 06:00 – 00:00) 18 Hour Time Period			Daytime (between 07:00 – 23:00) 16 Hour Time Period			Night-time (between 23:00 – 07:00) 8 Hour Time Period		
		$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)	$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)	$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)
24/02/16	Wed	-	-	-	-	-	-	35.2	33.0	27.8
25/02/16	Thurs	38.2	36.1	29.7	38.6	36.7	30.1	28.3	29.8	23.9
26/02/16	Fri	42.0	41.2	33.9	42.5	42.0	34.5	31.7	32.2	26.0
27/02/16	Sat	37.2	35.5	28.1	37.6	35.9	28.3	27.9	28.8	24.3
28/02/16	Sun	39.9	35.4	25.9	40.4	36.2	26.3	30.2	29.7	21.9
29/02/16	Mon	58.6	46.1	36.0	59.1	46.8	36.7	37.4	37.5	29.1

2.141 In addition to long term measurements a series of short term attended measurements were also undertaken and the results are provided in Table 42. A Cirrus Optimus Green CR:171C1 sound level meter (s/n G061729) was positioned at a height of 1.5m in free-field conditions adjacent to the long term monitoring equipment. The monitoring equipment was calibrated both before and after the measurement period using an acoustic calibrator, which has itself been calibrated against a reference set traceable to National and International Standards. There was no significant shift in the observed calibration level.

Table 42: Additional Attended Noise Level Measurements at Blackpark Farmhouse

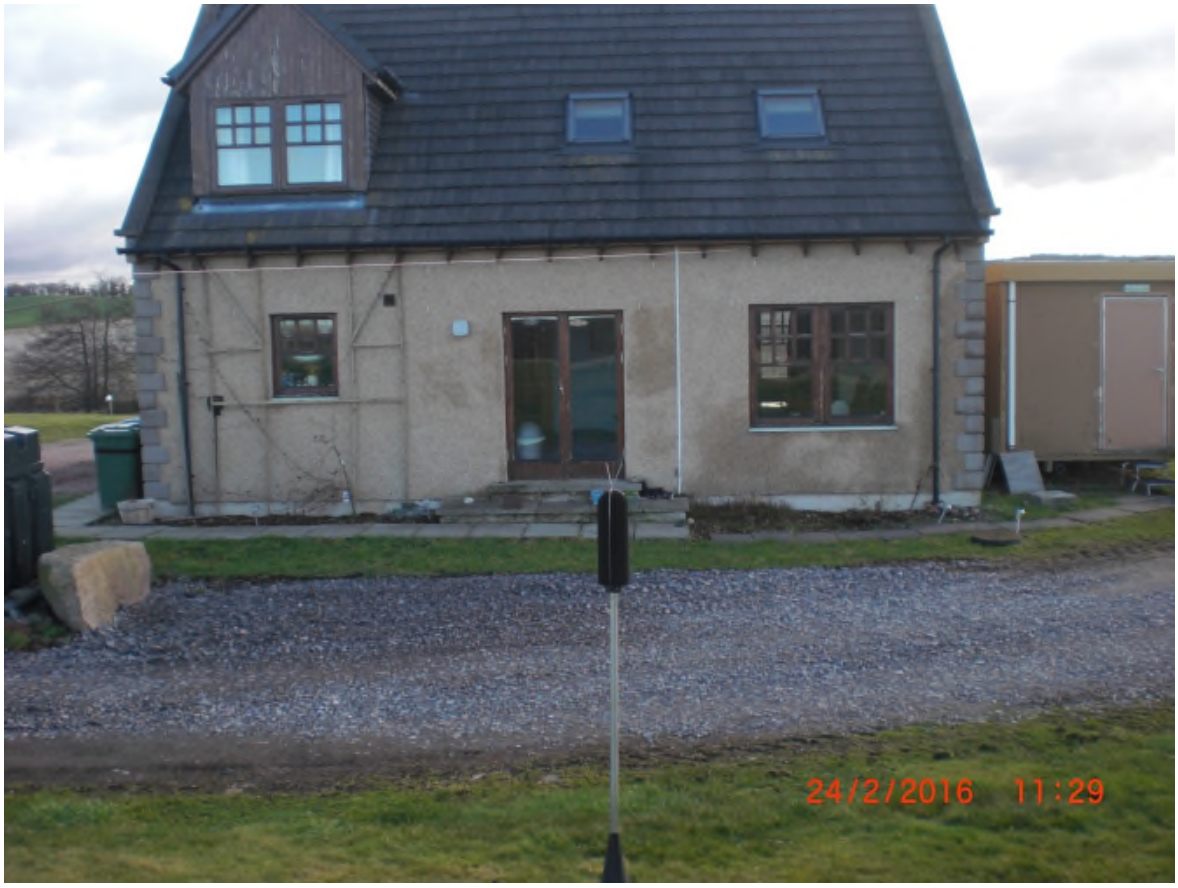
Start Date	Start Time (hh:mm)	Duration (hh:mm)	Noise Levels (dB)			Comments
			$L_{Aeq,T}$	$L_{A10,T}$	$L_{A90,T}$	
25/02/16	12:11	00:15	36.5	37.9	28.7	Light breeze, 100% cloud cover, dry. Noise climate dominated by birdsong, faint noise from industrial/commercial premises to the north east, very distant road traffic noise from surrounding roads occasional aircraft noise, occasional noise from livestock in surrounding fields and occasional noise from building work to the north-east. Aircraft at 12:14.
25/02/16	18:27	00:15	44.4	39.0	30.7	Calm, 100% cloud cover, dry. Noise climate dominated by distant road traffic noise on surrounding roads, faint noise from industrial/commercial premises to the north-east and occasional noise from residents at the property. Car exiting driveway of property at 18:30. Tractor entering local road and driving to farm buildings at 18:36.
26/02/16	12:57	00:15	37.8	40.1	31.9	Light breeze, 80% cloud cover, dry. Noise climate dominated by birdsong, faint noise from industrial commercial premises to the north-east, very distant road traffic noise from surrounding roads, occasional aircraft noise, occasional noise from livestock in surrounding fields, occasional noise from building work to the north east. Aircraft at 12:57. Aircraft at 13:09.

Measurement Location NV020: Orchard House, Kinnudie Farm, Auldearn, IV12 5QF

2.142 Noise monitoring equipment was installed at Orchard House between 24 February 2016 and 1 March 2016.

2.143 The measurement location was as shown in Photograph 20. A Cirrus CR:811B Class 1 sound level meter (s/n C19302FD) was positioned at a height of 1.5m in free-field conditions. The equipment was approximately 11.0m on the south-eastern façade of the building.

Photograph 20: Noise Monitoring Equipment at Orchard House



2.144 The monitoring equipment was calibrated both before and after the measurement period using an acoustic calibrator, which has itself been calibrated against a reference set traceable to National and International Standards. There was no significant shift in the observed calibration level.

2.145 At this location the noise climate was dominated by distant road traffic noise on the existing A96 to the north, occasional distant road traffic noise on surrounding local roads, distant noise from industrial/commercial premises to the west, occasional aircraft noise, birdsong, occasional activity at the property and occasional activity at farm buildings to the south west.

2.146 At this location a Lufft WS600 weather station was installed and set up to capture meteorological readings, including wind speed, direction and precipitation every 5 minutes.

2.147 A period of low wind speeds was recorded between 25 February and 28 February, where wind speeds do not generally exceed 3.0ms^{-1} (with the exception of the wind speeds recorded 15:00 hours on 24 February – 3.3ms^{-1}). Following this period, the recorded wind speeds generally increase to levels up to 5.0ms^{-1}. No precipitation was recorded during the measurement period.

2.148 Table 43 provides the measured daily noise levels at this location.

Table 43: Daily Summarised Noise Levels at Orchard House

Date	Day	Daytime (between 06:00 – 00:00) 18 Hour Time Period			Daytime (between 07:00 – 23:00) 16 Hour Time Period			Night-time (between 23:00 – 07:00) 8 Hour Time Period		
		$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)	$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)	$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)
24/02/16	Wed	-	-	-	-	-	-	39.4	39.0	33.1
25/02/16	Thurs	42.0	42.2	36.1	42.2	42.6	36.3	37.0	36.7	31.1
26/02/16	Fri	44.0	45.2	36.5	44.3	45.5	36.8	37.3	38.3	31.9
27/02/16	Sat	41.8	41.6	33.9	42.1	41.8	33.9	36.9	37.6	32.4
28/02/16	Sun	42.3	40.4	33.1	42.6	40.9	33.3	35.7	34.9	29.3

2.149 In addition to long term measurements a series of short term attended measurements were also undertaken and the results are provided in Table 44. A Cirrus Optimus Green CR:171C1 sound level meter (s/n G061729) was positioned at a height of 1.5m in free-field conditions adjacent to the long term monitoring equipment. The monitoring equipment was calibrated both before and after the measurement period using an acoustic calibrator, which has itself been calibrated against a reference set traceable to National and International Standards. There was no significant shift in the observed calibration level.

Table 44: Additional Attended Noise Level Measurements at Orchard House

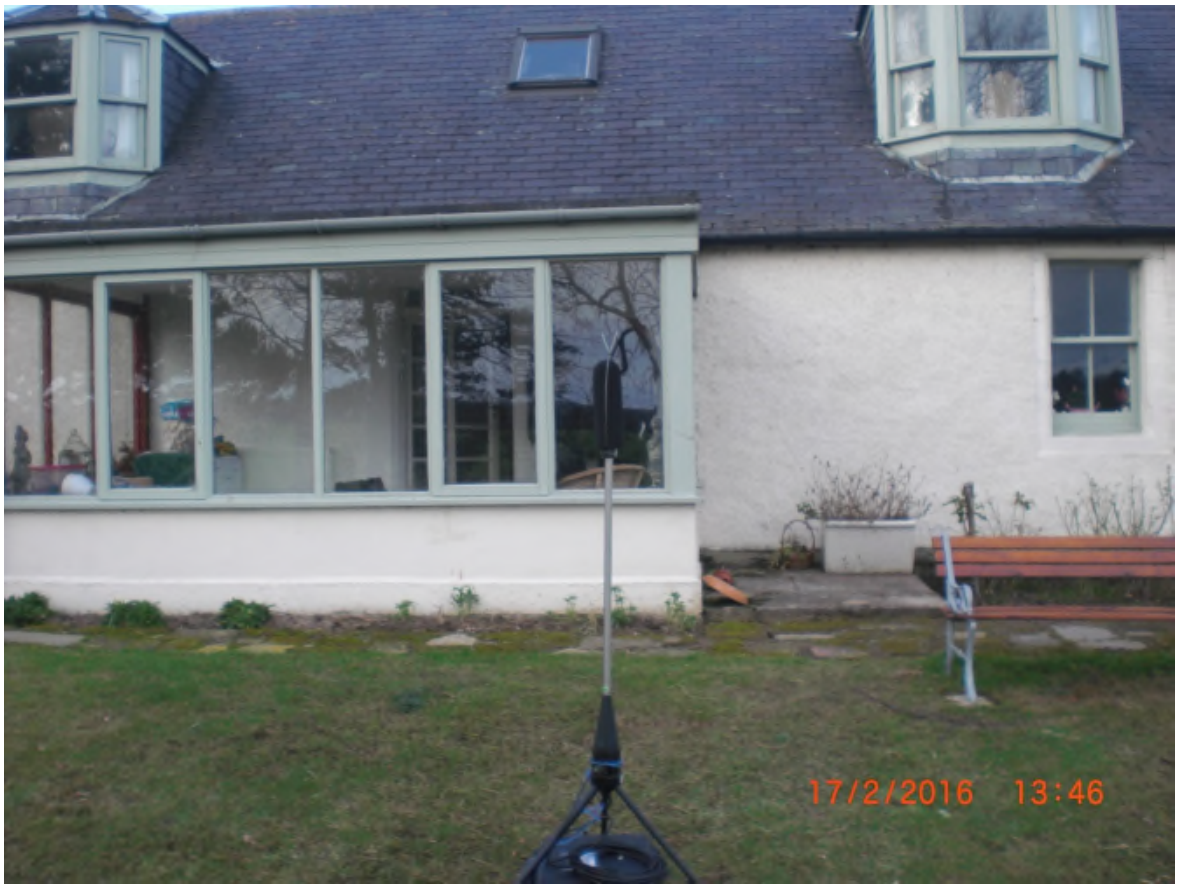
Start Date	Start Time (hh:mm)	Duration (hh:mm)	Noise Levels (dB)			Comments
			$L_{Aeq,T}$	$L_{A10,T}$	$L_{A90,T}$	
25/02/16	11:44	00:15	41.2	42.7	35.9	Westerly wind peaking at 3.7ms^{-1} averaging at 2.0ms^{-1}, 90% cloud cover, dry. Noise climate dominated by distant road traffic noise on the existing A96 to the north and surrounding local roads, distant noise from industrial/commercial premises to the west, birdsong, occasional noise at property, occasional noise from farm to the south and occasional aircraft noise. Aircraft at 11:48. Tractor at farm to south starting engine at 11:52.
25/02/16	18:53	00:15	37.8	40.3	34.1	Calm, 100% cloud cover, dry. Noise climate dominated by distant road traffic noise on the existing A96 to the north, occasional noise at property and faint noise from a small watercourse to the east of the measurement location.
26/02/16	13:22	00:15	37.5	40.0	33.6	Light Northerly wind peaking at 1.8ms^{-1} averaging at 1.0ms^{-1}, 90% cloud cover, dry. Noise climate dominated by distant road traffic noise on the existing A96 to the north, birdsong and occasional aircraft noise. Aircraft at 13:35.

Measurement Location 21 – Millhill, Auldearn, Nairn, IV12 5JU

2.150 Noise monitoring equipment was installed at Millhill between 17 February 2016 and 23 February 2016.

2.151 The measurement location was as shown in Photograph 21. A Cirrus CR:811B Class 1 sound level meter (s/n C17206FD) was positioned at a height of 1.5m in free-field conditions. The equipment was approximately 4.3m on the south-eastern façade of the building.

Photograph 21: Noise Monitoring Equipment at Millhill



2.152 The monitoring equipment was calibrated both before and after the measurement period using an acoustic calibrator, which has itself been calibrated against a reference set traceable to National and International Standards. There was no significant shift in the observed calibration level.

2.153 At this location the noise climate was dominated by distant road traffic noise on the existing A96 to the south, wind in vegetation, birdsong, occasional aircraft noise, occasional vehicle pass bys on local road to the south and west and occasional activity at the property and surrounding properties.

2.154 . On average, wind speed measurements range from 0.5ms^{-1}, up to 4ms^{-1}. A large proportion of the wind speeds recorded during the measurement period do not exceed 3ms^{-1}, however, peak wind speeds up to 3.7ms^{-1} occur between the 19 and 22 February. On average, the total precipitation recorded did not exceed 1.5mm, however a higher quantity of rainfall was recorded on the 19 February at 18:00 hours (2.3mm) and 20 February at 13:00 hours (1.6mm). No precipitation was recorded on 18 February.

2.155 Table 45 provides the measured daily noise levels at this location.

Table 45: Daily Summarised Noise Levels at Millhill

Date	Day	Daytime (between 06:00 – 00:00) 18 Hour Time Period			Daytime (between 07:00 – 23:00) 16 Hour Time Period			Night-time (between 23:00 – 07:00) 8 Hour Time Period		
		$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)	$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)	$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)
17/02/16	Wed	-	-	-	-	-	-	40.4	41.6	30.3
18/02/16	Thurs	48.3	48.7	41.1	48.7	49.1	41.9	41.1	42.3	31.8
19/02/16	Fri	52.5	54.1	46.2	52.7	54.3	46.8	46.8	49.0	36.7
20/02/16	Sat	49.5	51.5	42.7	49.8	52.0	43.1	47.0	49.5	37.8
21/02/16	Sun	49.5	51.8	44.4	49.5	51.8	44.7	46.4	48.8	40.3
22/02/16	Mon	45.4	46.0	37.8	45.6	46.5	38.3	38.5	39.4	29.0

2.156 In addition to long term measurements a series of short term attended measurements were also undertaken and the results are provided in Table 46. A Cirrus Optimus Green CR:171C1 sound level meter (s/n G061729) was positioned at a height of 1.5m in free-field conditions adjacent to the long term monitoring equipment. The monitoring equipment was calibrated both before and after the measurement period using an acoustic calibrator, which has itself been calibrated against a reference set traceable to National and International Standards. There was no significant shift in the observed calibration level.

Table 46: Additional Attended Noise Level Measurements at Millhill

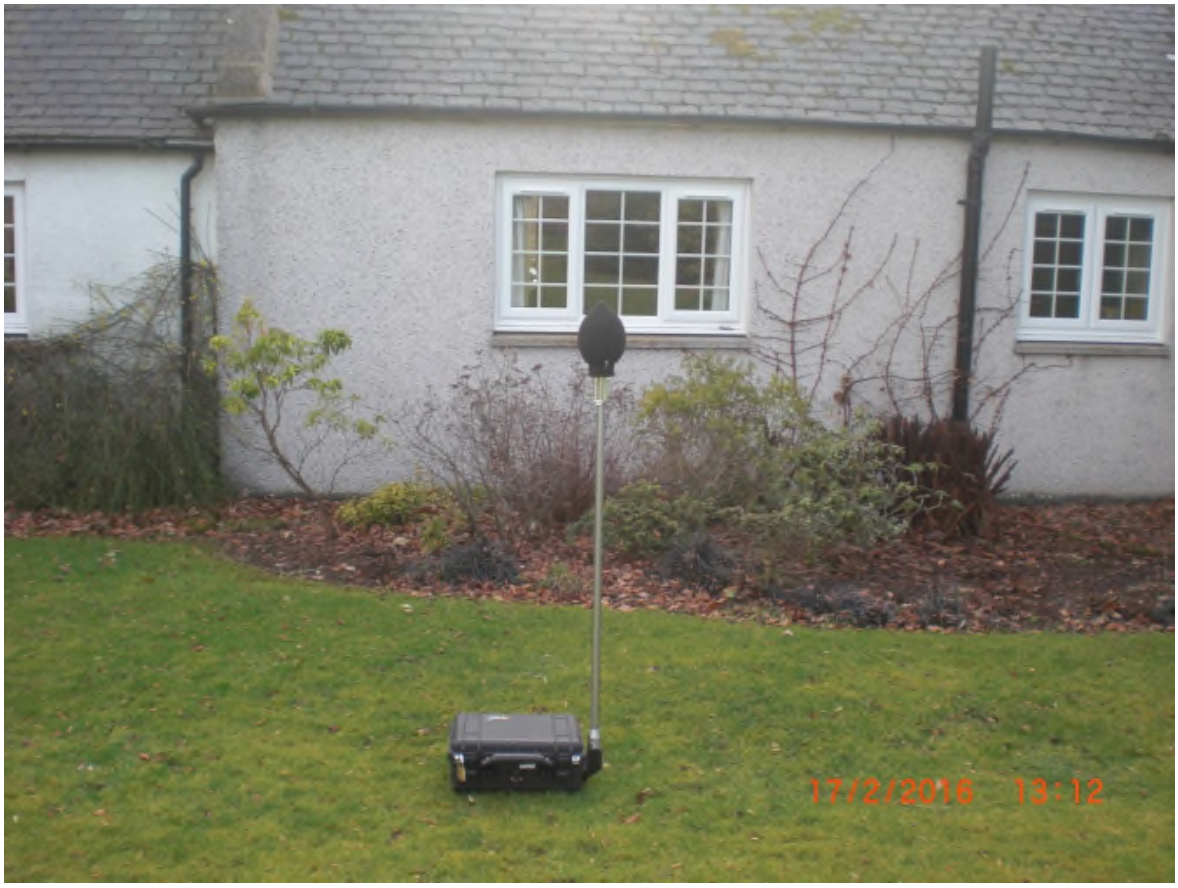
Start Date	Start Time (hh:mm)	Duration (hh:mm)	Noise Levels (dB)			Comments
			$L_{Aeq,T}$	$L_{A10,T}$	$L_{A90,T}$	
18/02/16	13:13	00:15	46.5	48.8	43.1	Westerly wind peaking at 4.0ms^{-1} averaging at 2.5ms^{-1}, 40% cloud cover, dry. Noise climate dominated by distant road traffic noise on the existing A96 to the south, wind in vegetation, birdsong, occasional aircraft noise, occasional vehicle pass bys on local road and occasional noise from dog barking at property. Car on local road at 13:24.
18/02/16	18:07	00:15	48.8	49.5	42.7	Westerly wind peaking at 1.5ms^{-1} averaging 1.0ms^{-1}, 50% cloud cover, dry. Noise climate dominated by distant road traffic noise on the existing A96 to the south, occasional aircraft noise and occasional vehicle pass bys on local road. Aircraft at 18:08. Car on local road at 18:12. Car on local road at 18:18. Aircraft at 18:21.
23/02/16	10:24	00:15	48.1	50.8	39.6	Westerly wind peaking at 2.3ms^{-1} averaging at 1.8ms^{-1}, 90% cloud cover, dry but ground slightly damp. Noise climate dominated by distant road traffic noise on the existing A96 to the south, birdsong, occasional aircraft noise, occasional vehicle pass bys on local road and occasional noise from property. Car on local road at 10:26. Aircraft at 10:32. Aircraft at 10:37.

Measurement Location NV022 – East Lodge Cottage, Boath, Auldearn, IV12 5JU

2.157 Noise monitoring equipment was installed at East Lodge Cottage between 17 February 2016 and 23 February 2016.

2.158 The measurement location was as shown in Photograph 22. A Rion NL-52 Class 1 sound level meter (s/n 00410083) was positioned at a height of 1.5m in free-field conditions. The equipment was approximately 5.0m on the northern façade of the building.

Photograph 22: Noise Monitoring Equipment at East Lodge Cottage



2.159 The monitoring equipment was calibrated both before and after the measurement period using an acoustic calibrator, which has itself been calibrated against a reference set traceable to National and International Standards. There was no significant shift in the observed calibration level.

2.160 At this location the noise climate was dominated by birdsong, occasional vehicle pass bys on local road to the north, occasional activity at the property, aircraft noise, wind in vegetation and distant road traffic noise on the existing A96 to the south. It was also noted that during the evening time periods noise from a small watercourse on the opposite side of the property was occasionally audible.

2.161 At this location a Lufft WS600 weather station was installed and set up to capture meteorological readings, including wind speed, direction and precipitation every 5 minutes.

2.162 On average, wind speed measurements range from 0.5ms^{-1}, up to 4.0ms^{-1}. A large proportion of the wind speeds recorded during the measurement period do not exceed 3.0ms^{-1}, however, peak wind speeds up to 3.7ms^{-1} occur between the 19 and 22 February. On average, the total precipitation recorded did not exceed 1.5mm, however a higher quantity of rainfall was recorded on the 19 February at 18:00 hours (2.3mm) and 20 February at 13:00 hours (1.6mm). No precipitation was recorded on 18 February.

2.163 Table 47 provides the measured daily noise levels at this location.

Table 47: Daily Summarised Noise Levels at East Lodge Cottage

Date	Day	Daytime (between 06:00 – 00:00) 18 Hour Time Period			Daytime (between 07:00 – 23:00) 16 Hour Time Period			Night-time (between 23:00 – 07:00) 8 Hour Time Period		
		$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)	$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)	$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)
17/02/16	Wed	-	-	-	-	-	-	37.4	37.7	31.1
18/02/16	Thurs	49.0	44.1	36.8	49.4	44.3	37.1	37.5	38.1	30.8
19/02/16	Fri	50.1	51.4	41.2	49.8	51.3	41.6	47.4	47.5	36.2
20/02/16	Sat	50.0	50.5	39.8	50.4	51.2	40.1	48.0	49.7	36.7
21/02/16	Sun	49.3	51.0	41.5	49.0	50.8	41.8	47.7	49.0	39.6
22/02/16	Mon	45.9	45.3	37.0	46.1	45.3	37.3	40.2	39.8	32.3

2.164 In addition to long term measurements a series of short term attended measurements were also undertaken and the results are provided in Table 48. A Cirrus Optimus Green CR:171C1 sound level meter (s/n G061729) was positioned at a height of 1.5m in free-field conditions adjacent to the long term monitoring equipment. The monitoring equipment was calibrated both before and after the measurement period using an acoustic calibrator, which has itself been calibrated against a reference set traceable to National and International Standards. There was no significant shift in the observed calibration level.

Table 48: Additional Attended Noise Level Measurements at East Lodge Cottage

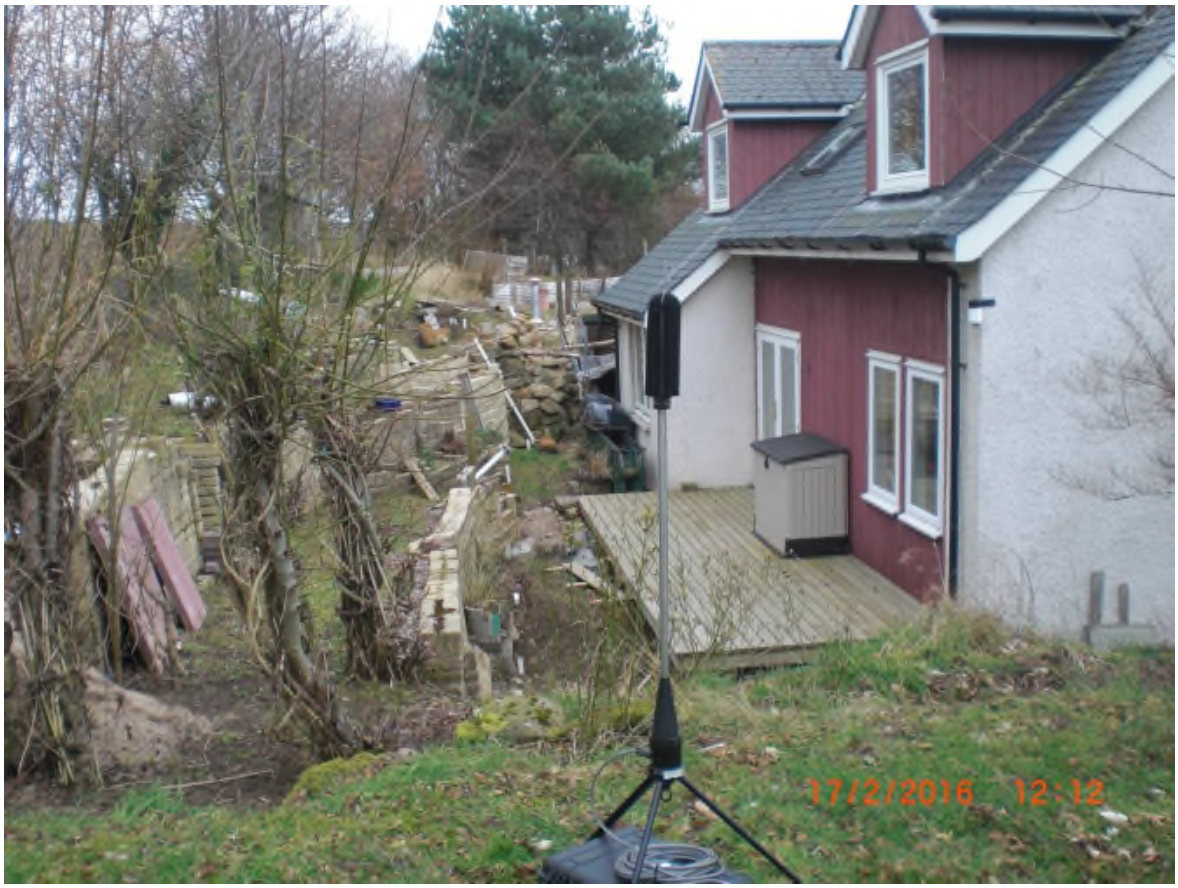
Start Date	Start Time (hh:mm)	Duration (hh:mm)	Noise Levels (dB)			Comments
			$L_{Aeq,T}$	$L_{A10,T}$	$L_{A90,T}$	
18/02/16	12:45	00:15	43.6	45.7	40.3	Westerly wind peaking at 3.4ms^{-1} averaging at 1.5ms^{-1}, 40% cloud cover, dry. Noise climate dominated by birdsong, wind in vegetation, occasional aircraft noise, occasional noise from residents and dogs in garden area and very faint distant road traffic noise on the existing A96 to the south (reduced due to shielding on the property). People speaking approximately 20m from measurement location at 12:49. Aircraft at 12:55.
18/02/16	18:34	00:15	40.5	42.4	37.4	Light breeze, 60% cloud cover, dry. Noise climate dominated by faint noise from small watercourse to south of property and very faint road traffic noise on the existing A96 to the south (both reduced due to shielding on the property). Car with muffler/engine modifications on A96 to south at 18:48. Car entering driveway of property at 18:49.
23/02/16	10:56	00:15	42.4	46.1	35.7	Westerly wind peaking at 2.4ms^{-1} averaging at 1.0ms^{-1}, 90% cloud cover, dry but ground slightly damp. Noise climate dominated by birdsong, vert faint distant road traffic noise on the existing A96 to the south (reduced due to shielding on the property), very faint noise from watercourse to south occasionally audible (also reduced due to shielding on the property).

Measurement Location NV023 – 3 The Steading, Auldearn, Nairn, IV12 5JY

2.165 Noise monitoring equipment was installed at 3 The Steading between 17 February 2016 and 23 February 2016.

2.166 The measurement location was as shown in Photograph 23. A Cirrus CR:811B Class 1 sound level meter (s/n C19301FD) was positioned at a height of 1.5m in free-field conditions. The equipment was approximately 8.0m on the north-western corner of the building.

Photograph 23: Noise Monitoring Equipment at 3 The Steading



2.167 The monitoring equipment was calibrated both before and after the measurement period using an acoustic calibrator, which has itself been calibrated against a reference set traceable to National and International Standards. There was no significant shift in the observed calibration level.

2.168 At this location the noise climate was dominated by road traffic noise on the existing A96 to the south, birdsong, occasional aircraft noise, wind in vegetation, occasional noise from agricultural vehicles in fields to north, occasional noise from children at Auldearn Primary School to the south west and occasional activity at property and surrounding properties.

2.169 .On average, wind speed measurements range from 0.5ms^{-1}, up to 4.0ms^{-1}. A large proportion of the wind speeds recorded during the measurement period do not exceed 3.0ms^{-1}, however, peak wind speeds up to 3.7ms^{-1} occur between the 19 and 21 February. On average, the total precipitation recorded did not exceed 1.5mm, however a higher quantity of rainfall was recorded on the 19 February at 18:00 hours (2.3mm) and 20 February at 13:00 hours (1.6mm). No precipitation was recorded on 18 February.

2.170 Table 49 provides the measured daily noise levels at this location.

Table 49: Daily Summarised Noise Levels at 3 The Steading

Date	Day	Daytime (between 06:00 – 00:00) 18 Hour Time Period			Daytime (between 07:00 – 23:00) 16 Hour Time Period			Night-time (between 23:00 – 07:00) 8 Hour Time Period		
		$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)	$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)	$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)
17/02/16	Wed	-	-	-	-	-	-	45.3	46.3	29.5
18/02/16	Thurs	52.8	55.2	44.7	53.1	55.5	45.8	45.0	47.7	29.9
19/02/16	Fri	55.3	57.8	48.1	55.5	58.0	48.9	49.6	51.4	36.1
20/02/16	Sat	54.6	57.1	46.2	54.9	57.6	47.2	47.5	50.7	36.3
21/02/16	Sun	54.0	56.6	46.2	54.3	57.0	47.1	49.8	51.5	39.0

2.171 In addition to long term measurements a series of short term attended measurements were also undertaken and the results are provided in Table 50. A Cirrus Optimus Green CR:171C1 sound level meter (s/n G061729) was positioned at a height of 1.5m in free-field conditions adjacent to the long term monitoring equipment. The monitoring equipment was calibrated both before and after the measurement period using an acoustic calibrator, which has itself been calibrated against a reference set traceable to National and International Standards. There was no significant shift in the observed calibration level.

Table 50: Additional Attended Noise Level Measurements at 3 The Steading

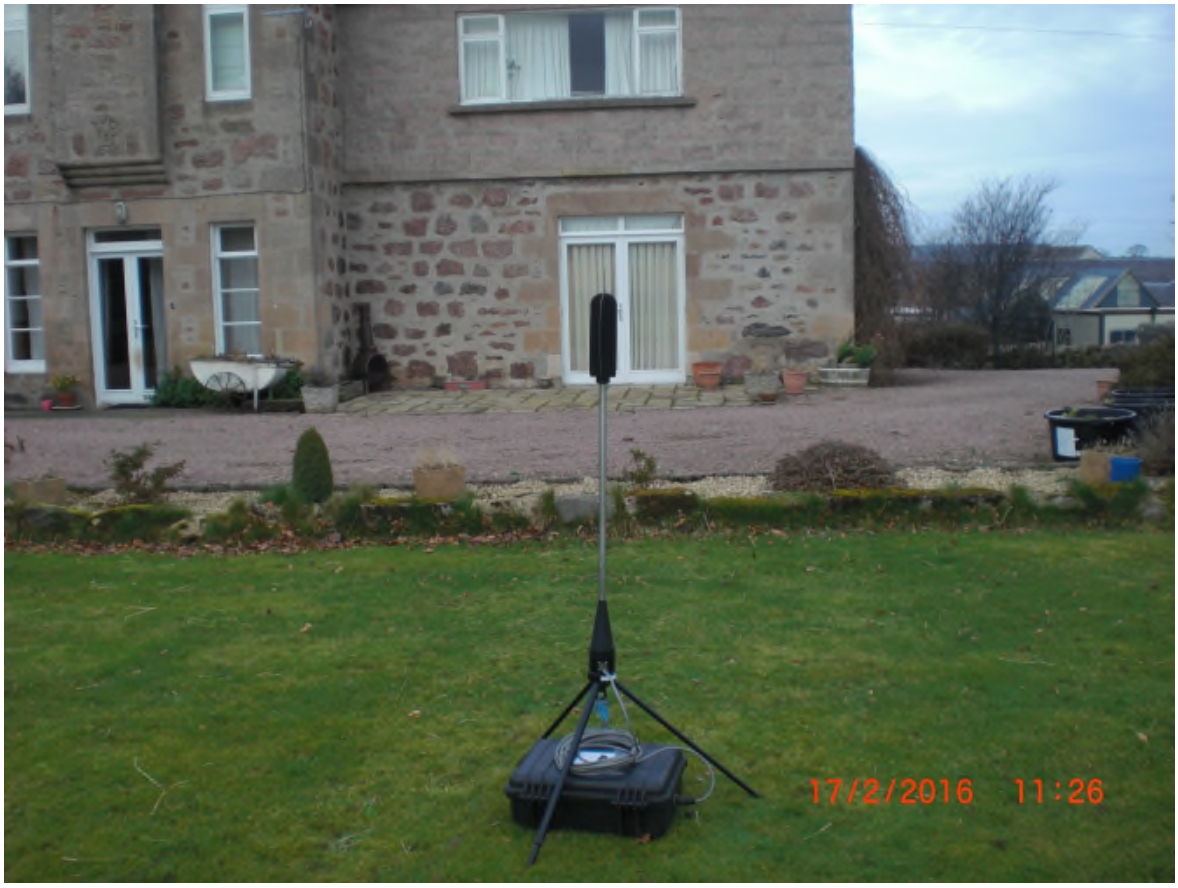
Start Date	Start Time (hh:mm)	Duration (hh:mm)	Noise Levels (dB)			Comments
			$L_{Aeq,T}$	$L_{A10,T}$	$L_{A90,T}$	
18/02/16	11:49	00:15	52.4	55.1	46.3	Westerly wind peaking at 2.0ms^{-1} averaging at 1.0ms^{-1}, 30% cloud cover, dry. Noise climate dominated by road traffic noise on the existing A96, birdsong, occasional aircraft noise, occasional activity at surrounding properties and wind in vegetation. Aircraft at 11:50.
18/02/16	19:51	00:15	49.0	53.0	38.5	Calm, no cloud cover, dry. Noise climate dominated by road traffic noise on the existing A96 and occasional talking at property. People speaking at property at 19:52.
23/02/16	12:44	00:15	51.4	54.3	45.9	Westerly wind peaking at 2.7ms^{-1} averaging at 1.2ms^{-1}, 40% cloud cover, dry. Noise climate dominated by road traffic noise on the existing A96, occasional activity from agricultural vehicles in fields to north, occasional noise from children at Auldearn primary school to the south west, birdsong and wind in vegetation. Tractor in field to north at 12:55.

Measurement Location NV024 –Penick Farmhouse, Auldearn, Nairn, IV12 5QG

2.172 Noise monitoring equipment was installed at Penick Farmhouse between 17 February 2016 and 23 February 2016.

2.173 The measurement location was as shown in Photograph 24. A Cirrus CR:811B Class 1 sound level meter (s/n C19302FD) was positioned at a height of 1.5m in free-field conditions. The equipment was approximately 11.0m on the south-eastern façade of the building.

Photograph 24: Noise Monitoring Equipment at Penick Farmhouse



2.174 The monitoring equipment was calibrated both before and after the measurement period using an acoustic calibrator, which has itself been calibrated against a reference set traceable to National and International Standards. There was no significant shift in the observed calibration level.

2.175 At this location the noise climate was dominated by distant road traffic noise on the existing A96 to the south, birdsong, occasional activity at the property, occasional activity at farm buildings to the north, occasional activity at tennis court to the east of the measurement location and occasional aircraft noise.

2.176 On average, wind speed measurements range from 0.5ms^{-1}, up to 4.0ms^{-1}. A large proportion of the wind speeds recorded during the measurement period do not exceed 3.0ms^{-1}, however, peak wind speeds up to 3.7ms^{-1} occur between the 19 and 21 February. On average, the total precipitation recorded did not exceed 1.5mm, however a higher quantity of rainfall was recorded on the 19 February at 18:00 hours (2.3mm) and 20 February at 13:00 hours (1.6mm). No precipitation was recorded on 18. February.

2.177 Table 51 provides the measured daily noise levels at this location.

Table 51: Daily Summarised Noise Levels at Penick Farmhouse

Date	Day	Daytime (between 06:00 – 00:00) 18 Hour Time Period			Daytime (between 07:00 – 23:00) 16 Hour Time Period			Night-time (between 23:00 – 07:00) 8 Hour Time Period		
		$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)	$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)	$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)
17/02/16	Wed	-	-	-	-	-	-	43.6	44.7	32.4
18/02/16	Thurs	48.6	49.9	42.0	48.8	50.1	42.7	43.2	44.8	31.0
19/02/16	Fri	54.7	53.9	46.3	54.9	53.9	46.9	47.9	48.9	37.4
20/02/16	Sat	50.6	51.9	43.2	50.9	52.5	43.8	46.6	48.8	36.4
21/02/16	Sun	50.3	52.0	44.6	50.6	52.2	45.2	-	-	-

2.178 In addition to long term measurements a series of short term attended measurements were also undertaken and the results are provided in Table 52. A Cirrus Optimus Green CR:171C1 sound level meter (s/n G061729) was positioned at a height of 1.5m in free-field conditions adjacent to the long term monitoring equipment. The monitoring equipment was calibrated both before and after the measurement period using an acoustic calibrator, which has itself been calibrated against a reference set traceable to National and International Standards. There was no significant shift in the observed calibration level.

Table 52: Additional Attended Noise Level Measurements at Penick Farmhouse

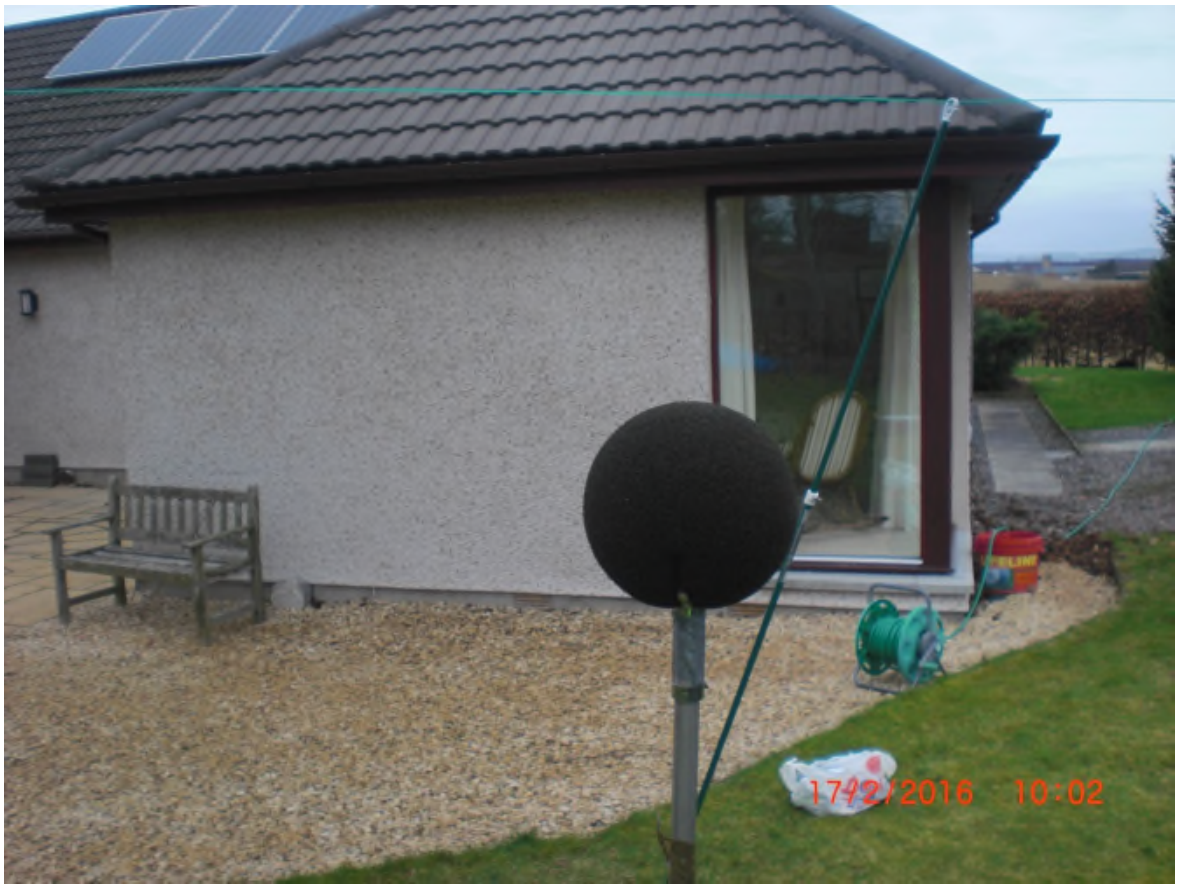
Start Date	Start Time (hh:mm)	Duration (hh:mm)	Noise Levels (dB)			Comments
			$L_{Aeq,T}$	$L_{A10,T}$	$L_{A90,T}$	
18/02/16	12:16	00:15	45.7	47.8	42.7	Light breeze, 10% cloud cover, dry. Noise climate dominated by distant road traffic noise on the existing A96, birdsong and faint activity from livestock in surrounding fields.
18/02/16	18:58	00:15	47.2	49.5	42.6	Calm, 10% cloud cover, dry. Noise climate dominated by distant road traffic noise on the existing A96 and noise from people playing tennis at adjacent tennis court on property.
23/02/16	11:31	00:15	43.3	45.1	39.4	Calm, 100% cloud cover, dry but ground slightly damp. Noise climate dominated by distant road traffic noise on the existing A96, birdsong, occasional aircraft noise and occasional noise from agricultural vehicles at farm buildings. Aircraft at 11:34. Tractor at farm buildings at 11:35.

Measurement Location NV025 – Innesfree, Auldearn, IV12 5QG

2.179 Noise monitoring equipment was installed at Innesfree between 17 February 2016 and 23 February 2016.

2.180 The measurement location was as shown in Photograph 25. A Rion NL-32 Class 1 sound level meter (s/n 00751323) was positioned at a height of 1.5m in free-field conditions. The equipment was approximately 5.0m on the south-eastern façade of the building.

Photograph 25: Noise Monitoring Equipment at Innesfree



2.181 The monitoring equipment was calibrated both before and after the measurement period using an acoustic calibrator, which has itself been calibrated against a reference set traceable to National and International Standards. There was no significant shift in the observed calibration level.

2.182 At this location the noise climate was dominated by road traffic noise on the existing A96, birdsong, wind in vegetation, occasional activity at the property and occasional aircraft noise.

2.183 At this location a Lufft WS600 weather station was installed and set up to capture meteorological readings, including wind speed, direction and precipitation every 5 minutes.

2.184 On average, wind speed measurements range from 0.5ms^{-1}, up to 4.0ms^{-1}. A large proportion of the wind speeds recorded during the measurement period do not exceed 3.0ms^{-1}, however, peak wind speeds up to 3.7ms^{-1} occur between the 19 and 22 February. On average, the total precipitation recorded did not exceed 1.5mm, however a higher quantity of rainfall was recorded on the 19 February at 18:00 hours (2.3mm) and 20 February at 13:00 hours (1.6mm). No precipitation was recorded on 18 February.

2.185 Table 53 provides the measured daily noise levels at this location.

Table 53: Daily Summarised Noise Levels at Innesfree

Date	Day	Daytime (between 06:00 – 00:00) 18 Hour Time Period			Daytime (between 07:00 – 23:00) 16 Hour Time Period			Night-time (between 23:00 – 07:00) 8 Hour Time Period		
		$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)	$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)	$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)
17/02/16	Wed	-	-	-	-	-	-	39.7	40.8	25.2
18/02/16	Thurs	48.3	50.3	39.5	48.6	50.7	40.4	39.4	41.9	25.0
19/02/16	Fri	50.5	52.0	43.3	50.3	51.9	44.0	48.4	50.0	35.4
20/02/16	Sat	51.0	53.1	42.1	51.4	53.7	42.9	46.8	49.5	34.0
21/02/16	Sun	51.3	53.8	43.9	51.2	53.9	44.4	49.0	50.8	39.8
22/02/16	Mon	59.8	55.6	42.1	60.3	56.2	43.0	44.3	46.5	28.8

2.186 In addition to long term measurements a series of short term attended measurements were also undertaken and the results are provided in Table 54. A Cirrus Optimus Green CR:171C1 sound level meter (s/n G061729) was positioned at a height of 1.5m in free-field conditions adjacent to the long term monitoring equipment. The monitoring equipment was calibrated both before and after the measurement period using an acoustic calibrator, which has itself been calibrated against a reference set traceable to National and International Standards. There was no significant shift in the observed calibration level.

Table 54: Additional Attended Noise Level Measurements at Innesfree

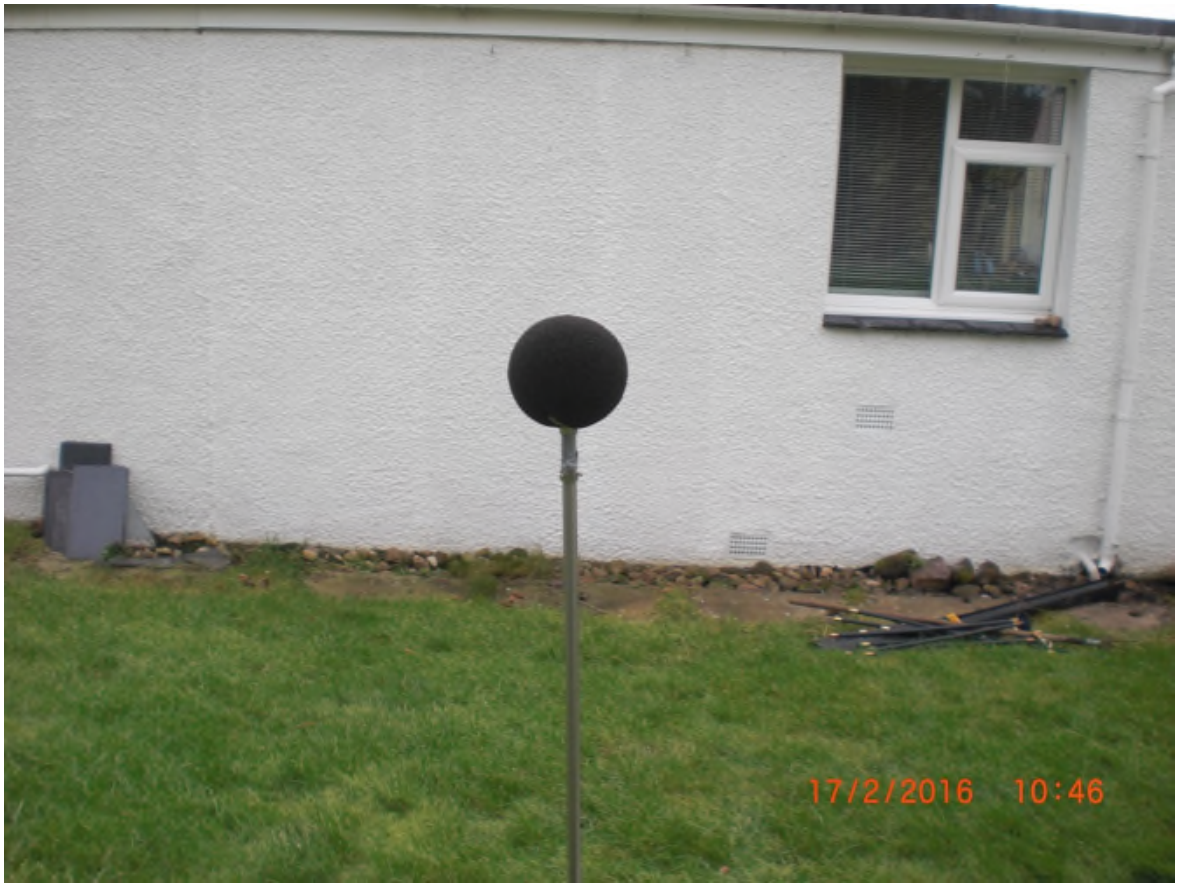
Start Date	Start Time (hh:mm)	Duration (hh:mm)	Noise Levels (dB)			Comments
			$L_{Aeq,T}$	$L_{A10,T}$	$L_{A90,T}$	
18/02/16	11:20	00:15	48.2	50.9	41.5	Westerly wind peaking at 4.5ms^{-1} averaging at 2.0ms^{-1}, 90% cloud cover, dry. Noise climate dominated by road traffic noise on the existing A96, birdsong, wind in vegetation, occasional aircraft noise and occasional activity at property. Helicopter at 11:26.
18/02/16	15:06	00:15	48.7	51.6	43.0	Westerly wind peaking at 3.5ms^{-1} averaging at 2.0ms^{-1}, 50% cloud cover, dry. Noise climate dominated by road traffic noise on the existing A96, birdsong and wind in vegetation.
18/02/16	19:26	00:15	44.1	47.3	36.5	Calm, 10% cloud cover, dry. Noise climate dominated by road traffic noise on the existing A96, occasional aircraft noise and occasional activity at property. Aircraft at 19:37.
23/02/16	10:22	00:15	48.7	51.7	40.8	Westerly wind peaking at 3.0ms^{-1} averaging at 1.3ms^{1}, 80% cloud cover, dry but ground slightly damp. Noise climate dominated by road traffic noise on the existing A96 and birdsong.

Measurement Location NV026 – Hardmuir of Boath, Auldearn, Nairn, IV12 5QG

2.187 Noise monitoring equipment was installed at Hardmuir of Boath between 17 February 2016 and 23 February 2016.

2.188 The measurement location was as shown in Photograph 26. A Rion NL-32 Class 1 sound level meter (s/n 00482602) was positioned at a height of 1.5m in free-field conditions. The equipment was approximately 4.2m on the south-eastern façade of the building.

Photograph 26: Noise Monitoring Equipment at Hardmuir of Boath



2.189 The monitoring equipment was calibrated both before and after the measurement period using an acoustic calibrator, which has itself been calibrated against a reference set traceable to National and International Standards. There was no significant shift in the observed calibration level.

2.190 At this location the noise climate was dominated by road traffic noise on the existing A96 to the north, occasional aircraft noise, occasional activity at property and surrounding properties, birdsong, wind in vegetation and occasional noise from livestock in fields to the north.

2.191 On average, wind speed measurements range from 0.5ms^{-1}, up to 4.0ms^{-1}. A large proportion of the wind speeds recorded during the measurement period do not exceed 3.0ms^{-1}, however, peak wind speeds up to 3.7ms^{-1} occur between the 19 and 22 February. On average, the total precipitation recorded did not exceed 1.5mm, however a higher quantity of rainfall was recorded on the 19 February at 18:00 hours (2.3mm) and 20 February at 13:00 hours (1.6mm). No precipitation was recorded on 18 February.

2.192 Table 55 provides the measured daily noise levels at this location.

Table 55: Daily Summarised Noise Levels at Hardmuir of Boath

Date	Day	Daytime (between 06:00 – 00:00) 18 Hour Time Period			Daytime (between 07:00 – 23:00) 16 Hour Time Period			Night-time (between 23:00 – 07:00) 8 Hour Time Period		
		$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)	$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)	$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)
17/02/16	Wed	-	-	-	-	-	-	36.5	37.9	27.3
18/02/16	Thurs	47.0	48.0	40.2	47.4	48.5	41.1	36.6	38.9	27.6
19/02/16	Fri	51.2	53.2	44.4	51.2	53.6	45.1	47.6	48.8	38.4
20/02/16	Sat	50.2	51.9	44.5	50.5	52.4	45.3	45.4	48.2	36.3
21/02/16	Sun	50.1	52.1	44.9	50.3	52.3	45.5	46.4	48.4	38.9
22/02/16	Mon	55.4	54.0	45.9	55.8	54.5	46.8	43.7	47.1	31.3

2.193 In addition to long term measurements a series of short term attended measurements were also undertaken and the results are provided in Table 56. A Cirrus Optimus Green CR:171C1 sound level meter (s/n G061729) was positioned at a height of 1.5m in free-field conditions adjacent to the long term monitoring equipment. The monitoring equipment was calibrated both before and after the measurement period using an acoustic calibrator, which has itself been calibrated against a reference set traceable to National and International Standards. There was no significant shift in the observed calibration level.

Table 56: Additional Attended Noise Level Measurements at Hardmuir of Boath

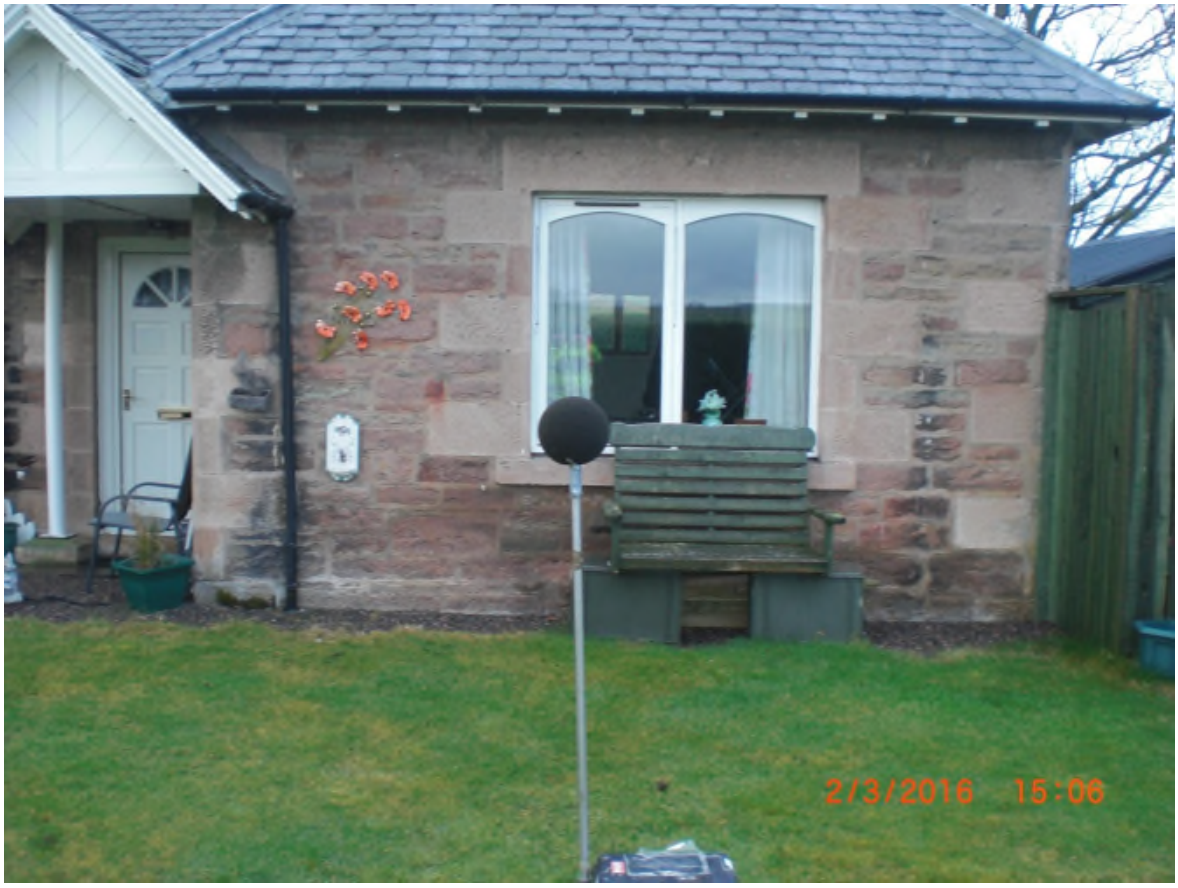
Start Date	Start Time (hh:mm)	Duration (hh:mm)	Noise Levels (dB)			Comments
			$L_{Aeq,T}$	$L_{A10,T}$	$L_{A90,T}$	
18/02/16	10:50	00:15	50.0	51.3	41.6	Westerly wind peaking at 3.0ms^{-1} averaging at 1.2ms^{-1}, 10% cloud cover, dry. Noise climate dominated by road traffic noise on the existing A96, birdsong, occasional aircraft noise, occasional noise from livestock in fields to the north, wind in vegetation and occasional activity at surrounding properties. Aircraft at 10:51. Post van driving to property at 10:56.
18/02/16	14:41	00:15	51.0	51.1	40.8	Westerly wind peaking at 2.0ms^{-1} averaging at 1.1ms^{-1}, 50% cloud cover, dry. Noise climate dominated by road traffic noise on the existing A96, birdsong, occasional aircraft nose and wind in vegetation. Aircraft at 14:52.
23/02/16	11:55	00:15	50.9	53.2	42.0	Westerly wind peaking at 1.4ms^{-1} averaging at 0.5ms^{-1}, 20% cloud cover, dry but ground slightly damp. Noise climate dominated by road traffic noise on the existing A96, occasional aircraft noise and occasional activity at surrounding properties. Aircraft at 12:05. People speaking at door of property at 12:06. Aircraft at 12:07.

Measurement Location NV027 – The Gate Lodge, Gollanfield, Inverness, IV2 7QP

2.194 Noise monitoring equipment was installed at The Gate Lodge between 2 March 2016 and 10 March 2016.

2.195 The measurement location was as shown in Photograph 27. A Rion NL-32 Class 1 sound level meter (s/n 00751323) was positioned at a height of 1.5m in free-field conditions. The equipment was approximately 4.0m on the south-eastern façade of the building.

Photograph 27: Noise Monitoring Equipment at The Gate Lodge



2.196 The monitoring equipment was calibrated both before and after the measurement period using an acoustic calibrator, which has itself been calibrated against a reference set traceable to National and International Standards. There was no significant shift in the observed calibration level.

2.197 At this location the noise climate was dominated by road traffic noise on the existing A96 to the north, birdsong, occasional aircraft noise, occasional vehicle pass bys on local roads to the north and west, occasional activity at the property and occasional train pass bys on the Aberdeen to Inverness Railway Line to the north of the measurement location.

2.198 On average, wind speed measurements ranged between 0.5ms^{-1} and 4.0ms^{-1} throughout the measurement period. Wind speeds peaked at 17:00 hours (2 March) and 12:00 hours (8 March), where levels up to 5.0ms^{-1} were recorded. In general, when rainfall occurred, the total hourly precipitation did not exceed 0.5mm, but higher levels of precipitation (up to 4.7mm) were recorded on 4 March (09:00 – 12:00 hours). No precipitation was recorded during the 2 and 10 March.

2.199 Table 57 provides the measured daily noise levels at this location.

Table 57: Daily Summarised Noise Levels at The Gate Lodge

Date	Day	Daytime (between 06:00 – 00:00) 18 Hour Time Period			Daytime (between 07:00 – 23:00) 16 Hour Time Period			Night-time (between 23:00 – 07:00) 8 Hour Time Period		
		$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)	$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)	$L_{Aeq,T}$ (dB)	$L_{A10,T}$ (dB)	$L_{A90,T}$ (dB)
02/03/16	Wed	-	-	-	-	-	-	40.9	40.6	28.4
03/03/16	Thurs	50.7	52.6	40.8	51.0	53.2	41.7	47.2	46.3	28.5
04/03/16	Fri	53.6	52.5	42.3	53.8	53.3	43.0	41.7	38.6	29.9
05/03/16	Sat	48.9	49.9	35.2	49.1	50.3	35.6	40.1	41.7	25.9
06/03/16	Sun	48.5	48.9	36.7	48.9	49.5	37.5	44.3	42.5	28.8
07/03/16	Mon	50.8	52.1	40.6	51.0	52.5	41.5	44.6	45.0	29.8
08/03/16	Tues	51.8	52.6	42.7	52.1	53.2	43.7	43.4	41.2	27.8
09/03/16	Wed	50.5	52.3	41.2	50.8	52.6	41.9	43.4	44.6	27.9

2.200 In addition to long term measurements a series of short term attended measurements were also undertaken and the results are provided in Table 58. A Cirrus Optimus Green CR:171C1 sound level meter (s/n G061729) was positioned at a height of 1.5m in free-field conditions adjacent to the long term monitoring equipment. The monitoring equipment was calibrated both before and after the measurement period using an acoustic calibrator, which has itself been calibrated against a reference set traceable to National and International Standards. There was no significant shift in the observed calibration level.

Table 58: Additional Attended Noise Level Measurements at The Gate Lodge

Start Date	Start Time (hh:mm)	Duration (hh:mm)	Noise Levels (dB)			Comments
			$L_{Aeq,T}$	$L_{A10,T}$	$L_{A90,T}$	
03/03/16	10:31	00:15	47.6	50.0	41.5	Light breeze, 50% cloud cover, dry but ground slightly damp. Noise climate dominated by road traffic noise on the existing A96, birdsong and occasional vehicle pass bys on local road. Car on local road at 10:35.
03/03/16	14:14	00:15	49.3	53.8	39.4	Light breeze, 50% cloud cover, dry. Noise climate dominated by road traffic noise on the existing A96, birdsong, occasional aircraft noise and noise from person working on car to north of measurement location. Increased noise from person working on car (repairing windows) at 14:17. Aircraft at 14:27.
03/03/16	18:02	00:15	48.5	50.7	44.2	Westerly wind peaking at 1.0ms^{-1} averaging at 0.5ms^{-1}, 90% cloud cover, dry. Noise climate dominated by road traffic noise on the existing A96, birdsong, occasional aircraft noise and occasional vehicle pass bys on local road. Aircraft at 18:05. Car on local road at 18:05.
09/03/16	19:15	00:15	51.5	54.0	44.2	Calm, 40% cloud cover, dry. Noise climate dominated by road traffic noise on the existing A96 and occasional train pass bys.