Appendix 6

Noise Monitoring Reports*

(No. of pages including blank pages = 194)

Note*: A copy of this Appendix is only available on the Project CD

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Donaldson and Abel Coal Mines

Quarterly Noise Monitoring

Quarter Ending June 2012

Report Number 630.01053-R1

3 August 2012

Donaldson Coal Pty Ltd
PO Box 675
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Donaldson and Abel Coal Mines

Quarterly Noise Monitoring

Quarter Ending June 2012

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Reference	Status	Date	Prepared	Checked	Authorised
630.01053-R1	Draft 1	3 August 2012	Nicholas Vandenberg	Nathan Archer	

Table of Contents

TABLES

Table of Contents

FIGURES

1 INTRODUCTION

Development consent was obtained by Donaldson Coal Pty Ltd for the Donaldson Mine in October 1999 following a Commission of Inquiry. Development Consent number N97/00147 was issued by the Minister for Urban Affairs pursuant to Section 101 of the Environmental Planning and Assessment Act 1979.

Project Approval (Application No. 05_0136) granted by the Minister of Planning was obtained by Donaldson Coal Pty Ltd for Abel Coal Mine in 2008.

Donaldson Coal Pty Ltd has commissioned SLR Consulting Pty Ltd (SLR Consulting) to conduct quarterly noise monitoring surveys for the Donaldson Coal Mine and Abel Coal Mine in accordance with the Abel Mine Project Noise Monitoring Program, dated 27 May 2008.

The objectives of the noise monitoring survey for this operating quarter were as follows:

- Measure the ambient noise levels at five (5) focus receptor locations (potentially worst affected) surrounding Donaldson Coal Mine and Abel Coal Mine.
- Qualify all sources of noise within each of the attended surveys, including estimated contribution or maximum level of individual noise sources.
- Assess the noise emissions of Donaldson Coal Mine and Abel Coal Mine with respect to the limits contained in the Development Consent.

2 DEVELOPMENT CONSENT AND PROJECT APPROVAL

2.1 Donaldson Coal Mine Development Consent Conditions

The Development Consent nominates hours of operation and mine noise emission goals in the Sections entitled "*Operation of Development, Condition No. 3(1) and 3(2)*", and "*Noise and Vibrational Noise Limits: Condition No. 15*" as follows:

"3.(1) Subject to (2) the approved hours of operation are as follows:

Works	*Period*	*Hours*
Construction, including construction of any bunds	*Monday to Friday* *Saturday*	*7 am to 6 pm* *8 am to 1 pm*
Mining operations, including mining, haulage of waste to dumps and coal processing	*Monday to Friday* *Saturday, Sunday*	*24 hours per day* *7 am to 6 pm*
Road Transportation and stockpiling of coal	*7 days per week*	*24 hours per day*
Rail loading of coal	*7 days per week*	*7 am to 10 pm*
Maintenance of mobile and fixed plant	*7 days per week*	*24 hours per day*
Blasting, not involving closure of John Renshaw Drive	*Monday to Saturday*	*7 am to 5 pm*
Blasting, involving closure of John Renshaw Drive	*Monday to Saturday*	*10 am to 2 pm*

Notes: *Restrictions on Public Holidays are the same as Sundays*

(2) The Applicant shall submit a report to the Director-General's satisfaction demonstrating the noise limits in Condition 15 can be met while rail loading of coal is occurring during the period from 6 pm to 10 pm. If that report does not demonstrate that the noise limits can be met to the Director-General's satisfaction, then the hours of operation for rail loading of coal shall be restricted to 7 am to 6 pm."

15. Unless subject to a negotiated agreement in accordance with Condition 23, the Applicant shall ensure that the noise emission from construction or mining operations, when measured or computed at the boundary of any dwelling not owned by the applicant (or within 30 metres of the dwelling, if the boundary is more that 30 metres from the dwelling), shall not exceed the following noise limits:

Location	*LA10(15minute) Noise Limits (dBA)*	
	Daytime	*Night-time*
Beresfield area (residential)	*45*	*35*
Steggles Poultry Farm	*50*	*40*
Ebenezer Park Area	*46*	*41*
Black Hill Area	*40*	*38*
Buchanan and Louth Park Area	*38*	*36*
Ashtonfield Area	*41*	*35*
Thornton Area	*48*	*40*

Note: Daytime is 7 am to 10 pm Monday-Saturday, and 8 am to 10 pm Sundays and Public Holidays. Night-time is 10 pm to 7 am Monday-Saturday, and 10 pm to 8 am Sundays and Public Holidays.

The noise limits apply for prevailing meteorological conditions (winds up to 3 m/s), except under conditions of temperature inversions."

Other Conditions of Consent relevant to noise are as follows:

"18. The applicant shall survey and investigate noise reduction measures from plant and equipment and set targets for noise reduction in each Annual Environmental Management Report (AEMR), taking into consideration valid noise complaints received in the previous year. The Report shall also include remedial measures.

19. The Applicant shall revise the Noise Management Plan as necessary and provide an updated Plan five years after commencement of mining to the Director-General, the independent noise expert (Condition 48), EPA, Councils and the Community Consultative Committee."

2.2 Abel Coal Mine – Project Approval

The relevant conditions relating to noise from the Abel Coal Mine approval are reproduced below.

Schedule 4

NOISE

Note: These conditions should be read in conjunction with section 3 of the Statement of Commitments.

Noise Limits

23 The Proponent shall ensure that the noise generated by the Project does not exceed at any privately-owned residence the levels set out in the following table for the monitoring location nearest that residence.

Table 1: Noise limits dB(A)

Day	Evening	Night		Location and Locality*
LAeq(15 minutes)	LAeq(15 minutes)	LAeq(15 minutes)	LA1(1 minute)	
50	48	41	51	**A** Weakleys Dr, Beresfield
50	48	41	51	**B** Yarrum Rd, Beresfield
43	44	38	50	**C** Phoenix Rd, Black Hill
41	40	36	46	**D** Black Hill School
41	40	36	46	**E** Brown Rd, Black Hill
41	40	36	46	**F** Black Hill Rd, Black Hill
43	41	36	46	**G** Buchanan Rd, Buchanan
43	41	36	46	**H** Mt Vincent Rd, Louth Park
44	46	38	48	**I** Lord Howe Dr, Ashtonfield
49	47	40	50	**J** Kilarney St, Avalon Estate
41	40	37	46	**K** Catholic Diocese (Former Bartter) K1, K2, K3
46	46	40	53	**L** Kilshanny Ave, Ashtonfield

Notes:

- *To determine compliance with the LAeq(15 minute) limit, noise from the project is to be measured at the most affected point within the residential boundary, or at the most affected point within 30 metres of a dwelling (rural situations) where the dwelling is more than 30 metres from the boundary. Where it can be demonstrated that direct measurement of noise from the development is impractical, the DECC may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy). The modification factors in Section 4 of the NSW Industrial Noise Policy shall also be applied to the measured noise levels where applicable.*
- *To determine compliance with the LA1(1 minute) limit, noise from the project is to be measured at 1 metre from the dwelling façade. Where it can be demonstrated that direct measurement of noise from the project is impractical, the DECC may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy).*
- *These limits apply under the relevant meteorological conditions outlined in the assessment procedures in Chapter 5 of the NSW Industrial Noise Policy.*
- *These limits do not apply if the Proponent has an agreement with the relevant owner/s of these residences to generate higher noise levels, and the Proponent has advised the Department in writing of the terms of this agreement.*

* Revised to list alphabetically

Noise Monitoring

24. The Proponent shall prepare and implement a Noise Monitoring Program for the project to the satisfaction of the Director-General. This program must:

(a) be submitted to the Director-General for approval within 6 months of this approval;

(b) be prepared in consultation with the DECC; and

(c) use a combination of attended and unattended monitoring measures to monitor the performance of the project.

2.2.1 Statement of Commitments

3.3 Monitoring

Within 6 months of this approval being granted a Noise Monitoring Program shall be prepared and implemented for the Abel Underground Mine and the Bloomfield CHPP, to the satisfaction of the Director-General. The Noise Monitoring Program shall include a combination of real-time and supplementary attended monitoring measures, and a noise monitoring protocol for evaluating compliance with the noise environmental assessment. This plan will be integrated with the monitoring plans for the Tasman, Donaldson and Bloomfield Mines to provide a single integrated Noise Monitoring Program for all 4 mines.

3 PROCEDURES AND METHODOLOGY

3.1 General Requirements

The operational noise monitoring program was conducted with reference to Development Consent N97/00147 (Donaldson Coal Mine), Project Approval 05_0136 (Abel Coal Mine), and in accordance with Heggies Report 30-1409-R2 dated 27 May 2008 (*Abel Mine Project Noise Monitoring Program)* and AS 1055-1997 "*Acoustics - Description and Measurement of Environmental Noise*".

3.2 Monitoring Locations

Baseline and preceding operational quarterly surveys have been conducted at 11 locations surrounding the Donaldson Mine and Abel Coal Mine sites. With the experience of these previous surveys, it was decided to concentrate noise monitoring at five (5) focus locations that represent the potentially most noise affected areas from Donaldson Mine and Abel Coal Mine during the June 2012 Quarter. The details of the monitoring locations are contained within **Table 1.**

Table 1 Monitoring Locations

Noise Monitoring Location	Description
A	98 Weakleys Drive, Beresfield
F	Lot 684 Black Hill Road, Black Hill
G	156 Buchannan Road, Buchannan
L	17 Kilshanny Ave, Ashtonfield
D	Black Hill School, Black Hill

A map giving the approximate location of the noise monitoring sites is contained within **Appendix A**.

3.3 Unattended Continuous Noise Monitoring

Environmental noise loggers were deployed for approximately a seven (7) day period between 29 May 2012 and 14 June 2012 at each of the five (5) nominated locations given in **Table 1**. All unattended monitoring equipment was programmed to continuously record statistical noise level indices in 15 minute intervals including the L_{Amax}, L_{A1}, L_{A10}, L_{A90}, L_{A99}, L_{Amin} and L_{Aeq}. The statistical noise exceedance levels (L_{AN}) are the levels exceeded for N% of the 15 minute interval. The L_{A90} represents the level exceeded for 90% of the interval period and is referred to as the average minimum or background noise level. The L_{A10} is the level exceeded for 10% of the time and is usually referred to as the average maximum noise level. The L_{Aeq} is the equivalent continuous sound pressure level and represents the steady sound level which is equal in energy to the fluctuating level over the interval period. The L_{Amax} is the maximum noise level recorded over the interval. Instrument calibration was conducted before and after each measurement survey, with the variation in calibrated levels not exceeding ±0.5 dBA.

3.4 Operator Attended Monitoring

Operator attended surveys were conducted at each of the five (5) monitoring locations during daytime, evening and night-time periods, to verify the unattended logging results and to determine the character and contribution of ambient noise sources.

3.5 Equipment Operation

The mobile equipment operating on the Donaldson Mine site during the survey period are contained in **Appendix B**.

During the survey period the following operations were being undertaken:

- Overburden removal and mining was being undertaken in Strips 1 - 7 in the Square Pit.
- Overburden was placed in the East Pit and West Pit.
- The grader and water cart was working on the surface during the reporting period.

The only surface equipment operating on the Abel Coal Mine site during the survey periods was a ventilation fan.

4 OPERATOR ATTENDED NOISE MONITORING

4.1 Results of Operator Attended Monitoring

Operator attended noise measurements were conducted during the daytime on Thursday 14 June 2012 and Tuesday 19 June 2012, during the evening on Monday 18 June 2012 and during the night-time on Monday 18 June 2012. All operator attended noise surveys were conducted using a Brüel & Kjær 2270 Type 1, integrating sound level meter (s/n: 2679354).

The results of the operator attended noise measurements are given in **Table 2** to **Table 6**. Ambient noise levels given in the tables include all noise sources such as traffic, insects, birds, and mine operations as well as any other industrial operations.

The tables provide the following information:

- Monitoring location.
- Date & start time.
- Wind velocity (m/s) and Temperature (ºC) at the measurement location.
- Typical maximum (L_{Amax}) and contributed noise levels.

Mine contributions listed in the tables are from Donaldson Mine and Abel Coal Mine and are stated only when a contribution could be quantified.

Table 2 Location A Weakleys Drive, Beresfield

Date/Start Time/Weather	Measurement Description	Primary Noise Descriptor (dBA re 20 µPa)					Description of Noise Emission and Typical Maximum Levels LAmax – dBA
		LAmax	LA1	LA10	LA90	LAeq	
19/06/2012 11:00 W = 2 m/s NW Temp = 21°C Cloud cover = 0/8	Daytime Ambient	64	59	56	52	54	Birds ~ 53 – 64 Logging Machinery ~ 54 – 60 Traffic ~ 59 - 63
		Donaldson mine ~ inaudible.					
18/06/2012 18:20 W = Calm Temp = 11°C Cloud cover = 0/8	Evening Ambient	85	79	73	58	70	Local Traffic ~ 74-83 Distant Traffic ~ 50 Crickets ~ 48
		Donaldson mine ~ Inaudible					
19/06/2012 00:41 W = Calm Temp = 8°C Cloud cover = 0/8	Night-time Ambient	86	80	67	42	66	Traffic ~ 67-74 Truck ~ 78-85 Crickets ~ 38 Distant Traffic ~ 44 – 47
		Donaldson mine ~ Inaudible					

Table 3 Location F Lot 684 Black Hill Road, Black Hill

Date/Start Time/Weather	Measurement Description	Primary Noise Descriptor (dBA re 20 µPa)					Description of Noise Emission and Typical Maximum Levels LAmax – dBA
		LAmax	LA1	LA10	LA90	LAeq	
19/06/2012 15:18 W = 1 m/s W Temp = 21°C Cloud cover = 0/8	Daytime Ambient	73	69	61	48	58	Local Traffic ~ 64-72 Frogs ~ 42 Bird ~ 56 John Renshaw Drive Traffic ~ 56 – 68 Trees rustling ~ 41
		Donaldson mine ~ Inaudible					
18/06/2012 19:10 W = Calm Temp = 10°C Cloud cover = 0/8	Evening Ambient	79	70	58	47	58	John Renshaw Drive Traffic ~ 58-62 Crickets ~ 47 Bird ~ 54 Operator ~ 54 Donaldson Mine ~ 37
		Estimated Donaldson LAeq Contribution~ 37 dBA					
19/06/2012 00:24 W = 0.5 m/s NW Temp = 6°C Cloud cover = 0/8	Night-time Ambient	58	53	49	44	47	Crickets/Insects ~ 49-51 Local Traffic ~ 53-57 Animal ~ 50 Bird ~ 50-51 Operator Noise ~ 57 Donaldson Mine ~ 40-49
		Estimated Donaldson LAeq Contribution ~ 34 dBA					

Table 4 Location G 156 Buchanan Road, Buchanan

Date/Start Time/Weather	Measurement Description	Primary Noise Descriptor (dBA re 20 µPa)					Description of Noise Emission and Typical Maximum Levels LAmax – dBA
		LAmax	LA1	LA10	LA90	LAeq	
14/06/2012 11:07 W = Calm Temp = 18°C Cloud cover = 4/8	Daytime Ambient	63	58	47	35	45	Birds ~ 50-53 Local Noise ~ 45 Plane ~ 32-42 Distant traffic ~ <30 Frogs ~ 35-43 Helicopter ~ 55-62
		Donaldson mine ~ Inaudible					
18/06/2012 21:43 W = Calm Temp = 6°C Cloud cover = 0/8	Evening Ambient	56	46	43	36	40	Distant Traffic ~ 45-46 Insects ~ 42 – 47 Dog ~ 30 Frogs ~ 38 Operator ~ 53
		Donaldson mine ~ Inaudible					
18/06/2012 22:00 W = Calm Temp = 19°C Cloud cover = 0/8	Night-time Ambient	56	46	44	36	40	Crickets ~ 45-47 Distant Traffic ~ 41-43 Dog ~ 30 Operator ~ 47 Reversing Alarm ~ 44
		Donaldson mine ~ Inaudible					

Table 5 Location L 17 Kilshanny Ave, Ashtonfield

Date/Start Time/Weather	Measurement Description	Primary Noise Descriptor (dBA re 20 µPa)					Description of Noise Emission and Typical Maximum Levels LAmax – dBA
		LAmax	LA1	LA10	LA90	LAeq	
19/06/2012 14:07 Wind: 1 m/s NW Temp = 21°C Cloud cover = 0/8	Daytime Ambient	86	64	45	37	57	Door Slam ~ 47 Birds ~ 43-60 Trees Rustling ~ 34 Car ~ 85 Banging ~ 49-57 Distant Traffic ~ 40 Construction ~ 45 Saw ~ 41
		Donaldson mine ~ Inaudible					
18/06/2012 20:25 W = Calm Temp = 7°C Cloud cover = 0/8	Evening Ambient	72	52	46	40	46	Insects/Crickets ~ 40 Distant Traffic ~ 43-44 Local traffic 72 Operator ~ 45 Plane ~46 – 49 Mine Operation ~ 38-50
		Donaldson mine ~ Inaudible					
18/06/2012 22:30 W = 1 m/s NW Temp = 8°C Cloud cover = 0/8	Night-time Ambient	68	55	41	37	45	Truck ~42-43 Mine Operation ~ 35 – 42 Crickets/insects ~ 31 Operator ~ 51 Birds ~ 36 Local Traffic ~ 68 Distant Traffic ~ 42
		Donaldson mine ~ Inaudible					

Table 6 Location D Black Hill School, Black Hill

Date/Start Time/Weather	Measurement Description	Primary Noise Descriptor (dBA re 20 µPa)					Description of Noise Emission and Typical Maximum Levels LAmax – dBA
		LAmax	LA1	LA10	LA90	LAeq	
19/06/2012 15:42 W = Calm Temp = 22°C Cloud cover = 0/8	Daytime Ambient	81	75	64	45	62	Truck ~ 75 – 78 Local Traffic ~ 71 – 78 Birds ~ 55 Distant Traffic ~ 36 Children ~ 52 Bus ~ 80 Tradesmen~ 52 – 74 Dog ~ 55-79 Plane ~ 56
		Donaldson mine ~ Inaudible					
18/06/2012 18:47 W = Calm Temp = 10°C Cloud cover = 0/8	Evening Ambient	77	68	54	40	54	Local Traffic ~ 48-76 Unidentified Industry ~ 36 Car Door ~ 56 Gate ~ 51 Dog ~ 42 Vacuum ~ 45 School students/parents ~ 51 Crickets ~ 34 Truck ~ 48-53 Cow ~ 43 Donaldson Mine ~ 49
		Estimated Donadson LAeq Contribution ~ 36					
18/06/2012 23:48 W = 1 m/s NW Temp = 6°C Cloud cover = 0/8	Night-time Ambient	57	47	45	40	43	Unidentified Industry ~ 36 Birds ~ 33 Operator ~ 57 Insects ~ 35 Stick Falling ~ 47 Cow ~ 44 Donaldson Mine ~ 47-50
		Estimated Donadson LAeq Contribution ~ 36					

4.2 Operator Attended Monitoring Summary

4.2.1 Donaldson Mine

Noise generated by local and distant traffic was a significant contributor to noise levels at all monitored locations as well as "natural' noise such as birds, insects and leaf rustle.

Donaldson Mine operations were observed to be audible at Location D Black Hill School and Location F Black Hill Road during the evening and night time periods. Donaldson Mine operations were inaudible at all other locations.

The estimated Donaldson Contribution at Location D and Location F during the evening was approximately L_{Aeq} 36 dBA and 37 dBA respectively. This is within the consent noise limits.

The estimated Donaldson contribution at Location D and Location F during the night was approximately L_{Aeq} 36 dBA and 34 dBA. This is within the consent conditions.

Based on results and observations from operator attended surveys, it is likely that the contributed noise levels from Donaldson Mine comply with noise emission goals for all periods.

4.2.2 Abel Coal Mine

Noise generated by local and distant traffic was a significant contributor to noise levels at all monitored locations.

Abel project operations were inaudible at all residential locations during all operator attended noise surveys. As such, it is likely that contributed noise levels from Abel Project did not exceed noise emission goals (including night-time sleep arousal criteria) and were in compliance with Abel Mine Project Approval.

5 UNATTNEDED CONTINUOUS NOISE MONITORING

5.1 Results of Unattended Continuous Monitoring

Unattended continuous noise monitoring was conducted between 29 May 2012 and 14 June 2012 at each of the five (5) nominated locations given in **Table 1**. ARL Type EL-316, ARL Type EL-215 and SVAN 957 Environmental noise loggers were used to monitor the ambient noise levels at each location. Details of the noise loggers used for the unattended continuous noise monitoring are given in **Table 7**.

Table 7 Noise Loggers and Noise Monitoring Locations

Location	Noise Logger Serial Number	Date of Logging
A – Weakleys Drive, Beresfield	20666	29/05/2012-05/06/2012
F – Black Hill Road, Black Hill	16-306-039	29/05/2012-05/06/2012
G – Buchanan Road, Buchanan	16-103-494	05/06/2012-14/06/2012
L – Kilshanny Ave, Kilshanny	16-203-509	05/06/2012-14/06/2012
D – Black Hill School, Black Hill	16-301-473	29/05/2012-05/06/2012

The unattended ambient noise logger data from each monitoring location are presented graphically on a daily basis and are attached as **Appendices C1** to **C5**. A summary of the results of the unattended continuous noise monitoring is given in

Table 8. The ambient noise level data quantifies the overall noise level at a given location independent of its source or character.

The measured ambient noise levels were divided into three periods representing day, evening and night as designated in the NSW Industrial Noise Policy (INP). The day, evening and night periods replace the day and night periods defined under the Environmental Noise Control Manual (ENCM). However, as the Donaldson conditions of consent are under the ENCM, these periods have also been reported.

Precautions can be taken to minimise influences from extraneous noise sources (eg optimum placement of the loggers away from creeks, trees, houses, etc), however, not all these sources or their effects can be eliminated. This is particularly the case during the warmer times of year when noise from insects, frogs, birds and other animals can become quite prevalent.

Weather data for the subject area during the noise monitoring period was provided by Donaldson Coal. Noise data during periods of any rainfall and/or wind speeds in excess of 5 m/s (approximately 9 knots) were discarded in accordance with INP weather affected data exclusion methodology.

Table 8 Unattended Continuous Monitoring Ambient Noise Levels (dBA Re 20 µPa)

Location	Period	Primary Noise Descriptor (dBA re 20 µPa)			
		LA1	LA10	LA90	LAeq
A Weakleys Drive, Beresfield	Daytime	62	59	49	63
	Evening	59	56	47	54
	ENCM Daytime	62	59	48	62
	Night	58	53	40	52
F Lot 684 Black Hill Road, Black Hill	Daytime	69	58	42	57
	Evening	67	53	46	52
	ENCM Daytime	68	57	42	58
	Night	57	53	42	52
G 156 Buchanan Road, Buchanan	Daytime	53	48	34	46
	Evening	53	48	40	49
	ENCM Daytime	54	48	35	47
	Night	51	49	35	46
L 17 Kilshanny Ave, Ashtonfield	Daytime	57	48	32	53
	Evening	49	48	36	45
	ENCM Daytime	56	46	35	49
	Night	45	42	35	43
D Black Hill School, Black Hill	Daytime	58	51	38	53
	Evening	54	44	36	47
	ENCM Daytime	57	51	36	50
	Night	51	45	33	49

Note: Periods used for the Industrial Noise Policy (INP) are defined as Daytime - 7.00 am to 6.00 pm Monday to Saturday, 8.00 am to 6.00 pm Sunday; Evening - 6.00 pm 10.00 pm; Night - 10.00 pm to 7.00 am pm Monday to Saturday, 10.00 pm to 8.00 am Sunday.
EPA Periods used for the Environmental Noise Control Manual (ENCM) Daytime 7.00 am to 10.00 pm, Night 10.00 pm to 7.00 am.

5.2 Long term Unattended Continuous Monitoring Summary for Donaldson Mine and Abel Coal Mine

5.2.1 Ambient L_{A90} Noise Levels

The long term ambient L_{A90} noise levels collected from each monitoring location are presented graphically in **Figure 1**, **Figure 2** and **Figure 3** for the daytime, evening and night-time respectively.

Figure 1 Long-term Daytime L_{A90} Noise Levels

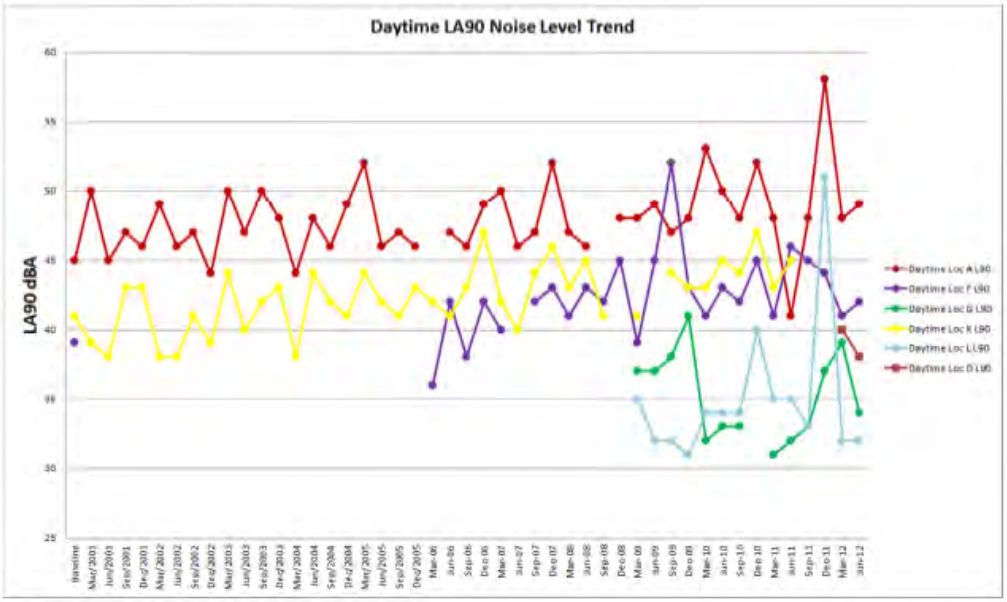


Figure 2 Long-term Evening L_{A90} Noise Levels

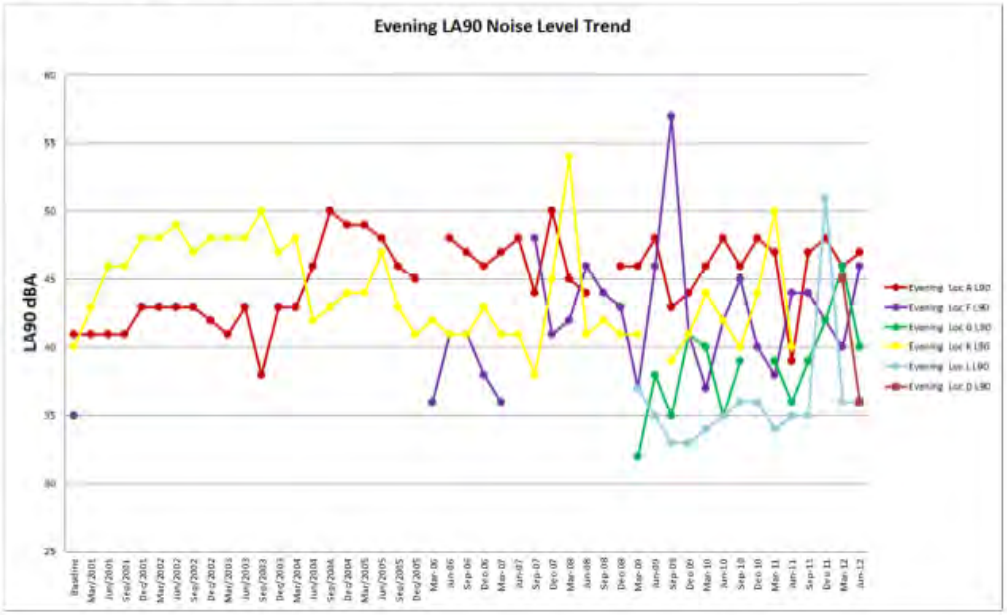
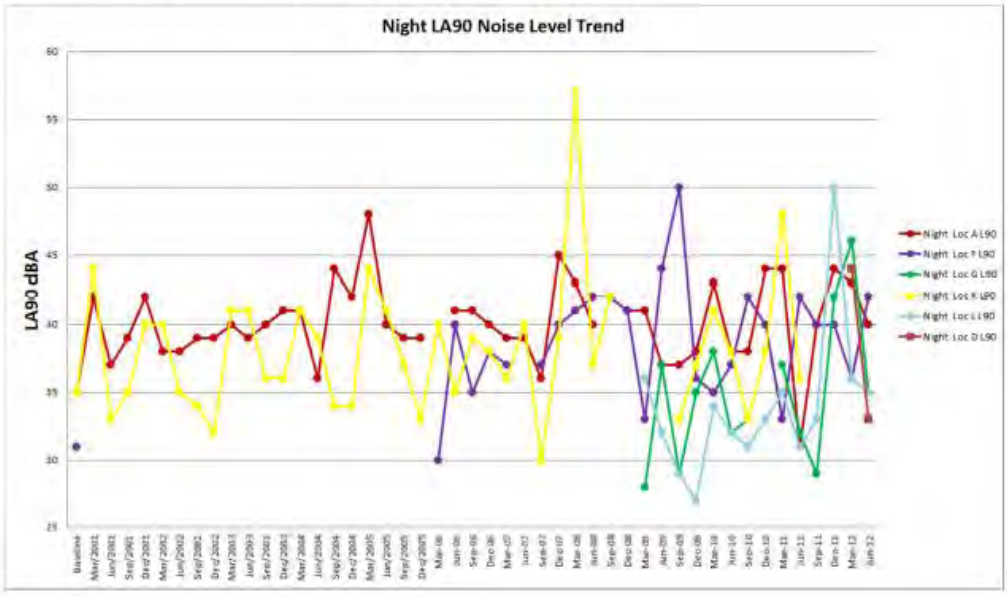


Figure 3 Long-term Night-time L_{A90} Noise Levels



Baseline

The summary of results in

Table 8 and **Figure 1**, **Figure 2** and **Figure 3** show that ambient L_{A90} noise levels recorded for the quarter ending June 2012 were higher than levels recorded during the baseline monitoring process at Location A by 4 dBA, 6 dBA and 5 dBA were recorded respectively during the daytime, evening and night-time. Increases of 3 dBA were recorded in the daytime, and increases of 11 dBA were recorded in the evening and night-time at Location F.

Given that no data was available at Locations D, G and L during baseline measurements and no monitoring was conducted at Location K during the June 2012 quarter no comparisons can be made.

Previous Quarter (March 2012)

A comparison of the current monitoring period with the previous monitoring period shows that L_{A90} noise levels were the same or lower than those recorded during March 2012 at Location D, G and L. Increases of 1 dBA, 6 dBA and 6 dBA were recorded respectively in the daytime, evening and night-time periods at Location F. Increases of 1 dBA during the day-time and evening periods were recorded at location A.

Coinciding Period Last Year (June 2011)

A comparison of the current monitoring period with the coinciding monitoring period last year indicates that L_{A90} noise levels were generally similar (within 4 dBA) or lower than those recorded in 2011 locations F, L and G.

Significant increases (up to 9 dBA) in the L_{A90} noise levels were recorded at location A during the daytime, evening and night-time periods. It is considered that this is likely due to the impact of local traffic along Weakleys Drive and logging in the industrial area.

5.2.2 Ambient L_{A10} Noise Level Comparison

The long term ambient L_{A10} noise levels collected from each monitoring location are presented graphically in **Figure 4**, **Figure 5** and **Figure 6**, for the daytime, evening and night-time respectively.

Figure 4 Long-term Daytime L_{A10} Noise Levels

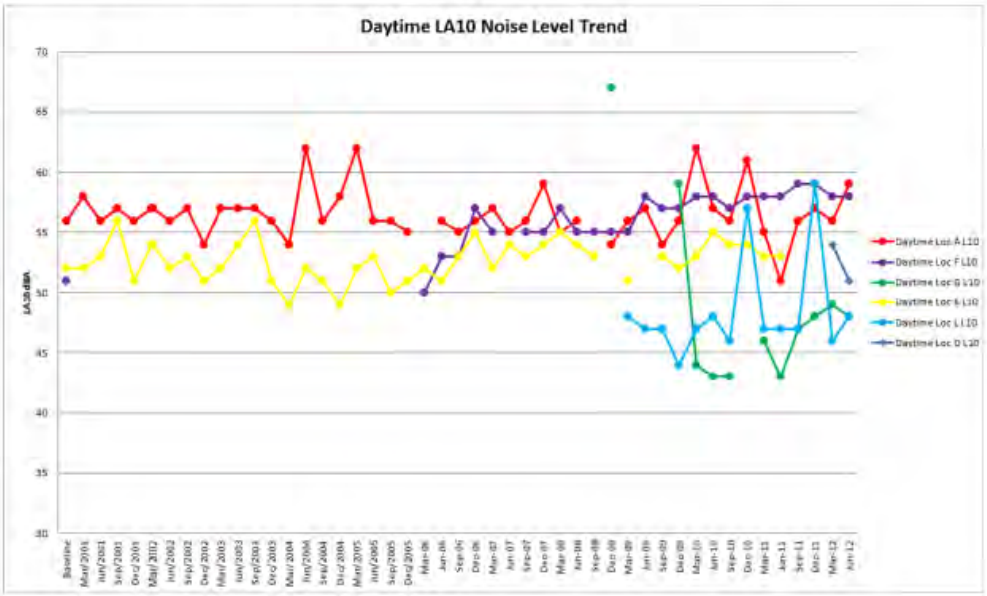


Figure 5 Long-term Evening L_{A10} Noise Levels

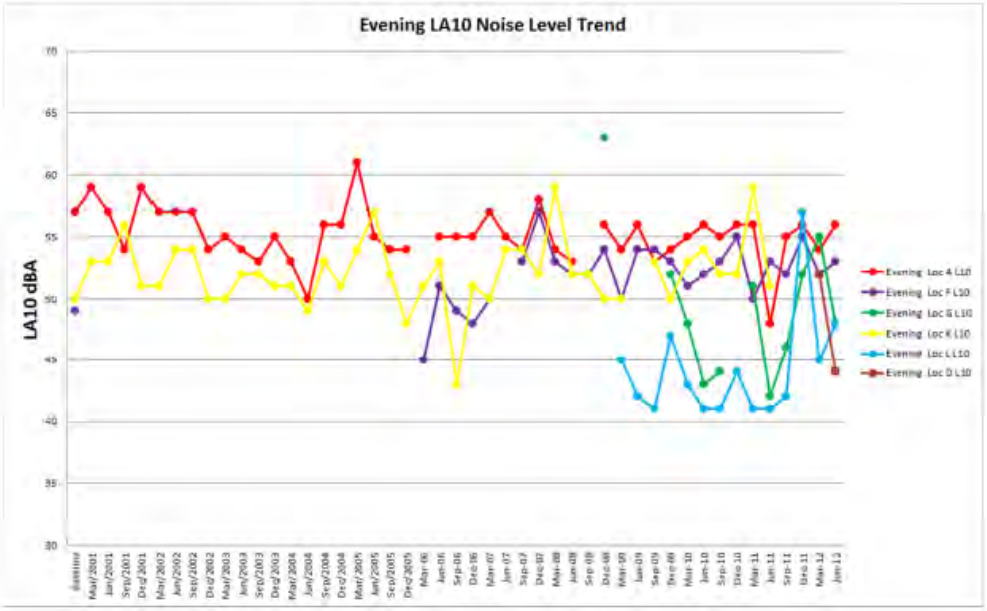
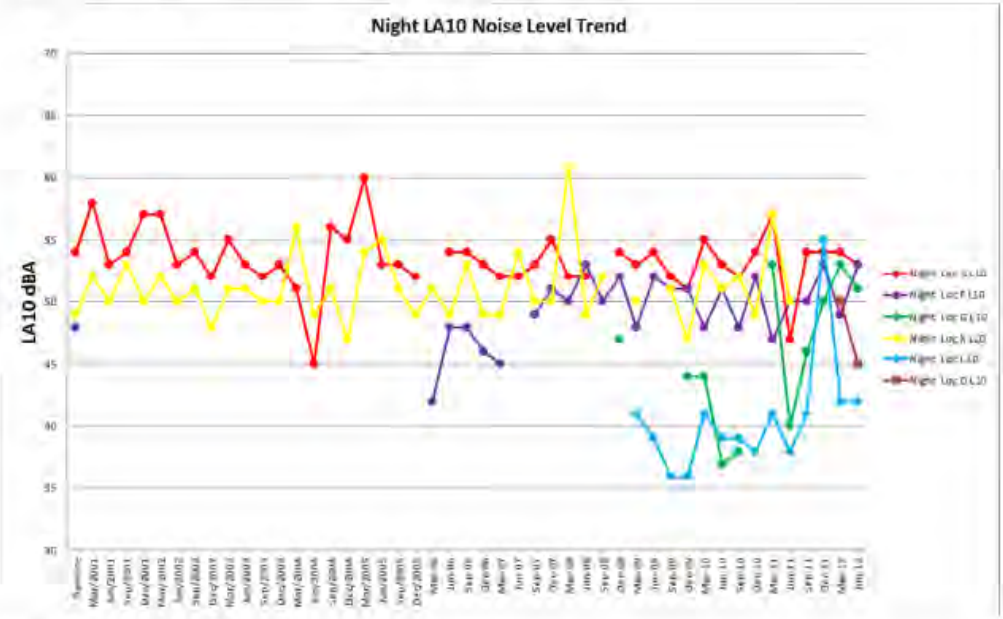


Figure 6 Long-term Night-time L_{A10} Noise Levels



Baseline

The summary of results in **Table 8** and **Figure 4**, **Figure 5** and **Figure 6** show that ambient L_{A10} noise levels recorded for the quarter ending June 2012 were 7 dBA greater than levels recorded during the baseline monitoring process at Location F during the daytime and 4 dBA higher during the evening and 5 dBA higher during the night-time. At Location A L_{A10} noise levels were either similar to the levels recorded during the baseline monitoring process or up to 3 dBA below.

Given that no data was available at Locations G, L and D during baseline measurements and no monitoring was conducted at Location K during the June 2012 quarter no comparisons can be made.

Previous Quarter (March 2012)

A comparison of the current monitoring period with the previous monitoring period shows that recorded L_{A10} noise levels at all monitoring locations were similar (within 4 dBA) or lower to those recorded in March 2012.

Coinciding Period Last Year (June 2011)

A comparison of the current monitoring period with the coinciding monitoring period last year indicates that L_{A10} noise levels were similar (within 3 dBA) or lower than those recorded in June 2011 at location F.

Noise levels at location A, G and L are up to 8 dBA, 11 dBA and 7 dBA higher than during the same period last year respectively.

Given that no data was available at Location D during the June 2011 quarter, no comparisons can be made.

5.3 Discussion

Based on the observations made during the operator attended noise surveys, where noise levels have been observed to increase at location A and Location F, the ambient noise environment is dominated by road traffic, natural noises or logging, and not considered to be impacted from the Donaldson Mine and Abel Mine activity.

6 SUMMARY OF RESULTS AND FINDINGS

SLR Consulting were engaged by Donaldson Coal Pty Ltd to conduct quarterly noise monitoring surveys for Donaldson Coal Mine and Abel Coal Mine in accordance with the Abel Coal Mine Noise Monitoring Program, dated 27 May 2008.

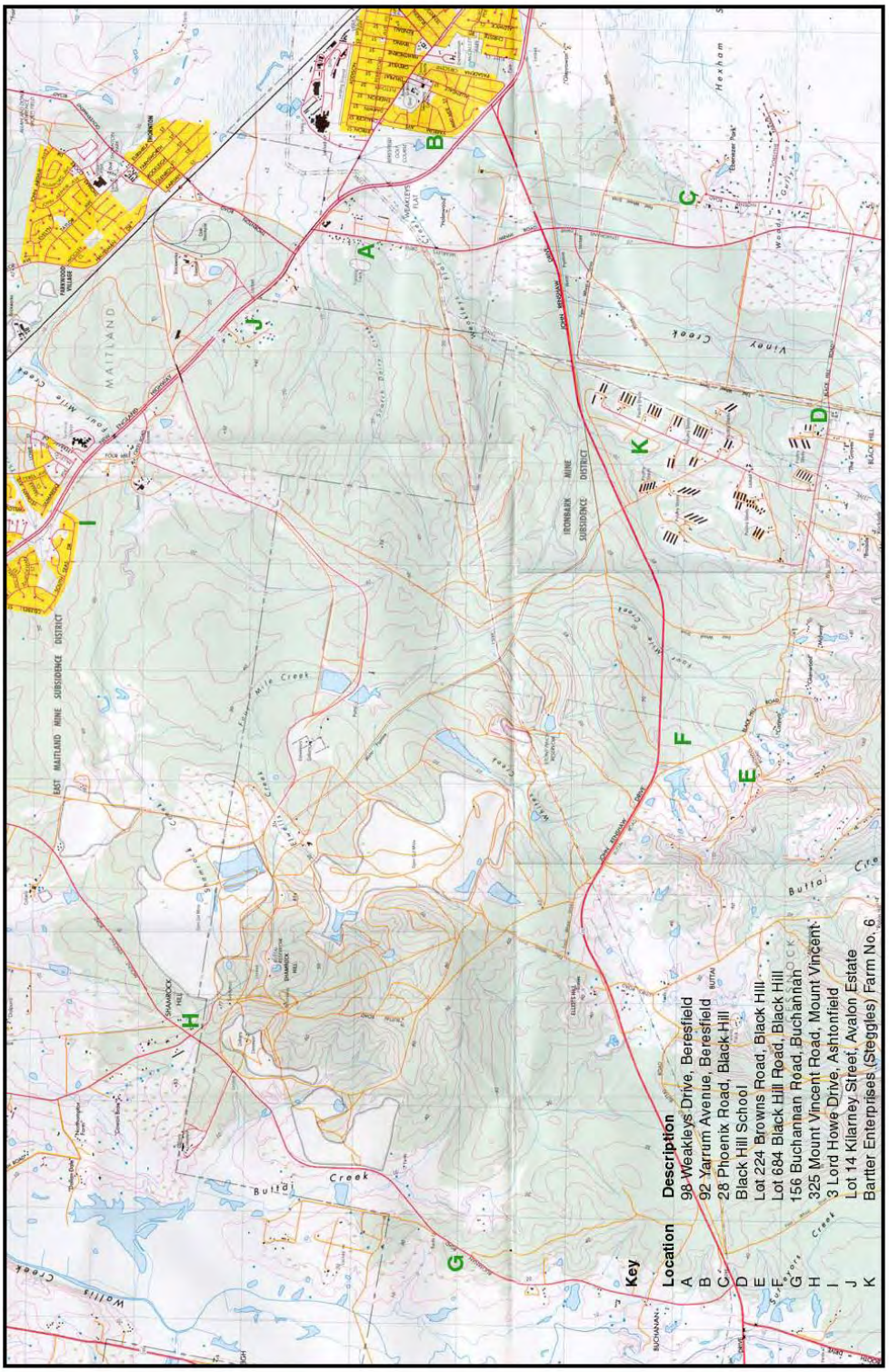
The results of the operator-attended noise measurements conducted at five (5) focus locations surrounding the mine site are included in **Table 2** to **Table 6**.

Based on the results and observations from operator attended surveys, it is likely that contributed noise levels from Donaldson Mine comply with noise emission goals for all periods.

Abel Mine operations were inaudible at all residential locations during all periods and as such it is likely that contributed noise levels from Abel Mine did not exceed noise emission goals (including night-time sleep arousal criteria) and were in compliance with the Abel Mine *Project Approval*.

A comparison of ambient L_{A10} and L_{A90} noise levels recorded during the current monitoring period (June 2012), the baseline monitoring period, the last monitoring period (March 2012), and the coinciding monitoring period from last year (June 2011) has been conducted.

In summary, where noise levels have risen, the ambient noise environment has been identified to generally contain traffic and natural noise sources or noise from other local mining and logging operations and not noise from Donaldson Mine or Abel Mine activity.



Appendix A – Page 1
Noise Monitoring Locations
Report 30-1053

Appendix B

Report Q39 30-1053-R1
Equipment Register Page 1 of 1

APPENDIX B - EQUIPMENT REGISTER

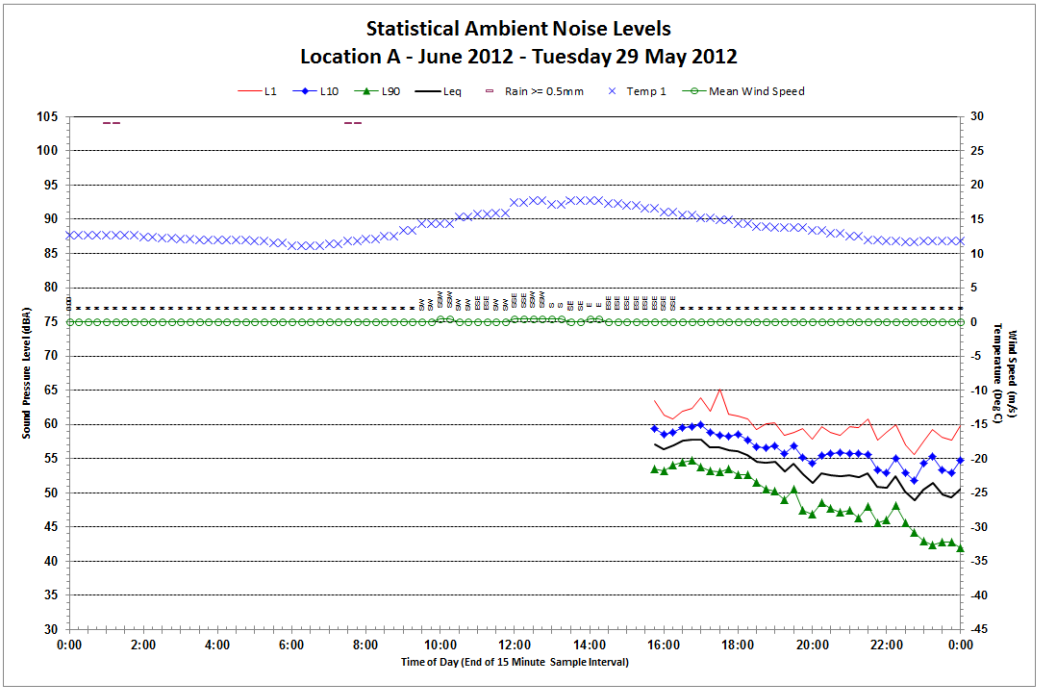
JOB NUMBER: 30-1053

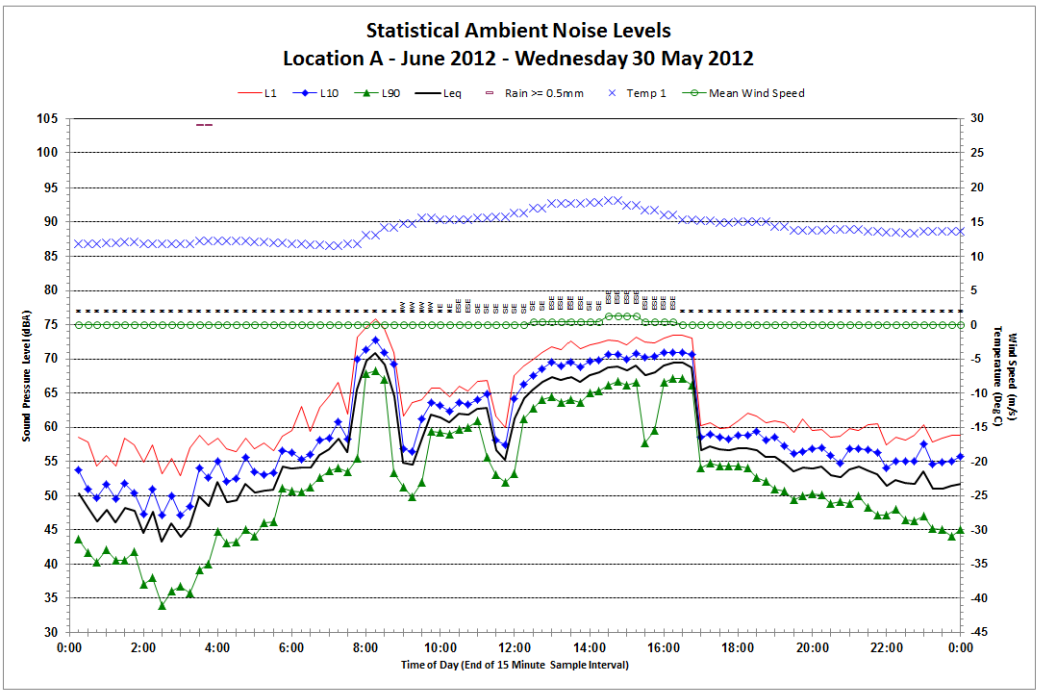
JOB DESCRIPTION: Donaldson Mine Quarterly Monitoring – March 2010

Unit No	Equipment	Description	Serial Number
1	DOZ004	CATERPILLAR D9R	7TL00898
2	DOZ005	CATERPILLAR D10R	3KR01384
3	DOZ006	CATERPILLAR D11N	74Z00717
4	DOZ008	CATERPILLAR D10R	3KR01233
5	DOZ009	CATERPILLAR D10R	AKT00823
6	EXC021	CATERPILLAR 330DL	NBD00168
7	EXC072	HITACHI EX2500	184-00108
8	EXC089	CATERPILLAR 5110B	AAA00311
9	LOD004	CATERPILLAR IT28G	CWAC00351
10	LOD044	KOMATSU WA700	10106
11	LOD149	CATERPILLAR 990II	4FR00394
12	RDT026	CATERPILLAR 777A W/CART	84A01034
13	RDT033	CATERPILLAR 740 W/CART	B1P02699
14	RDT100	CATERPILLAR 785	8GB00596
15	RDT107	CATERPILLAR 785	8GB00320
16	RDT140	CATERPILLAR 785	8GB00333
17	RDT143	CATERPILLAR 785	8GB00374
18	RDT155	CATERPILLAR 785	8GB00152
19	RDT162	CATERPILLAR 785	8GB00258
20	RDT163	CATERPILLAR 785	8GB00259
21	RDT182	CATERPILLAR 785	8GB00494
22	GRD004	CATERPILLAR 16H	6ZJ00678
23	GRD036	CATERPILLAR 16G	93U03039
24	CMP059	AIRMAN COMPRESSOR – STR034	
25	CMP061	SULLAIR COMPRESSOR 185CFM	200610160001
26	CMP062	SULLAIR COMPRESSOR 185CFM	206101100049
27	GEN001	KUBOTA GENERATOR – VEH154	
28	WEL057	LINCOLN SAM400 – VEH154	
29	VEH154	ISUZU NPS300 BOILY TRUCK	
30	STR034	VOLVO FL7 SERVICE TRUCK	YV5FAG6JD560318
31	UTE001	NISSAN PATROL SERVICE UTE	
32	UTE002	NISSAN NAVARA TRAYBACK	

Appendix C1

Statistical Ambient Noise Levels - Location A Page 1 of 4





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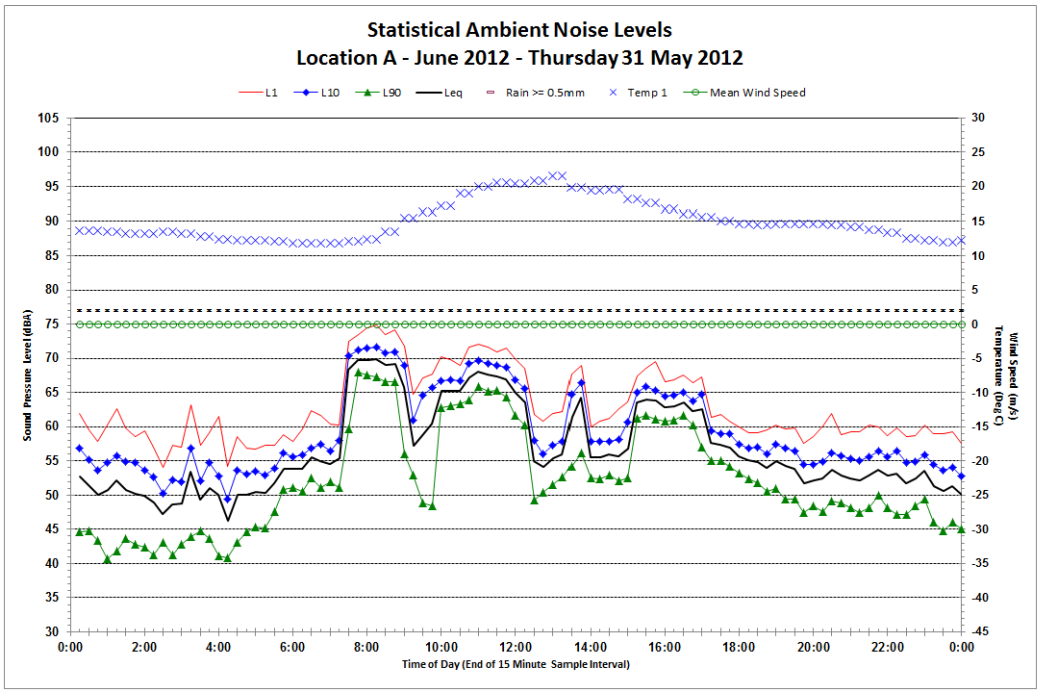
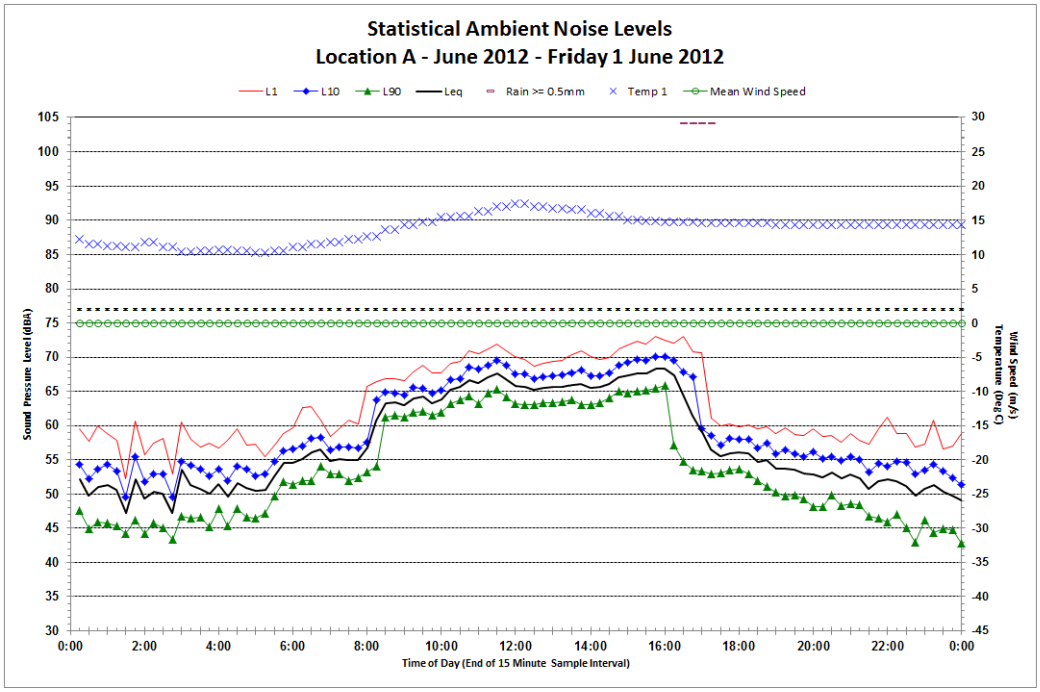
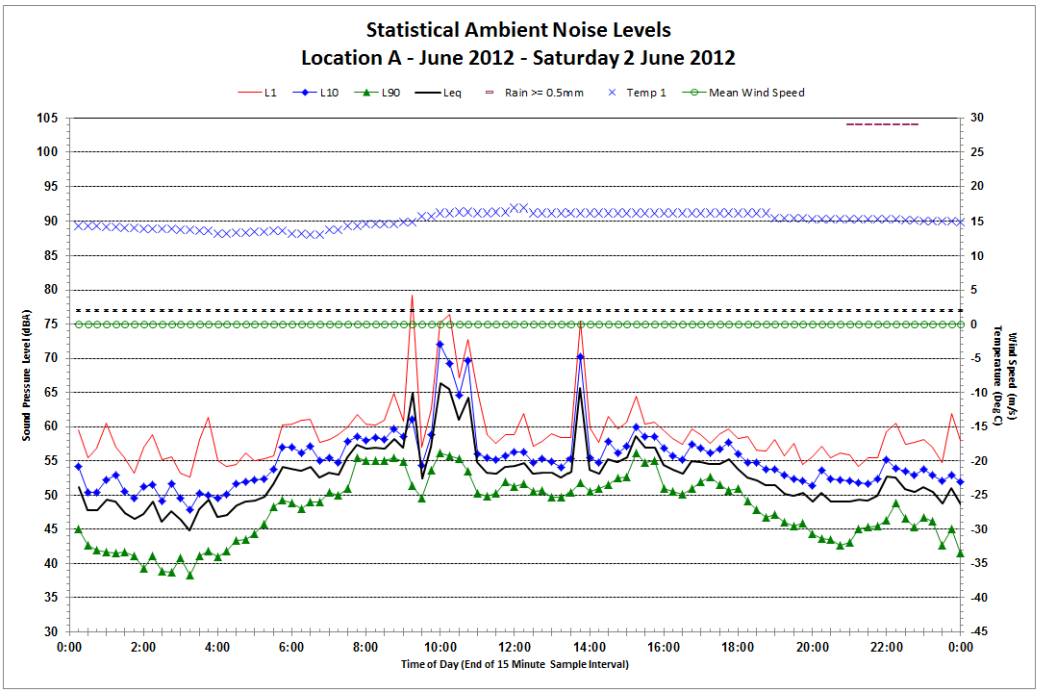
Statistical Ambient Noise Levels - Location A Page 2 of 4

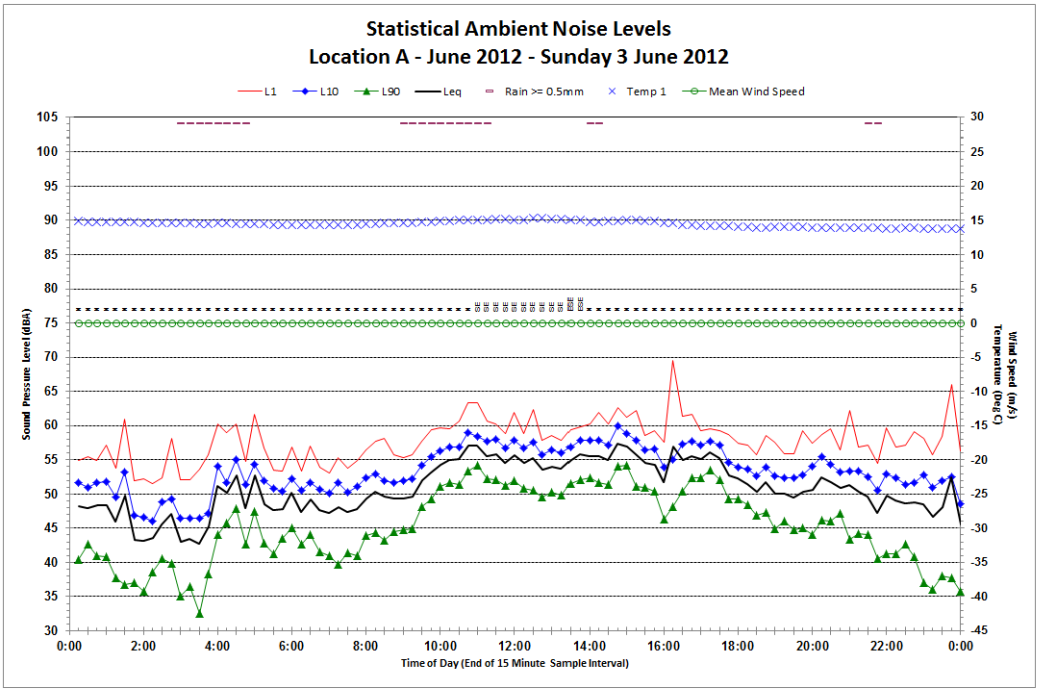




Appendix C1

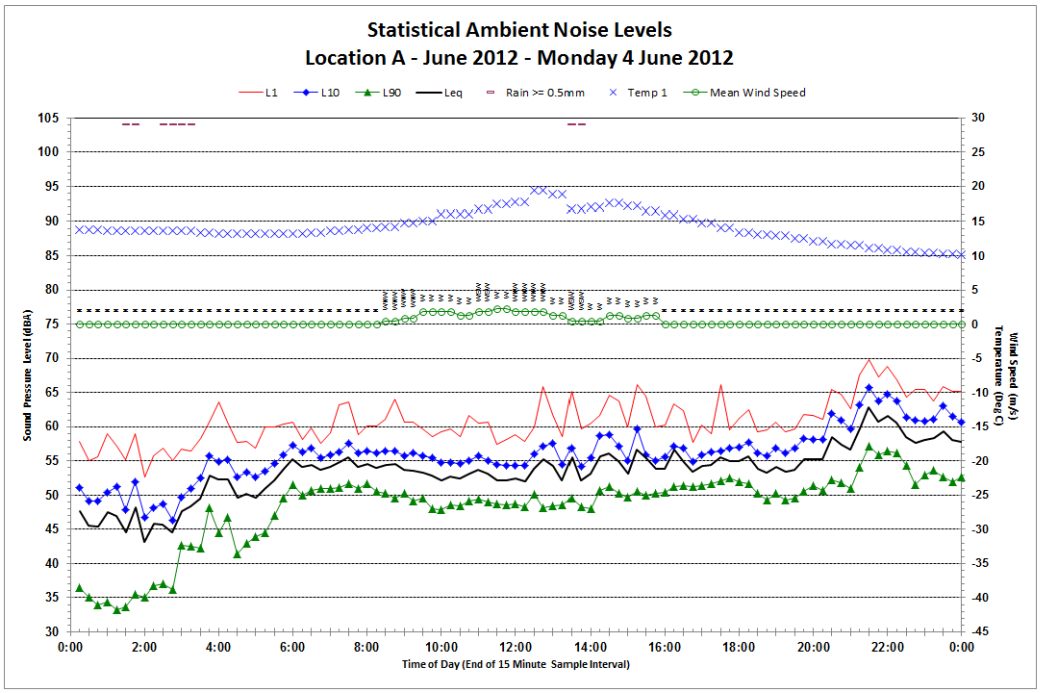
Statistical Ambient Noise Levels - Location A Page 3 of 4

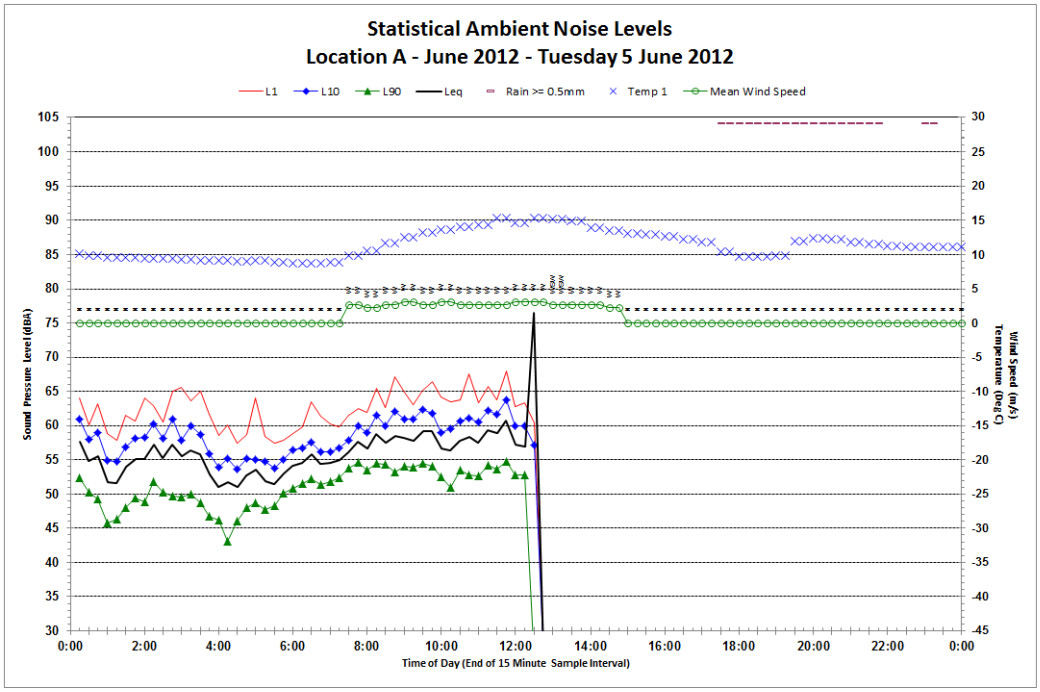




Appendix C1

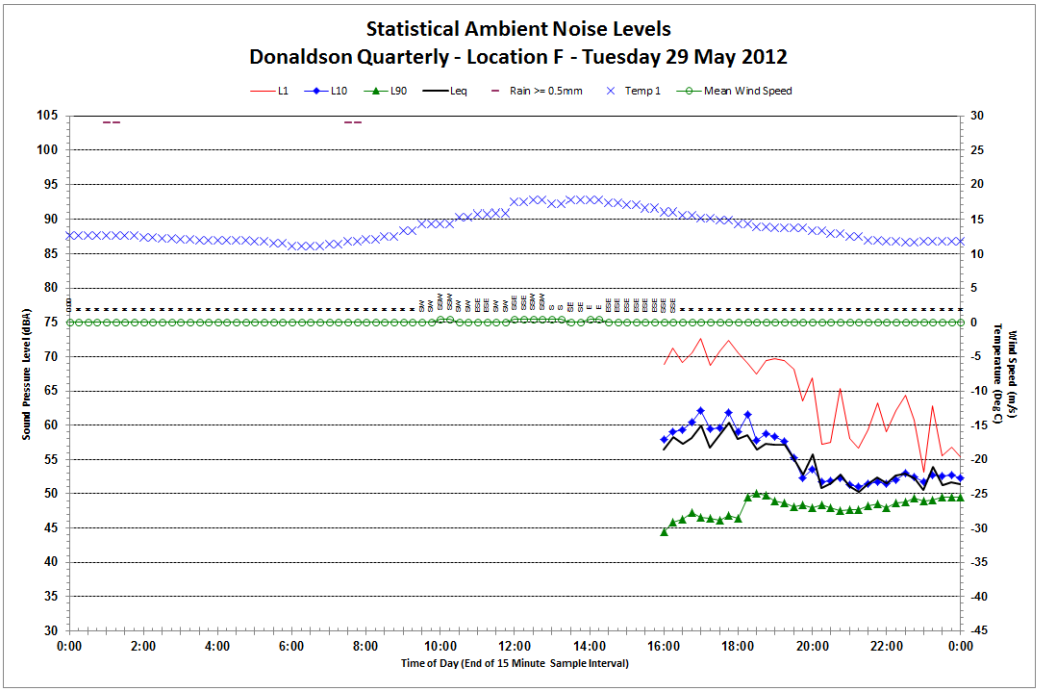
Statistical Ambient Noise Levels - Location A Page 4 of 4

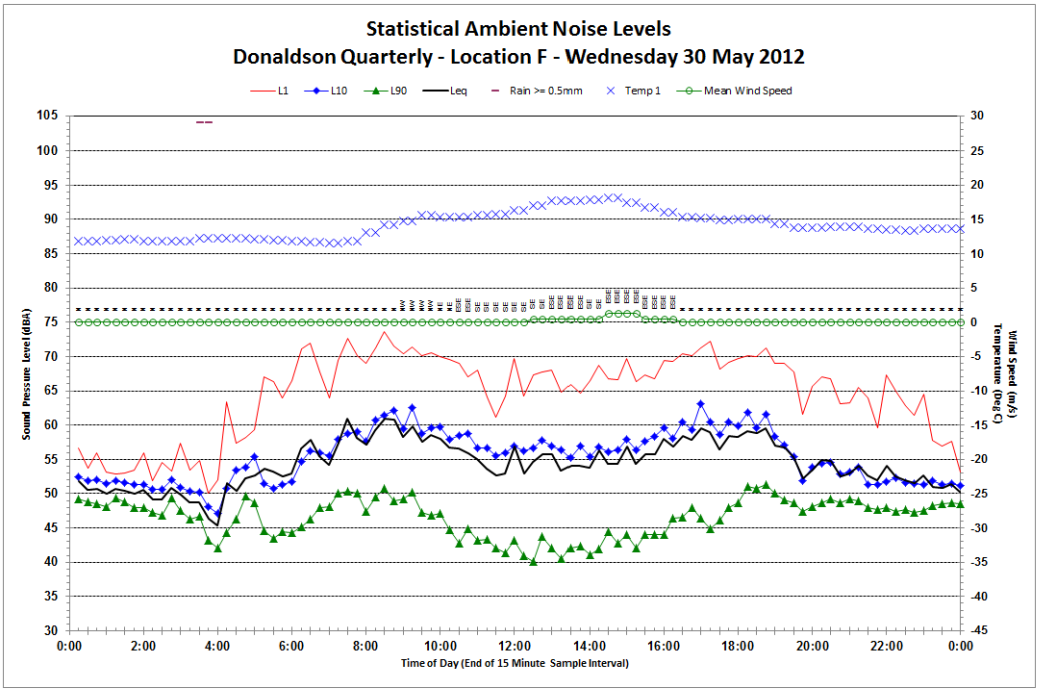




Appendix C2

Statistical Ambient Noise Levels – Location F Page 1 of 4





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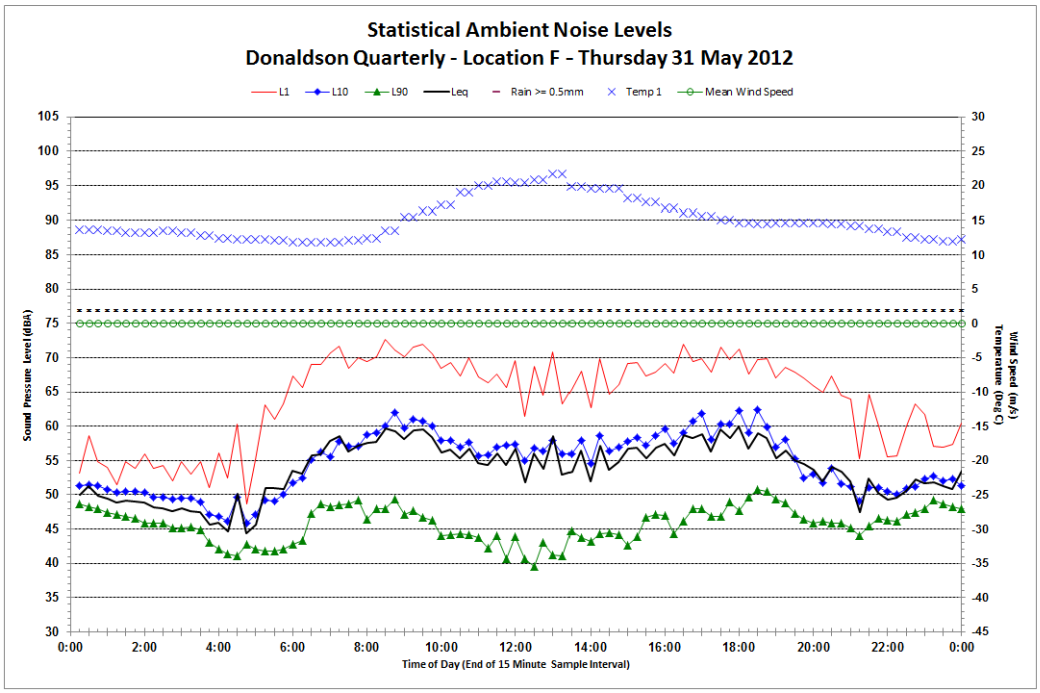
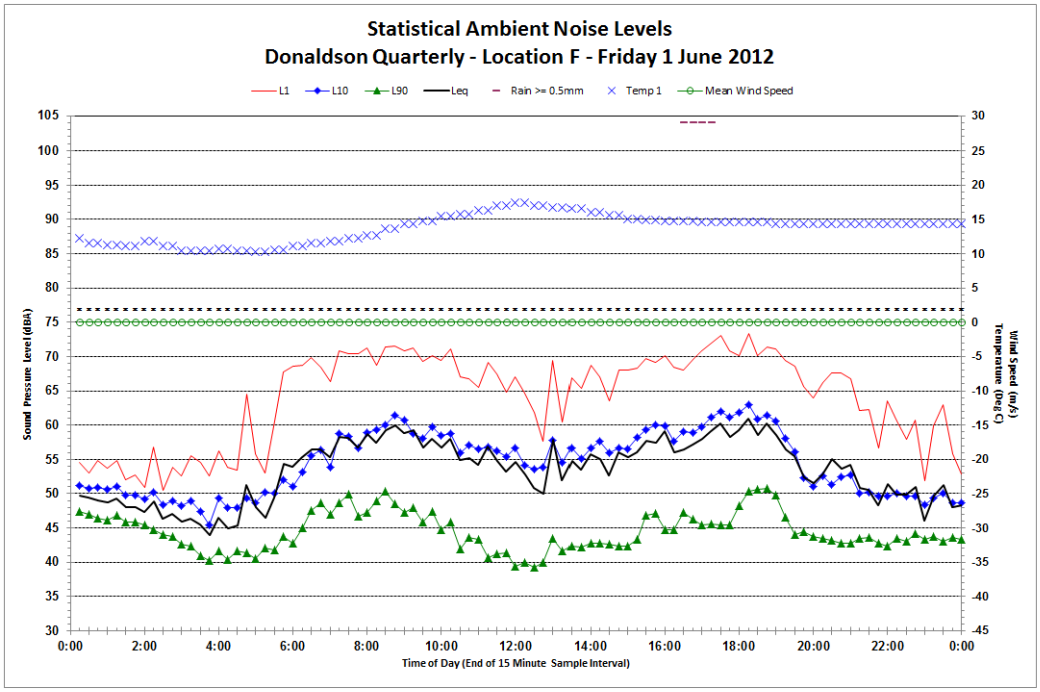
Statistical Ambient Noise Levels – Location F Page 2 of 4





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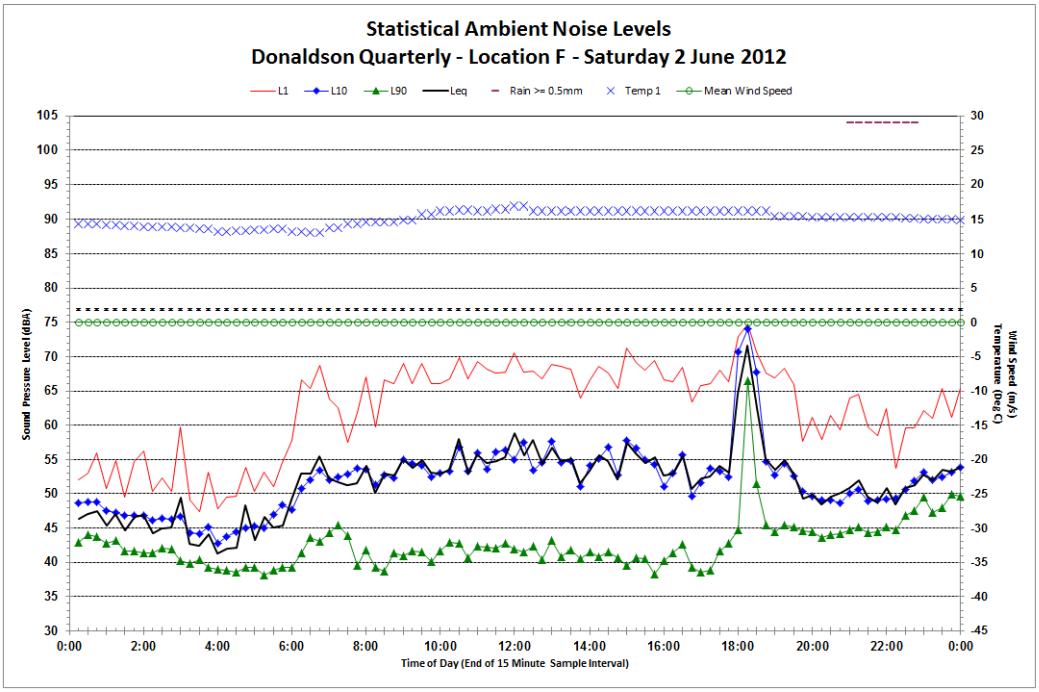
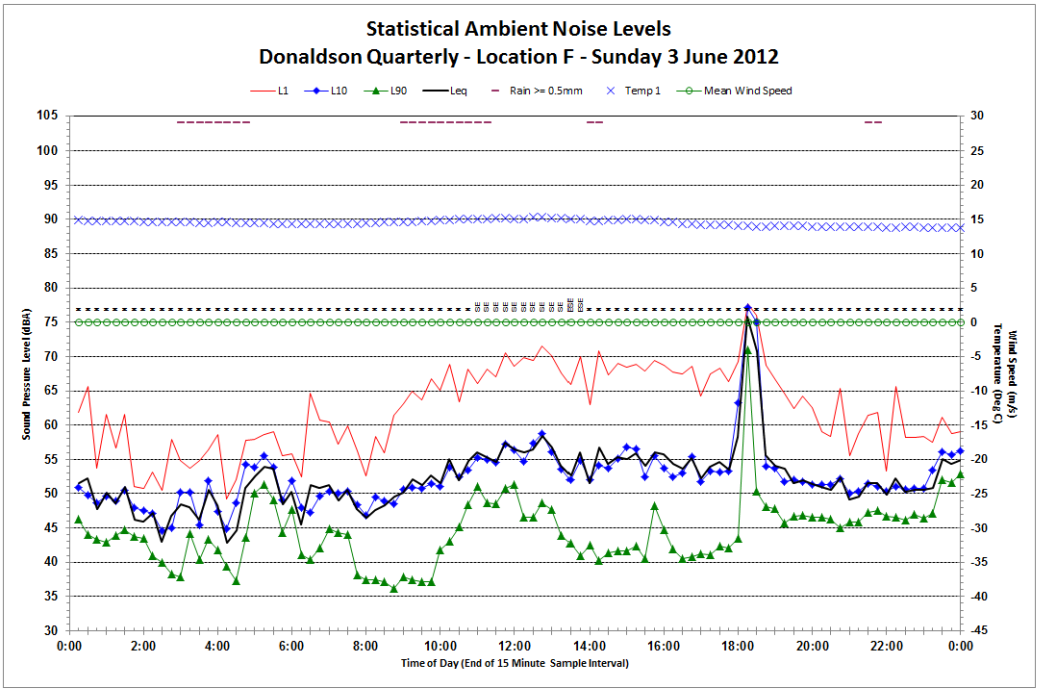
Statistical Ambient Noise Levels – Location F Page 3 of 4





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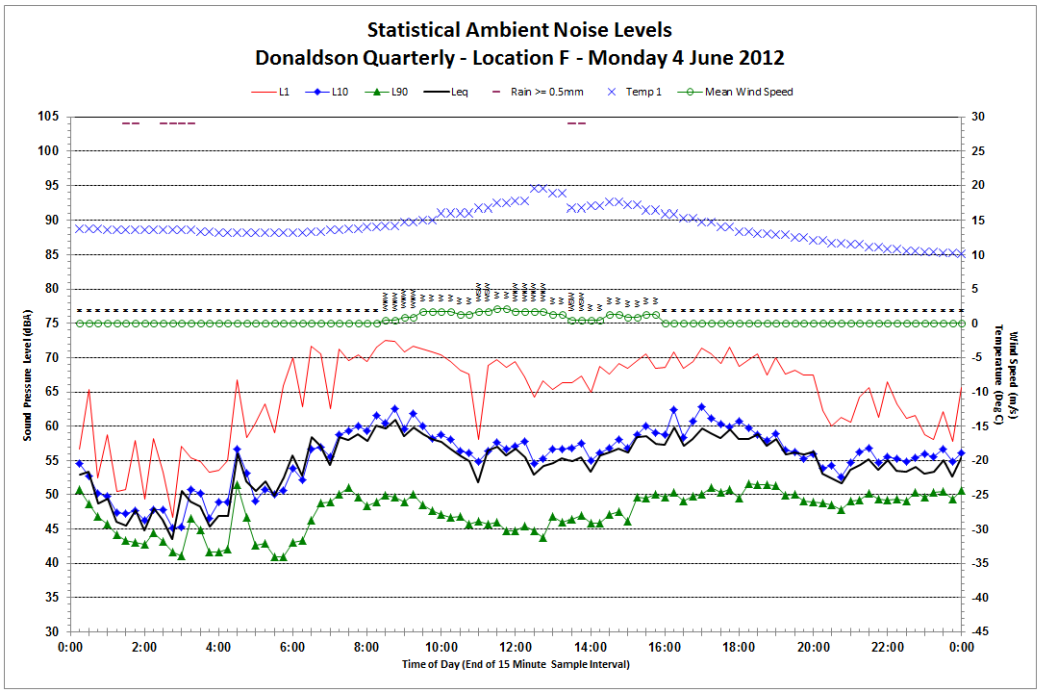
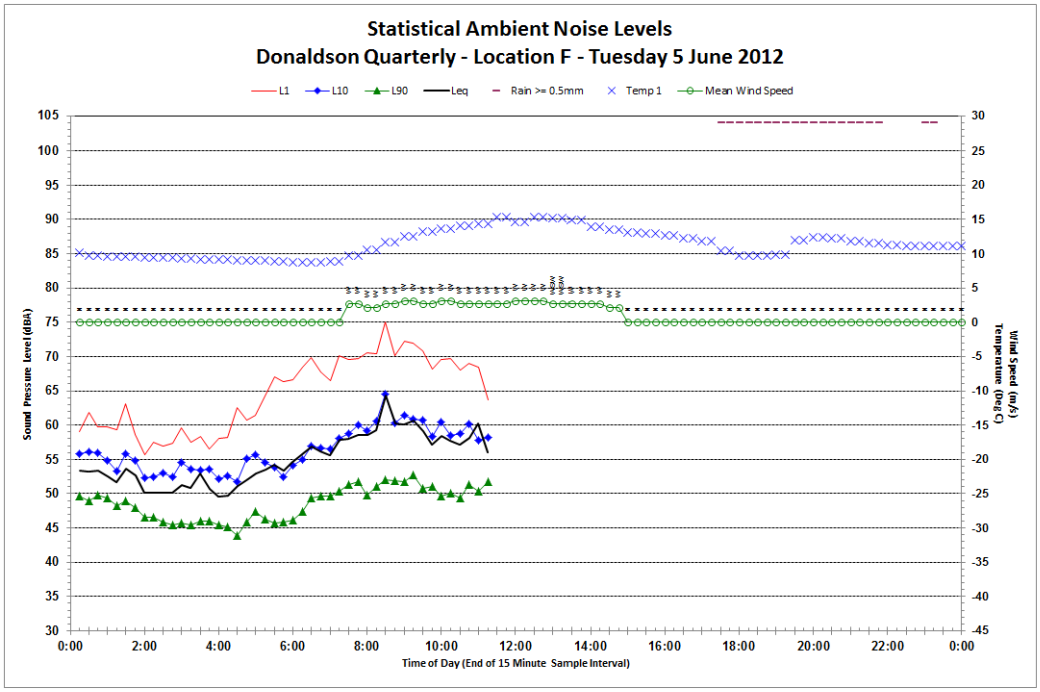
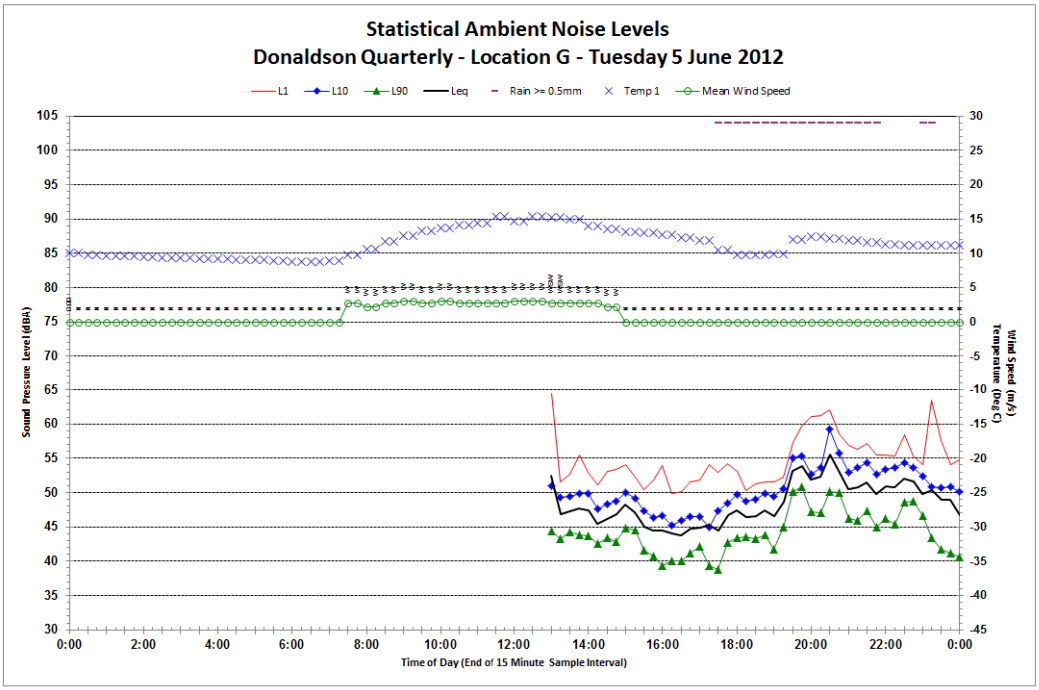
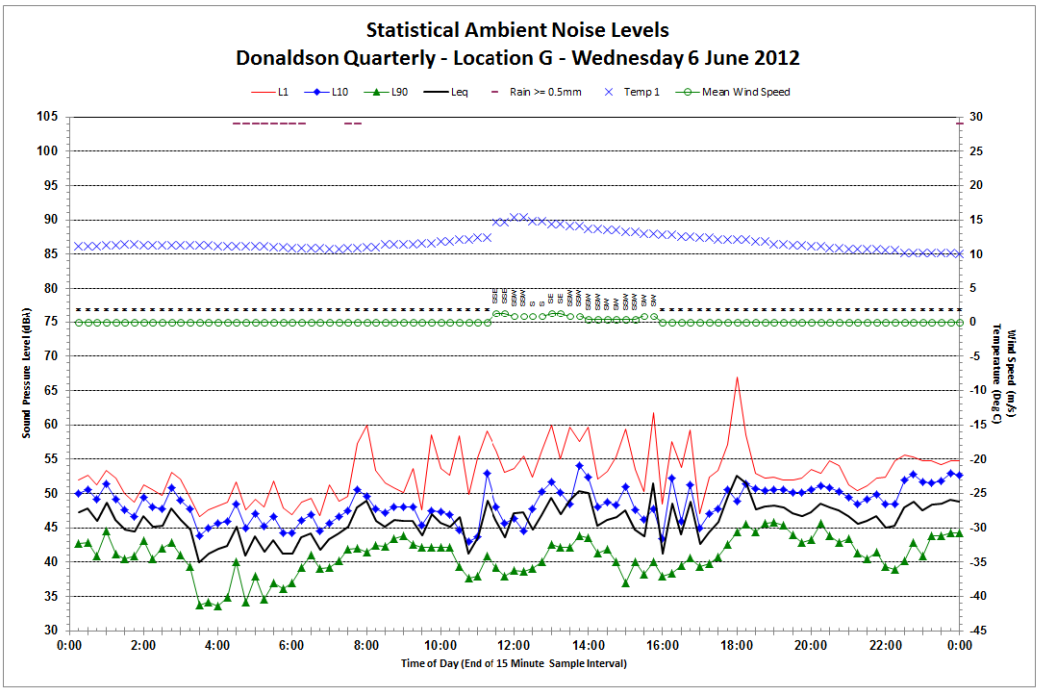
Statistical Ambient Noise Levels – Location F Page 4 of 4



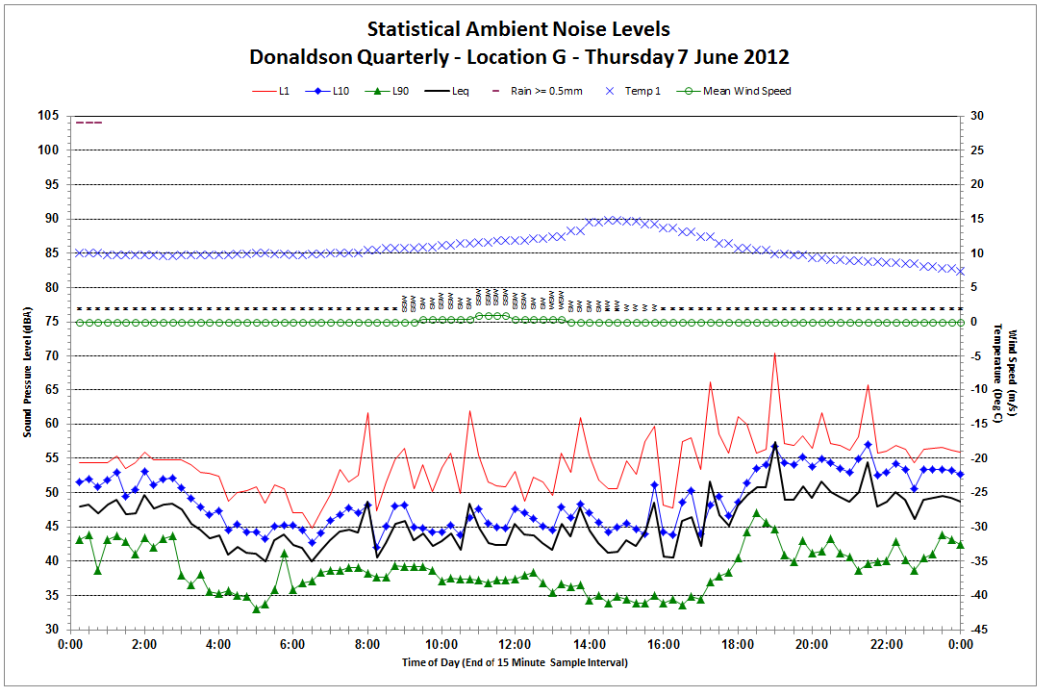


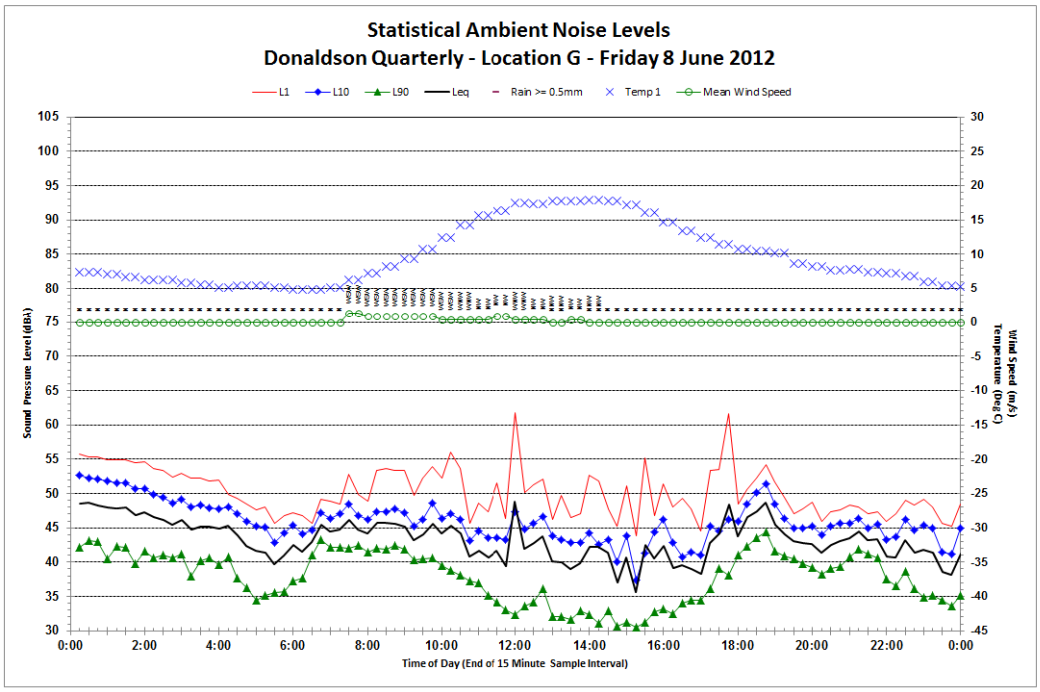
Appendix C3
Statistical Ambient Noise Levels – Location G Page 1 of 5



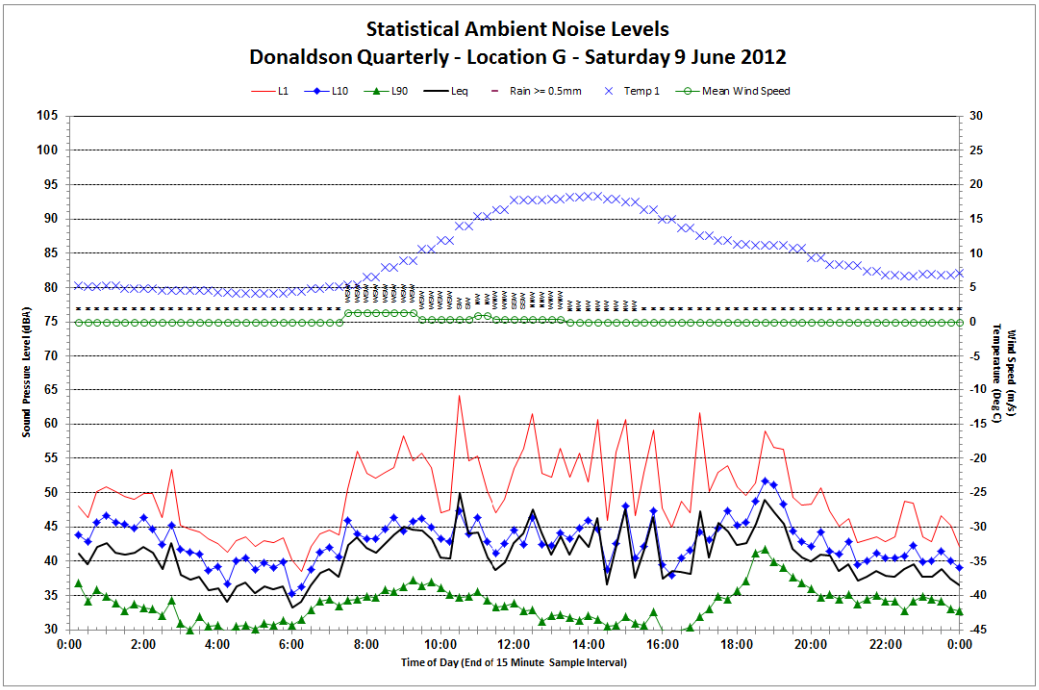


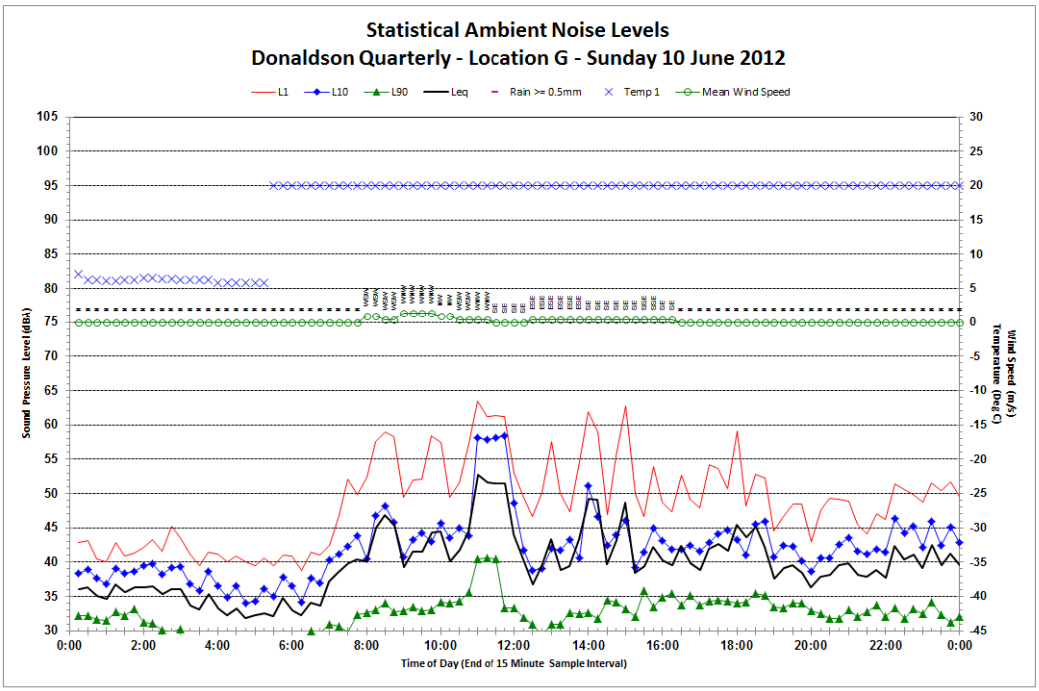
Appendix C3
Statistical Ambient Noise Levels – Location G Page 2 of 5



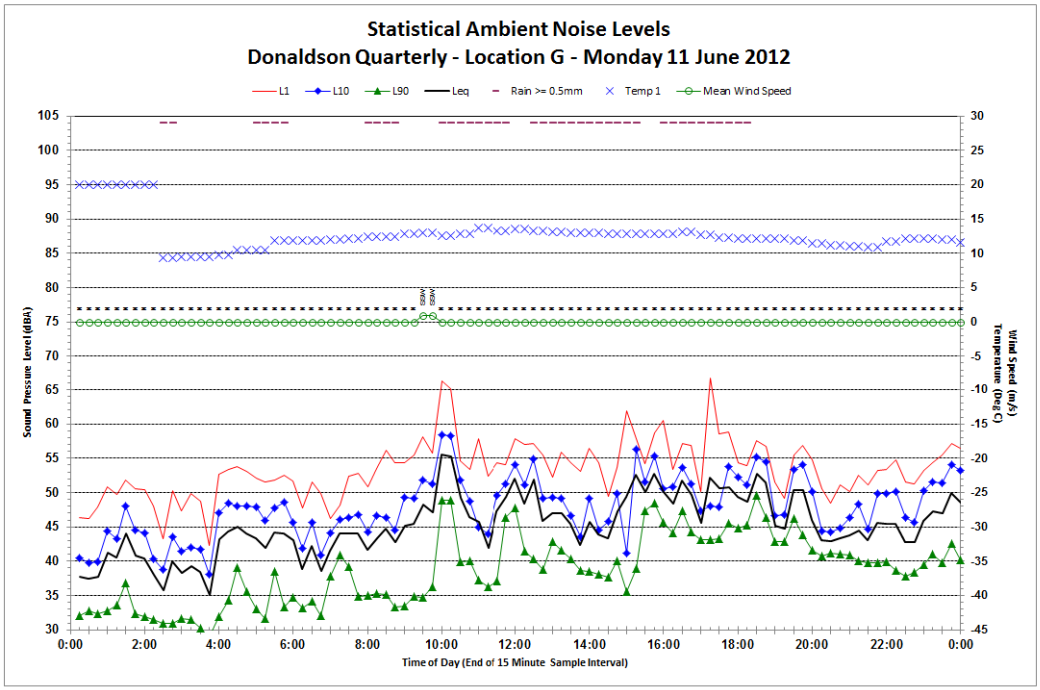


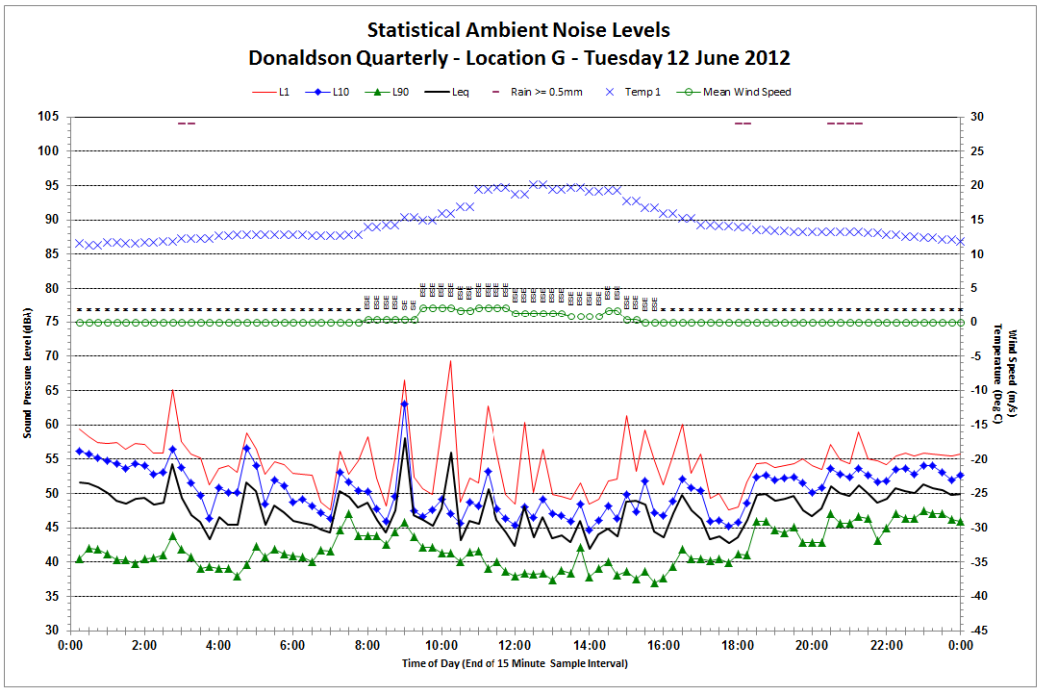
Appendix C3
Statistical Ambient Noise Levels – Location G Page 3 of 5



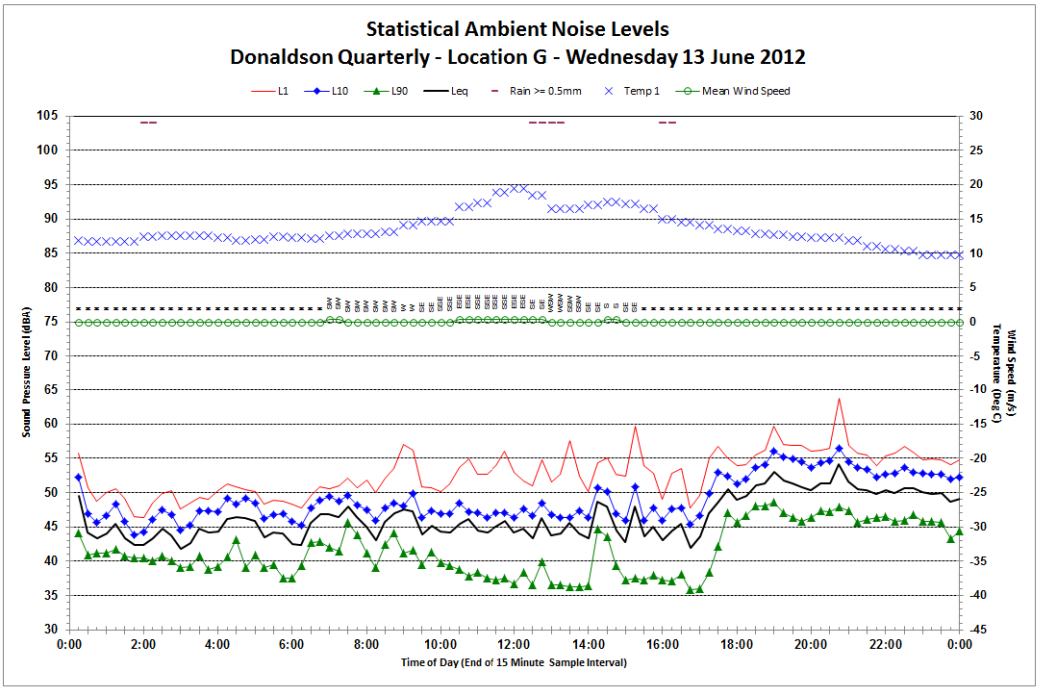


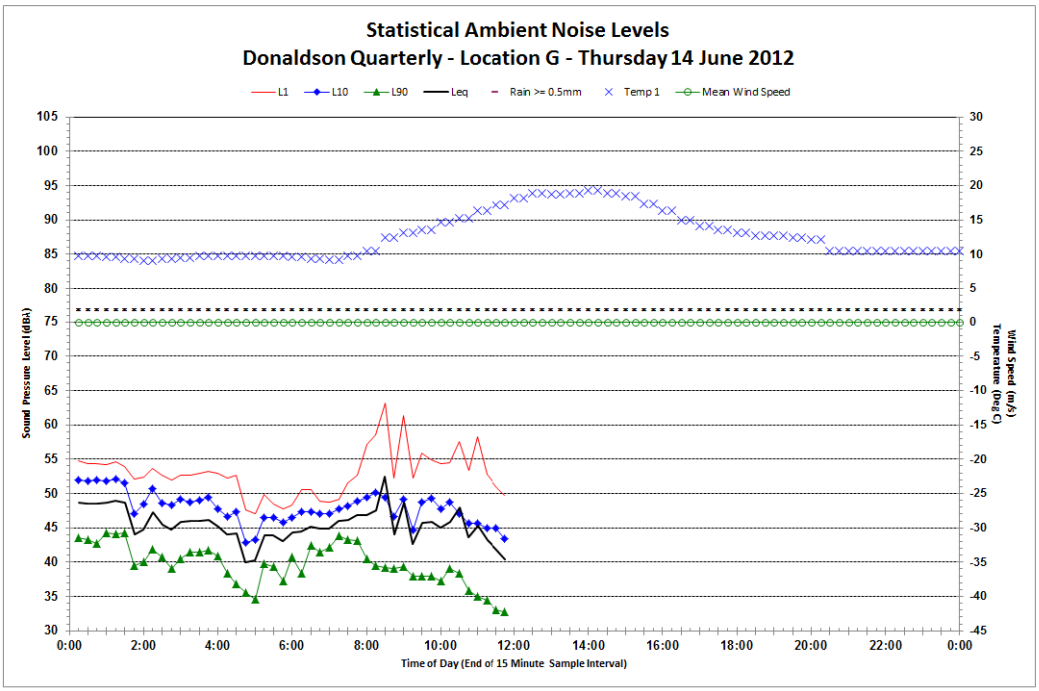
Appendix C3
Statistical Ambient Noise Levels – Location G Page 4 of 5





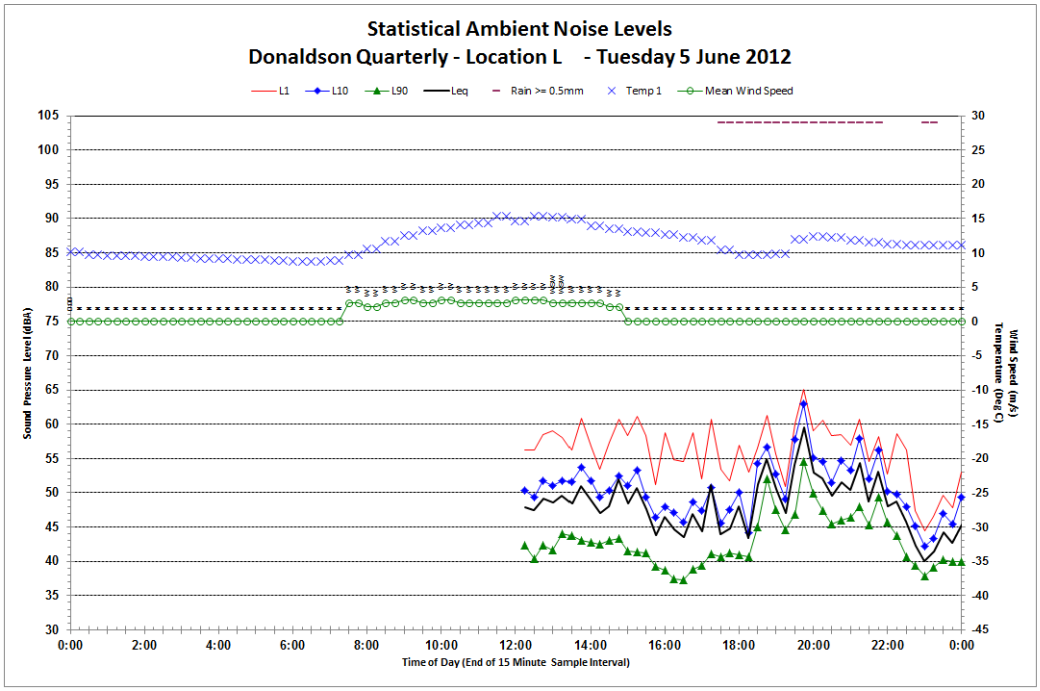
Appendix C3
Statistical Ambient Noise Levels – Location G Page 5 of 5

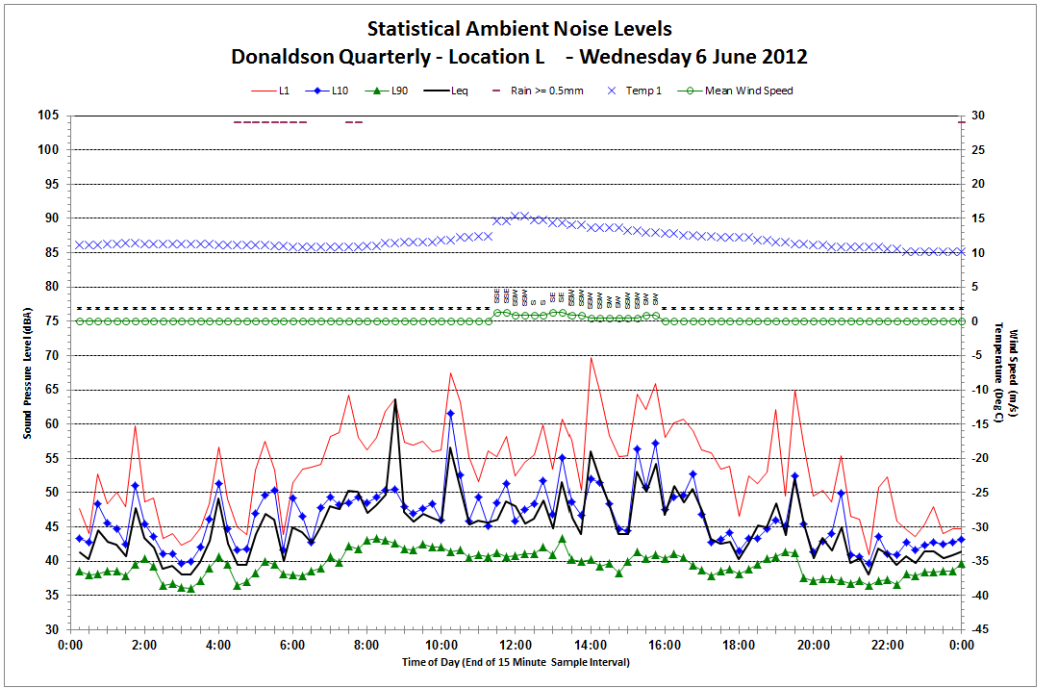




Appendix C4

Statistical Ambient Noise Levels – Location L Page 1 of 5





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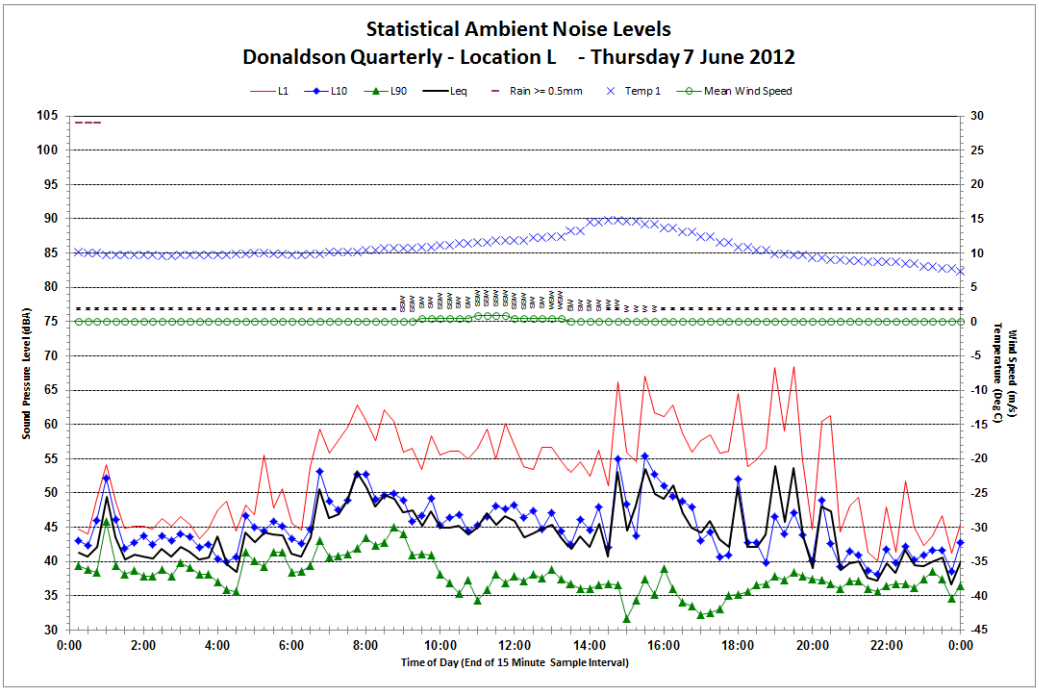
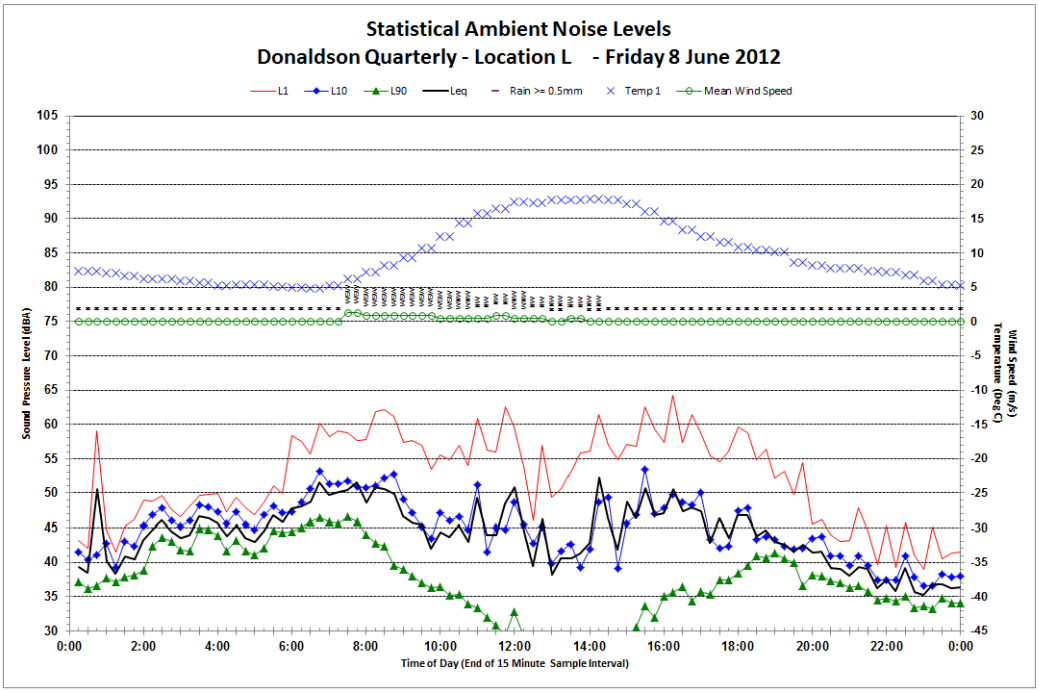
Statistical Ambient Noise Levels – Location L Page 2 of 5





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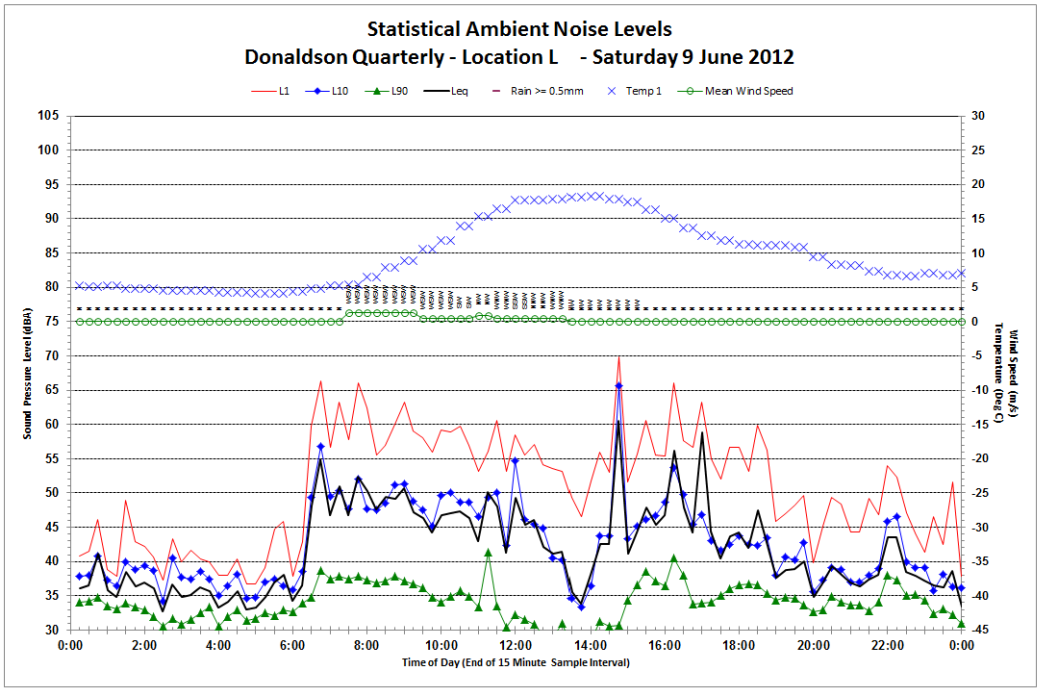
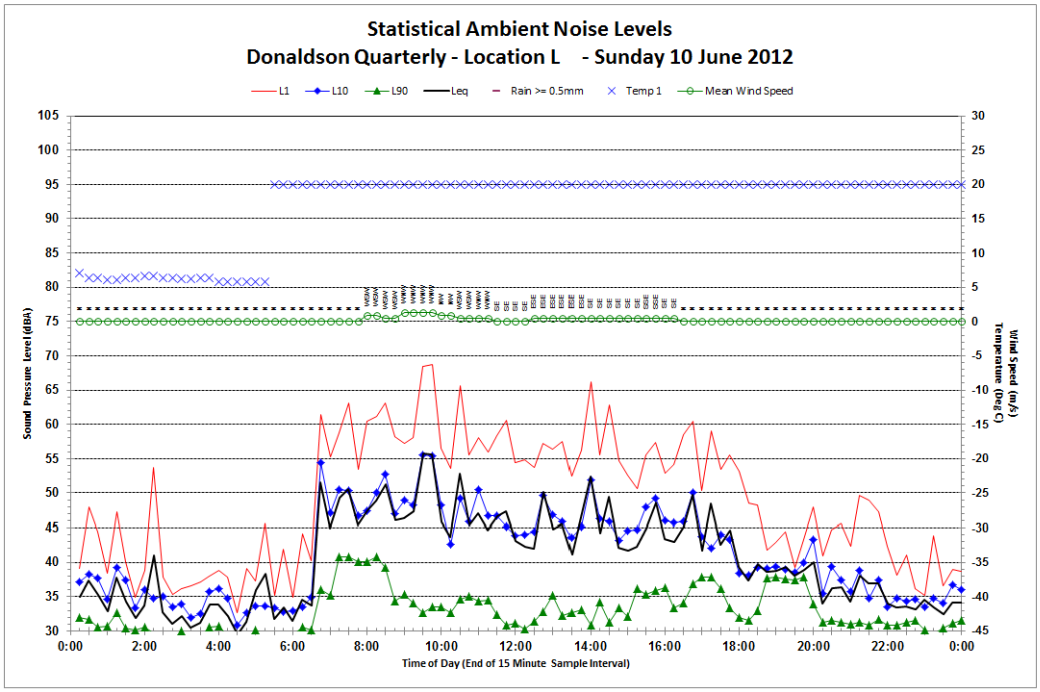
Statistical Ambient Noise Levels – Location L Page 3 of 5





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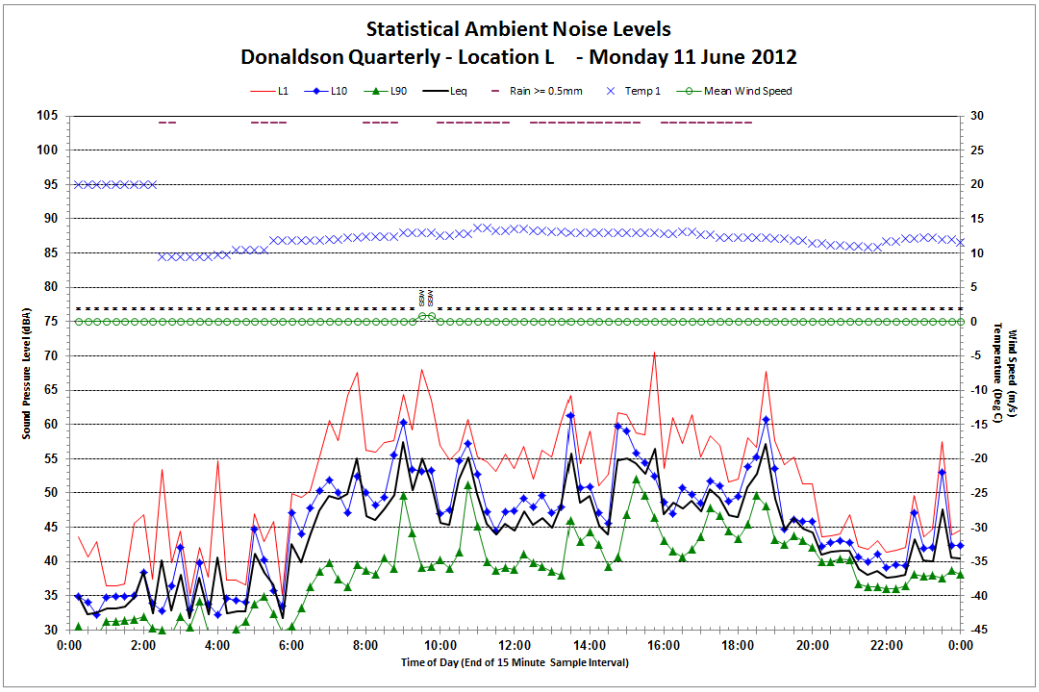
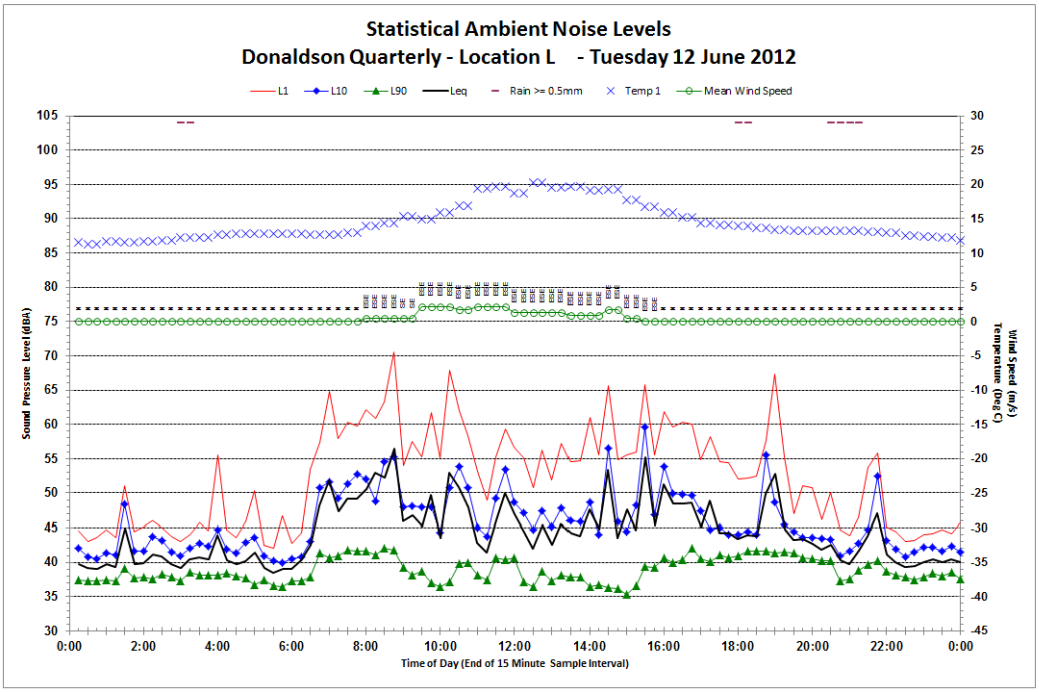
Statistical Ambient Noise Levels – Location L Page 4 of 5





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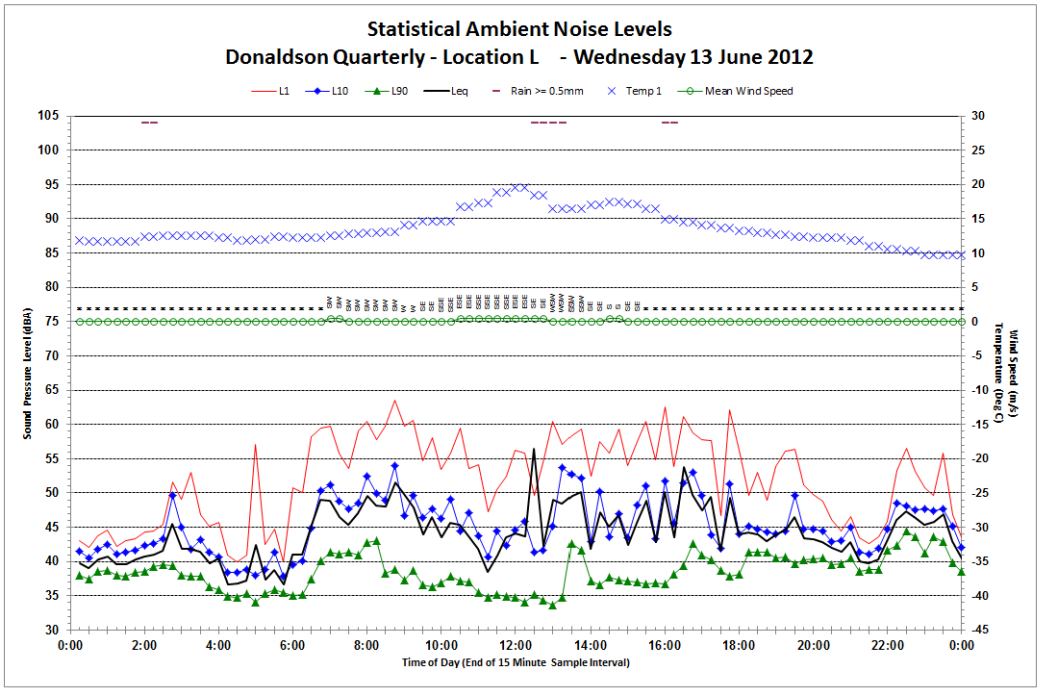
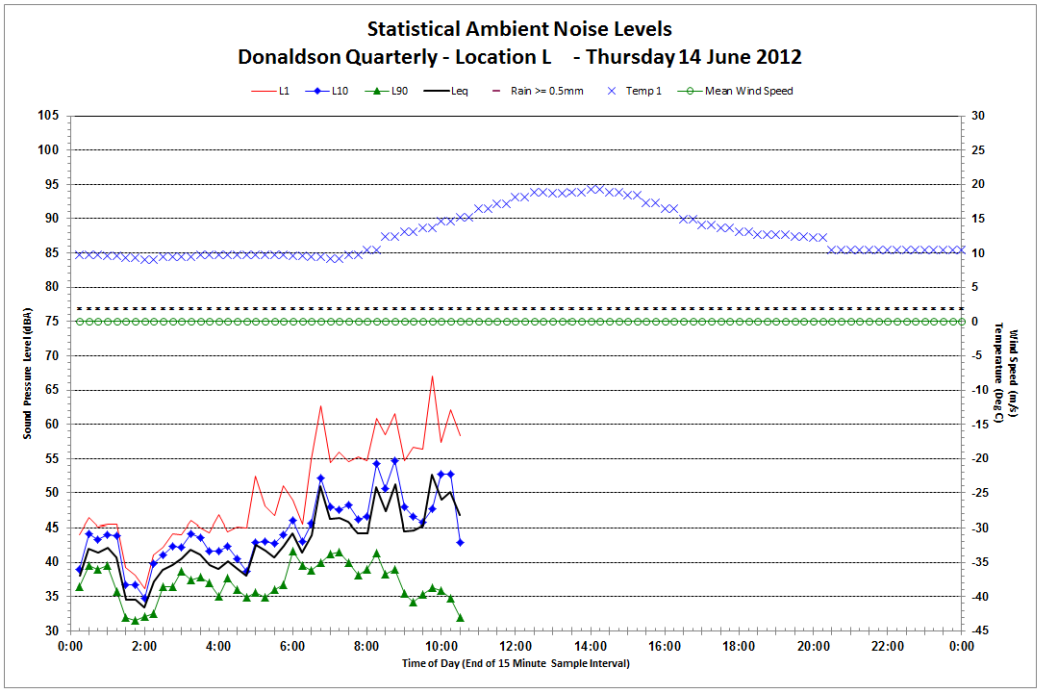
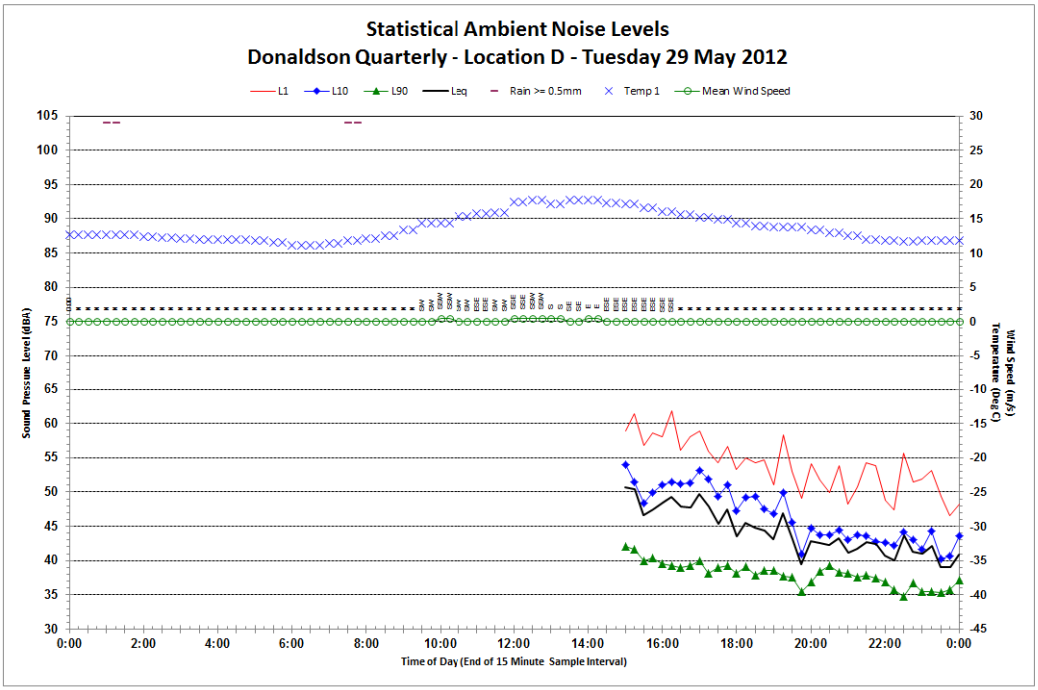
Statistical Ambient Noise Levels – Location L Page 5 of 5

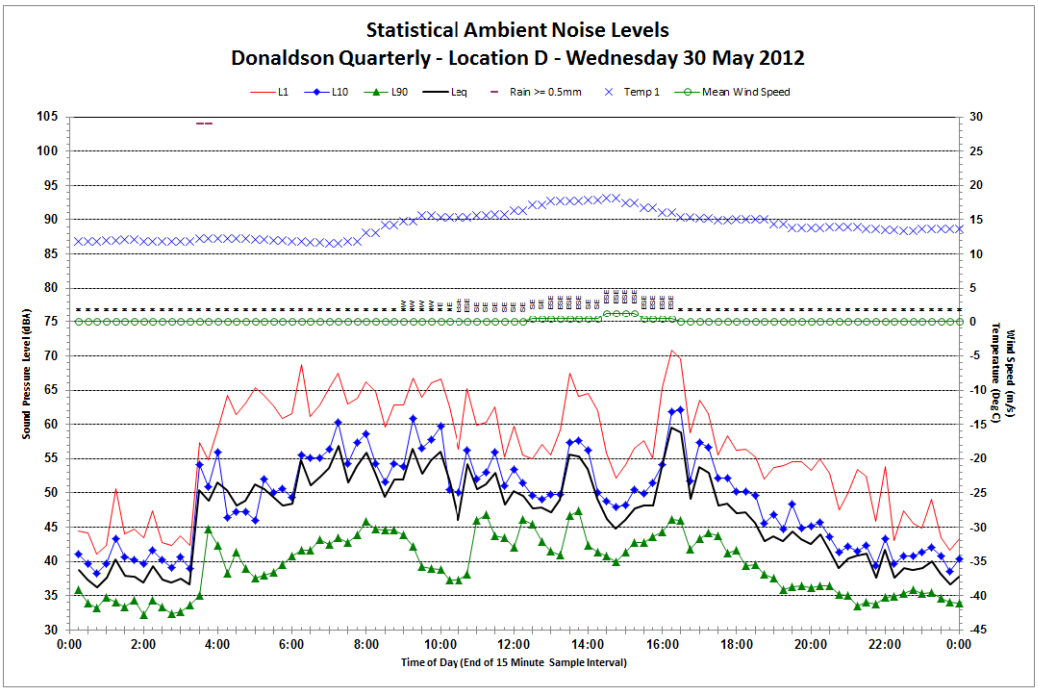




Appendix C5

Statistical Ambient Noise Levels – Location D Page 1 of 4





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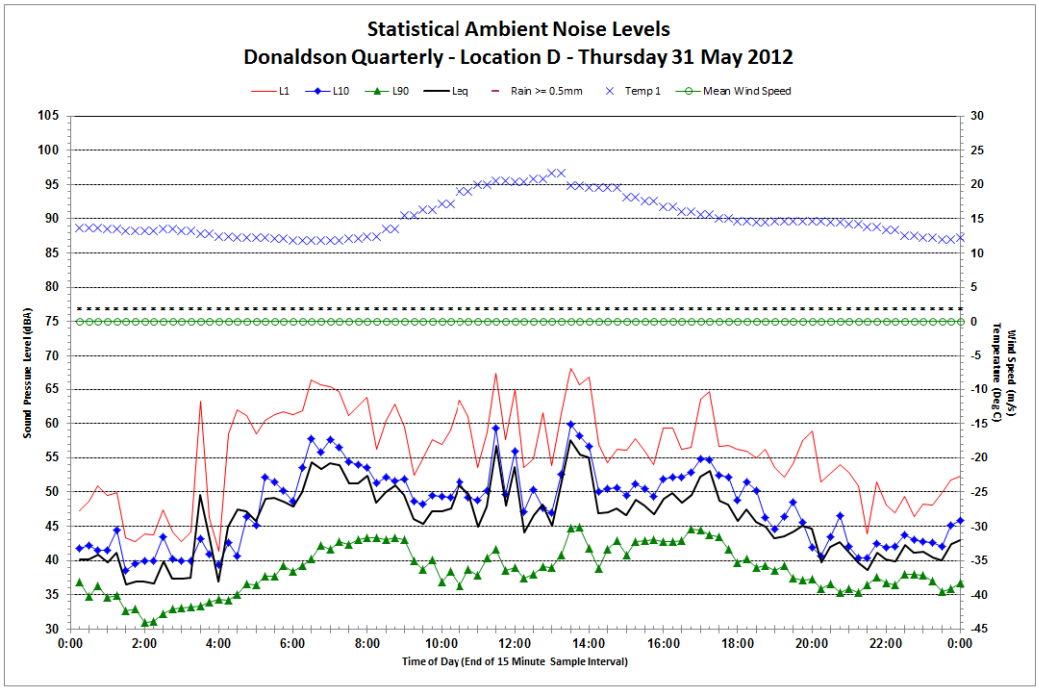
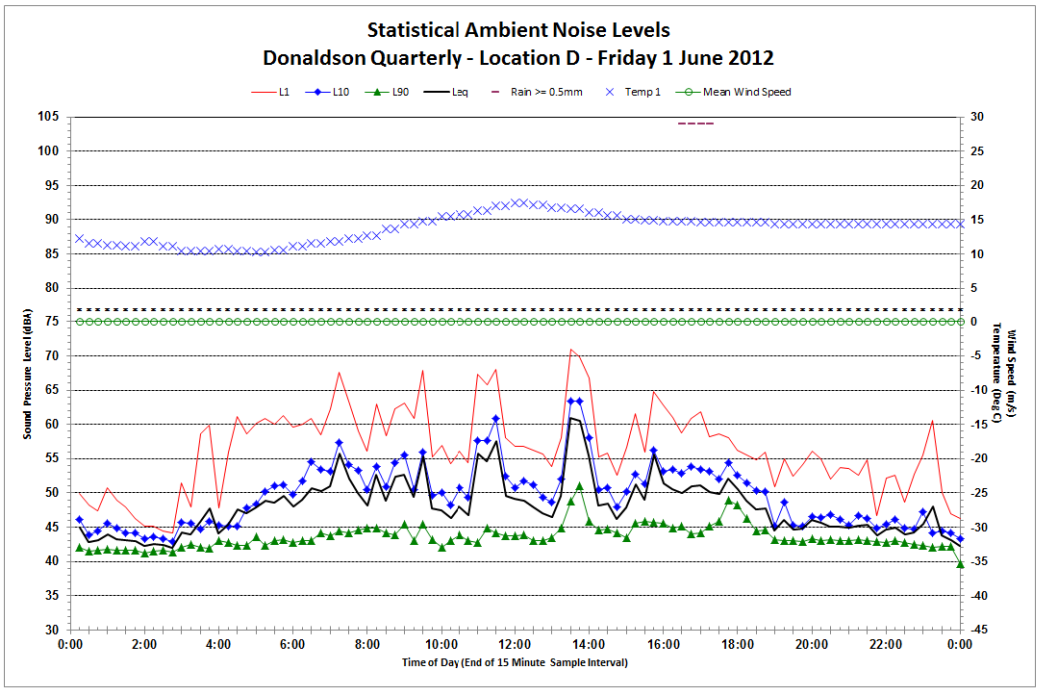
Statistical Ambient Noise Levels – Location D Page 2 of 4





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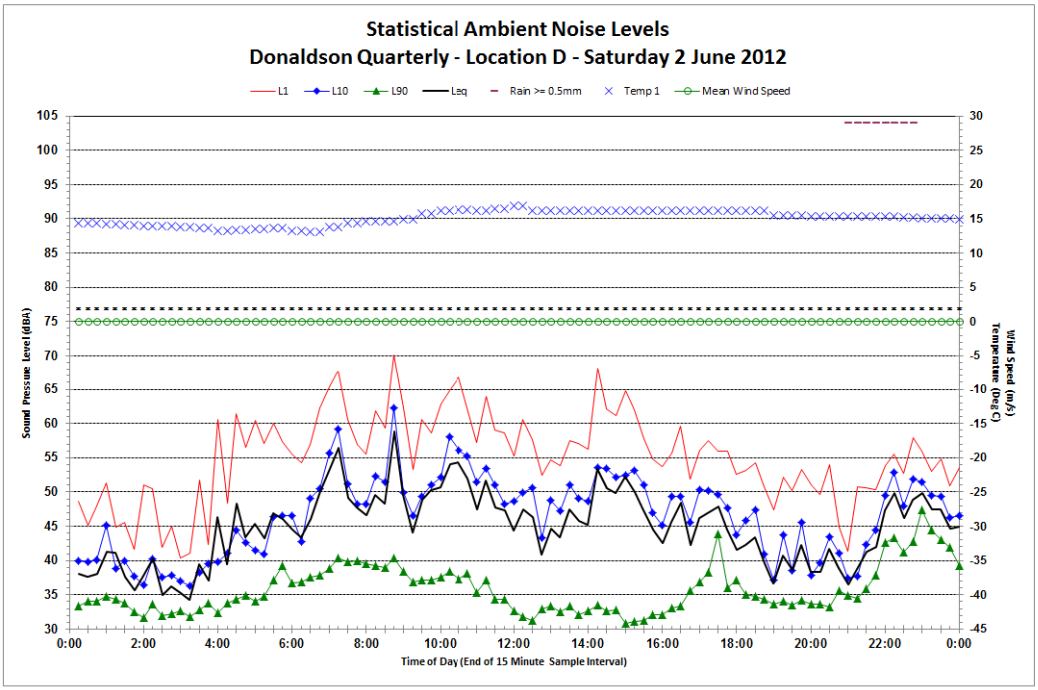
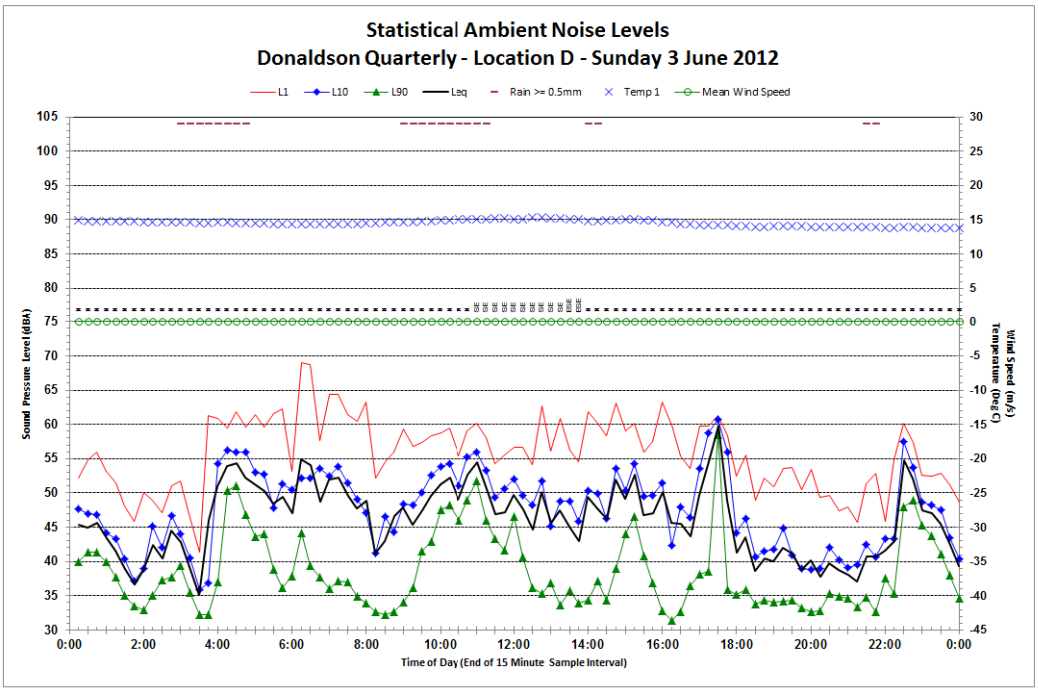
Statistical Ambient Noise Levels – Location D Page 3 of 4





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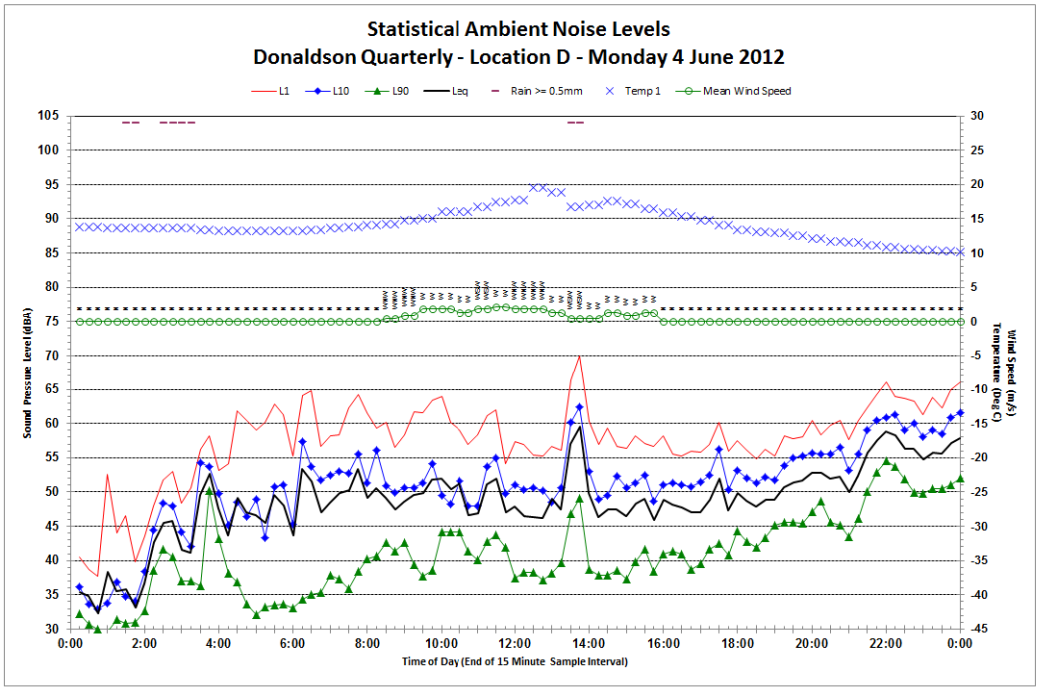
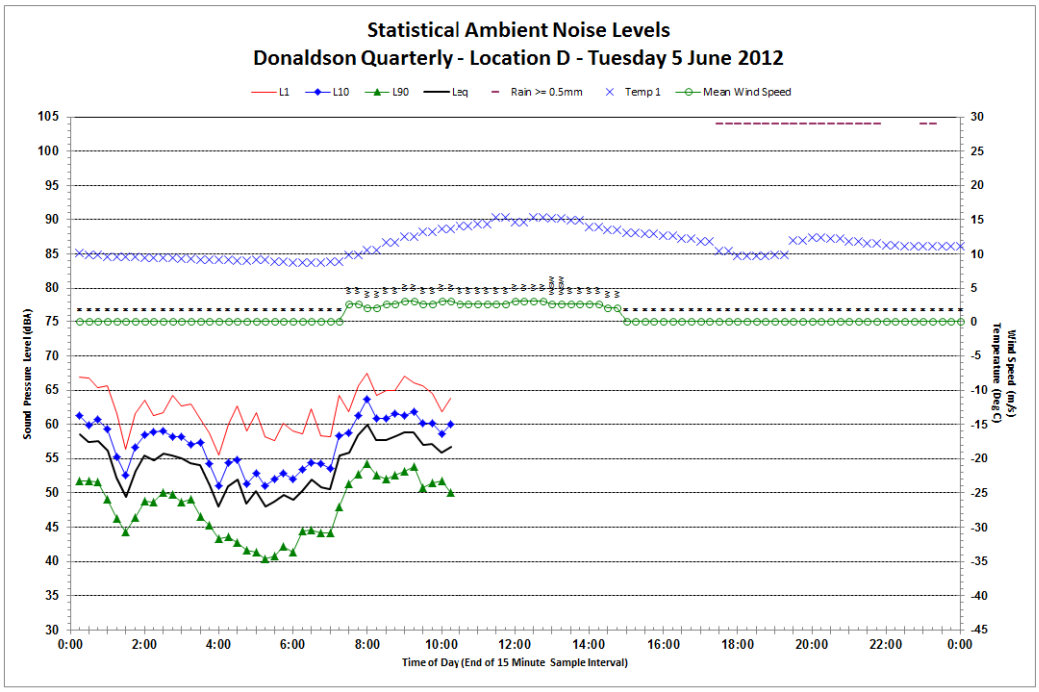
Statistical Ambient Noise Levels – Location D Page 4 of 4





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Donaldson and Abel Coal Mines

Quarterly Noise Monitoring

Quarter Ending September 2012

Report Number Q47 630.01053-R1 D1

12 October 2012

Donaldson Coal Pty Ltd
PO Box 675
Green Hills NSW 2320

Version: Draft 1

Donaldson and Abel Coal Mines

Quarterly Noise Monitoring

Quarter Ending September 2012

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DOCUMENT CONTROL

Reference	Status	Date	Prepared	Checked	Authorised
Q47 630.01053-R1D1	Draft 1	12 October 2012	Nicholas Vandenberg	Nathan Archer	

Table of Contents

TABLES

Table of Contents

1 INTRODUCTION

Development consent was obtained by Donaldson Coal Pty Ltd for the Donaldson Mine in October 1999 following a Commission of Inquiry. Development Consent number N97/00147 was issued by the Minister for Urban Affairs pursuant to Section 101 of the Environmental Planning and Assessment Act 1979.

Project Approval (Application No. 05_0136) granted by the Minister of Planning was obtained by Donaldson Coal Pty Ltd for Abel Coal Mine in 2008.

Donaldson Coal Pty Ltd has commissioned SLR Consulting Pty Ltd (SLR Consulting) to conduct quarterly noise monitoring surveys for the Donaldson Coal Mine and Abel Coal Mine in accordance with the Abel Mine Project Noise Monitoring Program, dated 27 May 2008.

The objectives of the noise monitoring survey for this operating quarter were as follows:

- Measure the ambient noise levels at five (5) focus receptor locations (potentially worst affected) surrounding Donaldson Coal Mine and Abel Coal Mine.
- Qualify all sources of noise within each of the attended surveys, including estimated contribution or maximum level of individual noise sources.
- Assess the noise emissions of Donaldson Coal Mine and Abel Coal Mine with respect to the limits contained in the Development Consent.

2 DEVELOPMENT CONSENT AND PROJECT APPROVAL

2.1 Donaldson Coal Mine Development Consent Conditions

The Development Consent nominates hours of operation and mine noise emission goals in the Sections entitled "*Operation of Development, Condition No. 3(1) and 3(2)*", and "*Noise and Vibrational Noise Limits: Condition No. 15*" as follows:

"3.(1) Subject to (2) the approved hours of operation are as follows:

Works	*Period*	*Hours*
Construction, including construction of any bunds	*Monday to Friday* *Saturday*	*7 am to 6 pm* *8 am to 1 pm*
Mining operations, including mining, haulage of waste to dumps and coal processing	*Monday to Friday* *Saturday, Sunday*	*24 hours per day* *7 am to 6 pm*
Road Transportation and stockpiling of coal	*7 days per week*	*24 hours per day*
Rail loading of coal	*7 days per week*	*7 am to 10 pm*
Maintenance of mobile and fixed plant	*7 days per week*	*24 hours per day*
Blasting, not involving closure of John Renshaw Drive	*Monday to Saturday*	*7 am to 5 pm*
Blasting, involving closure of John Renshaw Drive	*Monday to Saturday*	*10 am to 2 pm*

Notes: Restrictions on Public Holidays are the same as Sundays

(2) The Applicant shall submit a report to the Director-General's satisfaction demonstrating the noise limits in Condition 15 can be met while rail loading of coal is occurring during the period from 6 pm to 10 pm. If that report does not demonstrate that the noise limits can be met to the Director-General's satisfaction, then the hours of operation for rail loading of coal shall be restricted to 7 am to 6 pm."

15. Unless subject to a negotiated agreement in accordance with Condition 23, the Applicant shall ensure that the noise emission from construction or mining operations, when measured or computed at the boundary of any dwelling not owned by the applicant (or within 30 metres of the dwelling, if the boundary is more that 30 metres from the dwelling), shall not exceed the following noise limits:

Location	***LA10(15minute) Noise Limits (dBA)***	
	Daytime	***Night-time***
Beresfield area (residential)	*45*	*35*
Steggles Poultry Farm	*50*	*40*
Ebenezer Park Area	*46*	*41*
Black Hill Area	*40*	*38*
Buchanan and Louth Park Area	*38*	*36*
Ashtonfield Area	*41*	*35*
Thornton Area	*48*	*40*

Note: Daytime is 7 am to 10 pm Monday-Saturday, and 8 am to 10 pm Sundays and Public Holidays. Night-time is 10 pm to 7 am Monday-Saturday, and 10 pm to 8 am Sundays and Public Holidays.

The noise limits apply for prevailing meteorological conditions (winds up to 3 m/s), except under conditions of temperature inversions."

Other Conditions of Consent relevant to noise are as follows:

"18. The applicant shall survey and investigate noise reduction measures from plant and equipment and set targets for noise reduction in each Annual Environmental Management Report (AEMR), taking into consideration valid noise complaints received in the previous year. The Report shall also include remedial measures.

19. The Applicant shall revise the Noise Management Plan as necessary and provide an updated Plan five years after commencement of mining to the Director-General, the Independent noise expert (Condition 48), EPA, Councils and the Community Consultative Committee."

2.2 Abel Coal Mine – Project Approval

The relevant conditions relating to noise from the Abel Coal Mine approval are reproduced below.

Schedule 4

NOISE

Note: These conditions should be read in conjunction with section 3 of the Statement of Commitments.

Noise Limits

23 *The Proponent shall ensure that the noise generated by the Project does not exceed at any privately-owned residence the levels set out in the following table for the monitoring location nearest that residence.*

Table 1: Noise limits dB(A)

Day	Evening	Night		Location and Locality*
LAeq(15 minutes)	LAeq(15 minutes)	LAeq(15 minutes)	LA1(1 minute)	
50	48	41	51	**A** Weakleys Dr, Beresfield
50	48	41	51	**B** Yarrum Rd, Beresfield
43	44	38	50	**C** Phoenix Rd, Black Hill
41	40	36	46	**D** Black Hill School
41	40	36	46	**E** Brown Rd, Black Hill
41	40	36	46	**F** Black Hill Rd, Black Hill
43	41	36	46	**G** Buchanan Rd, Buchanan
43	41	36	46	**H** Mt Vincent Rd, Louth Park
44	46	38	48	**I** Lord Howe Dr, Ashtonfield
49	47	40	50	**J** Kilarney St, Avalon Estate
41	40	37	46	**K** Catholic Diocese (Former Bartter) K1, K2, K3
46	46	40	53	**L** Kilshanny Ave, Ashtonfield

Notes:

- *To determine compliance with the LAeq(15 minute) limit, noise from the project is to be measured at the most affected point within the residential boundary, or at the most affected point within 30 metres of a dwelling (rural situations) where the dwelling is more than 30 metres from the boundary. Where it can be demonstrated that direct measurement of noise from the development is impractical, the DECC may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy). The modification factors in Section 4 of the NSW Industrial Noise Policy shall also be applied to the measured noise levels where applicable.*
- *To determine compliance with the LA1(1 minute) limit, noise from the project is to be measured at 1 metre from the dwelling façade. Where it can be demonstrated that direct measurement of noise from the project is impractical, the DECC may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy).*
- *These limits apply under the relevant meteorological conditions outlined in the assessment procedures in Chapter 5 of the NSW Industrial Noise Policy.*
- *These limits do not apply if the Proponent has an agreement with the relevant owners of these residences to generate higher noise levels, and the Proponent has advised the Department in writing of the terms of this agreement.*

* Revised to list alphabetically

Noise Monitoring

24. The Proponent shall prepare and implement a Noise Monitoring Program for the project to the satisfaction of the Director-General. This program must:

(a) be submitted to the Director-General for approval within 6 months of this approval;

(b) be prepared in consultation with the DECC; and

(c) use a combination of attended and unattended monitoring measures to monitor the performance of the project.

2.2.1 Statement of Commitments

3.3 Monitoring

Within 6 months of this approval being granted a Noise Monitoring Program shall be prepared and implemented for the Abel Underground Mine and the Bloomfield CHPP, to the satisfaction of the Director-General. The Noise Monitoring Program shall include a combination of real-time and supplementary attended monitoring measures, and a noise monitoring protocol for evaluating compliance with the noise environmental assessment. This plan will be integrated with the monitoring plans for the Tasman, Donaldson and Bloomfield Mines to provide a single integrated Noise Monitoring Program for all 4 mines.

3 PROCEDURES AND METHODOLOGY

3.1 General Requirements

The operational noise monitoring program was conducted with reference to Development Consent N97/00147 (Donaldson Coal Mine), Project Approval 05_0136 (Abel Coal Mine), and in accordance with Heggies Report 30-1409-R2 dated 27 May 2008 (*Abel Mine Project Noise Monitoring Program)* and AS 1055-1997 "*Acoustics - Description and Measurement of Environmental Noise*".

3.2 Monitoring Locations

Baseline and preceding operational quarterly surveys have been conducted at 11 locations surrounding the Donaldson Mine and Abel Coal Mine sites. With the experience of these previous surveys, it was decided to concentrate noise monitoring at five (5) focus locations that represent the potentially most noise affected areas from Donaldson Mine and Abel Coal Mine during the September 2012 Quarter. The details of the monitoring locations are contained within **Table 1**.

Table 1 Monitoring Locations

Noise Monitoring Location	Description
A	98 Weakleys Drive, Beresfield
F	Lot 684 Black Hill Road, Black Hill
G	156 Buchannan Road, Buchannan
L	17 Kilshanny Ave, Ashtonfield
D	Black Hill School, Black Hill

A map giving the approximate location of the noise monitoring sites is contained within **Appendix A**.

3.3 Unattended Continuous Noise Monitoring

Environmental noise loggers were deployed for approximately a seven (7) day period between 29 August 2012 and 10 September 2012 at each of the five (5) nominated locations given in **Table 1**. All unattended monitoring equipment was programmed to continuously record statistical noise level indices in 15 minute intervals including the L_{Amax}, L_{A1}, L_{A10}, L_{A90}, L_{A99}, L_{Amin} and L_{Aeq}. The statistical noise exceedance levels (L_{AN}) are the levels exceeded for N% of the 15 minute interval. The L_{A90} represents the level exceeded for 90% of the interval period and is referred to as the average minimum or background noise level. The L_{A10} is the level exceeded for 10% of the time and is usually referred to as the average maximum noise level. The L_{Aeq} is the equivalent continuous sound pressure level and represents the steady sound level which is equal in energy to the fluctuating level over the interval period. The L_{Amax} is the maximum noise level recorded over the interval. Instrument calibration was conducted before and after each measurement survey, with the variation in calibrated levels not exceeding ±0.5 dBA.

3.4 Operator Attended Monitoring

Operator attended surveys were conducted at each of the five (5) monitoring locations during daytime, evening and night-time periods, to verify the unattended logging results and to determine the character and contribution of ambient noise sources.

3.5 Equipment Operation

The mobile equipment operating on the Donaldson Mine site during the survey period are contained in **Appendix B**.

During the survey period the following operations were being undertaken:

- Overburden removal and mining was being undertaken in Strips 1 - 7 in the Square Pit.
- Overburden was placed in the East Pit and West Pit.
- The grader and water cart was working on the surface during the reporting period.

The only surface equipment operating on the Abel Coal Mine site during the survey periods was a ventilation fan.

4 OPERATOR ATTENDED NOISE MONITORING

4.1 Results of Operator Attended Monitoring

Operator attended noise measurements were conducted during the daytime on Monday 3 September 2012 and Wednesday 5 September 2012, during the evening on Monday 3 September 2012 and during the night-time on Monday 3 September 2012. All operator attended noise surveys were conducted using a Brüel & Kjær 2270 Type 1, integrating sound level meter (s/n: 2679354).

Results of the operator attended noise measurements are given in **Table 2** to **Table 6**. Ambient noise levels given in the tables include all noise sources such as traffic, insects, birds, and mine operations as well as any other industrial operations.

The tables provide the following information:

- Monitoring location.
- Date & start time.
- Wind velocity (m/s) and Temperature (°C) at the measurement location.
- Typical maximum (L_{Amax}) and contributed noise levels.

Mine contributions listed in the tables are from Donaldson Mine and Abel Coal Mine and are stated only when a contribution could be quantified.

Table 2 Location A Weakleys Drive, Beresfield

Date/Start Time/Weather	Measurement Description	Primary Noise Descriptor (dBA re 20 µPa)					Description of Noise Emission and Typical Maximum Levels LAmax – dBA
		LAmax	LA1	LA10	LA90	LAeq	
03/09/2012 15:36 W = Calm Temp = 23°C Cloud cover = 0/8	Daytime Ambient	73	58	55	49	53	Birds ~ 46 to 56 Operator ~ 53 to 63 Other Industry ~ 50 to 64 Local Traffic ~ 50 to 63 Insects ~ 38 Chickens ~ 52 to 54 Resident ~ 50 to 73
		Donaldson mine ~ inaudible.					
03/09/2012 18:15 W = Calm Temp = 13°C Cloud cover = 0/8	Evening Ambient	87	75	71	58	68	Local Traffic ~ 69 to 85 Distant Traffic ~ 49 Other Industry ~ 47
		Donaldson mine ~ Inaudible					
04/09/2012 00:31 W = Calm Temp = 7°C Cloud cover = 0/8	Night-time Ambient	89	79	66	49	66	Local Traffic ~ 68 to 88 Other Industry ~ 55 Distant Traffic ~ 40 to 41 Birds 48 to 51
		Donaldson mine ~ Inaudible					

Table 3 Location F Lot 684 Black Hill Road, Black Hill

Date/Start Time/Weather	Measurement Description	Primary Noise Descriptor (dBA re 20 µPa)					Description of Noise Emission and Typical Maximum Levels LAmax – dBA
		LAmax	LA1	LA10	LA90	LAeq	
05/09/2012 14:51 W = 1.5 m/s NE Temp = 17°C Cloud cover = 0/8	Daytime Ambient	73	68	59	49	57	Local Traffic ~ 72 to 73 Bird ~ 54 to 61 JRD Traffic ~ 60 to 65 Trees rustling ~ 49 Insects ~ 45 Operator ~ 59
		Donaldson mine ~ Inaudible					
03/09/2012 18:38 W = Calm Temp = 13°C Cloud cover = 0/8	Evening Ambient	76	67	55	48	55	JRD Traffic ~ 52 to 57 Local Traffic ~ 67 to 76 Frogs ~ 44 Bird ~ 51 Donaldson Audiable ~ 40 to 41
		Estimated Donaldson LAeq Contribution ~ 37 dBA					
04/09/2012 00:03 W = Calm Temp = 9°C Cloud cover = 0/8	Night-time Ambient	63	56	51	43	48	Crickets/Insects ~ 49-51 Local Traffic ~ 53-57 Animal ~ 50 Bird ~ 50-51 Operator Noise ~ 57 Donaldson Audible ~ 36 to 45
		Estimated Donaldson LAeq Contribution ~ 38 dBA					

Table 4 Location G 156 Buchannan Road, Buchanan

Date/Start Time/Weather	Measurement Description	Primary Noise Descriptor (dBA re 20 µPa)					Description of Noise Emission and Typical Maximum Levels LAmax – dBA
		LAmax	LA1	LA10	LA90	LAeq	
03/09/2012 16:40 W = 2 m/s SE Temp = 19°C Cloud cover = 0/8	Daytime Ambient	51	45	43	39	41	Birds ~ 43 to 47 Local Traffic ~ 38 to 50 Haul Trucks ~ 37 to 41 Trees rustling ~ 38 Frogs ~ 36
		Donaldson mine ~ Inaudible					
03/09/2012 21:39 W = Calm Temp = 10°C Cloud cover = 0/8	Evening Ambient	51	46	42	34	38	Distant Traffic ~ 44 to 47 Insects ~ 36 Dog ~ <30 Frogs ~ 36 Operator ~ 42 to 44
		Donaldson mine ~ Inaudible					
03/09/2012 22:00 W = Calm Temp = 10°C Cloud cover = 0/8	Night-time Ambient	51	47	39	32	36	Crickets ~ 31 to 34 Frogs ~ 31 Bird ~ 34 Animal ~ 37 Distant Traffic ~ 35 to 51 Operator ~ 41
		Donaldson mine ~ Inaudible					

Table 5 Location L 17 Kilshanny Ave, Ashtonfield

Date/Start Time/Weather	Measurement Description	Primary Noise Descriptor (dBA re 20 µPa)					Description of Noise Emission and Typical Maximum Levels LAmax – dBA
		LAmax	LA1	LA10	LA90	LAeq	
03/09/2012 16:12 Wind: 0.5 m/s NE Temp = 22°C Cloud cover = 0/8	Daytime Ambient	75	60	47	36	49	Local Traffic ~ 50 to 75 Resident ~ 37 to 65 Plane ~ 44 Birds ~ 43 to 50 Dog Barking ~ 45
		Donaldson mine ~ Inaudible					
03/09/2012 20:14 W = Calm Temp = 12°C Cloud cover = 0/8	Evening Ambient	69	55	43	37	44	Insects/Crickets ~ 36 to 38 Distant Traffic ~ 42 to 47 Local traffic 44 to 68 Stick falling ~ 40 Resident ~ 48
		Donaldson mine ~ Inaudible					
03/09/2012 22:29 W = Calm Temp = 9°C Cloud cover = 0/8	Night-time Ambient	44	39	36	32	34	Insects ~ 32 to 35 Distant Traffic ~ 37 Local Traffic ~ 37 to 44 Dog ~ 40 to 41 Stick ~ 36 Operator ~ 44 Resident ~ 35
		Donaldson mine ~ Inaudible					

Table 6 Location D Black Hill School, Black Hill

Date/Start Time/Weather	Measurement Description	Primary Noise Descriptor (dBA re 20 µPa)					Description of Noise Emission and Typical Maximum Levels LAmax – dBA
		LAmax	LA1	LA10	LA90	LAeq	
05/09/2012 15:17 W = Calm Temp = 22°C Cloud cover = 0/8	Daytime Ambient	80	70	60	45	58	Local Traffic ~ 70 to 80 Trees Rustling ~ 53 to 57 Children ~ 55 to 56 Door Slam ~ 55 Insects ~ 49 Birds ~ 52 to 59 Distant Traffic ~ 43 Donaldson Audible in Lulls ~ 38
		Estimated Donadson LAeq Contribution ~ <35					
18/06/2012 18:47 W = Calm Temp = 10°C Cloud cover = 0/8	Evening Ambient	57	47	45	41	44	Operator ~ 45 Distant Traffic ~ 43 to 51 Frogs ~ 36 Animal ~ 38 to 42 Bang ~ 45 Stick Falling ~ 44 Donaldson Mine ~ 33
		Estimated Donadson LAeq Contribution ~ <33					
03/09/2012 23:45 W = Calm Temp = 7°C Cloud cover = 0/8	Night-time Ambient	53	49	45	37	42	Operator ~ 42 Distant Traffic ~ 49 – 52 Frogs ~ 36 Birds ~ 36 JRD Traffic ~ 34 Stick ~ 43 Donaldson Mine ~ 33 to 34
		Estimated Donadson LAeq Contribution ~ <33					

4.2 Operator Attended Monitoring Summary

4.2.1 Donaldson Mine

Noise generated by local and distant traffic was a significant contributor to noise levels at all monitored locations as well as "natural' noise such as birds, insects and leaf rustle.

Donaldson Mine operations were observed to be audible at Location D Black Hill School during the daytime, evening and night time periods and at Location F during the evening and night-time periods. Donaldson Mine operations were inaudible at all other locations.

The estimated Donaldson Contribution at Location D during the day-time was approximately L_{Aeq} 33 dBA. This is within the consent noise limits.

The estimated Donaldson Contribution at Location D and Location F during the evening was approximately L_{Aeq} 33 dBA and 37 dBA respectively. This is within the consent noise limits.

The estimated Donaldson contribution at Location D and Location F during the night was approximately L_{Aeq} 33 dBA and 38 dBA. This is within the consent conductions with the exception of Location F which is now a mine owned property and therefore the noise limits do not apply in accordance with Condition 15 of the consent conditions.

Based on results and observations from operator attended surveys, it is likely that the contributed noise levels from Donaldson Mine comply with noise emission goals for all periods.

4.2.2 Abel Coal Mine

Noise generated by local and distant traffic was a significant contributor to noise levels at all monitored locations.