Ambient Air Quality Assessment

Cnr Spencer Steet and Regatta Road Five Dock NSW

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Document Control

Version Number	Comments	Issue Date
1	Original	28th July 2015

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1. Introduction

This report has been prepared for Mr Fady Elightany for the purposes of reviewing air quality issues for a proposed childcare centre at the corner of Spencer Street and Regatta Road Five Dock NSW. The purpose of the assessment is for investigative reasons as part of a development application with the City of Canada Bay Council. This report will address the potential air quality issues and its impact on the proposed development by investigating local air pollutant parameters from the closest DECC monitoring station to the site and will also address meteorological factors that may affect the distribution of pollutants.

1.1 Limitations

This report and the associated services performed by Indoor Environmental Solutions (IES) are in accordance with the scope of services set out in the contract between IES and the Client. The scope of services was defined by the requests of the Client, by the time and budgetary constraints imposed by the Client, and by the availability of access to the site.

In preparing this report, IES has relied upon, and presumed accurate, certain information (or absence thereof) provided by government authorities, the Client and others identified herein. Except as otherwise stated in the report, IES has not attempted to verify the accuracy or completeness of any such information.

No warranty, undertaking, or guarantee, whether expressed or implied, is made with respect to the data reported or to the findings, observations, conclusions and recommendations expressed in this report. Furthermore, such data, findings, observations, conclusions and recommendations are based solely upon existence at the time of the investigation. The passage of time, manifestation of latent conditions or impacts of future events (e.g. changes in legislation, scientific knowledge, land uses, etc) may require further investigation at the site with subsequent data analysis and re-evaluation of the findings, observations, conclusions and recommendations expressed in this report.

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of the Client to accept if the Client so chooses any recommendations contained within and implement them in an appropriate, suitable and timely manner.

2. Project Description

2.1 Study Area

The study area is located on the corner of Spencer Street and Regatta Road Five Dock. The site is located within a 'General Industrial' zone, Zone IN1.[1]

2.2 Surrounding Land Use

The site is primarily bounded by motor vehicle repair workshops to the north, south, east and west of the site. The site is bounded by public recreation to the north east, low and medium density residential to the north, general industrial to the east, south and west of the site. Further west of the site there is low density residential land use. The zone is further bounded by Parramatta Road to the south of the site. There is a potential for vehicle exhaust emission to impact the proposed site.

[1] Cityof Canada Bay (2008) Canada Bay Local Environmental Plan 2008 Land Zoning Map Sheet LZN 005.

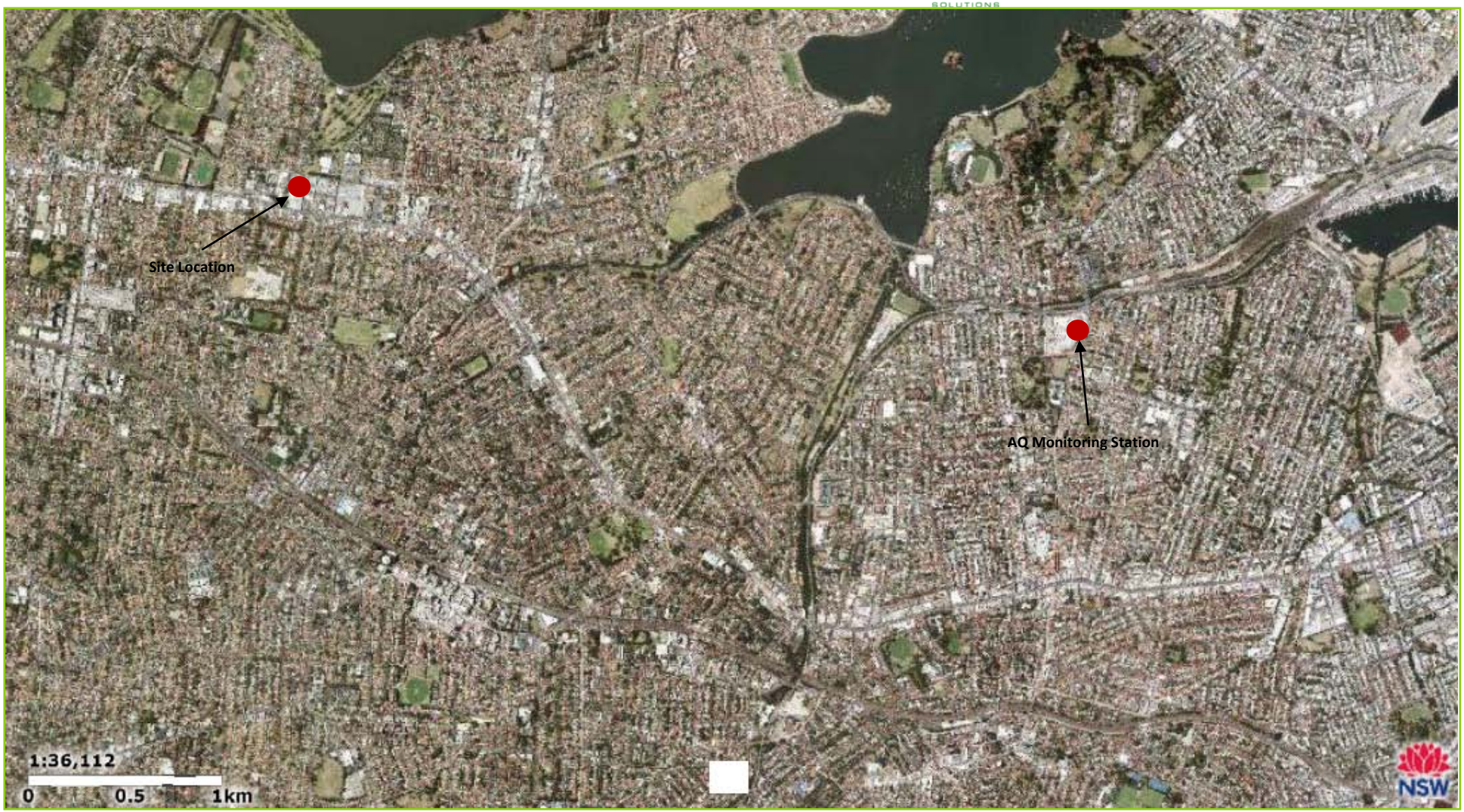

Figure 1: Site Location and Monitoring Station

3. Air Quality Issues

The Department of Environment and Climate Change (DECC) has released the following documents in relation to the assessment of air pollutants:

- Approved Methods for Modeling and Assessment of Air Pollutants in NSW (2005); and
- Approved Methods for the Sampling and Analysis of Air Pollutants in NSW (2007).

The monitoring data obtained for this desktop study has been obtained from the DECC monitoring network and data has been undertaken in accordance with the Approved Methods for Sampling and Analysis of Air Pollutants in NSW.

3.1 Existing Air Quality

This section presents an assessment of the existing air quality in the project area. There are a number of criteria used to assess air quality and these are described briefly in the following sections.

3.1.1 Air Quality Criteria

The National Environment Protection Council (NEPC), the Australian, State and Territory Governments agreed to the National Environment and Protection Measure for Ambient Air Quality in 1998, detailed in Table 1.

Table 1: National standards for criteria air pollutants in Australia

Pollutant	Concentration and averaging period
Carbon monoxide	9.0 ppm measured over an eight hour period
Nitrogen dioxide	0.12 ppm averaged over a one hour period
	0.03 ppm averaged over a one year period
Ozone	0.10 ppm of ozone measured over a one hour period
	0.08 ppm of ozone measured over a four hour period
Sulfur dioxide	0.20 ppm averaged over a one hour period
	0.08 ppm averaged over a 24 hour period
	0.02 ppm averaged over a one year period
Lead	0.5 µg/m³ averaged over a one year period
Particles as PM_{10}	50 µg/m³ averaged over a 24-hour period
Particles as $PM_{2.5}$	Advisory reporting standard: 25 µg/m³ over a one day period; 8 µg/m³ over a one year period

ppm – parts per million
µg/m³ - micrograms per cubic metre

3.1.2 DECC Monitoring Data

The closest air quality monitoring station to the site is Rozelle, located in the grounds of Rozelle Hospital, off Balmain Road, Rozelle (Australian Map Grid coordinates (km): 6251.2 northing, 330.0 easting and zone 56), within the Department of Environment and Climate Change (DECC) East Sydney region. The monitoring station is approximately 4km to the east of the proposed site, calculated using the distance tool in SIXX Maps (see Figure 1). It is situated in a residential area in the Parramatta River valley and is at an elevation of 22 meters. The following air pollutants are currently measured at Rozelle:

- Ozone (O_3)
- Nitrogen Dioxide (NO_2)
- Carbon Monoxide (CO)
- Particulate Matter (PM_{10} using a tapered element oscillating microbalance)
- Fine particulates (by nephelometry)
- Wind speed, wind direction and sigma theat
- Ambient temperature
- Relative humidity
- Solar radiation

A year's air quality data, between the 1st July 2014 to the 1st July 2015, from DECC's Rozelle monitoring station has been analysed for certain parameters. Please refer Table 2 for monthly exceedances. There were three exceedances for air pollutants during the entire monitoring period. One exceedance was for particulates less than 10 microns in diameter and two exceedances were for visibility (NEPH).

Table 2: Rozelle DECC Monitoring Station Monthly Exceedances

Date	Nitrogen Dioxide (NO_2) [count]	Carbon Monoxide (CO) [count]	Ozone 1hr av (O_3) [count]	Ozone 4hr av (O_3) [count]	Particulates (PM_{10}) [count]	Particulates (PM2.5) [count]	Sulfur Dioxide (SO_2) [count]	NEPH [count]
07/2014	0	0	0	0	0			2
08/2014	0	0	0	0	0			0
09/2014	0	0	0	0	0			0
10/2014	0	0	0	0	0			0
11/2014	0	0	0	0	0			0
12/2014	0	0	0	0	0			0
01/2015	0	0	0	0	0			0
02/2015	0	-	0	0	0		-	0
03/2015	0	0	0	0	0	-	0	0
04/2015	0	0	0	0	0	0	0	0
05/2015	0	0	0	0	1	0	0	0
06/2015	0	0	0	0	0	0	0	0

The air pollutants monitored by the Department of Environment and Climate Change (DECC) and used in the Air Quality Index (AQI) are ozone, nitrogen dioxide, carbon monoxide, sulfur dioxide and air particles.

The Air Quality Index (AQI) is a value derived for air quality data readings, which allows for more meaningful comparison of pollutants affecting air quality. The index is derived using the following formula[2]:

$$AQI_{pollutant} = \frac{\text{Pollutants data reading}}{\text{Standard}} \times 100$$

The Air Quality Index (AQI) is interpreted as very good, good, fair, poor, very poor and hazardous as seen below in Figure 2:

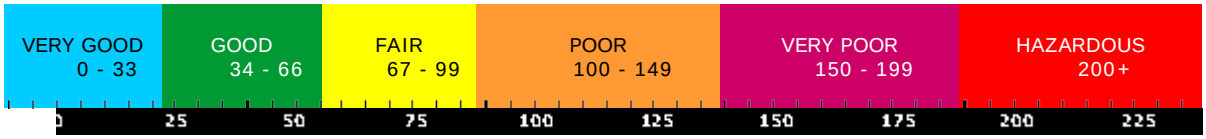

Figure 2: AQI Interpretation.
Source: DECC AQI Values 2nd March 2011

[2] DECC 26th February 2011 – Air Quality Definitions

The Daily AQI values from DECC's Rozelle Monitoring Station can be seen in Appendix A. The monitoring period is from the 1st July 2014 to the 1st July 2015. Instances of poor AQI readings have been highlighted (Appendix A), with two days of the year having recorded poor AQI's and no days having very poor or hazardous AQI's. All other days had very good, good and fair AQI readings.

The overall air quality recorded at the Rozelle monitoring station is good (Figure 3), with the majority of readings falling within 34 - 66 AQI, which is interpreted as good from Figure 2.

It is likely that the existing air quality at the proposed site is somewhat similar given the proximity to the monitoring station and the similarities in the surrounding land use.

There were two occurrences throughout the monitoring period, 1st July 2014 to 1st July 2015, where the AQI was in the 'poor' category between 100-149 AQI. This can be seen in Figure 3. It can be seen by the graphical representation of AQI data in Figure 3 that the majority of AQI readings fell within the 'good' rating levels of 344-66 AQI.

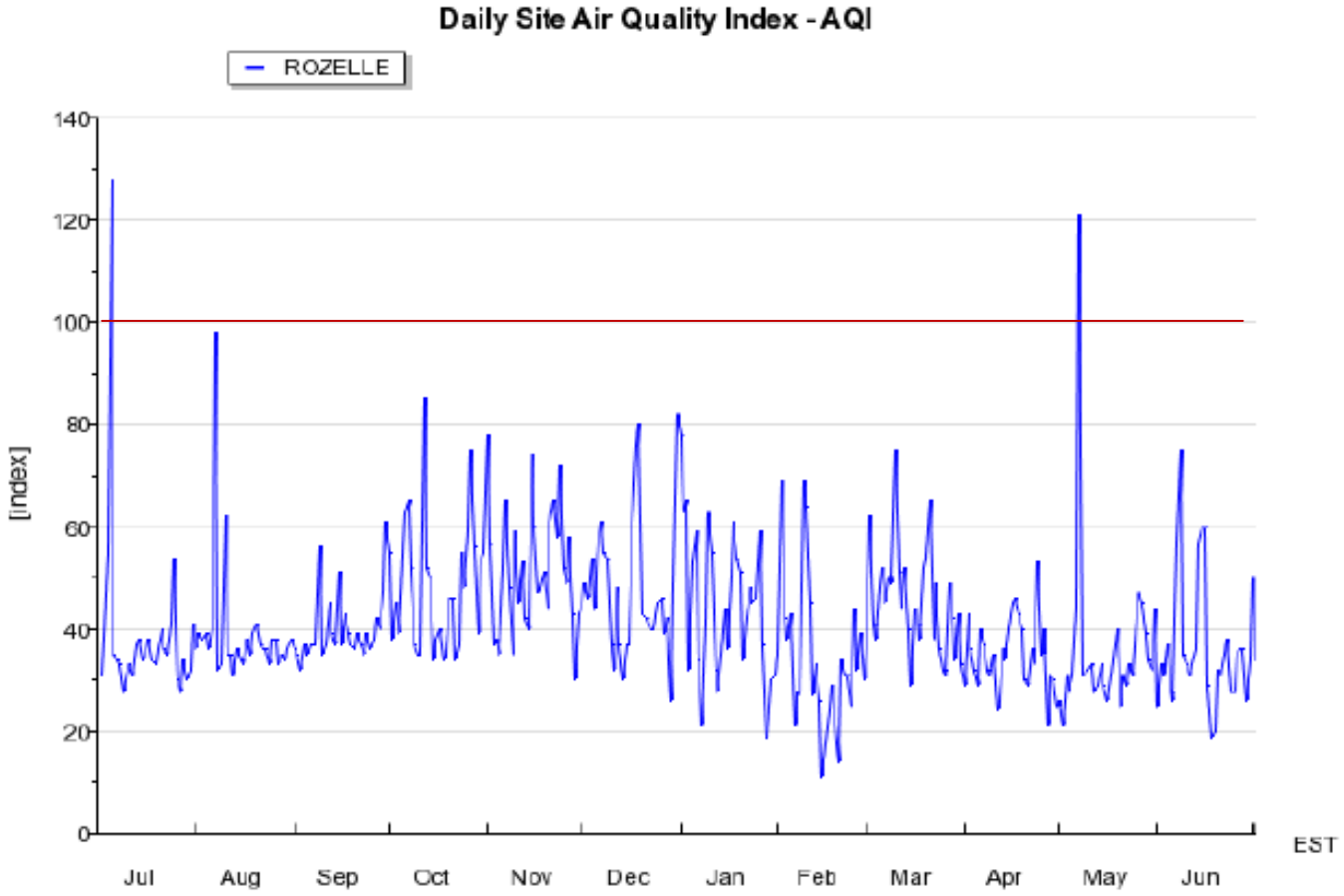

Figure 3: Daily AQI for Rozelle 01/07/04-01/07/15

Sulfur Dioxide levels, where data collection began in March 2015 from the DECC site, were within the National Standards for Criteria Air Pollutants in Australia, that is 0.08ppm averaged over a 24 hour period. Graphical representation of sulfur dioxide levels in Figure 4 show that sulfur dioxide levels were well within the 0.08ppm limit, or 8pphm.

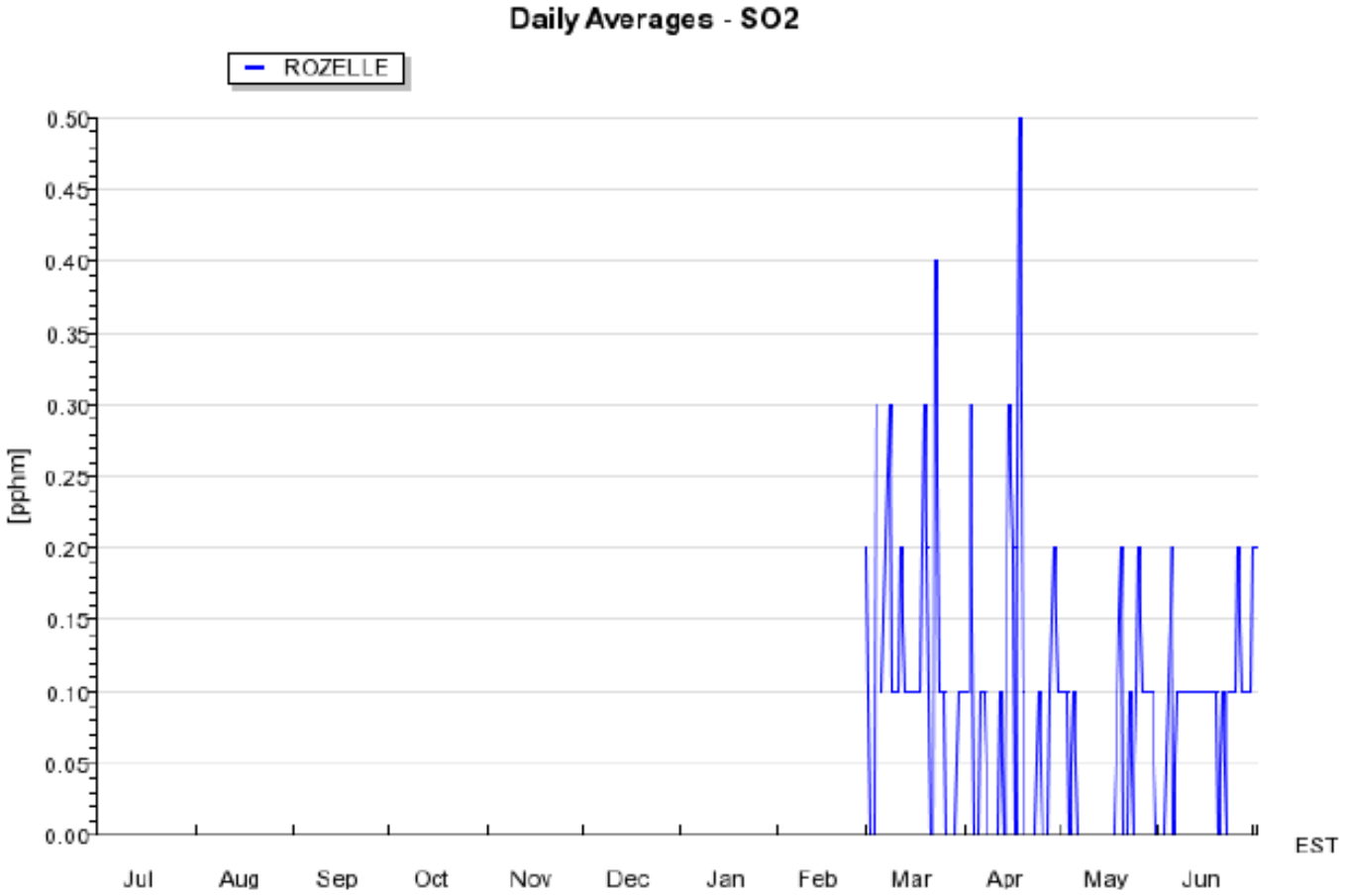

Figure 4: Daily Average Sulfur Dioxide (SO_2) Levels for Rozelle 01/07/04-01/07/15

Carbon Monoxide levels were well within the Nation Standards for Criteria Air Pollutants in Australia limit of 9ppm (Figure 5).

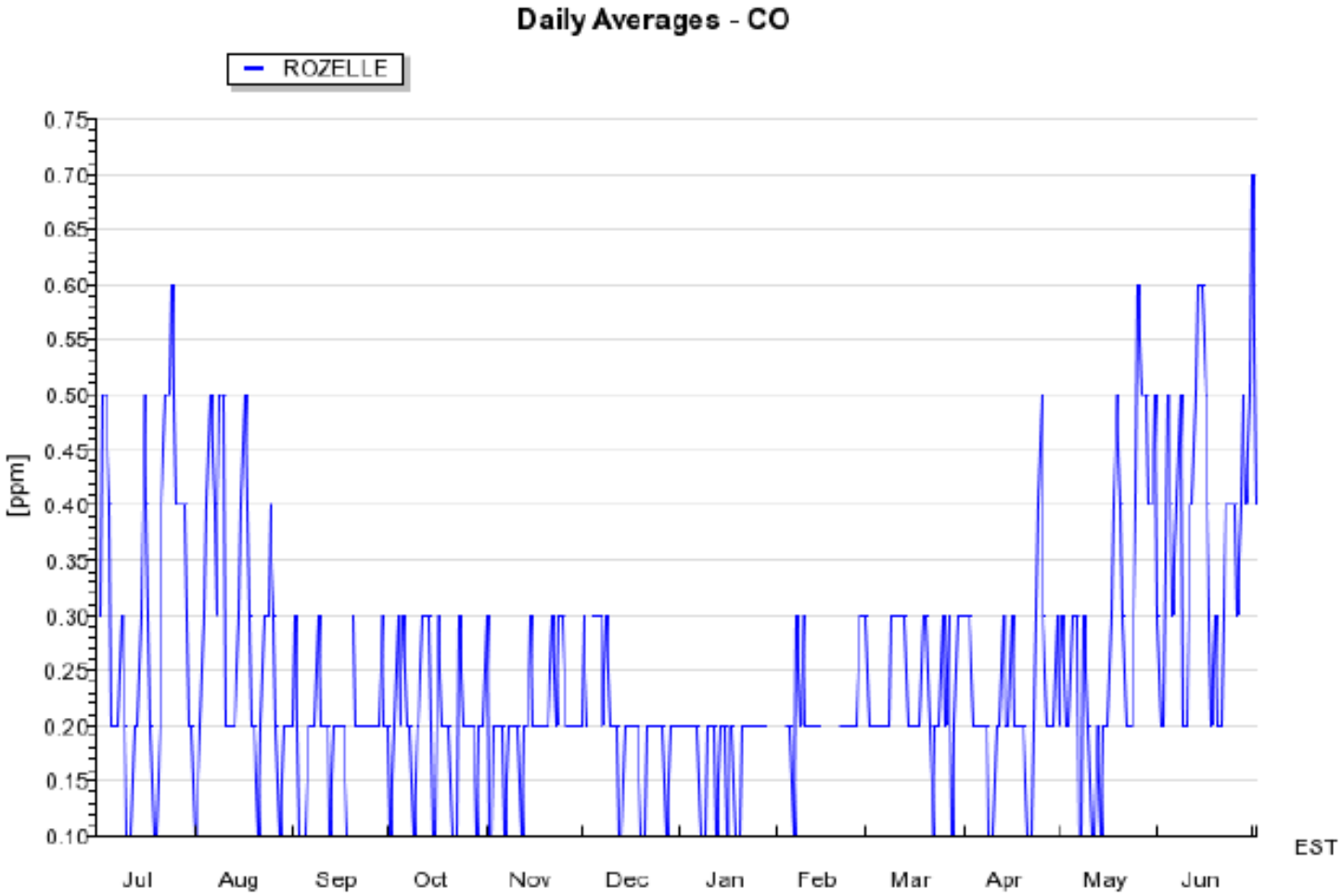

Figure 5: Daily Average Carbon Monoxide (CO) Levels for Rozelle 01/07/04-01/07/15

Nitrogen dioxide levels were well within the Nation Standards for Criteria Air Pollutants in Australia limit of 0.03ppm averaged over a one year period, or 3 pphm (Figure 6).

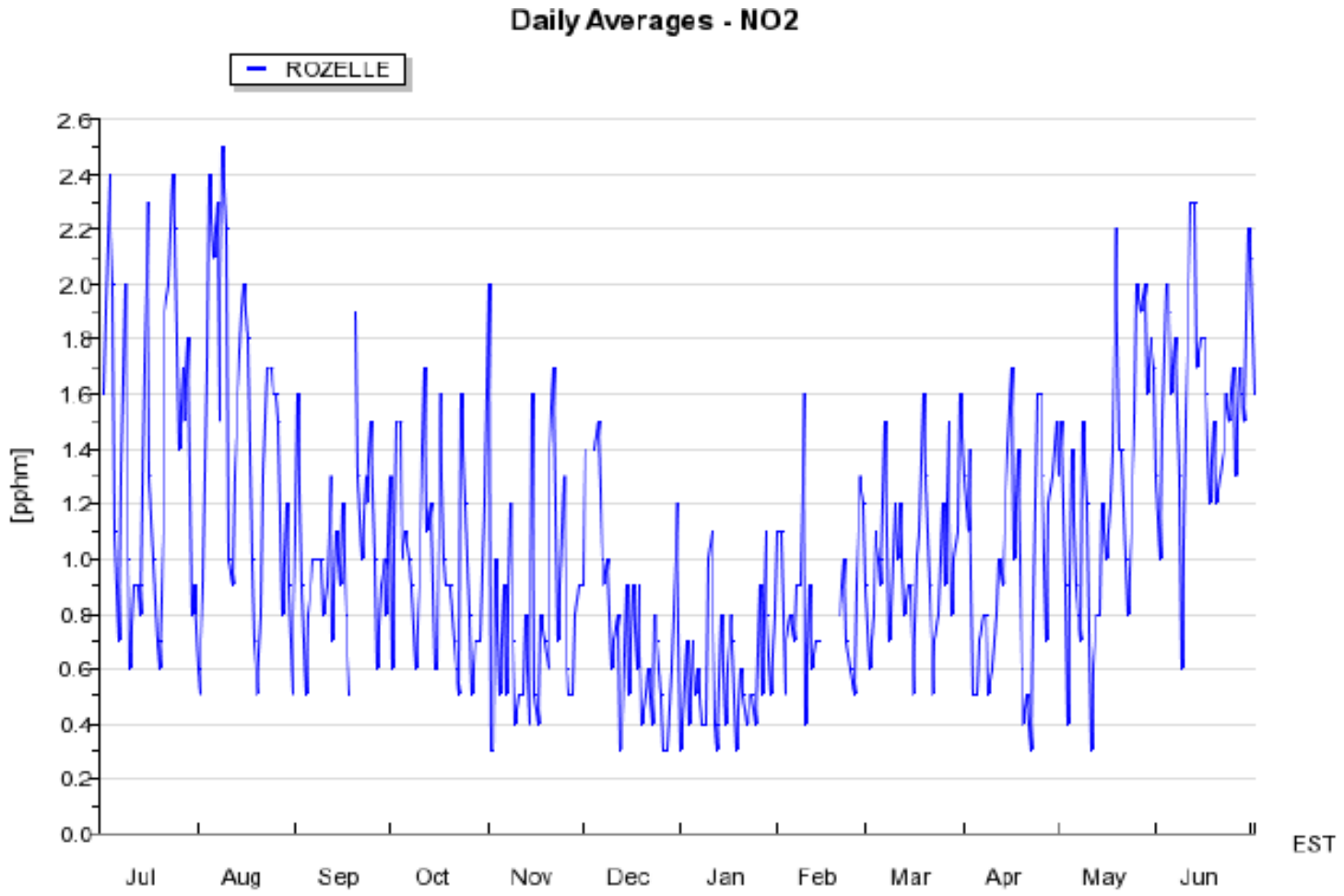

Figure 6: Daily Average Nitrogen Dioxide (NO_2) Levels for Rozelle 01/07/04-01/07/15

Ozone levels were well within the Nation Standards for Criteria Air Pollutants in Australia limit of 0.08ppm averaged over a four hour period, or 8 pphm (Figure 7).

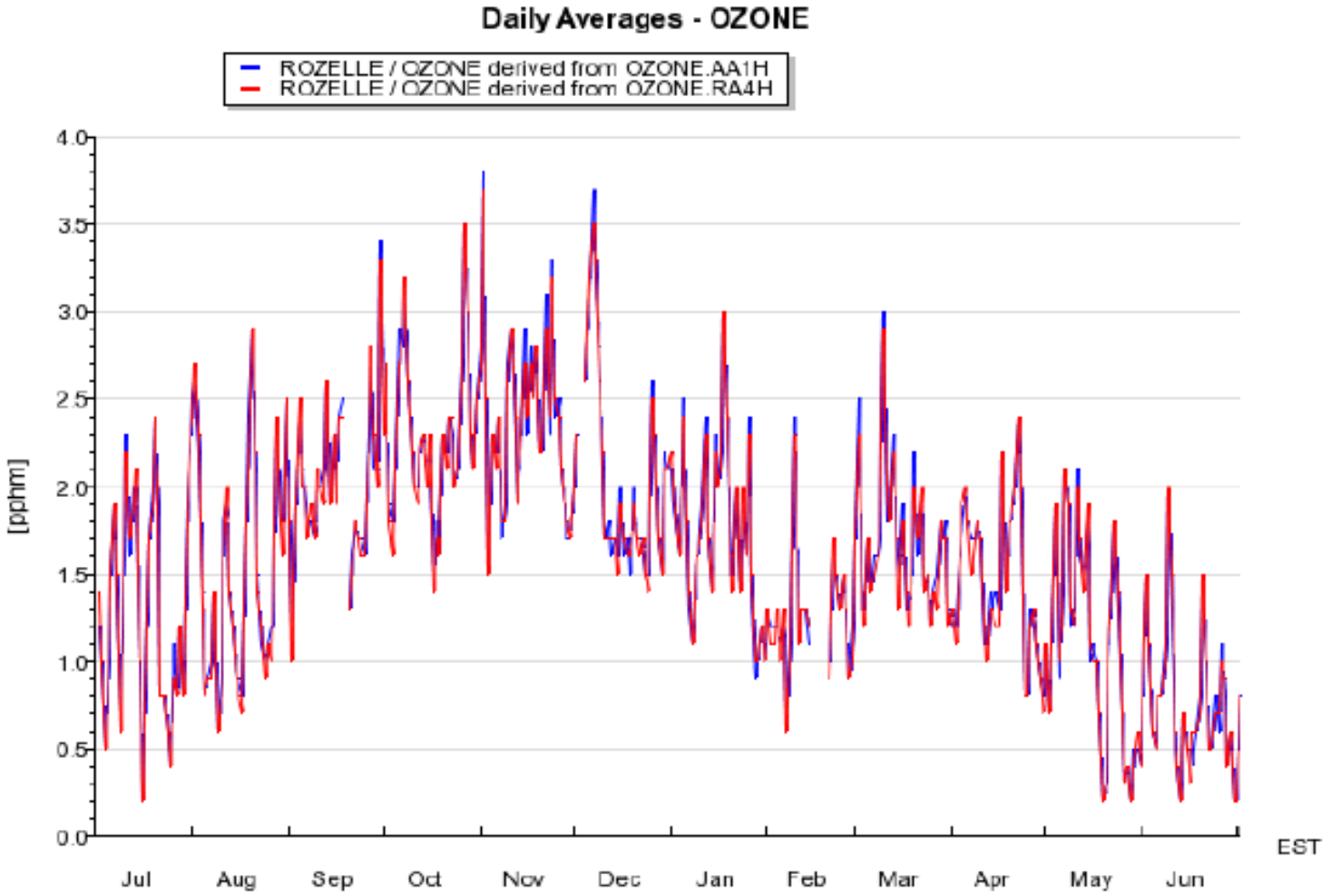

Figure 7: Daily Average Ozone (O_3) Levels for Rozelle 01/07/04-01/07/15

Particulate Matter less than 10 microns in diameter (PM_{10}) were the Nation Standards for Criteria Air Pollutants in Australia limit of 50µg/m^3 over a 24 hour period (Figure 8) for all readings except for one exceedance occurring in May 2015.

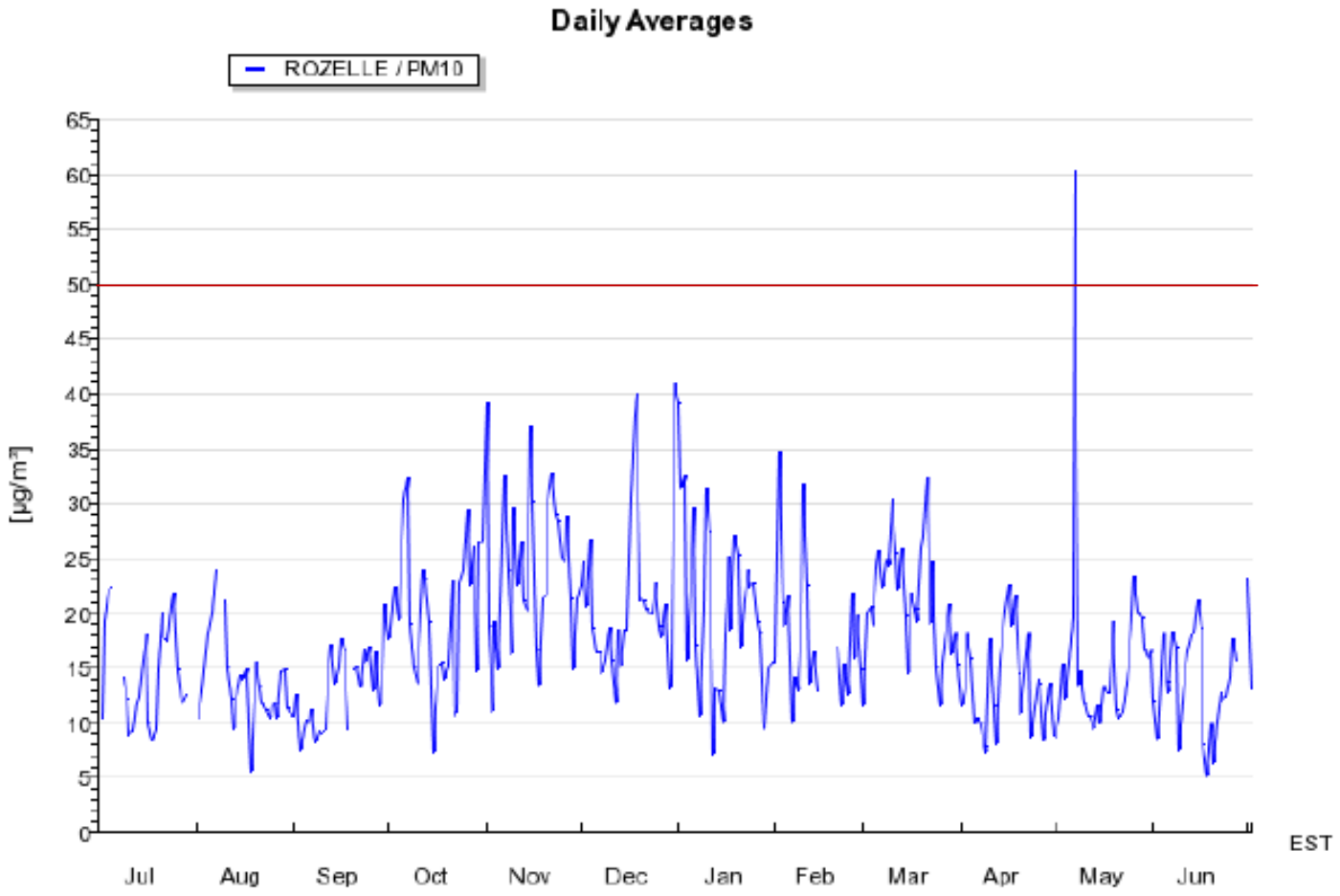

Figure 8: Daily Average Particulate Matter (PM_{10}) Levels for Rozelle 01/07/04-01/07/15

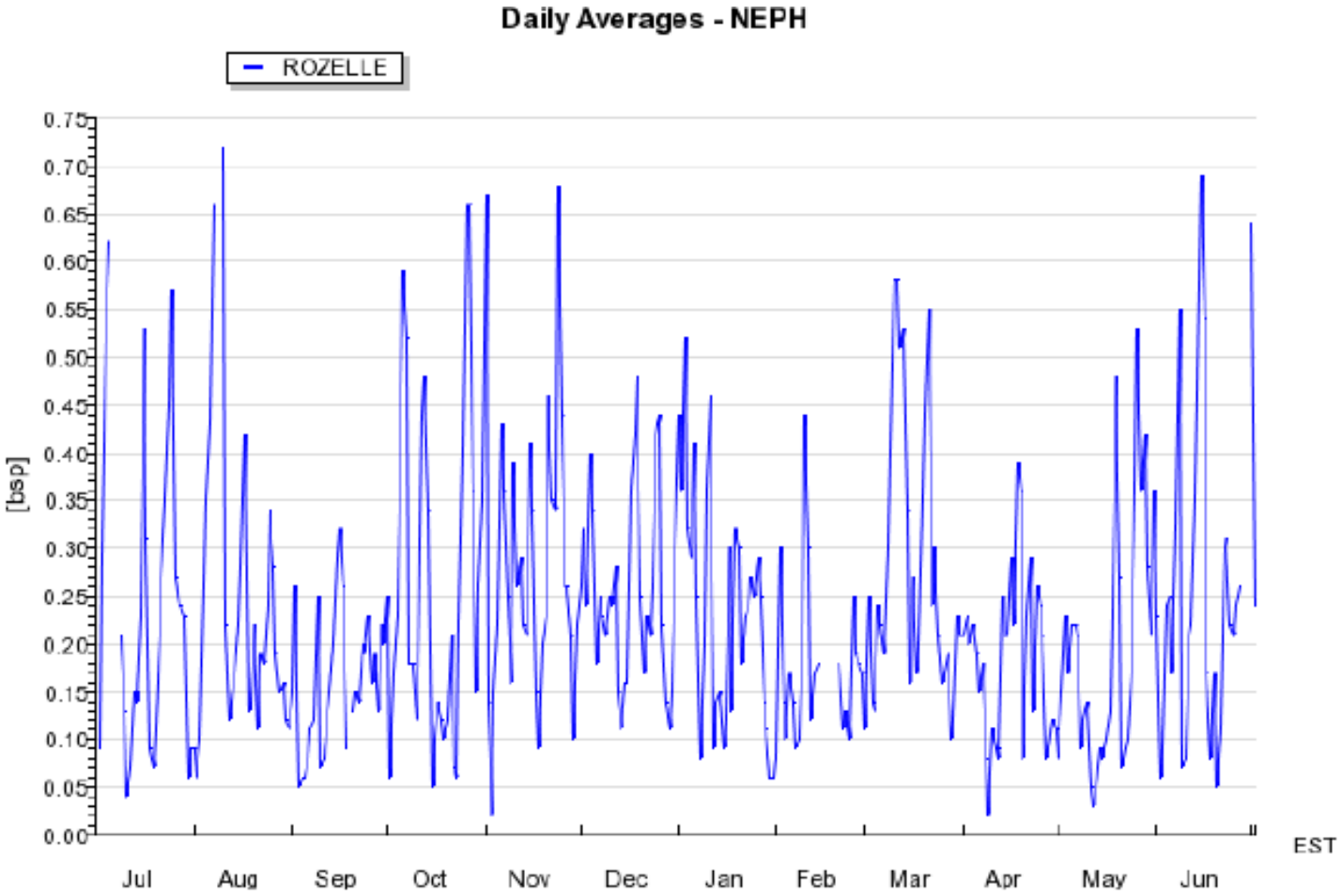

Figure 9: Daily Average Visibility (NEPH) Levels for Rozelle 01/07/04-01/07/15

4. Dispersion Meteorology

The dispersion meteorology of the area will also affect the local air quality. The distribution of wind directions and wind speeds will influence where pollution is brought from and where it is transported to. The local terrain will also influence pollution concentrations. The meteorological features of the area are summarised in the following sections.

Meteorology data (wind speed and direction) has been obtained from the Bureau of Meteorology Australia (BOMA) closest monitoring station, Canterbury (station number 066194) located at Canterbury Racecourse from July 2014 to July 2015.

4.1 Wind Speed and Direction

Wind speeds and directions were taken from the Canterbury BOMA Station 066194, closest available data to the project site and reveal that the approximate average wind speed for the 1st July 2014 to the 1st July 2015 was 14km/h.

The Beaufort Wind Scale has been used to describe the average annual wind speed. Based on this Wind Scale, the approximate average wind speed at BOMA station 066194 was 1-3 (Beaufort Scale Number) and can be described as light winds. Please refer to Appendix B for the Beaufort Wind Scale.

It is unlikely that long-range transport of pollutants will occur under light winds. It must be noted that only by modeling air pollutants and an in-depth assessment of the terrain and other meteorological conditions can assess this accurately.

Table 3: Wind Speed and Direction at Sydney BOMA Station 066194

		9am		3pm	
Date		**Direction**	**Speed (km/h)**	**Direction**	**Speed (km/h)**
July 2014	Average		10		16
	Minimum		Calm		Calm
	Maximum	W	22		28
August 2014	Average		10		18
	Minimum		Calm	NNW	9
	Maximum	SSE	33		26
September 2014	Average		11		18
	Minimum		Calm	WSW	2
	Maximum	W	30	WSW	28
October 2014	Average		11		19
	Minimum		Calm	NW	6
	Maximum		28	WNW	43
November 2014	Average		11		22
	Minimum		Calm	NE	15
	Maximum	SSE	28	W	33
December 2014	Average		12		21
	Minimum		Calm	NNE	11
	Maximum	SSE	30	SSE	37
January 2015	Average		11		20
	Minimum		Calm	SSE	11
	Maximum		22		28
February 2015	Average		8		20
	Minimum		2		E7
	Maximum	S	20	SSE	31
March 2015	Average		9		18
	Minimum		Calm	NW	4
	Maximum	WNW	22	SSE	33
April 2015	Average		12		17
	Minimum	WNW	6	NW	4
	Maximum	SSE	31	S	31
May 2015	Average		10		15
	Minimum		Calm		Calm
	Maximum	W	22	S	31
June 2015	Average		8		9
	Minimum		Calm		Calm
	Maximum	WSW	19		20

Wind rose speed and direction were obtained from Canterbury station number 066194 and can be seen in Figures 10 and 11. From these wind roses it can be seen that the majority of wind speed directions are West at 9am and ESE at 3pm. The distribution of winds in a westerly and ESE direction suggests that pollutants from vehicle exhaust emissions from Parramatta Road will not have a significant impact on the site. There is a potential for NW distribution of winds to distribute vehicle

exhaust emissions from Parramatta Road to the site, however based on this desktop review of air pollutant indicators, the air quality is considered 'good.'

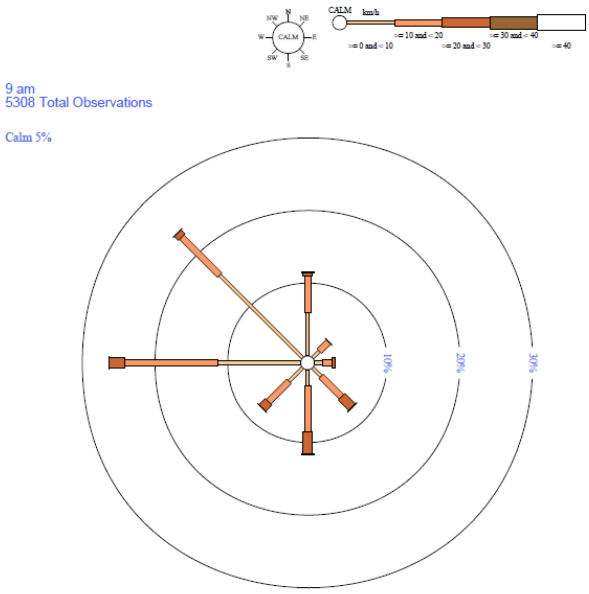

Figure 10: Rose of Wind direction versus Wind speed at 9am from station 066194

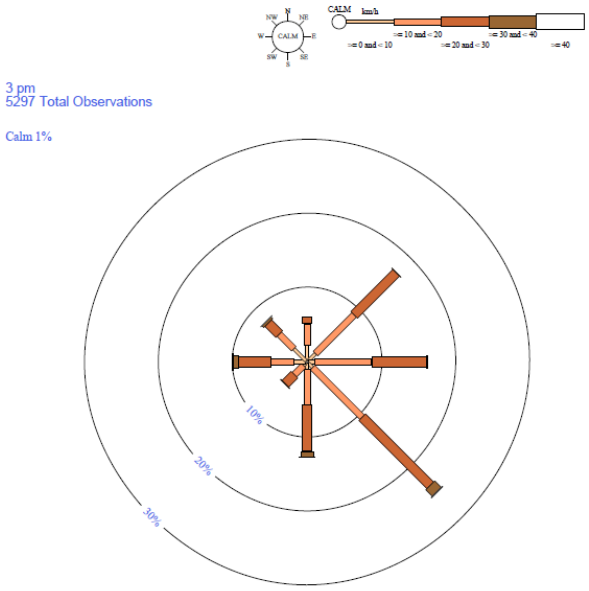

Figure 11: Rose of Wind direction versus Wind speed at 3pm from station 066194

5. Discussion

The review of air quality parameters from the closest DECC monitoring station to the site revealed that the air quality index was 'good' with the majority of the AQI readings falling within the 34-66 range, with only two exceedances within a year (July 2014- July 2015). A review of individual pollutants that are used to calculate the air quality index revealed that all pollutants were well within the National Standards for Criteria Air Pollutants in Australia, with only one exceedance for particulate matter less than 10 microns in diameter (PM_{10}).

It must be noted that the DECC monitoring station is of further distance from Parramatta Road than the subject site and the surrounding land use is somewhat different. There is a potential for PM_{10} and CO levels to be higher than the monitoring station data, however since the majority of Rozelle monitoring station AQI data falls within the 34-66 AQI range with only 2 exceedances throughout the analysed year, it is very likely that the proposed site will be within acceptable levels. Furthermore, carbon monoxide levels were well within the guideline limit of 9ppm (CO <1ppm from July 2014 to July 2015), and any differences between the monitoring site and the subject site would need to be significant to increase levels above the guideline limit. Similarly, PM_{10} levels were well within the guideline limit with only one exceedance throughout the analysed period, with the majority of readings falling below 35 $\mu g/m^3$. Any differences between the monitoring site and the subject site would need to be significant to increase PM_{10} levels above the guideline limit

Based on the closest data available to the site it is likely that the local air quality at the subject site will be within acceptable air quality index levels and the majority of air pollutant parameter levels within the National Standards for Criteria Air Pollutants in Australia.

APPENDIX A: DAILY ROZELLE AQI (24-HOUR INDEX)

Date	AQI	Date	AQI	Date	AQI	Date	AQI	Date	AQI	Date	AQI	Date	AQI
01/07/2014	1	25/08/2014	38	19/10/2014	46	13/12/2014	30	06/02/2015	28	02/04/2015	36	27/05/2015	39
02/07/2014	38	26/08/2014	33	20/10/2014	46	14/12/2014	37	07/02/2015	27	03/04/2015	32	28/05/2015	34
03/07/2014	55	27/08/2014	35	21/10/2014	34	15/12/2014	37	08/02/2015	69	04/04/2015	29	29/05/2015	32
04/07/2014	128	28/08/2014	34	22/10/2014	37	16/12/2014	61	09/02/2015	64	05/04/2015	40	30/05/2015	44
05/07/2014	35	29/08/2014	36	23/10/2014	55	17/12/2014	76	10/02/2015	45	06/04/2015	37	31/05/2015	25
06/07/2014	34	30/08/2014	38	24/10/2014	48	18/12/2014	80	11/02/2015	27	07/04/2015	32	01/06/2015	33
07/07/2014	33	31/08/2014	36	25/10/2014	59	19/12/2014	43	12/02/2015	33	08/04/2015	31	02/06/2015	31
08/07/2014	28	01/09/2014	35	26/10/2014	75	20/12/2014	42	13/02/2015	26	09/04/2015	35	03/06/2015	37
09/07/2014	32	02/09/2014	32	27/10/2014	56	21/12/2014	41	14/02/2015	11	10/04/2015	24	04/06/2015	28
10/07/2014	33	03/09/2014	37	28/10/2014	39	22/12/2014	40	15/02/2015		11/04/2015	26	05/06/2015	26
11/07/2014	31	04/09/2014	35	29/10/2014	53	23/12/2014	40	16/02/2015	24	12/04/2015	36	06/06/2015	57
12/07/2014	37	05/09/2014	37	30/10/2014	55	24/12/2014	45	17/02/2015	29	13/04/2015	34	07/06/2015	75
13/07/2014	38	06/09/2014	37	31/10/2014	78	25/12/2014	46	18/02/2015		14/04/2015	40	08/06/2015	35
14/07/2014	34	07/09/2014	37	01/11/2014	57	26/12/2014	39	19/02/2015	14	15/04/2015	45	09/06/2015	33
15/07/2014	36	08/09/2014	56	02/11/2014	37	27/12/2014	42	20/02/2015	34	16/04/2015	46	10/06/2015	31
16/07/2014	38	09/09/2014	35	03/11/2014	38	28/12/2014	26	21/02/2015	31	17/04/2015	43	11/06/2015	33
17/07/2014	34	10/09/2014	37	04/11/2014	35	29/12/2014	48	22/02/2015	31	18/04/2015	40	12/06/2015	36
18/07/2014	33	11/09/2014	45	05/11/2014	52	30/12/2014	82	23/02/2015	25	19/04/2015	30	13/06/2015	57
19/07/2014	36	12/09/2014	39	06/11/2014	65	31/12/2014	78	24/02/2015	44	20/04/2015	29	14/06/2015	60
20/07/2014	40	13/09/2014	37	07/11/2014	48	01/01/2015	63	25/02/2015	32	21/04/2015	36	15/06/2015	60
21/07/2014	36	14/09/2014	51	08/11/2014	35	02/01/2015	65	26/02/2015	39	22/04/2015	33	16/06/2015	29
22/07/2014	35	15/09/2014	37	09/11/2014	59	03/01/2015	32	27/02/2015	30	23/04/2015	53	17/06/2015	19
23/07/2014	41	16/09/2014	43	10/11/2014	45	04/01/2015	53	28/02/2015	36	24/04/2015	35	18/06/2015	20
24/07/2014	54	17/09/2014	39	11/11/2014	53	05/01/2015	59	01/03/2015	62	25/04/2015	40	19/06/2015	32
25/07/2014	30	18/09/2014	37	12/11/2014	42	06/01/2015	34	02/03/2015	41	26/04/2015	21	20/06/2015	31
26/07/2014	28	19/09/2014	36	13/11/2014	40	07/01/2015	21	03/03/2015	38	27/04/2015	31	21/06/2015	35
27/07/2014	34	20/09/2014	39	14/11/2014	74	08/01/2015	41	04/03/2015	48	28/04/2015	30	22/06/2015	38
28/07/2014	30	21/09/2014	37	15/11/2014	60	09/01/2015	63	05/03/2015	52	29/04/2015	25	23/06/2015	28
29/07/2014	32	22/09/2014	35	16/11/2014	47	10/01/2015	55	06/03/2015	45	30/04/2015	26	24/06/2015	28
30/07/2014	41	23/09/2014	39	17/11/2014	48	11/01/2015	32	07/03/2015	50	01/05/2015	21	25/06/2015	35
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05/08/2014	40	29/09/2014	61	23/11/2014	72	17/01/2015	61	13/03/2015	40	07/05/2015	31	01/07/2015	34
06/08/2014	98	30/09/2014	55	24/11/2014	52	18/01/2015	54	14/03/2015	29	08/05/2015	31		
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12/08/2014	31	06/10/2014	65	30/11/2014	45	24/01/2015	46	20/03/2015	65	14/05/2015	29		
13/08/2014	36	07/10/2014	52	01/12/2014	49	25/01/2015	59	21/03/2015	38	15/05/2015	26		
14/08/2014	34	08/10/2014	37	02/12/2014	46	26/01/2015	37	22/03/2015	49	16/05/2015	31		
15/08/2014	33	09/10/2014	35	03/12/2014	54	27/01/2015	19	23/03/2015	36	17/05/2015	34		
16/08/2014	38	10/10/2014	35	04/12/2014	44	28/01/2015	19	24/03/2015	32	18/05/2015	40		
17/08/2014	35	11/10/2014	85	05/12/2014	57	29/01/2015	30	25/03/2015	31	19/05/2015	25		
18/08/2014	39	12/10/2014	52	06/12/2014	61	30/01/2015	31	26/03/2015	49	20/05/2015	31		
19/08/2014	41	13/10/2014	50	07/12/2014	55	31/01/2015	35	27/03/2015	42	21/05/2015	29		
20/08/2014	37	14/10/2014	34	08/12/2014	54	01/02/2015	69	28/03/2015	34	22/05/2015	33		
21/08/2014	36	15/10/2014	38	09/12/2014	37	02/02/2015	42	29/03/2015	43	23/05/2015	31		
22/08/2014	36	16/10/2014	40	10/12/2014	32	03/02/2015	38	30/03/2015	33	24/05/2015	42		
23/08/2014	33	17/10/2014	34	11/12/2014	48	04/02/2015	43	31/03/2015	29	25/05/2015	47		
24/08/2014	38	18/10/2014	35	12/12/2014	37	05/02/2015	21	01/04/2015	43	26/05/2015	45		

APPENDIX A: DAILY AVERAGES - ROZELLE AQ RECORDED VALUES

Daily Averages Time Range: 01/07/2014 00:00 to 02/07/2015 00:00							
Initial Data	ROZELLE SO2 1h average	ROZELLE NO2 1h average	ROZELLE CO 1h average	ROZELLE OZONE 1h average	ROZELLE OZONE 4h rolling average	ROZELLE PM10 1h average	ROZELLE NEPH 1h average
Date	ROZELLE SO2 24h average [pphm]	ROZELLE NO2 24h average [pphm]	ROZELLE CO 24h average [ppm]	ROZELLE OZONE 24h average [pphm]	ROZELLE OZONE 24h average [pphm]	ROZELLE PM10 24h average [µg/m³]	ROZELLE NEPH 24h average [bsp]
01/07/2014		1.6	0.3	1.2	1.4	10.5	0.09
02/07/2014		1.9	0.5	1	1	19.2	0.29
03/07/2014		2.4	0.5	0.5	0.5	22	0.52
04/07/2014		2	0.4	1	0.9	22.4	0.62
05/07/2014		1.1	0.2	1.5	1.5	--	--
06/07/2014		0.7	0.2	1.9	1.9	--	--
07/07/2014		1.3	0.2	1.4	1.5	--	--
08/07/2014		2	0.3	0.7	0.6	14.1	0.21
09/07/2014		1	0.2	1.6	1.5	12.3	0.13
10/07/2014		0.6	0.1	2.3	2.2	9	0.04
11/07/2014		0.9	0.1	1.6	1.7	9.3	0.07
12/07/2014		0.9	0.2	2	1.9	11.8	0.15
13/07/2014		0.8	0.2	2	2.1	12.4	0.14
14/07/2014		1.7	0.3	1	1	15.8	0.23
15/07/2014		2.3	0.5	0.2	0.2	18	0.53
16/07/2014		1.3	0.4	0.8	0.7	10	0.31
17/07/2014		1	0.2	1.7	1.7	8.3	0.09
18/07/2014		0.7	0.1	2	1.9	9.4	0.07
19/07/2014		0.6	0.1	2.4	2.4	14.8	0.11
20/07/2014		1.1	0.2	1.9	2	20.1	0.21
21/07/2014		1.9	0.4	0.8	0.8	17.8	0.27
22/07/2014		2	0.5	0.8	0.8	17.5	0.35
23/07/2014		2.4	0.5	0.6	0.6	20.6	0.45
24/07/2014		2.2	0.6	0.4	0.4	21.8	0.57
25/07/2014		1.4	0.4	1.1	0.9	14.9	0.27
26/07/2014		1.7	0.4	0.8	0.8	12	0.24
27/07/2014		1.5	0.4	1.2	1.2	11.9	0.24
28/07/2014		1.8	0.4	0.8	0.8	12.6	0.23
29/07/2014		0.8	0.2	1.9	1.8	--	0.06
30/07/2014		0.9	0.2	2.1	2.2	--	0.09
31/07/2014		0.6	0.1	2.5	2.4	--	0.09
01/08/2014		0.5	0.1	2.6	2.7	10.5	0.06
02/08/2014		0.9	0.2	2.2	2.3	12.9	0.1
03/08/2014		1.7	0.3	1.4	1.3	16.4	0.26
04/08/2014		2.4	0.4	0.8	0.8	18.1	0.35
05/08/2014		2.1	0.5	0.9	0.9	20	0.43
06/08/2014		2.3	0.4	1	0.9	24	0.66
07/08/2014		1.5	0.3	1.4	1.4	--	--
08/08/2014		2.5	0.5	0.6	0.6	--	--
09/08/2014		2.2	0.5	0.9	0.8	21.2	0.72
10/08/2014		1	0.2	1.8	1.6	15.1	0.22
11/08/2014		0.9	0.2	1.9	2	12.3	0.12
12/08/2014		1.3	0.2	1.4	1.4	9.5	0.14
13/08/2014		1.6	0.2	1.2	1.2	12.4	0.17
14/08/2014		1.9	0.3	0.9	0.9	14.4	0.22
15/08/2014		2	0.4	0.9	0.8	14	0.28
16/08/2014		1.8	0.5	0.8	0.7	14.8	0.42
17/08/2014		1	0.3	1.8	1.8	5.6	0.13
18/08/2014		0.7	0.2	2.4	2.1	8.7	0.14
19/08/2014		0.5	0.2	2.9	2.9	15.6	0.22
20/08/2014		0.8	0.1	2.1	2.2	13.2	0.11
21/08/2014		1.3	0.2	1.5	1.4	11.8	0.19
22/08/2014		1.7	0.3	1.1	1.2	11.1	0.18
23/08/2014		1.7	0.3	1	0.9	10.5	0.24
24/08/2014		1.6	0.4	1.1	1.1	11.6	0.34
25/08/2014		1.6	0.3	1.2	1	11.9	0.28

Daily Averages Time Range: 01/07/2014 00:00 to 02/07/2015 00:00							
Initial Data	ROZELLE SO2 1h average	ROZELLE NO2 1h average	ROZELLE CO 1h average	ROZELLE OZONE 1h average	ROZELLE OZONE 4h rolling average	ROZELLE PM10 1h average	ROZELLE NEPH 1h average
Date	ROZELLE SO2 24h average [pphm]	ROZELLE NO2 24h average [pphm]	ROZELLE CO 24h average [ppm]	ROZELLE OZONE 24h average [pphm]	ROZELLE OZONE 24h average [pphm]	ROZELLE PM10 24h average [µg/m³]	ROZELLE NEPH 24h average [bsp]
26/08/2014		1.5	0.2	1.2	1.1	10.5	0.19
27/08/2014		0.8	0.1	2.3	2.4	14.7	0.15
28/08/2014		1.2	0.2	1.8	1.8	14.8	0.16
29/08/2014		0.9	0.2	1.8	1.6	11.3	0.12
30/08/2014		0.5	0.2	2.5	2.5	10.8	0.11
31/08/2014		1.1	0.2	1.7	1.8	10.6	0.15
01/09/2014		1.6	0.3	1.2	1	12.5	0.26
02/09/2014		0.9	0.1	1.9	1.9	7.6	0.05
03/09/2014		0.5	0.1	2.4	2.5	9.5	0.06
04/09/2014		0.8	0.1	2.1	2	10.3	0.06
05/09/2014		0.9	0.2	1.9	2	10.2	0.08
06/09/2014		1	0.2	1.8	1.7	11.1	0.11
07/09/2014		1	0.2	1.8	1.9	8.2	0.12
08/09/2014		1	0.3	1.7	1.7	9.2	0.25
09/09/2014		0.8	0.2	2	2.1	9.1	0.07
10/09/2014		0.9	0.2	2	2	9.4	0.08
11/09/2014		1.3	0.2	2.1	1.9	15.7	0.13
12/09/2014		0.7	0.1	2.6	2.6	17.2	0.15
13/09/2014		1.1	0.2	1.9	1.9	13.6	0.2
14/09/2014		0.9	0.2	2.3	2.3	15.1	0.29
15/09/2014		1.2	0.2	2	1.9	17.7	0.32
16/09/2014		0.8	0.2	2.4	2.4	16.7	0.26
17/09/2014		0.5	0.1	2.5	2.4	9.5	0.09
18/09/2014		--	--	--	--	--	--
19/09/2014		1.9	0.3	1.3	1.3	14.9	0.13
20/09/2014		1.3	0.2	1.6	1.5	15.2	0.15
21/09/2014		1	0.2	1.8	1.8	13.2	0.14
22/09/2014		1.3	0.2	1.7	1.7	16.7	0.2
23/09/2014		1.2	0.2	1.7	1.6	15.6	0.19
24/09/2014		1.5	0.2	1.6	1.6	17	0.23
25/09/2014		1	0.2	2.3	2.2	12.9	0.16
26/09/2014		0.6	0.2	2.7	2.8	16.5	0.19
27/09/2014		0.9	0.2	2.1	2.3	11.5	0.13
28/09/2014		1	0.3	2.1	2	14.5	0.22
29/09/2014		0.8	0.2	3.4	3.3	20.8	0.2
30/09/2014		1.3	0.2	2.5	2.3	17.7	0.25
01/10/2014		0.6	0.1	2.5	2.7	18.7	0.06
02/10/2014		1.5	0.2	1.9	1.8	22.3	0.17
03/10/2014		1.5	0.3	1.8	1.6	19.4	0.23
04/10/2014		1	0.2	2.1	2.1	22.8	0.34
05/10/2014		1.1	0.3	2.9	2.7	30.4	0.59
06/10/2014		1	0.2	2.8	2.8	32.4	0.52
07/10/2014		0.9	0.2	3.1	3.2	19.1	0.18
08/10/2014		0.6	0.1	2.6	2.6	15	0.18
09/10/2014		0.9	0.2	2.2	2.2	13.7	0.12
10/10/2014		1.1	0.2	2	2	16.8	0.17
11/10/2014		1.7	0.3	2	1.9	23.9	0.44
12/10/2014		1.1	0.3	2.2	2.2	23.1	0.48
13/10/2014		1.2	0.3	2.3	2.3	19.3	0.34
14/10/2014		0.6	0.1	2.1	2	7.3	0.05
15/10/2014		0.6	0.1	2.1	2.3	11.4	0.1
16/10/2014		1.6	0.3	1.5	1.4	15.2	0.14
17/10/2014		1	0.2	1.8	1.7	15.6	0.12
18/10/2014		0.9	0.2	1.7	1.6	13.9	0.1
19/10/2014		0.9	0.2	2.3	2.3	15.2	0.12
20/10/2014		0.7	0.1	2.2	2.1	22.9	0.21

Daily Averages Time Range: 01/07/2014 00:00 to 02/07/2015 00:00							
Initial Data	ROZELLE SO2 1h average	ROZELLE NO2 1h average	ROZELLE CO 1h average	ROZELLE OZONE 1h average	ROZELLE OZONE 4h rolling average	ROZELLE PM10 1h average	ROZELLE NEPH 1h average
Date	ROZELLE SO2 24h average [pphm]	ROZELLE NO2 24h average [pphm]	ROZELLE CO 24h average [ppm]	ROZELLE OZONE 24h average [pphm]	ROZELLE OZONE 24h average [pphm]	ROZELLE PM10 24h average [µg/m³]	ROZELLE NEPH 24h average [bsp]
21/10/2014		0.6	0.1	2.4	2.4	10.9	0.07
22/10/2014		0.5	0.1	2.3	2.4	11	0.06
23/10/2014		1.6	0.3	2	2	22.8	0.22
24/10/2014		1.2	0.2	2.1	2.1	23.9	0.4
25/10/2014		0.8	0.2	2.7	2.6	29.4	0.66
26/10/2014		0.5	0.2	3.5	3.5	22.5	0.66
27/10/2014		0.7	0.2	3	3	26	0.36
28/10/2014		0.7	0.1	2.3	2.3	14.7	0.15
29/10/2014		0.7	0.2	2.1	2.1	26.6	0.26
30/10/2014		1.2	0.2	2.5	2.5	26.6	0.35
31/10/2014		2	0.3	2.8	2.7	39.2	0.67
01/11/2014		0.3	0.1	3.8	3.7	18.9	0.14
02/11/2014		0.3	0.1	2.4	2.5	11	0.02
03/11/2014		1	0.2	1.6	1.5	19.2	0.15
04/11/2014		0.5	0.2	2.3	2.3	14.8	0.22
05/11/2014		0.9	0.2	2.2	2.1	26.2	0.43
06/11/2014		0.5	0.1	2.4	2.4	32.5	0.36
07/11/2014		1.2	0.2	1.7	1.8	23.9	0.25
08/11/2014		0.7	0.2	1.9	1.8	16.3	0.16
09/11/2014		0.4	0.2	2.7	2.6	29.6	0.39
10/11/2014		0.5	0.2	2.9	2.9	22.5	0.26
11/11/2014		0.5	0.1	2.3	2.4	26.6	0.29
12/11/2014		0.8	0.2	1.9	1.9	21.1	0.22
13/11/2014		0.4	0.2	2.2	2.3	20.2	0.21
14/11/2014		1.6	0.3	2.9	2.7	37	0.41
15/11/2014		0.5	0.2	2.3	2.4	30.2	0.34
16/11/2014		0.4	0.2	2.8	2.7	16.8	0.15
17/11/2014		0.8	0.2	2.6	2.5	13.5	0.09
18/11/2014		0.7	0.2	2.8	2.8	21.3	0.2
19/11/2014		0.6	0.2	2.2	2.2	21.9	0.23
20/11/2014		1.4	0.2	2.2	2.2	30.4	0.46
21/11/2014		1.7	0.3	3.1	2.9	32.7	0.35
22/11/2014		0.7	0.2	2.3	2.4	29	0.34
23/11/2014		0.9	0.3	3.3	3.2	28.5	0.68
24/11/2014		1.3	0.3	2.4	2.5	25	0.44
25/11/2014		0.6	0.2	2.5	2.4	24.7	0.26
26/11/2014		0.5	0.2	2.1	2.1	28.9	0.26
27/11/2014		0.5	0.2	1.9	1.9	21.4	0.21
28/11/2014		0.8	0.2	1.7	1.8	14.8	0.1
29/11/2014		0.9	0.2	1.7	1.7	21.4	0.22
30/11/2014		0.9	0.2	2	2	22.6	0.26
01/12/2014		1.4	0.3	2.3	2.3	24.6	0.32
02/12/2014		--	0.2	--	--	20.6	0.24
03/12/2014		--	--	--	--	26.8	0.4
04/12/2014		1.4	0.3	2.6	2.6	18.7	0.34
05/12/2014		1.5	0.3	3.1	3.2	16.5	0.18
06/12/2014		1	0.3	3.7	3.5	16.4	0.25
07/12/2014		0.9	0.2	3.2	3.3	14.5	0.23
08/12/2014		1	0.3	2.8	2.6	15.7	0.21
09/12/2014		0.6	0.2	2.1	2.2	18.7	0.25
10/12/2014		0.7	0.2	1.7	1.7	15.8	0.24
11/12/2014		0.8	0.2	1.8	1.7	11.9	0.28
12/12/2014		0.3	0.1	1.6	1.7	18.5	0.15
13/12/2014		0.4	0.1	1.7	1.7	15.2	0.11
14/12/2014		0.9	0.2	1.6	1.5	18.5	0.16
15/12/2014		0.5	0.2	2	1.9	18.5	0.16

Daily Averages Time Range: 01/07/2014 00:00 to 02/07/2015 00:00

Initial Data	ROZELLE SO2 1h average	ROZELLE NO2 1h average	ROZELLE CO 1h average	ROZELLE OZONE 1h average	ROZELLE OZONE 4h rolling average	ROZELLE PM10 1h average	ROZELLE NEPH 1h average
Date	ROZELLE SO2 24h average [pphm]	ROZELLE NO2 24h average [pphm]	ROZELLE CO 24h average [ppm]	ROZELLE OZONE 24h average [pphm]	ROZELLE OZONE 24h average [pphm]	ROZELLE PM10 24h average [µg/m³]	ROZELLE NEPH 24h average [bsp]
16/12/2014		0.9	0.2	1.6	1.7	30.4	0.36
17/12/2014		0.6	0.2	1.7	1.6	38.1	0.42
18/12/2014		0.9	0.2	1.5	1.6	40	0.48
19/12/2014		0.4	0.1	2	1.9	21.4	0.25
20/12/2014		0.5	0.1	1.7	1.7	21.2	0.17
21/12/2014		0.6	0.2	1.7	1.6	20.4	0.23
22/12/2014		0.4	0.2	1.6	1.7	19.9	0.21
23/12/2014		0.8	0.2	1.5	1.5	20	0.26
24/12/2014		0.7	0.2	1.5	1.4	22.7	0.42
25/12/2014		0.5	0.2	2.6	2.5	18.8	0.44
26/12/2014		0.3	0.2	2.3	2.3	17.9	0.22
27/12/2014		0.3	0.1	1.7	1.7	20.8	0.14
28/12/2014		0.6	0.2	1.5	1.5	13.1	0.11
29/12/2014		0.8	0.2	2.2	2.1	13.8	0.15
30/12/2014		1.2	0.2	2.1	2.1	40.9	0.3
31/12/2014		0.3	0.2	2.1	2.2	39.1	0.44
01/01/2015		0.4	0.2	1.9	2	31.5	0.36
02/01/2015		0.7	0.2	1.7	1.7	32.5	0.52
03/01/2015		0.4	0.2	1.6	1.6	15.8	0.32
04/01/2015		0.7	0.2	2.5	2.4	22	0.29
05/01/2015		0.5	0.2	1.7	1.8	29.5	0.41
06/01/2015		0.6	0.2	1.3	1.4	17.1	0.25
07/01/2015		0.4	0.1	1.1	1.1	10.7	0.08
08/01/2015		0.4	0.1	1.6	1.6	20.5	0.2
09/01/2015		1	0.2	1.6	1.6	31.4	0.36
10/01/2015		1.1	0.2	1.9	1.8	27.4	0.46
11/01/2015		0.4	0.2	2.4	2.3	7.1	0.09
12/01/2015		0.3	0.1	1.7	1.7	13.1	0.14
13/01/2015		0.8	0.2	1.4	1.4	12.9	0.15
14/01/2015		0.4	0.2	2.3	2.2	10.2	0.09
15/01/2015		0.6	0.1	2	2	17.8	0.12
16/01/2015		0.8	0.2	2.2	2.1	25.1	0.3
17/01/2015		0.7	0.2	3	3	18.5	0.13
18/01/2015		0.3	0.1	2.4	2.4	27.1	0.32
19/01/2015		0.6	0.1	1.5	1.6	25.4	0.3
20/01/2015		0.5	0.2	1.6	1.4	16.9	0.18
21/01/2015		0.4	0.2	2	2	21.1	0.23
22/01/2015		0.5	0.2	1.4	1.4	24	0.24
23/01/2015		0.5	0.2	1.9	2	22.6	0.27
24/01/2015		0.4	0.2	1.6	1.6	22.8	0.25
25/01/2015		0.9	0.2	2.4	2.3	19.2	0.29
26/01/2015		0.5	0.2	1.4	1.5	18.4	0.25
27/01/2015		1.1	0.2	0.9	1	9.6	0.14
28/01/2015		0.8	0.2	1	1	9.5	0.11
29/01/2015		0.5	--	1.2	1.2	15.1	0.06
30/01/2015		0.8	--	1	1	15.6	0.06
31/01/2015		1.1	--	1.3	1.3	15.6	0.08
01/02/2015		1.1	--	1.2	1.1	34.7	0.3
02/02/2015		0.5	--	1.2	1.1	21	0.14
03/02/2015		0.7	0.2	1.2	1.3	18.8	0.1
04/02/2015		0.8	0.2	1.1	1	21.6	0.17
05/02/2015		0.7	0.1	1.2	1.3	10.2	0.14
06/02/2015	--	0.9	0.3	0.7	0.6	14.2	0.09
07/02/2015		0.9	0.2	1.1	1	12.9	0.1
08/02/2015		1.6	0.3	2.4	2.3	20.3	0.21
09/02/2015		0.4	0.2	2.3	2.2	31.8	0.44

Daily Averages Time Range: 01/07/2014 00:00 to 02/07/2015 00:00

Initial Data	ROZELLE SO2 1h average	ROZELLE NO2 1h average	ROZELLE CO 1h average	ROZELLE OZONE 1h average	ROZELLE OZONE 4h rolling average	ROZELLE PM10 1h average	ROZELLE NEPH 1h average
Date	ROZELLE SO2 24h average [pphm]	ROZELLE NO2 24h average [pphm]	ROZELLE CO 24h average [ppm]	ROZELLE OZONE 24h average [pphm]	ROZELLE OZONE 24h average [pphm]	ROZELLE PM10 24h average [µg/m³]	ROZELLE NEPH 24h average [bsp]
10/02/2015		0.9	0.2	1.1	1.1	22.6	0.3
11/02/2015		0.6	0.2	1.3	1.3	13.7	0.12
12/02/2015		0.7	0.2	1.3	1.3	16.4	0.17
13/02/2015		0.7	0.2	1.1	1.2	13	0.18
14/02/2015		--	--	--	--	--	--
15/02/2015							
16/02/2015		--	--	--	--	--	--
17/02/2015		0.4	0.1	1.6	1.6	14.6	0.1
18/02/2015	--						
19/02/2015	--	--	--	--	--	--	--
20/02/2015	--	0.8	0.2	1	0.9	17	0.18
21/02/2015	--	1	0.2	1.6	1.7	11.5	0.11
22/02/2015	--	0.7	0.2	1.5	1.5	15.4	0.13
23/02/2015	--	0.6	0.2	1.3	1.3	12.5	0.1
24/02/2015	--	0.5	0.2	1.5	1.5	21.8	0.25
25/02/2015	--	0.9	0.2	1.3	1.3	15.9	0.19
26/02/2015	--	1.3	0.3	0.9	0.9	19.7	0.18
27/02/2015	--	1.2	0.3	1.2	1	14.8	0.17
28/02/2015	0.2	0.9	0.3	1.7	1.7	11.6	0.11
01/03/2015	0	0.6	0.2	2.5	2.3	20.1	0.25
02/03/2015	0	0.8	0.2	1.3	1.4	20.6	0.14
03/03/2015	0.3	1.1	0.2	1.3	1.2	18.8	0.13
04/03/2015	--	1	0.2	1.7	1.7	24.2	0.24
05/03/2015	0.1	0.9	0.2	1.4	1.4	25.7	0.22
06/03/2015	0.2	1.5	0.2	1.6	1.5	22.3	0.19
07/03/2015	0.3	0.7	0.2	1.6	1.6	24.8	0.3
08/03/2015	0.1	0.8	0.3	1.7	1.6	24.3	0.4
09/03/2015	0.1	1.2	0.3	3	2.9	30.4	0.58
10/03/2015	0.1	1	0.3	1.8	2	25.5	0.58
11/03/2015	0.2	1.2	0.3	1.9	1.8	22.2	0.51
12/03/2015	0.1	0.8	0.3	2.3	2.2	25.8	0.53
13/03/2015	0.1	0.9	0.2	1.6	1.7	19.8	0.34
14/03/2015	0.1	0.9	0.2	1.5	1.3	14.5	0.16
15/03/2015	0.1	0.5	0.2	1.9	1.8	21.9	0.27
16/03/2015	0.1	1	0.2	1.3	1.4	20.4	0.17
17/03/2015	0.1	1.1	0.2	1.3	1.2	19.2	0.2
18/03/2015	0.3	1.6	0.3	1.4	1.5	25.9	0.35
19/03/2015	0.2	1.3	0.3	2.2	2	27	0.44
20/03/2015	-0	0.9	0.2	1.6	1.7	32.4	0.55
21/03/2015	0	0.5	0.1	1.9	2	19.1	0.24
22/03/2015	0.4	0.7	0.2	1.4	1.4	24.7	0.3
23/03/2015	0.1	0.8	0.2	1.5	1.5	15	0.21
24/03/2015	0.1	1.2	0.3	1.2	1.2	11.6	0.16
25/03/2015	0	0.9	0.2	1.4	1.4	15.4	0.17
26/03/2015	0	1.5	0.3	1.5	1.3	18.6	0.19
27/03/2015	0	0.8	0.1	1.8	1.8	20.8	0.1
28/03/2015	0	1	0.2	1.7	1.7	16.2	0.12
29/03/2015	0.1	1.1	0.3	1.8	1.7	18.2	0.23
30/03/2015	0.1	1.6	0.3	1.3	1.2	15.3	0.21
31/03/2015	0.1	1.3	0.3	1.2	1.3	11.6	0.21
01/04/2015	0.1	1.1	0.3	1.2	1.1	13.1	0.23
02/04/2015	0.3	1.4	0.3	1.4	1.3	18.1	0.2
03/04/2015	0	0.5	0.2	1.7	1.9	15.9	0.22
04/04/2015	0	0.5	0.2	2	2	9.9	0.19
05/04/2015	0.1	0.7	0.2	1.8	1.8	10.4	0.15
06/04/2015	0.1	0.8	0.2	1.7	1.5	10	0.18

Daily Averages Time Range: 01/07/2014 00:00 to 02/07/2015 00:00

Initial Data	ROZELLE SO2 1h average	ROZELLE NO2 1h average	ROZELLE CO 1h average	ROZELLE OZONE 1h average	ROZELLE OZONE 4h rolling average	ROZELLE PM10 1h average	ROZELLE NEPH 1h average
Date	ROZELLE SO2 24h average [pphm]	ROZELLE NO2 24h average [pphm]	ROZELLE CO 24h average [ppm]	ROZELLE OZONE 24h average [pphm]	ROZELLE OZONE 24h average [pphm]	ROZELLE PM10 24h average [µg/m³]	ROZELLE NEPH 24h average [bsp]
07/04/2015	0	0.8	0.2	1.7	1.7	7.8	0.08
08/04/2015	-0	0.5	0.1	1.8	1.8	7.4	0.02
09/04/2015	0	0.6	0.1	1.7	1.7	17.6	0.11
10/04/2015	0	0.8	0.2	1.1	1.2	11.6	0.09
11/04/2015	0.1	1	0.2	1.1	1	8	0.08
12/04/2015	0	0.9	0.3	1.4	1.3	15.6	0.25
13/04/2015	0.1	1.1	0.2	1.3	1.3	17.2	0.21
14/04/2015	0.3	1.4	0.2	1.4	1.2	20.2	0.21
15/04/2015	0.2	1.7	0.3	1.3	1.2	22.5	0.29
16/04/2015	0	1	0.2	2.2	2.2	18.8	0.22
17/04/2015	0.5	1.4	0.2	1.4	1.4	21.7	0.39
18/04/2015	0.1	0.6	0.2	1.8	1.8	14.5	0.36
19/04/2015	0	0.4	0.2	1.8	1.8	10.8	0.08
20/04/2015	0	0.5	0.1	2	2	14.4	0.23
21/04/2015	0	0.3	0.1	2.4	2.4	18.1	0.29
22/04/2015	0	0.8	0.2	1.9	2	8.7	0.13
23/04/2015	0.1	1.6	0.4	0.8	0.8	11.3	0.26
24/04/2015	0	1.6	0.5	0.8	0.8	13.9	0.24
25/04/2015	0	1.3	0.3	1.3	1.2	13.7	0.21
26/04/2015	0	0.7	0.2	1.2	1.3	8.3	0.08
27/04/2015	0.1	1.2	0.2	1.1	1.1	10.8	0.09
28/04/2015	0.2	1.3	0.2	0.9	0.9	13.6	0.12
29/04/2015	0.1	1.5	0.3	0.8	0.7	8.9	0.11
30/04/2015	0.1	1.3	0.2	1.1	1.1	8.7	0.08
01/05/2015	0.1	1.5	0.3	0.7	0.7	10.4	0.15
02/05/2015	0.1	0.9	0.2	1.5	1.5	15.3	0.23
03/05/2015	0	0.4	0.2	1.9	1.9	12.2	0.17
04/05/2015	0.1	1.4	0.3	0.9	1	15.5	0.22
05/05/2015	0	0.9	0.3	1.4	1.2	19.5	0.22
06/05/2015	-0	0.8	0.1	2.1	2.1	60.3	0.21
07/05/2015	0	0.7	0.1	1.9	1.9	13.5	0.09
08/05/2015	0	1.5	0.3	1.2	1.3	14.7	0.12
09/05/2015	0	1.2	0.2	1.3	1.2	11.9	0.14
10/05/2015	0	0.3	0.1	2.1	2	10.7	0.05
11/05/2015	0	0.6	0.1	1.6	1.7	10.6	0.03
12/05/2015	0	0.8	0.2	1.5	1.4	9.4	0.05
13/05/2015	-0	0.8	0.1	1.8	1.9	11.6	0.09
14/05/2015	0	1.2	0.2	1	1.1	10	0.08
15/05/2015	0	1	0.2	1.1	1	13.2	0.1
16/05/2015	0	1.2	0.3	1	1	12.7	0.13
17/05/2015	0	1.4	0.4	0.7	0.7	12.8	0.23
18/05/2015	0.1	2.2	0.5	0.2	0.2	19.3	0.48
19/05/2015	0.2	1.4	0.4	0.3	0.3	11.2	0.27
20/05/2015	0	1.4	0.3	1	1.1	10.4	0.07
21/05/2015	0	1	0.2	1.5	1.4	11	0.09
22/05/2015	0.1	0.8	0.2	1.8	1.8	12.2	0.1
23/05/2015	0	1.1	0.2	1.3	1.4	15	0.17
24/05/2015	0.1	1.5	0.4	0.7	0.7	19.7	0.36
25/05/2015	0.2	2	0.6	0.3	0.3	23.5	0.53
26/05/2015	0.1	1.9	0.5	0.4	0.4	20.1	0.36
27/05/2015	0.1	2	0.5	0.2	0.2	19.5	0.42
28/05/2015	0.1	1.6	0.4	0.5	0.4	16.8	0.28
29/05/2015	0.1	1.8	0.4	0.5	0.6	15.9	0.21
30/05/2015	0	1.7	0.5	0.4	0.4	16.6	0.36
31/05/2015	0	1.3	0.3	0.8	0.8	12	0.23
01/06/2015	0	1	0.2	1.5	1.5	8.5	0.06

Daily Averages Time Range: 01/07/2014 00:00 to 02/07/2015 00:00							
Initial Data	ROZELLE SO2 1h average	ROZELLE NO2 1h average	ROZELLE CO 1h average	ROZELLE OZONE 1h average	ROZELLE OZONE 4h rolling average	ROZELLE PM10 1h average	ROZELLE NEPH 1h average
Date	ROZELLE SO2 24h average [pphm]	ROZELLE NO2 24h average [pphm]	ROZELLE CO 24h average [ppm]	ROZELLE OZONE 24h average [pphm]	ROZELLE OZONE 24h average [pphm]	ROZELLE PM10 24h average [µg/m³]	ROZELLE NEPH 24h average [bsp]
02/06/2015	0	1.5	0.2	1.1	1.1	10.9	0.09
03/06/2015	0.1	2	0.5	0.6	0.6	18.2	0.24
04/06/2015	0.2	1.9	0.4	0.5	0.5	13.8	0.25
05/06/2015	0	1.6	0.3	0.8	0.8	12.8	0.17
06/06/2015	0.1	1.8	0.4	0.8	0.8	18.4	0.32
07/06/2015	0.1	1.3	0.5	1.1	1	16.9	0.55
08/06/2015	0.1	0.6	0.2	2	2	7.5	0.07
09/06/2015	0.1	1.5	0.2	1.3	1.5	11.9	0.08
10/06/2015	0.1	2	0.4	0.5	0.6	15.3	0.21
11/06/2015	0.1	2.3	0.4	0.4	0.4	16.6	0.22
12/06/2015	0.1	2.3	0.5	0.2	0.2	18	0.35
13/06/2015	0.1	1.7	0.6	0.7	0.7	18.1	0.46
14/06/2015	0.1	1.8	0.6	0.5	0.5	21.1	0.69
15/06/2015	0.1	1.8	0.5	0.5	0.3	18.7	0.54
16/06/2015	0.1	1.6	0.4	0.4	0.6	8	0.17
17/06/2015	0.1	1.2	0.2	0.6	0.6	5.2	0.08
18/06/2015	0.1	1.5	0.3	0.8	0.7	9.9	0.17
19/06/2015	0	1.2	0.2	1.4	1.5	6.3	0.05
20/06/2015	0.1	1.3	0.2	1	1	10.2	0.11
21/06/2015	0	1.4	0.4	0.5	0.5	12.8	0.3
22/06/2015	0.1	1.6	0.4	0.5	0.5	12.3	0.31
23/06/2015	0.1	1.5	0.4	0.8	0.7	12.4	0.22
24/06/2015	0.1	1.7	0.4	0.6	0.7	14.2	0.21
25/06/2015	0.2	1.3	0.3	1.1	1	17.6	0.24
26/06/2015	0.1	1.7	0.4	0.8	0.9	15.7	0.26
27/06/2015	0.1	1.6	0.5	0.4	0.4	--	--
28/06/2015	0.1	1.5	0.4	0.6	0.6	--	--
29/06/2015	0.1	2.2	0.5	0.2	0.2	--	--
30/06/2015	0.2	2.1	0.7	0.2	0.2	23.3	0.64
01/07/2015	0.2	1.6	0.4	0.8	0.8	13.1	0.24

APPENDIX B: BEAUFORT WIND SCALE

Beaufort Wind Scale

Beaufort scale number	Descriptive term	Units in km/h	Units in knots	Description on Land	Description at Sea
0	Calm	0	0	Smoke rises vertically	Sea like a mirror.
1-3	Light winds	19 km/h or less	10 knots or less	Wind felt on face; leaves rustle; ordinary vanes moved by wind.	Small wavelets, ripples formed but do not break: A glassy appearance maintained.
4	Moderate winds	20 - 29 km/h	11-16 knots	Raises dust and loose paper; small branches are moved.	Small waves - becoming longer; fairly frequent white horses.
5	Fresh winds	30 - 39 km/h	17-21 knots	Small trees in leaf begin to sway; crested wavelets form on inland waters	Moderate waves, taking a more pronounced long form; many white horses are formed - a chance of some spray
6	Strong winds	40 - 50 km/h	22-27 knots	Large branches in motion; whistling heard in telephone wires; umbrellas used with difficulty.	Large waves begin to form; the white foam crests are more extensive with probably some spray
7	Near gale	51 - 62 km/h	28-33 knots	Whole trees in motion; inconvenience felt when walking against wind.	Sea heaps up and white foam from breaking waves begins to be blown in streaks along direction of wind.
8	Gale	63 - 75 km/h	34-40 knots	Twigs break off trees; progress generally impeded.	Moderately high waves of greater length; edges of crests begin to break into spindrift; foam is blown in well-marked streaks along the direction of the wind.
9	Strong gale	76 - 87 km/h	41-47 knots	Slight structural damage occurs -roofing dislodged; larger branches break off.	High waves; dense streaks of foam; crests of waves begin to topple, tumble and roll over; spray may affect visibility.
10	Storm	88 - 102 km/h	48-55 knots	Seldom experienced inland; trees uprooted; considerable structural damage.	Very high waves with long overhanging crests; the resulting foam in great patches is blown in dense white streaks; the surface of the sea takes on a white appearance; the tumbling of the sea becomes heavy with visibility affected.
11	Violent storm	103 -117 km/h	56-63 knots	Very rarely experienced - widespread damage	Exceptionally high waves; small and medium sized ships occasionally lost from view behind waves; the sea is completely covered with long white patches of foam; the edges of wave crests are blown into froth.
12+	Hurricane	118 km/h or more	64 knots or more		The air is filled with foam and spray. Sea completely white with driving spray; visibility very seriously affected

Source: Commonwealth of Australia 2011, Bureau of Meteorology