



**CARBON BASED ENVIRONMENTAL  
PTY LIMITED**  
ABN 74 102 920 285

**ROCLA QUARRY PRODUCTS  
CALGA QUARRY**

**ENVIRONMENTAL MONITORING**

**DUST DEPOSITION GAUGES, SURFACE AND  
GROUND WATERS AND METEOROLOGICAL  
STATION**

**DECEMBER 2007**

A handwritten signature in black ink that reads 'Colin Davies'.

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Environmental Scientist  
11 January 2008

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## EXECUTIVE SUMMARY

Carbon Based Environmental is contracted by Rocla Quarry Products to conduct environmental monitoring at the Calga Sand Quarry.

The monitoring includes;

- Dust Deposition Gauges;
- Surface Waters;
- Ground Waters; and
- Meteorological Station.

This report was prepared by Carbon Based Environmental and includes the following;

- Dust Deposition results for December 2007;
- Surface Water quality results for December 2007;
- Ground Water depth and quality results for December 2007; and
- Meteorological report for December 2007.

The December 2007 dust deposition results show a decrease in dust deposition rates this month. All sites, on a year to date average basis, are currently below the Air Quality Management Plan exceedence level of 3.7g/m<sup>2</sup>.month. Results were found to be representative of dust levels as determined by the Australian Standard.

Surface water samples were collected for the normal monthly sampling event on the 2 January 2008 at sites F and the small dam below site F, as the other sites were not flowing. At the time of sample collection, there was no water discharge observed from the site. Results from both sampling events show generally very good quality water with all sites maintaining slightly acidic pH, low Electrical Conductivity, Total Dissolved Solids and Total Suspended Solids, and no detectable Total Oil and Grease.

Groundwaters were sampled for normal monthly monitoring on 2 January 2008. There was no definite trend in groundwater depths this month with measurements indicating some increasing and some decreasing water levels at monitoring bores. There was a slight to moderate decline in pH at all monitoring bores this month, while EC levels remained stable.

The meteorological station continued to return high data recovery and operated well in December 2007. The predominant winds were from the ESE, with stronger winds from the NW-WNW. Recorded rainfall on site for December 2007 was 223.6mm, similar to that recorded at the BOM Peats Ridge Station and above the Peats Ridge long-term average for December. Results are detailed below:

Rocla Calga Quarry	223.6mm
BOM Peats Ridge*	222.4mm
BOM Gosford*	314.4mm
BOM Peats Ridge Long term mean for December*	95.5mm

\*Data sourced from Bureau of Meteorology (BOM) website ([www.bom.gov.au](http://www.bom.gov.au))

## 1.0 SAMPLING PROGRAM

Rocla Calga Quarry conducts environmental monitoring in accordance to Development Consent, DEC (EPA) licence and Environmental Management Plans. Carbon Based Environmental are contracted to undertake dust deposition gauge, surface and groundwater and meteorological monitoring for the project. Carbon Based Environmental commenced monitoring from the April 2006 monitoring period.

Dust deposition gauges are operated to the Australian Standard AS3580.10.1 “Methods for Sampling and Analysis of Ambient Air Method 10.1 Determination of Particulates—Deposited Matter—Gravimetric Method”. Sampling is undertaken every 30 +/- 2 days and each gauge is analysed for insoluble solids and ash residue. The results are reported as g/m<sup>2</sup>.month.

Surface water sites include local streams and dams. Basic analysis including pH, Electrical Conductivity, Total Suspended Solids and Total Oil and Grease is conducted monthly when sites A to D are flowing and Site F, a dam. Additional samples are collected when daily rainfall exceeds 50mm.

Groundwater sites are monitored at least bi-monthly for water quality and at least quarterly for water level. Groundwater monitoring loggers continuously record water levels in a selection of bores.

Meteorological monitoring is conducted at the quarry and displayed on the site computer with a real time display. Wind parameters are measured according to Australian Standard AS 2923 “Ambient Air— Guide for Measurement of Horizontal Wind for Air Quality Applications”.

The weather stations have the following sensor configuration;

- Air temperature
- Humidity
- Rainfall
- Atmospheric pressure
- Evaporation
- Solar radiation
- Wind speed
- Wind direction

Carbon Based Environmental continued to operate the monitoring equipment and utilise site collections at their existing locations.

## 2.0 MONTHLY RESULTS

### 2.1 DUST DEPOSITION GAUGES

**Table 1** displays the results for December 2007 and the project average. Results are in g/m<sup>2</sup>.month.

**Table 1: Dust Deposition results: 3-Dec-2007 to 2-Jan-2008**

Site	Monthly Insoluble Solids	Monthly Ash Residue	Monthly Combustible Matter	Monthly Ash Residue/ Insoluble Solids %	Current Project Average Insoluble Solids
CD1	0.4	0.4	<0.1	100	1.4
CD2b	1.2	0.3	0.9	25	1.6
CD3	1.4	0.2	1.2	14	0.9
CD4	1.1	0.2	0.9	18	1.2
CD5	1.0	0.3	0.7	30	1.0
CD6	1.4	0.4	1.0	29	1.3

Insoluble Solids marked with an \* indicate an excessively contaminated gauge. Contamination can include bird droppings, vegetation (such as plant matter, algae, pollen, seeds), and insects. Results in bold indicate insoluble solids levels above 3.7 g/m<sup>2</sup>.month, the Development Consent annual average amenity criteria at residential locations. Project average was calculated from the 28 October 2005 (start of the Development Consent period) from results supplied by Rocla or from the installation date of the gauges.

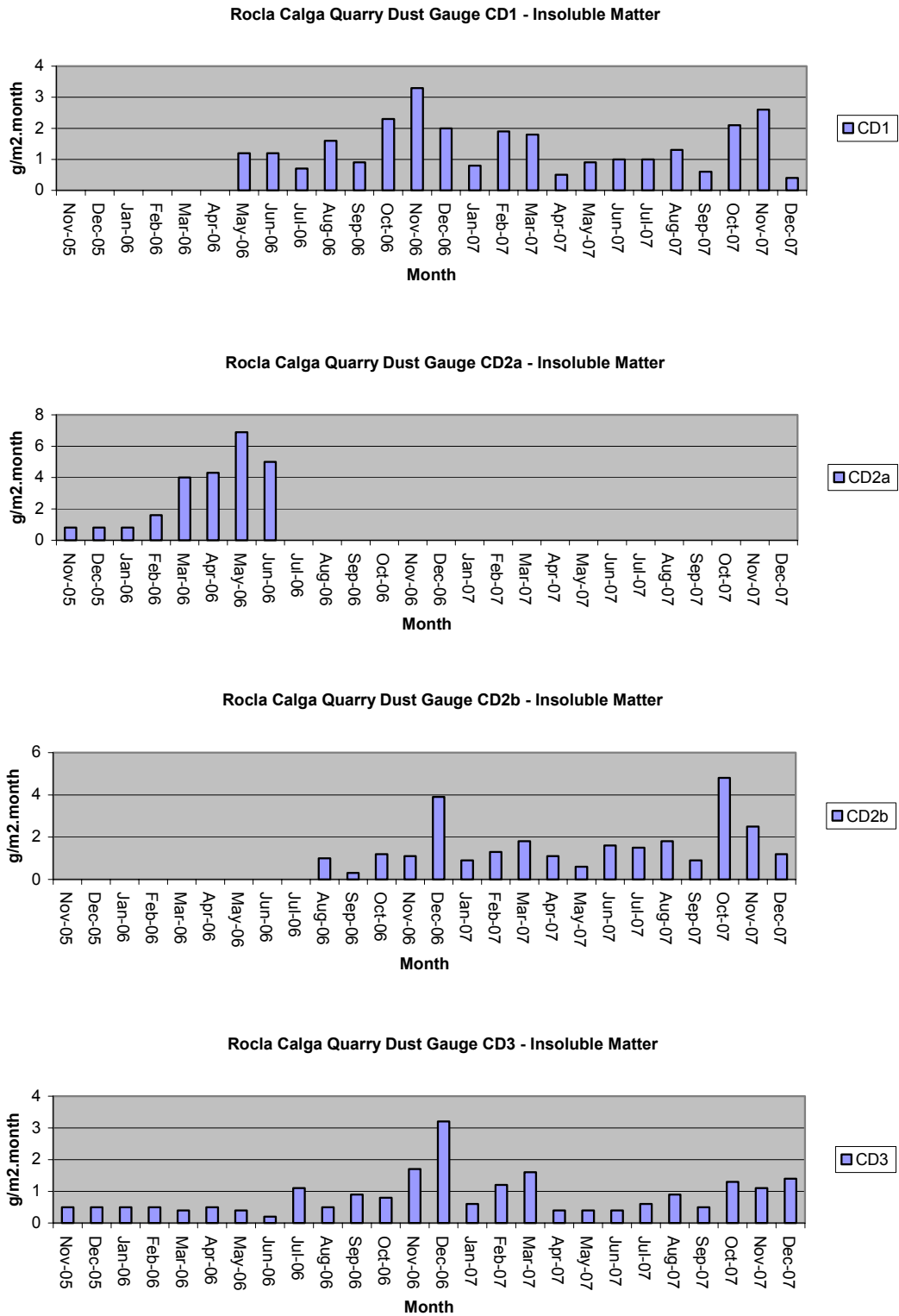
NA= Not Available.

CD1 was installed on the 1 May 2006. CD2a was discontinued at the start of August 2006 due to quarry operations “mining out” the site of the gauge. The replacement gauge, Site CD2b, was located in a position adjacent to the boundary between B. Kashouli and F. & J. Gazzana in conformance with the Air Quality Management Plan. CD4 was installed on 3 October 2006, to gauge air quality impacts to the south of the site operations, as were CD5 and CD6 which were installed on the 14 December 2006.

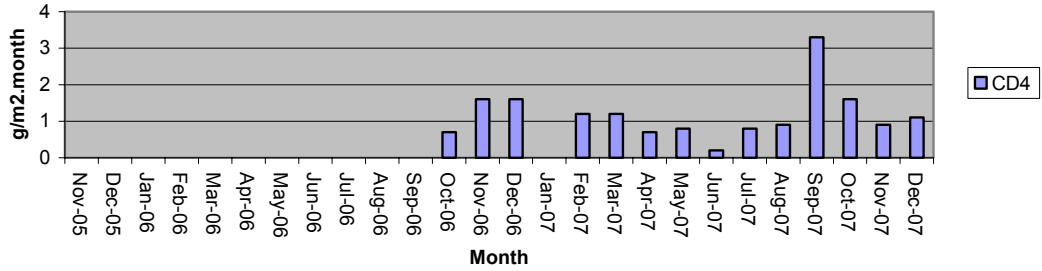
Dust deposition charts for all dust gauge sites appear in **Figure 1** below. The laboratory analysis is provided in **Appendix 1**.

Predominant winds were from the ESE, with strongest winds from the NW-WNW.

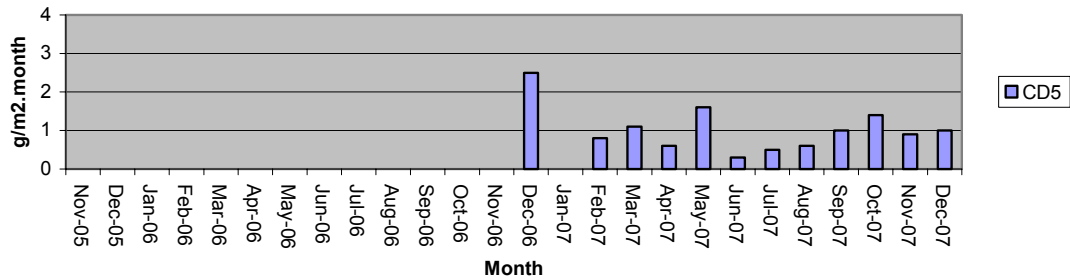
Figure 1: Dust Deposition Charts



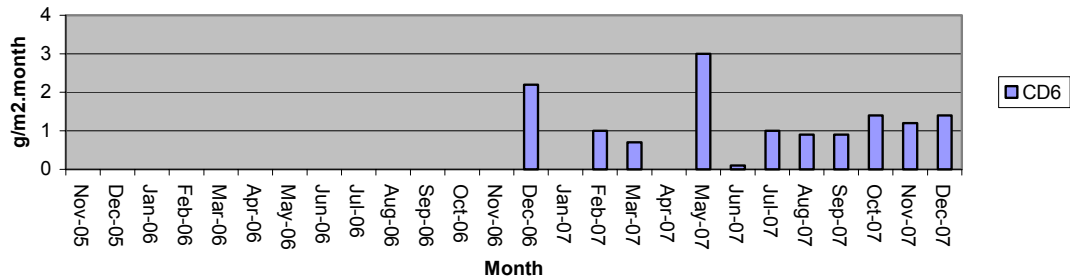
Rocla Calga Quarry Dust Gauge CD4 - Insoluble Matter



Rocla Calga Quarry Dust Gauge CD5 - Insoluble Matter



Rocla Calga Quarry Dust Gauge CD6 - Insoluble Matter



## 2.2 WATER MONITORING

### 2.2.1 Surface Waters

Monthly surface water monitoring was conducted on the 2 January 2008. Results are listed in **Table 2**. The laboratory analysis sheets are provided in **Appendix 1**.

**Table 2: Monthly surface water monitoring - grab sample results**

Site	Observed Flow Rate	Water Colour	Turbidity	pH	EC (uS/cm)	TSS (mg/l)	Oil and Grease (mg/l)
A	Not Flowing	--	--	--	--	--	--
B	Not Flowing	--	--	--	--	--	--
C	Not Flowing	--	--	--	--	--	--
D	Not Flowing	--	--	--	--	--	--
F	Dam	Clear	Clear	6.68	64	6	<5
Dam below F (Lower dam)*	Dam	Clear	Clear	6.31	61	14	<5

At the time of sampling, there were no water discharges off site from any sampling location.

\* The dam below Site F is not a requirement of the Site Water Management Plan.

There was no flow from any site at the time of sampling with two samples collected from dams; these were Site F and a small dam below site F, additional to the Site Water Management Plan requirements. The samples were collected and analysed for a monthly sampling event. Results show very good water quality with slightly acidic pH, low Electrical Conductivity, low Total Suspended Solids and no detectable Total Oil and Grease.

### 2.2.2 Ground Waters

Groundwaters were sampled on the 2 January 2008. Water quality tests for pH and electrical conductivity were conducted by Carbon Based Environmental Pty Limited. For water quality purposes, water was purged from the bore until constant pH (+/- 0.1 pH units) and Electrical Conductivity (+/- 5%) was obtained between samples. Data is displayed in **Table 3** and **Figures 2 to 5**.

There was no general trend in groundwater depth this month with measurements indicating both increases and decreases in groundwater depth at monitoring bores. The CP series of bores generally show larger increases and decreases in depth to water due to pumping from the bores. Longer term monitoring is required to fully evaluate groundwater depth trends.

Groundwater quality results indicated a slight to moderate decline in pH at all monitoring bores this month. EC levels remained low and stable. Detailed biannual water quality monitoring was conducted in October 2007 and is next due in April 2008.

**Table 3: Ground Water Quality Data**

Reference	Bore	Type	Depth to water TOC (m) April 06	Depth to water TOC (m) This report	pH This report	Electrical Conductivity (uS/cm) This report
CQ1	Voutos	* Monitor	20.59	19.69	4.6	130
CQ2	Voutos	DIP Only	6.23	5.12	4.4	70
CQ3	Voutos	* Monitor	10.53	10.24	4.6	125
CQ4	Voutos	* Monitor	8.78	5.77	4.1	90
CQ5	Gazzana	DIP Only	8.69	4.71	3.4	175
CQ6	Gazzana	DIP Only	16.00	12.43	3.4	270
CQ7	Gazzana	* Monitor	6.89	5.70	4.0	100
CQ8	Gazzana	* Monitor	11.03	7.78	3.8	185
CQ9	Gazzana	DIP Only	10.10	9.16	NA	NA
CQ10	Voutos	* Monitor	NI	22.41	5.1	130
CQ11S	Gazzana	* Monitor	NI	7.41	3.5	160
CQ11D	Gazzana	* Monitor	NI	8.71	3.2	105
CQ12	Gazzana	* Monitor	NI	3.89	3.7	150
CQ13	Kashouli	* Monitor	NI	12.07	3.6	200
CP3	Gazzana	Domestic	10.40	7.57	3.9	160
CP4	Kashouli	Domestic	13.63	7.34	3.7	235
CP5	Kashouli	Domestic	16.61	9.45	4.1	260
CP6	Kashouli	Domestic	16.27	11.38	3.9	240
CP7	Kashouli	Production	8.56	1.44	4.4	235
CP8	Rozmanec	Domestic	22.17	NR	NR	NR
MW7	Rocla Bore	* Monitor	15.76	15.38	4.2	125
MW8	Rocla Bore	* Monitor	9.82	6.89	4.3	100
MW9	Rocla Bore	* Monitor	22.44	21.86	4.0	90
MW10	Rocla Bore	* Monitor	15.41	12.87	4.2	125

Notes:

TOC = Water level measured from top of bore case to water.

NM = Not Monitored – unable to sample water due to access restrictions.

NR = Not Required by resident.

\* = Logger Installed.

NI = These bores were not installed in April 2006 but are now operational. April 2006 was the first set of measurements taken by Carbon Based Environmental Pty Limited.

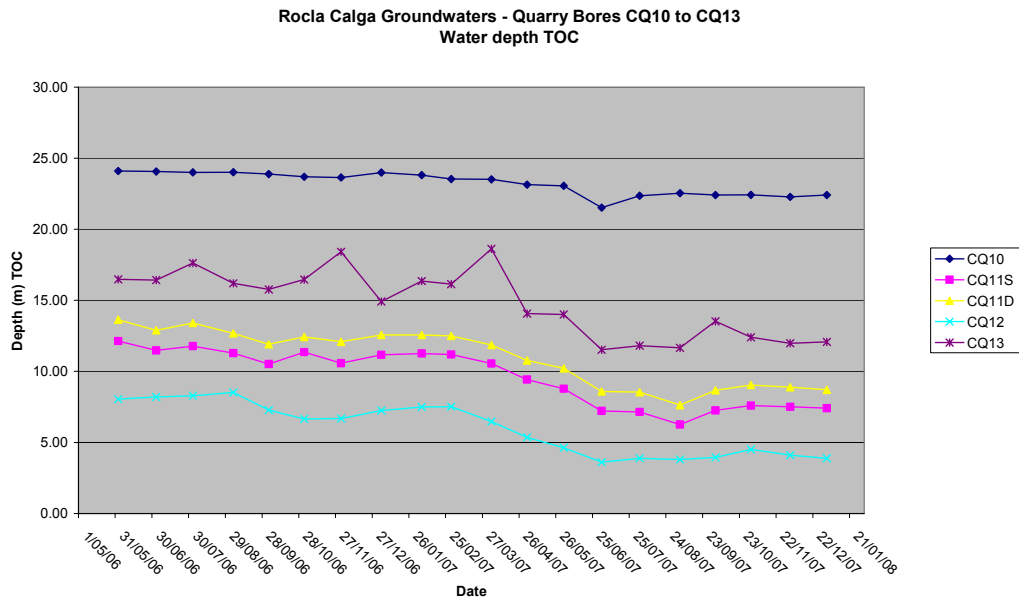
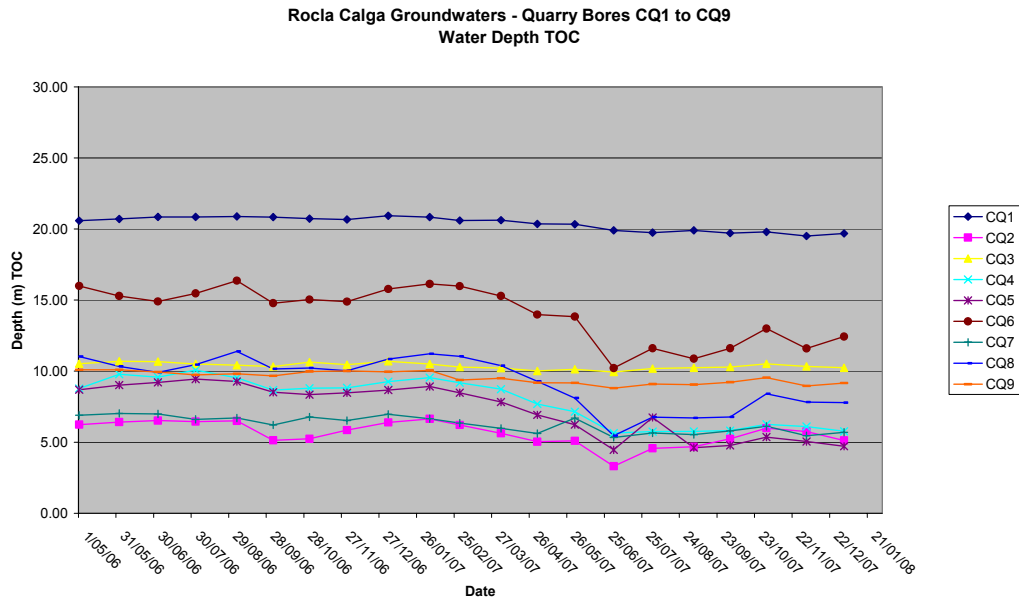
Shading is used to indicate the following trends in water depth (compared to last reading):

	Increase to ground water depth (water moved away from surface)
	Decrease to ground water depth (water moved towards surface)
	Stable water depth (+/- 0.01m)

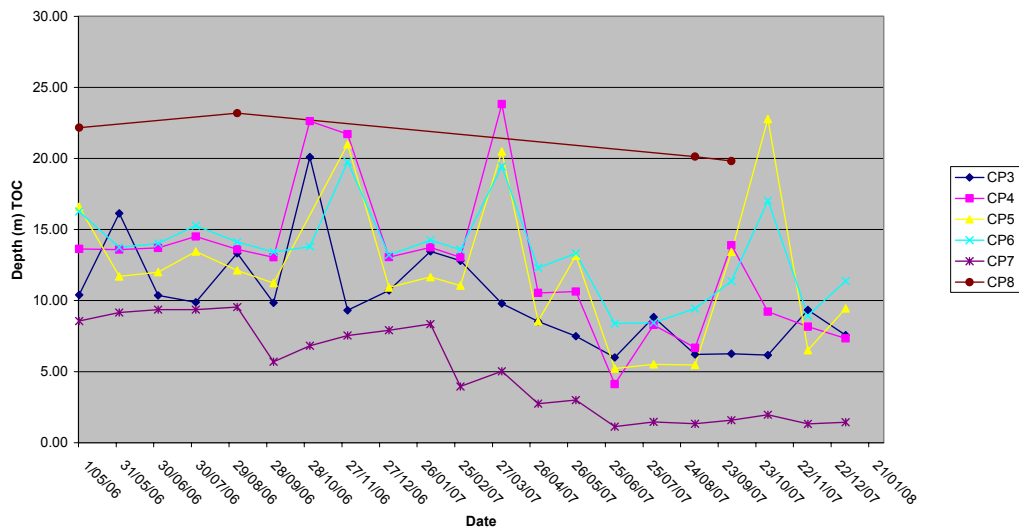
pH and EC measurements are not available for CQ9 this month due to a technical error with the pH/EC meter.

Available groundwater loggers were downloaded and forwarded to the Rocla Calga Quarry groundwater consultant.

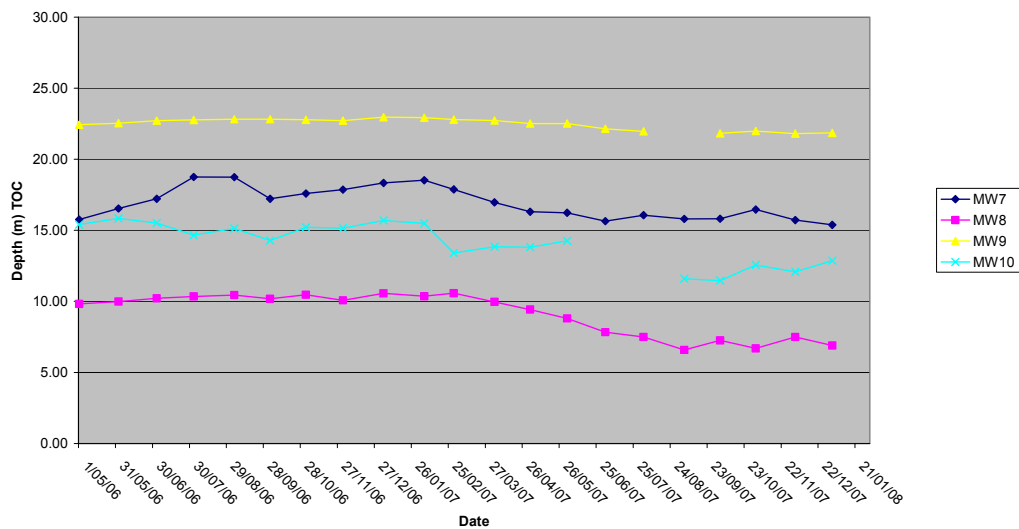
Figures 2 to 5: Groundwater Depth Charts.



Rocla Calga Groundwaters - Quarry Bores CP3 to CP8  
Water Depth TOC



Rocla Calga Groundwaters - Quarry Bores MW7 to MW10  
Water Depth TOC



## 2.3 METEOROLOGICAL MONITORING

The Rocla Calga Quarry weather station was fully operational in December 2007 with approximately 100% data recovery. The weather station data follows and includes;

- Monthly data numerical summary;
- Weather charts of air temperature, humidity, heat index and wind chill, atmospheric pressure, solar radiation, evapotranspiration, rain, wind speed and data reception; and
- Wind rose (frequency distribution diagram of wind speed and direction).

Monthly weather statistics from two nearby Bureau of Meteorology (BOM) stations, Peats Ridge and Gosford are included in **Appendix 2** for comparison purposes.

Data for December 2007 shows similar rainfall at the Rocla Calga Quarry station compared to the nearby Peats Ridge BOM station, but lower than the Gosford BOM station. The rainfall comparison is provided below:

Rocla Calga Quarry	223.6mm
BOM Peats Ridge*	222.4mm
BOM Gosford*	314.4mm
BOM Peats Ridge Long term mean for December*	95.5mm

\*Data sourced from Bureau of Meteorology (BOM) website ([www.bom.gov.au](http://www.bom.gov.au))

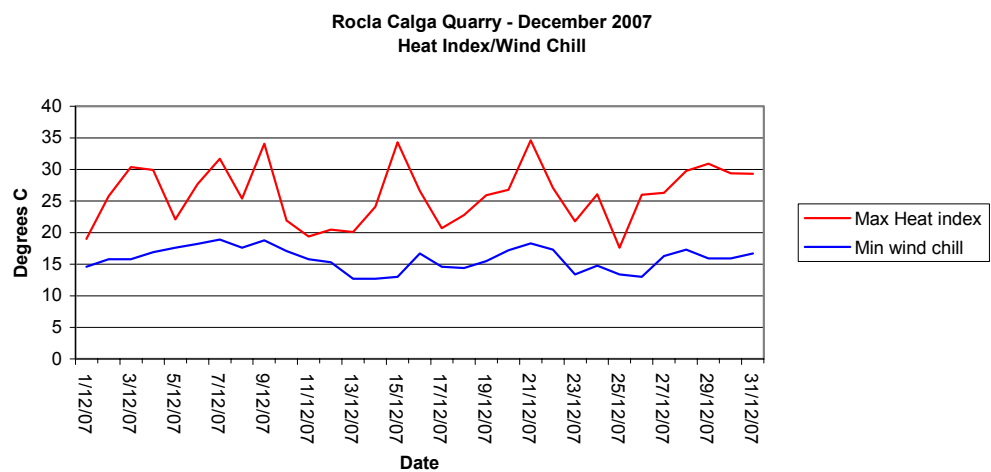
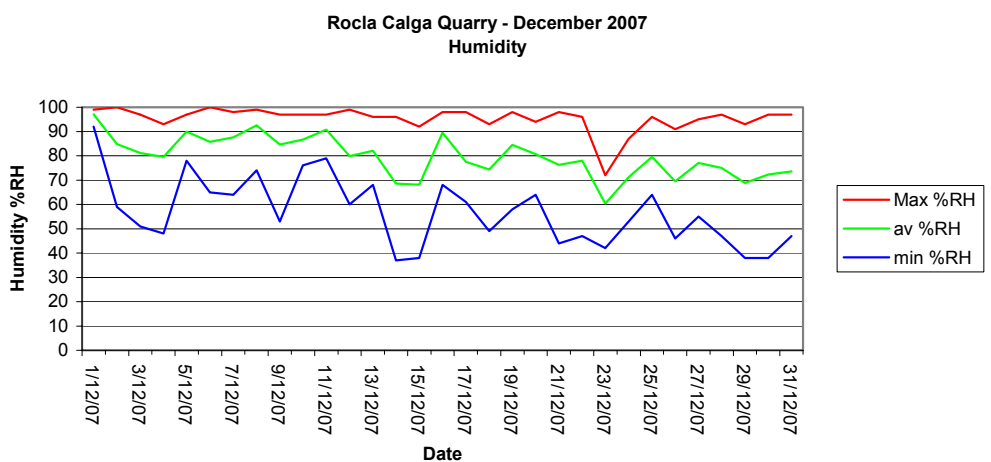
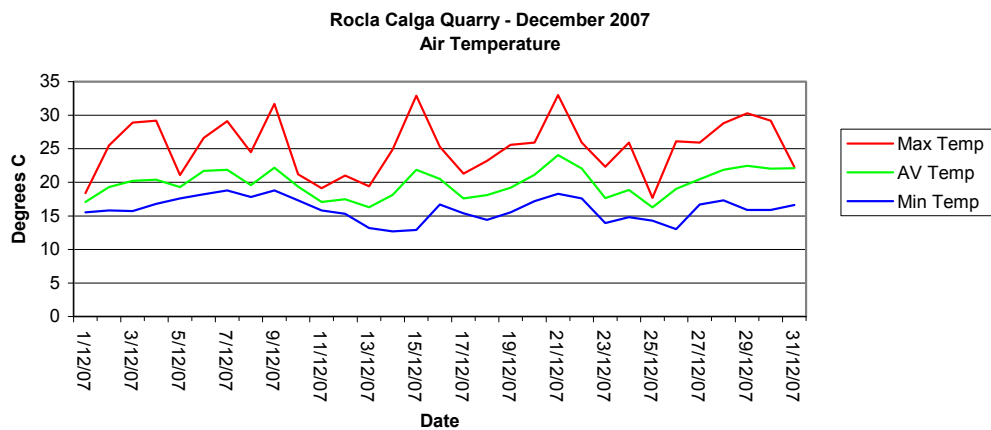
**Results are displayed in the following table and figures.**

### 2.3.1 Monthly meteorological data summary

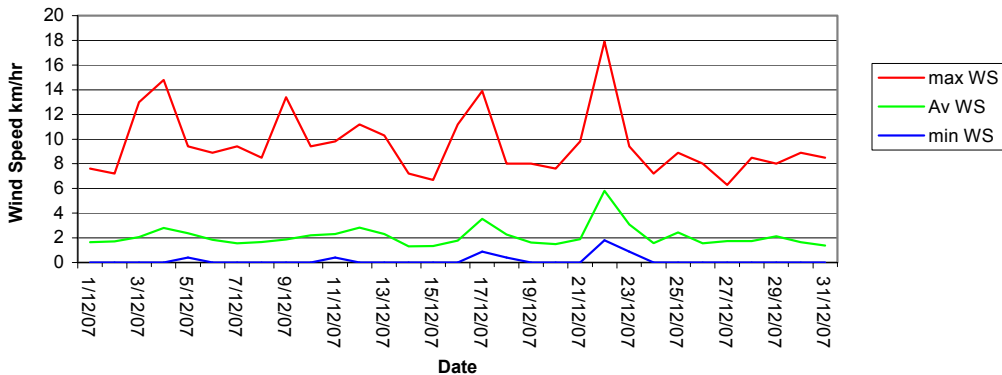
Summary Dec-07 Rocla - Calga

Date	Min Temp	AV Temp	Max Temp	min %RH	av %RH	Max %RH	RAIN mm	ET mm	min WS	Av WS	max WS	Min wind chill	Max Heat index	Min Atm P	Av Atm P	Max Atm P	Min Solar Rad	Av Solar Rad	Max Solar Rad	Min Data %	Av data %	Max Data %
1/12/07	15.5	17.1	18.4	92	97	99	78.4	0.8	0	1.7	7.6	14.6	19.0	1012.1	1014.2	1016.1	0	57.5	542	96.5	99.3	100
2/12/07	15.8	19.3	25.5	59	85	100	0.2	4.0	0	1.7	7.2	15.8	25.8	1009.9	1012.7	1015.3	0	231.0	1099	97.1	99.7	100
3/12/07	15.7	20.2	28.9	51	81	97	9.0	4.6	0	2.1	13	15.8	30.4	1004.2	1007.4	1010.5	0	267.5	1109	95.9	99.4	100
4/12/07	16.8	20.4	29.2	48	80	93	11.6	4.1	0	2.8	14.8	16.9	29.9	1003.7	1006.3	1009.8	0	224.1	1073	94.4	99.8	100
5/12/07	17.6	19.3	21.1	78	90	97	22.4	1.6	0.4	2.4	9.4	17.6	22.1	1008.9	1014.3	1017.9	0	84.2	504	93	99.6	100
6/12/07	18.2	21.7	26.6	65	86	100	1.0	4.2	0	1.8	8.9	18.2	27.7	1015.8	1016.9	1018.3	0	226.1	1126	96.8	99.7	100
7/12/07	18.8	21.9	29.1	64	88	98	3.2	3.3	0	1.6	9.4	18.9	31.7	1011.1	1013.9	1017	0	191.4	1136	94.4	99.8	100
8/12/07	17.8	19.6	24.5	74	93	99	0.4	1.7	0	1.7	8.5	17.6	25.4	1010.2	1013.0	1015.1	0	109.1	787	97.4	99.6	100
9/12/07	18.8	22.2	31.7	53	85	97	42.2	3.7	0	1.9	13.4	18.8	34.1	1005.6	1009.1	1012.3	0	204.8	1083	98.8	99.9	100
10/12/07	17.3	19.4	21.2	76	87	97	10.8	1.7	0	2.2	9.4	17.1	21.9	1007.3	1011.2	1015.2	0	81.1	547	97.4	99.8	100
11/12/07	15.8	17.1	19.1	79	91	97	1.4	1.1	0.4	2.3	9.8	15.8	19.4	1014.2	1016.7	1019.2	0	62.5	390	98	99.4	100
12/12/07	15.3	17.5	21	60	80	99	2.8	3.1	0	2.8	11.2	15.3	20.5	1018.3	1019.9	1021.6	0	154.4	789	90.9	99.3	100
13/12/07	13.2	16.3	19.4	68	82	96	8.0	2.4	0	2.3	10.3	12.7	20.1	1018.8	1019.7	1020.8	0	119.5	458	84.2	99.5	100
14/12/07	12.7	18.1	24.9	37	69	96	0.0	5.1	0	1.3	7.2	12.7	24.1	1013.9	1016.6	1019.4	0	300.7	1162	93	99.4	100
15/12/07	12.9	21.9	32.9	38	68	92	0.0	5.6	0	1.3	6.7	13	34.3	1008.7	1011.6	1014.8	0	303.7	993	91.8	99.8	100
16/12/07	16.7	20.5	25.3	68	89	98	14.0	1.9	0	1.8	11.2	16.7	26.6	1006.6	1009.6	1012.6	0	111.4	713	98	99.8	100
17/12/07	15.4	17.6	21.3	61	78	98	0.4	3.6	0.9	3.5	13.9	14.6	20.7	1011.7	1015.8	1019.7	0	180.8	952	96.2	99.5	100
18/12/07	14.4	18.1	23.2	49	74	93	1.8	4.7	0.4	2.3	8	14.4	22.8	1017.6	1018.9	1020.2	0	247.3	1059	96.5	99.3	100
19/12/07	15.5	19.2	25.6	58	84	98	1.8	3.6	0	1.6	8	15.5	25.9	1014.7	1017.0	1018.9	0	206.4	1090	96.5	99.4	100
20/12/07	17.2	21.1	25.9	64	81	94	0.0	3.0	0	1.5	7.6	17.2	26.8	1012	1014.5	1016.1	0	169.0	654	97.7	99.7	100
21/12/07	18.3	24.1	33	44	76	98	0.2	5.1	0	1.9	9.8	18.3	34.6	1004.9	1009.7	1013.4	0	261.4	1139	92.7	99.7	100
22/12/07	17.6	22.0	25.9	47	78	96	8.8	3.3	1.8	5.8	17.9	17.3	27.1	995.6	1000.3	1005.6	0	104.8	479	92.7	99.9	100
23/12/07	13.9	17.7	22.3	42	60	72	0.0	5.9	0.9	3.1	9.4	13.4	21.8	1005.1	1009.9	1013.7	0	305.6	1136	98.5	99.9	100
24/12/07	14.8	18.9	25.9	53	71	87	0.0	4.1	0	1.6	7.2	14.8	26.1	1010.3	1012.4	1014.7	0	222.7	1064	94.7	99.6	100
25/12/07	14.3	16.2	17.7	64	80	96	1.8	1.9	0	2.5	8.9	13.4	17.6	1014.8	1020.9	1025.1	0	95.5	393	96.5	99.4	100
26/12/07	13	19.0	26.1	46	69	91	0.0	5.0	0	1.6	8	13	26	1017.8	1021.5	1024.6	0	281.6	1198	93.3	99.8	100
27/12/07	16.7	20.5	25.9	55	77	95	3.0	3.3	0	1.7	6.3	16.3	26.3	1013.4	1015.8	1018.2	0	174.6	776	97.1	99.6	100
28/12/07	17.3	21.9	28.8	47	75	97	0.2	5.8	0	1.7	8.5	17.3	29.8	1013.4	1015.5	1017.3	0	317.0	1110	86	99.6	100
29/12/07	15.9	22.5	30.3	38	69	93	0.0	6.4	0	2.1	8	15.9	30.9	1014.4	1015.6	1016.9	0	341.2	1054	94.4	99.5	100
30/12/07	15.9	22.0	29.2	38	72	97	0.0	6.1	0	1.7	8.9	15.9	29.4	1015.6	1016.9	1018.3	0	330.5	1105	97.7	99.7	100
31/12/07	16.6	22.1	22.3	47	74	97	0.2	5.7	0	1.4	8.5	16.7	29.3	1016	1017.5	1019.3	0	341.3	1115	97.1	99.7	100
Monthly	12.7	19.8	33	37	80	100	223.6	116.3	0	2.1	17.9	12.7	34.6	995.6	1014.0	1025.1	0	203.5	1198	84.2	99.6	100

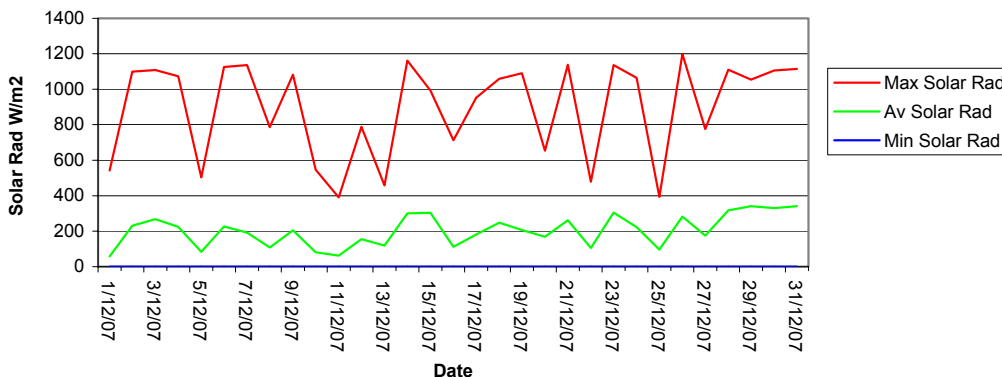
### 2.3.2 Monthly weather charts



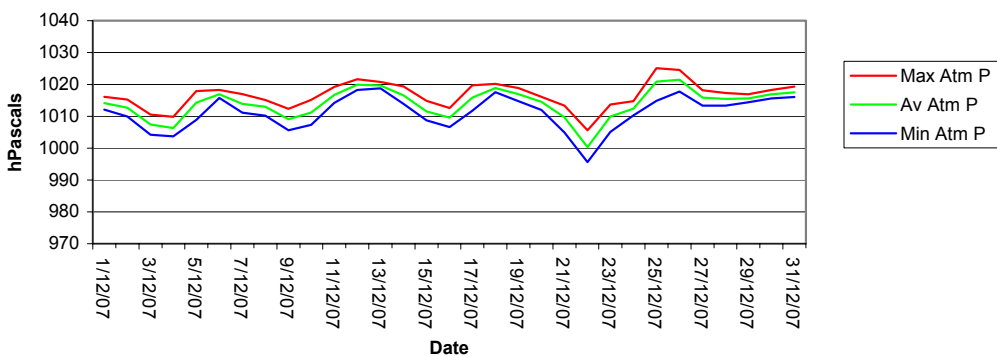
Rocla Calga Quarry - December 2007  
Wind Speed



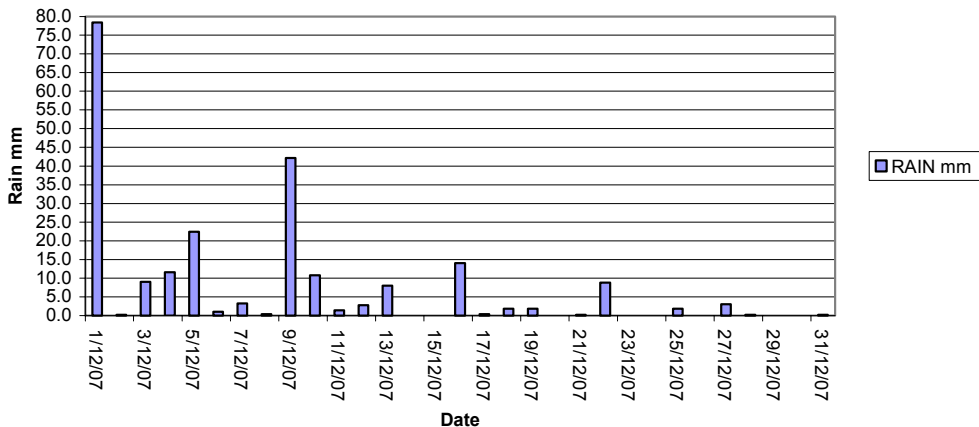
Rocla Calga Quarry - December 2007  
Solar Radiation



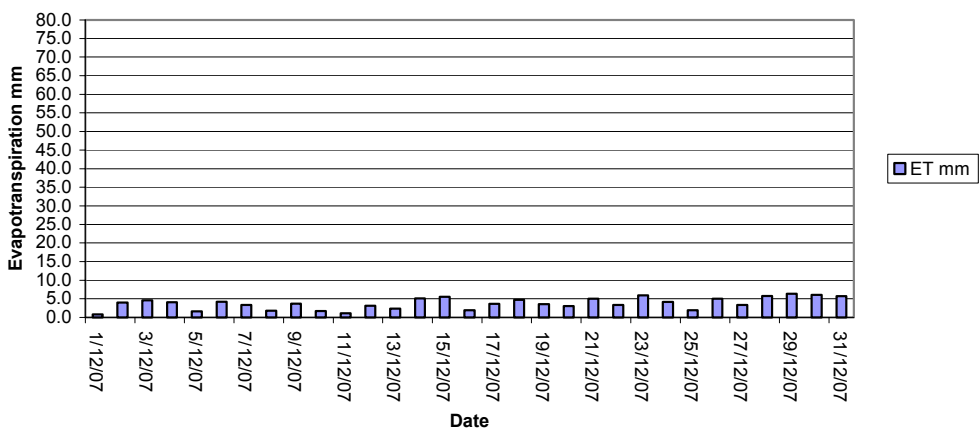
Rocla Calga Quarry - December 2007  
Atmospheric Pressure



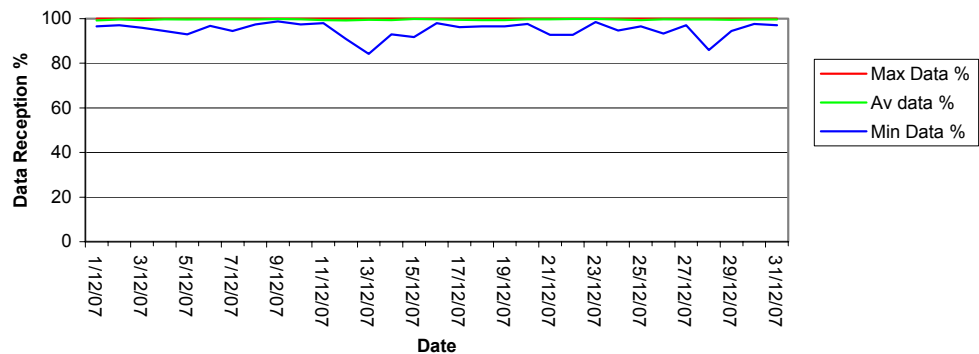
Rocla Calga Quarry - December 2007  
Rainfall



Rocla Calga Quarry - December 2007  
Evapotranspiration

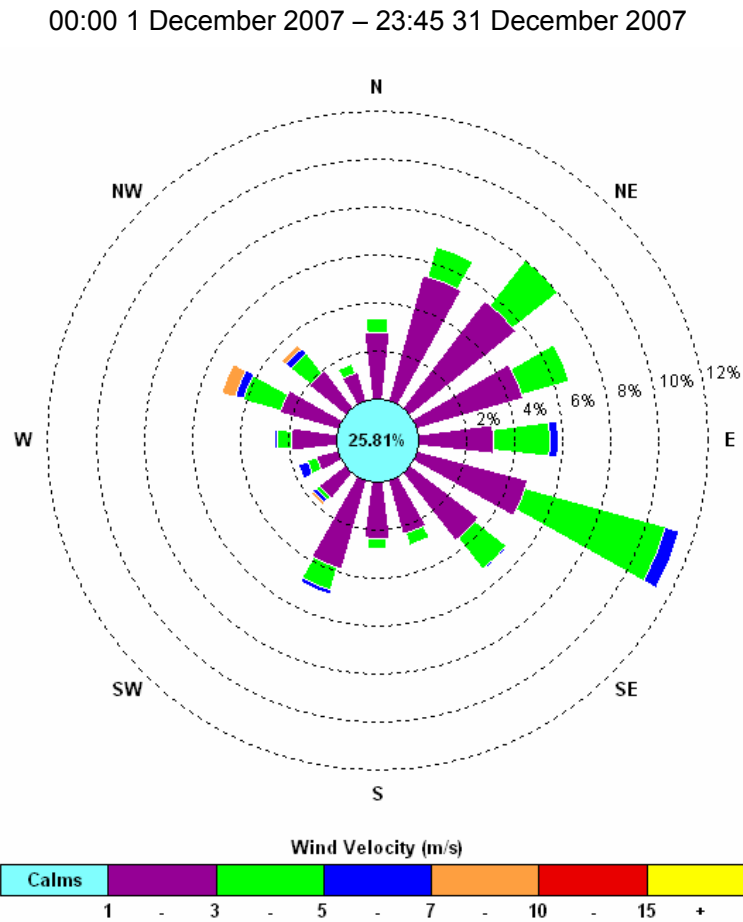


Rocla Calga Quarry - December 2007  
Data Reception



### 2.3.3 Windrose plot

Frequency plot of the average wind speed and average direction over each 15 minute sampling period. Wind is considered calm when less than a 15 minute average of 1m/s.



The windrose shows predominant winds from the ESE this month. The maximum wind speed was 17.9 m/s from the NW.

**APPENDIX 1**  
**LABORATORY CERTIFICATES**

**APPENDIX 2**

**ADDITIONAL BUREAU OF METEOROLOGY DATA  
FROM PEATS RIDGE AND GOSFORD  
MONITORING STATIONS**

**Peats Ridge, New South Wales  
December 2007 Daily Weather Observations**



**Australian Government  
Bureau of Meteorology**

Date	Day	Temps		Rain mm	Evap mm	Sun hours	Max wind gust			9am					3pm							
		Min °C	Max °C				Dirn	Spd km/h	Time local	Temp °C	RH %	Cld eighths	Dirn	Spd km/h	MSLP hPa	Temp °C	RH %	Cld eighths	Dirn	Spd km/h	MSLP hPa	
1	Sa	16.3		65.2							17.1	97	8	ENE	4		16.3	97	8	ESE	4	
2	Su																					
3	Mo		26.8													24.7	66	6	S	19		
4	Tu	14.7	28.6	45.2	11.6						19.5	83	8	NW	4	16.3	46	8	ESE	4		
5	We	16.2	21.2	15.4	4.6						20.3	90	7	S	4	19.5	92	8	S	4		
6	Th	18.1	24.5	0	1.8						19.6	93	8	NE	4	23.2	80	6	E	19		
7	Fr	18.8		0	2.8						21.1	88	7	ENE	4	25.1	80	7	NE	9		
8	Sa		27.0																			
9	Su	17.6	31.0	5.0	5.6						21.2	91	8	NNE	4							
10	Mo	17.8	21.1	15.8	5.4						19.3	93	8	SSW	4	21.1	78	7	SE	4		
11	Tu	15.3	18.2	6.2	2.6						16.6	94	8	SSW	4	17.6	89	8	S	9		
12	We	15.1	19.6	3.4	1.2						17.7	84	8	S	4	18.7	69	7	SSE	4		
13	Th	16.4	19.8	0.4	1.6						19.4	80	3	SW	4	17.2	89	8	SE	4		
14	Fr	10.8	23.0	12.0	1.6						17.0	78	2	SSE	4	22.6	41	0	E	9		
15	Sa	12.5	30.1	0	2.4						22.5	59	0	ESE	4							
16	Su	12.7	25.0	21.2	7.6						20.2	89	8	SSW	4							
17	Mo	14.7	21.5	12.4	2.0						17.0	76	7	SSE	19	20.1	69	8	S	4		
18	Tu	13.2	22.3	0.6	3.2						17.6	71	6	SE	4	20.6	66	6	ESE	9		
19	We	15.2	23.7	3.8	3.6						17.2	99	8	ESE	4	22.0	71	4	ENE	19		
20	Th	16.8	24.8	0.4	4.6						20.7	77	8	NE	4	23.2	81	8	E	9		
21	Fr	17.3	30.6	0.6	2.6						22.7	85	6	NE	9	29.6	54	6	N	4		
22	Sa	20.6	25.2	11.8	4.8						22.0	84	8	NW	28	24.1	78	7	NW	28		
23	Su	11.6	22.0	1.4	4.8						17.8	53	0	W	4							
24	Mo	14.2	22.3	0	2.6						18.6	58	8	E	4	20.3	67	6	ESE	9		
25	Tu	14.1	18.8	1.2	4.6						15.4	91	7	S	9	17.4	71	8	S	4		
26	We	11.6	23.6	0	1.2						18.6	70	3	S	4	22.6	63	3	ENE	19		
27	Th	16.2	26.0	0.4	5.2						20.6	77	7	NE	4							
28	Fr	16.5		0	5.2						21.0	78	4	W	4	25.2	62	1	ESE	9		
29	Sa		27.9	0																		
30	Su	14.3	26.1	0	7.8						21.7	70	1	ENE	4	25.2	70	0	E	9		
31	Mo	15.1	25.5	0	5.4						21.1	78	4	E	9	24.8	63	4	E	9		
<b>Statistics for December 2007</b>																						
Mean		15.3	24.3		4.1						19.4	80	5		6	21.6	71	5		9		
Lowest		10.8	18.2		1.2						15.4	53	0	#	4	16.3	41	0	#	4		
Highest		20.6	31.0	65.2	11.6						22.7	99	8	NW	28	29.6	97	8	NW	28		
Total				222.4	106.4																	

Gosford, New South Wales  
December 2007 Daily Weather Observations



Australian Government  
Bureau of Meteorology

Date	Day	Temps		Rain mm	Evap mm	Sun hours	Max wind gust			9am						3pm					
		Min	Max				Dirn	Spd	Time	Temp	RH	Cld	Dirn	Spd	MSLP	Temp	RH	Cld	Dirn	Spd	MSLP
		°C	°C					km/h	local	°C	%	eighths		km/h	hPa	°C	%	eighths		km/h	hPa
1	Sa	17.6	21.8	70.0			SSE	22	02:49	18.3	99		SW	2		18.8	99		ESE	6	
2	Su	15.0	24.5	39.8			ESE	19	15:38	21.6	76		SSE	7		23.1	68		ESE	7	
3	Mo	14.4	28.6	0			NNW	28	17:19	23.4	71		NNE	6		23.9	75		NNE	11	
4	Tu	15.6	30.9	13.6			W	50	14:15	20.1	98		Calm			27.4	59		E	7	
5	We	15.9	22.6	31.2			SSE	28	11:22	22.2	91		SSE	4		21.3	86		SE	11	
6	Th	19.2	25.8	30.2			NE	28	15:22	21.4	88		WNW	2		24.1	75		ENE	11	
7	Fr	18.0	27.5	0			ENE	28	14:28	22.6	86		NNW	4		25.7	78		ENE	11	
8	Sa	17.9	24.7	0.6			SSE	31	02:47	20.2	93		Calm			24.0	75		SSE	9	
9	Su	19.8	31.2	0			SSE	52	15:47	22.9	84		NNE	4		28.8	68		ENE	9	
10	Mo	18.5	23.1	69.0			S	33	14:41	21.1	85		SE	11		22.0	74		SSE	15	
11	Tu	17.6	21.0	4.4			SSE	28	10:50	18.7	85		SSE	7		19.4	84		SSE	15	
12	We	16.9	22.3	14.2			SE	50	11:45	20.4	74		SE	13		21.7	65		SSE	13	
13	Th	13.1	21.6	0.2			SSE	30	12:24	17.8	93		Calm			20.8	67		SSE	15	
14	Fr	11.4	24.2	1.6			SSE	24	14:46	20.9	56		SE	7		23.2	30		E	9	
15	Sa	11.2	29.1	0			ESE	24	12:32	21.7	63		NNW	9		27.7	53		NNE	7	
16	Su	18.2	27.0	0			SSE	31	19:54	22.3	83		NW	6		25.1	87		Calm		
17	Mo	17.0	22.9	12.8			SSE	43	15:57	19.1	69		SE	9		20.8	70		SE	15	
18	Tu	13.5	23.6	0.2			SSE	28	08:50	20.7	63		SE	13		21.6	62		SE	13	
19	We	16.7	24.4	2.4			N	50	14:59	19.1	93		NNW	4		23.5	62		ESE	9	
20	Th	16.7	25.6	0.2			NNW	26	09:33	22.7	74		NE	11		23.9	73		NE	11	
21	Fr	18.2	31.2	0			E	24	13:16	25.3	75		ESE	7		29.1	65		ENE	11	
22	Sa	21.7	27.2	8.8			N	44	13:41	23.2	84		N	11		26.1	71		NNW	17	
23	Su	11.8	22.9	0.4			SE	28	12:23	20.6	41		SE	13		21.7	50		SE	17	
24	Mo	15.6	23.6	0			ESE	19	11:52	20.8	61		SE	6		23.1	62		NE	6	
25	Tu	15.4	21.2	13.0			SE	31	06:38	17.0	85		SE	9		19.3	63		SE	13	
26	We	12.4	24.3	0			E	28	16:56	20.8	58		ESE	6		23.3	55		ENE	11	
27	Th	15.3	26.2	1.8			S	20	18:13	20.9	83		ESE	4		25.2	63		ESE	7	
28	Fr	17.2	26.8	0			E	24	12:11	23.0	78		SSE	7		26.0	50		ENE	11	
29	Sa	13.6	27.8	0			NE	26	15:44	23.2	62		NE	7		26.8	56		E	9	
30	Su	14.5	26.9	0			NE	24	12:45	24.0	68		ENE	6		26.2	45		ENE	9	
31	Mo	15.9	26.5	0			ESE	24	10:16	23.6	65		E	7		25.3	58		ENE	9	
Statistics for December 2007																					
Mean		16.0	25.4							21.3	76			6		23.8	66			10	
Lowest		11.2	21.0							17.0	41			Calm		18.8	30			Calm	
Highest		21.7	31.2	70.0			SSE	52		25.3	99		SE	13		29.1	99		#	17	
Total				314.4																	