

**APPENDIX 3 – ENVIRONMENTAL
PERFORMANCE**

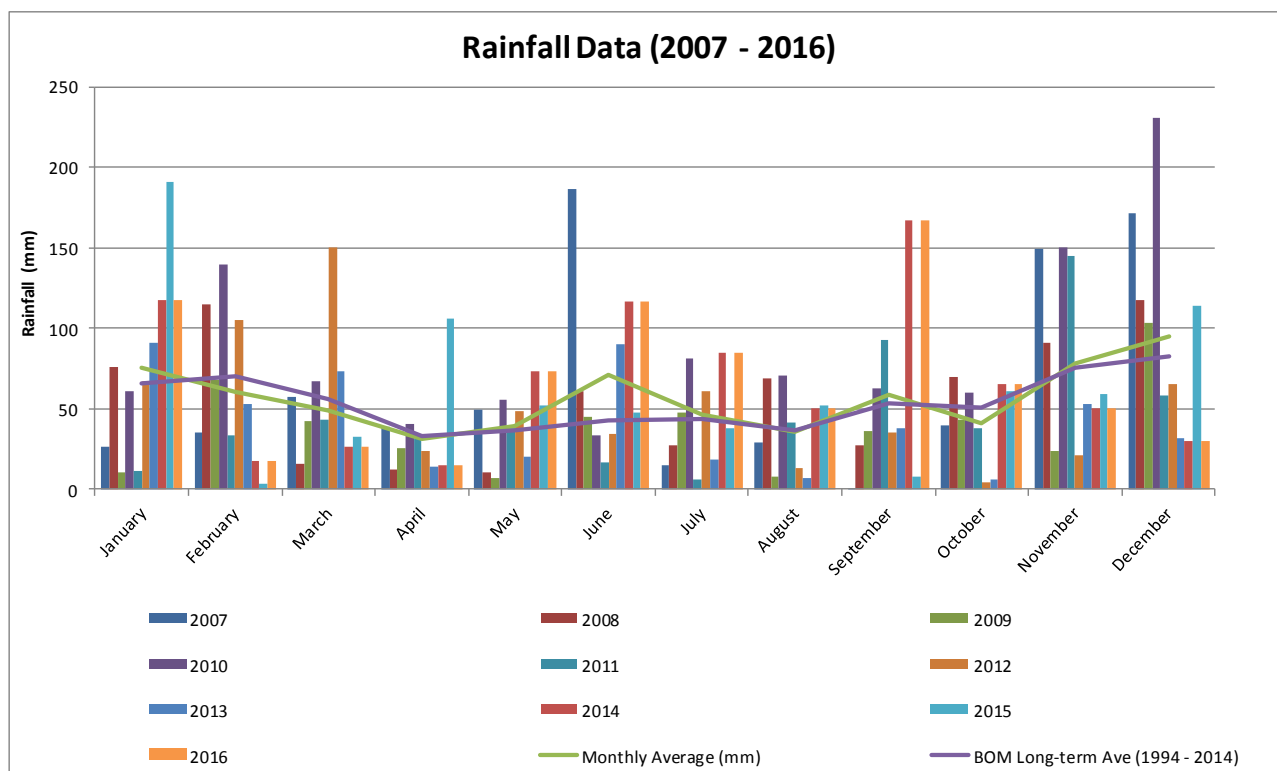
**APPENDIX 3A – METEOROLOGICAL
MONITORING DATA**

2016 Summary of Rainfall Data

	Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rainfall (mm)	2016	117.4	17.8	26.4	15.4	73.4	116.6	84.8	50	167.2	65.8	50.8	30
Cumulative Rainfall (mm)	2016	117.4	135.2	161.6	177	250.4	367	451.8	501.8	669	734.8	785.6	815.6

Historical Rainfall Data

Monthly	2006 (mm)	2007 (mm)	2008 (mm)	2009 (mm)	2010 (mm)	2011 (mm)	2012 (mm)	2013 (mm)	2014 (mm)	2015 (mm)	2016 (mm)	Monthly Average (mm)	BOM Long-term Ave (1994 - 2014) (mm)
January	67	26.2	75.8	10.6	61.4	11.4	66.8	91.2	117.4	190.8	117.4	76	65.5
February	76.6	35	115.2	67.8	139.8	33.6	105.6	53	17.8	3.6	17.8	60.53	70.5
March	9.2	57.2	15.6	42.2	67.2	43.4	150	73	26.4	32.4	26.4	49.36	56.1
April	20.8	38.8	12.4	25.4	40.6	32	23.8	13.8	15.4	106	15.4	31.31	33.1
May	0.8	49.2	10.4	7.4	56	38	48.8	20	73.4	52	73.4	39.04	36.7
June	37.2	186.8	61	44.8	34	16.6	34.2	90.6	116.6	47.4	116.6	71.44	42.6
July	51	14.6	27.8	48	81	6.2	60.6	18.6	84.8	38.2	84.8	46.87	43.6
August	7	29.2	69.4	8.2	70.8	41.8	13.4	6.8	50	52	50	36.24	36.4
September	15.6	0.2	27.8	36.2	62.4	92.8	35.4	38	167.2	7.8	167.2	59.15	53.4
October	1.8	39.4	70	43	60	38	4.2	6.6	65.8	60.8	65.8	41.4	51
November	70	149.2	91	24.2	150	145	20.8	52.8	50.8	59	50.8	78.51	75.5
December	NA	171.2	117.4	103.2	231.2	58	65.6	31.8	30	114.4	30	95.28	82.8

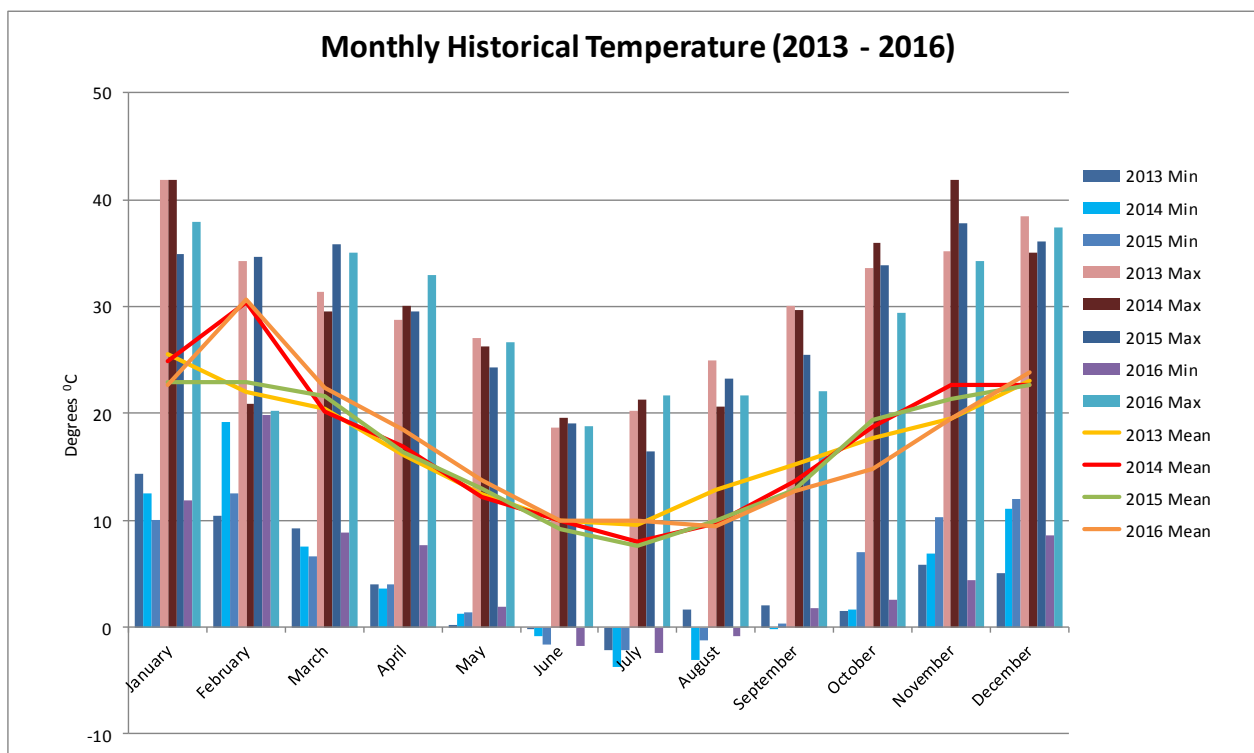


2016 Summary of Temperature Data

2016	Air Temperature (°C at 2 m)			Air Temperature (°C at 10 m)			Air Temperature (°C at 60 m)		
	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean
January	11.8	37.9	22.7	12.4	37.4	22.6	11.8	36.3	22.2
February	19.9	20.3	30.6	11.6	37.0	23.7	12.5	35.7	23.3
March	8.9	35.0	22.4	9.7	34.0	22.4	10.1	33.0	22.0
April	7.7	32.9	18.5	8.8	32.2	18.7	10.3	31.2	18.8
May	1.9	26.7	13.7	2.4	26.3	13.9	4.0	25.6	14.1
June	-1.8	18.8	10.0	-1.5	18.1	10.2	-1.4	17.2	10.2
July	-2.4	21.7	9.9	-2.2	21.1	10.0	-1.4	20.6	10.0
August	-0.9	21.7	9.5	-0.4	21.4	9.8	0.6	20.7	10.0
September	1.8	22.1	12.7	2.4	21.2	12.8	3.0	20.1	12.8
October	2.6	29.4	14.8	3.0	29.1	14.9	4.2	28.2	14.7
November	4.4	34.2	19.5	5.2	33.3	19.6	6.8	31.8	19.4
December	8.6	37.4	23.9	9.5	36.7	23.9	10.3	35.7	23.5

Historical Temperature Data

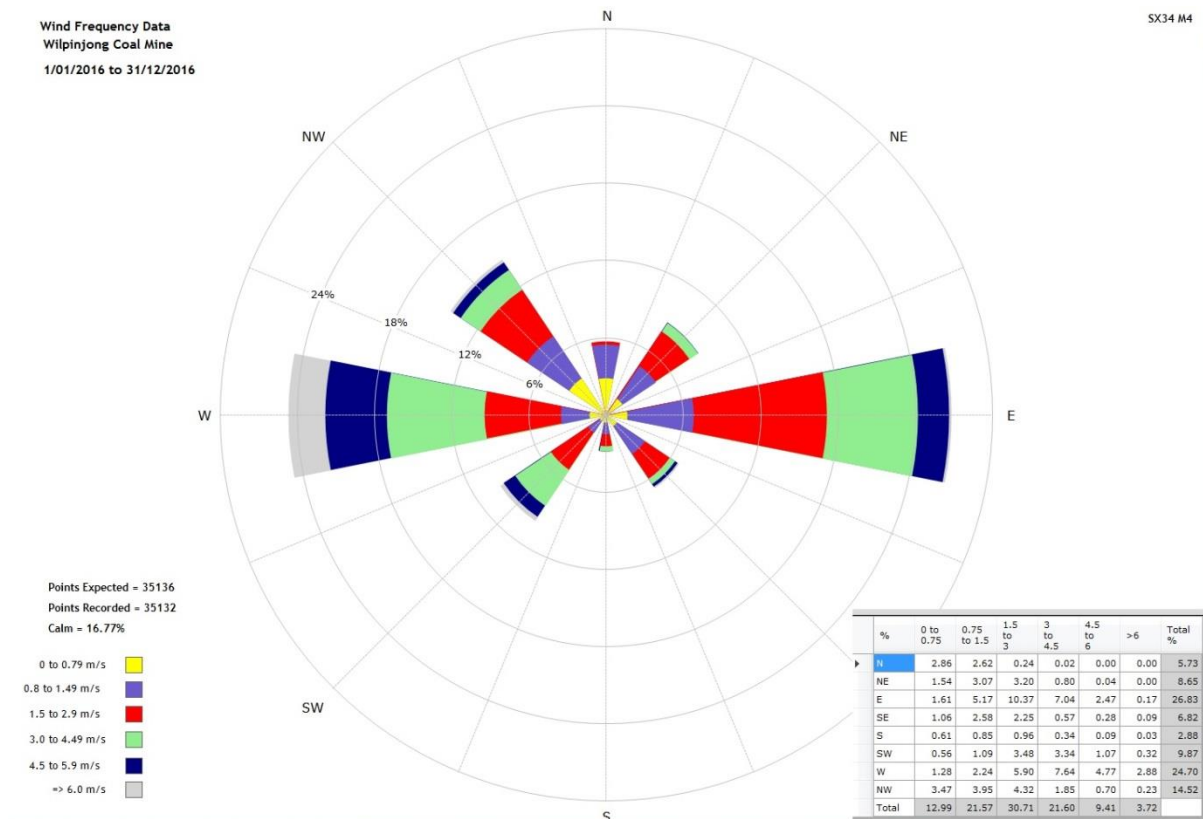
	2013 Min °C	2013 Max °C	2013 Ave °C	2014 Min °C	2014 Max °C	2014 Ave °C	2015 Min °C	2015 Max °C	2015 Ave °C
January	14.3	41.9	25.55	12.5	41.8	24.85	10	34.9	22.93
February	10.4	34.2	22.01	19.2	20.9	30.4	12.5	34.6	22.92
March	9.3	31.4	20.45	7.5	29.6	20.13	6.6	35.8	21.55
April	4	28.8	16.18	3.6	30	16.85	4	29.6	16.32
May	0.2	27.1	12.44	1.2	26.3	12.21	1.4	24.3	13
June	-0.2	18.7	10	-0.9	19.6	9.927	-1.6	19	9.237
July	-2.2	20.3	9.6	-3.7	21.3	8.045	-2.2	16.5	7.574
August	1.6	25	12.86	-3.1	20.6	9.755	-1.3	23.3	9.926
September	2	30	15.23	-0.2	29.7	13.57	0.4	25.5	12.82
October	1.5	33.6	17.74	1.6	35.9	18.76	7	33.8	19.44
November	5.9	35.2	19.55	6.9	41.9	22.66	10.3	37.8	21.37
December	5.1	38.5	23.09	11.1	35	22.61	12	36.1	22.68



2016 Average Wind Speeds & Directions

Month	Ave Wind Speed (m/s)	Max Wind Speed (m/s)	Ave Wind Dir.
January	2.3	8.0	138.9
February	2.3	8.2	144
March	1.8	8.9	132.1
April	1.6	6.5	159.6
May	2.0	7.7	240.2
June	2.5	20.7	215.1
July	2.5	10.0	228.1
August	1.6	7.9	209.2
September	2.1	11.2	217.7
October	2.8	9.7	231.4
November	2.3	9.9	211.6
December	2.4	10.6	171

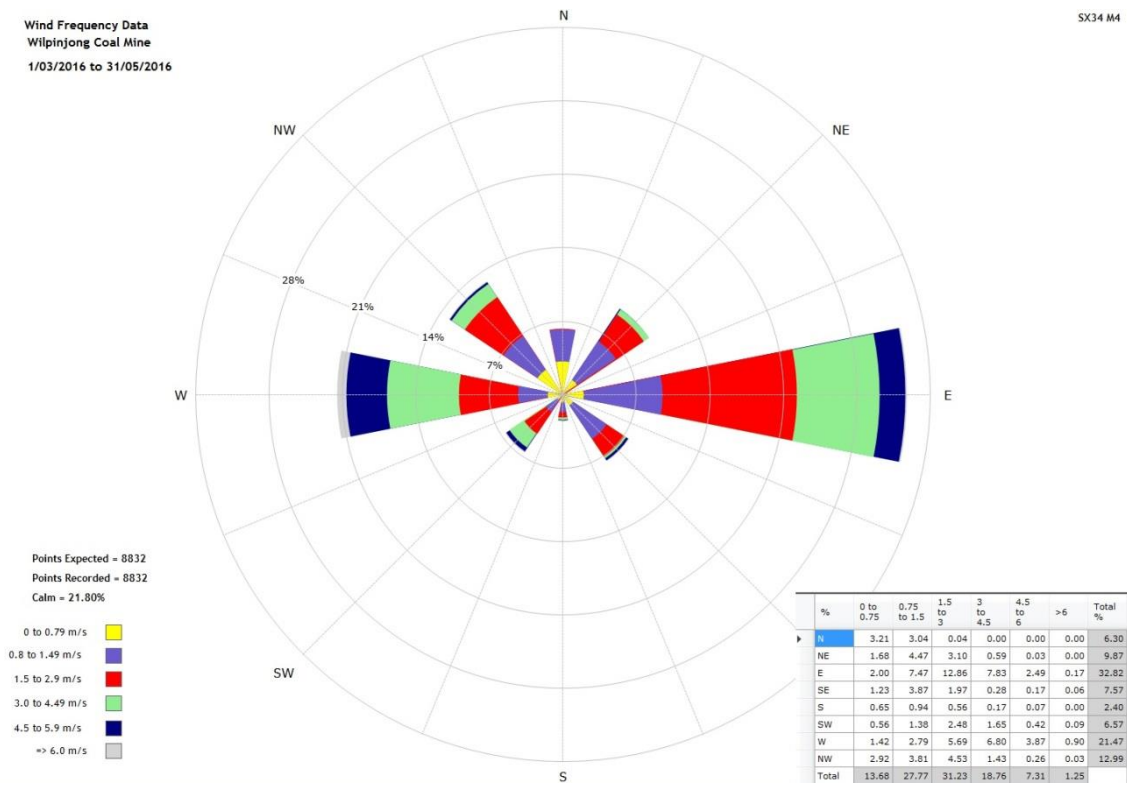
Annual Windrose 2016



Autumn Windrose 2016

Wind Frequency Data
Wilpinjong Coal Mine
1/03/2016 to 31/05/2016

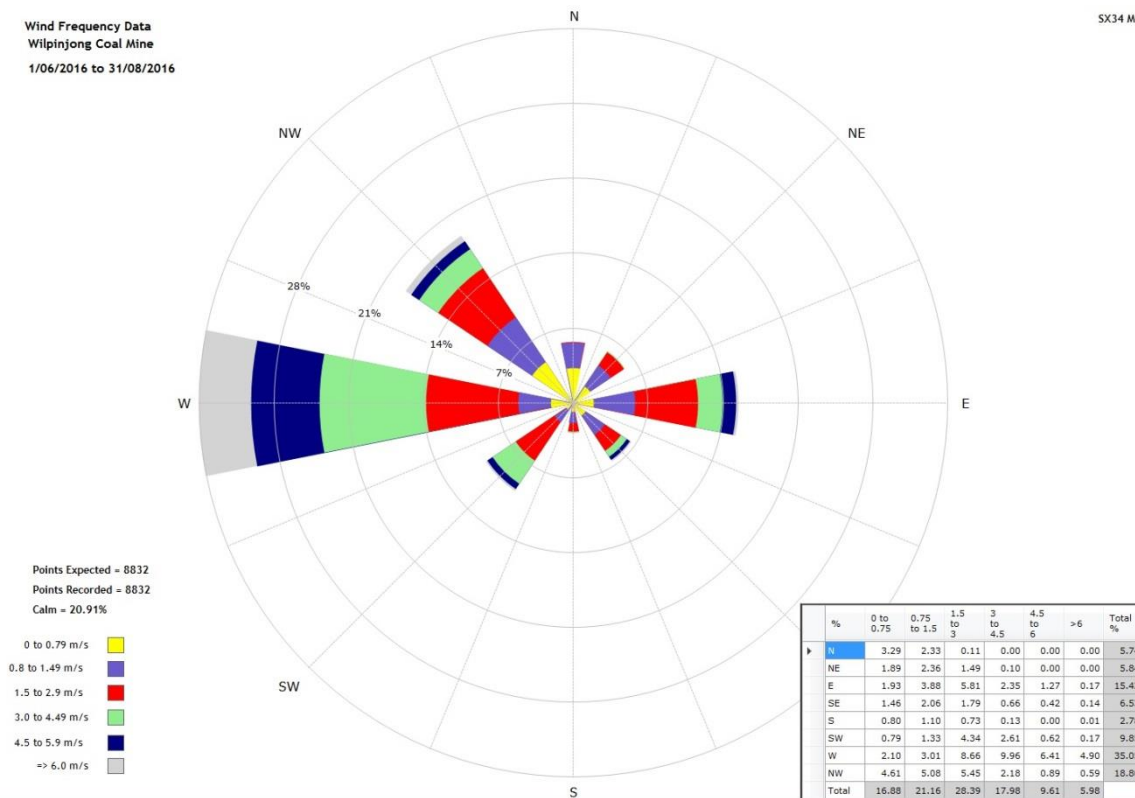
SX34 M4



Winter Windrose 2016

Wind Frequency Data
Wilpinjong Coal Mine
1/06/2016 to 31/08/2016

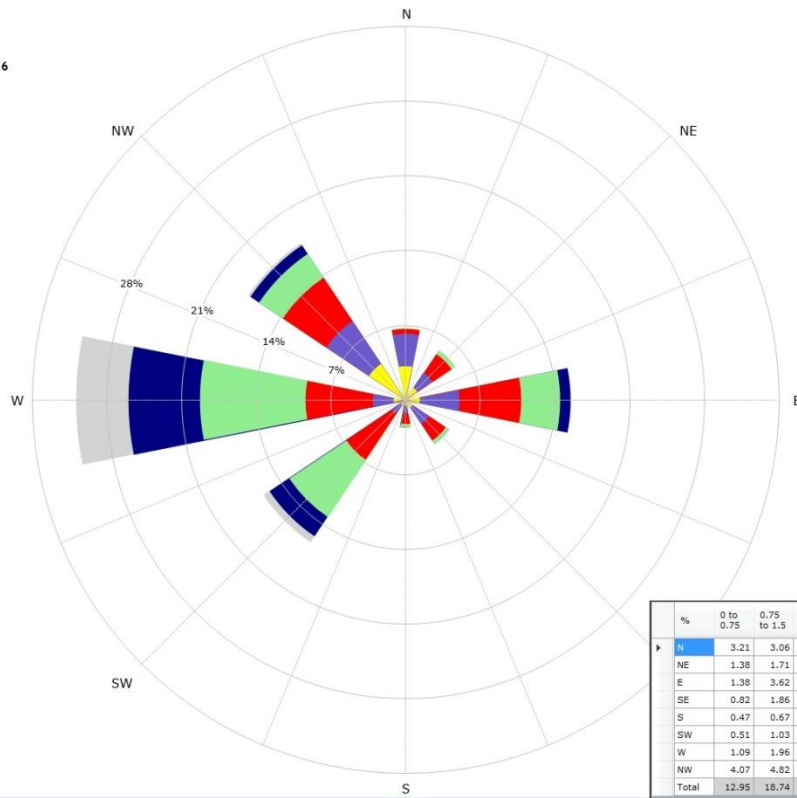
SX34 M4



Spring Windrose 2016

Wind Frequency Data
Wilpinjong Coal Mine
1/09/2016 to 30/11/2016

SX34 M4



Points Expected = 8736
Points Recorded = 8732
Calm = 13.08%

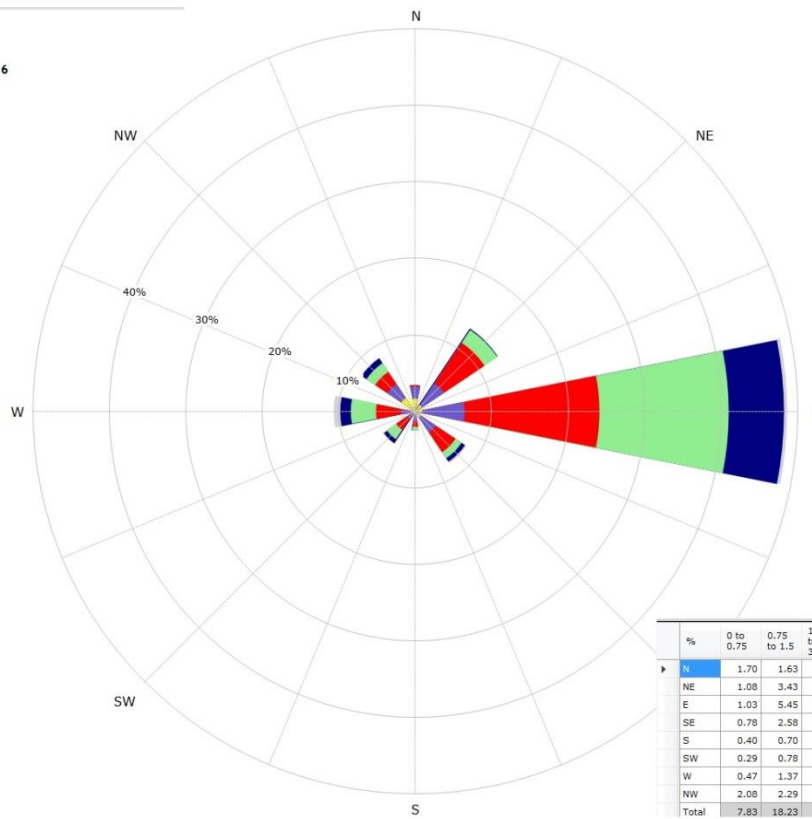
- 0 to 0.79 m/s ■
- 0.8 to 1.49 m/s ■
- 1.5 to 2.9 m/s ■
- 3.0 to 4.49 m/s ■
- 4.5 to 5.9 m/s ■
- >= 6.0 m/s ■

%	0 to 0.75	0.75 to 1.5	1.5 to 3	3 to 4.5	4.5 to 6	>6	Total %
N	3.21	3.06	0.45	0.03	0.00	0.00	6.75
NE	1.38	1.71	2.12	0.45	0.00	0.00	5.67
E	1.38	3.62	5.86	3.65	0.94	0.04	15.49
SE	0.82	1.86	1.86	0.37	0.01	0.00	4.91
S	0.47	0.67	1.04	0.34	0.05	0.01	2.60
SW	0.51	1.03	5.15	6.43	2.20	0.67	15.99
W	1.09	1.96	6.31	9.87	6.75	4.90	30.88
NW	4.07	4.82	4.98	2.66	0.97	0.20	17.71
Total	12.95	18.74	27.77	23.79	10.92	5.82	

Summer Windrose 2016

Wind Frequency Data
Wilpinjong Coal Mine
1/12/2015 to 29/02/2016

SX34 M4



Points Expected = 8736
Points Recorded = 8736
Calm = 10.67%

- 0 to 0.79 m/s ■
- 0.8 to 1.49 m/s ■
- 1.5 to 2.9 m/s ■
- 3.0 to 4.49 m/s ■
- 4.5 to 5.9 m/s ■
- >= 6.0 m/s ■

%	0 to 0.75	0.75 to 1.5	1.5 to 3	3 to 4.5	4.5 to 6	>6	Total %
N	1.70	1.63	0.15	0.04	0.00	0.00	3.52
NE	1.08	3.43	6.38	2.01	0.14	0.01	13.06
E	1.03	5.45	17.67	16.82	7.20	0.56	48.73
SE	0.78	2.58	3.01	0.97	0.54	0.13	8.01
S	0.40	0.70	0.86	0.42	0.04	0.04	2.46
SW	0.29	0.78	1.87	1.49	0.50	0.14	5.07
W	0.47	1.37	3.24	3.28	1.41	0.86	10.64
NW	2.08	2.29	1.90	1.42	0.73	0.09	8.51
Total	7.83	18.23	35.08	26.46	10.56	1.83	

Location of Meteorological Station

