



Suite 2B 14 Glen Street,
Eastwood, NSW 2122
Phone 61-2-9874-8644
Fax 61-2-9874-8904
E-mail : has@holmair.com.au
ACN 003-741-035
ABN 79-003-741-035

14 July 2009

Alan Wells
Wells Environmental Services
PO Box 205
East Maitland, NSW 2298

Subject: Proposed Modification to Ashton Coal Mine - additional longwall area (ref: DA 309-11-2001 MOD4)

Dear Alan,

You have asked Holmes Air Sciences to address the Director General's Requirements issued 31 July 2008 in regard to the proposed modification. The modification seeks to extend the life of the underground mine and increase approved mine capacity from 5.2 to 5.45 Mtpa ROM Coal. The increase in ROM coal production would be from the underground operation. The key air quality issue is set out in the Environmental Assessment Requirements as follows:

- **Air Quality and Noise:** *demonstrate that the mine as modified would comply with the air quality and noise limits in the existing development consent.*

Holmes Air Sciences previously undertook an air quality modelling study for the approval for this mine (October 2001). The original study was based on production of up to 2.5 Mtpa ROM Coal from the open cut and 2.95 Mtpa ROM Coal from the underground operations, totalling 5.45 Mtpa ROM coal for the mine.

The application for the underground extension seeks the same total quantity of ROM coal production originally modelled. Ashton Mine advises that any increase in currently approved production (of 5.2 Mtpa ROM coal) would be from the underground operation.

We have not conducted an air dispersion assessment for this proposal as the modelling would not provide any new information. The reasons are that the proposed extension would not be a significant source of emissions and the overall rate of emissions would not change significantly as a result of the proposal.

To address the specific Director General's air quality requirements a detailed compliance assessment of monitoring data has been carried out. As would be expected, compliance for the mine as a whole would be governed by activities other than those associated with the underground mine.

The details are provided below.

ASHTON (WHITE MINING) CONSENT MODIFICATION LETTER 1-10_08_AT_FINAL ISSUED

Consultant in Environmental Sciences
Holmes Air Sciences. A Division of Karpelo Holdings Pty Ltd ACN 003 741 035
Registered in NSW

How significant is the underground activity?

A detailed breakdown of dust emissions from the Ashton mine is provided in Attachment 1 and shows the dust emissions attributable to; 1) the underground activity as originally modelled; 2) as would currently occur; and, 3) as would occur from the proposed extension.

In the original environmental assessment the underground operation delivered 54% of the (5.45 Mtpa) ROM coal produced at the mine. Presently the underground operation delivers 57% of the approved 5.2 Mtpa ROM coal. It is proposed to alter this to 59% of a total of 5.45Mtpa ROM Coal.

Accordingly the underground operation would be responsible for 59% of the dust from all surface coal handling and associated activities, such as handling of rejects, ROM and product coal and also coal washing.

However, only 3.3% of the total Ashton mine dust emissions can be attributed to the underground activity and its associated surface activities.

What effect would the proposed underground extension have on dust impacts?

It is understood that the proposed extension of the underground area would slightly increase the rate of activity/material handling at the surface but would not make changes to the general location of surface activities. The proposal would essentially extend the life of the underground operation and slightly increase the underground rate of production.

In regard to air quality, the overall impact of the currently approved operation could change slightly. Table 1 in Appendix 1 shows that total dust produced would increase by 0.25% (1,613,208 v.s. 1,609,040 kg/year). The actual change in dust impact at receptors is likely to be less than 0.25% because the dust sources changed by the proposal have a lesser portion of the relative impact at the receptors located in Camberwell.

Essentially it can be concluded that there would not be any tangible change in dust impacts at receptors.

Current operational performance

We have examined recent ambient air quality and meteorological monitoring data for the area. The monitoring data is summarised in Attachment 2. The locations of the monitoring sites are shown in Attachment 3.

As predicted in the original impact assessment, the recent fourth year of mine operation has the greatest potential for dust impact. The winter period, with prevailing NW winds also has potential to seasonally elevate dust impacts in Camberwell Village. Generally, this appears to be reflected in the monitoring data.

Overall, the recent results all show a downwards trend. This is consistent with a declining rate of open-cut activity, seasonal influences, rehabilitation of open-cut areas and the mine refining its management practice.

The relevant criteria in Figures 1 to 4 are shown by the thick blue line. The criteria are presently achieved for annual average PM10, annual TSP and deposited dust.

The 24-hour average PM10 criteria apply to total ambient dust levels and are not met on all days, see Figure 2. We have examined in detail four representative days on which the 24-hour average PM10 criteria is elevated, see Figures 5 to 8.

These figures reveal that on some of these days the mine appears to be a significant contributor to the elevated levels, for example Figure 5 and 6 show generally higher 10-minute levels at monitoring sites downwind of the mine. However on some days it is unlikely that the mine is a significant contributor to the elevated levels. For example Figure 7 for windy conditions with wind from many directions, and also Figure 8 which shows that upwind and downwind sites can measure similar levels under steady weather conditions over the whole day.

14 July 2009

In consideration of this and that the proposal would have a small contribution to the total mine dust emissions, it appears the key factors for compliance to the 24-hour average criteria would be the prevailing background dust levels and how well the mine manages open-cut activities on a day-to-day basis.

Conclusion

The proposed extension of the underground operation involves increased underground coal production resulting in total annual production up to 5.45 Mtpa ROM Coal.

The proposal would have minimal effect (less than 0.25%) on the mine as a whole complying with consent air quality limits.

Compliance with the consent air quality limits would not be tangibly altered as a result of the proposed extension. Presently the mine complies with air quality limits, with the exception of cumulative 24-hour PM10 criteria where compliance (but also non-compliance) is not readily shown.

Compliance in this case is governed by the day-to-day operation of the open cut activities, specifically by the mines operational controls, such as moving or ceasing certain activities at critical times. To achieve compliance, the open cut activities need to continue to be carefully managed on a day-to-day basis.

Do not hesitate to contact me should you have any further queries.

Yours Sincerely
Holmes Air Sciences

Aleks Todoroski

ATTACHMENT 1 – Dust emissions breakdown for Ashton Mine

Activity	Modelled (2.50C + 2.95UG = 5.45 Mtpa ROM) kg/year				Current (2.250C + 2.95UG = 5.2 Mtpa ROM) kg/year				Proposed (2.25 OC + 3.2UG = 5.45 Mtpa ROM) kg/year			
	Total	OC fraction	UG fraction	UG % of total	Total	OC fraction	UG fraction	UG % of total	Total	OC fraction	UG fraction	UG % of total
Drilling Overburden	9,818	9,818	0	0.0%	8,836	8,836	0	0.0%	8,836	8,836	0	0.0%
Blasting Overburden	26,600	26,600	0	0.0%	23,940	23,940	0	0.0%	23,940	23,940	0	0.0%
Loading Overburden	52,395	52,395	0	0.0%	47,156	47,156	0	0.0%	47,156	47,156	0	0.0%
Hauling to West Dump	0	0	0	-	0	0	0	-	0	0	0	-
Hauling to in-pit dump	998,400	998,400	0	0.0%	898,560	898,560	0	0.0%	898,560	898,560	0	0.0%
Dumping overburden West out of pit dump	0	0	0	-	0	0	0	-	0	0	0	-
Dumping Overburden Main Pit	52,395	52,395	0	0.0%	47,156	47,156	0	0.0%	47,156	47,156	0	0.0%
Dozers on o/b	17,641	17,641	0	0.0%	15,877	15,877	0	0.0%	15,877	15,877	0	0.0%
Dozers on coal	52,197	52,197	0	0.0%	46,977	46,977	0	0.0%	46,977	46,977	0	0.0%
Loading coal into trucks	137,250	137,250	0	0.0%	123,525	123,525	0	0.0%	123,525	123,525	0	0.0%
Hauling coal to CHPP	150,000	150,000	0	0.0%	135,000	135,000	0	0.0%	135,000	135,000	0	0.0%
Rehandle coal at CHPP + unloading coal to hopper	54,450	54,450	0	0.0%	49,005	49,005	0	0.0%	49,005	49,005	0	0.0%
Loading coal to stockpile	19,260	8,860	10,400	54.0%	18,374	7,956	10,418	56.7%	19,260	7,954	11,306	58.7%
Loading coal to trains	1,926	886	1,040	54.0%	1,837	796	1,042	56.7%	1,926	795	1,131	58.7%
Hauling rejects	43,158	19,853	23,305	54.0%	41,173	17,828	23,345	56.7%	43,158	17,824	25,334	58.7%
Grading roads	14,483	14,483	0	0.0%	13,035	13,035	0	0.0%	13,035	13,035	0	0.0%
Wind erosion from mine and dumps	126,144	126,144	0	0.0%	113,530	113,530	0	0.0%	113,530	113,530	0	0.0%
Wind erosion from ROM and Product stockpiles	7,008	3,224	3,784	54.0%	6,686	2,895	3,791	56.7%	7,008	2,894	4,114	58.7%
Coal processing	19,260	8,860	10,400	54.0%	18,374	7,956	10,418	56.7%	19,260	7,954	11,306	58.7%
Glendell (wind insensitive)	2,628,000		0	0.0%	2,628,000		0	0.0%	2,628,000		0	0.0%
Glendell (wind sensitive)	486,000		0	0.0%	486,000		0	0.0%	486,000		0	0.0%
Glendell (wind erosion)	478,800		0	0.0%	478,800		0	0.0%	478,800		0	0.0%
Camberwell (wind insensitive)	2,625,810		0	0.0%	2,625,810		0	0.0%	2,625,810		0	0.0%
Camberwell (wind sensitive)	485,595		0	0.0%	485,595		0	0.0%	485,595		0	0.0%
Camberwell wind erosion	478,401		0	0.0%	478,401		0	0.0%	478,401		0	0.0%
Narama (wind insensitive)	2,482,000		0	0.0%	2,482,000		0	0.0%	2,482,000		0	0.0%
Narama (wind sensitive)	459,000		0	0.0%	459,000		0	0.0%	459,000		0	0.0%
Narama (wind erosion)	452,200		0	0.0%	452,200		0	0.0%	452,200		0	0.0%
Rixs Creek (wind insensitive)	1,095,000		0	0.0%	1,095,000		0	0.0%	1,095,000		0	0.0%
Rixs Creek (wind sensitive)	202,500		0	0.0%	202,500		0	0.0%	202,500		0	0.0%
Rixs Creek (wind erosion)	199,500		0	0.0%	199,500		0	0.0%	199,500		0	0.0%
Ashton Project	1,782,385	1,733,455	48,930	2.7%	1,609,040	1,560,026	49,014	3.0%	1,613,208	1,560,018	53,189	3.3%
Ashton Project plus nearby mines	13,855,191	13,806,261	12,121,736	0.4%	13,681,846	13,632,832	12,121,820	0.4%	13,686,014	13,632,824	12,125,995	0.4%

Table 1. Ashton Mine dust emission breakdown.

ATTACHMENT 2 – MONITORING RESULTS

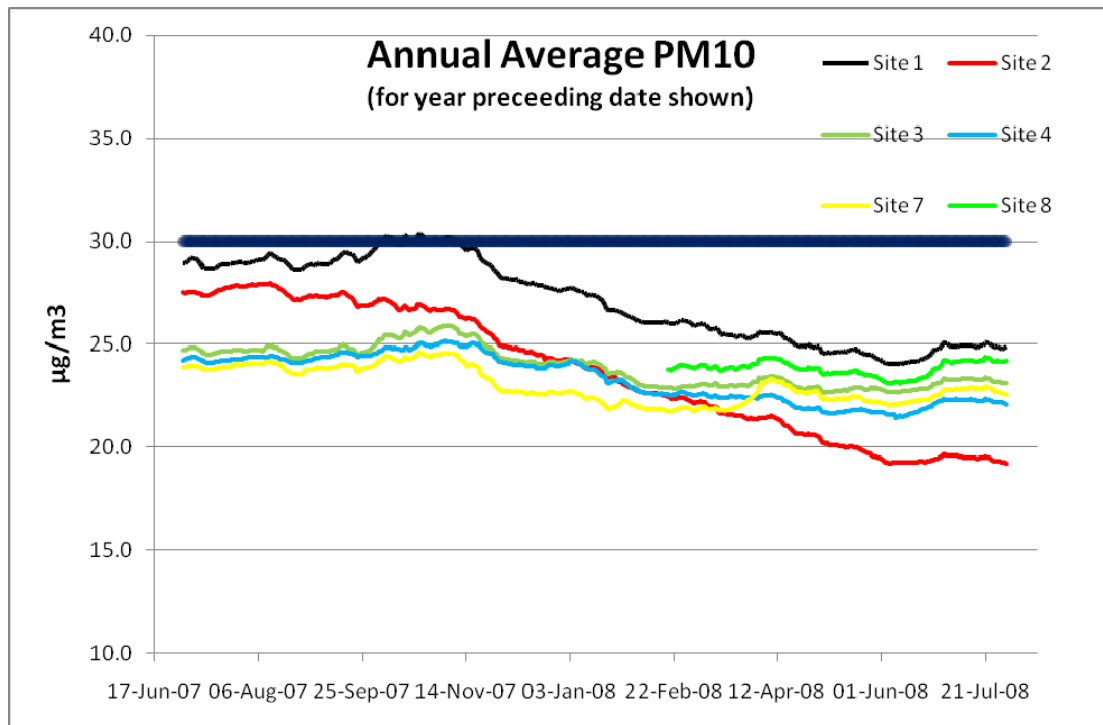


Figure 1. Rolling Annual Average PM10.

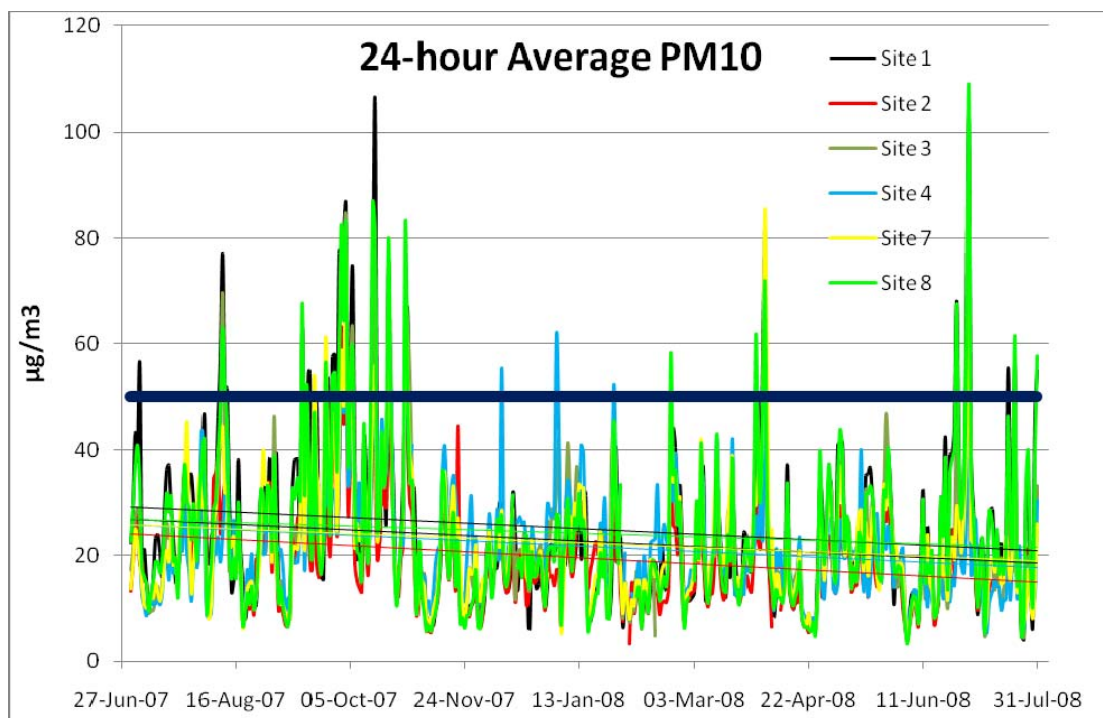


Figure 2. 24-hour Average PM10.

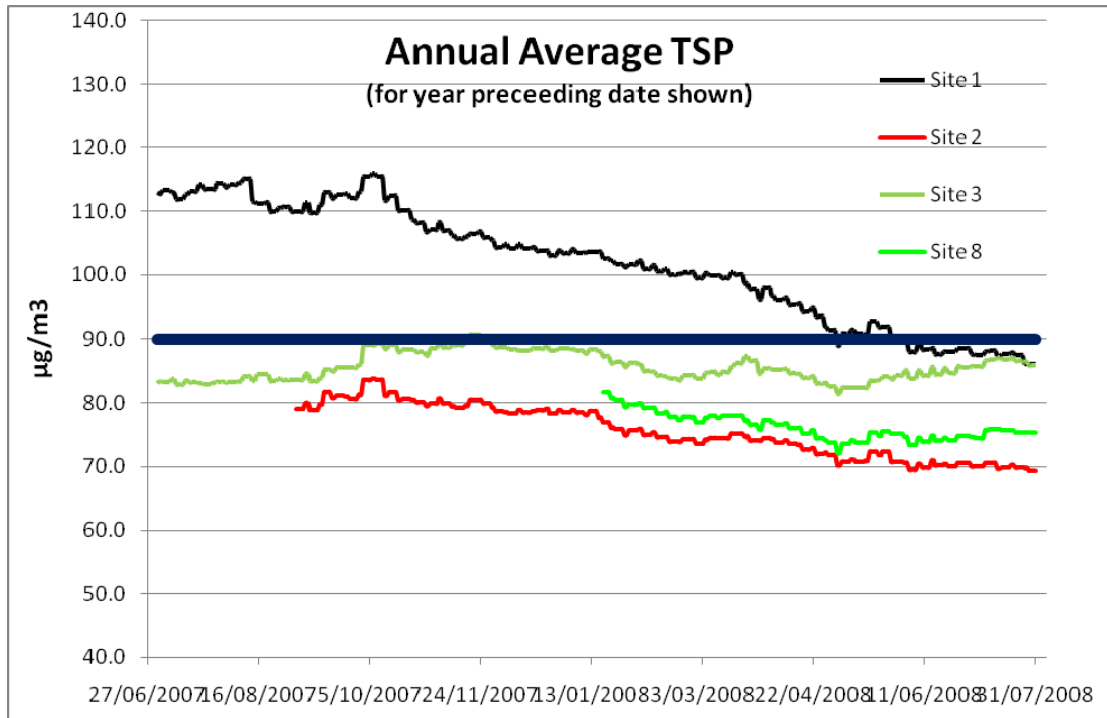


Figure 3. Rolling Annual Average TSP.

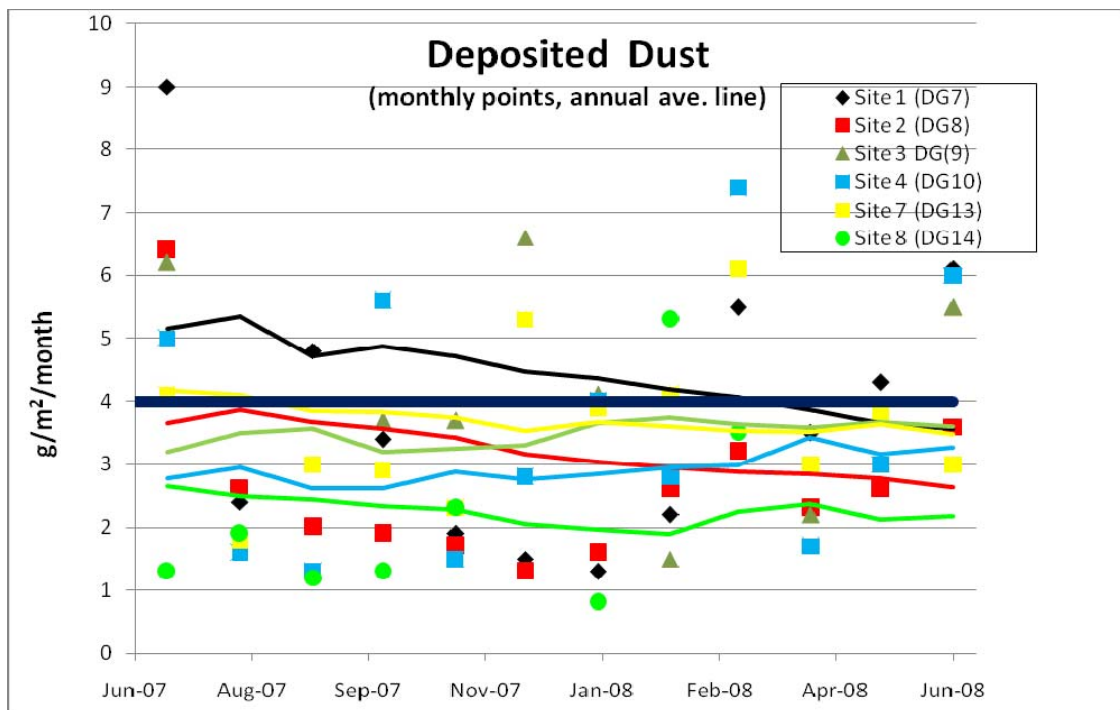


Figure 4. Deposited dust, monthly data and rolling annual average.

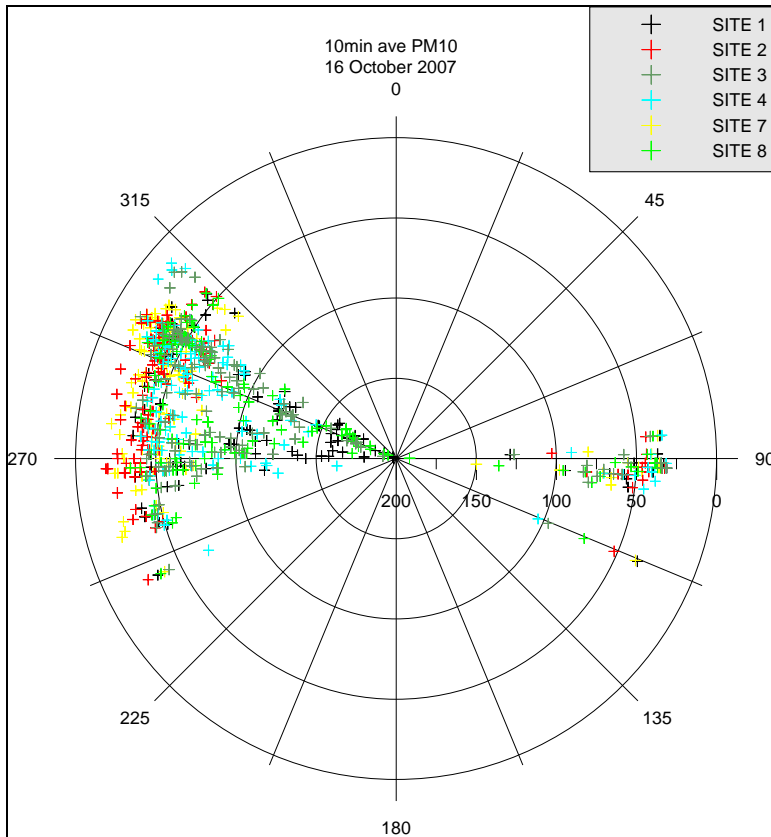


Figure 5. 10-minute average PM10 (24-hour ave. PM10 range: 39 to 106 $\mu\text{g}/\text{m}^3$)

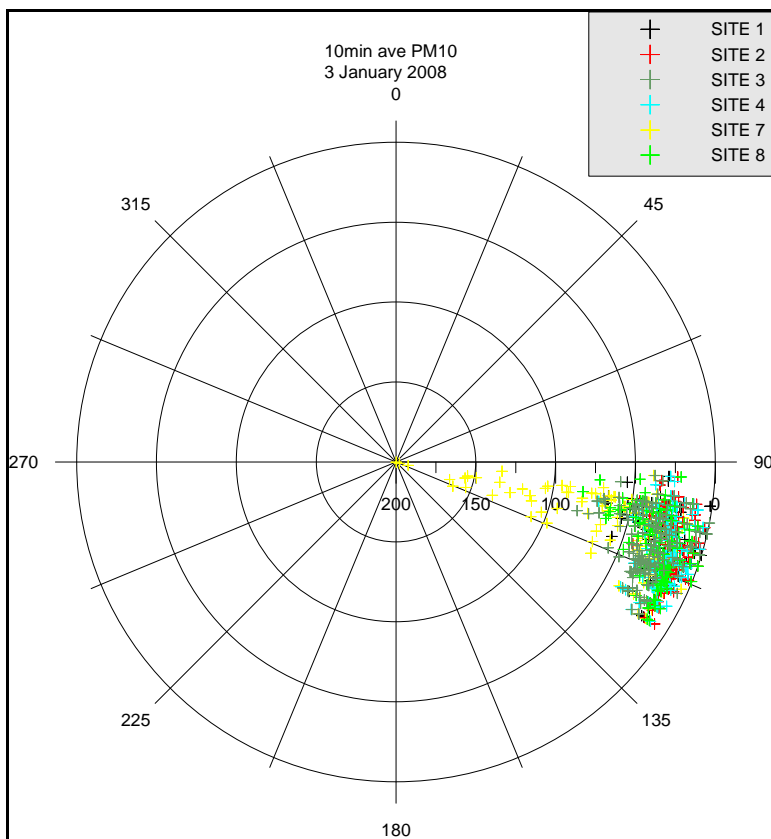


Figure 6. 10-minute average PM10 (24-hour ave. PM10 range: 17 to 62 $\mu\text{g}/\text{m}^3$)

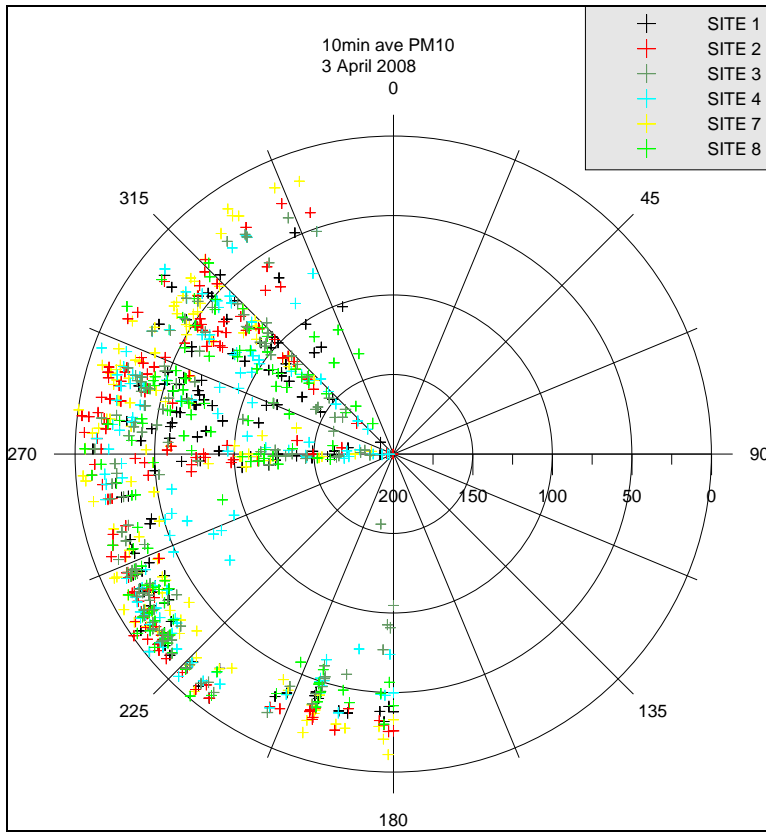


Figure 7. 10-minute average PM10 (24-hour ave. PM10 range: 47 to 86 $\mu\text{g}/\text{m}^3$)

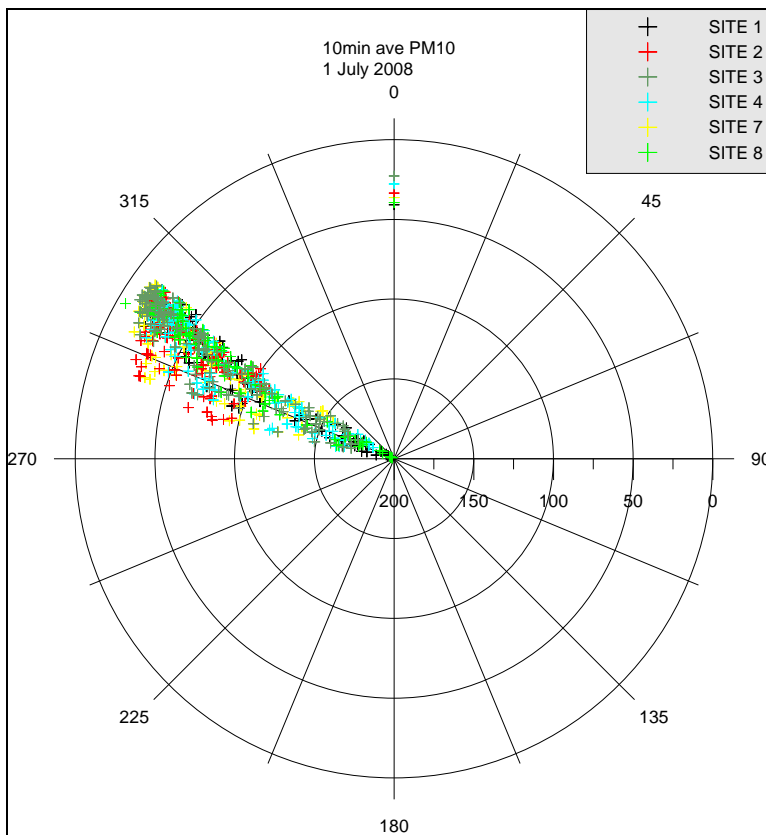
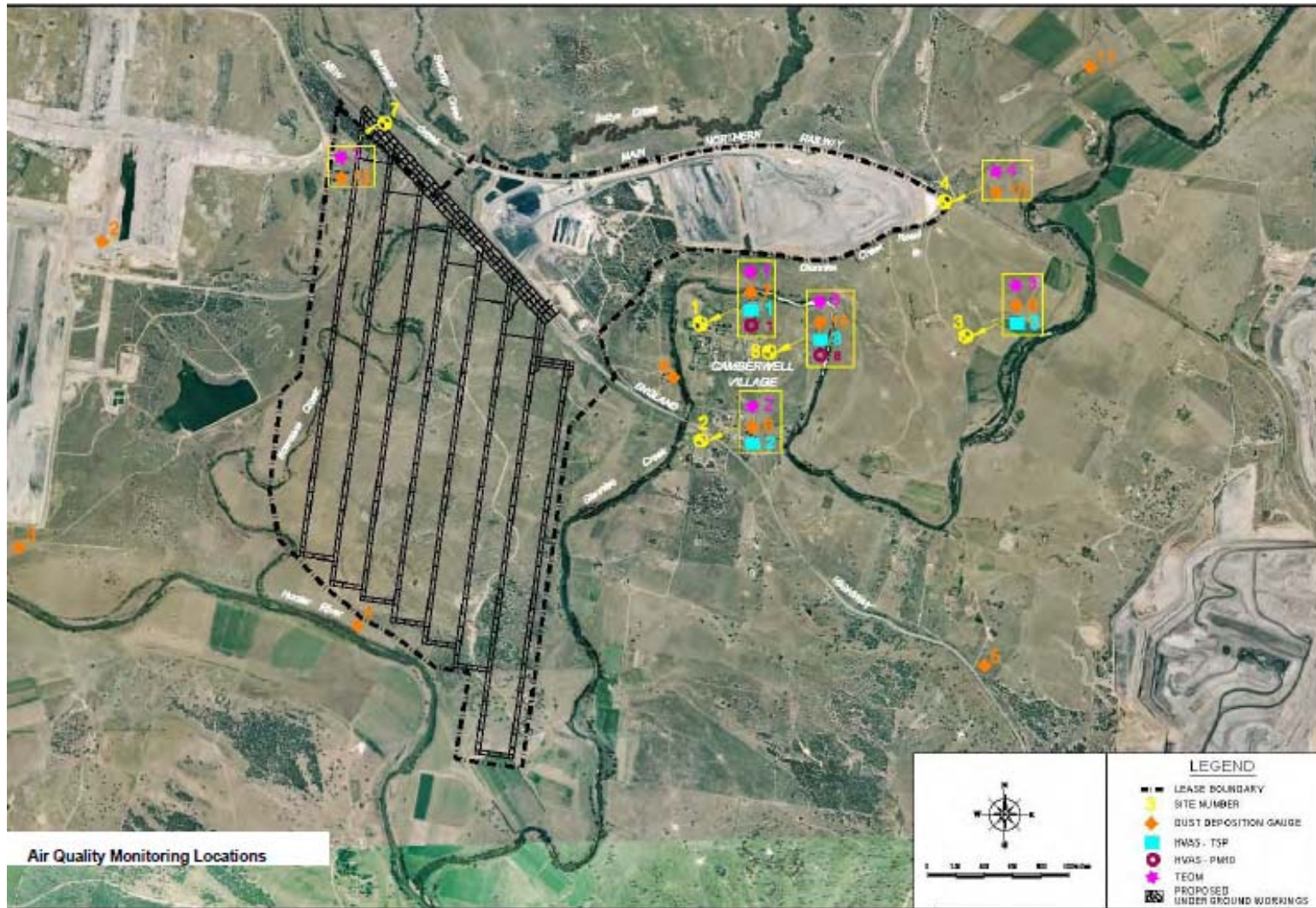


Figure 8. 10-minute average PM10 (24-hour ave. PM10 range: 52 to 109 $\mu\text{g}/\text{m}^3$)

ATTACHMENT 3 – MONITORING LOCATIONS



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