

**WAMBO COAL
ENVIRONMENTAL REPORTING
1 OCTOBER – 31 OCTOBER 2017**

10 November 2017

**Environment Protection Licence Number: 529
Licensee: Wambo Coal Pty Limited, PMB 1, Singleton NSW 2330
Premises: Wambo Coal Pty Limited, Jerrys Plains Road, Warkworth NSW 2330**

Monitoring Frequency: Once per month
 Sampling Method: Grab sample
 Limits: Nil

Date sampled: 23, 24 and 27 October 2017
 Date obtained: 23, 27 and 30 October 2017
 Date published: 10 November 2017

Table 1 - WCPL Surface and Mine Water Dam Results

Site	Date	pH	EC ($\mu\text{S}/\text{cm}$)	TSS (mg/L)	Comments
SW01	23 October	7.34	707	5	
	27 October	7.36	706	7	
SW02	23 October	7.48	890	<5	
	27 October	7.33	800	9	
SW03	23 October	7.64	1380	10	
	27 October	7.59	1340	6	
SW04	23 October				Dry
	27 October				Pool
SW05	23 October				Pool
	27 October				Pool
SW06	23 October				Dry
	27 October				Dry
SW07	23 October				Dry
	27 October				Pool
SW08	23 October				Dry
	27 October				No access
SW14	24 October	8.33	809	16	
SW15	23 October	9.17	7710	75	
	27 October	9.24	8020	94	
SW27	23 October				Pool
	27 October				Pool
SW31	24 October	9.29	6890	87	
SW32a	23 October	7.66	588	376	
	27 October	7.79	598	852	
SW38	24 October	9.17	8070	71	
SW39	23 October				Pool
	27 October				Pool
SW40	23 October				Pool
	27 October				Pool

Monitoring Frequency: Every 2 months
 Sampling Method: Grab sample
 Limits: Nil

Date sampled: 5, 6 & 16 October 2017
 Date obtained: 24 October 2017
 Date published: 10 November 2017

Table 2 - WCPL Groundwater Results

Site	Date	pH	EC ($\mu\text{S}/\text{cm}$)	Depth	Comments
P106	5 October				Dry
P109	6 October	6.5	816	6.07	
P114	5 October				Dry
P116	5 October	7.1	1667	6.77	
P202	6 October	7.6	382	8.30	
P206	6 October	7.8	2080	19.93	
P301	5 October	6.7	4760	15.96	
P315	5 October	6.2	285	8.25	
GW02	5 October	6.7	508	8.21	
GW08	5 October	7.9	1960	6.85	
GW09	5 October				Dry
GW11	5 October	6.9	587	6.33	
GW12	5 October				Insufficient Water
GW13	6 October	6.7	3320	6.01	
GW15	6 October	6.8	601	11.10	
GW16	5 October	7.6	998	10.57	
GW17	5 October	7.0	5330	11.92	
GW21	5 October				Dry
GW22	6 October	8.3	6950	35.40	
P1	16 October	6.68	7060	25.89	
P3	16 October				Removed
P11	16 October			31.21	Mud
P16	16 October	7.14	8010	8460	
P20	16 October	7.24	8110	8230	

Monitoring Frequency: Every 6 days
Sampling Method: AM15
Limits: 90 ug/m³ annual average limit

Date sampled: 3, 9, 15, 21 & 27 October 2017
Date obtained: 18 October & 8 November 2017
Date published: 10 November 2017

Table 3 - WCPL HVAS

Site	Date	TSP (UG/m3)
HV01	3 October	113
HV01	9 October	51.4
HV01	15 October	127
HV01	21 October	61.4
HV01	27 October	34
HV02	3 October	77.8
HV02	9 October	57.9
HV02	15 October	31.3
HV02	21 October	75.7
HV02	27 October	37.6
HV03	3 October	64.3
HV03	9 October	39.9
HV03	15 October	47.1
HV03	21 October	60.4
HV03	27 October	27.8
HV04	3 October	131
HV04	9 October	48.6
HV04	15 October	64.8
HV04	21 October	69.4
HV04	27 October	22.4

Monitoring Frequency: Once per month
Sampling Method: AM19
Limits: 4g / m² / month EPA Guideline

Date sampled: 17 October 2017
Date obtained: 17 October 2017
Date published: 10 November 2017

Table 4 - WCPL Depositional Dust Gauges

Site	Date	Ash (g/m ²)	Total Insoluble Matter (g/m ²)	AR/IS Ratio	Comment
D01	17 October	2.0	4.4	45.4	
D03	17 October	2.8	4.7	59.5	
D07	17 October	3.9	5.5	70.9	
D09	17 October	2.1	3.0	70	
D11	17 October	1.5	2.3	65.2	
D12	17 October	9.1	13.3	68.4	
D17	17 October	1.4	2.4	58.3	
D19	17 October	3.6	5.8	62.0	
D20	17 October	1.5	2.4	62.5	
D21	17 October	1.6	2.3	69.5	
D22	17 October	2.3	3.0	76.6	
D23	17 October	2.0	3.2	62.5	
D24	17 October	0.8	2.2	36.3	
D25	17 October	2.3	3.3	69.6	
D26	17 October	1.4	1.9	73.6	

Monitoring Frequency: Continuous
 Sampling Method: AM22
 Limits: Nil

Date sampled: Dust readings recorded daily
 Date obtained: The next day for the preceding day's result
 Date published: 10 November 2017

Table 5 - WCPL PM10 Results

Date of Run	PM01 - Coralie (Sentinex 19)		PM02 - Wambo Road (Caban) (Sentinex 20)		PM03 - Thelander (Sentinex 21)		PM04 - Muller (Sentinex 22)	
	PM10 24 Hour Result (ug/m ³)	YTD Average	PM10 24 Hour Result (ug/m ³)	YTD Average	PM10 24 Hour Result (ug/m ³)	YTD Average	PM10 24 Hour Result (ug/m ³)	YTD Average
1 October	29.1	19.5	30.6	19.5	20.1	13.7	27.6	16.4
2 October	40.2	19.6	36.7	19.5	37.7	13.8	38.2	16.4
3 October	22.1	19.6	18.4	19.5	16.1	13.8	24.2	16.5
4 October	31.9	19.6	26.3	19.6	22.4	13.8	24.3	16.5
5 October	22.6	19.6	18.8	19.6	18.6	13.8	19.5	16.5
6 October	31.3	19.7	34.1	19.6	23	13.9	17.1	16.5
7 October	26.5	19.7	20.4	19.6	26.3	13.9	23.6	16.5
8 October	23	19.7	18.3	19.6	17.8	13.9	20.8	16.5
9 October	12.9	19.7	12.5	19.6	8.7	13.9	9.2	16.5
10 October	32.6	19.7	25.2	19.6	28.3	14.0	24.8	16.5
11 October	36	19.8	25.8	19.6	24.7	14.0	34.8	16.6
12 October	17.1	19.8	13.8	19.6	11.6	14.0	14	16.6
13 October	33.2	19.8	28.2	19.6	29.4	14.0	32	16.7
14 October	21.9	19.87	16.2	19.6	16.6	14.0	21.9	16.7
15 October	24.3	19.8	10.7	19.6	11.9	14.0	13.9	16.7
16 October	25.6	19.9	14	19.6	18.6	14.1	16	16.7
17 October	37.2	19.9	22.5	19.6	25.2	14.1	20.8	16.7
18 October	24.9	19.9	20.1	19.6	18.3	14.1	18.4	16.7
19 October	26.1	20.0	23.3	19.6	16.8	14.1	26.7	16.7
20 October	14.6	19.9	9.8	19.6	9	14.1	10	16.7
21 October	18.1	19.9	18.2	19.6	17.3	14.1	17.6	16.7
22 October	22	19.9	16.8	19.6	14	14.1	17.1	16.7
23 October	14.5	19.9	10.7	19.5	11.3	14.1	12.3	16.7
24 October	13.3	19.9	12.5	19.5	9.5	14.1	11.3	16.7
25 October	20.7	19.9	19.5	19.5	13.2	14.1	11.7	16.6
26 October	24.9	19.9	24.8	19.5	24.4	14.1	27.2	16.7
27 October	14.5	19.9	41.3	19.6	12.1	14.1	11.3	16.7
28 October	17.2	19.9	15.1	19.6	15.8	14.1	19	16.7
29 October	18.7	19.9	15.4	19.6	12.2	14.1	13.6	16.7

Date of Run	PM01 - Coralie (Sentinex 19)		PM02 - Wambo Road (Caban) (Sentinex 20)		PM03 - Thelander (Sentinex 21)		PM04 - Muller (Sentinex 22)	
	PM10 24 Hour Result (ug/m ³)	YTD Average	PM10 24 Hour Result (ug/m ³)	YTD Average	PM10 24 Hour Result (ug/m ³)	YTD Average	PM10 24 Hour Result (ug/m ³)	YTD Average
30 October	22.8	19.9	16.2	19.5	18.6	14.1	14.6	16.7
31 October	14.3	19.9	12.2	19.5	12.7	14.1	11.3	16.6

Monitoring Frequency: Every blast
 Airblast Overpressure Limit: 120 dBL
 Ground Vibration Limit: 10mm/s

Date sampled: After blast event
 Date obtained: 9, 12, 18, 20 and 30 October 2017
 Date published: 10 November 2017

Table 6 - WCPL Blast Monitoring Results

Date & Time	ID	BM02 - Kelly		BM05 - Muller		BM07 - Thelander	
		dBL	mm/sec	dBL	mm/sec	dBL	mm/sec
2017-10-30 11:16:48	M_27WWA_198	99.7	0.11	104.3	1.65	100.9	1.05
2017-10-30 11:12:00	M_27WWA_200	94.8	0.05	107.2	0.20	99.3	0.23
2017-10-20 11:06:05	M_27_WWA_195	110.6	0.08	108.7	0.90	96.9	0.83
2017-10-20 10:57:30	M_27_WWA_197	96.9	0.05	102.7	0.46	97.7	0.41
2017-10-18 15:47:04	RP_1WWA_196	93.8	0.06	108.5	0.03	73.1	0.03
2017-10-12 10:06:29	RP_1WWA_192	103.9	0.09	95.9	0.04	104.2	0.04
2017-10-09 15:36:51	M_23WTA_190	109.0	0.12	104.8	1.02	88.1	1.09

Monitoring Frequency: Continuous
 Sampling Method: Site Meteorological Station
 Limits: Nil

Date sampled: Weather readings recorded daily
 Date obtained: 1 November 2017
 Date published: 10 November 2017

Table 7 - WCPL Meteorology

Date	Temperature (2m)			Temperature (10m)			Humidity			Solar Radiation		RAIN mm	Wind Speed		
	Min	Average	Max	Min	Average	Max	Min	Average	Max	Average	Max		Min	Average	Max
1 October	5.8	17.2	26.2	7.8	17.6	26	12.8	46.9	91.4	293.1	947.6	0	0	0.2	3.5
2 October	7.1	16.5	23.4	7.5	16.9	22.9	31.9	62.3	95.1	149.8	655.7	0	0.2	0.5	3.7
3 October	14.3	19.8	27.8	14.5	19.9	27.4	34.5	69.6	98.5	218.4	982.9	0.6	0.1	0.2	5
4 October	10.1	19.7	28.9	11.1	19.9	28.2	34.4	70.3	97.3	240.5	983.1	0	0	1.2	5.4
5 October	15.6	22.7	32	16.9	22.9	31.4	24.3	59.7	88.3	232.1	922.9	0	0.1	0.9	5.1
6 October	12.9	18.8	26.7	13.9	19.4	26.5	24.1	57.2	85.2	95.3	597.8	0	0.1	0.8	4.8
7 October	11.7	17.1	21.9	12.4	17	21.3	41.6	61.7	87.4	178.3	901	0	0.3	2.2	5.5
8 October	9.7	16	21.4	10.8	16.2	21.1	55.3	81.8	97.1	96	520.5	1.2	0.1	0.5	3
9 October	16.9	23.7	32	17.3	23.8	31.3	32.3	63.1	94.5	254.1	950.2	0.2	0.2	2.6	6.2
10 October	16.7	20	23.1	16.7	19.9	23.8	55.6	71.8	87.9	100.3	434.4	0	0.9	2.5	5.5
11 October	18.5	24.1	33.1	18.5	24	32.8	28.8	63.5	84.4	237.9	916.3	0	0.4	0.3	3.7
12 October	15.3	23.8	30.9	17.1	23.9	30.2	15.4	55	89.8	272	1004.2	0.8	0.2	3.4	7
13 October	12	20.5	30.7	12.9	20.6	30.3	20.4	61.9	90.3	281.2	963.3	0	0.1	0.2	5.3
14 October	15.7	18.2	21.5	15.7	18.2	20.8	59.8	79.6	97.1	61.6	859.9	9	1	2.6	5.1
15 October	15	18.8	24.4	15.5	18.8	23.9	52.4	76.5	98.3	151.5	964.3	11.8	0.7	2.3	6
16 October	11.6	18.1	24.3	12.1	18.1	23.7	38	68.2	98.2	273.2	1057	0	0.3	2.5	5.9
17 October	13.8	19.9	26.4	14.4	19.8	25.5	40.2	64.8	86.9	272.4	1128.3	0	0.6	3.5	6.8
18 October	15.7	21.5	27.7	16.1	21.3	27	37.2	63.4	91.4	302.7	1018.6	0.2	0.5	3.1	5.8
19 October	11.3	22.1	32.2	12.1	22.3	31.8	21.1	57.2	96.5	311.2	971.4	0	0	0.6	4.2
20 October	14.3	17.5	20.2	14.4	17.7	20.2	69.8	89.4	97.1	44.6	290	24.6	0.2	0.4	4.4
21 October	11.1	15.9	21.2	11.4	15.9	20.8	37.3	65.3	92.2	208.6	1095.9	0.2	0.1	2	4.7
22 October	8.8	16.2	23.4	9.4	16.2	22.8	33.8	68.6	97.9	243.2	1032.7	0	0.1	0.5	5.2
23 October	11.5	16.4	21.9	11.5	16.2	21.6	48.6	76.5	99	241.9	1191.7	20.8	0.4	1.5	4.6
24 October	8.8	20.5	30	9.6	20.7	29.7	24.4	57.9	98.7	335.1	1037.6	0.6	0	1.8	5.1
25 October	14.7	23.3	31.4	15.5	23.6	31	21.6	47	84.5	201.7	1073.4	0	0.1	1.8	6
26 October	11.6	21.5	31.3	11.5	21.6	30.6	40.6	70.3	100	306.9	1004.9	32	0.1	1.3	9
27 October	12	18.5	25.1	11.9	18.6	24.7	50.8	79.6	100	154.6	1153	1.6	0.1	0.2	4.2
28 October	14.1	21.7	29.3	14.9	21.9	29.2	34.8	70.5	99.2	251.2	1082.5	0	0.1	1	4.9
29 October	16.3	25.4	33.4	17.2	25.9	33.3	26.7	51.2	91.9	297.4	1060.2	0	0.1	2.1	4.8
30 October	13.4	24.9	36.3	14.3	25.2	36	14.8	45.9	96.8	328.7	1050.5	0	0	2.9	9.9
31 October	11.8	17.2	23.1	12.5	17.2	22.6	25.2	40.6	76.5	306.6	1270.2	0	0.1	1.5	6.7
MONTH	5.8	19.9	36.3	7.5	20.0	36	12.8	64.4	100	223.9	1270	103.6	0	1.5	9.9

