

**WAMBO COAL PTY LIMITED**

**MONTHLY ENVIRONMENTAL MONITORING REPORT**

**July 2016**

**Table 1 - Monthly Surface Water Results**

Sample Location	pH	EC (µS/cm)	TSS (mg/L)	TDS (mg/L)	Oil & Grease (mg/L)	Temp (°C)	Comments
<b>WOLLOMBI BROOK</b>							
SW01	7.6	842	11			11.8	
SW03	8.1	823	<5			10.4	
SW02	7.7	818	10			11.8	
SW40	7.7	818	8			11.4	
<b>NORTH WAMBO CREEK</b>							
SW04							Dry
SW27a							Pool
SW32a							Pool
SW05							Pool
<b>SOUTH WAMBO/STONY CREEK</b>							
SW06							Pool
SW07	7.7	<b>799</b>	7			11.9	
SW08							Dry
<b>WATERFALL CREEK</b>							
SW39							Pool
<b>MINE WATER DAMS</b>							
SW12	8.9	3260				10.8	
SW14							No access
SW15	9.0	5010				11.1	Dry
SW20							No access
SW29							No access
SW30							No access
SW31	9.1	3820				10.6	
SW38	9.0	4770				11.4	

**Note:** Figures in bold fall outside trigger levels.

**Table 2 - Ground Water Results**

Sample Location	pH	EC ( $\mu\text{S/cm}$ )	Depth to Water (m)	Temp ( $^{\circ}\text{C}$ )	Comments
GW02					No groundwater monitoring scheduled for July.
GW11					
P106					
P109					
P110					
P111					
P114					
P116					
P202					
P206					
P301					
P315					
GW12					
GW13					
GW14					
GW15					
GW16					
GW17					
GW18					
GW19					
GW21					
GW22					
P1*					
P12*					
P13*					
P15*					
P16*					
P17*					
P18*					
P20*					

**Note:** All depths measured to top of casing, except United bores which are to ground. Figures in bold are outside trigger levels listed in Table 5 of the Ground Water Monitoring Programme (GWMP), which is part of the Site Water Management Plan.

\* Represents data that is provided on a quarterly basis. The results are to be updated once available.

**Table 3 - Dust Deposition Results**

Site	Insoluble Solids (IS) (g/m <sup>2</sup> .month)	Ash Residue (AR) (g/m <sup>2</sup> .month)	IS:AR Ratio	IS YTD Average (g/m <sup>2</sup> .month)	AR YTD Average (g/m <sup>2</sup> .month)
D01*	11.6	2.5	22	3.7	2.3
D03*	31.2	13.3	43	2.8	2.0
D07*	5.0	2.5	50	<b>4.7</b>	2.7
D09*	4.4	2.0	45	2.6	1.6
#D11	2.4	1.1	46	3.3	2.6
#D12	3.1	1.4	45	3.3	2.1
#D17	0.5	0.2	40	1.4	0.9
D19	0.8	0.5	63	2.5	1.7
D20	0.9	0.5	56	1.6	1.0
#D21	0.4	0.3	75	1.7	1.3
#D22	1.1	0.5	45	2.2	1.5
D23*	4.3	1.7	40	1.4	1.0
#D24	1.0	0.3	30	1.0	0.6
#D25	0.9	0.4	44	2.8	2.1
D26	0.7	0.2	29	2.1	1.2

**Note:**

Results in **bold** are YTD average above 4g/m<sup>2</sup>/month

Results # are dust gauges not on WCPL owned land. DD gauges on Wambo Coal land and above criteria level are not considered non-compliance.

\* Contaminated sample

**Table 4 - HVAS Results**

<b>Date of Run</b>	<b>HV01 - Coralie TSP (<math>\mu\text{g}/\text{m}^3</math>)</b>	<b>HV02 - Caban TSP (<math>\mu\text{g}/\text{m}^3</math>)</b>	<b>HV03 - Thelander TSP (<math>\mu\text{g}/\text{m}^3</math>)</b>	<b>HV04 - Muller TSP (<math>\mu\text{g}/\text{m}^3</math>)</b>
4/07/2016	23.3	73.4	17.1	26.5
10/07/2016	22.2	26	21.2	42.7
16/07/2016	45.2	28.8	34.1	28.9
22/07/2016	16.9	24.1	6.7	7.7
28/07/2016	13.3	37.4	8.3	5.2
<b>Monthly Mean</b>	24.2	37.9	17.5	22.2
<b>Yearly Mean</b>	43.3	50.0	38.5	63.8

**Table 5 - Blast Results**

Peabody Wambo Blasting Results 2016													
Peabody ENERGY				Homestead (BM01)		Kelly (BM02)		Muller (BM05)		Harris (BM03)		Thelander (BM07)	
Blast Number	Date	Time	Blast ID	Overpressure dB(L)	Vibration (mm/sec)	Overpressure dB(L)	Vibration (mm/sec)	Overpressure dB(L)	Vibration (mm/sec)	Overpressure dB(L)	Vibration (mm/sec)	Overpressure dB(L)	Vibration (mm/sec)
46	4/07/2016	15:10:27	M_24RCA_25	103.9	0.03	100	0.04	107.4	0.39	105.6	0.03	101.8	0.35
47	7/07/2016	11:07:25	M_19WTA_30	97.9	0.19	92.1	0.54	104.7	0.54	91.2	0.13	100.8	0.65
48	11/07/2016	15:04:43	M_16WMA_23	99.1	0.12	92.3	0.09	98.2	0.42	99.1	0.12	94.7	0.54
49	19/07/2016	15:03:33	M_24RCA_26	99.1	0.03	92.6	0.04	98.3	0.18	94	0.02	89.8	0.13
50	27/07/2016	15:04:51	M21WTA_35	114.4	0.12	101.4	0.1	103.5	0.7	104.5	0.07	102	0.67
51	29/07/2016	15:08:33	M_18WTA_32	108.6	0.07	101.9	0.05	101	0.22	91.8	0.05	96.7	0.24

- \* Trigger unit SMS unable to be received by monitoring unit. Blast below monitoring unit vibration trigger threshold
- \*\* Hardware failure
- \*\*\* Software failure

**Table 6 - PM<sub>10</sub> Results**

Date	PM01 - Coralie (Sentinex 19)		PM02 - Wambo Road (Caban) (Sentinex 20)		PM03 - Thelander (Sentinex 21)		PM04 - Muller (Sentinex 22)	
	PM10 24 Hour Result (ug/m <sup>3</sup> )	YTD Average	PM10 24 Hour Result (ug/m <sup>3</sup> )	YTD Average	PM10 24 Hour Result (ug/m <sup>3</sup> )	YTD Average	PM10 24 Hour Result (ug/m <sup>3</sup> )	YTD Average
1/07/2016	9.60	15.58	14.60	18.68	6.60	15.36	10.40	18.41
2/07/2016	6.30	15.53	9.80	18.63	5.00	15.30	5.40	18.34
3/07/2016	6.70	15.48	13.00	18.60	5.60	15.25	5.20	18.27
4/07/2016	7.60	15.44	12.80	18.57	5.00	15.19	5.40	18.20
5/07/2016	8.60	15.40	21.60	18.58	7.70	15.15	12.00	18.16
6/07/2016	8.30	15.36	7.70	18.52	7.00	15.11	8.10	18.11
7/07/2016	4.30	15.30	4.80	18.45	3.90	15.05	4.20	18.04
8/07/2016	6.30	15.26	7.40	18.39	5.60	15.00	7.10	17.98
9/07/2016	7.00	15.21	7.30	18.33	6.10	14.95	6.80	17.92
10/07/2016	7.70	15.17	6.70	18.27	6.40	14.91	8.80	17.87
11/07/2016	11.70	15.15	10.30	18.23	8.90	14.88	14.20	17.85
12/07/2016	9.90	15.13	15.00	18.22	8.50	14.84	9.70	17.81
13/07/2016	7.30	15.09	12.40	18.19	6.60	14.80	6.10	17.75
14/07/2016	9.90	15.06	9.10	18.14	7.20	14.76	7.50	17.70
15/07/2016	8.20	15.02	13.30	18.12	6.60	14.72	6.80	17.65
16/07/2016	9.90	15.00	15.00	18.10	11.50	14.70	12.80	17.62
17/07/2016	16.40	15.00	12.90	18.07	14.70	14.70	13.30	17.60
18/07/2016	10.90	14.98	6.70	18.02	10.80	14.68	13.60	17.58
19/07/2016	9.90	14.96	10.50	17.98	6.70	14.64	7.20	17.53
20/07/2016	9.60	14.93	13.30	17.96	7.50	14.61	7.90	17.48
21/07/2016	5.20	14.88	4.40	17.89	4.30	14.56	5.00	17.42
22/07/2016	6.90	14.84	4.10	17.82	5.20	14.51	6.00	17.36
23/07/2016	7.90	14.81	9.60	17.78	6.00	14.47	6.30	17.31
24/07/2016	9.40	14.78	11.30	17.75	8.20	14.44	8.10	17.26
25/07/2016	7.70	14.75	7.30	17.70	6.60	14.40	6.70	17.21
26/07/2016	7.50	14.71	10.50	17.67	6.90	14.36	6.60	17.16
27/07/2016	7.70	14.68	10.90	17.63	7.00	14.33	6.50	17.11
28/07/2016	7.40	14.64	12.50	17.61	6.40	14.29	6.40	17.06
29/07/2016	7.00	14.61	10.90	17.58	5.80	14.25	5.70	17.01
30/07/2016	6.30	14.57	13.70	17.56	5.30	14.21	4.70	16.95

**Table 7 - Meteorological Data**

Date	Temperature (2m)			Temperature (10m)			Temperature Inversion			Humidity			Solar Radiation			Rain	Wind Speed		
	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max	mm	Min	Avg	Max
01/07/16	5.0	11.3	15.6	6.7	11.8	15.6	-3.3	6.6	21.5	44.4	63.5	86.5	68.3	315.4	421.3	1.1	0.5	3.7	5.8
02/07/16	-0.6	7.8	16.9	0.6	9.2	16.7	-8.5	17.6	50.7	47.8	79.5	97.5	66.5	332.5	444.7	0.0	0.0	1.3	3.6
03/07/16	-1.7	6.2	16.0	-1.0	7.5	16.0	-8.0	16.1	42.6	45.6	81.9	98.4	75.0	338.7	464.5	0.0	0.0	1.3	4.8
04/07/16	-2.2	6.8	16.1	-1.5	7.7	16.4	-10.4	12.1	30.5	49.4	82.9	98.4	23.0	316.5	456.6	0.0	0.0	1.0	5.2
05/07/16	7.8	11.2	16.9	8.7	11.7	16.8	-2.7	6.3	16.8	56.5	84.4	97.9	31.8	293.9	409.2	8.1	0.0	2.5	7.3
06/07/16	8.7	10.8	13.1	9.1	11.3	13.7	2.8	5.7	8.8	72.0	78.0	84.3	36.8	290.4	416.1	0.0	0.8	4.2	6.7
07/07/16	11.0	14.5	18.2	12.5	15.1	18.4	-1.4	8.2	23.9	62.3	76.5	88.0	39.9	307.9	431.4	0.0	0.1	2.2	5.0
08/07/16	10.7	13.2	15.6	11.6	14.0	15.9	1.3	9.0	22.3	82.8	90.9	97.8	11.9	303.1	433.7	1.8	0.0	0.7	3.2
09/07/16	5.7	12.4	18.9	7.8	13.1	18.7	-2.8	9.9	29.4	49.8	84.3	98.2	-1.9	254.9	443.6	0.2	0.0	0.8	3.5
10/07/16	3.9	10.7	18.4	5.0	11.7	18.4	-2.8	13.2	30.4	62.0	87.9	98.6	40.2	332.7	485.5	0.0	0.0	0.7	2.6
11/07/16	5.9	14.6	21.3	7.0	15.4	21.6	-0.2	9.9	30.1	47.4	75.4	99.0	65.4	351.7	490.4	0.2	0.0	2.6	7.8
12/07/16	14.0	16.7	18.6	14.5	17.2	18.8	1.4	6.5	9.3	35.6	54.4	76.3	86.7	338.9	448.1	0.0	3.5	5.3	8.3
13/07/16	3.1	10.6	14.7	5.4	11.4	14.7	-1.4	10.6	41.7	29.4	49.6	81.1	125.1	709.0	99999.9	0.0	0.2	3.6	7.8
14/07/16	-0.9	7.7	14.9	0.1	8.6	15.0	-5.6	11.6	40.5	34.5	62.7	91.8	97.2	369.4	509.8	0.0	0.0	2.2	4.9
15/07/16	-3.4	5.3	15.3	-2.3	6.5	15.5	-5.9	15.3	40.4	40.4	76.4	96.3	113.3	382.9	529.9	0.0	0.0	0.8	3.1
16/07/16	-0.7	9.5	18.8	0.5	10.2	18.7	-2.7	8.2	38.2	55.2	84.1	97.8	82.0	383.9	520.9	0.4	0.0	1.0	3.8
17/07/16	10.4	14.2	18.0	11.6	14.9	18.0	-4.9	8.1	30.3	73.4	89.7	98.0	38.7	350.2	467.5	0.4	0.0	0.9	2.9
18/07/16	10.3	16.1	23.6	11.9	17.0	23.7	-2.4	10.6	44.9	52.0	81.6	97.7	112.7	322.7	452.7	0.0	0.0	1.7	5.3
19/07/16	11.8	18.0	23.3	13.2	18.8	23.2	-3.5	9.8	25.7	56.6	78.3	96.8	-1.4	227.6	433.3	3.7	0.0	1.9	5.4
20/07/16	13.1	16.3	18.2	14.0	16.9	18.5	2.7	7.2	14.7	90.8	96.8	98.0	0.5	326.4	435.1	16.1	0.0	1.0	3.0
21/07/16	9.7	14.9	19.0	10.5	15.8	19.2	-0.5	10.5	25.2	72.6	87.8	98.0	57.0	317.6	450.8	0.0	0.0	0.8	2.8
22/07/16	9.1	17.6	24.4	9.8	18.2	24.8	-2.4	7.9	23.8	59.7	80.9	98.8	15.6	305.1	462.8	0.4	0.0	2.7	7.2
23/07/16	9.5	16.1	24.1	10.1	16.6	24.8	0.1	6.8	12.2	34.0	48.2	67.5	-1.2	294.8	437.3	0.0	0.4	4.8	10.3
24/07/16	2.4	7.3	11.7	3.8	8.4	12.0	0.6	13.0	57.7	42.6	71.7	93.8	84.0	358.6	494.7	0.0	0.0	1.3	5.5
25/07/16	7.7	11.9	15.6	8.9	12.4	15.7	-2.7	6.2	22.5	46.4	61.3	77.4	65.0	329.2	466.3	0.0	1.1	4.7	7.8
26/07/16	9.3	13.0	18.2	9.9	13.6	18.2	-1.5	7.0	27.7	43.1	58.2	69.1	-2.7	265.4	455.4	0.0	0.8	4.7	9.0
27/07/16	5.5	13.0	18.4	8.3	13.9	18.4	-0.6	11.6	44.5	38.1	59.6	84.6	-0.6	313.6	477.5	0.0	0.4	3.1	8.0
28/07/16	2.6	11.1	17.5	4.0	11.9	17.5	-4.8	10.0	39.3	47.8	69.6	96.3	73.0	326.7	477.0	0.0	0.0	2.8	5.8
29/07/16	0.4	9.8	15.7	2.7	10.5	15.8	-3.9	8.6	42.4	46.6	68.7	93.3	88.1	330.4	457.2	0.0	0.2	3.1	6.8
30/07/16	-0.4	9.3	18.7	0.8	10.2	18.7	-6.4	10.7	28.1	48.8	77.8	97.6	12.0	332.2	493.0	0.0	0.0	0.9	4.0
31/07/16	-0.4	9.3	18.7	0.8	10.2	18.7	-6.4	10.7	28.1	48.8	77.8	97.6	12.0	332.2	493.0	0.0	0.0	0.9	4.0
MONTH	-3.4	11.8	24.4	-2.3	12.6	24.8	-10.4	9.8	57.7	29.4	74.9	99.0	-2.7	334.0	99,999.9	32.1	0.0	2.2	10.3



