

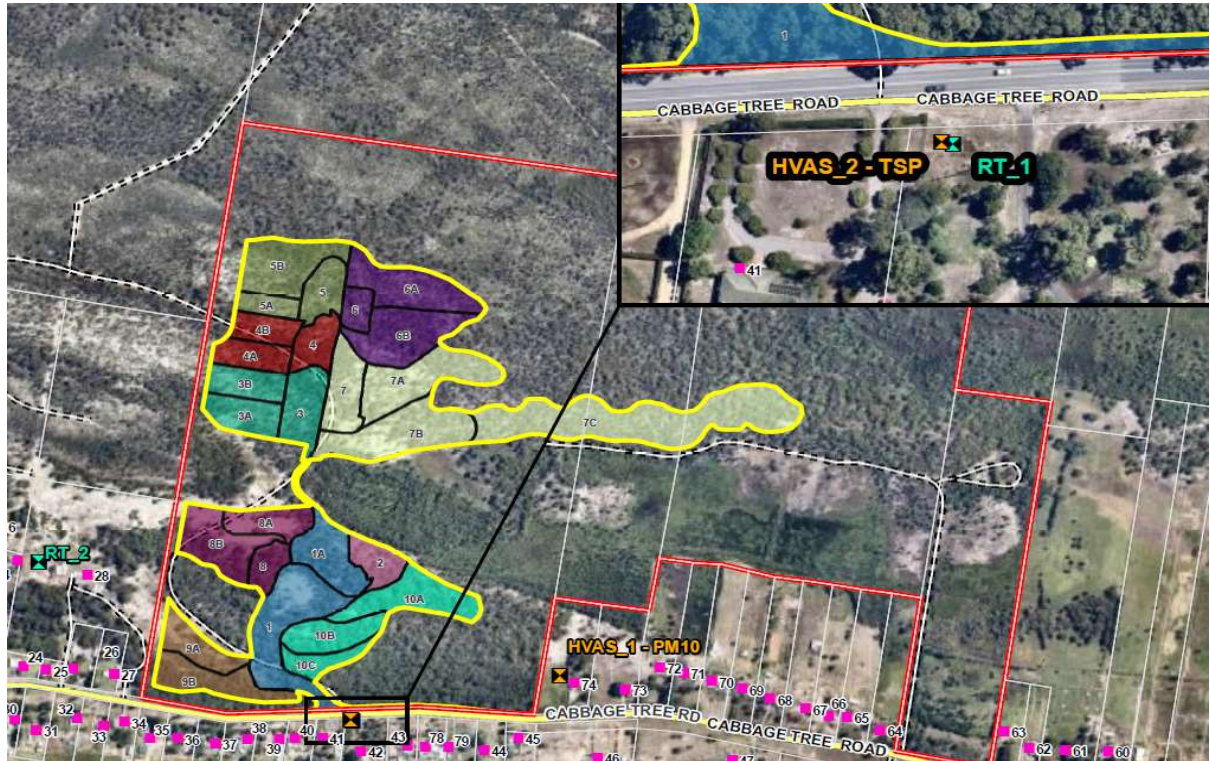
Williamstown Sand Syndicate Pty Ltd

Cabbage Tree Road Sand Quarry

282B (398) Cabbage Tree Road, Williamstown NSW

Air Quality Monitoring Network Results

Sample Locations



Air Quality Criteria

7. The Applicant must ensure that all reasonable and feasible avoidance and mitigation measures are employed so that particulate matter emissions generated by the development do not cause exceedances of the criteria in Table 3 at any residence on privately-owned land.

Table 3: Air quality criteria

Pollutant	Averaging Period	Criterion
Particulate matter < 10 µm (PM ₁₀)	Annual	a, c 25 µg/m ³
Particulate matter < 10 µm (PM ₁₀)	24 hour	b 50 µg/m ³
Total suspended particulates (TSP)	Annual	a, c 90 µg/m ³

Notes to Table 4:

a Cumulative impact (ie increase in concentrations due to the development plus background concentrations due to all other sources).

b Incremental impact (ie increase in concentrations due to the development alone, with zero allowable exceedances of the criteria over the life of the development).

c Excludes extraordinary events such as bushfires, prescribed burning, dust storms, sea fog, fire incidents or any other activity agreed by the Secretary.

d "Reasonable and feasible avoidance measures" includes, but is not limited to, the operational requirements in conditions 8 and 9 to develop and implement an air quality management system that ensures operational responses to the risks of exceedance of the criteria.

Air Quality Monitoring Network Results

Beta Attenuation Monitoring (BAM) Real-Time Monitoring - updated at end of month

Month	RT1				RT2				Comments
	Minimum	Average	Median	Maximum	Minimum	Average	Median	Maximum	
Jul-19	2.03	14.22	13.68	41.73	0.20	13.08	13.23	33.74	
Aug-19	-996.95	17.99	14.26	986.46	0.20	16.57	13.02	313.63	- Construction commenced 26 August - Machine error at RT1 - insects - Machine error at RT2 - air conditioning not working
Sep-19	6.27	23.92	16.47	194.14	3.23	20.29	14.24	84.62	- Regional dust storm event on weekend
Oct-19	0.23	21.72	16.16	182.65	0.32	25.45	17.92	146.94	- BAM service visit and calibration 2/10/19
Nov-19	2.27	39.32	25.84	377.49	0.32	42.31	28.86	285.84	- Regional bushfire smoke impacts on air quality - BAM units cleaned 21/11/19 - Machine error on RT2, average corrected with RT1 data
Dec-19	2.58	33.93	27.24	141.87	0.29	35.26	27.40	297.89	- Regional bushfire smoke impacts on air quality - Machine error on RT2, average corrected with RT1 data, service technician booked.
Jan-20	0.00	107.82	36.92	442.82	2.94	33.60	28.56	132.98	- Machine error on RT1, average corrected with RT2 data. Service technician booked. - Power lost to both units during storm 28/01/2020
Feb-20	0.26	15.37	13.14	97.30	0.26	13.89	12.86	102.77	- Machine error on RT1, average corrected with RT2 data. Service technician booked.
Mar-20	0.23	19.21	13.00	137.93	0.87	16.08	13.10	187.47	- Machine error on RT1, average corrected with RT2 data. - RT1 serviced on 4/3/2020.
Apr-20	0.23	14.72	12.71	62.59	0.60	18.97	16.02	109.19	
May-20	-3.59	11.95	7.86	193.85	0.23	11.88	10.52	143.45	- Machine error on RT1, average corrected with RT2 data. - Calibration on BAM and HVAS units
Jun-20	-3.62	1.97	1.14	35.09	0.29	10.94	10.24	37.29	- Machine error on RT1, average corrected with RT2 data.
Jul-20	-3.62	1.32	0.50	68.88	-3.62	3.38	2.14	68.88	- Machine error on RT1, average corrected with RT2 data.

HVAS 1 (PM10) paddock			HVAS 2 (TSP) sampson		
Sample Date	Concentration ($\mu\text{g}/\text{m}^3$)	Comment	Sample Date	Concentration ($\mu\text{g}/\text{m}^3$)	Comment
14-Sep-19	22.7		14-Sep-19	34.8	
17-Sep-19	17.3		17-Sep-19	31.6	
23-Sep-19	-	- Machine error. Power loss	23-Sep-19	-	- Machine error. Power loss
29-Sep-19	-	- Machine error. Power loss	29-Sep-19	-	- Machine error. Power loss
05-Oct-19	14.0		05-Oct-19	22.7	
11-Oct-19	5.9		11-Oct-19	11.0	
17-Oct-19	11.5	- Machine error. Partial sample only	17-Oct-19	89.0	
23-Oct-19	15.0		23-Oct-19	44.9	
29-Oct-19	51.1		29-Oct-19	81.5	
04-Nov-19	9.6		04-Nov-19	22.9	
10-Nov-19	21.4		10-Nov-19	50.5	
16-Nov-19	29.4	- Regional bushfire smoke impacts on air quality	16-Nov-19	41.4	
22-Nov-19	85.0	- Regional bushfire smoke impacts on air quality	22-Nov-19	129.4	- Regional bushfire smoke impacts on air quality
28-Nov-19	58.7	- Regional bushfire smoke impacts on air quality	28-Nov-19	107.0	- Regional bushfire smoke impacts on air quality
04-Dec-19	66.8		04-Dec-19	134.0	
10-Dec-19	105.0		10-Dec-19	105.0	
16-Dec-19	32.1		16-Dec-19	60.1	
22-Dec-19	12.7		22-Dec-19	67.1	
28-Dec-19	23.6		28-Dec-19	34.3	
03-Jan-20	-	- Machine error. No data until date reset 10/01/2020	03-Jan-20	-	- Machine error. No data until date reset 10/01/2020
09-Jan-20	-	- Machine error. No data until date reset 10/01/2020	09-Jan-20	-	- Machine error. No data until date reset 10/01/2020
15-Jan-20	17.7		15-Jan-20	36.8	
21-Jan-20	40.0		21-Jan-20	106.0	
27-Jan-20	29.1		27-Jan-20	53.0	
02-Feb-20	37.4		02-Feb-20	79.5	
08-Feb-20	16.5		08-Feb-20	31.4	
14-Feb-20	16.6		14-Feb-20	32.0	
20-Feb-20	17.5		20-Feb-20	48.3	
26-Feb-20	15.0		26-Feb-20	107.0	
03-Mar-20	20.9		03-Mar-20	46.2	
09-Mar-20	9.5		09-Mar-20	18.9	
15-Mar-20	11.4		15-Mar-20	21.3	
21-Mar-20	25.8		21-Mar-20	62.8	
27-Mar-20	12.5		27-Mar-20	27.0	
02-Apr-20	9.6		02-Apr-20	66.7	
08-Apr-20	7.8		08-Apr-20	23.2	
14-Apr-20	13.4		14-Apr-20	64.3	
20-Apr-20	19.4		20-Apr-20	71.8	
26-Apr-20	21.5		26-Apr-20	48.6	
02-May-20	35.1		02-May-20	110.0	
08-May-20	9.5		08-May-20	24.4	
14-May-20	13.1		14-May-20	27.5	
20-May-20	5.4		20-May-20	18.5	
26-May-20	10.9		26-May-20	18.7	
01-Jun-20	15.2		01-Jun-20	27.3	
07-Jun-20	4.1		07-Jun-20	11.4	
13-Jun-20	14.9		13-Jun-20	27.8	
19-Jun-20	4.5		19-Jun-20	28.5	
25-Jun-20	14.9		25-Jun-20	39.4	
01-Jul-20	7.0		01-Jul-20	35.0	
07-Jul-20	11.4		07-Jul-20	30.4	
13-Jul-20	6.4		13-Jul-20	16.1	
19-Jul-20	6.3		19-Jul-20	20.7	
25-Jul-20	4.9		25-Jul-20	13.6	
31-Jul-20	10.5		31-Jul-20	23.2	

Meteorological Data Sourced From:

Station ID: 061078
Name: WILLIAMTOWN RAAF
Lat: -32.79 Long: 151.84
Height: 7.5 m

<http://www.bom.gov.au/products/IDN60801/IDN60801.94776.shtml>