



Three Kings Quarry

Air Quality Quarterly Report

September 2014 – November 2014

In compliance with:

Permit 21875, conditions 26 & 27

Introduction

This report details the air quality monitoring results for Winstone Aggregates Three Kings Quarry for the period September 2014 – November 2014.

This report has been prepared in accordance with Conditions 26 and 27 of Permit 21875.

Condition 26 states:

That any results of total suspended particulate in ambient air monitoring showing exceedences of the prompts given in Condition 20 or specified in the TSP Monitoring Plan, shall be reported by facsimile to the Manager as soon as practicable. A summary of all monitoring results, including references where applicable to wind and rainfall data and any remedial actions taken shall be submitted to the Manager at the end of each quarter.

Condition 27 states:

That the Consent Holder shall record in a log all such information that is required to enable compliance with the conditions of this consent. The log shall record, on a daily basis, information including, but not limited to:

- (a) Any dust control equipment malfunctions and any remedial action taken;*
- (b) Any visible emissions of dust and the source;*
- (c) All relevant details relating to the total suspended particulate monitoring or other monitoring required by the TSP Monitoring Plan, to enable compliance with Conditions 19, 20 and 21;*
- (d) When a water cart was used and, if so, the frequency of use and the volume of water used; and*
- (e) The date and time of the entry and the signature of the person entering the information.*

The log shall be made available on request, during operating hours, to an enforcement officer and shall be kept for the term of the consent. A summary of the information recorded shall be submitted to the Manager at the end of each quarter.

Details of the monitoring undertaken as part of the air permit are described below and actual monitoring results are presented in tables attached to the report.

Summary of Monitoring Results

Summary tables of the monitoring results for each month of the reporting period are attached to this report. An overview of the quarter is provided below.

September 2014

All results for September 2014 were within the consented limits. Results are not available for the 6-8 September 2014 for the Southern Boundary BAM. This loss of data was a result of a fault with the wireless connection which transmits the data between the Southern Boundary BAM and the ENVIDAS system housed in the building of the Office BAM. This fault was fixed as soon as possible.

October 2014

All results for October 2014 were within the consented limits. There are three results that have not been reported for October 2014. The lack of data on these days were a result of power cuts: on 5th October the major power cut in Auckland meant that data was not able to be collected and recorded for the Southern Boundary BAM and Office BAM. Another internal power cut at the Southern Boundary BAM meant that data is missing for this location on 8th October 2014. It is noted that the systems have emergency backup systems

(UPS) in place but due to the nature of the power failures on these occasions the UPS were unable to cope with the duration of the cuts.

November 2014

All results for November 2014 were within the consented limits.

Daily Log

In accordance with Condition 27 of the air permit a daily log of monitoring results is maintained on site. The log includes information about equipment malfunctions, visible dust emissions, water cart use and all relevant details relating to particulate monitoring. A summary of the daily log is provided below.

- a. Over the last quarter all dust control equipment has functioned as required or additional measures were put in place to manage the situation. Maintenance was undertaken on both the sprinkler system and water cart over the quarter as necessary.
- b. No visible dust emissions (that went over or were over the boundary) were noted in the daily log for this period with the exception of the following comments:
 - Smoke from chimney of Danske Moblier recorded on for short periods on: 16th October, 6th November, 24th November, 25th November and 27th November.
- c. TSP monitoring was carried out as per TSP monitoring procedures documented in the site Air Quality Management Plan. A summary of the results is provided above and the tabled results for this reporting period are attached to this report.
- d. The water cart used 3528m³ during this period. The use over this quarter was made up of:

MONTH	LOADS	VOLUME (m ³)
September 2014	64	768
October 2014	112	1344
November 2014	118	1416

- e. The daily log sheet is dated and signed by the person entering the information.

Complaints

There have been no complaints made directly to Three Kings Quarry regarding dust during the period of September 2014 to November 2014.

Next Reporting Period

The next quarterly report will be submitted in early March 2015. This report will cover the monitoring period of December 2014 to February 2015.

Monitoring Results for the Period September 2014

Date	Day	daily average WS m/sec	daily average WD (degrees)	Daily Rain (mm)	Site TSP Office ($\mu\text{g}/\text{m}^3$)	BAM Office ($\mu\text{g}/\text{m}^3$)	Site TSP North Boundary ($\mu\text{g}/\text{m}^3$)	BAM South Boundary ($\mu\text{g}/\text{m}^3$)
1/09/2014	Mon	4.054	170.698	51.800		4.0		4.5
2/09/2014	Tue	3.281	194.260	1.200	20	9.6	20	10.1
3/09/2014	Wed	1.080	182.788	0.000		19.2		14.7
4/09/2014	Thu	1.728	103.747	6.800	17	9.4		6.0
5/09/2014	Fri	2.090	121.736	21.600		14.4		12.8
6/09/2014	Sat	2.414	116.205	7.000		4.9		No Data
7/09/2014	Sun	2.453	181.264	0.000		4.6		No Data
8/09/2014	Mon	2.944	204.156	0.000	29	19.7	27	No Data
9/09/2014	Tue	1.461	120.389	0.000		17.4		15.2
10/09/2014	Wed	1.840	118.910	0.000		12.4		12.2
11/09/2014	Thu	1.358	126.792	0.000		7.9		5.4
12/09/2014	Fri	2.002	118.483	12.600		9.8		8.1
13/09/2014	Sat	2.611	123.788	23.000		9.9		10.8
14/09/2014	Sun	5.667	214.295	4.000	39	17.8	26	19.1
15/09/2014	Mon	2.261	235.882	0.000		17.6		14.1
16/09/2014	Tue	2.911	251.344	8.400	25	15.6		12.6
17/09/2014	Wed	2.867	257.920	0.400		18.3		17.4
18/09/2014	Thu	2.385	158.260	0.200		17.5		14.7
19/09/2014	Fri	3.043	232.813	7.400		18.8		17.1
20/09/2014	Sat	3.280	240.139	13.200		16.0		14.9
21/09/2014	Sun	3.010	219.833	9.200	16	9.2	15	10.6
22/09/2014	Mon	6.110	212.375	5.800		15.9		21.5
23/09/2014	Tue	5.514	209.830	0.000		17.9		20.9
24/09/2014	Wed	5.508	209.212	0.000	67	31.4		37.4
25/09/2014	Thu	3.397	209.510	0.000		23.8		32.0
26/09/2014	Fri	2.235	244.465	0.000		12.9		13.1
27/09/2014	Sat	2.594	146.035	0.200	27	17.0		11.5
28/09/2014	Sun	3.473	178.642	2.400		10.5		8.6
29/09/2014	Mon	3.895	110.420	5.800		6.4		9.4
30/09/2014	Tue	3.734	186.969	0.800	22	8.1	21	8.7

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1/10/2014	Wed	3.286	210.375	0.000		9.8		9.2
2/10/2014	Thu	2.382	264.899	9.000	31	18.1	23	13.1
3/10/2014	Fri	3.918	258.569	1.200		19.1		17.6
4/10/2014	Sat	5.622	243.469	3.800		14.1		15.5
5/10/2014	Sun	3.802	235.243	0.600		No data		No data
6/10/2014	Mon	4.644	251.705	0.400		20.9		22.0
7/10/2014	Tue	5.324	227.274	3.400		27.8	23	30.3
8/10/2014	Wed	2.715	263.021	0.000		26.7		No data
9/10/2014	Thu	3.117	216.806	4.000	33	20.3		23.3
10/10/2014	Fri	2.115	131.802	0.000		19.4		18.7
11/10/2014	Sat	3.245	184.128	0.000		13.5		14.2
12/10/2014	Sun	4.400	198.108	0.000		12.6		15.0
13/10/2014	Mon	2.455	195.094	0.000		12.0		9.4
14/10/2014	Tue	2.125	201.260	0.000		15.7		10.6
15/10/2014	Wed	2.783	191.806	0.000	33	13.8	34	11.9
16/10/2014	Thu	2.701	139.569	0.000		14.3		11.8
17/10/2014	Fri	3.313	107.125	0.000		13.3		11.8
18/10/2014	Sat	2.787	119.701	23.000	15	11.4		10.4
19/10/2014	Sun	3.211	201.250	4.600		7.1		9.9
20/10/2014	Mon	3.955	227.066	0.200		11.9		11.2
21/10/2014	Tue	1.847	193.219	0.000	23	11.6	21	9.6
22/10/2014	Wed	1.927	103.465	0.200		18.0		18.1
23/10/2014	Thu	3.036	232.927	5.200	26	16.5		13.4
24/10/2014	Fri	4.703	216.872	0.400		14.1		17.0
25/10/2014	Sat	2.778	193.670	0.000		10.3		11.1
26/10/2014	Sun	2.673	262.969	0.000		14.2		12.5
27/10/2014	Mon	3.608	275.122	4.000	25	13.6	21	9.7
28/10/2014	Tue	2.634	184.153	18.600		8.5		6.5
29/10/2014	Wed	3.305	243.670	14.600	26	14.9		14.7
30/10/2014	Thu	5.340	234.573	0.800		26.4		28.5
31/10/2014	Fri	3.893	250.076	0.000		21.8		18.8

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1/11/2014	Sat	3.118	225.285	0.000	28	17.5	26	21.6
2/11/2014	Sun	2.077	245.493	0.000		17.9		16.6
3/11/2014	Mon	3.252	191.653	8.800		16.2		17.8
4/11/2014	Tue	1.909	231.448	0.000	27	17.9	24	16.5
5/11/2014	Wed	1.850	201.132	0.000		17.2		17.2
6/11/2014	Thu	4.173	244.063	1.600	36	12.4	18	11.7
7/11/2014	Fri	3.790	229.104	0.000		10.3		10.6
8/11/2014	Sat	3.459	212.208	0.000		12.1		11.3
9/11/2014	Sun	2.240	198.764	0.000	22	11.4	16	9.7
10/11/2014	Mon	2.698	234.167	0.000		13.3		6.9
11/11/2014	Tue	3.075	274.330	6.000		11.7		4.6
12/11/2014	Wed	4.027	259.688	3.000	31	14.5	28	15.0
13/11/2014	Thu	4.236	242.753	5.800		11.9		12.1
14/11/2014	Fri	4.623	233.413	2.000		12.7		16.1
15/11/2014	Sat	4.327	247.892	10.600	29	18.1	24	12.1
16/11/2014	Sun	3.966	234.771	0.000		21.6		25.8
17/11/2014	Mon	3.767	192.590	9.400		18.1		15.9
18/11/2014	Tue	4.455	233.038	0.000	50	22.9	43	24.7
19/11/2014	Wed	3.473	263.153	0.000		26.6		19.4
20/11/2014	Thu	4.981	227.104	0.000		23.1		24.0
21/11/2014	Fri	2.530	257.313	0.000		18.1		15.1
22/11/2014	Sat	3.449	266.969	0.200		15.1		9.6
23/11/2014	Sun	3.193	221.309	0.200		12.5		16.0
24/11/2014	Mon	1.479	250.271	0.000		15.5		5.8
25/11/2014	Tue	2.058	245.938	0.000		7.1		4.6
26/11/2014	Wed	3.067	237.198	0.000		17.6		17.1
27/11/2014	Thu	2.782	256.035	0.000		21.1		16.7
28/11/2014	Fri	3.372	263.167	6.000		17.7		13.9
29/11/2014	Sat	3.888	241.062	0.200		13.4		13.6
30/11/2014	Sun	3.396	256.802	0.000		10.5		7.8