



Three Kings Quarry

Air Quality Quarterly Report

June 2012 - August 2012

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 June 2012 – August 2012.

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.

June 2012

All results within consented limits.

Data was not collected on 18th to 21st June 2012 at the Southern Boundary BAM. This was a result of the generator powering the unit running out of diesel and the back up device failing to operate. As such, it was an extended period to get the system back up and running as it needed to be rebooted by a technician and checked for damage. The powering of this unit using a generator is only a temporary means as we are working towards a connection to the mains power supply. This will mean a much more reliable and stable source of power. We have undertaken an option analysis with the power provider and agreement on the most appropriate connection has been reached and consent was granted by Auckland Council on 1st May 2012 for the works associated with this connection. There are a number of conditions and consultation that must be met prior to being able to undertake the connection works. We expect to have mains power feeding the Southern Boundary BAM by end of July 2012.

During the period in which data was not collected at the Southern Boundary BAM (18th to 21st June 2012) all other monitoring was completed as required. All available results during this period were well within the trigger limits. Furthermore, the results from the Southern Boundary BAM for the rest of the month during similar meteorological conditions as the days that data is not available show results within the consented limit.

July 2012

All results within consented limits.

There are two days (18th and 19th July 2012) where data was not collected at the Southern Boundary BAM. This was during the transition from the unit being powered by the generator to its permanent power supply off a connection with the mains power. All other monitoring was completed as required over this period and results were within the consented limits. The results from the Southern Boundary BAM for the rest of the month during similar meteorological conditions as the two days that data is not available show results within the consented limit.

August 2012

All results within 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.
- b. No visible dust emissions (that went over or were over the boundary) were noted in the daily log for this period. However, there were three instances over this monitoring period where it was noted that smoke/dust was observed coming from an adjacent property's chimney (13th June 2012, 31st July 2012 and 31st August 2012).
- c. TSP monitoring was carried 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 696m³ during this period, made up of:

MONTH	LOADS	VOLUME (m ³)
June 2012	20	240
July 2012	32	384
August 2012	6	72

- 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 June 2012 to August 2012.

Next Reporting Period

The next quarterly report will be submitted in early December 2012. This report will cover the monitoring period of September to November 2012.

Monitoring Results for the Period June 2012

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 ($\mu\text{g}/\text{m}^3$)
1/06/2012	Fri	1.883	169.035	0.000	47	18.3	34	11.3
2/06/2012	Sat	0.914	160.170	0.000		23.5		15.3
3/06/2012	Sun	1.982	246.427	0.000		16.5		13.3
4/06/2012	Mon	1.229	170.049	0.000		11.9		10.6
5/06/2012	Tue	3.979	111.559	8.800		12.3		10.0
6/06/2012	Wed	3.051	137.014	3.000	26	23.9		20.6
7/06/2012	Thu	2.871	196.222	13.000		20.0		19.6
8/06/2012	Fri	1.870	223.576	2.400		21.0		15.0
9/06/2012	Sat	3.060	226.097	1.600	19	14.6	21	14.0
10/06/2012	Sun	2.425	210.257	1.000		13.4		13.7
11/06/2012	Mon	3.023	217.427	0.200		12.1		11.3
12/06/2012	Tue	2.374	186.076	0.000	27	17.1		6.7
13/06/2012	Wed	1.493	150.358	0.000		13.7		12.2
14/06/2012	Thu	1.279	135.535	0.000	14	20.2	31	18.0
15/06/2012	Fri	1.061	162.292	0.000		19.6		18.8
16/06/2012	Sat	2.683	173.740	0.000		11.8		10.6
17/06/2012	Sun	1.086	146.934	0.000	20	11.4		11.4
18/06/2012	Mon	4.341	98.569	4.400		14.5		no data
19/06/2012	Tue	2.233	185.451	2.000		18.8		no data
20/06/2012	Wed	2.153	203.771	12.800	30	22.1	29	no data
21/06/2012	Thu	1.555	193.701	1.200		16.6		no data
22/06/2012	Fri	1.973	204.059	0.200	20	14.1		9.7
23/06/2012	Sat	2.967	194.483	0.000		12.3		6.8
24/06/2012	Sun	3.059	198.042	7.000		8.8		8.4
25/06/2012	Mon	3.139	228.417	5.600		20.2		19.6
26/06/2012	Tue	2.950	235.490	2.600	23	17.4	20	15.1
27/06/2012	Wed	4.063	236.243	4.600		16.5		16.6
28/06/2012	Thu	4.550	223.656	1.600		19.3		17.3
29/06/2012	Fri	3.257	197.866	0.600		21.6		19.4
30/06/2012	Sat	0.938	143.813	0.000	32	18.6		30.7

Monitoring Results for the Period July 2012

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 ($\mu\text{g}/\text{m}^3$)
1/07/2012	Sun	1.751	113.993	0.000		13.9		13.8
2/07/2012	Mon	2.969	108.896	0.000		7.8		7.6
3/07/2012	Tue	3.513	115.632	42.600	14	9.7	16	8.6
4/07/2012	Wed	1.863	148.958	1.000		14.1		11.3
5/07/2012	Thu	1.158	143.556	0.000	21	14.1		7.2
6/07/2012	Fri	1.844	160.517	0.000		10.1		5.4
7/07/2012	Sat	1.625	173.781	0.000		10.1		10.7
8/07/2012	Sun	1.292	141.385	0.000	23	13.5	18	13.6
9/07/2012	Mon	0.781	121.830	0.000		17.8		17.9
10/07/2012	Tue	0.991	140.472	0.000		16.2		22.2
11/07/2012	Wed	0.696	182.726	0.000	42	25.7		20.8
12/07/2012	Thu	0.929	117.288	0.000		25.7		23.3
13/07/2012	Fri	1.523	109.410	0.000		11.2		11.9
14/07/2012	Sat	2.663	119.531	0.000	20	9.0	18	7.5
15/07/2012	Sun	4.385	93.215	13.000		12.6		9.1
16/07/2012	Mon	4.836	137.427	19.000		10.0		7.9
17/07/2012	Tue	4.398	189.299	2.000	39	19.1		17.9
18/07/2012	Wed	1.831	160.559	0.000		35.2		no data
19/07/2012	Thu	1.131	111.458	0.000	31	22.7	29	no data
20/07/2012	Fri	2.187	108.170	0.000		22.4		17.4
21/07/2012	Sat	3.110	90.861	0.000		14.6		11.9
22/07/2012	Sun	3.441	90.184	33.000	11	7.8		5.3
23/07/2012	Mon	2.552	107.337	12.000		9.1		7.8
24/07/2012	Tue	1.397	118.858	2.600		7.5		5.8
25/07/2012	Wed	1.521	125.424	7.400	12	9.0	18	8.9
26/07/2012	Thu	1.741	132.917	0.000		11.1		8.4
27/07/2012	Fri	1.007	103.368	0.000		14.2		16.1
28/07/2012	Sat	2.212	101.222	0.000		10.2		9.6
29/07/2012	Sun	3.006	98.257	14.400	18	12.0		7.0
30/07/2012	Mon	2.440	141.969	22.800		17.5		19.2
31/07/2012	Tue	1.617	142.701	5.800		9.9		20.9

Monitoring Results for the Period August 2012

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 ($\mu\text{g}/\text{m}^3$)
1/08/2012	Wed	2.363	88.611	9.600	11	6.5	13	7.3
2/08/2012	Thu	2.541	92.962	10.400		5.4		4.8
3/08/2012	Fri	1.727	93.951	0.000	22	7.8		7.4
4/08/2012	Sat	1.527	96.701	0.400		7.9		4.0
5/08/2012	Sun	1.159	112.969	0.000		8.9		6.0
6/08/2012	Mon	1.693	203.184	0.400		18.1		13.7
7/08/2012	Tue	2.510	154.208	2.600	28	13.9		11.0
8/08/2012	Wed	2.310	209.757	10.800		14.3		8.5
9/08/2012	Thu	2.995	191.646	5.200	20	9.9	17	8.0
10/08/2012	Fri	1.282	174.149	0.000		17.4		18.6
11/08/2012	Sat	2.212	97.146	5.800		8.3		5.9
12/08/2012	Sun	2.545	132.424	20.400		17.1		15.3
13/08/2012	Mon	2.144	213.274	6.600	22	11.8	22.0	7.4
14/08/2012	Tue	1.972	234.514	0.200		20.2		11.2
15/08/2012	Wed	1.965	152.892	15.600		12.7		12.5
16/08/2012	Thu	2.487	224.719	2.600	29	15.6		12.9
17/08/2012	Fri	1.739	230.715	0.000		16.3		10.0
18/08/2012	Sat	1.918	194.625	13.000		13.5		13.0
19/08/2012	Sun	2.440	125.382	18.200	17	12.0	16	10.4
20/08/2012	Mon	2.974	224.111	1.800		21.2		12.5
21/08/2012	Tue	3.911	198.934	1.400		12.3		10.5
22/08/2012	Wed	2.437	182.566	0.000		14.8		12.0
23/08/2012	Thu	1.376	177.497	2.800		19.1		12.9
24/08/2012	Fri	1.192	114.757	0.200		12.8		11.3
25/08/2012	Sat	2.248	91.750	0.000		7.4		5.1
26/08/2012	Sun	3.218	109.844	0.000		8.7		6.0
27/08/2012	Mon	3.002	181.264	0.800		16.5		9.4
28/08/2012	Tue	2.725	215.590	0.000		20.0		15.0
29/08/2012	Wed	2.045	112.344	0.000		17.4		18.0
30/08/2012	Thu	2.301	140.302	0.000		12.7		11.4
31/08/2012	Fri	1.615	139.462	0.000		13.0		17.1