



**Three Kings Quarry**  
**Air Quality Quarterly Report**  
**June - August 2011**

## **Introduction**

This report details the air quality monitoring results for Winstone Aggregates Three Kings Quarry for the period June – August 2011.

This report is being prepared in accordance with Conditions 26 and 27 of Permit 21875. The conditions state:

“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”.

“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 within the report or in the Appendices.

## **Daily Log**

In accordance with Condition 26 (a) – (e) 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.

**June 2011**

**Three Kings Quarry Summary monitoring results for the period June 2011**

| Date       | Day | daily average WS<br>m/sec | daily average WD<br>( degrees ) | Daily Rain<br>(mm) | Site TSP<br>mg/m3<br>office | BAM FH62<br>mg/m-3<br>office | Site TSP<br>mg/m3<br>North<br>Boundary |
|------------|-----|---------------------------|---------------------------------|--------------------|-----------------------------|------------------------------|--|
| 1/06/2011  | Wed | 2.009                     | 201.403                         | 0.000              | 27.4                        | 16.7                         |  |
| 2/06/2011  | Thu | 2.098                     | 120.090                         | 0.000              |                             | 13.0                         |  |
| 3/06/2011  | Fri | 3.791                     | 97.063                          | 0.200              |                             | 10.8                         |  |
| 4/06/2011  | Sat | 2.900                     | 121.785                         | 17.400             |                             | 17.7                         |  |
| 5/06/2011  | Sun | 2.054                     | 192.115                         | 0.000              |                             | 14.9                         |  |
| 6/06/2011  | Mon | 1.159                     | 242.160                         | 0.000              | 9.7                         | 4.6                          | 18.3                                   |
| 7/06/2011  | Tue | 1.890                     | 205.979                         | 0.000              |                             | 13.3                         |  |
| 8/06/2011  | Wed | 1.666                     | 229.892                         | 1.200              | 30                          | 18.4                         |  |
| 9/06/2011  | Thu | 1.223                     | 138.149                         | 0.000              |                             | 13.7                         |  |
| 10/06/2011 | Fri | 3.223                     | 145.052                         | 32.600             |                             | 10.6                         |  |
| 11/06/2011 | Sat | 1.971                     | 212.396                         | 3.200              |                             | 12.3                         |  |
| 12/06/2011 | Sun | 2.320                     | 229.372                         | 3.000              | 8.9                         | 8.8                          | 4.6                                    |
| 13/06/2011 | Mon | 2.813                     | 213.837                         | 0.000              |                             | 11.9                         |  |
| 14/06/2011 | Tue | 2.109                     | 211.889                         | 0.000              | 22.7                        | 11.1                         |  |
| 15/06/2011 | Wed | 3.364                     | 228.302                         | 0.000              |                             | 12.2                         |  |
| 16/06/2011 | Thu | 1.882                     | 171.257                         | 0.000              | 27.1                        | 13.4                         | 22.6                                   |
| 17/06/2011 | Fri | 2.882                     | 103.948                         | 6.400              |                             | 12.1                         |  |
| 18/06/2011 | Sat | 2.858                     | 159.229                         | 37.400             |                             | 17.7                         |  |
| 19/06/2011 | Sun | 3.345                     | 202.194                         | 9.400              | 25.4                        | 18.1                         |  |
| 20/06/2011 | Mon | 2.828                     | 192.951                         | 17.400             |                             | 17.2                         |  |
| 21/06/2011 | Tue | 2.678                     | 208.500                         | 0.000              |                             | 17.0                         |  |
| 22/06/2011 | Wed | 1.354                     | 226.875                         | 0.200              | 51                          | 16.8                         | 13.7                                   |
| 23/06/2011 | Thu | 2.314                     | 191.271                         | 4.400              |                             | 16.1                         |  |
| 24/06/2011 | Fri | 2.212                     | 203.427                         | 3.200              |                             | 13.0                         |  |
| 25/06/2011 | Sat | 3.902                     | 230.549                         | 8.400              | 16                          | 11.9                         |  |
| 26/06/2011 | Sun | 3.432                     | 214.837                         | 6.800              |                             | 9.6                          |  |
| 27/06/2011 | Mon | 1.801                     | 234.372                         | 1.200              |                             | 22.4                         |  |
| 28/06/2011 | Tue | 1.825                     | 243.038                         | 6.200              |                             | 15.5                         |  |
| 29/06/2011 | Wed | 2.372                     | 186.413                         | 1.200              |                             | 6.4                          |  |
| 30/06/2011 | Thu | 1.929                     | 165.382                         | 0.000              | 20.6                        | 17.1                         | 13.2                                   |

**July 2011**

**Three Kings Quarry Summary monitoring results for the period July 2011**

| Date       | Day | daily average WS<br>m/sec | daily average WD<br>( degrees ) | Daily Rain<br>(mm) | Site TSP<br>mg/m3<br>office | BAM FH62<br>mg/m-3<br>office | Site TSP<br>mg/m3<br>North<br>Boundary |
|------------|-----|---------------------------|---------------------------------|--------------------|-----------------------------|------------------------------|--|
| 1/07/2011  | Fri | 1.241                     | 162.983                         | 0.000              |                             | 16.3                         |  |
| 2/07/2011  | Sat | 1.532                     | 127.524                         | 0.000              |                             | 16.9                         |  |
| 3/07/2011  | Sun | 2.294                     | 131.358                         | 0.000              | 16.8                        | 10.6                         |  |
| 4/07/2011  | Mon | 2.886                     | 169.378                         | 0.000              |                             | 7.7                          |  |
| 5/07/2011  | Tue | 3.900                     | 212.476                         | 0.000              |                             | 13.2                         |  |
| 6/07/2011  | Wed | 3.916                     | 244.858                         | 8.200              | 39.5                        | 20.2                         | 20.3                                   |
| 7/07/2011  | Thu | 3.293                     | 232.729                         | 0.200              |                             | 20.1                         |  |
| 8/07/2011  | Fri | 5.159                     | 239.354                         | 7.400              |                             | 16.4                         |  |
| 9/07/2011  | Sat | 4.241                     | 251.243                         | 3.400              | 42.3                        | 29.6                         |  |
| 10/07/2011 | Sun | 3.490                     | 245.698                         | 1.400              |                             | 31.9                         |  |
| 11/07/2011 | Mon | 3.573                     | 241.170                         | 5.800              |                             | 57.8                         |  |
| 12/07/2011 | Tue | 4.370                     | 250.219                         | 5.000              | 38.2                        | 18.4                         | 29.4                                   |
| 13/07/2011 | Wed | 3.555                     | 254.302                         | 4.600              |                             | 28.5                         |  |
| 14/07/2011 | Thu | 3.350                     | 244.778                         | 12.800             | 28.9                        | 23.3                         |  |
| 15/07/2011 | Fri | 3.315                     | 225.375                         | 9.800              |                             | 12.3                         |  |
| 16/07/2011 | Sat | 2.754                     | 208.177                         | 2.000              |                             | 14.4                         |  |
| 17/07/2011 | Sun | 1.455                     | 186.521                         | 0.200              | 18.4                        | 17.0                         | 4.8                                    |
| 18/07/2011 | Mon | 1.130                     | 106.378                         | 0.000              |                             | 14.7                         |  |
| 19/07/2011 | Tue | 1.643                     | 105.389                         | 0.000              | 21.4                        | 11.9                         |  |
| 20/07/2011 | Wed | 2.796                     | 97.795                          | 0.000              |                             | 9.8                          |  |
| 21/07/2011 | Thu | 4.134                     | 91.892                          | 5.200              |                             | 6.9                          |  |
| 22/07/2011 | Fri | 3.538                     | 109.465                         | 5.800              |                             | 6.2                          |  |
| 23/07/2011 | Sat | 2.475                     | 102.424                         | 8.400              |                             | 6.0                          |  |
| 24/07/2011 | Sun | 4.063                     | 191.851                         | 1.600              |                             | 11.6                         |  |
| 25/07/2011 | Mon | 3.902                     | 224.896                         | 2.000              |                             | 10.8                         |  |
| 26/07/2011 | Tue | 1.910                     | 216.868                         | 0.000              |                             | 18.0                         |  |
| 27/07/2011 | Wed | 2.481                     | 252.882                         | 21.800             |                             | 16.4                         |  |
| 28/07/2011 | Thu | 2.014                     | 235.767                         | 3.200              |                             | 12.8                         |  |
| 29/07/2011 | Fri | 2.543                     | 234.257                         | 0.000              |                             | 11.8                         |  |
| 30/07/2011 | Sat | 2.235                     | 231.823                         | 1.200              |                             | 13.4                         |  |
| 31/07/2011 | Sun | 1.206                     | 180.747                         | 0.000              |                             | 17.4                         |  |

## August 2011

### Three Kings Quarry Summary monitoring results for the period August 2011

| Date       | Day | daily average WS<br>m/sec | daily average WD<br>( degrees ) | Daily Rain<br>(mm) | Site TSP<br>mg/m3<br>office | BAM FH62<br>mg/m-3<br>office | Site TSP<br>mg/m3<br>North<br>Boundary |
|------------|-----|---------------------------|---------------------------------|--------------------|-----------------------------|------------------------------|--|
| 1/08/2011  | Mon | 1.185                     | 230.868                         | 0.000              |                             | 19.2                         |  |
| 2/08/2011  | Tue | 1.703                     | 170.493                         | 0.000              | 26.2                        | 8.7                          |  |
| 3/08/2011  | Wed | 1.995                     | 175.174                         | 0.000              |                             | 9.9                          |  |
| 4/08/2011  | Thu | 2.948                     | 181.906                         | 0.000              | 34                          | 11.5                         | 27.8                                   |
| 5/08/2011  | Fri | 2.946                     | 196.924                         | 3.200              |                             | 11.2                         |  |
| 6/08/2011  | Sat | 2.082                     | 219.764                         | 0.000              |                             | 20.3                         |  |
| 7/08/2011  | Sun | 4.039                     | 231.250                         | 3.800              | 34.9                        | 20.4                         |  |
| 8/08/2011  | Mon | 3.134                     | 240.969                         | 0.000              |                             | 23.9                         |  |
| 9/08/2011  | Tue | 1.444                     | 212.424                         | 0.000              |                             | 13.9                         |  |
| 10/08/2011 | Wed | 1.408                     | 115.663                         | 0.000              | 23.1                        | 9.9                          | 18.7                                   |
| 11/08/2011 | Thu | 1.783                     | 157.299                         | 21.000             |                             | 12.9                         |  |
| 12/08/2011 | Fri | 1.857                     | 243.715                         | 6.200              |                             | 21.1                         |  |
| 13/08/2011 | Sat | 1.436                     | 180.538                         | 0.000              | 29.5                        | 12.1                         |  |
| 14/08/2011 | Sun | 5.454                     | 214.524                         | 2.200              |                             | 16.7                         |  |
| 15/08/2011 | Mon | 5.544                     | 229.111                         | 4.400              |                             | 13.2                         |  |
| 16/08/2011 | Tue | 1.698                     | 191.795                         | 0.200              | 30.2                        | 15.6                         | 28.9                                   |
| 17/08/2011 | Wed | 2.161                     | 181.222                         | 0.000              |                             | 10.4                         |  |
| 18/08/2011 | Thu | 2.443                     | 188.483                         | 0.000              |                             | 13.4                         |  |
| 19/08/2011 | Fri | 2.296                     | 188.184                         | 0.000              | 30.9                        | 10.0                         |  |
| 20/08/2011 | Sat | 1.888                     | 183.806                         | 0.000              |                             | 8.8                          |  |
| 21/08/2011 | Sun | 2.344                     | 203.920                         | 0.000              |                             | 17.2                         |  |
| 22/08/2011 | Mon | 1.248                     | 193.153                         | 0.000              |                             | 20.1                         |  |
| 23/08/2011 | Tue | 2.684                     | 216.448                         | 0.000              |                             | 8.5                          |  |
| 24/08/2011 | Wed | 1.932                     | 231.556                         | 0.000              |                             | 9.8                          |  |
| 25/08/2011 | Thu | 1.600                     | 235.458                         | 0.000              |                             | 8.9                          |  |
| 26/08/2011 | Fri | 1.610                     | 237.667                         | 0.000              |                             | 15.8                         |  |
| 27/08/2011 | Sat | 1.748                     | 252.653                         | 0.000              |                             | 14.2                         |  |
| 28/08/2011 | Sun | 1.128                     | 174.990                         | 0.000              |                             | 10.4                         |  |
| 29/08/2011 | Mon | 1.780                     | 107.239                         | 0.000              |                             | 9.3                          |  |
| 30/08/2011 | Tue | 1.565                     | 177.521                         | 7.200              |                             | 6.4                          |  |
| 31/08/2011 | Wed | 3.278                     | 216.059                         | 0.200              |                             | 9.8                          |  |

## Daily Log Summary for Three Kings Quarry Site for the period June – August 2011

(Condition 27, Air Permit 21875)

- a. No visible dust emissions (that went over or were over the boundary) were noted in the Daily Air Log for this period.

However, it was noted that there were visible dust emissions from Danske Mobler on the following days:

July 11 & 19 – Dust from Danske Mobler

Aug 10 – Dust from Danske Mobler

- b. TSP monitoring was carried as per TSP monitoring procedures documented in the site Air Quality Management Plan.
- c. The water cart used 120m<sup>3</sup> during this period, made up of:

| MONTH  | LOADS | VOLUME (m <sup>3</sup> ) |
|--------|-------|--------------------------|
| June   | 3     | 36                       |
| July   | 0     | 0                        |
| August | 7     | 84                       |

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

### Complaints:

There have been 3 complaints made directly to Three Kings Quarry during this period.

These complaints have been made in relation to the Drill and Blast programme being undertaken.

As this report is available on the Auckland Councils files for public viewing I have not included the complainant's names or addresses (for privacy reasons). However, if any council officer wishes to discuss these details I am more than happy to provide them in person.

#### Complaint 1

Received on the 19<sup>th</sup> July 2011

A complaint was received from a member of the public on Fyvie Avenue. They advised that they had been in Christchurch at the time of the earthquake and as a result the drill and blast programme at Three Kings Quarry was causing them alarm.

In response to this complaint we now notify this resident of each blast by text message (their request). Site management have also discussed the blast process and members of the family have been to the site to view one. Monitoring results were provided and nothing further has been heard from the complainant.

| <b>Date</b>                | <b>Big King Reserve Monitor</b> | <b>Mt Eden Road Monitor – Southern One</b> |
|----------------------------|---------------------------------|--|
| 19 <sup>th</sup> July 2011 | NT                              | NT   |
| 25 <sup>th</sup> July 2011 | 1.905mm/s                       | 0.635mm/s                                  |

### Complaint 2

A complaint was received on the 28<sup>th</sup> July 2011 from a member of the public in Queensway. The complainant advised that he and his wife were going away on holiday and prior to the trip they had cleaned all of their walls. A week later they noticed a couple of small cracks in the kitchen. He acknowledged that it was an old house and subject to movement but wished to see the monitoring results from the recent blasting. The one Monday prior had seemed quite large to him.

Site Management sent a copy of the monitoring results to the complainant and explained the results. An offer was also made to place a seismograph on their property but this was declined as they were going away on holiday. Nothing further heard from the complainant.

| <b>Date</b>                | <b>Big King Reserve Monitor</b> | <b>Mt Eden Road Monitor – Southern One</b> |
|----------------------------|---------------------------------|--|
| 19 <sup>th</sup> July 2011 | NT                              | NT   |
| 25 <sup>th</sup> July 2011 | 1.905mm/s                       | 0.635mm/s                                  |

### Complaint 3

A complaint was received from a resident in Simmonds Avenue. They had recently moved to the area and had noticed a couple of cracks in their house. They wanted to know if the recent blasting at Three Kings could cause this. Site management send the complainant a copy of the compliant monitoring results and explained how the levels had been set etc. An offer to place a seismograph on their property was made but nothing further has been heard.

Please see the attached report for further details.