

ROOTY HILL REGIONAL DISTRIBUTION CENTRE
MONTHLY ENVIRONMENTAL MONITORING REPORT

Aspect	Air Quality, Construction Noise and Local Meteorology
Date	September 2013

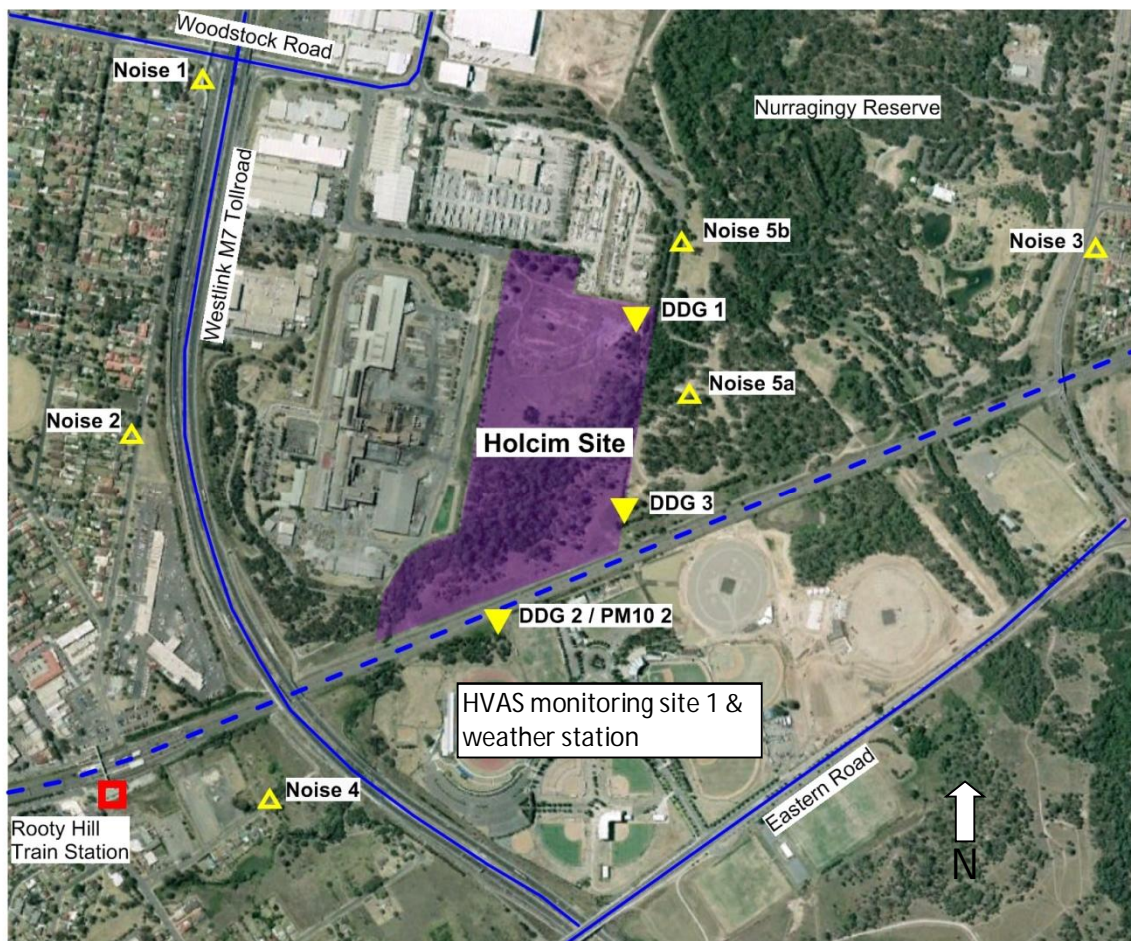
SUMMARY

Monitoring period	1 September to 30 September 2013
Parameters monitored in period	PM10 / TSP Depositional Dust Construction Noise Local Meteorology
Exceedance summary	<ul style="list-style-type: none">No exceedances of PM10 or TSP dust criteria were recorded during September 2013.No exceedances of depositional dust criteria during September 2013.No exceedance of noise criteria observed in September 2013.
Action required	None

1. Monitoring Locations

The monitoring locations at the Rooty Hill Regional Distribution Centre (RDC) for air quality, construction noise and meteorology are shown in Figure 1 and consist of:

- Dust monitoring (PM10): Blacktown International Sportspark (formerly Olympic Park)
- Dust monitoring (Depositional): Locations 1 to 3
- Noise monitoring: Locations 2 to 5
- Local Meteorology: Blacktown International Sportspark (formerly Olympic Park)



■ Figure 1 Monitoring locations

2. Monitoring Methodology

Dust

Air quality (dust) monitoring was undertaken using an Ecotech High Volume Air Sampler (HVAS) 3000 with a Particulate Matter - 10µm (PM₁₀) sampling head. The HVAS was operated on one-day-in-six in accordance with AS/NZS 3580.9.6:2003 *Methods for sampling and analysis of ambient air, Method 9.6: Determination of suspended particulate matter (PM10) – High volume sampler with size selective inlet - Gravimetric method.*

Calibration of the unit is checked on a monthly basis, in accordance with operating instructions for the unit and AS/NZS 3580.9.6:2003.

TSP will not be directly monitored, and instead will be calculated by application of a conversion factor (PM₁₀ x 2.5 = TSP), in accordance with the project’s Operational Environmental Monitoring Plan.

Depositional dust was monitored in accordance with AS/NZS 3580.10.1:2003 *Methods for sampling and analysis of ambient air Method 10.1: Determination of particulate matter – Deposited matter – Gravimetric method.*

Construction Noise

Construction noise was monitored for 15 minute attended periods in accordance with the requirements set out in the EPA (2000) Industrial Noise Policy and the DECC (2009) Interim Construction Noise Guidelines. Monitoring was carried out using a Brüel and Kjær Type 1 2260 Sound Level Meter by appropriately qualified personnel. Calibration of the unit was checked before and after each monitoring period, and the drift was below 0.5dB.

Local Meteorology

Meteorological conditions were monitored using a Davis Vantage Pro2 Plus monitoring unit. This unit was positioned in accordance with *AS2923-1987 Ambient air – Guide for measurement of horizontal wind for air quality applications*.

The Davis Vantage Pro2 plus meteorological station does not satisfy the accuracy requirements of AS 3580.14-2011 for wind speed and direction measurements. However, no monitoring standards are specified in the Project Approval and the accuracy of the proposed unit is considered sufficient for the purposes of construction impact management.

The integrity of the meteorological monitoring station is checked every six days.

3. Guidelines

Dust

Air quality (dust) criteria within the Minister's Conditions of Approval (MCoA), specifically Statement of Commitment (SoC) 4.1 and the Construction Dust Management Plan (CDMP) mirror those in the NSW EPA document *Approved methods for the modelling and assessment of air pollutants in New South Wales* (DEC 2005). The air quality assessment criteria are outlined below, which apply cumulatively (that is, due to all sources of emissions and not just the contribution from the project).

Pollutant	Averaging period	Concentration
PM ₁₀	24 hours	50ug/m ³
	Annual	30ug/m ³
TSP	Annual	90ug/m ³
Deposited dust	Annual	4 g/m ² /month*

* *Depositional dust criteria contained in the NSW EPA methods specify a maximum contribution of 2g/m²/month, up to a maximum total depositional dust level of 4g/m²/month. This criterion assumes a typical existing load of 2g/m²/month, prior to the start of construction activities.*

Construction Noise

Noise criteria are contained within Table 1 of the MCoA 2.3, and are as follows:

“The Proponent shall design, construct, operate and maintain the project to ensure that the noise contributions from the project to the background acoustic environment do not exceed the maximum allowable noise contributions specified in Table 1, at those locations and during those periods indicated”

Location	Morning Shoulder (6am to 7am Mon to Sat and 6am to 8am Sun and Pub Hol)	Day (7am to 6pm Mon to Sat and 8am to 6pm Sun and Pub Hol)	Evening (6pm to 10pm all days)	Night (10pm to 7am Mon to Sat and 10pm to 8am Sun)	
	L _{Aeq(15min)} dB(A)	L _{Aeq(15min)} dB(A)	L _{Aeq(15min)} dB(A)	L _{Aeq(15min)} dB(A)	L _{A1(1min)} dB(A)
Station St residences	39	44	44	39	53
Crawford Rd residences	40	40	39	39	53
Mavis St residences	35	35	35	35	53
Nurragingy reserve	When the reserve is in use L _{Aeq} 50dB(A)				
Colebee Centre	When the centre is in use – L _{Aeq} 50dB(A)				
Blacktown Olympic Park (active recreation areas)	When active recreation areas of the Park are in use – L _{Aeq} 55dB(A)				

In addition a noise impact assessment undertaken for the Construction Noise Management Plan (CNMP) (developed to satisfy MCoA 5.3(b)) assesses the impacts associated with different construction activities resulting from the Project. The assessment concludes the potential for disturbance at the nearest noise sensitive receivers is low. This assessment is based on adopted Noise Management Levels (NML), these being derived from measured background noise levels and the methodology presented in the DECC 2009 Interim Construction Noise Guidelines (ICNG), NSW Office of Environment and Heritage. The Project NML are below:

Receiver		Receiver Type	Approximate Distance and Orientation from RDC boundary	NML L _{Aeq,15min} / dB(A)
1	132 Station Street	Residential	650m west	58
2	54 Station Street	Residential	650m west	58
3	63 Coghlan Street	Residential	850m east	58
4	16 Mavis Street	Residential	650m west	60
5a	Lomandra Shelter Shed (Nurragingy Reserve)	Recreational	<100m east	63
5b	Boronia Shelter Shed (Nurragingy Reserve)	Recreational	<100m east	63

Local Meteorology

SoC 3.3, 10.4 and 15.3 requires Holcim monitor local meteorological conditions at the site. To comply with the SoC the following parameters must be monitored:

- Daily air temperature
- Solar radiation
- Daylight hours
- Daily rainfall
- Daily evaporation
- Continuous wind speed and direction

4. Monitoring results

Dust (PM₁₀ / TSP)

No exceedances of PM₁₀ or TSP dust criteria were recorded during the month of September 2013.

Date	PM ₁₀ (ug/m ³)		TSP	
	Measured result	Criteria	Calculated result (PM10 x 2.5)	Criteria
1/09/2013	26.3	50	65.8	NA
7/09/2013	27.6	50	69.0	NA
13/09/2013	12.8	50	32.0	NA
19/09/2013	43.7	50	109.3	NA
25/09/2013	Did not run due to faulty fan unit			
Annual average (to date)	25.7	30	64.2	90

Dust (Depositional)

No exceedances of the depositional dust criteria were recorded during the month of September 2013.

Peak clearing and earthworks activities associated with Stage 2 construction works, the exceptionally dry conditions and moderately high winds contributed to higher than average depositional dust results during this month.

The September depositional dust analysis covers an approximate 3 week period, rather than the nominal 4 weeks required under AS/NZS 3580.10.1:2003. This is a consequence of the operator error during the August reporting period and the requirement to align the monitoring period to the beginning and end of each calendar month.

The results of the September depositional dust analysis have been used in conjunction with results from the August depositional dust analysis to calculate equivalent monthly results from 1st to 30th September 2013. These calculations are based on the division of depositional dust analysis results by the number of days during the August monitoring period to get obtain average daily depositional rates. The average rate was used to calculate indicative depositional dust levels between the 1st and 11th September 2013. This was then added to the recorded depositional dust level during September to obtain the equivalent calculated results.

Annual average results remain below the assessment criterion.

Location	Total Insoluble Matter (g/m ² /month)			Goal (annual average)
	1	2	3	
11/09/2013 to 30/09/2013 (Actual results)	3.2*	2.9*	3.5*	
01/09/2013 to 30/09/2013 (Equivalent calculated results)	3.4	3.2	4.0	
Annual average	1.7	1.7	2.1	4 g /m ² /month

* Note: DDG results not obtained in accordance with AS3580.10.1:2003. Values calculated to provide indicative results only.

Construction Noise

No exceedances of noise criteria observed in September 2013.

Construction noise levels at location 5a (Lomandra Shelter Shed) in the Nurragingy Reserve were approximately 7dB(A) above the project noise criterion specified under MCoA 2.3. This was primarily due to a dozer engine and track noise from plant operating close to the site boundary fence. It is noted this noise criteria is only applicable when the reserve is in use. At the time of monitoring, although the reserve was open there was no one utilising the immediate area for recreational purposes. As a result the measured noise level is not considered to represent an exceedance to the project noise criterion.

It is also noted that the measured noise levels were 6dBA below the respective NML noted in the CNMP.

The results of attended construction noise monitoring are presented below:

Location	Start	Construction contribution L _{Aeq}	L _{Aeq}	L _{A10}	L _{A90}	Project criteria L _{Aeq(15min)} dB(A)	ML L _{Aeq,15min} / dB(A)	Notes
1 (132 Station St)	11:20	Inaudible	57	60	55	44	58	Holcim inaudible, M7 (constant 55-65), Woodstock avenue traffic (freq 55-60), birds
2 (54 Station St)	11:40	Inaudible	57	59	53	44	58	Holcim inaudible, M7 (constant 55-60), local traffic (55-65), breeze, birds
3 (63 Coghlan St)	12:10	Inaudible	56	61	54	40	58	Holcim inaudible, M7 (constant 55-60), birds
4 (16 Mavis St)	15:00	Inaudible	58	61	52	35	60	Holcim inaudible, Knox Rd traffic (constant 50-60), train (60-70)
5a (Lomandra Shelter Shed (Nurragingy Reserve))	14:30	57	55	57	47	50	63	Holcim (constant 50-60, trucks, dozer tracks, horns, beepers), cicadas (57), local traffic (55-60)
5b (Boronia Shelter Shed (Nurragingy Reserve))	14:10	47	53	56	46	50	63	Holcim (constant 40-50, dozer tracks, bangs, truck engines, beepers), industrial area (frequent 40-45), local traffic (65), birds (constant 50-60)

Local Meteorology

A wind rose showing the proportion of direction and strength of winds throughout the reporting period is below. A complete data set, including, humidity, temperature and rainfall is provided in software form.

The results of the wind rose show that areas to the south east of the site were the most likely to be impacted by construction generated dust. This area is southern areas of the Nurragingy reserve and the railway line.

Of the three Depositional Dust Gauges (DDG) installed for the project, DDG No. 3 which is located to the south east of the project site within the Nurragingy Reserve recorded the highest dust levels. This confirms the above assumption that areas to the south east are more likely to experience construction generated dust.

Windrose for September 2013

