

**ROOTY HILL REGIONAL DISTRIBUTION CENTRE
MONTHLY ENVIRONMENTAL MONITORING REPORT**

Aspect	Air Quality, Construction Noise and Meteorology
Date	July 2014

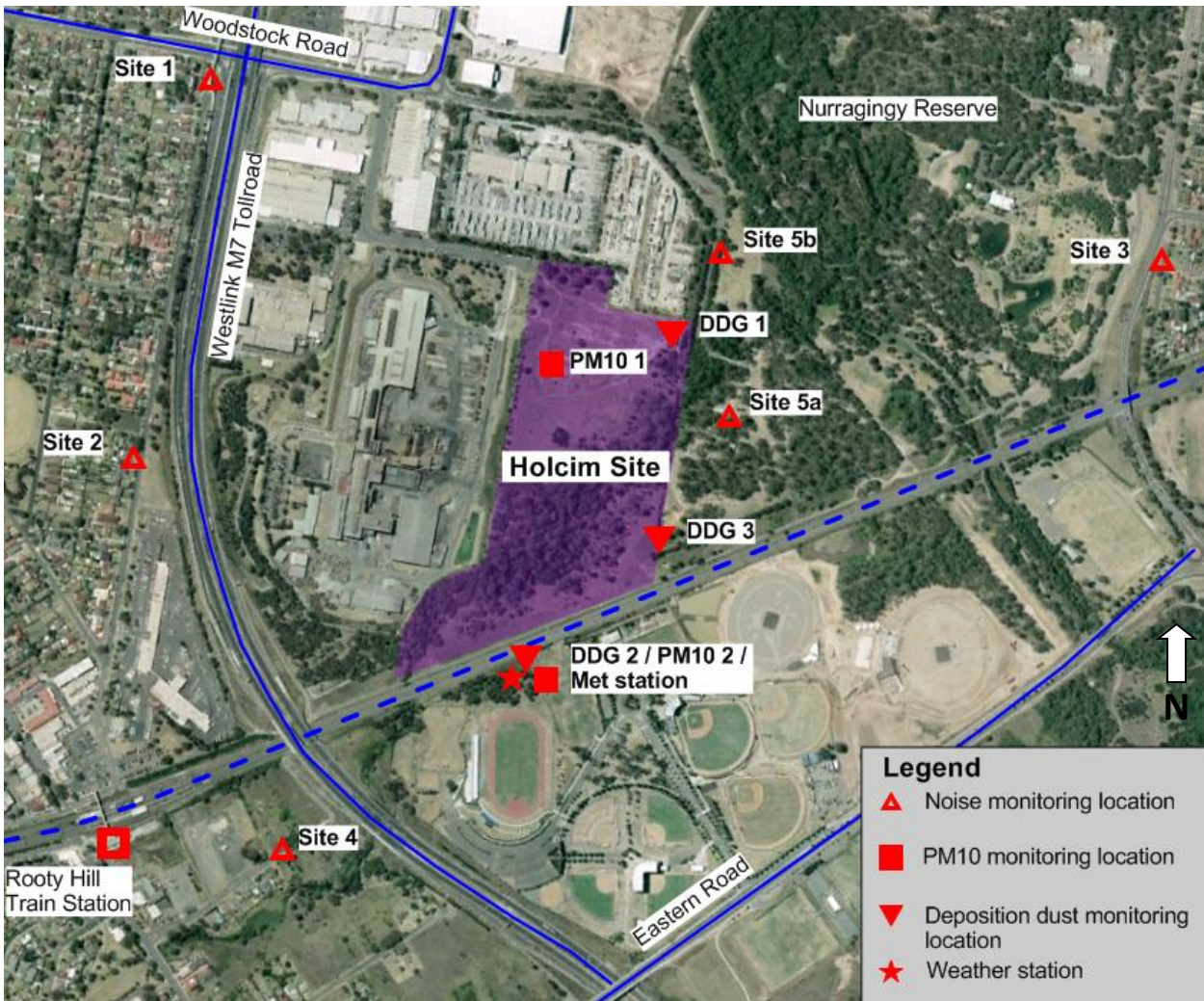
SUMMARY

Monitoring period	1 July to 31 July
Parameters monitored in period	Dust (PM ₁₀) / TSP Depositional Dust Construction Noise Local Meteorology
Exceedance summary	<ul style="list-style-type: none"> ▪ No exceedances of PM₁₀ or TSP dust criterion were recorded during July 2014. ▪ No exceedances of depositional dust annual criterion were recorded during July 2014. ▪ No attributable exceedances of the construction noise management levels were recorded in July 2014.
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)
Holcim Site offices
- Dust monitoring (Depositional): Locations 1 to 3
- Noise monitoring: Locations 1 to 5b
- Meteorology: Blacktown International Sportspark (formerly Olympic Park)



■ **Figure 1 Monitoring locations**

2. Monitoring Methodology

Dust

Air quality (dust) monitoring was undertaken using two Ecotech High Volume Air Samplers (HVAS) 3000 with Particulate Matter - 10µm (PM₁₀) sampling heads. The HVASs were 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 is no longer directly monitored, but is calculated by application of a conversion factor (PM₁₀ x 2.5 = TSP), in accordance with the site Operational 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 (ICNG). Monitoring was carried out using a SVAN 858 Type 1 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

Air Quality

Air quality (dust) criteria within the Project Conditions of Approval, 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 in **Table 1**, which apply cumulatively (that is, due to all sources of emissions and not just the contribution from the project).

■ Table 1 Air Quality Criteria

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

The Noise Management Levels (NML) for construction of the Rooty Hill RDC are provided in **Table 2**. These are based on the requirements of the ICNG, Ministers Condition of Approval (MCoA) 2.2 and the measured background levels.

■ **Table 2 Construction Noise Management Levels**

Receiver		Receiver Type	Approximate Distance and Orientation from RDC boundary	NML LAeq,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	63
5a	Lomandra Shelter Shed (Nurragingy Reserve)	Recreational	<100m east	60
5b	Boronia Shelter Shed (Nurragingy Reserve)	Recreational	<100m east	60

A construction noise impact assessment undertaken for the Construction Noise Management Plan (CNMP) predicts no exceedance of the NMLs at residential receivers throughout the construction program. Within the reserve, occasional exceedances are anticipated such as during earthworks; vegetation clearing; and installation of building structures and equipment.

Please note that MCoA 2.3 is related to the operational phase and compliance does not need to be assessed during construction.

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 are monitored:

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

4. Monitoring results

Air Quality

PM₁₀ / TSP

No exceedances of PM₁₀ or TSP dust criteria were recorded during the month of July 2014.

■ Table 3 HVAS Unit 1 (BSC) July 2014 PM₁₀ and TSP Results

Date	PM ₁₀ (ug/m ³)		TSP	
	Measured result	Criteria	Calculated result (PM10 x 2.5)	Criteria
5/07/2014	31.7	50	79.3	NA
11/07/2014	28.9	50	72.3	NA
17/07/2014	27.1	50	67.8	NA
23/07/2014	25.5	50	63.8	NA
29/07/2014	35.7	50	89.3	NA
Annual average (to date)	23.7		59.4	

■ Table 4 HVAS Unit 2 (Site office) July 2014 PM₁₀ and TSP Results

Date	PM ₁₀ (ug/m ³)		TSP	
	Measured result	Criteria	Calculated result (PM10 x 2.5)	Criteria
5/07/2014	33.8	50	84.5	NA
11/07/2014	28.2	50	70.5	NA
17/07/2014	22.6	50	56.5	NA
23/07/2014	29.9	50	74.8	NA
29/07/2014	25.7	50	64.3	NA
Annual average (to date)	25.5		63.8	

Depositional Dust

Although monthly deposited dust level recorded at DDG2 was above the annual criterion of 4 g/m²/month, the annual averages at all DDG's remains below the annual criterion for 2014.

■ Table 5 Depositional Dust Gauge Results July 2014

Location	Total Insoluble Matter (g/m ² /month)			Goal (annual average)
	1	2	3	
01/07/2014 – 30/07/2014	1.8	4.3	2.0	N/A
Annual average	1.9	2.8	1.4	4 g /m ² /month

** Average does not include erroneous result obtained on 31/10/2013.

Construction Noise

No attributable exceedances of construction noise management levels were observed during July 2014

Small scale earthworks were being carried out in the northern and southern areas of the site. Audible noise included truck movements between the two work areas, and earthmoving equipment in the south.

The results of attended construction noise monitoring are presented in **Table 6**.

■ **Table 6 Construction Noise Monitoring Results**

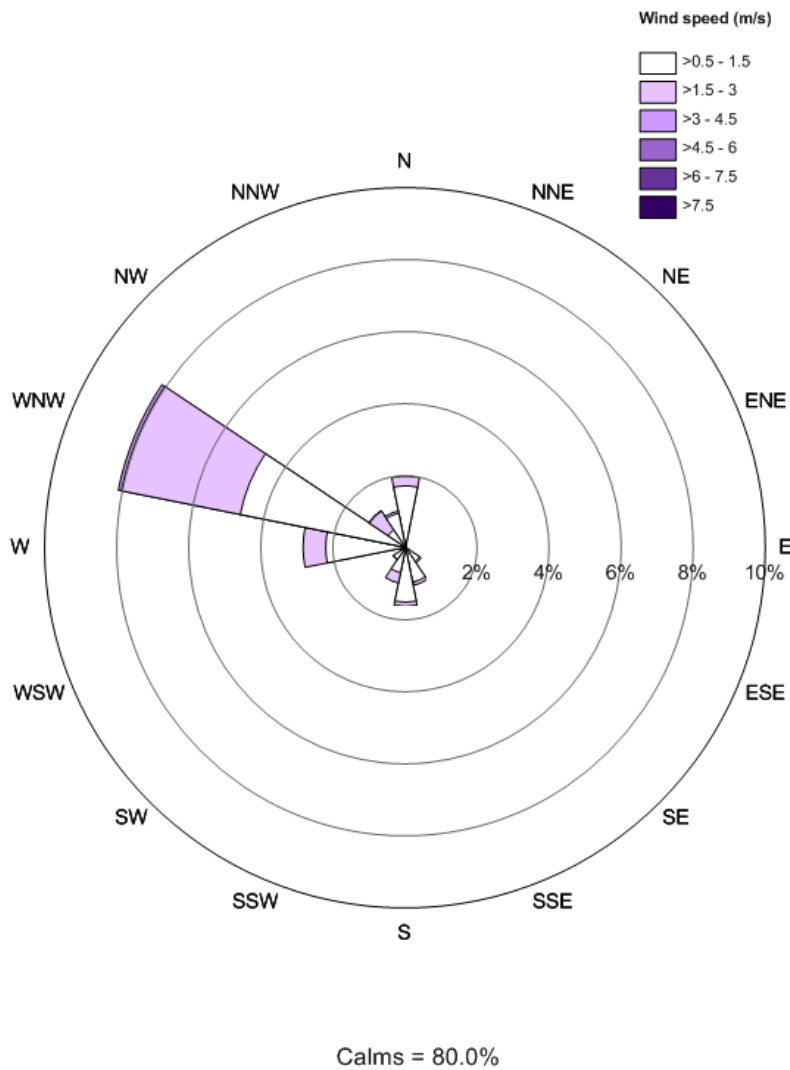
Location	Start	Construction contribution L _{Aeq}	L _{Aeq}	L _{A10}	L _{A90}	NML L _{Aeq,15} min / dB(A)	Notes
1 (132 Station St)	8:45	IA	55	58	49	58	Holcim inaudible, M7 (constant 50-60), birds
2 (54 Station St)	9:05	IA	59	61	51	58	Holcim inaudible, M7 (constant 50-55), local traffic (60-65), birds
3 (63 Coghlan St)	10:00	IA	59	62	50	58	Holcim inaudible, Knox Rd traffic (constant 55-65), aeroplane, train, garbage collection on adjacent streets (45-50)
4 (16 Mavis St)	9:30	IA	55	58	49	63	Holcim inaudible, M7 (constant 50-60), birds, train, aeroplane
5a (Lomandra Shelter Shed [Nurragingy Reserve])	10:25	50	54	56	48	60	Holcim (drilling, ratchet gun, bangs from northern earthworks), birds, trains, local traffic
5b (Boronia Shelter Shed [Nurragingy Reserve])	10:45	38	49	49	43	60	Holcim (excavator - constant 35-40), work at Hume site, birds, local traffic, park users

*IA - Inaudible

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 separately.

The wind rose shows that areas to the southeast of the site were the most likely to be impacted by construction generated dust. This area includes the Nurranginy reserve.



■ **Figure 2 July 2014 Windrose, Blacktown International Sportspark Meteorological station**