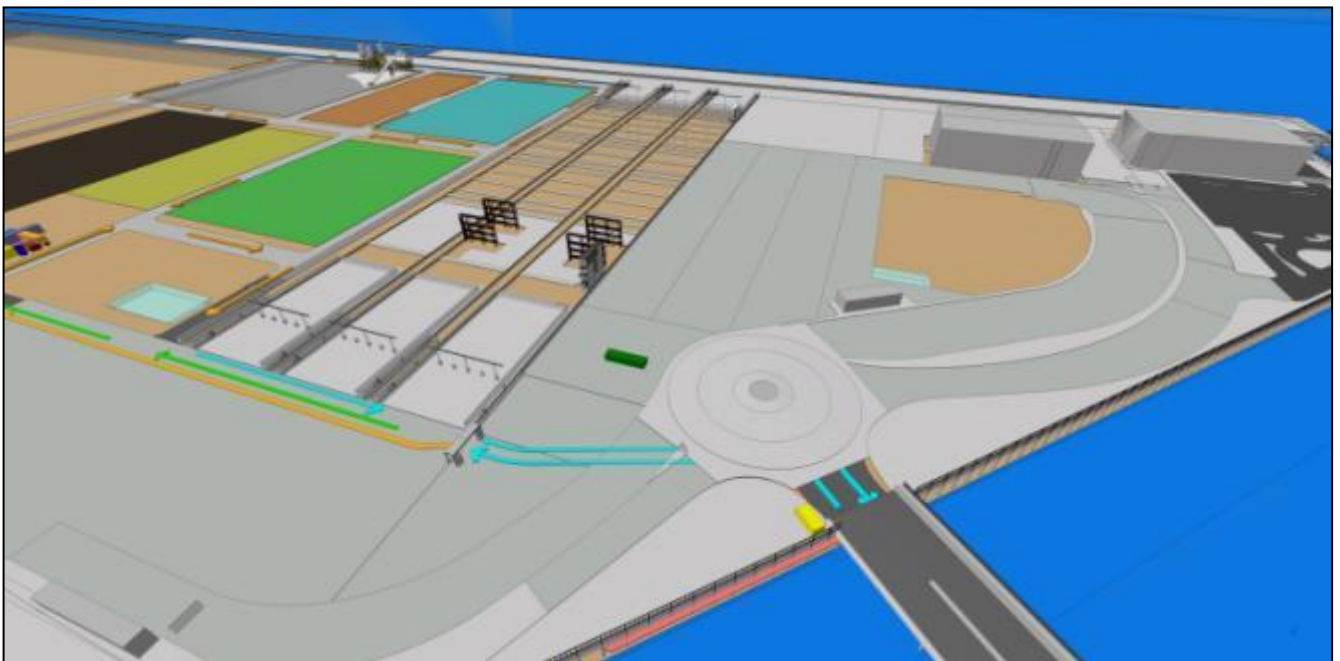


Sydney Port Botany Terminal 3

Monthly Environmental Monitoring Report

December 2013





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Client's Representative:	Mott McDonald
LORA Contract No.:	G52

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Revision History

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0	06/01/14	Issue	JA	06/01/14	JA

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1.0 Introduction

This report provides results for environmental monitoring activities associated with the Laing O'Rourke Terminal 3 expansion work at Port Botany for the month of December 2013.

Monitoring has been undertaken for dust, noise, water quality and shorebird observations.

No environmental complaints have been received by Laing O'Rourke this month in regards to the Terminal 3 construction works.

1.1 Construction Activities

Laing O'Rourke construction activities undertaken for the month of November 2013 included the following:

- Earthworks and ground improvements
- Drainage activities
- Services works
- Concrete batch plant and paving operations
- Rail beam preparation and construction
- Noise wall installation and painting
- Landscaping

2.0 Dust Monitoring and Air Quality

Four dust deposition gauges are installed in the areas surrounding the Port Botany Expansion. Dust deposition results for December 2013 have yet to be received from our laboratory. November 2013 results are reported in Appendix 1.

All results received for the deposition gauges are within EPA guidelines and Project criteria with the exception of one gauge located in the upper Penrhyn Estuary. The dust deposition gauge located in the upper Penrhyn Estuary returned a total insoluble matter value of 5.1 g/m².month which is above the project guideline of 4.0 g/m².month. This is the second exceedance of dust deposition monitoring targets during the current phase of the port expansion project and is repeated at the same location. A high ash content of 4.1 g/m².month was received for this Penrhyn Estuary dust gauge and thought to have contributed to the exceedance of the total insoluble matter. The source of the ash content is being investigated and not considered to be caused by the Laing O'Rourke Terminal 3 construction activities.

However, further to the polymer 'spray sealant' that has been applied to material stockpiled on the Southern end of the Terminal 3 site, additional applications of this polymer have been sprayed across the Terminal 3 site during December 2013 to minimise potential offsite dust impacts. Water Cart operations are also continuing across the site.

Other construction contractors engaged by Patrick Stevedores, working adjacent the Terminal 3 site and Penrhyn Estuary have been notified of the exceedance in a combined approach to minimise offsite impacts of Port expansion works. No residential properties or road networks were impacted by dust and there have been no dust complaints received by the project during this monitoring period.

A real-time dust monitor has been installed at the Botany Golf Club for reporting of PM₁₀ particulate matter. No exceedances of project PM₁₀ particulate matter criteria were recorded during December 2013.

Dust monitoring results are outlined in Appendix 1.

3.0 Noise Monitoring

Monthly construction noise monitoring was undertaken during December 2013. Noise monitoring locations have been based on noise-sensitive receptors in the project Environmental Impact Statement and approved for the Port Botany Expansion construction activities.

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Attended noise measurements were carried out for a period of 15 minutes at each location. During the monitoring event, observations were made on the weather as well as the surrounding noise sources and environment.

3.1 Day time noise monitoring

Noise measurements were undertaken on 3rd December 2013. Work activities being undertaken on the Terminal 3 project included earthworks, drainage and services activities, batch plant operation, paving, noise wall installation, rail beam construction, landscaping and material deliveries.

The Interim Construction Noise Guideline (2009, DECCW) sets out management levels for noise at residences and how they are to be applied. This guideline has been used in conjunction with the project Environmental Impact Statement to determine noise goals for the project. Recorded LA_{eq} levels exceeded the noise goals for noise emissions from the Port Botany Expansion Project at 5 of the 6 monitoring locations, however at each monitoring location extraneous, non-project related noises were the dominant noise sources. These noise sources included road traffic, both local and main, and aircraft noise. No Terminal 3 construction activities were audible at any monitoring locations.

It is noted that the intent of the Interim Construction Noise Guideline is to minimise noise impact from the construction works and is only applicable to the contribution of the noise from the Port Botany construction site. At the attended monitoring events, as has been noted on other stages of the Port Botany expansion project, the measured noise levels were controlled and dominated by other extraneous noise sources as listed above.

Noise monitoring results are shown in Appendix 2.

4.0 Water Quality Monitoring

Physical water parameters required to be monitored are pH, turbidity and visible oil and grease when dewatering activities are undertaken. Other contaminants may be tested for in areas of concern if the presence of contamination is observed.

4.1 Water Monitoring

No dewatering activities have been undertaken on the Laing O'Rourke Terminal 3 site during December 2013.

5.0 Shorebird Monitoring

No shorebird observations were obtained this month. With the noise wall installed around the perimeter of the site, birds present in Penrhyn Estuary cannot be seen and no target bird species have been identified on site. Sydney Ports Corporation manage Penrhyn Estuary and report on findings and progress separately to the Terminal 3 construction works.

6.0 Environmental Inspections and Audits

Weekly environmental inspections have been undertaken during December 2013 for the Terminal 3 project site. Inspections have focused on dust suppression with hot and dry conditions through the month. No significant environmental issues were observed or identified.

7.0 Appendices

Appendix 1 – Dust Monitoring Results
Appendix 2 – Noise Monitoring Results

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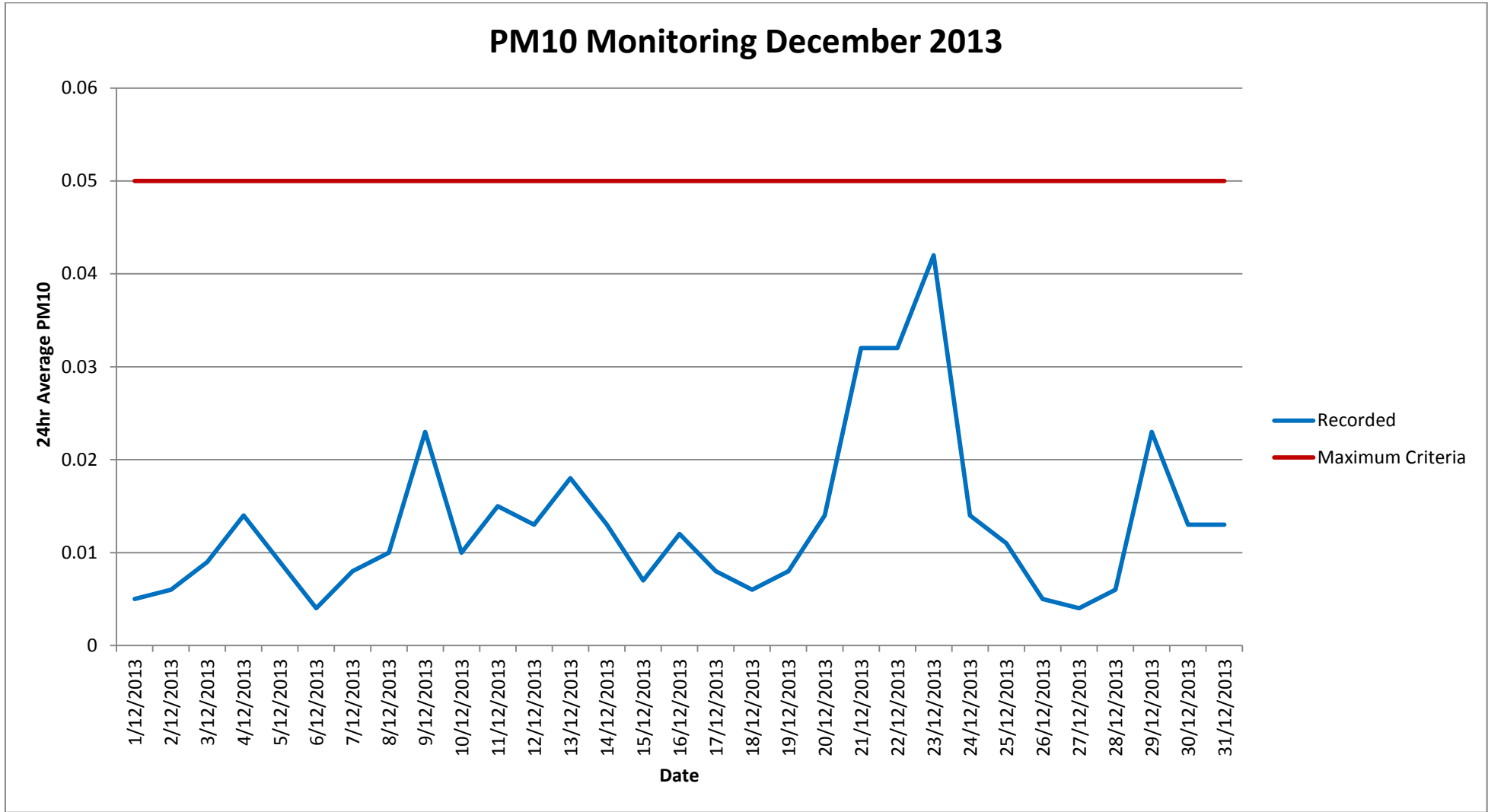
Appendix 1 – Dust Monitoring Results

Dust Deposition Gauge Results - November 2013

No.	Monitoring Location	Ash	Combustible matter	Total Soluble matter	Total Insoluble matter	Total Solids	Sample ID (File Reference)	EPA Guideline (Total Insoluble matter)	Comments (i.e. any exceedances of EPA objectives)	Work Activities / Observations During Monitoring Period
1	Upper Penrhyn Estuary	4.1	1.0	4.4	5.1	9.5	EN1304608-003	4	Above EPA guideline levels	Earthworks Drainage works Deliveries Paving Concrete batch plant Structural works Utilities Noise wall install Landscaping
2	Joseph Banks Park	0.8	0.4	4.5	1.2	5.7	EN1304608-001	4	Within EPA guideline levels	
3	Purcell Park	2.5	0.7	3.7	3.2	6.9	EN1304608-002	4	Within EPA guideline levels	
4	Botany Golf Course	1.5	0.6	6.0	2.1	8.1	EN1304608-004	4	Within EPA guideline levels	

All Units in g/m².month

PM₁₀ Monitoring Results – December 2013



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Dust Monitoring Locations



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Appendix 2 – December 13 Day Noise Monitoring Results

Noise Sensitive Area	Monitoring Location	Date	Time (24hr) & Duration (mins)	Construction Activities	Standard or Out of Hours Works (Day/Evening/Night)	Weather Conditions	In Response to Complaint?	RBL (dBA) - from EIS	Noise Goal ¹ (RBL+ 5dBA)	Recorded Noise Level LAeq (15 min) (dBA)	Recorded Noise Level LA1 (dBA)	Recorded Noise Level LA10 (dBA)	Recorded Noise Level L90 (dBA)	Noise Goal Difference (dBA)	Comments
Location 1 - Chelmsford Avenue	14 The Esplanade	3/12/2013	9:40	Ground improvement works Drainage works Material deliveries Batch Plant Pavement Works Rail Beam Construction	Standard Day	Fine	No	49	54	55	62	60	39	1	Noise from Foreshore Rd traffic, aircraft noise, local traffic, park noise. Terminal 3 construction inaudible
Location 2 - Dent Street	34 Dent St	3/12/2013	10:55	Ground improvement works Drainage works Material deliveries Batch Plant Pavement Works Rail Beam Construction	Standard Day	Fine	No	47	52	60	66	62	56	8	Local traffic and foreshore road noise, aircraft noise, park noise. Terminal 3 construction inaudible
Location 3 - Jennings Street	42 Jennings St	3/12/2013	12:30	Ground improvement works Drainage works Material deliveries Batch Plant Pavement Works Rail Beam Construction	Standard Day	Fine	No	40	45	61	81	65	44	16	Local traffic noise, aircraft noise. Terminal 3 construction inaudible
Location 4 - North of Golf Course	3 Anniversary Rd	3/12/2013	10:15	Ground improvement works Drainage works Material deliveries Batch Plant Pavement Works Rail Beam Construction	Standard Day	Fine	No	57	62	54	61	59	46	-8	Local traffic noise, aircraft noise. Terminal 3 construction inaudible
Location 5 - Australia Avenue	74 Australia Ave	3/12/2013	11:35	Ground improvement works Drainage works Material deliveries Batch Plant Pavement Works Rail Beam Construction	Standard Day	Fine	No	42	47	48	56	51	43	1	Local/distant traffic noise, aircraft noise, local industry. Terminal 3 construction inaudible
Location 6 - Military Road	73 Wassell St	3/12/2013	13:15	Ground improvement works Drainage works Material deliveries Batch Plant Pavement Works Rail Beam Construction	Standard Day	Fine	No	46	51	52	60	56	37	1	Noise from Bunnerong Rd, Local traffic noise, local industry, adjacent park. Terminal 3 construction inaudible

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Noise Monitoring Locations



Location 1	Location 2	Location 3	Location 4	Location 5	Location 6
14 The Esplanade	34 Dent St	42 Jennings St	3 Anniversary Rd	74 Australia Ave	73 Wassell St