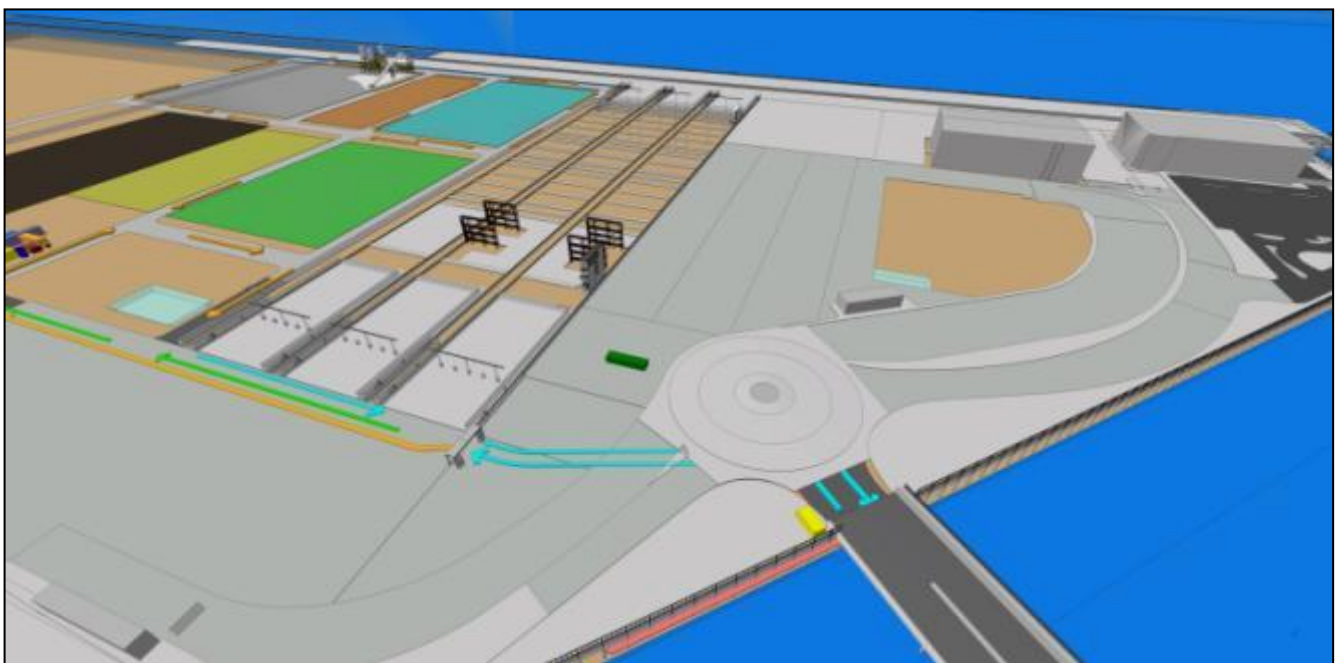


# Sydney Port Botany Terminal 3

## Monthly Environmental Monitoring Report

### December 2012



# SPBT3 Monthly Environmental Report – Dec 12

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

**Controlled Copy no.:** 1

## Revision History

| Rev | Date     | Description | Reviewed | INT/Date | Authorised |
|-----|----------|-------------|----------|----------|------------|
| 0   | 07/01/12 | Issue       | JA       | 07/01/12 | JA         |
|     |          |             |          |          |            |
|     |          |             |          |          |            |

## Management Reviews

| Review Date | Reviewed By | Details | Initial | Date |
|-------------|-------------|---------|---------|------|
|             |             |         |         |      |
|             |             |         |         |      |
|             |             |         |         |      |

# SPBT3 Monthly Environmental Report – Dec 12

## Contents:

|   |           |
|---|-----------|
| <b>1.0 Introduction</b> .....                               | <b>4</b>  |
| 1.1 Construction Activities.....                            | 4         |
| <b>2.0 Dust Monitoring and Air Quality</b> .....            | <b>4</b>  |
| <b>3.0 Noise Monitoring</b> .....                           | <b>4</b>  |
| 3.1 Day time noise monitoring .....                         | 4         |
| 3.2 Night time noise monitoring .....                       | 5         |
| <b>4.0 Soil and Water Quality Monitoring</b> .....          | <b>5</b>  |
| 4.1 Water Monitoring.....                                   | 5         |
| <b>5.0 Shorebird Monitoring</b> .....                       | <b>5</b>  |
| <b>6.0 Environmental Inspections and Audits</b> .....       | <b>5</b>  |
| <b>7.0 Appendices</b> .....                                 | <b>6</b>  |
| <b>Appendix 1 – Dust Deposition Results</b> .....           | <b>7</b>  |
| <b>Appendix 2 – Day-time Noise Monitoring Results</b> ..... | <b>8</b>  |
| <b>Appendix 3 – Water Monitoring Results</b> .....          | <b>9</b>  |
| <b>Appendix 4 – Terminal 3 Shorebird Observations</b> ..... | <b>11</b> |

# SPBT3 Monthly Environmental Report – Dec 12

## 1.0 Introduction

This report provides results for environmental monitoring activities associated with the Terminal 3 expansion at Port Botany for the month of December 2012.

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

No environmental complaints have been received this month in regards to the Terminal 3 expansion works. Results have been received in regards to a vibration complaint received from a residential address during November 2012. Vibration monitoring was undertaken at the residence with results indicating that the Terminal 3 construction works were not the source of any perceivable vibration or noise.

### 1.1 Construction Activities

Construction activities undertaken for the month of December 2012 included the following:

- Earthworks and ground improvements
- Drainage activities and headwall installation
- Precast concrete fabrication for utilities and services work
- Commencing of concrete batch plant installation .

## 2.0 Dust Monitoring and Air Quality

Three dust deposition gauges are installed in the areas surrounding the Port Botany Expansion. Dust deposition results for December 2012 have yet to be received from our laboratory. Dust deposition results for November are given in this report and are outlined in Appendix 1. All results are within EPA criteria.

There has been no dust complaints received this month.

A real-time dust monitor is being installed at Botany Golf Club in conjunction with Botany Council for reporting of PM<sub>10</sub> particulate matter. Results will be included in the January 2013 environmental monitoring report.

## 3.0 Noise Monitoring

Monthly construction noise monitoring was undertaken during December 2012. 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.

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 18<sup>th</sup> December 2012. Work activities being undertaken on the Terminal 3 project included ground improvement and earthworks, headwall and drainage works, concrete precast works 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 LAeq levels exceeded the noise goals for noise emissions from the Port Botany expansion Project at all locations except one, 3 Anniversary Road, Botany. 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.

Construction activities at the Terminal 3 project site were inaudible in all cases.

## SPBT3 Monthly Environmental Report – Dec 12

---

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.

Day-time noise monitoring results are shown in Appendix 2.

### 3.2 Night time noise monitoring

No night time monitoring was required to be undertaken for the Terminal 3 project site.

## 4.0 Soil and 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

Water monitoring has been undertaken during December for dewatering activities undertaken during the installation of drainage headwalls and Stormwater Quality Improvement Devices (SQIDs) and approaching drainage lines on the border of the Terminal 3 site. All dewatering results have been compliant with the discharge criteria set in the project Environmental Impact Statement. Dewatering results are summarised in Appendix 3.

## 5.0 Shorebird Monitoring

Shorebird observations from the Terminal 3 site during December 2012 are outlined in Appendix 4. Pacific Golden Plovers and Pied Oyster Catchers have been noted on the site.

## 6.0 Environmental Inspections and Audits

Weekly environmental inspections have been undertaken during December for the Terminal 3 project site. No significant environmental issues were observed or identified.

It is noted that a citrus based material has been trialled for stockpiles and unused, reclaimed areas of the Terminal 3 site. This product forms a hardened crust on the top layer of the sand to prevent dusty conditions during high winds.

Completed inspection sheets may be available on request.

## **7.0 Appendices**

- Appendix 1 – Dust Deposition Results**
- Appendix 2 – Day-time Noise Monitoring Results**
- Appendix 3 – Water Monitoring Results**
- Appendix 4 – Terminal 3 Shorebird Observations**

Appendix 1 – Dust Deposition Results

| Dust Deposition Gauge Results - December 2012 |                       |     |                    |                      |                        |              |                            |  |   |   |
|---|-----------------------|-----|--------------------|----------------------|------------------------|--------------|----------------------------|--|---|---|
| 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 | 1.9 | 0.6                | 1.4                  | 2.5                    | 3.9          | EN1204679-003              | 4                                      | Within EPA guideline levels                       | Ground improvements<br>Headwall installation<br>Drainage works<br>Material deliveries<br>Concrete precast fabrication |
| 2   | 14 The Esplanade      | 0.5 | 0.2                | 0.2                  | 0.7                    | 0.9          | EN1204679-001              | 4                                      | Within EPA guideline levels                       |   |
| 3   | 74 Australia Ave      | 1.3 | 0.3                | 0.8                  | 1.6                    | 2.4          | EN1204679-002              | 4                                      | Within EPA guideline levels                       |   |

All Units in g/m<sup>2</sup>.month

# SPBT3 Monthly Environmental Report – Dec 12

## Appendix 2 – Day-time Noise Monitoring Results

| Noise Monitoring Results - SPBT3 December 2012 |                     |            |                               |  |  |                    |                           |                      |                                     |  |                                |                                 |                                |                             | LAING O'ROURKE   |
|--|---------------------|------------|-------------------------------|--|--|--------------------|---------------------------|----------------------|-------------------------------------|--|--------------------------------|---------------------------------|--------------------------------|-----------------------------|--|
| 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 <sup>1</sup> (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    | 18/12/2012 | 8:35                          | Ground improvement works<br>Headwall and drainage works<br>Concrete precast works<br>Material deliveries | Standard Day                                       | Fine               | No                        | 49                   | 54                                  | 59                                       | 75                             | 59                              | 48                             | 5                           | Noise from Foreshore Rd traffic, some aircraft noise, local traffic, dog barking during monitoring |
| Location 2 - Dent Street                       | 34 Dent St          | 18/12/2012 | 9:20                          | Ground improvement works<br>Headwall and drainage works<br>Concrete precast works<br>Material deliveries | Standard Day                                       | Fine               | No                        | 47                   | 52                                  | 60                                       | 65                             | 61                              | 57                             | 8                           | Local traffic noise, aircraft noise  |
| Location 3 - Jennings Street                   | 42 Jenning St       | 18/12/2012 | 11:45                         | Ground improvement works<br>Headwall and drainage works<br>Concrete precast works<br>Material deliveries | Standard Day                                       | Fine               | No                        | 40                   | 45                                  | 56                                       | 63                             | 58                              | 42                             | 11                          | Local traffic noise, some aircraft noise   |
| Location 4- North of Golf Course               | 3 Anniversary Rd    | 18/12/2012 | 10:05                         | Ground improvement works<br>Headwall and drainage works<br>Concrete precast works<br>Material deliveries | Standard Day                                       | Fine               | No                        | 57                   | 62                                  | 54                                       | 62                             | 55                              | 50                             | -8                          | Local traffic noise, aircraft noise  |
| Location 5- Australia Avenue                   | 74 Australia Ave    | 18/12/2012 | 10:50                         | Ground improvement works<br>Headwall and drainage works<br>Concrete precast works<br>Material deliveries | Standard Day                                       | Fine               | No                        | 42                   | 47                                  | 50                                       | 56                             | 51                              | 42                             | 3                           | Local/distant traffic noise, aircraft noise  |
| Location 6- Military Road                      | 73 Wassell St       | 18/12/2012 | 12:35                         | Ground improvement works<br>Headwall and drainage works<br>Concrete precast works<br>Material deliveries | Standard Day                                       | Fine               | No                        | 46                   | 51                                  | 59                                       | 66                             | 62                              | 46                             | 8                           | Noise from Bunnerong Rd  |

Note 1: Noise goals are applicable to the noise contribution from the Terminal 3 Port Botany Expansion related construction activities only



# SPBT3 Monthly Environmental Report – Dec 12

## Appendix 3 – Water Monitoring Results

| Dewatering Discharge Monitoring |          |                |                    |                         |      |           |
|---------------------------------|----------|----------------|--------------------|-------------------------|------|-----------|
| Dewatering Location             | Date     | Meets Criteria | Discharge Location | Horiba Water Monitor    |      |           |
|                                 |          |                |                    | Oil and Grease (visual) | pH   | Turbidity |
| SC2a - SQIDs                    | 3/12 AM  | Yes            | Adjacent Bay       | None                    | 7.86 | 0.0       |
| SC2a - SQIDs                    | 3/12 PM  | Yes            | Adjacent Bay       | None                    | 7.96 | 1.2       |
| SC2a - SQIDs                    | 4/12 AM  | Yes            | Adjacent Bay       | None                    | 8.23 | 0.4       |
| SC2a - SQIDs                    | 4/12 PM  | Yes            | Adjacent Bay       | None                    | 8.35 | 0.6       |
| SC2a - SQIDs                    | 5/12 AM  | Yes            | Adjacent Bay       | None                    | 7.34 | 1.6       |
| SC2a - SQIDs                    | 5/12 PM  | Yes            | Adjacent Bay       | None                    | 7.78 | 0.5       |
| SC2a - SQIDs                    | 6/12 AM  | Yes            | Adjacent Bay       | None                    | 8.09 | 0.6       |
| SC2a - SQIDs                    | 6/12 PM  | Yes            | Adjacent Bay       | None                    | 7.45 | 1.7       |
| SC2a - SQIDs                    | 7/12 AM  | Yes            | Adjacent Bay       | None                    | 7.61 | 2.2       |
| SC2a - SQIDs                    | 7/12 PM  | Yes            | Adjacent Bay       | None                    | 7.12 | 0.6       |
| SC2a - SQIDs                    | 10/12 AM | Yes            | Adjacent Bay       | None                    | 7.74 | 0.5       |
| SC2a - SQIDs                    | 10/12 PM | Yes            | Adjacent Bay       | None                    | 7.12 | 0.0       |
| SC2a - SQIDs                    | 11/12 AM | Yes            | Adjacent Bay       | None                    | 7.32 | 1.2       |
| SC2a - SQIDs                    | 11/12 PM | Yes            | Adjacent Bay       | None                    | 7.34 | 1.9       |
| SC2a - SQIDs                    | 12/12 AM | Yes            | Adjacent Bay       | None                    | 7.85 | 2.0       |
| SC2a - SQIDs                    | 12/12 PM | Yes            | Adjacent Bay       | None                    | 7.98 | 2.1       |
| SC2a - SQIDs                    | 13/12 AM | Yes            | Adjacent Bay       | None                    | 8.24 | 1.8       |
| SC2a - SQIDs                    | 13/12 PM | Yes            | Adjacent Bay       | None                    | 7.76 | 0.3       |
| SC2a - SQIDs                    | 14/12 AM | Yes            | Adjacent Bay       | None                    | 7.86 | 0.2       |
| SC2a - SQIDs                    | 14/12 PM | Yes            | Adjacent Bay       | None                    | 7.95 | 1.6       |
| SC2a - SQIDs                    | 17/12 AM | Yes            | Adjacent Bay       | None                    | 8.12 | 0.9       |
| SC2a - SQIDs                    | 17/12 PM | Yes            | Adjacent Bay       | None                    | 7.32 | 1.2       |
| SC2a - SQIDs                    | 18/12 AM | Yes            | Adjacent Bay       | None                    | 7.69 | 0.4       |
| SC2a - SQIDs                    | 18/12 PM | Yes            | Adjacent Bay       | None                    | 7.53 | 1.7       |
|                                 |          |                |                    |                         |      |           |
| Bay Reading                     | 6/12 PM  | N/A            | N/A                | None                    | 7.86 | 0.4       |
| Bay Reading                     | 14/12 PM | N/A            | N/A                | None                    | 8.00 | 1.3       |
|                                 |          |                |                    |                         |      |           |
| SC3 - Outlet                    | 7/12 AM  | Yes            | Adjacent Bay       | None                    | 7.54 | 0.1       |
| SC3 - Outlet                    | 7/12 PM  | Yes            | Adjacent Bay       | None                    | 7.42 | 1.7       |
| SC3 - Outlet                    | 10/12 AM | Yes            | Adjacent Bay       | None                    | 8.34 | 2.1       |
| SC3 - Outlet                    | 10/12 PM | Yes            | Adjacent Bay       | None                    | 8.22 | 2.2       |
| SC3 - Outlet                    | 11/12 AM | Yes            | Adjacent Bay       | None                    | 7.68 | 1.8       |
| SC3 - Outlet                    | 11/12 PM | Yes            | Adjacent Bay       | None                    | 7.65 | 1.5       |
| SC3 - Outlet                    | 12/12 AM | Yes            | Adjacent Bay       | None                    | 7.23 | 0.2       |
|                                 |          |                |                    |                         |      |           |
| Bay Reading                     | 7/12 PM  | N/A            | N/A                | None                    | 7.89 | 1.6       |
| Bay Reading                     | 14/12 PM | N/A            | N/A                | None                    | 7.94 | 0.4       |
|                                 |          |                |                    |                         |      |           |
| SC5a - SQIDs                    | 3/12 AM  | Yes            | Adjacent Bay       | None                    | 7.12 | 1.8       |
| SC5a - SQIDs                    | 3/12 PM  | Yes            | Adjacent Bay       | None                    | 7.43 | 0.9       |
| SC5a - SQIDs                    | 4/12 AM  | Yes            | Adjacent Bay       | None                    | 7.65 | 1.1       |

## SPBT3 Monthly Environmental Report – Dec 12

|                  |          |     |              |      |      |     |
|------------------|----------|-----|--------------|------|------|-----|
| SC5a - SQIDs     | 4/12 PM  | Yes | Adjacent Bay | None | 7.63 | 0.5 |
| SC5a - SQIDs     | 5/12 AM  | Yes | Adjacent Bay | None | 7.34 | 0.5 |
| SC5a - SQIDs     | 5/12 PM  | Yes | Adjacent Bay | None | 7.29 | 2.2 |
|                  |          |     |              |      |      |     |
| Estuary          | 4/12 PM  | N/A | N/A          | None | 7.85 | 0.3 |
|                  |          |     |              |      |      |     |
| SC10 - Headwalls | 10/12 PM | Yes | Adjacent Bay | None | 8.05 | 3.4 |
| SC10 - Headwalls | 11/12 AM | Yes | Adjacent Bay | None | 7.98 | 2.8 |
| SC10 - Headwalls | 11/12 PM | Yes | Adjacent Bay | None | 8.12 | 3.1 |
| SC10 - Headwalls | 12/12 AM | Yes | Adjacent Bay | None | 7.87 | 2.6 |
|                  |          |     |              |      |      |     |
| Estuary          | 10/12 PM | N/A | N/A          | None | 7.98 | 1.3 |



**Appendix 4 – Terminal 3 Shorebird Observations**

| Shorebird Monitoring Database - SPBT3 worksite |                       |                               |             |  |
|--|-----------------------|-------------------------------|-------------|--|
| Date   | Bird Type             | Location                      | Reported by | Action   |
| 14/12/2012                                     | Pacific Golden Plover | 4 No. At SC10                 | J Ambler    | Birds dispersed from site on approach, area to be monitored  |
| 15/12/2012                                     | Pied Oyster Catcher   | 2 No. At future phase area 3A | C Spinetti  | Inspection by Environment Manager undertaken, no birds observed. No works forecast in this area during this breeding season so no further action taken |