NSBT Project
Construction EMP
January EMP Report

This document reports on performance against the construction environmental management plan ("CEMP") for the NSBT project in January 2008. This report also considers complaints received and how those complaints have been addressed. LBB manages the receipt and tracking of complaints/issues using a formal computer based tracking system. A 24-hour toll-free contact telephone number operates to respond to complaints, concerns or enquiries from the general public. A verbal response is provided within two hours unless the person requests otherwise. Some complaints are received via the community relations email address, in which case, if no telephone or mailing address details are provided, responses are provided electronically.

This report comprises four sections:

1.0 Noise Monitoring;

2.0 Vibration Monitoring;

3.0 Air Quality Monitoring;

4.0 Complaints.

1. NOISE MONITORING

The target for daytime noise level measured externally to a building is the greater of the preconstruction (2006) traffic noise in the area or 60 dB(A) after applying a 5 dB(A) correction to the 55 dB(A) goal which is based on measuring internal to a building.

LBB has established a continuous noise monitoring station near each of the four NSBT main work sites. These stations are located external to buildings at the addresses in the table below which also shows the average noise levels recorded in January at each location.

Worksite	Location of Monitoring	Average Levels in January 2008 (dBA)
Shafston Avenue	40 Connor Street	54
O'Connell Terrace	Mews Apartments	58
Pacific Motorway	71 Abingdon Street	59
Gibbon Street	19 Gibbon Street	59

Noise levels measured at all sites were less than the target.

The main strategies implemented (or continued) to mitigate noise include:

- enclosure buildings at O'Connell Terrace, Shafston Avenue, Gibbon Street and TBM spoil handling area north of Enoggera Creek;
- installation of conveyors for spoil handling at O'Connell Terrace including acoustic enclosure
- temporary noise barriers placed around rockbreaking equipment on Lutwyche Road;
- noise barriers installed for Shafston portal excavation works in the median area of Shafston Avenue;
- consult with affected property owners continues in advance of tunnelling operations to agree mitigation measures suitable to each particular owner's circumstances in relation to regenerated noise arising from the roadheader machines which in most cases lasts for a relatively short period of time.

2. VIBRATION MONITORING

Blasting in the median of Shafston Avenue commenced on 17 January 2008. Five blasts in total were initiated on 17, 18, 23, 24, 25 January. Vibration was monitored at six locations around the site and all vibration levels were within the CEMP goals.

3. AIR QUALITY MONITORING

The primary measure of air quality is the quantity of dust deposited locally in a given area over a given period. Dust deposition monitoring is carried out in accordance with AS 3580.10.1 (1991) at 14 permanent measuring stations set up across the project at the locations designated on the maps enclosed behind this report to provide representative samples. This form of measuring captures a sample over a nominal 30 day period and the sample is then laboratory tested which provides a measurement in the unit of grams per square metre per month commonly abbreviated to g/m^2/mth. The goal for residential locations is 4 g/m^2/mth and the results at each station for the actual period between 20 December and 18 January are shown below.

D1	Rosemount Hospital	1.4
D2	ICB	1.8
D3	Tufton St	1.9
D4	Quinton St	0.5
D5	Hawthorne St	1.4
D6	Armstrong Holden	1.9
D7	Ross St	2.0
D9	Regent St	1.6
D10	Bris Strikers	0.7
D11	Park -Dibley	1.9
D12	Ipswich O'Keefe	1.1
D13	Mews	2.1
D14	Jurgen St	1.4
D15	Faversham St	1.7

All dust deposition results complied with the 4 g/m^2/mth goal.

A secondary management tool applied to air quality is to measure the composition of the air adjacent to active worksites which provides an indicative trend over the life of the project going from the pre-existing condition to an active worksite and then reducing over time as the job completes and conditions become permanently stabilised. This measure of the particulates in the air is more widely used as an indicator of air quality in very large regions over quite a long period of time however it does have some value as a supplement to the primary dust deposition measure as an indicator of the local trends in air composition.

Measurement of the regional composition of air is done in accordance with AS 2922 of the total suspended particulate (referred to as TSP monitoring) and particulate matter less than 10um (referred to as PM10 monitoring). Because these measurements are targeted at long term overall air quality in a region generally over a period of several years they require a reasonable history of readings to determine compliance with the annual average goals of 90 µg/m^3 for TSP monitoring and 50 µg/m^3 for PM_{10} monitoring. In addition the CEMP requires that short term measurements of PM_{10} taken over a minimum 24hour period be less than 150 µg/m^3.

Measurements of air composition were carried out in January in the vicinity of the five (5) locations indicated on the maps enclosed at the back of this report and the results are shown in the table below. All of the 24 hour measures of PM10 were less than 150 µg/m^3.

The air quality goals for PM10 and TSP are based on an annual average. Rolling averages have been determined as below (as at 31 January 2008) for each of the three major work sites for each of PM10 and TSP:

Construction Zone	PM10 (µg/m^3)	TSP (µg/m^3)
Bowen Hills	36	50
Shafston Avenue	27	44
Pacific Motorway	37	63

The rolling averages to 31 January 2008 for each construction zone are within the air quality goals for PM_{10} and TSP. It is important to also note in relation to the foregoing measurements/rolling averages that:

- air monitoring stations are generally located within or immediately adjacent to the work sites and the results therefore represent the highest levels of local particulate generation caused by the project and;
- particulate levels experienced in surrounding areas will be less than those recorded at the monitoring stations due to the decrease in particulate concentrations as the distance from the work sites increases and;
- measurements have been taken during the period of those construction activities which generate the highest dust levels and;
- more permanent form of stabilisation has occurred progressively during 2007 and 2008 by increasing paved areas and installing tunnel enclosure buildings, all of which has resulted in progressively reduced dust generation.

Date	Mews		Queensland Newspapers		Connor Street		Ross Street		Faversham St	
	PM10 (µg/m^3)	TSP (µg/m^3)	PM10 (µg/m^3)	TSP (µg/m^3)	PM10 (µg/m^3)	TSP (µg/m^3)	PM10 (µg/m^3)	TSP (µg/m^3)	PM10 (µg/m^3)	TSP (µg/m^3)
1/01/2008	25.92	30.38	31.23	40.5	7.19	7.67				
2/01/2008	20.62	25.32	28.10	38.64	5.95	6.35	17.47	21.52	20.5	26.99
3/01/2008	10.08	14.29	9.72	14.55	7.83	14.09	8.59	14.18	11.8	18.54
4/01/2008	8.86	12.81	7.98	13.95	8.55	15.03	5.6	9	9.7	16.3
5/01/2008	11.65	17.19	14.81	25.50	23.96	46.56				
6/01/2008	18.38	26.33	21.57	32.92	9.83	15.1				
7/01/2008	21.75	32.51	19.88	32.42	6.83	9.75	12.16	19.5	11.35	17.36
8/01/2008	12.58	18.53	15.60	24.34	3.14	4.06	17.38	34.94	19.56	30.69
9/01/2008	25.45	32.37	23.70	34.03	4.2	4.78	18.73	26.34	18.45	25.97
10/01/2008	32.79	42.54	15.01	25.18	6.87	7.58	31.82	45.38	30.72	40.59
11/01/2008	25.88	33.89	10.29	16.2	6.1	7.21	10.8	16	16.5	25.2
12/01/2008	20.83	28.75	6.6	11.28	5.15	6.76				
13/01/2008	8.03	11.42			2.43	3.33				
14/01/2008	20.22	30.2			8.82	14.44	17.28	38.19	9.44	15.1
15/01/2008	41.22	48.16			49.64	67.6	46.9	59.81	49.1	68.25
16/01/2008	36.52	45.61			61.81	93.98	36.23	49.34	46.45	63.01
17/01/2008	28.84	38.19			36.29	54.34	30.44	50.04	26.71	37.05
18/01/2008	27.6	37.8			40.38	65.67	21.33	29.26	33.35	50.62
19/01/2008	27.89	35.72			44.08	69.82				
20/01/2008	21.28	26.72			27.3	40.17				
21/01/2008	25.63	36.44			34.28	56.29				
22/01/2008	48.39	68.94			41.39	58.46	54.42	82.62	37.22	49.44
23/01/2008	32.18	46.27			21.78	31.82	27.69	47.48	27.88	42.54
24/01/2008	36.92	54.54			10.23	14.45	20.93	34.49	25.45	42.34
25/01/2008	19.43	29.95			10.7	17.52	17.84	33.00	13.93	21.13
26/01/2008	14.12	20.47			3.72	5.42	11.87	18.26	13.71	20.52
27/01/2008	13.63	18.01			4.5	5.99	11.37	15.22	13.09	18.68
28/01/2008	14.39	19.01			5.82	7.59	12.58	16.89	13.9	19.44
29/01/2008	15.05	20.79			6.06	8.09	21.34	37.47	16.68	24.86
30/01/2008	20.6	26.58	11.69	16.38	11.33	15.98	20.08	28.55	22.25	31.82
1/01/2008	25.92	30.38	31.23	40.5	7.19	7.67				

Key mitigation measures implemented (or continued) to reduce dust generation include:

- enclosure buildings at O'Connell Terrace, Shafston Avenue and Gibbon Street;
- construction of covered conveyor and spoil handling enclosure on north bank of Enoggera Creek for TBM spoil management;
- reduce exposed surfaces by temporary infrastructure and permanent works;
- continued use of crushed rock and recycled pavement millings to stabilise internal haul roads;

- hydro mulch exposed areas of fill as soon as possible and where practicable;
- property treatments to frontline properties with high exposure to the worksite where physical mitigation measures may not be totally effective are considered on their merits on a case by case basis.

4. COMPLAINTS

In January a total of 46 complaints were raised of which 29 were received via the 1800 number and 17 via email, letter or in person. The following table shows the number and nature of the complaints/issues (more than one issue can be raised as part of a complaint) at each worksite.

Key mitigation measures implemented to respond to the noise and dust issues are described in Sections 1.0 and 3.0 of this report.

Nature of Complaint	Pacific M'way	Gibbon Street	Shafston Avenue	O'Connell Terrace	Other	Total
Dust			2	1		3
Noise	3	1	3			7
Traffic	10		4	1	2	17
Vibration	1					1
Property (access, security, damage)	8					7
Other	6		2	3		11
Total						**46**