



June 2011

ENVIRONMENTAL MANAGEMENT STRATEGY (EMS)
NOISE MONITORING PROGRAM

**Former QUARRY SITE AT OLD WALLGROVE ROAD EASTERN CREEK
MATERIALS PROCESSING CENTRE (MPC)
WASTE TRANSFER FACILITY associated with an adjacent
PROPOSED SOLID WASTE LANDFILL**

Document Control

For controlled copies of this EMS the copy number is shown below and initialled in Red by the Light Horse Business Centre and The Quarry Unit Trust Project Manager.

Reference Documents:

Noise and Air Quality Monitoring Proposal by PAE Holmes - Consultant Aleks Todoroski
(PAE Holmes Proposal)

Noise and Air Quality Monitoring Report by PAE Holmes – Consultant Aleks Todoroski
(PAE Holmes Report)

Light Horse Business Centre Noise Impact Management Plan (**NIMP**)

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<i>Date: June 2011</i>	<i>Position: Solicitor</i>	<i>Prepared by: LHBC</i>

NOISE MANAGEMENT (Benchmark Table BM 37)

1 NOISE MONITORING PROGRAM

1.1 PROJECT APPROVAL CONDITIONS

A Noise Monitoring Program is required to be prepared and implemented in accordance with Condition 40 of Schedule 3 of the Project Approval. Condition 40 is as follows.

The Proponent shall prepare and implement a Noise Monitoring Program for the development in consultation with DECCW, and to the satisfaction of the Director-General. This program must be submitted to the Director-General for approval prior to the commencement of operations, and include a noise monitoring protocol for evaluating compliance with the noise assessment criteria in this approval.

1.2 ACHIEVEMENT OF REQUIREMENTS

Table 1.1 lists the consent conditions for the preparation of a Noise Monitoring Program, provides a summary of the current compliance status and provides recommendations to achieve compliance and to improve the presentation of the Program.

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Table 1.1 Noise Monitoring Program Compliance Review (Condition 40 of Schedule 3).

CONSENT REQUIREMENTS	COMPLIANCE STATUS
<p><i>The Proponent shall prepare and implement a Noise Monitoring Program for the development in consultation with DECCW, and to the satisfaction of the Director-General. This program must be submitted to the Director-General for approval prior to the commencement of operations, and include a noise monitoring protocol for evaluating compliance with the noise assessment criteria in this approval.</i></p>	<p>Complies</p> <p>Refer: Section 1 of this Management Report; and Section 3.2 & 7.4 of NIMP.</p>

Table 1.2 reviews whether the preparation of a Noise Monitoring Program has been consistent with the requirements of Condition 2 of Schedule 5 of the Project Approval. It provides a summary of the current compliance status.

Table 1.2. Noise Monitoring Program Compliance Review (Condition 2 of Schedule 5).

CONSENT REQUIREMENTS	COMPLIANCE STATUS
<p><i>prepared in accordance with any relevant guidelines.</i></p>	<p>Report prepared in accordance with Conditions 38, 39 & 40 of Development Consent MP 06_0239 and with Chapter 11 NSW Government's Industrial Noise Policy and section 8.2 of the Interim Construction Noise Guide.</p>
<p><i>a) Detailed baseline data;</i></p>	<p>Complies</p> <p>Refer Sections 2, 2.1 & 4 of NIMP</p>

CONSENT REQUIREMENTS	COMPLIANCE STATUS
<p>b) A description of;</p> <ul style="list-style-type: none"> • The relevant statutory requirements (including any relevant approval, licence or lease conditions); • Any relevant limits or performance measures/criteria; • The specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the project or any management measures; 	<p>Complies</p> <p>Refer: Section 1 of this Management Report; and Sections 2, 2.5, 3.1, 3.2, 4.1 & 7.2 of NIMP.</p>
<p>c) A description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;</p>	<p>Complies</p> <p>Refer: Section 1 of this Management Report; and Sections 4, 4.1, 4.2, 4.3, 4.4, 6, 7.1, 7.2 & 7.4b of NIMP</p>
<p>d) A program to monitor and report any;</p> <ul style="list-style-type: none"> • Incidents; • Complaints; • Non-compliances with statutory requirements; and • Exceedances of the impact assessment criteria and/or performance criteria; and 	<p>Complies</p> <p>Refer: Section 1 of this Management Plan; and Sections 5, 6 & 7.2 of NIMP</p>
<p>e) A protocol for periodic review of the plan.</p>	<p>Complies</p> <p>Refer: Section 1 of this Management Plan; and Section 6 of NIMP</p>

NOISE MANAGEMENT

CRITERIA

The relevant criteria are set out in condition 40 of Development Consent MP 06_0239 dated 22 November 2009.

MANAGEMENT AND MITIGATION MEASURES

Noise levels should not exceed the noise limits presented in Table 1.3.

Table 1.3

Location	Day LAeq(15 Min) dB(A)
All affected receivers	36

Until the results of the monitoring have been compiled and assessed, the Landowner will initially rely upon feedback through the Community Consultation measures.

This includes establishing and maintaining contact and liaison with a Resident Committee comprising a minimum of 3 householders in sensitive receiver areas and acting upon reports provided to the Site Project Manager.

Compliance with the hours of operation identified within Condition 39 of the consent (refer below) and conducting site preparation works in the manner set out in accordance with the approved documentation provides the ability to meet the required noise criteria and reduce the scope for Community complaints.

HOURS OF OPERATION

Due consideration is given to minimising the potential noise impacts on surrounding neighbours, and noise mitigation measures includes restricting the hours of operation to:

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- Monday – Friday 7.00am to 6.00pm
- Saturday - 8.00am to 4.00pm
- No construction on Sundays or public holidays.

MONITORING AND COMPLIANCE REPORTING

- The Landowner commissioned a preliminary construction phase noise monitoring to be carried out by PAE Holomes in line with DECCW procedures.
- A compliance attended noise monitoring survey was conducted during in April 2010.
- The results of the survey indicated that construction activities occurring at the site were not audible during the monitoring, neither above background noise nor in the absence of background noise.
- Weather conditions were clear, fine and sunny with negligible breeze during the monitoring period.
- These conditions are appropriate for conducting environmental noise measurements.
- **Table 1.4** summarises the measurement results and compares them against the relevant daytime noise criteria.

• **Table 1.4: Noise Monitoring Results**

Location	Time	LA _{eq} (15 Min) dB(A) due to Construction	Day Time Criteria: LA _{eq} (15 Min) dB(A)	Comments
Erskine Park	9:51 – 10:05am	N/A	36	Traffic 40-45dBA, plane overhead 30-48bDA, helicopter 44-49dBA, cicada 44dBA, birds 40dBA. Construction noise not audible.
	12:32 – 12:47pm	N/A		Cicada 50dBA, frogs 40dBA. Construction noise not audible.

Minchinbury	10:33 – 10:48 am	N/A		Trucks 40dBA, plane, cicada 55-57 dBA. Construction noise not audible.
	12:01 – 12:16 pm	N/A		Trucks 50- 61dBA, plane, cicada 60dBA. Construction noise not audible



- It can be seen from **Table 1.4** that there were a number of background noise sources unrelated to the construction activities occurring at the site.
- Such sources included insects, birds, animals, aircraft and road traffic.
- Construction related noise sources were not audible above these ambient or background noise levels.
- It should be noted that the construction activity was also not audible in the absence of these ambient sources and is therefore in compliance with the relevant day-time criteria.

OPERATIONAL NOISE MONITORING.

- This will be carried out by an appropriately qualified Environmental Consultant, PAE Holmes.
- Attended loggers will be established at residential locations to the north and west of the site, in and around McFarlane Drive, and Barossa Drive in Minchinbury and Swamphen Street and Roper Road in Erskine Park.
- Monitoring will take place when the site is fully operational.
- During the first 12 months of operations, data collection will be undertaken on a quarterly basis. Thereafter, in the subsequent years, and provided that there are no demonstrated exceedances, then the monitoring shall be six monthly.

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- Results from the logging within the first 12 months of operations will be collated and supplied to the Director General of the Department of Planning within 3 months of the completion of monitoring.
- Results of monitoring will be assessed by reference to Chapter 11 NSW Government's Industrial Noise Policy.
- In subsequent years, provided that there are no demonstrated exceedances, then the attended monitoring shall be six monthly.
- A complaints handling procedure will ensure that any complaints regarding noise are logged and appropriately recorded and all relevant initial data is obtained in order to determine whether a prima facie case exists to support the view that the complaint relates to the site and that an exceedance has or may have occurred.
- The Site Project Manager will ensure that an effective complaint investigation is immediately carried out in order to determine the likely cause of the exceedance.
- Thereafter, appropriate noise management measures will be implemented (if required) by the issue of work directions or changes to operational procedures depending upon the nature or extent of the measures taken.
- The Site Project Manager or his delegate will respond to the complainant in each case outlining the measures taken (if any).
- One or more of the Residents' Committee will be invited to consult in relation to each complaint and in relation to the relevant investigation and attenuation measures which are implemented.

A six monthly review of work procedures and/or noise control procedures shall be undertaken in response to complaints or to issues raised by the Residents Committee. **CONTINGENCY MEASURES**

- Noise Management measures will be implemented immediately (if required) by the issue of work directions or changes to operational procedures depending upon the nature or extent of the measures taken.

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- Non-compliance with the noise goals set out in Table 1.3 will be reported promptly and corrective action taken to mitigate any impacts.
- All on-site, fixed and mobile diesel powered plant equipment, excluding road vehicles, are to be correctly fitted and maintained in accordance with the manufacturer's specifications. Particular attention is to be given to engine exhaust systems and the care and maintenance of mufflers.
- If fixed machinery is identified as being a source that exceeds noise trigger values the use of the machinery will cease until noise attenuation measures are implemented.
- If the noise source is a point source such as an engine or motor then the engine or motor will be housed in a suitably noise insulated cowling hood or structure.
- Noise emissions will be minimised by taking all necessary precautions to reduce noise of operations. Acceptable levels will be defined by the Authority. Noise will be managed and mitigated by the following measures:-
 - reduction in vehicle speeds to 15 km/hour on site roads;
 - provision of speed humps and road signs to enforce speed restrictions;
 - strategic placement of all vehicles and grids/gratings;
 - monitoring of noise at prescribed locations, reporting noise exceedances in the monthly and annual report and if noise complaints or noise exceedances are observed to determine and mitigate or remove the source of the excess noise such that on repeat monitoring the noise exceedance is no longer present.
- Active noise mitigation measures to be employed include the following.
 - All operating plant and machinery on the site to be well maintained and noise muffled;
 - No rock breaking to occur except at lower levels on the site or behind earthen bunds to act as noises baffles;

- Trucks entering the site to be reported if excessively noisy, signs to be erected to request that trucks do not rev engines excessively or use air brakes unless necessary for safety reasons;
- In the event of any noise related complaints the source of noise will be identified by observation and additional noise monitoring and the source of noise will be mitigated or eliminated as appropriate.
- If the noise source is reversing beepers or alarms on moveable plant or trucks then for those vehicles and plant on site then measures will be taken to adjust the tone and where appropriate reduce the volume of those appropriately so as to remove the potential for noise disturbance.
- Temporary cessation of work until wind conditions are favourable.
- The Site Project Manager shall monitor the site daily and report weekly to the Landowner on the following:
 - The impacts and environmental performance of the cut and fill bulk earthworks;
 - Effectiveness of the management measures in relation to noise management;
and
 - Any recommendations of ways to improve the environmental performance of the works over time.

NOISE MONITORING PROTOCOL

Objective

- New quarterly LAeq (15 Min) levels in calm weather will be predicted and compared with the noise impact assessment criteria outlined in Table 1.3.

Personnel

- Attended noise monitoring will be carried out by an appropriately qualified environmental consultant, from PAE Holmes, being a senior consultant suitably qualified and with experienced in environmental noise monitoring.

Data Collection

- New LAeq, 15 minute noise levels will be obtained
- Attended noise monitoring will be conducted quarterly, using a Type 1 Sound Level Meter conforming with Australian Standard AS 1259 “Acoustics – Sound Level Meters”, which has an accuracy suitable for laboratory use. The Sound Level Meter will be field calibrated before and after measurements are taken.
- Attended noise monitoring will occur at residential locations to the north and west of the site, in and around McFarlane Drive, and Barossa Drive in Minchinbury and Swamphen Street and Roper Road in Erskine Park.
- Attended noise monitoring will be taken over periods covering morning, afternoon, and evenings. Attended measurements will be taken over 15 minutes periods.

Analysis

- Noise measurements will be analysed in accordance with the Industrial Noise Policy (INP).

Reporting

- A report will be provided outlining the measured noise levels and comparing to noise impact assessment criteria outlined in Table 1.3.

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