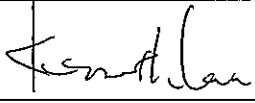



Contract No. SS M333

**Reprovisioning of Diamond Hill
Crematorium**

Monthly EM&A Report for November 2006

December 2006

	Name	Signature
Reviewed & Checked:	Kenneth Lau	
Approved: (ET Leader)	Y T Tang	

Version:	Revision 0	Date:	14 December 2006
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The information contained in this report is, to the best of our knowledge, correct at the time of printing. The interpretation and recommendations in the report are based on our experience, using reasonable professional skill and judgment, and based upon the information that was available to us. These interpretations and recommendations are not necessarily relevant to any aspect outside the restricted requirements of our brief. This report has been prepared for the sole and specific use of our client and MEMCL accepts no responsibility for its use by others.

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BY POST & FAX (2524 8194)

11 December 2006

Architectural Services Department
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Your
Ref:

Our 1148-06/E06-62382
Ref:

For attention of: Mr Michael Mak

Dear Michael

**Reprovisioning of Diamond Hill Crematorium
Monthly EM&A Report for November 2006 (Revision 0)**

We refer to the email of 7 December 2006 with the enclosure of the draft monthly EM&A Report for November 2006 (Revision 0) and subsequent email of 11 December 2006 from MEMCL.

We have no further comment and hereby verified the captioned EM&A report.

Should you have any queries, please do not hesitate to contact the undersigned on 2911 2719 or Adi Lee on 2911 2729.

Yours sincerely

**Coleman Ng
Independent Environmental Checker
HYDER CONSULTING LIMITED**

cc MEMCL – Mr. Y. T. Tang/Mr. Kenneth Lau
CRCCL – Mr. Whyment Leung

(Fax: 2891 0305)
(Fax: 2827 2921)

CN/AL





TABLE OF CONTENTS

EXECUTIVE SUMMARY III

1. INTRODUCTION..... 1

 Background 1

 Scope of Report..... 1

 Project Organisation 1

 Environmental Status in the Reporting Month..... 1

 Summary of EM&A Requirements..... 1

2. AIR QUALITY 2

 Monitoring Requirements..... 2

 Monitoring Equipment 2

 Monitoring Parameters, Frequency and Duration 2

 Monitoring Locations..... 2

 Monitoring Methodology 2

 Results and Observations..... 2

3. NOISE 2

 Monitoring Requirements..... 2

 Monitoring Equipment 2

 Monitoring Parameters, Frequency and Duration 2

 Monitoring Locations..... 2

 Monitoring Methodology 2

 Results and Observations..... 2

4. ENVIRONMENTAL SITE INSPECTION..... 2

 Site Inspections..... 2

 Review of Environmental Monitoring Procedures..... 2

 Advice on Waste Management Status 2

 Status Environmental Licences and Permits 2

 Implementation Status of Environmental Mitigation Measures 2

 Summary of Exceedances of Environmental Quality Performance Limit..... 2

 Summary of Environmental Complaints, Notifications of Summons and Successful Prosecutions..... 2

5. FUTURE KEY ISSUES 2

 Key Issues and Recommendations for Coming Month 2

 Environmental Monitoring and Audit Schedule for the Coming Months 2

6. CONCLUSIONS AND RECOMMENDATIONS 2

 Conclusions..... 2

 Recommendations 2

List of Tables

Table 2.1	Air Quality Monitoring Equipment.....	2
Table 2.2	Air Quality Monitoring Parameters, Frequency and Duration	2
Table 2.3	Locations of Air Quality Monitoring Stations	2
Table 2.4	Summary of Impact 1-hour TSP Monitoring Results.....	2
Table 2.5	Summary of Impact 24-hour TSP Monitoring Results.....	2
Table 3.1	Noise Monitoring Equipment	2
Table 3.2	Noise Monitoring Parameters, Frequency and Duration.....	2
Table 3.3	Locations of Noise Monitoring Stations.....	2
Table 3.4	Summary of Impact Noise Monitoring Results during 07:00 – 19:00 on Normal Weekdays ...	2
Table 4.1	Summary of Waste Disposal in the Month	2
Table 4.2	Summary Of Environmental Complaints And Prosecutions.....	2

List of Figures

Figure 1.1	Project Organisation for Environmental Management
Figure 1.2	Layout of Work Site
Figure 2.1	Locations of Air Quality Monitoring Stations
Figure 3.1	Locations of Construction Noise Monitoring Stations
Figure 4.1	Complaint Flow Diagram

Appendices

Appendix A	Key Contacts of Environmental Personnel
Appendix B	Construction Programme
Appendix C	Environmental Action and Limit Levels
Appendix D	Environmental Monitoring and Audit Schedules
Appendix E	Calibration Details
Appendix F	Air Quality Monitoring Results and Graphical Presentation
Appendix G	Noise Monitoring Results and Graphical Presentation
Appendix H	Summary of Weekly Environmental Site Inspection Observations
Appendix I	Status of Environmental Permits/Licences
Appendix J	Implementation Schedule of Mitigation Measures
Appendix K	Event and Action Plans

EXECUTIVE SUMMARY

Introduction

Maunsell Environmental Management Consultants Limited (MEMCL) is the designated Environmental Team (ET) for "Reprovisioning of Diamond Hill Crematorium" (The Project). This is the twenty-fifth monthly Environmental Monitoring and Audit (EM&A) report prepared by MEMCL for the Project. The EM&A programme for the Project commenced on 29 October 2004. This report documents the findings of EM&A Works conducted in the month of November 2006 (1 to 30 November 2006).

As informed by the Contractor, construction activities in the reporting period were:

- Steel fixing, erect formwork and concreting for footings, internal and external walls (including fair-face concrete), columns and 1/F slabs, circular staircase and planters on 1/F level;
- Installation of M & E services at Cremator Plant Room and other plant rooms at L/G and G/F level;
- Internal Plastering and Finishing Works at L/G & G/F plant rooms and lobby area;
- Installation of external stone wall;
- Roof finishes above Cremator Plant Room area;
- Last Manhole Connection;
- Construction of EVA road;
- Installation of cremator plant components inside cremator plant room and roof area; and
- Testing of cremator at Cremator Plant Room.

A summary of monitoring and audit activities conducted in the reporting period is listed below:

1-hour TSP monitoring	15 sessions
24-hour TSP monitoring	5 sessions
Daytime noise monitoring	4 sessions
Environmental site inspection	4 sessions

Breaches of Action and Limit Levels

Air Quality

All 1-hour and 24-hour TSP monitoring results recorded in the month complied with the Action and Limit Levels.

Construction Noise

All noise monitoring results recorded in the month complied with the Action and Limit Levels.

Implementation Status of Environmental Mitigation Measures

In general, the Contractor satisfactorily implemented all the required mitigation measures and was reasonably responsive to the ET's recommendations on any discrepancy observed during the weekly environmental site inspection.

Environmental Complaints, Notification of Summons and Successful Prosecutions

No environmental complaint, notification of summons or successful prosecution was received or made against this Project in the month.

Reporting Changes

No reporting change was required in the month.

Future Key Issues

Key issues to be considered in the coming month include:

- Generation of dust from activities on-site;
- Noise impact from operating equipment and machinery on-site;
- Generation of site surface runoffs and wastewater from activities on-site;
- Storage and disposal of general refuse and construction waste from activities on-site;
- Management of chemicals and avoidance of oil spillage.

摘要

簡介

茂盛環境管理顧問有限公司乃「重置鑽石山火葬場」[下稱(工程項目)]的指定環境小組。本冊是茂盛為工程項目製作的第二十五份每月環境監察及審核報告。工程項目的環境監察及審核由二零零四年十月廿九日開始、本報告記錄了二零零六年十一月份(二零零六年十一月一日至十一月三十日)所進行的環境監察及審核工作。

根據承建商的資料，本月有以下的建築活動：

- 鋼根固定, 支架構成及混凝土澆灌
- 安裝電機結構於焚化爐機房的焚化爐上及地面機房
- 地面內牆噴上砂漿及修整
- 安裝於焚化爐機房的焚化爐上
- 完成焚化爐機房的天花設備
- 僅剩下水道的接駁
- 進行地底油缸的管道裝置於緊急行車輪通路
- 緊急行車輪通路工程
- 安裝焚化爐組件於焚化爐機房內和機房天花
- 測試焚化爐於焚化爐機房

本月有下列幾項的監察及審核活動：

一小時總懸浮粒子監察	15 次
廿四小時總懸浮粒子監察	5 次
日間噪音監察	4 次
環境巡查	4 次

違反監察標準

空氣質素

本月所有一小時及二十四小時總懸浮粒子監測結果皆符合行動水平和極限水平。

建築噪音

本月所有噪音監測結果皆符合行動水平和極限水平。

環境影響緩和措施

承建商大致上完成所需的緩和措施，同時已對環境小組在每週的環境巡查中的建議作出合理的回應及跟進。

有關環境的投訴，傳票及檢控

本月沒有收到有關環境的投訴，傳票及檢控。

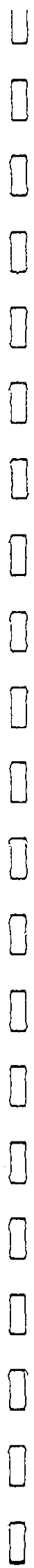
報告修訂

本月並沒有修訂報告。

預計要注意的事項

下月要注意事項包括：

- 工程活動所產生的塵埃
- 操作中儀器及機器產生的噪音影響
- 工程活動所產生的污水
- 普通廢物與建築廢物的暫貯及棄置
- 化學品的管理及防止意外漏油



1. INTRODUCTION

Background

- 1.1 Maunsell Environmental Management Consultants Limited (MEMCL) (hereinafter called the "ET") was appointed by China Resources Construction Company Limited (CRC) (hereinafter called the "Contractor") to undertake Environmental Monitoring and Audit for "Reprovisioning of Diamond Hill Crematorium" (hereinafter called the "Project"). Under the requirements of Section 4 of Environmental Permit EP-179/2004, EM&A programme as set out in the approved EM&A Manual is required to be implemented. In accordance with the approved EM&A Manual, environmental monitoring of air quality and noise and environmental site inspections are required for the Project.

Scope of Report

- 1.2 The EM&A programme for the Project commenced on 29 October 2004. This report presents a summary of the environmental monitoring and audit works, list of activities, and mitigation measures for the Project in November 2006 (from 1 to 30 November 2006).

Project Organisation

- 1.3 The organisation of the environmental management team is shown in Figure 1.1. Key personnel contacts are presented in Appendix A.

Environmental Status in the Reporting Month

- 1.4 The construction programme of the Project is provided in Appendix B. In the month, the following activities took place for the construction of the Project:
- Steel fixing, erect formwork and concreting for footings, internal and external walls (including fair-face concrete), columns and 1/F slabs, circular staircase and planters on 1/F level;
 - Installation of M & E services at Cremator Plant Room and other plant rooms at L/G and G/F level;
 - Internal Plastering and Finishing Works at L/G & G/F plant rooms and lobby area;
 - Installation of external stone wall;
 - Roof finishes above Cremator Plant Room area;
 - Last Manhole Connection;
 - Construction of EVA road;
 - Construction of U/F services pipeworks at EVA;
 - Installation of cremator plant components inside cremator plant room and roof area; and
 - Testing of cremator at Cremator Plant Room.

- 1.5 Layout plan of the Project work site is provided in Figure 1.2.

Summary of EM&A Requirements

- 1.6 The description and detailed locations of sensitive receivers and monitoring stations for air quality and noise are shown in Figures 2.1 and 3.1 respectively and relevant sections of this Report.
- 1.7 The EM&A programme require environmental monitoring for air quality and noise and environmental site inspections for air quality, noise, water quality, landscape and visual, and waste management. The EM&A requirements for each parameter described in the following sections include:
- All monitoring parameters
 - Action and Limit Levels for all environmental parameters
 - Event and Action Plans
 - Environmental mitigation measures, as recommended in the project final EIA report
 - Environmental requirements in contract documents.
- 1.8 The advice on the implementation status of environmental protection and pollution control/mitigation measures is summarised in Appendix J of the Report.

2. AIR QUALITY

Monitoring Requirements

- 2.1 1-hour TSP and 24-hour TSP levels at two designated monitoring stations were monitored in the month in accordance with the EM&A Manual. Appendix C shows the established Action and Limit Levels for the environmental monitoring works.
- 2.2 The monitoring schedule for the month is shown in Appendix D. Air quality monitoring stations for 24-hour TSP and 1-hour TSP measurements are shown in Figure 2.1.

Monitoring Equipment

- 2.3 Portable dust meter was used to carry out 1-hour TSP monitoring. High volume sampler (HVS - Model GMWS-2310 Accu-Vol) completed with the appropriate sampling inlets was installed for 24-hour TSP sampling. The HVS meet all the requirements as specified in the approved EM&A Manual. Table 2.1 summarised the equipment that were used in the dust-monitoring programme.

Table 2.1 Air Quality Monitoring Equipment

Equipment	Model
Dust Meter (for 1-hour TSP measurement)	Laser Dust Monitor – Model LD-1/LD-3
HVS (for 24-hour TSP measurement)	GMWS 2310 Accy-Vol system
Calibration Kit (for HVS)	GMW 25

Monitoring Parameters, Frequency and Duration

- 2.4 Table 2.2 summarised the monitoring parameters, frequency and duration of impact air quality monitoring.

Table 2.2 Air Quality Monitoring Parameters, Frequency and Duration

Parameter	Duration	Frequency
1-hour TSP	1 hour	3 times every six days
24-hour TSP	24 hours	Once every six days

Monitoring Locations

- 2.5 In accordance with the EM&A Manual, two air quality monitoring stations, as shown in Figure 2.1 were selected for 24-hour TSP and 1-hour TSP sampling. Table 2.3 describes the location of the air quality monitoring stations.

Table 2.3 Locations of Air Quality Monitoring Stations

Monitoring Station	Identity / Description	Level
ASR8	Po Leung Kuk Grandmont Primary School	Roof top level of 7 storey building
ASR17	Staff Quarter for Diamond Hill Crematorium	Roof top level of 1 storey building

Monitoring Methodology

1-hour TSP Monitoring

Monitoring Procedure

- 2.6 The measuring procedures of 1-hour TSP by a portable dust meter are in accordance with the Manufacturer's Instruction Manual as follows:
- Set POWER to "ON", push BATTERY button, make sure that the meter's indicator is in the range with a red line and allow the instrument to stand for about 3 minutes (Then, the air sampling inlet has been capped).

- Push the knob at MEASURE position.
- Push "O-ADJ" button. (Then meter's indication is 0).
- Push the knob at SENSI ADJ position and set the meter's indication to S value described on the Test Report using the trimmer for SENSI ADJ.
- Pull out the knob and return it to MEASURE position.
- Push "START" button.

Maintenance and Calibration

- The 1-hour TSP dust meters are verified at 1-year intervals throughout all stages of the impact air quality monitoring.
- Calibration details for the dust meters are provided in Appendix E.

24-hour TSP Monitoring

Installation

2.7 The HVSs were installed in the vicinity of the air sensitive receivers. The following criteria were considered in the installation of the HVSs:

- A horizontal platform with appropriate support to secure the samplers against gusty wind was provided.
- The distance between the HVS and any obstacles, such as buildings, was at least twice the height that the obstacle protrudes above the HVS.
- A minimum of 2 meters separation from walls, parapets and penthouses was provided for rooftop sampler.
- No furnace or incinerator flues were nearby.
- Airflow around the sampler was unrestricted.
- Permission was obtained to set up the sampler and to obtain access to the monitoring stations.
- A secure supply of electricity was obtained to operate the sampler.

Preparation of Filter papers

- Glass fibre filters, G810 were labelled and sufficient filters that were clean and without pinholes were selected.
- All filters were equilibrated in the conditioning environment for 24 hours before weighing. The conditioning environment temperature was around 25 °C and not variable by more than ± 3 °C; the relative humidity (RH) was < 50% and not variable by more than ± 5 %. A convenient working RH was 40%.
- *ALS Technichem (HK) Pty Ltd.* is a HOKLAS accredited laboratory which has comprehensive quality assurance and quality control programmes.

Monitoring Procedures

- The power supply was checked to ensure the HVSs work properly.
- The filter holder and the area surrounding the filter were cleaned.
- The filter holder was removed by loosening the four bolts and a new filter, with stamped number upward, on a supporting screen was aligned carefully.
- The filter was properly aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter.
- The swing bolts were fastened to hold the filter holder down to the frame. The pressure applied should be sufficient to avoid air leakage at the edges.
- Then the shelter lid was closed and secured with the aluminum strip.
- The HVSs were warmed-up for about 5 minutes to establish run-temperature conditions.
- A new flowrate record sheet was set into the flow recorder.
- The flow rate of the HVS was checked and adjusted at around 1.1 m³/min. The range was between 0.6-1.7 m³/min.

- The programmable timer was set for a sampling period of 24 hrs \pm 1 hr, and the starting time, weather condition and the filter number were recorded.
- The initial elapsed time was recorded.
- At the end of sampling, the sampled filter was removed carefully and folded in half length so that only surfaces with collected particulate matter were in contact.
- It was then be placed in a clean plastic envelope and sealed.
- All monitoring information was recorded on a standard data sheet.
- Filters were sent to *ALS Technichem (HK) Pty Ltd.* for analysis.

Maintenance and Calibration

- The HVSSs and their accessories were maintained in good working condition, such as replacing motor brushes routinely and checking electrical wiring to ensure a continuous power supply.
- HVSSs are calibrated at bi-monthly intervals using GMW-25 Calibration Kit throughout all stages of the impact air quality monitoring.
- Calibration details for the HVSSs are provided in Appendix E.

Results and Observations

2.8 Dust monitoring was conducted for both 1-hour TSP and 24-hour TSP at all designated monitoring stations in the month. Air quality monitoring results and graphical presentations are provided in Appendix F.

1-hour TSP Monitoring

2.9 All measured 1-hour TSP levels complied with the Action and Limit Levels in the month. A summary of 1-hour TSP monitoring results is presented in Table 2.4.

Table 2.4 Summary of Impact 1-hour TSP Monitoring Results

Monitoring Station	1-hour TSP ($\mu\text{g}/\text{m}^3$)	Action Level ($\mu\text{g}/\text{m}^3$)	Limit Level ($\mu\text{g}/\text{m}^3$)	No. of Exceedance	
	Range			Action	Limit
ASR8	88.4 – 98.8	408.1	500.0	Nil	Nil
ASR17	89.2 – 126.7	408.4	500.0	Nil	Nil

24-hour TSP Monitoring

2.10 All measured 24-hour TSP levels complied with the Action and Limit Levels in the month. A summary of 24-hour TSP monitoring results is presented in Table 2.5.

Table 2.5 Summary of Impact 24-hour TSP Monitoring Results

Monitoring Station	24-hour TSP ($\mu\text{g}/\text{m}^3$)	Action Level ($\mu\text{g}/\text{m}^3$)	Limit Level ($\mu\text{g}/\text{m}^3$)	No. of Exceedance	
	Range			Action	Limit
ASR8	25.7 – 177.9	195.0	260.0	Nil	Nil
ASR17	40.4 – 166.4	174.1	260.0	Nil	Nil

3. NOISE

Monitoring Requirements

- 3.1 Noise levels at three designated monitoring stations were monitored in the month in accordance with the EM&A Manual. Appendix C shows the established Action and Limit Levels for the environmental monitoring works.
- 3.2 The monitoring schedule for the month is shown in Appendix D. Noise monitoring stations are shown in Figure 3.1.

Monitoring Equipment

- 3.3 Integrating Sound Level Meter was employed for noise monitoring. They were Type 1 sound level meters capable of giving a continuous readout of the noise level readings including equivalent continuous sound pressure level (L_{eq}) and percentile sound pressure level (L_x). They comply with International Electrotechnical Commission Publications 651:1979 (Type 1) and 804:1985 (Type 1). Portable electronic wind speed indicator capable of measuring wind speed in m/s was employed to check the wind speed. Table 3.1 details the noise monitoring equipment used.

Table 3.1 Noise Monitoring Equipment

Equipment	Model
Integrating Sound Level Meter	Rion NL-18/31
Calibrator	Rion NC-73

Monitoring Parameters, Frequency and Duration

- 3.4 Table 3.2 summarised the monitoring parameters, period, frequency and duration of impact noise monitoring.

Table 3.2 Noise Monitoring Parameters, Frequency and Duration

Time Period	Parameters	Duration (min)	Frequency
Daytime (0700 to 1900 on normal weekdays)	L_{eq}	30	Once per week

Monitoring Locations

- 3.5 In accordance with the EM&A Manual, three noise monitoring stations, as shown in Figure 3.1 were selected for noise monitoring. Table 3.3 describes the location of this monitoring station.

Table 3.3 Locations of Noise Monitoring Stations

Monitoring Station	Identity / Description	Level
SR3	International Christian Quality Music Secondary and Primary School	Roof top level of 7 storey building
SR4	Po Leung Kuk Grandmont Primary School	Roof top level of 7 storey building
SR6	Staff Quarter for Diamond Hill Crematorium	Roof top level of 1 storey building

Monitoring Methodology

Monitoring Procedures

- The Sound Level Meter was set on a tripod at a height of 1.2 m above the ground.
- Façade measurements were made at all three monitoring locations.
- The battery condition was checked to ensure the correct functioning of the meter.

- Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:
 - frequency weighting: A
 - time weighting: Fast
 - time measurement: L_{eq} (30 minutes) during non-restricted hours i.e. between 07:00 and 19:00 on normal weekdays
- Prior to and after each noise measurement, the meter was calibrated using a Calibrator for 94 dB at 1000 Hz. If the difference in the calibration level before and after measurement was more than 1 dB(A), the measurement would be considered invalid and repeat of noise measurement would be required after re-calibration or repair of the equipment.
- The wind speed was frequently checked with a portable wind meter.
- During the monitoring period, the L_{eq} , L_{10} and L_{90} were recorded. In addition, site conditions and noise sources were recorded on a standard record sheet.
- Noise measurement was paused during periods of high intrusive noise (e.g. dog barking, helicopter noise) if possible. Observations were recorded when intrusive noise was unavoidable.
- Noise monitoring was cancelled in the presence of fog, rain, wind with a steady speed exceeding 5 m/s, or wind with gusts exceeding 10 m/s.

Maintenance and Calibration

- The microphone head of the sound level meter and calibrator is cleaned with soft cloth at quarterly intervals.
- The meter and calibrator are sent to the supplier or HOKLAS laboratory to check and calibrate at yearly intervals.
- Calibration details for the sound level meter and calibrator are provided in Appendix E.

Results and Observations

- 3.6 Noise monitoring was conducted at all designated monitoring stations as scheduled in the month. Noise monitoring results and graphical presentations are provided in Appendix G.
- 3.7 All measured noise levels complied with the Action and Limit Levels in the month. A summary of noise monitoring results is presented in Table 3.4.

Table 3.4 Summary of Impact Noise Monitoring Results during 07:00 – 19:00 on Normal Weekdays

Monitoring Station	Measured Noise Level, dB(A) L_{eq} (30 min)	Calculated Construction Noise Level, dB(A)	Limit Level	No. of Exceedance	
	Average and Range	Average and Range		Action*	Limit
SR3	64.4 (64.0 – 64.8)	# (# - #)	70/65 ^{###}	Nil	Nil
SR4	63.8 (62.9 – 64.7)	# (# - #)	70/65 ^{###}	Nil	Nil
SR6	63.3 (62.7 – 63.8)	# (# - #)	75	Nil	Nil

* - Action Level is triggered by receipt of a noise complaint

- Measured noise level is less than the baseline noise level

- reduce to 70dB(A) for schools and 65dB(A) during school examination periods

4. ENVIRONMENTAL SITE INSPECTION

Site Inspections

4.1 Site inspection was carried out on a weekly basis to monitor the timely implementation of proper environmental pollution control and mitigation measures for the Project. In the month, four site inspections were carried out in the month. The summary of weekly environmental site inspections observations and environmental site inspection checklists are attached in Appendix H.

Review of Environmental Monitoring Procedures

4.2 The monitoring works conducted by the Environmental Team were inspected regularly. Observations have been recorded for the monitoring works as follows:

Air Quality Monitoring

- The monitoring team recorded the observations around the monitoring stations within and outside of the construction site.
- The monitoring team recorded the temperature and general weather condition on the monitoring day.

Noise Monitoring

- The monitoring team recorded the observations around the monitoring stations, which might affect the results.
- Major noise sources were identified and recorded.

Advice on Waste Management Status

4.3 The actual quantities of inert C&D materials and non-inert C&D wastes generated by activities of the Project in the month are provided in Table 4.1. Trip ticket system was implemented for all offsite waste disposal.

Table 4.1 Summary of Waste Disposal in the Month

Type of Waste Material		Disposed Quantity	Destination
Inert C&D materials		45 m ³	Kai Tak Public Fill Barging Point
Non-inert C&D waste	Metals	Nil	Not Applicable
	Paper/cardboard packaging	Nil	Not Applicable
	Plastics	Nil	Not Applicable
	Chemical waste	Nil	Not Applicable
	Others, e.g. general refuse	204 m ³	SENT Landfill

Status Environmental Licences and Permits

4.4 The status of all permits/licences obtained/in-use in the month is summarised in Appendix I.

Implementation Status of Environmental Mitigation Measures

4.5 An updated summary of the Environmental Mitigation Implementation Schedule (EMIS) is presented in Appendix J.

4.6 During the weekly site inspection conducted by the Environmental Team in the month, the following observations and recommendations were made.

Water Quality

- The Contractor was reminded to provide and maintain the washing wheel facilities in regular basis.

- The Contractor was reminded to provide sandbags for surface runoff.
- Stagnant water in various sites working area on ground floor, first floor, the basement, outside the sub-contractor's office and the site exit. The Contractor was reminded to remove the stagnant water to prevent mosquitoes breeding and treated in the sedimentation tank before discharging.
- The Contractor was reminded to clean up the mud and soil deposited within the site area.

Air Quality

- The Contractor was reminded to remove the cement bags
- Uncovered stockpile was observed on the G/F and the 1/F. The Contractor was reminded to provide a covers or water spraying or placed in sheltered areas for the excavator materials/ stockpiles in order to avoid dust generation.
- The Contractor was reminded to maintain and provide water spraying for the entire road surface in order to avoid dust generation.

Noise

- No particular observations and recommendations were made during the weekly site inspections in the month.

Waste or Chemical Management

- The Contractor was reminded to maintain or remove the construction wastes in regular basis.
- Chemical drums were observed on the G/F and 1/F. The Contractor was reminded to store in the sorting area that provided the demarcation and signposts.

Landscape and Visual

- No particular observations and recommendations were made during the weekly site inspections in the month.

Others

- No particular observations and recommendations were made during the weekly site inspections in the month.

Summary of Exceedances of Environmental Quality Performance Limit

- 4.7 The Event and Action Plans for air quality and noise are presented in Appendix K.
- 4.8 No exceedance of Action and Limit Levels for 1-hour and 24-hour TSP and noise was recorded in the month.

Summary of Environmental Complaints, Notifications of Summons and Successful Prosecutions

- 4.9 Figure 4.1 presents the environmental complaint flow diagram of the Project and Table 4.2 presents the statistics of complaints, notification of summons and successful prosecution since the commencement of the Project.

Table 4.2 Summary of Environmental Complaints And Prosecutions

Complaints logged		Summons served		Successful Prosecution	
October 2006	Cumulative	October 2006	Cumulative	October 2006	Cumulative
0	0	0	0	0	0

- 4.10 No environmental complaint, notification of summons and prosecution was received or made against the Project in the month.

5. FUTURE KEY ISSUES

Key Issues and Recommendations for Coming Month

5.1 Key issues to be considered in the coming month include:

- Generation of dust from activities on-site;
- Noise impact from operating equipment and machinery on-site;
- Generation of site surface runoffs and wastewater from activities on-site;
- Storage and disposal of general refuse and construction waste from activities on-site; and
- Management of chemicals and avoidance of oil spillage.

5.2 Recommendations for the coming month include:

- Provide water spray to haul roads and unpaved areas;
- Provide regular maintenance to wheel wash facilities on-site;
- Cover the stockpiles on-site entirely;
- Store all chemicals on site in the chemical storage area;
- Ensure general refuse are sorted, recycled and disposed properly; and
- Ensure construction wastes are disposed off-site properly and regularly.

Environmental Monitoring and Audit Schedule for the Coming Months

5.3 The tentative schedules for environmental monitoring and audit for the next three months are provided in Appendix D.

6. CONCLUSIONS AND RECOMMENDATIONS

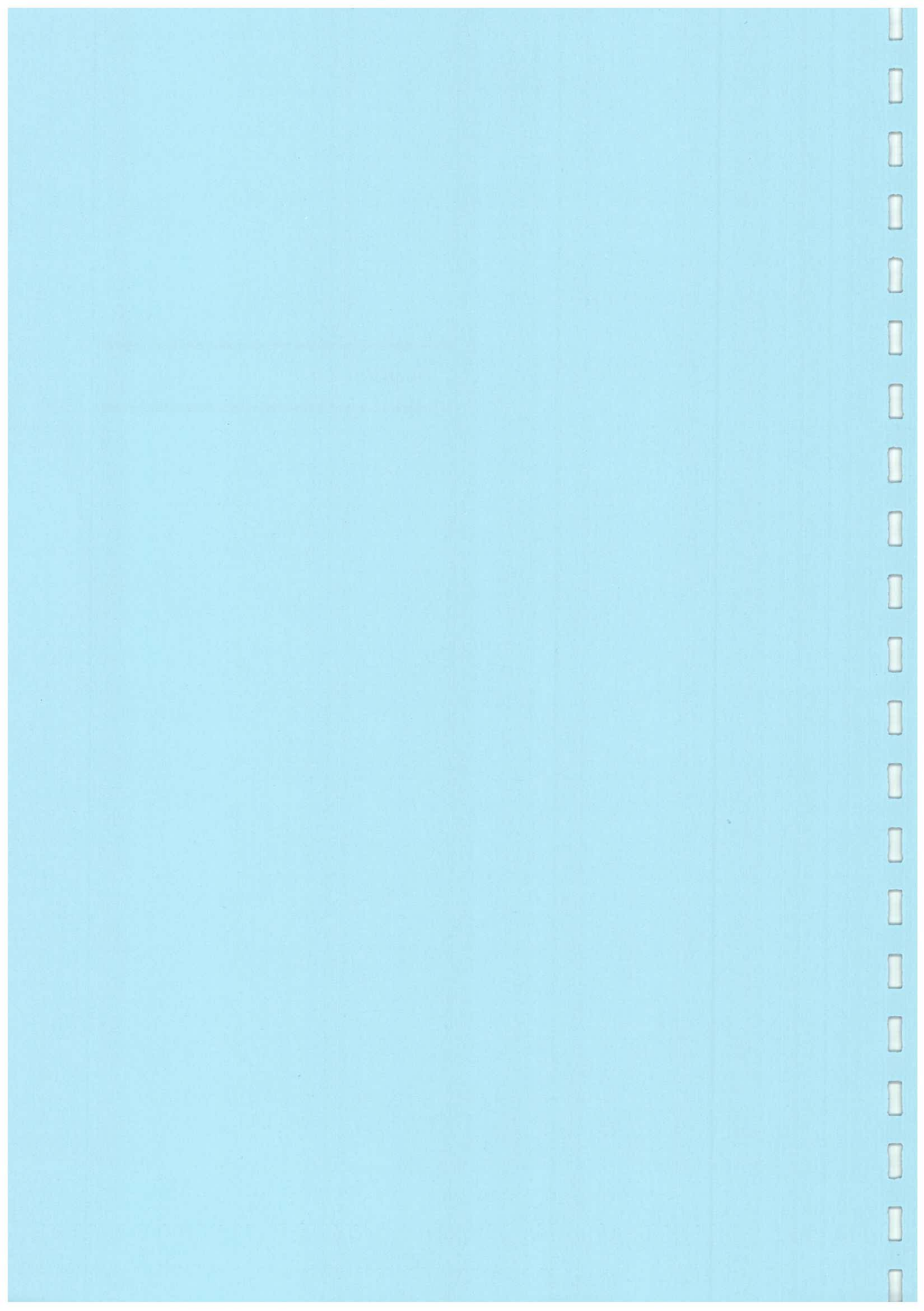
Conclusions

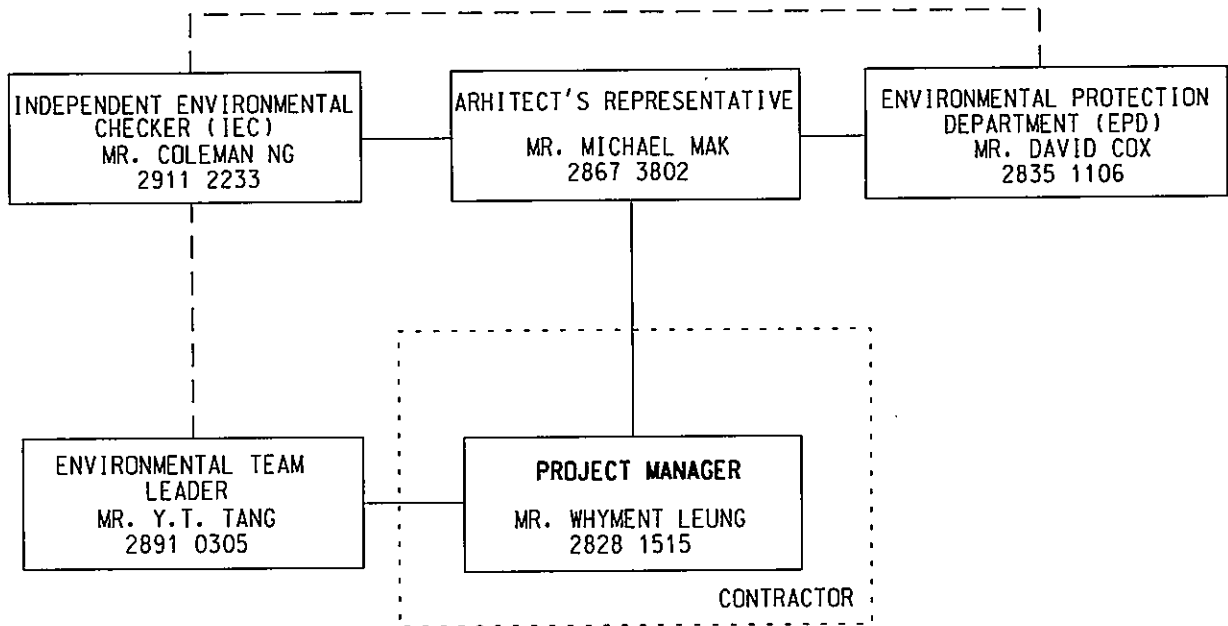
- 6.1 Environmental monitoring and audit was performed in November 2006. All monitoring and audit results in the month were checked and reviewed.
- 6.2 All 1-hour and 24-hour TSP monitoring results recorded in the month complied with the Action and Limit Levels.
- 6.3 All noise monitoring results recorded in the month complied with the Action and Limit Levels.
- 6.4 In general, the Contractor satisfactorily implemented all the required mitigation measure and was reasonably responsive to the ET's recommendations on any discrepancy observed during the weekly environmental site inspection.
- 6.5 No environmental complaint, notification summons or successful prosecution was received or made against this Project in the month.

Recommendations

- 6.6 According to results of weekly environmental site inspections performed in the month and the construction programme for the coming month, recommendations for air quality, construction noise, water quality and waste and chemical management are detailed in Sections 5.1 and 5.2.

FIGURES



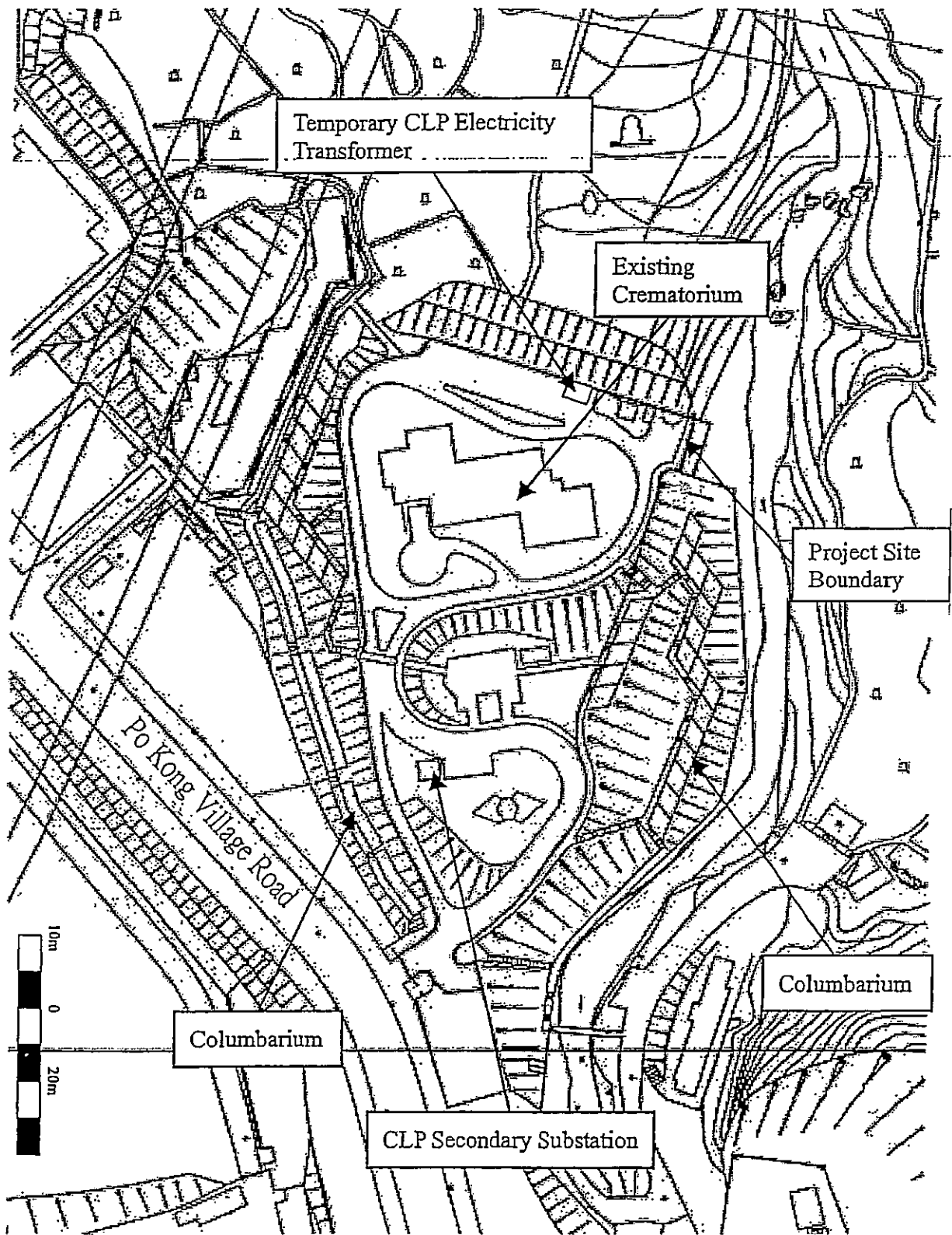


LEGEND:

———— DIRECT COMMUNICATION

- - - LIAISON

MAUNSELL AECOM Maunsell Environmental Management Consultants Ltd	CONTRACT NO: SS M333 - REPROVISIONING OF DIAMOND HILL CREMATORIUM		SCALE	N.T.S.	DATE	2006	
	PROJECT ORGANIZATION FOR ENVIRONMENTAL MANAGEMENT		CHECK	PTPM	DRAWN	LLMC	
			JOB No.	S07904	DRAWING No.	2.1	REV



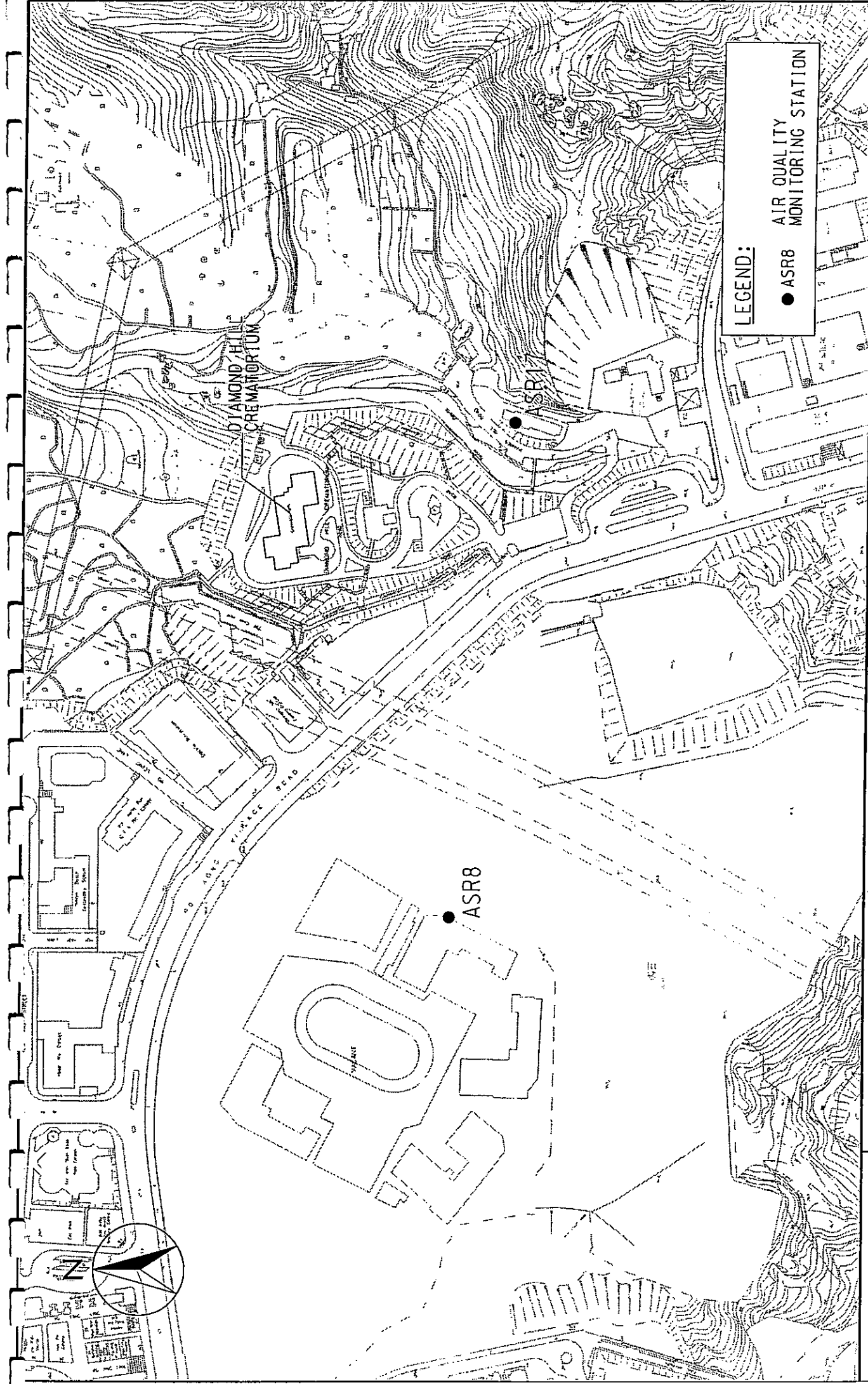
MAUNSELL | AECOM

Maunsell Environmental Management Consultants Ltd

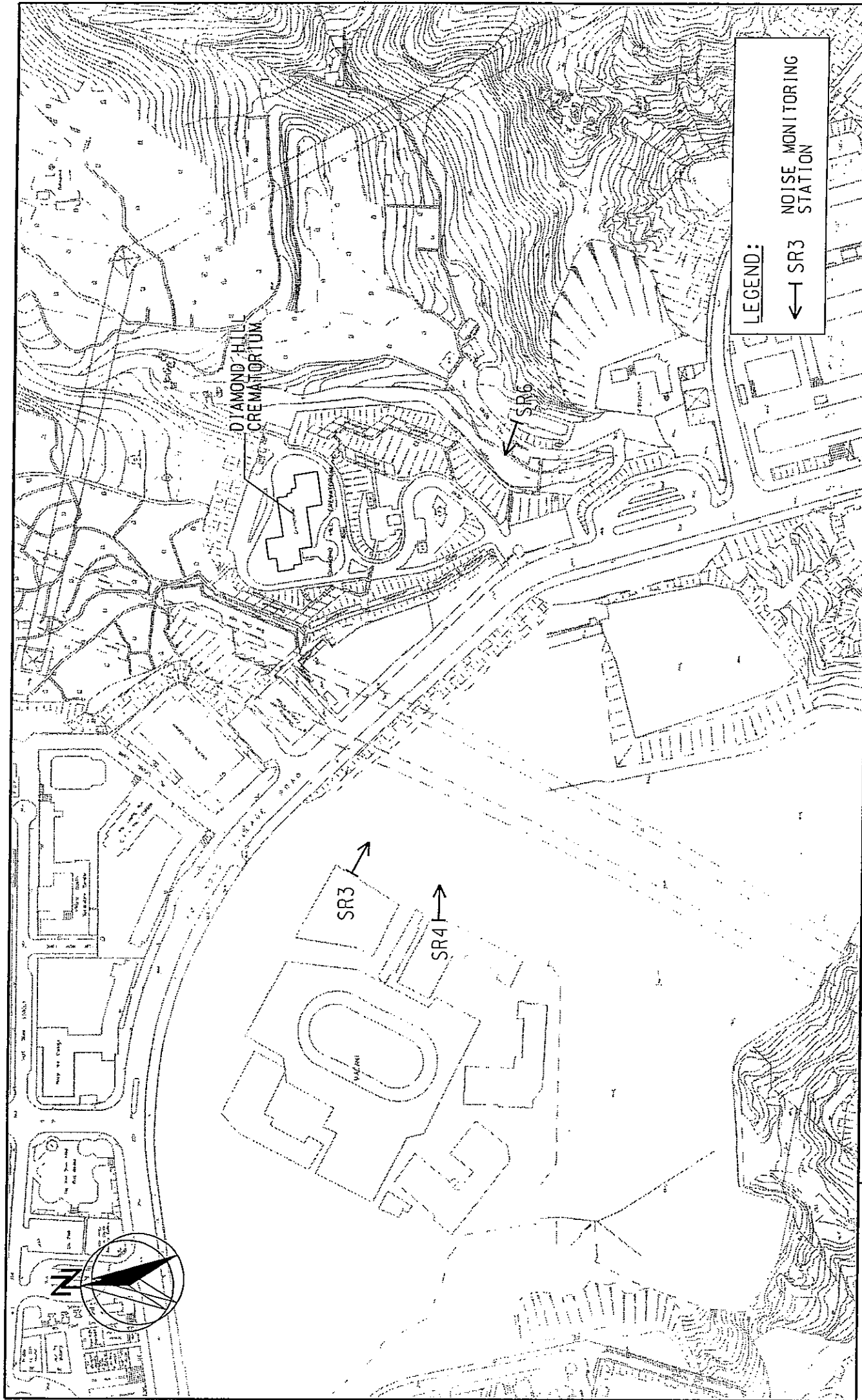
CONTRACT NO: SS M333 - REPROVISIONING OF DIAMOND HILL CREMATORIUM

LAYOUT OF WORK SITE

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		REV	-

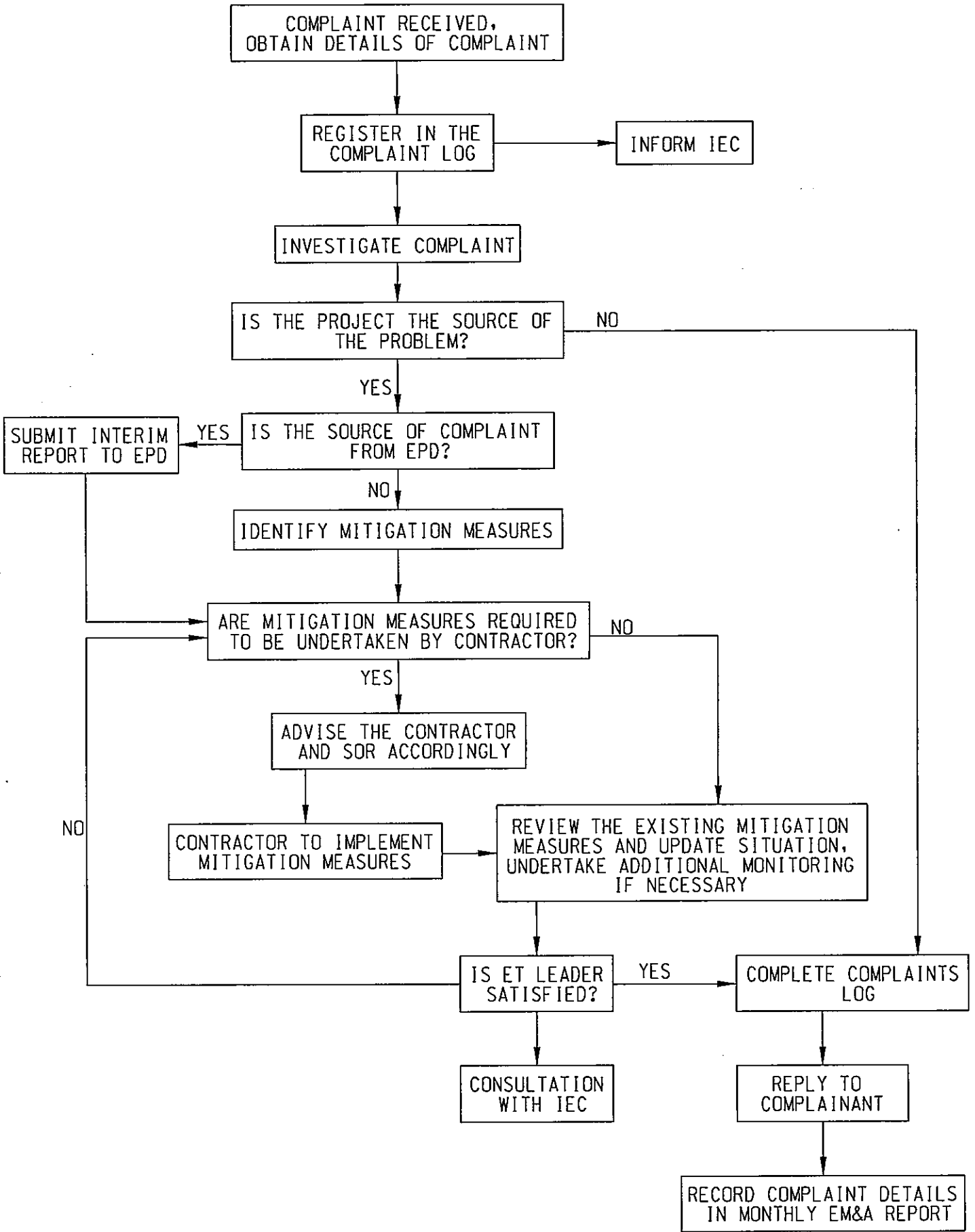


MAUNSELL AECOM Maunsell Environmental Management Consultants Ltd <small>\\S07904\DRAWING\REPORT\200505\AOMS.DGN</small>	CONTRACT NO: SS M333 REPROVISIONING OF DIAMOND HILL CREMATORIUM		SCALE A4 1:3000	DATE 2005
	LOCATIONS OF AIR QUALITY MONITORING STATIONS		CHECK FSYY	DRAWN LLMC
			JDB No. S07904	DRAWING No. 3.1
				REV -



LEGEND:
 ← SR3 NOISE MONITORING STATION

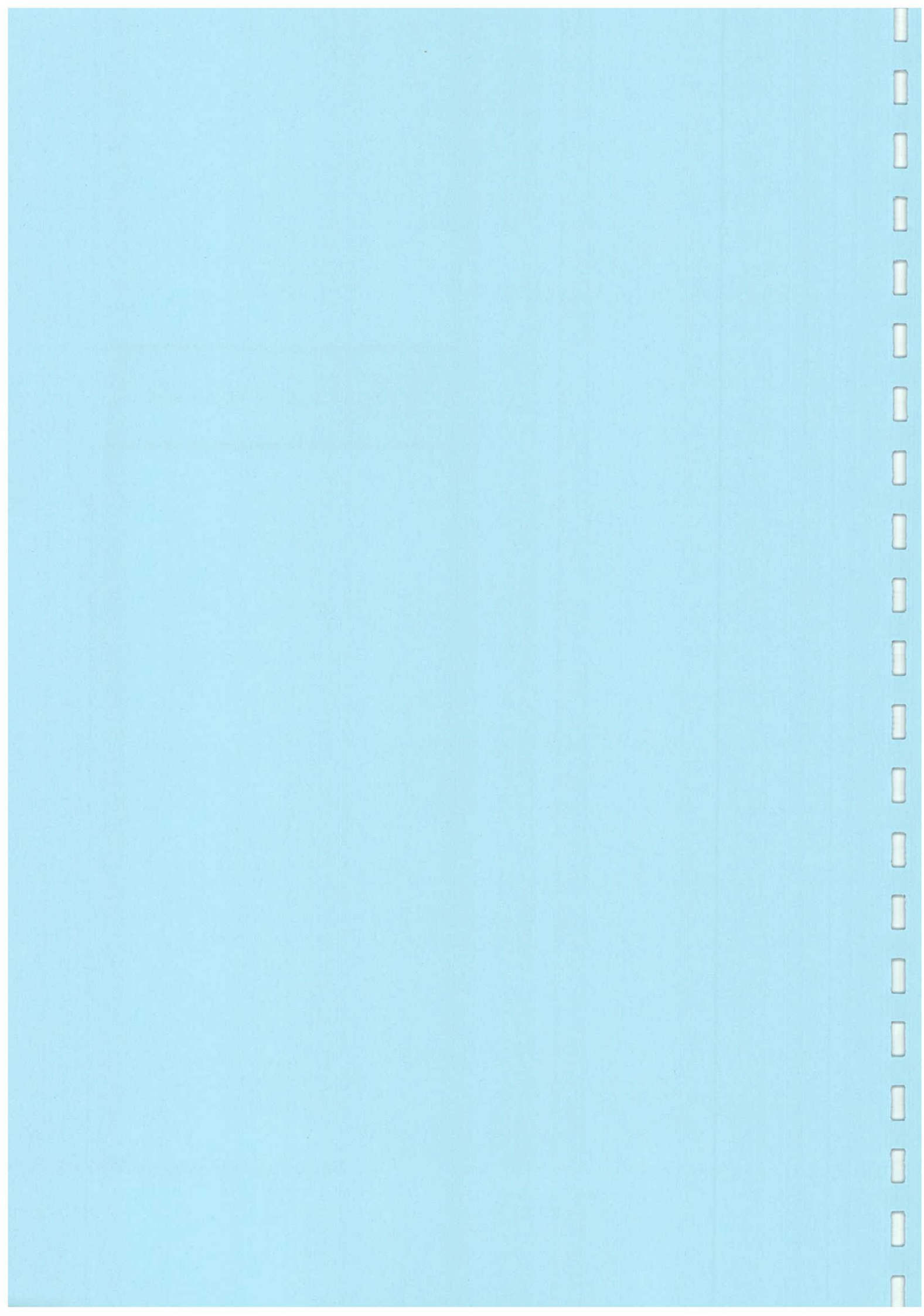
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	LOCATIONS OF CONSTRUCTION NOISE MONITORING STATIONS						



MAUNSELL AECOM Maunsell Environmental Management Consultants Ltd	CONTRACT NO: SS M333 - REPROVISIONING OF DIAMOND HILL CREMATORIUM COMPLAINT FLOW DIAGRAM	SCALE	N.T.S.	DATE	2006
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		JOB No.	S07904	DRAWING No.	7.1

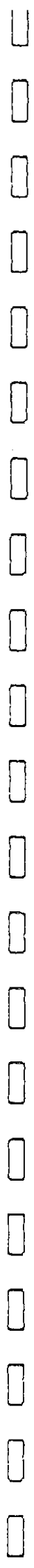


**APPENDIX A
KEY CONTACTS OF ENVIRONMENTAL
PERSONNEL**

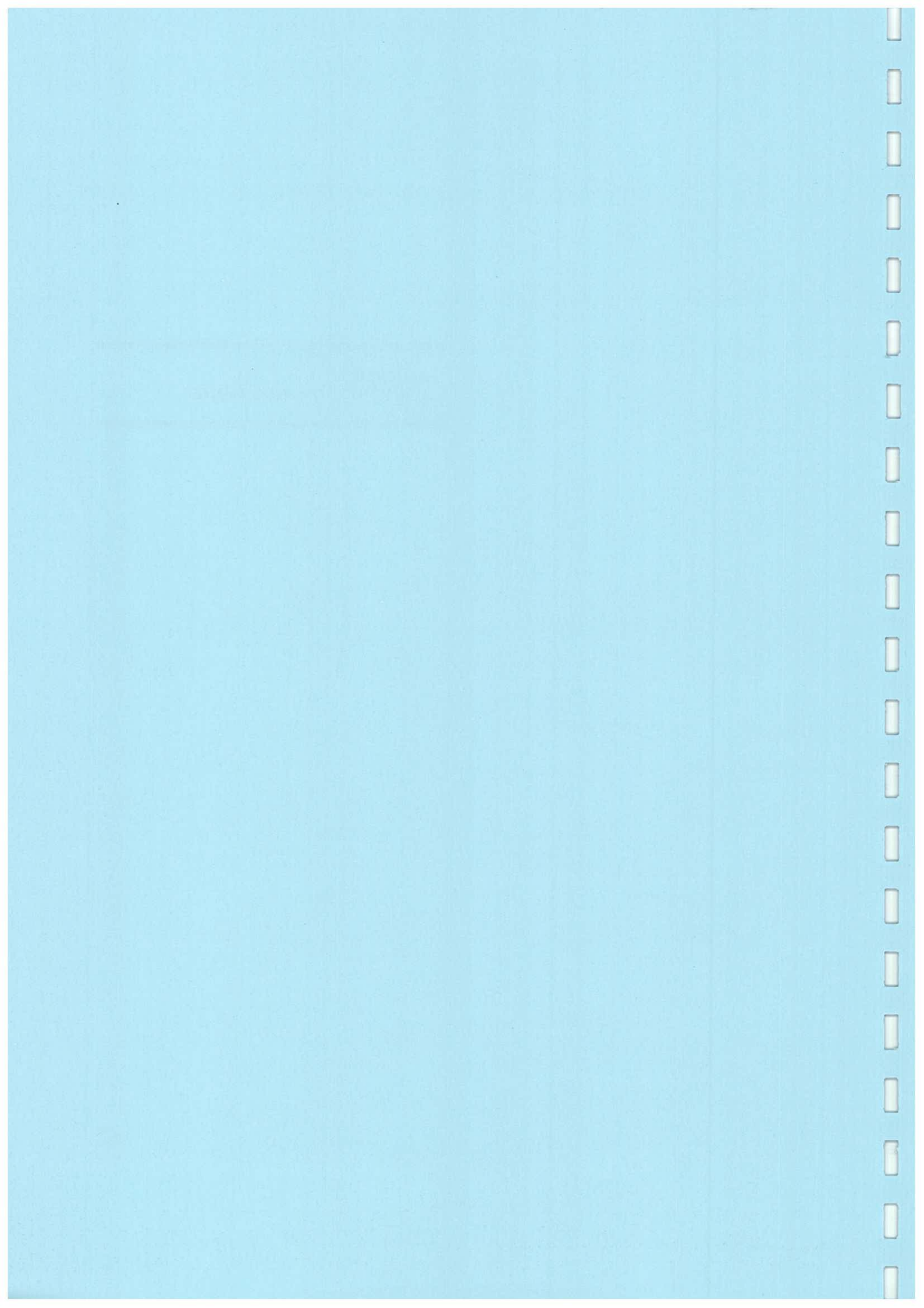


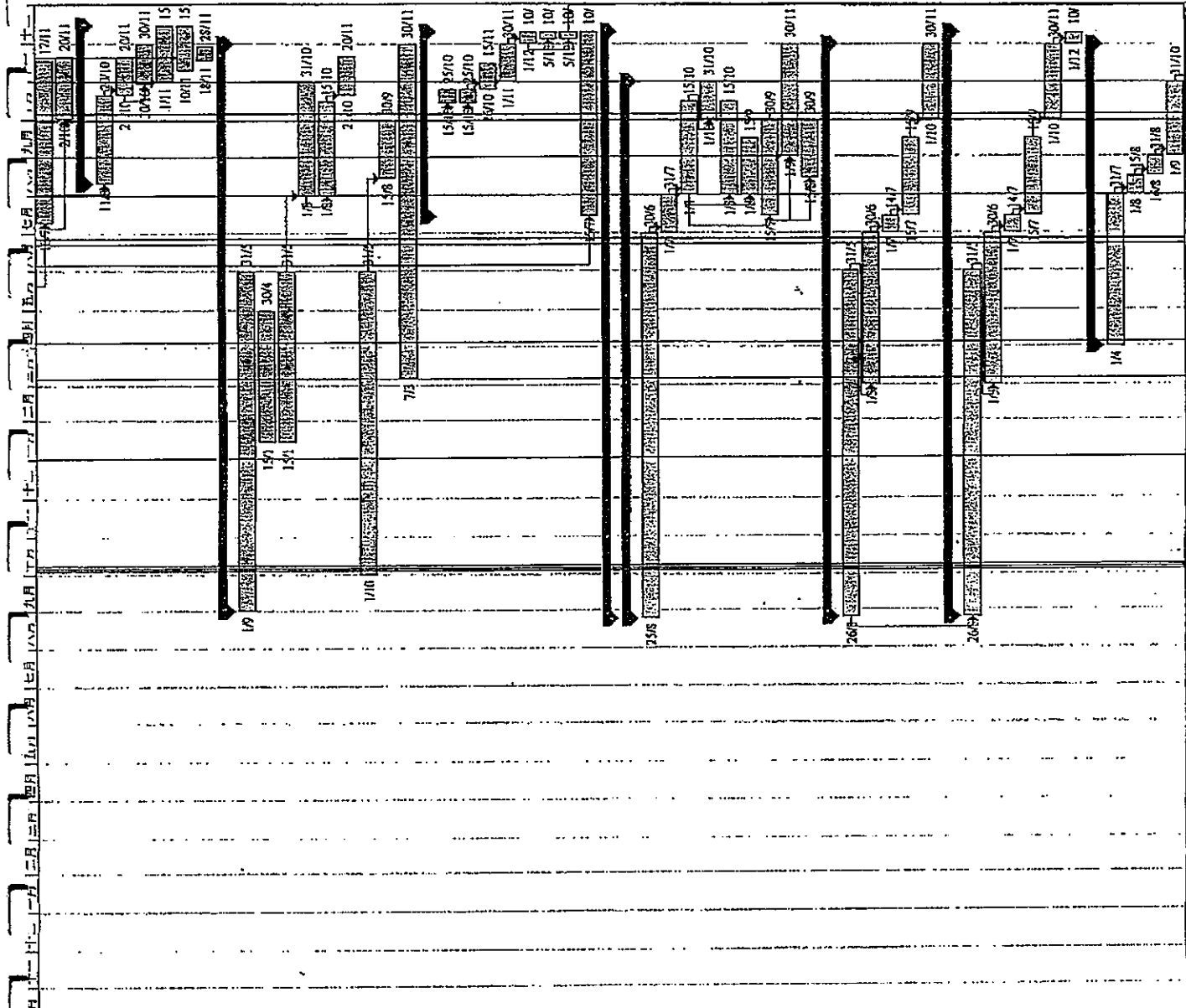
Appendix A**Key Contacts of Environmental Personnel**

Party	Name	Telephone No.	Fax No.
Environmental Protection Department			
SEPO	Mr. David Cox	2835 1106	2591 0558
EPO	Ms. Marlene Ho	2835 1186	2591 0558
EPO (ECD)	Mr. Charles Wu	2117 7540	2756 8588
Architect			
Architectural Services Department			
Project Architect	Mr. Michael Mak	2867 3802	2524 8194
Independent Environmental Checker			
Hyder Consulting Limited			
IEC	Mr. Coleman Ng	2911 2233	2805 5028
Assistant to IEC	Mr. Adi Lee	2911 2233	2805 5028
Contractor			
China Resources Construction Company Limited			
Project Manager	Mr. Whyment Leung	2828 1515	2827 2921
Environmental Team			
Maunsell Environmental Management Consultants Limited			
ET Leader	Mr. Y.T. Tang	2893 1551	2891 0305
Audit Team Leader	Mr. Kenneth Lau	2893 1551	2891 0305
Monitoring Team Leader	Mr. Eddie Yang	2893 1551	2891 0305



**APPENDIX B
CONSTRUCTION PROGRAMME**





Activity	Duration (Days)	Start Date	End Date
Floor Screed	31 days	10/12/2006	17/11/2006
Floor Tiling	50 days	21/01/2006	20/11/2006
Capacity & Joinery	127 days	11/02/2006	15/12/2006
Door Frame Installation	71 days	11/02/2006	20/10/2006
Door Installation	31 days	21/10/2006	20/11/2006
Ironmongery	32 days	31/10/2006	30/11/2006
Cabinets, Vanity Top & Reception Counter	45 days	1/11/2006	15/12/2006
Lockers, Access Panel etc	36 days	10/11/2006	15/12/2006
Toilet Partition	11 days	18/11/2006	28/11/2006
Steel & Metalwork	456 days	19/12/05	30/11/2006
Shop Drawing Submission & Approval	273 days	19/12/05	31/12/2006
Submit & Approval of Fabrication Procedure	106 days	15/11/2006	30/11/2006
Sub. & App. of Giltventilation & Installation Procedure	137 days	15/11/2006	31/12/2006
Handrail & Railing	92 days	18/12/06	31/10/2006
Steel Door Frame	76 days	18/12/06	15/10/2006
Steel Door Installation	31 days	21/10/2006	20/11/2006
Shop Drawing Submission and Approval of Roller Shutter	243 days	17/10/2005	31/12/2006
Roller Shutter Installation	47 days	15/02/06	30/09/2006
Steel & Metal Work (Miscellaneous)	269 days	7/12/2006	30/11/2006
Suspended Ceiling Installation	149 days	15/07/2006	10/12/2006
Gypsum Board Ceiling	71 days	15/10/2006	25/07/2006
Acoustic false ceiling grid	11 days	15/10/2006	25/10/2006
Acoustic false ceiling panel	21 days	28/10/2006	18/11/2006
Acoustic Wall Panel	30 days	1/11/2006	30/11/2006
Carpet Flooring	10 days	1/12/2006	10/12/2006
PVC/F.S. Steel Facile	6 days	5/12/2006	10/12/2006
Floor Mat	6 days	5/12/2006	10/12/2006
Painting	149 days	15/07/2006	10/12/2006
External Finishing	473 days	25/02/05	10/12/2006
Aluminum Window & Composite Windows	433 days	25/02/05	31/10/2006
Shop Drawing Submission & Approval	310 days	23/08/2005	30/06/2006
Manufacturing & Delivery	31 days	17/10/06	31/07/2006
Window frame and sash	76 days	18/12/06	13/10/2006
Glassing & Sealant	31 days	1/10/2006	31/10/2006
External Wall Plastering	76 days	18/12/06	13/10/2006
Recycled Brick Laying	46 days	1/02/06	15/09/2006
External Rubble Stone	78 days	15/07/2006	30/09/2006
External Wall Finishing	91 days	1/02/06	30/11/2006
Metal Louvre Installation	47 days	15/02/06	30/09/2006
Glass Canopy Installation	462 days	26/07/05	30/11/2006
Shop Drawing Submission & Approval	279 days	26/07/2005	31/12/2006
Preparation of Mock Up Sample	122 days	1/02/06	30/05/2006
Visual Inspection & Approval	14 days	17/12/06	14/07/2006
Manufacturing & Delivery	63 days	15/07/2006	15/09/2006
Site Installation	61 days	7/10/2006	30/11/2006
Site Light Installation	472 days	26/02/05	10/12/2006
Shop Drawing Submission & Approval	279 days	26/07/2005	31/12/2006
Preparation of Mock Up Sample	122 days	1/02/06	30/05/2006
Performance Test	16 days	17/12/06	14/07/2006
Manufacturing & Delivery	63 days	15/07/2006	15/09/2006
Site Installation	61 days	7/10/2006	30/11/2006
Field Test	10 days	1/12/2006	10/12/2006
Glass Panel Wall (Delivered)	244 days	1/12/2006	30/11/2006
Shop Drawing Submission & Approval	122 days	1/12/2006	31/07/2006
Preparation of Mock Up Sample	15 days	1/12/2006	15/07/2006
Visual Inspection & Approval	16 days	16/02/06	31/08/2006
Manufacturing & Delivery	61 days	1/10/2006	31/10/2006

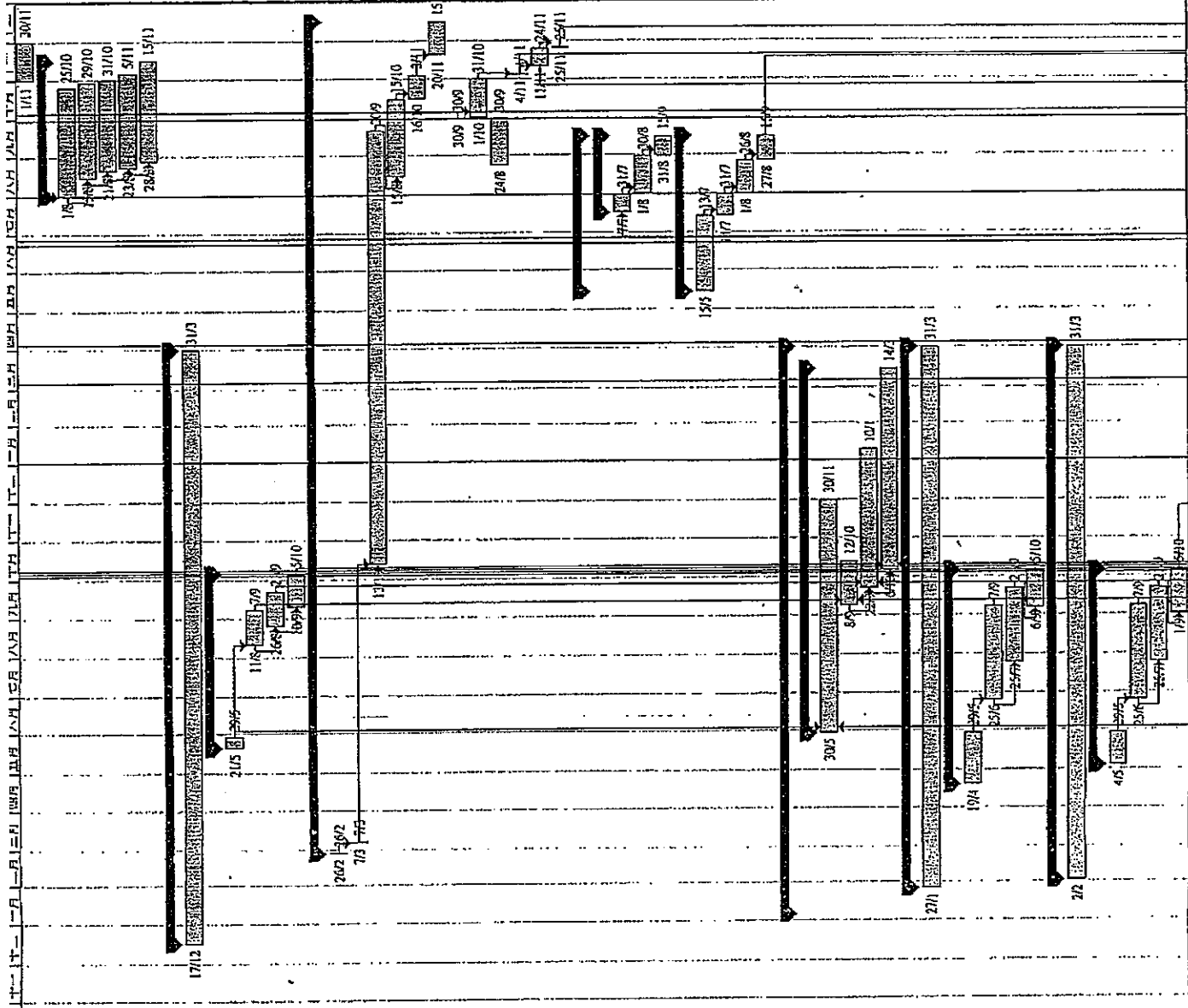
Planned by: Mr. Eric To
 Programme ref.: DHC/MF/S/1/001 Rev: H1
 Dated: 24 June 2006

Approved by:

Task: 任务
 Responsibility: 负责任务
 Design: 设计
 Material: 材料
 Inspection: 检查
 Approval: 批准
 On-site work: 现场工作
 On-site supervision: 现场监督
 On-site maintenance work: 现场维护工作
 On-site maintenance: 现场维护
 On-site adjustment: 现场调整
 On-site repair: 现场修理
 On-site replacement: 现场更换
 On-site demolition: 现场拆除
 On-site construction: 现场施工
 On-site installation: 现场安装
 On-site testing: 现场测试
 On-site commissioning: 现场调试
 On-site handover: 现场移交
 On-site closure: 现场关闭
 On-site safety: 现场安全
 On-site security: 现场保安
 On-site hygiene: 现场卫生
 On-site environment: 现场环境
 On-site quality: 现场质量
 On-site cost: 现场成本
 On-site risk: 现场风险
 On-site communication: 现场沟通
 On-site coordination: 现场协调
 On-site management: 现场管理
 On-site leadership: 现场领导
 On-site motivation: 现场激励
 On-site team building: 现场团队建设
 On-site culture: 现场文化
 On-site values: 现场价值观
 On-site ethics: 现场伦理
 On-site integrity: 现场诚信
 On-site transparency: 现场透明
 On-site accountability: 现场问责
 On-site responsibility: 现场责任
 On-site commitment: 现场承诺
 On-site loyalty: 现场忠诚
 On-site dedication: 现场奉献
 On-site passion: 现场热情
 On-site energy: 现场活力
 On-site enthusiasm: 现场 enthusiasm
 On-site optimism: 现场乐观
 On-site positivity: 现场积极
 On-site confidence: 现场自信
 On-site self-esteem: 现场自尊
 On-site self-respect: 现场自重
 On-site self-discipline: 现场自律
 On-site self-control: 现场自控
 On-site self-reliance: 现场自立
 On-site self-sufficiency: 现场自给
 On-site self-actualization: 现场自我实现
 On-site self-fulfillment: 现场自我满足
 On-site self-actualization: 现场自我实现
 On-site self-fulfillment: 现场自我满足

Master Programme for Reprovisioning of Diamond Hill Crematorium at Po Kong Village Rival, Kowloon, Hong Kong

P.3 of 7



Task ID	Task Description	Start Date	End Date	Duration (Days)
172	Site Installation	1/17/2006	30/11/2006	30 days
173	Roofing	1/8/2006	15/1/2006	107 days
174	Cement & Sand Screen	1/8/2006	25/10/2006	86 days
175	Waterproofing	1/8/2006	29/10/2006	76 days
176	Water Test / Infra Red Scanning	21/8/2006	31/10/2006	72 days
177	Insulation Board	23/8/2006	5/11/2006	75 days
178	Roof Tile	28/8/2006	15/11/2006	80 days
179	PVD Sheeting & Material Submission	17/12/2004	31/5/2006	470 days
180	Material Submission	17/12/2004	31/5/2006	470 days
181	Shopdrawing Submission	21/5/2005	5/10/2005	138 days
182	LAG	21/5/2005	29/5/2005	9 days
183	G/F	11/8/2005	7/9/2005	28 days
184	I/F	26/8/2005	21/9/2005	27 days
185	R/F	10/9/2005	5/10/2005	26 days
186	Plumbing & Drainage Installation	26/9/2005	15/12/2006	658 days
187	Submit Form WVO 046 Pt. I & II to WVO	26/9/2005	26/9/2005	1 day
188	WVO Acceptance of WVO 046 Pt. III	7/10/2005	7/10/2005	1 day
189	1st Installation - Concreted Piping / Pipe Sleeve	13/10/2005	20/9/2006	343 days
190	2nd Installation - Piping and Riser	15/10/2006	15/10/2006	62 days
191	Sanitary Filling	18/10/2006	31/11/2006	19 days
192	Test and Commission	20/11/2006	15/12/2006	26 days
193	Handover Pump Room	30/9/2006	30/9/2006	1 day
194	Pump Room Installation	1/10/2006	31/10/2006	31 days
195	Handover Pipe Duct	24/8/2006	30/9/2006	38 days
196	Submit Form WVO 046 Pt. IV to WVO	4/11/2006	4/11/2006	1 day
197	WVO Inspection	13/11/2006	24/11/2006	14 days
198	Water Connection	25/11/2006	25/11/2006	1 day
199	WVO Drainage Installation / Plumbing / Cable Draw Pits	15/5/2006	15/9/2006	124 days
200	External Arch	17/7/2006	15/9/2006	61 days
201	Excavation	17/7/2006	31/7/2006	15 days
202	Laying & Testing	1/8/2006	30/8/2006	30 days
203	Backfilling	31/8/2006	15/9/2006	16 days
204	Drainage Connection to Public System	15/5/2006	15/9/2006	124 days
205	Permit Application	15/5/2006	13/7/2006	60 days
206	Excavation	14/7/2006	31/7/2006	18 days
207	Laying & Testing	1/8/2006	26/8/2006	26 days
208	Backfilling and Reinstatement	21/8/2006	15/9/2006	20 days
209	Submission & Approval for B.S. Installation	6/12/2005	31/3/2006	450 days
210	CSD & CBWD Submission and Approval	30/5/2005	14/2/2006	289 days
211	L/G	30/5/2005	30/11/2005	185 days
212	G/F	8/9/2005	12/10/2005	35 days
213	I/F	22/9/2005	10/7/2006	111 days
214	R/F	6/10/2005	14/3/2006	160 days
215	Electrical Shopdrawing & Material Submission	27/11/2005	31/3/2006	429 days
216	Shopdrawing Submission & Approval	19/12/2005	5/10/2006	170 days
217	L/G	19/12/2005	29/5/2006	41 days
218	G/F	25/6/2006	7/9/2006	75 days
219	I/F	23/7/2006	21/9/2006	59 days
220	R/F	6/9/2006	31/10/2006	30 days
221	F.S. Shopdrawing & Material Submission	20/7/2005	31/3/2006	423 days
222	Material Submission	15/5/2005	5/10/2005	155 days
223	Shopdrawing Submission & Approval	4/5/2005	29/5/2005	26 days
224	LAG	23/6/2005	7/9/2005	75 days
225	G/F	23/6/2005	7/9/2005	75 days
226	I/F	23/6/2005	7/9/2005	75 days
227	R/F	1/9/2005	5/10/2005	35 days

Prepared by: Mr. Eric To
 Programme ref: DHCAP(S)1001 Rev H1
 Dated: 24 June 2006

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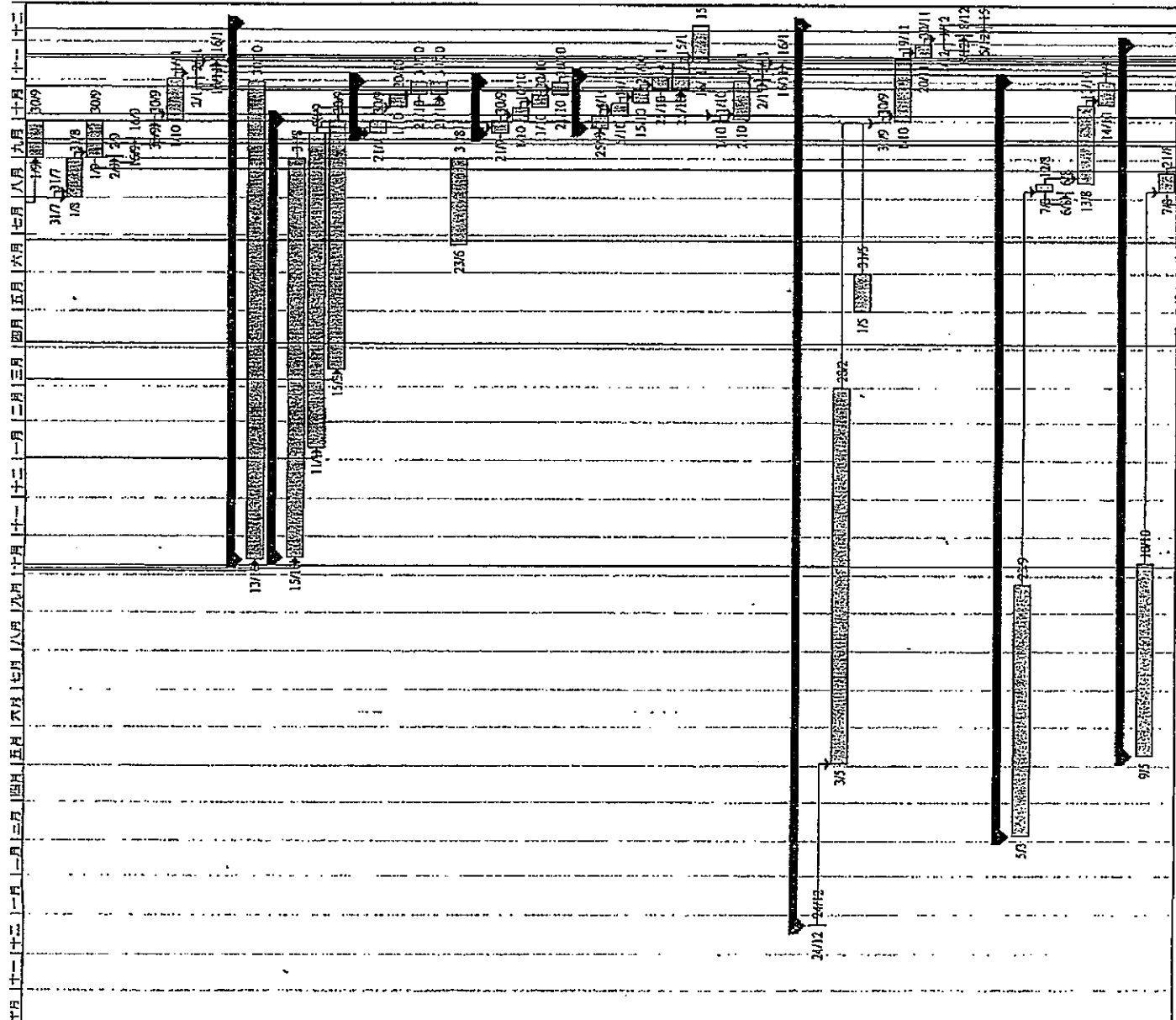
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Task ID	Task Description	Start Date	End Date	Duration	Resource
286	Final Fixing	1/9/2006	3/9/2006	30 days	
287	Handover F.S. Pump Room (LGS)	3/17/2006	3/17/2006	1 day	
288	Pump Room Installation	1/8/2006	3/18/2006	31 days	
289	Form 314	1/9/2006	3/9/2006	30 days	
290	Submit Form VVO 046 Pt. IV to VVO	2/9/2006	2/9/2006	1 day	
291	WVO Inspection	1/6/2006	1/6/2006	1 day	
292	Water Connection (F.S. Water)	3/9/2006	3/9/2006	1 day	
293	Testing and Commissioning	1/10/2006	1/11/2006	32 days	
294	Form 501	2/11/2006	2/11/2006	1 day	
295	F.S. Inspection	1/6/12/2006	1/6/12/2006	1 day	
296	MVAC Installation	1/9/10/2006	1/5/12/2006	429 days	
297	14 Fixing - Conduit & Wiring	1/3/12/2006	3/10/2006	33 days	
298	Concealed Conduit Installation	1/3/12/2006	3/9/2006	35 days	
299	LGS - G/F	1/3/12/2006	2/9/2006	32 days	
300	G/F - 1/F	1/3/12/2006	2/9/2006	23 days	
301	1/F - R/F	1/3/12/2006	3/10/2006	200 days	
302	Cable Wiring	1/3/12/2006	3/10/2006	40 days	
303	LGS	2/19/2006	3/9/2006	10 days	
304	G/F	2/19/2006	2/10/2006	10 days	
305	1/F	2/19/2006	3/10/2006	10 days	
306	R/F	2/19/2006	3/10/2006	10 days	
307	2nd Fixing - Air Ducts, Ventilation Fan and A/C Units	2/3/2006	3/18/2006	70 days	
308	Duct Work & Pipework Installation	2/19/2006	3/10/2006	40 days	
309	LGS	2/19/2006	3/9/2006	10 days	
310	G/F	1/10/2006	1/10/2006	10 days	
311	1/F	1/10/2006	2/10/2006	10 days	
312	R/F	1/10/2006	3/10/2006	10 days	
313	Spill Type System, VRF VAV & Ventilation Fan Installation	2/5/2006	4/11/2006	41 days	
314	LGS	2/5/2006	4/10/2006	10 days	
315	G/F	2/10/2006	4/10/2006	10 days	
316	1/F	2/10/2006	4/10/2006	10 days	
317	R/F	2/10/2006	4/11/2006	11 days	
318	Final Fixing Ductwork Controls etc	2/5/10/2006	1/5/12/2006	23 days	
319	Testing and Commissioning	1/6/12/2006	1/5/12/2006	30 days	
320	Handover of AHU Plant Room (1/F)	1/10/2006	1/10/2006	1 day	
321	Plant Room Installation	2/10/2006	1/11/2006	31 days	
322	Form 501	2/11/2006	2/11/2006	1 day	
323	Ventilation Inspection	1/6/12/2006	1/6/12/2006	1 day	
324	Lift Installation	2/4/12/2004	1/5/12/2004	722 days	
325	Nomination of Lift NSC	2/4/12/2004	2/4/12/2004	1 day	
326	Shopdrawing and Material Submission & Approval	2/5/2005	2/8/2005	302 days	
327	Design Submission of Temp. Work Platform Inside Lift Shaft	3/5/2006	3/5/2006	31 days	
328	Handover Lift Machine Room & Shaft	3/9/2006	3/9/2006	1 day	
329	Lift Installation	7/10/2006	1/11/2006	50 days	
330	Testing and Commissioning	2/11/2006	3/11/2006	11 days	
331	Form 5	8/12/2006	8/12/2006	1 day	
332	EMSD Inspection	1/5/12/2006	1/5/12/2006	1 day	
333	Lift Certificate	5/21/2005	1/11/2006	607 days	
334	Emergency Gas Set Installation	5/21/2005	2/3/2005	203 days	
335	Shop Drawing and Material Submission & Approval	7/8/2006	1/28/2006	6 days	
336	Delivery of Material / Equipment	1/3/2006	6/8/2006	62 days	
337	Handover of E/Gen Set Room (G/F)	1/10/2006	1/10/2006	1 day	
338	Gen Set Installation	1/10/2006	1/10/2006	1 day	
339	Testing and Commissioning	9/2/2005	3/11/2006	571 days	
340	Filtration System	9/2/2005	10/10/2005	155 days	
341	Shop Drawing and Material Submission & Approval	7/8/2006	7/8/2006	1 day	
342	Delivery of Material / Equipment	7/8/2006	7/8/2006	1 day	

Handed by: Mr. Eric To
 Programme ref: DHC/M/15/001 Rev. H1
 Date: 24 June 2006

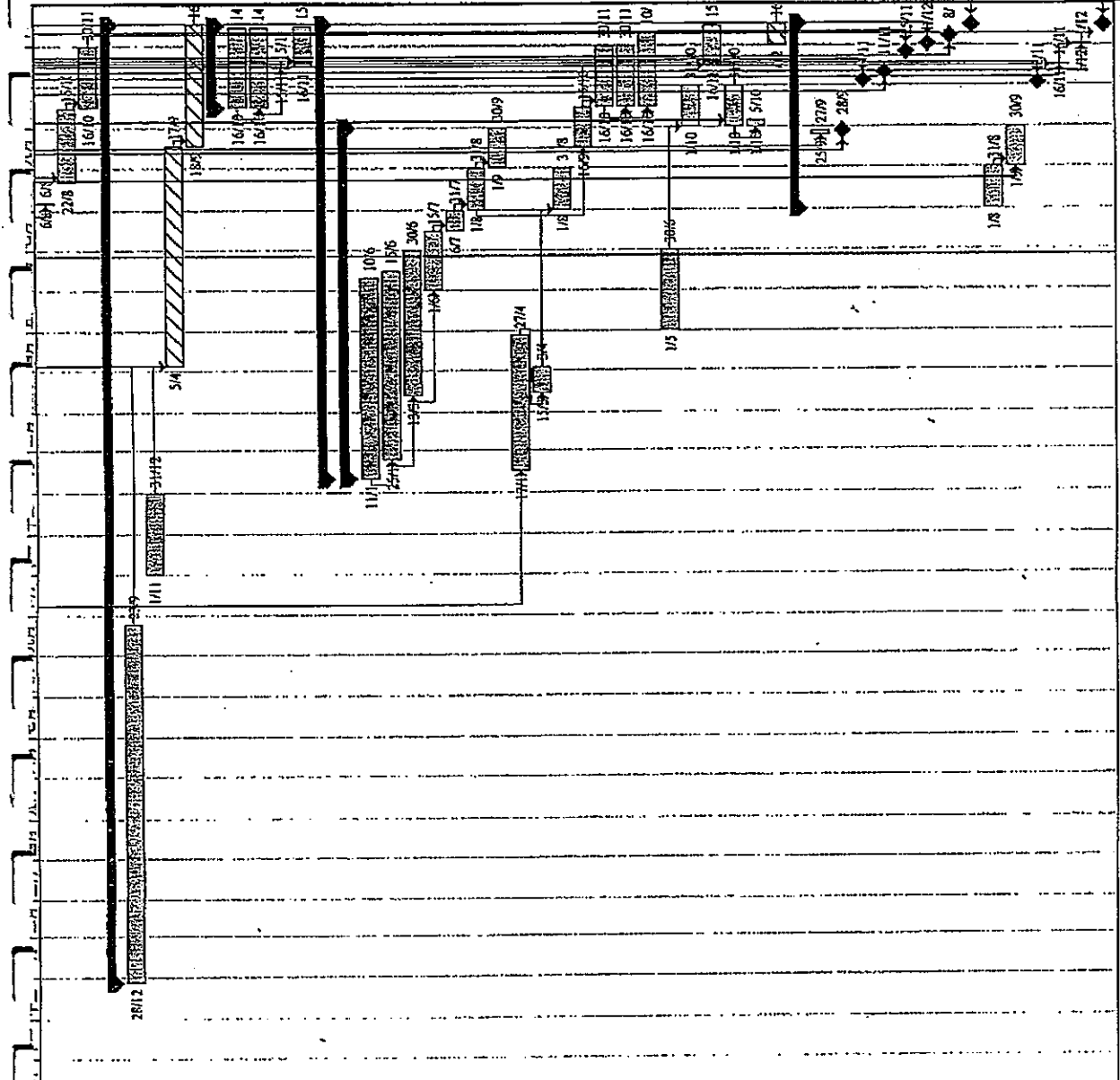
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Resource: Internal Work External Work

Legend: Internal Work External Work

Scale: 1:100

Sheet: 6 of 7



313	Handover of Filtration Plant Room (GIP)	1 day	6/8/2006	6/8/2006
314	Pipework Installation & Filtration Plant Installation	55 days	22/8/2006	13/10/2006
315	Testing and Commissioning	46 days	16/10/2006	30/1/2007
316	Cremator Plant Installation (NSC)	719 days	28/12/2004	16/12/2006
317	Stop Drawing & Equipment Submission and approval	270 days	28/12/2004	21/6/2005
318	Sub. & App. of Method Statement for Erection of Scaffolding inside Chimney	61 days	1/11/2005	31/12/2005
319	Cremator Plant Installation	166 days	5/4/2006	1/9/2006
320	Testing & Commissioning	90 days	18/9/2006	16/12/2006
321	Works by Specialist Contractors / Public Utility	61 days	16/10/2006	15/12/2006
322	CCTV & PA System	60 days	16/10/2006	14/12/2006
323	Client's fittings and fixtures	60 days	16/10/2006	14/12/2006
324	Handover of TBE Room	1 day	15/11/2006	15/11/2006
325	Telephone Installation	30 days	16/11/2006	15/12/2006
326	External works	340 days	11/11/2006	16/12/2006
327	EVA Construction	268 days	11/11/2006	30/9/2006
328	Excavation for Footing	151 days	11/11/2006	10/6/2006
329	Concrete Footing	142 days	25/11/2006	15/6/2006
330	Concrete Wall	110 days	13/12/2006	30/9/2006
331	UG Services	45 days	16/2/2006	15/2/2006
332	Backfilling	16 days	16/2/2006	31/2/2006
333	Road Slab	31 days	18/2/2006	31/8/2006
334	Parquet Wall	30 days	19/2/2006	30/9/2006
335	UG Fuel Tank Construction	101 days	17/1/2006	27/4/2006
336	Installation of Fuel Tank	20 days	15/3/2006	3/4/2006
337	DG Inspection & Licence	31 days	18/2/2006	31/8/2006
338	Plaster & Plaster Cub	30 days	16/9/2006	15/10/2006
339	Finishes to Plasters	46 days	16/10/2006	30/1/2007
340	Granite Paver	46 days	16/10/2006	30/1/2007
341	External Works Painting	56 days	16/10/2006	10/1/2007
342	Temporary Scaffolding - Design, Submission & Approval	61 days	15/12/2006	30/6/2006
343	Temporary Scaffolding - Construction	31 days	1/1/2007	31/1/2007
344	Soft Landscape	30 days	16/11/2006	15/12/2006
345	Removal of Scaffolding	31 days	1/10/2006	31/10/2006
346	Removal of Tower Crane	5 days	1/10/2006	5/10/2006
347	Final cleaning	16 days	1/12/2006	16/12/2006
348	Project Key Milestone Date	138 days	1/8/2006	16/12/2006
349	CLP Inspection	3 days	25/9/2006	27/9/2006
350	Permanent Power On	0 days	28/9/2006	28/9/2006
351	Submit WVO/QG (Part IV) (Fr & Ft)	0 days	4/11/2006	4/11/2006
352	WVO Inspection	0 days	11/11/2006	11/11/2006
353	Permanent Water Supply (Fr & Ft)	0 days	25/11/2006	25/11/2006
354	Submit Form 3	0 days	1/12/2006	1/12/2006
355	EMSD Inspection	0 days	8/12/2006	8/12/2006
356	Lift certificate	0 days	15/12/2006	15/12/2006
357	Submit & Approval of Final GBP	31 days	1/8/2006	31/8/2006
358	Submit & Approval of Form 314	30 days	1/8/2006	30/9/2006
359	Submit Form 311	0 days	2/11/2006	2/11/2006
360	F.S. Inspection	1 day	16/11/2006	16/11/2006
361	F.S. Certificate	1 day	1/12/2006	1/12/2006
362	Handover of Section 1	1 day	16/12/2006	16/12/2006

Planned by: Mr. Eric To
 Programme ref: DHC/MATS/1/001 Rev:11
 Date: 24 June 2006

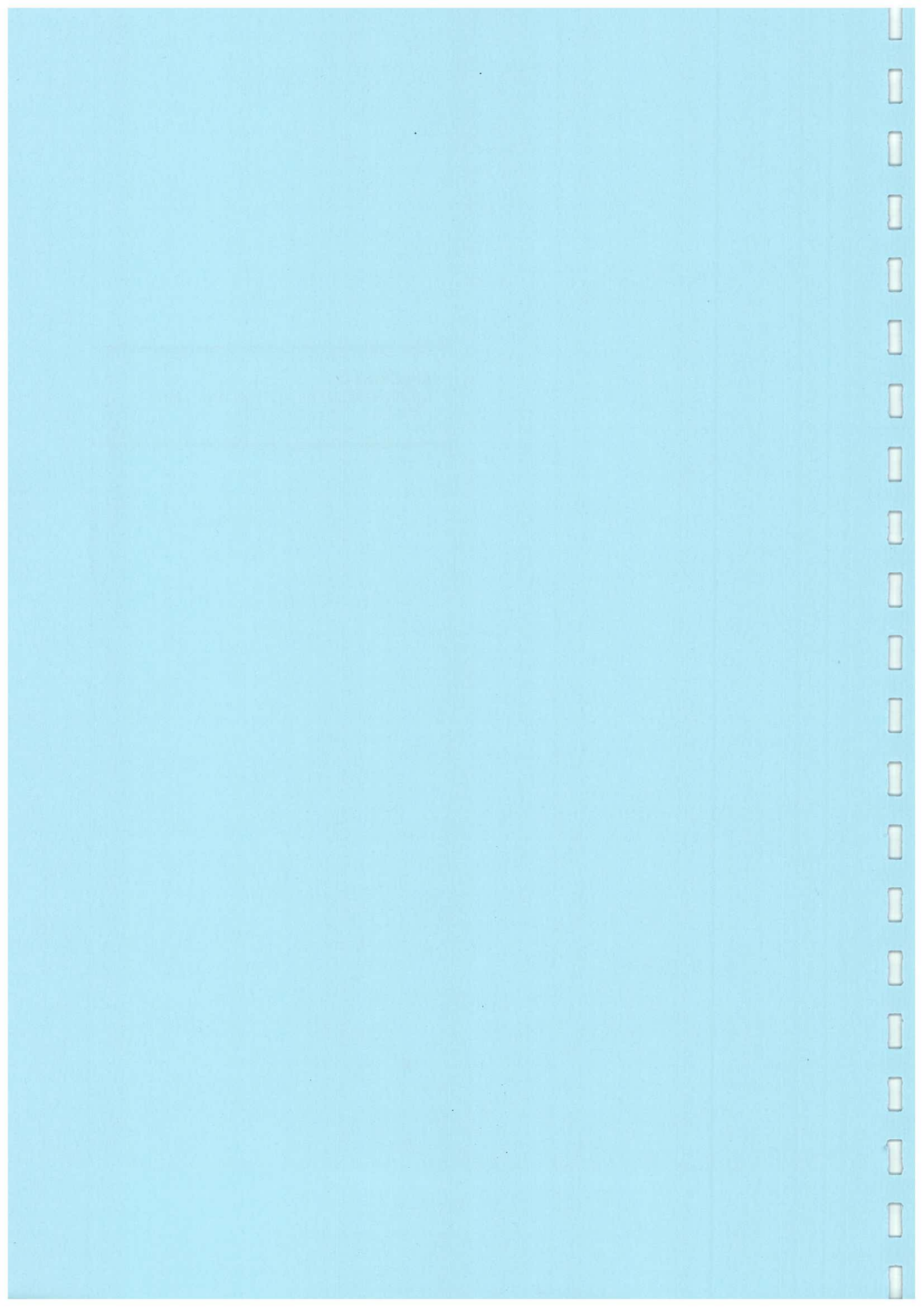
Approved by:

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**APPENDIX C
ENVIRONMENTAL ACTION AND LIMIT
LEVELS**



Appendix C Environmental Action and Limit Levels

Action and Limit Levels for 24-hour TSP

Monitoring Station	Action Level ($\mu\text{g}/\text{m}^3$)	Limit Level ($\mu\text{g}/\text{m}^3$)
ASR8	195.0	260
ASR17	174.1	260

Action and Limit Levels for 1-hour TSP

Monitoring Station	Action Level ($\mu\text{g}/\text{m}^3$)	Limit Level ($\mu\text{g}/\text{m}^3$)
ASR8	408.1	500
ASR17	408.4	500

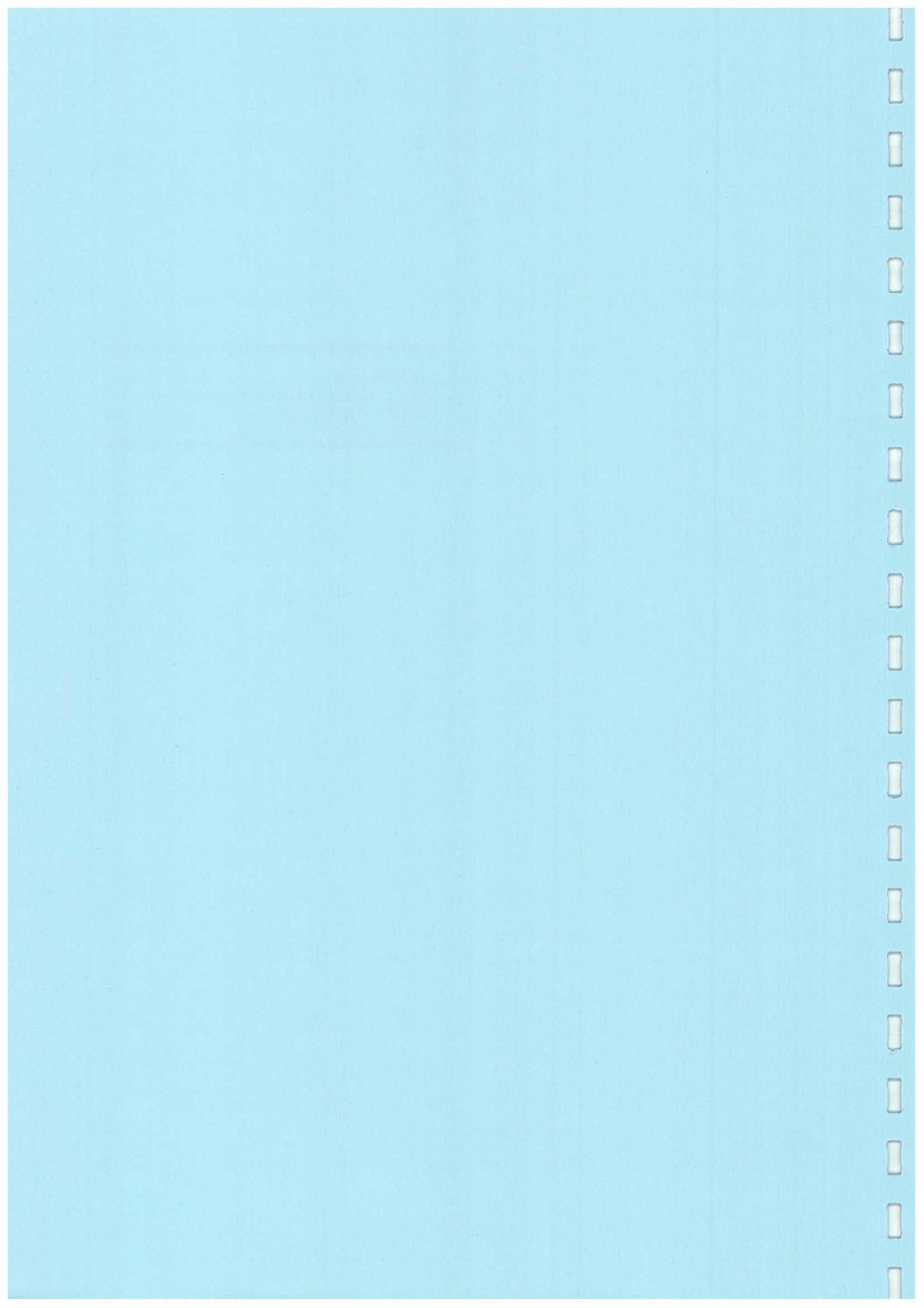
Action and Limit Levels (L_{eq}) for Construction Noise

Time Period	Action Level	Limit Level		
		SR3	SR4	SR6
0700 – 1900 hours on normal weekdays	When one documented complaint is received from any one of the sensitive receivers	70/65*	70/65*	75
0700 – 2300 hours on public holidays including Sundays and 1900 – 2300 hours on all days		Subject to requirements stipulated in future Construction Noise Permits		
2300 – 0700 on all days				

*reduce to 70dB(A) for schools and 65dB(A) during school examination periods



**APPENDIX D
ENVIRONMENTAL MONITORING AND
AUDIT SCHEDULES**



**Reprovisioning of Diamond Hill Crematorium
Impact Air Quality and Noise Monitoring and Audit Schedule for November 2006**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			01-Nov	02-Nov	03-Nov	04-Nov
05-Nov	06-Nov	07-Nov	08-Nov	09-Nov	10-Nov	11-Nov
		24-hour TSP	1-hour TSP Noise	1-hour TSP Noise		
12-Nov	13-Nov	14-Nov	15-Nov	16-Nov	17-Nov	18-Nov
	24-hour TSP	1-hour TSP Noise				24-hour TSP
19-Nov	20-Nov	21-Nov	22-Nov	23-Nov	24-Nov	25-Nov
	1-hour TSP Noise				24-hour TSP	1-hour TSP
26-Nov	27-Nov	28-Nov	29-Nov	30-Nov		
				24-hour TSP		

The schedule is subject to change due to unforeseeable circumstances (adverse weather, etc)

**Reprovisioning of Diamond Hill Crematorium
Tentative Impact Air Quality and Noise Monitoring and Audit Schedule for December 2006**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					01-Dec	02-Dec
					1-hour TSP Noise	
03-Dec	04-Dec	05-Dec	06-Dec	07-Dec	08-Dec	09-Dec
		24-hour TSP	1-hour TSP Noise			
10-Dec	11-Dec	12-Dec	13-Dec	14-Dec	15-Dec	16-Dec
	24-hour TSP	1-hour TSP Noise				24-hour TSP
17-Dec	18-Dec	19-Dec	20-Dec	21-Dec	22-Dec	23-Dec
	1-hour TSP Noise			24-hour TSP	1-hour TSP Noise	
24-Dec	25-Dec	26-Dec	27-Dec	28-Dec	29-Dec	30-Dec
	Site Environmental Audit	24-hour TSP	1-hour TSP Noise			
31-Dec						
	Site Environmental Audit					

The schedule is subject to change due to unforeseeable circumstances (adverse weather, etc)

**Reprovisioning of Diamond Hill Crematorium
Tentative Impact Air Quality and Noise Monitoring and Audit Schedule for January 2007**

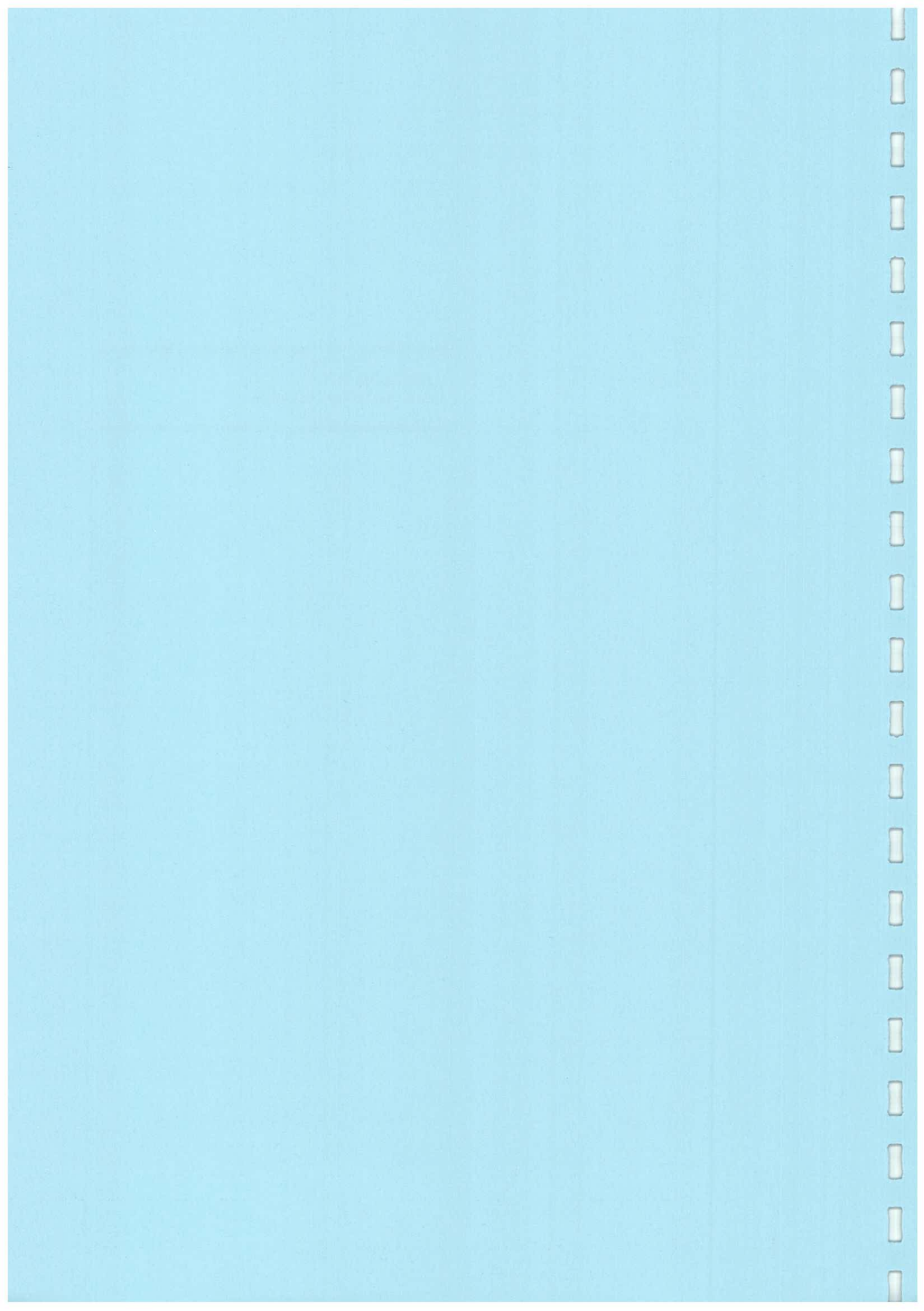
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	01-Jan	02-Jan	03-Jan	04-Jan	05-Jan	06-Jan
07-Jan	08-Jan	09-Jan	10-Jan	11-Jan	12-Jan	13-Jan
	24-hour TSP	1-hour TSP Noise	1-hour TSP Noise		24-hour TSP	1-hour TSP Noise
14-Jan	15-Jan	16-Jan	17-Jan	18-Jan	19-Jan	20-Jan
	Site Environmental Audit			24-hour TSP	1-hour TSP Noise	
21-Jan	22-Jan	23-Jan	24-Jan	25-Jan	26-Jan	27-Jan
	Site Environmental Audit		24-hour TSP	1-hour TSP Noise		
28-Jan	29-Jan	30-Jan	31-Jan	01-Feb	29-Dec	30-Dec
	Site Environmental Audit	24-hour TSP	1-hour TSP Noise			

The schedule is subject to change due to unforeseeable circumstances (adverse weather, etc)

**Reprovisioning of Diamond Hill Crematorium
Tentative Impact Air Quality and Noise Monitoring and Audit Schedule for February 2007**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				01-Feb	02-Feb	03-Feb
04-Feb	05-Feb	06-Feb	07-Feb	08-Feb	09-Feb	10-Feb
	24-hour TSP	1-hour TSP Noise				
11-Feb	12-Feb	13-Feb	14-Feb	15-Feb	16-Feb	17-Feb
	Site Environmental Audit	24-hour TSP	1-hour TSP Noise			
18-Feb	19-Feb	20-Feb	21-Feb	22-Feb	23-Feb	24-Feb
	Site Environmental Audit			1-hour TSP Noise		
25-Feb	26-Feb	27-Feb	28-Feb	01-Mar	29-Dec	30-Dec
	Site Environmental Audit	24-hour TSP	1-hour TSP Noise			

APPENDIX E
CALIBRATION DETAILS



Maunsell Environmental Management Consultants Ltd.
TSP High Volume Sampler
Field Calibration Report

Station: Po Leung Kuk Grandmont Primary School (ASR8) Operator: Yuen
 Cal. Date: 28-Sep-06 Next Due Date: 28-Nov-06
 Equipment No.: A-001-69T Serial No.: 0716

Ambient Condition			
Temperature, Ta (K)	302	Pressure, Pa (mmHg)	760.0

Orifice Transfer Standard Information					
Serial No:	988	Slope, mc	2.00878	Intercept, bc	0.00015
Last Calibration Date:	15-Nov-05	$mc \times Qstd + bc = [DH \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	15-Nov-06	$Qstd = \{ [DH \times (Pa/760) \times (298/Ta)]^{1/2} - bc \} / mc$			

Calibration of TSP Sampler					
Resistance Plate No.	Orifice			HVS Flow Recorder	
	DH (orifice), in. of water	$[DH \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (m ³ /min) X-axis	Flow Recorder Reading (CFM)	Continuous Flow Recorder Reading IC (CFM) Y-axis
18	14.0	3.72	1.85	51.0	50.66
13	12.5	3.51	1.75	50.0	49.67
10	9.2	3.01	1.50	41.0	40.73
7	7.4	2.70	1.35	36.0	35.76
5	3.0	1.72	0.86	22.0	21.85

By Linear Regression of Y on X

Slope, mw = 29.9713 Intercept, bw = -4.0231

Correlation Coefficient* = 0.9953

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 1.30m³/min

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = IC \times [(Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; IC = $(mw \times Qstd + bw) \times [(760 / Pa) \times (Ta / 298)]^{1/2} =$ 35.17

Remarks: _____

QC Reviewer: Eddie Yang Signature: [Signature] Date: 28-9-2006

Maunsell Environmental Management Consultants Ltd.
TSP High Volume Sampler
Field Calibration Report

Station: Staff Quarter For Diamond Hill Crematorium (ASR17) Operator: Yuen
 Cal. Date: 28-Sep-06 Next Due Date: 28-Nov-06
 Equipment No.: A-001-21T Serial No.: 10278

Ambient Condition			
Temperature, Ta (K)	302	Pressure, Pa (mmHg)	760.0

Orifice Transfer Standard Information					
Serial No:	988	Slope, mc	2.00878	Intercept, bc	0.00015
Last Calibration Date:	15-Nov-05	$mc \times Qstd + bc = [DH \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	15-Nov-06	$Qstd = \{ [DH \times (Pa/760) \times (298/Ta)]^{1/2} - bc \} / mc$			

Calibration of TSP Sampler					
Resistance Plate No.	Orifice			HVS Flow Recorder	
	DH (orifice), in. of water	$[DH \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (m ³ /min) X-axis	Flow Recorder Reading (CFM)	Continuous Flow Recorder Reading IC (CFM) Y-axis
18	13.0	3.58	1.78	49.0	48.67
13	12.5	3.51	1.75	47.0	46.69
10	9.2	3.01	1.50	41.0	40.73
7	7.9	2.79	1.39	38.0	37.75
5	3.4	1.83	0.91	24.0	23.84

By Linear Regression of Y on X

Slope, mw = 27.9024 Intercept, bw = -1.3838

Correlation Coefficient* = 0.9978

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 1.30m³/min

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = IC \times [(Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; IC = (mw x Qstd + bw) x [(760 / Pa) x (Ta / 298)]^{1/2} = 35.12

Remarks: _____

QC Reviewer: Eddie Yang Signature: [Signature] Date: 28.9.2006

EQUIPMENT CALIBRATION RECORD

Type: Laser Dust Monitor
 Manufacturer/Brand: SIBATA
 Model No.: LD-1
 Equipment No.: A.005.05a
 Sensitivity Adjustment Scale Setting: 510 CPM
 Operator: Eddie Yang (EWNY)

Standard Equipment

Equipment: Rupprecht & Patashnick TEOM®
 Venue: Cyberport (Pui Ying Secondary School)
 Model No.: Series 1400AB
 Serial No: Control: 140AB219899803
 Sensor: 1200C143659803 K₀: 12500
 Last Calibration Date*: 17 June 2006

*Remarks: Recommended interval for hardware calibration is 1 year

Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration): 510 CPM
 Sensitivity Adjustment Scale Setting (After Calibration): 510 CPM

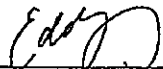
Hour	Date (dd-mm-yy)	Time	Ambient Condition		Concentration ¹ (mg/m ³) Y-axis	Total Count ²	Count/ Minute ³ X-axis
			Temp (°C)	R.H. (%)			
1	09-07-06	09:00 - 10:00	28.9	88	0.08838	2710	45.17
2	09-07-06	12:00 - 13:00	30.1	82	0.03365	1214	20.23
3	09-07-06	13:00 - 14:00	30.4	81	0.05263	1548	25.80
4	09-07-06	14:00 - 15:00	30.3	81	0.05402	2053	34.22

Note: 1. Monitoring data was measured by Rupprecht & Patashnick TEOM®
 2. Total Count was logged by Laser Dust Monitor
 3. Count/minute was calculated by (Total Count/60)

By Linear Regression of Y or X
 Slope (K-factor): 0.0018
 Correlation coefficient: 0.9056

Validity of Calibration Record: 9 July 2007

Remarks:

QC Reviewer: Eddie Yang Signature:  Date: 10/7/2006

EQUIPMENT CALIBRATION RECORD

Type: Laser Dust Monitor
 Manufacturer/Brand: SIBATA
 Model No.: LD-3
 Equipment No.: A.005.07a
 Sensitivity Adjustment Scale Setting: 557 CPM
 Operator: Eddie Yang (EWNY)

Standard Equipment

Equipment: Rupprecht & Patashnick TEOM®
 Venue: Cyberport (Pui Ying Secondary School)
 Model No.: Series 1400AB
 Serial No: Control: 140AB219899803
 Sensor: 1200C143659803 K₀: 12500
 Last Calibration Date*: 17 June 2006

*Remarks: Recommended interval for hardware calibration is 1 year

Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration): 557 CPM
 Sensitivity Adjustment Scale Setting (After Calibration): 557 CPM

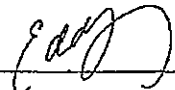
Hour	Date (dd-mm-yy)	Time	Ambient Condition		Concentration ¹ (mg/m ³) Y-axis	Total Count ²	Count/ Minute ³ X-axis
			Temp (°C)	R.H. (%)			
1	18-06-06	09:00 - 10:00	28.9	82	0.02370	768	12.80
2	18-06-06	10:00 - 11:00	29.1	82	0.02161	707	11.78
3	18-06-06	12:00 - 13:00	29.5	82	0.02609	822	13.70
4	18-06-06	13:00 - 14:00	29.6	81	0.01991	603	10.05

Note: 1. Monitoring data was measured by Rupprecht & Patashnick TEOM®
 2. Total Count was logged by Laser Dust Monitor
 3. Count/minute was calculated by (Total Count/60)

By Linear Regression of Y or X
 Slope (K-factor): 0.0019
 Correlation coefficient: 0.9281

Validity of Calibration Record: 18 June 2007

Remarks:

QC Reviewer: Eddie Yang Signature:  Date: 19 June 2006



綜合試驗有限公司
SOILS & MATERIALS ENGINEERING CO., LTD.

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香港黃竹坑道37號利達中心地下·9樓·12樓·13樓及20樓
E-mail: smec@sigsmec.com Website: www.sigsmec.com

Tel : (852) 2873 6860
Fax : (852) 2555 7533



CERTIFICATE OF CALIBRATION

Certificate No.: 06CA0713 01-02 Page 1 of 2

Item tested

Description:	Sound Level Meter (Class I)	Microphone	Preamp
Manufacturer:	Rion, Co., Ltd.	Rion, Co. Ltd.	Rion, Co. Ltd.
Type/Model No.:	NL-31	UC-53A	NH-21
Serial/Equipment No.:	00320534	102464	03581
Adaptors used:	(N.007.02A)		

Item submitted by

Client: Maunsell Environmental Management Consultants Ltd.
Request No.:
Date of request: 12-Jul-2006

Date of test: 13-Jul-2006

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Multi function sound calibrator	B&K 4226	2288444	11-Jan-2007	CIGISMEC
Measuring amplifier	B&K 2610	2346941	30-Nov-2006	SCM
Signal generator	DS 360	33873	30-Nov-2006	SCM
Signal generator	DS 360	61227	12-Jul-2007	SCM

Ambient conditions

Temperature: (24 ± 1) °C
Relative humidity: (55 ± 10) %
Air pressure: (1000 ± 10) hPa

Test specifications

- The Sound Level Meter has been calibrated in accordance with the requirements as specified in BS 7580: Part 1: 1997 and the lab calibration procedure SMTP004-CA-152.
- The electrical tests were performed using an electrical signal substituted for the microphone which was removed and replaced by an equivalent capacitance within a tolerance of ±20%.
- The acoustic calibration was performed using an B&K 4226 sound calibrator and corrections was applied for the difference between the free-field and pressure responses of the Sound Level Meter.

Test results

Details of the performed measurements are presented on page 2 of this certificate.

Actual Measurement data are documented on worksheet.

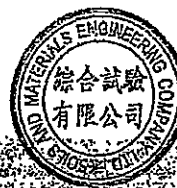
Approved Signatory:

Huang Jian Min

Date:

14-Jul-2006

Company Chop



Comments: The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.



綜合試驗有限公司
SOILS & MATERIALS ENGINEERING CO., LTD.

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香港黃竹坑道37號利達中心地下, 9樓, 12樓, 13樓及20樓
E-mail: smec@cigsmecc.com Website: www.cigsmecc.com

Tel : (852) 2873 6860
Fax : (852) 2555 7533



CERTIFICATE OF CALIBRATION

Certificate No.: 06CA0713 01-06

Page: 1 of 2

Item tested

Description: Sound Calibrator (Class 1)
Manufacturer: Rion Co., Ltd.
Type/Model No.: NC-73
Serial/Equipment No.: 10307216
Adaptors used: (N. 004. 06)

Item submitted by

Client: Maunsell Environmental Management Consultants Ltd.
Request No.:
Date of request: 12-Jul-2006

Date of test: 13-Jul-2006

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Lab standard microphone	B&K 4180	2239857	12-Apr-2007	SCL
Preamplifier	B&K 2673	2239857	30-Nov-2006	SCM
Measuring amplifier	B&K 2610	2346941	30-Nov-2006	SCM
Signal generator	DS 360	61227	12-Jul-2007	SCM
Digital multi-meter	34401A	US36087050	30-Nov-2006	CIGISMEC
Audio analyzer	8903B	GB41300350	28-Nov-2006	SCM
Universal counter	53132A	MY40003662	12-Jul-2007	SCM

Ambient conditions

Temperature: 24 ± 1 °C
Relative humidity: 65 ± 10 %
Air pressure: 1000 ± 15 hPa

Test specifications

- The Sound Calibrator has been calibrated in accordance with the requirements as specified in IEC 60942 1997 Annex B and the lab calibration procedure SMTP004-CA-156.
- The calibrator was tested with its axis vertical facing downwards at the specific frequency using insert voltage technique.
- The results are rounded to the nearest 0.01 dB and 0.1 Hz and have not been corrected for variations from a reference pressure of 1013.25 hectoPascals as the maker's information indicates that the instrument is insensitive to pressure changes.

Test results

This is to certify that the sound calibrator conforms to the requirements of annex B of IEC 60942 1997 under the conditions under which the test was performed. This does not imply that the sound calibrator meets IEC 60942 under any other conditions.

Details of the performed measurements are presented on page 2 of this certificate.

Approved Signatory:

Huang Jian Min

Date:

14-Jul-2006

Company C/opp:

Comments: The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.



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SOILS & MATERIALS ENGINEERING CO., LTD.

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Tel : (852) 2873 6860
Fax : (852) 2555 7533



CERTIFICATE OF CALIBRATION

Certificate No.: 06CA0304 01-01 Page 1 of 2

Item tested

Description:	Sound Level Meter (Class I)	Microphone	Preamp
Manufacturer:	RION CO., LTD.	RION CO. LTD.	RION CO. LTD.
Type/Model No.:	NL-18	UC-53	NH-19
Serial/Equipment No.:	00570446	88764	75883
Adaptors used:	-	-	-

Item submitted by

Client: Maunsell Environmental Management Consultants Ltd.
Request No.: -
Date of request: 04-Mar-2006

Date of test: 09-Mar-2006

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Multi function sound calibrator	B&K 4226	2288444	11/Jan/2007	CIGISMEC
Measuring amplifier	B&K 2610	2346941	30/Nov/2006	SCM
Signal generator	DS 360	33873	30/Nov/2006	SCM
Signal generator	DS 360	61227	06/Jun/2006	NIM

Ambient conditions

Temperature: (21 ± 1) °C
Relative humidity: (55 ± 10) %
Air pressure: (1000 ± 15) hPa

Test specifications

- The Sound Level Meter has been calibrated in accordance with the requirements as specified in BS 7580: Part 1: 1997 and the lab calibration procedure SMTP004-CA-152.
- The electrical tests were performed using an electrical signal substituted for the microphone which was removed and replaced by an equivalent capacitance within a tolerance of ±20%.
- The acoustic calibration was performed using an B&K 4226 sound calibrator and corrections was applied for the difference between the free-field and pressure response of the Sound Level Meter.

Test results

This is to certify that the Sound Level Meter conforms to BS 7580: Part 1: 1997 for the conditions under which the test was performed.

Details of the performed measurements are presented on page 2 of this certificate.

Actual Measurement data are documented on worksheet.

Approved Signatory:

Huang Jian Min

Date: 10-Mar-2006

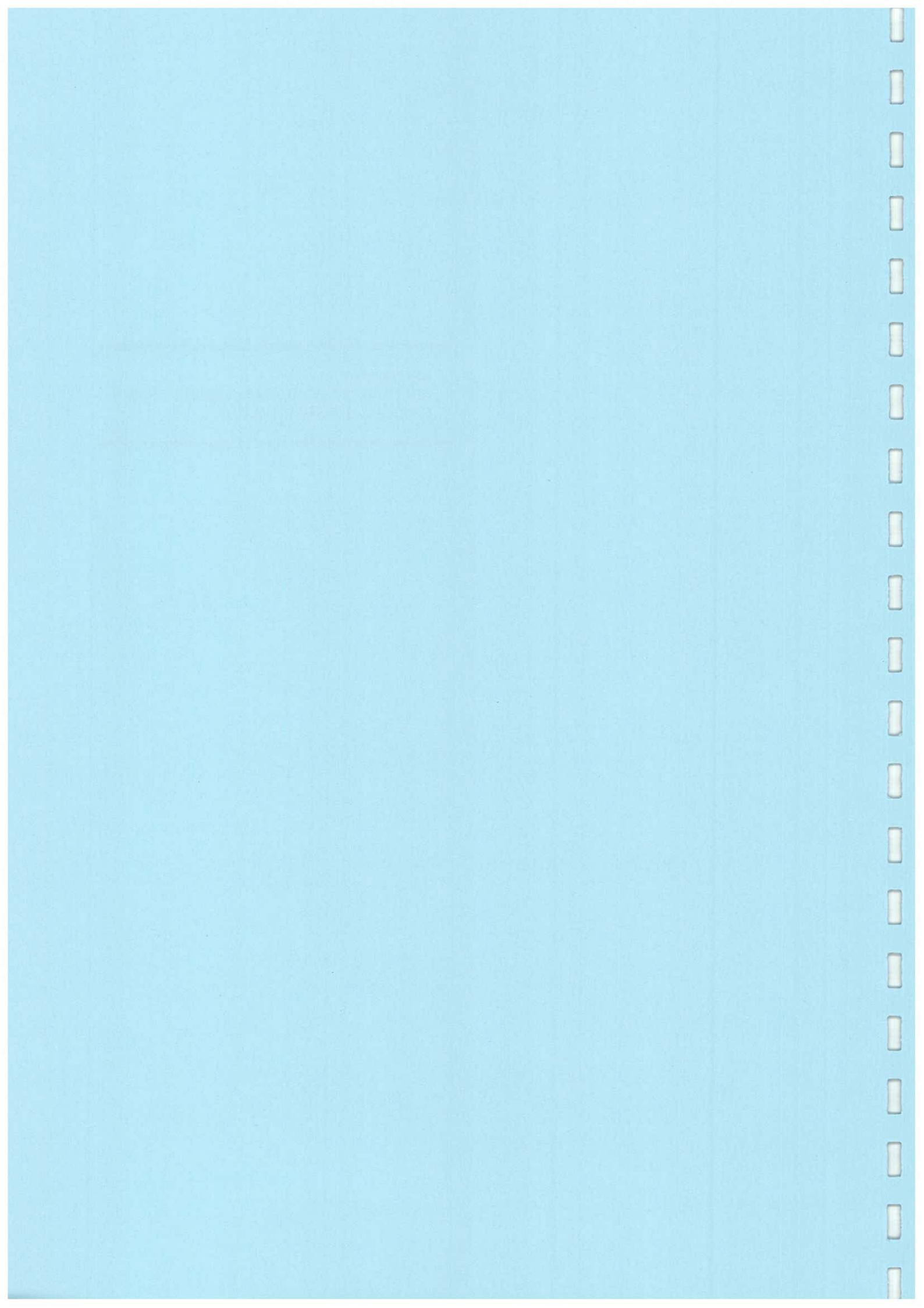
Company Chop:



Comments: The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.



**APPENDIX F
AIR QUALITY MONITORING RESULTS AND
GRAPHICAL PRESENTATION**



APPENDIX F: Air Quality Monitoring Results

1-hour TSP Monitoring Results at Station ASR8

Date	Starting Time	Concentration, $\mu\text{g}/\text{m}^3$			
		1st	2nd	3rd	Average
2-Nov-06	8:00	90.9	94.0	91.9	92.3
8-Nov-06	13:00	90.1	89.3	92.0	90.5
14-Nov-06	8:00	90.1	88.4	89.1	89.2
20-Nov-06	8:00	98.8	96.7	97.1	97.5
25-Nov-06	8:00	95.3	97.0	94.8	95.7
Min.					88.4
Max.					98.8
Average					93.0

1-hour TSP Monitoring Results at Station ASR17

Date	Starting Time	Concentration, $\mu\text{g}/\text{m}^3$			
		1st	2nd	3rd	Average
2-Nov-06	8:00	115.5	114.5	116.6	115.5
8-Nov-06	13:00	105.2	110.5	105.3	107.0
14-Nov-06	8:00	98.6	96.8	99.2	98.2
20-Nov-06	8:00	126.7	122.4	121.0	123.4
25-Nov-06	8:00	92.4	89.2	93.3	91.6
Min.					89.2
Max.					126.7
Average					107.1

Remark: Bold value indicated an Action level exceedance
 Bold & Italic value indicated an Limit level exceedance

APPENDIX F: Air Quality Monitoring Results

24-hour TSP Monitoring Results at Station ASR8

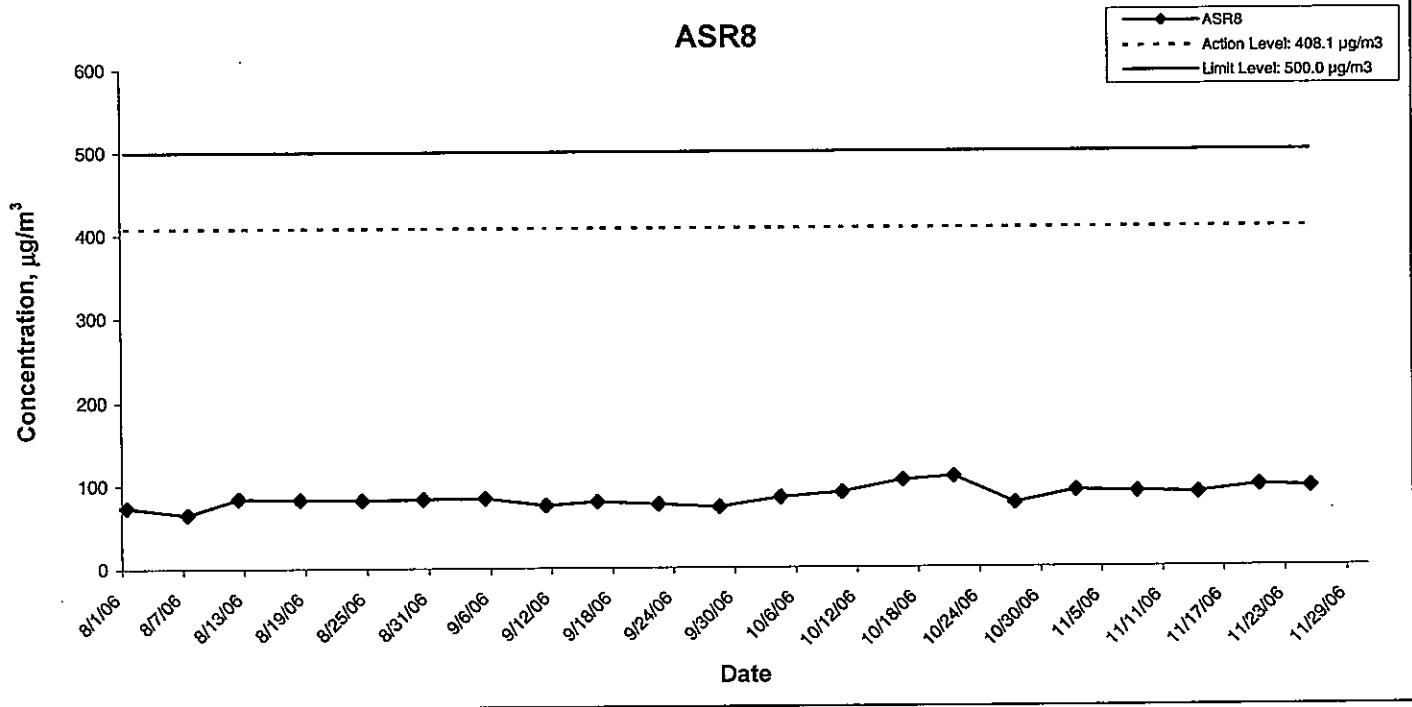
Date	Filter Weight (g)		Flow Rate (m ³ /min.)		Elapse Time		Sampling Time(hrs.)	Conc. (µg/m ³)	Weather Condition	Particulate weight(g)	Av. flow (m ³ /min)	Total vol. (m ³)	
	Initial	Final	Initial	Final	Initial	Final							
1-Nov-06	3.4988	3.8598	1.41	1.41	7230.2	7254.2	24.0	177.9	Sunny	0.36	1.41	2023.2	
7-Nov-06	3.5066	3.8020	1.31	1.31	7254.2	7278.2	24.0	156.5	Sunny	0.30	1.31	1887.8	
13-Nov-06	3.5424	3.5852	1.16	1.16	7278.2	7302.2	24.0	25.7	Fine	0.04	1.16	1664.6	
18-Nov-06	3.5082	3.6526	1.32	1.32	7302.2	7326.2	24.0	76.0	Fine	0.14	1.32	1900.8	
24-Nov-06	3.5166	3.6364	1.28	1.28	1326.2	1350.2	24.0	65.0	Fine	0.12	1.28	1843.2	
30-Nov-06	3.5399	3.6639	1.41	1.41	1350.2	1374.2	24.0	61.3	Fine	0.12	1.41	2023.2	
								Min					25.7
								Max					177.9
								Average					93.7

24-hour TSP Monitoring Results at Station ASR17

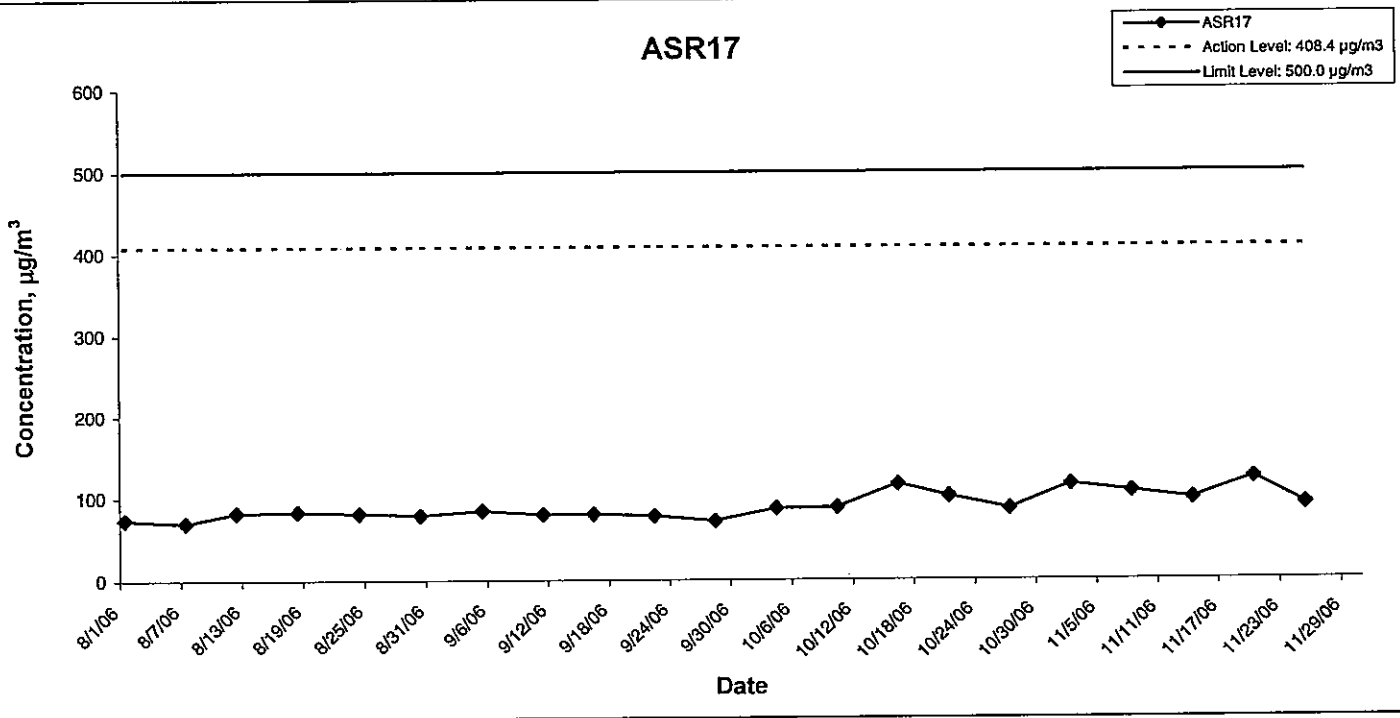
Date	Filter Weight (g)		Flow Rate (m ³ /min.)		Elapse Time		Sampling Time(hrs.)	Conc. (µg/m ³)	Weather Condition	Particulate weight(g)	Av. flow (m ³ /min)	Total vol. (m ³)	
	Initial	Final	Initial	Final	Initial	Final							
1-Nov-06	3.5274	3.8435	1.34	1.34	17325.4	17349.4	24.0	163.6	Sunny	0.32	1.34	1932.5	
7-Nov-06	3.5138	3.7909	1.31	1.31	17349.4	17373.4	24.0	146.7	Sunny	0.28	1.31	1889.3	
13-Nov-06	3.5443	3.6862	1.31	1.31	17373.4	17397.4	24.0	75.1	Fine	0.14	1.31	1889.3	
18-Nov-06	3.5117	3.6225	1.34	1.34	17297.4	17321.4	24.0	57.5	Fine	0.11	1.34	1926.7	
24-Nov-06	3.4688	3.8369	1.54	1.54	17321.4	17345.4	24.0	166.4	Fine	0.37	1.54	2211.8	
30-Nov-06	3.5922	3.6102	1.34	1.34	17345.4	17369.4	24.0	40.4	Fine	0.08	1.34	1932.5	
								Min					40.4
								Max					166.4
								Average					108.3

Remark: Bold value indicated an Action level exceedance
 Bold & Italic value indicated an Limit level exceedance

ASR8



ASR17



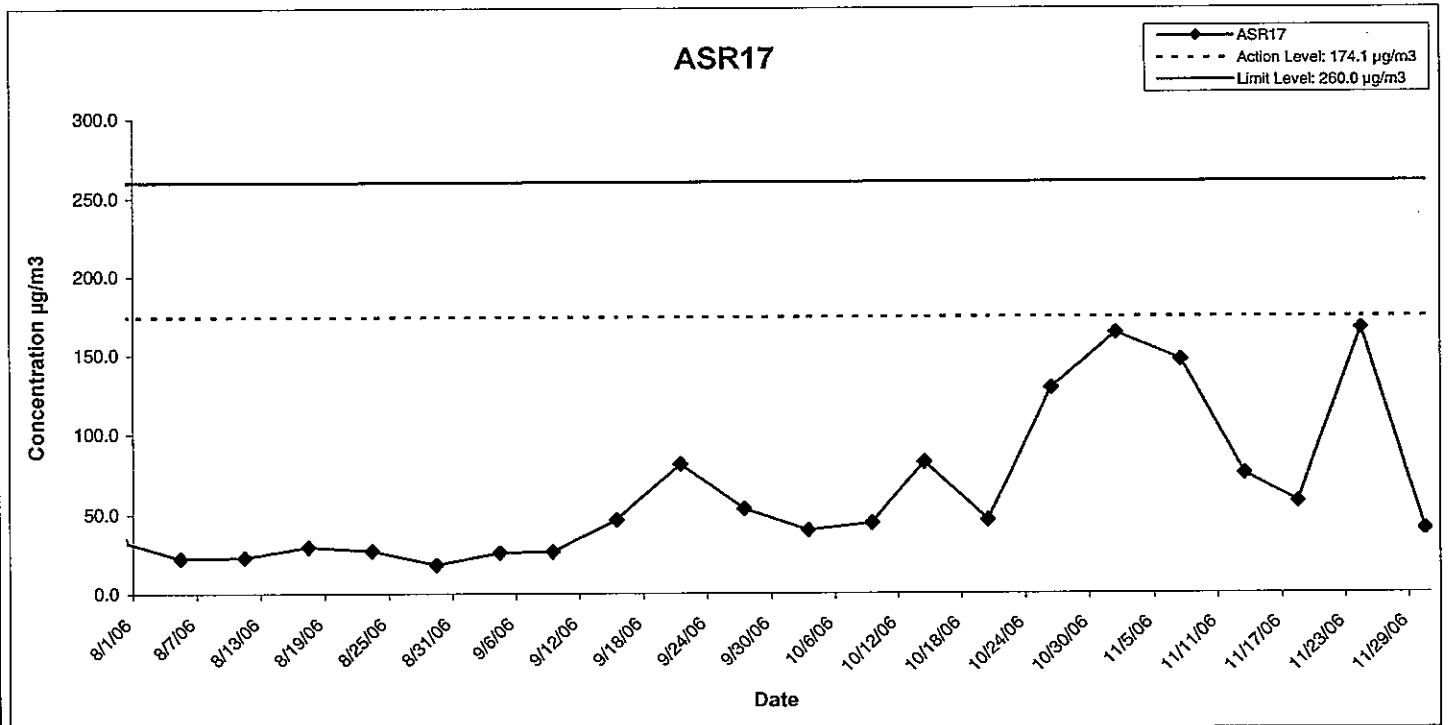
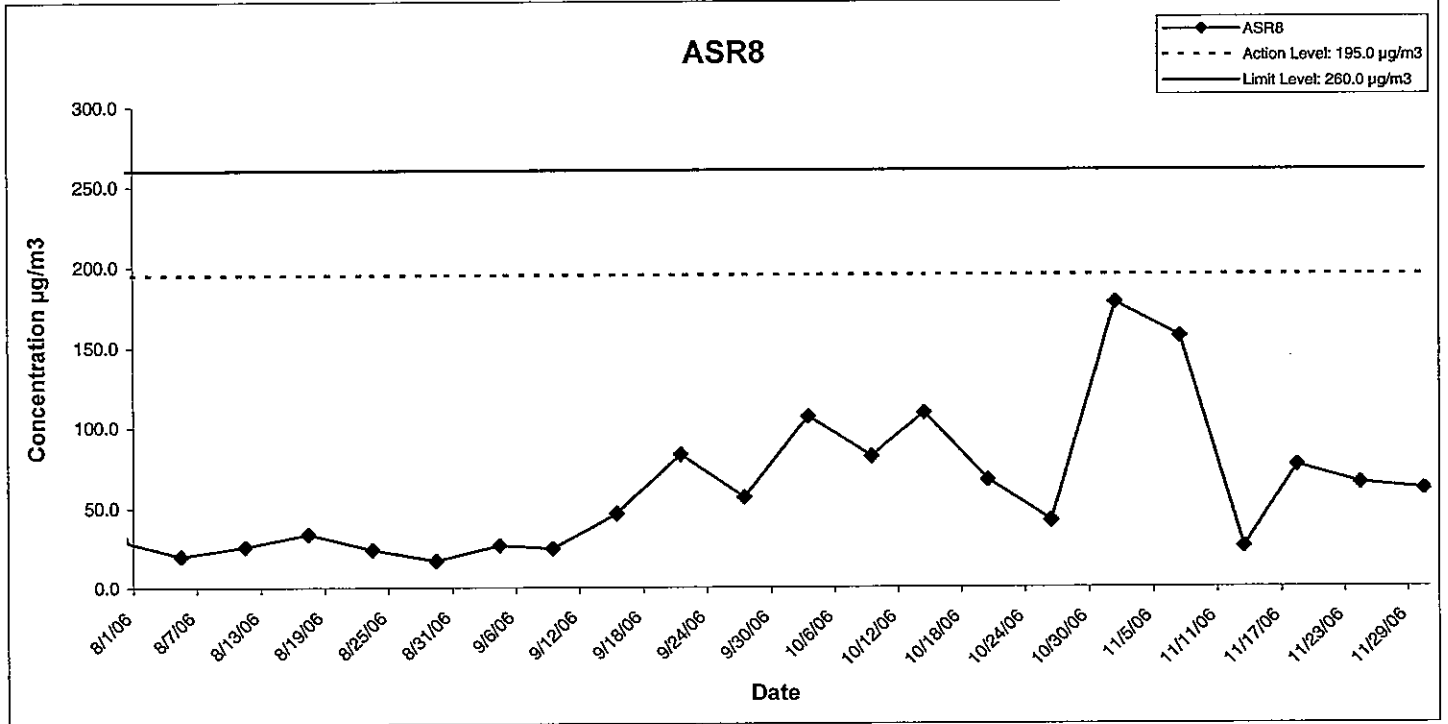
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MaunSELL Environmental Management Consultants Ltd

Contract No. SS M333 Re-provisioning of Diamond Hill Crematorium

Graphical Presentation of 1-hour TSP Monitoring Results for Location ASR8 and ASR17

SCALE	N.T.S.	DATE	2006
CHECK	PTPM	DRAWN	LLMC
JOB NO.	S07904	APPENDIX	F
		Rev	-

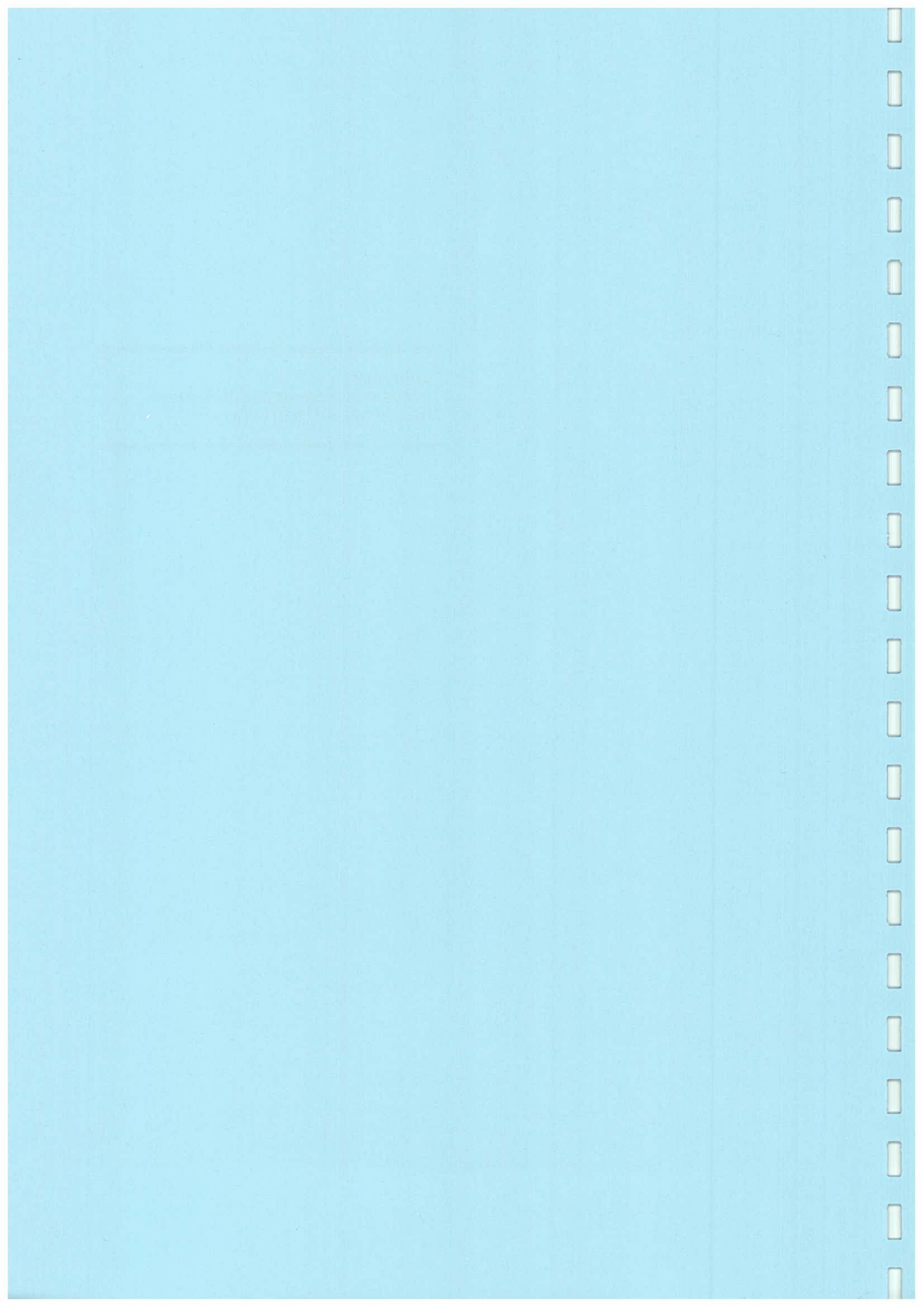


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 Maunsell Environmental
 Management Consultants Ltd

Contract No. SS M333 Re-provisioning of Diamond Hill
 Crematorium
**Graphical Presentation of 24-hour TSP
 Monitoring Results for Location ASR8 and
 ASR17**

SCALE	N.T.S.	DATE	2006
CHECK	PTPM	DRAWN	LLMC
JOB NO.	S07904	APPENDIX	Rev
		F	-

**APPENDIX G
NOISE MONITORING RESULTS AND
GRAPHICAL PRESENTATION**



Appendix G Noise Monitoring Results

Daytime Noise Monitoring Results at Station SR3

Date	Weather Condition	Noise Level for 30-min, dB(A)*				Baseline Noise Level, dB(A)	Calculated Construction Noise Level, dB(A)	Limit Level, dB(A)	Exceedance (Y/N)
		Time	L90	L10	Leq				
2-Nov-06	Sunny	9:50	61.0	66.2	64.0	65.1	*Note	70	N
8-Nov-06	Sunny	14:45	62.7	66.5	64.8	65.1	*Note	70	N
14-Nov-06	Fine	9:40	61.7	66.0	64.5	65.1	*Note	70	N
20-Nov-06	Fine	8:58	60.5	66.2	64.2	65.1	*Note	70	N
		Min	60.5	66.0	64.0				
		Max	62.7	66.5	64.8				
		Average	61.5	66.2	64.4				

Daytime Noise Monitoring Results at Station SR4

Date	Weather Condition	Noise Level for 30-min, dB(A)*				Baseline Noise Level, dB(A)	Calculated Construction Noise Level, dB(A)	Limit Level, dB(A)	Exceedance (Y/N)
		Time	L90	L10	Leq				
2-Nov-06	Sunny	9:00	60.5	65.0	63.3	65.6	*Note	70	N
8-Nov-06	Sunny	13:55	62.0	66.0	64.2	65.6	*Note	70	N
14-Nov-06	Fine	8:50	62.0	66.2	64.7	65.6	*Note	70	N
20-Nov-06	Fine	8:50	60.0	64.5	62.9	65.6	*Note	70	N
		Min	60.0	64.5	62.9				
		Max	62.0	66.2	64.7				
		Average	61.1	65.4	63.8				

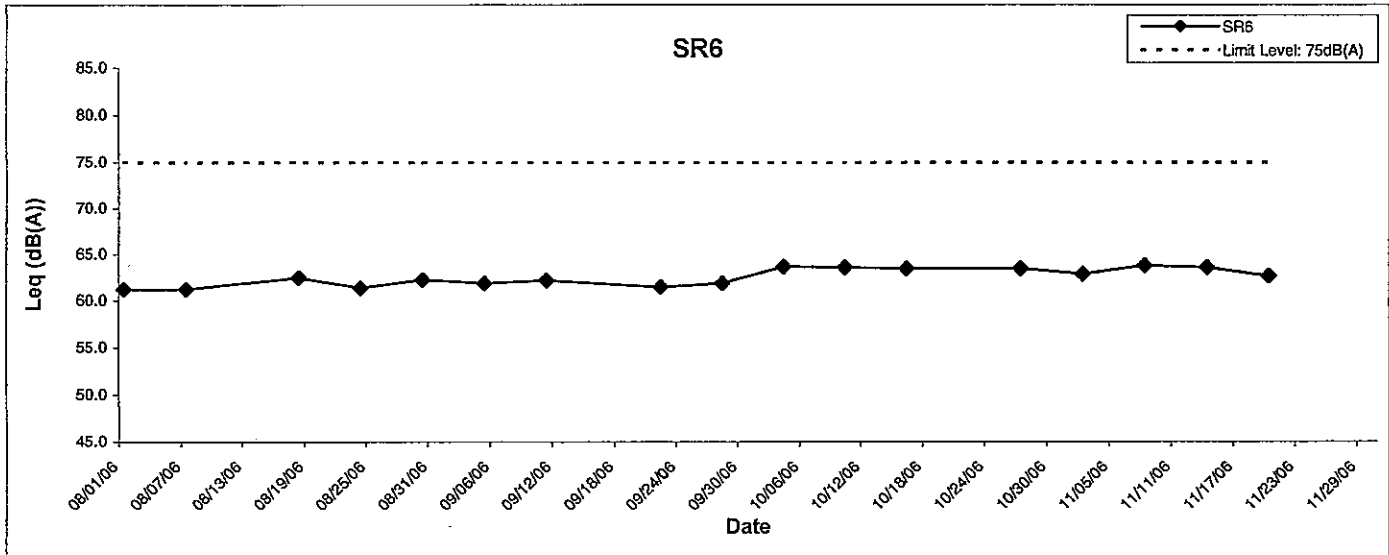
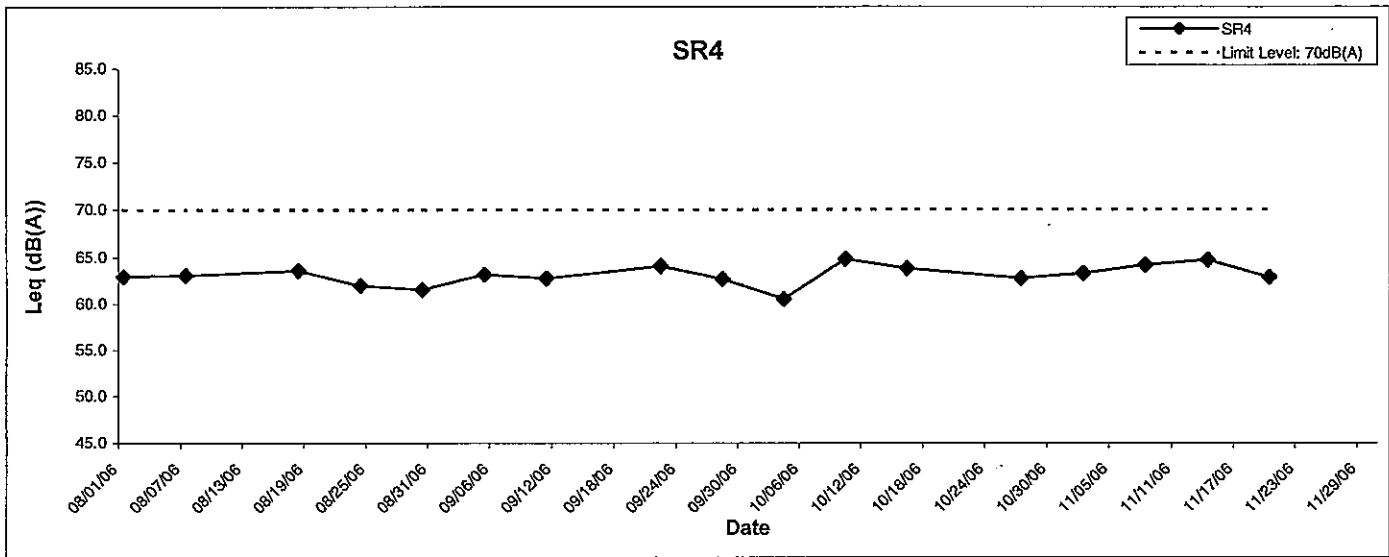
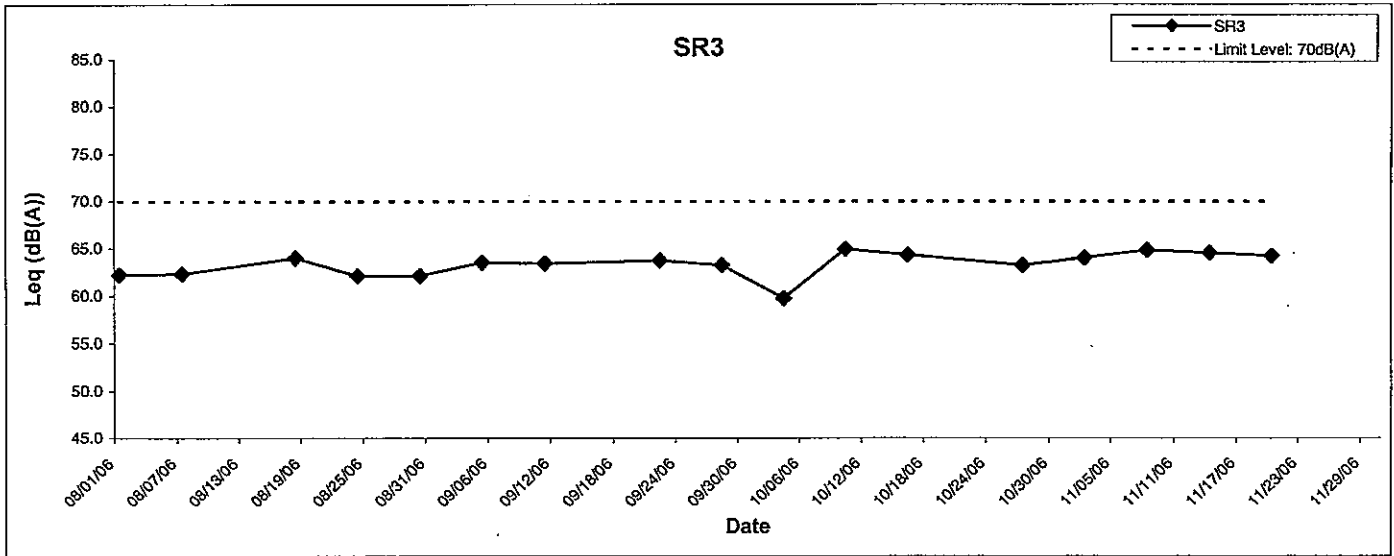
Daytime Noise Monitoring Results at Station SR6

Date	Weather Condition	Noise Level for 30-min, dB(A)*				Baseline Noise Level, dB(A)	Calculated Construction Noise Level, dB(A)	Limit Level, dB(A)	Exceedance (Y/N)
		Time	L90	L10	Leq				
2-Nov-06	Sunny	8:10	60.0	64.5	62.9	68.5	*Note	75	N
8-Nov-06	Sunny	13:00	60.0	65.2	63.8	68.5	*Note	75	N
14-Nov-06	Fine	8:00	60.0	65.5	63.6	68.5	*Note	75	N
20-Nov-06	Fine	8:00	60.0	64.9	62.7	68.5	*Note	75	N
		Min	60.0	64.5	62.7				
		Max	60.0	65.5	63.8				
		Average	60.0	65.0	63.3				

* - Façade measurement

Bold & Italic value indicated an Limit level exceedance

Note: Measured noise level is less than the baseline noise level.



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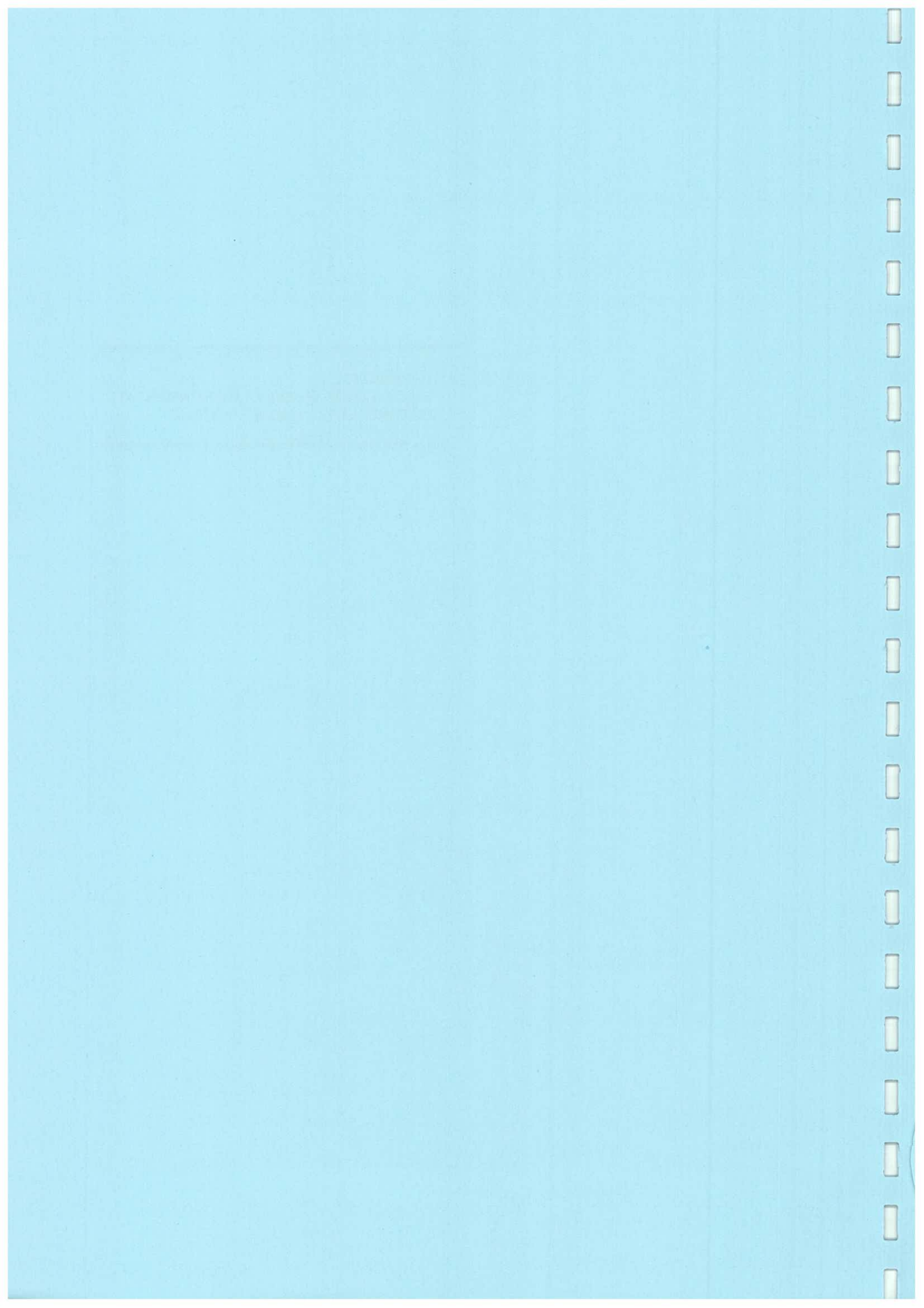
Maunsell Environmental
Management Consultants Ltd

Contract No. SS M333 Reprovisioning of Diamond Hill
Crematorium

**Graphical Presentation of Noise
Monitoring Results for Location SR3, SR4
and SR6**

SCALE	N.T.S.	DATE	2006
CHECK	PTPM	DRAWN	LLMC
JOB NO.	S07904	APPENDIX	Rev
		G	-

**APPENDIX H
SUMMARY OF WEEKLY ENVIRONMENTAL
SITE INSPECTION OBSERVATIONS**



Inspection Information

Date	6 November 2006
Time	10:00 am – 12:00 am

Remarks/Observations

<p><i>Water Quality</i></p> <ol style="list-style-type: none">1. The Contractor was reminded to maintain drainage properly.2. <u>The Contractor was reminded to maintain and repair the washing wheel facilities.</u> <p><i>Air Quality</i></p> <ol style="list-style-type: none">3. <u>The Contractor was reminded to provide the washing wheel facilities.</u> <p><i>Noise</i></p> <ol style="list-style-type: none">4. No violation was observed in this site inspection. <p><i>Waste/Chemical Management</i></p> <ol style="list-style-type: none">5. The Contractor was reminded to disposal refuse regularly.6. The Contractor was reminded to store chemical waste properly.7. The Contractor was reminded to dispose the construction wastes properly. <p><i>Landscape and Visual</i></p> <ol style="list-style-type: none">8. No violation was observed in this site inspection. <p><i>Others</i></p> <ol style="list-style-type: none">9. No violation was observed in this site inspection.

Inspection Information

Date	13 November 2006
Time	10:00 am – 12:00 am

Remarks/Observations

<p><i>Water Quality</i></p> <ol style="list-style-type: none">1. The Contractor was reminded to maintain and repair the washing wheel facilities.2. Stagnant water was observed on the 1/F. The Contractor was reminded to pump out the water. The stagnant water should be treated in the sedimentation tank before discharge. <p><i>Air Quality</i></p> <ol style="list-style-type: none">3. The Contractor was reminded to provide the washing wheel facilities.4. <u>Uncovered stockpiles were observed on the G/F. The Contractor was reminded to provide covers, or placed in sheltered areas for the stockpiles in order to avoid dust generation.</u> <p><i>Noise</i></p> <ol style="list-style-type: none">5. No violation was observed in this site inspection. <p><i>Waste/Chemical Management</i></p> <ol style="list-style-type: none">6. The Contractor was reminded to dispose the construction wastes properly. <p><i>Landscape and Visual</i></p> <ol style="list-style-type: none">7. No violation was observed in this site inspection. <p><i>Others</i></p> <ol style="list-style-type: none">8. No violation was observed in this site inspection.

Inspection Information

Date	20 November 2006
Time	10:00 am – 12:00 am

Remarks/Observations

Water Quality

1. The Contractor was reminded to maintain and repair the washing wheel facilities.
2. Stagnant water was observed on the G/F and 1/F. The Contractor was reminded to pump out the water. The stagnant water should be treated in the sedimentation tank before discharge.
3. The Contractor was reminded to clean up the silt & mud deposited, rubbish and pump out the stagnant water from the on-site drainage system on the 1/F.

Air Quality

4. The Contractor was reminded to provide the washing wheel facilities.
5. Uncovered stockpiles were observed on the G/F and 1/F. The Contractor was reminded to provide covers, or placed in sheltered areas for the stockpiles in order to avoid dust generation.

Noise

6. No violation was observed in this site inspection.

Waste/Chemical Management

7. The Contractor was reminded to dispose the construction wastes properly.
8. The Contractor was reminded to store the chemical drums and chemicals materials into the designated storage area with the proper labels.

Landscape and Visual

9. No violation was observed in this site inspection.

Others

10. No violation was observed in this site inspection.

Inspection Information

Date	27 November 2006
Time	10:00 am – 12:00 am

Remarks/Observations

Water Quality

1. The Contractor was reminded to maintain and repair the washing wheel facilities.
2. Stagnant water was observed on the site. The Contractor was reminded to pump out the water in the sedimentation tank before discharge.

Air Quality

3. The Contractor was reminded to provide clean up any dusty materials within 30m of the vehicle entrance.

Noise

4. The Contractor was reminded to maintain all the plants properly No violation was observed in this site inspection.

Waste/Chemical Management

5. Oil leakage was observed on the site. The Contractor was reminded to provide drip tray and store the chemical drums into the designated storage area with the proper labels.
6. The Contractor was reminded to dispose the construction wastes properly.

Landscape and Visual

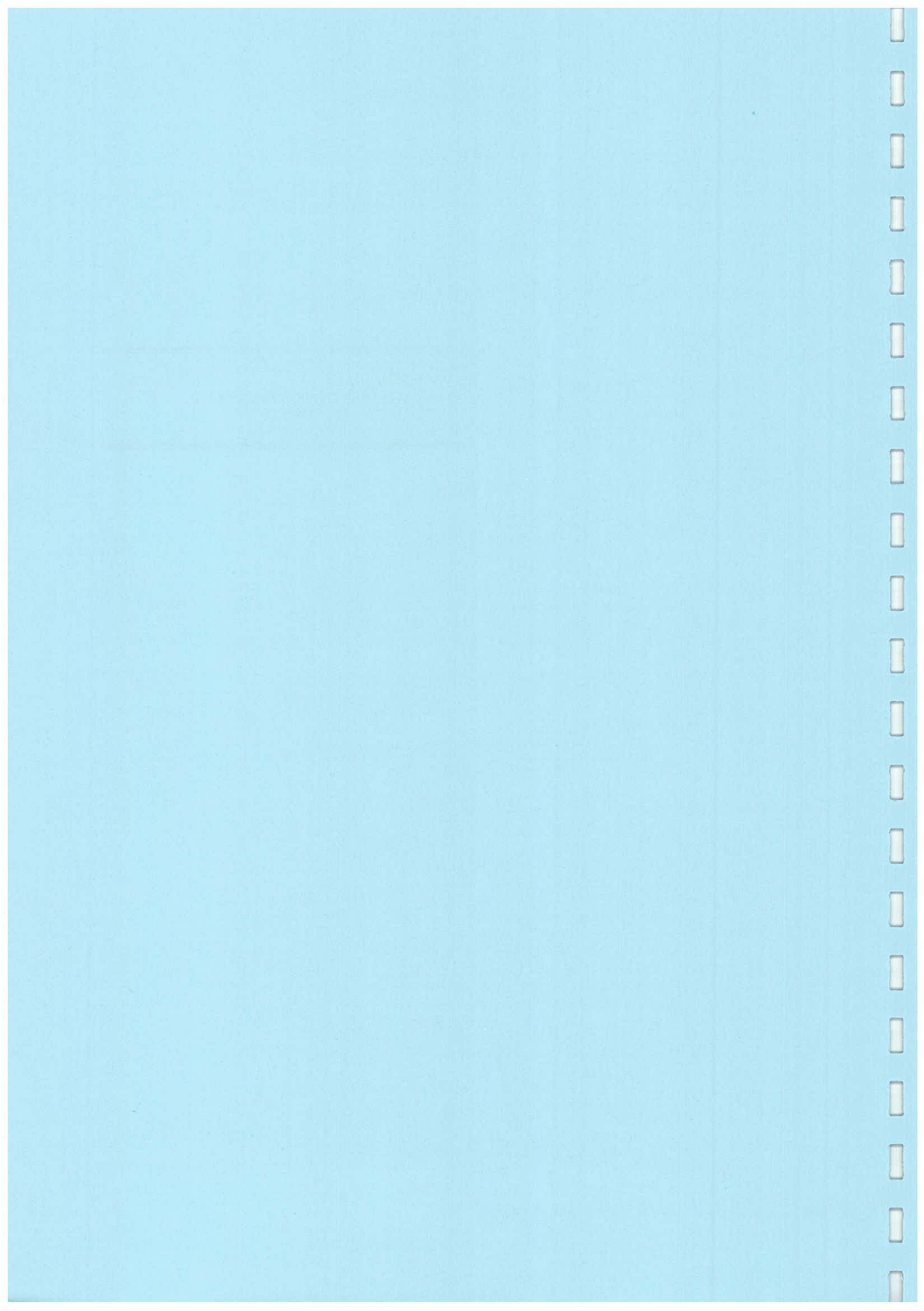
7. No violation was observed in this site inspection.

Others

8. No violation was observed in this site inspection.



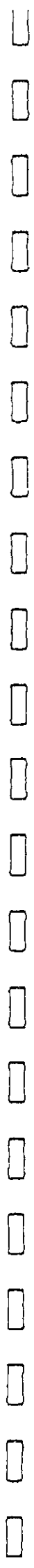
**APPENDIX I
STATUS OF ENVIRONMENTAL
PERMITS/LICENCES**



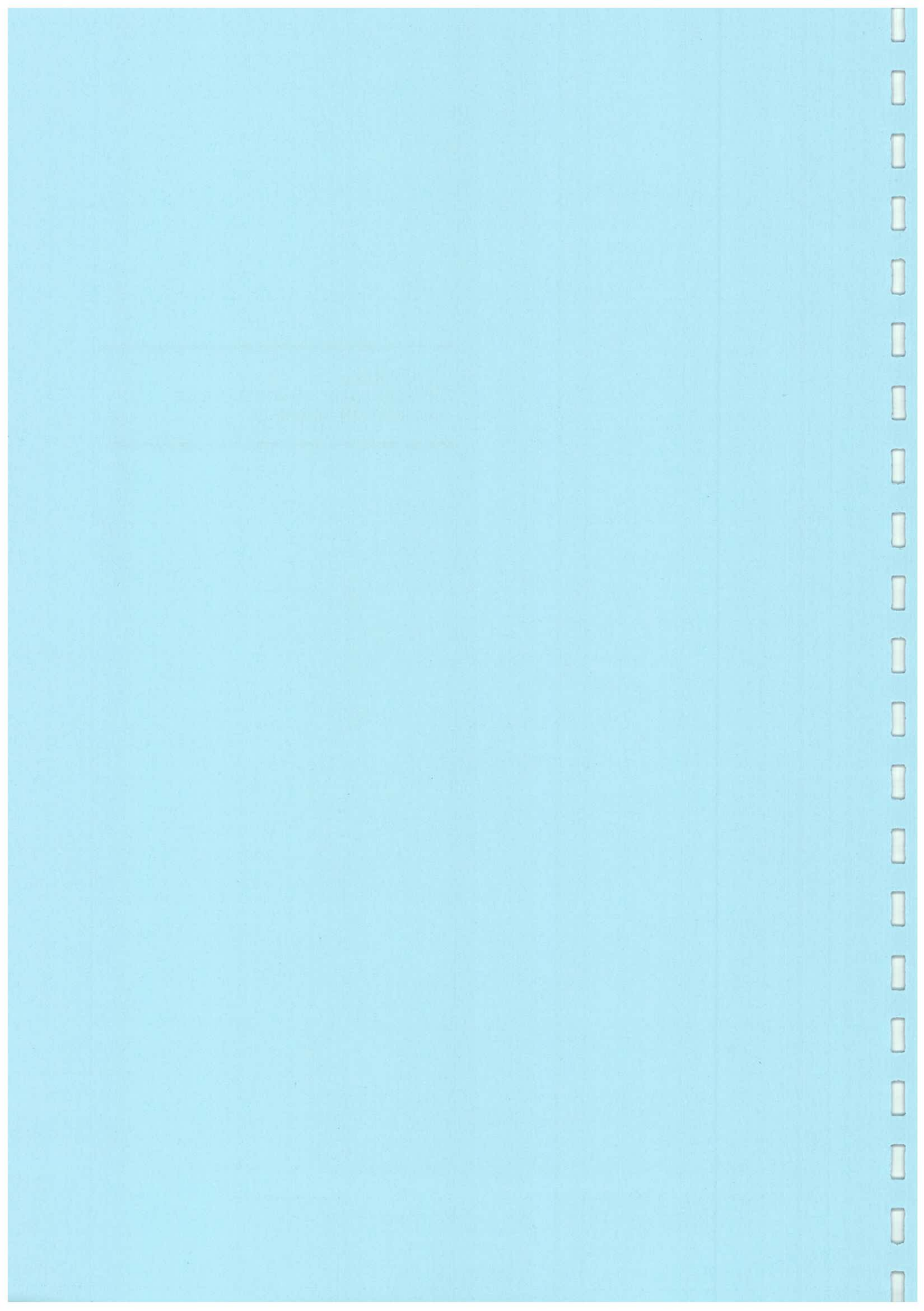
Appendix I

Status of Environmental Permits/Licenses

Permit No.	Valid Period		Section	Status
	From	To		
Environmental Permit & Further Environmental Permit				
EP-179/2004/B	14 Feb 2005	N/A	Reprovisioning of Diamond Hill Crematorium	Valid
Registration as a Chemical Waste Producer				
5213-288-C3108-10	6 Dec 2004	N/A	Reprovisioning of Diamond Hill Crematorium	Valid
Water Discharge License				
RE/C0202/288/1	9 Mar 2005	31 Mar 2010	Reprovisioning of Diamond Hill Crematorium	Valid
Construction Noise Permit				
GW-RE0164-06	10 Jul 2006	9 Dec 2006	Reprovisioning of Diamond Hill Crematorium	Valid



**APPENDIX J
IMPLEMENTATION SCHEDULE OF
MITIGATION MEASURES**



Appendix J – Environmental Mitigation Implementation Schedule

Recommended Mitigation Measures	Location and Timing	Who to Implement?	When to Implement?	What Requirements or Standards to Achieve?	Status
Air Quality Mitigation Measures					
Special air pollution control systems shall be installed and operate to reduce the emissions of air pollutants to acceptable levels	New cremators in New Crematorium	Arch SD	Design, Construction, Demolition and Operation stage	BPM/APCO	√
FEHD shall apply for a Specified Process License under the APCO	New Cremators in the New Crematorium / prior to operation	FEHD	Construction, Demolition and Operation stage	APCO	N/A
The efflux velocity of chimney shall be at least 15 m/s, the design diameter of the chimneys shall be 0.22 m and 0.30 m, the design chimney height shall be 101m P.D. (28.5m above ground), for 170 kg and 250 kg cremators respectively	Chimney of New Crematorium / design and construction stages	Arch SD	Design and Construction stage	BPM/APCO	N/A
If the interior wall of existing cremators and chimney are confirmed dioxins contaminated, special precautions shall be taken avoid fugitive emissions of dioxin contaminated materials	Cremator room and chimney in Existing Crematorium / demolition	Arch SD/Contractor	Demolition stage		N/A
Sufficient water spraying should be applied during the construction work, the fugitive dust generated from general construction dust would be reduced by 90%	Project site / construction and demolition stages	Arch SD, contractor	Construction and Demolition stage	APCO	√
Carry out a confirmatory test of dioxins in the depositions on chimney wall, flue gas ducting and combustion chambers when the existing Crematorium is shut down	Chimney, flue and cremators in Existing Crematorium / decommissioning	FEHD, Arch SD	Demolition stage		N/A
If the dioxin level of surface deposition is between 1 and 10 ppb I-TEQ, it is classified as moderately contaminated with dioxins. The demolition work site should be covered up to avoid emission of fugitive dust during demolition	Chimney, flue and cremators in Existing Crematorium / decommissioning	Arch SD 3	Demolition stage		N/A

1

Recommended Mitigation Measures	Location and Timing	Who to Implement?	When to Implement?	What Requirements or Standards to Achieve?	Status
If the dioxin level of surface deposition exceeds 10 ppb I-TEQ, it is classified as severely dioxin-contaminated waste. If it is confirmed that the existing facilities are severely contaminated with dioxins, a special decommissioning method – Containment method – would be adopted	Chimney, flue and cremators in Existing Crematorium / decommissioning	Arch SD 3	Demolition stage		N/A
All the demolition waste would be carefully handled, sealed and treated as chemical waste. The waste collector shall be responsible for preventing fugitive dust emission when handling the demolition waste	Chimney, flue and cremators in Existing Crematorium / demolition stage	Arch SD, contractor	Demolition stage		√
Employ a registered asbestos contractor to remove asbestos containing material during the demolition of the existing crematorium building	Cremator room in Existing Crematorium / decommissioning	Arch SD, contractor	Demolition stage	APCO	N/A
Submit a formal AIR and Asbestos Abatement plan signed by a registered asbestos consultant to the Authority for approval under APCO 28 days prior to the start of any asbestos abatement work.	Cremator room in Existing Crematorium / decommissioning	Arch SD, consultant	Demolition stage	APCO	N/A
When removing asbestos containing materials, enclosure of the work area; containment and sealing for the asbestos containing waste; provision of personal decontamination facility; use of personal respiratory/protection equipment; use of vacuum cleaner equipped with high efficiency air particulate (HEPA) filter for cleaning up the work area; and carry out air quality monitoring during the asbestos abatement work	Cremator room in Existing Crematorium / decommissioning	Arch SD, consultant	Demolition stage	APCO	N/A
Appoint qualified personnel to carry out the asbestos containing material removal work, including a registered asbestos contractor to carry out the work; a registered asbestos supervisor to supervise the work; a registered asbestos laboratory to monitor the air quality, and a registered asbestos consultant to supervise and certify the asbestos abatement work.	Cremator room in Existing Crematorium / decommissioning	Arch SD, consultant	Demolition stage	APCO	N/A

2

Recommended Mitigation Measures	Location and Timing	Who to Implement?	When to Implement?	What Requirements or Standards to Achieve?	Status
<ul style="list-style-type: none"> Stockpiles of excavated materials and other structures such as site buildings should be used effectively to screen noise from the works 					
Liaise with the school and the Examination Authority to ascertain the dates and times of examination periods during the course of the construction/ demolition works so as to avoid any noisy activities during these periods. Programme of the on-site works should hence be well programmed such that the noisier construction activities would not be coincided with the examination of the schools.	Project site / construction and demolition stages	Contractor	Demolition stage	NCO	√
Conduct regular noise monitoring.	SR 3, SR 4 and SR 6 / Phase I & II works	Contractor	Demolition stage	NCO, EM&A Guidelines for Development Projects in Hong Kong	√
Land Contamination Mitigation Measures					
Additional site investigations in areas of the site that are currently in use and cannot be readily accessed. These investigations will be carried out once the existing facility has been decommissioned. The additional site investigations are required in the vicinity of the existing CLP secondary substation, and around the cremators and flues inside the crematorium building. Once access to these areas is available, a sampling and analysis plan will be prepared for approval by EPD, additional investigations will take place, and the need for remedial works will be determined. Any remedial works required will be in addition to those described in this current report.	CLP secondary substation and cremator room/ demolition stage (Phase I – CLP secondary substation; Phase II – cremator room)	Contractor	Demolition stage	ProPECC PN 3/94	√
Once the Existing Crematorium has ceased operating during Phase II, confirmatory surface	Locations S1 to S6 specified in the	Contractor	Demolition stage	ProPECC PN 3/94	N/A

5

Recommended Mitigation Measures	Location and Timing	Who to Implement?	When to Implement?	What Requirements or Standards to Achieve?	Status
samples will be taken from the samples points S1 to S6 at a depth of 0.1m, and these samples will be analysed for the same suite of determinands (i.e. dioxins, metals and PAH) in order to confirm that no further contamination has occurred. The Remediation Action Plan will be revised on the basis of these results.	CAP/demolition				
The underground fuel storage tank and associated pipework will be removed as part of the site formation works. The base of the excavations will be inspected during and after tank removal by a suitably experienced environmental specialist in order to determine whether there is any visual or olfactory evidence of fuel contamination. If such contamination is suspected, then confirmatory soil sampling will be carried out, and the samples analysed for TPH.	Underground fuel storage tank/during and after tank removal	Contractor	Demolition stage	ProPECC PN 3/94 and Guidance Notes for Investigation and Remediation of Contaminated Sites of Petrol Filling Stations, Boatyards and Car Repair / Dismantling Workshops	N/A
Summary of remediation works at locations S3 and S5:					
1. Mark out 5m radius around S3 and S5 2. Excavate to depth of 0.5m 3. Transport to landfill site for final disposal 4. Take 4 samples from edges of excavation and one sample from base of excavation, analyse for lead and tin 5. If the results exceed Dutch B Levels, extend excavation to a further 5 m radius and 0.5 m depth in the quadrant where the contaminated samples is encountered and repeat steps 3 and 4 6. If the results less than Dutch B Levels, then remediation completed.	Locations S3 and S5 specified in CAP/demolition	Contractor	Demolition stage	ProPECC PN3/94	N/A

6

Recommended Mitigation Measures	Location and Timing	Who to Implement?	When to Implement?	What Requirements or Standards to Achieve?	Status
accompanied by an admission ticket. Vehicles leaving the site should be adequately sheeted to prevent dispersion of contaminated material during transport. The wheels of vehicles should be cleaned prior to leaving site, to prevent contaminated material leaving site on the wheels of vehicles.				Guidance Notes for Investigation and Remediation of Contaminated Sites of Petrol Filling Stations, Boatyards and Car Repair / Dismantling Workshops	
Compliance Report for Remedial Works					
Following completion of remediation works, a Remediation Report should be compiled and submitted, to demonstrate that the remediation works have been carried out in accordance with the Remediation Action Plan. The Remediation Report should include details of the excavation works carried out, records of material taken to landfill, and results of confirmatory testing, and should be submitted to EPD for approval before the commencement of building works.	All areas requiring remedial works in Project site / after completion of remediation works	Agent Contractor	Demolition stage	ProPECC PN 3/94 and Guidance Notes for Investigation and Remediation of Contaminated Sites of Petrol Filling Stations, Boatyards and Car Repair / Dismantling Workshops	N/A
Land Contamination Mitigation Measures					
Conduct supplementary site investigation for TPH and PCB in soil samples.	CLP substation / after decommissioning but prior to demolition during Phase I work	Contractor	Demolition stage	CAR, RAP, future sampling and analysis plan	√
Conduct confirmatory testing of PAH, dioxins and metals (the "Dutch List") in soil samples.	S1 to S6 / Phase II work	Contractor	Construction and Demolition stages	CAR, RAP, future sampling and analysis plan	N/A
If fuel contamination underneath the underground fuel tank is suspected, confirmatory soil sampling will be carried out for analysis of TPH.	Underneath the underground fuel tank / Phase II	Contractor	Demolition stages	CAR, RAP, future sampling and analysis plan	N/A
Conduct confirmatory testing of tin and lead in soil	S3 and S5 / during	Contractor	Construction and	CAR, RAP, future	N/A

Recommended Mitigation Measures	Location and Timing	Who to Implement?	When to Implement?	What Requirements or Standards to Achieve?	Status
samples to confirm all contaminated soil has been excavated.	Phase II work following excavation at each location		Demolition stages	sampling and analysis plan	
Waste Management Mitigation Measures					
<p>Good Site Practice</p> <ul style="list-style-type: none"> • Obtain relevant waste disposal permits from the appropriate authorities, in accordance with the Waste Disposal Ordinance (Cap. 354), Waste Disposal (Chemical Waste) (General) Regulation (Cap. 354) and the Land (Miscellaneous Provision) Ordinance (Cap. 28) • Prepare a Waste Management Plan approved by the Engineers / Supervising Officer of the Project in accordance with Environment, Transport and Works Bureau Technical Circular (Works) (ETWBTC(W)) 15/2003, Waste Management On Construction Sites • Nominate an approved person, such as site manager, to be responsible for good site practice, arrangements for collection and effective disposal of all types of wastes generated on-site to appropriate facility • Use waste haulier authorized or licensed to collect specific category of waste • Establish trip ticket system as contractual requirement (with reference to Works Branch Technical Circular (WBTC) No. 21/2002) for monitoring of public fill and C&D waste at public filling facilities and landfills. Such activities should be monitored by the Environmental Team • Provide training to site staff in terms of proper waste management and chemical waste handling procedures • Separate chemical wastes for special handling and dispose them at licensed facility for treatment • Establish routine cleaning and maintenance programme for drainage systems, sumps and oil interceptors • Provide sufficient waste disposal points and regular 	Project site/ design, construction and demolition stages	Contractor	Design, Construction and Demolition stages	Waste Disposal Ordinance (Cap. 354), Waste Disposal (Chemical Waste) (General) Regulation (Cap. 354) Land (Miscellaneous Provision) Ordinance (Cap. 28) WDO, ETWBTC(W) 15/2003, WBTC No. 21/2002	*

Recommended Mitigation Measures			Location and Timing	Who to Implement?	When to Implement?	What Requirements or Standards to Achieve?	Status
Location	Investigation Parameter	Investigation Period					
Cremators/ flue/chimney and surrounding areas	Asbestos (building structure)	Phase II					
CLP secondary substation	PCB, TPH (soil samples)	Phase I					
Cremators/ flue/chimney and surrounding areas	Dioxins, heavy metals, PAH (ash waste)	Phase II					
Surface soil around Existing Crematorium	Dioxins, heavy metals, PAH (soil sample)	Phase II					
Further contamination investigation shall provide information on the extent of contamination at cremators /flues / chimney as well as the quantity of contaminated materials requiring treatment and disposal.							

Recommended Mitigation Measures	Location and Timing	Who to Implement?	When to Implement?	What Requirements or Standards to Achieve?	Status
Samples of ash/particulate matters should be collected from within the cremators (including the bottom ash), chimney walls, flues and surrounding area of the Existing Crematorium for analysis of dioxin, heavy metals and PAHs by a HOKLAS accredited laboratory. A consultant experienced in the abatement of chemical wastes particularly the handling of DCM, should be appointed in order to assist with the evaluation of the information and prepare an abatement plan for the ash waste. Such a plan shall be submitted to EPD and the Labour Department (LD) to establish an acceptable and safe method for these potentially hazardous wastes. The abatement plan should identify the method of abatement, the performance criteria for the protection of workers and the environment and any emergency procedures and contingency measures required.					
It must be ensured that the treatment of ash wastes will comply with all routine construction site safety procedures would apply as well as statutory requirements under the Occupational Safety and Health Ordinance and Factories and Industrial Undertakings Ordinance. Due to the difficulties in establishing permanent and effective engineering controls, the protection of workers is likely to be at the worker level. A safe system of work must be provided, and training and suitable personal protective equipment as well as hygienic decontamination facilities should be provided. It is recommended that the methods to be adopted by the contractor for disposal of the ash waste should be agreed with LD and EPD.	Cremator room in Existing Crematorium / before demolition and after decommission	Contractor	Demolition stage	ProPECC PN 3/94	N/A
Sufficient time should be allocated to abate all ash waste with DCM/HMCM/PAHCM. The contractor should ensure the implications of dust				ProPECC PN 3/94 Code of Practice on	N/A

Recommended Mitigation Measures			Location and Timing	Who to Implement?	When to Implement?	What Requirements or Standards to Achieve?	Status
Severely Contaminated DCM	≥10 ppb TEQ	Any level					
<p><i>Demolition, Handling, Treatment and Disposal of Low/Non-Contaminated DCM /HMCM / PAHCM from Demolition of Existing Crematorium</i> Where the ash waste contains low/non contaminated DCM/HMCM/PAHCM, the contractor should avoid ash waste becoming airborne during demolition. General dust suppression measures mentioned in Section 4 should be followed. All such ash waste can be directly disposal of at landfill. Subject to the findings of the further asbestos investigation, building structures where such ash waste is found but contaminated with asbestos should be dealt in accordance to 7.7.16.</p>			Cremator room in Existing Crematorium / demolition	Contractor	Demolition stage	APCO	N/A
<p><i>Demolition, Handling, Treatment and Disposal of Moderately Contaminated DCM and Moderately/Severely Contaminated HMCM / PAHCM from Demolition of the Existing Crematorium</i> Procedure on demolition, handling, treatment and disposal of Moderately Contaminated DCM and Moderately/Severely Contaminated HMCM / PAHCM is listed below</p>			Cremator room in Existing Crematorium / demolition	Contractor	Demolition stage	Waste Disposal (Chemical Waste) (General) Regulation	N/A
Item	Procedure						

Recommended Mitigation Measures		Location and Timing	Who to Implement?	When to Implement?	What Requirements or Standards to Achieve?	Status
Site Preparation	<p>The contractor should ensure the impacts of dust containing dioxin and/or heavy metals on air quality and workers health during the handling and transportation of the contaminated materials are mitigated. Except the cremators/flue/chimney, all removable items where moderately contaminated DCM or moderately/severely contaminated HMCM / PAHCM is identified should be removed as far as practicable to avoid obstructing the decontamination activities. Preliminary site decontamination of all debris shall be carried out using HEPA vacuum cleaner. The top portion of the chimney above the roof shall be enclosed by a chamber with three layers of polythene sheets. At the entrance to the cremators /flues /chimney, a 3-chamber decontamination unit shall be constructed for entry and exit from the work area.</p> <p>The 3-chamber decontamination unit shall comprise a dirty room, a shower room and a clean room of at least 1m x 1m base each with 3 layers of fire retardant polythene sheet where all workers shall carry out decontamination procedures before leaving the work area. Warning signs in both Chinese and English should be put up in conspicuous areas.</p>					

Recommended Mitigation Measures	Location and Timing	Who to Implement?	When to Implement?	What Requirements or Standards to Achieve?	Status
<p>DCM or moderately/severely contaminated HMCM / PAHCM should be collected and stabilized to meet landfill disposal criteria of the Facilities Management Group (FMG) of EPD. In this case it is envisaged that the process would involve collection and mixing of the ash waste with cement. Pilot mixing and TCLP tests should be carried out to establish the appropriate ratio of cement to ash waste to the satisfaction of EPD. It is envisaged that the pilot tests would involve the mixing of say 5%, 10% and 15% ratios of cement to ash waste and three replicate of 300 mm cube blocks for each ratio. TCLP tests should then be used to establish the correct ratio of cement to ash waste to the satisfaction of EPD.</p>					

Recommended Mitigation Measures	Location and Timing	Who to Implement?	When to Implement?	What Requirements or Standards to Achieve?	Status
<p>Disposal</p> <p>After immobilization of the ash waste by mixing with cement in the correct ratio as determined by the pilot mixing and TCLP test, the waste materials should be placed inside polyethylene lined steel drums for disposal at landfill. Transparent plastic sheeting of 0.15 mm thickness low-density polyethylene or PVC should be employed. The drums should be 16 gauge steel or thicker and fitted with double bung fixed ends adequately sealed and well labelled in new or good condition. The drums should be clearly marked "DANGEROUS CHEMICAL WASTE" in English and Chinese. Prior agreement of the disposal criteria from the FMG of EPD and agreement to disposal from the landfill operator <i>must be obtained</i>.</p> <p>As a fall back option, if the landfill disposal criteria cannot be met after immobilization of the ash waste, disposal at the CWTC should be considered.</p> <p>The building structures will be disposal of at landfill.</p>	<p>Cremator room in Existing Crematorium / demolition</p>	<p>Contractor</p>	<p>Demolition stage</p>	<p>Waste Disposal (Chemical Waste) (General) Regulation</p>	<p>N/A</p>

Recommended Mitigation Measures	Location and Timing	Who to Implement?	When to Implement?	What Requirements or Standards to Achieve?	Status
the air movers should be kept on site for inspection upon request. The appointed contractor shall also check the differential pressure of the air mover to make sure the filter is not blocked. A differential pressure above 0.2 inches of water indicates that the filters would need to be changed.					
Smoke Test: before commencement of the decommissioning work, a smoke test with non-toxic smoke shall be carried out to ensure the air-tightness of the containment. Also check whether there are stagnant air pockets indicated by an aggregate of smoke that cannot effectively be extracted. After a successful test, switch on the air mover to exhaust smoke from the containment and to give a minimum of 6 air changes per hour, and check visually to see that the filters screen out the smoke effectively and if the pressure gauges read normal. If not, the air mover shall be sealed up and returned to the supplier workshop for necessary servicing, and replaced by a tested air mover. The normal reading pressure range for maintaining 6 air changes per hour shall be 1.5-4 mm/0.05-0.15 inches of water or equivalent	Crematorium room in Existing Crematorium / demolition	Contractor	Demolition stage	Waste Disposal (Chemical Waste) (General) Regulation	N/A

Recommended Mitigation Measures	Location and Timing	Who to Implement?	When to Implement?	What Requirements or Standards to Achieve?	Status
(negative pressure). The audible alarm's integrity should also be checked and the trigger shall be at <1.5 mm/0.05 inches of water (negative pressure). Otherwise securely seal up all openings before switching off the air mover.					
Treatment of Waste/Workers Safety Protection: the contractor shall be required to register as a Chemical Waste Producer. All workers shall wear full protective equipment, disposable protective coverall (such as Tyvek) (with hood and shoe covers), nitrile gloves, rubber boots (or boot covers), and full-face positive pressure respirators equipped with a combination cartridge that filters particulate and removes organic vapour. The organic vapour protection is an added protection against the unlikely exposure to any vapour as a necessary measure.					
If ACM is identified in building structures where severely contaminated DCM is found, relevant abatement measures for building structures described in the AAP (see 7.7.16) should be implemented prior to the above site preparation.					

Recommended Mitigation Measures	Location and Timing	Who to Implement?	When to Implement?	What Requirements or Standards to Achieve?	Status
Repeat the above decontamination procedure for the second innermost layer of fire retardant polyethene sheet by wet wiping and HEPA vacuuming. After spraying with PVA, peel off this second innermost layer of the polyethene sheet covering the wall, ceiling and floor and dispose of at landfill site. Finally, the last layer of polyethene sheet shall then be taken down after spraying with PVA and be disposed as contaminated wastes.					
If ACM is identified in building structures where severely contaminated DCM is found, relevant abatement measures for building structures described in the AAP (see 7.7.16) should be implemented prior to the above decontamination, demolition and handling measures.					
Treatment and disposal Waste to be disposed to CWTC: all contaminated ash waste with severely contaminated DCM removed and the used HEPA filters shall be sent to CWTC in Tsing Yi. The total volume should be confirmed by further site investigation.	Cremator room in Existing Crematorium / demolition	Contractor	Demolition stage	Waste Disposal (Chemical Waste) (General) Regulation	N/A

Recommended Mitigation Measures	Location and Timing	Who to Implement?	When to Implement?	What Requirements or Standards to Achieve?	Status
Waste to be Disposed of at Landfill: other wastes including the building structures and its associated panels as well as wastes generated from this decommissioning works are also considered as contaminated waste and shall be disposed of at a designated landfill. Wastes generated from this decommissioning works refer to the polyethene wrapping sheets for the building structures, waste generated from the dismantlement of the containment and decontamination units, and cloth used in wet wrapping, etc. as previously described in this section. They shall be placed into appropriate containers such as drums, jerricans, or heavy duty and leak-proof plastic as a prudent approach. A disposal permit has to be obtained from the Authority. The disposal trip ticket is required to be made available as record after disposal.					
If ACM is identified in building structures where severely contaminated DCM is found, relevant disposal measures for building structures described in the AAP (see 7.7.16) should be implemented in prior to the above disposal measures.					

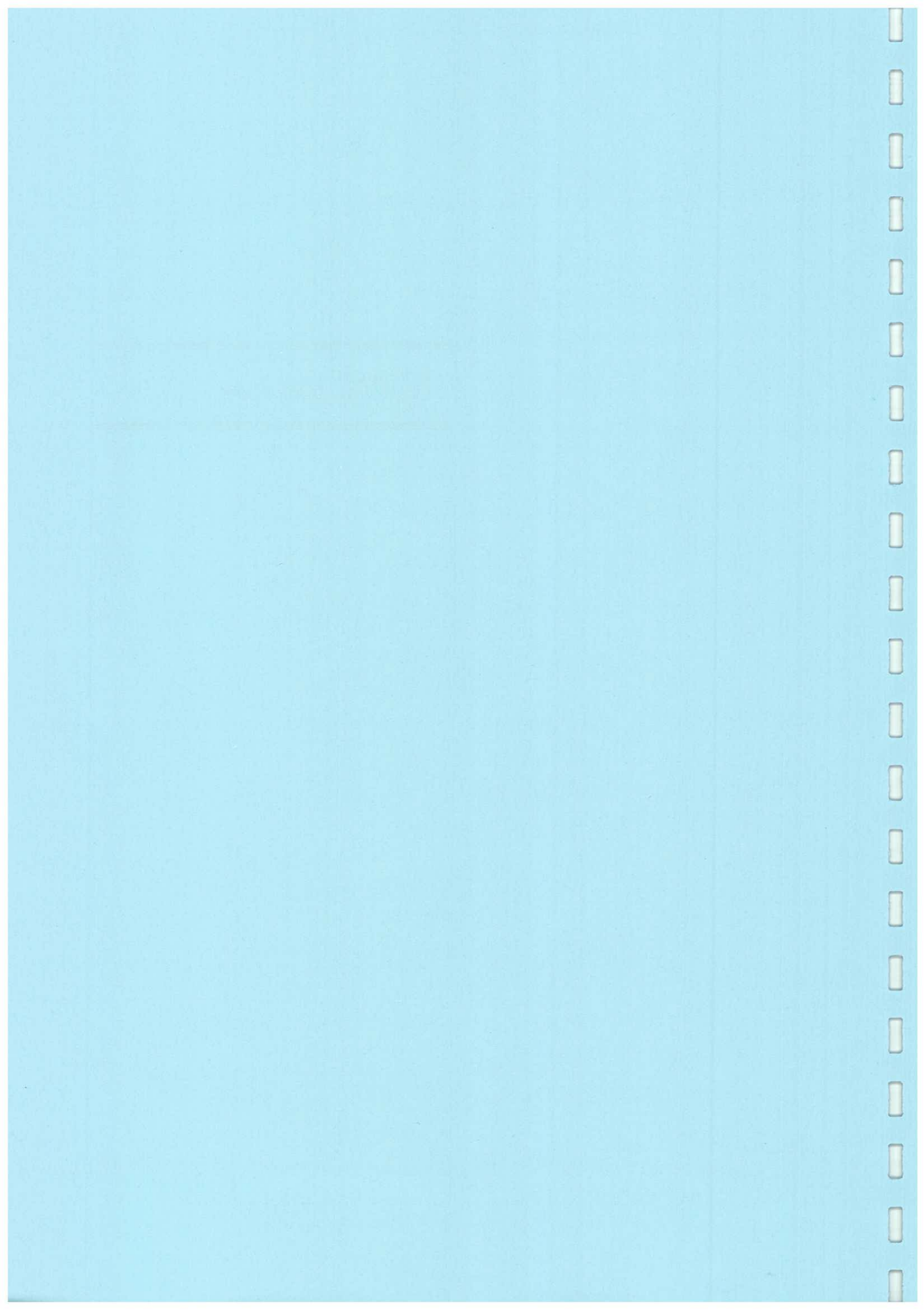
Recommended Mitigation Measures	Location and Timing	Who to Implement?	When to Implement?	What Requirements or Standards to Achieve?	Status
materials are adequately separated.					
The chemical waste should be disposed of by: <ul style="list-style-type: none"> • A licensed waste collector; • A facility licensed to receive chemical waste, such as the CWTC at Tsing Yi, which offers chemical waste collection service and can supply the necessary storage containers; and/or • A waste recycling plant as approved by EPD. 	Project site / demolition	Contractor	Demolition stage	Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Waste Disposal (Chemical Waste) (General) Regulation.	N/A
General Refuse General refuse should be stored in enclosed bins or compaction units separated from C&D and chemical wastes. A reliable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D and chemical wastes, on a daily or every second day basis to minimize odour, pest and litter impacts. The burning of refuse on construction sites is prohibited by law. Aluminum cans are often recovered from the waste stream by individual collectors if they are segregated or easily accessible. Therefore, separately labeled bins for deposit of these cans should be provided if feasible. Similarly, plastic bottles and carton package material generated on-site should be separated for recycling as far as practicable. Site office waste should be reduced through recycling of paper if volumes are large enough to warrant collection. Participation in a local collection scheme should be considered if one is available.	Project site / construction and demolition stages	Contractor	Construction and Demolition stage		
Conduct supplementary site investigation for asbestos in building structures and for dioxins, metals (the "Dutch List") and PAH in ash/particular	Around existing cremators, chimney and flues	Contractor	Demolition stage	AIR, AMP/AAP to be submitted under	N/A

Recommended Mitigation Measures	Location and Timing	Who to Implement?	When to Implement?	What Requirements or Standards to Achieve?	Status
matter samples.	inside cremator room / after decommissioning but prior to demolition during Phase II work			APCO, future supplementary site investigation plan	
Landscape and Visual Mitigation Measures					
The identification of the landscape and visual impacts will highlight those sources of conflict requiring design solutions or modifications to reduce the impacts and, if possible, blend the development with the surrounding landscape. The proposed landscape mitigation measures will be described and illustrated by means of site plans and photomontage and take into account factors including: <ul style="list-style-type: none"> • Screen planting • Transplanting of mature trees with good amenity value where appropriate • Conservation of topsoil for reuse • Sensitive alignment of structures to minimise disturbance to surrounding vegetation • Reinstatement of areas disturbed during construction • The design and finishes / colours of architectural and engineering structures such as terminals and pylons • Existing views, views of the development with no mitigation, views with mitigation at day one of operation and after 10 years of operation 	Project site / design, construction and demolition stages	Contractor/FEH D/Arch SD	Construction and Demolition stage	EIAO-TM	N/A
Tree transplanting: The tree survey has identified the trees which will be affected by the development and which could be considered for	Project site / construction and demolition as well	Contractor/Arch SD	Construction and Demolition stage	WBTC 7/2002, WBTC 14/2002, EIAO-TM	N/A

Recommended Mitigation Measures	Location and Timing	Who to Implement?	When to Implement?	What Requirements or Standards to Achieve?	Status
contractor should implement appropriate mitigation measures with reference to the <i>Practice Note for Professional Persons, Construction Site Drainage (ProPECC PN 1/94)</i> published by EPD. Such measures are highlighted as follows.					
<p>Construction and Demolition Phases - Construction and Demolition Run-off and Drainage</p> <p>Exposed soil areas should be minimized to reduce the potential for increased siltation, contamination of run-off and erosion. Any effluent discharge from the Project site is subject to the control of Water Pollution Control Ordinance (WPCO) discharge license and should be treated to meet the discharge standard set out in the relevant license. In addition, no site run-off should enter the stream on the eastern side of the Project site. Run-off impacts associated with the construction and demolition activities can be readily controlled through the use of appropriate mitigation measures, which include:</p> <ul style="list-style-type: none"> • Temporary ditches should be provided to facilitate run-off discharge into appropriate watercourses, via a silt retention pond • Boundaries of earthworks should be marked and surrounded by dykes • Open material storage stockpiles should be covered with tarpaulin or similar fabric to prevent material washing away • Exposed soil areas should be minimized to reduce the potential for increased siltation and contamination of run-off • Earthwork final surfaces should be well compacted and subsequent permanent work should be immediately performed • Use of sediment traps wherever necessary 	Project site / construction and demolition stages	Contractor	Construction and Demolition stage	ProPECC PN 1/94	√

Recommended Mitigation Measures	Location and Timing	Who to Implement?	When to Implement?	What Requirements or Standards to Achieve?	Status
<ul style="list-style-type: none"> • Maintenance of drainage systems to prevent flooding and overflow 					
All temporary drainage pipes and culverts provided to facilitate run-off discharge should be adequately designed to facilitate rapid discharge of storm flows. All sediment traps should be regularly cleaned and maintained. The temporarily diverted drainage should be reinstated to its original condition, when the construction/demolition work is completed.					√
Sand and silt in wash water from wheel washing facilities should be settled out and removed from discharge into temporary drainage pipes or culverts. A section of the haul road between the wheel washing bay and the public road should be paved with backfill to prevent wash water or other site run-off from entering public road drains.					√
Oil interceptors should be provided in the drainage system downstream of any significant oil and grease sources. They should be regularly maintained to prevent the release of oil and grease into the storm water drainage system after accidental spillage. The inceptor should have a bypass to prevent flooding during periods of heavy rain, as specified in <i>ProPECC PN 1/94</i> .	Project site / construction and demolition stages	Contractor	Construction and Demolition stage	ProPECC PN 1/94	N/A
<p>Construction and Demolition Phases - General Construction and Demolition Activities</p> <p>All the solid waste and chemical waste generated on site should be collected, handled and disposed of properly to avoid affecting the water quality of the nearby WSRs. The proper waste management measures are detailed in S.7.7.5-S.7.7.6.</p>	Project site / construction and demolition stages	Contractor	Construction and Demolition stage	ProPECC PN 1/94	√
Construction and Demolition Phases - Sewage Generated from On-site Workforce	Project site / construction and	Contractor	Construction and Demolition stage	ProPECC PN 1/94	√

**APPENDIX K
EVENT AND ACTION PLANS**



Appendix K Event and Action Plans

Table K.1 Event and Action Plan for Air Quality

EVENT		ACTION			CONTRACTOR	
		ET	IEC	AR		
ACTION LEVEL						
1. Exceedance for one sample	<ol style="list-style-type: none"> 1. Identify source, investigate the cause of exceedance and propose remedial measures; Inform IEC and AR; 2. Repeat measurement to confirm finding; 3. Increase monitoring frequency to daily, if ET assessment indicates that exceedance is due to contractor's construction works. 4. Identify source, investigate the cause of exceedance and propose remedial measures; Inform IEC and AR; 5. Repeat measurements to confirm findings; 6. Increase monitoring frequency to daily, if ET assessment indicates that exceedance is due to contractor's construction works; 7. Discuss with IEC and Contractor on remedial actions required; 8. If exceedance continues, arrange meeting with IEC and AR; 9. If exceedance stops, cease additional monitoring. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET; 2. Check Contractor's working method. 	<ol style="list-style-type: none"> 1. Notify Contractor. 	<ol style="list-style-type: none"> 1. Rectify any unacceptable practice; 2. Amend working methods if appropriate. 		
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> 1. Identify source, investigate the cause of exceedance and propose remedial measures; Inform IEC and AR; 2. Repeat measurements to confirm findings; 3. Increase monitoring frequency to daily, if ET assessment indicates that exceedance is due to contractor's construction works; 4. Discuss with IEC and Contractor on remedial actions required; 5. If exceedance continues, arrange meeting with IEC and AR; 6. If exceedance stops, cease additional monitoring. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the AR on the effectiveness of the proposed remedial measures; 5. Supervise implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented. 	<ol style="list-style-type: none"> 1. Submit proposals for remedial actions to IEC within three working days of notification; 2. Implement the agreed proposals; 3. Amend proposal if appropriate. 		
LIMIT LEVEL						
1. Exceedance for one sample	<ol style="list-style-type: none"> 1. Identify source, investigate the cause of exceedance and propose remedial measures; Inform IEC, AR and EPD; 2. Repeat measurement to confirm finding; 3. Increase monitoring frequency to daily, if ET assessment indicates that exceedance is due to contractor's construction works; 4. Assess effectiveness of Contractor's remedial actions and keep IEC, AR and EPD informed of the results. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the AR on the effectiveness of the proposed remedial measures; 5. Supervise implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented. 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within three working days of notification; 3. Implement the agreed proposals; 4. Amend proposal if appropriate. 		
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> 1. Notify Contractor, IEC, AR and EPD; 2. Identify source, investigate the cause of exceedance and propose remedial measures; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency to daily, if ET assessment indicates that exceedance is due to contractor's construction works; 	<ol style="list-style-type: none"> 1. Discuss amongst AR, ET, and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the AR accordingly; 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. In consultation with the IEC, agree with the Contractor on the remedial 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within three working days of notification; 		

ACTION				
EVENT	ET	IEC	AR	CONTRACTOR
	<p>assessment indicates that exceedance is due to contractor's construction works;</p> <p>5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented;</p> <p>6. Arrange meeting with IEC and AR to discuss the remedial actions to be taken;</p> <p>7. Assess effectiveness of Contractor's remedial actions and keep IEC, AR and EPD informed of the results;</p> <p>8. If exceedance stops, cease additional monitoring.</p>	<p>3. Supervise the implementation of remedial measures.</p>	<p>measures to be implemented;</p> <p>4. Ensure remedial measures properly implemented;</p> <p>5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.</p>	<p>3. Implement the agreed proposals;</p> <p>4. Resubmit proposals if problem still not under control;</p> <p>5. Stop the relevant portion of works as determined by the AR until the exceedance is abated.</p>

Table K.2 Event and Action Plan for Construction Noise

EVENT	ACTION				CONTRACTOR
	ET	IEC	AR	AR	
Action Level	<ol style="list-style-type: none"> 1. Notify Contractor and IEC; 2. Carry out investigation; 3. Report the results of investigation to the IEC and Contractor; 4. Discuss with the Contractor and formulate remedial measures; 5. Increase monitoring frequency to check mitigation effectiveness, if ET assessment indicates that exceedance is due to contractor's construction work. 	<ol style="list-style-type: none"> 1. Review the analysed results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the AR accordingly; 3. Supervise the implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. Require Contractor to propose remedial measures for the analysed noise problem; 4. Ensure remedial measures are properly implemented. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Require Contractor to propose remedial measures for the analysed noise problem; 4. Ensure remedial measures properly implemented; 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated. 	<ol style="list-style-type: none"> 1. Submit noise mitigation proposals to IEC; 2. Implement noise mitigation proposals.
Limit Level	<ol style="list-style-type: none"> 1. Notify Contractor, IEC, AR and EPD; 2. Identify source; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency, if ET assessment indicates that exceedance is due to contractor's construction work; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Inform IEC, AR and EPD the causes and actions taken for the exceedances; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, AR and EPD informed of the results; 8. If exceedance stops, cease additional monitoring. 	<ol style="list-style-type: none"> 1. Discuss amongst AR, ET, and Contractor on the potential remedial actions; 2. Review Contractors remedial actions whenever necessary to assure their effectiveness and advise the AR accordingly; 3. Supervise the implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Discuss amongst AR, ET, and Contractor on the potential remedial actions; 2. Review Contractors remedial actions whenever necessary to assure their effectiveness and advise the AR accordingly; 3. Supervise the implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by the AR until the exceedance is abated. 	

