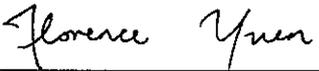


Contract No. SS M333

Reprovisioning of Diamond Hill  
Crematorium

Quarterly EM&A Summary Report  
for November 2004 to January 2005

February 2005

  
Reviewed by (PM):

  
Checked by:

  
Approved by:  
(Environmental Team Leader)

Report Version: Revision 0 Date of Submission: 28 February 2005

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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## EXECUTIVE SUMMARY

This report summarizes the EM&A works performed in the period from 29 October 2004 to 31 January 2005. In the reporting quarter, the following activities took place for the construction of the Project:

- Site clearance;
- Erection of hoarding;
- Erection of site offices;
- Break up existing pavement and excavation;
- Demolish existing tunnel;
- Installation work in transformer room;
- Draw pits and cable ducts construction;
- Underground utilities laying and backfilling; and
- Tarmac and concrete road slab construction.

For air quality, all 1-hour TSP monitoring results recorded in the quarter complied with the Action and Limit (AL) Levels. One Action Level exceedance was recorded for 24-hour TSP in the quarter. The exceedance was concluded not due to construction works of the Project.

For noise, all noise monitoring results recorded in the quarter complied with the Action and Limit Levels.

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.

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



## 1. INTRODUCTION

- 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/B, 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.
- 1.2 This is the first Quarterly EM&A Summary Report prepared by the ET summarizing the EM&A works performed from 29 October 2004 to 31 January 2005.

## 2. PROJECT CHARACTERISTICS

### *Project Organization and Contacts of Key Management*

- 2.1 An organization structure and the line of communication were set up for the Project between the Environmental Protection Department (EPD), the Architect, Independent Environmental Checker (IEC), the Contractor and the Environmental Team (ET). The project organization and contact details of key management are shown in Figure 2.1 and Appendix A respectively.

### *Construction Activities in the Quarter*

- 2.2 The following activities took place for the construction of the Project in the quarter:

- Site clearance;
- Erection of hoarding;
- Erection of site offices;
- Break up existing pavement and excavation;
- Demolish existing tunnel;
- Installation work in transformer room;
- Draw pits and cable ducts construction;
- Underground utilities laying and backfilling; and
- Tarmac and concrete road slab construction.

- 2.3 Layout plan of the Project work site is provided in Figure 2.2.

## 3. ENVIRONMENTAL MONITORING AND AUDIT REQUIREMENTS

### *Monitoring Parameters and Locations*

- 3.1 The EM&A Manual designates locations for the ET to monitor environmental impacts in terms of air quality and noise. The air quality and noise monitoring stations for the Project are shown in Figures 3.1 to 3.2. Appendix B gives the details of the monitoring requirements.

### *Environmental Quality Performance Limits (Action and Limit Levels)*

- 3.2 The environmental quality performance limits, i.e. Action and Limit Levels (AL Levels) were derived from the baseline monitoring results and/or other approaches as detailed in the approved EM&A Manual. Should the measured environmental quality parameters exceed the AL Levels, the respective action plans would be implemented. The AL Levels for each environmental parameter are given in Appendix C.

*Environmental Mitigation Measures*

- 3.3 Relevant mitigation measures as recommended in the Project EIA had been stipulated in the approved EM&A Manual for the Contractor to adopt. A list of environmental mitigation measures is given in Appendix F.

**4. MONITORING RESULTS**

*Air Quality*

- 4.1 1-hour and 24-hour TSP monitoring were carried out for ASR8 and ASR17 in the quarter. Graphical presentations of 1-hour and 24-hour TSP monitoring results are provided in Appendix D.

*Noise*

- 4.2 Noise monitoring was carried out at SR3, 4 and 6 in the quarter. Graphical presentations of the noise monitoring results are provided in Appendix E.

**5. AUDIT RESULTS**

*Implementation Status of Environmental Mitigation Measures*

- 5.1 During the weekly site inspection conducted by the ET in the quarter, the following observations and recommendations were made.

Water Quality

- Construction of wheel wash bay was in progress. However, some foliage was accumulated in the bay. The Contractor was reminded to remove any materials accumulated in the wheel wash bay regularly. Foliage accumulated was removed by the next weekly site inspection.
- A drainage channel directing away from the site was observed. The Contractor was reminded to provide a trap to avoid discharge of materials through the drainage channel. Sandbags was provided by the next weekly site inspection.
- The Contractor indicated that application for effluent discharge license was in progress. Installation of wastewater treatment facility was completed.
- Exposed slopes with existing storm drains at the bottom was observed. The Contractor was recommended to provide sandbags along the existing storm drains to avoid soil and sand from entering the drains. Sandbags were provided by the next weekly site inspection.
- The Contractor was reminded to provide sandbags for the gully pit near the temporary stockpiling area to prevent surface runoff from entering the storm drains. Sandbags were provided by the next weekly site inspection.

Air Quality

- Stockpiles of excavated material were partly covered by tarpaulin. Provision of water spray to stockpiles was not observed. The Contractor indicated that the water supply within the site was damaged. The Contractor was reminded to provide dust suppression measure to stockpiles of excavated material to avoid generation of fugitive dust. Provision of water spray was observed by the next weekly site inspection and more tarpaulin sheets were provided by end of the quarter.
- Breaking of pavement was observed without provision of water spray. The Contractor was reminded to provide water spray to all breaking operations. Provision of water spray to pavement breaking was observed by the next weekly site inspection.

Noise

- The Contractor indicated that application for construction noise permit was in progress.

Waste or Chemical Management

- Registration as a chemical waste producer was available for inspection.
- Chemical Waste Storage Area was erected by end of the reporting quarter. The Contractor was reminded to provide a proper label in both English and Chinese. The Contractor was also recommended to erect a gate with lock.
- The Contractor was reminded to provide drip tray as temporary storage of chemical containers near the transformer room. Chemical containers were not observed near the transformer room by the next weekly site inspection.

Landscape and Visual

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

Others

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

5.2 The updated status of the Environmental Mitigation Implementation Schedule (EMIS) is provided in Appendix F.

*Status of Environmental Licences and Permit*

5.3 The status of all permits/licences obtained/in-use in the quarter is summarised in Appendix G.

*Advice on Waste Management Status*

5.4 The actual quantities of inert C&D materials and non-inert C&D wastes generated by activities of the Project in the quarter are provided in Table 5.1. Trip ticket system was implemented for all offsite waste disposal.

**TABLE 5.1 SUMMARY OF WASTE DISPOSAL IN THE QUARTER**

Type of Waste Material		Disposed Quantity			Destination
		Nov 04	Dec 04	Jan 05	
Inert C&D materials		Nil	Nil	Nil	Not Applicable
Non-inert C&D waste	Metals	Nil	Nil	Nil	Not Applicable
	Paper/cardboard packaging	Nil	Nil	Nil	Not Applicable
	Plastics	Nil	Nil	Nil	Not Applicable
	Chemical waste	Nil	Nil	Nil	Not Applicable
	Others, e.g. general refuse	Nil	109m <sup>3</sup>	109m <sup>3</sup>	SENT Landfill

**6. NON-COMPLIANCE (EXCEEDANCES) OF THE ENVIRONMENTAL QUALITY PERFORMANCE LIMITS (ACTION AND LIMIT LEVELS)**

*Summary of Exceedances*

6.1 All 1-hour TSP monitoring results recorded in the quarter complied with the AL Levels. One Action Level exceedance was recorded for 24-hour TSP in the quarter.

6.2 All noise monitoring results recorded in the quarter complied with the AL Levels.

***Review of Reasons for and Implications of Non-compliance***

- 6.3 No exceedance of Action and Limit Levels for 1-hour TSP and noise levels was recorded in the quarter.
- 6.4 One Action Level exceedance of 24-hour TSP was recorded in the quarter. The exceedance recorded in the quarter was concluded not due to construction works of the Project.

***Summary of Actions Taken***

- 6.5 The Contractor generally implemented all the required mitigation measures to suppress the environmental impacts. As all AL level exceedances recorded in the quarter were not associated with the works of the Project, no further action was required.

**7. ENVIRONMENTAL COMPLAINTS**

- 7.1 All environmental complaints received or made against the Project since commencement of the Project would be handled in accordance with the EM&A Manual. The complaint handling procedure is provided in Figure 7.1.
- 7.2 No environmental complaint was received or made against the Project in the quarter.
- 7.3 Summary record of the complaints, investigation and follow-up actions undertaken since commencement of the Project are provided in Appendix H.

**8. NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS**

- 8.1 No notification of summons and successful prosecutions was received or made against the Project in the quarter.

**9. COMMENTS, CONCLUSIONS AND RECOMMENDATIONS**

- 9.1 The ET carried out air quality and construction noise monitoring and weekly environmental site inspection in accordance with the updated EM&A Manual.
- 9.2 One exceedance on 24-hour TSP was recorded in the quarter. ET's assessment showed that the exceedance was not due to construction works of the Project and no further action was required.
- 9.3 The implemented EM&A programme ensured that any air quality and construction noise impacts to the sensitive receivers would be readily detected and timely actions could be taken to rectify any non-compliance. Assessment and analysis of air quality and construction noise monitoring results recorded had demonstrated the environmental acceptability of the Project. Weekly site inspections ensured that the EIA recommended mitigation measures were effectively implemented.

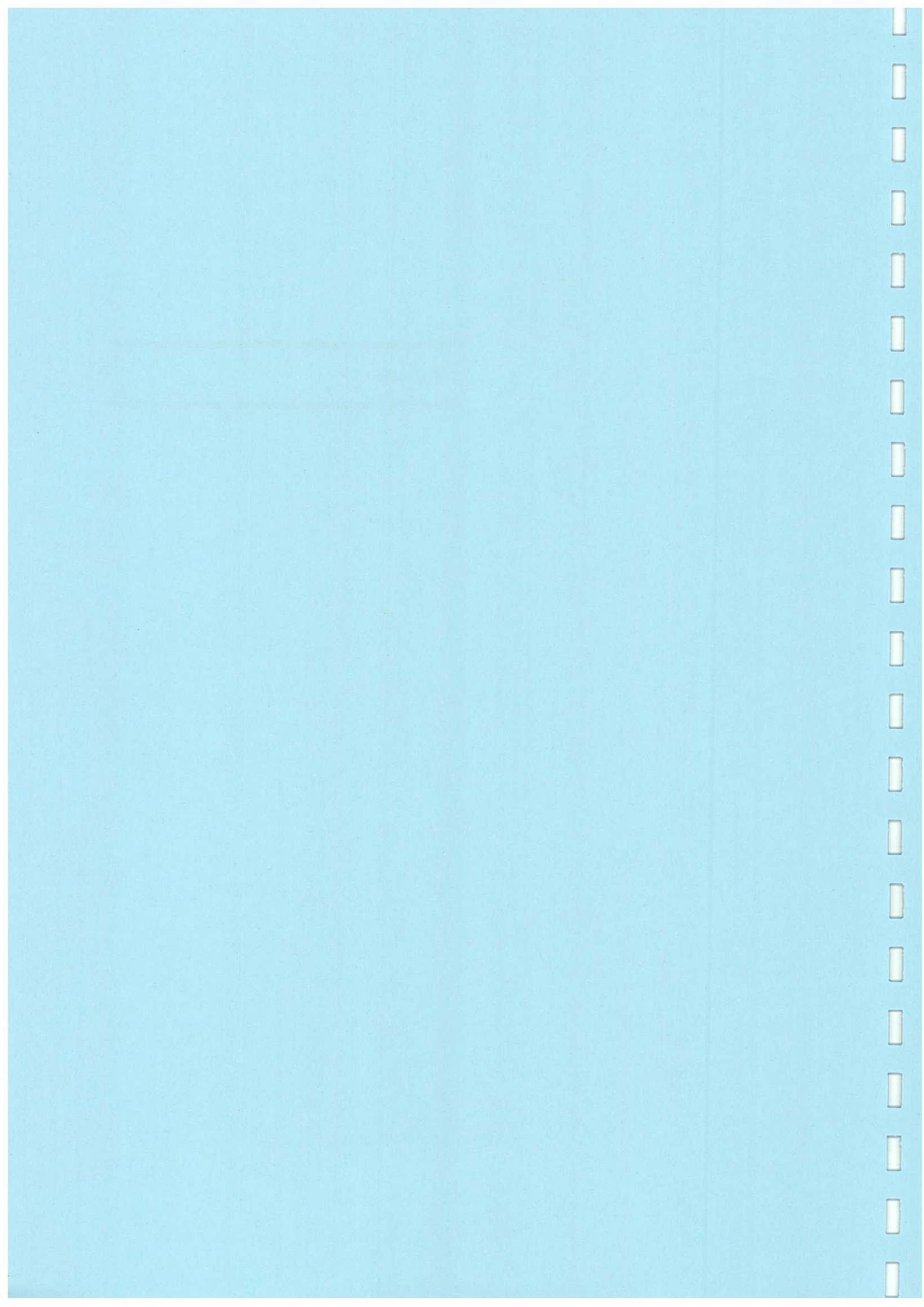
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**FIGURES**

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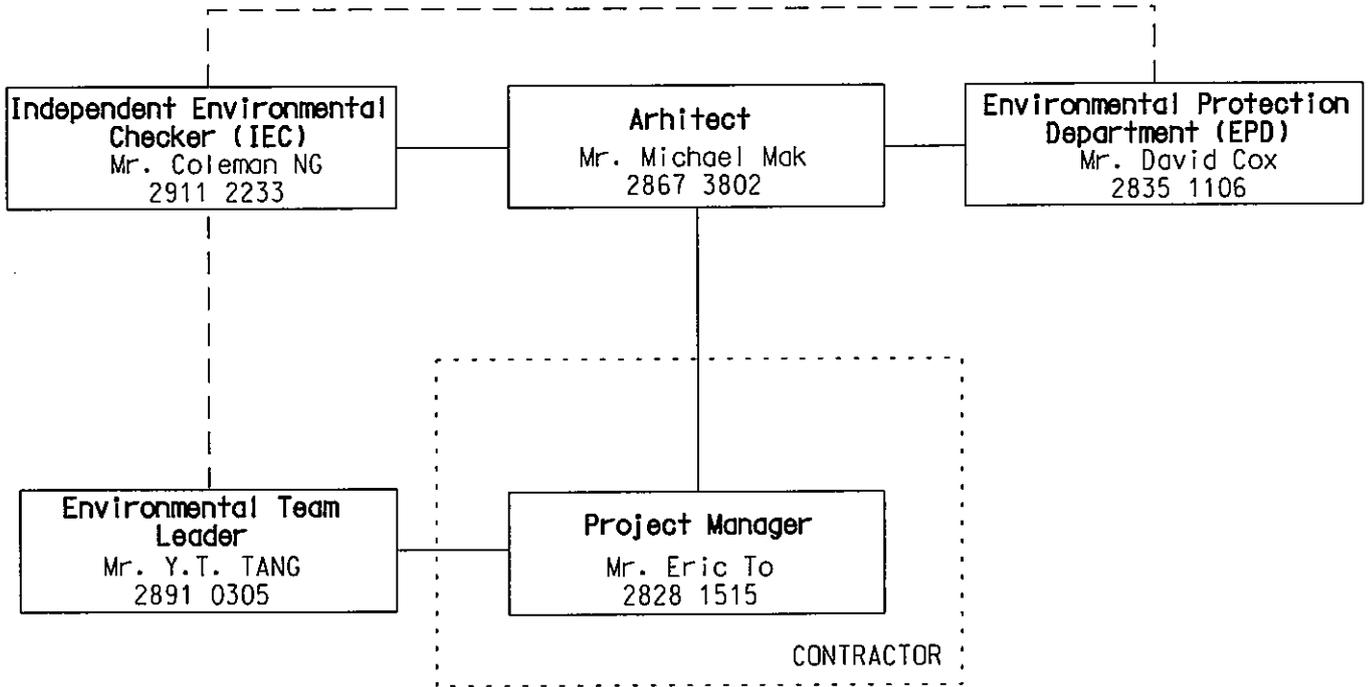
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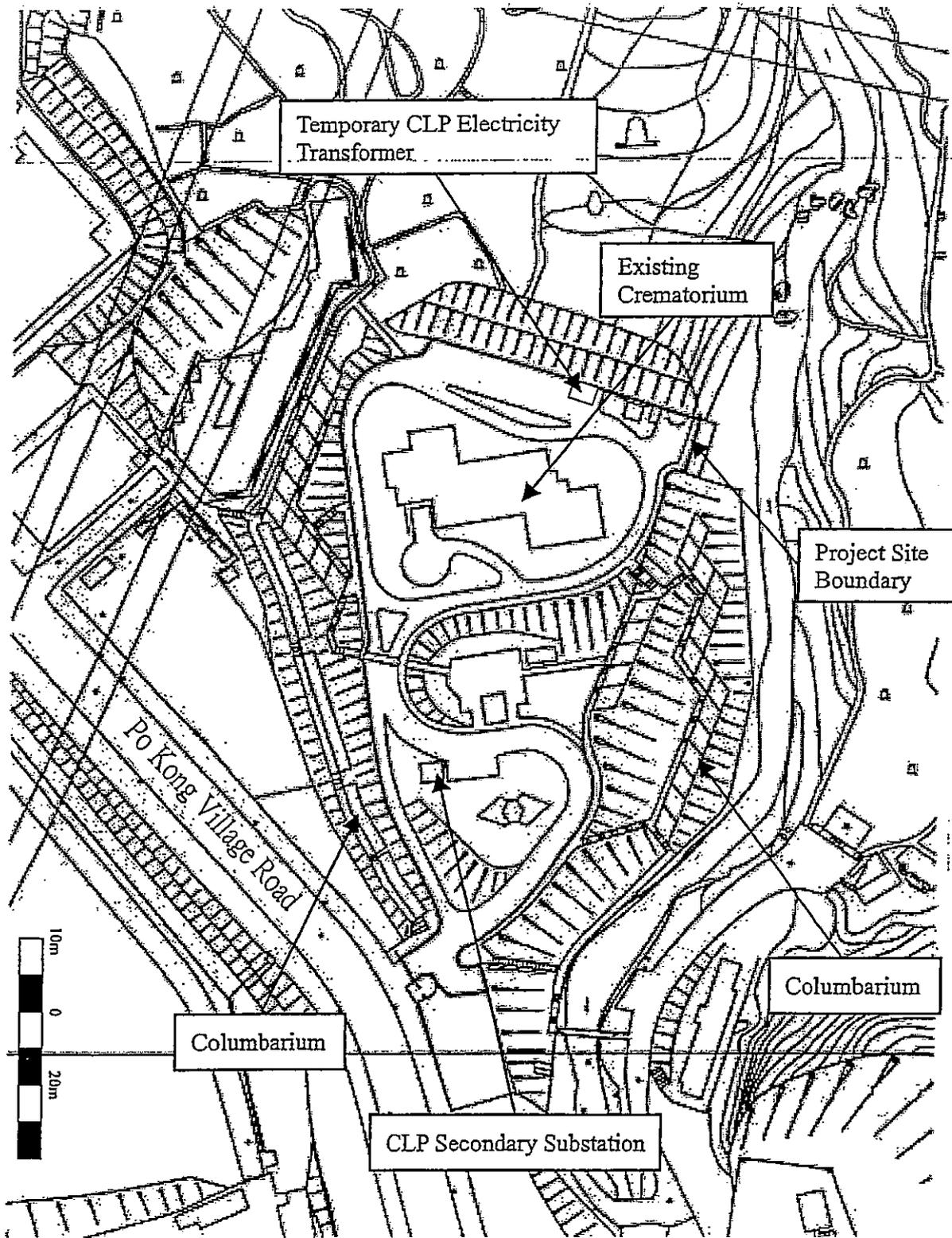
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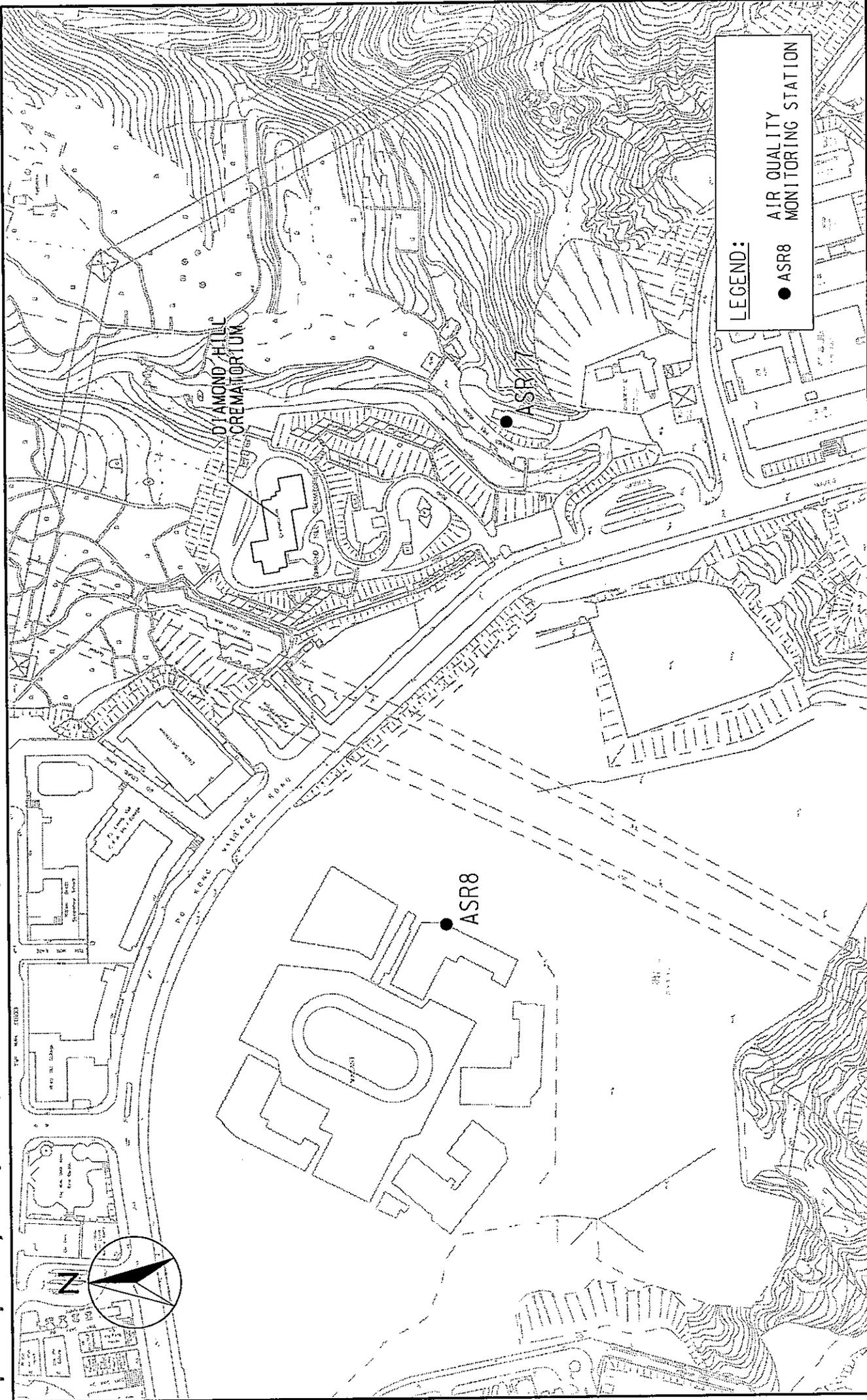
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<b>Maunsell</b> ENVIRONMENTAL MANAGEMENT CONSULTANTS LTD. 茂盛環境管理顧問有限公司	CONTRACT NO: SS M333 - REPROVISIONING OF DIAMOND HILL CREMATORIUM	SCALE 比例 N.T.S.	DATE 日期 2005
	<b>PROJECT ORGANIZATION FOR          ENVIRONMENTAL MANAGEMENT</b>	JOB No. 項目編號 S07904	DRAWING No. 圖號 2.1



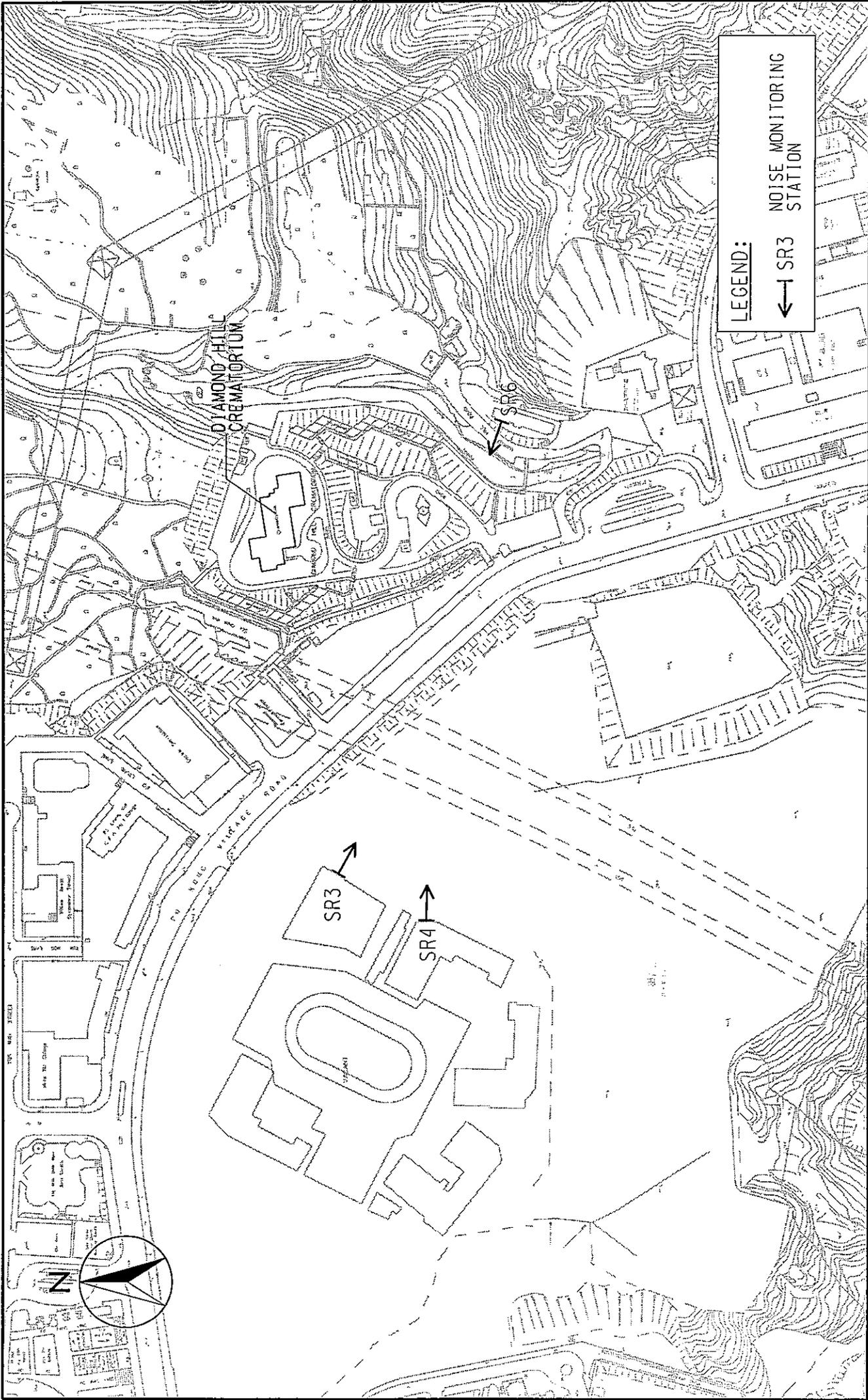


**LEGEND:**  
 ● ASR8  
 ● ASP1  
 AIR QUALITY MONITORING STATION

SCALE 比例	A4 1:3000	DATE 日期	2005
JOB NO. 项目编号	S07904	DRAWING NO. 图号	3.1

CONTRACT NO: SS M333  
 REPROVISIONING OF DIAMOND HILL CREMATORIUM  
**LOCATIONS OF AIR QUALITY MONITORING STATIONS**

**Maunsell**  
 ENVIRONMENTAL MANAGEMENT CONSULTANTS LTD.  
 茂盛環境管理顧問有限公司



**Mausell**  
 ENVIRONMENTAL MANAGEMENT CONSULTANTS LTD.  
 茂盛環境管理顧問有限公司

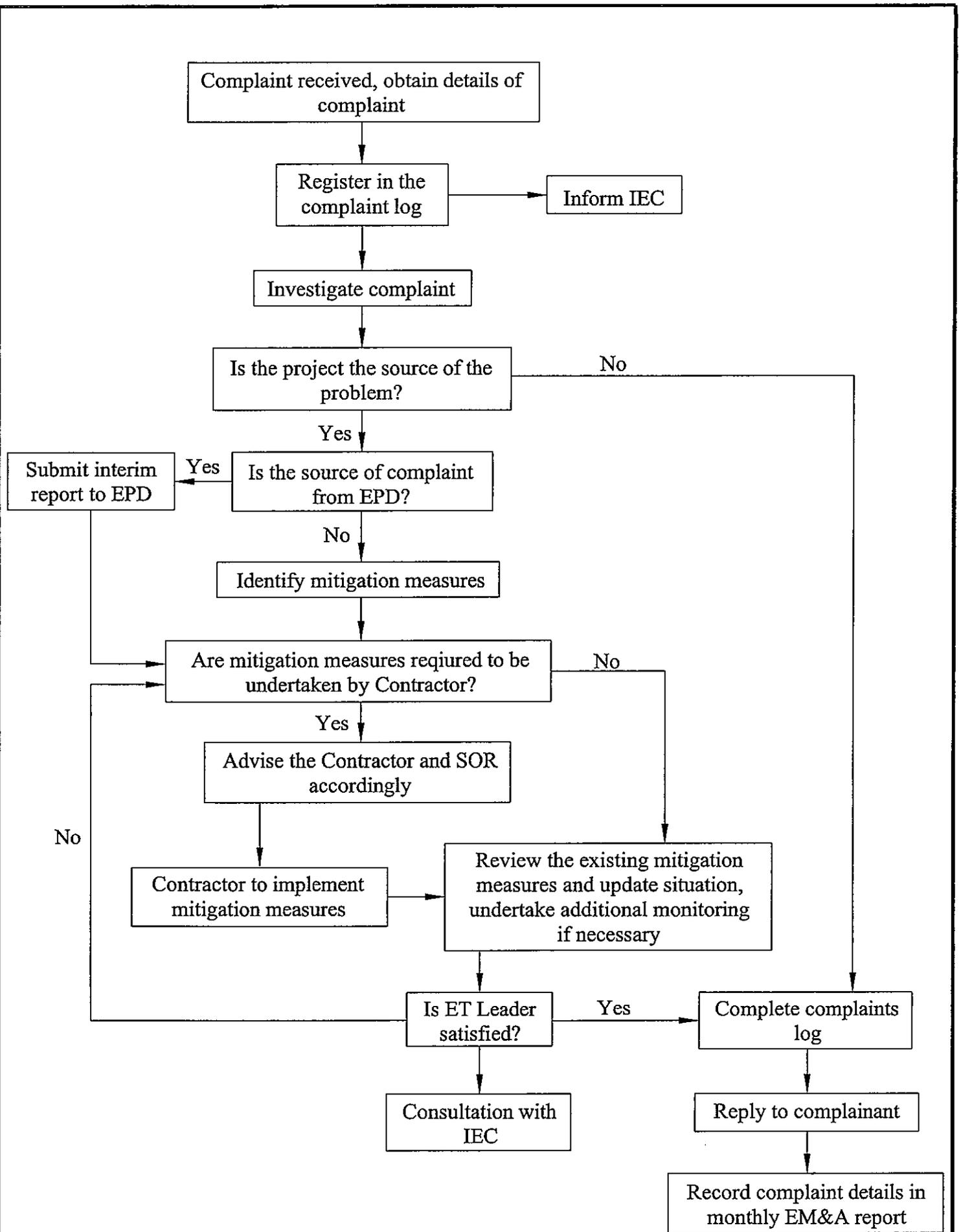
CONTRACT NO: SS M333  
 REPROVISIONING OF DIAMOND HILL CREMATORIUM  
**LOCATIONS OF CONSTRUCTION NOISE MONITORING STATIONS**

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 項目編號 S07904

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 日期 2005

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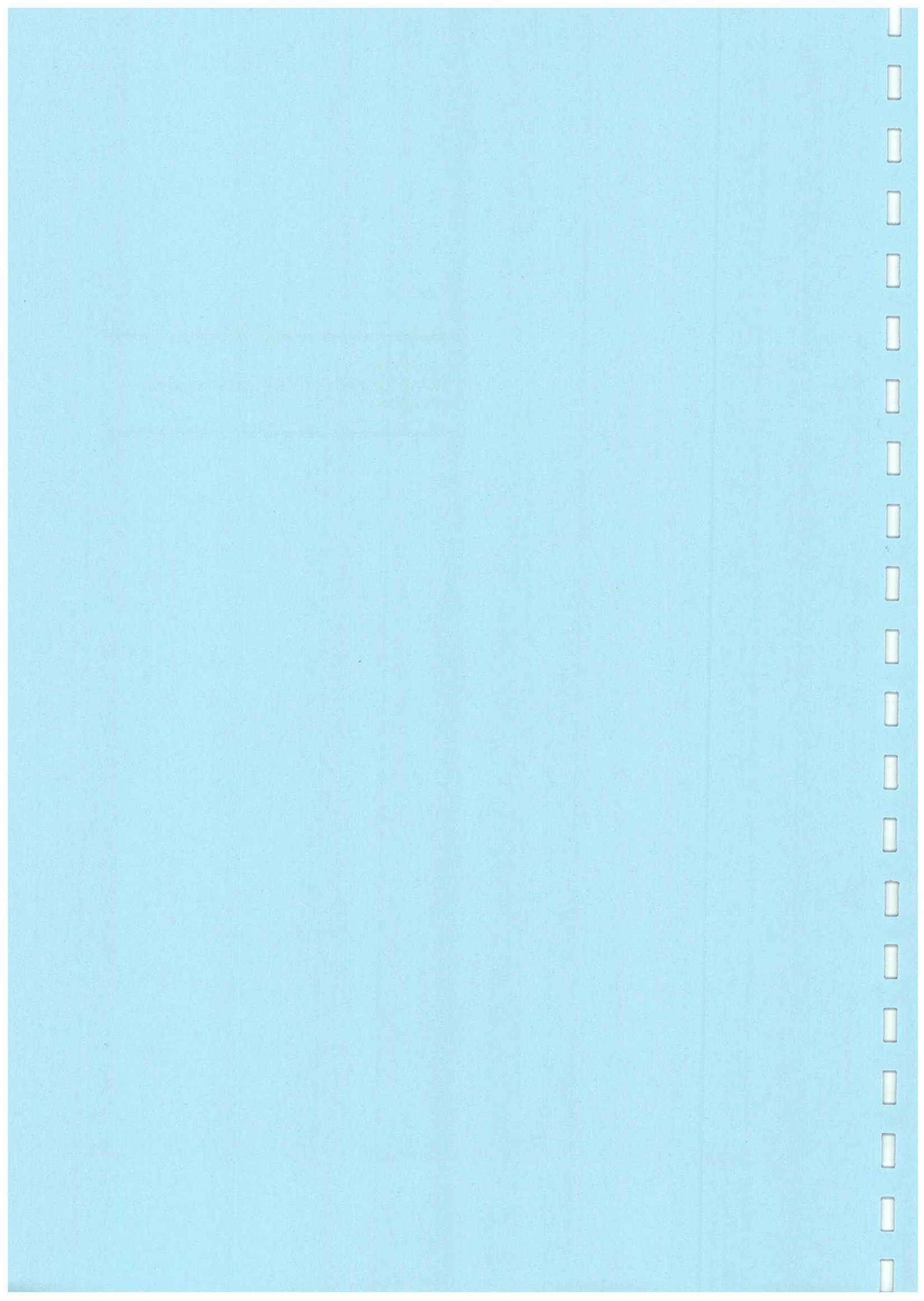




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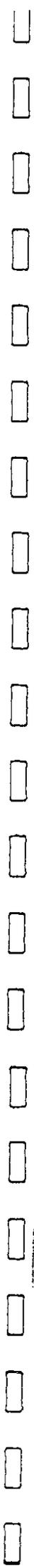
**APPENDIX A  
KEY CONTACTS OF ENVIRONMENTAL  
PERSONNEL**

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## Appendix A — Key Contacts of Environmental Personnel

Party	Name	Telephone No.	Fax No.
<b>Environmental Protection Department</b>			
SEPO	Mr. David Cox	2835 1106	2591 0558
EPO	Ms. Marlene Ho	2835 1186	2591 0558
EPO (LCO)	Mr. Charles Wu	2117 7540	2756 8588
<b>Architect</b>			
Architectural Services Department			
Project Architect	Mr. Michael Mak	2867 3802	2524 8194
Assistant Architect	Mr. Johnson Lee	2867 4135	2524 8194
<b>Independent Environmental Checker</b>			
Hyder Consulting Limited			
IEC	Mr. Coleman Ng	2911 2233	2805 5028
Assistant to IEC	Mr. Adi Lee	2911 2233	2805 5028
<b>Contractor</b>			
China Resources Construction Company Limited			
Project Manager	Mr. Eric To	2828 1515	2827 2921
<b>Environmental Team</b>			
Maunsell Environmental Management Consultants Limited			
ET Leader	Mr. Y.T. Tang	2893 1551	2891 0305
Audit Team Leader	Ms. Florence Yuen	2893 1551	2891 0305
Monitoring Team Leader	Mr. Thomas Chan	2893 1551	2891 0305



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**APPENDIX B  
ENVIRONEMTNAL MONITORING AND  
AUDIT PROGRAMME**

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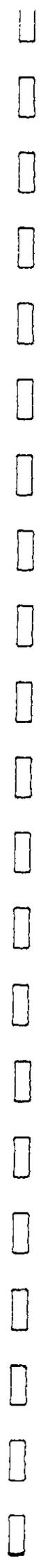
## Appendix B Environmental Monitoring Programme

**Table B1 Air Quality Monitoring Parameters and Frequency**

Location	Parameter	Duration	Frequency
ASR8 and 17	1-hour TSP	1 hour	3 times every six days
	24-hour TSP	24 hours	Once every six days

**Table B2 Noise Monitoring Parameters, Period and Frequency**

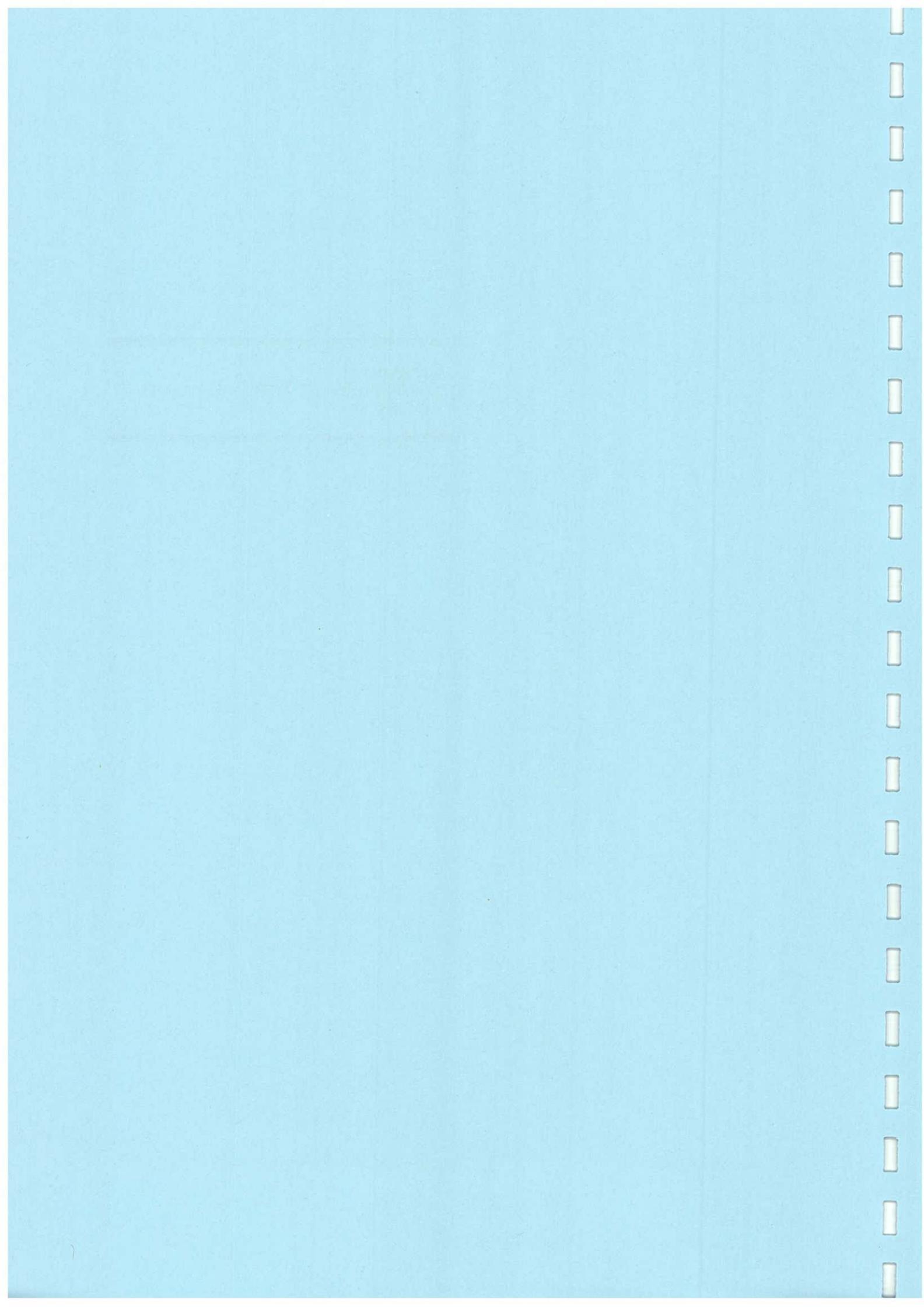
Location	Time Period	Parameters	Frequency
SR3, 4 and 6	Daytime (0700 to 1900 on normal weekdays)	$L_{eq}$ (30-min)	Once per week



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**APPENDIX C  
ENVIRONMENTAL ACTION AND LIMIT  
LEVELS**

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## 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



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**APPENDIX D  
GRAPHICAL PRESENTATION OF AIR  
QUALITY MONITORING RESULTS**

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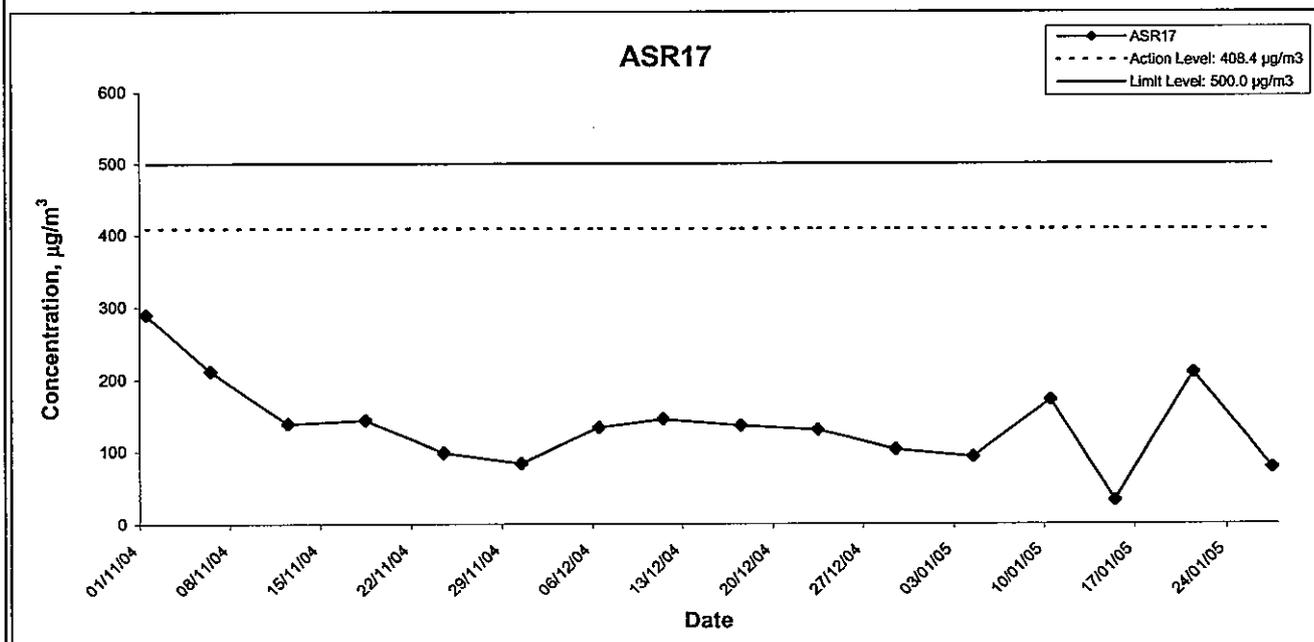
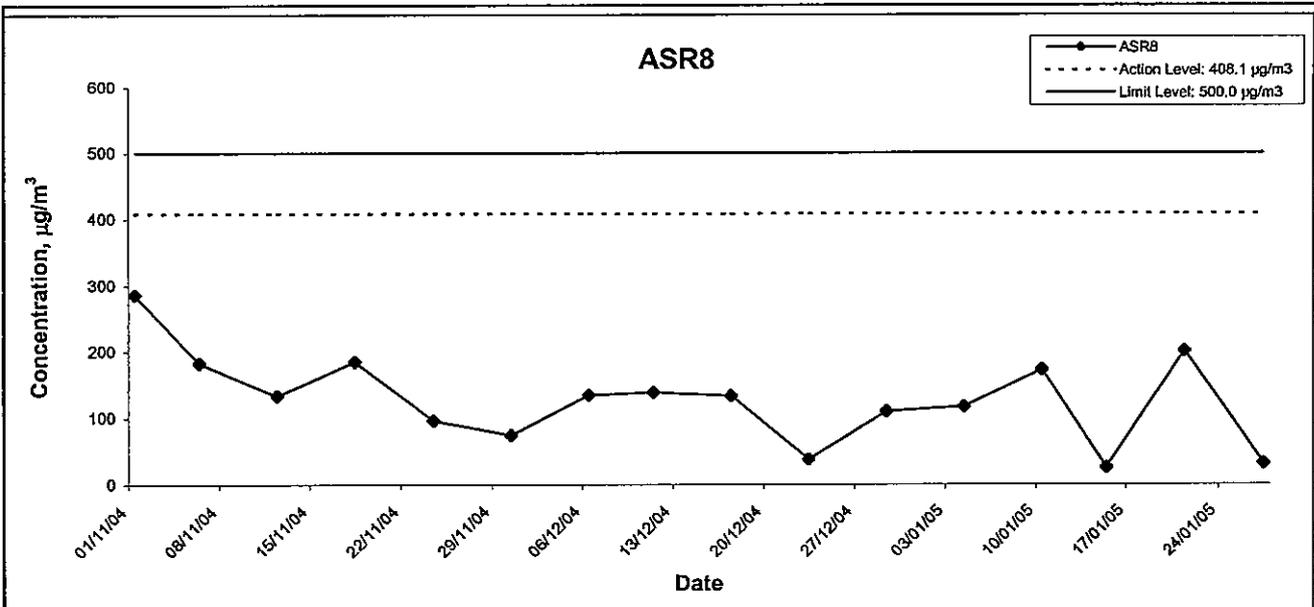
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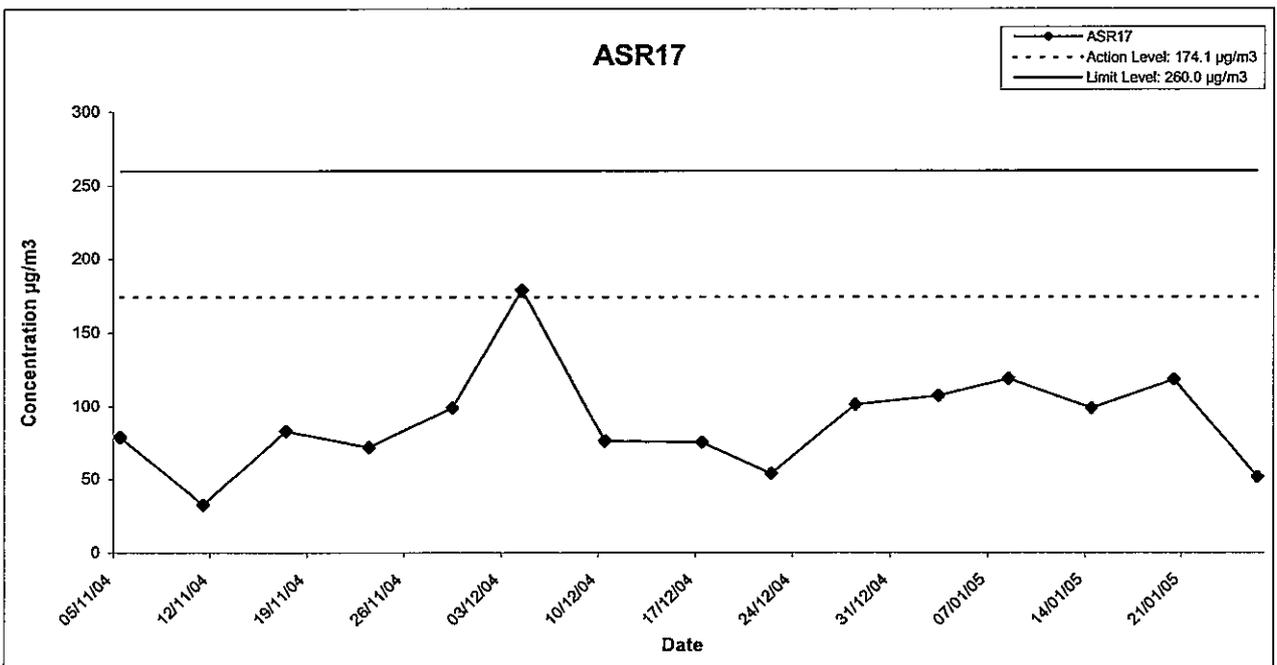
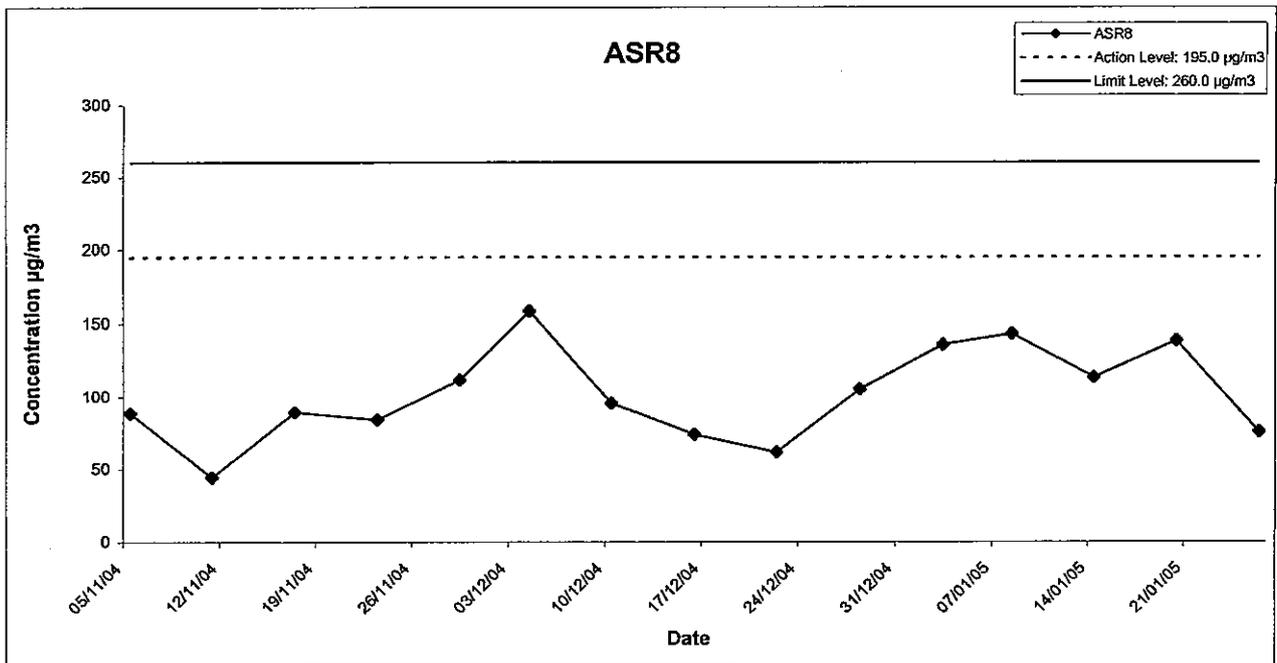
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Title Contract No. SS M333 Reprovisioning of Diamond Hill Crematorium  Graphical Presentation of 1-hour TSP Monitoring Results for Location ASR8 and ASR17	Scale N.T.S.	Project No. S07904	
	Date 2005	Appendix D	

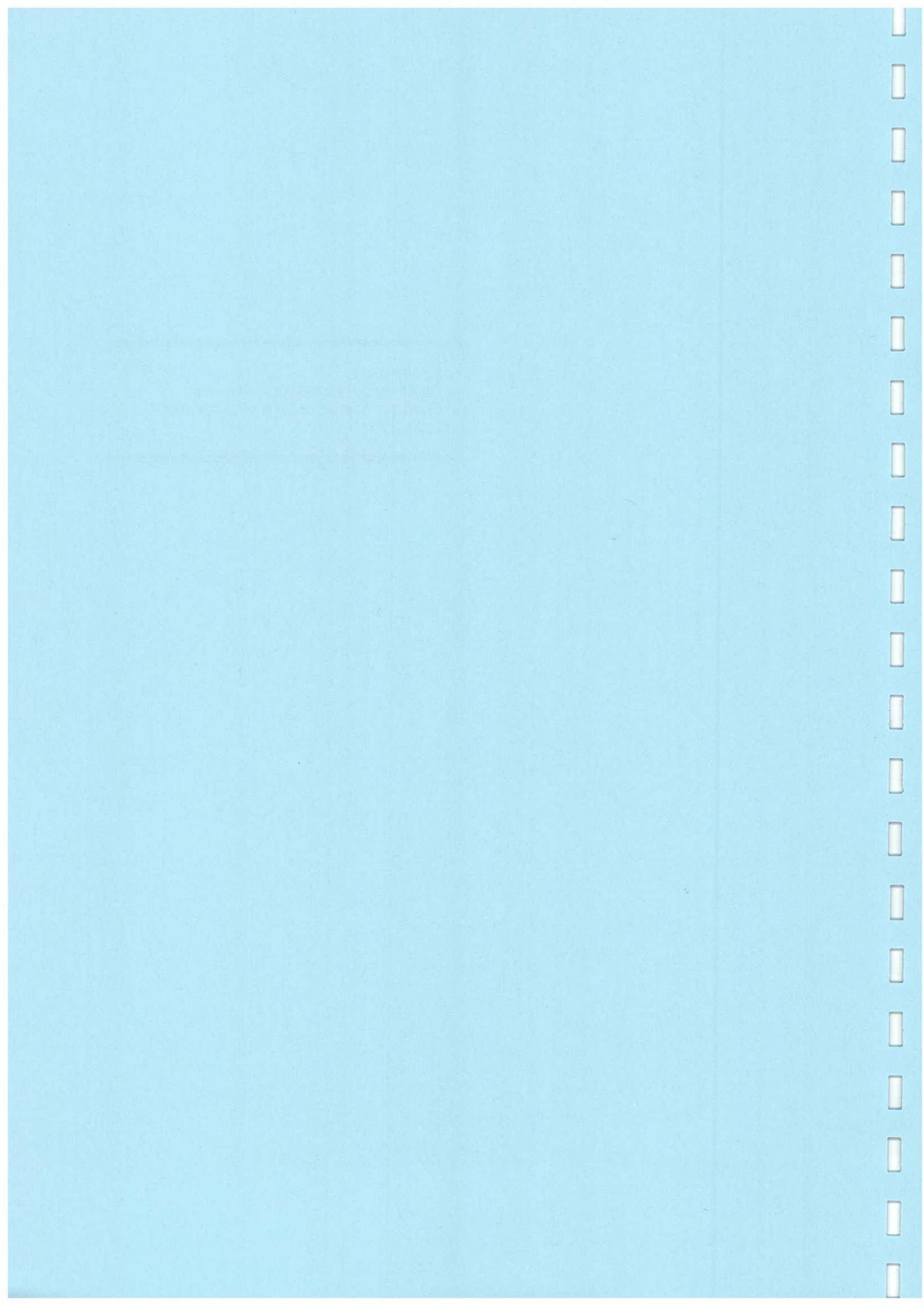


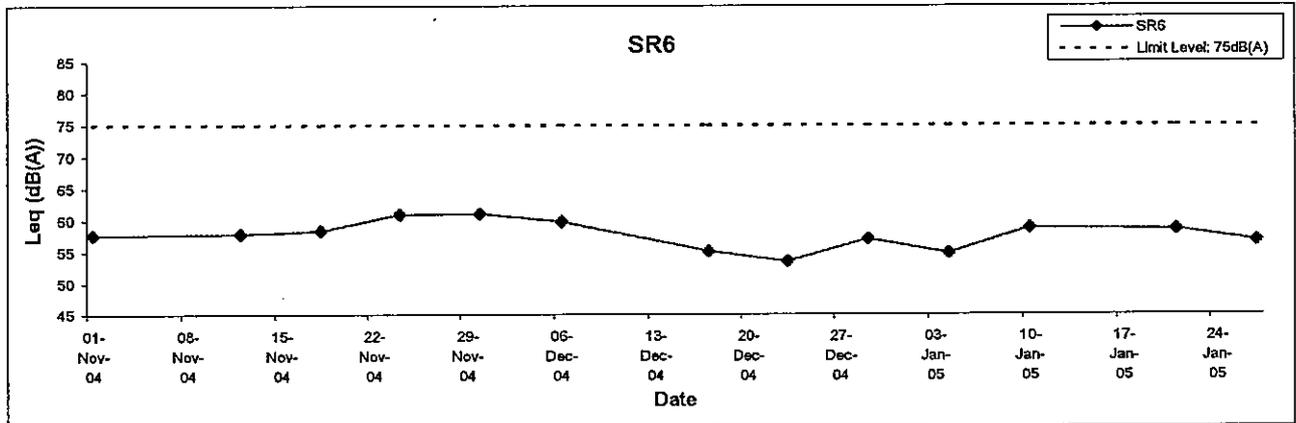
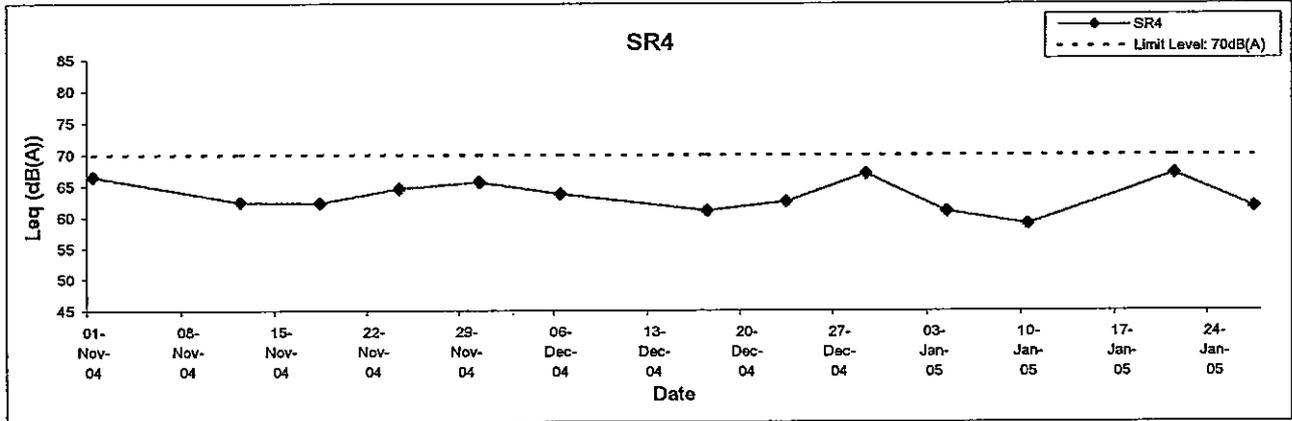
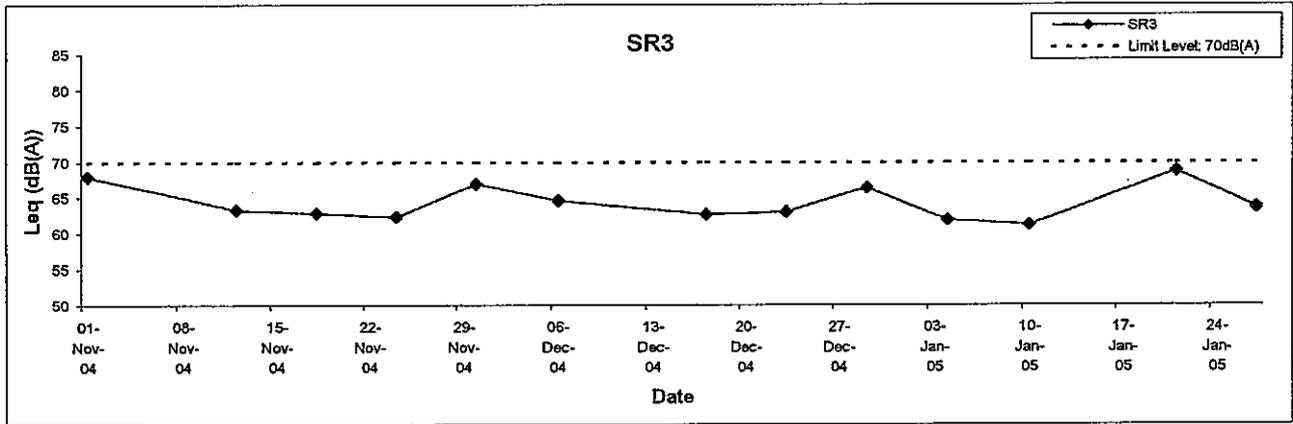
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	Graphical Presentation of 24-hour TSP Monitoring Results for Location ASR8 and ASR17	Date	2005	Appendix D		

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**APPENDIX E  
GRAPHICAL PRESENTATION OF  
CONSTRUCTION NOISE MONITORING  
RESULTS**

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Title 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.	Project No. S07904	
	Date 2005	Appendix E	



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**APPENDIX F  
IMPLEMENTATION SCHEDULE OF  
MITIGATION MEASURES**

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## Appendix F – Environmental Mitigation Implementation Schedule

Recommended Mitigation Measures	Location and Timing	Who to Implement?	When to Implement?	What Requirements or Standards to Achieve?	Status
<b>Air Quality Mitigation Measures</b>					
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 101mP.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		

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		N/A
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	Cremator room in Existing Crematorium / decommissioning	Arch SD, consultant	Demolition stage	APCO	N/A

Recommended Mitigation Measures	Location and Timing	Who to Implement?	When to Implement?	What Requirements or Standards to Achieve?	Status
the work; a registered asbestos laboratory to monitor the air quality, and a registered asbestos consultant to supervise and certify the asbestos abatement work. Erect a site barrier with the height of no less than 2.4m to enclose the construction site Apply frequent water spraying to ensure the surface of the construction site sufficiently wet to reduce fugitive dust due to wind erosion and transportation on unpaved haul road Cover up stockpiles of fill material and dusty material Install a vehicle-cleaning system at the main entrance of the construction site to clean up the vehicles before leaving the site The Air Pollution Control (Construction Dust) Regulation shall be followed for fugitive dust control	Project site / construction and demolition stages	Contractor	Construction and Demolition stage	APCO, Air Pollution Control (Construction Dust) Regulation	√
No more than 6 cremators (including both the existing and new ones) are in operation during commissioning test of new cremators. The commissioning test of each new cremator shall be recorded by a log book	Existing and new cremators in Existing and New Crematorium / text and commissioning	Arch SD/FEHD/ Contractor	Construction stage		N/A
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 / all stages	Arch SD	Design, Construction, Demolition and Operation stage	BPM/APCO	N/A
Conduct baseline and regular 1-hour and 24-hour TSP monitoring.	A8 and A17 / baseline monitoring prior to Phase I & II works and regular monitoring throughout Phase I & II works	Contractor	Construction and Demolition stage	APCO, EM&A Guidelines for Development Projects in Hong Kong	√

Recommended Mitigation Measures	Location and Timing	Who to Implement?	When to Implement?	What Requirements or Standards to Achieve?	Status
When the demolition material is confirmed to have ACM, monitoring for asbestos fibre would be carried out at the boundary of the construction site for reassurance purposes as per the requirement of future license for asbestos abatement, though it is not expected that asbestos fibre would be liberated from the demolition of the Existing Crematorium building.	Construction site boundary / demolition	Contractor	Demolition stage	Asbestos Study Report, AIR and AAP to be submitted under APCO, future licence for asbestos abatement (if any)	N/A
<b>Noise Mitigation Measures</b> Select quiet plant, which is defined as PME with a sound power level lower than that specified in GW-TM. Examples of quiet plant can be referred to those listed in British Standard BS5228.	Project site / construction and demolition stages	Contractor	Construction and Demolition stages	GW-TM	N/A
Where practicable, use movable barriers of 3 to 5 m height with a small cantilevered upper portion and skid footing can be located within a few metres from a stationary plant (e.g. generator, compressor, etc.) and within about 5 m for a mobile equipment (e.g. breaker, excavator, etc.), especially in the vicinity of SR3, SR4 and SR6. The purpose-built noise barriers or screens shall be constructed of appropriate materials with a minimum superficial density of 15kg/m <sup>2</sup> .	Project site / construction and demolition stages	Contractor	Construction and Demolition stages	NCO	N/A
<ul style="list-style-type: none"> <li>Only well-maintained plant should be operated on site and plant should be regularly serviced during the construction works</li> <li>Plant that is used intermittently should be turned off or throttled down when not in active use</li> <li>Plant that is known to emit noise strongly in one direction should be oriented to face away from NSRs</li> </ul>	Project site / construction and demolition stages	Contractor	Construction and Demolition stages	NCO	√

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"> <li>Silencers, mufflers and enclosures for plant should be used where possible and maintained adequately throughout the works</li> <li>Where possible mobile plant should be sited away from NSRs</li> <li>Stockpiles of excavated materials and other structures such as site buildings should be used effectively to screen noise from the works</li> </ul>					
<p>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.</p>	Project site / construction and demolition stages	Contractor	Demolition stage	NCO	N/A
<p>Conduct regular noise monitoring.</p>	SR 3, SR 4 and SR 6 / Phase I & II works	Contractor	Demolition stage	NCO, EM&A Guidelines for Development Projects in Hong Kong	√
<p><b>Land Contamination Mitigation Measures</b></p> <p>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</p>	CLP secondary substation and cremator room/ demolition stage (Phase I – CLP secondary substation; Phase II – cremator room)	Contractor	Demolition stage	ProPECC PN 3/94	N/A

Recommended Mitigation Measures	Location and Timing	Who to Implement?	When to Implement?	What Requirements or Standards to Achieve?	Status
<p>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.</p>					
<p>Once the Existing Crematorium has ceased operating during Phase II, confirmatory surface 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.</p>	<p>Locations S1 to S6 specified in the CAP/demolition</p>	<p>Contractor</p>	<p>Demolition stage</p>	<p>ProPECC PN 3/94</p>	<p>N/A</p>
<p>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.</p>	<p>Underground fuel storage tank/during and after tank removal</p>	<p>Contractor</p>	<p>Demolition stage</p>	<p>ProPECC PN 3/94 and Guidance Notes for Investigation and Remediation of Contaminated Sites of Petrol Filling Stations, Boatyards and Car Repair / Dismantling Workshops</p>	<p>N/A</p>
<p><i>Summary of remediation works at locations S3 and S5:</i></p>					
<p>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</p>	<p>Locations S3 and S5 specified in CAP/demolition</p>	<p>Contractor</p>	<p>Demolition stage</p>	<p>ProPECC PN3/94</p>	<p>N/A</p>

Recommended Mitigation Measures	Location and Timing	Who to Implement?	When to Implement?	What Requirements or Standards to Achieve?	Status
<p>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.</p> <p>During removal of the underground fuel storage tank, appropriate precautions should be taken to avoid contamination. All fuel tanks and associated pipework should be emptied prior to any demolition work being undertaken. Any remaining sludge or sediment in the tanks or pipework should be removed and disposed of as chemical waste in accordance with the appropriate regulations for disposal of such material.</p>	<p>Underground fuel storage tank / Phase II demolition</p>	<p>Agent Contractor</p>	<p>Demolition stage</p>	<p>ProPECC PN 3/94 and Guidance Notes for Investigation and Remediation of Contaminated Sites of Petrol Filling Stations, Boatyards and Car Repair / Dismantling Workshops</p>	<p>N/A</p>
<p>Should contamination be encountered beneath the fuel tank or the CLP secondary substation, further remedial work will be required. Such potential contamination would consist of either TPH (in the case of the fuel tank) or PCBs (in the case of the CLP secondary substation). As a realistic worst-case estimate, the PCB contaminated soil at CLP secondary substation may require stabilisation with cement prior to disposal to landfill. A realistic worst case estimate is that the volume of TPH contaminated soil at underground storage tank would require landfill disposal.</p>	<p>CLP secondary substation /Phase I demolition and underground fuel tank / Phase II demolition</p>	<p>Contractor</p>	<p>Demolition stage</p>	<p>ProPECC PN 3/94 and Guidance Notes for Investigation and Remediation of Contaminated Sites of Petrol Filling Stations, Boatyards and Car Repair / Dismantling Workshops</p>	<p>N/A</p>
<p><b>Health and Safety Precautions during Remedial Works</b></p> <p>The site workers engaged in the remedial works should be provided with adequate personal protective equipment, which should include:</p> <ul style="list-style-type: none"> <li>• Protective footwear;</li> <li>• Gloves;</li> <li>• Dust masks; and</li> <li>• Overalls.</li> </ul> <p>A clean area should be provided, equipped with</p>	<p>All areas requiring remedial works in Project site / demolition during Phases I and II</p>	<p>Contractor</p>	<p>Demolition stage</p>	<p>ProPECC PN 3/94 and Guidance Notes for Investigation and Remediation of Contaminated</p>	<p>N/A</p>

Recommended Mitigation Measures	Location and Timing	Who to Implement?	When to Implement?	What Requirements or Standards to Achieve?	Status
<p>washing facilities. Eating, drinking and smoking should only be permitted within designated "clean" areas after washing. Excavated material should not be stockpiled, but should immediately be treated/transported to landfill on a daily basis ..</p>				<p>Sites of Petrol Filling Stations, Boatyards and Car Repair / Dismantling Workshops</p>	
<p>Avoidance of Impacts on Water Quality during Remedial Works In order to avoid impacts on water quality during remedial works, care will be taken to minimise the mobilisation of sediment during excavation and transport. Measures to be adopted will be based on the recommendations set out in Practice Note for Professional Persons ProPECC PN1/94 "Construction Site Drainage". The results of the site investigation suggest that there is unlikely to be any requirement for dewatering of excavations, since groundwater was not encountered in any of the exploratory holes. The contractor carrying out the remedial works will be required to submit a method statement detailing the measures to be taken to avoid water quality impacts. Typical measures would include;</p> <ul style="list-style-type: none"> <li>• Carry out the works during the dry season (i.e. October to March) if possible;</li> <li>• Use bunds or perimeter drains to prevent run-off water entering excavations;</li> <li>• Sheet or otherwise cover excavations whenever rainstorms are expected to occur;</li> <li>• Minimise the requirements for stockpiling of material and ensure any stockpiles are covered;</li> <li>• Temporary on-wit stockpiling of contaminated materials should be avoided, and all excavated contaminated soils/materials should be disposed of on a daily basis;</li> <li>• Ensure that any discharges to storm drains pass</li> </ul>	<p>All areas requiring remedial works in Project site / demolition during Phases I and II</p>	<p>Agent Contractor</p>	<p>Demolition stage</p>	<p>ProPECC PN 3/94, ProPECC PN1/94 and Guidance Notes for Investigation and Remediation of Contaminated Sites of Petrol Filling Stations, Boatyards and Car Repair / Dismantling Workshops</p>	<p>N/A</p>

Recommended Mitigation Measures	Location and Timing	Who to Implement?	When to Implement?	What Requirements or Standards to Achieve?	Status
<p>through an appropriate silt trap.</p> <p><b>Waste Disposal Requirements during Remedial Works</b></p> <p>An application for permission to dispose of excavated material should be made to the Facilities Management Group of EPD three months prior to disposal. A "trip-ticket" system should be implemented. Each load of contaminated soil despatched to landfill should be 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.</p>	<p>All areas requiring remedial works in Project site / demolition during Phases I and II</p>	<p>Contractor</p>	<p>Demolition stage</p>	<p>ProPECC PN 3/94, Waste Disposal Ordinance (Cap. 354), WBTC No. 21/2002 and Guidance Notes for Investigation and Remediation of Contaminated Sites of Petrol Filling Stations, Boatyards and Car Repair / Dismantling Workshops</p>	<p>N/A</p>
<p><b>Compliance Report for Remedial Works</b></p> <p>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.</p>	<p>All areas requiring remedial works in Project site / after completion of remediation works</p>	<p>Agent Contractor</p>	<p>Demolition stage</p>	<p>ProPECC PN 3/94 and Guidance Notes for Investigation and Remediation of Contaminated Sites of Petrol Filling Stations, Boatyards and Car Repair / Dismantling Workshops</p>	<p>N/A</p>
<p><b>Land Contamination Mitigation Measures</b></p> <p>Conduct supplementary site investigation for TPH and PCB in soil samples.</p>	<p>CLP substation / after decommissioning</p>	<p>Contractor</p>	<p>Demolition stage</p>	<p>CAR, RAP, future sampling and analysis plan</p>	<p>N/A</p>

Recommended Mitigation Measures	Location and Timing	Who to Implement?	When to Implement?	What Requirements or Standards to Achieve?	Status
	but prior to demolition during Phase I work				
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 samples to confirm all contaminated soil has been excavated.	S3 and S5 / during Phase II work following excavation at each location	Contractor	Construction and Demolition stages	CAR, RAP, future sampling and analysis plan	N/A
<b>Waste Management Mitigation Measures</b>					
<p>Good Site Practice</p> <ul style="list-style-type: none"> <li>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)</li> <li>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</li> <li>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</li> <li>Use waste haulier authorized or licensed to collect specific category of waste</li> <li>Establish trip ticket system as contractual requirement (with reference to Works Branch</li> </ul>	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
<p>Technical Circular (WBTC) No. 21/2002) for monitoring of public fill and C&amp;D waste at public filling facilities and landfills. Such activities should be monitored by the Environmental Team</p> <ul style="list-style-type: none"> <li>• Provide training to site staff in terms of proper waste management and chemical waste handling procedures</li> <li>• Separate chemical wastes for special handling and dispose them at licensed facility for treatment</li> <li>• Establish routine cleaning and maintenance programme for drainage systems, sumps and oil interceptors</li> <li>• Provide sufficient waste disposal points and regular collection for disposal</li> <li>• Adopt measures to minimize windblown litter and dust during transportation of waste, such as covering trucks or transporting wastes in enclosed containers</li> <li>• Establish recording system for the amount of wastes generated, recycled and disposed of (including the disposal sites)</li> </ul>					
<p>Waste Management Plan The contractor should submit the Waste Management Plan to Engineer/Supervising Officer of the Project for approval. The Waste Management Plan should describe the arrangements for avoidance, reuse, recovery and recycling, storage, collection, treatment and disposal of different categories of waste to be generated from the activities of the Project and indicate the disposal location(s) of all waste. A trip ticket system shall be included in the Waste Management Plan.</p>	Project site / design, construction and demolition stages	Contractor	Design, Construction and Demolition stages	Waste Disposal Ordinance (Cap. 354)	√
<p>Waste Reduction Measures • Minimize the damage or contamination of construction material by proper storage and site practices</p> <ul style="list-style-type: none"> <li>• Plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste</li> <li>• Prior to disposal of</li> </ul>	Project site / construction and demolition stages	Agent Contractor	Construction and Demolition stages	WBTC No. 32/92, 5/98 and 19/99	√

Recommended Mitigation Measures	Location and Timing	Who to Implement?	When to Implement?	What Requirements or Standards to Achieve?	Status
<p>C&amp;D waste, wood, steel and other metals should be separated for reuse and / or recycling to minimize the quantity of waste to be disposed of to landfill • Minimize use of wood and reuse non-timber formwork to reduce the amount of C&amp;D waste</p> <ul style="list-style-type: none"> <li>• Recycle any unused chemicals or those with remaining functional capacity as far as practicable • As far as practicable, segregate and store different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal</li> <li>• Encourage collection of aluminium cans, plastic bottles and packaging material (e.g. carton boxes) and office paper by individual collectors, separate labeled bins should be provided to help segregate this waste from other general refuse generated by the work force</li> </ul>					
<p>Excavated Material Rock and soil generated from excavation should be reused for site formation as far as possible. In addition, excavated material from foundation work can be reused for landscaping as far as practicable to avoid disposal off-site.</p>	Project site / construction and demolition stages	Contractor	Construction and Demolition stages	WBTC 12/2000	✓
<p>Construction and Demolition Material Careful design, planning and good site management can minimize over-ordering and generation of waste materials such as concrete, mortar and cement grouts. Standard formwork should be used as far as practicable, wooden formwork should be replaced by metal ones whenever possible. Alternatives such as plastic fencing and reusable site office structures can also minimize C&amp;D waste generation. The contractor should recycle as much as possible of the C&amp;D material on-site. Public fill and C&amp;D waste should be segregated and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal. Materials such as concrete and masonry can be</p>	Project site / construction and demolition stages	Contractor	Design, Construction and Demolition stages	WBTC 5/98 and 19/99	N/A

Recommended Mitigation Measures	Location and Timing	Who to Implement?	When to Implement?	What Requirements or Standards to Achieve?	Status
<p>crushed and used as fill and steel reinforcing bar can be used by scrap steel mills. Different areas of sites should be designated for such segregation and storage. To maximize landfill life, government policy discourages the disposal of C&amp;D materials with more than 20% inert material by volume (or 30% inert material by weight) at landfill. Inert C&amp;D material (public fill) should be directed to an approved public filling area, where it has the added benefit of offsetting the need for removal of materials from borrow areas for reclamation purposes.</p> <p>Contaminated Material – Further Contamination Investigation</p> <p>After decommissioning but prior to demolition of the Existing Crematorium, further contamination investigation should be carried out to confirm the quality and quantity of ash waste, building structures and contaminated soil requiring treatment and disposal. Further contamination investigation shall provide information on the extent of contamination (DCM / HMC / PAHCM) at cremators / flues / chimney as well as the quantity of contaminated materials requiring treatment and disposal. Regarding ACM, future AIR, AMP/AAP should be submitted to EPD for approval under the APCO. Asbestos investigation / abatement (including the preparation of AIR and AAP) should be carried out by registered asbestos consultant and contractor. A summary of requirement is given below:</p>	<p>CLP secondary substation / prior to Phase I demolition; cremator room in Existing Crematorium / prior to Phase II demolition</p>	<p>Contractor</p>	<p>Demolition stages</p>	<p>ProPECC PN 3/94</p>	<p>N/A</p>
<p><b>Location</b></p>	<p><b>Investigation Parameter</b></p>				
	<p><b>Investigation Period</b></p>				

Recommended Mitigation Measures		Location and Timing	Who to Implement?	When to Implement?	What Requirements or Standards to Achieve?	Status
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 Crematorim sample)	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
<p>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.</p>					
<p>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.</p>	<p>Cremator room in Existing Crematorium / before demolition and after decommission</p>	<p>Contractor</p>	<p>Demolition stage</p>	<p>ProPECC PN 3/94</p>	<p>N/A</p>
<p>Sufficient time should be allocated to abate all ash</p>				<p>ProPECC PN 3/94</p>	<p>N/A</p>

Recommended Mitigation Measures	Location and Timing	Who to Implement?	When to Implement?	What Requirements or Standards to Achieve?	Status
<p>waste with DCM/HMCM/PAHCM. The contractor should ensure the implications of dust containing DCM/HMCM on air quality and workers health during the clean up work are mitigated. Since DCM is chemically related to Polychlorinated Biphenyl (PCB) wastes, the requirements of the <i>Code of Practice on the Handling, Transportation and Disposal of (PCB) Wastes</i> should be referenced when developing the abatement plan.</p>				Code of Practice on the Handling, Transportation and Disposal of (PCB) Wastes	
<p>A land contamination site investigation was carried out under this EIA to determine disposal requirements for contaminated soil. Further site investigation on soil around CLP secondary substation is needed when decommissioned, which will be during Phase I of the works. In addition, confirmatory testing on DCM level in locations S1 to S6 will be required to identify the appropriate remediation and disposal requirements during Phase II of the works.</p>	Locations S1 to S6 in CAP / prior to Phase II demolition		Demolition stage		N/A
<p>Asbestos Containing Materials (ACM) Further asbestos assessment should be carried out when access to the cremators /flue /chimney is accessible after decommissioning and before demolition. An AMP should be prepared. The AAP should be prepared and submitted to EPD for approval prior to commencement of demolition works in accordance with the APCO. It is preferable to remove all ACM before actual demolition. A registered asbestos removal contractor should be employed to remove all ACM in accordance with the approved AAP which will be prepared in due course in accordance with the <i>Code of Practice (COP) on Asbestos Control for Safe</i></p>	Cremator room in Existing Crematorium / before demolition and after decommission	Contractor	Demolition stage	Code of Practice (COP) on Asbestos Control for Safe Handling of Low Risk ACM and Asbestos Work Using Full Containment or Mini Containment Method COP on Handling, Transportation and Disposal of	N/A

Recommended Mitigation Measures	Location and Timing	Who to Implement?	When to Implement?	What Requirements or Standards to Achieve?	Status
<p><i>Handling of Low Risk ACM and Asbestos Work Using Full Containment or Mini Containment Method</i> published by EPD. A registered asbestos consultant should also be employed to supervise abatement works. For the disposal of ACM, the contractor should observe the <i>COP on Handling, Transportation and Disposal of Asbestos Waste under the Waste Disposal (Chemical Waste) (General) Regulation.</i></p> <p>Dioxin Containing Materials (DCM) / Heavy Metal Containing Materials (HMCM) / Polyaromatic Hydrocarbon Containing Materials (PAHCM) from Demolition of the Existing Crematorium</p> <p>Proposed Contamination Classification for Ash Waste with DCM/HMCM</p>	<p>Crematorium room in Existing Crematorium / before demolition and after decommission</p>	<p>Contractor</p>	<p>Demolition</p>	<p>Asbestos Waste under the Waste Disposal (Chemical Waste) (General) Regulation APCO</p> <p>ProPECC PN3/94 USEPA dioxin assessment criterion</p>	<p>N/A</p>
<p><b>Classification of Contamination</b></p> <p>Low/Non Contaminated by DCM / HMCM / PAHCM</p>	<p>Dioxin Level in Ash Waste</p> <p>&lt; 1 ppb TEQ</p>				
	<p>Heavy Metal Level in Ash Waste</p> <p>&lt; Dutch "B" List</p>				

Recommended Mitigation Measures	Location and Timing	Who to Implement?	When to Implement?	What Requirements or Standards to Achieve?	Status
Moderately /Severely Contaminated HMC / PAHCM					
Moderately Contaminated DCM					
Severely Contaminated DCM					
<p>≥ 1 ppb TEQ</p> <p>≥ Dutch "B" List</p> <p>Any level</p> <p>Any level</p> <p>Any level</p> <p><i>Demolition, Handling, Treatment and Disposal of Low/Non-Contaminated DCM /HMC / PAHCM from Demolition of Existing Crematorium</i></p> <p>Where the ash waste contains low/non contaminated DCM/HMC/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.</p> <p>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

Recommended Mitigation Measures	Location and Timing	Who to Implement?	When to Implement?	What Requirements or Standards to Achieve?	Status
<p><i>Demolition, Handling, Treatment and Disposal of Moderately Contaminated DCM and Moderately/Severely Contaminated HMCM / PAHCM from Demolition of the Existing Crematorium</i></p> <p>Procedure on demolition, handling, treatment and disposal of Moderately Contaminated DCM and Moderately/Severely Contaminated HMCM / PAHCM is listed below</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>
<p><b>Item</b></p>	<p><b>Procedure</b></p>				

Recommended Mitigation Measures	Location and Timing	Who to Implement?	When to Implement?	What Requirements or Standards to Achieve?	Status
<p>Site Preparation</p> <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 HMC / 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 polyethene 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. The 3-chamber decontamination unit shall comprise a dirty room, a shower room and a clean room of at least 1 m x 1 m base each with 3 layers of fire retardant polyethene sheet where all workers shall carry out decontamination procedures before leaving the work area. Warning signs in both Chinese and <i>English should be put up in conspicuous areas.</i></p>					

Recommended Mitigation Measures	Location and Timing	Who to Implement?	When to Implement?	What Requirements or Standards to Achieve?	Status
<p>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.</p>					
<p>If ACM is identified in building structures where moderately contaminated DCM or moderately/severely contaminated HMCM / PAHCM 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.</p>					
<p>Decontamination, demolition and handling</p> <p>The cremators/flue/chimney shall be removed from top down starting from the chimney. Any ash or residues attached to the cremators/flue/chimney or any other building structures shall be removed by scrubbing and HEPA vacuuming.</p> <p>Wastes generated from the containment or decontamination unit including the protection clothing of the workers such as the coverall, nitrile glove, rubber boots and materials used for wet wiping shall be disposed of at</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
<p>landfill site.</p> <p>After completion of removal, decontaminate all surfaces by HEPA vacuum.</p> <p>If ACM is identified in building structures where moderately contaminated DCM or moderately/severely contaminated HMCM / PAHCM 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.</p>					
<p>Treatment</p> <p>The ash waste contains dioxin/heavy metals and in its untreated state would be classified as a chemical waste under the <i>Waste Disposal (Chemical Waste) (General) Regulation</i>. While the quantity of DCM/HMCM is not expected to be significant, the levels of dioxin and heavy metals would affect the treatment option. Immobilization of the contaminated materials by mixing with cement followed by disposal at landfill (if landfill disposal criteria can be met) would be the most preferable option.</p>					

Recommended Mitigation Measures	Location and Timing	Who to Implement?	When to Implement?	What Requirements or Standards to Achieve?	Status
<p>Rather than treating the already incinerated ash waste by incineration, the ash waste with moderately contaminated 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.</p> <p>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>Crematorium 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>
<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>					

Recommended Mitigation Measures	Location and Timing	Who to Implement?	When to Implement?	What Requirements or Standards to Achieve?	Status
<p>If ACM is identified in building structures where moderately contaminated DCM or moderately/severely contaminated HMC/M / PAH/M is found, relevant disposal measures for building structures described in the AAP (see 7.7.16) should be implemented instead.</p>					
<p><i>Demolition, Handling, Treatment and Disposal of Severely Contaminated DCM from Demolition of the Existing Crematorium</i>  Procedure for demolition, handling, treatment and disposal of Severely Contaminated DCM is listed below</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>
<p><b>Item</b>  Site Preparation</p> <p><b>Procedure</b>  Except the cremators/flue/chimney, all removable items where severely contaminated DCM is identified should be removed from the cremator room 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 walls, floor and ceiling of the cremator room where severely contaminated DCM located shall be lined with 3 layers of fire retardant polyethylene sheets. The top portion of the chimney above the roof shall be enclosed by a chamber with</p>					

Recommended Mitigation Measures	Location and Timing	Who to Implement?	When to Implement?	What Requirements or Standards to Achieve?	Status
<p>three layers of polyethene 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. 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 polyethene 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>					
<p>Air movers should be installed at the cremator room, and at the bottom of the chimney to exhaust air from the work area. A stand-by air mover shall also be installed with each of the air movers. Sufficient air movement shall be maintained to give a minimum of 6 air changes per hour to the work area, and maintain a negative pressure of 0.05-0.15 inches of water within the work area throughout the entire course of the decommissioning works. A pressure monitor with printout records and audible alarm shall be installed at an easily</p>					

Recommended Mitigation Measures	Location and Timing	Who to Implement?	When to Implement?	What Requirements or Standards to Achieve?	Status
<p>accessible location to demonstrate that negative pressure is maintained. New pre-filters and HEPA filters shall be used on the air movers.</p> <p>A copy of the maintenance records of 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.</p>					
<p>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</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
<p>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 (negative pressure). The audible alarm's integrity should also be checked and the trigger shall be at &lt;1.5 mm/0.05 inches of water (negative pressure). Otherwise securely seal up all openings before switching off the air mover.</p>					
<p>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</p>					

Recommended Mitigation Measures	Location and Timing	Who to Implement?	When to Implement?	What Requirements or Standards to Achieve?	Status
<p>exposure to any vapour as a necessary measure.</p> <p>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.</p>					
<p>Decontamination, demolition and handling</p> <p>The cremators/flue/chimney shall be removed from top down starting from the chimney. Any ash or residues attaching to the cremators/flue/chimney or any other building structures shall be removed by scrubbing and HEPA vacuuming.</p> <p>The detached sections of the building structures where severely contaminated DCM is located shall be wrapped with 2 layers of fire retardant polyethylene sheets. A third layer shall then be wrapped and secured with duct tape. Decontaminate the outer layer of the wrapped flue sections by wet wiping.</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>
<p>Wastes generated from the containment or decontamination unit including the fire retardant polyethylene sheets, protection clothing of the workers such as the coverall, nitrile glove, rubber boots</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
<p>and materials used for wet wiping shall be disposed of at landfill site.</p> <p>The quantity of wastewater generated from the decontaminated process will be very small but the contractor should take precautionary measures as to minimize the quantity of contaminated water arising. Nevertheless, if any contaminated wastewater needs to be discharged out of the site, it has to be properly treated to WPCO requirements with prior agreement from EPD on discharge standards.</p>					
<p>After completion of removal, decontaminate the surface where severely contaminated DCM was located, including the wrapped incinerator furnace and flue sections left within the containment, by wet wiping and HEPA vacuum.</p> <p>Then spray the innermost layer of the fire retardant polyethene sheet covering the wall, ceiling and floor with PVA. Upon drying, peel off this innermost layer of the polyethene sheet covering the containment and dispose of at landfill site.</p>					

Recommended Mitigation Measures	Location and Timing	Who to Implement?	When to Implement?	What Requirements or Standards to Achieve?	Status
<p>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.</p>					
<p>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.</p>					
<p>Treatment and disposal</p> <p>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.</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
<p>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.</p>					

Recommended Mitigation Measures	Location and Timing	Who to Implement?	When to Implement?	What Requirements or Standards to Achieve?	Status
<p>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.</p>					
<p><i>Dioxin Containing Materials (DCM) / Heavy Metal Containing Materials (HMCM) / Polyaromatic Hydrocarbon Containing Materials (PAHCM) / Total Petroleum Hydrocarbon Containing Materials (TPHCM) / Polychlorinated Biphenyls Containing Materials (PCBCM) from Soil Remediation at the Project Site</i></p> <p>According to the CAR and RAP, less than 100 m of soil would require disposal at landfill. Relevant health and safety procedure, waste disposal requirements and compliance report are as detailed in Figure 6.3. Mitigation measures to avoid fugitive dust emission mentioned in S.4.7.2 should also be observed.</p> <p>In addition, after decommissioning but before demolition of the Existing Crematorium, further investigations during Phase I of the works at the vicinity of CLP secondary substation should also be carried out to determine if additional remediation (in addition to the current RAP) is required. Confirmatory test on levels of DCM, HMCM and PAHCM in locations S1 to S6 during Phase II of the works is also required to determine any further remediation /treatment/disposal. In addition, the ash waste in cremator/chimney/flues should also be</p>	<p>Locations S3 and S5 of CAP / demolition</p>	<p>Contractor</p>	<p>Demolition stage</p>	<p>ProPECC PN3/94 APCO</p>	<p>N/A</p>
	<p>CLP secondary substation / after decommission and before demolition</p>	<p>Contractor</p>	<p>Demolition stage</p>	<p>ProPECC PN3/94</p>	<p>N/A</p>

Recommended Mitigation Measures	Location and Timing	Who to Implement?	When to Implement?	What Requirements or Standards to Achieve?	Status
<p>collected for the testing of DCM/HMCM/PAHCM during Phase II of the works. The sampling and analysis plan should be prepared and submitted to EPD for approval.</p> <p>All the aforementioned ACM / DCM / HMCM / PAHCM / TPHCM / PCBCM are classified as chemical waste. In addition to the measures mentioned above, the packaging, labelling and storage practices of chemical waste as stipulated in the following paragraphs should also be applied to these contaminated materials.</p>	Project site / demolition	Contractor	Demolition stage	Waste Disposal (Chemical Waste) (General) Regulation	N/A
<p><b>Chemical Waste</b></p> <p>All the chemical waste should be handled according to the <i>Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes</i>. The Contractor should register as a chemical waste producer. The chemical waste should be stored and collected by an approved contractor for disposal at a licensed facility in accordance with the <i>Waste Disposal (Chemical Waste) (General) Regulation</i>. Containers used for the storage of chemical waste should:</p>	Project site / demolition	Contractor	Demolition stage	Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Waste Disposal (Chemical Waste) (General) Regulation.	<ul style="list-style-type: none"> <li>•</li> </ul>
<ul style="list-style-type: none"> <li>• Be suitable for the substance they are holding, resistant to corrosion, maintained in good condition, and securely closed;</li> <li>• Have a capacity of less than 450 L unless the specifications have been approved by the EPD; and</li> <li>• Display a label in English and Chinese in accordance with instructions prescribed in <i>Schedule 2 of the Waste Disposal (Chemical Waste) (General) Regulation</i>.</li> </ul>					<ul style="list-style-type: none"> <li>•</li> </ul>
<p>The storage area for chemical waste should:</p> <ul style="list-style-type: none"> <li>• Be clearly labeled and used solely for the storage of chemical waste;</li> </ul>					

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"> <li>• Be enclosed on at least 3 sides;</li> <li>• Have an impermeable floor and bunding, of capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in that area, whichever is the greatest;</li> <li>• Have adequate ventilation;</li> <li>• Be covered to prevent rainfall from entering (water collected within the bund must be tested and disposal as chemical waste if necessary); and</li> <li>• Be properly arranged so that incompatible materials are adequately separated.</li> </ul>					
<p>The chemical waste should be disposed of by:</p> <ul style="list-style-type: none"> <li>• A licensed waste collector;</li> <li>• 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</li> <li>• A waste recycling plant as approved by EPD.</li> </ul>	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
<p><b>General Refuse</b>  General refuse should be stored in enclosed bins or compaction units separated from C&amp;D and chemical wastes. A reliable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&amp;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</p>	Project site / construction and demolition stages	Contractor	Construction and Demolition stage		√

Recommended Mitigation Measures	Location and Timing	Who to Implement?	When to Implement?	What Requirements or Standards to Achieve?	Status
<p>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.</p>					
<p>Conduct supplementary site investigation for asbestos in building structures and for dioxins, metals (the "Dutch List") and PAH in ash/particular matter samples.</p>	<p>Around existing cremators, chimney and flues inside cremator room / after decommissioning but prior to demolition during Phase II work</p>	<p>Contractor</p>	<p>Demolition stage</p>	<p>AIR, AMP/AAP to be submitted under APCO, future supplementary site investigation plan</p>	<p>N/A</p>
<p><b>Landscape and Visual Mitigation Measures</b></p> <p>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:</p> <ul style="list-style-type: none"> <li>• Screen planting</li> <li>• Transplanting of mature trees with good amenity value where appropriate</li> <li>• Conservation of topsoil for reuse</li> </ul>	<p>Project site / design, construction and demolition stages</p>	<p>Contractor/FEH D/Arch SD</p>	<p>Construction and Demolition stage</p>	<p>EIAO-TM</p>	<p>N/A</p>

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"> <li>• Sensitive alignment of structures to minimise disturbance to surrounding vegetation</li> <li>• Reinstatement of areas disturbed during construction</li> <li>• The design and finishes / colours of architectural and engineering structures such as terminals and pylons</li> <li>• Existing views, views of the development with no mitigation, views with mitigation at day one of operation and after 10 years of operation</li> </ul>					
<p>Tree transplanting: The tree survey has identified the trees which will be affected by the development and which could be considered for transplanting prior to commencement of construction work. Felling is considered as a last resort and every effort should be made to transplant the many good trees of high amenity value to either nearby suitable sites within the cemetery or to available space in FEHD's Wo Hop Shek Crematorium pending identification of an alternative site. The feasibility of transplanting will depend on a number of factors such as size, health and species of the tree. Adequate time (a minimum of 4 months) should be allowed for preparing trees for transplanting. Weekly inspection of tree protection measures as well as monitoring of tree transplant operations during both phases should be implemented. Particular care should be taken to save the 9 nos. mature and semi-mature protected tree species and 12 nos. protected shrub and immature tree species identified. To give the protected species the best possible chance of survival it is recommended that they are relocated to sheltered and well maintained planted</p>	Project site / construction and demolition as well as operation stages	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
<p>areas within the cemetery. The following measures for tree transplanting should be adopted:</p> <p>(a) Appoint a landscape contractor for the establishment and maintenance of the transplanted trees as well as any new tree planting for 12 months upon completion of the works.</p> <p>(b) Careful co-ordination of Phase I and II works to allow tree transplanting from Phase II site directly to Phase I site.</p>					
<p>Tree protection: Trees to be retained adjacent to works areas will be carefully protected by strong hoarding and if necessary additional protection to individual tree trunks to avoid damage by machinery. The hoarding will also prevent contractors from compacting soil around tree roots or dumping materials. Reference should be made to the guidelines for tree protection in the Government publication "Tree Planting and Maintenance in Hong Kong".</p>	Project site / construction and demolition stages	Arch SD	Construction and Demolition stage	WBTC 7/2002, WBTC 14/2002, EIAO-TM	N/A
<p>Topsoil conservation: Any topsoil excavated during construction will be carefully saved and stored to one side of the works area for reuse upon completion.</p>	Project site / upon completion of construction works for each phase	Arch SD	Construction and Demolition stage	WBTC 7/2002, WBTC 14/2002, EIAO-TM	N/A
<p>Replanting: Upon completion planting of ornamental trees and shrubs will be provided to the periphery of the new crematorium building to help screen and soften the overall appearance of the structure. In addition, a reprovisioned memorial garden with a lotus pond and ornamental planting will be incorporated in the deck area of the building. Since the majority of the new planting will be on the deck structure the selection of species will be more limited</p>	Project site / upon completion of construction works for each phase	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
with emphasis on smaller trees and ornamental shrubs to comply with loading restrictions. Notwithstanding this site constraint on tree selection, a minimum of 1.2m soil depth will be provide for tree planting on the podium / roof structure for healthy establishment of the new tree planting.					
Weekly inspections of tree protection measures as well as monitoring of tree transplant operations.	Project site / Phase I & II works	Project Landscape Architect	Construction and Demolition stage	Landscape Master Plan, Tree Planting and Maintenance in Hong Kong	N/A
<b>Water Quality Mitigation Measures</b>					
<b>Construction and Demolition Phases – General</b> To safeguard the water quality of the WSRs potentially affected by the Project works, the 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.	Project site / construction and demolition stages	Contractor	Construction and Demolition stage	ProPECC PN 1/94	√
<b>Construction and Demolition Phases - Construction and Demolition Run-off and Drainage</b> 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	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
<p>activities can be readily controlled through the use of appropriate mitigation measures, which include:</p> <ul style="list-style-type: none"> <li>• Temporary ditches should be provided to facilitate run-off discharge into appropriate watercourses, via a silt retention pond</li> <li>• Boundaries of earthworks should be marked and surrounded by dykes</li> <li>• Open material storage stockpiles should be covered with tarpaulin or similar fabric to prevent material washing away</li> <li>• Exposed soil areas should be minimized to reduce the potential for increased siltation and contamination of run-off</li> <li>• Earthwork final surfaces should be well compacted and subsequent permanent work should be immediately performed</li> <li>• Use of sediment traps wherever necessary</li> <li>• Maintenance of drainage systems to prevent flooding and overflow</li> </ul>					
<p>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.</p>					√
<p>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</p>					N/A

Recommended Mitigation Measures	Location and Timing	Who to Implement?	When to Implement?	What Requirements or Standards to Achieve?	Status
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
Construction and Demolition Phases - General Construction and Demolition Activities 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.	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 The sewage from construction work force is expected to be handled by portable chemical toilets if the existing toilets in the Project site are not adequate. Appropriate and adequate portable toilets should be provided by licensed contractors who will be responsible for appropriate disposal and maintenance of these facilities.	Project site / construction and demolition stages	Contractor	Construction and Demolition stage	ProPECC PN 1/94	✓
Construction and Demolition Phases - Soil Remediation Activities Mitigation measures will need to be implemented during the currently identified soil remediation activities. If further land contamination investigation results (at CLP secondary	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
<p>substation during Phase I and at locations S1 to S6 during Phase II) confirm the needs for further soil remediation prior to demolition of the Existing Crematorium, relevant water quality mitigation measures (in addition to the current RAP) will need to be identified and implemented by the contractor. In addition, the mitigation measures recommended for minimizing water quality impacts for construction and demolition run-off and drainage as well as for general construction and demolition activities should also be adopted where applicable.</p> <p>In order to avoid impacts on water quality during further remedial works, care will be taken to minimise the mobilisation of sediment during excavation and transport. Measures to be adopted will be based on the recommendations set out in <i>Practice Note for Professional Persons ProPECC PNI/94 "Construction Site Drainage"</i>. The results of the site investigation suggest that there is unlikely to be any requirement for dewatering of excavations, since groundwater was not encountered in any of the exploratory holes.</p> <p>The contractor carrying out the remedial works will be required to submit a method statement detailing the measures to be taken to avoid water quality impacts. Typical measures would include:</p> <ul style="list-style-type: none"> <li>• Carry out the works during the dry season (i.e. October to March) if possible</li> <li>• Use bunds or perimeter drains to prevent run-off water entering excavations</li> <li>• Sheet or otherwise cover excavations whenever</li> </ul>					

Recommended Mitigation Measures	Location and Timing	Who to Implement?	When to Implement?	What Requirements or Standards to Achieve?	Status
<p>rainsforms are expected to occur</p> <ul style="list-style-type: none"> <li>• Minimise the requirements for stockpiling of material and ensure any stockpiles are covered</li> <li>• Temporary on-site stockpiling of contaminated materials should be avoided, all excavated contaminated soils/materials should be disposed of on a daily basis</li> <li>• Ensure that any discharges to storm drains pass through an appropriate silt trap</li> </ul>					

Note:

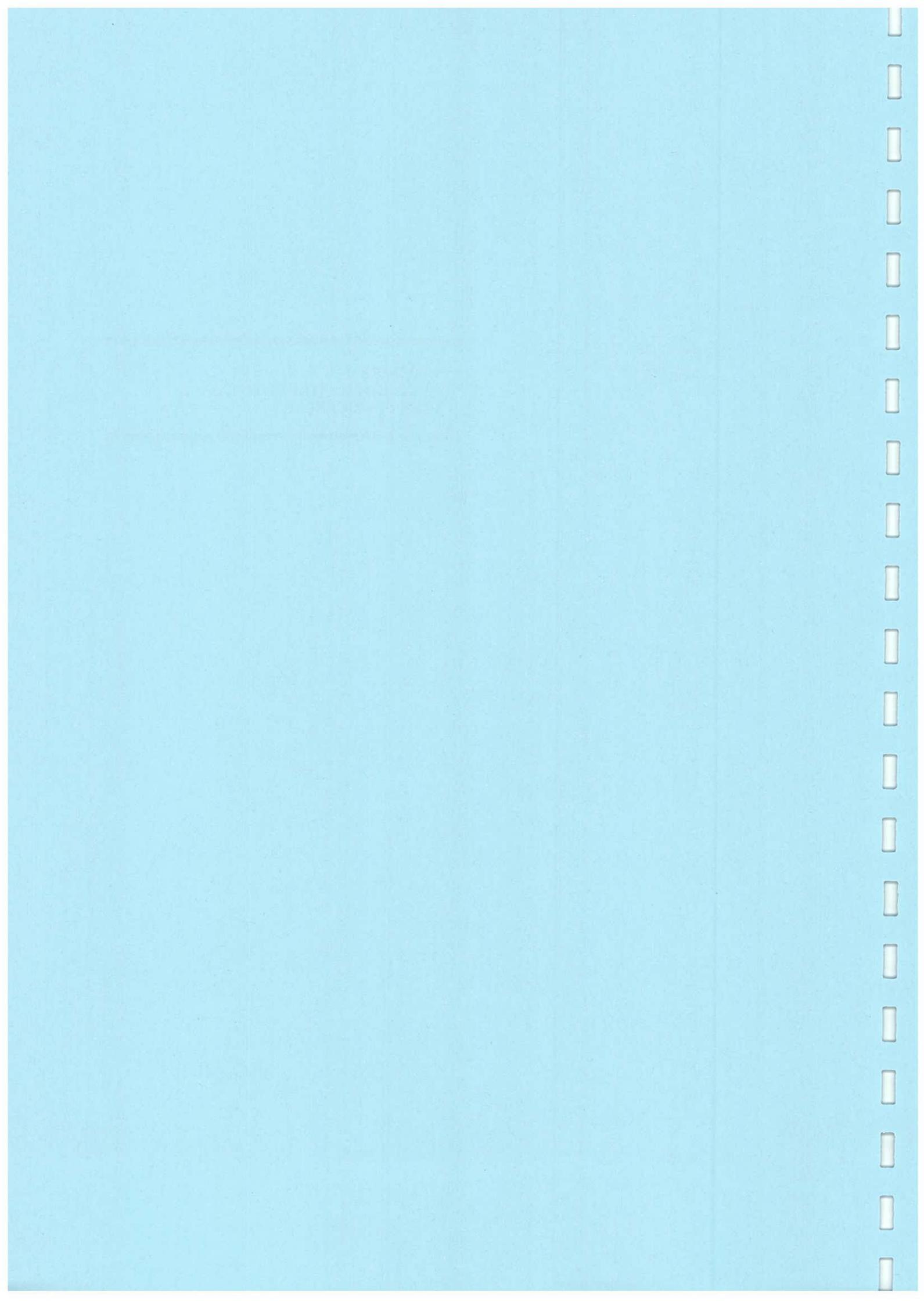
- √ Compliance of mitigation measure
- × Non-compliance of mitigation measures
- Non-compliance but rectified by the contractor
- N/A Not applicable



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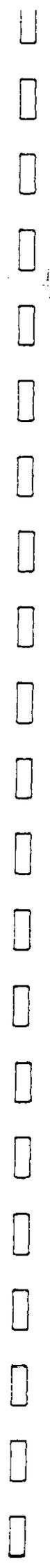
**APPENDIX G  
STATUS OF ENVIRONMENTAL  
PERMITS/LICENCES**

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**Appendix G Status of Environmental Permits/Licenses**

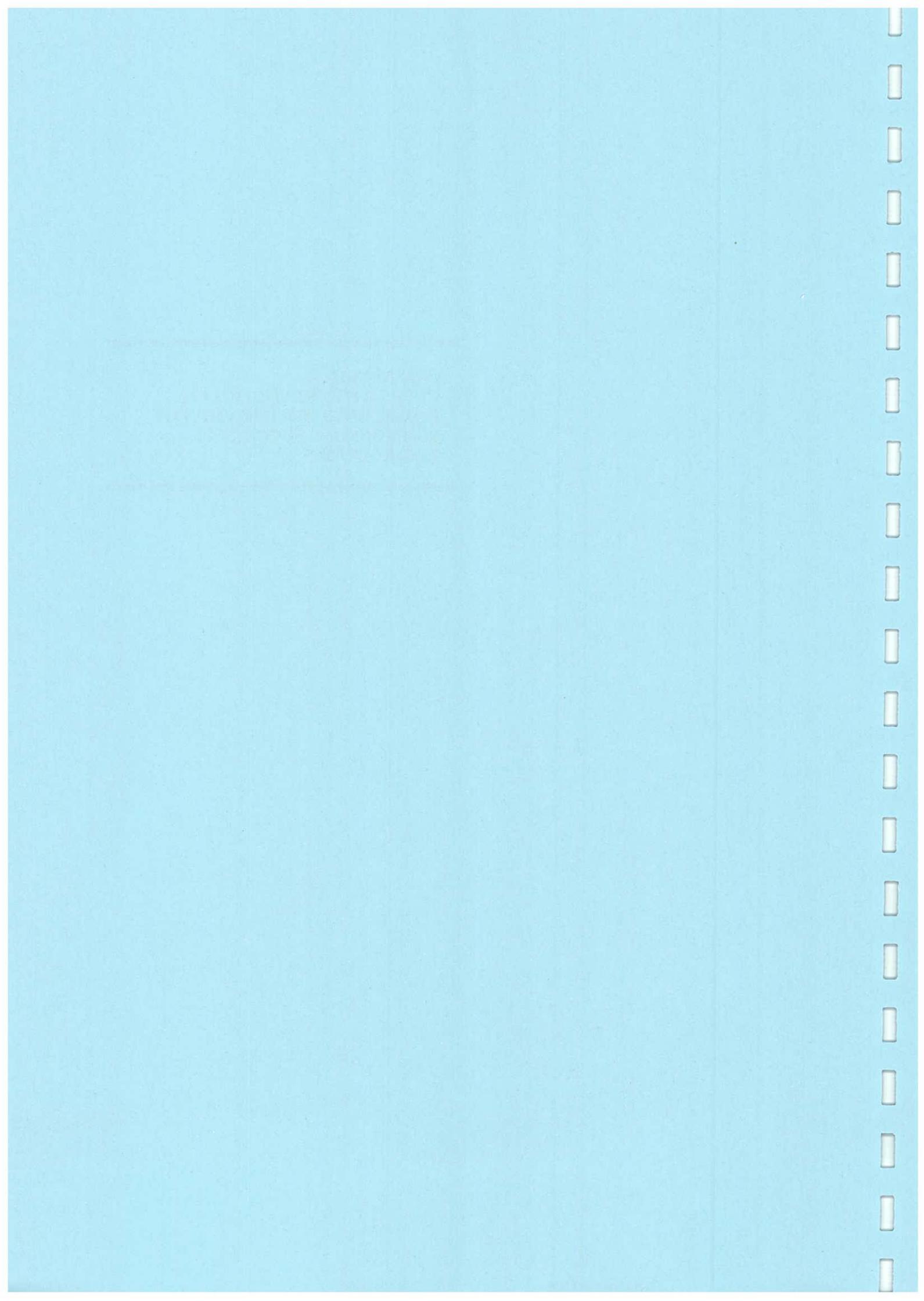
Permit No.	Valid Period		Section	Status
	From	To		
<b>Environmental Permit &amp; Further Environmental Permit</b>				
EP-179/2004/A	21 Dec 2004	N/A	Reprovisioning of Diamond Hill Crematorium	Valid
<b>Registration as a Chemical Waste Producer</b>				
5213-288-C3108- 10	6 Dec 2004	N/A	Reprovisioning of Diamond Hill Crematorium	Valid



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**APPENDIX H  
CUMULATIVE STATISTICS ON  
COMPLAINTS, NOTIFICATION OF  
SUMMONS AND SUCCESSFUL  
PROSECUTIONS**

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**Appendix H Cumulative statistics on complaints, notifications of summons and successful prosecutions**

	<b>Date Received</b>	<b>Subject</b>	<b>Status</b>	<b>Total no. recorded in this month</b>	<b>Total no. recorded since project commencement</b>
<b>Environmental complaints</b>	-	-	-	0	0
<b>Notification of summons</b>	-	-	-	0	0
<b>Successful Prosecutions</b>	-	-	-	0	0

