

MTR Corporation Limited

HONG KONG SECTION OF GUANGZHOU –  
SHENZHEN – HONG KONG EXPRESS RAIL LINK  
(No. EP-349/2009)

Environmental Monitoring and Audit Report No. 1  
(Mar 2010) Rev 1

Verified by:   
Position: Independent Environmental Checker  
Date: 15 June 2010

MTR Corporation Limited

HONG KONG SECTION OF GUANGZHOU -  
SHENZHEN - HONG KONG EXPRESS RAIL LINK  
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(March 2010) Rev 1

Certified by: *Glenn Frommes*  
Position: Environmental Team Leader  
Date: 15 JUN 2010

## **EXECUTIVE SUMMARY**

This is the 1st monthly Environmental Monitoring and Audit (EM&A) Report presenting the EM&A works undertaken during the period from 1 to 31 March 2010 for the Hong Kong Section of Guangzhou - Shenzhen - Hong Kong Express Rail Link (hereinafter referred to “the XRL” or “the Project”) in accordance with the EM&A Manual and the requirement under EP-349/2009.

### ***Air Quality***

Air quality monitoring was conducted for 24-hour Total Suspended Particulates (TSP) at 3 air quality monitoring locations in the vicinity of Works Area V1 in March 2010. Two 24-hour TSP exceedances were recorded in this month. Investigation was carried out which revealed that the exceedances were likely due to background level.

### ***Airborne Noise***

Airborne noise was measured in terms of  $L_{eq(30min)}$  dB(A) with  $L_{10}$  and  $L_{90}$  measurements as reference at 5 noise monitoring locations at least once every week. All noise levels recorded in this month were below the Limit Level.

### ***Monitoring of Avifaunal Species***

Weekly ecological monitoring was conducted on 10, 17, 24 and 31 March 2010 during the period of hoarding erection at Mai Po Ventilation Building Works Area (MPV). The monitoring results indicated the fishponds at MPV were utilized by a large number of waterbirds in March 2010. No significant reduction in the number of species and abundance of avifauna was observed. Therefore, no adverse indirect impacts arising from the Project were observed.

### ***Monitoring of Impact at Fishpond due to Noise***

Baseline airborne noise monitoring at fishpond next to MPV Works Area was carried out between 15 March 2010 and 28 March 2010 in accordance with the Monitoring and Emergency Response Plan in relation to the potential impact to fishpond due to noise.

### ***Landscape and Visual***

A Certified Arborist was employed and has conducted inspection and audits and found that the tree protection works being carried out by the civil works and transplanting contractors were in accordance with the requirements of EP and EIA.

### ***Environmental Audits***

Weekly site inspections were carried out on 3<sup>rd</sup>, 10<sup>th</sup>, 17<sup>th</sup>, 24<sup>th</sup> and 31<sup>st</sup> of March 2010 in 803A & 803 D; and 4<sup>th</sup>, 11<sup>th</sup>, 18<sup>th</sup>, 25<sup>th</sup> and 31<sup>st</sup> of March 2010 in 803C. Monthly environmental audit attended by IEC was held on 24<sup>th</sup> March 2010 in 803A & 803 D; and 25<sup>th</sup> March 2010 in 803C, attended by representatives from MTRCL, IEC and Contractors. Issues observed during these audits are detailed in Section 6.

### ***Environmental Complaints / Exceednace / Non-conformance / Summons and Prosecution***

For this reporting month, a total of 4 environmental complaints were referred from the EPD. Of the environmental complains received, two were on construction noise, while one on wastewater and the other one on construction dust impact. Complaint investigations were conducted in accordance with the requirements in the EM&A Manual.

For this month, a total of two Action Level exceedances in 24-hr TSP level were recorded at AM 15 and AM 17 on 18 Mar 2010. Investigation was carried out by the ET which revealed that the exceedances were due to high background level.

No non-compliance event was recorded during the reporting period. No summons/prosecutions was received in this reporting period.

### ***Works for Coming Month***

For Contract 803A in Works Area V, the key construction activities for the following month include bored pile, guide wall, diaphragm wall, pre-drilling, hoarding erection, utilities diversion and road works. For Contract 803C in Works Area V, the key construction activities for the following month are anticipated to comprise of pre-bored H-pile, bored pile, pre-drilling, utilities diversion and excavation of ex-PTI. For Contract 803D in Works Area V, the key construction activities for the following month are anticipated to comprise of pre-bored H-pile, bored pile, guide wall, diaphragm wall. For Contract 825 in Works Area A, key construction activities including construction of diaphragm wall is expected to commence in mid-April.

### ***Further Environmental Key Issues***

Air quality and airborne noise monitoring shall continue in the following month. Considering the nature of construction activities, key environmental issues in the coming months include the followings:

- Disposal of C&D waste;

- Dust generation from site activities;
- Noise impact from operating equipment;
- Site water discharge;
- Chemical wastes;
- Trees protection

### ***Reporting Changes***

In the reporting period, there was no reporting change of circumstances which may affect the compliance with the recommendations of the EIA Report.

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## **1. INTRODUCTION**

### ***1.1 Project Background***

Further to the Government's decision made in April 2008, MTR Corporation (MTR) commenced to plan and design the Hong Kong Section of Guangzhou - Shenzhen - Hong Kong Express Rail Link (hereinafter referred to "the XRL" or "the Project"), which is a committed cross boundary transport infrastructure project.

The XRL will provide high speed rail services between Hong Kong and Guangzhou, and a connection to the national high-speed passenger rail network serving major mainland cities outside of Guangdong province. The Hong Kong section of the XRL is about 26km from new terminus located in West Kowloon (i.e. West Kowloon Terminus (WKT)) to the boundary at Huang gang. Along the railway corridor, there will be a total of eight ventilation buildings/ emergency access point (EAP), stabling sidings and a maintenance facility at Shek Kong (SSS) and an Emergency Rescue Station (ERS) next to SSS serving the operation of the XRL.

### ***1.2 Coverage***

This is the 1st monthly Environmental Monitoring and Audit (EM&A) Report presenting the EM&A works undertaken during the period from 1 to 31 March 2010 for XRL in accordance with the EM&A Manual and the requirement under EP-349/2009.

## 2. PROJECT INFORMATION

### *2.1 Project Management Organisation and Management Structure*

The project management organisation chart and contact of key personnel are shown in Appendix B.

### *2.2 Construction Activities*

This report marked the first month of civil construction commenced in Works Area V1 on 1 March 2010. It is anticipated that the civil construction shall be completed in year 2015. The updated construction programme is attached in Appendix C.

Major construction activities undertaken in the reporting month is summarized in the following table.

<b>Contract</b>	<b>Works Area</b>	<b>Major Construction Activities</b>
803A	V1	Plant Set-up, guide wall construction, utilities diversion and road works
803C	V1	Hoarding erection, plant Set-up, pre-drill, Pre-bored H-pile, utilities diversion, excavation of ex-PTI and demolition of abandoned toilet.
803D	V1	Pre-bored H-pile, bored pile, guide wall, diaphragm wall, barging facility construction.

Table 2-1 Major construction activities in March 2010

### 3. ENVIRONMENTAL STATUS

#### *3.1 Status of Implementation of mitigation measures*

Environmental mitigation measures recommended in the EIA report were implemented and their implementation status are summarized in Appendix D.

#### *3.2 Status of Submissions under EP*

A summary of the status of submissions submitted under the EP for this Project as at 31 Mar 2010 is presented in Table 3-1

<b>EP-349/2009 Clause No.</b>	<b>Document Title</b>	<b>Status</b>
1.13	Notification of the commencement date of construction of the Project for Contract 802, 805, 803A, 803B, 803C, 803D	Submitted on 1 Feb 2010
1.13	Notification of the commencement date of construction of the Project for Contract 822	Submitted on 29 Mar 2010
1.13	Notification of the commencement date of construction of the Project for Contract 825	Submitted on 26 Feb 2010
2.1	Establishment of ET	Established
2.3	Employment of IEC	Established
2.6	Management organization of the Civil Contractors for Contract 802, 805, 803A, 803C, 803D	Submitted on 2 Feb 2010

<b>EP-349/2009 Clause No.</b>	<b>Document Title</b>	<b>Status</b>
2.6	Management organization of the Civil Contractors for Contract 803B	Submitted on 23 Mar 2010
2.6	Management organization of the Civil Contractors for Contract 822	Submitted on 29 Mar 2010
2.6	Management organization of the Civil Contractors for Contract 825	Submitted on 26 Feb 2010
2.7	Set up of community Liaison Groups	Submitted on 15 Mar 2010
2.8	Set up of designated complaint hotline	Submitted on 2 Mar 2010
2.9	Works Schedule	Submitted on 1 Feb 2010
2.12 (ii)	Monitoring and Emergency Response Plan in relation to potential impacts on fishponds in Mai Po Area due to noise or vibration	Submitted on 25 Feb 2010
2.14	Tree Planting and Landscape Plan - For Yau Tsim Mong District TLP-1 (Revision 1)	Submitted on 16 Mar 2010
2.14	Tree Planting and Landscape Plan - For Shum Shui Po District TLP-2 (Revision 1)	Submitted on 6 Jan 2010
2.14	Tree Planting and Landscape Plan - For Tsuen Wan District TLP-4	Submitted on 12 Mar 2010
2.14	Tree Planting and Landscape Plan - For Tuen Mun District	Submitted on 12 Mar 2010

EP-349/2009 Clause No.	Document Title	Status
	TLP-5	
2.14	Tree Planting and Landscape Plan - For Yuen Long District (Mai Po) TLP-6 (Revision1)	Submitted on 2 Feb 2010
2.15	Tree Protection Plan	Submitted on 4 Mar 2010
2.19	Updated C&D Material Management Plan	Submitted on 23 Mar 2010
2.21	Revised Contamination Assessment Plan (CAP) for Mai Po Works Area	Submitted on 11 Mar 2010
2.21	Revised Contamination Assessment Plan (CAP) for Lai Chi Kok Works Area	Submitted on 18 Mar 2010
2.21	Revised Contamination Assessment Plan (CAP) for West Kowloon	Submitted on 29 Dec 2009
2.42	Baseline Monitoring Report (Part 1) Rev 2 for Works Area N, O, P, Q and Y	Submitted on 29 Mar 2010
2.42	Baseline Monitoring Report (Part 2) for Works Area R	Submitted on 8 Jan 2010
2.42	Baseline Monitoring Report (Part 3) Rev 1 for Works Area V1	Submitted on 3 Feb 2010
2.42	Baseline Monitoring Report (Part 4) for Works Area V1	Submitted on 25 Jan 2010
2.42	Baseline Monitoring Report (Part 5) Rev 1 for Works Area V2	Submitted on 17 Feb 2010

<b>EP-349/2009 Clause No.</b>	<b>Document Title</b>	<b>Status</b>
2.42	Baseline Monitoring Report (Part 6) for Works Area A	Submitted on 12 Feb 2010
2.42	Baseline Monitoring Report (Part 7) for Works Area G	Submitted on 4 Mar 2010
2.42	Baseline Monitoring Report (Part 8) for Works Area H	Submitted on 25 Mar 2010

Table 3-1 Summary of the status of submissions submitted under the EP

### 3.2 Status of Permit/License/Notifications

A summary of the status of permits, licences, and/or notifications on environmental protection for this Project during the reporting month is presented in Table 3-2 below. The Environmental Permit (EP-349/2009) issued by EPD is being used for the XRL project.

<b>Item</b>	<b>Item Description</b>	<b>Application Date</b>	<b>Permit Status</b>
Contract 803A (Works Area V1)			
1	Notification of construction work under APCO	3 <sup>rd</sup> February 2010	Submitted
2	Registration as Chemical Waste Producer	3 <sup>rd</sup> February 2010	Approved on 1 <sup>st</sup> March 2010 (Permit No. 5213-225-B2382-01)
3	WPCO license	3 <sup>rd</sup> February 2010	Assessing
4	Bill account for disposal of construction waste	1 <sup>st</sup> February 2010	Account activated on 26 <sup>th</sup> February 2010 (Account No. 7010223)

<b>Item</b>	<b>Item Description</b>	<b>Application Date</b>	<b>Permit Status</b>
<b>Contract 803C (Works Area V1)</b>			
1	Notification of construction work under APCO (Form NA)	29th January 2010	Submitted
2	Registration as Chemical Waste Producer	29th January 2010	Approved (Permit no. (WPN8334-217-V213 9-01))
3	Water Discharge licence	25th January 2010	Approved (Permit no. WT00005958-2010) (Valid until: 31/3/2015)
4	CNP	1st March 2010	Approved (GW-RE0125-01) (Valid: 27/3/2010 – 30/4/2010)
5	Bill account for disposal of construction waste	29th January 2010	Account activated (Account no. 7010203)
<b>Contract 803D (Works Area V1)</b>			
1	Notification of construction work under APCO	3 <sup>rd</sup> February 2010	Submitted
2	Registration as Chemical Waste Producer	1 <sup>st</sup> February 2010	Approved on 1 <sup>st</sup> March 2010 (Permit no. 5213-217-B2382-01)

<b>Item</b>	<b>Item Description</b>	<b>Application Date</b>	<b>Permit Status</b>
3	WPCO license	3 <sup>rd</sup> February 2010	Assessing
4	CNP	7th January 2010	Approved GW-RE0033-10 (Valid until 24 <sup>th</sup> Jul 2010)
5	Bill account for disposal of construction waste	1 <sup>st</sup> February 2010	Account activated on 26 <sup>th</sup> Feb 2010 (Account no. 7010238)

Table 3-2 Summary of the status of permits, licences, and/or notifications

## **4. SUMMARY OF EM&A REQUIREMENT**

### ***4.1 Air Quality***

#### ***4.1.1 Air Quality Parameters***

In accordance to the EM&A Manual, 1-hour Total Suspended Particulates (TSP) shall be carried out in case of complaint. 24-hour Total Suspended Particulates (TSP) levels was measured at the 3 air monitoring locations in accordance with the EM&A Manual. Monitoring was undertaken at each monitoring location once per every six days. Information such as date of monitoring, duration, weather condition, equipment used and monitoring results shall be recorded on the field data sheet developed for the Project. Monitoring results are summarized in Section 5.

#### ***4.1.2 Monitoring Methodology and Calibration***

Monitoring was undertaken to establish for 24-hour Total Suspended Particulates (TSP) at 3 monitoring locations in the vicinity of the Works Area V1. Monitoring of 24-hour TSP was carried out using a high volume sampler (HVS) according to Part 50 Chapter 1 Appendix B, Title 40 of the Code of Federal Regulations of the USEPA.

The sampling procedure follows to that described Part 50 Chapter 1 Appendix B, Title 40 of the Code of Federal Regulations of the USEPA. TSP is sampled by drawing air through a conditioned, pre-weighed filter paper inside the high volume sampler at a controlled rate. After 24-hour sampling the filter paper with retained particles shall be collected and returned to HOKLAS accredited laboratory (ALS Technichem (HK) Pty Ltd) for drying in a desiccators followed by accurate weighing. TSP levels are calculated from the ratio of the mass of particulate retained on the filter paper to the total volume of air sampled.

The flow rate of the high volume sampler with mass flow controller was calibrated using an orifice calibrator. Initial calibration (five points) was conducted upon installation and prior to commissioning. Calibration was carried out every six months. Calibration certificate is attached in Appendix E. The samplers shall be properly maintained. Prior to dust monitoring commencing, appropriate checks shall be made to ensure that all equipment and necessary power supply are in good working condition.

### 4.1.3 Monitoring Location

According to the EM&A Manual, air quality monitoring was carried out at the locations as shown in Table 4-1 below. The monitoring locations are illustrated in Appendix F.

<b>Monitoring Station ID</b>	<b>Air Quality Monitoring Location</b>
AM 15	Podium Floor between Sorrento and The Waterfront
AM 16	Podium Floor of Tower 3, The Waterfront
AM 17	Roof of Lift Building of The Victoria Towers

Table 4-1 Air Quality Monitoring Location

### 4.1.4 Action and Limit Levels

With reference to the baseline monitoring results, the Action and Limit Levels for the 24-hour TSP monitoring derived are shown in Table 4-2. For reference purpose, the Action and Limit Levels for 1-hr TSP monitoring are also included. In the case of exceedance of Action and/or Limit levels for air quality occur, the Event and Action Plan shown in Table 4-3 shall be implemented.

<b>Monitoring Station ID</b>	<b>1-hour TSP Level in <math>\mu\text{g}/\text{m}^3</math></b>		<b>24-hour TSP Level in <math>\mu\text{g}/\text{m}^3</math></b>	
	Action Level	Limit Level	Action Level	Limit Level
AM 15	298.4	500	168.8	260
AM 16	295.6	500	155.9	260
AM 17	319.4	500	179.3	260

Table 4-2 Action and Limit Levels for Air Quality

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
<b>ACTION LEVEL</b>				
1. Exceedance for one sample	<ol style="list-style-type: none"> <li>1. Identify source, investigate the causes of complaint and propose remedial measures;</li> <li>2. Inform IEC and ER;</li> <li>3. Repeat measurement to confirm finding;</li> <li>4. Increase monitoring frequency to daily.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method.</li> </ol>	<ol style="list-style-type: none"> <li>1. Notify Contractor.</li> </ol>	<ol style="list-style-type: none"> <li>1. Rectify any unacceptable practice;</li> <li>2. Amend working methods if appropriate.</li> </ol>
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> <li>1. Identify source;</li> <li>2. Inform IEC and ER;</li> <li>3. Advise the ER on the effectiveness of the proposed remedial measures;</li> <li>4. Repeat measurements to confirm findings;</li> <li>5. Increase monitoring frequency to daily;</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method;</li> <li>3. Discuss with ET and ER (together with the Contractor) on possible remedial measures;</li> <li>4. Advise the ET/ER on the</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of exceedance in writing;</li> <li>2. Notify Contractor;</li> <li>3. Ensure remedial measures properly implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Submit proposals for remedial to ER within three working days of notification;</li> <li>2. Implement the agreed proposals;</li> <li>3. Amend proposal if appropriate.</li> </ol>

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
	6. Discuss with IEC and ER (together with the Contractor) on remedial actions required; 7. If exceedance continues, arrange meeting with IEC and ER; 8. If exceedance stops, cease additional monitoring.	effectiveness of the proposed remedial measures; 5. Supervise Implementation of remedial measures.		
<b>LIMIT LEVEL</b>				
1. Exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform IEC, ER, Contractor and EPD; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily; 5. Assess effectiveness of	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and ER (together with the Contractor) on possible remedial measures; 4. Advise the ER on the effectiveness of the proposed	1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to ER with a copy to IEC within three working days of notification; 3. Implement the

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
	Contractor's remedial actions and keep IEC, EPD and ER informed of the results.	remedial measures; 5. Supervise implementation of remedial measures.		agreed proposals; 4. Amend proposal if appropriate.
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> <li>1. Notify IEC, ER, Contractor and EPD;</li> <li>2. Identify source;</li> <li>3. Repeat measurement to confirm findings;</li> <li>4. Increase monitoring frequency to daily;</li> <li>5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented;</li> <li>6. Arrange meeting with IEC and ER to discuss the remedial actions to be taken;</li> <li>7. Assess effectiveness of</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss amongst ER, ET, and Contractor on the potential remedial actions;</li> <li>2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly;</li> <li>3. Supervise the implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of exceedance in writing;</li> <li>2. Notify Contractor;</li> <li>3. In consultation with the IEC, agree with the Contractor on the remedial measures to be implemented;</li> <li>4. Ensure remedial measures properly implemented;</li> <li>5. If exceedance continues, consider what portion of the work is responsible and instruct the</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Submit proposals for remedial actions to ER with a copy to IEC within three working days of notification;</li> <li>3. Implement the agreed proposals;</li> <li>4. Revise and resubmit proposals if problem still not under control;</li> <li>5. Stop the relevant</li> </ol>

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
	Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring.		Contractor to stop that portion of work until the exceedance is abated.	portion of works as determined by the ER until the exceedance is abated.

Table 4-3 Event and Action Plan for Air Quality

## **4.2 Air-borne Noise**

### **4.2.1 Noise Parameters**

In accordance to the EM&A Manual, construction noise monitoring shall be conducted to obtain one set of 30-minute measurement at each monitoring station between 0700 and 1900 hours on normal weekdays at a frequency of once per week when construction activities are underway. The Leq, L10 and L90 were also recorded at the specified interval.

### **4.2.2 Monitoring Methodology and Calibration**

As referred to the Technical Memorandum (TM) issued under the NCO, sound level meters in compliance with the International Electrotechnical Commission Publications 651: 1979 (Type 1) and 804: 1985 (Type 1) specifications shall be used for carrying out the noise monitoring. In this baseline monitoring, B&K 2250 sound level meters, which complies with the above-mentioned specifications, were used.

Immediately prior to and following each noise measurement the accuracy of the sound level meter should be checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements may be accepted as valid only if the difference between calibration levels obtained before and after the noise measurement is less than 1.0 dB.

The sound level meters and calibrator are verified by the certified laboratory or manufacturer at a regular interval to ensure they perform to the same level of accuracy as stated in the manufacturer's specifications. Calibration certificates of the sound level meters and calibrator are attached in Appendix E.

### **4.2.3 Monitoring Location**

According to the EM&A Manual, noise quality monitoring was carried out at the locations as shown in Table 4-4 below. The monitoring locations are illustrated in Appendix F.

<b>Monitoring Station ID</b>	<b>Noise Monitoring Location</b>
CN 30	Man Cheong Street Refuse Collection Point
CN 31	Tower 6, Sorrento

<b>Monitoring Station ID</b>	<b>Noise Monitoring Location</b>
CN 32	Podium of Tower 3, The Waterfront
CN 33	Star Tower, The Arch
CN 34	Lift Building of The Victoria Towers

Table 4-4 Air Quality Monitoring Location

#### ***4.2.4 Action and Limit Levels***

The Action and Limit Levels for the construction noise are shown in Table 4-5 below. In the case of non-compliance of Action and/or Limit level, the Event and Action Plan shown in Table 4-6 shall be implemented.

<b>Time Period</b>	<b>Action</b>	<b>Limit</b>
0700-1900 hours on normal weekdays	When one documented complaint is received	75 dB(A) for residential premises
		70 dB(A) for school and 65 dB(A) during examination period

Table 4-5 Action and Limit Levels for Airborne Construction Noise

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
<b>Action Level</b>	5. Notify IEC, ER and Contactor 6. Carry out investigation 7. Report the results of investigation to the IEC, ER and Contactor 8. Discuss jointly with the ER and Contractor and formulate remedial measures 9. Increase monitoring frequency to check mitigation effectiveness	1. Review the analysed results submitted by the ET 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly 3. Supervise the implementation of remedial measures	1. Confirm receipt of notification of failure in writing 2. Notify Contractor 3. Require Contractor to propose remedial measures for the analysed noise problem 4. Ensure remedial measures are properly implemented	1. Submit noise mitigation proposals to ER with copy to IEC and ET 2. Implement noise mitigation proposals
<b>Limit Level</b>	9. Notify IEC, ER, EPD and Contractor 10. Identify source 11. Repeat measurement to confirm findings 12. Increase monitoring frequency 13. Carry out analysis of Contractor's working procedures to determine possible mitigation	6. Discuss amongst ER, ET and Contractor on the potential remedial actions 7. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly 8. Supervise the implementation of remedial measures	4. Confirm receipt of notification of failure in writing 5. Notify Contractor 6. Require Contractor to propose remedial measures for the analysed noise problem 7. Ensure remedial measures	1. Take immediate action to avoid further exceedance 2. Submit proposals for remedial actions to ER with copy to IEC and ET 3. Implement the agreed

	<p>to be implemented</p> <p>14. Inform IEC, ER, EPD the causes and actions taken for the exceedances</p> <p>15. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results</p> <p>16. If exceedance stops, cease additional monitoring</p>		<p>are properly implemented</p> <p>8. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated</p>	<p>proposals</p> <p>4. Revise and resubmit proposals if problem still not under control</p> <p>5. Stop the relevant portion of works as determined by the ER until the exceedance is abated</p>
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Table 4-6 Event and Action Plan for Construction Noise Monitoring

### **4.3 Ground-borne Noise**

No ground-borne noise monitoring was conducted in the reporting month since no operation of TBM was carried out.

### **4.4 Ecological Monitoring**

#### **4.4.1 Ecological Monitoring on Avifaunal Communities**

##### **Monitoring methodology**

In accordance with the Ecological Monitoring Plan, avifaunal communities will be surveyed quantitatively by transect count or/and point count method covering the vicinity of the works area as shown in Table 4-7 below. Birds heard or seen within the survey area will be identified to species level and counted. The nature of construction works within works area conducting during each impact monitoring visit will also be recorded. Weather condition and other noticeable activities occurring within or in the vicinity of the survey areas will be recorded. The ecological impact monitoring will be undertaken by qualified ecologist(s) with university degree in ecology or relevant disciplines, and at least 5-years relevant post qualification project experience. The impact monitoring results will be compared to the baseline data collected before construction. Should any unpredicted indirect ecological impacts arising from the Project be detected, remedial measures will be implemented by the Contractor.

##### **Monitoring location, frequency and duration**

In accordance with the EM&A Manual and Ecological Monitoring Plan, ecological monitoring should be conducted at Works Area in MPV, TPP, SSS/ERS, TUW and PHV. With the erection of site hoarding started in MPV in this reporting month, ecological monitoring was commenced. The location, frequency and duration of ecological monitoring at MPV is shown in Table 4-7 and Figure C8016/C/XRL/ACM/M51/001 in Appendix F.

<b>Works Area</b>	<b>Monitoring Location</b>	<b>Monitoring Frequency</b>	<b>Monitoring Duration</b>
MPV	● Fishponds in Wetland Conservation Area (WCA) within 500 m from the boundary of MPV works area	Weekly	During erection of site hoarding
		Monthly	During construction phase of MPV works

			area
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Table 4-7 Requirement of Construction Impact Monitoring for Avifaunal Group

***4.4.2 Monitoring of impact at fishpond due to noise/vibrations***

Baseline airborne noise monitoring was conducted at fishpond in Mai Po in the reporting month in accordance with the requirement of Monitoring and Emergency Response Plan. As operation of TBM underneath fishponds in Mai Po is not expected in the coming reporting months, no monitoring of ground-borne noise was carried out.

***Monitoring of impact due to air-borne noise***

***Monitoring methodology***

With reference to the Monitoring and Emergency Response Plan, the noise acceptance criteria of 75 dB(A) was adopted for the assessment of adverse impact to fisheries due to air-borne noise.

***Monitoring location, frequency and duration***

The nearest fish-pond located in the vicinity of the works area in Mai Po as shown in Appendix F was identified as a representative air-borne and ground-borne noise/vibration monitoring location.

Prior to the commencement of construction, the baseline noise levels should be measured for at least 14 consecutive days to obtain one set of 30-minute measurement during day-time (0700-1900) every day during the baseline monitoring period. The Leq, L10 and L90 should be recorded at the specified interval.

In the event that construction be anticipated outside the above-mentioned period, additional baseline monitoring would be undertaken at the proposed working hours prior to the commencement of the construction concerned with photo-record for reference.

During construction stage, routine air-borne noise monitoring would be carried out at the respective monitoring location when there are project-related construction activities being undertaken within a radius of 300m from the monitoring station. An initial guide on the monitoring is to obtain one set of 30-minute measurement at a

frequency of once a week when the above-mentioned construction activities are underway.

### ***Action and Limit Levels***

The Action and Limit levels for air-borne noise are defined in the table below. Should non-compliance of the noise quality criteria occur, actions in accordance with the Table 4-6 as should be carried out.

<b>Time Period</b>	<b>Action Level</b>	<b>Limit Level</b>
All time period	When one documented complaint related to adverse impact to fisheries from fish-pond operator or any abnormal ecological monitoring results	75 dB(A) for air-borne noise

Table 4-8: Action and Limit Level for potential impact at fishpond due to air-borne noise

### ***4.5 Landscape and Visual***

Monitoring of the implementation of the tree protection measures during construction phase was conducted in accordance with the requirements of EP condition 2.15 (iv). The landscape and visual monitoring and auditing will be conducted once a month throughout the construction stage and covering the entire project site areas.

### ***4.6 Cultural Heritage***

#### ***4.6.1 Archaeology***

No monitoring and reporting is required since construction at Shek Kong Stabling Sidings (SSS) and Lung Kwu Sheng Tan (LKST) have not started.

#### ***4.6.2 Built Heritage***

No monitoring and reporting is required since construction at ex-Lai Chi Kok Hospital (LCKH) and SSS have not started.

### ***4.7 Landfill Gas***

No monitoring was carried out in this reporting month since there was no construction within the Ngau Tam Mei Landfill (NTML) consultation zone.



## 5. MONITORING RESULT

### 5.1 Air Quality

The monitoring schedule is shown in Appendix G. Graphical plots of the monitoring results in the reporting month are shown in Appendix H. Results of 24-hour TSP level are shown in Table 5-1 below.

AM 15				
Monitoring Date	Monitoring Result ( $\mu\text{g m}^{-3}$ )	Action Level ( $\mu\text{g m}^{-3}$ )	Limit Level ( $\mu\text{g m}^{-3}$ )	Exceedance?
1-Mar-10	77.8	168.8	260.0	N
6-Mar-10	53.2	168.8	260.0	N
12-Mar-10	104.8	168.8	260.0	N
18-Mar-10	205.7	168.8	260.0	Y (Action Level exceedance)
24-Mar-10	50.7	168.8	260.0	N
30-Mar-10	100.8	168.8	260.0	N
AM 16				
1-Mar-10	53.9	155.9	260.0	N
6-Mar-10	45.6	155.9	260.0	N
12-Mar-10	82.0	155.9	260.0	N
18-Mar-10	144.0	155.9	260.0	N
24-Mar-10	27.5	155.9	260.0	N
30-Mar-10	79.9	155.9	260.0	N
AM 17				
1-Mar-10	84.2	179.3	260.0	N
6-Mar-10	39.6	179.3	260.0	N
12-Mar-10	76.1	179.3	260.0	N
18-Mar-10	237.9	179.3	260.0	Y (Action Level exceedance)

24-Mar-10	36.3	179.3	260.0	N
30-Mar-10	102.1	179.3	260.0	N

Table 5-1 Air Quality Monitoring Results

No complaint on air quality was received in the reporting month. There were two exceedances of 24-hr TSP Action Level at AM 15 and AM 17 respectively on 18 March 2010. The Engineer's Representative, the contractors and IEC were informed of the exceedance. Investigation was carried out in accordance with the EM&A Manual which revealed that the exceedance was due to background level instead of project-related activities. Investigation results were verified by the IEC.

## 5.2 Noise

The monitoring schedule is shown in Appendix G. Results of measured noise level, in terms of  $L_{eq(30min)}$  is presented in Table 5-2 below. Detailed results in terms of  $L_{eq}$ , L10 and L90 and noise sources and graphical presentations are given in Appendix H.

Monitoring Date	$L_{eq}$ , dB(A)	Limit Level, dB(A)	Exceedance?
CN 30			
5/3/2010	66.3	75	N
12/3/2010	63.1	75	N
19/3/2010	62.4	75	N
26/3/2010	65.0	75	N
31/3/2010	65.5	75	N
CN 31			
5/3/2010	72.3	75	N
12/3/2010	68.2	75	N
19/3/2010	67.1	75	N
26/3/2010	70.3	75	N
31/3/2010	73.3	75	N

<b>Monitoring Date</b>	<b>L<sub>eq</sub>, dB(A)</b>	<b>Limit Level, dB(A)</b>	<b>Exceedance?</b>
CN 32			
5/3/2010	72.9	75	N
12/3/2010	71.7	75	N
19/3/2010	68.5	75	N
26/3/2010	71.3	75	N
31/3/2010	73.4	75	N
CN 33			
5/3/2010	71.4	75	N
12/3/2010	72.8	75	N
19/3/2010	73.6	75	N
26/3/2010	74.7	75	N
31/3/2010	73.6	75	N
CN 34			
5/3/2010	74.5	75	N
12/3/2010	71.9	75	N
19/3/2010	73.1	75	N
26/3/2010	73.9	75	N
31/3/2010	72.1	75	N

Table 5-2 Construction Noise Monitoring Results

No exceedance of Limit Level was recorded at all of the noise monitoring stations in the reporting month.

### ***5.3 Ecological Monitoring***

### 5.3.1 Ecological Monitoring on Avifaunal Communities

Weekly ecological monitoring at MPV was conducted on 10, 17, 24 and 31 March 2010. Other than minor site preparation work like site hoarding and setting up of bentonite pool, no major construction works was carried out within the site during the monitoring. The nature of construction works, weather conditions and other noticeable activities occurring within or in the vicinity of the survey area during each visit were summarized in Table 5-3. The MPV-1 survey site comprised about 20 fishponds with most of them being actively managed (Figure C8016/C/XRL/ACM/M51/001 in Appendix F refers). Commonly observed pond management activities during the monitoring include pond aeration, removal of bund weeds and occasional draining of ponds. Construction works was also being conducted for a nearby concurrent project “Proposed Comprehensive Development at Wo Shang Wai, Yuen Long” (Wo Shang Wai Project), which is near MPV-1/P9, during the monitoring. The bird species and their abundance recorded during the avifauna survey carried out in the reporting month are presented in Appendix I.

Date	Construction Works within Works Area	Weather Conditions	Observed Activities outside Works Area
10 March 2010	Site preparation works (Erection of site hoarding)	Sunny, windy	<ul style="list-style-type: none"> <li>● Pond aeration</li> <li>● Removal of bund weeds</li> <li>● Draining and ploughing of pond</li> </ul> Site investigation works near MPV-1/P9 for Wo Shang Wai Project
17 March 2010	Site preparation works (Erection of site hoarding , setting up of bentonite pool)	Overcast, windy	<ul style="list-style-type: none"> <li>● Pond aeration</li> <li>● Removal of bund weeds</li> <li>● Draining and ploughing of pond</li> </ul> Site investigation works near MPV-1/P9 for Wo Shang Wai Project

Date	Construction Works within Works Area	Weather Conditions	Observed Activities outside Works Area
24 March 2010	Site preparation works (Erection of site hoarding , setting up of bentonite pool)	Sunny	<ul style="list-style-type: none"> <li>● Pond aeration</li> <li>● Removal of bund weeds</li> <li>● Draining and ploughing of pond</li> </ul> Excavation works near MPV-1/P9 for Wo Shang Wai Project
31 March 2010	Site preparation works (Erection of site hoarding , setting up of bentonite pool)	Hazy	<ul style="list-style-type: none"> <li>● Pond aeration</li> <li>● Removal of bund weeds</li> <li>● Draining and ploughing of pond</li> </ul> Excavation works near MPV-1/P9 for Wo Shang Wai Project

Table 5-3 Construction Works, Weather Conditions and Other Observed Activities during Each Visit in March 2010

The total number of avifauna species recorded at MPV-1 survey site in March 2010 ranged from 27 to 40 while the abundance ranged from 361 to 460. Both the number of species and abundance of birds remained stable throughout the monitoring period except the first monitoring on 10 March, which yields a relatively lower number of species (Table 5-4 and 5-5 refer). The population of the avifauna recorded mainly consist of overwintering species (e.g. Great Cormorant and Black-faced Spoonbill), significant aggregation of waterbirds (e.g. ardeids, plovers and sandpipers) in partially drained ponds, and the passage migrant Barn Swallow. Of particular interest, 119 individuals of the winter visitor, Black-faced Spoonbill were recorded during the monitoring period. Detailed records of avifauna at MPV-1 survey area are presented in Appendix I.

The monitoring results in March 2010 were compared against the dry season results of the Baseline Bird Survey conducted from November 2009 to January 2010. The abundance of avifauna recorded in March was higher than the baseline survey

results (Table 5-4 refers). Meanwhile, the total number of species and number of species of conservation interest recorded in March are either same as or higher than the baseline, except for the monitoring on 10 March (Table 5-5 refers). Although the total number of species recorded on 10 March was lower than the baseline, it was not attributed to the reduction of species of conservation interest and other waterbirds. Indeed, the number of species of conservation interest recorded on 10 March was higher than the baseline, including the record of 15 individuals of Black-faced Spoonbill (which had not been recorded during the baseline surveys). Two additional species of conservation interest including Black-headed Gull (winter visitor) and Oriental Pratincole (spring passage migrant) were also recorded during the monitoring. The monitoring results indicated the fishponds at MPV were utilized by a large number of waterbirds in March 2010. No significant reduction in the number of species and abundance of avifauna was observed. Therefore, no adverse indirect impacts arising from the proposed Project were observed.

Survey	MPV-1	
	No. of Species	Abundance
10 March 2010	27	460
17 March 2010	33	361
24 March 2010	40	444
31 March 2010	36	364
<b>Baseline Dry Season Survey (Nov 2009 – Jan 2010)</b> <b>(source: monthly averaged number obtained in Baseline Bird Survey)</b>	<b>38</b>	<b>306</b>

Table 5-4 Number of Species and Abundance of Avifauna Recorded during Bird Survey at the Point Count Locations of the MPV-1 Survey Site

Month	Total Number of Species Recorded <sup>1,2</sup>
10 March 2010	32 (15)
17 March 2010	46 (11)
24 March 2010	46 (13)
31 March 2010	41 (12)
<b>Baseline Dry Season Survey (Nov 2009 – Jan 2010)</b> <b>(source: monthly averaged</b>	<b>41 (11)</b>

<b>number obtained in Baseline Bird Survey)</b>	
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Note:

- (1) Total number of species recorded included the avifauna recorded from both point count locations and walk transect.
- (2) The numbers in brackets denote the number of species of conservation interest.

Table 5-5 Total Number of Avifauna Species Recorded during Bird Survey at the MPV-1 Survey Site

### ***5.3.2 Monitoring of impact at fishpond due to noise***

The baseline air-borne noise monitoring at fishpond was carried out from 15 Mar 2010 to 28 Mar 2010. The monitoring results, in terms of  $L_{eq(30min)}$ , are summarized in Table 5-6 below:

<b>Date</b>	<b><math>L_{eq}</math>, dB(A)</b>	<b><math>L_{10}</math>, dB(A)</b>	<b><math>L_{90}</math>, dB(A)</b>
15/03/2010	60.1	62.4	56.1
16/03/2010	57.8	60.8	51.9
17/03/2010	57.2	58.9	54.3
18/03/2010	52.2	54.2	48.3
19/03/2010	60.7	52.4	47.3
20/03/2010	58.3	61.3	53.4
21/03/2010	49.7	48.3	42.3
22/03/2010	55.3	56.9	49.5
23/03/2010	56.3	57.6	54.4
24/03/2010	58.0	60.2	53.4
25/03/2010	68.0	72.0	57.0
26/03/2010	57.8	60.4	52.9
27/03/2010	59.0	61.5	54.0

Date	L <sub>eq</sub> , dB(A)	L <sub>10</sub> , dB(A)	L <sub>90</sub> , dB(A)
28/03/2010	56.0	57.9	56.0

Table 5-6 Baseline airborne noise monitoring results at fishpond in Mai Po

The average Leq during the baseline monitoring period was 57.6 dB(A). Leq recorded during the baseline monitoring period was ranged from 49.7 dB(A) to 68.0 dB(A)

#### 5.4 Waste Management

The waste flow table for the waste generated from this Project of the reporting month is summarized in the following tables:

##### Contract 803A

Month	Actual Quantities of Inert C&D Materials Generated Monthly					
	Total Quantity Generated	Broken Concrete (see Note 2)	Reused in the Contract	Reused in other Projects	Reused as Public Fill	Imported Fill
	(in '000 m <sup>3</sup> )					
March 2010	0.014	0	0	0	0	0
Month	Actual Quantities of C&D Materials Generated Monthly					
	Metals	Paper/cardboard packaging	Plastics (see Note 1)	Chemical Waste	Others, e.g. general refuse	
	(in '000 kg)				(in '000 m <sup>3</sup> )	
March 2010	0	0	0	0	0.014	

##### Contract 803C

Month	Actual Quantities of Inert C&D Materials Generated Monthly					
	Total Quantity Generated	Broken Concrete (see Note 2)	Reused in the Contract	Reused in other Projects	Reused as Public Fill	Imported Fill
	(in '000 m <sup>3</sup> )					
March	2.74	0	1.5	0	0	0

<b>2010</b>						
<b>Month</b>	<b>Actual Quantities of C&amp;D Materials Generated Monthly</b>					
	<b>Metals</b>	<b>Paper/cardboard packaging</b>	<b>Plastics (see Note 1)</b>	<b>Chemical Waste</b>	<b>Others, e.g. general refuse</b>	
	<b>(in '000 kg)</b>				<b>(in '000 m<sup>3</sup>)</b>	
<b>March 2010</b>	0	0	0	0	0.006	

#### **Contract 803D**

<b>Month</b>	<b>Actual Quantities of Inert C&amp;D Materials Generated Monthly</b>					
	<b>Total Quantity Generated</b>	<b>Broken Concrete (see Note 2)</b>	<b>Reused in the Contract</b>	<b>Reused in other Projects</b>	<b>Reused as Public Fill</b>	<b>Imported Fill</b>
	<b>(in '000 m<sup>3</sup>)</b>					
<b>March 2010</b>	1.803	0	0.2	0	0	0
<b>Month</b>	<b>Actual Quantities of C&amp;D Materials Generated Monthly</b>					
	<b>Metals</b>	<b>Paper/cardboard packaging</b>	<b>Plastics (see Note 1)</b>	<b>Chemical Waste</b>	<b>Others, e.g. general refuse</b>	
	<b>(in '000 kg)</b>				<b>(in '000 m<sup>3</sup>)</b>	
<b>March 2010</b>	0	0	0	0	0.003	

Note: 1. Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material.

2. Broken concrete for recycling into aggregates.

Table 5-7 Monthly summary waste flow tables

#### **5.5. Landscape and Visual**

Monthly monitoring and audit was undertaken in accordance with the requirement of EP condition 2.15 (iv)

#### Tree Protection Works at Contract 802

Trees have been labelled on site and warning tape has been attached to trees. No tree transplanting work was carried out.

#### Tree Protection Works at Contract 803C

No tree protection and method statement was submitted. The overall site has been fenced and individual trees have no substantive protection. Request was made to contractor improve the tree protection measures. The tree protection measures were improved.

#### Tree Protection Works at Contract 805

Trees have been labelled on site and temporary protective fences will be installed April 2010. No tree transplantation was carried out.

#### Tree Protection Work at Contract 825

Tree protection plan has been submitted to MTRC for comments. Temporary protective fences will be installed at early of April 2010 and trees have been labelled on site.

#### Tree Transplanting in this reporting period

No tree was transplanted in the reporting period.

## 6. SITE INSPECTION

### *Works Area VI*

Site inspections by ET were carried out on 3<sup>rd</sup>, 10<sup>th</sup>, 17<sup>th</sup>, 24<sup>th</sup> and 31<sup>st</sup> of March 2010 in 803A & 803 D; and 4<sup>th</sup>, 11<sup>th</sup>, 18<sup>th</sup>, 25<sup>th</sup> and 31<sup>st</sup> of March 2010 in 803C. IEC sit audit was carried out on 24<sup>th</sup> March 2010 in 803A & 803 D; and 25<sup>th</sup> March 2010 in 803C.

All observations have been recorded in the audit checklist and passed to the Contractor together with the appropriate recommended mitigation measures where necessary. The key observations from site inspections and associated recommendations are summarized in Table 6-1 below. No non-compliance was observed.

<b>Key Observations</b>	<b>Observed Date</b>	<b>Recommendation</b>	<b>Contractor's Follow-up Action(s) Undertaken</b>	<b>Close-out (Date)</b>
<b><i>Site Audit by ET</i></b>				
<b><i>Contract 803A (Works Area VI)</i></b>				
Construction waste was not covered	3 Mar 10	Cover the waste.	Construction waste covered with impermeable sheet.	6 Mar 10
Site surface was observed dry		Water truck is recommended. Spray water regularly particular in dry and windy weather.	Water spraying regularly, install water sprinkler.	
Chemical waste container was not found	10 Mar 10	Provide chemical waste container	Set-up a chemical waste storage area on-site asap.	13 Mar 10
Site surface was observed dry	17 Mar 10	Spray water	Water spraying regularly.	18 Mar 10
Dry sandy site surface and stockpile (excavated material for guide wall construction)		Spray water	Water spraying regularly.	18 Mar 10
Stockpiles of excavated material were not covered with tarpaulin sheets or other means	24 Mar 10	Cover or spray water	Cover the stockpile with tarpaulin sheets	27 Mar 10

<b>Key Observations</b>	<b>Observed Date</b>	<b>Recommendation</b>	<b>Contractor's Follow-up Action(s) Undertaken</b>	<b>Close-out (Date)</b>
Haul roads on-site was observed dry and dusty		Spray water	Water spraying regularly	
Chemical waste storage area was available but not properly secured/locked		Delivery permanent secured container	Set-up a proper chemical waste storage area on-site.	
<b><i>Contract 803C (Works Area VI)</i></b>				
No chemical waste container was observed on site	4 Mar 10	Provide chemical waste container for chemical waste	Chemical Waste Storage Area was arranged on 5/3/2010 and would be delivered to the site within next week. (Notes: there is no chemical waste generated in the project site so far.)	5 Mar 10
Large dry surface area was observed in south-west of site in open windy zone.		Spray water regularly particular in dry and windy weather.	Mobile tanker for spraying water would be arranged watering the whole site at interval of 2 hours.	
Paint containers untidy and no drip tray was observed		Tidy up and provide drip tray	Drip tray was provided to chemical containers.	4 Mar 10

<b>Key Observations</b>	<b>Observed Date</b>	<b>Recommendation</b>	<b>Contractor's Follow-up Action(s) Undertaken</b>	<b>Close-out (Date)</b>
Noisy welder set with generator was located close to the Waterfront.		Re-locate away from Waterfront or provide noise barrier	The said generator was moved to the location at Eastern bound of the site (i.e. most far away from Waterfront at Western bound of the site) and it was suspended from operation.	5 Mar 10
Chemical waste container not on site yet	11 Mar 10	Provide chemical waste container for chemical waste	The new container for chemical waste storage had been delivered to project site on 12 Mar 2010. The required label would be displayed on it in early next week.	12 Mar 10
Cement mixing was observed without enclosure on top and 3 sides although enclosure is available on site.		To provide enclosure on top and 3 sides	Shelter with 3 sides and top was erected for the cement mixing process.	25 Mar 10
A chemical waste drum was observed placed on bareground.	25 Mar 10	Provide drip tray	The waste chemical drum was put inside the chemical waste storage area with drip tray provided.	27 Mar 10
Rock breaking was observed without water spray although water hose is available		Spray water	The worker was spraying water for the breaking process with the water jet provided nearby.	25 Mar 10
<b>Contract 803D (Works Area V1)</b>				

<b>Key Observations</b>	<b>Observed Date</b>	<b>Recommendation</b>	<b>Contractor's Follow-up Action(s) Undertaken</b>	<b>Close-out (Date)</b>
Mud was observed overflow from the temporary spoil storage area.	3 Mar 10	Clear the overflowed mud.	Remove overflowed mud.	6 Mar 10
No chemical waste container and drip tray found		Provide chemical waste container for chemical waste and drip tray for chemical material.	Set-up a chemical waste storage area on-site	
Diesel tank without drip tray	17 Mar 10	Provide drip tray	Provide a drip tray for diesel tank	18 Mar 10
Dry stockpile along D/W excavated from guide wall construction		Cover stockpile or spray water or remove	Remove the stockpile to storage area.	
Chemical drums were not placed in designated storage area	24 Mar 10	Place in designated area	Place the diesel tank in designated area.	27 Mar 10
Oil spillage due to equipment breakdown (oil mixed with water) accumulated on-site was observed		Remove the oil and stored it in chemical waste storage area.	Remove the oil and stored it in chemical waste storage area.	
Dark smoke was observed emitted by an air compressor.		Check the compressor regularly	Compressor was checked regularly.	
Chemical waste storage area was available but without proper security or lock		Provide proper security or lock	Provide a chain and lock at chemical storage area for security.	
Haul roads on-site were dry and dusty		Spray water regularly	Water spraying regularly	
Environmental permit was not posted at site entrance		Post a copy of EP	Post a copy of EP at the site entrance.	
<b>Site Audit by IEC</b>				

<b>Key Observations</b>	<b>Observed Date</b>	<b>Recommendation</b>	<b>Contractor's Follow-up Action(s) Undertaken</b>	<b>Close-out (Date)</b>
<b><i>Contract 803 A&amp;D (Works Area VI)</i></b>				
Chemical drums were not placed in designated storage area	24 Mar 10	Place in designated area	Place the diesel tank in designated area.	27 Mar 10
Oil spillage due to equipment breakdown (oil mixed with water) accumulated on-site was observed		Remove the oil and stored it in chemical waste storage area.	Remove the oil and stored it in chemical waste storage area.	
Dark smoke was observed emitted by an air compressor.		Check the compressor regularly	Compressor was checked regularly.	
Chemical waste storage area was available but without proper security or lock		Provide proper security or lock	Provide a chain and lock at chemical storage area for security.	
Haul roads on-site were dry and dusty		Spray water regularly	Water spraying regularly	
Environmental permit was not posted at site entrance		Post a copy of EP	Post a copy of EP at the site entrance.	
<b><i>Contract 803C (Works Area VI)</i></b>				
Cement mixing was observed without enclosure on top and 3 sides although enclosure is available on site.	25 Mar 10	Have enclosure on top and 3 sides Have enclosure on top and 3 sides	Shelter with 3 sides and top was erected for the cement mixing process.	25 Mar 10
A chemical waste drum was observed placed on bareground.		Provide drip tray	The waste chemical drum was put inside the chemical waste storage area with drip tray provided. (Completed on 27 Mar 2010)	27 Mar 10

<b>Key Observations</b>	<b>Observed Date</b>	<b>Recommendation</b>	<b>Contractor's Follow-up Action(s) Undertaken</b>	<b>Close-out (Date)</b>
Rock breaking was observed without water spray although water hose is available		Spray water	The worker was spraying water for the breaking process with the water jet provided nearby.	25 Mar 10

Table 6-1 Summary of site inspections, recommendations and follow-up actions

## **7. NON-COMPLIANCE AND DEFICIENCY**

### ***7.1 Summary of Complaint***

For this reporting month, a total of 4 environmental complaints were referred from the EPD. The complaints and follow-up actions are summarized as below:

1. An environmental complaint was referred from EPD on 3 Mar 2010 regarding the construction noise from Contract 803C on 24 Feb 2010. Complaint handling procedure in accordance with the requirement of EM&A Manual was undertaken. Investigation revealed that mitigation measures had been implemented for works at Contract 803C with no exceedance recorded. The contractors were requested to enhance the environmental management on site to minimise noise impact to the nearby noise sensitive receivers.

2. An environmental complaint was referred from EPD on 17 Mar 2010 regarding the construction noise from Contract 803C on 16 Mar 2010. Complaint handling procedure in accordance with the requirement of EM&A Manual was undertaken. Investigation revealed that mitigation measures had been implemented for works at Contract 803C with no exceedance recorded. The Contractors were requested to enhance the environmental management on site in order to minimize the noise impact.

3. An environmental complaint was referred from EPD on 26 Mar 2010 regarding discharge of muddy water from construction site in West Kowloon Terminus on 26 Mar 2010. Complaint handling procedure in accordance with the requirement of EM&A Manual was undertaken. The case was found to be likely due to washing of mud from the wheels of truck. The Contractor was reminded to ensure the wheel wash is thoroughly completed before the vehicle leaves the site in order to prevent any recurrence of the incident.

4. An environmental complaint was referred from EPD on 31 March 2010 on construction dust from construction site of West Kowloon Terminus on 30 March afternoon. Complaint handling procedure in accordance with the EM&A Manual was undertaken. The investigation was being undertaken and the results of which would be covered in the EM&A report in coming month.

### ***7.2 Summary of Exceedance***

For this month, a total of two Action Level exceedances in 24-hr TSP level were recorded at AM 15 and AM 17 on 18 Mar 2010. Investigation was carried out by the ET which revealed that the exceedances were due to high background level. The investigation result was reviewed by the IEC.

### ***7.3 Summary of Notification of Summons, Prosecutions and Corrective Actions***

No notification of summons and prosecutions was received during the reporting month

## 8. FUTURE KEY ISSUES

### 8.1 Construction Works in Coming Months

Works to be undertaken for the following months are summarized below, the most updated programme for the Project is given in Appendix C.

<b><i>Contract 803A (Works Area VI)</i></b>
Construction of bored pile, guide wall, diaphragm wall, pre-drilling, hoarding erection, utilities diversion and road works.
<b><i>Contract 803C (Works Area VI)</i></b>
Construction of pre-bored H-pile, bored pile, pre-drilling, utilities diversion and excavation of ex-PTI
<b><i>Contract 803D (Works Area VI)</i></b>
Construction of pre-bored H-pile, bored pile, guide wall, diaphragm wall, pre-drilling, hoarding erection and road works.

Table 8-1 Summary of construction works in coming month

In addition to the above works areas, major construction activities in MPV (Works Area A), including construction of diaphragm wall, would be started in mid-April. Impact monitoring would be conducted according to the construction programme.

### 8.2 Monitoring Schedule for Next Month

The tentative schedule of TSP and noise monitoring for the next reporting period is presented in Appendix G. With the site hoarding erection at MPV scheduled to complete by end of March and commencement of construction in April, ecological monitoring at MPV would be conducted on monthly basis in April in accordance with the Ecological Monitoring Plan.

## 9. CONCLUSIONS

The Report presents the results of EM&A works and the impact monitoring for the construction works of the XRL project undertaken during the period of 1 March 2010 to 31 March 2010. The major construction activities in the reporting period included guide wall construction, pre-drilling works, bored piling at Works Area V1.

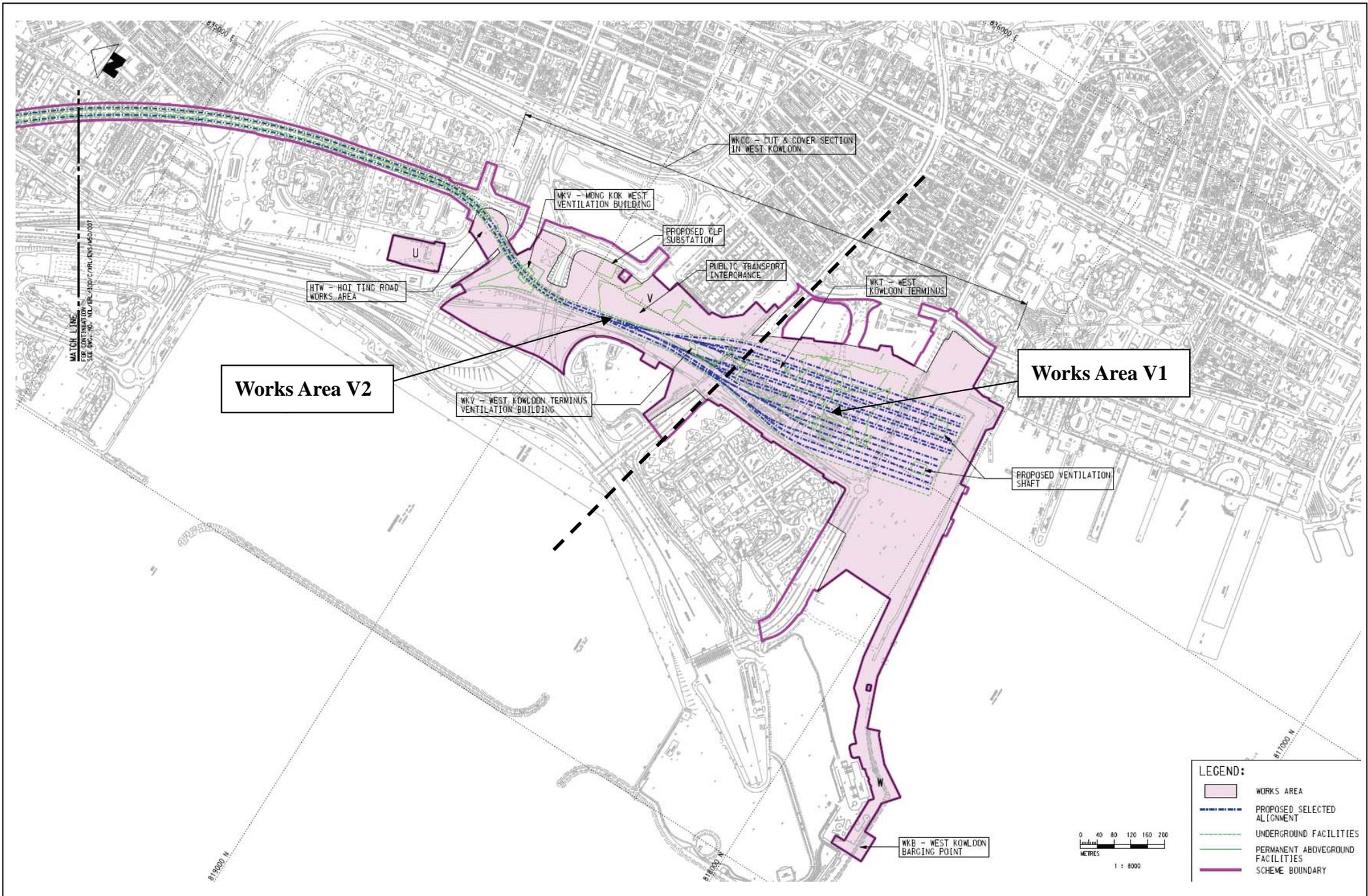
Impact monitoring for air quality and noise were conducted in accordance with the EM&A Manual in the reporting period, two exceedances of Action Level of 24-hr TSP in West Kowloon were found. Investigations of the exceedances were conducted which revealed that the exceedances were due to background level. No environmental notification of summon and prosecution was received in the reporting period.

Four environmental complaint was received in the reporting period. The complaints had been handled in accordance with the procedures stipulated in the EM&A Manual. Site inspection was conducted on a weekly basis to monitor proper implementation of environmental pollution control and mitigation measures for the Project. No non-conformance to the environmental requirements was identified in the reporting period.

In the reporting period, there was no reporting change of circumstances which may affect the compliance with the recommendations of the EIA Report. It is concluded from the environmental monitoring and audit works for the XRL Project that the construction works were undertaken in an appropriately environmentally sensitive manner in the reporting period. The environmental protection and pollution control measures provided by the contractors were generally acceptable apart from some minor irregularities which were rectified timely by the respective civil works contractors. The ET will continue the implementation of the environmental monitoring and audit programme in accordance to the EM&A Manual and to a level consistent with MTRCL's Corporate Sustainability Policy.

Appendix A

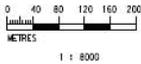
Works Area



**Works Area V2**

**Works Area V1**

- LEGEND:**
- WORKS AREA
  - PROPOSED SELECTED ALIGNMENT
  - UNDERGROUND FACILITIES
  - PERMANENT ABOVEGROUND FACILITIES
  - SCHEME BOUNDARY



MATCH LINE FOR CONTINUATION SEE DRAWING NO. MKV-100 (REVISED 18/11/2011)

815000 N

816000 N

817000 N

818000 E

819000 E



HTW - HOI TING ROAD WORKS AREA

MKV - MONG KOK WEST VENTILATION BUILDING

PROPOSED CLP SUBSTATION

PUBLIC TRANSPORT INTERCHANGE

WKT - WEST KOWLOON TERMINUS

WKY - WEST KOWLOON TERMINUS VENTILATION BUILDING

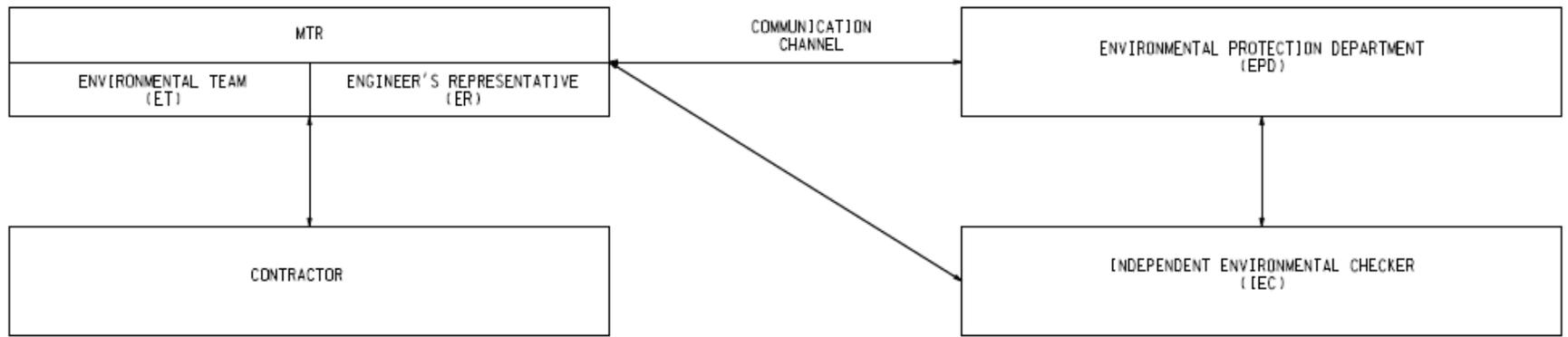
PROPOSED VENTILATION SHAFT

WKB - WEST KOWLOON BARGING POINT

WKC - CUT & COVER SECTION IN WEST KOWLOON

Appendix B

Project Management Organization  
and Contacts of Key Personnel



**Project Management Organization Chart**

<b>Engineer's Representative</b>		
Title	Name	Telephone
Project Manager - XRL Terminus	Mr. Calum Smith	2208 3564
Construction Manager (803 A/C)	Mr. Samuel Lo	3575 1378
Construction Manager (803 D)	Mr. KS Lim	3575 1338
<b>Independent Environmental Checker</b>		
Divisional Manager	Dr. Anne Kerr	2828 5793
<b>Environmental Team</b>		
Environmental Team Leader	Mr. Glenn Frommer	2688 1552
Deputy Environmental Team Leader	Mr. Richard Kwan	2688 1179
<b>Contractor</b>		
Contract 803A Contractor		
Project Director	Frédéric HUBERT	9133 1983
Project Manager	Dick YIU	9426 4657
Site IMS Manager	Nick LAU	9216 9245
Contract 803C Contractor		
Project Manager	Mr. Roland Yuen	9465 2815
Deputy Project Manager	Mr. Desmond Chung	9015 6863
Contract 803D Contractor		
Project Director	Frédéric HUBERT	9133 1983
Project Manager	Dick YIU	9426 4657
Site IMS Manager	Nick LAU	9216 9245

# Appendix C

## Construction Programme

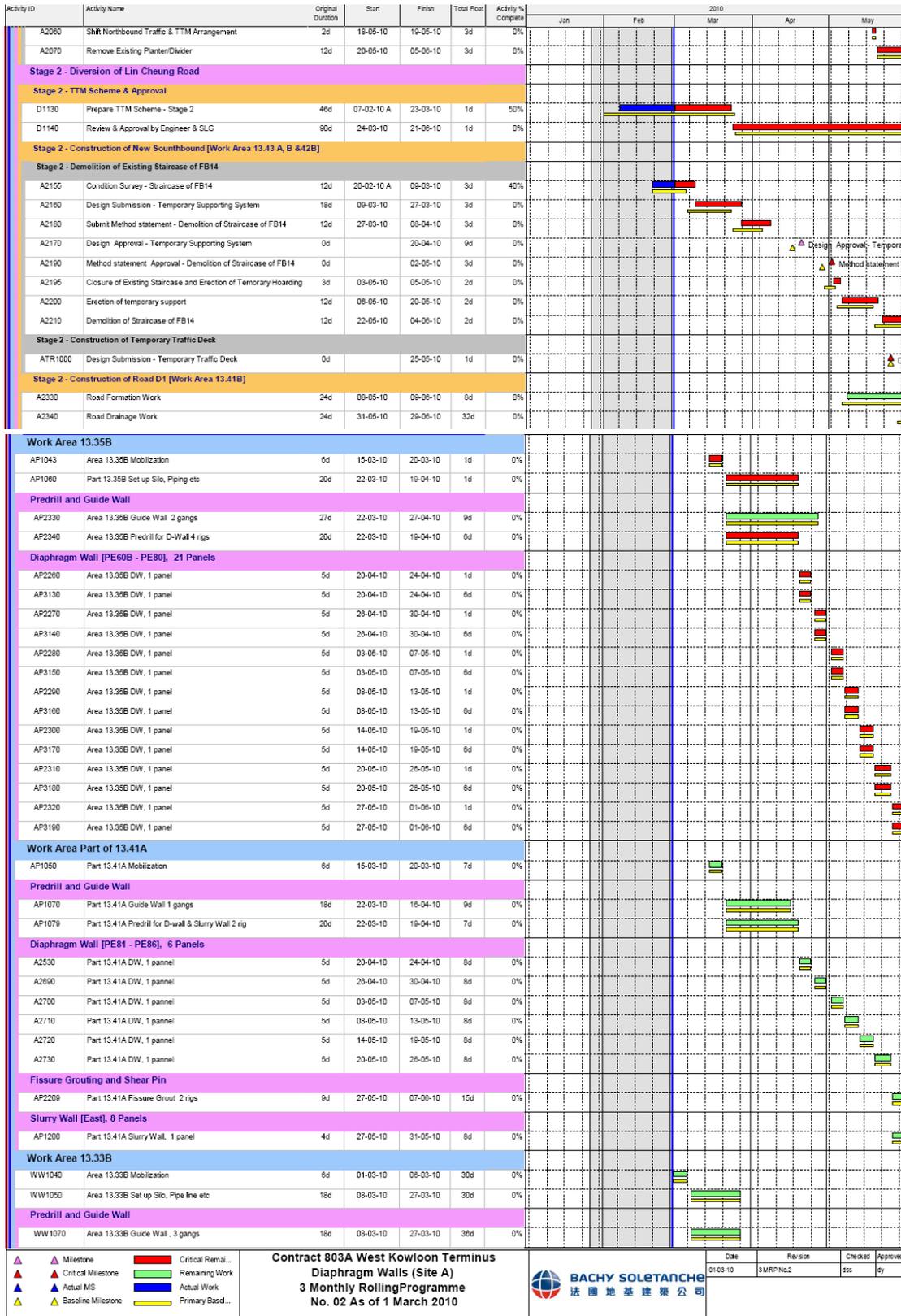
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Activity % Complete	2010									
							Jan	Feb	Mar	Apr	May					
<b>Utilities Diversion</b>																
<b>Work Area 13.42B &amp; 13.41A</b>																
<b>Utility Coordination</b>																
A1670	General Planning and Utility Programme for Work Area 13.42B	14d	08-02-10 A	21-02-10 A		100%										
A1680	Coordination with WSD	30d	22-02-10 A	23-03-10	0d	23.33%										
<b>Watermain Diversion</b>																
<b>Watermain Across Jordan Road</b>																
<b>TTM Scheme &amp; Approval</b>																
AT1050	Prepare overall TTM Scheme for watermain road crossing	14d	01-02-10 A	14-02-10 A		100%										
AT1060	Submission of TTM Scheme	0d		14-02-10 A		100%										
AT1070	Approval TTM Scheme	0d		14-03-10	5d	0%										
AT1080	Notification of Stage 1 TTM	4d	15-03-10	18-03-10	5d	0%										
AT1090	Stage 1 - Implement TTM Scheme	0d	24-03-10		0d	0%										
AT1100	Notification of Stage 2 TTM	4d	05-05-10	08-05-10	4d	0%										
AT1110	Stage 2 - Implement TTM Scheme	0d	09-05-10		4d	0%										
AT1120	Notification of Stage 3 TTM	4d	29-05-10	01-06-10	3d	0%										
<b>Stage 1</b>																
A1690	Traffic Arrangement and Construction of New Bus Bay	12d	24-03-10	10-04-10	0d	0%										
A1700	Notification of Shift existing Bus Stop	5d	11-04-10	15-04-10	0d	0%										
AT1220	Shift Bus Bay at Jordan Road	0d	16-04-10		0d	0%										
AT1230	Trial Trench to identify existing utilities and watermains	6d	16-04-10	22-04-10	4d	0%										
AT1240	Shoring for Trench excavation & temp road deck	8d	23-04-10	04-05-10	4d	0%										
<b>Stage 2</b>																
AT1270	Trial Trench to identify existing utilities and watermains	6d	10-05-10	17-05-10	2d	0%										
AT1280	Shoring for Trench excavation & temp road deck	8d	16-05-10	29-05-10	2d	0%										
<b>Pipe Trough for Watermains</b>																
AT1470	Trial Trench to identify existing utilities and watermains	12d	24-03-10	10-04-10	2d	0%										
AT1480	Excavation for Lower Portion of Pipe Trough for SW202	8d	12-04-10	21-04-10	2d	0%										
AT1490	Construct Base Slab of Lower Portion of Pipe Trough for SW202	16d	23-04-10	13-05-10	2d	0%										
AT1500	Construct Wall of Lower Portion of Pipe Trough for SW202	16d	30-04-10	20-05-10	2d	0%										
AT1510	Excavation for Upper Portion of Pipe Trough for FW301 & SW301	8d	23-05-10	01-06-10	2d	0%										
<b>Pipe Laying, Test and Sterilization</b>																
AT1570	SW202 Excavation & Pipe Laying Ch.A 5.7 - 106	28d	12-04-10	18-05-10	2d	0%										
AT1600	FW202 Excavation & Pipe Laying Ch.B 8 - 180	36d	12-04-10	29-05-10	20d	0%										
AT1620	FW201 Excavation & Pipe Laying Ch.C 10 - 175	36d	12-04-10	29-05-10	48d	0%										
AT1580	SW301 Excavation & Pipe Laying Ch.D 0 - 22	12d	19-05-10	04-06-10	2d	0%										
AT1610	FW301 Excavation & Pipe Laying Ch.E 0 - 15	12d	31-05-10	14-06-10	20d	0%										
AT1630	FW201 Excavation & Pipe Laying Ch.X 0 - 23.1 & Ch.Y 0-25.8	18d	31-05-10	22-06-10	48d	0%										
<b>Utility Trough at Jordan Road</b>																
<b>Utility Coordination &amp; Design</b>																
A1710	Trial Trench for existing utility identification at Jordan Road	12d	16-04-10	30-04-10	0d	0%										
A1720	Coordination with all utility companies	28d	01-05-10	29-05-10	0d	0%										
A1730	Utility Trough Design Scheme	18d	09-05-10	26-05-10	0d	0%										
A1740	Utility Trough Design Scheme Submission	0d		26-05-10	0d	0%										
<b>Diversion of Lin Cheung Road and D1 &amp; D1A</b>																
<b>Stage 1 - Diversion of Lin Cheung Road [Work Area 13.31]</b>																
<b>Stage 1 - TTM Scheme &amp; Approval</b>																
AT1780	Prepare overall TTM Scheme for Stage 1 - Lin Cheung Road	21d	01-02-10 A	21-02-10 A		100%										
AT1790	Submission of TTM Scheme	0d	22-02-10 A			100%										
AT1800	Approval TTM Scheme	0d		23-03-10	9d	0%										
AT1810	Notification of Stage 1.1 TTM	6d	24-03-10	29-03-10	9d	0%										
AT1820	Stage 1.1 - Implement TTM Scheme	0d	30-03-10		4d	0%										
AT1830	Notification of Stage 1.2 TTM	6d	12-05-10	17-05-10	4d	0%										
AT1840	Stage 1.2 - Implement TTM Scheme	0d	18-05-10		3d	0%										
<b>Stage 1 - Road Construction [Work Area 13.31]</b>																
<b>Stage 1.1 - Road Widening (Northbound) at existing Footpath</b>																
A2020	Reduce (Northbound) existing Footpath & TTM Arrangement	6d	30-03-10	06-04-10	4d	0%										
A2030	Remove existing Railing	4d	10-04-10	14-04-10	4d	0%										
A2040	Laying New Kerb & Flexible Pavement	16d	15-04-10	04-05-10	4d	0%										
A2050	Install/Relocate Road Sign & Road Furniture	6d	05-05-10	11-05-10	4d	0%										
<b>Stage 1.2 - Shift Central Divider</b>																

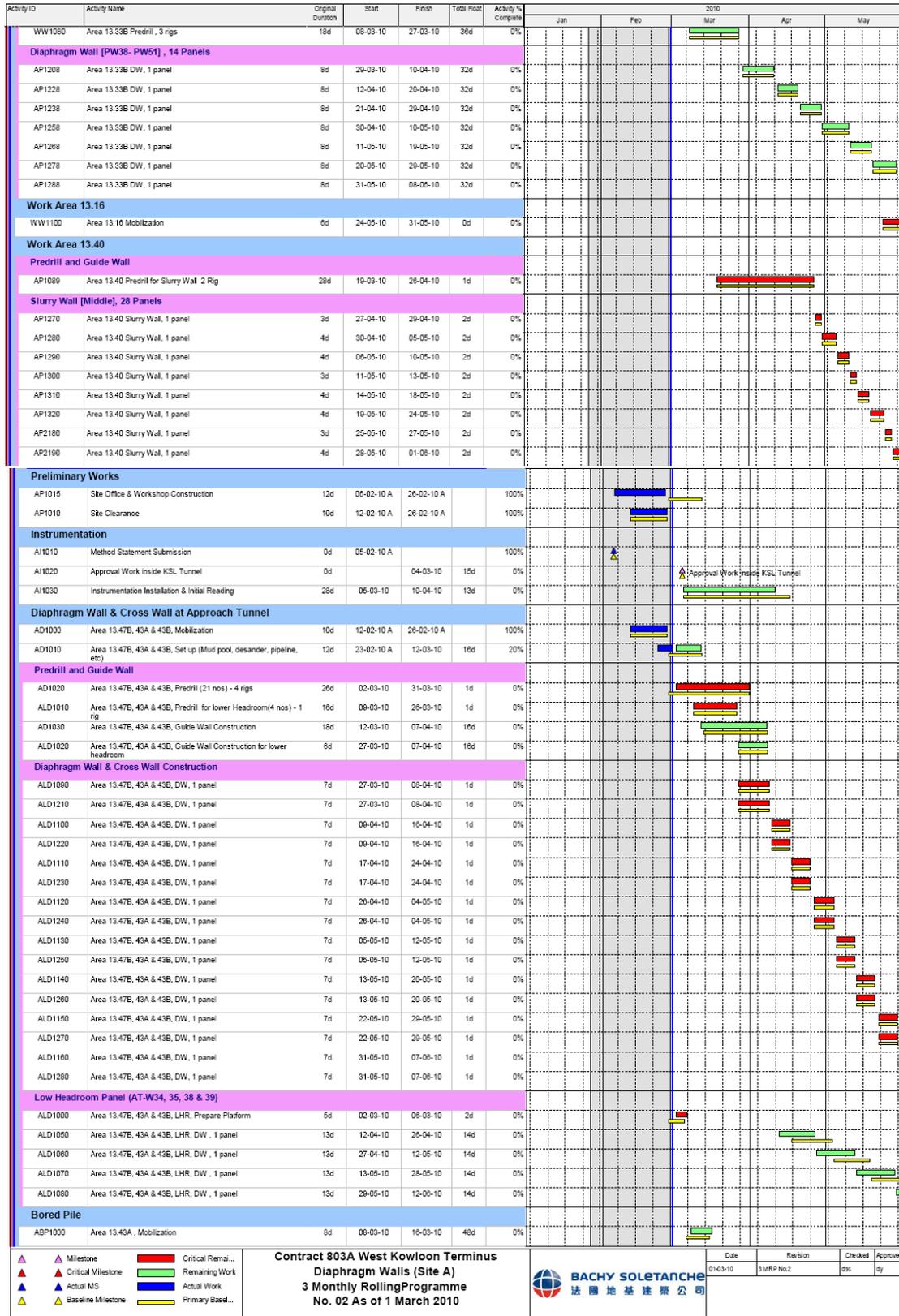
- ▲ Milestone
- ▲ Critical Milestone
- ▲ Actual MS
- ▲ Baseline Milestone
- Critical Reman...
- Remaining Work
- Actual Work
- Primary Baseli...

**Contract 803A West Kowloon Terminus  
Diaphragm Walls (Site A)  
3 Monthly Rolling Programme  
No. 02 As of 1 March 2010**



Date	Revision	Checked	Approved
01-03-10	3/ MRP No.2	gsc	dy





Activity ID	Activity Name	Original Duration	Start	Finish	Total Pical	Activity % Complete	2010				
							Jan	Feb	Mar	Apr	May
ABP1010	Area 13.43A , Set up RCD	6d	17-03-10	23-03-10	48d	0%					
<b>Predrill</b>											
ABP1020	Area 13.43A , Predrill (4 nos) - 1 rig	16d	27-03-10	20-04-10	45d	0%					
<b>Bored Pile Construction</b>											
ABP1030	Area 13.43A , 1 Bored Pile	9d	21-04-10	30-04-10	49d	0%					
ABP1040	Area 13.43A , 1 Bored Pile	9d	28-04-10	08-05-10	49d	0%					
ABP1050	Area 13.43A , 1 Bored Pile	9d	06-05-10	15-05-10	49d	0%					
ABP1080	Area 13.43A , 1 Bored Pile	9d	13-05-10	24-05-10	49d	0%					
<b>Bored Pile Testing</b>											
ABP1070	Area 13.43A BA14 & As-built Submission	0d		27-05-10	49d	0%					
ABP1080	Area 13.43A Select Full Cores	14d	28-05-10	10-06-10	60d	0%					

-  Milestone
-  Critical Milestone
-  Actual MS
-  Baseline Milestone
-  Critical Remai...
-  Remaining Work
-  Actual Work
-  Primary Basel...

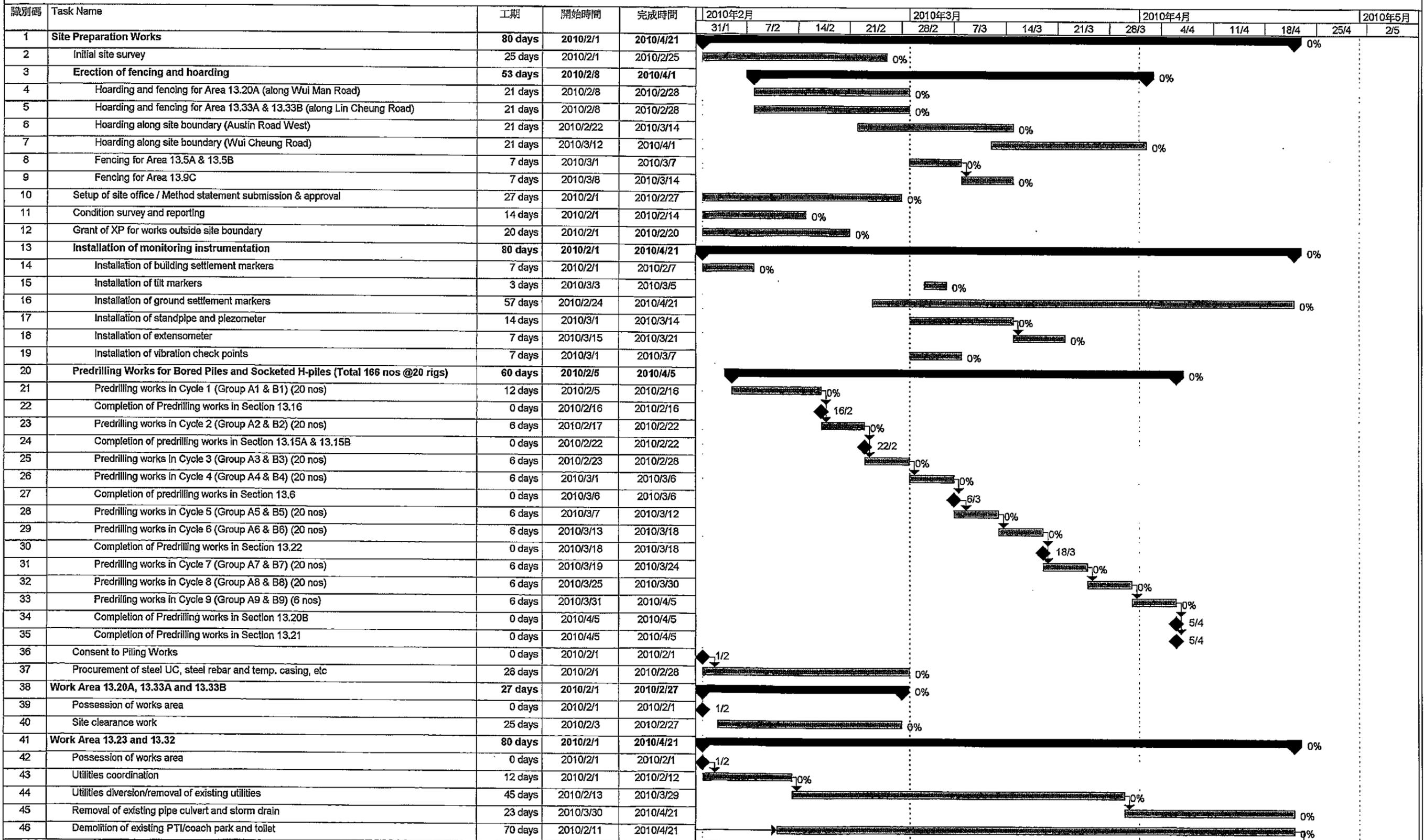
**Contract 803A West Kowloon Terminus  
Diaphragm Walls (Site A)  
3 Monthly Rolling Programme  
No. 02 As of 1 March 2010**



Date	Revision	Checked	Approved
0103-10	3 MRP No.2	29c	by

VIBRO-CHUN WO JOINT VENTURE  
3-month Rolling Program (Feb 2010 to Apr 2010)

Express Rail Link  
Contract 803C-West Kowloon Terminus Piles (Site A-South)

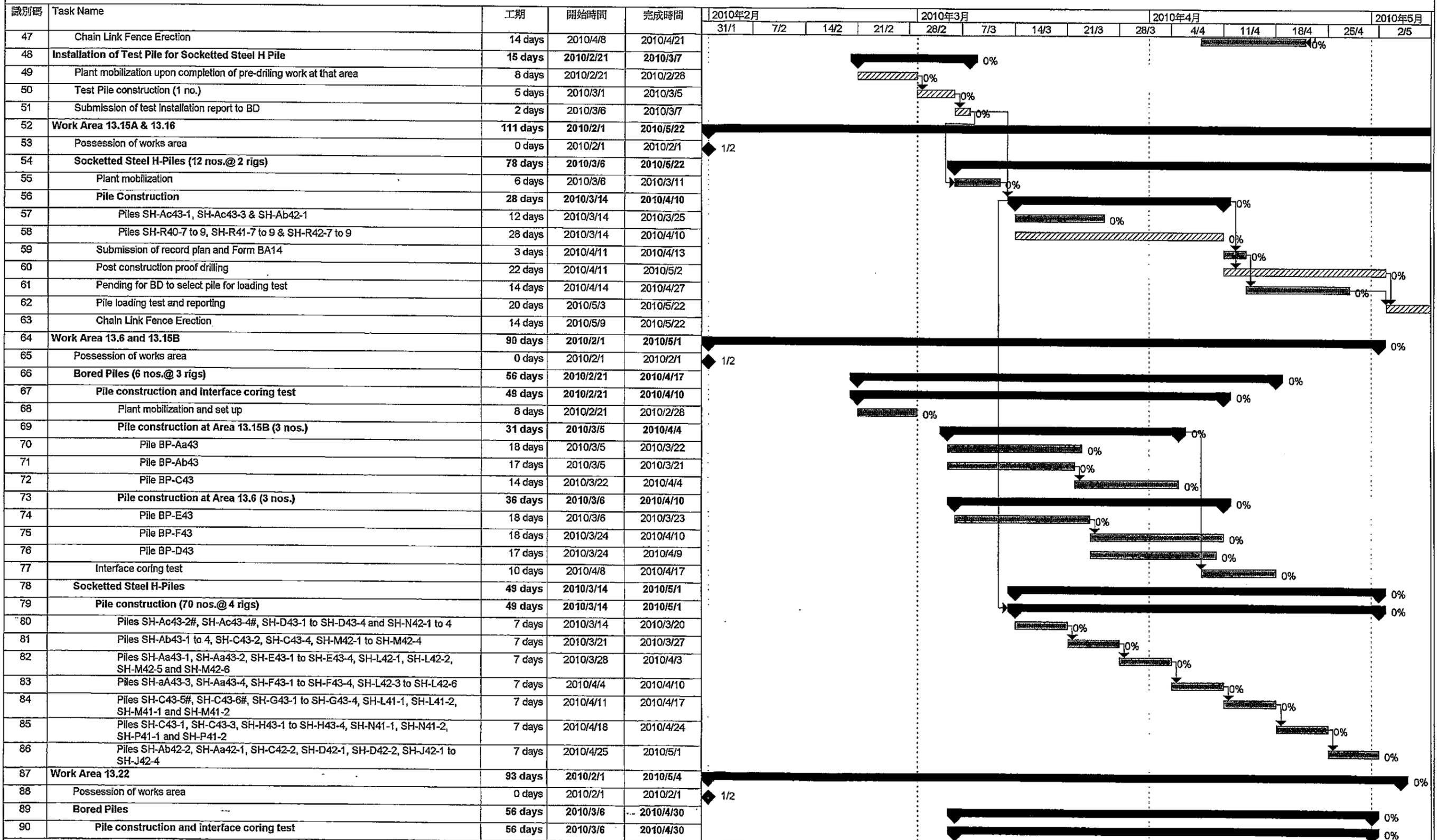


3-month Rolling Program (Feb 2010 to Apr 2010)

Critical		Task		Baseline		Milestone		Project Summary		Deadline	
Critical Split		Split		Baseline Split		Summary Progress		External Tasks			
Critical Progress		Task Progress		Baseline Milestone		Summary		External Milestone			

VIBRO-CHUN WO JOINT VENTURE  
3-month Rolling Program (Feb 2010 to Apr 2010)

Express Rail Link  
Contract 803C-West Kowloon Terminus Piles (Site A-South)



3-month Rolling Program (Feb 2010 to Apr 2010)

Critical		Task		Baseline		Milestone		Project Summary		Deadline	
Critical Split		Split		Baseline Split		Summary Progress		External Tasks			
Critical Progress		Task Progress		Baseline Milestone		Summary		External Milestone			

VIBRO-CHUN WO JOINT VENTURE  
3-month Rolling Program (Feb 2010 to Apr 2010)

Express Rail Link  
Contract 803C-West Kowloon Terminus Piles (Site A-South)

識別碼	Task Name	工期	開始時間	完成時間	2010年2月				2010年3月				2010年4月				2010年5月	
					31/1	7/2	14/2	21/2	28/2	7/3	14/3	21/3	28/3	4/4	11/4	18/4	25/4	2/5
91	<b>Pile construction (8 nos.@ 4 rigs)</b>	56 days	2010/3/6	2010/4/30														0%
92	Pile BP-G35	18 days	2010/3/12	2010/3/29														0%
93	Pile BP-H35	18 days	2010/3/30	2010/4/16														0%
94	Pile BP-F35	14 days	2010/4/17	2010/4/30														0%
95	Pile BP-F31	18 days	2010/3/12	2010/3/29														0%
96	Pile BP-F34	13 days	2010/4/12	2010/4/24														0%
97	Pile BP-R40	18 days	2010/3/6	2010/3/23														0%
98	Pile BP-Q39	18 days	2010/3/24	2010/4/10														0%
99	Pile BP-P38	14 days	2010/4/11	2010/4/24														0%
100	Interface Coring test	24 days	2010/4/7	2010/4/30														0%
101	<b>Socketted Steel H-Piles</b>	42 days	2010/3/24	2010/5/4														0%
102	<b>Pile construction (37 nos.@ 3 rigs)</b>	42 days	2010/3/24	2010/5/4														0%
103	Piles SH-N38-1 to SH-N38-3 and SH-J35-1 to SH-J35-3	7 days	2010/3/24	2010/3/30														0%
104	Piles SH-N38-4 to SH-N38-6 and SH-J35-4, SH-M38-1 and SH-M38-2	7 days	2010/3/31	2010/4/6														0%
105	Piles SH-M38-3 to SH-M38-6, SH-K35-1 and SH-K35-2	7 days	2010/4/7	2010/4/13														0%
106	Piles SH-K35-3 to SH-K35-6, SH-L38-2, SH-L38-4 and SH-L38-6	7 days	2010/4/14	2010/4/20														0%
107	Piles SH-K36-1 to SH-K36-3 and SH-L37-1 to SH-L37-3	7 days	2010/4/21	2010/4/27														0%
108	Piles SH-K36-4 to SH-K36-6 and SH-L37-4 to SH-L37-6	7 days	2010/4/28	2010/5/4														0%
109	<b>Work Area 13.20B</b>	89 days	2010/2/1	2010/4/30														0%
110	Possession of works area	0 days	2010/2/1	2010/2/1	◆ 1/2													0%
111	<b>Bored Piles</b>	32 days	2010/3/30	2010/4/30														0%
112	<b>Pile construction and interface coring test</b>	32 days	2010/3/30	2010/4/30														0%
113	<b>Pile construction (4 nos.@ 4 rigs)</b>	32 days	2010/3/30	2010/4/30														0%
114	Pile BP-Aa42	13 days	2010/4/12	2010/4/24														0%
115	Pile BP-C33	18 days	2010/3/30	2010/4/16														0%
116	Pile BP-C34	14 days	2010/4/17	2010/4/30														0%
117	Pile BP-C42	14 days	2010/4/12	2010/4/25														0%
118	Interface coring test	2 days	2010/4/24	2010/4/25														0%
119	<b>Socketted Steel H-Piles</b>	35 days	2010/3/26	2010/4/29														0%
120	<b>Pile construction (33 nos.@ 3 rigs)</b>	35 days	2010/3/26	2010/4/29														0%
121	Piles SH-D35-1\$, SH-D35-3\$ and SH-C35-1\$ to SH-C35-4\$	7 days	2010/3/26	2010/4/1														0%
122	Piles SH-C35-5, SH-C35-6, SH-C35-7\$, SH-C35-8\$ and SH-C35-9	7 days	2010/4/2	2010/4/8														0%
123	Piles SH-D34-1\$, SH-D34-3\$, SH-D34-5, SH-D33-1\$, SH-D33-3\$, SH-D33-5, SH-C34-5\$ and SH-C34-6\$	7 days	2010/4/9	2010/4/15														0%
124	Piles SH-C33-7\$, SH-C33-8\$, SH-C33-9, SH-C32-1\$, SH-C32-2\$ and SH-C32-3\$	7 days	2010/4/16	2010/4/22														0%
125	Piles SH-C32-4\$, SH-C32-5, SH-C32-6, SH-C32-7\$, SH-C32-9, SH-D32-1\$, SH-D32-3\$ and SH-D32-5	7 days	2010/4/23	2010/4/29														0%
126	<b>Work Area 13.21</b>	0 days	2010/2/1	2010/2/1	◆ 1/2													0%
127	Possession of works area	0 days	2010/2/1	2010/2/1	◆ 1/2													0%

3-month Rolling Program (Feb 2010 to Apr 2010)

Critical		Task		Baseline		Milestone	◆	Project Summary		Deadline	↓
Critical Split		Split		Baseline Split		Summary Progress		External Tasks			
Critical Progress		Task Progress		Baseline Milestone	◇	Summary		External Milestone	◆		

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Activity % Complete	2010									
							Jan	Feb	Mar	Apr	May	Jun				
<b>Utilities Diversion</b>																
<b>200mm dia Fresh Water Main (FW107)</b>																
U1000	FW 107 - Trial Pits	12	01-03-10	13-03-10	4	0%										
U1010	FW 107 - Coordination with WSD	24	15-03-10	16-04-10	4	0%										
U1020	FW 107 - Construct Diversion Watermain	24	24-05-10	23-06-10	5	0%										
<b>LV, 11kV Cables (LV 111)</b>																
U1040	LV 111 - Cables Detection	3	01-03-10	03-03-10	29	0%										
U1050	LV 111 - Trial Trenches	12	04-03-10	17-03-10	29	0%										
U1060	LV 111 - Coordination with CLP	24	18-03-10	20-04-10	29	0%										
U1070	LV 111 - Cable Diversion by CLP	24	21-04-10	22-05-10	29	0%										
<b>Telecom Cable (PCCW 101)</b>																
U1080	PCCW101 - Cables Detection	3	01-03-10	03-03-10	47	0%										
U1090	PCCW - Trial Trenches	6	04-03-10	10-03-10	47	0%										
U1100	PCCW - Coordination with PCCW	24	11-03-10	12-04-10	47	0%										
U1110	PCCW - Cable Diversion by PCCW	12	13-04-10	27-04-10	47	0%										
<b>400 LPB &amp; MP Gas Main (GS106 &amp; 107)</b>																
U1120	GS106 & 107 - Trial Pits	12	01-03-10	13-03-10	44	0%										
U1130	GS106 & 107 - Coordination with HKCG	24	15-03-10	16-04-10	44	0%										
U1140	GS106 & 107 - Gas Pipe Diversion by HKCG	12	17-04-10	03-05-10	44	0%										
<b>Diversion of Austin Road West</b>																
<b>TTM Schemes and Approval</b>																
DA1000	Prepare TTM schemes	45	01-02-10 A	10-03-10	18	80%										
DA1010	Review & Approval by Engineer & SLG	84	11-03-10	02-06-10	21	0%										
<b>Diaphragm Wall [94 Panels]</b>																
<b>Works Area 13.2 (North)</b>																
DW1590	D-Wall - Mobilisation	18	01-02-10 A	22-02-10 A		100%										
DW1600	D-Wall Site Set Up (silo, pipeline, desander, etc)	28	08-02-10 A	28-02-10 A		100%										
<b>Guide Wall Construction</b>																
DW1610	Guide-Wall - Area 13.2 North - Panel PE	10	25-02-10 A	09-03-10	5	50%										
DW1620	Guide-Wall - Area 13.2 North - Panel PW	10	10-03-10	20-03-10	5	0%										
<b>Diaphragm Wall Construction [10 Panels]</b>																
DW1860	DR2: D-Wall - Area 13.2 North - 1 Panel	14	22-03-10	10-04-10	9	0%										
DW1892	DR3: D-Wall - Area 13.2 North - 1 Panel	14	22-03-10	10-04-10	15	0%										
DW1850	DR1: D-Wall - Area 13.2 North - 1 Panel	14	27-03-10	16-04-10	0	0%										
DW1873	DR2: D-Wall - Area 13.2 North - 1 Panel	14	12-04-10	27-04-10	9	0%										
DW1893	DR3: D-Wall - Area 13.2 North - 1 Panel	14	12-04-10	27-04-10	15	0%										
DW1852	DR1: D-Wall - Area 13.2 North - 1 Panel	14	17-04-10	04-05-10	0	0%										
DW1894	DR3: D-Wall - Area 13.2 North - 1 Panel	14	28-04-10	14-05-10	15	0%										

- ▲ Milestone
- ▲ Critical Milestone
- ▲ Actual MS
- ▲ Baseline Milestone
- Critical Remai...
- Remaining W...
- Actual Work
- Primary BaseL...

**Contract 803D West Kowloon Terminus  
Diaphragm Walls and Piles (WKCD)  
3 Monthly Rolling Programme  
No. 02 As of 1 March 2010**



Date	Revision	Checked	Approved
01-03-10	3 MRP No.2	gt	dy



Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Activity % Complete	2010					
							Jan	Feb	Mar	Apr	May	Jun
BP1065	BR3: Bored Pile - Area 13.2 North (1 nos)	7	10-05-10	17-05-10	13	0%						
BP1090	BR3: Bored Pile - Area 13.2 North (1 nos)	7	18-05-10	26-05-10	13	0%						
BP1028	BR1: Bored Pile - Area 13.2 North (1 nos)	7	18-05-10	26-05-10	7	0%						
BP1058	BR2: Bored Pile - Area 13.2 North (1 nos)	7	18-05-10	26-05-10	10	0%						
BP1030	BR1: Bored Pile - Area 13.2 North (1 nos)	7	27-05-10	03-06-10	7	0%						
BP1060	BR2: Bored Pile - Area 13.2 North (1 nos)	7	27-05-10	03-06-10	10	0%						
<b>Bored Pile (Area 13.2 South)</b>												
<b>Bored Pile Construction (Area 13.2 South) [71 Nos]</b>												
BP2255	BR4: Bored Pile - Area 13.2 South (1 nos)	7	20-03-10	29-03-10	10	0%						
BP2258	BR4: Bored Pile - Area 13.2 South (1 nos)	7	29-03-10	10-04-10	10	0%						
BP2260	BR4: Bored Pile - Area 13.2 South (1 nos)	7	10-04-10	19-04-10	10	0%						
BP2170	BR3: Bored Pile - Area 13.2 South (1 nos)	7	27-05-10	03-06-10	13	0%						
<b>Bored Pile (Area 13.1)</b>												
<b>Bored Pile Construction (Area 13.1) [62 Nos]</b>												
BP3120	BR5: Bored Pile - Area 13.1 (1 nos)	7	26-03-10	08-04-10	11	0%						
BP3122	BR5: Bored Pile - Area 13.1 (1 nos)	7	08-04-10	16-04-10	11	0%						
BP3125	BR5: Bored Pile - Area 13.1 (1 nos)	7	16-04-10	24-04-10	11	0%						
BP3010	BR4: Bored Pile - Area 13.1 (1 nos)	7	19-04-10	27-04-10	10	0%						
BP3130	BR5: Bored Pile - Area 13.1 (1 nos)	7	24-04-10	04-05-10	11	0%						
BP3012	BR4: Bored Pile - Area 13.1 (1 nos)	7	27-04-10	06-05-10	10	0%						
BP3132	BR5: Bored Pile - Area 13.1 (1 nos)	7	04-05-10	12-05-10	11	0%						
BP3015	BR4: Bored Pile - Area 13.1 (1 nos)	7	06-05-10	14-05-10	10	0%						
BP3135	BR5: Bored Pile - Area 13.1 (1 nos)	7	12-05-10	20-05-10	11	0%						
BP3020	BR4: Bored Pile - Area 13.1 (1 nos)	7	14-05-10	24-05-10	10	0%						
BP3140	BR5: Bored Pile - Area 13.1 (1 nos)	7	20-05-10	29-05-10	11	0%						
BP3022	BR4: Bored Pile - Area 13.1 (1 nos)	7	24-05-10	01-06-10	10	0%						
BP3142	BR5: Bored Pile - Area 13.1 (1 nos)	7	29-05-10	07-06-10	11	0%						
<b>Socketed H-Pile [887 Nos]</b>												
SH1000	H-Pile - Mobilisation	18	01-02-10 A	24-02-10 A		100%						
SH1010	H-Pile - Site Set Up (welding yard, mixer, air tanks, pipeline, etc)	18	01-02-10 A	24-02-10 A		100%						
<b>Test Boring - Socketed H-Pile</b>												
SH1030	Prepare Test Boring Proposal	4	01-02-10 A	06-02-10 A		100%						
SH1040	Test Boring - Review by the Engineer	28	07-02-10 A	11-02-10 A		100%						
SH1050	Test Boring - Install Ground & Piezometer Monitoring	16	09-02-10 A	11-02-10 A		100%						
SH1060	Test Boring	28	11-02-10 A	16-03-10	18	50%						
<b>Socketed H-Pile (Works Area 13.2 North)</b>												
<b>Socketed H-Pile Construction (Works Area 13.2 North) [126 Nos]</b>												
SH1070	HR1: H-Pile - Area 13.2 North (10 nos)	23	24-03-10	24-04-10	18	0%						
SH1100	HR2: H-Pile - Area 13.2 North (10 nos)	23	24-03-10	24-04-10	18	0%						
SH1300	HR3: H-Pile - Area 13.2 North (10 nos)	23	24-03-10	24-04-10	18	0%						
SH1680	HR4: H-Pile - Area 13.2 North (10 nos)	23	24-03-10	24-04-10	18	0%						
SH1720	HR5: H-Pile - Area 13.2 North (10 nos)	23	24-03-10	24-04-10	19	0%						
SH1735	HR9: H-Pile - Area 13.2 North (10 nos)	23	24-03-10	24-04-10	19	0%						
SH1090	HR1: H-Pile - Area 13.2 North (11 nos)	25	26-04-10	31-05-10	18	0%						
SH1120	HR2: H-Pile - Area 13.2 North (11 nos)	25	26-04-10	31-05-10	18	0%						
SH1670	HR3: H-Pile - Area 13.2 North (11 nos)	25	26-04-10	31-05-10	18	0%						
SH1700	HR4: H-Pile - Area 13.2 North (11 nos)	25	26-04-10	31-05-10	18	0%						
SH1730	HR5: H-Pile - Area 13.2 North (11 nos)	25	26-04-10	31-05-10	19	0%						
SH1740	HR9: H-Pile - Area 13.2 North (11 nos)	25	26-04-10	31-05-10	19	0%						
<b>Socketed H-Pile (Works Area 13.2 South)</b>												
<b>Socketed H-Pile Construction (Works Area 13.2 South) [275 Nos]</b>												
SH1220	HR1: H-Pile - Area 13.2 South (10 nos)	23	31-05-10	29-06-10	18	0%						
SH1800	HR2: H-Pile - Area 13.2 South (10 nos)	23	31-05-10	29-06-10	18	0%						
SH1670	HR3: H-Pile - Area 13.2 South (10 nos)	23	31-05-10	29-06-10	18	0%						
SH1940	HR4: H-Pile - Area 13.2 South (10 nos)	23	31-05-10	29-06-10	18	0%						
SH2010	HR5: H-Pile - Area 13.2 South (10 nos)	23	31-05-10	29-06-10	23	0%						
<b>Socketed H-Pile (Works Area 13.1)</b>												
<b>Socketed H-Pile Construction (Works Area 13.1) [296 Nos]</b>												
SH1390	HR6: H-Pile - Area 13.1 (10 nos)	23	17-03-10	17-04-10	18	0%						
SH2140	HR7: H-Pile - Area 13.1 (10 nos)	23	17-03-10	17-04-10	18	0%						
SH2240	HR8: H-Pile - Area 13.1 (10 nos)	23	17-03-10	17-04-10	18	0%						
SH1490	HR6: H-Pile - Area 13.1 (10 nos)	23	19-04-10	19-05-10	18	0%						
SH2150	HR7: H-Pile - Area 13.1 (10 nos)	23	19-04-10	19-05-10	18	0%						
SH2250	HR8: H-Pile - Area 13.1 (10 nos)	23	19-04-10	19-05-10	18	0%						

▲ Milestone	▲ Critical Milestone	▲ Actual MS	▲ Baseline Milestone	■ Critical Remi...	■ Remaining W...	■ Actual Work	■ Primary Base...
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**Contract 803D West Kowloon Terminus**  
**Diaphragm Walls and Piles (WKCD)**  
**3 Monthly Rolling Programme**  
**No. 02 As of 1 March 2010**



Date	Revision	Checked	Approved
01-03-10	3 MRP NO.2	at	by

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Activity % Complete	2010							
							Jan	Feb	Mar	Apr	May	Jun		
SH1410	HRB: H-Pile - Area 13.1 (10 nos)	23	19-05-10	18-06-10	18	0%								
SH2160	HR7: H-Pile - Area 13.1 (10 nos)	23	19-05-10	18-06-10	18	0%								
SH2260	HRB: H-Pile - Area 13.1 (10 nos)	23	19-05-10	18-06-10	18	0%								
<b>Engineer's Site Accommodation</b>														
E1005	Design & Prepare Detailed Drawings	18	15-02-10 A	04-03-10	0	80%								
E1020	Engineer's Site Office - Design Approval	28	03-03-10	31-03-10	0	0%								
E1010	Submission to Engineer for Approval	0	04-03-10		0	0%								
E1025	Engineer Instruction (Latest Date)	0	01-04-10		0	0%								
E1028	Subletting and Procurement	28	02-04-10	29-04-10	0	0%								
E1030	Foundation Construction	20	30-04-10	27-05-10	0	0%								
E1040	Superstructure Construction - G/F to 1/F	18	28-05-10	19-06-10	0	0%								

▲	Milestone	■	Critical Remel..
▲	Critical Milestone	■	Remaining W...
▲	Actual MS	■	Actual Work
▲	Baseline Milestone	■	Primary Base L...

Contract 803D West Kowloon Terminus  
Diaphragm Walls and Piles (WKCD)  
3 Monthly Rolling Programme  
No. 02 As of 1 March 2010



Date	Revision	Checked	Approved
01-03-10	SMRP No.2	et	ty

# Appendix D

## Implementation Status

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
<b>Ecological Impact (Detailed design Phase / Pre-construction Phase)</b>						
S3.398	- Prior to commencement of channel works, an ecological habitat management plan should be prepared to provide the detailed specifications for the habitats and ecological functions to be provided, and control of colonization of invasive plant species at the mitigation stream habitats and define the long-term management and ecological monitoring and audit requirements for these habitats.	To mitigate the avoidable loss of watercourse habitat	MTR	SSS	Detailed design phase / Prior to commencement of channel works	To be implemented as per construction programme
S3.388 - S3.397	- The constructed channel in the SSS site should include open channel with ecologically friendly stream feature to mitigate the direct impact due to the loss of a watercourse habitat in Shek Kong.	To mitigate the avoidable loss of watercourse habitat	MTR / DDC	SSS	Detailed design phase	To be implemented as per construction programme
S3.410	- The implementation details of the impact monitoring programme should be described in ecological monitoring plan for EPD approval before	To outline details of ecological impact monitoring	MTR	MPV, TPP, SSS / ERS, PHV and	Before commencement of construction	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	commencement of construction activities.			TUW	activities	
S3.327 & S3.412	<p>- A monitoring and emergency response plan (to be prepared by the Contractor), in relation to potential impacts due to groundwater drawdown, will form part of the EM&amp;A requirement in the EM&amp;A Manual subject to approval by EPD and AFCD before commencement of the tunnelling and MPV construction in Mai Po area. The plan should include, but not be limited to, details of monitoring locations and programme, a mechanism to monitor the implication from the works to the groundwater system and fish pond, action levels and emergency responses such as immediate action, remedial action and investigation.</p>	To detect potential impacts due to groundwater drawdown	Contractor	MPV	Before commencement of the tunnelling and MPV construction	To be implemented as per construction programme

<b>EIA Ref.</b>	<b>Recommended Mitigation Measures</b>	<b>Objectives of the Recommended Measures &amp; Main Concern to Address</b>	<b>Who to implement the measures?</b>	<b>Location of the measures</b>	<b>When to implement the measures?</b>	<b>Implementation Status</b>
S3.413	- A monitoring and emergency response plan, in relation to impacts due to noise/vibration, should form part of the EM&A requirement in the EM&A Manual subject to approval by EPD and AFCD before commencement of the tunnelling and MPV construction in Mai Po area.	To detect and monitor noise / vibration impacts	Contractor	MPV	Before commencement of bore tunnelling and MPV construction	Implemented
<b>Ecological Impact (Construction Phase)</b>						
S3.325 - S3.326	- Implementation of precautionary measures during tunnelling works.	To avoid potential hydrogeological impacts	Contractor	All works areas	Construction phase	To be implemented as per construction programme
S3.409 to S3.410	- Ecological impact monitoring focusing on habitats and species of conservation interest should be conducted during the construction phase at the MPV, TPP, SSS / ERS, PHV, and TUW sites where a number of avifauna of conservation interest (e.g.	To monitor potential indirect construction impacts to wildlife	MTR	MPV, TPP, SSS / ERS, PHV, and TUW	Construction phase	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	<p>overwintering bird, Greater Painted-snipe) and areas of conservation interest (e.g. country parks, conservation areas, and wetlands) were recorded.</p> <ul style="list-style-type: none"> <li>- Avifaunal communities should be surveyed quantitatively along transects. Birds heard or seen along the transects should be identified to species and counted. The nature of construction works within works area conducting during each impact monitoring visit should also be recorded. The quantitative monitoring results should be compared to pre-construction condition. The impact monitoring results should be undertaken by qualified ecologist(s) with relevant working experience.</li> <li>- Should any unpredicted indirect ecological impacts arising from the proposed Project be detected, remedial measures should be developed and implemented by the Contractor.</li> </ul>		<p>MTR</p> <p>Contractor</p>			

<b>EIA Ref.</b>	<b>Recommended Mitigation Measures</b>	<b>Objectives of the Recommended Measures &amp; Main Concern to Address</b>	<b>Who to implement the measures?</b>	<b>Location of the measures</b>	<b>When to implement the measures?</b>	<b>Implementation Status</b>
S3.327 & S3.412	- Implementation of the groundwater monitoring and emergency response plan.	To detect and minimize hydrological impacts	Contractor	MPV	Construction phase (During bore tunneling works and construction of Mai Po Ventilation Shaft)	To be implemented as per construction programme
S3.413	- Implementation of monitoring and emergency response plan on noise and vibration.	To detect and minimize noise / vibration impacts	Contractor	MPV	Construction phase (During bore tunneling works and construction of Mai Po Ventilation Shaft)	Implemented
S3.364 -S3.369	- Use of quiet construction plant and temporary noise barriers.	To minimise impacts to surrounding habitats	MTR / Contractor	All works areas	Construction phase	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	<ul style="list-style-type: none"> <li>- Access to the ventilation building sites should follow existing access roads, such as the maintenance access along the existing drainage channels.</li> <li>- Site hoarding of about 2.4 m high should be erected around the works area of access roads along drainage channels in the TPP and SSS / ERS sites.</li> <li>- Gate and fences should be installed along the construction accesses that are adjacent to public areas.</li> <li>- Gates and hoardings should be provided at the entrances/exits and along the boundary of the works areas respectively to prevent any trespassers from encroaching or will fully disturbing any wild animals and their habitats within the works areas.</li> <li>- A trip-ticket system should be adopted to monitor the disposal of construction and demolition materials. CCTV and warning signs should be provided at the</li> </ul>					

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	entrance of the proposed temporary and permanent vehicular access.					
3.370 -3.371 and 3.373	<ul style="list-style-type: none"> <li>- Vegetation located within the works areas should be preserved as far as practicable.</li> <li>- To avoid soil compaction, heavy machinery should not be used in close proximity to vegetation. Soils that become compacted through the activities of the development should be loosened to an appropriate depth to allow seed germination.</li> <li>- All temporarily affected habitats should be reinstated after the completion of works.</li> <li>- Placement of equipment or stockpiles should be confined to designated works areas. Access routes should be confined on existing disturbed land, where practicable.</li> </ul>	To minimize impacts to vegetation	MTR / Contractor	All works areas	Construction phase	Implemented
	- Detailed vegetation survey should be conducted in	To minimize impacts to	MTR /	TSW	Prior to	To be

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	<p>TSW site prior to commencement of site clearance.</p>	vegetation	Contractor		commencement of site clearance	implemented as per construction programme
	<ul style="list-style-type: none"> <li>- To mitigate the loss of the vegetation and habitats, planting of native species should be provided in the areas affected by the Project in TSW site, and other works area, where practicable.</li> </ul>	To minimize impacts to vegetation	MTR / Contractor	TSW and all other works areas	Construction phase	To be implemented as per construction programme
S3.372	<ul style="list-style-type: none"> <li>- The affected individuals of Incense Tree within the NTV works area should be transplanted to nearby suitable habitats prior to the commencement of site clearance at NTV works area as far as practicable.</li> <li>- A detailed vegetation survey covering the affected habitat at NTV works area should be conducted by a suitably qualified botanist / ecologist to identify and record the affected individuals in order to provide details for the transplantation scheme prior to the</li> </ul>	To minimize impacts to vegetation	MTR / Contractor	NTV	Construction phase	To be implemented as per construction programme

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	<p>commencement of site clearance. Feasibility and suitability of transplanting the affected individuals would be studied and suitable receptor sites would be identified. The transplantation proposal for the affected individuals should be prepared as necessary and transplantation should be supervised by a suitably qualified ecologist / horticulturist.</p>					
S3.374 - S3.377	<ul style="list-style-type: none"> <li>- Site hoarding of 2.4 m high should be set up along the boundary of the works areas as far as practicable.</li> </ul>	To minimize disturbance to wildlife	Contractor	All works areas	Construction phase	Implemented
	<ul style="list-style-type: none"> <li>- The erection of hoarding (2.4 m) along KT5 in the area with high Greater Painted-snipe occurrence (e.g. the proposed access road next to KT5) should avoid their breeding season, prior to construction activities in the area.</li> </ul>			KT5 (near TPP)	Prior to the construction of access road	To be implemented as per construction programme
	<ul style="list-style-type: none"> <li>- The use of noisy construction equipment such as hydraulic breakers should be avoided at the area with</li> </ul>			KT5 (near TPP)	Construction phase	To be implemented as per

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	high painted-snipe occurrence (e.g. the proposed access road next to KT5) during their breeding season as far as practicable.					construction programme
	<ul style="list-style-type: none"> <li>- Hoardings of 2.4 m height should be put in place before commencement of construction activities. Hoarding at the section along the northern boundary of the MPV works area should be installed first. The duration of hoarding erection should be kept as brief as practicable.</li> <li>- Upon the erection of site hoarding, all construction activities should be conducted within the fenced area.</li> </ul>			MPV	Right after possession of site	Implemented
	<ul style="list-style-type: none"> <li>- Major construction site lighting should point inward and downward. Unnecessary lighting should be turned off outside working hours of the construction sites.</li> </ul>			All works area	Construction phase	Implemented
S3.378 -	<ul style="list-style-type: none"> <li>- Excavation works carried out within waterbodies</li> </ul>	To minimise pollution to	Contractor	All works	Construction	To be

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
S3.380	<p>should be carried out in dry season where practicable.</p> <ul style="list-style-type: none"> <li>- Excavation works within the watercourse / drainage channel should be restricted when possible to an enclosed dry section of the watercourse / drainage channel, with containment measures such as bunds and barriers used within the watercourse / drainage channel.</li> <li>- Site runoff should be directed towards regularly cleaned and maintained silt traps and oil / grease separators. The silt and oil / grease separators should be appropriately designed for the local drainage and ground conditions. Tightly sealed closed grab excavators should be deployed where material to be handled is wet.</li> <li>- The flow of the watercourse and drainage channel located with the Project Area should be maintained throughout the construction phase.</li> </ul>	waterbodies		areas	phase	implemented as per construction programme

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
<b>Terrestrial Ecological Impact (Post-construction / Operation Phase)</b>						
S3.327 & S3.412	- Implementation of the groundwater monitoring and emergency response plan.	To detect and minimize hydrogeological impacts	Contractor	MPV	Post-construction phase	To be implemented as per construction programme
S3.381	- The affected agricultural land should be restored to a condition suitable for agricultural use before handing over to landowners / operators.	To minimize impacts to surrounding habitats	MTR / Contractor	All temporarily occupied agricultural land	Operation phase	To be implemented as per construction programme
S3.382 – S3.384	- Vegetation control in the constructed channels should be implemented to prevent the excessive growth of vegetation that would impede the drainage capacity of the channel. To minimise sedimentation, de-silting should be limited to the dry season (November to March). The natural stream bed	To minimise impacts to constructed channels	MTR	All constructed channels in SSS	Operation phase	To be implemented as per construction programme

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	<p>substrate should not be removed from the channel during de-silting works.</p> <ul style="list-style-type: none"> <li>- For maintenance de-silting, temporary barrier walls should be used to provide a dewatered zone for de-silting works. Waste material produced during de-silting should be disposed of in a timely and appropriate manner.</li> </ul>					
S3.385 & S3.387	<ul style="list-style-type: none"> <li>- Large areas of reflective material (including glass) should not be used on the outer surfaces of the buildings.</li> <li>- All the major lighting sources should point inward and downward to minimise glare disturbance to wildlife. The intensity of light should also be controlled to the lowest possible level.</li> </ul>	To minimise impacts to wildlife	MTR / DDC	All ventilation buildings in northern section and SSS	Detailed design and Operation phases	To be implemented as per construction programme
S3.411	<ul style="list-style-type: none"> <li>- Implementation of ecological habitat management plan.</li> </ul>	To monitor the wildlife use of the mitigation	MTR	Mitigation stream habitat in SSS / ERS	Operation phase	To be implemented as per

<b>EIA Ref.</b>	<b>Recommended Mitigation Measures</b>	<b>Objectives of the Recommended Measures &amp; Main Concern to Address</b>	<b>Who to implement the measures?</b>	<b>Location of the measures</b>	<b>When to implement the measures?</b>	<b>Implementation Status</b>
	- Ecological monitoring of the mitigation stream habitats according to ecological habitat management plan.	stream habitat				construction programme
<b>Marine Ecological Impact (Construction Phase)</b>						
Appendix 3.6 (S1.102)	- The use of high-speed vessels should also be avoided during the construction and operation of the proposed barging point.	To minimise the indirect impact to Chinese White Dolphin habitat	Contractor	LKB	Construction phase	To be implemented as per construction programme
Appendix 3.6 (S1.103)	- No dumping of rubbish, oil or chemicals would be allowed.	To minimise the pollution to marine habitats	Contractor	LKB	Construction phase	To be implemented as per construction programme
Appendix 3.6 (S1.104)	- Deployment of silt curtains around the closed grab dredgers to minimize the suspended sediment impact due to dredging activities in dredging region. - To minimize impact on the gorgonians along the	To minimise the impact to subtidal habitats	Contractor	LKB	Construction phase	To be implemented as per construction

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	coastline near the dredging area, double silt curtains should be deployed around the works area.					programme
Appendix 3.6 (S1.106)	- The number of work vessels and small crafts should be minimized. Dredging should be carried out continuously without unnecessary break to prevent unpredictable or sudden noise outbursts at random intervals.	To minimise disturbance impact on Chinese White Dolphin	Contractor	LKB	Construction phase	To be implemented as per construction programme
Appendix 3.7 (S1.83)	- Mitigation measures to control water quality impacts proposed under Section 11 should be adopted.	To minimise indirect impact to intertidal and subtidal flora and fauna	Contractor	WKT	Construction phase	To be implemented as per construction programme
Appendix 3.6 (S1.105)	- Engines of vessels moored at the barging point would be turned off to minimize unnecessary underwater noise.	To minimise disturbance impact on Chinese White Dolphin	Contractor	LKB	Construction phase	To be implemented as per construction programme

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
<b>Pond Fisheries Impact (Pre-construction Phase)</b>						
S4.51	- A monitoring and emergency response plan, in relation to potential impacts due to groundwater drawdown, will form part of the EM&A requirement in the EM&A Manual subject to approval by EPD and AFCD before commencement of the tunnelling and MPV construction in Mai Po area. The plan should include, but not be limited to, details of monitoring locations and programme, a mechanism to monitor the implication from the works to the groundwater system and fish ponds including their water levels, action levels and emergency responses such as immediate action, remedial action and investigation.	To detect and minimize potential hydrological impacts	Contractor	MPV	Pre-construction phase (Before commencement of the tunnelling and MPV construction)	To be implemented as per construction programme
S4.52	- A monitoring and emergency response plan, in relation to impacts due to noise/vibration, should form part of the EM&A requirement in the EM&A	To detect and monitor noise / vibration impacts	Contractor	MPV	Pre-construction phase (Before commencement	Implemented

<b>EIA Ref.</b>	<b>Recommended Mitigation Measures</b>	<b>Objectives of the Recommended Measures &amp; Main Concern to Address</b>	<b>Who to implement the measures?</b>	<b>Location of the measures</b>	<b>When to implement the measures?</b>	<b>Implementation Status</b>
	Manual subject to approval by EPD and AFCD before commencement of the tunnelling and MPV construction in Mai Po area.				of bore tunnelling and MPV construction)	
S4.45	- Consultation should be conducted with fish operators in Mai Po before tunnelling starts. The method of construction, potential impact and mitigation measures should be fully explained to the operators at the meeting.	Engagement of stakeholders	Contractor / MTR	MPV	Pre-construction phase (Before commencement of tunneling works)	To be implemented as per construction programme
<b>Pond Fisheries Impact (Construction Phase)</b>						
S4.51	- Implementation of the groundwater monitoring and emergency response plan.	To detect and minimize hydrogeological impacts	Contractor	MPV	Construction phase (During bore tunneling works and construction of Mai Po Ventilation	To be implemented as per construction programme

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
					Shaft)	
S4.52	- Implementation of the monitoring and emergency response plan on noise and vibration.	To detect and minimize noise / vibration impacts	Contractor	MPV	Construction phase (During bore tunneling works and construction of Mai Po Ventilation Shaft)	Implemented
S4.40	- Good site practices and proper dust and water quality control measures should be implemented. These include site confinement with fencing/hoarding erection at the perimeter of the works area, stockpile covering by impervious sheeting to avoid spread of construction dust, and proper handling, storage and disposal of chemical waste to avoid contamination of the existing water system, etc.	To minimize the indirect off-site impacts on the adjacent fishponds	Contractor	MPV	Construction phase	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
S4.44	<p>Implementation of good site practices during the construction phase:</p> <ul style="list-style-type: none"> <li>▪ Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program;</li> <li>▪ Silencers or mufflers on construction equipment should be utilized and properly maintained during the construction program;</li> <li>▪ Machines and plant (such as trucks) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum;</li> <li>▪ Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby fishponds;</li> <li>▪ Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction activities;</li> <li>▪ Use of movable barrier for certain powered</li> </ul>	To minimize disturbance to fishponds by construction noise	Contractor	MPV	Construction phase	Implemented

<b>EIA Ref.</b>	<b>Recommended Mitigation Measures</b>	<b>Objectives of the Recommended Measures &amp; Main Concern to Address</b>	<b>Who to implement the measures?</b>	<b>Location of the measures</b>	<b>When to implement the measures?</b>	<b>Implementation Status</b>
	mechanical equipment (PME); and <ul style="list-style-type: none"> <li>▪ Use of noise enclosure or acoustic shed to cover certain stationary PME.</li> </ul>					
<b>Pond Fisheries Impact (Post-construction Phase)</b>						
S4.51	- Implementation of the groundwater monitoring and emergency response plan.	To detect and minimize hydrogeological impacts	Contractor	MPV	Post-Construction phase	To be implemented as per construction programme
<b>Marine Fisheries Impact (Construction Phase)</b>						
Appendix 4.2 (S1.38)	- Mitigation measures to control water quality impacts proposed under Section 11 should be adopted.	To minimize the indirect impact on fisheries resources	Contractor	LKB and WKT	Construction phase	To be implemented as per construction programme
<b>Airborne Noise Impact (Construction Phase)</b>						
S5.120	The following good site practices should be implemented:	To reduce construction noise impact	MTR / Contractor	All works areas	Construction phase	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	<ul style="list-style-type: none"> <li>▪ Only well-maintained plant should be operated on-site and plants should be serviced regularly during the construction program;</li> <li>▪ Silencers or mufflers on construction equipment should be utilized and should be properly maintained during the construction program;</li> <li>▪ Mobile plant, if any, should be sited as far from noise sensitive receivers (NSRs) as possible;</li> <li>▪ Machines and plant (such as trucks) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum;</li> <li>▪ Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs; and</li> <li>▪ Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction activities.</li> </ul>					
S5.121-S	The following quiet PME should be used:	To reduce construction	MTR /	Works Areas	Construction	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
5.122 and Table 5.22	<ul style="list-style-type: none"> <li>▪ Pneumatic breaker (SWL=110dB(A))</li> <li>▪ Tracked Excavator Fitted with Hydraulic Breaker (SWL=110dB(A))</li> <li>▪ Truck Mixer (SWL=100dB(A))</li> <li>▪ Tracked Crane (SWL=101dB(A))</li> <li>▪ Dump Truck (SWL=103dB(A))</li> <li>▪ Tracked Excavator/Loader (SWL=105dB(A))</li> <li>▪ Dozer (SWL=111dB(A))</li> <li>▪ Road Roller (SWL=101dB(A))</li> </ul>	noise impact	Contractor	A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, Y, Z, AA, AC, AE, AF, AG and AH	phase	
S5.123 - S5.124	<p>Movable noise barrier should be used for the following PME where practicable:</p> <ul style="list-style-type: none"> <li>▪ Mini backhoe</li> <li>▪ Breaker, mini-robot mounted</li> <li>▪ Vibratory poker</li> <li>▪ Handheld breaker</li> <li>▪ Excavator</li> </ul>	To reduce construction noise impact	MTR / Contractor	Works Areas A, C and D	Construction phase	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	<ul style="list-style-type: none"> <li>▪ Grab</li> <li>▪ Tracked Crane</li> </ul>					
S5.125	<p>Noise enclosure/acoustic shed should be used for the following PME where practicable:</p> <ul style="list-style-type: none"> <li>▪ Air compressor</li> <li>▪ Concrete pump</li> <li>▪ Grout pump</li> <li>▪ Shotcrete pump</li> </ul>	To reduce construction noise impact	MTR / Contractor	Works Areas A, B, C, D, E, F, G, H, I, J, K, L, M, O, P, Q, S, T, U, V and Z	Construction phase	Implemented
S5.125	Acoustic enclosure should be used for enclosing drilling jumbo as fully as possible.	To reduce construction noise impact	MTR / Contractor	Works Areas B, C, F, H and J	Construction phase	To be implemented as per construction programme
S5.127	Silencer should be used for the ventilation fans.	To reduce construction noise impact	MTR / Contractor	Works Areas A, B, C, D, E, F, H, J, L and P	Construction phase	To be implemented as per construction

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
						programme
S5.128	<p>Noise insulating fabric should be applied where practicable to cover the following PME:</p> <ul style="list-style-type: none"> <li>▪ Drill rig</li> <li>▪ Grab and chisel</li> <li>▪ Oscillator &amp; casings</li> <li>▪ Piling rig</li> <li>▪ Piling, large diameter bored, reverse circulation drill</li> <li>▪ Piling, vibrating hammer</li> </ul>	To reduce construction noise impact	MTR / Contractor	Works Areas A, B, C, D, E, G, L, M, N, O, Q, R, S, V	Construction phase	Implemented
S5.130	Use of “Noise Insulating Cover” to cover the mucking out points.	To reduce construction noise impact	MTR / Contractor	Works Area L	Construction phase	To be implemented as per construction programme
S5.131	Use of temporary hoardings along the works boundary.	To reduce construction noise impact	MTR / Contractor	Works Areas B and D	Construction phase	To be implemented

<b>EIA Ref.</b>	<b>Recommended Mitigation Measures</b>	<b>Objectives of the Recommended Measures &amp; Main Concern to Address</b>	<b>Who to implement the measures?</b>	<b>Location of the measures</b>	<b>When to implement the measures?</b>	<b>Implementation Status</b>
						as per construction programme
S5.134-S5.136	Use of saw instead of mini-robot mounted breaker and oscillator pile for removal of superstructures	To reduce construction noise impact	MTR / Contractor	Works Areas N, O and S	Construction phase	To be implemented as per construction programme
S5.137	Scheduling of construction works outside school examination periods	To reduce construction noise impact	MTR / Contractor	Works Areas G, J, K, L, N, O, P, Q, Y, U, V and AH	Construction phase	To be implemented as per construction programme
S5.193	Airborne construction noise monitoring should be conducted in accordance with EM&A Manual to monitor the airborne noise impact.	To monitor airborne noise impact	MTR / Contractor	Proposed monitoring locations	Construction phase	Implemented
<b>Airborne Noise Impact (Operation Phase)</b>						

<b>EIA Ref.</b>	<b>Recommended Mitigation Measures</b>	<b>Objectives of the Recommended Measures &amp; Main Concern to Address</b>	<b>Who to implement the measures?</b>	<b>Location of the measures</b>	<b>When to implement the measures?</b>	<b>Implementation Status</b>
S5.113 and Table 5.21	The maximum permissible sound power levels (Max SWLs) for the fixed plant should be complied with during the selection of equipment and mitigation measures.	To comply with the noise criteria of Noise Control Ordinance	MTR / DDC	MPV, NTV, PHV, SMV, KCV, NCV, MKV, WKV and WKT	Detailed design and operation phases	To be implemented as per construction programme
S5.140	Noise barrier should be erected as follow: <ul style="list-style-type: none"> <li>▪ A 8m high barrier along the access road on eastern side of SSS; and</li> <li>▪ 5.5m barrier along western boundary facing Leung Uk Tsuen squats.</li> </ul>	To comply with the noise criteria of Noise Control Ordinance	MTR / DDC	SSS	Detailed design and operation phases	To be implemented as per construction programme
S5.140	Installation of 13m absorptive panels on both sides and full length of ERS.	To comply with the noise criteria of Noise Control Ordinance	MTR / DDC	ERS	Detailed design and operation phases	To be implemented as per construction programme
S5.196	Noise commissioning test is recommended to monitor the ground-borne noise level complying with NCO.	To monitor ground-borne noise impact	MTR / Contractor	Proposed monitoring	Operation phase	To be implemented

<b>EIA Ref.</b>	<b>Recommended Mitigation Measures</b>	<b>Objectives of the Recommended Measures &amp; Main Concern to Address</b>	<b>Who to implement the measures?</b>	<b>Location of the measures</b>	<b>When to implement the measures?</b>	<b>Implementation Status</b>
				locations		as per construction programme
<b>Ground-borne Noise Impact (Construction Phase)</b>						
S6.82	Ground-borne construction noise monitoring should be conducted in accordance with EM&A Manual to monitor the ground-borne noise impact.	To monitor ground-borne noise impact	MTR / Contractor	Proposed monitoring locations	Construction phase	To be implemented as per construction programme
S6.85	Construction groundborne noise measurement results should be used to further update the ground-borne noise prediction where appropriate.	To update the predicted ground-borne noise levels.	MTR / Contractor	TBM tunneling section	Construction phase	To be implemented as per construction programme
S6.83	Conduct tests of the FDL of the train to update the ground-borne noise prediction and the recommended mitigation measures as necessary.	To confirm the predicted ground-borne noise levels	MTR	-	Prior to the final design of the trackform and the extent of	To be implemented as per construction

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
					each type of trackform, and after the proposed train in operation outside Hong Kong	programme
S6.84	Conduct vibration borehole testing at two carefully selected locations along the proposed tunnel alignment to determine the LSR values under certain geological conditions. The ground-borne noise predictions and the recommendation on mitigation measures should be updated as necessary.	To confirm the predicted ground-borne noise levels	MTR	Proposed two locations	Prior to the commencement of construction works	To be implemented as per construction programme
<b>Ground-borne Noise Impact (Operation Phase)</b>						

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
S6.87	Noise commissioning test is recommended to monitor the ground-borne noise level complying with NCO.	To monitor ground-borne noise impact	MTR / Contractor	Proposed monitoring locations	Operation phase	To be implemented as per construction programme
<b>Landscape and Visual Impact (Construction Phase)</b>						
Table 7.10	All existing trees should be carefully protected during construction as far as possible in accordance with ETWB TCW No. 29/2004 and 3/2006.	To minimize landscape and visual impacts during construction phase	Contractor	Works areas	Detailed design and construction phases	Implemented
	Trees should be retained on site as far as possible. Should removal of trees be unavoidable due to construction impacts, trees will be transplanted or felled depending on stated criteria in the Tree Removal Applications to be submitted separately in accordance with ETWBC 2/2004 and 3/2006. Wood resulting from tree removal should be recycled as mulch or soil conditioner which could be used within the Project or in other projects as much as possible.		Contractor			

<b>EIA Ref.</b>	<b>Recommended Mitigation Measures</b>	<b>Objectives of the Recommended Measures &amp; Main Concern to Address</b>	<b>Who to implement the measures?</b>	<b>Location of the measures</b>	<b>When to implement the measures?</b>	<b>Implementation Status</b>
	Control of night-time lighting glare.		Contractor			
	Erection of decorative screen hoarding to screen off undesirable views of the construction site having consideration of safety and security.		Contractor			
	Reuse of existing topsoil where possible for new planting areas within the project.		Contractor			

**Landscape and Visual Impact (Operation Phase)**

Table 7.11	Compensatory tree planting should be incorporated into the proposed Project where space is available	To minimize landscape and visual impacts during operation phase	MTR	Works areas	Detailed design and operation phases	To be implemented as per construction programme
	Landscape and visual enhancement treatments		MTR			
	Compensatory habitat proposal for natural stream course at SSS		MTR			
	Reinstatement of works area in Nam Cheong Park to integrate with the existing park.		MTR			
	Tall buffer tree planting should be incorporated provide screening to ventilation buildings, engineering structures		MTR			

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	and associated facilities.					
	Roof greening to mitigate the visual impact of VB on the VSRs at high level.		MTR			
	Vertical greening would be incorporated where practicable to visually soften the façade of ventilation building and/or noise barrier		MTR			
	Incorporation of aesthetically pleasing streetscape design which would be responsive to adjacent landscape context.		MTR			
	Roadside amenity trees to enhance the landscape and visual quality of the existing and proposed road.		MTR			
	Reinstatement of disturbed areas to match adjacent area or to condition to suit future landuse.		MTR			
	Aesthetically pleasing design as regard to the form, material and finishes shall be incorporated to all		MTR			

buildings, engineering structures and associated infrastructure facilities so as to blend in the buildings and

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	<p>structures to the adjacent landscape and visual context.</p> <p>Control of Operation Night-time Glare</p> <p>Incorporation of aesthetically pleasing design to boundary fence so as to blend in the structure to the adjacent landscape and visual context.</p> <p>The scale, location, disposition and design of the ventilation shafts at WKCD would be further reviewed and submitted to relevant parties (e.g. WKCDA and PlanD) for agreement.</p>		<p>MTR</p> <p>MTR</p> <p>MTR</p>			
<b>Cultural Heritage Impact</b>						
S8.100 – S8.103	<ul style="list-style-type: none"> <li>Conduct further investigation (a minimum of 18 trial pits, 1m x 1.5m) to confirm any archaeological remains exist in the inaccessible areas (NOL/ERL/300/C/XRL/ENS/M55/303- 304 &amp; 306-307). If archaeological data collected from these 18 test pits is insufficient to ascertain the archaeological potential of the inaccessible areas,</li> </ul>	To confirm any archaeological remains exist in the inaccessible areas and to preserve archaeological remains if any	MTR	Proposed rescue excavation area in SSS and other archaeological deposit areas	Prior to construction phase	To be implemented as per construction programme

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	<p>additional test pits should be conducted</p> <ul style="list-style-type: none"> <li>Conduct rescue excavation to preserve archaeological remains by detailed records if found (NOL/ERL/300/C/XRL/ENS/M55/307)</li> </ul>			identified in the further archaeological investigation		
S8.103	Conduct archaeological watching brief during construction works at TUW for identification of any historical finds during construction phase	To identify any historical finds in the works area	MTR	TUW	Construction phase	To be implemented as per construction programme
S8.104	Conduct regular site audit during the construction of barging point to confirm that no excavation works is conducted at Lung Kwu Sheung Tan archaeological deposit area.	To avoid direct impact	MTR	LKST barging point and associated access road	Construction phase	To be implemented as per construction programme
S8.105	Restriction of works boundary of TPP to be extended to	To avoid direct impact	MTR	TPP	Construction	To be

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	relics discovered area outside TPP.				phase	implemented as per construction programme
S8.107, S8.128	Avoid works areas at the sites of the identified built heritage structures as far as practicable. Identified earth shines within works boundary of SSS and TPP will be relocated by local villagers prior to commencement of construction works at SSS and TPP.	To avoid direct impact	MTR	Earth shines (NHL-04,TK P-02 and LET-07)	Prior to construction phase	To be implemented as per construction programme
S8.109, S8.125	Vibration monitoring at Lai Chi Kok Hospital: <ul style="list-style-type: none"> <li>▪ Prior to commencement of construction works, the location and installation of the monitoring stations should be discussed and agreed with AMO, Hong Kong Institution for Promotion of Chinese Culture (the “NPO”, selected organization for the Revitalisation Scheme), the Commissioner for Heritage’s Office and relevant parties before installation.</li> </ul>	To monitor vibration impacts on the identified vibration sensitive historical buildings	MTR	Ex-Lai Chi Kok Hospital	Before construction phase; Construction phase	To be implemented as per construction programme

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	<ul style="list-style-type: none"> <li>▪ Compliance monitoring of vibration limits should be conducted and reported as a requirement of EM&amp;A programme.</li> </ul>					
S8.110, S8.126	<ul style="list-style-type: none"> <li>▪ A further condition survey and appropriate consolidation works (e.g. installation of temporary propping or reinforced timber beam to maintain the stability of structure etc.), if required, will be carried out on Blocks P Q, W and the inaccessible area of LCKH prior to construction. It should be discussed and agreed in advance with AMO, NPO, the Commissioner for Heritage's Office and relevant parties,</li> </ul>	To minimize vibration impacts on the identified vibration sensitive historical buildings	MTR	Ex-Lai Chi Kok Hospital	Detailed design	To be implemented as per construction programme
S8.112, S8.127	<ul style="list-style-type: none"> <li>▪ If consent is given by the property owner, a condition survey will be carried out at Cheung Yuen prior to the commencement of works in SSS. The survey should be discussed and agreed in advance with AMO and property owner prior to commencement of survey.</li> </ul>	To minimize vibration impacts on the identified vibration sensitive historical buildings	MTR	Cheung Yuen	Prior to construction phase	To be implemented as per construction programme

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
S8.112, S8.127	<ul style="list-style-type: none"> <li>▪ If consent is given by the property owner, vibration monitoring at LET-06 (Cheung Yuen) will be conducted when excavation works are being conducted within 50m radius from the house. The monitoring location should be discussed and agreed with AMO and property owner before installation.</li> </ul>	To monitor vibration impacts on the identified vibration sensitive historical buildings	MTR	Cheung Yuen	Construction phase	To be implemented as per construction programme
S8.113, S8.124	<ul style="list-style-type: none"> <li>▪ Control of vibration levels from the proposed blasting and excavation activities within a peak particle velocity (ppv) limit of 25mm/s to prevent potential vibration impact to all identified built heritage resources.</li> </ul>	To minimize vibration impacts on the identified vibration sensitive historical buildings	MTR	All works area where blasting and excavation activities are involved	Construction phase	To be implemented as per construction programme
S8.114 - S8.115	<ul style="list-style-type: none"> <li>▪ Use of sensibly designed screen hoardings for reducing the potential visual impact.</li> </ul>	To minimize visual impacts	MTR	All identified heritage buildings in all works areas	Detailed design and construction phase	To be implemented as per construction programme

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
<b>Land Contamination Impact</b>						
S9.28 – S9.33	<p>Remediation of Contaminated Soil</p> <ul style="list-style-type: none"> <li>▪ After excavation, confirmation sampling and testing shall be conducted from the sidewalls and at base of the excavations to ensure complete excavation of contaminated soils.</li> <li>▪ Bioremediation (biopiling) / ex-situ chemical oxidation are proposed to remediate the contaminated soil recorded in Sites H and Q. Remediation Report(s) (RR) for contaminated works area(s) should be prepared by the Land Contamination Specialist to detail the remediation process and demonstrate that contaminated soils are all removed, properly handled and disposal of. The remediated soil should be reused on site to minimise the waste disposal.</li> </ul>	To remediate contaminated soil	Contractor	Sites H and Q	Site remediation	To be implemented as per construction programme
S9.35(i)	<p>For construction works of the alignment close to Ngau Tam Mei Landfill</p> <ul style="list-style-type: none"> <li>▪ As a general precautionary measure, visual inspection of excavated materials should be conducted to screen soil for signs of contamination</li> </ul>	Acting as a general precautionary measure to screen soil for signs of contamination during tunnel boring works under/close to Ngau Tam	MTR/Contractor	Within the Landfill Boundary where signs of contamination	During Tunnel Boring within Ngau Tam Mei Landfill	To be implemented as per construction

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	<p>(e.g. discoloration, stains and odour). The inspection process should also be assisted by a photo ionization detector (PID) for volatile organics. If suspected materials are encountered during tunnel boring, sampling and testing for the parameters recommended in Table 6.1 of CAP should be undertaken to verify any contamination. The suspected soil bored out during excavation and tunnel boring should be temporary stockpiled and if laboratory analysis indicated exceedance of relevant RBRG levels, remediation works, should be undertaken depending on the quantity and quality of contaminated soil identified.</p>	Mei Landfill		is identified	Boundary Section	programme
S9.35(ii)	<p>For construction works at CLP transformer station at Lai Cheung Road and Petrol Filling Station at 82 Tai Kok Tsui Road</p> <ul style="list-style-type: none"> <li>▪ As a general precautionary measure, visual inspection of excavated materials should be conducted to screen soil for signs of contamination (e.g. discoloration, stains and odour). The inspection process should also be assisted by a photo ionization detector (PID) for volatile organics. If suspected materials are encountered</li> </ul>	Acting as a general precautionary measure to screen soil for signs of contamination during tunnel boring/ excavation at CLP transformer station at Lai Cheung Road and Petrol Filling Station at 82	MTR/Contractor	Area close to CLP transformer station at Lai Cheung Road and Petrol Filling Station at 82 Tai Kok	During Tunnel Boring/ excavation works near CLP transformer station at Lai Cheung Road and Petrol	To be implemented as per construction programme

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	during tunnel boring, further sampling and testing should also be undertaken to verify any contamination. The soil bored out during excavation and tunnel boring should be temporary stockpiled and if laboratory analysis indicated exceedance of relevant RBRG levels, remediation works, should be undertaken depending on the quantity and quality of contaminated soil identified.	Tai Kok Tsui Road		Tsui Road where signs of contamination is identified	Filling Station at 82 Tai Kok Tsui Road	
S9.35 (iii)	<p>For sites with contamination identified (Site H and Site Q) the following environmental mitigation measures should be undertaken during the course of the site remediation:</p> <ul style="list-style-type: none"> <li>▪ Excavation profiles must be properly designed and executed with attention to the relevant requirements for environment, health and safety;</li> <li>▪ Excavation should be carried out during dry season as far as possible to minimise contaminated runoff from contaminated soils;</li> <li>▪ Supply of suitable clean backfill material is needed after excavation;</li> <li>▪ The chemical oxidant proposed (RegenOx™) as a contaminant mass reduction technology. Comprises</li> </ul>	To minimise the potentially adverse environmental impacts arising from the handling of potentially contaminated materials.	Contractor	Sites H and Q /during transportation	Site remediation and prior to construction phase	To be implemented as per construction programme

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	<p>a solid oxidant complex (sodium percarbonate/catalytic formulation) and an activator complex (a composition of ferrous salt embedded in a micro-scale catalyst gel). These chemical will be securely stored, separately and away from sources of ignition or oxidizable items. Handling will &amp; will be undertaken by persons specifically trained and wearing appropriate PPE.</p> <ul style="list-style-type: none"> <li>▪ Vehicles containing any excavated materials should be suitably covered to limit potential dust emissions or contaminated wastewater run-off, and truck bodies and tailgates should be sealed to prevent any discharge during transport or during wet conditions;</li> <li>▪ Speed control for the trucks carrying contaminated materials should be enforced; and</li> <li>▪ Vehicle wheel and body washing facilities at the site's exist points should be established and used.</li> </ul>					
S9.35(iv)	<p>In order to minimise the potentially adverse effects on health and safety of construction workers during the course of site remediation, the Occupation Safety and Health Ordinance (OSHO) (Chapter 509) and its</p>	<p>To minimise the potentially adverse effects on health and safety of construction workers during the course of site remediation</p>	Contractor	Sites H and Q	Site remediation and prior to construction phase	

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	<p>subsidiary Regulations should be followed by all site personnel working on the site at all times. In addition, the following basic health and safety measures should be implemented as far as possible:</p> <ul style="list-style-type: none"> <li>▪ Set up a list of safety measures for site workers;</li> <li>▪ Provide written information and training on safety for site workers;</li> <li>▪ Keep a log-book and plan showing the contaminated zones and clean zones;</li> <li>▪ Maintain a hygienic working environment;</li> <li>▪ Avoid dust generation;</li> <li>▪ Provide face and respiratory protection gear to site workers;</li> <li>▪ Provide personal protective clothing (e.g. chemical resistant jackboot, liquid tight gloves) to site workers; and</li> <li>▪ Provide first aid training and materials to site workers.</li> </ul>					
9.35(v)	For Areas Feasible or Infeasible for On-Site Inspection	(i) To identify areas with land contamination	MTR/ Contractor	Areas Infeasible for	After land resumption and	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	<p>and Site Investigation</p> <p>(i) Phase 2 supplementary SI works</p> <ul style="list-style-type: none"> <li>▪ Upon site access is granted, site inspection should be carried out to ascertain any contaminative sources and hotspot of contamination within the site.</li> <li>▪ The sampling and testing schedule as recommended in the approved CAP should then be updated based on respective site situation and the number of sampling locations may be significantly reduced. A revised CAP should then be submitted to EPD for endorsement.</li> <li>▪ For supplementary CARs and RAP(s), upon completion of SI and laboratory testing, supplementary CARs should be submitted to EPD for endorsement. If contamination is identified, RAP(s) should also be submitted to EPD for endorsement.</li> <li>▪ The revised CAPs and supplementary CARs and /or RAP(s) should be submitted in separate packages for different works area depending on the schedule of land resumption and the commencement of</li> </ul>	<p>concern, report laboratory results and propose remediation measures if necessary.</p> <p>(ii) To ensure remediation works have been undertaken to before the commencement of any construction works of the Project that may disturb the ground of the south-western portion of the MPV.</p>		On-Site Inspection and Site Investigation and WSW	prior to the construction works commencement at respective sites	

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	<p>construction works for each works area.</p> <ul style="list-style-type: none"> <li>▪ RR(s) should be submitted to demonstrate completion of remediation works before construction work starts at the site.</li> </ul> <p>(ii) WSW</p> <ul style="list-style-type: none"> <li>▪ According to WSW EP Condition 3.14, the Project Proponent of the WSW development shall prepare and submit CAR/RAP to EPD within 2 months after commencement of construction of the WSW development and the recommendations in the endorsed CAR/RAP shall be fully implemented before the commencement of any construction works that may disturb the ground of the relevant sites.</li> <li>▪ This project will ensure that the completion of remediation works before the construction works at contaminated areas start.</li> </ul>					
<b>Waste Management Implications (Construction Phase)</b>						
S10.107	<p>Recommendations for good site practices:</p> <ul style="list-style-type: none"> <li>▪ Prepare a Waste Management Plan approved by the Engineer/Supervising Officer of the Project based</li> </ul>	To implement good site practice for handling, sorting reuse and recycling of C&D	Contractor	All works areas	Construction phase	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	<p>on current practices on construction sites;</p> <ul style="list-style-type: none"> <li>▪ Training of site personnel in, site cleanliness, proper waste management and chemical handling procedures;</li> <li>▪ Provision of sufficient waste disposal points and regular collection of waste;</li> <li>▪ Appropriate measures to minimize windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers;</li> <li>▪ Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; and</li> <li>▪ Separation of chemical wastes for special handling and appropriate treatment.</li> </ul>	materials				
S10.108	<p>Recommendations for waste reduction measures:</p> <ul style="list-style-type: none"> <li>▪ Sorting of demolition debris and excavated materials from demolition works to recover reusable/ recyclable portions (i.e. soil, broken concrete, metal etc.);</li> <li>▪ Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their</li> </ul>	To implement on-site sorting facilitating reuse and recycling of materials as well as proper disposal of waste	Contractor	All works areas	Construction phase	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	<p>proper disposal;</p> <ul style="list-style-type: none"> <li>▪ Encourage collection of aluminium cans by providing separate labelled bins to enable this waste to be segregated from other general refuse generated by the workforce;</li> <li>▪ Proper storage and site practices to minimize the potential for damage or contamination of construction materials;</li> <li>▪ Plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste; and</li> <li>▪ Training should be provided to workers about the concepts of site cleanliness and appropriate waste management procedures, including waste reduction, reuse and recycle.</li> </ul>					
S10.109	The Contractor should prepare and implement a Waste Management Plan (WMP) as a part of the Environmental Management Plan (EMP) in accordance with ETWB TCW No. 19/2005 which describes the arrangements for avoidance, reuse, recovery, recycling, storage, collection, treatment and disposal of different categories of waste to be generated from the	To keep trace of the generation, minimization, reuse and disposal of C&D materials in the Project	Contractor	All works areas	Construction phase	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	construction activities.					
S10.112	<p>Storage of materials on site may induce adverse environmental impacts if not properly managed, recommendations to minimise the impacts include:</p> <ul style="list-style-type: none"> <li>▪ Waste, such as soil, should be handled and stored well to ensure secure containment, thus minimising the potential of pollution;</li> <li>▪ Maintain and clean storage areas routinely;</li> <li>▪ Stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away; and</li> <li>▪ Different locations should be designated to stockpile each material to enhance reuse.</li> </ul>	To minimise potential impacts of waste storage and enhance reusable volume	Contractor	All work areas	Construction phase	Implemented
S10.113	Waste hauliers must hold a valid permit for the collection of waste as stipulated in their permits. Removal of waste should be done in a timely manner.	To collect and remove waste generated	Contractor	All work areas	Construction phase	Implemented
S10.114-115	Implementation of trip-ticket system to monitor waste disposal and control fly-tipping.	To monitor disposal of waste and control fly-tipping	Contractor	All work areas	Construction phase	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	<p>Set up warning signs at vehicular access points reminding drivers of designated disposal sites and penalties of an offence.</p> <p>Installation of close-circuited television at access points of vehicles to monitor and prevent illegal dumping.</p>					
S10.117	<p>Recommendations for excavated materials within works areas:</p> <ul style="list-style-type: none"> <li>▪ Several ramps should be used for transportation of different materials as far as practicable (at SSS/ERS site, both soft and hard materials could be generated with the provision of three ramps, each of them can be used for single material for primary separation). Each ramp should be used for transportation of a single material as far as practicable.</li> <li>▪ If a conveyor system is used, materials should be transported separately on the belts, it is therefore proposed that more than one conveyor belt should be installed if possible. If more than one material is needed to be transported on a single belt, each material should be stockpiled separately once they are removed from the excavation face to the ground and the belt should operate at different times with</li> </ul>	To mitigate and minimize the potential impacts from the storage and transportation of materials within works areas	Contractor	All works areas	Construction Phase	To be implemented as per construction programme

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	<p>different materials as far as practicable.</p> <ul style="list-style-type: none"> <li>▪ Enclosure should also be provided for the conveyor belt, as far as practicable to minimize the of dust generation.</li> <li>▪ Different locations should be designated for each material during stockpiling. Stockpiling may be needed when the conveyor system is under constraint or when the spoil could not be transported away from works area immediately after excavation. Cover should be provided to dusty stockpiles to avoid the materials from being wind-blown or flushed away by water. It is expected that water spraying system should also be equipped to moisten the materials.</li> </ul>					
S10.119	Wet spoil generated from TBM construction, construction of bored piles and D-wall should be properly handled before disposal to Taishan and Fill Banks respectively for reuse in other projects. Dry materials should be mixed with the wet spoil or by the use of lime to reduce water content where applicable.	To minimise impacts to disposal outlet from reception of wet spoil	Contractor	All works areas	Construction phase	To be implemented as per construction programme
S10.120	Wheelwash facilities should be provided before the trucks leave the works area.	To minimise dust impact	Contractor	All works areas	Construction phase	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
S10.121	<p>The Contractor should ensure the on-site separation from inert portion.</p> <p>The waste delivered to landfill should not contain any free water or have water content more than 70% by weight.</p> <p>The haulier must ensure suitable amount of waste would be loaded on different types of trucks used.</p> <p>A one-week notice should be given to EPD with information on Contractor's name and respective contact details.</p>	To meet the requirement for disposal at landfill	Contractor and Waste haulier	All works areas	Construction phase	Implemented
S10.125	<p>This will generally follow the PNAP 25 in handling of dredged/excavated sediment. The dredged / excavated sediments would be loaded onto barges and transported to existing designated disposal sites allocated by the MFC according to their levels of contamination, as presented below:</p> <ul style="list-style-type: none"> <li>▪ For Type 1 sediment, the sediments will be excavated/dredged and transport to designated CEDD Facilities, typically at South Cheung Chau and/or Ninepin.</li> <li>▪ For Type 2 sediment, the sediments will be dredged/excavated and transport to designated CEDD Facilities, typically at East Sha Chau for confined marine disposal.</li> </ul>	To dispose sediment in an authorized and least impacted way	Contractor	All works areas with sediments concern	Detailed Design and Construction phase	To be implemented as per construction programme

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	<ul style="list-style-type: none"> <li>▪ For Type 3 sediment, it would require special treatment/disposal before confined marine disposal at CEDD Facilities, typically at East Sha Chau. In order to have the least potential of loss of contaminants to the marine environment, containment of the sediments in geosynthetic containers is proposed when transporting the sediment.</li> </ul> <p>Field trials are recommended to be undertaken during the detailed design stage to establish the optimum handling method for this approach. The details of the disposal methodology could therefore be confirmed during the detailed design stage, prior to construction.</p>					
S10.126	The basic requirements and procedures for dredged / excavated sediment disposal specified under PNAP 252 shall be followed.	To dispose sediment in an authorized and least impacted way	Contractor	All works areas with sediments concern	Construction phase	To be implemented as per construction programme
S10.127	The Project Proponent will agree in advance with MFC of CEDD on the site allocation by submitting a Construction & Demolition Material Management Plan. The final disposal sites and arrangement will be determined by the MFC and a dumping permit will be	To determine the best handling and disposal option of the sediments.	MTR/ Contractor	All works areas with sediments concern	Detailed Design and Construction phase	To be implemented as per construction programme

<b>EIA Ref.</b>	<b>Recommended Mitigation Measures</b>	<b>Objectives of the Recommended Measures &amp; Main Concern to Address</b>	<b>Who to implement the measures?</b>	<b>Location of the measures</b>	<b>When to implement the measures?</b>	<b>Implementation Status</b>
	obtained from the DEP prior to the commencement of the dredging and excavation works.					
S10.128	The contractor for the dredging/ excavation works shall apply for the site allocations of marine sediment disposal based on the prior agreement with MFC/CEDD. The contractor shall apply for all necessary permits from relevant authorities for the disposal of dredged / excavated sediment.	To dispose the sediments in an authorized way.	Contractor	All works areas with sediments concern	Construction phase	To be implemented as per construction programme
S10.129	If temporary stockpiling of sediments is necessary, the sediment should be covered by tarpaulin and earth bunds or sand bag barriers should be provided on site to prevent leachate from entering the drains and surrounding water bodies. The stockpiling areas should be completely paved or covered by lining avoiding contaminating the soil or groundwater underneath.	To prevent the cross contamination of surrounding soils and water bodies	Contractor	All works areas with sediments concern	Construction phase	To be implemented as per construction programme
S10.130	The dredged / excavated sediment should be transported by covering trucks to designated barging points. The barge transporting the sediments to the designated disposal site should be equipped with tight fitting seals to prevent leakage. Besides, the barge should not be filled to a level that would cause overflow of materials or laden water during loading or transportation.	To prevent overflowing of sediments to the surrounding area and water bodies	Contractor	All works areas with sediments concern / trucks / barges	Construction phase	To be implemented as per construction programme

<b>EIA Ref.</b>	<b>Recommended Mitigation Measures</b>	<b>Objectives of the Recommended Measures &amp; Main Concern to Address</b>	<b>Who to implement the measures?</b>	<b>Location of the measures</b>	<b>When to implement the measures?</b>	<b>Implementation Status</b>
S10.131	Loading of the dredged / excavated sediment to the barge should be controlled to avoid splashing and overflowing of the sediment slurry to the surrounding water.	To prevent overflowing of sediments to the surrounding area and water bodies	Contractor	Barging points	Construction phase	To be implemented as per construction programme
S10.132	In order to minimise the potential odour emissions during the dredging / excavation operation and transportation of the sediment, the dredged / excavated sediment placed on barges should be properly covered as far as practicable. Requirement of the <i>Air Pollution Ordinance (Construction Dust) Regulation</i> , where relevant, should be adhered to during the construction phase of the Project.	To minimise dust and odor impacts to surrounding environment	Contractor	All works areas with sediments concern / Barging points	Construction phase	To be implemented as per construction programme
S10.134	Workers should wear protective gloves when carrying out the dredging / excavation works. Adequate washing and cleaning facilities should be provided on site.	To minimise the exposure to the contaminated sediments	Contractor	All works areas with sediments concern	Construction phase	Implemented
S10.135	For allocation of sediment disposal site and application of marine dumping permit, another proposal for sampling and chemical testing of the sediment will be prepared and submitted to the EPD for approval following the procedures in PNAP 252. The approved detailed sampling and chemical testing will be carried out prior to the commencement of the	To analyse the sediments quality and determine the best disposal option	Contractor	All works areas with sediments concern	Construction phase	To be implemented as per construction programme

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	<p>dredging/excavation activities to confirm the sediment disposal method. The contamination levels of the marine sediment to be dredged / excavated have to be analysed and recorded. After carrying out the sampling and testing, a Sediment Quality Report (SQR) will be prepared for EPD approval as required under the <i>Dumping at Sea Ordinance</i> to agree and confirm the quantities and extent of the contamination of the sediments prior to the dredging/ construction contract being tendered. The SQR will include the sampling details, the chemical testing results, quality control records, proposed classification and delineation of sediment according to the requirements of the Appendix A of PNAP 252.</p>					
S10.136	<p>If chemical wastes are produced at the construction site, the Contractor would be required to register with the EPD as a chemical waste producer and to follow the guidelines stated in the <i>Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes</i>. Containers used for storage of chemical waste should :</p> <ul style="list-style-type: none"> <li>▪ Be compatible with the chemical wastes being stored, maintained in good condition and securely sealed;</li> <li>▪ Have a capacity of less than 450 litres unless the</li> </ul>	To properly store the chemical waste within works areas	Contractor	All works areas	Construction phase	Implemented

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	<p>specifications have been approved by EPD; and</p> <ul style="list-style-type: none"> <li>▪ Display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the <i>Waste Disposal (Chemical Waste) (General) Regulation</i>.</li> </ul>					
S10.137	<p>The chemical storage areas should:</p> <ul style="list-style-type: none"> <li>▪ Be clearly labelled to indicate corresponding chemical characteristics of the chemical waste and used for storage of chemical waste only;</li> <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; and</li> <li>▪ Be properly arranged so that incompatible materials are adequately separated.</li> </ul>	To prepare appropriate storage areas for chemical waste at works areas	Contractor	All works areas	Construction phase	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
S10.138	Lubricants, waste oils and other chemical wastes would be generated during the maintenance of vehicles and mechanical equipments. Used lubricants should be collected and stored in individual containers which are fully labelled in English and Chinese and stored in a designated secure place.	To clearly label the chemical waste at works areas	Contractor	All works areas	Construction phase	Implemented
S10.139	A trip-ticket system should be operated in accordance with the <i>Waste Disposal (Chemical Waste) (General) Regulation</i> to monitor all movements of chemical waste. The Contractor should employ a licensed collector to transport and dispose of the chemical wastes, to either the approved CWTC at Tsing Yi, or another licensed facility, in accordance with the <i>Waste Disposal (Chemical Waste) (General) Regulation</i> .	To monitor the generation, reuse and disposal of chemical waste	Contractor	All works areas	Construction phase	Implemented
S10.140	General refuse should be stored in enclosed bins or compaction units separate from C&D materials and chemical waste. A reputable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D materials and chemical wastes.	To properly store and separate from other C&D materials for subsequent collection and disposal	Contractor	All works areas	Construction phase	Implemented
S10.141	The recyclable component of general refuse, such as aluminium cans, paper and cleansed plastic containers should be separated from other waste. Provision and collection of recycling bins for different types of	To facilitate recycling of recyclable portions of refuse	Contractor	All works areas	Construction phase	Implemented

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	recyclable waste should be set up by the Contractor. The Contractor should also be responsible for arranging recycling companies to collect these materials.					
S10.142	The Contractor should carry out a training programme for workers in avoiding, reducing, reusing and recycling of materials generation. Posters and leaflets advising on the use of the bins should also be provided in the sites as reminders.	To raise workers' awareness on recycling issue	Contractor	All works areas	Construction phase	Implemented
<b>Waste Management Implications (Operation Phase)</b>						
S10.146-10.147	<p>Chemical waste:</p> <ul style="list-style-type: none"> <li>▪ The requirements stipulated in the <i>Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes</i> should be followed in handling of chemical waste as in construction phase.</li> <li>▪ A trip-ticket system should be operated in accordance with the <i>Waste Disposal (Chemical Waste) (General) Regulation</i> to monitor all movements of chemical wastes which would be collected by a licensed collector to a licensed facility for final treatment and disposal.</li> </ul>	To avoid environmental impacts in handling, storage and disposal of chemical waste	MTR	Ventilation buildings, SSS and WKT	Operation phase	To be implemented as per construction programme

<b>EIA Ref.</b>	<b>Recommended Mitigation Measures</b>	<b>Objectives of the Recommended Measures &amp; Main Concern to Address</b>	<b>Who to implement the measures?</b>	<b>Location of the measures</b>	<b>When to implement the measures?</b>	<b>Implementation Status</b>
	<ul style="list-style-type: none"> <li>The recommendations proposed for the mitigation of impacts from chemical waste in construction phase should also be followed (refer to S10.104-S10.106).</li> </ul>					
S10.148-S10.149	<p>General refuse:</p> <ul style="list-style-type: none"> <li>Provide recycling bins at designated areas for proper recycling of papers, aluminium cans and plastics bottles.</li> <li>Separation from other waste types and collected by licensed collectors at daily basis to minimize the potential impacts from odour and vermin.</li> </ul>	To separate general refuse from other waste types and proper disposal of the refuse	MTR	Ventilation buildings, SSS and WKT	Operation phase	To be implemented as per construction programme
S10.150	<p>Industrial waste:</p> <ul style="list-style-type: none"> <li>Separation of reusable components like steel before collection by licensed collector</li> </ul>	To recycle useful materials from industrial waste and proper disposal	MTR	Ventilation buildings, SSS and WKT	Operation phase	To be implemented as per construction programme
<b>Water Quality Impact (Construction Phase)</b>						
S11.128 - S11.153	Construction site run-off and general construction activities:	To control water quality impact from construction	MTR / Contractor	All works areas	Construction phase	Implemented

<b>EIA Ref.</b>	<b>Recommended Mitigation Measures</b>	<b>Objectives of the Recommended Measures &amp; Main Concern to Address</b>	<b>Who to implement the measures?</b>	<b>Location of the measures</b>	<b>When to implement the measures?</b>	<b>Implementation Status</b>
	<ul style="list-style-type: none"> <li>▪ The mitigation measures as outlined in the ProPECC PN 1/94 Construction Site Drainage should be adopted where applicable.</li> </ul>	site runoff and general construction activities				
S11.154	<p>Groundwater seepages from uncontaminated area:</p> <ul style="list-style-type: none"> <li>▪ In case seepage of uncontaminated groundwater occurs, groundwater should be pumped out from the works areas and discharged into the storm system via silt removal facilities. Uncontaminated groundwater from dewatering process should also be discharged into the storm system via silt traps.</li> </ul>	To control water quality impact from groundwater from uncontaminated area	MTR / Contractor	All works areas	Construction phase	To be implemented as per construction programme
S11.155	As the proposed WKT is near the Victoria Harbour, high ground water level regime due to both tidal effects and rainwater infiltration is anticipated. A cofferdam wall should be built to limit groundwater inflow to the excavation works areas in the WKT site.	To control water quality impact from groundwater from uncontaminated area	MTR / Contractor	WKT	Construction phase	To be implemented as per construction programme
S11.156	To monitor the tide and groundwater relationship, it is recommended to install groundwater level loggers at the nearest tidal areas (i.e. near Mai Po).	To monitor the groundwater level	MTR / Contractor	Mai Po	Construction phase	To be implemented as per construction

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
						programme
S11.157 - S11.158	<p>Site Runoff or Groundwater from contaminated areas:</p> <ul style="list-style-type: none"> <li>▪ No directly discharge of groundwater from contaminated areas should be adopted.</li> <li>▪ Prior to any excavation works within the potentially contaminated areas, the baseline groundwater quality in the areas should be reviewed based on the past relevant site investigation data and any additional groundwater quality measurements to be performed with reference to <i>Guidance Note for Contaminated Land Assessment and Remediation</i> and the review results should be submitted to EPD for examination. If the review results indicated that the groundwater to be generated from the excavation works would be contaminated, this contaminated groundwater should be either properly treated or properly recharged into the ground in compliance with the requirements of the TM-DSS.</li> <li>▪ If wastewater treatment is to be deployed for</li> </ul>	To control water quality impact from contaminated groundwater	MTR / Contractor	Excavation areas where contaminated ground-water is found	Construction phase	To be implemented as per construction programme

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	<p>treating the contaminated groundwater, the wastewater treatment unit shall deploy suitable treatment processes (e.g. oil interceptor / activated carbon) to reduce the pollution level to an acceptable standard and remove any prohibited substances (such as TPH) to an undetectable range.</p> <ul style="list-style-type: none"> <li>▪ All treated effluent from the wastewater treatment plant shall meet the requirements as stated in TM-DSS and should be either discharged into the foul sewers or tankered away for proper disposal.</li> <li>▪ If deployment of wastewater treatment is not feasible for handling the contaminated groundwater, groundwater recharging wells should be installed as appropriate for recharging the contaminated groundwater back into the ground. The recharging wells should be selected at places where the groundwater quality will not be affected by the recharge operation as indicated in section 2.3 of the TM-DSS. The baseline groundwater quality should be determined prior to the selection of the recharge wells, and submit a working plan to EPD for agreement. Pollution levels of groundwater to be recharged shall not be higher than pollutant levels of ambient groundwater at the</li> </ul>					

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	<p>recharge well. Groundwater monitoring wells should be installed near the recharge points to monitor the effectiveness of the recharge wells and to ensure that no likelihood of increase of groundwater level and transfer of pollutants beyond the site boundary. Prior to recharge, free products should be removed as necessary by installing the petrol interceptor. The Contractor should apply for a discharge licence under the WPCO through the Regional Office of EPD for groundwater recharge operation or discharge of treated groundwater.</p>					
S11.128 - S11.136, S11.160	<p>Barging points:</p> <p>Mitigation measures for control water quality impact from surface run-off should be applied.</p> <p>The following good site practices should also be adopted:</p> <ul style="list-style-type: none"> <li>▪ all vessels should be sized so that adequate clearance is maintained between vessels and the seabed in all tide conditions, to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash</li> </ul>	To control water quality impact from barging point	MTR / Contractor	All barging Points	Construction phase	To be implemented as per construction programme

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	<ul style="list-style-type: none"> <li>▪ all hopper barges should be fitted with tight fitting seals to their bottom openings to prevent leakage of material</li> <li>▪ construction activities should not cause foam, oil, grease, scum, litter or other objectionable matter to be present on the water within the site</li> <li>▪ loading of barges and hoppers should be controlled to prevent splashing of material into the surrounding water. Barges or hoppers should not be filled to a level that will cause the overflow of materials or polluted water during loading or transportation</li> </ul>					
S11.161	<p>Effluent discharge:</p> <p>There is a need to apply to EPD for a discharge licence for discharge of effluent from the construction site under the WPCO. The discharge quality should meet the requirements specified in the discharge licence. Minimum distances of 100 m should be maintained between the discharge points of construction site effluent and the existing seawater intakes. If monitoring of the treated effluent quality from the works areas is required during the construction phase</p>	To control water quality impact from effluent discharge from construction site	MTR / Contractor	All works areas	Construction phase	Implemented

<b>EIA Ref.</b>	<b>Recommended Mitigation Measures</b>	<b>Objectives of the Recommended Measures &amp; Main Concern to Address</b>	<b>Who to implement the measures?</b>	<b>Location of the measures</b>	<b>When to implement the measures?</b>	<b>Implementation Status</b>
	of the Project, the monitoring should be carried out in accordance with the WPCO license which is under the ambit of regional office (RO) of EPD.					
S11.162	Accidental spillage of chemicals:  Contractor should register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes.	To control water quality impact from accidental chemical spillage	MTR / Contractor	All works areas	Construction phase	Implemented
S11.163	Any service shop and maintenance facilities should be located on hard standings within a bunded area, and sumps and oil interceptors should be provided. Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges.	To control water quality impact from accidental chemical spillage	MTR / Contractor	All works areas	Construction phase	To be implemented as per construction programme
S11.164	Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published under the Waste	To control water quality impact from accidental chemical spillage	MTR / Contractor	All works areas	Construction phase	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	<p>Disposal Ordinance details the requirements to deal with chemical wastes. General requirements are given as follows:</p> <ul style="list-style-type: none"> <li>▪ Suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport.</li> <li>▪ Chemical waste containers should be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents.</li> <li>▪ Storage area should be selected at a safe location on site and adequate space should be allocated to the storage area.</li> </ul>					
S11.165	<p>Surface construction works at or in close proximity of watercourses or seafront:</p> <ul style="list-style-type: none"> <li>▪ The proposed surface construction works should be carried out in dry season as far as practicable where the flow in the river channel or stream is low.</li> <li>▪ The use of less or smaller construction plants may be specified to reduce the disturbance to the riverbed or pond deposits.</li> </ul>	<p>To control water quality impact from construction works at or in close proximity of watercourses or seafront</p>	<p>MTR / Contractor</p>	<p>All works areas</p>	<p>Construction phase</p>	<p>To be implemented as per construction programme</p>

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	<ul style="list-style-type: none"> <li>▪ Temporary sewerage system should be designed to prevent wastewater from entering the river, streams and sea.</li> <li>▪ Temporary storage of materials (e.g. equipment, filling materials, chemicals and fuel) and temporary stockpile of construction materials should be located well away from any water courses during carrying out of the construction works.</li> <li>▪ Stockpiling of construction materials and dusty materials should be covered and located away from any water courses.</li> <li>▪ Construction debris and spoil should be covered up and/or disposed of as soon as possible to avoid being washed into the nearby water receivers.</li> <li>▪ Construction activities, which generate large amount of wastewater, should be carried out in a distance away from the waterfront, where practicable.</li> <li>▪ Mitigation measures to control site run-off from entering the nearby water environment should be implemented to minimize water quality impacts. Surface channels should be provided along the edge</li> </ul>					

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	<p>of the waterfront within the work sites to intercept the run-off.</p> <ul style="list-style-type: none"> <li>▪ Construction effluent, site run-off and sewage should be properly collected and/or treated.</li> <li>▪ Any works site inside the water courses should be temporarily isolated. The water flow should be temporarily diverted to downstream by using PVC pipes, steel arrays in concrete case or similar, restricting the excavation works to be conducted within an enclosed dry section of the channel. This works arrangement would provide a dry zone for excavation works within the river channel and would prevent the conveyance of suspended sediment downstream. Dewatering at works section should be conducted prior to the commencement of works. Further limiting or reducing the works area inside the water courses should be considered during wet season or rainstorm event in order to reduce the area of exposed surface.</li> <li>▪ Silt curtain should be installed around the construction activities at or near the watercourses to minimize the potential impacts due to accidental</li> </ul>					

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	<p>spillage of construction wastes and excavated materials.</p> <ul style="list-style-type: none"> <li>▪ Proper shoring may need to be erected in order to prevent soil or mud from slipping into the watercourses.</li> <li>▪ Supervisory staff should be assigned to station on site to closely supervise and monitor the works.</li> </ul>					
S11.166	<p>Surface construction works close to water gathering grounds:</p> <ul style="list-style-type: none"> <li>▪ The conditions as specified in WSD guidelines on protection of Water Gathering Ground should be followed or observed where practicable</li> </ul>	To control water quality impact from surface construction works close to Water Gathering Ground	MTR / Contractor	Works areas close to water gathering ground	Construction phase	To be implemented as per construction programme
S11.167	<p>Dredging of marine sediments at LKST:</p> <ul style="list-style-type: none"> <li>▪ Closed grab dredger should be used to minimize the loss of sediment during the raising of the loaded grabs through the water column.</li> <li>▪ No more than one closed grab dredger should be operated at any one time.</li> <li>▪ Double silt curtains should be deployed around the dredging operations as far as practicable.</li> </ul>	To minimize the loss of fine sediment to suspension during dredging of marine sediments at LKST	MTR / Contractor	Marine dredging at LKST	Construction phase	To be implemented as per construction programme

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	<ul style="list-style-type: none"> <li>▪ The descent speed of grabs should be controlled to minimize the seabed impact speed.</li> <li>▪ Barges should be loaded carefully to avoid splashing of material.</li> <li>▪ All barges used for the transport of dredged materials should be fitted with tight bottom seals in order to prevent leakage of material during loading and transport.</li> <li>▪ All barges should be filled to a level which ensures that material does not spill over during loading and transport to the disposal site and that adequate freeboard is maintained to ensure that the decks are not washed by wave action.</li> </ul>					
S11.83 and S11.165	<p>Diversion of watercourse:</p> <ul style="list-style-type: none"> <li>▪ The excavation works at the existing stream in Shek Kong/ Kam Tin Nullah should be carried out by approved methods by the Engineer to minimise erosion. Should excavation works be carried out at the designated section of water course, temporary river diversion should be conducted prior to the commencement of works to avoid water flowing into works area. The temporary diversion of water</li> </ul>	To control water quality impact due to diversion of watercourse	MTR / Contractor	Watercourse to be diverted in Shek Kong	Construction phase	To be implemented as per construction programme

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	<p>flow should be performed by appropriate means, such as completing the construction of the proposed channel section for carrying diverted flow prior to excavation works, or other similar methods, as approved by the Engineer to suit the works condition. This works arrangement would provide a dry zone for excavation works within the river channel and would prevent the conveyance of suspended sediment downstream. Dewatering at works section should also be conducted prior to the commencement of works.</p> <ul style="list-style-type: none"> <li>▪ Mitigation measures for minimizing the water quality impact for surface construction works at or close to the watercourses should also be applied.</li> </ul>					
S. 11.169 - 11.173	<p>Hydrogeological Impact:</p> <p>For the cut and cover tunnels and associated excavations for vent buildings and emergency access/escape points, the following measures should be in place in order to mitigate any drawdown effects to the groundwater table during the operation of the temporary dewatering works:</p> <ul style="list-style-type: none"> <li>▪ Toe grouting should be applied beneath the toe level of the temporary/permanent cofferdam walls</li> </ul>	To control groundwater hydrogeological impact and groundwater drawdown	MTR/ Contractor	All works areas	Construction phase	To be implemented as per construction programme

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	<p>as necessary to lengthen the effective flow path of groundwater from outside and thus control the amount of water inflow to the excavation.</p> <ul style="list-style-type: none"> <li>▪ Recharge wells should be installed as necessary outside the excavation areas. Water pumped from the excavation areas should be recharge back into the ground.</li> </ul> <p>The bored tunnels should be constructed using a closed face tunnel boring machine to limit water inflow into the excavation face. The cutter head for the machine will be sealed during excavation and therefore the water inflow from the face will be very small. Precast undrained linings should be installed and back grouted behind the tunnel boring machine as it advances along the alignment to minimize the potential inflow of water behind the cutter head.</p> <p>The Contractor should initially adopt suitable water control strategies while undertaking the excavation works. The water control strategies are shown as follow:</p>					

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	<ul style="list-style-type: none"> <li>▪ Probing Ahead: As normal practice, the Contractor will undertake rigorous probing of the ground ahead of tunnel excavation works to identify zones of significant water inflow. The probe drilling results will be evaluated to determine specific grouting requirements in line with the tunnel advance. In such zones of significant water inflow that could occur as a result of discrete, permeable features, the intent would be to reduce overall inflow by means of cut-off grouting executed ahead of the tunnel advance.</li> <li>▪ Pre-grouting: Where water inflow quantities are excessive, pre-grouting will be required to reduce the water inflow into the tunnel. The pre-grouting will be achieved via a systematic and carefully specified protocol of grouting.</li> <li>▪ In principle, the grout pre-treatment would be designed on the basis of probe hole drilling ahead of the tunnel face.</li> </ul> <p>In the event of excessive drawdown being observed within the ground water table as a result of the tunnelling works even after incorporation of the water</p>					

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	<p>control strategies, post-grouting will be applied as described below:</p> <ul style="list-style-type: none"> <li>▪ Post-grouting: Groundwater drawdown will be most likely due to inflows of water into the tunnel that have not been sufficiently controlled by the pre-grouting measures. Where this occurs post grouting will be undertaken before the lining is cast. Whilst unlikely to be required in significant measure, such a contingency should be allowed for reduction in permeability of the tunnel surround (by grouting) to limit inflow to acceptable levels.</li> </ul> <p>A detailed groundwater monitoring programme should be developed in detailed design stage to monitor both the proposed works and the impact of those works on the adjacent area.</p>					
<b>Water Quality Impact (Operation Phase)</b>						
S11.174	<p>Tunnel run-off and drainage:</p> <ul style="list-style-type: none"> <li>▪ Track drainage channels discharge should pass through oil/grit interceptors/chambers to remove</li> </ul>	To control runoff from rail track	MTR / DDC	Tunnels and rail tracks	Operation phase	To be implemented as per construction

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	<p>oil, grease and sediment before being pumped to the foul sewer/holding tank for further disposal.</p> <ul style="list-style-type: none"> <li>▪ The silt traps and oil interceptors should be cleaned and maintained regularly.</li> <li>▪ Oily contents of the oil interceptors should be transferred to an appropriate disposal facility, or to be collected for reuse, if possible.</li> </ul>					programme
S11.175 – S11.176	<p>Sewage effluents:</p> <ul style="list-style-type: none"> <li>▪ Connection of domestic sewage generated from the Project should be diverted to the foul sewer wherever possible. If public sewer system is not available, sewage tanking away services or on-site sewage treatment facilities should be provided to prevent direct discharge of sewage to the nearby storm system and all the discharge should comply with the requirements stipulated in the TM-DSS.</li> <li>▪ For handling, treatment and disposal of other operation stage effluent, the practices outlined in ProPECC PN 5/93 should be adopted where applicable.</li> </ul>	To control water quality impact from sewage effluent discharge ventilation buildings, SSS and WKT	MTR / DDC	Ventilation buildings, SSS and WKT	Operation phase	To be implemented as per construction programme

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
S11.177-S11.181	<p>Shek Kong Stabling Sidings (SSS):</p> <ul style="list-style-type: none"> <li>▪ All the maintenance areas within the SSS should be housed or covered to prevent generation of contaminated rainwater runoff. All wastewater generated from the maintenance and cleaning activities should be collected and diverted to oil interceptor or other appropriate treatment facilities for proper treatment so that it satisfies the requirements stipulated in the TM-DSS.</li> <li>▪ In case there is no public sewer available for the SSS during the operation phase, all wastewater generated or collected in the SSS should be tankered away for proper disposal to prevent direct discharge of any wastewater to the nearby surface water system.</li> <li>▪ Oil interceptors should be regularly inspected and cleaned to avoid wash-out of oil during storm conditions. A bypass would be provided to avoid overload of the interceptor's capacity.</li> <li>▪ All waste oils and fuels should be collected and handled in compliance with the Waste Disposal Ordinance. Site drainage should be well maintained and good management practices should be observed</li> </ul>	To control water quality impacts from the operation of Shek Kong Stabling Sidings	MTR/DDC	SSS	Operation phase	To be implemented as per construction programme

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	<p>to ensure that oils and chemicals are managed, stored and handled properly and do not enter the nearby water streams. Areas for chemical storage should be securely locked. The storage area should 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, to minimize the impacts from any potential accidents. In case of the occurrence of accidental spillage of chemicals, it is required to take immediate actions to control the release of chemicals.</p> <ul style="list-style-type: none"> <li>▪ Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published under the Waste Disposal Ordinance details the requirements to deal with chemical wastes.</li> </ul>					
S11.182	For any future maintenance desilting of the newly constructed or diverted watercourses, temporary barrier walls should be used to provide a dry zone for desilting work. Maintenance desilting should be carried out	To control water quality impact due to maintenance desilting of the newly	MTR	Diverted watercourses in Shek Kong	Operation phase	To be implemented as per

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	during periods of low flow in the dry season.	constructed or diverted watercourses				construction programme
<b>Air Quality (Construction Phase)</b>						
S 12.78	For concrete batching plant, the requirements and mitigation measures stipulated in the <i>Guidance Note on the Best Practicable Means for Cement Works (Concrete Batching Plant) BPM 3/2(93)</i> should be followed and implemented.	To minimize dust impacts	MTR / Contractor	Concrete batching plant at works area V	Construction phase	To be implemented as per construction programme
Table 12.9 and Table 12.12	<p>The design emission concentration of dust collector for different types of silos for concrete batching plant should be:</p> <ul style="list-style-type: none"> <li>▪ Dust collector for each small Cement Silo <math>\leq 30 \text{ mg/m}^3</math></li> <li>▪ Dust collector for each Large Capacity Cement Silo <math>\leq 50 \text{ mg/m}^3</math></li> <li>▪ Dust collector for each PFA Silo <math>\leq 30 \text{ mg/m}^3</math></li> <li>▪ Dust collector for each Mixer <math>\leq 40 \text{ mg/m}^3</math></li> </ul> <p>During operation of concrete batching plant:</p>	To minimize dust impacts	MTR / Contractor	Concrete batching plant at works area V	Construction phase	To be implemented as per construction programme

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	<ul style="list-style-type: none"> <li>▪ The aggregates should be unloaded from the tipper trucks to the receiving hopper equipped with enclosures on 3 sides and top cover, and water spraying system.</li> <li>▪ The cement and PFA should be directly loaded into the silo via a flexible duct. Dust collectors should be installed at the cement/PFA silo based on the above design emission rates.</li> <li>▪ The aggregates should be stored in fully enclosed overhead storage bins. The top of overhead storage bins should be covered with cladding. Water spraying system should be installed at the top of storage bins for watering the aggregates, and aggregate storage bins should be fully enclosed.</li> <li>▪ The whole process of weighing and mixing of cementitious material should be performed in a fully enclosed environment. The mixers shall equip with the dust collectors based on the above design emission rates.</li> <li>▪ The concrete should be directly loaded from the mixer into the transit mixer of a truck in “wet” form.</li> </ul>					

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	<ul style="list-style-type: none"> <li>▪ Haul road within the site should be paved. Wheel washing pit should be installed at the gate of the concrete batching plant. Water spraying system should be installed along the haul road.</li> </ul>					
Table 12.10	<p>(1) Cut &amp; Cover Areas and Stockpiles in the vicinity of adits/shafts:</p> <p>(a) Heavy construction activities at Cut &amp; Cover Areas, Storage of materials at Stockpiles - Active areas for heavy construction activities, loading &amp; unloading materials at stockpiles</p> <ul style="list-style-type: none"> <li>▪ The specified requirements for cut &amp; cover areas and stockpiles at Shek Kong, Nam Cheong and West Kowloon works areas are as follows: <ul style="list-style-type: none"> <li>(i) Shek Kong works area – active area minimized to 15% of total area, watering with complete coverage of active area ten times a day.</li> <li>(ii) Nam Cheong works area – active area minimized to 30% of total area, watering with complete coverage of active stockpile area four</li> </ul> </li> </ul>	To minimize dust impacts	MTR / Contractor	All works areas	Construction phase	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	<p>times a day.</p> <p>(iii) West Kowloon works area – active area minimized to 15% of total area, watering with complete coverage of active area eight times a day.</p> <ul style="list-style-type: none"> <li>▪ For other sites, the active area would be minimized to 30% of the total area, water spraying system would be applied on the active area and watering with complete coverage of active area four times a day would be required.</li> <li>▪ The remaining inactive area would be well covered with impervious sheeting at all work sites.</li> </ul> <p>(b) Trucks - Transportation of materials</p> <ul style="list-style-type: none"> <li>▪ Wheel wash facilities provided at the site exit. The vehicles should be washed before leaving the stockpiles. The spoils should also be well covered before leaving the site in order to minimise generation of dusty materials.</li> <li>▪ The haul roads within the site should be paved and water spraying would be provided to keep the wet condition.</li> <li>▪ For the Shek Kong works area, watering paved haul</li> </ul>					

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	<p>roads once per hour would be provided.</p> <p>(2) Temporary stockpiles within barging facilities:</p> <p>(a) Loading point - Loading of spoils from trucks onto stockpile</p> <ul style="list-style-type: none"> <li>▪ Water spraying should be provided at the loading points to suppress the dust impact.</li> </ul> <p>(b) Storage of materials - Active area for loading &amp; unloading materials</p> <ul style="list-style-type: none"> <li>▪ Water spraying system should be applied on the active area and watering with complete coverage of active area four times a day is required.</li> </ul>					
Table 12.11	<p>Barging facilities:</p> <p>(1) Haul road within barging facilities - Transportation of spoils to the barging points</p> <ul style="list-style-type: none"> <li>▪ All road surfaces within the barging facilities should be paved and water spraying should be provided to keep the wet condition. For paved haul roads at West Kowloon and Nam Cheong, watering</li> </ul>	To minimize dust impacts	MTR / Contractor	All barging points	Construction phase	To be implemented as per construction programme

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	<p>haul road once per hour is required.</p> <p>(2) Unloading of materials - Unloading of spoil materials</p> <ul style="list-style-type: none"> <li>▪ The unloading process should be undertaken within enclosed tipping hall. Water spraying and dust curtain should be provided at the discharge point for dust suppression.</li> </ul> <p>(3) Trucks - Vehicles leaving the barging facilities</p> <ul style="list-style-type: none"> <li>▪ Vehicle wheel washing facilities should be provided at site exit.</li> </ul> <p>(4) Transportation of spoils to one of the Nam Cheong Barging Point</p> <ul style="list-style-type: none"> <li>▪ Fully enclosed conveyor system should be adopted for transportation of spoils from shaft to the barging point.</li> </ul>					
S 12.78	<p>Dust suppression measures stipulated in the Air Pollution Control (Construction Dust) Regulation and good site practices:</p> <ul style="list-style-type: none"> <li>▪ Use of regular watering, with complete coverage, to reduce dust emissions from exposed site surfaces</li> </ul>	To minimize dust impacts	MTR / Contractor	All works areas	Construction phase	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	<p>and unpaved roads, particularly during dry weather.</p> <ul style="list-style-type: none"> <li>▪ Use of frequent watering for particularly dusty construction areas and areas close to ASRs.</li> <li>▪ Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering should be applied to aggregate fines.</li> <li>▪ Open stockpiles should be avoided or covered. Where possible, prevent placing dusty material storage piles near ASRs.</li> <li>▪ Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations.</li> <li>▪ Establishment and use of vehicle wheel and body washing facilities at the exit points of the site.</li> <li>▪ Provision of wind shield and dust extraction units or similar dust mitigation measures at the loading points, and use of water sprinklers at the loading area where dust generation is likely during the loading process of loose material, particularly in dry seasons/ periods.</li> <li>▪ Imposition of speed controls for vehicles on</li> </ul>					

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	<p>unpaved site roads. 8 kilometers per hour is the recommended limit.</p> <ul style="list-style-type: none"> <li>▪ Where possible, routing of vehicles and positioning of construction plant should be at the maximum possible distance from ASRs.</li> <li>▪ Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides.</li> <li>▪ Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed.</li> <li>▪ Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system.</li> </ul>					
S12.94	Environmental monitoring and audit for dust emission should be conducted in accordance with EM&A Manual during the construction phase of the Project to check	To monitor dust impact	MTR / Contactor	Proposed monitoring locations	Design and operation phases	Implemented

<b>EIA Ref.</b>	<b>Recommended Mitigation Measures</b>	<b>Objectives of the Recommended Measures &amp; Main Concern to Address</b>	<b>Who to implement the measures?</b>	<b>Location of the measures</b>	<b>When to implement the measures?</b>	<b>Implementation Status</b>
	compliance with legislative requirements.					
<b>Air Quality (Operation Phase)</b>						
S12.48	The vent shafts of the stations should be designed to be sited at more than 5m from any opening at the adjacent building	To alleviate the adverse air quality impact in the stations	MTR	WKT	Design and operation phases	To be implemented as per construction programme
S12.50	The design of the mechanical air ventilation for PTI should follow EPD's ProPECC PN1/98 Control of Air Pollution in Semi-confined Public Transport Interchanges.	To alleviate the adverse air quality impact in the PTI	MTR	PTI at the ground floor of ventilation building complex at WKT	Design and operation phases	To be implemented as per construction programme
<b>Hazard to Life</b>						
S13.96/ S13.99	Improved truck design to reduce the amount of combustibles in the cabin and fuel carried in the fuel tank should be minimised to reduce the duration of any fire.	To meet the ALARP requirement	MTRC/ Contractor	-	Construction phase	To be implemented as per

<b>EIA Ref.</b>	<b>Recommended Mitigation Measures</b>	<b>Objectives of the Recommended Measures &amp; Main Concern to Address</b>	<b>Who to implement the measures?</b>	<b>Location of the measures</b>	<b>When to implement the measures?</b>	<b>Implementation Status</b>
	The truck should be brand new, diesel powered and equipped with fuel and battery isolation switches, front exhaust spark arrester, 1 x 9 kg water based and 1 x 9 kg dry chemical powder fire extinguishers. This should be combined with monthly vehicle inspection					construction programme
S13.96	The explosive truck accident frequency should be minimized by implementing a dedicated training programme for both the driver and his attendants, including regular briefing sessions, implementation of a defensive driving attitude. In addition, drivers should be selected based on good safety record, and medical checks.	To meet the ALARP requirement	MTRC/ Contractor	-	Construction phase.	To be implemented as per construction programme
S13.96	The contractor should as far as practicable combine the explosive deliveries for a given work area.	To meet the ALARP requirement	MTRC/ Contractor	-	Construction phase	To be implemented as per construction programme
S13.96	The explosive truck fire involvement frequency should be	To meet the ALARP	MTRC/	-	Construction	To be

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	minimized by implementing a better emergency response and training to make sure the adequate fire extinguishers are used and attempt is made to evacuate the area of the incident or securing the explosive load if possible. All explosive vehicles should also be equipped with bigger capacity AFFF-type extinguishers.	requirement	Contractor		phase	implemented as per construction programme
S13.96	A minimum headway between two consecutive truck conveys of at least 10 min is recommended	To meet the ALARP requirement	MTRC/ Contractor	Along explosives transport route.	Construction phase.	To be implemented as per construction programme
S13.96/ S13.105	Only the required quantity of explosives for a particular blast should be transported to avoid the return of unused explosives to the magazines.  If disposal is required for small quantities, disposal should be made in a controlled and safe manner by a Registered Shotfirer.	To reduce the risk during explosives transport	MTRC/ Contractor	-	Construction phase	To be implemented as per construction programme

<b>EIA Ref.</b>	<b>Recommended Mitigation Measures</b>	<b>Objectives of the Recommended Measures &amp; Main Concern to Address</b>	<b>Who to implement the measures?</b>	<b>Location of the measures</b>	<b>When to implement the measures?</b>	<b>Implementation Status</b>
S13.97	Blasting activities including storage and transport of explosives should be supervised and audited by competent site staff to ensure strict compliance with the blasting permit conditions.	To ensure that the risks from the proposed explosives storage and transport would be acceptable	MTRC / Contractor	Works areas at which explosives would be stored and/or used.	Construction phase	To be implemented as per construction programme
S13.97	Emergency plan (ie magazine operational manual) shall be developed to address uncontrolled fire in magazine area and transport. The case of fire near an explosive carrying truck in jammed traffic should also be covered. Drill of the emergency plan should be carried out at regular intervals.	To reduce the risk of fire	MTRC/ Contractor	Explosive Magazine and along explosives transport route.	Construction phase	To be implemented as per construction programme
S13.97	Adverse weather working guideline should be developed to clearly define procedure for transport explosives during thunderstorm.	To ensure safe transport of explosives	MTRC/ Contractor	Along explosives transport route.	Construction phase	To be implemented as per construction programme

<b>EIA Ref.</b>	<b>Recommended Mitigation Measures</b>	<b>Objectives of the Recommended Measures &amp; Main Concern to Address</b>	<b>Who to implement the measures?</b>	<b>Location of the measures</b>	<b>When to implement the measures?</b>	<b>Implementation Status</b>
S13.98	Delivery vehicles shall not be permitted to remain within the secured fenced off magazine store area.	To reduce the risk of fire within the magazine	MTRC / Contractor	Explosive Magazine	Construction phase	To be implemented as per construction programme
S13.98	Good house-keeping within and outside of the magazine to ensure that combustible materials (including vegetation) are removed and not allowed to accumulate.	To reduce the risk of fire within the magazine	MTRC / Contractor	Explosive Magazine	Construction phase	To be implemented as per construction programme
S13.99/ S13.101	Use only experienced driver(s) with good safety record. Training should be provided to ensure it covers all major safety subjects.	To ensure safe transport of explosives	MTRC/ Contractor	-	Construction phase	To be implemented as per construction programme
S13.99	Develop procedure to ensure that parking space on the site is available for the explosive truck. Confirmation of parking space should be communicated to truck drivers	To ensure that the risks from the proposed explosives storage and	MTRC/ Contractor	Explosive magazine	Construction phase	To be implemented as per

<b>EIA Ref.</b>	<b>Recommended Mitigation Measures</b>	<b>Objectives of the Recommended Measures &amp; Main Concern to Address</b>	<b>Who to implement the measures?</b>	<b>Location of the measures</b>	<b>When to implement the measures?</b>	<b>Implementation Status</b>
	before delivery.	transport would be acceptable				construction programme
S13.99	Detonators shall not be transported in the same vehicle with other Class 1 explosives	To reduce the risk of explosion during the transport of cartridge emulsion	MTRC / Contractor	-	Construction phase	To be implemented as per construction programme
S13.99	During transport of the explosives within the tunnel, hot work should not be permitted in the vicinity of the explosives offloading or charging activities.	To ensure safe transport of explosives	MTRC/ Contractor	Along explosives transport route.	Construction phase	To be implemented as per construction programme
S13.99	Ensure that packaging of detonators remains intact until handed over at blasting site.	To reduce the risk of explosion during the transport of detonator	MTRC/ Contractor	-	Construction phase	To be implemented as per construction programme
S13.99	Horizontal fire screen on cargo deck and vertical fire	To reduce the risk during	MTRC/	-	Construction	To be

<b>EIA Ref.</b>	<b>Recommended Mitigation Measures</b>	<b>Objectives of the Recommended Measures &amp; Main Concern to Address</b>	<b>Who to implement the measures?</b>	<b>Location of the measures</b>	<b>When to implement the measures?</b>	<b>Implementation Status</b>
	screen mounted at least 150 mm behind the drivers cab and 100 mm from the steel cargo compartment, the vertical screen shall protrude 150 mm in excess of all three (3) sides of the steel cargo compartment.	explosives transport	Contractor		phase	implemented as per construction programme
S13.104	Ensure that cartridge emulsion with high water content should be preferred. Also, the emulsion with perchlorate formulation should be avoided.	To ensure safe explosives to be used	MTRC/ Contractor	-	Construction phase	To be implemented as per construction programme
<b>Landfill Gas Hazard – Design and Construction Phases</b>						
S14.73 & S14.86	- All personnel who work on site and all visitors to the site should be made aware of the possibility of ignition of gas in the vicinity of excavations. Safety notices should be posted warning of the potential hazards.	Protect the workers from landfill gas hazards	Contractor	XRL tunnels within the NTML Consultation Zone, Barging Point and Nursery	Construction phase	To be implemented as per construction programme

<b>EIA Ref.</b>	<b>Recommended Mitigation Measures</b>	<b>Objectives of the Recommended Measures &amp; Main Concern to Address</b>	<b>Who to implement the measures?</b>	<b>Location of the measures</b>	<b>When to implement the measures?</b>	<b>Implementation Status</b>
				Site		
S14.73	- Those staff who work in, or have responsibility for “at risk” areas, including all excavation workers, supervisors and engineers working within the Consultation Zone, should receive appropriate training on working in areas susceptible to landfill gas, fire and explosion hazards.	Protect the workers from landfill gas hazards	Contractor	XRL tunnels within the NTML Consultation Zone	Construction phase	To be implemented as per construction programme
S14.73	- During all works, safety procedures will be implemented to minimise the risks of fires and explosions and asphyxiation of workers (especially in confined space).	Protect the workers from landfill gas hazards	Contractor	XRL tunnels within the NTML Consultation Zone	Construction phase	To be implemented as per construction programme
S14.73	- Safety officers, specifically trained with regard to landfill gas related hazards and the appropriate actions to take in adverse circumstances will be present on all worksites throughout the works.	Protect the workers from landfill gas hazards	Contractor	XRL tunnels within the NTML Consultation Zone	Construction phase	To be implemented as per construction programme

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
S14.73, S14.86, S14.87	- Smoking and naked flames will be prohibited within confined spaces. 'No Smoking' and 'No Naked Flame' notices in Chinese and English will be posted prominently around the construction site. Safety notices should be posted warning of the potential hazards.	Protect the workers from landfill gas hazards	Contractor	XRL tunnels within the NTML Consultation Zone, Barging Point and Nursery Site	Construction phase	To be implemented as per construction programme
S14.73	- Welding, flame-cutting or other hot works may only be carried out in confined spaces when controlled by a 'permit to work' procedure, properly authorised by the Safety Officer. The permit to work procedure will set down clearly the requirements for continuous monitoring of methane, carbon dioxide and oxygen throughout the period during which the hot works are in progress. The procedure will also require the presence of an appropriately qualified person who shall be responsible for reviewing the gas	Protect the workers from landfill gas hazards	Contractor	XRL tunnels within the NTML Consultation Zone	Construction phase	To be implemented as per construction programme

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	<p>measurements as they are made, and who shall have executive responsibility for suspending the work in the event of unacceptable or hazardous conditions. Only those workers who are appropriately trained and fully aware of the potentially hazardous conditions which may arise will be permitted to carry out hot works in confined areas.</p>					
S14.73	<p>- A mechanical ventilation system must be in use at all times during which personnel are engaged in works inside the tunnel or excavation and be evacuated in the event of power outages. Work must not be carried out in the absence of mechanical ventilation and supervision of adequately trained safety personnel. In exceptional case where work is carried out under non-ventilated condition, any electrical equipment used, such as motors and extension cords, should be intrinsically safe.</p>	Protect the workers from landfill gas hazards	Contractor	XRL tunnels within the NTML Consultation Zone	Construction phase	To be implemented as per construction programme

<b>EIA Ref.</b>	<b>Recommended Mitigation Measures</b>	<b>Objectives of the Recommended Measures &amp; Main Concern to Address</b>	<b>Who to implement the measures?</b>	<b>Location of the measures</b>	<b>When to implement the measures?</b>	<b>Implementation Status</b>
S14.73	- Adequate fire extinguishing equipment, fire-resistant clothing and breathing apparatus sets should be made available on site.	Protect the workers from landfill gas hazards	Contractor	XRL tunnels within the NTML Consultation Zone	Construction phase	To be implemented as per construction programme
S14.86	- Raising the site office 500mm above ground.	Protect the workers from landfill gas hazards	Contractor	Barging Point	Construction phase	To be implemented as per construction programme
S14.86	- Utilities services connected to the site office and the annulus around these service entry points should be properly sealed.	Protect the workers from landfill gas hazards	Contractor	Barging Point	Construction phase	To be implemented as per construction programme
S14.74	- Construction works to be undertaken in confined space should follow the relevant Regulations under Chapter 59 Factories and Industrial Undertakings	Protect the workers from landfill gas hazards	Contractor	XRL tunnels within the NTML	Construction phase	To be implemented as per

<b>EIA Ref.</b>	<b>Recommended Mitigation Measures</b>	<b>Objectives of the Recommended Measures &amp; Main Concern to Address</b>	<b>Who to implement the measures?</b>	<b>Location of the measures</b>	<b>When to implement the measures?</b>	<b>Implementation Status</b>
	Ordinance and Chapter 509 Occupational Health and Safety Ordinance.			Consultation Zone		construction programme
S14.73	- Monitoring of methane, carbon dioxide and oxygen inside the XRL tunnels.	Protect the workers from landfill gas hazards	Contractor	XRL tunnels within the NTML Consultation Zone	Construction phase	To be implemented as per construction programme
S14.75	- A walkover survey to monitor flammable gas at all joints and cracks, if identified, upon completion of the tunnel work. Rectifications, such as sealing of cracks and inspection of tunnel seals, shall be carried out for any signs of the presence of flammable gas. The survey should be conducted under non-ventilated condition and before starting the work of the day.	Confirm no landfill gas ingress into the XRL tunnels	Contractor	XRL tunnels within the NTML Consultation Zone	Construction phase	To be implemented as per construction programme
S14.76	- Weekly monitoring of methane, carbon dioxide and oxygen in the form of a walkover survey at 20m intervals for section of tunnels under NTML and 50m	Confirm no landfill gas ingress into the XRL tunnels	Contractor	XRL tunnels within the NTML	Construction phase	To be implemented as per

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	interval within the NTML Consultation Zone should be conducted after completion of the tunnel construction works and not less than 3 months before commencement of operation. The survey should be conducted under non-ventilated condition and before starting the work of the day.			Consultation Zone		construction programme
S14.77	- A summary of the monitoring results should be submitted to EPD for record before the commencement of operational phase. The results should be reviewed and agreed with EPD before the commencement of operation to determine the monitoring requirements during the operational phase	To review and agree the monitoring requirement during the operational phase	MTR/Contractor	-	Before operation	To be implemented as per construction programme
S14.78	- Appropriate sealant will be applied to joints to prevent the ingress of groundwater, which will also form a low permeability gas barrier. Good workmanship and adequate construction supervision will be required to ensure the actual works are implemented as per the design requirements. This	Protect the XRL tunnels from landfill gas hazards	Design Engineer/ Contractor	XRL tunnels within the NTML Consultation Zone	Design and Construction phases	To be implemented as per construction programme

<b>EIA Ref.</b>	<b>Recommended Mitigation Measures</b>	<b>Objectives of the Recommended Measures &amp; Main Concern to Address</b>	<b>Who to implement the measures?</b>	<b>Location of the measures</b>	<b>When to implement the measures?</b>	<b>Implementation Status</b>
	will be implemented by MTRC's Material and Workmanship Specification.					
S14.79	- Adequate ventilation will be needed as part of the tunnel design to act as an active gas control when needed.	Protect the XRL tunnels from landfill gas hazards	Design Engineer	XRL tunnels within the NTML Consultation Zone	Design phase	To be implemented as per construction programme
S14.80	- Upon completion of the landfill gas protection measures, a report on the implemented landfill gas protection measures with relevant as-built drawings and other detailed information showing that the design measures mentioned in this assessment to protect the tunnels from landfill gas hazard have been properly incorporated should be submitted to EPD.	Ensure landfill gas protection measures have been completed	Contractor	XRL tunnels within the NTML Consultation Zone	Construction phase	To be implemented as per construction programme
<b>Landfill Gas Hazard – Operation Phase</b>						
S14.76	- Ventilation of the tunnels should be switched on for half an hour before the first train is expected (the	Protect the operation of the XRL from landfill gas	MTR	XRL tunnels within the	Operation phase	To be implemented

<b>EIA Ref.</b>	<b>Recommended Mitigation Measures</b>	<b>Objectives of the Recommended Measures &amp; Main Concern to Address</b>	<b>Who to implement the measures?</b>	<b>Location of the measures</b>	<b>When to implement the measures?</b>	<b>Implementation Status</b>
	requirement to implement this measure is subject to findings of the review of landfill gas monitoring data with EPD before the commencement of operation).	hazards		NTML Consultation Zone		as per construction programme
S14.76	- All maintenance personnel and station staff working within the tunnels should be educated in the dangers of landfill gas and the signs and symptoms of asphyxia.	Protect the workers from landfill gas hazards	MTR	XRL tunnels within the NTML Consultation Zone	Operation phase	To be implemented as per construction programme
S14.76	- Smoking within the tunnels should be prohibited at all times.	Protect the operation of the XRL and workers from landfill gas hazards	MTR	XRL tunnels within the NTML Consultation Zone	Operation phase	To be implemented as per construction programme
S14.76	- An assumed presence of landfill gas should be adopted at all times by maintenance workers and a strictly regulated “work permit procedure” involving training, ventilation, gas monitoring (as detailed in	Protect the workers from landfill gas hazards	MTR	XRL tunnels within the NTML Consultation	Operation phase	To be implemented as per construction

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measures	When to implement the measures?	Implementation Status
	the Construction recommendations section), safety tracking and communication with maintenance staff, enforcement of the no smoking order.			Zone		programme
S14.82 & S14.83	- The monitoring requirement during the operational phase should be discussed with EPD before the commencement of operation. Weekly monitoring of methane, carbon dioxide and oxygen in the form of a walkover survey at 20m intervals for section of tunnels under NTML and 50m interval within the NTML Consultation Zone is tentatively proposed. The survey should be conducted under non-ventilated condition and before the first train operates and start-up of ventilation, if applicable. A summary of the monitoring results should be submitted to EPD for record at the end of the monitoring period.	Confirm no landfill gas ingress into the XRL tunnels	MTR	XRL tunnels within the NTML Consultation Zone	Operation phase	To be implemented as per construction programme
S14.84	- An annual walkover survey in the tunnels within the Consultation Zone of the NTML should be conducted to test for the presence of flammable gas at joints and	Confirm no landfill gas ingress into the XRL	MTR	XRL tunnels within the NTML	Operation phase	To be implemented as per

<b>EIA Ref.</b>	<b>Recommended Mitigation Measures</b>	<b>Objectives of the Recommended Measures &amp; Main Concern to Address</b>	<b>Who to implement the measures?</b>	<b>Location of the measures</b>	<b>When to implement the measures?</b>	<b>Implementation Status</b>
	cracks, if identified. Rectifications, such as sealing of cracks and inspection of tunnel seals, should be carried out for any signs of presence of flammable gas. The survey should be conducted under non-ventilated condition and before the first train operates and start-up of ventilation, if applicable.	tunnels		Consultation Zone		construction programme

# Appendix E

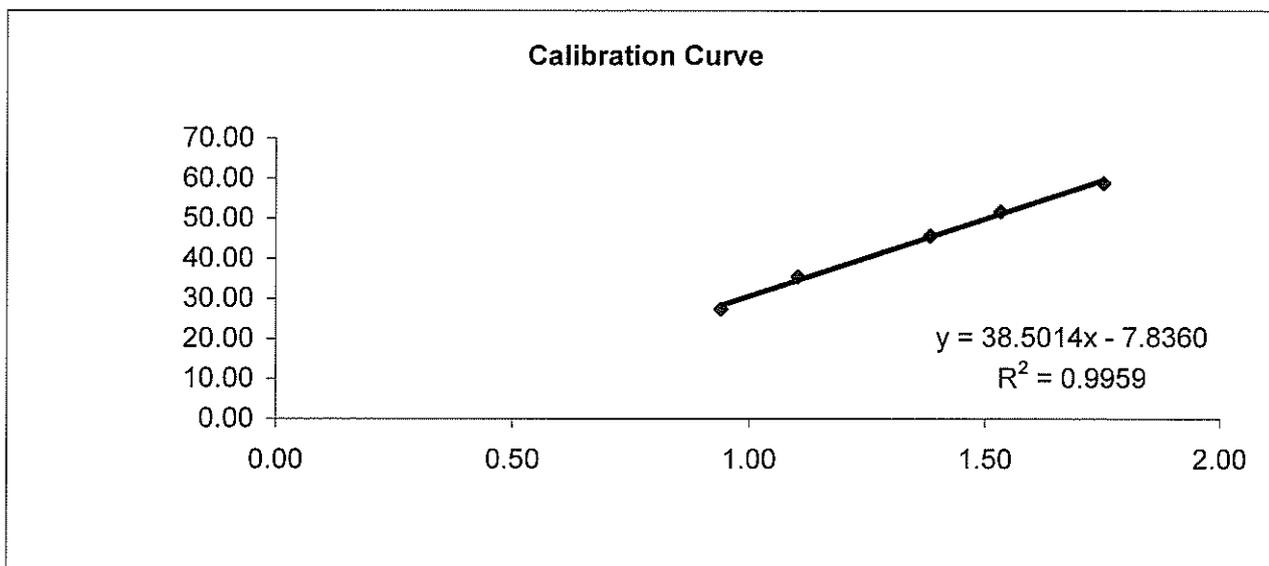
## Calibration Certificates

# Ove Arup Partners (Hong Kong) Limited

## High Volume Air Sampler Calibration Worksheet

Calibration date	22-Dec-09	Barometric pressure	765 mm Hg
Next Calibration date	20-Jun-10	Temperature (°C)	18 °C
Sampler location	The Victoria Towers	Temperature (K)	291 K
Sampler model	TE-5170	P <sub>std</sub>	760 mm Hg
Sampler serial number	528	T <sub>std</sub>	298 K
Calibrator model	GMW-2535		
Calibrator serial number	1378		
Slope of the standard curve, m <sub>s</sub>	2.00826		
Intercept of the standard curve, b <sub>s</sub>	-0.01649		

Resistance Plate No.	Manometer Reading (inch H <sub>2</sub> O)	Flow Recorder Reading (CFM)	Calculated Q <sub>std</sub> (m <sup>3</sup> /min)	Continuous Flow Recorder Reading IC (CFM)
5	3.40	27.00	0.94	27.41
7	4.70	35.00	1.10	35.53
10	7.40	45.00	1.38	45.69
13	9.10	51.00	1.53	51.78
18	11.90	58.00	1.75	58.89

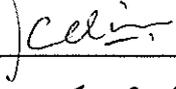


### Linear Regression

Sampler slope (m) : **38.5014**  
 Sampler intercept (b) : **-7.8360**  
 Correlation coefficient (R<sup>2</sup>) : **0.9959**

Correlation coefficient is greater than 0.9900 and the calibration result is accepted.

Performed by: 

Checked by: 

Approved by: 

Date: 22/12/2009

Date: 22/12/2009

Date: 23/12/2009

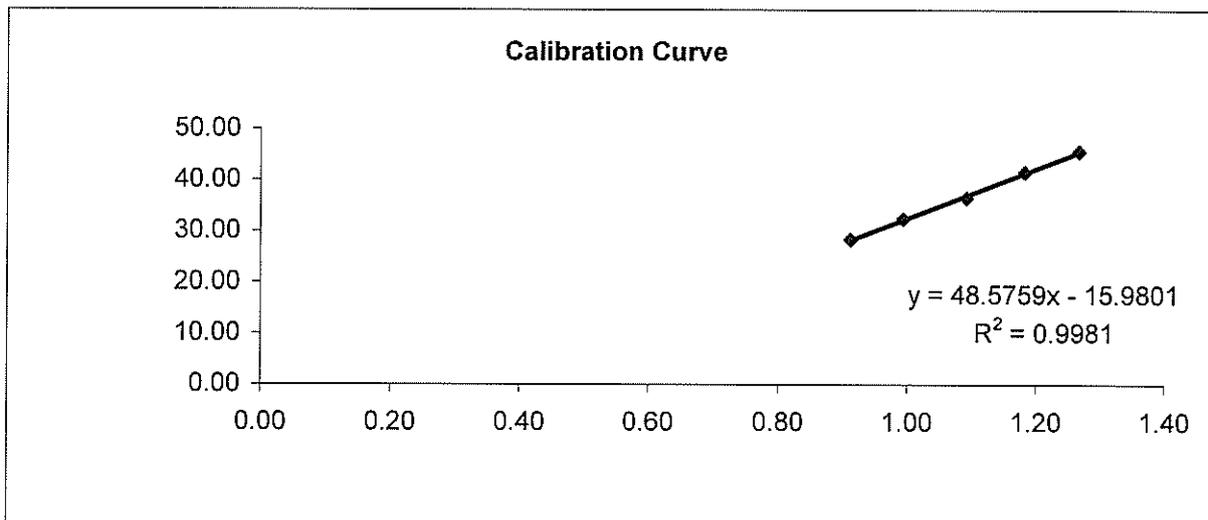
# Ove Arup Partners (Hong Kong) Limited

## High Volume Air Sampler Calibration Worksheet

Calibration date	5-Dec-09	Barometric pressure	765 mm Hg
Next Calibration date	3-Jun-10	Temperature (°C)	18 °C
Sampler location	Tower 6, Sorrento	Temperature (K)	291 K
Sampler model	TE-5170	P <sub>std</sub>	760 mm Hg
Sampler serial number	0515	T <sub>std</sub>	298 K

Calibrator model	GMW-2535
Calibrator serial number	1378
Slope of the standard curve, m <sub>s</sub>	2.00826
Intercept of the standard curve, b <sub>s</sub>	-0.01649

Resistance Plate No.	Manometer Reading (inch H <sub>2</sub> O)	Flow Recorder Reading (CFM)	Calculated Q <sub>std</sub> (m <sup>3</sup> /min)	Continuous Flow Recorder Reading IC (CFM)
5	3.20	28.00	0.91	28.43
7	3.80	32.00	0.99	32.49
10	4.60	36.00	1.09	36.55
13	5.40	41.00	1.18	41.63
18	6.20	45.00	1.27	45.69



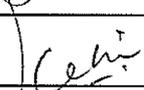
**Linear Regression**

Sampler slope (m) : **48.5759**  
 Sampler intercept (b) : **-15.9801**  
 Correlation coefficient (R<sup>2</sup>) : **0.9981**

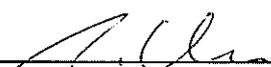
Correlation coefficient is greater than 0.9900 and the calibration result is accepted.

Performed by: 

Date: 5/12/09

Checked by: 

Date: 5/12/09

Approved by: 

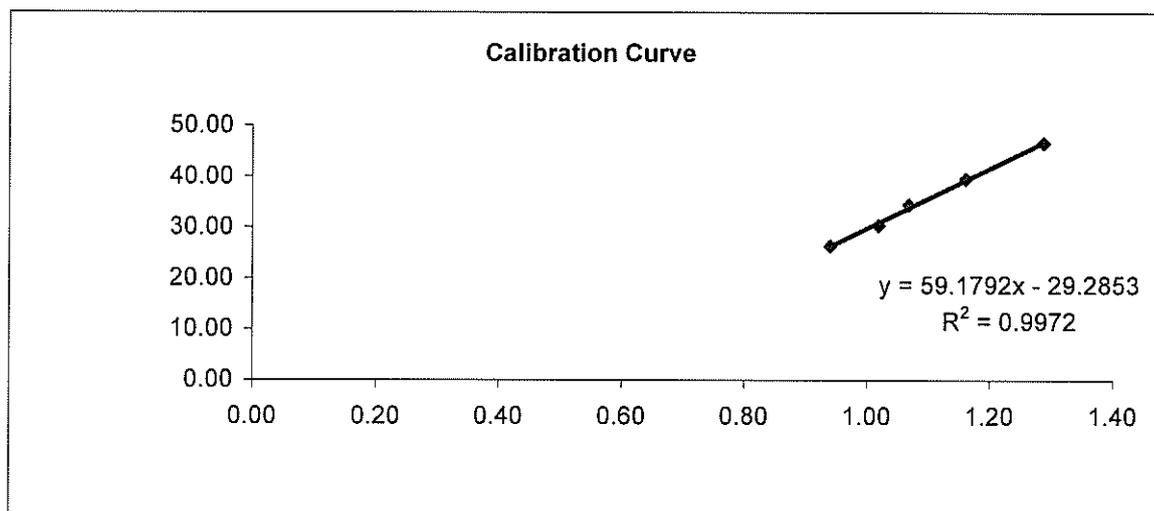
Date: 18/12/09

# Ove Arup Partners (Hong Kong) Limited

## High Volume Air Sampler Calibration Worksheet

Calibration date	5-Dec-09	Barometric pressure	765 mm Hg
Next Calibration date	3-Jun-10	Temperature (°C)	18 °C
Sampler location	Waterfront	Temperature (K)	291 K
Sampler model	GMWS-2310-105	P <sub>std</sub>	760 mm Hg
Sampler serial number	1282	T <sub>std</sub>	298 K
Calibrator model	GMW-2535		
Calibrator serial number	1378		
Slope of the standard curve, m <sub>s</sub>	2.00826		
Intercept of the standard curve, b <sub>s</sub>	-0.01649		

Resistance Plate No.	Manometer Reading (inch H <sub>2</sub> O)	Flow Recorder Reading (CFM)	Calculated Q <sub>std</sub> (m <sup>3</sup> /min)	Continuous Flow Recorder Reading IC (CFM)
5	3.40	26.00	0.94	26.40
7	4.00	30.00	1.02	30.46
10	4.40	34.00	1.07	34.52
13	5.20	39.00	1.16	39.60
18	6.40	46.00	1.29	46.70



**Linear Regression**

Sampler slope (m) : **59.1792**  
 Sampler intercept (b) : **-29.2853**  
 Correlation coefficient (R<sup>2</sup>) : **0.9972**

Correlation coefficient is greater than 0.9900 and the calibration result is accepted.

Performed by: 

Checked by: 

Approved by: 

Date: 8/12/09

Date: 5/12/09

Date: 18/12/09



## CERTIFICATE OF CALIBRATION

Certificate No.: 09CA0523 02-02A

Page: 1 of 2

### Item tested

Description: Acoustical Calibrator (Class 1)  
Manufacturer: Rion Co., Ltd.  
Type/Model No.: NC-73  
Serial/Equipment No.: 10186489  
Adaptors used: -

### Item submitted by

Customer: Allied Environmental Consultants Limited  
Address of Customer: 1001, Shanghai Industrial Investment Building, 48 Hennessy Road, Wanchai  
Request No.: -  
Date of request: 22-May-2009

Date of test: 23-May-2009

### Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Lab standard microphone	B&K 4180	2412857	29-Jun-2009	SCL
Preamplifier	B&K 2673	2239857	02-Dec-2009	CEPREI
Measuring amplifier	B&K 2610	2346941	03-Dec-2009	CEPREI
Signal generator	DS 360	61227	18-Jul-2009	CEPREI
Digital multi-meter	34401A	US36087050	03-Dec-2009	CIGISMEC
Audio analyzer	8903B	GB41300350	27-Nov-2009	CEPREI
Universal counter	53132A	MY40003662	11-Jul-2009	CEPREI

### Ambient conditions

Temperature:  $23 \pm 1$  °C  
Relative humidity:  $60 \pm 10$  %  
Air pressure:  $1000 \pm 10$  hPa

### Test specifications

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

### Test results

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

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

Approved Signatory:

Huang Jian Min/Feng Jun Qi

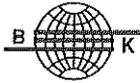
Date: 05-Oct-2009

Company Chop:



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





## CERTIFICATE OF CALIBRATION

Certificate No. : 2KS100208-1

Page 1 of 2

### Calibration of :

Description :	Sound Level Meter	,	Microphone
Manufacture :	Brüel & Kjær		
Type No. :	2250	,	4950
Serial No. :	2701816		2678774

### Client :

EDMS Tech Ltd  
1009, 10/F World Wide House  
19 Des Douex Road, Central  
Hong Kong

### Calibration Conditions :

Air Temperature :	23	°C
Air Pressure :	101.9	kPa
Relative Humidity :	62	%

### Test Specifications :

The Sound Level Meter has been calibrated in accordance with the requirements as specified in IEC 60651 and IEC 60804 type 1, and vendor specific procedures.

The measurements has been performed with the assistance of :  
Brüel & Kjær's Sound Level Meter Calibration System B&K 9600 CAL2238A, Ver.25.10.1999  
The standard(s) and instrument(s) used in the calibration are traceable to international standard and are calibrated on a schedule which is adjusted to maintain the required accuracy level.

### Test Result :

A list of the performed (sub) tests is stated on page 2 of this certificate. Actual Measurement are documented on worksheet.

Date of Calibration : 19 February, 2010  
Calibrated By :

Certificate issued : 22 February, 2010  
Approved signatory :

Dai Bin

Jacky Leung

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## CERTIFICATE OF CALIBRATION

Certificate No. : 2KS100208-1

Page 2 of 2

### Results :

List of performed (sub) test with test status:

“OK” Means the result of the (sub)test is Inside the tolerances stated in the test specifications.

“ - ” Means the result of the (sub)test is Outside these tolerances.

Test :	Subtest :	Status :
Noise	A	OK
Noise	C	OK
Noise	Lin	OK
Frequency Weighting	A	OK
Frequency Weighting	C	OK
Frequency Weighting	Lin	OK
Level Range Control	1000 Hz	OK
Linearity Range	SPL 10dB 4000 Hz	OK
Linearity Range	SPL 1dB 1000 Hz	OK
Linearity Range	Leq	OK
Linearity Range	SEL	OK
RMS Detector	CF 3	OK
RMS Detector	CF 5	OK
RMS Detector	CF 10	OK
RMS Detector	Symmetry	OK
Time Weighting	Difference Indication	OK
Time Weighting	Single Burst FAST	OK
Time Weighting	Single Burst SLOW	OK
Time Weighting	Single Burst IMPULSE	OK
Time Weighting	Repetitive Burst	OK
Time Weighting	Peak	OK
Time Averaging		OK
Pulse Range		OK
Overload	SPL	OK
Overload	SEL	OK
Acoustic Response	A	OK
Acoustic Response	Lin	OK

### Calibration Equipment :

Brüel & Kjør's Sound Level Meter Calibration System B&K 9600 CAL2238A, Ver.25.10.1999				
Description :	Make & Model :	Serial No. :	Last Cal. Date :	Traceable to:
Digital Multi-meter	Datron 1281	27361	30 Sept, 2009	HKSCS (HOKLAS)
Sine/Noise Generator	B&K 1049	1314978	Test	B&K Conformance
Test Waveform Generator	B&K 5918	1482949	Test	B&K Conformance
Acoustical Calibrator	B&K 4226	1551627	13 May 2009	NPL via B&K (DANAK)

Calibrated By : *War Bin*  
Date : 19 February, 2010

Checked By : *Andy*  
Date : 22 February, 2010

**CERTIFICATE OF CALIBRATION**

Certificate No. : 2KS100208-5

Page 1 of 2

**Calibration of :**

Description :	Sound Level Meter	,	Microphone
Manufacture :	Brüel & Kjær		
Type No. :	2250	,	4950
Serial No. :	2701826		2678784

**Client :**

EDMS Tech Ltd  
1009, 10/F World Wide House  
19 Des Douex Road, Central  
Hong Kong

**Calibration Conditions :**

Air Temperature :	23	°C
Air Pressure :	101.9	kPa
Relative Humidity :	62	%

**Test Specifications :**

The Sound Level Meter has been calibrated in accordance with the requirements as specified in IEC 60651 and IEC 60804 type 1, and vendor specific procedures.

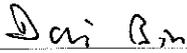
The measurements has been performed with the assistance of :  
Brüel & Kjær's Sound Level Meter Calibration System B&K 9600 CAL2238A, Ver.25.10.1999  
The standard(s) and instrument(s) used in the calibration are traceable to international standard and are calibrated on a schedule which is adjusted to maintain the required accuracy level.

**Test Result :**

A list of the performed (sub) tests is stated on page 2 of this certificate. Actual Measurement are documented on worksheet.

Date of Calibration : 19 February, 2010  
Calibrated By :

Certificate issued : 22 February, 2010  
Approved signatory :

  
Dai Bin

  
Jacky Leung

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## CERTIFICATE OF CALIBRATION

Certificate No. : 2KS100208-5

Page 2 of 2

**Results :**

List of performed (sub) test with test status:

"OK" Means the result of the (sub)test is Inside the tolerances stated in the test specifications.

" - " Means the result of the (sub)test is Outside these tolerances.

Test :	Subtest :	Status :
Noise	A	OK
Noise	C	OK
Noise	Lin	OK
Frequency Weighting	A	OK
Frequency Weighting	C	OK
Frequency Weighting	Lin	OK
Level Range Control	1000 Hz	OK
Linearity Range	SPL 10dB 4000 Hz	OK
Linearity Range	SPL 1dB 1000 Hz	OK
Linearity Range	Leq	OK
Linearity Range	SEL	OK
RMS Detector	CF 3	OK
RMS Detector	CF 5	OK
RMS Detector	CF 10	OK
RMS Detector	Symmetry	OK
Time Weighting	Difference Indication	OK
Time Weighting	Single Burst FAST	OK
Time Weighting	Single Burst SLOW	OK
Time Weighting	Single Burst IMPULSE	OK
Time Weighting	Repetitive Burst	OK
Time Weighting	Peak	OK
Time Averaging		OK
Pulse Range		OK
Overload	SPL	OK
Overload	SEL	OK
Acoustic Response	A	OK
Acoustic Response	Lin	OK

**Calibration Equipment :**

Brüel & Kjør's Sound Level Meter Calibration System B&K 9600 CAL2238A, Ver.25.10.1999				
Description :	Make & Model :	Serial No. :	Last Cal. Date :	Traceable to:
Digital Multi-meter	Datron 1281	27361	30 Sept, 2009	HKSCS (HOKLAS)
Sine/Noise Generator	B&K 1049	1314978	Test	B&K Conformance
Test Waveform Generator	B&K 5918	1482949	Test	B&K Conformance
Acoustical Calibrator	B&K 4226	1551627	13 May 2009	NPL via B&K (DANAK)

Calibrated By : *Dwi Bin*  
Date : 19 February, 2010

Checked By : *[Signature]*  
Date : 22 February, 2010

**CERTIFICATE OF CALIBRATION**

Certificate No. : 2KS100208-11

Page 1 of 2

**Calibration of :**

Description	: Sound Level Meter	,	Microphone
Manufacture	: Brüel & Kjær		
Type No.	: 2250	,	4950
Serial No.	: 2701823		2678781

**Client :**

EDMS Tech Ltd  
1009, 10/F World Wide House  
19 Des Douex Road, Central  
Hong Kong

**Calibration Conditions :**

Air Temperature	: 23 °C
Air Pressure	: 101.9 kPa
Relative Humidity	: 62 %

**Test Specifications :**

The Sound Level Meter has been calibrated in accordance with the requirements as specified in IEC 60651 and IEC 60804 type 1, and vendor specific procedures.

The measurements has been performed with the assistance of :  
Brüel & Kjær's Sound Level Meter Calibration System B&K 9600 CAL2238A, Ver.25.10.1999  
The standard(s) and instrument(s) used in the calibration are traceable to international standard and are calibrated on a schedule which is adjusted to maintain the required accuracy level.

**Test Result :**

A list of the performed (sub) tests is stated on page 2 of this certificate. Actual Measurement are documented on worksheet.

Date of Calibration : 19 February, 2010  
Calibrated By :

Certificate issued : 22 February, 2010  
Approved signatory :

Dai Bin  
Dai Bin  
Jacky Leung

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## CERTIFICATE OF CALIBRATION

Certificate No. : 2KS100208-11

Page 2 of 2

**Results :**

List of performed (sub) test with test status:

"OK" Means the result of the (sub)test is Inside the tolerances stated in the test specifications.

" - " Means the result of the (sub)test is Outside these tolerances.

Test :	Subtest :	Status :
Noise	A	OK
Noise	C	OK
Noise	Lin	OK
Frequency Weighting	A	OK
Frequency Weighting	C	OK
Frequency Weighting	Lin	OK
Level Range Control	1000 Hz	OK
Linearity Range	SPL 10dB 4000 Hz	OK
Linearity Range	SPL 1dB 1000 Hz	OK
Linearity Range	Leq	OK
Linearity Range	SEL	OK
RMS Detector	CF 3	OK
RMS Detector	CF 5	OK
RMS Detector	CF 10	OK
RMS Detector	Symmetry	OK
Time Weighting	Difference Indication	OK
Time Weighting	Single Burst FAST	OK
Time Weighting	Single Burst SLOW	OK
Time Weighting	Single Burst IMPULSE	OK
Time Weighting	Repetitive Burst	OK
Time Weighting	Peak	OK
Time Averaging		OK
Pulse Range		OK
Overload	SPL	OK
Overload	SEL	OK
Acoustic Response	A	OK
Acoustic Response	Lin	OK

**Calibration Equipment :**

Brüel & Kjær's Sound Level Meter Calibration System B&K 9600 CAL2238A, Ver.25.10.1999				
Description :	Make & Model :	Serial No. :	Last Cal. Date :	Traceable to:
Digital Multi-meter	Datron 1281	27361	30 Sept, 2009	HKSCS (HOKLAS)
Sine/Noise Generator	B&K 1049	1314978	Test	B&K Conformance
Test Waveform Generator	B&K 5918	1482949	Test	B&K Conformance
Acoustical Calibrator	B&K 4226	1551627	13 May 2009	NPL via B&K (DANAK)

Calibrated By : *Dev B M*

Date : 19 February, 2010

Checked By : *Jawly*

Date : 22 February, 2010



3/1

## CERTIFICATE OF CALIBRATION

Certificate No. : 2KS100208-10

Page 1 of 2

### Calibration of :

Description :	Sound Level Meter	,	Microphone
Manufacture :	Brüel & Kjær		
Type No. :	2250	,	4950
Serial No. :	2701827		2678785

### Client :

EDMS Tech Ltd  
1009, 10/F World Wide House  
19 Des Douex Road, Central  
Hong Kong

### Calibration Conditions :

Air Temperature :	23	°C
Air Pressure :	101.9	kPa
Relative Humidity :	62	%

### Test Specifications :

The Sound Level Meter has been calibrated in accordance with the requirements as specified in IEC 60651 and IEC 60804 type 1, and vendor specific procedures.

The measurements has been performed with the assistance of :  
Brüel & Kjær's Sound Level Meter Calibration System B&K 9600 CAL2238A, Ver.25.10.1999  
The standard(s) and instrument(s) used in the calibration are traceable to international standard and are calibrated on a schedule which is adjusted to maintain the required accuracy level.

### Test Result :

A list of the performed (sub) tests is stated on page 2 of this certificate. Actual Measurement are documented on worksheet.

Date of Calibration : 19 February, 2010  
Calibrated By :

Certificate issued : 22 February, 2010  
Approved signatory :

Dai Bin

Jacky Leung

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## CERTIFICATE OF CALIBRATION

Certificate No. : 2KS100208-10

Page 2 of 2

### Results :

List of performed (sub) test with test status:

“OK” Means the result of the (sub)test is Inside the tolerances stated in the test specifications.

“ - ” Means the result of the (sub)test is Outside these tolerances.

Test :	Subtest :	Status :
Noise	A	OK
Noise	C	OK
Noise	Lin	OK
Frequency Weighting	A	OK
Frequency Weighting	C	OK
Frequency Weighting	Lin	OK
Level Range Control	1000 Hz	OK
Linearity Range	SPL 10dB 4000 Hz	OK
Linearity Range	SPL 1dB 1000 Hz	OK
Linearity Range	Leq	OK
Linearity Range	SEL	OK
RMS Detector	CF 3	OK
RMS Detector	CF 5	OK
RMS Detector	CF 10	OK
RMS Detector	Symmetry	OK
Time Weighting	Difference Indication	OK
Time Weighting	Single Burst FAST	OK
Time Weighting	Single Burst SLOW	OK
Time Weighting	Single Burst IMPULSE	OK
Time Weighting	Repetitive Burst	OK
Time Weighting	Peak	OK
Time Averaging		OK
Pulse Range		OK
Overload	SPL	OK
Overload	SEL	OK
Acoustic Response	A	OK
Acoustic Response	Lin	OK

### Calibration Equipment :

Description :	Make & Model :	Serial No. :	Last Cal. Date :	Traceable to :
Brüel & Kjær's Sound Level Meter Calibration System	B&K 9600 CAL2238A,	Ver.25.10.1999		
Digital Multi-meter	Datron 1281	27361	30 Sept, 2009	HKSCS (HOKLAS)
Sine/Noise Generator	B&K 1049	1314978	Test	B&K Conformance
Test Waveform Generator	B&K 5918	1482949	Test	B&K Conformance
Acoustical Calibrator	B&K 4226	1551627	13 May 2009	NPL via B&K (DANAK)

Calibrated By : *Dev Bm*  
Date : 19 February, 2010

Checked By : *Janey*  
Date : 22 February, 2010



## CERTIFICATE OF CALIBRATION

Certificate No. : 2KS100208-3

Page 1 of 2

### Calibration of :

Description	: Sound Level Meter	,	Microphone
Manufacture	: Brüel & Kjær		
Type No.	: 2250	,	4950
Serial No.	: 2701829		2678787

### Client :

EDMS Tech Ltd  
1009, 10/F World Wide House  
19 Des Douex Road, Central  
Hong Kong

### Calibration Conditions :

Air Temperature	: 23 °C
Air Pressure	: 101.9 kPa
Relative Humidity	: 62 %

### Test Specifications :

The Sound Level Meter has been calibrated in accordance with the requirements as specified in IEC 60651 and IEC 60804 type 1, and vendor specific procedures.

The measurements has been performed with the assistance of :

Brüel & Kjær's Sound Level Meter Calibration System B&K 9600 CAL2238A, Ver.25.10.1999  
The standard(s) and instrument(s) used in the calibration are traceable to international standard and are calibrated on a schedule which is adjusted to maintain the required accuracy level.

### Test Result :

A list of the performed (sub) tests is stated on page 2 of this certificate. Actual Measurement are documented on worksheet.

Date of Calibration : 19 February, 2010  
Calibrated By :

Certificate issued : 22 February, 2010  
Approved signatory :

Dai Bin

Jacky Leung

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## CERTIFICATE OF CALIBRATION

**Certificate No. :** 2KS100208-3

**Page 2 of 2**

**Results :**

List of performed (sub) test with test status:

“OK” Means the result of the (sub)test is Inside the tolerances stated in the test specifications.

“ - ” Means the result of the (sub)test is Outside these tolerances.

Test :	Subtest :	Status :
Noise	A	OK
Noise	C	OK
Noise	Lin	OK
Frequency Weighting	A	OK
Frequency Weighting	C	OK
Frequency Weighting	Lin	OK
Level Range Control	1000 Hz	OK
Linearity Range	SPL 10dB 4000 Hz	OK
Linearity Range	SPL 1dB 1000 Hz	OK
Linearity Range	Leq	OK
Linearity Range	SEL	OK
RMS Detector	CF 3	OK
RMS Detector	CF 5	OK
RMS Detector	CF 10	OK
RMS Detector	Symmetry	OK
Time Weighting	Difference Indication	OK
Time Weighting	Single Burst FAST	OK
Time Weighting	Single Burst SLOW	OK
Time Weighting	Single Burst IMPULSE	OK
Time Weighting	Repetitive Burst	OK
Time Weighting	Peak	OK
Time Averaging		OK
Pulse Range		OK
Overload	SPL	OK
Overload	SEL	OK
Acoustic Response	A	OK
Acoustic Response	Lin	OK

**Calibration Equipment :**

Brüel & Kjær's Sound Level Meter Calibration System B&K 9600 CAL2238A, Ver.25.10.1999

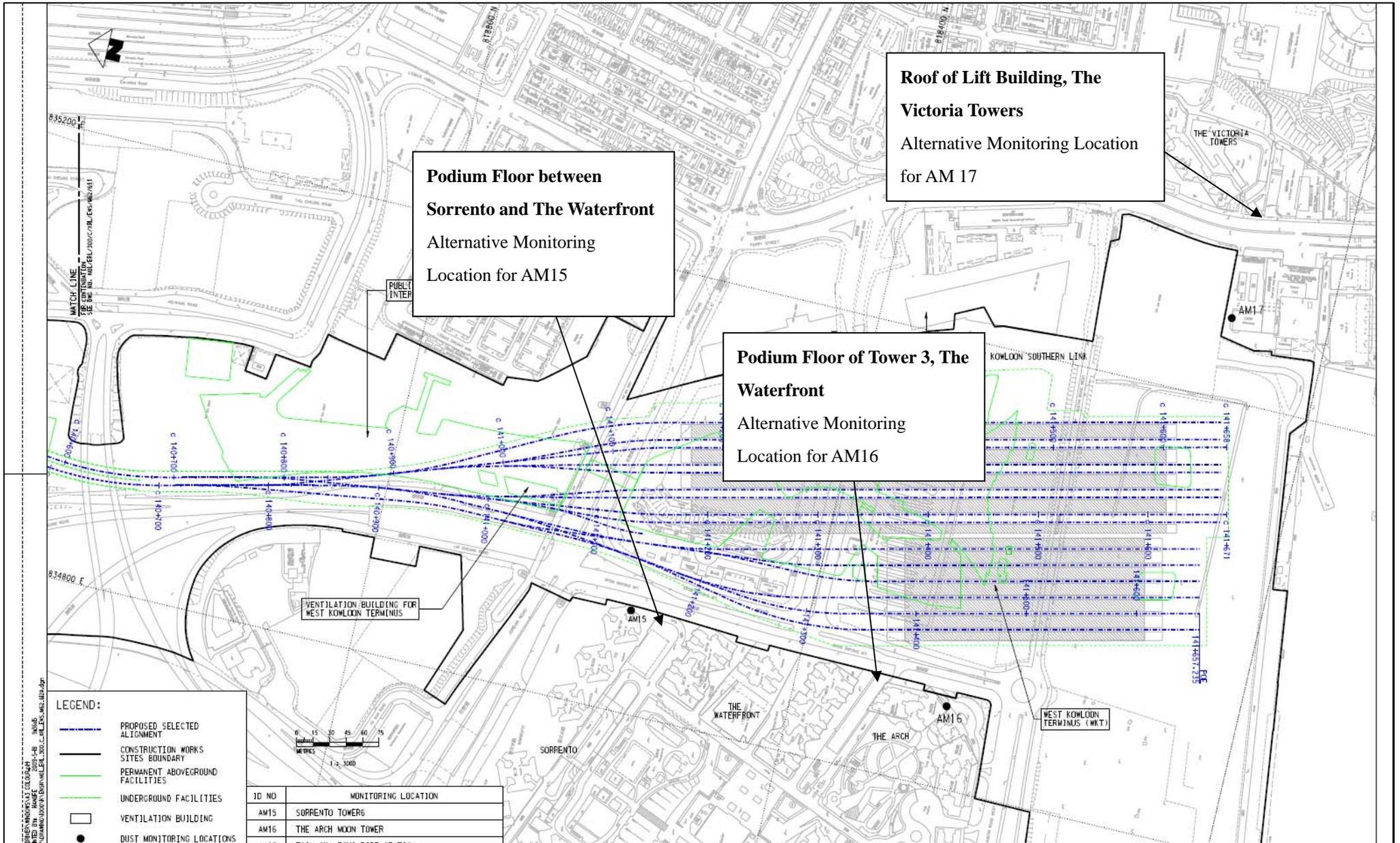
Description :	Make & Model :	Serial No. :	Last Cal. Date :	Traceable to:
Digital Multi-meter	Datron 1281	27361	30 Sept, 2009	HKSCS (HOKLAS)
Sine/Noise Generator	B&K 1049	1314978	Test	B&K Conformance
Test Waveform Generator	B&K 5918	1482949	Test	B&K Conformance
Acoustical Calibrator	B&K 4226	1551627	13 May 2009	NPL via B&K (DANAK)

Calibrated By : *Dai Bin*  
Date : 19 February, 2010

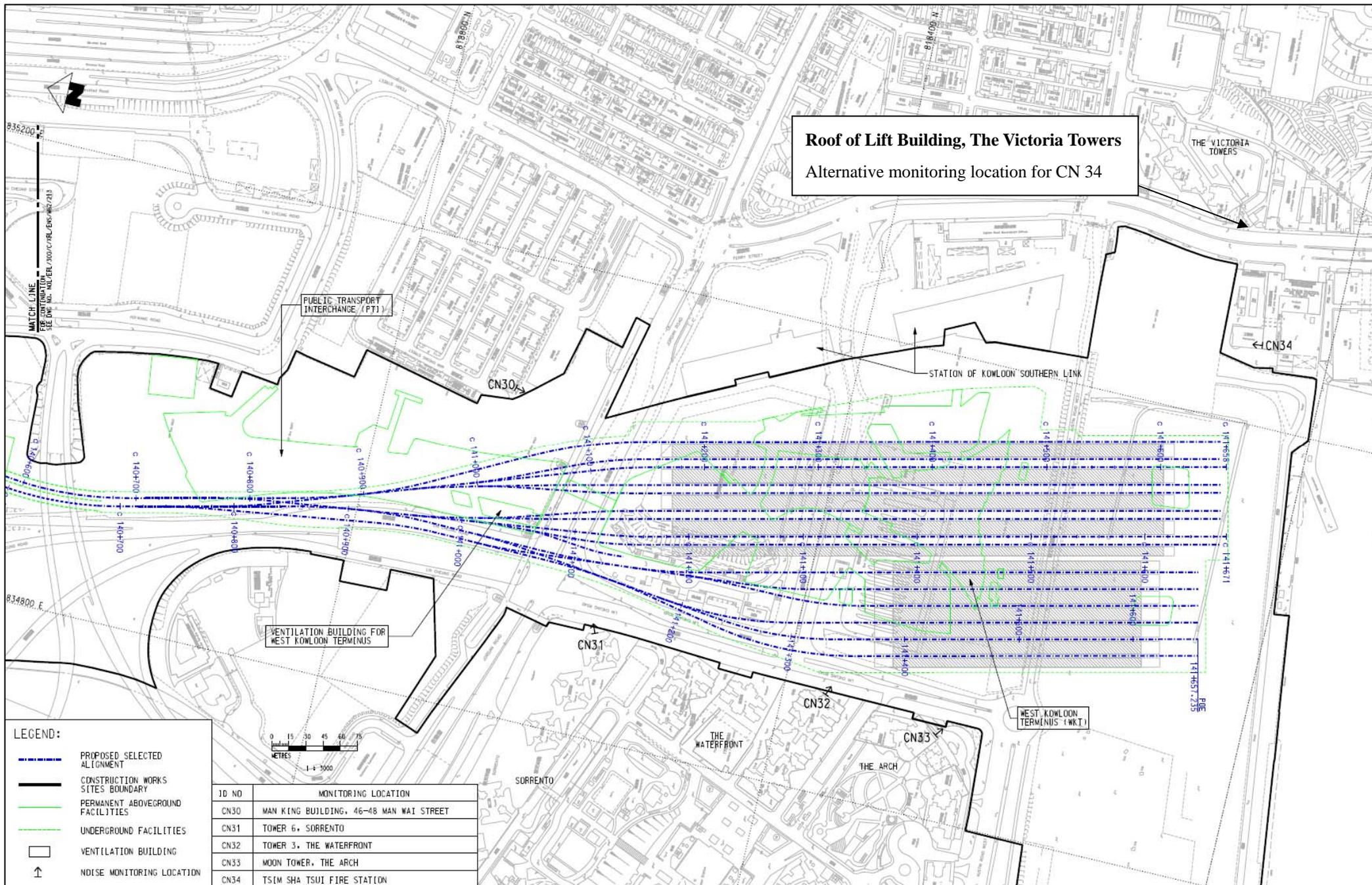
Checked By : *Jan*  
Date : 22 February, 2010

# Appendix F

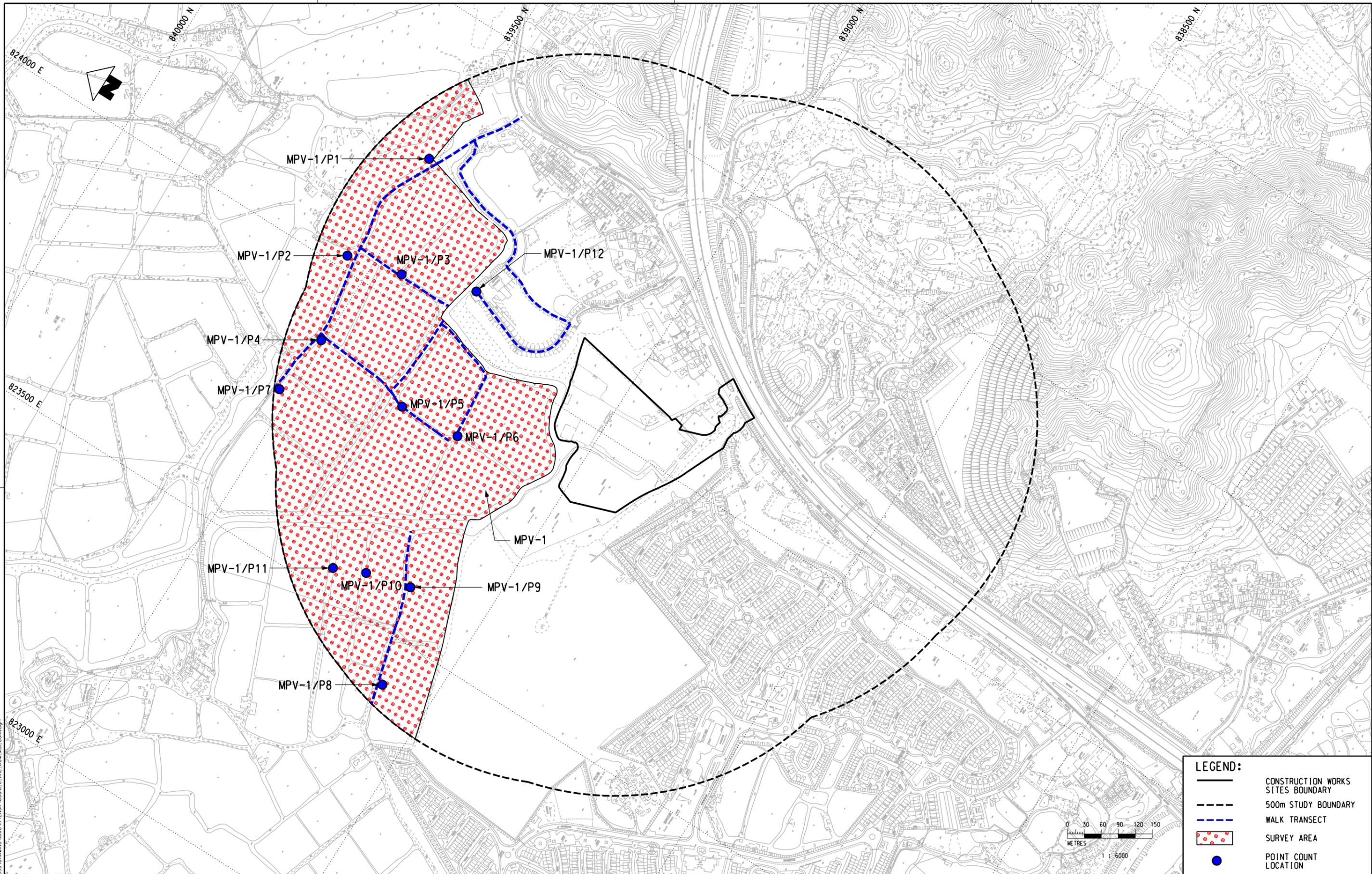
## Monitoring Locations



**Dust monitoring locations**

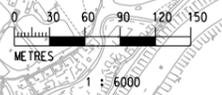


**Noise monitoring locations**



**LEGEND:**

- CONSTRUCTION WORKS SITES BOUNDARY
- 500m STUDY BOUNDARY
- WALK TRANSECT
- SURVEY AREA
- POINT COUNT LOCATION

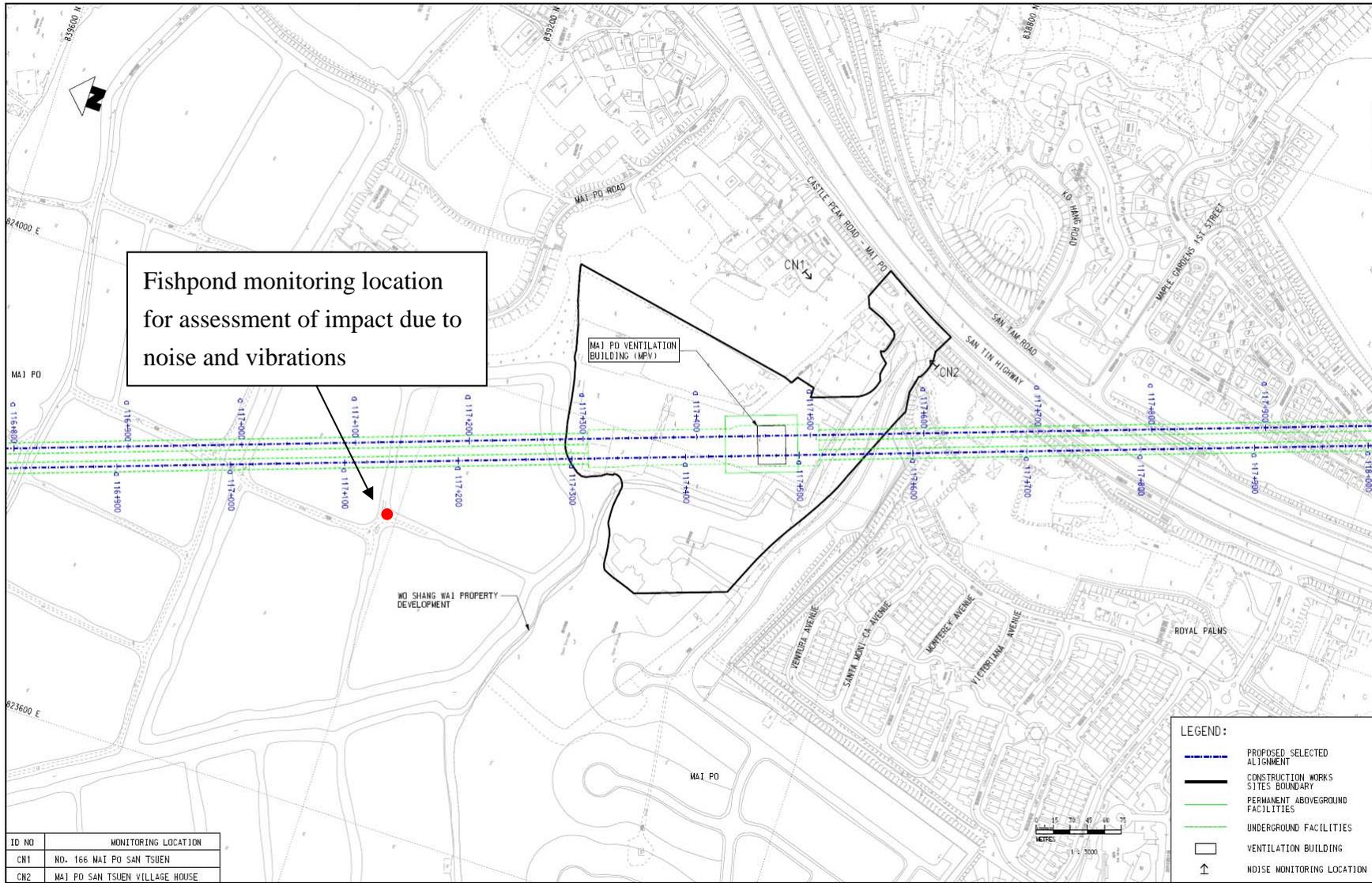


PLOT DIR: R:\stms\mtr\p1\DRIVER\WINDOWS\13 COLOUR.dwg 9:52:30  
 MODELNAME: XUCF 2008-4-8  
 FILENAME: P:\projects\6050393\DRAWINGS\000\XUCF\CB06.C.XRL\_ACM\_M51\_001A.dgn

REV	DESCRIPTION	BY	DATE	APPROVED	REV	DESCRIPTION	BY	DATE	APPROVED

DRAWN	XCF	 <b>EXPRESS RAIL LINK</b> 
DESIGNED	TWF	
CHECKED	KCC	
APPROVED	PL	
DATE	10/OCT/2008	
<small>DO NOT SCALE DRAWINGS. ALL DIMENSIONS SHALL BE VERIFIED ON SITE.          (C) MTR CORPORATION LIMITED 2008 COPYRIGHT IN RESPECT OF THIS DRAWING / DOCUMENT IS OWNED BY THE MTR CORPORATION LIMITED OF HONG KONG. NO REPRODUCTION OF THE DRAWING / DOCUMENT OR ANY PART BY WHATEVER MEANS IS PERMITTED WITHOUT THE PRIOR WRITTEN CONSENT OF THE MTR CORPORATION LIMITED.</small>		ORIGINATOR <b>AECOM</b> CADD REF. C8016_C.XRL_ACM_M51_001A.dgn

TITLE	<b>C8016</b> <b>ENVIRONMENTAL TERM CONSULTANCY FOR XRL</b> <b>SURVEY AREA, POINT COUNT LOCATION AND</b> <b>WALK TRANSECT FOR MPV-1</b>	
SCALE	FIGURE NO.	REV.
1 : 6000 (A3)	C8016/C/XRL/ACM/M51/001	A



**Fishpond monitoring location**

# Appendix G

## Monitoring Schedule

## Construction Dust (24-hr TSP) Impact Monitoring Schedule - March 2010

Note 1: **TSP** denotes Total Suspended Particulate

<b>Mar-2010</b>						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1 AM15, AM16, AM17	2	3	4	5	6 AM15, AM16, AM17
7	8	9	10	11	12 AM15, AM16, AM17	13
14	15	16	17	18 AM15, AM16, AM17	19	20
21	22	23	24 AM15, AM16, AM17	25	26	27
28	29	30 AM15, AM16, AM17	31			

## Tentative Construction Dust (24-hr TSP) Impact Monitoring Schedule - April 2010

Note 1: **TSP** denotes Total Suspended Particulate

<b>Apr-2010</b>						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<b>1</b>				<b>1</b> AM15, AM16, AM17	<b>2</b>	<b>3</b>
<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b> AM15, AM16, AM17	<b>8</b>	<b>9</b>	<b>10</b>
<b>11</b>	<b>12</b>	<b>13</b> AM1, AM15, AM16, AM17	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>
<b>18</b>	<b>19</b> AM1, AM15, AM16, AM17	<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b> AM1, AM15, AM16, AM17
<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b> AM1, AM15, AM16, AM17	

**Monitoring Schedule in the Reporting Month (01 March 2010 - 31 March 2010)**

Date	CN30 Man King Building	CN31 Tower 6, Sorrento	CN32 Tower 3, The Waterfront	CN33 Moon Tower, The Arch	CN34 Victoria Tower
01-Mar-10					
02-Mar-10					
03-Mar-10					
04-Mar-10					
05-Mar-10	√	√	√	√	√
06-Mar-10					
07-Mar-10					
08-Mar-10					
09-Mar-10					
10-Mar-10					
11-Mar-10					
12-Mar-10	√	√	√	√	√
13-Mar-10					
14-Mar-10					
15-Mar-10					
16-Mar-10					
17-Mar-10					
18-Mar-10					
19-Mar-10	√	√	√	√	√
20-Mar-10					
21-Mar-10					
22-Mar-10					
23-Mar-10					
24-Mar-10					
25-Mar-10			√		
26-Mar-10	√	√		√	√
27-Mar-10					
28-Mar-10					
29-Mar-10					
30-Mar-10					
31-Mar-10	√	√	√	√	√

**Tentative Monitoring Schedule in the Next Reporting Month (01 April 2010 - 30 April 2010)**

Date	CN30 Man King Building	CN31 Tower 6, Sorrento	CN32 Tower 3, The Waterfront	CN33 Moon Tower, The Arch	CN34 Victoria Tower	CN1 No. 142 Mai Po San Tsuen	CN2 Mai Po San Tsuen Village Hse
01-Apr-10							
02-Apr-10							
03-Apr-10							
04-Apr-10							
05-Apr-10							
06-Apr-10							
07-Apr-10							
08-Apr-10							
09-Apr-10	√	√	√	√	√		
10-Apr-10							
11-Apr-10							
12-Apr-10							
13-Apr-10							
14-Apr-10							
15-Apr-10							
16-Apr-10	√	√	√	√	√	√	√
17-Apr-10							
18-Apr-10							
19-Apr-10							
20-Apr-10							
21-Apr-10							
22-Apr-10							
23-Apr-10	√	√	√	√	√	√	√
24-Apr-10							
25-Apr-10							
26-Apr-10							
27-Apr-10							
28-Apr-10							
29-Apr-10							
30-Apr-10	√	√	√	√	√	√	√

### Ecological Monitoring Schedule - March 2010

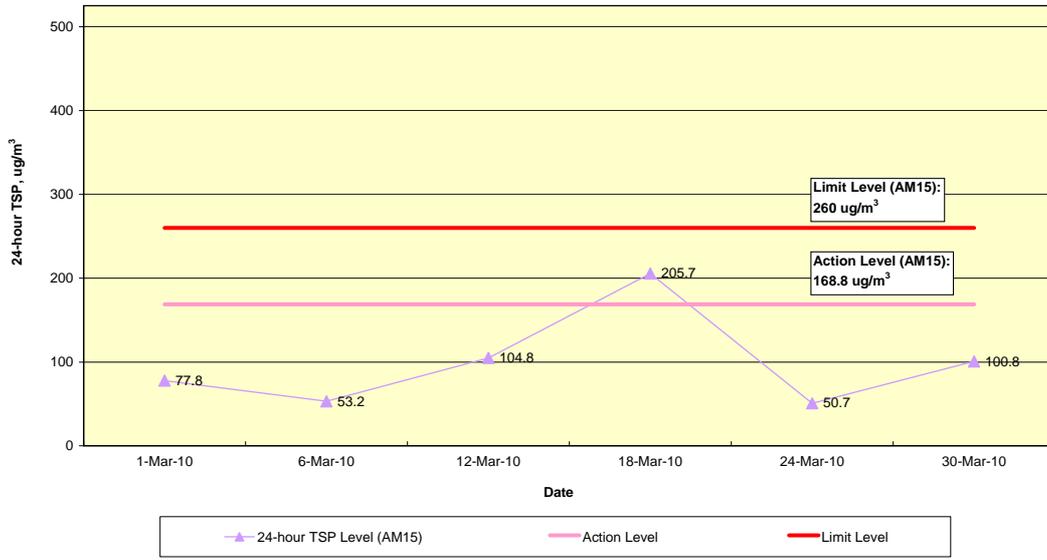
Mar-2010						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	2	3	4	5	6
7	8	9	10 MPV	11	12	13
14	15	16	17 MPV	18	19	20
21	22	23	24 MPV	25	26	27
28	29	30	31 MPV			

### Tentative Ecological Monitoring Schedule - April 2010

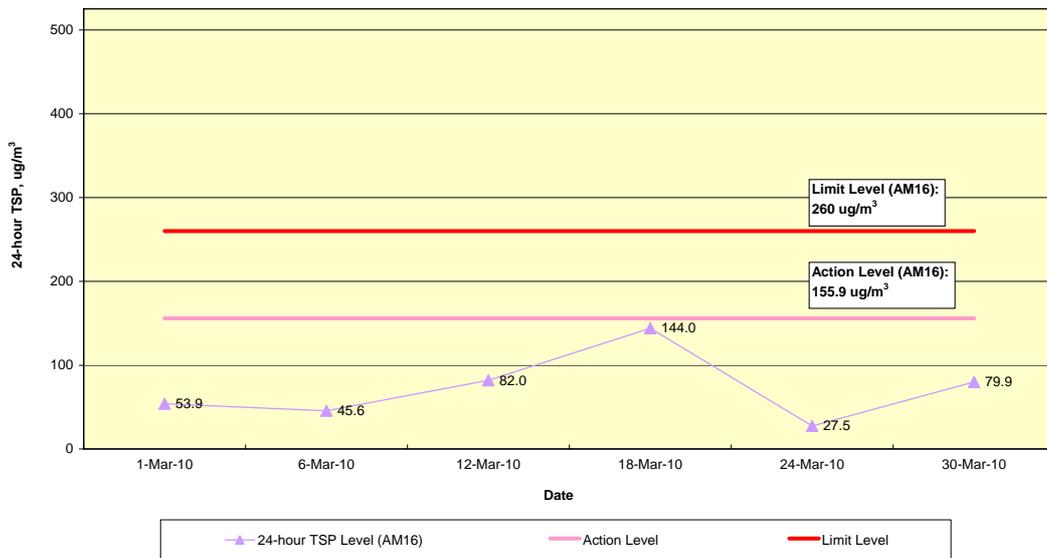
Apr-2010						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20 MPV	21	22	23	24
25	26	27	28	29	30	

Appendix H  
Graphical Plots of  
Monitoring Results

**Construction Dust Impact Monitoring  
Trend of 24-hour TSP Levels at AM15 (March 2010)**

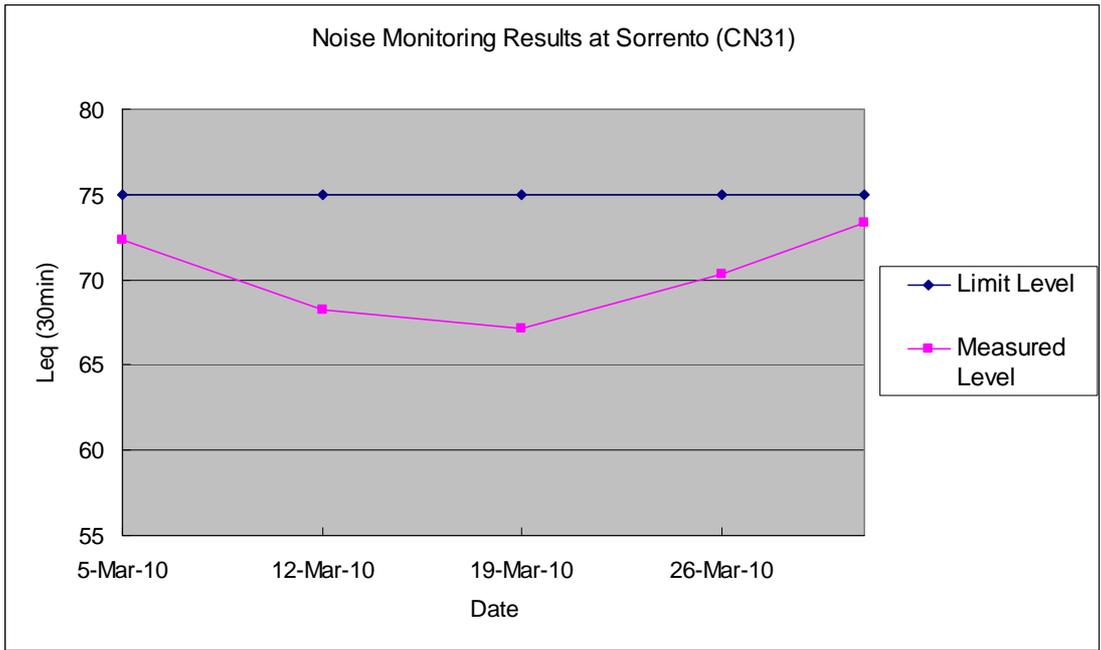
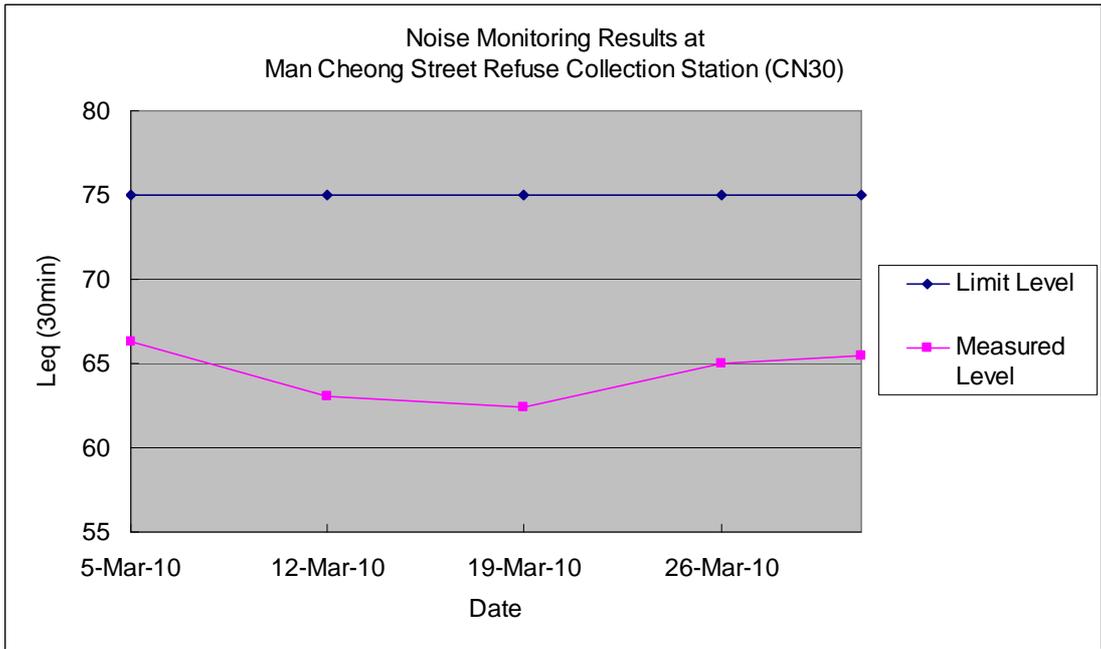


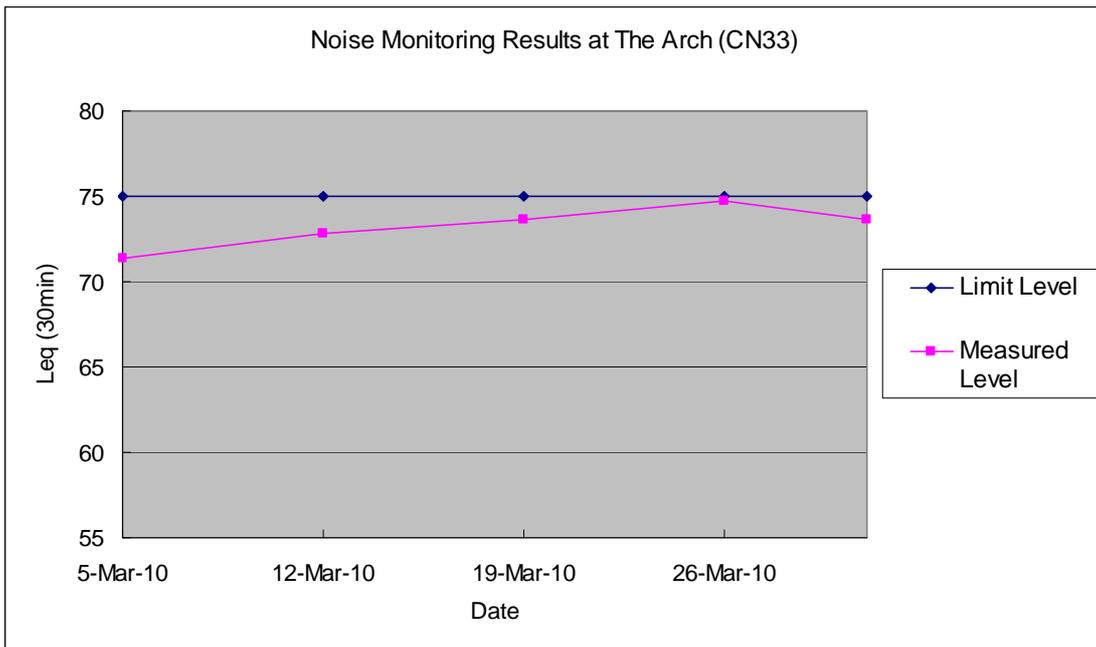
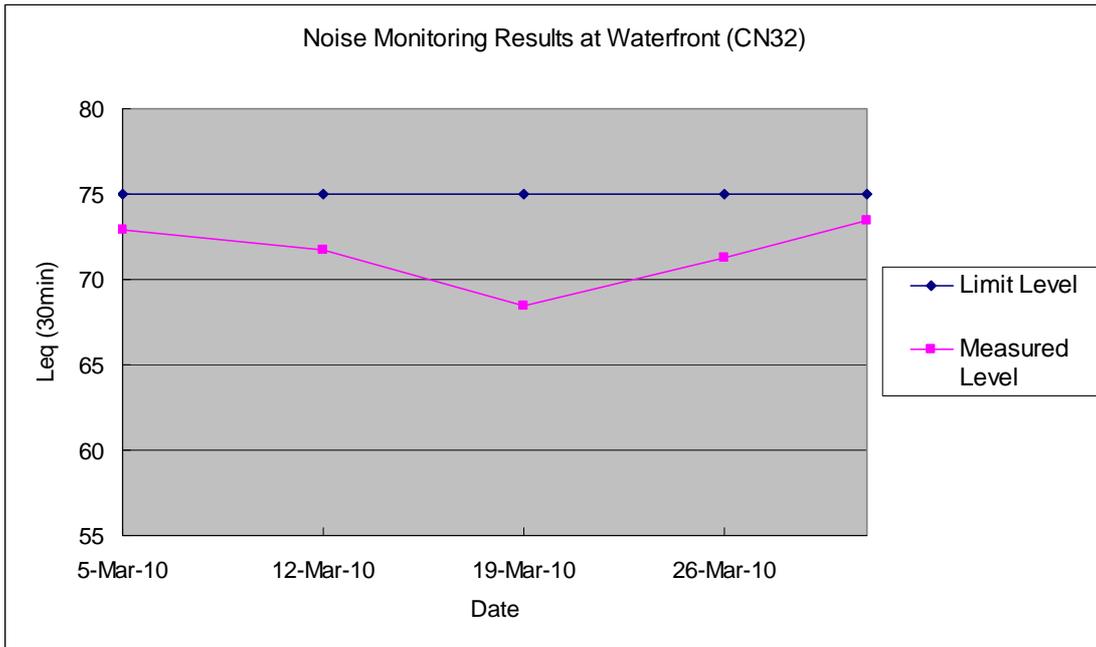
**Construction Dust Impact Monitoring  
Trend of 24-hour TSP Levels at AM16 (March 2010)**



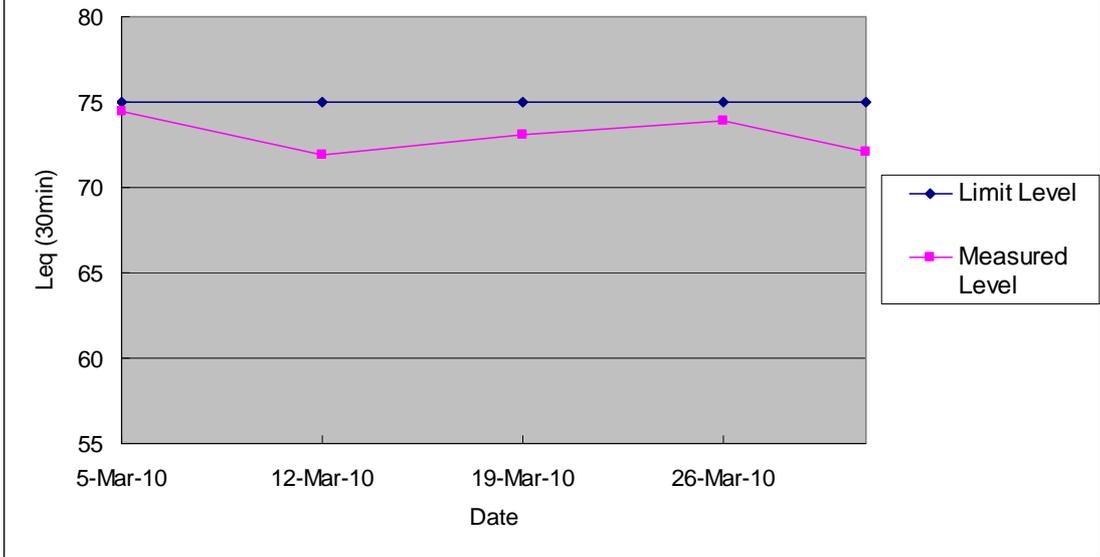
Construction Dust Impact Monitoring  
Trend of 24-hour TSP Levels at AM17 (March 2010)







Noise Monitoring Results at Victoria Towers (CN34)



Appendix I

Bird Species and Abundance  
Recorded during Avifauna Survey

Bird Species and Abundance Recorded during Bird Survey at MPV-1

Avifauna (10 March 2010)

Common Name	Scientific Name	Chinese Name	MPV-1/P1	MPV-1/P2	MPV-1/P3	MPV-1/P4	MPV-1/P5	MPV-1/P6	MPV-1/P7	MPV-1/P8	MPV-1/P9	MPV-1/P10	MPV-1/P11	MPV-1/P12	Sub-total	Walk Transect
Little Grebe	<i>Tachybaptus ruficollis</i>	小鸕鶿		1	4			2						2	9	
Great Cormorant	<i>Phalacrocorax carbo</i>	鸕鶿		41									3		44	√
Great Egret	<i>Egretta alba</i>	大白鷺		1									1		2	
Little Egret	<i>Egretta garzetta</i>	小白鷺	2	8			35		2	5		6	1		59	√
Cattle Egret	<i>Bubulcus ibis</i>	牛背鷺					1								1	
Chinese Pond Heron	<i>Ardeola bacchus</i>	池鷺		21	1									1	23	√
Black-faced Spoonbill	<i>Platalea minor</i>	黑臉琵鷺					15								15	√
Common Teal	<i>Anas crecca</i>	綠翅鴨													0	√
Tufted Duck	<i>Aythya fuligula</i>	鳳頭潛鴨												1	1	
Black Kite	<i>Milvus migrans</i>	黑鳶(麻鷹)													0	√
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	白胸苦惡鳥		1									1		2	
Little Ringed Plover	<i>Charadrius dubius</i>	金眶鸕(黑領鸕)					2	3		1					6	
Kentish Plover	<i>Charadrius alexandrinus</i>	環頸鸕						15							15	
Marsh Sandpiper	<i>Tringa stagnatilis</i>	澤鸕						1							1	
Green Sandpiper	<i>Tringa ochropus</i>	白腰草鸕						4							4	
Wood Sandpiper	<i>Tringa glareola</i>	林鸕				2		2		3					7	
Common Sandpiper	<i>Actitis hypoleucos</i>	磯鸕				7	1	1	1	1					11	
Spotted Dove	<i>Streptopelia chinensis</i>	珠頸斑鳩	1							2					3	√
Barn Swallow	<i>Hirundo rustica</i>	家燕		5	52	5	1	35		15	30	58		2	203	√
Yellow Wagtail	<i>Motacilla flava</i>	黃鶺鴒			16	5		1	1						23	
White Wagtail	<i>Motacilla alba</i>	白鶺鴒				4	1	5	5			1			16	√
Richard's Pipit	<i>Anthus richardi</i>	田鶺			1										1	
Red-throated Pipit	<i>Anthus cervinus</i>	紅喉鶺							3						3	
Common Stonechat	<i>Saxicola torquata</i>	黑喉石鶺							1						1	√
Zitting Cisticola	<i>Cisticola juncidis</i>	棕扇尾鶺							1						1	
Yellow-bellied Prinia	<i>Prinia flaviventris</i>	黃腹山鶺鶯												1	1	√
Eurasian Tree Sparrow	<i>Passer montanus</i>	麻雀								3					3	
Red-billed Starling	<i>Sturnus sericeus</i>	絲光椋鳥													0	√
Black-collared Starling	<i>Sturnus nigricollis</i>	黑領椋鳥													0	√
Crested Myna	<i>Acridotheres cristatellus</i>	八哥	2							2					4	√
Large-billed Crow	<i>Corvus macrorhynchus</i>	大嘴烏鴉													0	√
Collared Crow	<i>Corvus torquatus</i>	白頸鴉					1								1	
<b>No. of Birds at Each Point:</b>			<b>5</b>	<b>78</b>	<b>74</b>	<b>23</b>	<b>57</b>	<b>69</b>	<b>14</b>	<b>32</b>	<b>30</b>	<b>65</b>	<b>6</b>	<b>7</b>		
<b>No. of Birds Recorded from Point Count:</b>															<b>460</b>	
<b>No. of Species Recorded from Point Count:</b>															<b>27</b>	
<b>Total No. of Species:</b>															<b>32</b>	
<b>Total No. of Species of Conservation Interest:</b>															<b>15</b>	

Bird Species and Abundance Recorded during Bird Survey at MPV-1

Avifauna (17 March 2010)

Common Name	Scientific Name	Chinese Name	MPV-1/P1	MPV-1/P2	MPV-1/P3	MPV-1/P4	MPV-1/P5	MPV-1/P6	MPV-1/P7	MPV-1/P8	MPV-1/P9	MPV-1/P10	MPV-1/P11	MPV-1/P12	Sub-total	Walk Transect
Little Grebe	<i>Tachybaptus ruficollis</i>	小鸕鶿	1	1	3			2	1						8	
Great Cormorant	<i>Phalacrocorax carbo</i>	鸕鶿		45	1	1			8				3		58	√
Grey Heron	<i>Ardea cinerea</i>	蒼鷺													0	√
Great Egret	<i>Egretta alba</i>	大白鷺									16		2		18	√
Little Egret	<i>Egretta garzetta</i>	小白鷺	1			1	1	1		3	18	4	1	1	31	√
Cattle Egret	<i>Bubulcus ibis</i>	牛背鷺													0	√
Chinese Pond Heron	<i>Ardeola bacchus</i>	池鷺	4	2								2			8	√
Black-faced Spoonbill	<i>Platalea minor</i>	黑臉琵鷺									9				9	√
Black Kite	<i>Milvus migrans</i>	黑鳶(麻鷹)										1			1	√
Crested Goshawk	<i>Accipiter trivirgatus</i>	鳳頭鷹													0	√
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	白胸苦惡鳥	2							1					3	√
Common Moorhen	<i>Gallinula chloropus</i>	黑水雞			1										1	
Green Sandpiper	<i>Tringa ochropus</i>	白腰草鶺						1							1	
Wood Sandpiper	<i>Tringa glareola</i>	林鶺					1	1							2	
Common Sandpiper	<i>Actitis hypoleucos</i>	磯鶺				1			4	3					8	
Spotted Dove	<i>Streptopelia chinensis</i>	珠頸斑鳩	1	1						2					4	
Common Koel	<i>Eudynamys scolopacea</i>	噪鵲													0	√
Greater Coucal	<i>Centropus sinensis</i>	褐翅鴉鵲													0	√
Little Swift	<i>Apus affinis</i>	小白腰雨燕													0	√
Pied Kingfisher	<i>Ceryle rudis</i>	斑魚狗													0	√
Common Kingfisher	<i>Alcedo atthis</i>	普通翠鳥		1	1							1		1	4	
White-throated Kingfisher	<i>Halcyon smyrnensis</i>	白胸翡翠								1					1	
Barn Swallow	<i>Hirundo rustica</i>	家燕	1		14		10	22	45						92	√
Grey Wagtail	<i>Motacilla cinerea</i>	灰鶺鴒					1								1	
Yellow Wagtail	<i>Motacilla flava</i>	黃鶺鴒			4	9	11	2	2						28	
White Wagtail	<i>Motacilla alba</i>	白鶺鴒					1	1							2	
Richard's Pipit	<i>Anthus richardi</i>	田鶺					1								1	
Olive-backed Pipit	<i>Anthus hodgsoni</i>	樹鶺								1					1	
Red-throated Pipit	<i>Anthus cervinus</i>	紅喉鶺				1	2	2	3						8	
Red-whiskered Bulbul	<i>Pycnonotus jocosus</i>	紅耳鶺													0	√
Chinese Bulbul	<i>Pycnonotus sinensis</i>	白頭鶺												1	1	√
Sooty-headed Bulbul	<i>Pycnonotus aurigaster</i>	白喉紅臀鶺													0	√
Long-tailed Shrike	<i>Lanius schach</i>	棕背伯勞												1	1	√
Oriental Magpie Robin	<i>Copsychus saularis</i>	鶺鴒	1	1						1					3	
Common Stonechat	<i>Saxicola torquata</i>	黑喉石鶺			1			1		1					3	√
Masked Laughingthrush	<i>Garrulax perspicillatus</i>	黑臉噪鶺													0	√
Yellow-bellied Prinia	<i>Prinia flaviventris</i>	黃腹山鶺鶯													0	√
Plain Prinia	<i>Prinia inornata</i>	純色山鶺鶯		1	1									1	3	
Scaly-breasted Munia	<i>Lonchura punctulata</i>	斑文鳥													0	√
Eurasian Tree Sparrow	<i>Passer montanus</i>	麻雀							3	10					13	√
Red-billed Starling	<i>Sturnus sericeus</i>	絲光椋鳥		40											40	√
Black-collared Starling	<i>Sturnus nigricollis</i>	黑領椋鳥			1				1						2	√
Crested Myna	<i>Acridotheres cristatellus</i>	八哥								2					2	√
Common Magpie	<i>Pica pica</i>	喜鵲			1	1									2	
Large-billed Crow	<i>Corvus macrorhynchus</i>	大嘴烏鴉													0	√
Collared Crow	<i>Corvus torquatus</i>	白頸鴉					1								1	√
<b>No. of Birds at Each Point:</b>			<b>11</b>	<b>92</b>	<b>28</b>	<b>14</b>	<b>29</b>	<b>33</b>	<b>67</b>	<b>25</b>	<b>43</b>	<b>8</b>	<b>6</b>	<b>5</b>		
<b>No. of Birds Recorded from Point Count:</b>															<b>361</b>	
<b>No. of Species Recorded from Point Count:</b>															<b>33</b>	
<b>Total No. of Species:</b>															<b>46</b>	
<b>Total No. of Species of Conservation Interest:</b>															<b>11</b>	

Bird Species and Abundance Recorded during Bird Survey at MPV-1

Avifauna (24 March 2010)

Common Name	Scientific Name	Chinese Name	MPV-1/P1	MPV-1/P2	MPV-1/P3	MPV-1/P4	MPV-1/P5	MPV-1/P6	MPV-1/P7	MPV-1/P8	MPV-1/P9	MPV-1/P10	MPV-1/P11	MPV-1/P12	Sub-total	Walk Transect
Little Grebe	<i>Tachybaptus ruficollis</i>	小鵝鶩			4				1						5	
Great Cormorant	<i>Phalacrocorax carbo</i>	鸕鶿		2		1									3	
Grey Heron	<i>Ardea cinerea</i>	蒼鷺													0	v
Great Egret	<i>Egretta alba</i>	大白鷺			15		4	8	1			1	1		30	v
Little Egret	<i>Egretta garzetta</i>	小白鷺		1	87			13	1	1	1	10	1		115	v
Cattle Egret	<i>Bubulcus ibis</i>	牛背鷺						1							1	v
Chinese Pond Heron	<i>Ardeola bacchus</i>	池鷺	1	5	5	2		2	4	1		1			21	v
Black-crowned Night Heron	<i>Nycticorax nycticorax</i>	夜鷺		1											1	
Eurasian Spoonbill	<i>Platalea leucorodia</i>	白琵鷺			3										3	
Black-faced Spoonbill	<i>Platalea minor</i>	黑臉琵鷺			90						9				99	
Black Kite	<i>Milvus migrans</i>	黑鳶(麻鷹)													0	v
Common Kestrel	<i>Falco tinnunculus</i>	紅隼													0	v
White-breasted Waterhen	<i>Amauornis phoenicurus</i>	白胸苦惡鳥		1					4	4					9	
Common Moorhen	<i>Gallinula chloropus</i>	黑水雞			1										1	
Oriental Pratincole	<i>Glareola maldivarum</i>	普通燕鴒					13								13	
Little Ringed Plover	<i>Charadrius dubius</i>	金眶鴒(黑領鴒)					2				1	1			4	
Green Sandpiper	<i>Tringa ochropus</i>	白腰草鴒			1		2	4	1						8	
Wood Sandpiper	<i>Tringa glareola</i>	林鴒						6				1			7	
Common Sandpiper	<i>Actitis hypoleucos</i>	磯鴒			1	1	2	1	1			2			8	
Common Snipe	<i>Gallinago gallinago</i>	扇尾沙錐						2							2	
Black-headed Gull	<i>Larus ridibundus</i>	紅嘴鷗		1	1			1	1						4	
Oriental Turtle Dove	<i>Streptopelia orientalis</i>	山斑鳩		1											1	
Spotted Dove	<i>Streptopelia chinensis</i>	珠頸斑鳩	1	1	2				1			1	1	1	8	
Common Koel	<i>Eudynamys scolopacea</i>	噪鵲										1			1	v
Common Kingfisher	<i>Alcedo atthis</i>	普通翠鳥	1	1											2	
Barn Swallow	<i>Hirundo rustica</i>	家燕													0	v
Yellow Wagtail	<i>Motacilla flava</i>	黃鶺鴒				2	12	12	3	4	3				36	
Grey Wagtail	<i>Motacilla cinerea</i>	灰鶺鴒								1	1				2	
White Wagtail	<i>Motacilla alba</i>	白鶺鴒	1					1	1	5	1	2			11	
Richard's Pipit	<i>Anthus richardi</i>	田鸚				1					1				2	
Red-throated Pipit	<i>Anthus cervinus</i>	紅喉鸚				2		2			4				8	
Red-whiskered Bulbul	<i>Pycnonotus jocosus</i>	紅耳鸚											1		1	
Chinese Bulbul	<i>Pycnonotus sinensis</i>	白頭鸚	2							3					5	
Oriental Magpie Robin	<i>Copsychus saularis</i>	鸚鵡	1										1		2	
Common Stonechat	<i>Saxicola torquata</i>	黑喉石鸚							1						1	
Zitting Cisticola	<i>Cisticola juncidis</i>	棕扇尾鸚				1					2				3	
Yellow-bellied Prinia	<i>Prinia flaviventris</i>	黃腹山鸚	1		1					1					3	
Plain Prinia	<i>Prinia inornata</i>	純色山鸚							1	4				1	6	
White-rumped Munia	<i>Lonchura striata</i>	白腰文鳥													0	v
Eurasian Tree Sparrow	<i>Passer montanus</i>	麻雀	4												4	
Black-collared Starling	<i>Sturnus nigricollis</i>	黑領椋鳥				2							1		3	v
Common Myna	<i>Acridotheres tristis</i>	家八哥												2	2	
Crested Myna	<i>Acridotheres cristatellus</i>	八哥						2		2		2			6	
Common Magpie	<i>Pica pica</i>	喜鵲	1		1										2	
Large-billed Crow	<i>Corvus macrorhynchus</i>	大嘴烏鴉													0	v
Collared Crow	<i>Corvus torquatus</i>	白頸鴉							1						1	v
<b>No. of Birds at Each Point:</b>			<b>13</b>	<b>14</b>	<b>212</b>	<b>12</b>	<b>35</b>	<b>55</b>	<b>22</b>	<b>26</b>	<b>23</b>	<b>22</b>	<b>6</b>	<b>4</b>		
<b>No. of Birds Recorded from Point Count:</b>															<b>444</b>	
<b>No. of Species Recorded from Point Count:</b>															<b>40</b>	
<b>Total No. of Species:</b>																<b>46</b>
<b>Total No. of Species of Conservation Interest:</b>																<b>13</b>

Bird Species and Abundance Recorded during Bird Survey at MPV-1

Avifauna (31 March 2010)

Common Name	Scientific Name	Chinese Name	MPV-1/P1	MPV-1/P2	MPV-1/P3	MPV-1/P4	MPV-1/P5	MPV-1/P6	MPV-1/P7	MPV-1/P8	MPV-1/P9	MPV-1/P10	MPV-1/P11	MPV-1/P12	Sub-total	Walk Transect
Little Grebe	<i>Tachybaptus ruficollis</i>	小鸕鷀							2						2	
Great Cormorant	<i>Phalacrocorax carbo</i>	鸕鷀		1											1	
Grey Heron	<i>Ardea cinerea</i>	蒼鷺			1										1	
Great Egret	<i>Egretta alba</i>	大白鷺		1				1		1		1			4	v
Little Egret	<i>Egretta garzetta</i>	小白鷺		1	3	1		2		4	1	11	3		26	v
Chinese Pond Heron	<i>Ardeola bacchus</i>	池鷺	3	3	1	2		2	1	2					14	v
Black-crowned Night Heron	<i>Nycticorax nycticorax</i>	夜鷺		3											3	
Black-faced Spoonbill	<i>Platalea minor</i>	黑臉琵鷺			5										5	v
White-breasted Waterhen	<i>Amaurornis phoenicurus</i>	白胸苦惡鳥	1	3											4	
Oriental Pratincole	<i>Glareola maldivarum</i>	普通燕鴒					5								5	
Little Ringed Plover	<i>Charadrius dubius</i>	金眶鴒(黑領鴒)								1	2	1		9	13	v
Kentish Plover	<i>Charadrius alexandrinus</i>	環頸鴒												9	9	
Greater Sand Plover	<i>Charadrius leschenaultii</i>	鐵嘴沙鴒												4	4	
Green Sandpiper	<i>Tringa ochropus</i>	白腰草鴒									1				1	v
Wood Sandpiper	<i>Tringa glareola</i>	林鴒				2	1			1		2		7	13	v
Common Sandpiper	<i>Actitis hypoleucos</i>	磯鴒			1	3	2	1	1	1	2	2		1	14	v
Black-headed Gull	<i>Larus ridibundus</i>	紅嘴鷗						1		1					2	
Spotted Dove	<i>Streptopelia chinensis</i>	珠頸斑鳩	1	3		1						1			6	v
Large Hawk Cuckoo	<i>Hierococcyx sparveroides</i>	鷹鴉													0	v
Common Koel	<i>Eudynamys scolopacea</i>	噪鴉													0	v
Greater Coucal	<i>Centropus sinensis</i>	褐翅鴉鴉													0	v
Common Kingfisher	<i>Alcedo atthis</i>	普通翠鳥	2	1											3	v
Barn Swallow	<i>Hirundo rustica</i>	家燕	8	1	55	7	30		11						112	v
Yellow Wagtail	<i>Motacilla flava</i>	黃鶺鴒			4	2	2	4	5	3	3	1			24	v
Grey Wagtail	<i>Motacilla cinerea</i>	灰鶺鴒					3								3	
White Wagtail	<i>Motacilla alba</i>	白鶺鴒			2				2	2	2	2			10	v
Richard's Pipit	<i>Anthus richardi</i>	田鸚					1								1	
Olive-backed Pipit	<i>Anthus hodgsoni</i>	樹鸚													0	v
Red-throated Pipit	<i>Anthus cervinus</i>	紅喉鸚			9	4	5	5	6	3	2			1	35	
Red-whiskered Bulbul	<i>Pycnonotus jocosus</i>	紅耳鶇	1												1	v
Chinese Bulbul	<i>Pycnonotus sinensis</i>	白頭鶇	1							2				1	4	v
Long-tailed Shrike	<i>Lanius schach</i>	棕背伯勞													0	v
Oriental Magpie Robin	<i>Copsychus saularis</i>	鶇鴉	2			1						1			4	
Common Stonechat	<i>Saxicola torquata</i>	黑喉石鶇			2		3		2						7	
Black-throated Laughingthrush	<i>Garrulax chinensis</i>	黑喉噪鶇											2		2	v
Yellow-bellied Prinia	<i>Prinia flaviventris</i>	黃腹山鶇鶇		3	3	1				3			1	1	12	v
Plain Prinia	<i>Prinia inornata</i>	純色山鶇鶇		2	2								1	1	6	v
Eurasian Tree Sparrow	<i>Passer montanus</i>	麻雀	3						2	1					6	
Black-collared Starling	<i>Sturnus nigricollis</i>	黑領椋鳥	1					1	1						3	v
Crested Myna	<i>Acridotheres cristatellus</i>	八哥	1							2					3	v
Common Magpie	<i>Pica pica</i>	喜鶇	1												1	v
<b>No. of Birds at Each Point:</b>			<b>25</b>	<b>22</b>	<b>88</b>	<b>24</b>	<b>52</b>	<b>17</b>	<b>33</b>	<b>27</b>	<b>13</b>	<b>22</b>	<b>7</b>	<b>34</b>		
<b>No. of Birds Recorded from Point Count:</b>															<b>364</b>	
<b>No. of Species Recorded from Point Count:</b>															<b>36</b>	
<b>Total No. of Species:</b>															<b>41</b>	
<b>Total No. of Species of Conservation Interest:</b>															<b>12</b>	

Note:

1. Species in bold represents Species of Conservation Interest.

## Appendix J

# Representative Photographs of the Avifauna Monitoring in March 2010

**Representative Photographs of the Avifauna Monitoring in March 2010**  
**MPV-1 (Fishponds at Mai Po)**



Plate 1 Pond Aeration at Point Count Location MPV-1/P8



Plate 2 Partially Drained Pond at Point Count Location  
MPV-1/P9



Plate 3 Pond Ploughing at Point Count Location MPV-1/P5

**Representative Photographs of the Avifauna Monitoring in March 2010  
MPV-1 (Fishponds at Mai Po)**



Plate 4 Site Investigation Works at Point Count Location  
MPV-1/P9 for Wo Shang Wai Project



Plate 5 Excavation Works at Point Count Location MPV-1/P9  
for Wo Shang Wai Project



Plate 6 Setting up of Bentonite Pool within MPV Works Area

**Representative Photographs of the Avifauna Monitoring in March 2010**  
**MPV-1 (Fishponds at Mai Po)**



Plate 7 Aggregation of Ardeids at Point Count Location MPV-1/P1

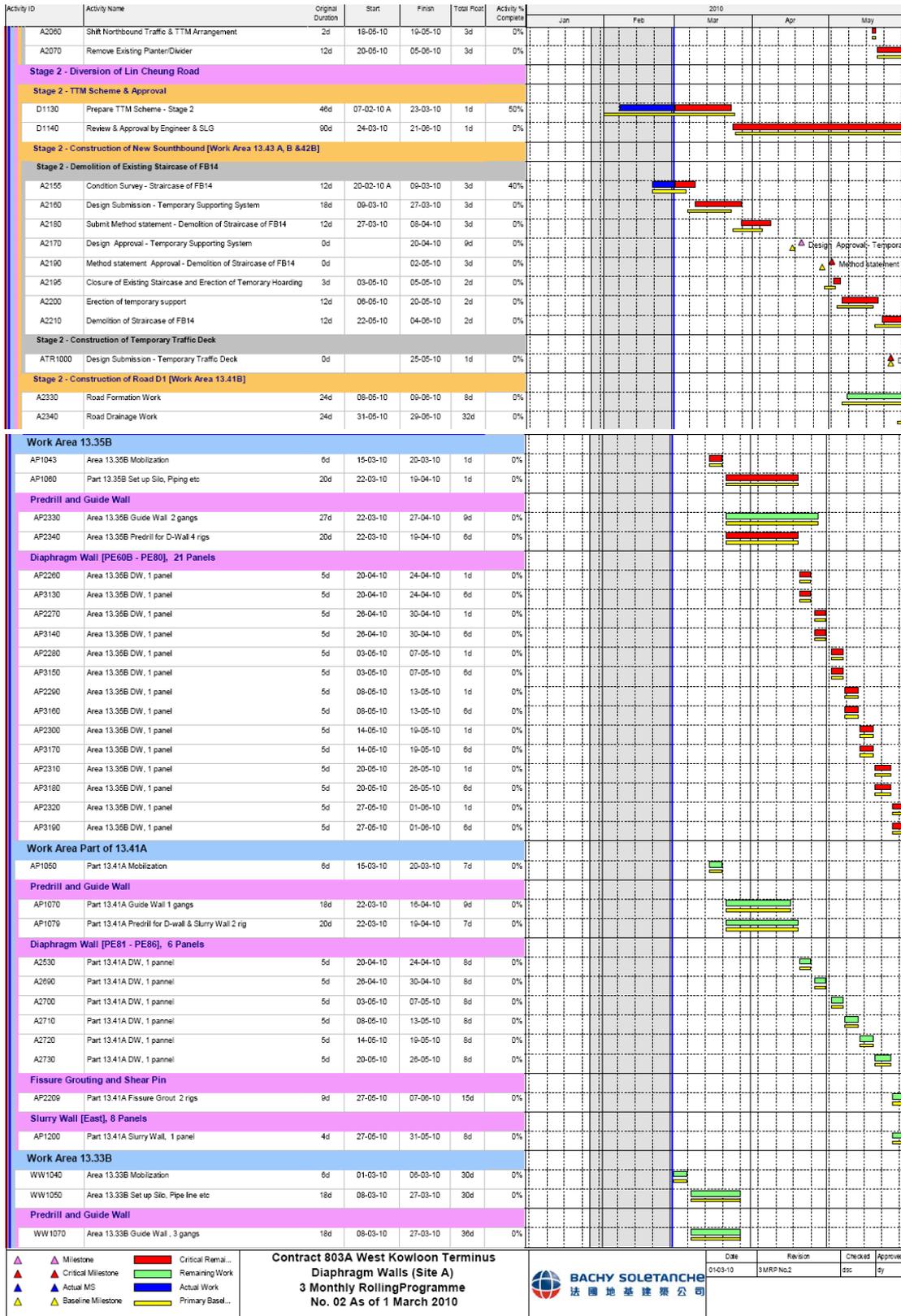


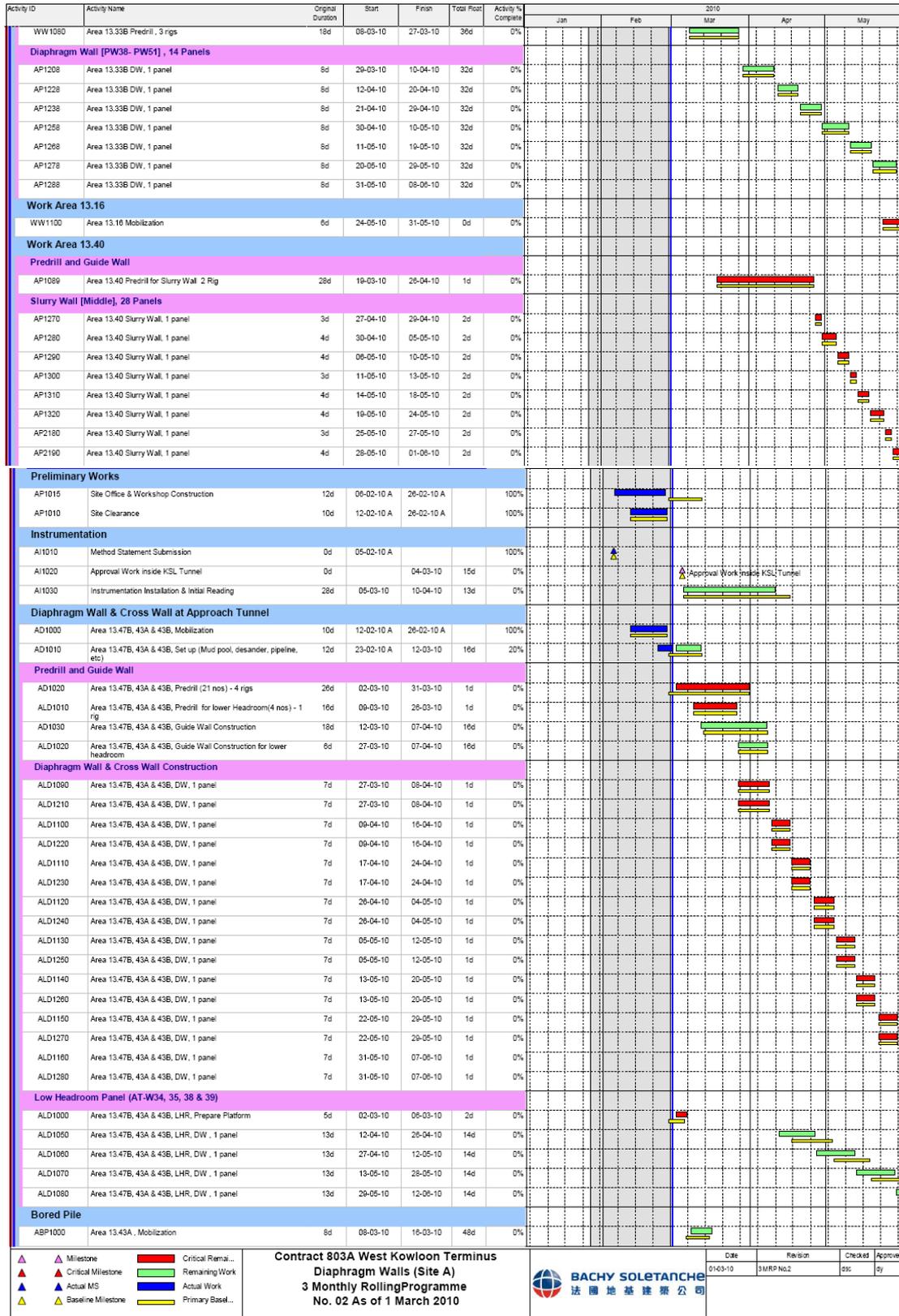
Plate 8 Aggregation of Black-faced Spoonbill at Point Count Location MPV-1/P5

# Appendix C

## Construction Programme

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Activity % Complete	2010					
							Jan	Feb	Mar	Apr	May	
<b>Utilities Diversion</b>												
<b>Work Area 13.42B &amp; 13.41A</b>												
<b>Utility Coordination</b>												
A1670	General Planning and Utility Programme for Work Area 13.42B	14d	08-02-10 A	21-02-10 A		100%						
A1680	Coordination with WSD	30d	22-02-10 A	23-03-10	0d	23.33%						
<b>Watermain Diversion</b>												
<b>Watermain Across Jordan Road</b>												
<b>TTM Scheme &amp; Approval</b>												
AT1050	Prepare overall TTM Scheme for watermain road crossing	14d	01-02-10 A	14-02-10 A		100%						
AT1060	Submission of TTM Scheme	0d		14-02-10 A		100%						
AT1070	Approval TTM Scheme	0d		14-03-10	5d	0%						
AT1080	Notification of Stage 1 TTM	4d	15-03-10	18-03-10	5d	0%						
AT1090	Stage 1 - Implement TTM Scheme	0d	24-03-10		0d	0%						
AT1100	Notification of Stage 2 TTM	4d	05-05-10	08-05-10	4d	0%						
AT1110	Stage 2 - Implement TTM Scheme	0d	06-05-10		4d	0%						
AT1120	Notification of Stage 3 TTM	4d	26-05-10	01-06-10	3d	0%						
<b>Stage 1</b>												
A1690	Traffic Arrangement and Construction of New Bus Bay	12d	24-03-10	10-04-10	0d	0%						
A1700	Notification of Shift existing Bus Stop	5d	11-04-10	15-04-10	0d	0%						
AT1220	Shift Bus Bay at Jordan Road	0d	16-04-10		0d	0%						
AT1230	Trial Trench to identify existing utilities and watermains	6d	16-04-10	22-04-10	4d	0%						
AT1240	Shoring for Trench excavation & temp road deck	8d	23-04-10	04-05-10	4d	0%						
<b>Stage 2</b>												
AT1270	Trial Trench to identify existing utilities and watermains	6d	10-05-10	17-05-10	2d	0%						
AT1280	Shoring for Trench excavation & temp road deck	8d	16-05-10	26-05-10	2d	0%						
<b>Pipe Trough for Watermains</b>												
AT1470	Trial Trench to identify existing utilities and watermains	12d	24-03-10	10-04-10	2d	0%						
AT1480	Excavation for Lower Portion of Pipe Trough for SW202	8d	12-04-10	21-04-10	2d	0%						
AT1490	Construct Base Slab of Lower Portion of Pipe Trough for SW202	16d	23-04-10	13-05-10	2d	0%						
AT1500	Construct Wall of Lower Portion of Pipe Trough for SW202	16d	30-04-10	20-05-10	2d	0%						
AT1510	Excavation for Upper Portion of Pipe Trough for FW301 & SW301	8d	23-05-10	01-06-10	2d	0%						
<b>Pipe Laying, Test and Sterilization</b>												
AT1570	SW202 Excavation & Pipe Laying Ch.A 5.7 - 106	28d	12-04-10	18-05-10	2d	0%						
AT1600	FW202 Excavation & Pipe Laying Ch.B 8 - 180	36d	12-04-10	29-05-10	20d	0%						
AT1620	FW201 Excavation & Pipe Laying Ch.C 10 - 175	36d	12-04-10	29-05-10	48d	0%						
AT1580	SW301 Excavation & Pipe Laying Ch.D 0 - 22	12d	16-05-10	04-06-10	2d	0%						
AT1610	FW301 Excavation & Pipe Laying Ch.E 0 - 15	12d	31-05-10	14-06-10	20d	0%						
AT1630	FW201 Excavation & Pipe Laying Ch.X 0 - 23.1 & Ch.Y 0-25.8	16d	31-05-10	22-06-10	48d	0%						
<b>Utility Trough at Jordan Road</b>												
<b>Utility Coordination &amp; Design</b>												
A1710	Trial Trench for existing utility identification at Jordan Road	12d	16-04-10	30-04-10	0d	0%						
A1720	Coordination with all utility companies	28d	01-05-10	29-05-10	0d	0%						
A1730	Utility Trough Design Scheme	18d	09-05-10	26-05-10	0d	0%						
A1740	Utility Trough Design Scheme Submission	0d		26-05-10	0d	0%						
<b>Diversion of Lin Cheung Road and D1 &amp; D1A</b>												
<b>Stage 1 - Diversion of Lin Cheung Road [Work Area 13.31]</b>												
<b>Stage 1 - TTM Scheme &amp; Approval</b>												
AT1780	Prepare overall TTM Scheme for Stage 1 - Lin Cheung Road	21d	01-02-10 A	21-02-10 A		100%						
AT1790	Submission of TTM Scheme	0d	22-02-10 A			100%						
AT1800	Approval TTM Scheme	0d		23-03-10	9d	0%						
AT1810	Notification of Stage 1.1 TTM	6d	24-03-10	29-03-10	9d	0%						
AT1820	Stage 1.1 - Implement TTM Scheme	0d	30-03-10		4d	0%						
AT1830	Notification of Stage 1.2 TTM	6d	12-05-10	17-05-10	4d	0%						
AT1840	Stage 1.2 - Implement TTM Scheme	0d	18-05-10		3d	0%						
<b>Stage 1 - Road Construction [Work Area 13.31]</b>												
<b>Stage 1.1 - Road Widening (Northbound) at existing Footpath</b>												
A2020	Reduce (Northbound) existing Footpath & TTM Arrangement	6d	30-03-10	06-04-10	4d	0%						
A2030	Remove existing Railing	4d	10-04-10	14-04-10	4d	0%						
A2040	Laying New Kerb & Flexible Pavement	16d	15-04-10	04-05-10	4d	0%						
A2050	Install/Relocate Road Sign & Road Furniture	6d	05-05-10	11-05-10	4d	0%						
<b>Stage 1.2 - Shift Central Divider</b>												
<div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <p>▲ Milestone</p> <p>▲ Critical Milestone</p> <p>▲ Actual MS</p> <p>▲ Baseline Milestone</p> </div> <div style="width: 30%;"> <p>■ Critical Reman...</p> <p>■ Remaining Work</p> <p>■ Actual Work</p> <p>■ Primary Baseli...</p> </div> <div style="width: 30%; text-align: center;"> <p><b>Contract 803A West Kowloon Terminus</b></p> <p><b>Diaphragm Walls (Site A)</b></p> <p><b>3 Monthly Rolling Programme</b></p> <p><b>No. 02 As of 1 March 2010</b></p> </div> </div>												
							Date: 01-03-10 Revision: 3/ MRP No.2 Checked: dsc Approved: by					





Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Activity % Complete	2010				
							Jan	Feb	Mar	Apr	May
ABP1010	Area 13.43A , Set up RCD	6d	17-03-10	23-03-10	48d	0%					
<b>Predrill</b>											
ABP1020	Area 13.43A , Predrill (4 nos) - 1 rig	16d	27-03-10	20-04-10	45d	0%					
<b>Bored Pile Construction</b>											
ABP1030	Area 13.43A , 1 Bored Pile	9d	21-04-10	30-04-10	49d	0%					
ABP1040	Area 13.43A , 1 Bored Pile	9d	28-04-10	08-05-10	49d	0%					
ABP1050	Area 13.43A , 1 Bored Pile	9d	06-05-10	15-05-10	49d	0%					
ABP1060	Area 13.43A , 1 Bored Pile	9d	13-05-10	24-05-10	49d	0%					
<b>Bored Pile Testing</b>											
ABP1070	Area 13.43A BA14 & As-built Submission	0d		27-05-10	49d	0%					
ABP1080	Area 13.43A Select Full Cores	14d	28-05-10	10-06-10	60d	0%					

-  Milestone
-  Critical Milestone
-  Actual MS
-  Baseline Milestone
-  Critical Remain...
-  Remaining Work
-  Actual Work
-  Primary Basel...

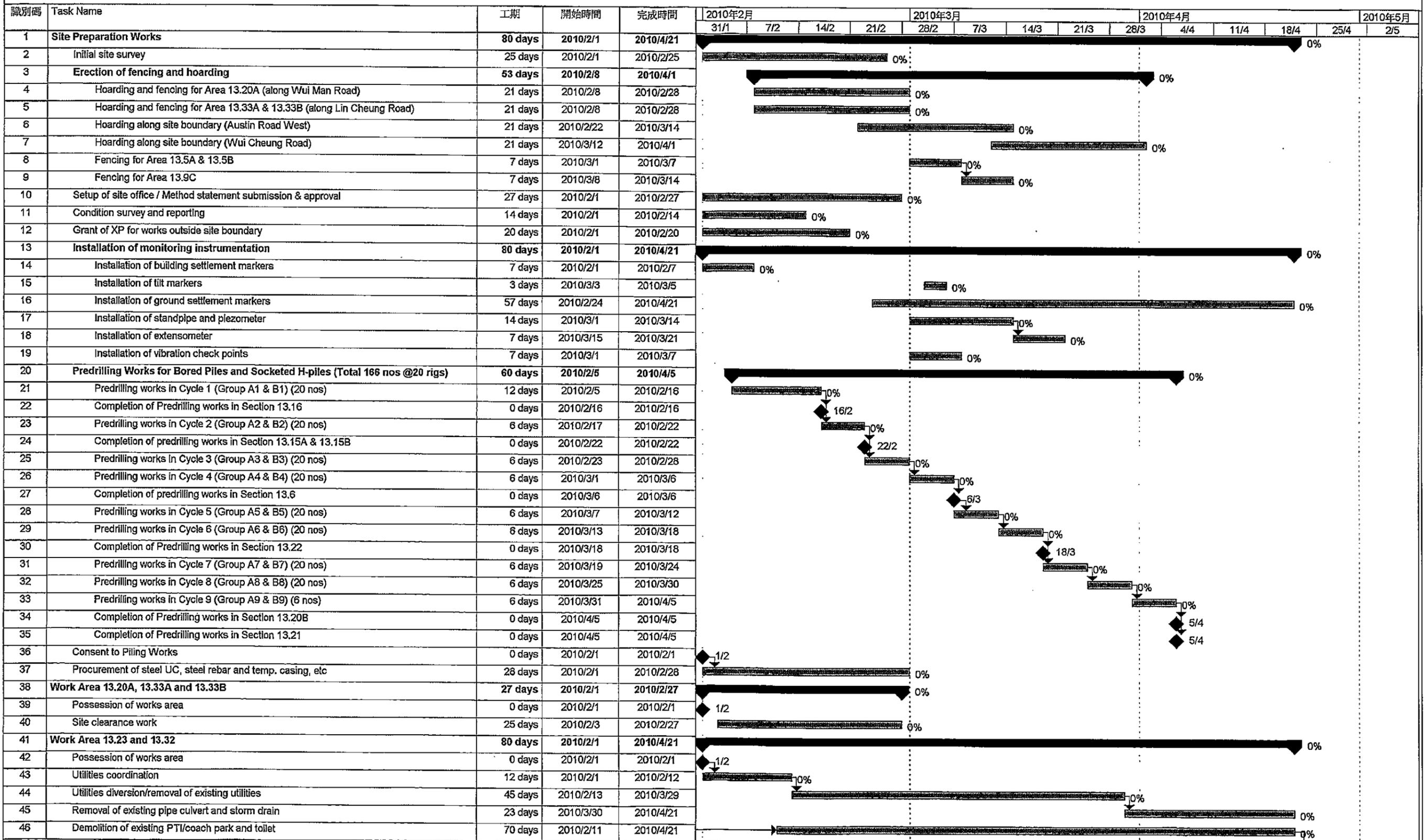
**Contract 803A West Kowloon Terminus  
Diaphragm Walls (Site A)  
3 Monthly Rolling Programme  
No. 02 As of 1 March 2010**



Date	Revision	Checked	Approved
0103-10	3 MRP No.2	29c	by

VIBRO-CHUN WO JOINT VENTURE  
3-month Rolling Program (Feb 2010 to Apr 2010)

Express Rail Link  
Contract 803C-West Kowloon Terminus Piles (Site A-South)

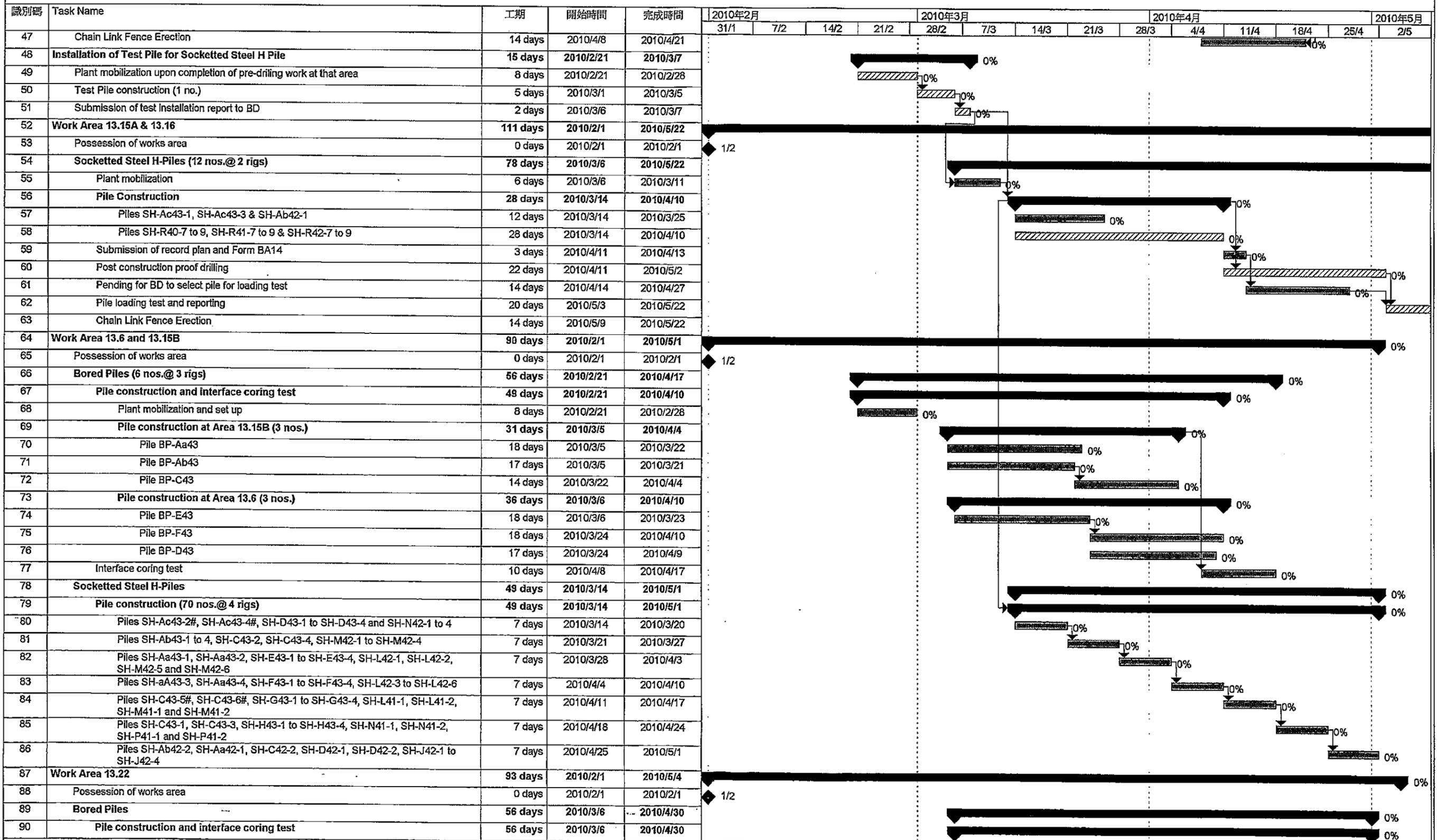


3-month Rolling Program (Feb 2010 to Apr 2010)

Critical		Task		Baseline		Milestone		Project Summary		Deadline	
Critical Split		Split		Baseline Split		Summary Progress		External Tasks			
Critical Progress		Task Progress		Baseline Milestone		Summary		External Milestone			

VIBRO-CHUN WO JOINT VENTURE  
3-month Rolling Program (Feb 2010 to Apr 2010)

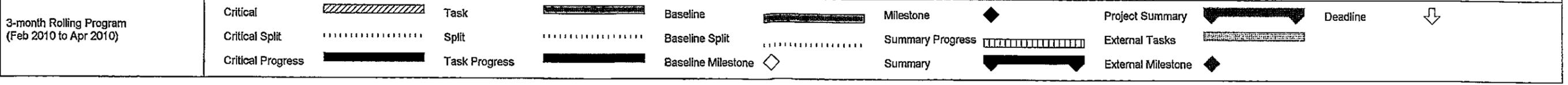
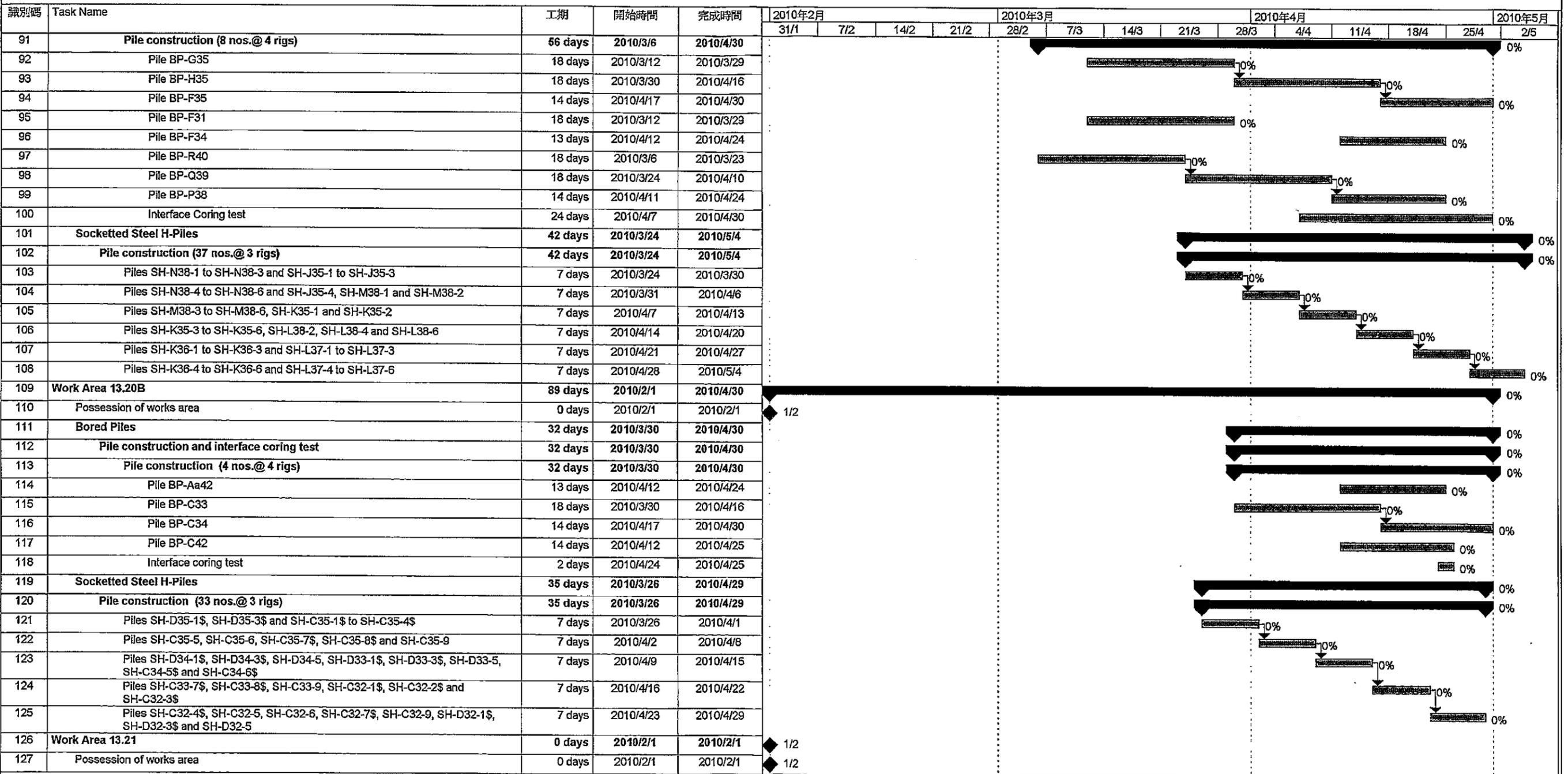
Express Rail Link  
Contract 803C-West Kowloon Terminus Piles (Site A-South)



3-month Rolling Program (Feb 2010 to Apr 2010)	Critical		Task		Baseline		Milestone		Project Summary		Deadline	
	Critical Split		Split		Baseline Split		Summary Progress		External Tasks			
	Critical Progress		Task Progress		Baseline Milestone		Summary		External Milestone			

VIBRO-CHUN WO JOINT VENTURE  
3-month Rolling Program (Feb 2010 to Apr 2010)

Express Rail Link  
Contract 803C-West Kowloon Terminus Piles (Site A-South)



Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Activity % Complete	2010								
							Jan	Feb	Mar	Apr	May	Jun			
<b>Utilities Diversion</b>															
<b>200mm dia Fresh Water Main (FW107)</b>															
U1000	FW 107 - Trial Pits	12	01-03-10	13-03-10	4	0%									
U1010	FW 107 - Coordination with WSD	24	15-03-10	16-04-10	4	0%									
U1020	FW 107 - Construct Diversion Watermain	24	24-05-10	23-06-10	5	0%									
<b>LV, 11kV Cables (LV 111)</b>															
U1040	LV 111 - Cables Detection	3	01-03-10	03-03-10	29	0%									
U1050	LV 111 - Trial Trenches	12	04-03-10	17-03-10	29	0%									
U1060	LV 111 - Coordination with CLP	24	18-03-10	20-04-10	29	0%									
U1070	LV 111 - Cable Diversion by CLP	24	21-04-10	22-05-10	29	0%									
<b>Telecom Cable (PCCW 101)</b>															
U1080	PCCW101 - Cables Detection	3	01-03-10	03-03-10	47	0%									
U1090	PCCW - Trial Trenches	6	04-03-10	10-03-10	47	0%									
U1100	PCCW - Coordination with PCCW	24	11-03-10	12-04-10	47	0%									
U1110	PCCW - Cable Diversion by PCCW	12	13-04-10	27-04-10	47	0%									
<b>400 LPB &amp; MP Gas Main (GS106 &amp; 107)</b>															
U1120	GS106 & 107 - Trial Pits	12	01-03-10	13-03-10	44	0%									
U1130	GS106 & 107 - Coordination with HKCG	24	15-03-10	16-04-10	44	0%									
U1140	GS106 & 107 - Gas Pipe Diversion by HKCG	12	17-04-10	03-05-10	44	0%									
<b>Diversion of Austin Road West</b>															
<b>TTM Schemes and Approval</b>															
DA1000	Prepare TTM schemes	45	01-02-10 A	10-03-10	18	80%									
DA1010	Review & Approval by Engineer & SLG	84	11-03-10	02-06-10	21	0%									
<b>Diaphragm Wall [94 Panels]</b>															
<b>Works Area 13.2 (North)</b>															
DW1590	D-Wall - Mobilisation	18	01-02-10 A	22-02-10 A		100%									
DW1600	D-Wall Site Set Up (silo, pipeline, desander, etc)	28	08-02-10 A	28-02-10 A		100%									
<b>Guide Wall Construction</b>															
DW1610	Guide-Wall - Area 13.2 North - Panel PE	10	25-02-10 A	09-03-10	5	50%									
DW1620	Guide-Wall - Area 13.2 North - Panel PW	10	10-03-10	20-03-10	5	0%									
<b>Diaphragm Wall Construction [10 Panels]</b>															
DW1860	DR2: D-Wall - Area 13.2 North - 1 Panel	14	22-03-10	10-04-10	9	0%									
DW1892	DR3: D-Wall - Area 13.2 North - 1 Panel	14	22-03-10	10-04-10	15	0%									
DW1850	DR1: D-Wall - Area 13.2 North - 1 Panel	14	27-03-10	16-04-10	0	0%									
DW1873	DR2: D-Wall - Area 13.2 North - 1 Panel	14	12-04-10	27-04-10	9	0%									
DW1893	DR3: D-Wall - Area 13.2 North - 1 Panel	14	12-04-10	27-04-10	15	0%									
DW1852	DR1: D-Wall - Area 13.2 North - 1 Panel	14	17-04-10	04-05-10	0	0%									
DW1894	DR3: D-Wall - Area 13.2 North - 1 Panel	14	28-04-10	14-05-10	15	0%									

- △ Milestone
- ▲ Critical Milestone
- ▲ Actual MS
- ▲ Baseline Milestone
- Critical Remai...
- Remaining W...
- Actual Work
- Primary BaseL...

**Contract 803D West Kowloon Terminus  
Diaphragm Walls and Piles (WKCD)  
3 Monthly Rolling Programme  
No. 02 As of 1 March 2010**



Date	Revision	Checked	Approved
01-03-10	3 MRP No.2	gt	dy

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Activity % Complete	2010					
							Jan	Feb	Mar	Apr	May	Jun
DW1875	DR2: D-Wall - Area 13.2 North - 1 Panel	14	28-04-10	14-05-10	9	0%						
DW1858	DR1: D-Wall - Area 13.2 North - 1 Panel	14	05-05-10	20-05-10	0	0%						
DW1890	DR2: D-Wall - Area 13.2 North - 1 Panel	14	15-05-10	01-06-10	9	0%						
<b>Fissure Grouting</b>												
DW1930	Fissure Grouting - Area 13.2 North - Panel PE	12	05-05-10	19-05-10	20	0%						
<b>Shear Pin</b>												
DW1940	Shear Pin - Area 13.2 North - Panel PE	15	20-05-10	09-06-10	20	0%						
<b>Works Area 13.2 (South)</b>												
<b>Guide Wall Construction</b>												
DW1860	Guide Wall - Area 13.2 South - Panel PE	10	25-02-10 A	15-03-10	27	50%						
DW1670	Guide Wall - Area 13.2 South - Panel PW	15	16-03-10	01-04-10	42	0%						
<b>Diaphragm Wall Construction [17 Panel]</b>												
DW1970	DR4: D-Wall - Area 13.2 South - 1 Panel	14	01-04-10	22-04-10	13	0%						
DW1973	DR4: D-Wall - Area 13.2 South - 1 Panel	14	22-04-10	10-05-10	13	0%						
DW1975	DR4: D-Wall - Area 13.2 South - 1 Panel	14	10-05-10	27-05-10	13	0%						
DW2007	DR3: D-Wall - Area 13.2 South - 1 Panel	14	15-05-10	01-06-10	15	0%						
DW1977	DR4: D-Wall - Area 13.2 South - 1 Panel	14	27-05-10	12-06-10	13	0%						
<b>Works Area 13.1</b>												
<b>Guide Wall Construction</b>												
DW2420	Guide Wall - Area 13.1 - Panel PW	11	11-02-10 A	27-02-10 A		100%						
DW2410	Guide Wall - Area 13.1 - Panel PS	26	04-03-10	07-04-10	7	0%						
DW2415	Guide Wall - Area 13.1 - Panel PE	26	08-04-10	11-05-10	7	0%						
<b>Diaphragm Wall Construction [58 Panel]</b>												
DW2100	DR5: D-Wall - Area 13.1 - 1 Panel	10	19-05-10	31-05-10	0	0%						
DW2222	DR6: D-Wall - Area 13.1 - 1 Panel	10	19-05-10	31-05-10	2	0%						
DW2310	DR1: D-Wall - Area 13.1 - 1 Panel	10	22-05-10	02-06-10	0	0%						
<b>Ground Investigation</b>												
<b>Predrill - D-Wall ( Works Area 13.1 and 13.2)</b>												
DW0110	Predrill - D-Wall - Area 13.2 North - (9nos) 3 Rigs	15	25-02-10 A	15-03-10	0	15%						
DW0130	Predrill - D-Wall - Area 13.2 South - (13nos) 3 Rigs	25	25-02-10 A	16-04-10	12	8%						
DW0140	Predrill - D-Wall - Area 13.1 - (12nos) 2 Rigs	30	01-03-10	08-04-10	0	0%						
DW0150	Predrill - D-Wall - Area 13.1 - (12nos) 2 Rigs	30	09-04-10	18-05-10	0	0%						
<b>Predrill - Bored Pile</b>												
BP0110	Predrill - Area 13.2 North (7 nos) 3 Rigs	10	06-02-10 A	03-03-10	10	71%						
BP0132	Predrill - Area 13.2 South (14 nos) 3 Rigs	24	06-02-10 A	20-03-10	10	29%						
BP0134	Predrill - Area 13.1 (3 nos) 3 Rigs	5	20-03-10	26-03-10	11	0%						
<b>Predrill - Socketed H - Pile</b>												
SH0010	Predrill (23 nos) - Socketed H-Pile 6 Rigs	20	09-02-10 A	16-03-10	75	30%						
SH0020	Predrill (23 nos) - Socketed H-Pile 6 Rigs	20	17-03-10	13-04-10	75	0%						
<b>Bored Pile [177 No]</b>												
BP0010	Bored Pile - Mobilisation	20	09-02-10 A	26-02-10 A		100%						
BP0020	Set Up RCD	24	11-02-10 A	26-02-10 A		100%						
<b>Bored Pile (Area 13.2 North)</b>												
<b>Bored Pile Construction (Area 13.2 North) [23 Nos]</b>												
BP1010	BR1: Bored Pile - Area 13.2 North (1 nos)	7	24-03-10	31-03-10	7	0%						
BP1040	BR2: Bored Pile - Area 13.2 North (1 nos)	7	24-03-10	31-03-10	10	0%						
BP1070	BR3: Bored Pile - Area 13.2 North (1 nos)	7	24-03-10	31-03-10	13	0%						
BP1012	BR1: Bored Pile - Area 13.2 North (1 nos)	7	01-04-10	13-04-10	7	0%						
BP1042	BR2: Bored Pile - Area 13.2 North (1 nos)	7	01-04-10	13-04-10	10	0%						
BP1072	BR3: Bored Pile - Area 13.2 North (1 nos)	7	01-04-10	13-04-10	13	0%						
BP1015	BR1: Bored Pile - Area 13.2 North (1 nos)	7	14-04-10	21-04-10	7	0%						
BP1045	BR2: Bored Pile - Area 13.2 North (1 nos)	7	14-04-10	21-04-10	10	0%						
BP1075	BR3: Bored Pile - Area 13.2 North (1 nos)	7	14-04-10	21-04-10	13	0%						
BP1020	BR1: Bored Pile - Area 13.2 North (1 nos)	7	22-04-10	29-04-10	7	0%						
BP1050	BR2: Bored Pile - Area 13.2 North (1 nos)	7	22-04-10	29-04-10	10	0%						
BP1080	BR3: Bored Pile - Area 13.2 North (1 nos)	7	22-04-10	29-04-10	13	0%						
BP1022	BR1: Bored Pile - Area 13.2 North (1 nos)	7	30-04-10	08-05-10	7	0%						
BP1052	BR2: Bored Pile - Area 13.2 North (1 nos)	7	30-04-10	08-05-10	10	0%						
BP1082	BR3: Bored Pile - Area 13.2 North (1 nos)	7	30-04-10	08-05-10	13	0%						
BP1025	BR1: Bored Pile - Area 13.2 North (1 nos)	7	10-05-10	17-05-10	7	0%						
BP1055	BR2: Bored Pile - Area 13.2 North (1 nos)	7	10-05-10	17-05-10	10	0%						

▲	Milestone	■	Critical Remai...
▲	Critical Milestone	■	Remaining W...
▲	Actual MS	■	Actual Work
▲	Baseline Milestone	■	Primary Baseli...

**Contract 803D West Kowloon Terminus**  
**Diaphragm Walls and Piles (WKCD)**  
**3 Monthly Rolling Programme**  
**No. 02 As of 1 March 2010**



Date	Revision	Checked	Approved
01-03-10	3 MRP No.2	st	st

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Activity % Complete	2010					
							Jan	Feb	Mar	Apr	May	Jun
BP1085	BR3: Bored Pile - Area 13.2 North (1 nos)	7	10-05-10	17-05-10	13	0%						
BP1090	BR3: Bored Pile - Area 13.2 North (1 nos)	7	18-05-10	26-05-10	13	0%						
BP1028	BR1: Bored Pile - Area 13.2 North (1 nos)	7	18-05-10	26-05-10	7	0%						
BP1058	BR2: Bored Pile - Area 13.2 North (1 nos)	7	18-05-10	26-05-10	10	0%						
BP1030	BR1: Bored Pile - Area 13.2 North (1 nos)	7	27-05-10	03-06-10	7	0%						
BP1060	BR2: Bored Pile - Area 13.2 North (1 nos)	7	27-05-10	03-06-10	10	0%						
<b>Bored Pile (Area 13.2 South)</b>												
<b>Bored Pile Construction (Area 13.2 South) [71 Nos]</b>												
BP2255	BR4: Bored Pile - Area 13.2 South (1 nos)	7	20-03-10	29-03-10	10	0%						
BP2258	BR4: Bored Pile - Area 13.2 South (1 nos)	7	29-03-10	10-04-10	10	0%						
BP2260	BR4: Bored Pile - Area 13.2 South (1 nos)	7	10-04-10	19-04-10	10	0%						
BP2170	BR3: Bored Pile - Area 13.2 South (1 nos)	7	27-05-10	03-06-10	13	0%						
<b>Bored Pile (Area 13.1)</b>												
<b>Bored Pile Construction (Area 13.1) [62 Nos]</b>												
BP3120	BR5: Bored Pile - Area 13.1 (1 nos)	7	26-03-10	08-04-10	11	0%						
BP3122	BR5: Bored Pile - Area 13.1 (1 nos)	7	08-04-10	16-04-10	11	0%						
BP3125	BR5: Bored Pile - Area 13.1 (1 nos)	7	16-04-10	24-04-10	11	0%						
BP3010	BR4: Bored Pile - Area 13.1 (1 nos)	7	19-04-10	27-04-10	10	0%						
BP3130	BR5: Bored Pile - Area 13.1 (1 nos)	7	24-04-10	04-05-10	11	0%						
BP3012	BR4: Bored Pile - Area 13.1 (1 nos)	7	27-04-10	06-05-10	10	0%						
BP3132	BR5: Bored Pile - Area 13.1 (1 nos)	7	04-05-10	12-05-10	11	0%						
BP3015	BR4: Bored Pile - Area 13.1 (1 nos)	7	06-05-10	14-05-10	10	0%						
BP3135	BR5: Bored Pile - Area 13.1 (1 nos)	7	12-05-10	20-05-10	11	0%						
BP3020	BR4: Bored Pile - Area 13.1 (1 nos)	7	14-05-10	24-05-10	10	0%						
BP3140	BR5: Bored Pile - Area 13.1 (1 nos)	7	20-05-10	29-05-10	11	0%						
BP3022	BR4: Bored Pile - Area 13.1 (1 nos)	7	24-05-10	01-06-10	10	0%						
BP3142	BR5: Bored Pile - Area 13.1 (1 nos)	7	29-05-10	07-06-10	11	0%						
<b>Socketed H-Pile [887 Nos]</b>												
SH1000	H-Pile - Mobilisation	18	01-02-10 A	24-02-10 A		100%						
SH1010	H-Pile - Site Set Up (welding yard, mixer, air tanks, pipeline, etc)	18	01-02-10 A	24-02-10 A		100%						
<b>Test Boring - Socketed H-Pile</b>												
SH1030	Prepare Test Boring Proposal	4	01-02-10 A	06-02-10 A		100%						
SH1040	Test Boring - Review by the Engineer	28	07-02-10 A	11-02-10 A		100%						
SH1050	Test Boring - Install Ground & Piezometer Monitoring	16	09-02-10 A	11-02-10 A		100%						
SH1060	Test Boring	28	11-02-10 A	16-03-10	18	50%						
<b>Socketed H-Pile (Works Area 13.2 North)</b>												
<b>Socketed H-Pile Construction (Works Area 13.2 North) [126 Nos]</b>												
SH1070	HR1: H-Pile - Area 13.2 North (10 nos)	23	24-03-10	24-04-10	18	0%						
SH1100	HR2: H-Pile - Area 13.2 North (10 nos)	23	24-03-10	24-04-10	18	0%						
SH1300	HR3: H-Pile - Area 13.2 North (10 nos)	23	24-03-10	24-04-10	18	0%						
SH1680	HR4: H-Pile - Area 13.2 North (10 nos)	23	24-03-10	24-04-10	18	0%						
SH1720	HR5: H-Pile - Area 13.2 North (10 nos)	23	24-03-10	24-04-10	19	0%						
SH1735	HR9: H-Pile - Area 13.2 North (10 nos)	23	24-03-10	24-04-10	19	0%						
SH1090	HR1: H-Pile - Area 13.2 North (11 nos)	25	26-04-10	31-05-10	18	0%						
SH1120	HR2: H-Pile - Area 13.2 North (11 nos)	25	26-04-10	31-05-10	18	0%						
SH1670	HR3: H-Pile - Area 13.2 North (11 nos)	25	26-04-10	31-05-10	18	0%						
SH1700	HR4: H-Pile - Area 13.2 North (11 nos)	25	26-04-10	31-05-10	18	0%						
SH1730	HR5: H-Pile - Area 13.2 North (11 nos)	25	26-04-10	31-05-10	19	0%						
SH1740	HR9: H-Pile - Area 13.2 North (11 nos)	25	26-04-10	31-05-10	19	0%						
<b>Socketed H-Pile (Works Area 13.2 South)</b>												
<b>Socketed H-Pile Construction (Works Area 13.2 South) [275 Nos]</b>												
SH1220	HR1: H-Pile - Area 13.2 South (10 nos)	23	31-05-10	29-06-10	18	0%						
SH1800	HR2: H-Pile - Area 13.2 South (10 nos)	23	31-05-10	29-06-10	18	0%						
SH1670	HR3: H-Pile - Area 13.2 South (10 nos)	23	31-05-10	29-06-10	18	0%						
SH1940	HR4: H-Pile - Area 13.2 South (10 nos)	23	31-05-10	29-06-10	18	0%						
SH2010	HR5: H-Pile - Area 13.2 South (10 nos)	23	31-05-10	29-06-10	23	0%						
<b>Socketed H-Pile (Works Area 13.1)</b>												
<b>Socketed H-Pile Construction (Works Area 13.1) [296 Nos]</b>												
SH1390	HR6: H-Pile - Area 13.1 (10 nos)	23	17-03-10	17-04-10	18	0%						
SH2140	HR7: H-Pile - Area 13.1 (10 nos)	23	17-03-10	17-04-10	18	0%						
SH2240	HR8: H-Pile - Area 13.1 (10 nos)	23	17-03-10	17-04-10	18	0%						
SH1490	HR6: H-Pile - Area 13.1 (10 nos)	23	19-04-10	19-05-10	18	0%						
SH2150	HR7: H-Pile - Area 13.1 (10 nos)	23	19-04-10	19-05-10	18	0%						
SH2250	HR8: H-Pile - Area 13.1 (10 nos)	23	19-04-10	19-05-10	18	0%						

▲ Milestone	▲ Critical Milestone	▲ Actual MS	▲ Baseline Milestone	■ Critical Remi...	■ Remaining W...	■ Actual Work	■ Primary Base...
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**Contract 803D West Kowloon Terminus**  
**Diaphragm Walls and Piles (WKCD)**  
**3 Monthly Rolling Programme**  
**No. 02 As of 1 March 2010**



Date	Revision	Checked	Approved
01-03-10	3 MRP NO.2	at	by

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Activity % Complete	2010							
							Jan	Feb	Mar	Apr	May	Jun		
SH1410	HRB: H-Pile - Area 13.1 (10 nos)	23	19-05-10	18-06-10	18	0%								
SH2160	HR7: H-Pile - Area 13.1 (10 nos)	23	19-05-10	18-06-10	18	0%								
SH2260	HRB: H-Pile - Area 13.1 (10 nos)	23	19-05-10	18-06-10	18	0%								
<b>Engineer's Site Accommodation</b>														
E1005	Design & Prepare Detailed Drawings	18	15-02-10 A	04-03-10	0	80%								
E1020	Engineer's Site Office - Design Approval	28	03-03-10	31-03-10	0	0%								
E1010	Submission to Engineer for Approval	0	04-03-10		0	0%								
E1025	Engineer Instruction (Latest Date)	0	01-04-10		0	0%								
E1028	Subletting and Procurement	28	02-04-10	29-04-10	0	0%								
E1030	Foundation Construction	20	30-04-10	27-05-10	0	0%								
E1040	Superstructure Construction - G/F to 1/F	18	28-05-10	19-06-10	0	0%								

▲	Milestone	■	Critical Remel..
▲	Critical Milestone	■	Remaining W...
▲	Actual MS	■	Actual Work
▲	Baseline Milestone	■	Primary Base L...

Contract 803D West Kowloon Terminus  
Diaphragm Walls and Piles (WKCD)  
3 Monthly Rolling Programme  
No. 02 As of 1 March 2010



Date	Revision	Checked	Approved
01-03-10	SMRP No.2	et	ty