

MTR Corporation Limited

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

Baseline Monitoring Report (Part 6) Rev2

Certified by: Glenn Frommer
Position: Environmental Team Leader

Date: 06 MAY 2010

EXECUTIVE SUMMARY

This is the 2nd monthly Environmental Monitoring and Audit (EM&A) Report presenting the EM&A works undertaken during the period from 1 to 30 April 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 4 air quality monitoring locations in the vicinity of Works Area in Mai Po (Works Area A) and West Kowloon (Works Area V1) in April 2010. No 24-hour TSP exceedance was recorded in this month.

Airborne Noise

Airborne noise was measured in terms of $L_{eq(30min)}$ dB(A) with L_{10} and L_{90} measurements as reference at 7 noise monitoring locations in the vicinity of Works Area in Mai Po (Works Area A) and West Kowloon (Works Area V1) once every week. All noise levels recorded in this month were below the Limit Level.

Monitoring of Avifaunal Species

Monthly ecological monitoring was conducted on 20 April 2010 during the construction of Mai Po Ventilation Building Works Area (MPV). The monitoring results indicated the fishponds within the survey area were utilized by a large number of waterbirds in April 2010 during the monitoring. No significant fluctuation in the number of species and abundance of avifauna was observed. Based on the monitoring results, no adverse indirect impacts arising from the Project were observed.

Monitoring of Impact at Fishpond due to Noise

The impact noise monitoring at fish pond was scheduled to commence in mid-Apr when the construction works in MPV commenced. Given that the access for impact noise monitoring at fishpond was not available in Apr 2010, no noise monitoring was conducted in April 2010. Monitoring will be conducted when site access is available.

With reference to the noise monitoring results at the closest monitoring location CN 1 (No. 142 Mai Po San Tsuen) in April 2010, no exceedance of the Limit Level (75 dB(A) as stipulated in the Monitoring and Emergency Response Plan was recorded. Furthermore,

results of ecological monitoring revealed that no adverse impact was observed in April 2010. Based on these monitoring results, there was no adverse impact to the nearby fishponds due to noise.

Landscape and Visual

Regular inspections and audits conducted by certified Arborist 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

In this reporting month, regular site inspections attended by representative from MTRCL and Contractors were carried out at 803 A, B, C, D in West Kowloon and 825 in Mai Po. In addition to the regular site inspections, monthly IEC environmental audits attended by IEC, MTRCL and Contractors were held on 28th April 2010 in 803A & 803 D; 23th April 2010 in 803B; 22nd April 2010 in 803C and 26th April 2010 in 825. Issues observed during these audits are detailed in Section 6.

Environmental Complaints / Exceedance / Non-conformance / Summons and Prosecution

For April 2010, a total of 2 environmental complaints were referred from EPD. Of the environmental complaints received, one was on construction dust, while the other one on construction noise. Complaint investigations were conducted in accordance with the requirements in the EM&A Manual.

For this month, no exceedance of noise and dust level was recorded.

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 West Kowloon (Works Area V1), the key construction activities for the following month include guide wall and diaphragm construction, utilities diversion and road works. For Contract 803B in Works Area V1, the key construction activities for the following month include pre-drilling work, construction of socket H-pile, site setting up and removal of existing concrete footing. For Contract 803C in Works Area V1, the key construction activities for the following month are anticipated to comprise of pre-bored H-pile and bored pile. For Contract 803D in Works Area V1, the key construction activities

for the following month are anticipated to comprise of pre-bored H-pile, bored pile, diaphragm wall, barging facility construction and haul road construction. For Contract 825 in Works Area A, key construction activities including pre-drilling, bored pile, guide wall and diaphragm wall are expected in May.

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;
- Ecological impact;
- 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.

Table of Contents

EXECUTIVE SUMMARY	1
1. INTRODUCTION.....	5
2. PROJECT INFORMATION	6
3. ENVIRONMENTAL STATUS.....	7
4. SUMMARY OF EM&A REQUIREMENT	13
5. MONITORING RESULT	20
6. SITE INSPECTION.....	29
7. NON-COMPLIANCE AND DEFICIENCY.....	33
8. FUTURE KEY ISSUES.....	35
9. CONCLUSIONS	36

Appendix

Appendix A Works Area	37
Appendix B Project Management Organization and Contacts of Key Personnel	38
Appendix C Construction Programme	39
Appendix D Implementation Status	40
Appendix E Calibration Certificates.....	41
Appendix F Monitoring Locations	42
Appendix G Monitoring Schedule	43
Appendix H Graphical Plots of Monitoring Results.....	44
Appendix I Bird Species and Abundance Recorded during Avifauna Survey	45
Appendix J Representative Photographs of the Avifauna Monitoring.....	46
Appendix K Certified Arborist Inspection Record.....	47

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 would 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 would be a total of eight ventilation buildings/ emergency access point (EAP), stabling sidings and a maintenance facility at Shek Kong Stabling Sidings (SSS) and an Emergency Rescue Station (ERS) next to SSS serving the operation of the XRL.

1.2 Coverage

This is the 2nd monthly Environmental Monitoring and Audit (EM&A) Report presenting the EM&A works undertaken during the period from 1 to 30 April 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 second month of civil construction in Works Area A and V1 for April 2010. It is anticipated that the civil construction 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.

Contract	Works Area	Major Construction Activities
<i>West Kowloon</i>		
803A	V1	Guide wall and diaphragm wall construction, utilities diversion and road works
803B	V1	Pre-drilling, removal of existing slab and footing, set up for socketed H-piling work, removal of underground water mains
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, haul road construction.
<i>Mai Po</i>		
825	A	Bored pile, guide wall, diaphragm wall, pre-drilling, utilities diversion and road works.

Table 2-1 Major construction activities in April 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 submissions submitted under the EP for this Project as at 30 Apr 2010 is presented in Table 3-1 below:

EP-349/2009 Clause No.	Document Title
1.13	Notification of the commencement date of construction of the Project for Contract 802, 805, 803A, 803B, 803C, 803D, 822 and 825
2.1	Establishment of ET
2.3	Employment of IEC
2.6	Management organization of the Civil Contractors for Contract 802, 805, 803A, 803B, 803C, 803D, 822 and 825
2.7	Set up of Community Liaison Groups
2.8	Set up of designated complaint hotline
2.9	Construction programme
2.12 (ii)	Monitoring and Emergency Response Plan in relation to potential impacts on fishponds in Mai Po Area due to noise or vibration
2.14	Tree Planting and Landscape Plan - For Yau Tsim Mong District TLP-1 (Revision 1)
2.14	Tree Planting and Landscape Plan - For Shum Shui Po District TLP-2

EP-349/2009 Clause No.	Document Title
2.14	Tree Planting and Landscape Plan - For Kwai Tsing TLP-3
2.14	Tree Planting and Landscape Plan - For Tsuen Wan District TLP-4
2.14	Tree Planting and Landscape Plan - For Tuen Mun District TLP-5
2.14	Tree Planting and Landscape Plan - For Yuen Long District (Mai Po) TLP-6 (Revision1)
2.15	Tree Protection Plan
2.19	Updated C&D Material Management Plan
2.21	Revised Contamination Assessment Plan (CAP), Contamination Assessment Report (CAR) and Remediation Assessment Plan (RAP) (Part I) for Mai Po Works Area
2.21	Revised Contamination Assessment Plan (CAP) and Contamination Assessment Report (CAR) for Lai Chi Kok Works Area
2.21	Revised Contamination Assessment Plan (CAP) for West Kowloon
2.42	Baseline Monitoring Report (Part 1) Rev 3 for Works Area N, O, P, Q and Y
2.42	Baseline Monitoring Report (Part 2) for Works Area R
2.42	Baseline Monitoring Report (Part 3) Rev 2 for Works Area V1
2.42	Baseline Monitoring Report (Part 4) for Works Area V1
2.42	Baseline Monitoring Report (Part 5) Rev 1 for Works Area V2
2.42	Baseline Monitoring Report (Part 6) Rev 1 for Works Area A
2.42	Baseline Monitoring Report (Part 7) for Works Area G
2.42	Baseline Monitoring Report (Part 8) for Works Area H

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.

Item	Item Description	Application Date	Permit Status
<i>Contract 803A (Works Area V1)</i>			
1	Notification of construction work under APCO	3 rd February 2010	Submitted
2	Registration as Chemical Waste Producer	3 rd February 2010	Approved on 1 st March 2010 (Permit No. 5213-225-B2382-01)
3	WPCO license	3 rd February 2010	Approved on 13 th April 2010 (License No. WT00005983-2010, valid until 30 th Apr 2015)
4	Bill account for disposal of construction waste	1 st February 2010	Account activated on 26 th February 2010 (Account No. 7010223)
5	Construction Noise Permit	19 th March 2010	Approved on 1 st Apr 2010 (Permit no. GW-RE0149-10, valid until 1 st Oct 2010)
<i>Contract 803B (Works Area V1)</i>			
1	Notification of	22 nd March 2010	Submitted

Item	Item Description	Application Date	Permit Status
	construction work under APCO		
2	Registration as Chemical Waste Producer	22 nd March 2010	Assessing
3	WPCO license	8 th April 2010	Assessing
4	Bill account for disposal of construction waste	Submitted	Account activated on 20 th March 2010 (Account No. 7010468)
<i>Contract 803C (Works Area V1)</i>			
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	WPCO licence	25th January 2010	Approved (Permit no. WT00005958-2010) (Valid until: 31/3/2015)
4	Construction Noise Permit	17th April 2010	Approved (GW-RE0178-10) (Valid: 3/5/2010 – 15/10/2010)
5	Bill account for disposal of construction waste	29th January 2010	Account activated (Account no.

Item	Item Description	Application Date	Permit Status
			7010203)
<i>Contract 803D (Works Area V1)</i>			
1	Notification of construction work under APCO	3 rd February 2010	Submitted
2	Registration as Chemical Waste Producer	1 st February 2010	Approved on 1 st March 2010 (Permit no. 5213-217-B2382-01)
3	WPCO license	3 rd February 2010	Approved on 13 th Apr 2010 (License No. WT00005981-2010, valid until 30 th Apr 2015)
4	Construction Noise Permit	19 th March 2010	Approved on 1 st Apr 2010 GW-RE0152-10 (Valid until 1 st Oct 2010)
5	Bill account for disposal of construction waste	1 st February 2010	Account activated on 26 th Feb 2010 (Account no. 7010238)
<i>Contract 825 (Works Area A)</i>			
1	Notification of construction work under APCO	25 th February 2010	Approved on 25 th February 2010 (Ref. No. 314540)
2	Registration as Chemical Waste Producer	25 th February 2010	Approved on 10 th March 2010

Item	Item Description	Application Date	Permit Status
			(Permit No. 5213-542-P1057-02)
3	WPCO license	25 th February 2010	Assessing
4	Construction Noise Permit	12 th April 2010	Approved on 26 th April 2010 (Permit No. GW-RN0121-10)
5	Bill account for disposal of construction waste	10 th February 2010	Account activated on 18 th February 2010 (Account no. 7010271)

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, 24-hour Total Suspended Particulates (TSP) levels were measured at the 4 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 4 monitoring locations in the vicinity of the Works Area A and 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.

Monitoring Station ID	Air Quality Monitoring Location
AM 1	Outside No. 142 Mai Po San Tsuen
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. In the case of exceedance of Action and/or Limit levels for air quality occur, the Event and Action Plan as stipulated the EM&A Manual shall be implemented.

Monitoring Station ID	24-hour TSP Level in $\mu\text{g}/\text{m}^3$	
	Action Level	Limit Level
AM 1	217.3	260
AM 15	168.8	260
AM 16	155.9	260
AM 17	179.3	260

Table 4-2 Action and Limit Levels 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.

Monitoring Station ID	Noise Monitoring Location
CN 1	No. 142 Mai Po San Tsuen
CN 2	Mai Po San Tsuen Village House

Monitoring Station ID	Noise Monitoring Location
CN 30	Man Cheong Street Refuse Collection Point
CN 31	Tower 6, Sorrento
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 stipulated in the EM&A Manual shall be implemented.

Time Period	Action	Limit
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

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 would 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 would be identified to species level and counted. The nature of construction works within works area conducting during each impact monitoring would also be recorded. Weather condition and other noticeable activities occurring within or in the vicinity of the survey areas would be recorded. The impact monitoring results would be compared to the baseline data collected before construction. Should any unpredicted indirect ecological impacts arising from the Project be detected, remedial measures would 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 construction works at MPV commenced in April 2010, ecological monitoring on monthly basis was commenced in April 2010. The location, frequency and duration of ecological monitoring at MPV are shown in Table 4-7 and Figure C8016/C/XRL/ACM/M51/001 in Appendix F.

Works Area	Monitoring Location	Monitoring Frequency	Monitoring Duration
Mai Po Ventilation Building Works Area (MPV)	• Fishponds in Wetland Conservation Area (WCA) within 500 m from the boundary of MPV works area	Monthly	During construction phase of MPV works area

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

4.4.2 Monitoring of impact at fishpond due to noise/vibrations

In accordance with the Monitoring and Emergency Response Plan, during construction stage, air-borne noise monitoring should be carried out at the respective monitoring location at nearby fishpond (Appendix F) when there are project-related construction activities being undertaken within a radius of 300m from the monitoring location. One set of 30-minute measurement at a frequency of once a week when the above-mentioned construction activities are underway.

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.

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. 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.

Time Period	Action Level	Limit Level
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 would 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.

Monitoring Date	Monitoring Result ($\mu\text{g m}^{-3}$)	Action Level ($\mu\text{g m}^{-3}$)	Limit Level ($\mu\text{g m}^{-3}$)	Exccedance?
AM 1				
1 Apr 2010	111.6	217.3	260.0	N
7 Apr 2010	141.9	217.3	260.0	N
13 Apr 2010	41.2	217.3	260.0	N
19 Apr 2010	102.9	217.3	260.0	N
24 Apr 2010	124.2	217.3	260.0	N
30 Apr 2010	50.5	217.3	260.0	N
AM 15				
1 Apr 2010	29.3	168.8	260.0	N
7 Apr 2010	94.4	168.8	260.0	N
13 Apr 2010	42.6	168.8	260.0	N
19 Apr 2010	107.1	168.8	260.0	N
24 Apr 2010	91.9	168.8	260.0	N
30 Apr 2010	72.5	168.8	260.0	N
AM 16				
1 Apr 2010	68.5	155.9	260.0	N
7 Apr 2010	34.2	155.9	260.0	N
13 Apr 2010	38.0	155.9	260.0	N
19 Apr 2010	58.3	155.9	260.0	N
24 Apr 2010	80.9	155.9	260.0	N
30 Apr 2010	57.7	155.9	260.0	N
AM 17				
1 Apr 2010	98.9	179.3	260.0	N
7 Apr 2010	80.6	179.3	260.0	N

Monitoring Date	Monitoring Result ($\mu\text{g m}^{-3}$)	Action Level ($\mu\text{g m}^{-3}$)	Limit Level ($\mu\text{g m}^{-3}$)	Exceedance?
13 Apr 2010	57.6	179.3	260.0	N
19 Apr 2010	92.5	179.3	260.0	N
24 Apr 2010	83.5	179.3	260.0	N
30 Apr 2010	80.5	179.3	260.0	N

Table 5-1 Air Quality Monitoring Results

One complaint on air quality was referred from EPD in the reporting month regarding dust from cement spraying at 803D construction site on 14 April 2010. The Engineer's Representative and IEC were informed of the complaint. Investigation was carried out in accordance with the EM&A Manual which revealed that there had been no cement spraying activities at the area concerned. Nonetheless, the Contractor was reminded to minimise dust generated with proper mitigation measures implemented. Investigation results were verified by the IEC.

No exceedance of 24-hr TSP Action Level was recorded in the reporting month.

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} , L_{10} and L_{90} and noise sources and graphical presentations are given in Appendix H.

Monitoring Date	L_{eq}, dB(A)	Limit Level, dB(A)	Exceedance?
CN 1			
9/4/2010	70.0	75	N
14/4/2010	62.7	75	N
21/4/2010	66.1	75	N
28/4/2010	65.2	75	N
CN 2			
9/4/2010	67.0	75	N

Monitoring Date	L_{eq}, dB(A)	Limit Level, dB(A)	Exceedance?
16/4/2010	72.8	75	N
21/4/2010	67.5	75	N
29/4/2010	68.5	75	N
CN 30			
9/4/2010	66.2	75	N
14/4/2010	66.2	75	N
20/4/2010	63.3	75	N
28/4/2010	63.4	75	N
CN 31			
9/4/2010	69.9	75	N
14/4/2010	73.4	75	N
20/4/2010	72.4	75	N
28/4/2010	70.8	75	N
CN 32			
9/4/2010	73.3	75	N
14/4/2010	73.3	75	N
20/4/2010	71.8	75	N
30/4/2010	74.3	75	N
CN 33			
9/4/2010	74.4	75	N
14/4/2010	74.5	75	N
20/4/2010	74.8	75	N

Monitoring Date	L_{eq}, dB(A)	Limit Level, dB(A)	Exceedance?
28/4/2010	74.7	75	N
CN 34			
9/4/2010	73.5	75	N
14/4/2010	73.0	75	N
20/4/2010	73.0	75	N
28/4/2010	72.8	75	N

Table 5-2 Construction Noise Monitoring Results

.

One complaint on noise was referred from EPD regarding construction noise from construction site of West Kowloon Terminus on 13 April 2010. The Engineer's Representative and IEC were informed of the complaint. Investigation was carried out in accordance with the EM&A Manual which revealed that mitigation measures had been implemented to minimise the construction noise. Furthermore, no exceedance was recorded at the nearby noise monitoring stations. Nonetheless, the Contractor was reminded to minimise the noise impact by implementing the noise mitigation measures. Investigation results were verified by the IEC.

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

Monthly avifauna monitoring at MPV work site was conducted on 20 April 2010. The weather conditions and other noticeable activities occurring within or in the vicinity of the survey area during the monitoring 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/ENS/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. Ongoing construction activities were also recorded at the works area of the project "Proposed Comprehensive Development at Wo Shang Wai, Yuen Long" (hereinafter to be referred to as "Wo Shang Wai

Project”) located near Point Count Location MPV-1/P9. The bird species and their abundance recorded during the avifauna monitoring for the reporting month are presented in Appendix I.

Date	Construction Works within Works Area	Weather Conditions	Observed Activities in the MPV-1 Survey Site
20 April 2010	Plant set-up	Cloudy with a few showers	● Pond aeration ● Removal of bund weeds ● Draining of pond ● Pond formation works ● Excavation and other construction works (e.g. erection of barriers) for Wo Shang Wai Project near Point Count Location MPV-1/P9

Table 5-3 Construction Works, Weather Conditions and Other Observed Activities during April 2010

A total of 222 individuals from 27 avifauna species were recorded from the Point Count Locations at MPV-1 survey site in April 2010 (Table 5-4 refers). The total number of species recorded during the monitoring was 38. The population of the avifauna recorded mainly consisted of watertbirds (e.g. ardeids and sandpipers) and passage migrants (e.g. Barn Swallow and Yellow Wagtail). Noticeable finding includes the aggregation of 20 individuals of Oriental Pratincole (passage migrant) in a drained pond where pond formation works were being carried out (at Point Count Location MPV-1/P5). Detailed records of avifauna at MPV-1 survey site are presented in Appendix I.

The monitoring results in April 2010 were compared against the wet season results of the baseline bird survey conducted from August to October 2009. The abundance of avifauna recorded from the Point Count Locations of MPV-1 survey site in April 2010 was of similar magnitude as the baseline survey results (Table 5-4 refers). Meanwhile, the total number of species and number of species of conservation interest recorded from MPV-1 survey site in April 2010 was higher than those recorded in the baseline survey (Table 5-5 refers). In addition to some ardeid species of

conservation interest (e.g. Great Egret, Little Egret, and Chinese Pond Heron), passage migrants of conservation interest (e.g. Black-winged Stilt, Oriental Pratincole, Long-toed Stint, and Little Tern) were also recorded in the monitoring, which had not been recorded during the baseline surveys. The monitoring results indicated the fishponds near MPV works area were utilized by a large number of waterbirds in April 2010. No significant fluctuation in the number of species and abundance of avifauna was observed. Based on the monitoring results, no adverse indirect impacts arising from the proposed Project were noted.

Survey	MPV-1	
	No. of Species	Abundance
20 April 2010	27	222
August to October 2009 (Source: monthly averaged number obtained in Baseline Bird Survey)	24	230

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 ^{1,2}
20 April 2010	38 (9)
August to October 2009 (Source: monthly averaged number obtained in Baseline Bird Survey)	24 (5)

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 impact noise monitoring at fish pond was scheduled to commence in mid-Apr when the construction works in MPV commenced. Given that the access for impact noise monitoring at fishpond was not available in Apr 2010, no noise monitoring was conducted in April 2010. Monitoring will be conducted when site access is available.

With reference to the nearby noise monitoring location at CN 1 (No. 142 Mai Po San Tsuen), no exceedance of the Limit Level (75 dB(A) as stipulated in the Monitoring and Emergency Response Plan was recorded. Furthermore, results of ecological monitoring revealed that no adverse impact was observed in April 2010. Based on these monitoring results, there was no adverse impact to the nearby fishponds due to noise.

5.4 Waste Management

The quantities of waste generated from this Project during the reporting month are summarized in the following table:

Reporting Month	Inert C&D ¹Materials (tonnes)	Non-inert C&D ²Materials (tonnes)	Chemical Waste (Litre)
Contract 803A			
March 2010	0	31.4	0
April 2010	864.6	19.3	0
Contract 803B			
April 2010	0	3.19	0
Contract 803C			
March 2010	3984.2*	0	0
April 2010	5734.0	0	0
Contract 803D			
March 2010	3195.2	9.4	0
April 2010	6154.1	15.2	0
Contract 825			
April 2010	823.9	127.5	0

* Of which 1500 tonnes were reused in this Project

Note: 1. Inert C&D materials include bricks, concrete, building debris, rubble and excavated soil.

2. Non-inert C&D materials include steel, paper / cardboard packaging waste, plastics and other wastes such as general refuse.

Table 5-6 Summary of construction waste generated

5.5. Landscape and Visual

5.5.1 Monitoring Requirement

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 EP/EIA.

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.

5.5.2 Audit Result

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

Tree Transplanting Works at Contract 803A

Initial root pruning of trees to be transplanted was carried out. Contractor has to take sufficient measures to ensure public safety during pruning works in pedestrian. Notable dieback in some of trees to be transplanted on Lin Cheung Road was found. Contractor was asked to review health condition of trees.

Tree Protection Works at Contract 802

Trees have been fully labelled on site which included all retained, transplanted and felling tree. No tree transplanting work was carried out.

Tree Protection Work 803B

No tree transplanting was carried out. Tree has been labelled on site.

Tree Protection Work 803D

Protective fencing for transplanted tree was installed. Some minor damage of tree branches and surface roots was caused by the installation of the blocks. Contractor was asked to propose remedial treatments.

Tree Protection Work 803C

Overall site has been fenced. Lightweight protective fences erected but not strong enough and inadequately secured.

Tree Protection Work 805

Tree has been labelled on site. Lightweight temporary protective fences have been installed. Hoarding design has been modified to minimise impact on retained tree.

Tree Protection Work 822

Trees have been labelled and colour tagged. Full protective fencing should be installed before any heavy construction activity commences in adjacent areas.

Tree Protection Work 825

Trees have been fully labelled on site and identified. Lightweight protective fencing has been installed for transplanting trees. Important Tree T1539 (P) needed to be pruned and retained at Castle Road Junction. Water supply tank and associated pipework was recommended to decommission and to remove.

6. SITE INSPECTION

Works Area V1

Regular site inspections attended by representatives from ET and Contractors were carried out at 803 A, B, C, D in West Kowloon, 825 in Mai Po and date shown in the following table. In addition to the regular site inspections attended by ET and Contractors, monthly IEC environmental audits attended by IEC, ET and Contractors were held on 28th April 2010 in 803A & 803 D; 23th April 2010 in 803B; 22nd April 2010 in 803C and 26th April 2010 in 825.

Contract	Date of Site Inspections
803A	7 th , 14 th , 21 st , 28 th of April
803B	16 th , 23 rd , 30 th of April
803C	1 st , 8 th , 15 th , 22 nd , 29 th of April
803D	7 th , 14 th , 21 st , 28 th of April
825	7 th , 12 th , 19 th , 26 th of April

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 these site inspections and Contractor's follow-up action are summarized in Table 6-1 below. No non-compliance was observed.

Item	Description	Contractor's Follow-up Action(s) Undertaken
Contract 803A		
1	The Contractor was reminded to provide drip tray for chemical to avoid potential soil contamination due to leakage	Drip tray was provided for chemical
2	The Contractor was reminded to cover the stockpile with tarpaulin sheet to suppress dust generation	The stockpile of C&D material was covered with tarpaulin sheet

Item	Description	Contractor's Follow-up Action(s) Undertaken
3	The Contractor was reminded to provide noise mitigation measure for noisy activities	Movable noise barrier was provided for noisy activities
4	Unpaved area was observed dry and dusty.	Watering frequency was increased to suppress dust generation
Contract 803B		
1	The Contractor was reminded to provide drip tray for chemical to avoid potential soil contamination due to leakage	Drip tray was provided for chemical
2	Materials other than chemical waste were stored in the chemical waste storage area	Materials other than chemical waste were removed
3	The Contractor was reminded to provide water spray for concrete breaking activities to suppress dust generation	Water spraying was provided for concrete breaking activities.
Contract 803C		
1	The Contractor was reminded to enhance dust suppression measure at haul road	Water spraying over haul road
2	Drip tray was not provided for chemical	Drip tray was provided for chemical
3	Oil stain was observed	The contaminated soil was handled and treated as chemical waste and stored in the chemical waste storage area on site. Also, drip tray was provided for the machinery.
4	The Contractor was reminded to cover the stockpile with tarpaulin sheet to suppress dust generation	The stockpile of C&D material was covered with tarpaulin sheet

Item	Description	Contractor's Follow-up Action(s) Undertaken
5	It was observed that one side of the enclosure for cement mixing area was damaged.	The damaged side of the shelter for cement mixing area was rectified.
Contract 803D		
1	The Contractor was reminded to provide noise mitigation measure for noisy activities	Hammer was enclosed with noise absorbent material
2	The Contractor was reminded to provide drip tray for chemical to avoid potential soil contamination due to leakage	Drip tray was provided for chemical
3	The Contractor was reminded to cover the stockpile with tarpaulin sheet to suppress dust generation	The stockpile of C&D material was covered with tarpaulin sheet
4	Materials other than chemical waste were stored in the chemical waste storage area	Materials other than chemical waste were removed
5	Dark smoke was observed emitted from air compressor	The concerned air compressor was checked and fixed
Contract 825		
1	The Contractor was reminded to cover the stockpile with tarpaulin sheet to suppress dust generation	The stockpile of C&D material was covered with tarpaulin sheet
2	The Contractor was reminded to provide proper enclosure and covering of bentonite powder to avoid dust impact	The bentonite powder was properly covered.
3	The Contractor was reminded to provide drip tray for chemical to avoid potential soil contamination due to leakage	Drip tray was provided for chemical

Item	Description	Contractor's Follow-up Action(s) Undertaken
4	The Contractor was reminded to provide proper labelling and sign for chemicals storage area.	Chemical label was provided

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 two environmental complaints were referred from the EPD. There are a total of six environmental complaints since commencement of the construction. The complaints and follow-up actions are summarized as below:

1. A complaint was referred from EPD regarding dust from cement spraying at 803D construction site on 14 April 2010. The Engineer's Representative and IEC were informed of the complaint. Investigation was carried out in accordance with the EM&A Manual which revealed that there had been no cement spraying activities at the area concerned. Furthermore, no exceedance was recorded at the nearby air quality monitoring stations. Nonetheless, the Contractor was reminded to minimise generation of dust with proper mitigation measures implemented. Investigation results were verified by the IEC.

2. A complaint was referred from EPD regarding construction noise from construction site of West Kowloon Terminus on 13 April 2010. The Engineer's Representative and IEC were informed of the complaint. Investigation was carried out in accordance with the EM&A Manual which revealed that mitigation measures had been implemented to minimise the construction noise. Furthermore, no exceedance was recorded at the nearby noise monitoring stations. Nonetheless, the Contractor was reminded to minimise the noise impact by further enhancing the noise mitigation measures. Investigation results were verified by the IEC.

An environmental complaint was referred from EPD regarding construction dust from construction site of West Kowloon Terminus on 30 March 2010 afternoon. Complaint handling procedure in accordance with the EM&A Manual was undertaken. The investigation undertaken revealed that mitigation measures had been implemented during the dust generating construction activities with no exceedance recorded at the nearby air quality monitoring stations on 30 March 2010. Nonetheless, the Contractor was reminded to minimise dust generated with proper mitigation measures implemented. Investigation results were verified by the IEC.

7.2 Summary of Exceedance

No exceedance was recorded in the reporting month.

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.

<i>Contract 803A (Works Area V1)</i>
Guide wall and diaphragm construction, utilities diversion and road works
<i>Contract 803B (Works Area V1)</i>
Pre-drilling, construction of socket H-pile, site setting up and removal of existing concrete footing.
<i>Contract 803C (Works Area V1)</i>
Construction of pre-bored H-pile and bored pile
<i>Contract 803D (Works Area V1)</i>
Pre-bored H-pile, bored pile, diaphragm wall, barging facility, haul road construction
<i>Contract 825 (Works Area A)</i>
Construction of bored pile, guide wall, diaphragm wall, pre-drilling, utilities diversion and road works

Table 8-1 Summary of construction works in coming month

In addition to the above works areas, major construction activities including site formation works would be commenced in Shing Mun and Shek Yam Works Areas (Works Area G and H). 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.

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 April 2010 to 30 April 2010. The major construction activities in the reporting period included guide wall construction, pre-drilling works, bored piling at Works Area A and V1.

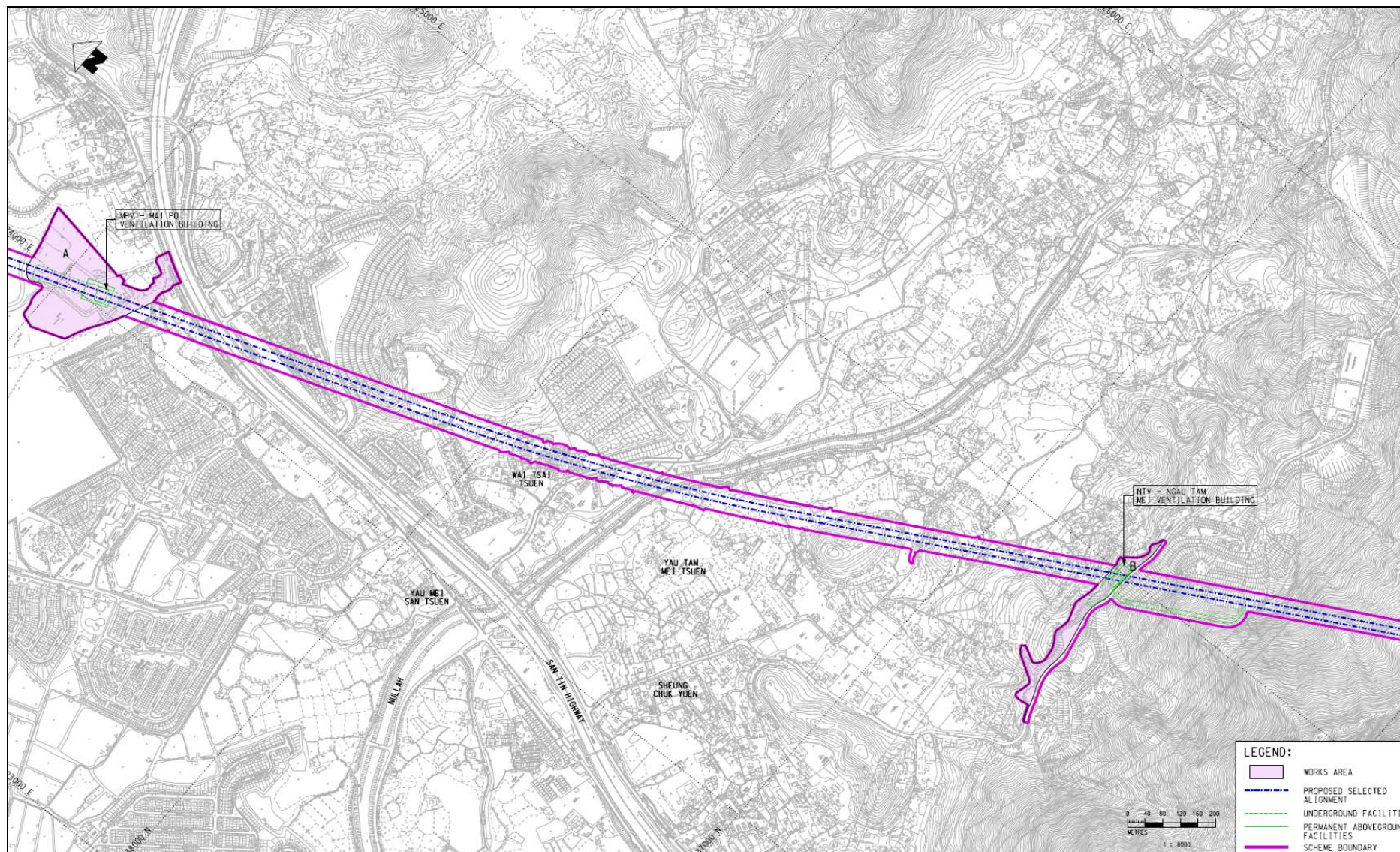
Impact monitoring for air quality and noise were conducted in accordance with the EM&A Manual in the reporting period, no exceedance was measured at all monitoring stations. No environmental notification of summon and prosecution was received in the reporting period.

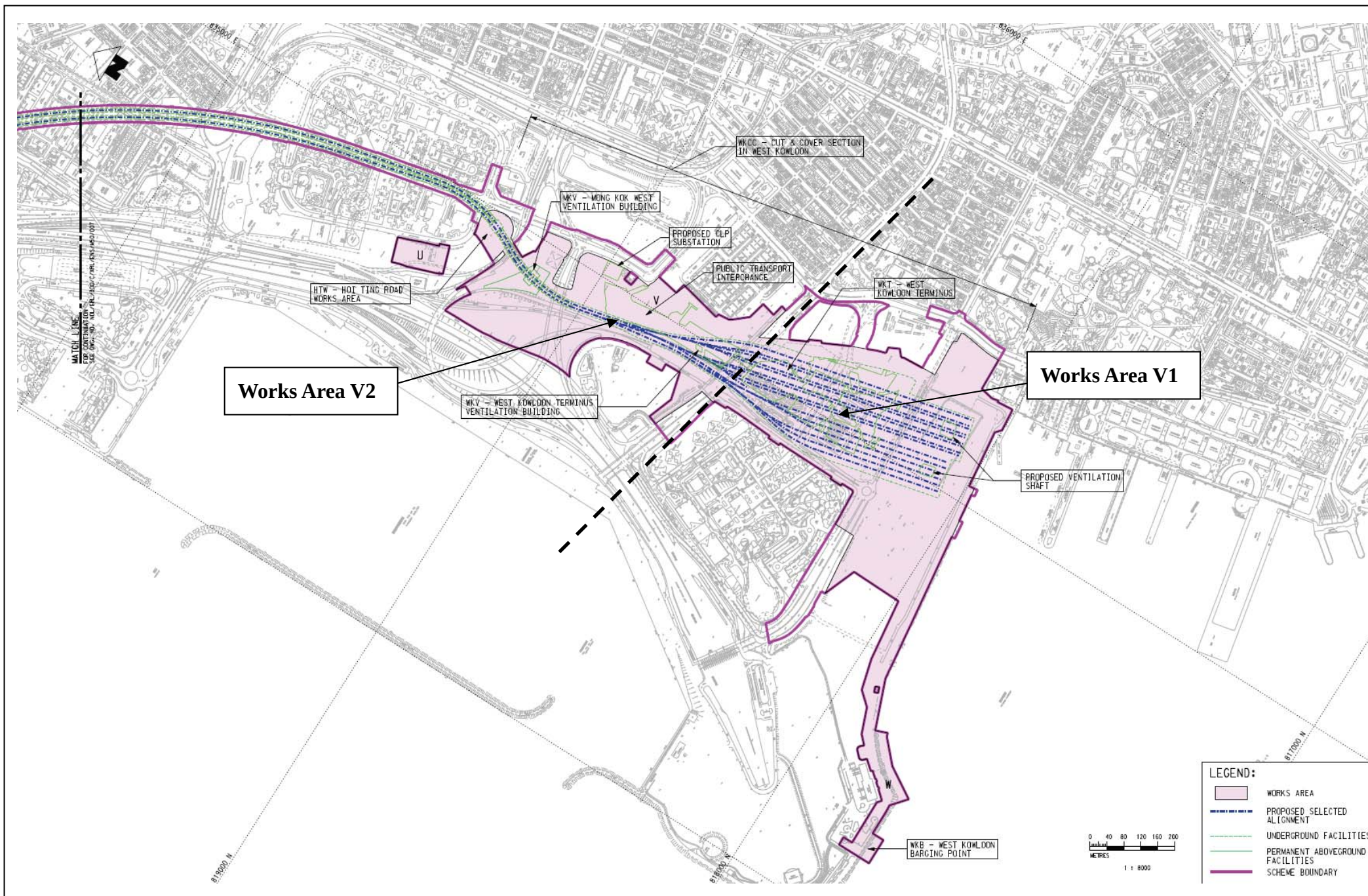
Two environmental complaints were received in the reporting period. The complaints had been handled in accordance with the procedures stipulated in the EM&A Manual. Site inspection was conducted regularly to monitor proper implementation of environmental pollution control and mitigation measures for 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 would 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

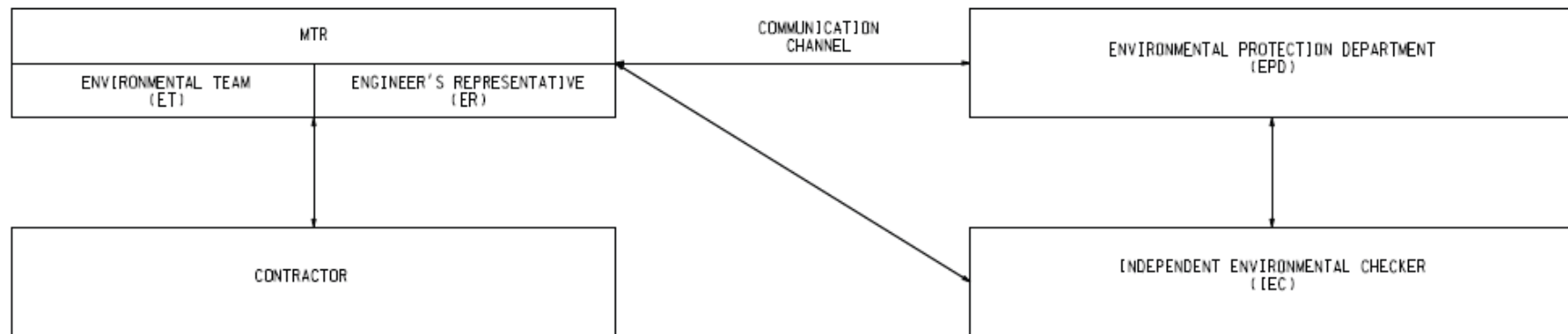




Appendix B

Project Management Organization and Contacts of Key Personnel

Engineer's Representative		
Title	Name	Telephone
Construction Manager (803 A/B/C)	Mr. Samuel Lo	3575 1378
Construction Manager (803 D)	Mr. KS Lim	3575 1338
Independent Environmental Checker		
Divisional Manager	Dr. Anne Kerr	2828 5793
Environmental Team		
Environmental Team Leader	Mr. Glenn Frommer	2688 1552
Deputy Environmental Team Leader	Mr. Richard Kwan	2688 1179
Contractor		
Contract 803A Contractor		
Project Manager	Dick YIU	9426 4657
Site IMS Manager	Nick LAU	9216 9245
Contract 803B Contractor		
Project Manager	Fung Lai Man	9252 4204
Project Manager	Peter Cheung	9278 5536
Contract 803C Contractor		
Project Manager	Mr. Roland Yuen	9465 2815
Deputy Project Manager	Mr. Desmond Chung	9015 6863
Contract 803D Contractor		
Project Manager	Dick YIU	9426 4657
Site IMS Manager	Nick LAU	9216 9245
Contract 825 Contractor		
Project Manager	Mr. Nakayama	2482 8101
QAE Manager	Mr. M.H.Isa	9884 0810
Environmental Officer	Mr. Marko Chan	9723 4670



Project Management Organization Chart

Appendix C

Construction Programme

Contract 803A West Kowloon Terminus Diaphragm Walls (Site A)			Page 2 of 6				February 2010 Monthly Report : Appendix B2				
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Activity % Complete	2010				
							Jan	Feb	Mar	Apr	May
A1250	Submit Environmental Management Plan	0d		24-02-10 A		100%					
A1130	Submit System Assurance Plan	0d		26-02-10 A		100%					
A1170	Submit Health and Safety Plan	0d		26-02-10 A		100%					
A1210	Submit Quality Plan	0d		26-02-10 A		100%					
A1290	Submit Programming Management Plan	0d		01-03-10	-5d	0%					
A1260	Approval Environmental Management Plan	0d		20-04-10	0d	0%					
A1140	Approval System Assurance Plan	0d		22-04-10	-2d	0%					
A1180	Approval Health and Safety Plan	0d		22-04-10	-2d	0%					
A1220	Approval Quality Plan	0d		22-04-10	-2d	0%					
A1300	Approval Programming Management Plan	0d		25-04-10	-5d	0%					
A1270	Initial Audit Environmental Management Plan	0d		18-05-10	0d	0%					
A1150	Initial Audit System Assurance Plan	0d		20-05-10	-2d	0%					
A1190	Initial Audit Health and Safety Plan	0d		20-05-10	-2d	0%					
A1230	Initial Audit Quality Plan	0d		20-05-10	-2d	0%					
A1310	Initial Audit Programming Management Plan	0d		23-05-10	-5d	0%					
Method Statement											
A1330	Submit Method Statement of Instrumentation and Monitoring	0d		01-02-10 A		100%					
A1340	Approval Method Statement of Instrumentation and Monitoring	0d		16-02-10 A		100%					
A1370	Submit Method Statement of Diaphragm Wall	0d		01-03-10	23d	0%					
A1430	Submit Method Statement of Watermain Diversion	0d		14-03-10	3d	0%					
A1380	Approval Method Statement of Diaphragm Wall	0d		28-03-10	23d	0%					
A1440	Approval Method Statement of Watermain Diversion	0d		11-04-10	3d	0%					
A1410	Submit Method Statement of Slurry Wall	0d		12-04-10	2d	0%					
A1420	Approval Method Statement of Slurry Wall	0d		26-04-10	2d	0%					
A1610	Submit Method Statement of Fissure Grout	0d		28-04-10	9d	0%					
A1390	Submit Method Statement of Installation of Shear Pin	0d		10-05-10	7d	0%					
A1620	Approval Method Statement of Installation of Fissure Grout	0d		26-05-10	9d	0%					
Cost Centre B - Preparation and Monitoring											
Milestones - Cost Centre B											
MSB010	Milestone B1	0d		09-05-10*	0d	0%					
Pre-Construction Works											
Initial Site Survey & CCTV Survey of Drainage											
PC0010	ISS & CCTV: - Area 13.9A	3d	08-02-10 A	02-03-10	26d	50%					
PC0040	ISS & CCTV: - Area 13.14	2d	08-02-10 A	01-03-10	26d	50%					
PC0100	ISS & CCTV: - Area 13.31	10d	08-02-10 A	05-03-10	22d	50%					
PC0190	ISS & CCTV: - Area 13.41A	10d	08-02-10 A	09-03-10	19d	50%					
PC0200	ISS & CCTV: - Part of 13.41A	2d	08-02-10 A	01-03-10	19d	50%					
PC0210	ISS & CCTV: - Area 13.41B	6d	08-02-10 A	03-03-10	24d	50%					
PC0220	ISS & CCTV: - Area 13.42A	6d	08-02-10 A	03-03-10	17d	50%					
PC0230	ISS & CCTV: - Area 13.42B	8d	08-02-10 A	04-03-10	3d	50%					
PC0240	ISS & CCTV: - Area 13.42C	4d	08-02-10 A	02-03-10	20d	50%					
PC0250	ISS & CCTV: - Area 13.42D	4d	08-02-10 A	02-03-10	25d	50%					
PC0260	ISS & CCTV: - Area 13.43A	2d	08-02-10 A	01-03-10	1d	50%					
PC0270	ISS & CCTV: - Area 13.43B	2d	08-02-10 A	01-03-10	1d	50%					
PC0280	ISS & CCTV: - Area 13.45	3d	08-02-10 A	02-03-10	26d	50%					
PC0290	ISS & CCTV: - Area 13.47A	4d	08-02-10 A	02-03-10	2d	50%					
PC0300	ISS & CCTV: - Area 13.47B	4d	08-02-10 A	02-03-10	2d	50%					
PC0020	ISS & CCTV: - Area 13.11A	4d	17-02-10 A	02-03-10	22d	50%					
PC0030	ISS & CCTV: - Area 13.11B	4d	17-02-10 A	02-03-10	22d	50%					
PC0080	ISS & CCTV: - Area 13.20A	3d	01-03-10	03-03-10	81d	0%					
PC0110	ISS & CCTV: - Area 13.33A	3d	01-03-10	03-03-10	33d	0%					
PC0120	ISS & CCTV: - Area 13.33B	3d	01-03-10	03-03-10	33d	0%					
PC0140	ISS & CCTV: - Area 13.35A	4d	15-03-10	18-03-10	8d	0%					
PC0150	ISS & CCTV: - Area 13.35B	6d	15-03-10	20-03-10	6d	0%					
PC0180	ISS & CCTV: - Area 13.40	4d	15-03-10	18-03-10	1d	0%					
PC0070	ISS & CCTV: - Area 13.16	3d	19-04-10	21-04-10	29d	0%					
PC0050	ISS & CCTV: - Area 13.15A	3d	31-05-10	03-06-10	7d	0%					
Hoarding and Fencings											
B02010	Fencing and Hoarding and Vehicular Gates - Stage 1	40d	08-02-10 A	29-03-10*	0d	0%					
Instrumentation and Monitoring											
Instrumentation											
B03010	Building Settlement markers (122 nos)	18d	10-03-10	30-03-10	19d	0%					
B03020	Ground & Utility Settlement markers (121 nos)	18d	10-03-10	30-03-10	19d	0%					
B03050	Piezometer/Standpipe (9 nos) 2 rigs	15d	10-03-10	26-03-10	22d	0%					
Contract 803A West Kowloon Terminus Diaphragm Walls (Site A) 3 Monthly RollingProgramme No. 02 As of 1 March 2010 BACHY SOLETANCHE 法國地基建築公司											

Contract 803A West Kowloon Terminus Diaphragm Walls (Site A)				Page 4 of 6			February 2010 Monthly Report : Appendix B2						
Activity ID		Activity Name		Original Duration	Start	Finish	Total Float	Activity % Complete	2010				
					Jan	Feb	Mar	Apr	May				
A2060		Shift Northbound Traffic & TTM Arrangement		2d	18-05-10	19-05-10	3d	0%					
A2070		Remove Existing Planter/Divider		12d	20-05-10	05-06-10	3d	0%					
Stage 2 - Diversion of Lin Cheung Road													
Stage 2 - TTM Scheme & Approval													
D1130		Prepare TTM Scheme - Stage 2		46d	07-02-10 A	23-03-10	1d	50%					
D1140		Review & Approval by Engineer & SLG		90d	24-03-10	21-06-10	1d	0%					
Stage 2 - Construction of New Sounthbound [Work Area 13.43 A, B &42B]													
Stage 2 - Demolition of Existing Staircase of FB14													
A2155		Condition Survey - Straircase of FB14		12d	20-02-10 A	09-03-10	3d	40%					
A2160		Design Submission - Temporary Supporting System		18d	09-03-10	27-03-10	3d	0%					
A2180		Submit Method statement - Demolition of Straircase of FB14		12d	27-03-10	08-04-10	3d	0%					
A2170		Design Approval - Temporary Supporting System		0d		20-04-10	9d	0%	Design Approval - Temporary				
A2190		Method statement Approval - Demolition of Straircase of FB14		0d		02-05-10	3d	0%	Method Statement A				
A2195		Closure of Existing Staircase and Erection of Temorary Hoarding		3d	03-05-10	05-05-10	2d	0%					
A2200		Erection of temporary support		12d	06-05-10	20-05-10	2d	0%					
A2210		Demolition of Straircase of FB14		12d	22-05-10	04-06-10	2d	0%					
Stage 2 - Construction of Temporary Traffic Deck													
ATR1000		Design Submission - Temporary Traffic Deck		0d		25-05-10	1d	0%	De				
Stage 2 - Construction of Road D1 [Work Area 13.41B]													
A2330		Road Formation Work		24d	08-05-10	09-06-10	8d	0%					
A2340		Road Drainage Work		24d	31-05-10	29-06-10	32d	0%					
Cost Centre C - Diaphragm Walls & Slurry Walls (WKT)													
Work Area 13.35B													
AP1043		Area 13.35B Mobilization		6d	15-03-10	20-03-10	1d	0%					
AP1060		Part 13.35B Set up Silo, Piping etc		20d	22-03-10	19-04-10	1d	0%					
Predrill and Guide Wall													
AP2330		Area 13.35B Guide Wall 2 gangs		27d	22-03-10	27-04-10	9d	0%					
AP2340		Area 13.35B Predrill for D-Wall 4 rigs		20d	22-03-10	19-04-10	6d	0%					
Diaphragm Wall [PE60B - PE80], 21 Panels													
AP2260		Area 13.35B DW, 1 panel		5d	20-04-10	24-04-10	1d	0%					
AP3130		Area 13.35B DW, 1 panel		5d	20-04-10	24-04-10	6d	0%					
AP2270		Area 13.35B DW, 1 panel		5d	26-04-10	30-04-10	1d	0%					
AP3140		Area 13.35B DW, 1 panel		5d	26-04-10	30-04-10	6d	0%					
AP2280		Area 13.35B DW, 1 panel		5d	03-05-10	07-05-10	1d	0%					
AP3150		Area 13.35B DW, 1 panel		5d	03-05-10	07-05-10	6d	0%					
AP2290		Area 13.35B DW, 1 panel		5d	08-05-10	13-05-10	1d	0%					
AP3160		Area 13.35B DW, 1 panel		5d	08-05-10	13-05-10	6d	0%					
AP2300		Area 13.35B DW, 1 panel		5d	14-05-10	19-05-10	1d	0%					
AP3170		Area 13.35B DW, 1 panel		5d	14-05-10	19-05-10	6d	0%					
AP2310		Area 13.35B DW, 1 panel		5d	20-05-10	26-05-10	1d	0%					
AP3180		Area 13.35B DW, 1 panel		5d	20-05-10	26-05-10	6d	0%					
AP2320		Area 13.35B DW, 1 panel		5d	27-05-10	01-06-10	1d	0%					
AP3190		Area 13.35B DW, 1 panel		5d	27-05-10	01-06-10	6d	0%					
Work Area Part of 13.41A													
AP1050		Part 13.41A Mobilization		6d	15-03-10	20-03-10	7d	0%					
Predrill and Guide Wall													
AP1070		Part 13.41A Guide Wall 1 gangs		18d	22-03-10	16-04-10	9d	0%					
AP1079		Part 13.41A Predrill for D-wall & Slurry Wall 2 rig		20d	22-03-10	19-04-10	7d	0%					
Diaphragm Wall [PE81 - PE86], 6 Panels													
A2530		Part 13.41A DW, 1 pannel		5d	20-04-10	24-04-10	8d	0%					
A2690		Part 13.41A DW, 1 pannel		5d	26-04-10	30-04-10	8d	0%					
A2700		Part 13.41A DW, 1 pannel		5d	03-05-10	07-05-10	8d	0%					
A2710		Part 13.41A DW, 1 pannel		5d	08-05-10	13-05-10	8d	0%					
A2720		Part 13.41A DW, 1 pannel		5d	14-05-10	19-05-10	8d	0%					
A2730		Part 13.41A DW, 1 pannel		5d	20-05-10	26-05-10	8d	0%					
Fissure Grouting and Shear Pin													
AP2209		Part 13.41A Fissure Grout 2 rigs		9d	27-05-10	07-06-10	15d	0%					
Slurry Wall [East], 8 Panels													
AP1200		Part 13.41A Slurry Wall, 1 panel		4d	27-05-10	31-05-10	8d	0%					
Work Area 13.33B													
WW1040		Area 13.33B Mobilization		6d	01-03-10	06-03-10	30d	0%					
WW1050		Area 13.33B Set up Silo, Pipe line etc		18d	08-03-10	27-03-10	30d	0%					
Predrill and Guide Wall													
WW1070		Area 13.33B Guide Wall , 3 gangs		18d	08-03-10	27-03-10	36d	0%					
▲		▲ Milestone							Date				
▲		▲ Critical Milestone							Revision				
▲		▲ Actual MS							Checked				
▲		▲ Baseline Milestone							Approved				
									01-03-10				
									3MRP No.2				
									dsc				
									dy				
Contract 803A West Kowloon Terminus Diaphragm Walls (Site A) 3 Monthly RollingProgramme No. 02 As of 1 March 2010								 BACHY SOLETANCHE 法國地基建築公司					

Contract 803A West Kowloon Terminus Diaphragm Walls (Site A)							Page 5 of 6		February 2010 Monthly Report : Appendix B2							
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Activity % Complete	2010					Jan	Feb	Mar	Apr	May
WW1080	Area 13.33B Predrill , 3 rigs	18d	08-03-10	27-03-10	36d	0%										
Diaphragm Wall [PW38- PW51] , 14 Panels																
AP1208	Area 13.33B DW, 1 panel	8d	29-03-10	10-04-10	32d	0%										
AP1228	Area 13.33B DW, 1 panel	8d	12-04-10	20-04-10	32d	0%										
AP1238	Area 13.33B DW, 1 panel	8d	21-04-10	29-04-10	32d	0%										
AP1258	Area 13.33B DW, 1 panel	8d	30-04-10	10-05-10	32d	0%										
AP1268	Area 13.33B DW, 1 panel	8d	11-05-10	19-05-10	32d	0%										
AP1278	Area 13.33B DW, 1 panel	8d	20-05-10	29-05-10	32d	0%										
AP1288	Area 13.33B DW, 1 panel	8d	31-05-10	08-06-10	32d	0%										
Work Area 13.16																
WW1100	Area 13.16 Mobilization	6d	24-05-10	31-05-10	0d	0%										
Work Area 13.40																
Predrill and Guide Wall																
AP1089	Area 13.40 Predrill for Slurry Wall 2 Rig	28d	19-03-10	26-04-10	1d	0%										
Slurry Wall [Middle], 28 Panels																
AP1270	Area 13.40 Slurry Wall, 1 panel	3d	27-04-10	29-04-10	2d	0%										
AP1280	Area 13.40 Slurry Wall, 1 panel	4d	30-04-10	05-05-10	2d	0%										
AP1290	Area 13.40 Slurry Wall, 1 panel	4d	06-05-10	10-05-10	2d	0%										
AP1300	Area 13.40 Slurry Wall, 1 panel	3d	11-05-10	13-05-10	2d	0%										
AP1310	Area 13.40 Slurry Wall, 1 panel	4d	14-05-10	18-05-10	2d	0%										
AP1320	Area 13.40 Slurry Wall, 1 panel	4d	19-05-10	24-05-10	2d	0%										
AP2180	Area 13.40 Slurry Wall, 1 panel	3d	25-05-10	27-05-10	2d	0%										
AP2190	Area 13.40 Slurry Wall, 1 panel	4d	28-05-10	01-06-10	2d	0%										
Cost Centre D - Ancillary Works																
Preliminary Works																
AP1015	Site Office & Workshop Construction	12d	06-02-10 A	26-02-10 A		100%										
AP1010	Site Clearance	10d	12-02-10 A	26-02-10 A		100%										
Instrumentation																
AI1010	Method Statement Submission	0d	05-02-10 A			100%										
AI1020	Approval Work inside KSL Tunnel	0d		04-03-10	15d	0%										
AI1030	Instrumentation Installation & Initial Reading	28d	05-03-10	10-04-10	13d	0%										
Diaphragm Wall & Cross Wall at Approach Tunnel																
AD1000	Area 13.47B, 43A & 43B, Mobilization	10d	12-02-10 A	26-02-10 A		100%										
AD1010	Area 13.47B, 43A & 43B, Set up (Mud pool, desander, pipeline, etc)	12d	23-02-10 A	12-03-10	16d	20%										
Predrill and Guide Wall																
AD1020	Area 13.47B, 43A & 43B, Predrill (21 nos) - 4 rigs	26d	02-03-10	31-03-10	1d	0%										
ALD1010	Area 13.47B, 43A & 43B, Predrill for lower Headroom(4 nos) - 1 rig	16d	09-03-10	26-03-10	1d	0%										
AD1030	Area 13.47B, 43A & 43B, Guide Wall Construction	18d	12-03-10	07-04-10	16d	0%										
ALD1020	Area 13.47B, 43A & 43B, Guide Wall Construction for lower headroom	6d	27-03-10	07-04-10	16d	0%										
Diaphragm Wall & Cross Wall Construction																
ALD1090	Area 13.47B, 43A & 43B, DW, 1 panel	7d	27-03-10	08-04-10	1d	0%										
ALD1210	Area 13.47B, 43A & 43B, DW, 1 panel	7d	27-03-10	08-04-10	1d	0%										
ALD1100	Area 13.47B, 43A & 43B, DW, 1 panel	7d	09-04-10	16-04-10	1d	0%										
ALD1220	Area 13.47B, 43A & 43B, DW, 1 panel	7d	09-04-10	16-04-10	1d	0%										
ALD1110	Area 13.47B, 43A & 43B, DW, 1 panel	7d	17-04-10	24-04-10	1d	0%										
ALD1230	Area 13.47B, 43A & 43B, DW, 1 panel	7d	17-04-10	24-04-10	1d	0%										
ALD1120	Area 13.47B, 43A & 43B, DW, 1 panel	7d	26-04-10	04-05-10	1d	0%										
ALD1240	Area 13.47B, 43A & 43B, DW, 1 panel	7d	26-04-10	04-05-10	1d	0%										
ALD1130	Area 13.47B, 43A & 43B, DW, 1 panel	7d	05-05-10	12-05-10	1d	0%										
ALD1250	Area 13.47B, 43A & 43B, DW, 1 panel	7d	05-05-10	12-05-10	1d	0%										
ALD1140	Area 13.47B, 43A & 43B, DW, 1 panel	7d	13-05-10	20-05-10	1d	0%										
ALD1260	Area 13.47B, 43A & 43B, DW, 1 panel	7d	13-05-10	20-05-10	1d	0%										
ALD1150	Area 13.47B, 43A & 43B, DW, 1 panel	7d	22-05-10	29-05-10	1d	0%										
ALD1270	Area 13.47B, 43A & 43B, DW, 1 panel	7d	22-05-10	29-05-10	1d	0%										
ALD1160	Area 13.47B, 43A & 43B, DW, 1 panel	7d	31-05-10	07-06-10	1d	0%										
ALD1280	Area 13.47B, 43A & 43B, DW, 1 panel	7d	31-05-10	07-06-10	1d	0%										
Low Headroom Panel (AT-W34, 35, 38 & 39)																
ALD1000	Area 13.47B, 43A & 43B, LHR, Prepare Platform	5d	02-03-10	06-03-10	2d	0%										
ALD1050	Area 13.47B, 43A & 43B, LHR, DW , 1 panel	13d	12-04-10	26-04-10	14d	0%										
ALD1060	Area 13.47B, 43A & 43B, LHR, DW , 1 panel	13d	27-04-10	12-05-10	14d	0%										
ALD1070	Area 13.47B, 43A & 43B, LHR, DW , 1 panel	13d	13-05-10	28-05-10	14d	0%										
ALD1080	Area 13.47B, 43A & 43B, LHR, DW , 1 panel	13d	29-05-10	12-06-10	14d	0%										
Bored Pile																
ABP1000	Area 13.43A , Mobilization	8d	08-03-10	16-03-10	48d	0%										
Contract 803A West Kowloon Terminus Diaphragm Walls (Site A) 3 Monthly RollingProgramme No. 02 As of 1 March 2010							 BACHY SOLETANCHE 法國地基建業公司		Date 01-03-10	Revision 3MRP No.2	Checked dsc	Approved dy				
▲ Milestone ▲ Critical Milestone ▲ Actual MS ▲ Baseline Milestone ■ Critical Remain... ■ Remaining Work ■ Actual Work ■ Primary Basel...																

Contract 803A West Kowloon Terminus Diaphragm Walls (Site A)		Page 6 of 6					February 2010 Monthly Report : Appendix B2				
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%					
Predrill											
ABP1020	Area 13.43A , Predrill (4 nos) - 1 rig	16d	27-03-10	20-04-10	45d	0%					
Bored Pile Construction											
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%					
Bored Pile Testing											
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 RollingProgramme

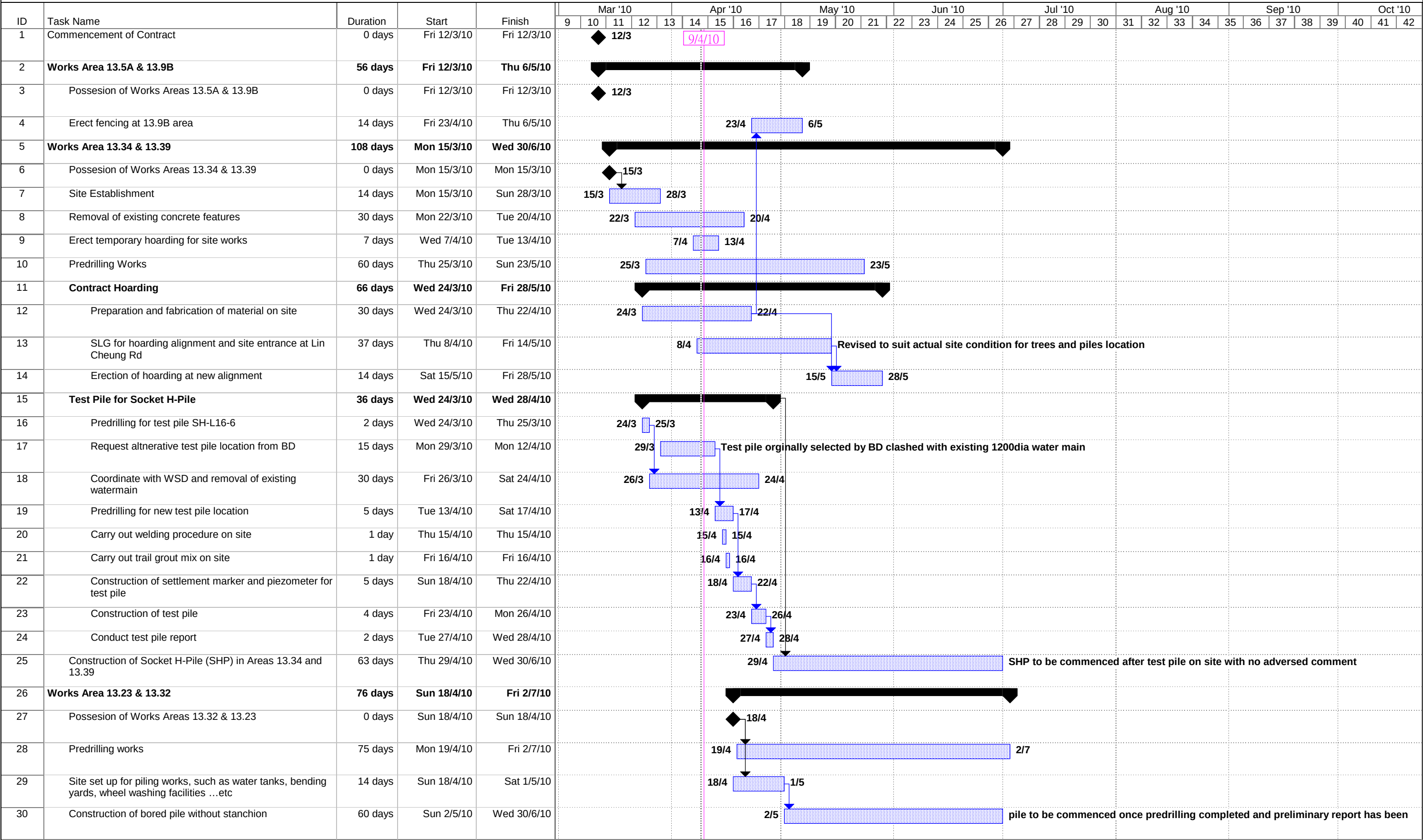
No. 02 As of 1 March 2010

 **BACHY SOLETANCHE**
法國地基建業公司

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

Main Contractor : Tysan Foundation Ltd.

XRL Contract 803B
West Kowloon Terminus Piling (Site A - North)
3 Month Rolling Programme (9-Apr-10)

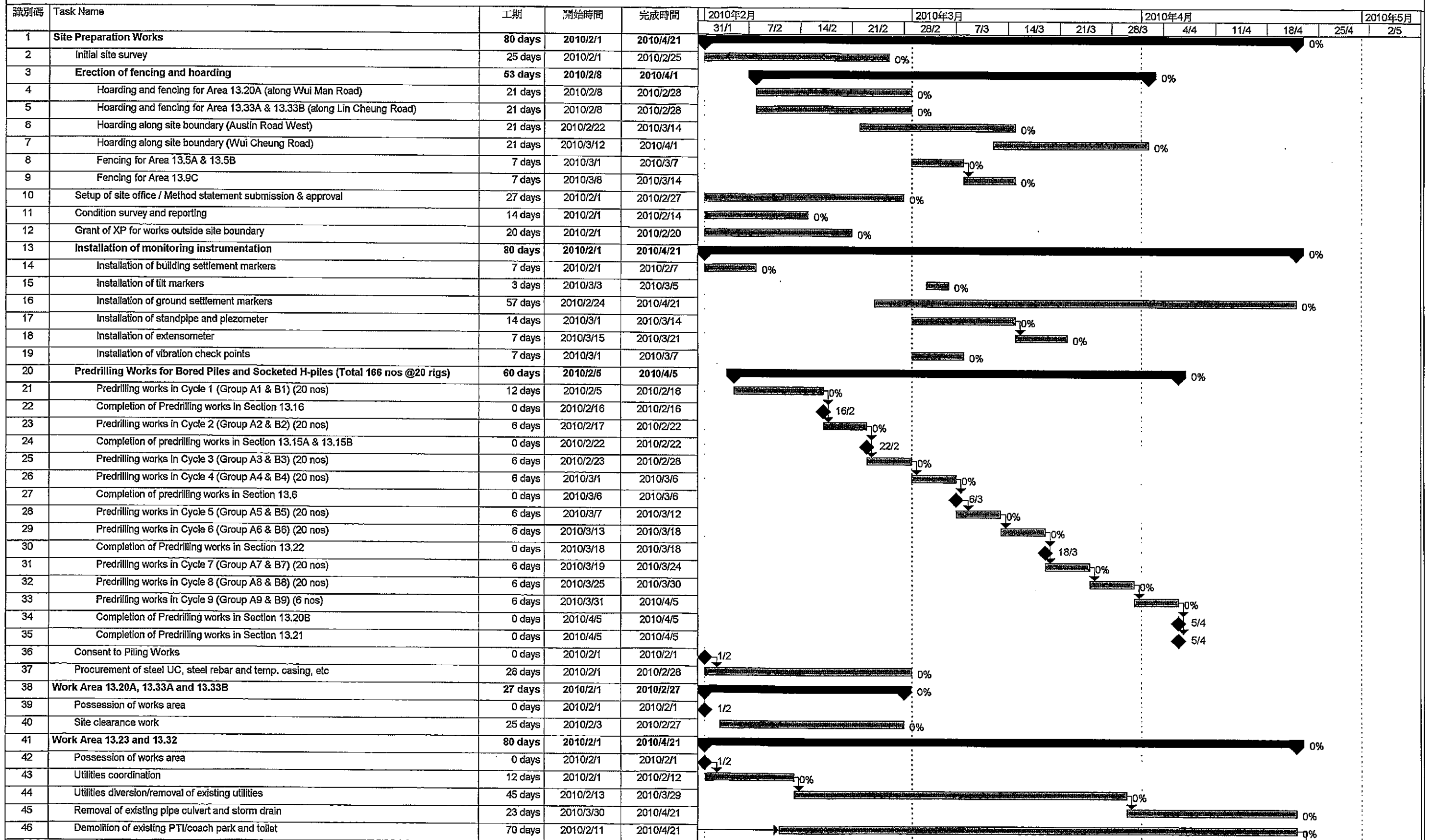


Project: 3 month rolling Program 803E
Date: Fri 9/4/10

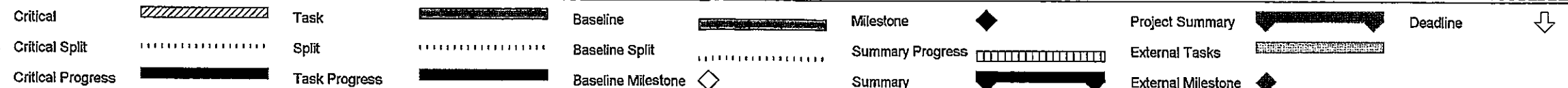
Task Split Milestone Summary

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)

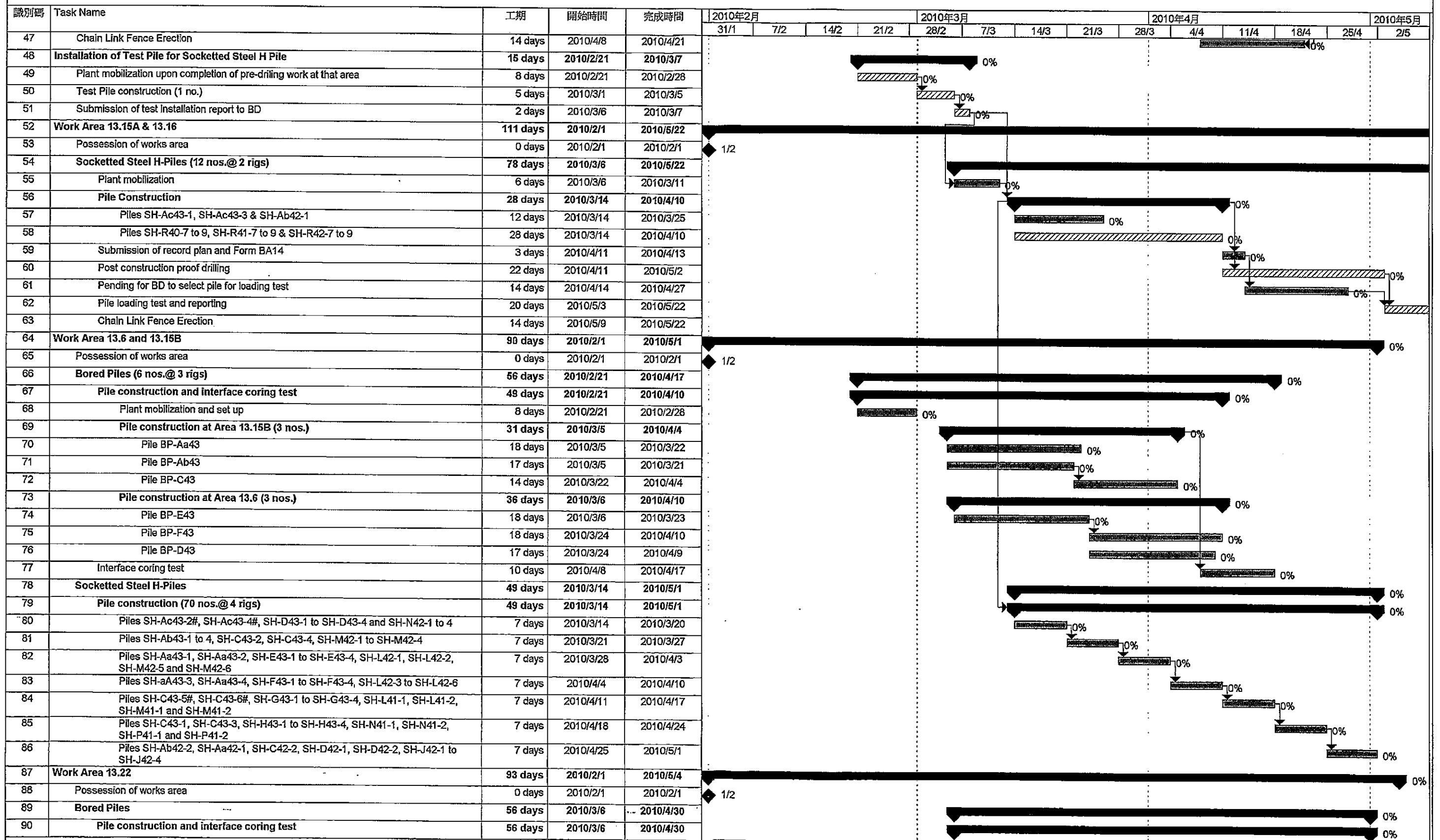


3-month Rolling Program
(Feb 2010 to Apr 2010)

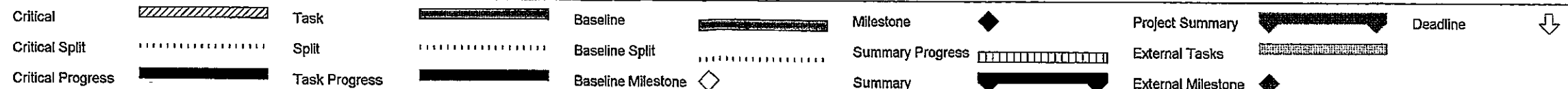


VIBRO-CHUN WO JOINT VENTURE
3-month Rolling Program (Feb 2010 to Apr 2010)

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



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



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	Pile construction (8 nos.@ 4 rigs)	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	Socketted Steel H-Piles	42 days	2010/3/24	2010/5/4																				0%
102	Pile construction (37 nos.@ 3 rigs)	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	Work Area 13.20B	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	Bored Piles	32 days	2010/3/30	2010/4/30																				0%
112	Pile construction and interface coring test	32 days	2010/3/30	2010/4/30																				0%
113	Pile construction (4 nos.@ 4 rigs)	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	Socketted Steel H-Piles	35 days	2010/3/26	2010/4/29																				0%
120	Pile construction (33 nos.@ 3 rigs)	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	Work Area 13.21	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



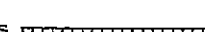
Split



Baseline Split



Summary Progress



External Tasks



Critical Progress



Task Progress



Baseline Milestone



Summary



External Milestone



▲ Milestone ▲ Critical Milestone ▲ Actual MS ▲ Baseline Milestone Critical Rema... Remaining W... Actual Work Primary Baseli...	Contract 803D West Kowloon Terminus Diaphragm Walls and Piles (WKCD) 3 Monthly Rolling Programme No. 02 As of 1 March 2010	BACHY SOLETANCHE 法國地基建業公司 <table><tr><th>Date</th><th>Revision</th><th>Checked</th><th>Approved</th></tr><tr><td>01-03-10</td><td>3 MRP No.2</td><td>qt</td><td>dy</td></tr></table>	Date	Revision	Checked	Approved	01-03-10	3 MRP No.2	qt	dy
Date	Revision	Checked	Approved							
01-03-10	3 MRP No.2	qt	dy							

▲ Milestone ▲ Critical Milestone ▲ Actual MS ▲ Baseline Milestone Critical Rema... Remaining W... Actual Work Primary Baseli...	Contract 803D West Kowloon Terminus Diaphragm Walls and Piles (WKCD) 3 Monthly Rolling Programme No. 02 As of 1 March 2010	 BACHY SOLETANCHE 法國地基建業公司	<table><tr><th>Date</th><th>Revision</th><th>Checked</th><th>Approved</th></tr><tr><td>01-03-10</td><td>3 MRP No.2</td><td>qt</td><td>dy</td></tr></table>	Date	Revision	Checked	Approved	01-03-10	3 MRP No.2	qt	dy
Date	Revision	Checked	Approved								
01-03-10	3 MRP No.2	qt	dy								

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Activity % Complete	2010					
							Jan	Feb	Mar	Apr	May	Jun
BF1070	Weight Bridge Installation	15	06-05-10	25-05-10	0	0%						
BF1060	Construction of Barging Facility (Cladding)	15	06-05-10	25-05-10	0	0%						
BF1080	Weight Bridge - Testing & Commissioning	8	27-05-10	05-06-10	0	0%						
Haul Road & Associated Works												
HR0010	Design Haul Road	7	01-03-10	07-03-10	5	0%						
HR0020	ICE Checking - Design Haul Road	5	08-03-10	12-03-10	5	0%						
HR0030	Submission to Engineer Approval - Design Haul Road	20	13-03-10	01-04-10	5	0%						
East Section												
HR1000	Haul Road East Section - Road Formation Works	12	07-04-10	21-04-10	0	0%						
HR1010	Haul Road East Section - Drainage Works	15	22-04-10	11-05-10	6	0%						
HR1020	Haul Road East Section - Road Pavement	6	13-05-10	19-05-10	6	0%						
West Section												
HR1030	Haul Road West Section - Road Formation Works	12	22-04-10	07-05-10	0	0%						
HR1040	Haul Road West Section - Drainage Works	15	08-05-10	28-05-10	0	0%						
HR1050	Haul Road West Section - Road Pavement	6	29-05-10	05-06-10	0	0%						
Utilities Diversion												
200mm dia Fresh Water Main (FW107)												
U1000	FW107 - Trial pits	12	01-03-10	13-03-10	4	0%						
U1010	FW107 - Coordination with WSD	24	15-03-10	16-04-10	4	0%						
U1020	FW107 - Construct Diversion Watermain	24	24-05-10	23-06-10	5	0%						
LV, 11kV Cables (LV111)												
U1040	LV111 - Cables Detection	3	01-03-10	03-03-10	29	0%						
U1050	LV111 - Trial Trenches	12	04-03-10	17-03-10	29	0%						
U1060	LV111 - Coordination with CLP	24	18-03-10	20-04-10	29	0%						
U1070	LV111 - Cable Diversion by CLP	24	21-04-10	22-05-10	29	0%						
Telecom Cable (PCCW101)												
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%						
400 LPB & MP Gas Main (GS106 & 107)												
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%						
Diversion of Austin Road West												
TTM Schemes and Approval												
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%						
Instrumentation and Monitoring												
Instrumentation												
B03050	Piezometer/Standpipe (10 nos)	27	10-02-10 A	19-03-10	4	40%						
B03020	Ground Settlement markers (31 nos)	12	18-02-10 A	04-03-10	9	68%						
B03010	Building Settlement markers (27 nos)	18	24-02-10 A	17-03-10	5	18%						
B03090	Inclinometer in Ground (7 nos)	21	24-02-10 A	22-03-10	5	14%						
B03025	Utility Settlement markers (53 nos)	25	26-02-10 A	26-03-10	0	9%						
B03080	Vibration Check Point (4 nos)	10	04-03-10	16-03-10	9	0%						
B03070	Tile Markers (3 No)	3	17-03-10	20-03-10	5	0%						
B03060	Extensometer in Ground (1 no)	3	19-03-10	23-03-10	4	0%						
Cost Centre C - Diaphragm Walls and Slurry Walls												
Diaphragm Wall [94 Panels]												
Works Area 13.2 (North)												
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%						
Guide Wall Construction												
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%						
Diaphragm Wall Construction [10 Panels]												
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%						

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%						
Fissure Grouting												
DW1930	Fissure Grouting - Area 13.2 North - Panel PE	12	05-05-10	19-05-10	20	0%						
Shear Pin												
DW1940	Shear Pin - Area 13.2 North - Panel PE	15	20-05-10	09-06-10	20	0%						
Works Area 13.2 (South)												
Guide Wall Construction												
DW1660	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%						
Diaphragm Wall Construction [17 Panel]												
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%						
Works Area 13.1												
Guide Wall Construction												
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%						
Diaphragm Wall Construction [58 Panel]												
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%						
Cost Centre D - Ground Investigation and Piles												
Milestones - Cost centre D												
MSD010	Milestone D1	0		09-05-10*	0	0%						
Ground Investigation												
Predrill - D-Wall (Works Area 13.1 and 13.2)												
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%						
Predrill - Bored Pile												
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%						
Predrill - Socketed H - Pile												
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%						
Bored Pile [177 No]												
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%						
Bored Pile (Area 13.2 North)												
Bored Pile Construction (Area 13.2 North) [23 Nos]												
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%						

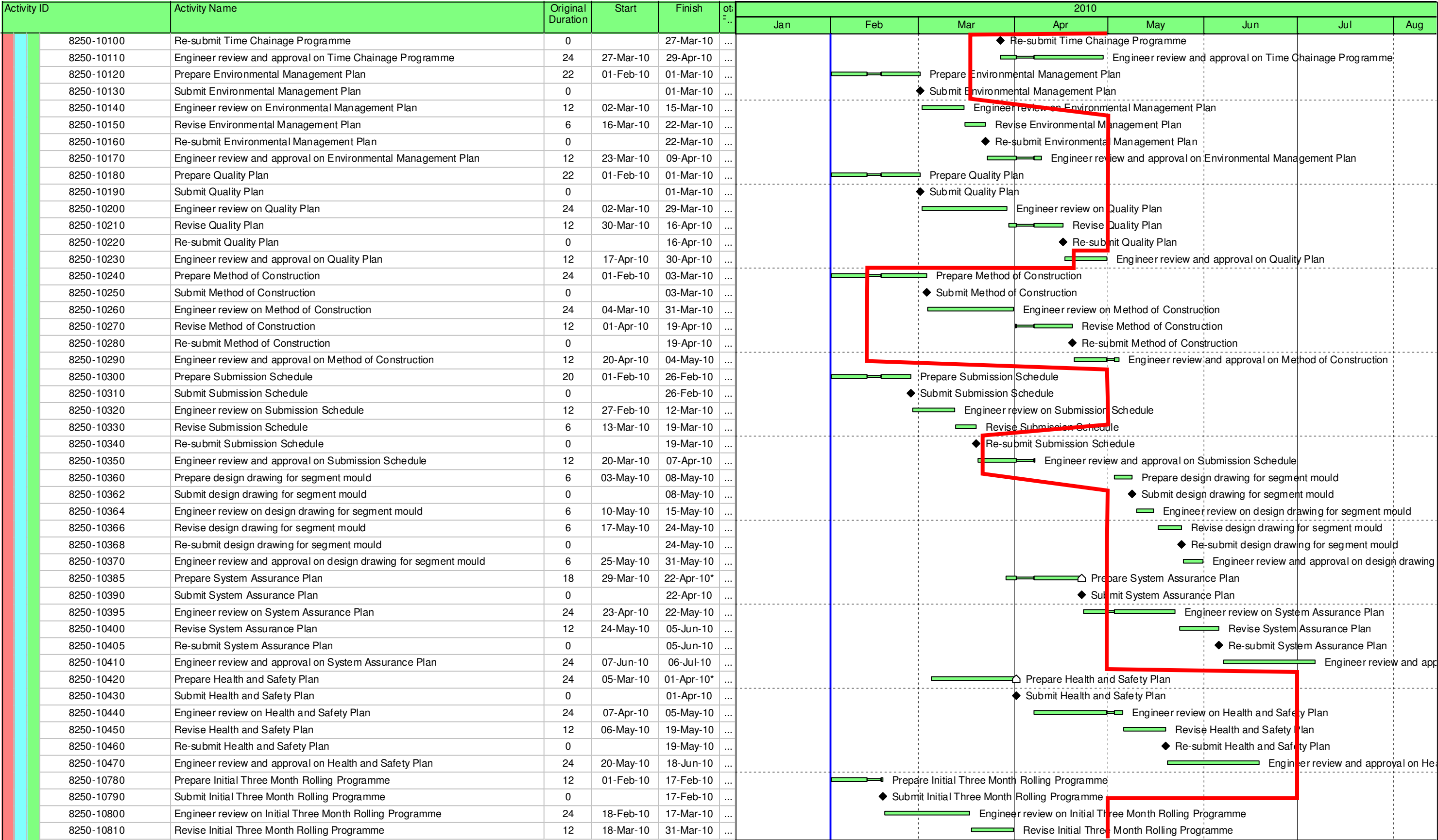
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Activity % Complete	2010					
							Jan	Feb	Mar	Apr	May	Jun
BP1085	BR3: Bored Pile - Area 13.2 North (1 nos)	7	10-05-10	17-05-10	13	0%						
BP1090	BR3: Bored Pile - Area 13.2 North (1 nos)	7	18-05-10	26-05-10	13	0%						
BP1028	BR1: 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%						
Bored Pile (Area 13.2 South)												
Bored Pile Construction (Area 13.2 South) [71 Nos]												
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%						
Bored Pile (Area 13.1)												
Bored Pile Construction (Area 13.1) [62 Nos]												
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%						
Socketed H-Pile [887 Nos]												
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%						
Test Boring - Socketed H-Pile												
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%						
Socketed H-Pile (Works Area 13.2 North)												
Socketed H-Pile Construction (Works Area 13.2 North) [126 Nos]												
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%						
Socketed H-Pile (Works Area 13.2 South)												
Socketed H-Pile Construction (Works Area 13.2 South) [275 Nos]												
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%						
SH1870	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%						
Socketed H-Pile (Works Area 13.1)												
Socketed H-Pile Construction (Works Area 13.1) [296 Nos]												
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%						
SH1400	HR6: H-Pile - Area 13.1 (10 nos)	23	19-04-10	18-05-10	18	0%						
SH2150	HR7: H-Pile - Area 13.1 (10 nos)	23	19-04-10	18-05-10	18	0%						
SH2250	HR8: H-Pile - Area 13.1 (10 nos)	23	19-04-10	18-05-10	18	0%						

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Activity % Complete	2010					
							Jan	Feb	Mar	Apr	May	Jun
SH1410	HR6: 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	HR8: H-Pile - Area 13.1 (10 nos)	23	19-05-10	18-06-10	18	0%						
Cost Centre E: Option 1 - Engineer's Site Accommodation												
Milestones - Cost Centre E												
MSE010	Milestone E1	0		30-05-10*	0	0%						
Engineer's Site Accommodation												
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%						

Please note this programme is purely an extract of the Preliminary Master Programme showing activities planned for in the first 6 months. As the Preliminary Master Programme is still under development, this update is only an approximation of the current status. In addition, some of the submission and design deliverable dates are yet to be optimized and therefore they are subject to change until the Preliminary Master Programme is approved and consolidated. The level of detail of activities reported will be addressed in the next issue.

Activity ID	Activity Name	Original Duration	Start	Finish	ot = ..	2010							
						Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Project Dates		112	01-Feb-10	22-Jun-10	1...	22-Jun-10, Project Dates							
Key Dates / Completion Obligations		0	01-Feb-10	01-Feb-10	0	01-Feb-10, Key Dates / Completion Obligations							
No Sub-location		0	01-Feb-10	01-Feb-10	0	01-Feb-10, No Sub-location							
8250KD01	Contract Commencement Date	0	01-Feb-10*		0	Contract Commencement Date							
Works Area Access and Handover Dates		88	07-Feb-10	01-Jun-10	...	01-Jun-10, Works Area Access and Handover D							
No Sub-location		88	07-Feb-10	01-Jun-10	...	01-Jun-10, No Sub-location							
8250AC010	Access to Works Area 1.1	0	01-Jun-10*		7	Access to Works Area 1.1							
8250AC030	Access to Works Area 1.3 - first time	0	07-Feb-10*		3	Access to Works Area 1.3 - first time							
8250AC040	Access to Works Area 1.4A	0	07-Feb-10*		3	Access to Works Area 1.4A							
8250AC041	Access to Works Area 1.4B - first time	0	07-Feb-10*		3	Access to Works Area 1.4B - first time							
8250AC050	Access to Works Area 1.5 - first time	0	07-Feb-10*		3	Access to Works Area 1.5 - first time							
8250AC070	Access to Works Area 1.6	0	07-Feb-10*		3	Access to Works Area 1.6							
8250AC080	Access to Works Area 1.7	0	07-Feb-10*		3	Access to Works Area 1.7							
8250AC090	Access to Works Area 1.8	0	07-Feb-10*		3	Access to Works Area 1.8							
8250AC100	Access to Works Area 1.9	0	01-Apr-10*		8	Access to Works Area 1.9							
8250AC160	Access to Works Area 1.15	0	19-Mar-10*		...	Access to Works Area 1.15							
8250AC180	Access to Works Area 1.17 - first time	0	07-Feb-10*		...	Access to Works Area 1.17 - first time							
8250AC200	Access to Works Area 1.19	0	01-Jun-10*		...	Access to Works Area 1.19							
8250AC210	Access to Works Area 1.20	0	01-Jun-10*		...	Access to Works Area 1.20							
8250AC220	Access to Works Area 1.21	0	01-Jun-10*		...	Access to Works Area 1.21							
Payment Milestone Dates		82	10-Mar-10	22-Jun-10	...	22-Jun-10, Payment Milestone Da							
No Sub-location		82	10-Mar-10	22-Jun-10	...	22-Jun-10, No Sub-location							
8250MSA01.1	Approval of Preliminary Master Programme	0		04-May-10	...	Approval of Preliminary Master Programme							
8250MSA01.2	Approval of Time Chainage Programme	0		29-Apr-10	...	Approval of Time Chainage Programme							
8250MSA01.3	Approval of Environmental Management Plan	0		09-Apr-10	...	Approval of Environmental Management Plan							
8250MSA01.4	Approval of Quality Plan	0		30-Apr-10	...	Approval of Quality Plan							
8250MSA01.5	Approval of Method of Construction	0		04-May-10	...	Approval of Method of Construction							
8250MSA01.6	Approval of Submission Schedule	0		07-Apr-10	...	Approval of Submission Schedule							
8250MSB01	Provide evidence that TBM has been procured	0		10-Mar-10	...	Provide evidence that TBM has been procured							
8250MSC01.1	Approval of tunnel lining design	0		22-Jun-10	...	Approval of tunnel lining design							
8250MSC01.2	Approval of tunnel segment mould design	0		31-May-10	...	Approval of tunnel segment mould design							
8250MSE01	Complete 5% of diaphragm wall	0		21-Apr-10	...	Complete 5% of diaphragm wall							
8250MSF01	Complete 75% installation of ground settlement markers in Mai Po area	0		19-May-10	...	Complete 75% installation of ground settlement markers in							
Submissions		158	01-Feb-10	16-Aug-10	1...								
No Location		158	01-Feb-10	16-Aug-10	...								
No Sub-location		158	01-Feb-10	16-Aug-10	...								
8250-10000	Prepare Preliminary Master Programme	24	01-Feb-10	03-Mar-10	...	Prepare Preliminary Master Programme							
8250-10010	Submit Preliminary Master Programme	0		03-Mar-10	...	Submit Preliminary Master Programme							
8250-10020	Engineer review on Preliminary Master Programme	24	04-Mar-10	31-Mar-10	...	Engineer review on Preliminary Master Programme							
8250-10030	Revise Preliminary Master Programme	12	01-Apr-10	19-Apr-10	...	Revise Preliminary Master Programme							
8250-10040	Re-submit Preliminary Master Programme	0		19-Apr-10	...	Re-submit Preliminary Master Programme							
8250-10050	Engineer review and approval on Preliminary Master Programme	12	20-Apr-10	04-May-10	...	Engineer review and approval on Preliminary Master Programme							
8250-10060	Prepare Time Chainage Programme	12	01-Feb-10	17-Feb-10	...	Prepare Time Chainage Programme							
8250-10070	Submit Time Chainage Programme	0		17-Feb-10	...	Submit Time Chainage Programme							
8250-10080	Engineer review on Time Chainage Programme	24	18-Feb-10	17-Mar-10	...	Engineer review on Time Chainage Programme							
8250-10090	Revise Time Chainage Programme	9	18-Mar-10	27-Mar-10	...	Revise Time Chainage Programme							

 Remaining Work  Critical Remaining Work  Start Constraint  Finish Constraint  Milestone  Summary	MTR XRL Contract 825 Mai Po to Ngau Tam Mei Tunnels 3-Month Rolling Programme for Option 2 Page 1 of 7		<table> <tr> <th colspan="4">3-Month Rolling Programme</th></tr> <tr> <th>Date</th><th>Revision</th><th>Checked</th><th>Approved</th></tr> <tr> <td>30-Apr-10</td><td>3-Month Rolling Programme as of 30...</td><td></td><td></td></tr> </table>	3-Month Rolling Programme				Date	Revision	Checked	Approved	30-Apr-10	3-Month Rolling Programme as of 30...		
3-Month Rolling Programme															
Date	Revision	Checked	Approved												
30-Apr-10	3-Month Rolling Programme as of 30...														



- Remaining Work
- Critical Remaining Work
- △

 Start Constraint
- △

 Finish Constraint
- ◆

 Milestone
- Summary

MTR XRL Contract 825

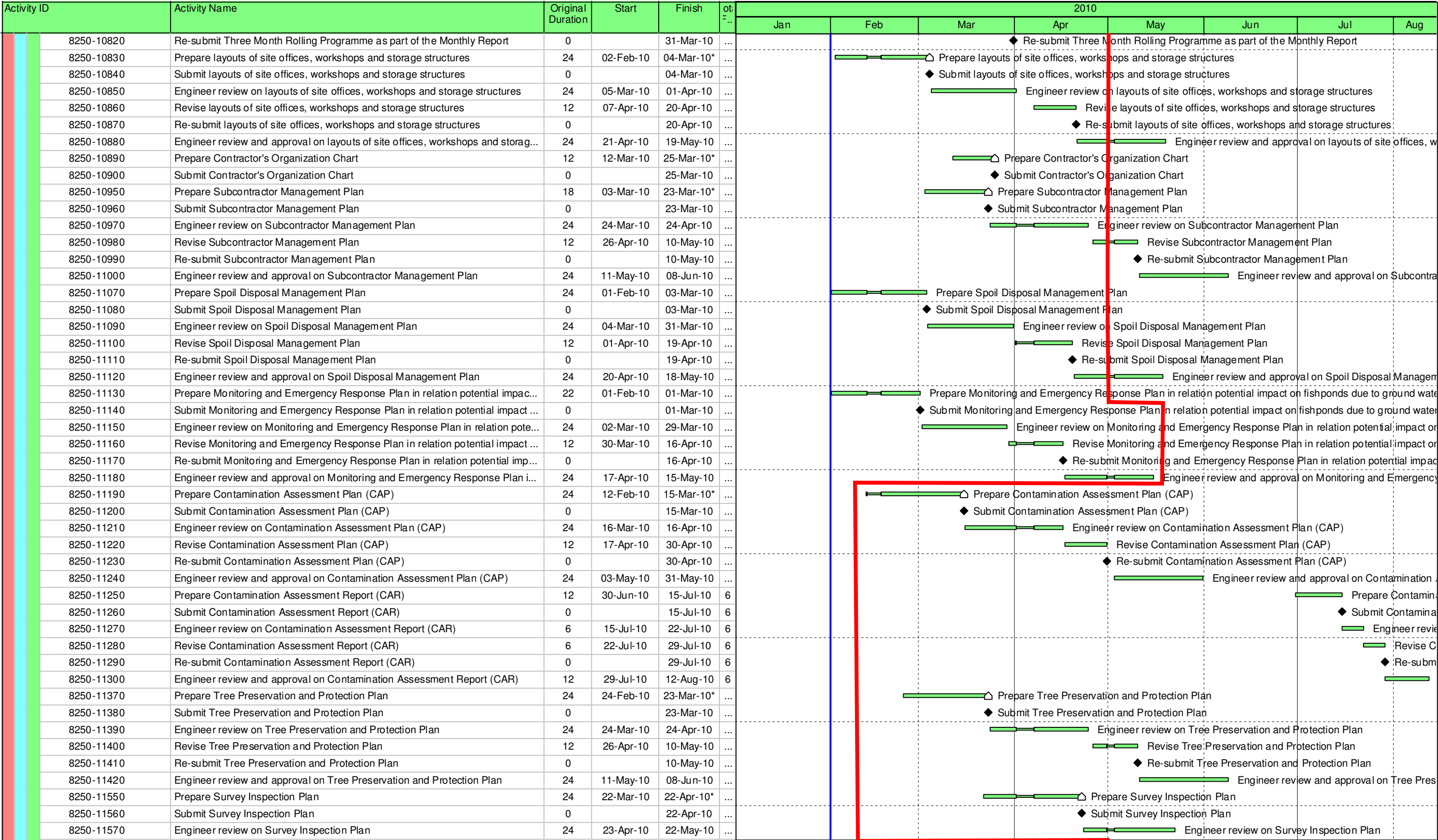
Mai Po to Ngau Tam Mei Tunnels

3-Month Rolling Programme

for Option 2



3-Month Rolling Programme			
Date	Revision	Checked	Approved
30-Apr-10	3-Month Rolling Programme as of 30...		



- Remaining Work
- Critical Remaining Work
- △

 Start Constraint
- △

 Finish Constraint
- ◆

 Milestone
- Summary

MTR XRL Contract 825

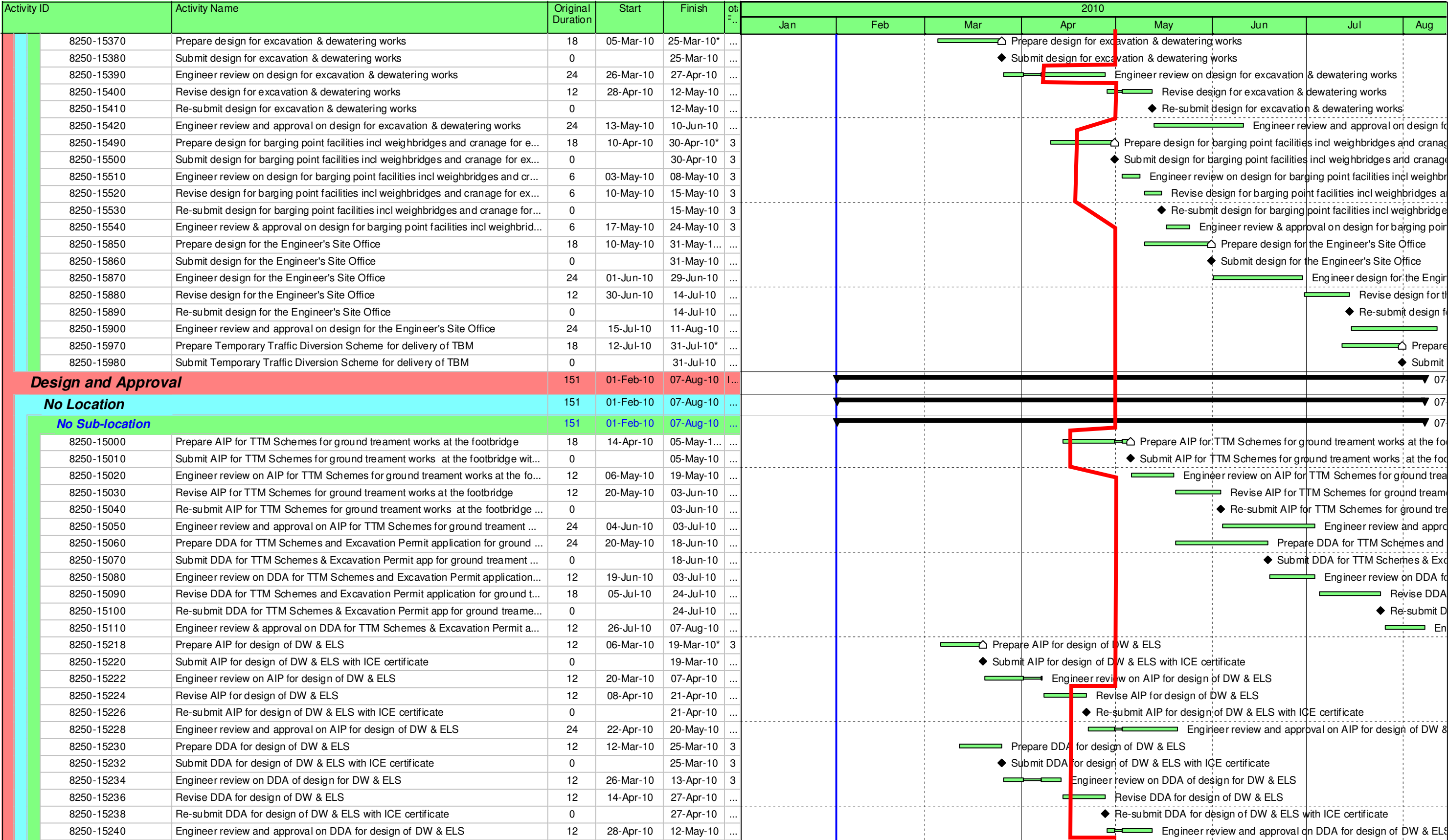
Mai Po to Ngau Tam Mei Tunnels

3-Month Rolling Programme

for Option 2



3-Month Rolling Programme			
Date	Revision	Checked	Approved
30-Apr-10	3-Month Rolling Programme as of 30...		



- Remaining Work
- Critical Remaining Work
- △

 Start Constraint
- △

 Finish Constraint
- ◆

 Milestone
- Summary

MTR XRL Contract 825

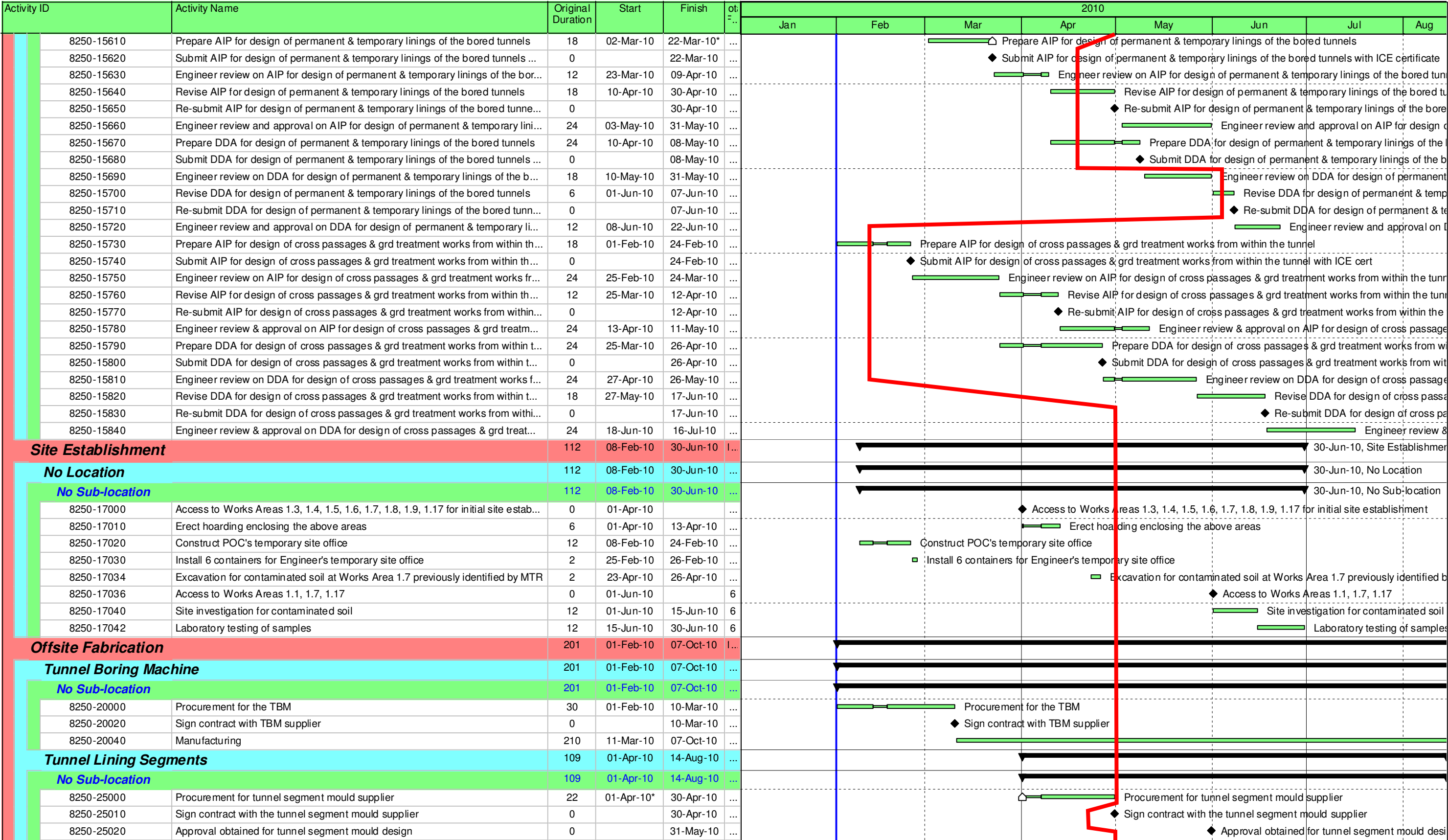
Mai Po to Ngau Tam Mei Tunnels

3-Month Rolling Programme

for Option 2



3-Month Rolling Programme			
Date	Revision	Checked	Approved
30-Apr-10	3-Month Rolling Programme as of 30...		



- Remaining Work
- Critical Remaining Work
- △

 Start Constraint
- △

 Finish Constraint
- ◆

 Milestone
- Summary

MTR XRL Contract 825

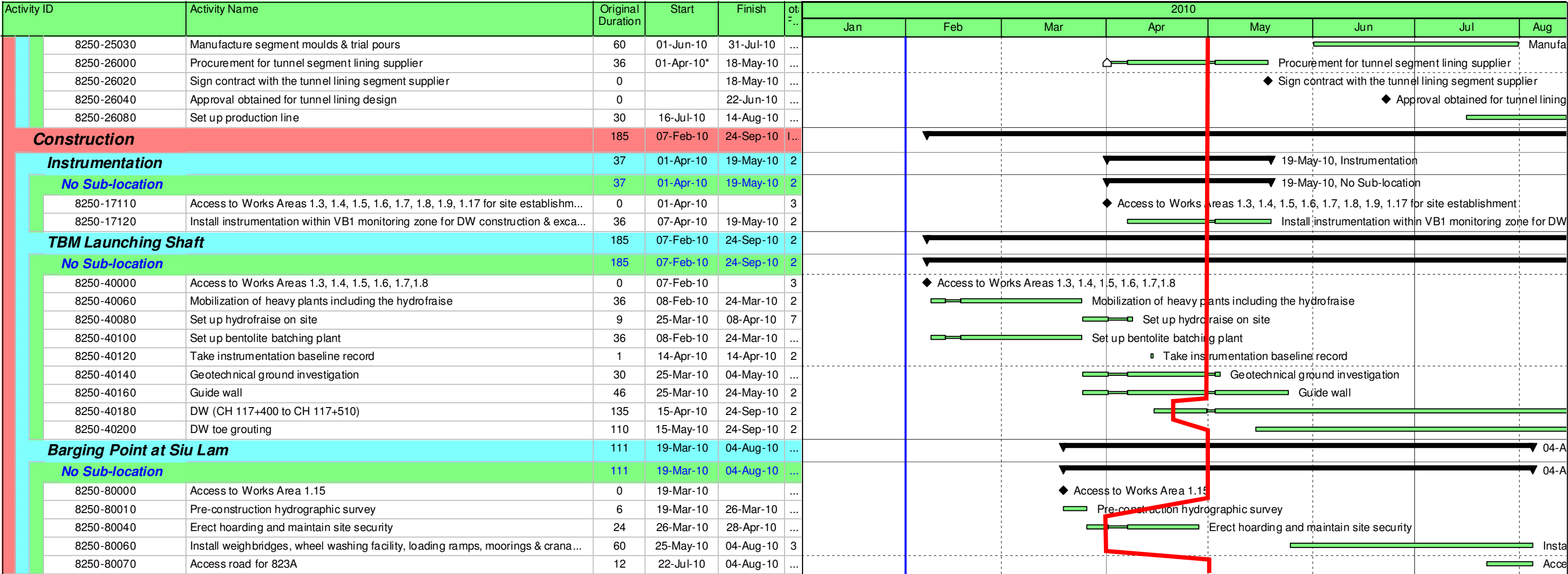
Mai Po to Ngau Tam Mei Tunnels

3-Month Rolling Programme

for Option 2



3-Month Rolling Programme			
Date	Revision	Checked	Approved
30-Apr-10	3-Month Rolling Programme as of 30...		



Remaining Work

Critical Remaining Work

◻

Start Constraint

◻

Finish Constraint

◆

Milestone

▶

Summary

MTR XRL Contract 825

Mai Po to Ngau Tam Mei Tunnels

3-Month Rolling Programme

for Option 2

Page 7 of 7

PENTA-OCEAN

CONSTRUCTION CO.,LTD.

五洋建設

Date

30-Apr-10

3-Month Rolling Programme as of 30...

3-Month Rolling Programme

Revision

Checked

Approved

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
Ecological Impact (Detailed design Phase / Pre-construction Phase)						
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	- 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&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 pond, action levels and emergency responses such as immediate action, remedial action and investigation.	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

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
S3.413	- 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
Ecological Impact (Construction Phase)						
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
	overwintering bird, Greater Painted-snipe) and areas of conservation interest (e.g. country parks, conservation areas, and wetlands) were recorded. - 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. - Should any unpredicted indirect ecological impacts arising from the proposed Project be detected, remedial measures should be developed and implemented by the Contractor.		MTR Contractor			

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
S3.327 & 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
	- Access to the ventilation building sites should follow existing access roads, such as the maintenance access along the existing drainage channels. - 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. - Gate and fences should be installed along the construction accesses that are adjacent to public areas. - 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. - 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					

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	- Vegetation located within the works areas should be preserved as far as practicable. - 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. - All temporarily affected habitats should be reinstated after the completion of works. - Placement of equipment or stockpiles should be confined to designated works areas. Access routes should be confined on existing disturbed land, where practicable.	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
	TSW site prior to commencement of site clearance.	vegetation	Contractor		commencement of site clearance	implemented as per construction programme
	- 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.	To minimize impacts to vegetation	MTR / Contractor	TSW and all other works areas	Construction phase	To be implemented as per construction programme
S3.372	- 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. - 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	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
	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.					
S3.374 - S3.377	- Site hoarding of 2.4 m high should be set up along the boundary of the works areas as far as practicable.	To minimize disturbance to wildlife	Contractor	All works areas	Construction phase	Implemented
	- 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.			KT5 (near TPP)	Prior to the construction of access road	To be implemented as per construction programme
	- The use of noisy construction equipment such as hydraulic breakers should be avoided at the area with			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
	- 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. - Upon the erection of site hoarding, all construction activities should be conducted within the fenced area.			MPV	Right after possession of site	Implemented
	- Major construction site lighting should point inward and downward. Unnecessary lighting should be turned off outside working hours of the construction sites.			All works area	Construction phase	Implemented
S3.378 -	- Excavation works carried out within waterbodies	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	should be carried out in dry season where practicable. - 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. - 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. - The flow of the watercourse and drainage channel located with the Project Area should be maintained throughout the construction phase.	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
Terrestrial Ecological Impact (Post-construction / Operation Phase)						
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
	substrate should not be removed from the channel during de-silting works. - 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.					
S3.385 & S3.387	- Large areas of reflective material (including glass) should not be used on the outer surfaces of the buildings. - 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.	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	- Implementation of ecological habitat management plan.	To monitor the wildlife use of the mitigation	MTR	Mitigation stream habitat in SSS / ERS	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
	- Ecological monitoring of the mitigation stream habitats according to ecological habitat management plan.	stream habitat				construction programme
Marine Ecological Impact (Construction Phase)						
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
Pond Fisheries Impact (Pre-construction Phase)						
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

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
	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
Pond Fisheries Impact (Construction Phase)						
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	Implementation of good site practices during the construction phase: ▪ Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program; ▪ Silencers or mufflers on construction equipment should be utilized and properly maintained during the construction program; ▪ 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; ▪ 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; ▪ Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction activities; ▪ Use of movable barrier for certain powered	To minimize disturbance to fishponds by construction noise	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
	mechanical equipment (PME); and Use of noise enclosure or acoustic shed to cover certain stationary PME.					
Pond Fisheries Impact (Post-construction Phase)						
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
Marine Fisheries Impact (Construction Phase)						
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
Airborne Noise Impact (Construction Phase)						
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?	Implementat ion Status
	▪ Only well-maintained plant should be operated on-site and plants should be serviced regularly during the construction program; ▪ Silencers or mufflers on construction equipment should be utilized and should be properly maintained during the construction program; ▪ Mobile plant, if any, should be sited as far from noise sensitive receivers (NSRs) as possible; ▪ 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; ▪ 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 ▪ Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction activities.					
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	▪ Pneumatic breaker (SWL=110dB(A)) ▪ Tracked Excavator Fitted with Hydraulic Breaker (SWL=110dB(A)) ▪ Truck Mixer (SWL=100dB(A)) ▪ Tracked Crane (SWL=101dB(A)) ▪ Dump Truck (SWL=103dB(A)) ▪ Tracked Excavator/Loader (SWL=105dB(A)) ▪ Dozer (SWL=111dB(A)) ▪ Road Roller (SWL=101dB(A))	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	Movable noise barrier should be used for the following PME where practicable: ▪ Mini backhoe ▪ Breaker, mini-robot mounted ▪ Vibratory poker ▪ Handheld breaker ▪ Excavator	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
	▪ Grab ▪ Tracked Crane					
S5.125	Noise enclosure/acoustic shed should be used for the following PME where practicable: ▪ Air compressor ▪ Concrete pump ▪ Grout pump ▪ Shotcrete pump	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	Noise insulating fabric should be applied where practicable to cover the following PME: ▪ Drill rig ▪ Grab and chisel ▪ Oscillator & casings ▪ Piling rig ▪ Piling, large diameter bored, reverse circulation drill ▪ Piling, vibrating hammer	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

[illegible]

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
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: ▪ A 8m high barrier along the access road on eastern side of SSS; and ▪ 5.5m barrier along western boundary facing Leung Uk Tsuen squats.	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

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
				locations		as per construction programme
Ground-borne Noise Impact (Construction Phase)						
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

[illegible]

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
Landscape and Visual Impact (Construction Phase)						
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			

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
	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?	Implementat ion 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
	structures to the adjacent landscape and visual context.					
	Control of Operation Night-time Glare		MTR			
	Incorporation of aesthetically pleasing design to boundary fence so as to blend in the structure to the adjacent landscape and visual context.		MTR			
	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.		MTR			
Cultural Heritage Impact						
S8.100 – S8.103	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 & 306-307). If archaeological data collected from these 18 test pits is insufficient to ascertain the archaeological potential of the inaccessible areas,	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
	additional test pits should be conducted Conduct rescue excavation to preserve archaeological remains by detailed records if found (NOL/ERL/300/C/XRL/ENS/M55/307)			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: ▪ 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.	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
	Compliance monitoring of vibration limits should be conducted and reported as a requirement of EM&A programme.					
S8.110, S8.126	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,	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	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.	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	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.	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	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.	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	Use of sensibly designed screen hoardings for reducing the potential visual impact.	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
Land Contamination Impact						
S9.28 – S9.33	Remediation of Contaminated Soil - 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. - 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.	To remediate contaminated soil	Contractor	Sites H and Q	Site remediation	To be implemented as per construction programme
S9.35(i)	For construction works of the alignment close to Ngau Tam Mei Landfill As a general precautionary measure, visual inspection of excavated materials should be conducted to screen soil for signs of contamination	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
	(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.	Mei Landfill		is identified	Boundary Section	programme
S9.35(ii)	For construction works at CLP transformer station at Lai Cheung Road and Petrol Filling Station at 82 Tai Kok Tsui Road 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	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)	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: - Excavation profiles must be properly designed and executed with attention to the relevant requirements for environment, health and safety; - Excavation should be carried out during dry season as far as possible to minimise contaminated runoff from contaminated soils; - Supply of suitable clean backfill material is needed after excavation; - The chemical oxidant proposed (RegenOx™) as a contaminant mass reduction technology. Comprises	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
	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 & will be undertaken by persons specifically trained and wearing appropriate PPE. ▪ 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; ▪ Speed control for the trucks carrying contaminated materials should be enforced; and ▪ Vehicle wheel and body washing facilities at the site's exit points should be established and used.					
S9.35(iv)	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	To minimise the potentially adverse effects on health and safety of construction workers during the course of site remediation	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?	Implementat ion Status
	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: ▪ Set up a list of safety measures for site workers; ▪ Provide written information and training on safety for site workers; ▪ Keep a log-book and plan showing the contaminated zones and clean zones; ▪ Maintain a hygienic working environment; ▪ Avoid dust generation; ▪ Provide face and respiratory protection gear to site workers; ▪ Provide personal protective clothing (e.g. chemical resistant jackboot, liquid tight gloves) to site workers; and ▪ Provide first aid training and materials to site workers.					
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
	and Site Investigation (i) Phase 2 supplementary SI works ▪ Upon site access is granted, site inspection should be carried out to ascertain any contaminative sources and hotspot of contamination within the site. ▪ 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. ▪ 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. ▪ 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	concern, report laboratory results and propose remediation measures if necessary. (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.		On-Site Inspection and Site Investigation and WSW	prior to the construction works commencement at respective sites	

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 works for each works area. - RR(s) should be submitted to demonstrate completion of remediation works before construction work starts at the site. (ii) WSW - 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. - This project will ensure that the completion of remediation works before the construction works at contaminated areas start.					
Waste Management Implications (Construction Phase)						
S10.107	Recommendations for good site practices: Prepare a Waste Management Plan approved by the Engineer/Supervising Officer of the Project based	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
	on current practices on construction sites; ▪ Training of site personnel in, site cleanliness, proper waste management and chemical handling procedures; ▪ Provision of sufficient waste disposal points and regular collection of waste; ▪ Appropriate measures to minimize windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; ▪ Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; and ▪ Separation of chemical wastes for special handling and appropriate treatment.	materials				
S10.108	Recommendations for waste reduction measures: ▪ Sorting of demolition debris and excavated materials from demolition works to recover reusable/ recyclable portions (i.e. soil, broken concrete, metal etc.); ▪ Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their	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
	proper disposal; ▪ 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; ▪ Proper storage and site practices to minimize the potential for damage or contamination of construction materials; ▪ Plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste; and ▪ Training should be provided to workers about the concepts of site cleanliness and appropriate waste management procedures, including waste reduction, reuse and recycle.					
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	Storage of materials on site may induce adverse environmental impacts if not properly managed, recommendations to minimise the impacts include: ▪ Waste, such as soil, should be handled and stored well to ensure secure containment, thus minimising the potential of pollution; ▪ Maintain and clean storage areas routinely; ▪ Stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away; and ▪ Different locations should be designated to stockpile each material to enhance reuse.	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
	Set up warning signs at vehicular access points reminding drivers of designated disposal sites and penalties of an offence. Installation of close-circuited television at access points of vehicles to monitor and prevent illegal dumping.					
S10.117	Recommendations for excavated materials within works areas: ▪ 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. ▪ 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	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
	different materials as far as practicable. ▪ Enclosure should also be provided for the conveyor belt, as far as practicable to minimize the of dust generation. ▪ 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.					
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	The Contractor should ensure the on-site separation from inert portion. The waste delivered to landfill should not contain any free water or have water content more than 70% by weight. The haulier must ensure suitable amount of waste would be loaded on different types of trucks used. A one-week notice should be given to EPD with information on Contractor's name and respective contact details.	To meet the requirement for disposal at landfill	Contractor and Waste haulier	All works areas	Construction phase	Implemented
S10.125	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: - For Type 1 sediment, the sediments will be excavated/dredged and transport to designated CEDD Facilities, typically at South Cheung Chau and/or Ninepin. - 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.	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
	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. 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.					
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

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
	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

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
S10.131	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
	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.					
S10.136	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 : ▪ Be compatible with the chemical wastes being stored, maintained in good condition and securely sealed; ▪ Have a capacity of less than 450 litres unless the	To properly store the chemical waste within 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
	specifications have been approved by EPD; and 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>.					
S10.137	The chemical storage areas should: - Be clearly labelled to indicate corresponding chemical characteristics of the chemical waste and used for storage of chemical waste only; - Be enclosed on at least 3 sides; - 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; - Have adequate ventilation; - Be covered to prevent rainfall from entering; and - Be properly arranged so that incompatible materials are adequately separated.	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

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
	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
Waste Management Implications (Operation Phase)						
S10.146-10.147	Chemical waste: - 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. - 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.	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

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 recommendations proposed for the mitigation of impacts from chemical waste in construction phase should also be followed (refer to S10.104-S10.106).					
S10.148-S10.149	General refuse: - Provide recycling bins at designated areas for proper recycling of papers, aluminium cans and plastics bottles. - Separation from other waste types and collected by licensed collectors at daily basis to minimize the potential impacts from odour and vermin.	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	Industrial waste: Separation of reusable components like steel before collection by licensed collector	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
Water Quality Impact (Construction Phase)						
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

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 mitigation measures as outlined in the ProPECC PN 1/94 Construction Site Drainage should be adopted where applicable.	site runoff and general construction activities				
S11.154	Groundwater seepages from uncontaminated area: 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.	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	Site Runoff or Groundwater from contaminated areas: - No directly discharge of groundwater from contaminated areas should be adopted. - 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. - If wastewater treatment is to be deployed for	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
	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. ▪ 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. ▪ 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					

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
	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.					
S11.128 - S11.136, S11.160	Barging points: Mitigation measures for control water quality impact from surface run-off should be applied. The following good site practices should also be adopted: 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	To control water quality impact from barging point	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
	- all hopper barges should be fitted with tight fitting seals to their bottom openings to prevent leakage of material - construction activities should not cause foam, oil, grease, scum, litter or other objectionable matter to be present on the water within the site - 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					
S11.161	Effluent discharge: 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	To control water quality impact from effluent discharge from construction site	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
	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
	Disposal Ordinance details the requirements to deal with chemical wastes. General requirements are given as follows: ▪ Suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport. ▪ Chemical waste containers should be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents. ▪ Storage area should be selected at a safe location on site and adequate space should be allocated to the storage area.					
S11.165	Surface construction works at or in close proximity of watercourses or seafront: ▪ 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. ▪ The use of less or smaller construction plants may be specified to reduce the disturbance to the riverbed or pond deposits.	To control water quality impact from construction works at or in close proximity of watercourses or seafront	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
	▪ Temporary sewerage system should be designed to prevent wastewater from entering the river, streams and sea. ▪ 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. ▪ Stockpiling of construction materials and dusty materials should be covered and located away from any water courses. ▪ 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. ▪ Construction activities, which generate large amount of wastewater, should be carried out in a distance away from the waterfront, where practicable. ▪ 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					

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
	of the waterfront within the work sites to intercept the run-off. ▪ Construction effluent, site run-off and sewage should be properly collected and/or treated. ▪ 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. ▪ Silt curtain should be installed around the construction activities at or near the watercourses to minimize the potential impacts due to accidental					

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
	spillage of construction wastes and excavated materials. - Proper shoring may need to be erected in order to prevent soil or mud from slipping into the watercourses. - Supervisory staff should be assigned to station on site to closely supervise and monitor the works.					
S11.166	Surface construction works close to water gathering grounds: The conditions as specified in WSD guidelines on protection of Water Gathering Ground should be followed or observed where practicable	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	Dredging of marine sediments at LKST: - Closed grab dredger should be used to minimize the loss of sediment during the raising of the loaded grabs through the water column. - No more than one closed grab dredger should be operated at any one time. - Double silt curtains should be deployed around the dredging operations as far as practicable.	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
	▪ The descent speed of grabs should be controlled to minimize the seabed impact speed. ▪ Barges should be loaded carefully to avoid splashing of material. ▪ 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. ▪ 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.					
S11.83 and S11.165	Diversion of watercourse: ▪ 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	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
	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. ▪ Mitigation measures for minimizing the water quality impact for surface construction works at or close to the watercourses should also be applied.					
S. 11.169 - 11.173	Hydrogeological Impact: 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: ▪ Toe grouting should be applied beneath the toe level of the temporary/permanent cofferdam walls	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
	as necessary to lengthen the effective flow path of groundwater from outside and thus control the amount of water inflow to the excavation. Recharge wells should be installed as necessary outside the excavation areas. Water pumped from the excavation areas should be recharge back into the ground. 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. The Contractor should initially adopt suitable water control strategies while undertaking the excavation works. The water control strategies are shown as follow:					

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
	▪ 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. ▪ 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. ▪ In principle, the grout pre-treatment would be designed on the basis of probe hole drilling ahead of the tunnel face. 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					

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
	control strategies, post-grouting will be applied as described below: 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. 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.					
Water Quality Impact (Operation Phase)						
S11.174	Tunnel run-off and drainage: Track drainage channels discharge should pass through oil/grit interceptors/chambers to remove	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
	oil, grease and sediment before being pumped to the foul sewer/holding tank for further disposal. ▪ The silt traps and oil interceptors should be cleaned and maintained regularly. ▪ Oily contents of the oil interceptors should be transferred to an appropriate disposal facility, or to be collected for reuse, if possible.					programme
S11.175 – S11.176	Sewage effluents: ▪ 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. ▪ For handling, treatment and disposal of other operation stage effluent, the practices outlined in ProPECC PN 5/93 should be adopted where applicable.	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	Shek Kong Stabling Sidings (SSS): - 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. - 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. - 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. - 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	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
	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. ▪ 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.					
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
Air Quality (Construction Phase)						
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	The design emission concentration of dust collector for different types of silos for concrete batching plant should be: ▪ Dust collector for each small Cement Silo $\leq 30 \text{ mg/m}^3$ ▪ Dust collector for each Large Capacity Cement Silo $\leq 50 \text{ mg/m}^3$ ▪ Dust collector for each PFA Silo $\leq 30 \text{ mg/m}^3$ ▪ Dust collector for each Mixer $\leq 40 \text{ mg/m}^3$ During operation of concrete batching plant:	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
	▪ 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. ▪ 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. ▪ 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. ▪ 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. ▪ The concrete should be directly loaded from the mixer into the transit mixer of a truck in “wet” form.					

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
	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.					
Table 12.10	(1) Cut & Cover Areas and Stockpiles in the vicinity of adits/shafts: (a) Heavy construction activities at Cut & Cover Areas, Storage of materials at Stockpiles - Active areas for heavy construction activities, loading & unloading materials at stockpiles - The specified requirements for cut & cover areas and stockpiles at Shek Kong, Nam Cheong and West Kowloon works areas are as follows: (i) Shek Kong works area – active area minimized to 15% of total area, watering with complete coverage of active area ten times a day. (ii) Nam Cheong works area – active area minimized to 30% of total area, watering with complete coverage of active stockpile area four	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
	times a day. (iii) West Kowloon works area – active area minimized to 15% of total area, watering with complete coverage of active area eight times a day. ▪ 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. ▪ The remaining inactive area would be well covered with impervious sheeting at all work sites. (b) Trucks - Transportation of materials ▪ 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. ▪ The haul roads within the site should be paved and water spraying would be provided to keep the wet condition. ▪ For the Shek Kong works area, watering paved haul					

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
	roads once per hour would be provided. (2) Temporary stockpiles within barging facilities: (a) Loading point - Loading of spoils from trucks onto stockpile - Water spraying should be provided at the loading points to suppress the dust impact. (b) Storage of materials - Active area for loading & unloading materials - Water spraying system should be applied on the active area and watering with complete coverage of active area four times a day is required.					
Table 12.11	Barging facilities: (1) Haul road within barging facilities - Transportation of spoils to the barging points 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	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?	Implementat ion Status
	haul road once per hour is required. (2) Unloading of materials - Unloading of spoil materials ▪ 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. (3) Trucks - Vehicles leaving the barging facilities ▪ Vehicle wheel washing facilities should be provided at site exit. (4) Transportation of spoils to one of the Nam Cheong Barging Point ▪ Fully enclosed conveyor system should be adopted for transportation of spoils from shaft to the barging point.					
S 12.78	Dust suppression measures stipulated in the Air Pollution Control (Construction Dust) Regulation and good site practices: ▪ Use of regular watering, with complete coverage, to reduce dust emissions from exposed site surfaces	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
	and unpaved roads, particularly during dry weather. ▪ Use of frequent watering for particularly dusty construction areas and areas close to ASRs. ▪ 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. ▪ Open stockpiles should be avoided or covered. Where possible, prevent placing dusty material storage piles near ASRs. ▪ Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations. ▪ Establishment and use of vehicle wheel and body washing facilities at the exit points of the site. ▪ 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. ▪ Imposition of speed controls for vehicles on					

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
	unpaved site roads. 8 kilometers per hour is the recommended limit. - Where possible, routing of vehicles and positioning of construction plant should be at the maximum possible distance from ASRs. - 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. - 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. - 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.					
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

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
	compliance with legislative requirements.					
Air Quality (Operation Phase)						
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
Hazard to Life						
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

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 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

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
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

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
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

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
	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

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
	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
Landfill Gas Hazard – Design and Construction Phases						
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

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
				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
	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.					
S14.73	- 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.	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	- 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

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
	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

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
	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
Landfill Gas Hazard – Operation Phase						
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

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
	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

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
	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

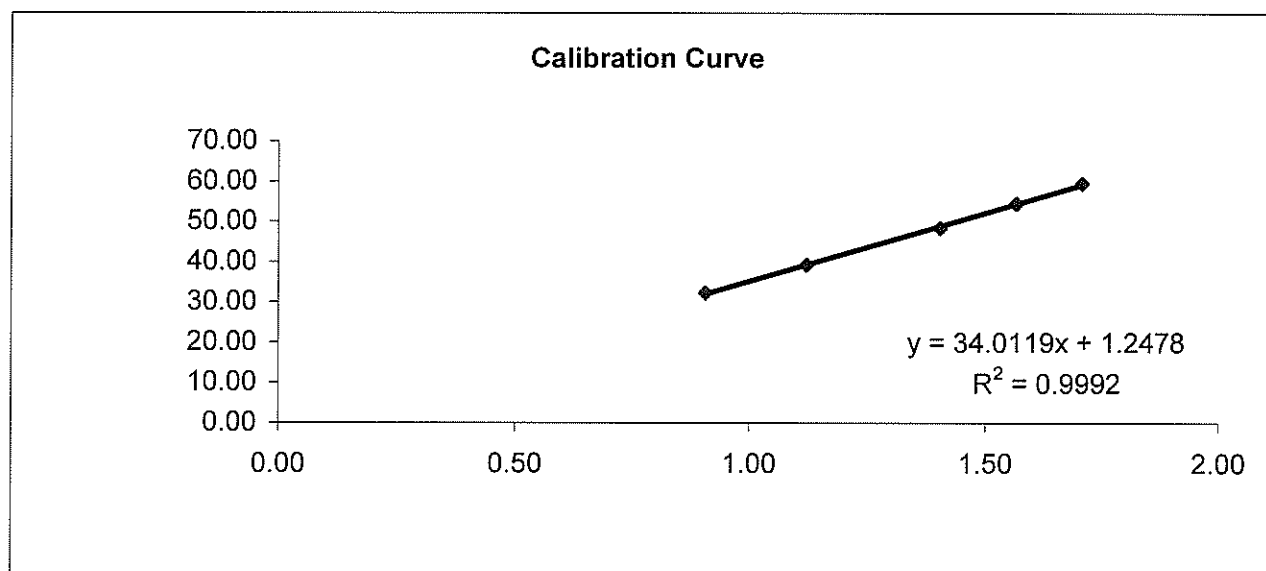
Calibration Certificates

Ove Arup Partners (Hong Kong) Limited

High Volume Air Sampler Calibration Worksheet

Calibration date	20-Jan-10	Barometric pressure	767 mm Hg
Next Calibration date	19-Jul-10	Temperature (°C)	22 °C
Sampler location	AM1 Mai Po San Tsuen	Temperature (K)	295 K
Sampler model	TE-5170	P _{std}	760 mm Hg
Sampler serial number	467	T _{std}	298 K
Calibrator model	GMW-2535		
Calibrator serial number	1378		
Slope of the standard curve, m _s	2.00826		
Intercept of the standard curve, b _s	-0.01649		

Resistance Plate No.	Manometer Reading (inch H ₂ O)	Flow Recorder Reading (CFM)	Calculated Q _{std} (m ³ /min)	Continuous Flow Recorder Reading IC (CFM)
5	3.20	32.00	0.91	32.31
7	4.90	39.00	1.12	39.38
10	7.70	48.00	1.40	48.47
13	9.60	54.00	1.57	54.52
18	11.40	59.00	1.71	59.57



Linear Regression

Sampler slope (m) : 34.0119
Sampler intercept (b) : 1.2478
Correlation coefficient (R^2) : 0.9992

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

Performed by: [Signature]

Date: 20/1/2010

Checked by: [Signature]

Date: 20/1/2010

Approved by: [Signature]

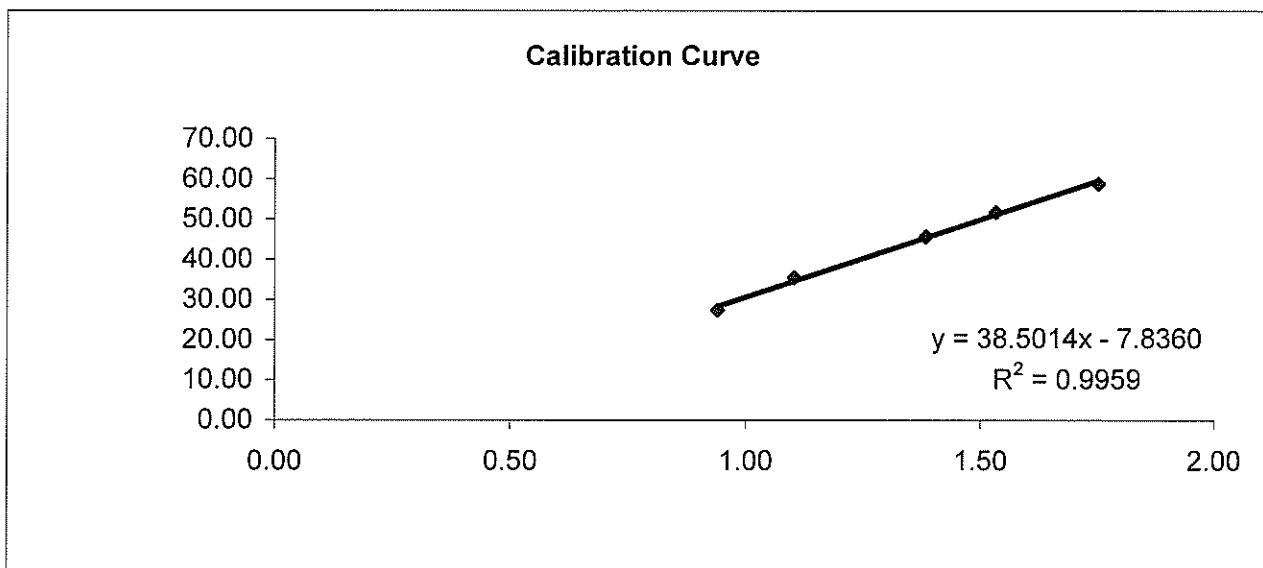
Date: 20/01/2010

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 _{std}	760 mm Hg
Sampler serial number	528	T _{std}	298 K
Calibrator model	GMW-2535		
Calibrator serial number	1378		
Slope of the standard curve, m _s	2.00826		
Intercept of the standard curve, b _s	-0.01649		

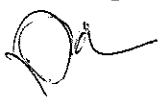
Resistance Plate No.	Manometer Reading (inch H ₂ O)	Flow Recorder Reading (CFM)	Calculated Q _{std} (m ³ /min)	Continuous Flow Recorder Reading IC (CFM)
5	3.40	27.00	0.94	27.41
7	4.70	35.00	1.10	35.53
10	7.40	45.00	1.38	45.69
13	9.10	51.00	1.53	51.78
18	11.90	58.00	1.75	58.89



Linear Regression

Sampler slope (m) : **38.5014**
 Sampler intercept (b) : **-7.8360**
 Correlation coefficient (R²) : **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

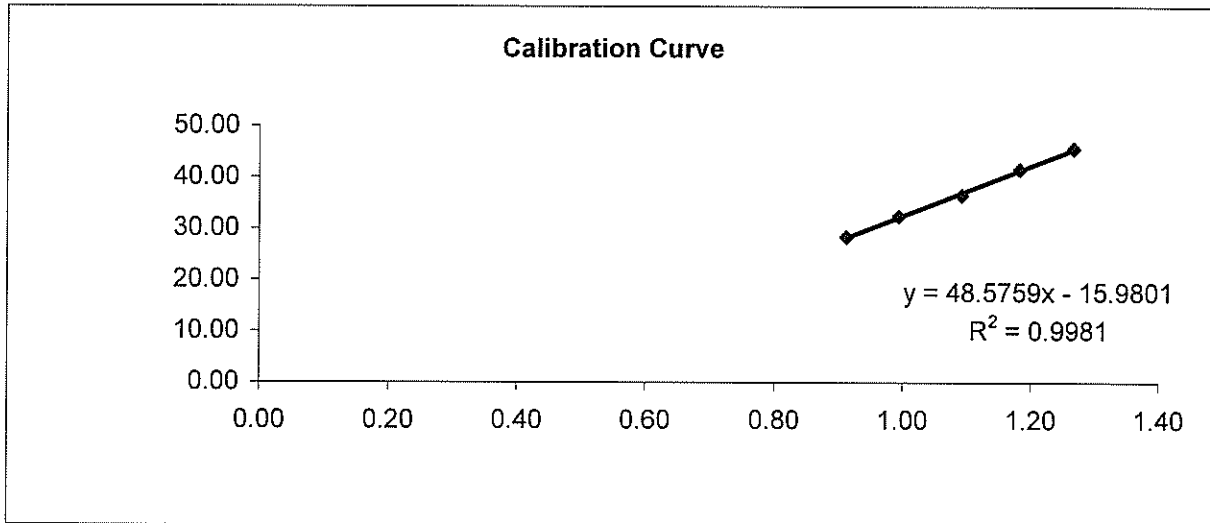
Ove Arup Partners (Hong Kong) Limited

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 _{std}	760 mm Hg
Sampler serial number	0515	T _{std}	298 K

Calibrator model	GMW-2535
Calibrator serial number	1378
Slope of the standard curve, m _s	2.00826
Intercept of the standard curve, b _s	-0.01649

Resistance Plate No.	Manometer Reading (inch H ₂ O)	Flow Recorder Reading (CFM)	Calculated Q _{std} (m ³ /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



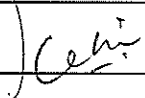
Linear Regression

Sampler slope (m) : **48.5759**
 Sampler intercept (b) : **-15.9801**
 Correlation coefficient (R²) : **0.9981**

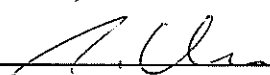
Correlation coefficient is greater than 0.9900 and the calibration result is accepted.

Performed by: 

Date: 5/12/09

Checked by: 

Date: 5/12/09

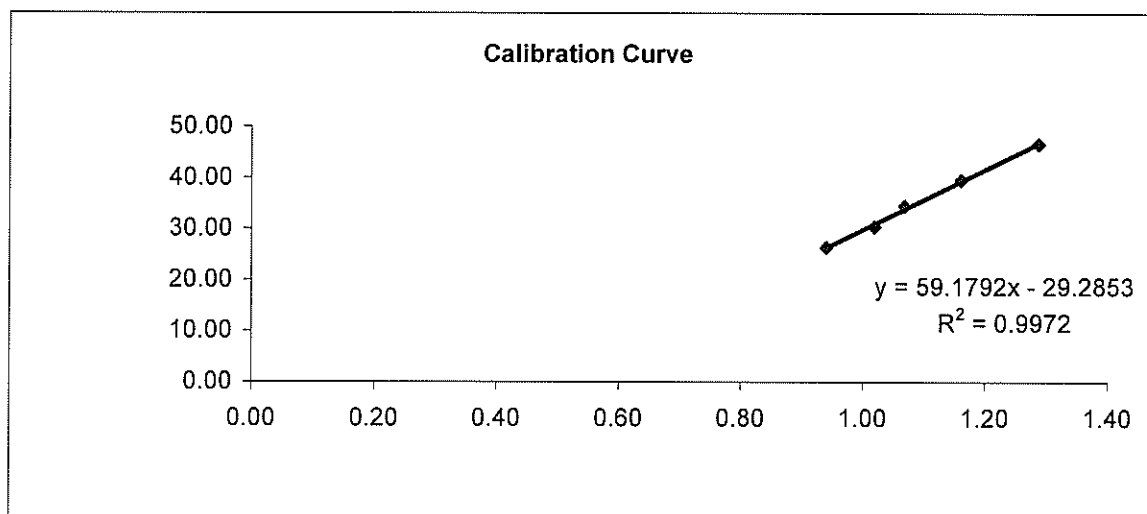
Approved by: 

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 _{std}	760 mm Hg
Sampler serial number	1282	T _{std}	298 K
Calibrator model	GMW-2535		
Calibrator serial number	1378		
Slope of the standard curve, m _s	2.00826		
Intercept of the standard curve, b _s	-0.01649		

Resistance Plate No.	Manometer Reading (inch H ₂ O)	Flow Recorder Reading (CFM)	Calculated Q _{std} (m ³ /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

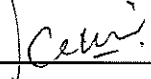


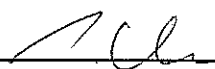
Linear Regression

Sampler slope (m) : **59.1792**
 Sampler intercept (b) : **-29.2853**
 Correlation coefficient (R²) : **0.9972**

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

Performed by: 

Checked by: 

Approved by: 

Date: 5/12/09

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 ± 1 °C
Relative humidity: 60 ± 10 %
Air pressure: 1000 ± 10 hPa

Test specifications

- 1, 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.
- 2, The calibrator was tested with its axis vertical facing downwards at the specific frequency using insert voltage technique.
- 3, 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

(Continuation Page)

Certificate No.: 09CA0523 02-02A

Page: 2 of 2

1, Measured Sound Pressure Level

The output Sound Pressure Level in the calibrator head was measured at the setting and frequency shown using a calibrated laboratory standard microphone and insert voltage technique. The results are given in below with the estimated uncertainties.

(Output level in dB re 20 μ Pa)

Frequency Shown Hz	Output Sound Pressure Level Setting dB	Measured Output Sound Pressure Level dB	Estimated Uncertainty dB
1000	94.00	93.83	0.1

2, Sound Pressure Level Stability - Short Term Fluctuations

The Short Term Fluctuations was determined by measuring the maximum and minimum of the fast weighted DC output of the B&K 2610 measuring amplifier over a 20 second time interval as required in the standard. The Short Term Fluctuation was found to be:

At 1000 Hz STF = 0.005 dB

Estimated uncertainty 0.005 dB

3, Actual Output Frequency

The determination of actual output frequency was made using a B&K 4180 microphone together with a B&K 2673 preamplifier connected to a B&K 2610 measuring amplifier. The AC output of the B&K 2610 was taken to an universal counter which was used to determine the frequency averaged over 20 second of operation as required by the standard. The actual output frequency at 1 KHz was:

At 1000 Hz Actual Frequency = 986.4 Hz

Estimated uncertainty 0.1 Hz Coverage factor k = 2.2

4, Total Noise and Distortion

For the Total Noise and Distortion measurement, the unfiltered AC output of the B&K 2610 measuring amplifier was connected to an Agilent Type 8903 B distortion analyser. The TND result at 1 KHz was:

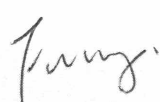
At 1000 Hz TND = 0.5%

Estimated uncertainty 0.7%

The uncertainties have been calculated in accordance with the ISO Publication "Guide to the expression of uncertainty in measurement", and gives an interval estimated to have a level of confidence of 95 %. A coverage factor of 2 is assumed unless explicitly stated.

- End -

Calibrated by: C.Y. Fung
Date: 23-May-2009

Checked by: 
Date: 05-Oct-2009

The standard(s) and equipment used in the calibration are traceable to national or international recognised standards and are calibrated on a schedule to maintain the required accuracy level.

CERTIFICATE OF CALIBRATION

Certificate No. : 2KS100208-7

Page 1 of 2

Calibration of :

Description :	Sound Level Meter	,	Microphone
Manufacture :	Brüel & Kjær		
Type No. :	2250	,	4950
Serial No. :	2701830		2678788

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

Reproduction of the complete certificate is allowed. Parts of the certificate may only be reproduced after written permission.

CERTIFICATE OF CALIBRATION

Certificate No. : 2KS100208-7
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 : *Du Rm*
 Date : 19 February, 2010

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

CERTIFICATE OF CALIBRATION**Certificate No. :** 2KS100208-13**Page** 1 **of** 2**Calibration of :**

Description :	Sound Level Meter	,	Microphone
Manufacture :	Brüel & Kjær		
Type No. :	2250	,	4950
Serial No. :	2701819		2678777

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 : 22 February, 2010
Calibrated By :

Certificate issued : 22 February, 2010
Approved signatory :

Dai Bin

Jacky Leung

Reproduction of the complete certificate is allowed. Parts of the certificate may only be reproduced after written permission.

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.

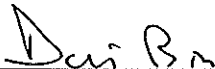
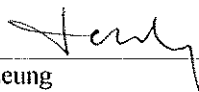
The measurements has been performed with the assistance of :
Brüel & Kjær's Sound Level Meter Calibration System B&K 9600 CAL2238A, Ver.25.10.1999
The standard(s) and instrument(s) used in the calibration are traceable to international standard and are calibrated on a schedule which is adjusted to maintain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

Reproduction of the complete certificate is allowed. Parts of the certificate may only be reproduced after written permission.

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

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

 Checked By : *Henry*
 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.

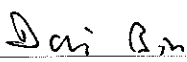
The measurements has been performed with the assistance of :
Brüel & Kjær's Sound Level Meter Calibration System B&K 9600 CAL2238A, Ver.25.10.1999
The standard(s) and instrument(s) used in the calibration are traceable to international standard and are calibrated on a schedule which is adjusted to maintain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

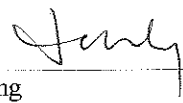
Test Result :

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

Reproduction of the complete certificate is allowed. Parts of the certificate may only be reproduced after written permission.

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 & 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 : *[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

Jacky Leung

Reproduction of the complete certificate is allowed. Parts of the certificate may only be reproduced after written permission.

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 : *Janly*

Date : 22 February, 2010



31

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

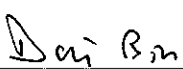
The standard(s) and instrument(s) used in the calibration are traceable to international standard and are calibrated on a schedule which is adjusted to maintain the required accuracy level.

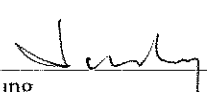
Test Result :

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

Reproduction of the complete certificate is allowed. Parts of the certificate may only be reproduced after written permission.

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 :

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	HKSC (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 : *Henry*
 Date : 22 February, 2010



29

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

Reproduction of the complete certificate is allowed. Parts of the certificate may only be reproduced after written permission.

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.

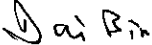
" - " Means the result of the (sub)test is Outside these tolerances.

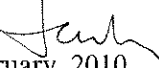
Test :	Subtest :	Status :
Noise	A	OK
Noise	C	OK
Noise	Lin	OK
Frequency Weighting	A	OK
Frequency Weighting	C	OK
Frequency Weighting	Lin	OK
Level Range Control	1000 Hz	OK
Linearity Range	SPL 10dB 4000 Hz	OK
Linearity Range	SPL 1dB 1000 Hz	OK
Linearity Range	Leq	OK
Linearity Range	SEL	OK
RMS Detector	CF 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

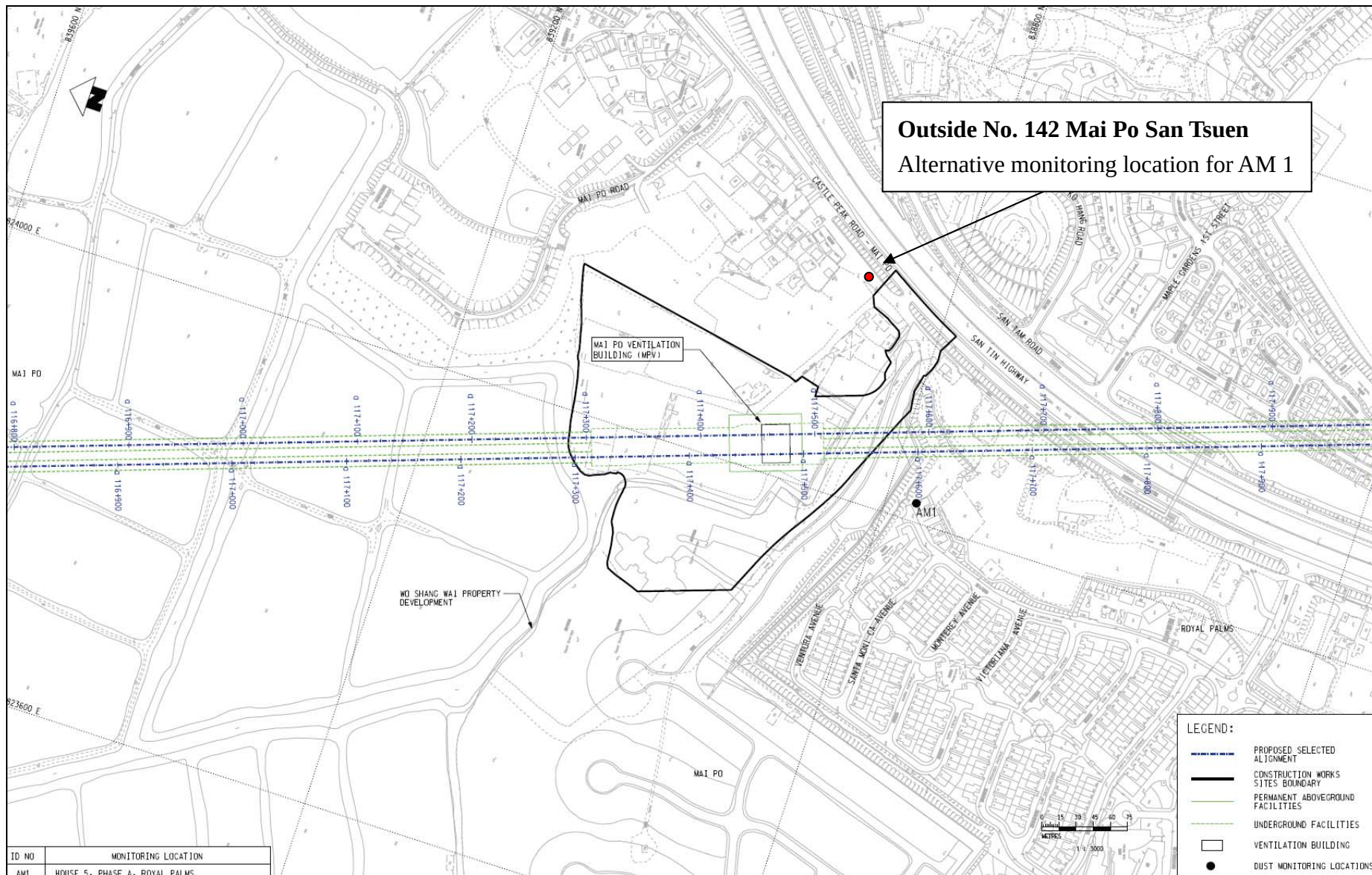
Description :	Make & Model :	Serial No. :	Last Cal. Date :	Traceable to:
Digital Multi-meter	Datron 1281	27361	30 Sept, 2009	HKSCS (HOKLAS)
Sine/Noise Generator	B&K 1049	1314978	Test	B&K Conformance
Test Waveform Generator	B&K 5918	1482949	Test	B&K Conformance
Acoustical Calibrator	B&K 4226	1551627	13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

 Calibrated By : 
 Date : 19 February, 2010

 Checked By : 
 Date : 22 February, 2010

Appendix F

Monitoring Locations



Outside No. 142 Mai Po San Tsuen
Alternative monitoring location for AM 1

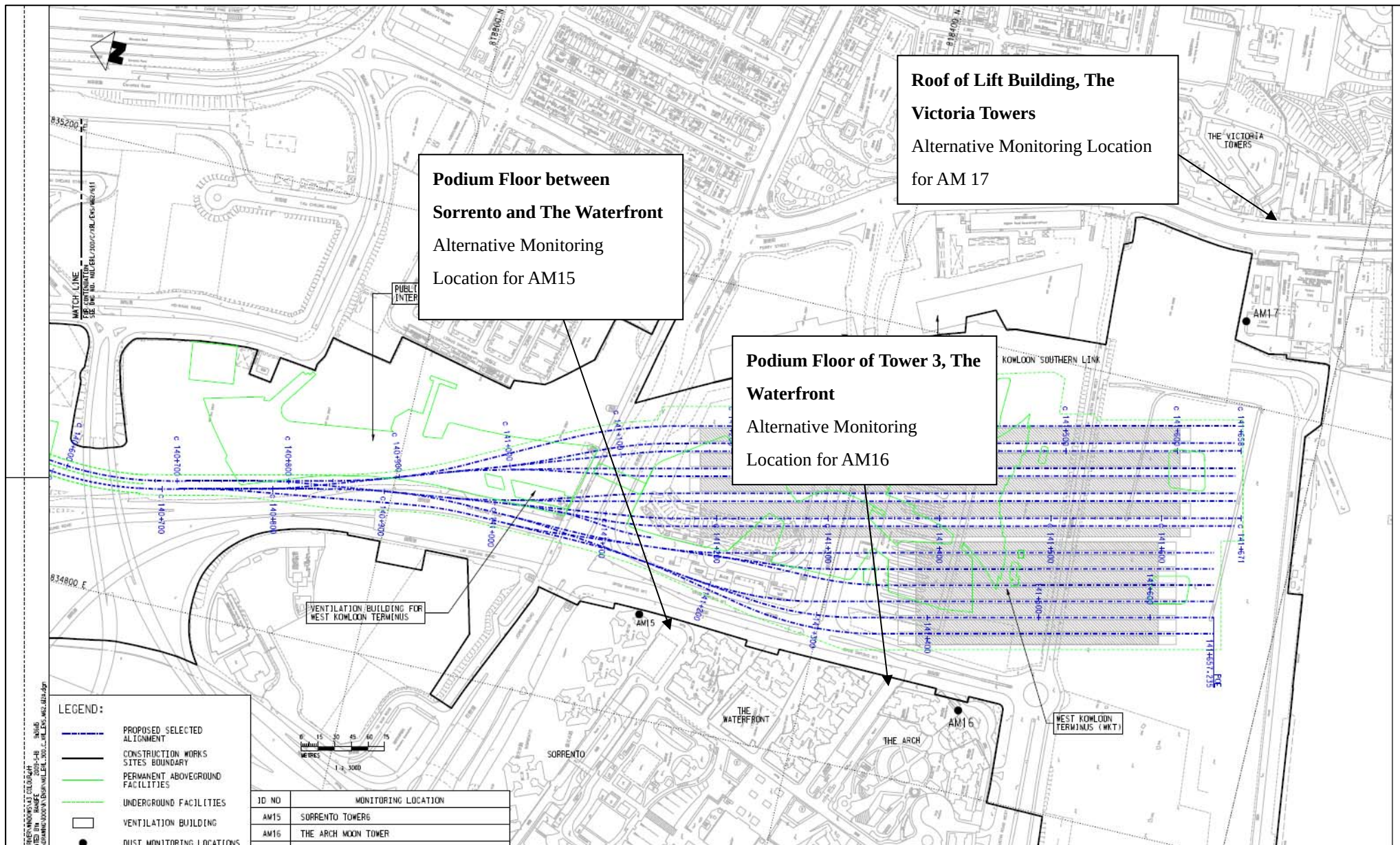
MAI PO VENTILATION
BUILDING (MEV)

WO SHANG WAI PROPERTY
DEVELOPMENT

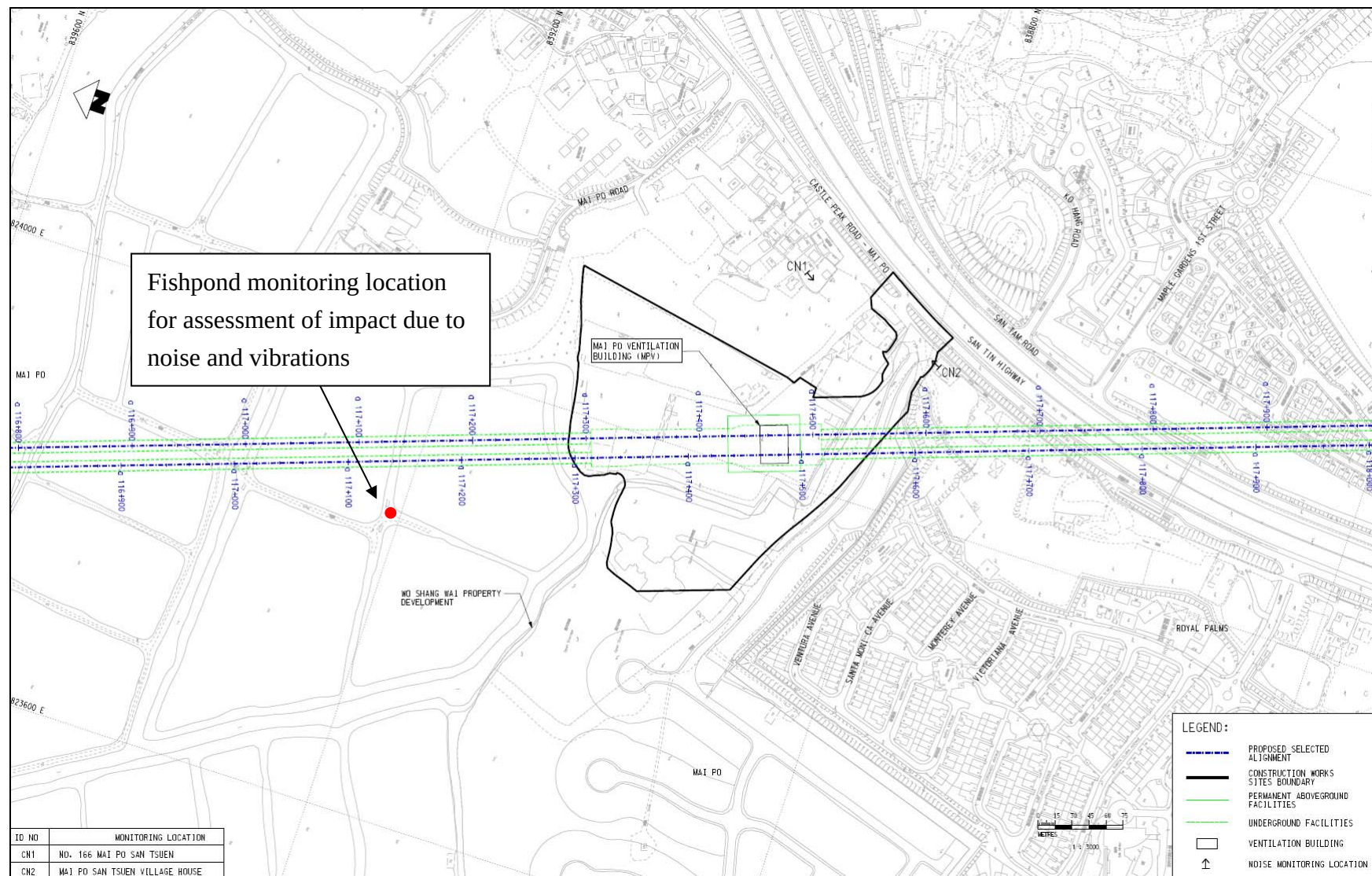
AM1

- LEGEND:**
- PROPOSED SELECTED ALIGNMENT
 - CONSTRUCTION WORKS SITES BOUNDARY
 - PERMANENT ABOVEGROUND FACILITIES
 - UNDERGROUND FACILITIES
 - VENTILATION BUILDING
 - DUST MONITORING LOCATIONS

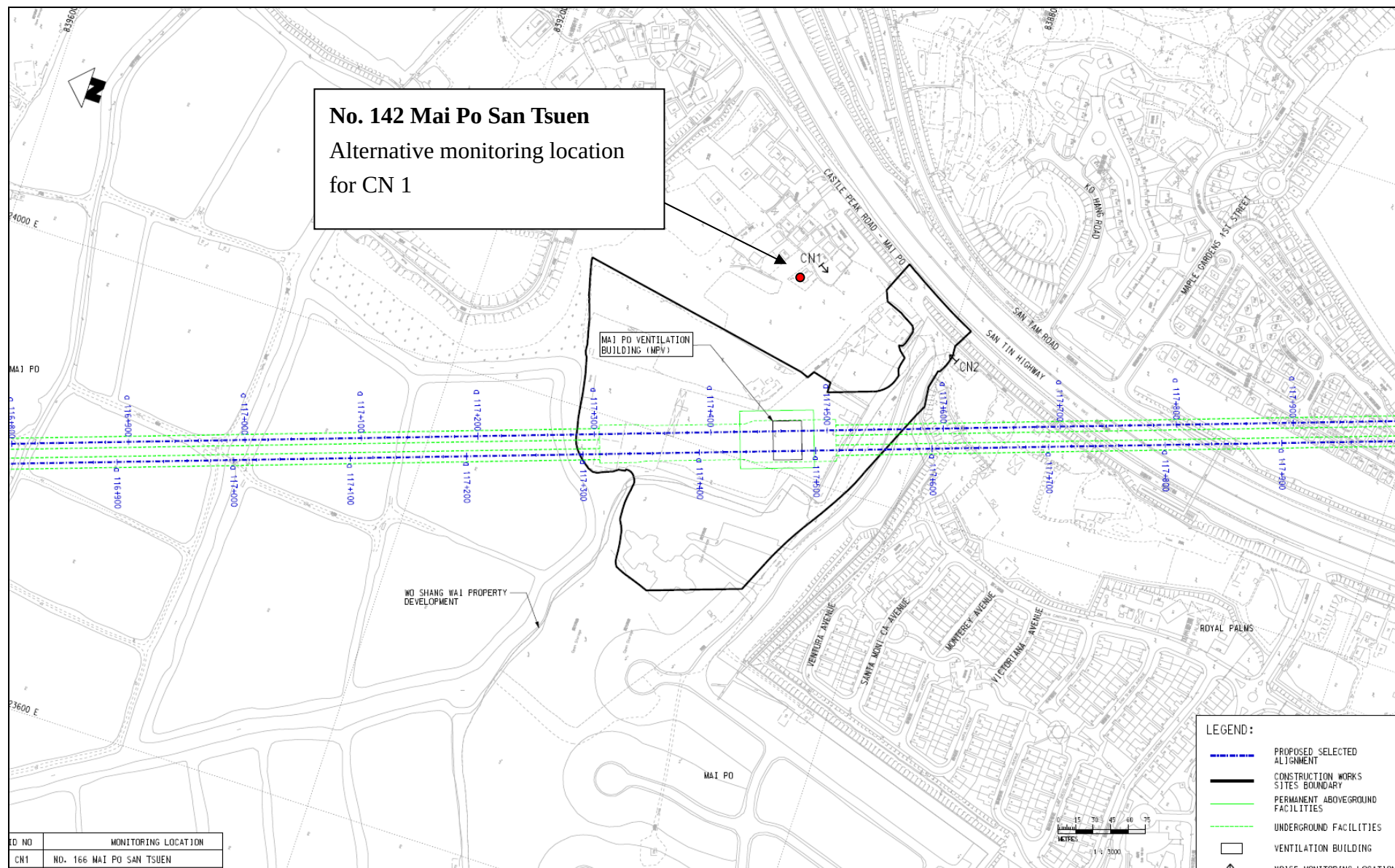
ID NO	MONITORING LOCATION
AM1	HOUSE 5, PHASE A, ROYAL PALMS

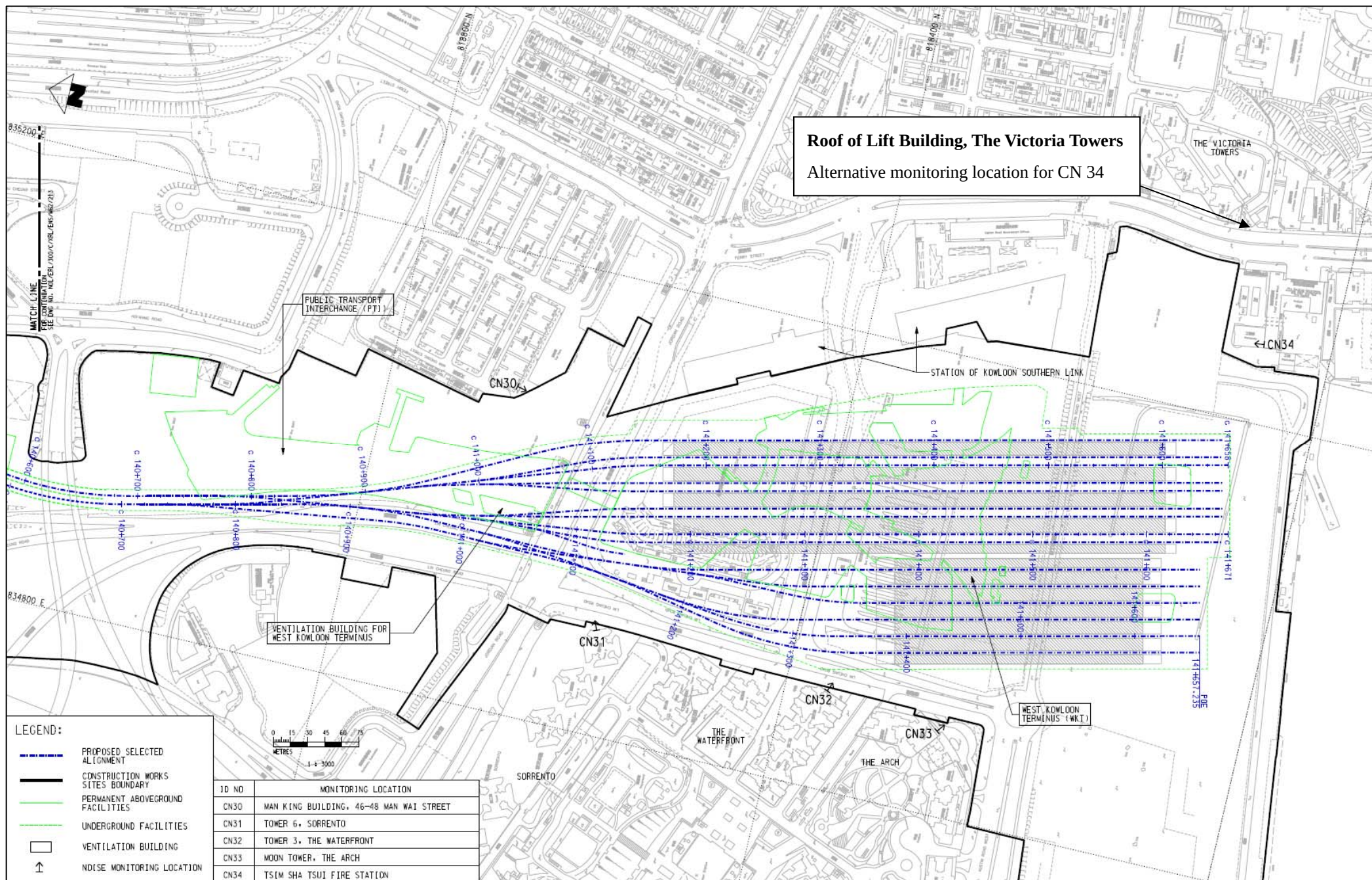


Dust monitoring locations



Fishpond monitoring location





Appendix G

Monitoring Schedule

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

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

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

Tentative Construction Dust (24-hr TSP) Impact Monitoring Schedule - May 2010Note 1: **TSP** denotes Total Suspended Particulate

May-2010						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1						1
2	3	4	5	6 AM1, AM9, AM10, AM15, AM16, AM17	7	8
9	10	11	12 AM1, AM9, AM10, AM15, AM16, AM17	13	14	15
16	17	18 AM1, AM9, AM10, AM15, AM16, AM17	19	20	21	22
23	24 AM1, AM9, AM10, AM15, AM16, AM17	25	26	27	28	29 AM1, AM9, AM10, AM15, AM16, AM17
30	31					

Ecological Monitoring Schedule - April 2010

Apr-2010						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1				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	

Tentative Ecological Monitoring Schedule - May 2010

May-2010						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1						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	31					

Monitoring Schedule in the 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			√				

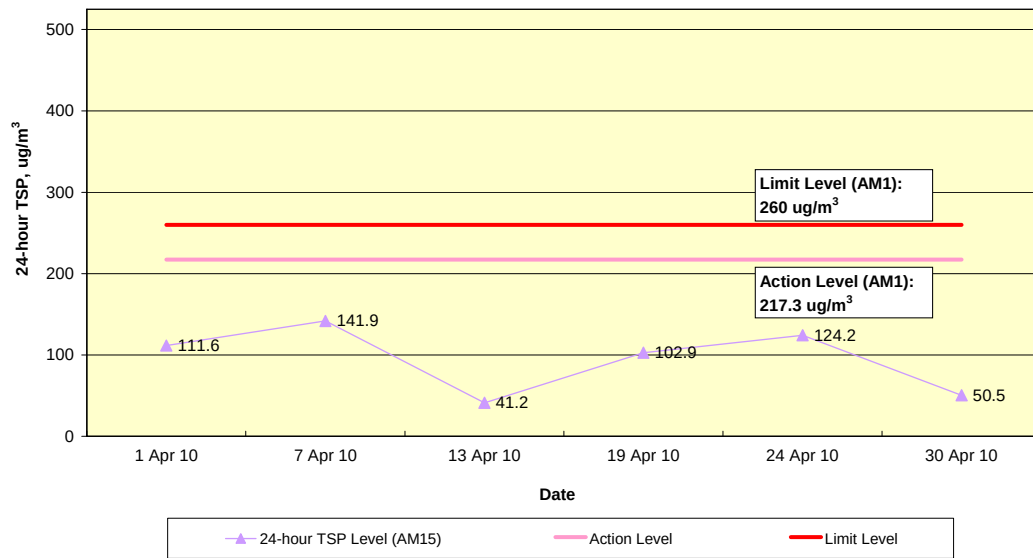
Tentative Monitoring Schedule in Coming Reporting Month (01 May 2010 - 31 May 2010)

[illegible]

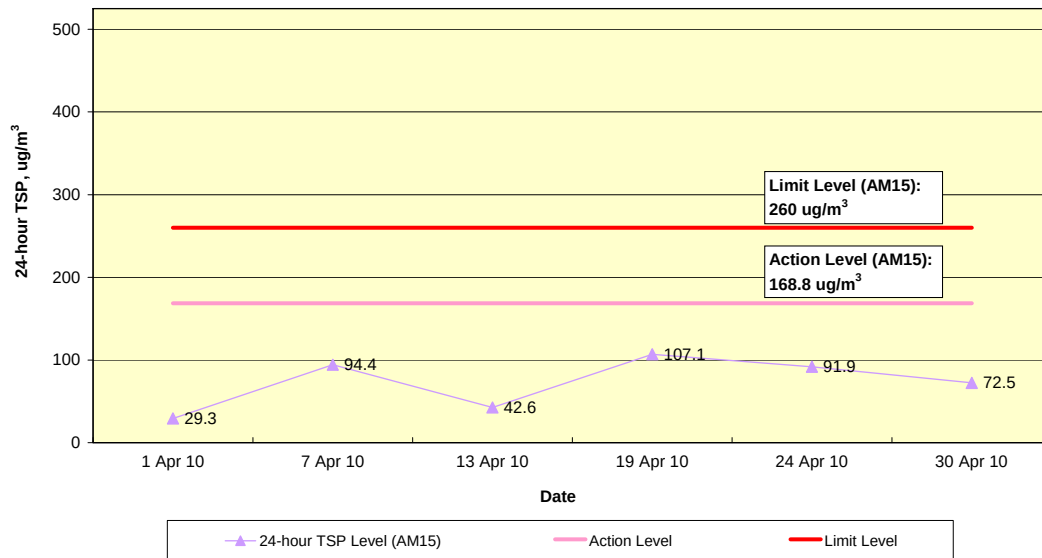
Appendix H

Graphical Plots of Monitoring Results

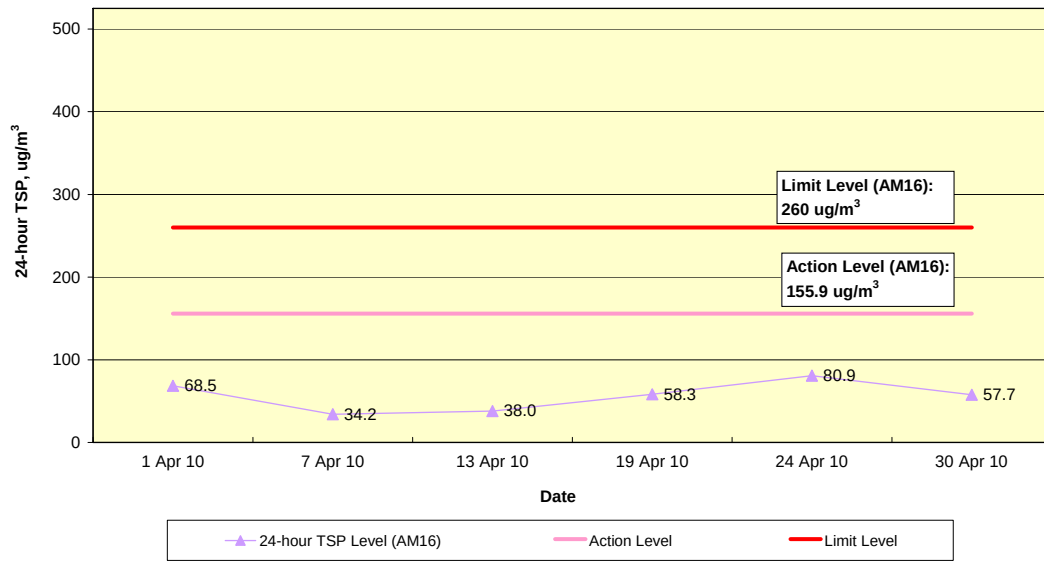
Construction Dust Impact Monitoring
Trend of 24-hour TSP Levels at AM1 (April 2010)



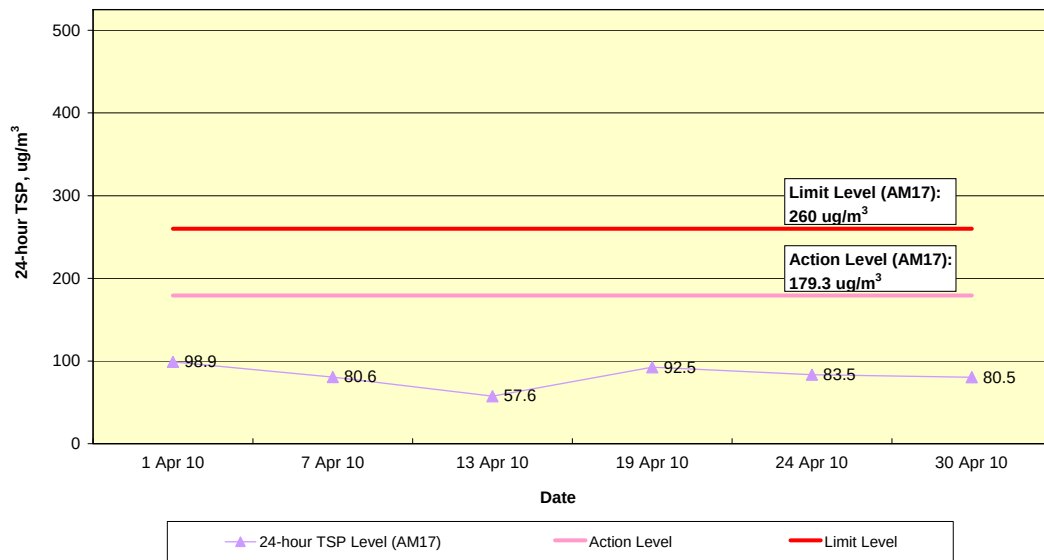
Construction Dust Impact Monitoring
Trend of 24-hour TSP Levels at AM15 (April 2010)

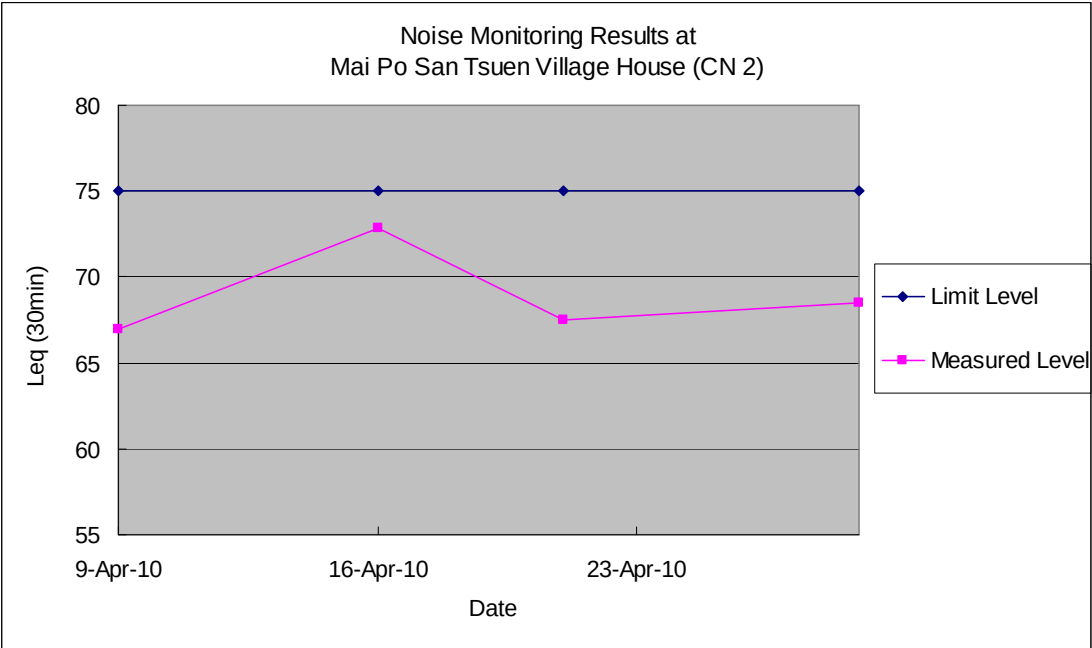
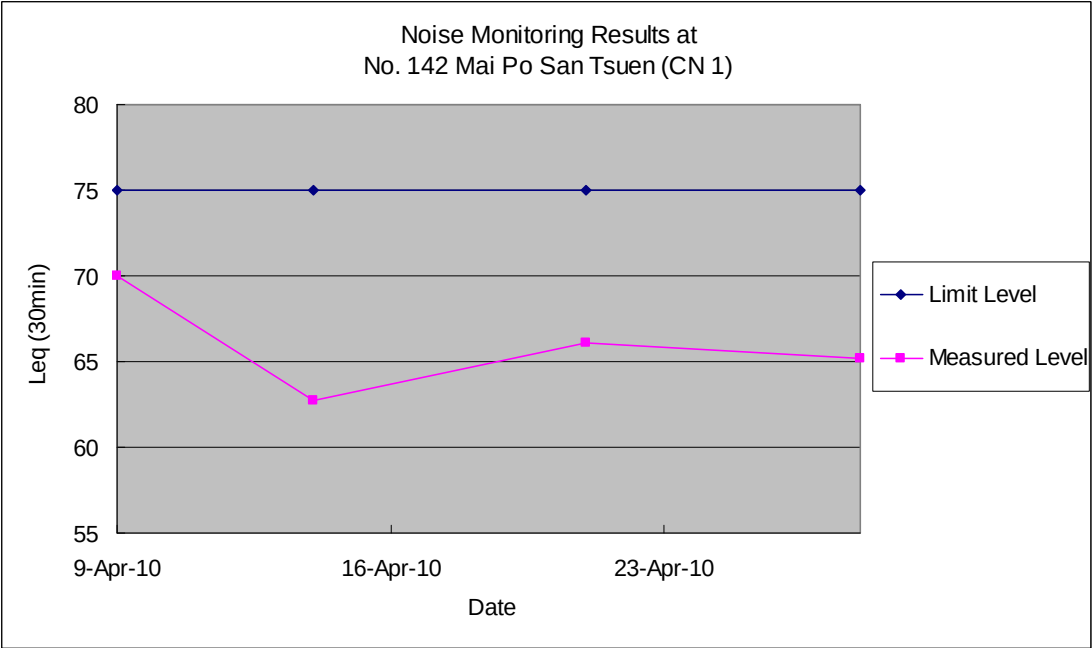


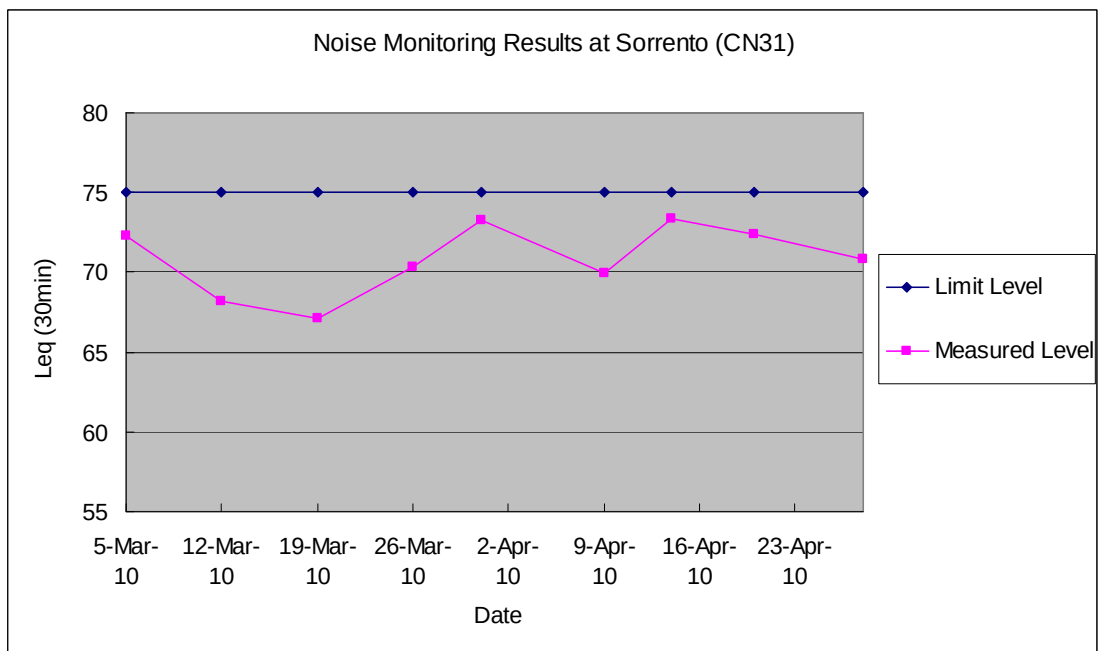
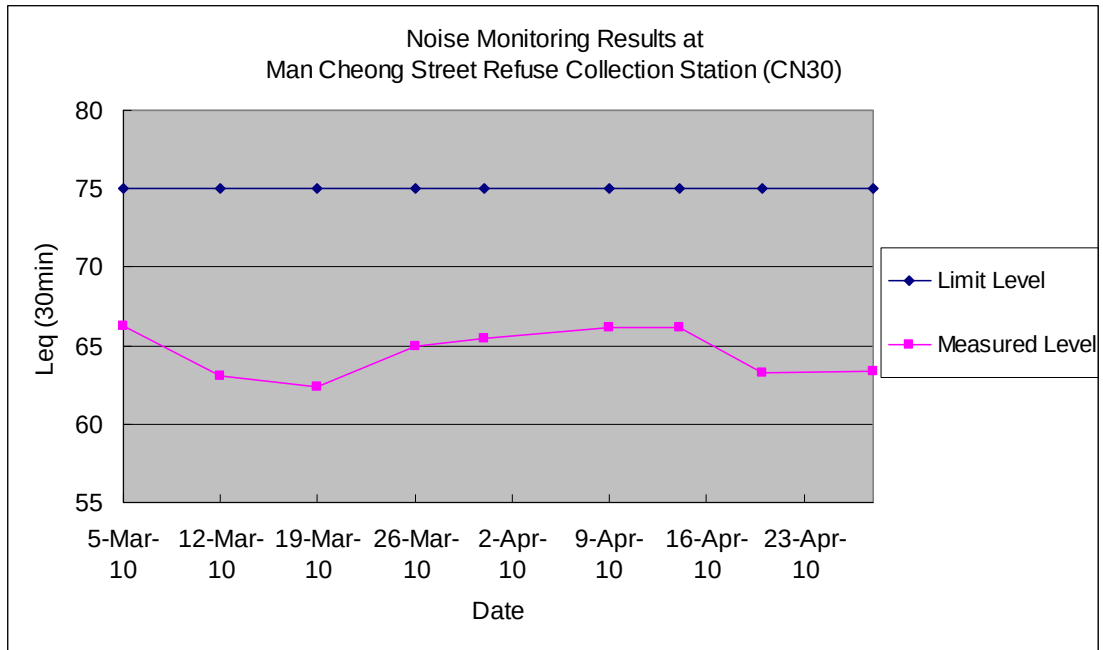
Construction Dust Impact Monitoring
Trend of 24-hour TSP Levels at AM16 (April 2010)

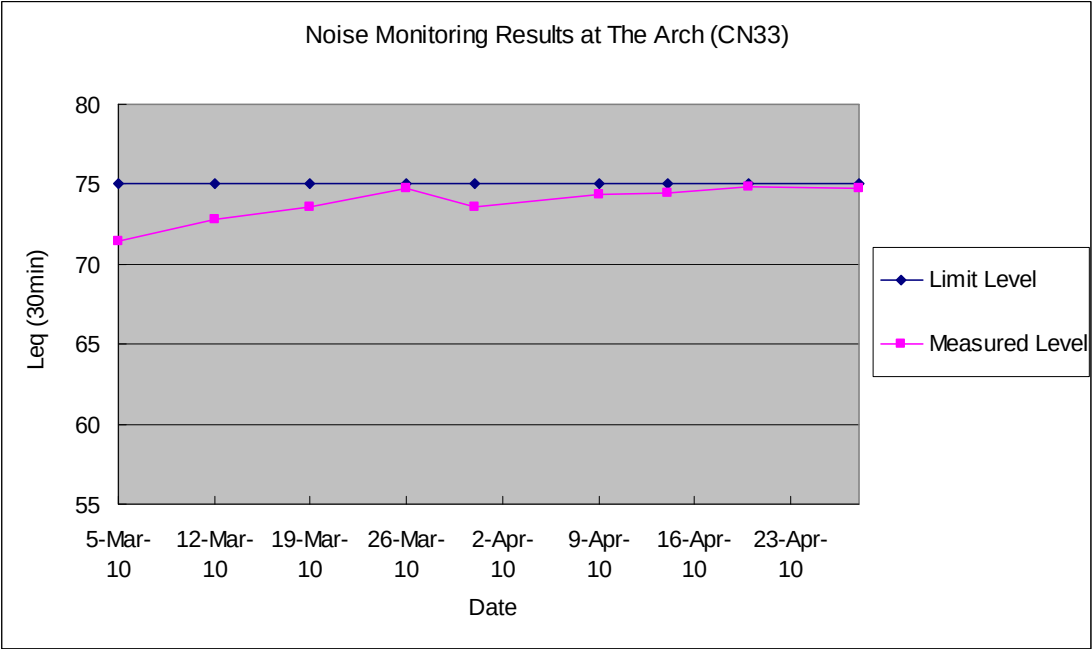
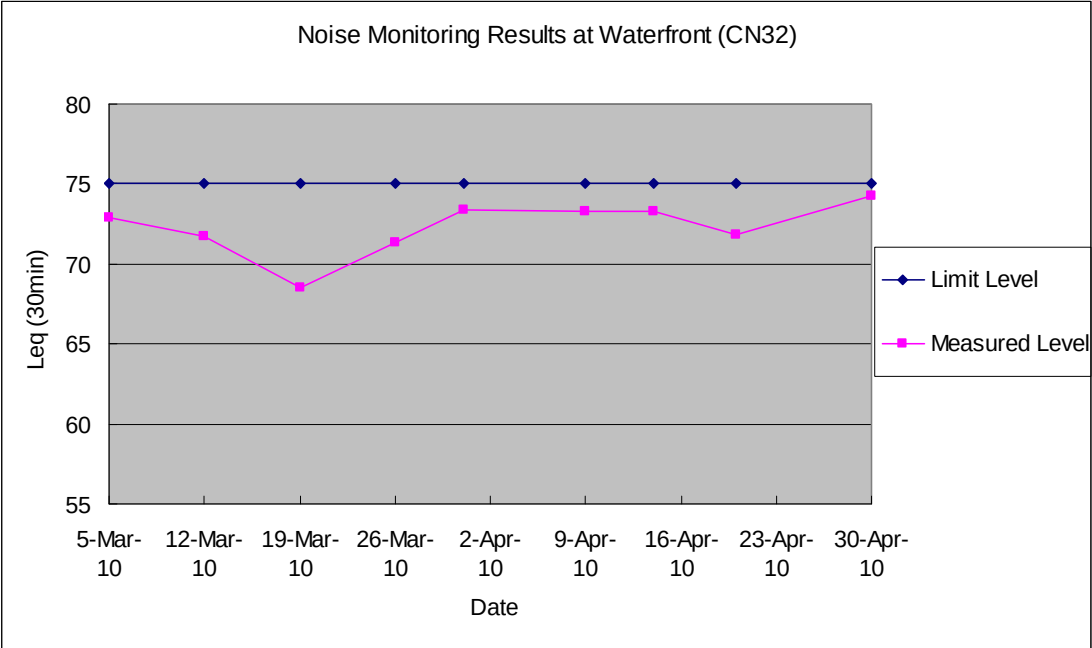


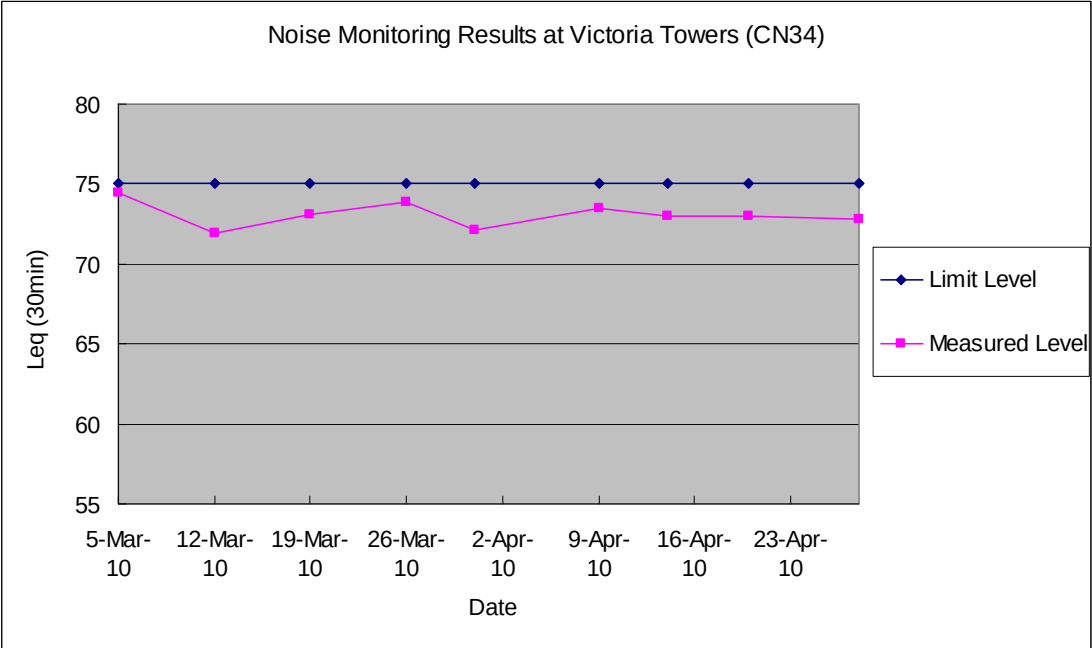
Construction Dust Impact Monitoring
Trend of 24-hour TSP Levels at AM17 (April 2010)











Appendix I

Bird Species and Abundance
Recorded during Avifauna Survey

Appendix I Bird Species and Abundance Recorded during Avifauna Monitoring in April 2010

Works Area: MPV
Survey Site: MPV-1
Survey Date: 20 April 2010

Common Name	Chinese Name	Principal Status	Point Count Location												Sub-total	Walk Transect
			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		
Little Grebe	小鵞鵒	P			1										1	
Great Egret	大白鷺	P						1	1				1		3	
Little Egret	小白鷺	P		1	9			1	6	3	4	7			31	v
Chinese Pond Heron	池鷺	P		2	1	1			1	2		1			8	v
Black-crowned Night Heron	夜鷺	P													0	v
Black Kite	黑鳶(麻鷹)	W, R													0	v
White-breasted Waterhen	白胸苦惡鳥	R							1						1	
Common Moorhen	黑水雞	R	1												1	
Black-winged Stilt	黑翅長腳鷸	W									2				2	
Oriental Pratincole	普通燕鴿	M					20		1						21	
Little Ringed Plover	金眶鷸(黑領鷸)	W, R			2						1				3	
Wood Sandpiper	林鷸	M, W						2			3			1	6	
Common Sandpiper	磯鷸	M, W			1	1	1	3	2	1	1	3			13	v
Red-necked Phalarope	紅頸瓣蹼鷸	M									2				2	
Long-toed Stint	長趾濱鷸	M					5				8				13	
Whiskered Tern	鬚浮鷸	M						4							4	v
Little Tern	白額燕鷸	M													0	v
Spotted Dove	珠頸斑鳩	R	4	2								2		1	9	v
Large Hawk Cuckoo	鷹鵂	Su													0	v
Common Koel	噪鵂	Su, R													0	v
Greater Coucal	褐翅鴉鵂	R													0	v
Barn Swallow	家燕	SpM, Su		4					3	30					37	v
Yellow Wagtail	黃鵪鶉	M, W			3	6	4	4	13	1	7	1		1	40	v
Grey Wagtail	灰鵪鶉	W							1						1	
White Wagtail	白鵪鶉	W, R									1	2			3	v
Red-whiskered Bulbul	紅耳鵯	R													0	v
Chinese Bulbul	白頭鵯	R								1					1	
Long-tailed Shrike	棕背伯勞	R													0	v
Oriental Magpie Robin	鵲鵯	R	1		1					1					3	
Masked Laughingthrush	黑臉噪鵯	R													0	v
Yellow-bellied Prinia	黃腹山鵪鶉	R													0	v
Plain Prinia	純色山鵪鶉	R			2						2				4	
Little Bunting	小鵪	W													0	v
Eurasian Tree Sparrow	麻雀	R	3							5					8	
Black-collared Starling	黑領椋鳥	R			1	1									2	v
Common Myna	家八哥	R						1							1	v
Crested Myna	八哥	R							2						2	v
Azure-winged Magpie	灰喜鵲	Very scarce												2	2	
No. of Birds at Each Point:			9	9	21	9	30	16	31	44	31	16	1	5		
No. of Birds Recorded from Point Count:			222													
No. of Species Recorded from Point Count:			27													
Total No. of Species:			38													
Total No. of Species of Conservation Interest:			9													

Note:
R=resident; W=winter visitor; Su=summer visitor; M=migrant; Sp=spring; P=present all year

Appendix J

Representative Photographs of the
Avifauna Monitoring

**Appendix J Representative Photographs taken during the Avifauna Monitoring in April 2010
MPV-1 (Fishponds at Mai Po)**



Plate 1 Pond Aeration at Point Count Location MPV-1/P10



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



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

Appendix J Representative Photographs taken during the Avifauna Monitoring in April 2010
MPV-1 (Fishponds at Mai Po)



Plate 4 Removal of Bund Weeds at Point Count Location
MPV-1/P6



Plate 5 Construction Activities at Point Count Location
MPV-1/P9 for Wo Shang Wai Development Project



Plate 6 Excavation Works at Point Count Location MPV-1/P9
for Wo Shang Wai Development Project

**Appendix J Representative Photographs taken during the Avifauna Monitoring in April 2010
MPV-1 (Fishponds at Mai Po)**



Plate 7 Black-winged Stilt at Point Count Location MPV-1/P9

Appendix K

Certified Arborist Inspection Record

MTR Express Rail Link, Contract 801

Monthly Audit Inspection Record APRIL 2010

Audit of tree works, including tree protection, pruning work, transplanting work, maintenance works in the temporary holding nursery, and compensation tree planting

Date	Contract	Activity Description	Purpose
23 April 2010	Contract 802 Parcel 40.2 (three portions), and adjacent footpaths along Sham Mong Road, at Nam Cheong Station	Inspection of retained trees and trees to be transplanted within the contract	Regular monthly audit of tree works
22 April 2010	Contract 803A Parcel 44.1, 44.3, 45.8, 45.10; Footpaths and central dividers of Lin Cheung Road, Austin Road West, and Canton Road	Inspection of retained trees and trees to be transplanted within the contract	Regular monthly audit of tree works
22 April 2010	Contract 803B Parcel 45.8	Inspection of trees to be transplanted within the contract	Regular monthly audit of tree works
22 April 2010	Contract 803C Parcels 45.1, 45.3, 45.6, 45.7	Inspection of trees to be transplanted within the contract	Regular monthly audit of tree works
22 April 2010	Contract 803D Parcel 46.2	Inspection of trees to be transplanted within the contract	Regular monthly audit of tree works
23 April 2010	Contract 805 Parcel 38.3 (alongside Sham Shui Po Government Primary School) and areas of footpath on Sham Mong Road; Parcels 38.6/38.7 (CLP Building); Parcel 41.4; and Footpath / central dividers at the junction of Sham Mong Rd and Hoi Fai Rd	Inspection of retained trees and trees to be transplanted within the contract	Regular monthly audit of tree works
27 April 2010	Contract 822 Parcel NT-6 (Pat Heung) (handover Dec 2010); Parcel NT-7 (Cheung Shan Estate Road, Tsuen Wan); Parcel NT-8 (Cheung Wing Road / Yau Ma Hom Road); Site Office - San Kwai Street, Kwai Hing; and Parcel NT-17 (6.6, 6.9) Siu Lam FW Service Reservoir	Inspection of retained trees and trees to be transplanted within the contract	Regular monthly audit of tree works
27 April 2010	Contract 825 NT1, NT-1a (Mai Po), NT3, Castle Peak Road - Mai Po; and CP-12 (hand over due June 2010)	Inspection of retained trees and trees to be transplanted within the contract	Regular monthly audit of tree works

Signed by:
Matthew PRYOR (RLA, CA)



Our ref KMY/PEJ/AFK/JOC/FY/T264090/22.01/L-0063
T 2828 5757
E anne.kerr@mottmac.com.hk
Your ref

MTR Corporation Ltd.,
8/F MTR Fo Tan Railway House,
No. 9, Lok King Street,
Fo Tan,
Shatin, N.T.

14 May 2010
By Post and email

Attn : Dr. Glenn Frommer

Dear Sir

Express Rail Link
Consultancy Agreement No. C806
Independent Environmental Checker (IEC)
Environmental Permit No.: EP-349/2009
Condition 2.43 – Submission of Monthly EM&A Report – April 2010

I refer to the captioned revised submission received on 13 May 2010. Pursuant to the EP Condition 2.43, I hereby verify the Monthly EM&A Report – April 2010 for the Project. We trusted that fish pond noise monitoring is to be carried out once access is available.

Yours faithfully,
for MOTT MACDONALD HONG KONG LIMITED



Dr. Anne Kerr
Independent Environmental Checker (IEC)

MTR Corporation Limited

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

Environmental Monitoring and Audit Report No. 2
(April 2010)

Certified by:

Glenn Frommer

Position:

Environmental Team Leader

Date:

13 MAY 2010

Our ref KMY/AFK/JOC/FY/bl/T264090/22.01/L-0062
T 2828 5757
E anne.kerr@mottmac.com.hk
Your ref

MTR Corporation Ltd.,
8/F MTR Fo Tan Railway House,
No. 9, Lok King Street,
Fo Tan,
Shatin, N.T.

12 May 2010
By Post and email

Attn : Dr. Glenn Frommer

Dear Sir

Express Rail Link
Consultancy Agreement No. C806
Independent Environmental Checker (IEC)
Environmental Permit No.: EP-349/2009
Condition 2.42 – Baseline Monitoring Report (Part 6) Revision 2

We refer to the Baseline Monitoring Report (Part 6) Revision 2 received on 6 May 2010 via email. Pursuant to Condition 2.42 of the Environmental Permit, I hereby verify the Baseline Monitoring Report Part 6 Revision 2.

Yours faithfully,
for MOTT MACDONALD HONG KONG LIMITED



Dr. Anne Kerr
Independent Environmental Checker (IEC)

Table of Contents

EXECUTIVE SUMMARY 1

1. INTRODUCTION.....2

2. AIR QUALITY.....3

3. AIRBORNE CONSTRUCTION NOISE.....7

4. CONCLUSION 11

APPENDIX A 12

APPENDIX B 17

APPENDIX C 44

APPENDIX D 45

EXECUTIVE SUMMARY

The environmental baseline monitoring for the Hong Kong Section of Guangzhou-Shenzhen-Hong Kong Express Rail Link, hereinafter referred to “the XRL” was conducted at 2 noise and 1 air quality monitoring locations in the vicinity of Works Area A (Figure 1). Noise measurements were taken in terms of Leq with L10 and L90 as reference. Air quality was measured in terms of 1-hour and 24-hour average Total Suspended Particulates (TSP).

According to the EM&A Manual, the original monitoring location for AM 1 is located at House 5, Phase A, Royal Palms. However, as no access was obtained for installation of dust monitoring equipment within Royal Palms, the monitoring location was relocated to Mai Po San Tsuen Village House. In response to concern expressed by local resident and having considered the availability of power source in the area, the monitoring location was further re-located to outside No. 142 Mai Po San Tsuen in order to minimize the nuisance to residents. Baseline dust monitoring for both 1-hour and 24-hour TSP level were conducted at outside No. 142 Mai Po San Tsuen from 4/3/2010 to 17/3/2010. The average 1-hour and 24-hour TSP level at No. 142 Mai Po San Tsuen are $103.4\mu\text{g}/\text{m}^3$ and $134.4\mu\text{g}/\text{m}^3$ respectively. The Action Level of 1-hour and 24-hour average TSP levels at the revised location are $317.2\mu\text{g}/\text{m}^3$ and $217.3\mu\text{g}/\text{m}^3$ respectively.

Given that no access was obtained from the house owner of the original monitoring location of CN 1 (No. 166 Mai Po San Tsuen), the monitoring location was relocated to the adjacent No. 142 Mai Po San Tsuen. Baseline noise monitoring was conducted between 15/1/2010 and 1/2/2010 at No. 142 Mai Po San Tsuen (CN 1) and between 15/1/2010 and 2/2/2010 at Mai Po San Tsuen Village House (CN 2). No noise monitoring was conducted on 21/1 (1900-2300 and 2300-0700), 22/1 to 24/1 and 25/1 (0700-1900) due to rainfall. Baseline noise monitoring was conducted during daytime (0700-1900 hours), evening time (1900-2300 hours) and night-time (2300-0700 hours) on all day during the above-mentioned period. In this report, the measured noise levels on weekdays were presented separately from general holidays and Sundays for easy of reference. It was noted from the monitoring results that ambient noise level for daytime at No. 142 Mai Po San Tsuen (CN 1), 67 dB(A), is comparable to Mai Po San Tsuen Village House (CN 2), 69 dB(A). The daytime baseline noise levels at all of the two locations were below the Limit Level for of 75 dB(A) for residential premises.

1. INTRODUCTION

1.1 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 Purpose of the report

In accordance with the Environmental Monitoring and Audit (EM&A) Manual, environmental baseline monitoring was carried out for dust and noise. This Baseline Monitoring Report (Part 6) contains baseline monitoring findings in the vicinity of Works Area A (Figure 1). The purpose of this report is to summarize the findings of this baseline monitoring and to establish the compliance levels for the subsequent environmental impact monitoring during construction stage.

2. AIR QUALITY

2.1 Monitoring Methodology

Monitoring was undertaken to establish baseline levels for both 1-hour and 24-hour Total Suspended Particulates (TSP) at AM 1 located in the vicinity of the works areas A. This provides data against which any environmental impacts due to construction activities can be compared.

During the construction period impact monitoring will only be conducted for 24-hour TSP, although 1-hour TSP monitoring may also be conducted and used in following up on complaints or exceedances, in order to provide a more rapid indication of the source of the problem at hand.

Baseline monitoring was conducted for both 1-hour and 24-hour TSP using a direct reading meter (MIE Data-RAM Portable Real Time Aerosol Monitor) and a high volume sampler (HVS) according to Part 50 Chapter 1 Appendix B, Title 40 of the Code of Federal Regulations of the USEPA.

2.2 Monitoring Frequency

Three separate 1-hour TSP measurements daily for a period of at least 14 days were made at the monitoring station to establish the ambient 1-hour TSP levels. For 24-hour TSP, monitoring was carried out continuously over a period of at least 14 days at the monitoring stations to establish the ambient 24-hour TSP levels. The monitoring frequency for baseline monitoring of 1-hour and 24-hour TSP is summarized in the table below:

Sampling Parameter	Frequency	Duration
1 hour TSP	• 3 times per day	Consecutive days of at least 2 weeks before commencement of construction works
Continuous 24-hour TSP	• Daily	

Table 2.1: Monitoring frequency for baseline monitoring of 1-hour and 24-hour TSP

2.3 Monitoring location

According to the EM&A Manual, the original monitoring location for AM 1 is located at House 5, Phase A, Royal Palms. However, as no access was obtained for installation of dust monitoring equipment within Royal Palms, the monitoring location was relocated to Mai Po San Tsuen Village House. In response to the concern expressed by local residents and having considered the availability of power source in the area, the monitoring location was further relocated to outside No. 142 Mai Po San Tsuen in order to minimize the nuisance caused to the nearby residents. Plan showing the original and alternative locations of AM 1 and photo of the alternative monitoring location at No. 142 Mai Po San Tsuen are shown in Figure 2 and Figure 4 respectively.

Baseline air quality monitoring was carried out at the period shown in Table 2.2 below to determine the ambient levels of both 1-hour and 24-hour TSP levels respectively at AM 1 in the vicinity of Works Area A. The locations of the works area and the respective ASRs are shown in Figures 1 and 2 respectively. The information of the ASRs where baseline air monitoring had been conducted is summarized in the table below:

Monitoring Station ID	Original Monitoring Location in EM&A Manual	Alternative Monitoring Location	Monitoring period
AM 1	House 5, Phase A, Royal Palms ¹	Outside No. 142 Mai Po San Tsuen ¹	4/3/2010 - 17/3/2010 (1-hr and 24-hr);

¹ Given that no access was obtained from Royal Palms, the monitoring location was relocated to Mai Po San Tsuen Village House. In response to the concern expressed by local residents and having considered the availability of power source in the area, the monitoring location was further relocated to outside No. 142 Mai Po San Tsuen in order to minimize the nuisance caused to the nearby residents.

Table 2.2: Information of Air Sensitive Receiver where dust monitoring was conducted

2.4 Calibration requirements

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 C. Calibration of the MIE by certified laboratory or manufacturer was carried out every two years and properly documented. Calibration certificate is attached in Appendix C.

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.

2.5 Monitoring Procedures

1-Hour TSP Levels Monitoring

TSP is sampled by drawing air into the MIE where particulate concentrations are measured instantaneously with an in-built detector sensing light scattered by the particles in the sampled air (optical sensing stage). Continuous TSP levels are indicated on the MIE along with a 'Time Weighted Average' value.

24-Hour TSP Levels Monitoring

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.

2.6 Monitoring Results

During the monitoring period, the weather was mostly fine with occasional rainy days. The major source of dust in the vicinity was observed to originate mainly from the traffic on nearby access road.

Monitoring results of 1-hour and 24-hour TSP are summarised in Table 2.3 and 2.4. All monitoring data of 1-hour and 24-hour are shown in Appendix A.

Monitoring Location	Average TSP Concentration, $\mu\text{g}/\text{m}^3$ (Range)
Outside No. 142 Mai Po San Tsuen (AM 1)	103.4 (70.3-155.7)

Table 2.3: Summary of baseline 1-hour TSP level

Monitoring Location	Average TSP Concentration, $\mu\text{g}/\text{m}^3$ (Range)
Outside No. 142 Mai Po San Tsuen (AM 1)	134.4 (24.7-294.0)

Table 2.4: Summary of baseline 24-hour TSP level

2.7 Action and Limit Levels

In accordance with the EM&A Manual, the baseline TSP levels form the basis for derivation of the Action Levels for subsequent impact monitoring, which is summarised in the table below:

Parameter	Action Level ⁽¹⁾	Limit Level
TSP (24 hour average)	• $\text{BL} \leq 200\mu\text{g m}^{-3}$, $\text{AL} = (\text{BL} * 1.3 + \text{LL})/2$ • $\text{BL} > 200\mu\text{g m}^{-3}$, $\text{AL} = \text{LL}$	$260 \mu\text{g m}^{-3}$
TSP (1 hour average)	• $\text{BL} \leq 384\mu\text{g m}^{-3}$, $\text{AL} = (\text{BL} * 1.3 + \text{LL})/2$ • $\text{BL} > 384\mu\text{g m}^{-3}$, $\text{AL} = \text{LL}$	$500 \mu\text{g m}^{-3}$

(1) BL = Baseline level, AL = Action level, LL = Limit Level.

Table 2.5: Basis for establishing the Action and Limit Levels for Air Quality

In accordance with Table 2.3 and 2.4 regarding results from baseline monitoring, the Action Level for air quality impact monitoring are calculated and presented below:

Location	Parameter	Action Level	Limit Level
Outside No. 142 Mai Po San Tsuen (AM 1)	TSP (24-hour average)	$217 \mu\text{g m}^{-3}$	$260 \mu\text{g m}^{-3}$
	TSP (1-hour average)	$317 \mu\text{g m}^{-3}$	$500 \mu\text{g m}^{-3}$

Table 2.6: Action and Limit Levels for Air Quality Impact Monitoring

3. AIRBORNE CONSTRUCTION NOISE

3.1 Monitoring Methodology

Consecutive noise measurements were undertaken over a period of at least 14 days to establish the ambient noise levels at representative nearest sensitive receivers. Continuous 5 minute A-weighted noise levels were recorded throughout the daytime, evening and night-time on weekdays (Monday to Saturday) and also on Sundays.

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, Rion NL-31 sound level meters, which complies with the above-mentioned specifications, were used.

There should not be any construction activities in the vicinity of the monitoring stations during the baseline monitoring. Any non-project related construction activities in the vicinity of the monitoring stations during the baseline monitoring should be noted and the source and location of such activities should be recorded.

3.2 Monitoring Frequency

The baseline monitoring was measured daily for a continuous period of at least 14 consecutive days at a minimum logging interval of 30 minutes for daytime (between 0700 and 1900 hours of normal weekdays) and 15 minutes (as three consecutive Leq, (5 minutes) readings) for evening time (between 1900 and 2300 hours of normal weekdays), general holidays including Sundays (between 0700 and 2300 hours) and night-time (between 2300 and 0700 of all days). The Leq, L10 and L90 were recorded at the specified interval.

3.3 Monitoring location

Baseline noise monitoring was carried out during 15/1/2010 to 2/2/2010 at Noise Sensitive Receivers (NSRs) located in the vicinity of Works Area A. According to the EM&A Manual, the original monitoring location of CN 1 is located at No. 166 Mai Po San Tsuen. However, as no access was obtained from the house owner, the

monitoring location was relocated to the adjacent No. 142 Mai Po San Tsuen. Plan showing the original and alternative locations of CN 1 and photo of the alternative monitoring location are shown in Figure 3 and Figure 5 respectively. Monitoring was carried out at the following stations in accordance with the EM&A Manual:

Monitoring Station ID	Noise Monitoring Location	Monitoring period
CN 1	No. 142 Mai Po San Tsuen (Alternative monitoring location to the original monitoring location at No. 166 Mai Po San Tsuen)	15/1/2010-1/2/2010 ¹
CN 2	Mai Po San Tsuen Village House	15/1/2010-2/2/2010 ^{1,2}

¹ No noise monitoring was conducted on 21/1 (1900-2300 and 2300-0700), 22/1 to 24/1 and 25/1 (0700-1900) due to rainfall

² No noise monitoring was conducted on 25/1 (1900-0700) and 26/1(0700-1900) due to no power supply.

Table 3.1: Information of Noise Monitoring Stations

3.4 Calibration Requirements

Rion NL 31 sound level meters which complied with the International Electrotechnical Commission Publication 651:1979 (Type 1) and 804:1985 (Type 1), specification as referred to in the Technical Memoranda to the NCO were used for the baseline monitoring. The Rion sound level meters and Rion NC 73 calibrator are verified by the certified laboratory or manufacturer once every year 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 C.

Immediately prior to and following each noise measurement the accuracy of the sound level meter should be checked using an acoustic calibrator (Rion NC 73) 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.

3.5 Action and Limit Levels

The Action and Limit Levels defined in the EM&A Manual for airborne construction noise is presented below for reference.

Time Period	Action	Limit
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 3.2: Action and Limit Levels for Airborne Construction Noise

3.6 Monitoring Results

Baseline noise monitoring was conducted between 15/1/2010 and 1/2/2010 at No. 142 Mai Po San Tsuen (CN 1) and between 15/1/2010 and 2/2/2010 Mai Po San Tsuen Village House (CN 2). The weather condition was generally fine with occasional rainfall events during the monitoring period. Free field measurements were taken at CN 1 and CN2. A facade correction of +3dB(A) has been added to the results of CN 1 and CN 2 due to the free-field measurements at the noise monitoring stations. The major noise sources at respective monitoring locations are summarized at the table below:

Monitoring location ID	Monitoring location	Major noise source
CN 1*	No. 142 Mai Po San Tsuen	Traffic noise
CN 2*	Mai Po San Tsuen Village House	Traffic noise

* Free-field measurements were taken at this location.

Table 3.3: Major noise source at noise monitoring locations

Baseline noise monitoring results are summarised in Table 3.3 over the monitoring periods. All monitoring data are contained in Appendix B. Graphical presentations of the monitoring results are shown in Appendix B.

Period	Monitoring Station	L_{eq}(30min) – dB(A) (Range)	L₁₀(30min) – dB(A) (Range)	L₉₀(30min) – dB(A) (Range)
0700 – 1900 (Daytime, Normal weekday)	CN 1	67 (64-73)	69 (66-77)	65 (61-69)
	CN 2	69 (65-80)	71 (67-84)	65 (61-69)
Period	Monitoring Station	L_{eq}(5min) – dB(A) (Range)	L₁₀(5min) – dB(A) (Range)	L₉₀(5min) – dB(A) (Range)
0700 – 2300 (General Holiday including Sunday)	CN 1	65 (62-69)	67 (64-70)	62 (58-65)
	CN 2	65 (62-73)	67 (65-77)	61 (58-64)
1900 – 2300 (Evening, Normal weekday)	CN 1	66 (62-70)	68 (64-72)	63 (59-67)
	CN 2	66 (63-79)	68 (65-75)	62 (58-68)
2300 – 0700 (Night-time, all days)	CN 1	64 (57-70)	67 (60-72)	60 (51-67)
	CN 2	62 (55-80)	64 (58-77)	57 (43-65)

Table 3.4: Baseline noise monitoring results

As revealed from the monitoring results, baseline noise levels for daytime (0700-1900) during normal weekdays at the CN1 and CN2 range from 64-73 dB(A) and 65-80 dB(A) respectively. It was noted from the monitoring results that ambient noise level for daytime at No. 142 Mai Po San Tsuen (CN 1 , 67 dB(A)) is comparable to that measured at Mai Po San Tsuen Village House (CN 2, 69 dB(A)). The daytime baseline noise levels at all of the two locations were below the Limit Level for of 75 dB(A) for residential premises.

4. CONCLUSION

4.1 Air

1-hour TSP

Baseline 1-hour TSP monitoring was conducted at AM 1 (Outside No. 142 Mai Po San Tsuen) between the period 4/3/2010 and 17/3/2010. The weather condition was mostly fine with occasional rainy days. From site observation, it was noted that the major source of TSP was originated mainly from traffic on nearby access road.

Baseline 1-hour TSP monitoring at AM 1 was found in the range of 70.3 to 155.7 $\mu\text{g}/\text{m}^3$. The average 1-hour TSP level at AM 1 was recorded to be 103.4 $\mu\text{g}/\text{m}^3$.

24-hour TSP

Baseline 24-hour TSP monitoring was conducted at AM 1 (Outside No. 142 Mai Po San Tsuen) between the period 4/3/2010 and 17/3/2010. Baseline 24-hour TSP monitoring at AM 1 was found in the range of 24.7 to 294.0 $\mu\text{g}/\text{m}^3$. The average 24-hour TSP level was recorded to be 134.4 $\mu\text{g}/\text{m}^3$.

The Action Levels at the monitoring locations were derived based on the baseline monitoring results. The Action Level of 1-hour and 24-hour average TSP levels at AM 1 was 317.2 $\mu\text{g}/\text{m}^3$ and 217.3 $\mu\text{g}/\text{m}^3$ respectively.

4.2 Airborne Construction Noise

Baseline noise monitoring were carried at all two monitoring stations from 15/1/2009 to 2/2/2010. The weather during the baseline monitoring period was generally fine with occasional rainfall events.

As revealed from the monitoring results, baseline noise levels for daytime (0700-1900) during normal weekdays at the CN1 and CN2 range from 64-73 dB(A) and 65-80 dB(A) respectively. It was noted from the monitoring results that ambient noise level for daytime at No. 142 Mai Po San Tsuen (CN 1 , 67 dB(A)) is comparable to that measured at Mai Po San Tsuen Village House (CN 2, 69 dB(A)). The daytime baseline noise levels at all of the two locations were below the Limit Level for of 75 dB(A) for residential premises.

Appendix A

Baseline air quality (1-hr and 24-hr TSP) monitoring data

Details of 1-hour TSP Level monitoring at AM 1 (Outside No. 142 Mai Po San Tsuen)

Month	Date	Set No.	Time periods		Weather condition	Site condition	Temp. (°C)	Pressure (mmHg)	1-hour TSP Level (µg/m ³)	Remarks
			Start	Finish						
Mar-10	04-Mar-10	1	15:01	16:01	Cloudy	Normal	25.0	758.0	75.3	
Mar-10	04-Mar-10	2	16:01	17:01	Cloudy	Normal	25.0	758.0	78.3	
Mar-10	04-Mar-10	3	17:01	18:01	Cloudy	Normal	25.0	758.0	75.8	
Mar-10	05-Mar-10	1	15:32	16:32	Cloudy	Normal	26.0	758.0	114.4	
Mar-10	05-Mar-10	2	16:32	17:32	Cloudy	Normal	26.0	758.0	140.3	
Mar-10	05-Mar-10	3	17:32	18:32	Cloudy	Normal	26.0	758.0	111.8	
Mar-10	06-Mar-10	1	14:28	15:28	Rainy	Normal	26.0	759.0	72.6	
Mar-10	06-Mar-10	2	15:28	16:28	Rainy	Normal	26.0	759.0	70.3	
Mar-10	06-Mar-10	3	16:28	17:28	Rainy	Normal	26.0	759.0	77.0	
Mar-10	07-Mar-10	1	14:28	15:28	Cloudy	Normal	19.0	762.0	94.7	
Mar-10	07-Mar-10	2	15:28	16:28	Cloudy	Normal	19.0	762.0	104.0	
Mar-10	07-Mar-10	3	16:28	17:28	Cloudy	Normal	19.0	762.0	103.9	
Mar-10	08-Mar-10	1	14:30	15:30	Fine	Normal	17.0	763.0	142.8	
Mar-10	08-Mar-10	2	15:30	16:30	Fine	Normal	17.0	763.0	144.3	
Mar-10	08-Mar-10	3	16:30	17:30	Fine	Normal	17.0	763.0	141.8	
Mar-10	09-Mar-10	1	14:19	15:19	Fine	Normal	11.0	769.0	130.0	
Mar-10	09-Mar-10	2	15:19	16:19	Fine	Normal	11.0	769.0	127.8	

Month	Date	Set No.	Time periods		Weather condition	Site condition	Temp. (°C)	Pressure (mmHg)	1-hour TSP Level (µg/m ³)	Remarks
			Start	Finish						
Mar-10	09-Mar-10	3	16:19	17:19	Fine	Normal	11.0	769.0	119.8	
Mar-10	10-Mar-10	1	14:31	15:31	Fine	Normal	12.0	771.0	101.5	
Mar-10	10-Mar-10	2	15:31	16:31	Fine	Normal	12.0	771.0	84.7	
Mar-10	10-Mar-10	3	16:31	17:31	Fine	Normal	12.0	771.0	80.8	
Mar-10	11-Mar-10	1	10:11	11:11	Fine	Normal	15.0	768.0	96.4	
Mar-10	11-Mar-10	2	11:11	12:11	Fine	Normal	15.0	768.0	83.6	
Mar-10	11-Mar-10	3	12:11	13:11	Fine	Normal	15.0	768.0	72.2	
Mar-10	12-Mar-10	1	8:23	9:23	Cloudy	Normal	17.0	765.0	79.0	
Mar-10	12-Mar-10	2	9:23	10:23	Cloudy	Normal	17.0	765.0	91.0	
Mar-10	12-Mar-10	3	10:23	11:23	Cloudy	Normal	17.0	765.0	93.8	
Mar-10	13-Mar-10	1	9:09	10:09	Fine	Normal	19.0	762.0	82.9	
Mar-10	13-Mar-10	2	10:09	11:09	Fine	Normal	19.0	762.0	81.1	
Mar-10	13-Mar-10	3	11:09	12:09	Fine	Normal	19.0	762.0	79.8	
Mar-10	14-Mar-10	1	8:35	9:35	Fine	Normal	20.0	761.0	108.0	
Mar-10	14-Mar-10	2	9:35	10:35	Fine	Normal	20.0	761.0	102.9	
Mar-10	14-Mar-10	3	10:35	11:35	Fine	Normal	20.0	761.0	101.5	
Mar-10	15-Mar-10	1	9:02	10:02	Fine	Normal	20.0	761.0	144.8	
Mar-10	15-Mar-10	2	10:02	11:02	Fine	Normal	20.0	761.0	95.4	
Mar-10	15-Mar-10	3	11:02	12:02	Fine	Normal	20.0	761.0	93.2	

Month	Date	Set No.	Time periods		Weather condition	Site condition	Temp. (°C)	Pressure (mmHg)	1-hour TSP Level (µg/m ³)	Remarks
			Start	Finish						
Mar-10	16-Mar-10	1	9:02	10:02	Fine	Normal	19.0	768.0	125.0	
Mar-10	16-Mar-10	2	10:02	11:02	Fine	Normal	19.0	768.0	109.9	
Mar-10	16-Mar-10	3	11:02	12:02	Fine	Normal	19.0	768.0	103.3	
Mar-10	17-Mar-10	1	8:59	9:59	Fine	Normal	19.0	767.0	124.4	
Mar-10	17-Mar-10	2	9:59	10:59	Fine	Normal	19.0	767.0	129.1	
Mar-10	17-Mar-10	3	10:59	11:59	Fine	Normal	19.0	767.0	155.7	
								Average	103.4	
								Action		
								Level	317.2	
								Limit		
								Level	500.0	
								Max	155.7	
								Min	70.3	

Details of 24-hour TSP Level monitoring at AM 1 (Outside No. 142 Mai Po San Tsuen)

Filter No.	Date	Time periods		Weather condition	Site condition	Filter Weight (g)		TSP weight (g)	Flow Rate (m³/min)		Average Flow Rate (m³/min)	Elapse Time		Sampling Time (mins.)	Total vol. (m³)	24-hour TSP Level (ug/m³)
		Start	Finish			Initial	Final		Initial	Final		Start	Finish			
100886	04-Mar-10	14:50	14:50	Cloudy	Normal Operation	2.8310	3.0799	0.2489	1.2553	1.2532	1.2543	9187.12	9211.12	1440.00	1806.12	137.8
100893	05-Mar-10	14:58	14:58	Cloudy	Normal Operation	2.8192	2.8952	0.0760	1.1945	1.1953	1.1949	9211.12	9235.12	1440.00	1720.66	44.2
100907	06-Mar-10	15:02	15:02	Rainy	Normal Operation	2.7610	2.9061	0.1451	1.1660	1.1529	1.1595	9235.12	9259.12	1440.00	1669.61	86.9
100698	07-Mar-10	15:06	15:06	Cloudy	Normal Operation	2.8184	2.9091	0.0907	1.2124	1.2175	1.2150	9259.12	9283.12	1440.00	1749.53	51.8
100884	08-Mar-10	15:09	15:09	Fine	Normal Operation	2.8525	2.8950	0.0425	1.1578	1.2357	1.1968	9283.12	9307.12	1440.00	1723.32	24.7
100925	09-Mar-10	15:13	15:13	Fine	Normal Operation	2.7560	3.0246	0.2686	1.2357	1.2351	1.2354	9307.12	9331.12	1440.00	1778.98	151.0
100911	10-Mar-10	15:15	15:15	Fine	Normal Operation	2.8830	3.1981	0.3151	1.2351	1.1959	1.2155	9331.12	9355.12	1440.00	1750.32	180.0
100894	11-Mar-10	15:18	15:18	Fine	Normal Operation	2.8331	3.1867	0.3536	1.1959	1.1893	1.1926	9355.12	9379.12	1440.00	1717.34	205.9
100879	12-Mar-10	15:22	15:22	Cloudy	Normal Operation	2.8400	3.3547	0.5147	1.2192	1.2124	1.2158	9379.12	9403.12	1440.00	1750.75	294.0
100919	13-Mar-10	15:28	15:28	Fine	Normal Operation	2.8337	3.0416	0.2079	1.2124	1.2688	1.2406	9403.12	9427.12	1440.00	1786.46	116.4
100895	14-Mar-10	15:31	15:31	Fine	Normal Operation	2.8447	2.9470	0.1023	1.2095	1.2095	1.2095	9427.12	9451.12	1440.00	1741.68	58.7
100897	15-Mar-10	15:38	15:38	Fine	Normal Operation	2.8597	3.1052	0.2455	1.1798	1.1576	1.1687	9451.12	9475.12	1440.00	1682.93	145.9
100922	16-Mar-10	15:42	15:42	Fine	Normal Operation	2.8430	3.1316	0.2886	1.2173	1.1568	1.1871	9475.12	9499.12	1440.00	1709.35	168.8
100913	17-Mar-10	15:46	15:46	Fine	Normal Operation	2.8702	3.2505	0.3803	1.2165	1.2403	1.2284	9499.12	9523.12	1440.00	1768.90	215.0
															Average	134.4
															Action Level	217.3
															Limit Level	260.0
															Max	294.0
															Min	24.7

Appendix B

Baseline noise monitoring data

Baseline Noise Monitoring Result

Location: CN 1 No. 142 Mai Po San Tsuen

Baseline monitoring period: 15/1/2010-1/2/2010

Parameter: Leq

Time Slot Averaged Baselines

1) Weekdays Daytime Noise Level, dB(A)

Time slot	Leq, 30 min	L10	L90
07:00-07:30	66.9	68.8	64.0
07:30-08:00	67.6	69.4	64.9
08:00-08:30	68.2	69.9	65.5
08:30-09:00	67.9	69.6	65.5
09:00-09:30	67.1	68.8	64.6
09:30-10:00	67.1	68.9	64.6
10:00-10:30	67.6	69.2	65.1
10:30-11:00	67.3	69.0	64.8
11:00-11:30	67.3	69.0	64.8
11:30-12:00	67.0	68.7	64.5
12:00-12:30	66.1	67.9	63.4
12:30-13:00	66.2	68.0	63.4
13:00-13:30	66.5	68.4	63.9
13:30-14:00	66.8	68.5	64.3
14:00-14:30	67.0	68.8	64.4
14:30-15:00	67.5	69.9	64.3
15:00-15:30	67.2	69.5	64.1
15:30-16:00	67.1	69.0	64.3
16:00-16:30	67.5	69.2	64.8
16:30-17:00	67.5	69.1	64.8
17:00-17:30	67.2	68.8	64.8
17:30-18:00	66.8	68.4	64.4
18:00-18:30	67.0	68.7	64.6
18:30-19:00	66.6	68.4	64.1
Average	67.2	68.9	64.5

Noise Control Period Averaged Baselines

2) Weekdays Evening Noise Level, dB(A)

Time Slot	Leq, 5min	L10	L90
19:00-19:15	66.0	67.8	63.4
	65.6	67.4	63.1
	65.6	67.4	62.9
19:15-19:30	66.1	68.1	63.0
	65.6	67.5	62.9
	65.6	67.5	63.0
19:30-19:45	65.8	67.7	63.0
	65.7	67.8	62.9
	65.5	67.4	62.7
19:45-20:00	65.4	67.5	62.6
	66.0	67.9	63.0
	66.8	68.7	63.9
20:00-20:15	66.7	68.6	63.7
	66.8	68.6	63.7
	66.7	68.6	63.7
20:15-20:30	66.9	68.9	63.6
	67.0	68.8	63.8
	66.9	68.8	63.5
20:30-20:45	66.8	68.8	63.5
	66.7	68.6	63.5
	66.9	68.8	63.7
20:45-21:00	67.1	68.9	64.0
	66.5	68.5	63.4
	65.1	67.1	62.0
21:00-21:15	64.8	67.0	61.5
	64.7	66.8	61.7
	64.6	66.7	61.5
21:15-21:30	64.5	66.7	61.3
	64.4	66.5	61.4
	64.7	67.0	61.6
21:30-21:45	64.6	66.7	61.4
	64.3	66.3	61.2

Time Slot	Leq, 5min	L10	L90
	64.6	66.5	61.6
21:45-22:00	64.5	66.5	61.6
	65.0	67.1	62.0
	66.2	68.2	63.0
22:00-22:15	66.3	68.4	63.0
	65.9	67.8	62.7
	66.2	68.3	62.8
22:15-22:30	66.0	68.0	62.7
	66.3	68.4	62.6
	65.8	67.9	62.6
22:30-22:45	66.0	68.1	62.5
	65.7	67.7	62.3
	65.8	67.8	62.4
22:45-23:00	65.7	67.8	62.4
	65.4	67.6	61.8
	64.6	66.9	61.3
Average	65.8	67.8	62.7

3) General Holidays (including Sundays) (0700-2300) Noise Level, dB(A)

Time Slot	Leq, 5min	L10	L90
0700-07:15	64.6	66.7	60.6
	63.9	65.9	60.0
	63.4	65.4	60.3
07:15-07:30	64.0	66.4	60.2
	64.7	67.3	60.9
	65.1	67.4	61.4
07:30-07:45	64.7	66.9	61.5
	63.8	66.1	60.7
	64.6	66.5	61.2
07:45-08:00	67.6	67.3	62.3
	65.5	67.0	61.6
	65.7	67.8	62.1
08:00-08:15	65.2	67.2	62.0
	65.4	67.5	62.2

Time Slot	Leq, 5min	L10	L90
	64.7	66.7	61.7
08:15-08:30	65.2	67.1	62.5
	65.3	67.3	62.2
	65.5	67.5	62.4
08:30-08:45	65.4	67.4	61.6
	65.3	67.4	62.2
	66.3	68.8	61.5
08:45-09:00	65.2	66.9	62.8
	65.7	67.6	62.6
	65.2	67.0	61.9
09:00-09:15	64.2	66.2	60.7
	63.9	66.2	60.5
	64.1	66.1	60.8
09:15-09:30	64.0	65.8	61.1
	64.3	66.5	60.7
	63.9	65.9	61.1
09:30-09:45	64.1	66.2	60.7
	63.7	65.8	60.6
	64.6	66.7	61.5
09:45-10:00	64.5	66.8	60.8
	64.9	67.0	61.3
	65.2	67.1	62.3
10:00-10:15	66.4	68.1	62.6
	64.8	66.5	62.2
	65.0	66.8	62.1
10:15-10:30	65.8	67.1	62.7
	65.1	67.0	61.9
	65.2	67.0	62.6
10:30-10:45	65.3	66.9	62.2
	64.8	66.6	62.1
	65.5	67.5	62.5
10:45-11:00	64.9	66.7	61.6
	64.3	66.2	61.6
	65.0	66.8	62.4
11:00-11:15	65.0	66.8	62.2
	64.8	66.9	61.6

Time Slot	Leq, 5min	L10	L90
	64.5	66.3	61.7
11:15-11:30	64.8	66.8	62.4
	65.3	67.0	62.4
	65.8	67.5	63.4
11:30-11:45	65.4	67.3	62.9
	65.5	67.6	62.3
	65.1	67.2	61.8
11:45-12:00	64.5	66.4	61.1
	64.5	66.7	61.3
	64.1	66.1	60.3
12:00-12:15	64.1	66.3	61.0
	63.6	65.5	60.6
	63.7	65.6	60.7
12:15-12:30	64.4	66.4	61.7
	64.2	66.1	61.7
	64.8	66.5	61.9
12:30-12:45	65.7	67.2	61.8
	64.2	66.1	61.6
	64.0	65.9	61.1
12:45-13:00	64.6	66.9	60.8
	64.3	66.1	61.6
	64.5	66.5	61.8
13:00-13:15	64.3	66.3	61.6
	64.2	66.1	61.2
	64.3	66.1	61.5
13:15-13:30	64.4	66.2	61.9
	64.5	66.5	61.7
	64.5	66.4	61.7
13:30-13:45	64.7	66.7	61.8
	64.6	66.4	62.2
	64.9	66.8	62.3
13:45-14:00	64.2	66.0	61.8
	64.6	66.5	61.9
	65.4	67.0	63.1
14:00-14:15	65.6	67.5	62.2
	65.1	66.9	62.4

Time Slot	Leq, 5min	L10	L90
	64.9	66.7	62.5
14:15-14:30	64.5	66.3	62.1
	65.4	67.3	62.7
	65.0	66.8	62.4
14:30-14:45	64.9	66.9	62.2
	64.6	66.5	61.8
	65.2	66.8	62.5
14:45-15:00	64.8	66.8	62.4
	64.3	66.3	61.1
	64.1	66.4	60.9
15:00-15:15	64.7	66.5	62.2
	63.9	65.9	61.0
	64.4	66.3	61.8
15:15-15:30	64.1	65.8	61.7
	64.3	66.2	61.5
	64.4	66.4	61.6
15:30-15:45	64.3	66.1	61.4
	64.0	65.8	61.5
	63.7	65.7	60.5
15:45-16:00	64.6	66.6	61.0
	63.8	65.6	61.3
	64.4	66.2	61.9
16:00-16:15	64.6	66.5	61.5
	64.7	66.4	62.2
	64.8	66.6	62.4
16:15-16:30	65.4	67.2	62.4
	65.3	67.2	62.3
	65.8	67.9	62.4
16:30-16:45	65.6	67.6	62.4
	64.6	66.5	61.9
	64.9	66.7	61.9
16:45-17:00	65.2	67.0	62.7
	65.3	67.0	62.6
	65.8	67.3	62.6
17:00-17:15	65.1	66.7	62.6
	64.8	66.4	62.2

Time Slot	Leq, 5min	L10	L90
	65.2	66.8	62.6
17:15-17:30	65.3	67.1	62.9
	65.7	66.7	62.3
	66.3	67.5	63.0
17:30-17:45	64.9	66.6	62.4
	65.5	67.2	63.1
	64.7	66.4	62.5
17:45-18:00	64.9	66.4	62.8
	65.0	66.7	62.8
	65.4	67.4	62.3
18:00-18:15	65.5	67.2	63.1
	65.7	67.5	63.1
	65.7	67.3	62.7
18:15-18:30	64.9	66.6	62.3
	65.3	67.0	62.8
	66.2	67.9	63.6
18:30-18:45	65.9	67.9	62.9
	65.4	67.2	62.8
	66.1	67.9	63.3
18:45-19:00	66.2	67.8	63.6
	65.6	67.4	62.9
	63.8	65.6	61.4
19:00-19:15	64.2	66.0	61.7
	64.4	66.2	61.5
	63.9	65.7	60.5
19:15-19:30	63.8	65.9	60.8
	64.1	65.9	61.2
	64.0	65.8	61.5
19:30-19:45	64.3	66.3	61.5
	63.7	65.8	60.8
	64.2	66.3	61.2
19:45-20:00	63.6	65.7	60.4
	63.9	65.9	60.9
	65.4	67.2	62.6
20:00-20:15	65.9	67.6	63.1
	65.2	67.0	62.4

Time Slot	Leq, 5min	L10	L90
	65.7	67.3	63.4
20:15-20:30	65.9	67.9	62.4
	65.7	67.6	62.8
	65.5	67.4	62.7
20:30-20:45	65.7	67.6	62.9
	65.5	67.5	62.2
	65.8	67.8	62.7
20:45-21:00	65.6	67.4	62.2
	65.0	67.0	62.1
	64.4	66.2	61.7
21:00-21:15	63.7	65.6	60.9
	63.4	65.6	60.2
	63.4	65.5	60.5
21:15-21:30	63.7	65.7	61.0
	64.0	66.0	61.2
	63.6	65.5	60.8
21:30-21:45	64.1	66.0	61.3
	65.2	66.4	61.0
	64.7	66.8	60.7
21:45-22:00	64.7	66.6	61.8
	64.5	66.6	61.0
	65.8	67.5	63.0
22:00-22:15	65.5	67.2	62.9
	66.0	67.8	63.4
	65.7	67.4	62.8
22:15-22:30	65.2	67.3	62.2
	65.4	67.4	62.1
	66.2	68.1	63.5
22:30-22:45	66.5	68.4	62.6
	65.2	67.1	61.8
	65.0	67.0	61.9
22:45-23:00	65.6	67.6	61.8
	65.2	67.6	61.4
	63.7	65.8	60.7
Average	64.9	66.8	61.9

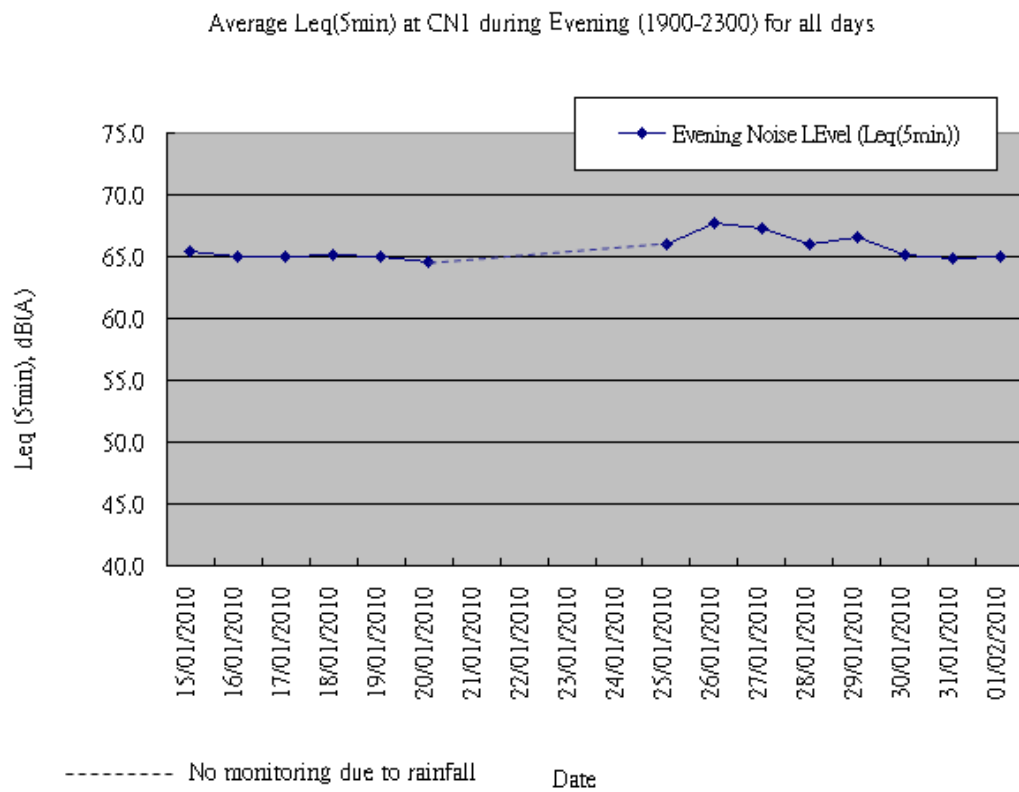
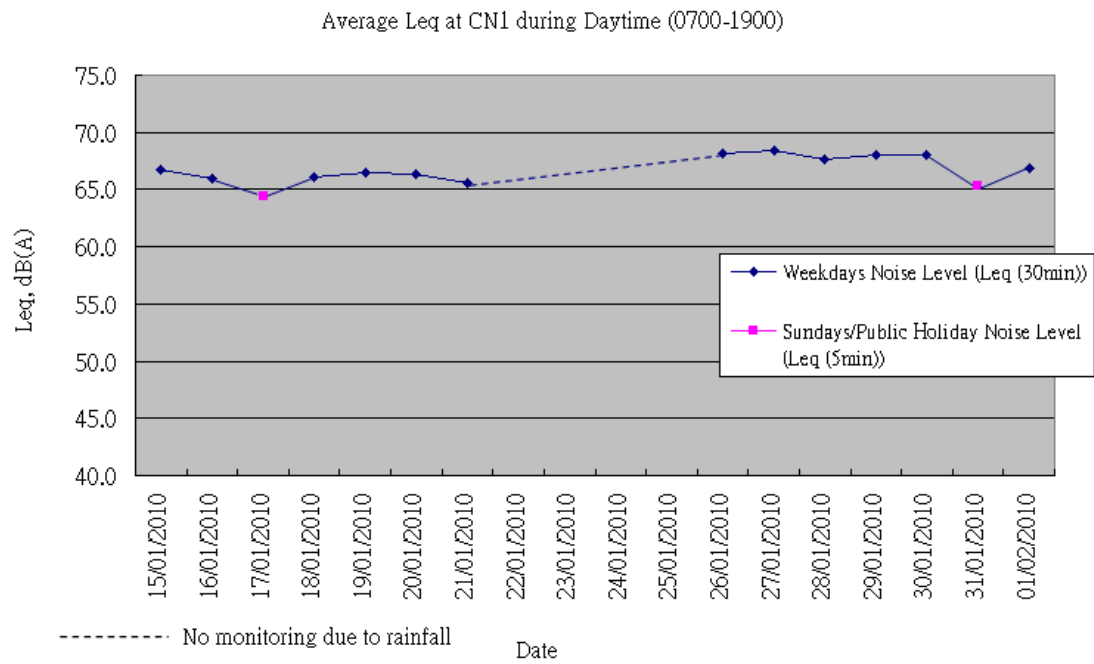
4) Night-time (for all days) Noise Level, dB(A)

Time Slot	Leq, 5min	L10	L90
23:00-23:15	64.1	66.2	61.1
	64.9	67.2	61.4
	64.6	67.0	61.1
23:15-23:30	64.9	67.1	61.3
	64.8	67.2	61.2
	64.0	66.2	60.7
23:30-23:45	64.1	66.3	61.0
	64.2	66.4	60.7
	63.5	65.5	60.5
23:45-00:00	64.6	66.7	61.1
	64.3	66.5	60.9
	65.2	67.5	61.3
00:00-00:15	65.5	67.8	61.7
	65.1	67.3	61.3
	65.5	67.6	61.7
00:15-00:30	65.6	67.7	61.6
	65.6	67.8	61.7
	65.4	67.6	61.1
00:30-00:45	65.1	67.4	61.1
	65.1	67.2	61.4
	65.3	67.5	61.2
00:45:01:00	64.7	67.0	60.7
	64.7	67.0	60.0
	64.7	67.0	60.3
01:00-01:15	64.9	67.2	60.7
	65.1	67.4	60.9
	64.8	67.3	60.0
01:15-01:30	64.7	67.2	60.1
	64.5	66.9	60.1
	64.3	66.8	59.5
01:30-01:45	64.6	67.1	59.8
	64.6	67.2	59.6
	65.0	67.3	60.4
01:45-02:00	64.3	66.9	59.1

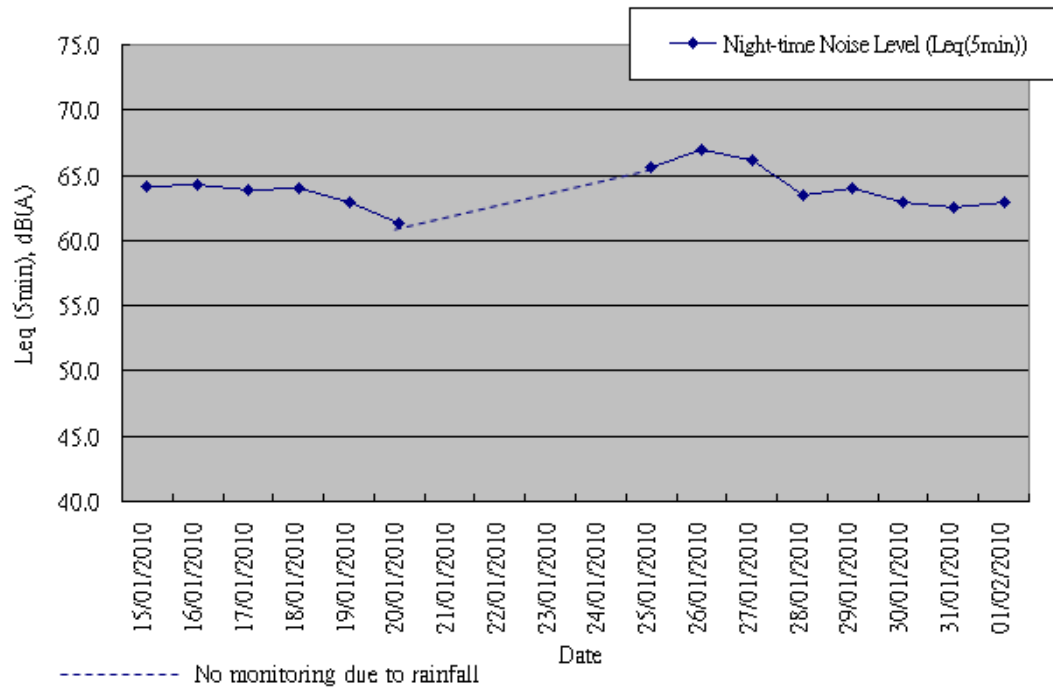
Time Slot	Leq, 5min	L10	L90
	64.3	66.8	59.4
	63.8	66.4	59.1
02:00-02:15	64.0	66.7	58.9
	63.2	65.9	58.5
	64.1	66.9	59.3
02:15-02:30	64.2	66.9	59.0
	64.4	67.0	59.5
	64.0	66.6	58.7
02:30-02:45	63.6	66.3	58.5
	64.2	66.7	59.1
	64.1	66.7	58.9
02:45-03:00	64.1	66.8	58.3
	63.2	66.1	57.9
	62.0	65.0	56.4
03:00-03:15	61.5	64.3	56.8
	63.1	66.0	57.6
	62.0	65.2	56.6
03:15-03:30	62.5	65.5	57.2
	62.4	65.7	56.7
	61.0	63.9	55.8
03:30-03:45	61.5	64.4	56.3
	61.8	64.6	56.3
	60.8	63.5	56.2
03:45-04:00	62.7	65.5	57.0
	62.5	65.2	57.4
	61.4	64.5	55.4
04:00-04:15	61.3	64.6	54.5
	61.1	64.4	54.4
	61.3	64.6	54.9
04:15-04:30	61.6	64.6	55.6
	61.6	64.8	55.0
	61.4	64.7	54.8
04:30-04:45	61.3	64.6	54.8
	61.9	65.2	55.0
	61.4	64.6	55.0
04:45-05:00	62.3	65.4	56.0

Time Slot	Leq, 5min	L10	L90
	62.6	65.5	57.2
	64.2	66.5	59.2
05:00-05:15	64.2	67.0	58.5
	64.2	66.6	59.2
	64.4	66.7	60.0
05:15-05:30	64.5	67.1	59.9
	65.4	67.5	61.5
	64.4	67.0	59.2
05:30-05:45	64.5	67.1	59.7
	64.5	67.1	59.4
	64.6	67.0	59.7
05:45-06:00	64.7	67.3	59.7
	64.6	67.0	60.0
	64.9	67.1	60.5
06:00-06:15	65.0	67.6	60.0
	65.0	67.2	61.0
	65.5	67.6	61.6
06:15-06:30	65.2	67.8	60.7
	65.5	67.8	61.8
	65.3	67.7	61.0
06:30-06:45	65.6	67.8	61.6
	65.5	67.7	62.0
	66.1	68.2	62.3
06:45-07:00	66.1	68.4	62.5
	65.9	68.0	62.7
	65.4	67.4	62.1
Average	64.2	66.7	59.8

Log average was used



Average Leq(5min) at CN1 during Nighttime (2300-0700) for all days



Baseline Noise Monitoring Result

Location: CN 2 Mai Po San Tsuen Village House

Baseline monitoring period: 15/1/2010-2/2/2010

Parameter: Leq

Time Slot Averaged Baselines

1) Weekdays Daytime Noise Level, dB(A)

Time slot	Leq, 30 min	L10	L90
07:00-07:30	67.2	68.9	64.0
07:30-08:00	68.3	70.0	65.3
08:00-08:30	69.0	70.4	65.7
08:30-09:00	69.4	71.4	66.0
09:00-09:30	69.0	71.0	65.9
09:30-10:00	68.9	70.8	65.5
10:00-10:30	69.4	71.5	65.6
10:30-11:00	69.3	71.3	65.6
11:00-11:30	68.8	70.9	65.2
11:30-12:00	69.0	71.1	65.2
12:00-12:30	68.0	70.0	64.5
12:30-13:00	67.9	69.8	64.4
13:00-13:30	68.5	70.4	65.0
13:30-14:00	68.9	70.8	65.2
14:00-14:30	69.1	71.1	65.0
14:30-15:00	69.4	71.7	65.1
15:00-15:30	69.3	71.9	65.1
15:30-16:00	68.3	70.4	64.8
16:00-16:30	68.3	70.3	65.0
16:30-17:00	69.1	70.9	65.2
17:00-17:30	68.8	70.4	65.3
17:30-18:00	70.0	71.6	65.4
18:00-18:30	67.8	69.4	65.1
18:30-19:00	68.3	69.6	64.6
Average	68.8	70.7	65.2

Noise Control Period Averaged Baselines

2) Weekdays Evening Noise Level, dB(A)

Time Slot	Leq, 5min	L10	L90
19:00-19:15	67.4	69.2	64.2
	67.1	68.7	63.8
	66.9	68.7	64.0
19:15-19:30	66.9	68.7	63.6
	68.3	69.1	63.7
	66.4	68.4	63.6
19:30-19:45	66.8	68.6	63.5
	67.3	68.6	63.3
	66.3	68.3	63.4
19:45-20:00	67.7	69.0	63.3
	66.4	68.4	63.2
	66.2	68.3	63.0
20:00-20:15	66.0	67.9	62.9
	68.3	68.2	63.0
	65.9	68.0	62.5
20:15-20:30	66.4	68.3	62.7
	66.1	68.0	63.2
	66.0	68.1	62.6
20:30-20:45	66.1	68.2	62.9
	66.6	68.3	62.4
	65.8	67.8	62.3
20:45-21:00	66.2	68.4	62.4
	66.6	68.9	62.3
	66.0	67.9	62.2
21:00-21:15	65.9	67.8	61.8
	65.4	67.5	62.1
	66.2	67.7	61.9
21:15-21:30	65.4	67.6	62.0
	65.5	67.5	61.9
	65.1	67.3	61.8
21:30-21:45	65.9	67.5	61.8

Time Slot	Leq, 5min	L10	L90
	65.2	67.2	61.8
	64.8	66.9	61.5
21:45-22:00	65.2	67.1	61.6
	64.6	66.8	61.2
	64.8	67.2	61.0
22:00-22:15	64.7	67.1	61.2
	66.1	66.9	61.0
	65.0	67.1	61.6
22:15-22:30	64.7	66.9	61.0
	64.8	66.9	61.2
	64.2	66.5	60.9
22:30-22:45	64.7	66.8	61.2
	68.7	66.8	60.9
	66.4	66.5	61.0
22:45-23:00	69.8	67.9	61.0
	65.2	66.7	60.6
	64.5	66.6	60.7
Average	66.3	67.8	62.3

3) General Holidays (including Sundays) (0700-2300) Noise Level, dB(A)

Time Slot	Leq, 5min	L10	L90
0700-07:15	63.6	65.9	58.7
	63.3	65.8	58.7
	65.8	67.2	59.7
07:15-07:30	63.9	66.2	58.8
	65.5	67.8	60.7
	65.3	67.0	61.1
07:30-07:45	65.3	67.0	60.8
	65.4	67.0	59.5
	65.5	67.5	60.8
07:45-08:00	69.9	69.5	60.5
	65.1	67.4	60.6

Time Slot	Leq, 5min	L10	L90
	65.1	67.1	61.1
08:00-08:15	66.0	68.3	60.3
	65.5	67.7	61.5
	64.5	66.7	60.8
08:15-08:30	65.1	67.2	61.1
	65.1	67.1	61.3
	65.1	67.3	61.4
08:30-08:45	65.2	67.1	61.5
	66.8	68.7	62.7
	65.3	67.4	62.1
08:45-09:00	66.0	67.8	63.4
	66.0	68.0	63.1
	66.0	68.1	62.6
09:00-09:15	66.9	68.5	61.4
	67.2	68.6	61.0
	66.1	67.7	61.9
09:15-09:30	65.3	67.5	61.6
	65.7	67.4	61.1
	65.9	68.1	62.1
09:30-09:45	65.3	67.7	61.2
	65.3	67.6	61.8
	64.9	67.2	60.8
09:45-10:00	64.9	67.2	60.8
	65.1	67.6	61.0
	65.5	67.4	61.2
10:00-10:15	65.4	67.6	61.9
	66.3	67.8	61.5
	64.6	66.9	61.6
10:15-10:30	65.3	67.5	61.2
	67.9	70.3	60.8
	66.2	68.8	62.2
10:30-10:45	65.3	67.8	61.4
	65.2	67.3	62.2
	66.1	68.2	61.2
10:45-11:00	65.9	67.6	61.6
	65.1	67.4	61.6

Time Slot	Leq, 5min	L10	L90
	65.0	67.1	61.7
11:00-11:15	65.1	67.0	61.4
	65.7	68.0	61.9
	64.5	66.7	61.3
11:15-11:30	65.1	67.4	62.0
	64.7	67.0	61.4
	64.9	67.0	61.8
11:30-11:45	65.1	67.5	60.6
	65.3	67.7	61.7
	64.9	67.3	61.6
11:45-12:00	63.9	66.5	59.9
	64.8	67.2	61.0
	64.6	66.8	60.8
12:00-12:15	64.4	66.4	60.6
	66.3	68.0	62.0
	64.8	67.3	61.2
12:15-12:30	64.5	66.8	61.1
	64.5	66.7	61.2
	66.0	68.4	61.1
12:30-12:45	65.5	68.0	61.5
	64.3	66.3	60.9
	64.6	67.0	60.9
12:45-13:00	64.8	67.2	61.0
	63.8	66.0	60.8
	65.8	68.4	60.6
13:00-13:15	65.4	67.2	61.4
	64.0	66.3	60.6
	64.4	66.7	60.9
13:15-13:30	64.1	66.2	61.0
	64.3	66.4	61.0
	64.7	66.6	60.7
13:30-13:45	65.3	67.1	61.5
	65.9	69.2	61.2
	70.6	74.0	61.7
13:45-14:00	65.5	68.4	61.0
	64.2	66.6	60.6

Time Slot	Leq, 5min	L10	L90
	65.4	67.1	61.4
14:00-14:15	66.0	67.7	61.3
	64.0	66.2	60.9
	64.1	66.1	61.1
14:15-14:30	64.7	66.7	61.6
	64.2	66.4	60.7
	65.2	67.4	61.2
14:30-14:45	64.6	66.8	61.2
	64.1	66.5	60.4
	63.9	66.1	60.8
14:45-15:00	64.6	67.2	60.6
	64.0	66.4	60.3
	65.5	67.1	60.9
15:00-15:15	65.0	67.2	61.5
	64.3	66.5	60.9
	64.3	66.3	61.2
15:15-15:30	64.3	66.8	60.8
	65.4	67.5	61.0
	65.9	67.9	61.5
15:30-15:45	64.4	66.7	60.9
	64.5	66.6	60.7
	63.5	65.6	59.8
15:45-16:00	64.0	66.2	60.4
	67.4	69.7	60.1
	70.3	66.7	60.0
16:00-16:15	64.1	66.4	60.3
	64.9	67.1	61.2
	65.4	67.5	61.2
16:15-16:30	64.7	66.8	61.6
	64.5	66.9	60.9
	64.3	66.7	61.2
16:30-16:45	64.7	67.0	61.8
	64.1	66.2	61.0
	65.2	67.2	61.7
16:45-17:00	64.3	66.8	60.5
	64.7	67.0	61.0

Time Slot	Leq, 5min	L10	L90
	64.8	66.8	62.0
17:00-17:15	65.1	67.3	62.0
	64.6	66.8	60.9
	64.9	67.0	61.9
17:15-17:30	64.8	66.8	61.8
	64.9	66.9	62.1
	64.8	66.8	61.5
17:30-17:45	65.2	67.3	62.3
	66.7	68.3	62.2
	65.0	66.9	61.7
17:45-18:00	64.9	66.5	62.0
	64.7	66.8	61.5
	64.4	66.8	61.4
18:00-18:15	65.3	67.6	62.1
	64.6	66.6	61.6
	65.0	66.9	62.5
18:15-18:30	65.1	67.0	61.8
	65.2	66.8	61.3
	70.6	67.5	62.6
18:30-18:45	64.5	66.8	61.2
	66.0	67.4	61.7
	64.6	66.6	61.8
18:45-19:00	64.7	66.9	62.0
	64.2	66.3	61.0
	64.3	66.5	61.0
19:00-19:15	64.6	66.6	61.6
	68.0	67.9	61.5
	63.5	65.8	60.1
19:15-19:30	64.2	66.7	60.6
	65.1	66.9	60.8
	63.4	65.7	60.0
19:30-19:45	64.0	66.4	60.6
	63.7	66.1	59.6
	64.1	66.4	60.8
19:45-20:00	63.6	66.2	59.3
	66.0	66.6	60.9

Time Slot	Leq, 5min	L10	L90
	68.1	67.2	60.6
20:00-20:15	64.0	66.0	61.1
	63.7	66.1	60.1
	63.4	65.7	59.5
20:15-20:30	64.2	66.2	59.6
	64.1	66.5	60.2
	64.1	66.5	60.2
20:30-20:45	63.9	65.9	61.0
	63.9	65.8	61.1
	65.8	66.9	60.3
20:45-21:00	67.0	66.7	60.1
	64.2	66.3	60.4
	63.9	66.1	60.4
21:00-21:15	64.5	66.2	60.8
	63.4	65.4	59.9
	63.8	66.0	60.1
21:15-21:30	64.3	66.3	61.1
	64.1	66.4	60.9
	64.8	66.7	60.6
21:30-21:45	63.9	66.0	60.9
	63.8	65.9	60.4
	64.4	66.7	60.3
21:45-22:00	64.4	66.7	61.2
	63.6	65.6	60.1
	63.2	65.2	60.3
22:00-22:15	63.7	65.8	60.5
	63.6	65.9	60.2
	63.8	66.1	60.2
22:15-22:30	63.8	66.0	60.5
	63.8	66.0	60.7
	63.9	65.9	60.6
22:30-22:45	63.5	65.6	59.9
	63.2	65.6	59.7
	63.2	65.5	59.8
22:45-23:00	63.4	66.1	59.8
	63.0	65.3	59.5

Time Slot	Leq, 5min	L10	L90
	62.9	65.2	59.2
Average	65.1	67.1	61.1

4) Night-time (for all days) Noise Level, dB(A)

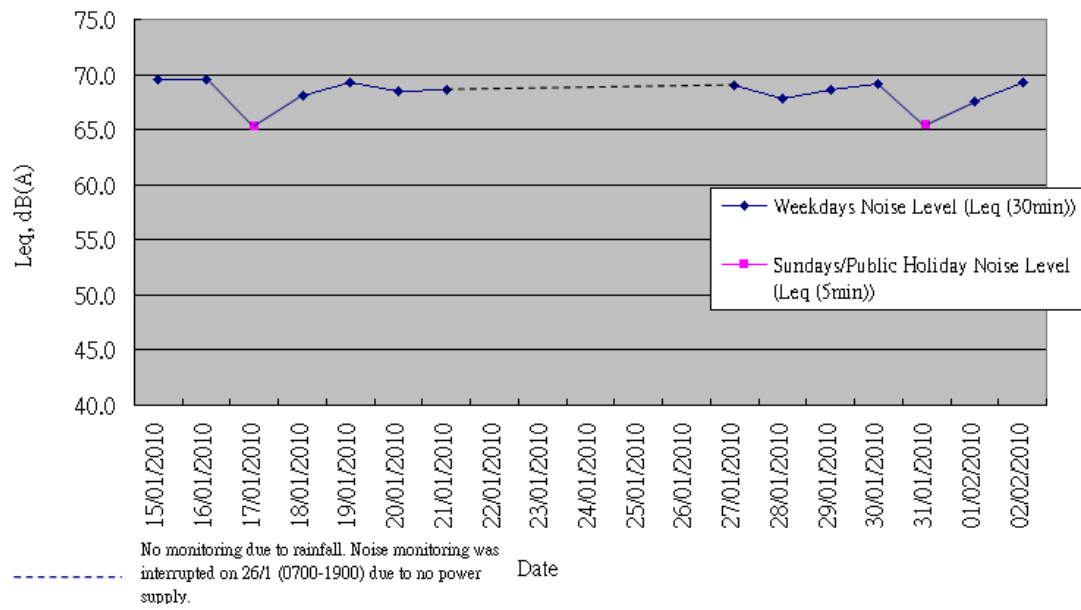
Time Slot	Leq, 5min	L10	L90
23:00-23:15	64.1	66.3	60.4
	64.4	66.4	60.4
	64.3	66.4	60.1
23:15-23:30	64.0	66.2	60.4
	63.7	66.1	59.9
	67.2	66.4	60.0
23:30-23:45	63.4	65.7	59.7
	63.7	66.0	59.9
	63.7	65.8	59.5
23:45-00:00	66.6	65.6	59.4
	63.0	65.3	58.9
	63.1	65.4	59.0
00:00-00:15	63.6	65.5	58.6
	62.9	65.3	58.6
	62.6	65.1	58.4
00:15-00:30	62.9	65.4	58.7
	63.0	65.4	58.9
	62.5	65.2	58.1
00:30-00:45	62.5	65.0	58.2
	61.8	64.4	57.7
	64.2	64.6	57.2
00:45:01:00	61.6	64.4	57.1
	61.6	64.2	57.1
	61.5	64.3	57.0
01:00-01:15	61.4	64.1	56.9
	61.1	63.9	56.5
	60.9	63.7	56.4
01:15-01:30	60.9	63.6	55.9
	61.2	64.1	56.4

Time Slot	Leq, 5min	L10	L90
	60.7	63.6	56.0
01:30-01:45	61.0	63.7	56.3
	60.9	63.8	55.6
	60.7	63.6	55.6
01:45-02:00	60.2	63.2	55.2
	60.4	63.3	55.5
	60.3	63.2	55.0
02:00-02:15	60.4	63.3	55.1
	59.8	62.8	54.8
	59.7	62.5	54.9
02:15-02:30	59.8	62.5	54.7
	59.8	62.7	55.1
	59.7	62.5	54.6
02:30-02:45	59.7	62.6	54.6
	59.9	63.0	54.5
	59.8	62.7	54.7
02:45-03:00	59.5	62.4	54.3
	59.8	62.9	54.6
	59.0	61.9	54.2
03:00-03:15	59.2	62.3	54.1
	59.3	62.2	54.3
	59.6	62.3	54.2
03:15-03:30	59.4	62.4	53.9
	59.1	62.1	54.1
	58.7	61.9	53.9
03:30-03:45	58.1	61.0	53.4
	58.2	61.3	53.4
	59.8	62.5	54.0
03:45-04:00	59.2	62.5	54.1
	59.1	62.3	53.7
	59.0	62.1	53.9
04:00-04:15	58.5	61.5	53.6
	58.7	61.8	53.8
	58.9	61.9	53.9
04:15-04:30	59.1	62.2	53.8
	58.7	61.8	53.8

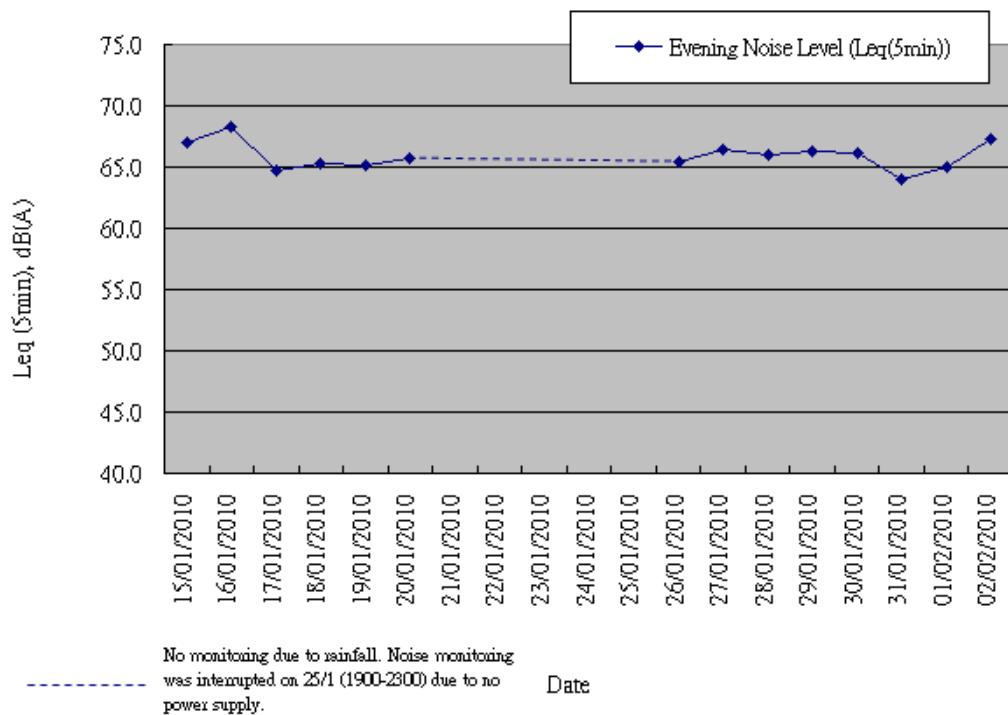
Time Slot	Leq, 5min	L10	L90
	58.9	62.0	53.7
04:30-04:45	59.8	62.4	54.6
	59.0	62.0	54.0
	59.2	62.3	54.4
04:45-05:00	59.5	62.7	54.2
	59.2	62.4	54.3
	58.9	61.9	53.8
05:00-05:15	59.4	62.4	54.4
	59.3	62.2	54.4
	60.8	63.4	55.1
05:15-05:30	60.0	62.9	54.9
	59.9	62.8	55.2
	69.3	66.1	55.5
05:30-05:45	67.7	67.4	55.4
	61.4	64.3	55.6
	61.1	64.0	56.2
05:45-06:00	66.1	65.4	56.5
	64.0	64.5	56.6
	61.6	64.3	56.7
06:00-06:15	61.9	64.5	56.8
	64.6	65.3	58.1
	62.9	65.2	57.9
06:15-06:30	62.8	65.0	58.3
	62.9	65.5	58.7
	66.7	65.7	59.0
06:30-06:45	63.7	66.1	59.4
	64.0	66.4	59.6
	64.2	66.6	60.0
06:45-07:00	64.7	67.0	61.2
	65.4	67.5	61.2
	65.6	67.6	61.9
Average	62.3	64.3	57.1

Log average was used

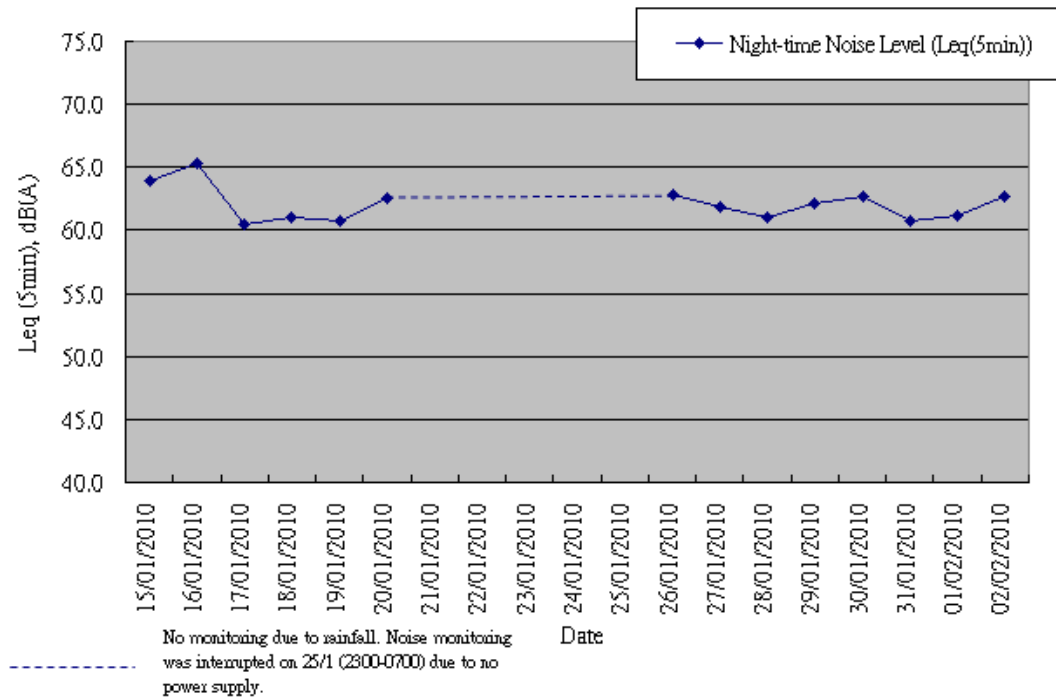
Average Leq at CN2 during Daytime (0700-1900)



Average Leq(5min) at CN2 during Evening (1900-2300) for all days



Average Leq(5min) at CN2 during Nighttime (2300-0700) for all days



Appendix C

Calibration Certificates for Monitoring Equipments

ThermoFisher
SCIENTIFIC
27 FORGE PARKWAY
FRANKLIN MA 02038
TOLL FREE: 866-282-0430
TEL: 508-553-6949
FAX: 508-541-8366
www.thermofisher.com

PDR1000 CALIBRATION CERTIFICATE

This calibration is traceable to the National Institute of Standards and Testing

<u>SERIAL NUMBER:</u>	<u>3893</u>	
<u>CALIBRATION RATIO:</u>	<u>1.007</u>	
<u>AVG. PDR CONCENTRATION:</u>	<u>2.25</u>	<u>mg/m3</u>
<u>MASTER AVG CONCENTRATION:</u>	<u>2.05</u>	<u>mg/m3</u>
<u>PDR BACKGROUND CONCENTRATION:</u>	<u>0.172</u>	<u>mg/m3</u>
<u>PDR BKGRND PRIOR TO CLEANING:</u>	<u>0.379</u>	<u>mg/m3</u>

<u>TEMPERATURE:</u>	69	F
<u>RH:</u>	15	%

CALIBRATION MASTER:	D325
LAST CALIBRATED:	12/8/2009

TECHNICIAN: DMC

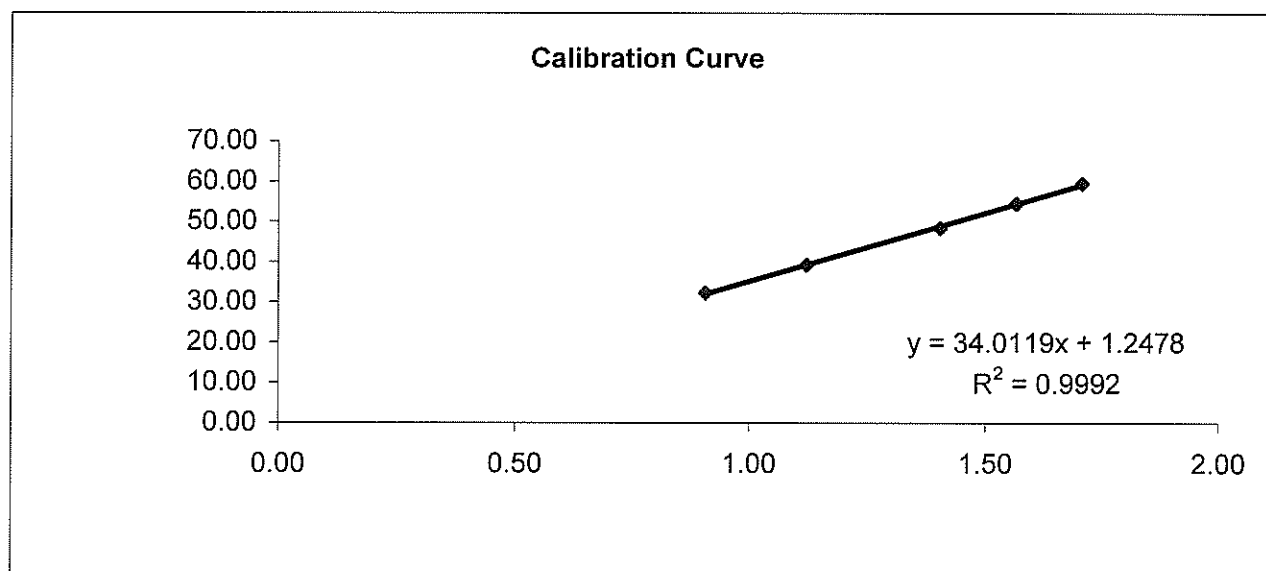
DATE: 12/18/2009

Ove Arup Partners (Hong Kong) Limited

High Volume Air Sampler Calibration Worksheet

Calibration date	20-Jan-10	Barometric pressure	767 mm Hg
Next Calibration date	19-Jul-10	Temperature (°C)	22 °C
Sampler location	AM1 Mai Po San Tsuen	Temperature (K)	295 K
Sampler model	TE-5170	P _{std}	760 mm Hg
Sampler serial number	467	T _{std}	298 K
Calibrator model	GMW-2535		
Calibrator serial number	1378		
Slope of the standard curve, m _s	2.00826		
Intercept of the standard curve, b _s	-0.01649		

Resistance Plate No.	Manometer Reading (inch H ₂ O)	Flow Recorder Reading (CFM)	Calculated Q _{std} (m ³ /min)	Continuous Flow Recorder Reading IC (CFM)
5	3.20	32.00	0.91	32.31
7	4.90	39.00	1.12	39.38
10	7.70	48.00	1.40	48.47
13	9.60	54.00	1.57	54.52
18	11.40	59.00	1.71	59.57



Linear Regression

Sampler slope (m) : 34.0119
Sampler intercept (b) : 1.2478
Correlation coefficient (R^2) : 0.9992

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

Performed by: [Signature]

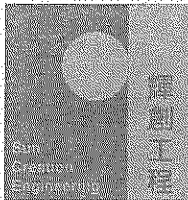
Date: 20/1/2010

Checked by: [Signature]

Date: 20/1/2010

Approved by: [Signature]

Date: 20/01/2010



輝創工程有限公司

Sun Creation Engineering Limited Calibration and Testing Laboratory

Certificate No. : C093598

Certificate of Calibration

This is to certify that the equipment

Description : Sound Level Calibrator

Manufacturer : Rion

Model No. : NC-73

Serial No. : 10786708

has been calibrated for the specific items and ranges.

The results are shown in the Calibration Report No. C093598.

The equipment is supplied by

Co. Name : Envirotech Services Co.

*Address : Shop 6, G/F., Casio Mansion, 209 Shaaukeiwan Road,
Hong Kong*

Send to: Winnie RO		Ref:
Received by:	Date:	
Action taken:		
By:	Date:	Action:

Date Received by ERM
IC-370
Login Ref

Date of Issue : 10 July 2009

Certified by :

H C Chan

The test equipment used for calibration are traceable to the National Standards as specified in this report.
This report shall not be reproduced except in full and with prior written approval from this laboratory.

Calibration and Testing Laboratory of Sun Creation Engineering Limited

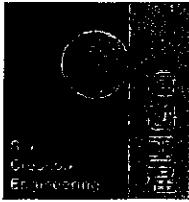
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong

Tel: 2927 2606

Fax: 2744 8986

E-mail: callab@suncreation.com

Website: www.suncreation.com



輝創工程有限公司

Sun Creation Engineering Limited Calibration and Testing Laboratory

Report No. : C093598

Calibration Report

ITEM TESTED

DESCRIPTION : Sound Level Calibrator
MANUFACTURER : Rion
MODEL NO. : NC-73
SERIAL NO. : 10786708

TEST CONDITIONS

AMBIENT TEMPERATURE : $(23 \pm 2)^{\circ}\text{C}$
LINE VOLTAGE : ---

RELATIVE HUMIDITY : $(55 \pm 20)\%$

TEST SPECIFICATIONS

Calibration check

DATE OF TEST : 9 July 2009

JOB NO. : IC09-1664

TEST RESULTS

The results apply to the particular unit-under-test only.
All results are within manufacturer's specification.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA
- Agilent Technologies, USA

Tested by :

K/C Lee

Date : 10 July 2009

The test equipment used for calibration are traceable to the National Standards as specified in this report.
This report shall not be reproduced except in full and with prior written approval from this laboratory.

Calibration and Testing Laboratory of Sun Creation Engineering Limited

c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong

Tel: 2927 2606

Fax: 2744 8986

E-mail: callab@suncreation.com

Website: www.suncreation.com

Page 1 of 2



Calibration Report

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 24 hours before the commencement of the test.
2. The results presented are the mean of 3 measurements at each calibration point.
3. Test equipment :

<u>Equipment ID</u>	<u>Description</u>	<u>Certificate No.</u>
TST150A	Measuring Amplifier	C080751
CL129	Universal Counter	C093121
CL281	Multifunction Acoustic Calibrator	DC090052

4. Test procedure : MA100N.

5. Results :

5.1 Sound Level Accuracy

UUT Nominal Value	Measured Value (dB)	Mfr's Spec. (dB)	Uncertainty of Measured Value (dB)
94 dB, 1 kHz	93.9	± 0.5	± 0.2

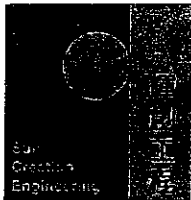
5.2 Frequency Accuracy

UUT Nominal Value (kHz)	Measured Value (Hz)	Mfr's Spec.	Uncertainty of Measured Value (Hz)
1	0.991 6	1 kHz ± 2 %	± 0.1

Remark : - The uncertainties are for a confidence probability of not less than 95 %.

Note :

The values given in this Calibration Report only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.



輝創工程有限公司

Sun Creation Engineering Limited Calibration and Testing Laboratory

Certificate No. : C093733

Certificate of Calibration

This is to certify that the equipment

Description : Sound Level Meter

Manufacturer : Rion

Model No. : NL-31

Serial No. : 00320533

*has been calibrated for the specific items and ranges.
The results are shown in the Calibration Report No. C093733.*

The equipment is supplied by

Co. Name : Envirotech Services Co.

*Address : Shop 6, G/F., Casio Mansion, 209 Shaukeiwan Road,
Hong Kong*

Date of Issue : 16 July 2009

*Certified by : Chan Hui Ching
H C Chan*

The test equipment used for calibration are traceable to the National Standards as specified in this report.
This report shall not be reproduced except in full and with prior written approval from this laboratory.

Calibration and Testing Laboratory of Sun Creation Engineering Limited

c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong

Tel: 2927 2606

Fax: 2744 8986

E-mail: callab@suncreation.com

Website: www.suncreation.com



輝創工程有限公司

Sun Creation Engineering Limited Calibration and Testing Laboratory

Report No. : C093733

Calibration Report

ITEM TESTED

DESCRIPTION : Sound Level Meter
MANUFACTURER : Rion
MODEL NO. : NL-31
SERIAL NO. : 00320533

TEST CONDITIONS

AMBIENT TEMPERATURE : $(23 \pm 2)^{\circ}\text{C}$
LINE VOLTAGE : ---

RELATIVE HUMIDITY : $(55 \pm 20)\%$

TEST SPECIFICATIONS

Calibration check

DATE OF TEST : 15 July 2009

JOB NO. : IC09-1740

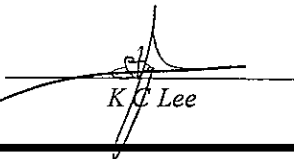
TEST RESULTS

The results apply to the particular unit-under-test only.
All results are within manufacturer's specification.
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA
- Agilent Technologies, USA

Tested by :


K.C. Lee

Date : 16 July 2009

The test equipment used for calibration are traceable to the National Standards as specified in this report.
This report shall not be reproduced except in full and with prior written approval from this laboratory.

Calibration and Testing Laboratory of Sun Creation Engineering Limited

c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong

Tel: 2927 2606

Fax: 2744 8986

E-mail: callab@suncreation.com

Website: www.suncreation.com

Page 1 of 4



Calibration Report

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 24 hours, and switched on to warm up for over 10 minutes before the commencement of the test.
2. Self-calibration was performed before the test.
3. The results presented are the mean of 3 measurements at each calibration point.
4. Test equipment :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C090024
CL281	Multifunction Acoustic Calibrator	DC090052

5. Test procedure : MA101N.

6. Results :

6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

UUT Setting				Applied Value		UUT	IEC 60651
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	Reading (dB)	Type 1 Spec. (dB)
30 - 120	L _A	A	Fast	94.00	1	94.2	± 0.7

6.1.2 Linearity

UUT Setting				Applied Value		UUT
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	Reading (dB)
30 - 120	L _A	A	Fast	94.00	1	94.2 (Ref.)
				104.00		104.2
				114.00		114.2

IEC 60651 Type 1 Spec. : ± 0.4 dB per 10 dB step and ± 0.7 dB for overall different.

6.2 Time Weighting

6.2.1 Continuous Signal

UUT Setting				Applied Value		UUT	IEC 60651
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	Reading (dB)	Type 1 Spec. (dB)
30 - 120	L _A	A	Fast	94.00	1	94.2	Ref.
			Slow			94.1	± 0.1

The test equipment used for calibration are traceable to the National Standards as specified in this report.
This report shall not be reproduced except in full and with prior written approval from this laboratory.



Calibration Report

6.2.2 Tone Burst Signal (2 kHz)

UUT Setting				Applied Value		UUT	IEC 60651
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Burst Duration	Reading (dB)	Type 1 Spec. (dB)
20 - 110	L _A	A	Fast	106.00	Continuous	106.0	Ref.
	L _{Amax}				200 ms	105.0	-1.0 ± 1.0
	L _A	Slow	Continuous		106.0	Ref.	
	L _{Amax}		500 ms		102.0	-4.1 ± 1.0	

6.3 Frequency Weighting

6.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 120	L _A	A	Fast	94.00	31.5 Hz	55.0	-39.4 ± 1.5
					63 Hz	68.3	-26.2 ± 1.5
					125 Hz	78.3	-16.1 ± 1.0
					250 Hz	85.7	-8.6 ± 1.0
					500 Hz	91.0	-3.2 ± 1.0
					1 kHz	94.2	Ref.
					2 kHz	95.2	+1.2 ± 1.0
					4 kHz	94.4	+1.0 ± 1.0
					8 kHz	90.1	-1.1 (+1.5 ; -3.0)
					12.5 kHz	83.9	-4.3 (+3.0 ; -6.0)

6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 120	L _C	C	Fast	94.00	31.5 Hz	91.4	-3.0 ± 1.5
					63 Hz	93.6	-0.8 ± 1.5
					125 Hz	94.1	-0.2 ± 1.0
					250 Hz	94.3	0.0 ± 1.0
					500 Hz	94.3	0.0 ± 1.0
					1 kHz	94.2	Ref.
					2 kHz	93.9	-0.2 ± 1.0
					4 kHz	92.7	-0.8 ± 1.0
					8 kHz	88.3	-3.0 (+1.5 ; -3.0)
					12.5 kHz	82.1	-6.2 (+3.0 ; -6.0)

The test equipment used for calibration are traceable to the National Standards as specified in this report.
This report shall not be reproduced except in full and with prior written approval from this laboratory.

Calibration Report

6.4 Time Averaging

UUT Setting				Applied Value					UUT	IEC 60804
Range (dB)	Mode	Frequency Weighting	Time Weighting	Freq. (kHz)	Burst Duration (ms)	Burst Duty Factor	Burst Level (dB)	Equivalent Level (dB)	Reading (dB)	Type I Spec. (dB)
20 - 110	L _{Aeq}	A	10 sec.	4	1	1/10	110.0	100	100.3	± 0.5
						1/10 ²		90	90.3	± 0.5
			60 sec.			1/10 ³		80	80.3	± 1.0
			5 min.			1/10 ⁴		70	70.3	± 1.0

Remarks : - Mfr's Spec. : IEC 60651 & IEC 60804 Type 1

- Uncertainties of Applied Value : 94 dB : 31.5 Hz - 125 Hz : ± 0.35 dB
250 Hz - 500 Hz : ± 0.30 dB
1 kHz : ± 0.20 dB
2 kHz - 4 kHz : ± 0.35 dB
8 kHz : ± 0.45 dB
12.5 kHz : ± 0.70 dB
104 dB : 1 kHz : ± 0.10 dB (Ref. 94 dB)
114 dB : 1 kHz : ± 0.10 dB (Ref. 94 dB)
Burst equivalent level : ± 0.2 dB (Ref. 110 dB continuous sound level)

- The uncertainties are for a confidence probability of not less than 95 %.

Note :

The values given in this Calibration Report only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.



輝創工程有限公司

Sun Creation Engineering Limited Calibration and Testing Laboratory

Certificate No. : C092284

Certificate of Calibration

This is to certify that the equipment

Description : Sound Level Meter

Manufacturer : Rion

Model No. : NL-31

Serial No. : 00410224

*has been calibrated for the specific items and ranges.
The results are shown in the Calibration Report No. C092284.*

The equipment is supplied by

Co. Name : Envirotech Services Co.

*Address : Shop 6, G/F., Casio Mansion, 209 Shaaukeiwan Road,
Hong Kong*

Date of Issue : 8 May 2009

Certified by :

K C Lee

The test equipment used for calibration are traceable to the National Standards as specified in this report.
This report shall not be reproduced except in full and with prior written approval from this laboratory.

Calibration and Testing Laboratory of Sun Creation Engineering Limited

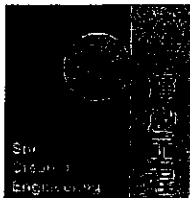
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong

Tel: 2927 2606

Fax: 2744 8986

E-mail: callab@suncreation.com

Website: www.suncreation.com



輝創工程有限公司

Sun Creation Engineering Limited Calibration and Testing Laboratory

Report No. : C092284

Calibration Report

ITEM TESTED

DESCRIPTION : Sound Level Meter
MANUFACTURER : Rion
MODEL NO. : NL-31
SERIAL NO. : 00410224

TEST CONDITIONS

AMBIENT TEMPERATURE : $(23 \pm 2)^{\circ}\text{C}$
LINE VOLTAGE : ---

RELATIVE HUMIDITY : $(55 \pm 20)\%$

TEST SPECIFICATIONS

Calibration

DATE OF TEST : 7 May 2009

JOB NO. : IC09-1058

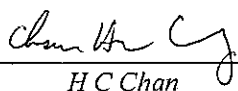
TEST RESULTS

The results apply to the particular unit-under-test only.
All results are within manufacturer's specification. (after adjustment)
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory

Tested by :


H C Chan

Date : 8 May 2009

The test equipment used for calibration are traceable to the National Standards as specified in this report.
This report shall not be reproduced except in full and with prior written approval from this laboratory.

Calibration and Testing Laboratory of Sun Creation Engineering Limited

c/o 4/F. Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong

Tel: 2927 2606

Fax: 2744 8986

E-mail: callab@suncreation.com

Website: www.suncreation.com

Page 1 of 4



Calibration Report

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 24 hours, and switched on to warm up for over 10 minutes before the commencement of the test.
2. Self-calibration using the internal standard (after adjustment) was performed before the test 6.1.2 - 6.4.
3. The results presented are the mean of 3 measurements at each calibration point.
4. Test equipment :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C090024
CL281	Multifunction Acoustic Calibrator	DC090052

5. Test procedure : MA101N.

6. Results :

6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

UUT Setting				Applied Value		UUT Reading (dB)		IEC 651 Type 1 Spec. (dB)
Range (dB)	Mode	Weight	Response	Level (dB)	Freq. (kHz)	Before Adjustment	After Adjustment	
20 - 100	L _A	A	Fast	94.00	1	* 91.4	94.0	± 0.7

* Out of Mfr's Spec.

6.1.2 Linearity

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Mode	Weight	Response	Level (dB)	Freq. (kHz)	
30 - 120	L _A	A	Fast	94.00	1	94.0 (Ref.)
				104.00		104.0
				114.00		114.3

IEC 651 Type 1 Spec. : ± 0.4 dB per 10 dB step and ± 0.7 dB for overall different.

6.2 Time Weighting

6.2.1 Continuous Signal

UUT Setting				Applied Value		UUT Reading (dB)	IEC 651 Type 1 Spec. (dB)
Range (dB)	Mode	Weight	Response	Level (dB)	Freq. (kHz)		
20 - 100	L _A	A	Fast	94.00	1	94.0	Ref.
			Slow			94.0	± 0.1

The test equipment used for calibration are traceable to the National Standards as specified in this report.
This report shall not be reproduced except in full and with prior written approval from this laboratory.



Calibration Report

6.2.2 Tone Burst Signal (2 kHz)

UUT Setting				Applied Value		UUT Reading (dB)	IEC 651 Type 1 Spec. (dB)	
Range (dB)	Mode	Weight	Response	Level (dB)	Burst Duration			
20 - 110	L _A	A	Fast	106.00	Continuous	106.0	Ref.	
	L _{Amax}				200 ms	105.0	-1.0 ± 1.0	
	L _A		Slow		Continuous	106.0	Ref.	
	L _{Amax}				500 ms	102.0	-4.1 ± 1.0	

6.3 Frequency Weighting

6.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 651 Type 1 Spec. (dB)
Range (dB)	Mode	Weight	Response	Level (dB)	Freq.		
20 - 100	L _A	A	Fast	94.00	31.5 Hz	54.9	-39.4 ± 1.5
					63 Hz	68.1	-26.2 ± 1.5
					125 Hz	78.0	-16.1 ± 1.0
					500 Hz	90.8	-3.2 ± 1.0
					1 kHz	94.0	Ref.
					2 kHz	95.2	+1.2 ± 1.0
					4 kHz	94.7	+1.0 ± 1.0
					8 kHz	90.2	-1.1 (+1.5 ; -3.0)

6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 651 Type 1 Spec. (dB)
Range (dB)	Mode	Weight	Response	Level (dB)	Freq.		
20 - 100	L _C	C	Fast	94.00	31.5 Hz	91.3	-3.0 ± 1.5
					63 Hz	93.4	-0.8 ± 1.5
					125 Hz	93.9	-0.2 ± 1.0
					500 Hz	94.1	0.0 ± 1.0
					1 kHz	94.0	Ref.
					2 kHz	93.8	-0.2 ± 1.0
					4 kHz	92.9	-0.8 ± 1.0
					8 kHz	88.4	-3.0 (+1.5 ; -3.0)

The test equipment used for calibration are traceable to the National Standards as specified in this report.
This report shall not be reproduced except in full and with prior written approval from this laboratory.



Calibration Report

6.4 Time Averaging

UUT Setting				Applied Value					UUT	IEC 60804
Range (dB)	Mode	Weight	Integrating Time	Freq. (kHz)	Burst Duration (ms)	Burst Duty Factor	Burst Level (dB)	Equivalent Level (dB)	Reading (dB)	Type 1 Spec. (dB)
20 - 110	L _{Aeq}	A	10 sec.	4	1	1/10	110.0	100	100.1	± 0.5
						1/10 ²		90	90.1	± 0.5
			60 sec.			1/10 ³		80	80.0	± 1.0
			5 min.			1/10 ⁴		70	70.0	± 1.0

Remarks : - Mfr's Spec. : IEC 651 & IEC 60804 Type 1

- Uncertainties of Applied Value : 94 dB : 31.5Hz - 125 Hz : ± 0.35 dB
500 Hz : ± 0.30 dB
1 kHz : ± 0.20 dB
2 kHz - 4 kHz : ± 0.35 dB
8 kHz : ± 0.45 dB
104 dB : 1 kHz : ± 0.10 dB (Ref. 94 dB)
114 dB : 1 kHz : ± 0.10 dB (Ref. 94 dB)
Burst equivalent level : ± 0.2 dB (Ref. 110 dB continuous sound level)

- The uncertainties are for a confidence probability of not less than 95 %.

Note :

The values given in this Calibration Report only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

Appendix D

Figures

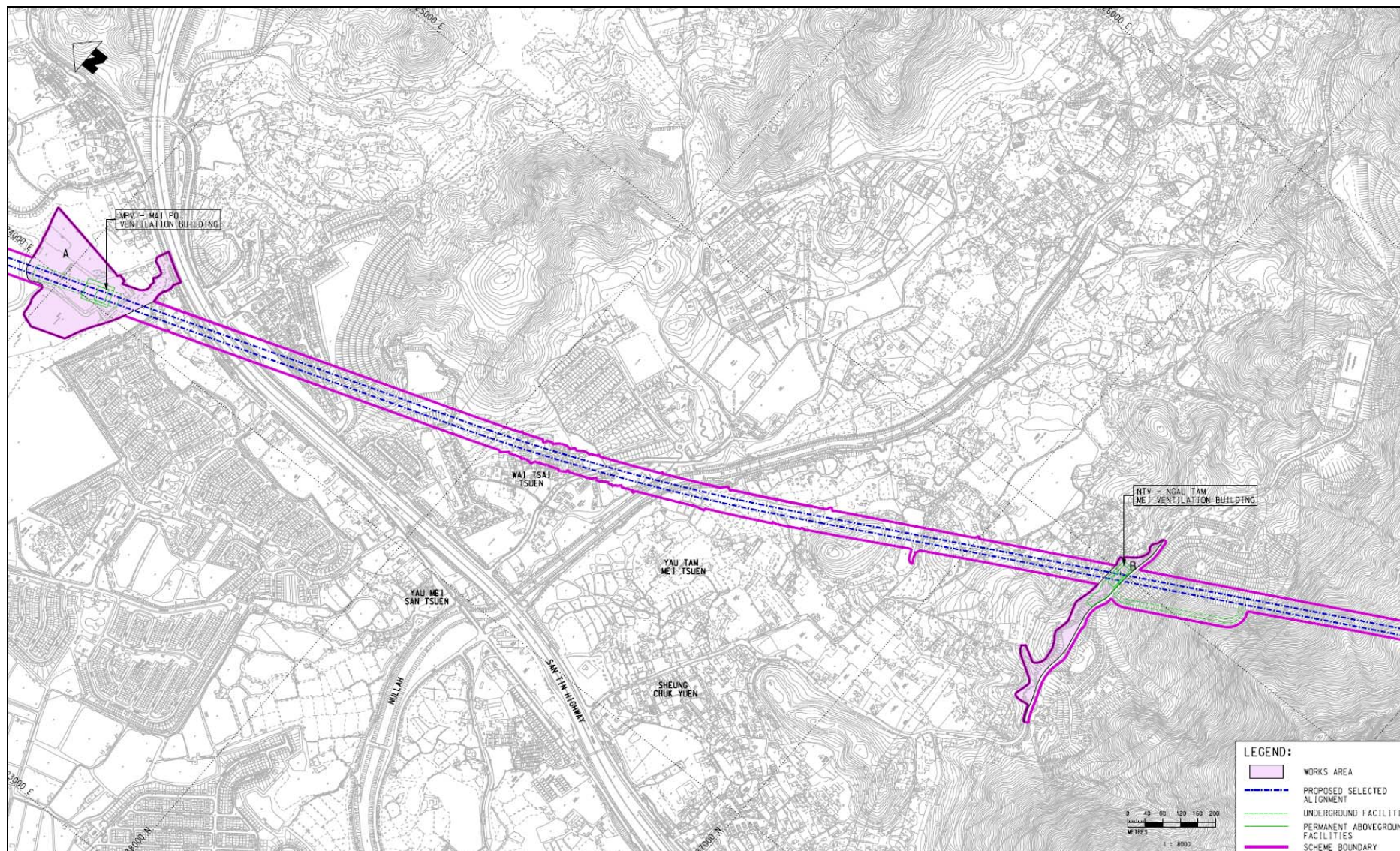


Figure 1 – Works Area

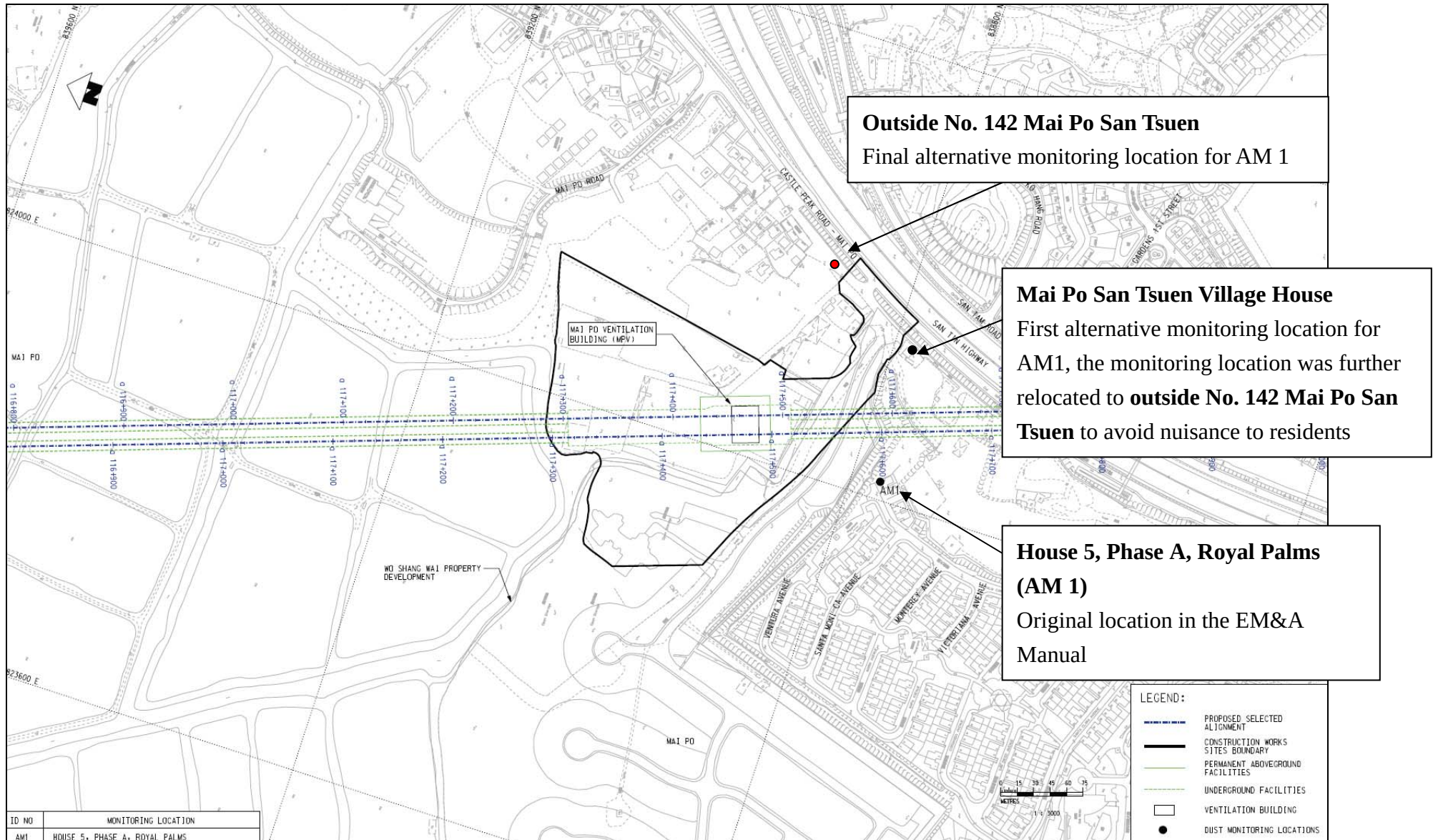


Figure 2 - Dust Monitoring Location

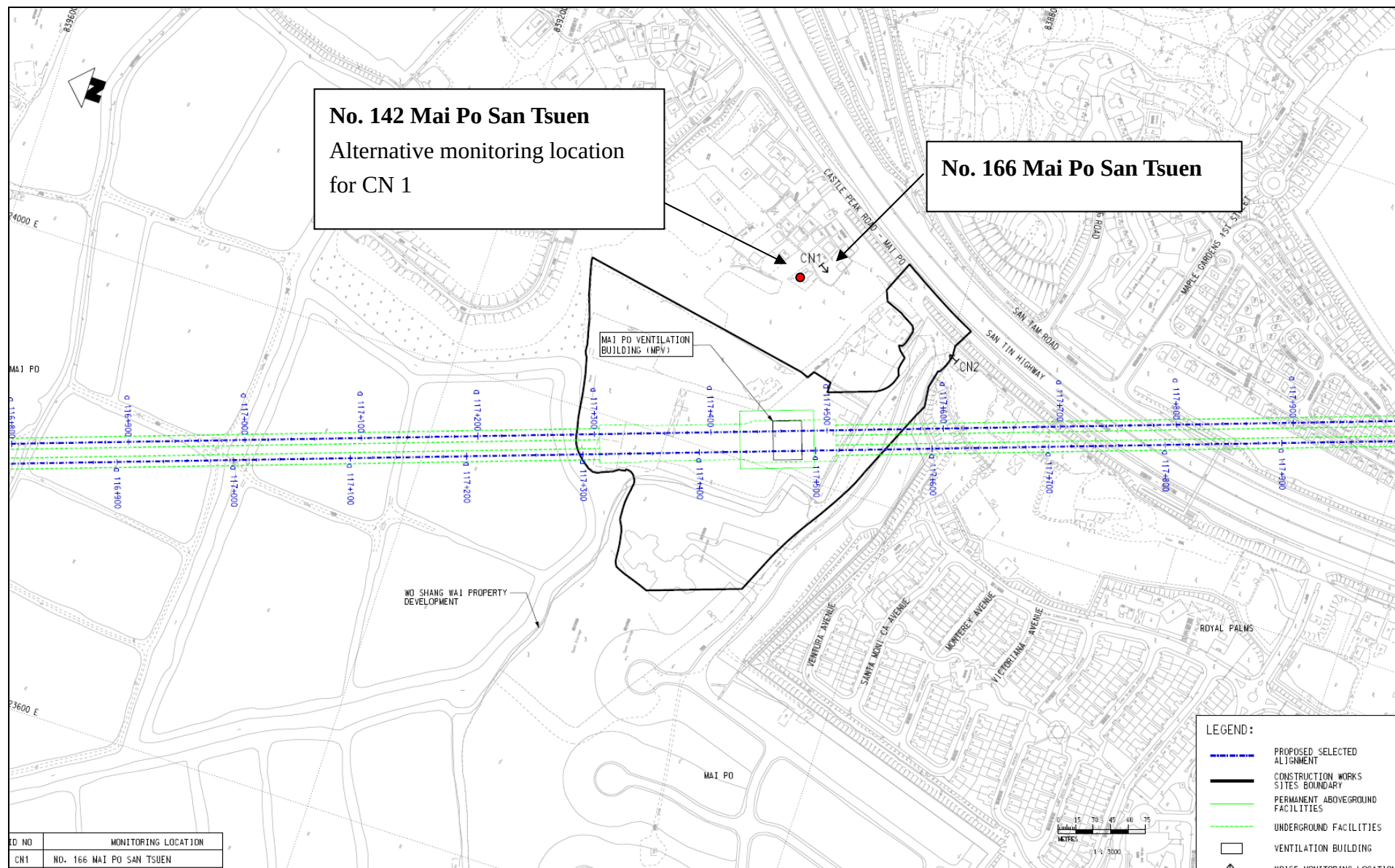


Figure 3 – Noise Monitoring Location



Alternative monitoring location of AM 1 – Outside No. 142 Mai Po San Tsuen

Figure 4 – Photo of Alternative Dust Monitoring Location



Alternative monitoring location of CN 1 – No. 142 Mai Po San Tsuen

Figure 5 – Photo of Alternative Noise Monitoring Location