AECOM

Environmental Protection Department

Contract No. HY/2012/06

Widening of Fanling Highway - Tai Hang to Wo Hop Shek Interchange

Monthly EM&A Report For April 2014

[05/2014]

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12 May 2014
By Fax (2805 5028) & Post

Dear Sir,

Attn: Mr. James Penny

Environmental Monitoring and Audit (EM&A) for Widening of Tolo Highway/Fanling Highway between Island House Interchange and Fanling
Stage 2 (between Tai Hang to Wo Hop Shek Interchange)
Environmental Permit No. EP-324/2008/B
Condition 3.3 – Submission of Monthly EM&A Report – April 2014 for the portion of Stage 2 works under Contract No. HY/2012/06

We refer to the revised Monthly EM&A Report – April 2014 received on 9 May 2014 submitted by the Environmental Team via email. Pursuant to Environmental Permit Condition 3.3, I hereby verify the Monthly EM&A Report – April 2014 (Rev. 0) for the portion of works under Stage 2 of the captioned Project which is managed under Contract No. HY/2012/06.

Yours faithfully
for MOTT MACDONALD HONG KONG LIMITED

Terence Kong
Independent Environmental Checker

c.c. HyD – Mr. Chung Lok Chin (Fax: 2714 5198) / Ms. Jackei Yin (Fax: 2761 4864)
AECOM – Mr. Y W Fung (Fax:2891 0305)

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EXECUTIVE SUMMARY

The proposed widening of Tolo Highway and Fanling Highway between Island House Interchange and Fanling (the Project) is a Designated Project under the Environmental Impact Assessment Ordinance (Cap. 499) (EIAO). An Environmental Impact Assessment (EIA) Report (the approved EIA Report) together with an Environmental Monitoring and Audit (EM&A) Manual (the approved EM&A Manual) were completed and approved under the EIAO on 14 July 2000 (Register Number: EIA-043/2000).

The objective of the Project "Widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling" is to widen Tolo Highway and Fanling Highway to dual 4-lane carriageway in order to alleviate the current traffic congestion problems and to cope with the increasing transport demands to and from the urban areas and also cross boundary traffic.

The Project is a designated project and governed by an Environmental Permit (EP-324/2008) issued by the EPD on 23 December 2008. Subsequently, the EPD issued a Variation of Environmental Permit (EP-324/2008/A) (VEP) on 31 January 2012. The VEP (EP-324/2008/B) was subsequently granted on 17 March 2014 which superseded the previous EP (EP-324/2008/A).

The construction works for this Project are delivered in 2 stages i.e. Stage 1 (between Island House Interchange and Tai Hang) and Stage 2 (between Tai Hang and Wo Hop Shek Interchange). Stage 2 would be implemented under two works contracts. Contract No. HY2012/06 "Widening of Fanling Highway – Tai Hang to Wo Hop Shek Interchange" and the entrusted portion to CEDD under Contract No. CV/2012/09 "Liantang/Heung Yuen Wai Boundary Control Point Site Formation and Infrastructure Works – Contract 3". This report focuses on Contract No. HY2012/06 "Widening of Fanling Highway – Tai Hang to Wo Hop Shek Interchange" in Stage 2 of the Project only.

Pursuant to the EP (EP-324/2008/B) Condition 2.7, the Capture Survey Trip Report for Ma Wat River Northern Meander (Version 2) for the Project was submitted on 24 December 2013 by the Environmental Team (ET) and verified by the Independent Environmental Checker (IEC) on 6 January 2014.

The construction phase of the Contract under the EP and the Environmental Monitoring and Audit (EM&A) programme of the contract commenced on 21 November 2013. The impact environmental monitoring and audit includes air quality and noise monitoring.

This report documents the findings of EM&A works conducted in the period between 1 and 30 April 2014. As informed by the Contractor, construction activities in the reporting period were:

- Site clearance;
- Ground investigation;
- Tree felling and transplantation;
- Piling works;
- Pipe laying;
- Retaining wall construction;
- Excavation; and
- Backfilling.

Reporting Change

There was no reporting change required in the reporting month.

Breaches of Action and Limit Levels for Air Quality

No exceedance of Action and Limit Level was recorded for 1-hour and 24-hour TSP monitoring in the reporting month.

Breaches of Action and Limit Levels for Noise

No Action Level exceedance of construction noise was recorded in the reporting month, since no noise complaints related to 0700 – 1900 hours on normal weekdays was received and followed by Environmental Team in the reporting month.

No Limit Level exceedance of construction noise was recorded in the reporting month.

Complaint, Notification of Summons and Successful Prosecution

No complaint, notification of summons and successful prosecution was received in the reporting month.

Future Key Issues
Key issues to be considered in the coming month include:

- Properly store and label oils and chemicals on site;
- Chemical, chemical waste and waste management;
- Collection of construction waste should be carried out regularly;
- Properly maintain all drainage facilities and wheel washing facilities on site;
- Exposed slopes should be covered up properly if no temporary work will be conducted;
- Quieter powered mechanical equipment should be used;
- Suppress dust generated from excavation activities and haul road traffic; and
- Tree protective measures for all retained trees should be well maintained.

1 INTRODUCTION

1.1 Background

1.1.1. Tolo Highway and Fanling Highway are the expressways in the North East New Territories (NENT) connecting Sha Tin, Tai Po and Fanling. These highways form a vital part of the strategic Route 9, which links Hong Kong Island to the boundary at Shenzhen. At present, this section of Route 9 is a dual 3-lane carriageway. However, at several major interchanges along this section of Route 9, the highway is a dual-2 lane carriageway only. Severe congestion is a frequent occurrence during the peak periods, particularly in the Kowloon-bound direction.

1.1.2. The objective of the Project "Widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling" is to widen Tolo Highway and Fanling Highway to dual 4-lane carriageway in order to alleviate the current traffic congestion problems and to cope with the increasing transport demands to and from the urban areas and also cross boundary traffic.

1.1.3. The Project is a designated project and governed by an Environmental Permit (EP-324/2008) issued by the EPD on 23 December 2008. Subsequently, the EPD issued a Variation of Environmental Permit (EP-324/2008/A) (VEP) on 31 January 2012. The VEP (EP-324/2008/B) was subsequently granted on 17 March 2014 which superseded the previous EP (EP-324/2008/A).

1.1.4. The scope of the Project comprises mainly:-

(i) Widening of a 5.7 km section of Tolo Highway and 3.0 km section of Fanling Highway between Island House Interchange and Wo Hop Shek Interchange from the existing dual 3-lane to dual 4-lane, including construction of new vehicular bridges;

(ii) Widening of interchange sections at Island House Interchange, Tai Po North Interchange, and Lam Kam Road Interchange from dual 2-lane to dual 3-lane, except Sha Tin bound carriageway at Tai Po North Interchange, which is widened from 3-lane to 4-lane, including realignment of various slip roads;

(iii) Modification and reconstruction of highways, vehicular bridges, underpasses and footbridges.

1.1.5. The construction works for this Project will be delivered in 2 stages i.e. Stage 1 (between Island House Interchange and Tai Hang) and Stage 2 (between Tai Hang and Wo Hop Shek Interchange). Stage 2 would be implemented under two works contracts. Contract No. HY/2012/06 "Widening of Fanling Highway – Tai Hang to Wo Hop Shek Interchange" and the entrusted portion to CEDD under Contract No. CV/2012/09 "Liantang/Heung Yuen Wai Boundary Control Point Site Formation and Infrastructure Works – Contract 3". This report focuses on Contract No. HY2012/06 "Widening of Fanling Highway – Tai Hang to Wo Hop Shek Interchange" in Stage 2 of the Project only.

1.1.6. Hyder-Arup-Black and Veatch Joint Venture (HABVJV) are appointed by Highways Department (HyD) as the consultants for the design and construction assignment for the Tolo project under Agreement No. CE 58/2000 Supplementary Agreement No. 3 (SA3) (i.e. the Engineer for the Contract).

1.1.7. China State Construction Engineering (Hong Kong) Ltd. (CSHK) was commissioned as the Contractor of the Contract.

1.1.8. AECOM Asia Co. Ltd. was commissioned by China State Construction Engineering (Hong Kong) Limited as the Environmental Team (ET) to undertake the Environmental Monitoring and Audit (EM&A) works for the Contract and Mott MacDonald Hong Kong Ltd. acts as the Independent Environmental Checker (IEC) for the Contract.

1.1.9. The construction phase of the Contract under the EP commenced on 21 November 2013.

1.1.10. According to the updated EM&A Manual of Stage 2 of the Project, there is a need of an EM&A programme including air quality and noise monitoring. The EM&A programme for Stage 2 of the Project commenced on 21 November 2013.

1.2 Scope of Report

1.2.1 This is the sixth monthly EM&A Report under the Contract No. HY/2012/06 "Widening of Fanling Highway – Tai Hang to Wo Hop Shek Interchange. This report presents a summary of the environmental monitoring and audit works, list of activities and mitigation measures proposed by the ET for the Contract in April 2014.

1.3 Project Organization

1.3.1 The project organization structure is shown in Appendix A. The key personnel contact names and numbers are summarized in Table 1.1.

Table 1.1 Contact Information of Key Personnel

Party	Position	Name	Telephone	Fax
ER (Hyder-Arup-Black & Veatch Joint Venture)	Chief Resident Engineer	Edwin Chung	6115 0818	2638 0950
IEC (Mott MacDonald Hong Kong Limited)	Independent Environmental Checker	Terence Kong	2828 5919	2827 1823
Contractor (China State Construction Engineering (Hong Kong) Limited)	Environmental Officer	Michael Tsang	9277 4956	2672 2501
		C C Chow	9679 6315	2672 2501
ET (AECOM Asia Company Limited)	ET Leader	Y W Fung	3922 9393	3922 9797

1.4 Summary of Construction Works

1.4.1 The construction phase for the Contract under the EP commenced on 21 November 2013.

1.4.2 Details of the construction works carried out by the Contractor in this reporting period are listed below:

- Site clearance;
- Ground investigation;
- Tree felling and transplantation;
- Piling works;
- Pipe laying;
- Retaining wall construction;
- Excavation; and
- Backfilling.

1.4.3 The Construction Programme is shown in Appendix B.

1.4.4 The general layout plan of the Project site showing the contract areas is shown in Figure 1.1.

1.4.5 The environmental mitigation measures implementation schedule are presented in Appendix C.

1.5 Summary of EM&A Programme Requirements

1.5.1 The EM&A programme required environmental monitoring for air quality, noise and environmental site inspections for air quality, water quality, noise, waste management, ecology, and landscape and visual impact. The EM&A requirements for each parameter described in the following sections include:-

- All monitoring parameters;
- Monitoring schedules for the reporting month and forthcoming months;
- Action and Limit levels for all environmental parameters;
- Event / Action Plan;
- Environmental mitigation measures, as recommended in the Project EIA study final report; and
- Environmental requirement in contract documents.

2 AIR QUALITY MONITORING

2.1 Monitoring Requirements

2.1.1 In accordance with the updated EM&A Manual, baseline 1-hour and 24-hour TSP levels at one air quality monitoring station was established. Impact 1-hour TSP monitoring was conducted for at least three times every 6 days, while impact 24-hour TSP monitoring was carried out for at least once every 6 days. The Action and Limit level of the air quality monitoring is provided in Appendix D.

2.2 Monitoring Equipment

2.2.1 24-hour TSP air quality monitoring was performed using High Volume Sampler (HVS) located at each designated monitoring station. The HVS meets all the requirements of the updated EM&A Manual. Portable direct reading dust meters were used to carry out the 1-hour TSP monitoring. Brand and model of the equipment is given in Table 2.1.

Table 2.1 Air Quality Monitoring Equipment

Equipment	Brand and Model
Portable direct reading dust meter (1-hour TSP)	Sibata Digital Dust Monitor (Model No. LD-3 and LD-3B)
High Volume Sampler (24-hour TSP)	Tisch Total Suspended Particulate Mass Flow Controlled High Volume Air Sampler (Model No. TE-5170)

2.3 Monitoring Locations

2.3.1 The monitoring station was set up at the proposed location in accordance with updated EM&A Manual. Table 2.2 describes details of the monitoring station. The locations are shown in Figure 1.2a.

Table 2.2 Locations of Impact Air Quality Monitoring Station

Location	Monitoring Station
AM2 (SR2)	Fanling Government Secondary School

2.4 Monitoring Parameters and Frequency

2.4.1 Table 2.3 summarizes the monitoring parameters, frequency and duration of impact TSP monitoring.

Table 2.3 Air Quality Monitoring Parameters and Frequency

Parameter	Frequency
24-hour TSP	Once every 6 days
1-hour TSP	3 times every 6 days while the highest dust impact was expected

2.5 Monitoring Methodology

2.5.1 24-hour TSP Monitoring

(a) The HVS was installed in the vicinity of the air sensitive receivers. The following criteria were considered in the installation of the HVS.

(i) A horizontal platform with appropriate support to secure the sampler against gusty wind was provided.
(ii) The distance between the HVS and any obstacles, such as buildings, was at least twice the height that the obstacle protrudes above the HVS.
(iii) A minimum of 2 meters separation from walls, parapets and penthouse for rooftop sampler.
(iv) A minimum of 2 meters separation from any supporting structure, measured horizontally.
(v) No furnace or incinerator flues nearby.
(vi) Airflow around the sampler was unrestricted.
(vii) Permission was obtained to set up the samplers and access to the monitoring stations.
(viii) A secured supply of electricity was obtained to operate the samplers.
(ix) The sampler was located more than 20 meters from any dripline.
(x) Any wire fence and gate, required to protect the sampler, did not obstruct the monitoring process.
(xi) Flow control accuracy was kept within ±2.5% deviation over 24-hour sampling period.

(b) Preparation of Filter Papers

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

(c) Field Monitoring

(i) The power supply was checked to ensure the HVS works properly.
(ii) The filter holder and the area surrounding the filter were cleaned.
(iii) The filter holder was removed by loosening the four bolts and a new filter, with stamped number upward, on a supporting screen was aligned carefully.
(iv) The filter was properly aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter.
(v) The swing bolts were fastened to hold the filter holder down to the frame. The pressure applied was sufficient to avoid air leakage at the edges.
(vi) Then the shelter lid was closed and was secured with the aluminum strip.
(vii) The HVS was warmed-up for about 5 minutes to establish run-temperature conditions.
(viii) A new flow rate record sheet was set into the flow recorder.
(ix) On site temperature and atmospheric pressure readings were taken and the flow rate of the HVS was checked and adjusted at around 1.1 m^3/min, and complied with the range specified in the updated EM&A Manual (i.e. 0.6-1.7 m^3/min).
(x) The programmable digital timer was set for a sampling period of 24 hrs, and the starting time, weather condition and the filter number were recorded.
(xi) The initial elapsed time was recorded.
(xii) At the end of sampling, on site temperature and atmospheric pressure readings were taken and the final flow rate of the HVS was checked and recorded.
(xiii) The final elapsed time was recorded.

(xiv) The sampled filter was removed carefully and folded in half length so that only surfaces with collected particulate matter were in contact.
(xv) It was then placed in a clean plastic envelope and sealed.
(xvi) All monitoring information was recorded on a standard data sheet.
(xvii) Filters were then sent to ALS Technichem (HK) Pty Ltd. for analysis.

(d) Maintenance and Calibration

(i) The HVS and its accessories were maintained in good working condition, such as replacing motor brushes routinely and checking electrical wiring to ensure a continuous power supply.
(ii) 5-point calibration of the HVS was conducted using TE-5025A Calibration Kit prior to the commencement of baseline monitoring. Bi-monthly 5-point calibration of the HVS will be carried out during impact monitoring.
(iii) Calibration certificate of the HVSs are provided in Appendix E.

2.5.2 1-hour TSP Monitoring

(a) Measuring Procedures

The measuring procedures of the 1-hour dust meter were in accordance with the Manufacturer's Instruction Manual as follows:-
(i) Turn the power on.
(ii) Close the air collecting opening cover.
(iii) Push the "TIME SETTING" switch to [BG].
(iv) Push "START/STOP" switch to perform background measurement for 6 seconds.
(v) Turn the knob at SENSI ADJ position to insert the light scattering plate.
(vi) Leave the equipment for 1 minute upon "SPAN CHECK" is indicated in the display.
(vii) Push "START/STOP" switch to perform automatic sensitivity adjustment. This measurement takes 1 minute.
(viii) Pull out the knob and return it to MEASURE position.
(ix) Push the "TIME SETTING" switch the time set in the display to 3 hours.
(x) Lower down the air collection opening cover.
(xi) Push "START/STOP" switch to start measurement.

(b) Maintenance and Calibration

(i) The 1-hour TSP meter was calibrated at 1-year intervals against a continuous particulate TEOM Monitor, Series 1400ab. Calibration certificates of the Laser Dust Monitors are provided in Appendix E.
(ii) 1-hour validation checking of the TSP meter against HVS is carried out yearly at the air quality monitoring locations.

2.6 Monitoring Schedule for the Reporting Month

2.6.1 The schedule for environmental monitoring in April 2014 is provided in Appendix F.

2.7 Results and Observations

2.7.1 The monitoring results for 1-hour TSP and 24-hour TSP are summarized in Table 2.4 and 2.5 respectively. Detailed impact air quality monitoring results are presented in Appendix G.

Table 2.4 Summary of 1-hour TSP Monitoring Results in the Reporting Period

Location	Average ($\mu g/m^3$)	Range ($\mu g/m^3$)	Action Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)
AM2 (Fanling Government Secondary School)	78.5	73.8 – 84.4	317.8	500

Table 2.5 Summary of 24-hour TSP Monitoring Results in the Reporting Period

Location	Average ($\mu g/m^3$)	Range ($\mu g/m^3$)	Action Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)
AM2 (Fanling Government Secondary School)	39.6	25.2 – 47.7	200.7	260

2.7.2 The major dust source during the monitoring mainly from nearby traffic emission.

2.7.3 All 1-hour and 24-hour TSP results were below the Action and Limit Level at all monitoring locations in the reporting month.

2.7.4 The event action plan is annexed in Appendix J.

2.7.5 Weather information including wind speed and wind direction is annexed in Appendix H. The information was obtained from the Hong Kong Observatory Tai Po and Tai Mei Tuk Automatic Weather Stations.

3 NOISE MONITORING

3.1 Monitoring Requirements

3.1.1 In accordance with the EM&A Manual, impact noise monitoring was conducted for at least once per week during the construction phase of the Contract. The Action and Limit level of the noise monitoring is provided in Appendix D.

3.2 Monitoring Equipment

3.2.1 Noise monitoring was performed using sound level meter at each designated monitoring station. The sound level meters deployed comply with the International Electrotechnical Commission Publications (IEC) 651:1979 (Type 1) and 804:1985 (Type 1) specifications. Acoustic calibrator was deployed to check the sound level meters at a known sound pressure level. Brand and model of the equipment is given in Table 3.1.

Table 3.1 Noise Monitoring Equipment

Equipment	Brand and Model
Integrated Sound Level Meter	Rion NL-31
Acoustic Calibrator	Rion NC-73

3.3 Monitoring Locations

3.3.1 Monitoring stations M2 and M3 were set up at the proposed locations in accordance with updated EM&A Manual. Figure 1.2a-b shows the locations of the monitoring stations. Table 3.2 describes the details of the monitoring stations.

Table 3.2 Locations of Impact Noise Monitoring Stations

Monitoring Station	Location	Description
M2	West Tai Wo	1.2m from the ground floor free-field of the Residential
M3	Fanling Government Secondary School	1m from the exterior of the roof top façade of the school

3.4 Monitoring Parameters and Frequency

3.4.1 Table 3.3 summarizes the monitoring parameters, frequency and duration of impact noise monitoring.

Table 3.3 Noise Monitoring Parameters, Frequency and Duration

Parameter	Frequency
30-mins measurement at each monitoring station between 0700 and 1900 on normal weekdays. L_{eq}, L_{10} and L_{90} would be recorded.	At least once per week

3.5 Monitoring Methodology

3.5.1 Monitoring Procedure

(a) Façade measurement was made at monitoring station M3, while free-field measurement was made at monitoring station M2.

(b) The sound level meter was set on a tripod at a height of 1.2 m above the ground for free-field measurements at monitoring station M2.

(c) The battery condition was checked to ensure the correct functioning of the meter.

(d) Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:-

(i) frequency weighting: A
(ii) time weighting: Fast
(iii) time measurement: $L_{eq(30\text{-}minutes)}$ during non-restricted hours i.e. 07:00 – 1900 on normal weekdays; $L_{eq(5\text{-}minutes)}$ during restricted hours i.e. 19:00 – 23:00 and 23:00 – 07:00 of normal weekdays, whole day of Sundays and Public Holidays

(e) Prior to and after each noise measurement, the meter was calibrated using the acoustic calibrator for 94dB(A) at 1000 Hz. If the difference in the calibration level before and after measurement was more than 1 dB(A), the measurement would be considered invalid and repeat of noise measurement would be required after re-calibration or repair of the equipment.

(f) During the monitoring period, the L_{eq}, L_{10} and L_{90} were recorded. In addition, site conditions and noise sources were recorded on a standard record sheet.

(g) Noise measurement was paused during periods of high intrusive noise (e.g. dog barking, helicopter noise) if possible. Observations were recorded when intrusive noise was unavoidable.

(h) Noise monitoring was cancelled in the presence of fog, rain, wind with a steady speed exceeding 5m/s, or wind with gusts exceeding 10m/s.

3.5.2 Maintenance and Calibration

(a) The microphone head of the sound level meter was cleaned with soft cloth at regular intervals.

(b) The meter and calibrator were sent to the supplier or HOKLAS laboratory to check and calibrate at yearly intervals.

(c) Calibration certificates of the sound level meters and acoustic calibrators are provided in Appendix E.

3.6 Monitoring Schedule for the Reporting Month

3.6.1 The schedule for environmental monitoring in April 2014 is provided in Appendix F.

3.7 Monitoring Results

3.7.1 The monitoring results for construction noise are summarized in Table 3.4 and the monitoring data is provided in Appendix I.

Table 3.4 Summary of Construction Noise Monitoring Results in the Reporting Period

	Average, dB(A), $L_{eq\ (30\ mins)}$	**Range, dB(A), $L_{eq\ (30\ mins)}$**	**Limit Level, dB(A), $L_{eq\ (30\ mins)}$**
M2*	68.6	66.8 – 69.6	75
M3#	65.6	63.8 – 66.6	65/70

*+3dB(A) Façade correction included
Limit Level of 70dB(A) applies to education institutes while 65dB(A) applies during school examination period.

3.7.2 There was no noise complaint related to 0700 – 1900 hours on normal weekdays was received and followed up by Environmental Team in the reporting period. Hence, no Action Level exceedance was recorded.

3.7.3 No noise monitoring result exceeding the Limit Level was recorded at all monitoring stations in the reporting month.

3.7.4 Major noise sources during the noise monitoring were mainly road traffic noise.

3.7.5 The event action plan is annexed in Appendix J.

4 ENVIRONMENTAL SITE INSPECTION AND AUDIT

4.1 Site Inspection

4.1.1 Site Inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control and mitigation measures for the Contract. In the reporting month, 4 site inspections were carried out respectively on 1, 10, 15, 22 and 29 April 2014 for the Contract. While no specific observation was recorded, recommendations on remedial actions were given to the Contractor for precautionary purpose.

4.1.2 The environmental site inspections summaries are provided in Appendix K.

4.1.3 Particular observations during the site inspections are described below:

Air Quality

4.1.4 The Contractor was reminded to cover the open stockpile under the bridge at Area 340.

4.1.5 Mud trails were observed at the site exit. The Contractor was reminded to wash the wheels of vehicles before vehicles leave the site.

Noise

4.1.6 The generator was observed to be too close to the sensitive receiver. The Contractor was reminded to re-position it to reduce the noise generated to the house nearby.

4.1.7 The air compressors were observed to be too close to the sensitive receiver. The Contractor was reminded to re-position them to reduce the noise generated to the house nearby.

Water Quality

4.1.8 No adverse observation was identified in the reporting month.

Chemical and Waste Management

4.1.9 The Contractor was reminded to close all the gaps between the drip tray and the generator at Area 346.

Landscape and Visual Impact

4.1.10 No adverse observation was identified in the reporting month.

Miscellaneous

4.1.11 Stagnant water was observed on the access road at Area 320. The Contractor was reminded to clear the water to prevent mosquito breeding.

4.2 Advice on the Solid and Liquid Waste Management Status

4.2.1 The Contractor has registered as chemical waste producers for the Contract. C&D material sorting was carried out on site. Sufficient numbers of receptacles were available for general refuse collection.

4.2.2 As advised by the Contractor, 44m^3 of inert C&D material was disposed of as public fill to Tuen Mun 38 (of which 0m^3 was broken concrete), while 60m^3 of general refuse was disposed of at NENT landfill. 47kg of paper/cardboard packaging, 0kg of plastics and 0kg of metals were collected by recycling contractors in the reporting month. 25m^3 and 19m^3 of inert C&D materials were reused on

site and reused in NENT for backfilling purpose respectively. 0kg of chemical wastes was collected by licensed contractors in the reporting period.

4.2.3 The actual amounts of different types of waste generated by the activities of the Project in the reporting month are shown in Table 4.1.

Table 4.1 Summary of Waste Flow Table

Waste Type	Actual Amount	Disposal/Reuse Locations
Inert C&D materials	44m^3 (of which 0m^3 was broken concrete)	Tuen Mun 38
General refuse	60m^3	NENT Landfill
Paper/cardboard packaging	47kg	Recycling Contractors
Plastics	0kg	Recycling Contractors
Metals	0kg	Recycling Contractors
C&D materials reused on site	25m^3	Site Area
C&D materials reused in NENT for backfilling	19m^3	NENT Landfill
Chemical wastes	0kg	Licensed Contractors

4.2.4 The Contractor was advised to maintain on site waste sorting and recording system and maximize reuse / recycle of C&D wastes.

4.3 Environmental Licenses and Permits

4.3.1 The environmental licenses and permits for Stage 1 of the Project and valid in the reporting month is summarized in Table 4.2.

Table 4.2 Summary of Environmental Licensing and Permit Status

Statutory Reference	License/ Permit	License or Permit No.	Valid Period		License/ Permit Holder	Remarks
			From	To		
EIAO	Environmental Permit	EP-324/2008/B*	17/03/2014	N/A	HyD	The VEP (EP-324/2008/B) was subsequently granted on 17 March 2014 which superseded the previous EP (EP-324/2008/A).
WPCO	Discharge License (Site)	WT00017159-2013	18/09/2013	30/09/2018	CSHK	--
WDO	Chemical Waste Producer Registration	5213-722-C3822-01	5/09/2013	N/A	CSHK	Chemical waste produced in Contract HY/2012/06
WDO	Billing Account for Disposal of Construction Waste	7009328	08/09/2009	N/A	CSHK	Waste disposal in Contract HY/2008/09

Statutory Reference	License/ Permit	License or Permit No.	Valid Period		License/ Permit Holder	Remarks
			From	To		
NCO	Construction Noise Permit	GW-RN0648-13	10/11/2013	20/4/2014	CSHK	Tree Felling at South of Fanling Highway between Yuen Leng and Hong Lok Yuen (0900 to 1800 hours on Sunday)
		GW-RN0755-13	08/12/2013	01/06/2014	CSHK	Tree Felling at North of Fanling Highway between Yuen Leng and Hong Lok Yuen
		GW-RN0782-13	12/12/2013	07/06/2014	CSHK	Loading & Unloading at Fanling Highway between Hong Lok Yuen and Yuen Leng
		GW-RN0040-14	09/02/2014	20/07/2014	CSHK	Loading and Unloading at Fanling Highway between Ch.21.9 and Ch. 24.1 (North Bound)
		GW-RN0055-14	31/01/2014	27/04/2014	CSHK	Loading and Unloading at Fanling Highway between Nam Wah Po and Tai Hang North Bound
		GW-RN0068-14	09/02/2014	20/7/2014	CSHK	Tree Felling at Fanling Highway between Ch.23.0 and 23.8 (North Bound)
		GW-RN0259-14	17/04/2014	19/09/2014	CSHK	Tree Felling at Fanling Highway between CH23.6 and CH24.3 (South Bound)

4.4 Implementation Status of Environmental Mitigation Measures

4.4.1 A summary of the Implementation Schedule of Environmental Mitigation Measures (EMIS) is presented in Appendix C.

4.5 Summary of Exceedances of the Environmental Quality Performance Limit

4.5.1 All 1-hour and 24-hour TSP monitoring results complied with the Action / Limit Levels in the reporting period.

4.5.2 For construction noise, no Action and Limit Level exceedance was recorded at all monitoring stations in the reporting period.

4.6 Summary of Complaints, Notification of Summons and Successful Prosecutions

4.6.1 The Environmental Complaint Handling Procedure is annexed in Figure 4.1.

4.6.2 No complaint, notification of summons and successful prosecution was received in the reporting month.

4.6.3 Statistics on complaints, notifications of summons and successful prosecutions are summarized in Appendix L.

5 FUTURE KEY ISSUES

5.1 Construction Programme for the Coming Months

5.1.1 The major construction works for the Contract in May 2014 will be:-

- Site clearance;
- Ground investigation;
- Tree felling and transplantation;
- Piling works;
- Pipe laying;
- Retaining wall construction;
- Excavation; and
- Backfilling.

5.2 Key Issues for the Coming Month

5.2.1 Key issues to be considered in May 2014:-

- Properly store and label oils and chemicals on site;
- Chemical, chemical waste and waste management;
- Collection of construction waste should be carried out regularly;
- Properly maintain all drainage facilities and wheel washing facilities on site;
- Exposed slopes should be covered up properly if no temporary work will be conducted;
- Quieter powered mechanical equipment should be used;
- Suppress dust generated from excavation activities and haul road traffic; and
- Tree protective measures for all retained trees should be well maintained.

5.3 Monitoring Schedule for the Coming Month

5.3.1 The tentative schedule for environmental monitoring in May 2014 is provided in Appendix F.

6 CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

6.1.1 The construction phase and EM&A programme of the Contract commenced on 21 November 2013.

6.1.2 1-hour TSP, 24-hour TSP and noise monitoring were carried out in the reporting period.

6.1.3 All 1-hour and 24-hour TSP monitoring results complied with the Action / Limit Levels in the reporting period. No Action and Limit Level exceedance for construction noise was recorded at all monitoring stations in the reporting month.

6.1.4 5 environmental site inspections were carried out in April 2014. Recommendations on remedial actions were given to the Contractors for the deficiencies identified during the site audits.

6.1.5 No complaint, notification of summons and successful prosecution was received in the reporting month.

6.2 Recommendations

6.2.1 According to the environmental site inspection performed in the reporting month, while no specific observation was recorded, the following recommendations on remedial actions were provided to the Contractor for precautionary purpose:

Air Quality Impact

- All vehicles should be washed to remove any dusty materials before leaving the site.
- Haul roads should be sufficiently dampened to minimize fugitive dust generation.
- Wheel washing facilities should be properly maintained to ensure properly functioning.

Construction Noise Impact

- Noisy operations should be oriented to a direction away from sensitive receivers as far as possible.

Water Quality Impact

- Stagnant water accumulated in drip trays should be removed.
- Silt accumulated at public drain should be cleaned up.
- Silty effluent should be treated/desilted before discharged. Untreated effluent should be prevented from entering public drain channel.

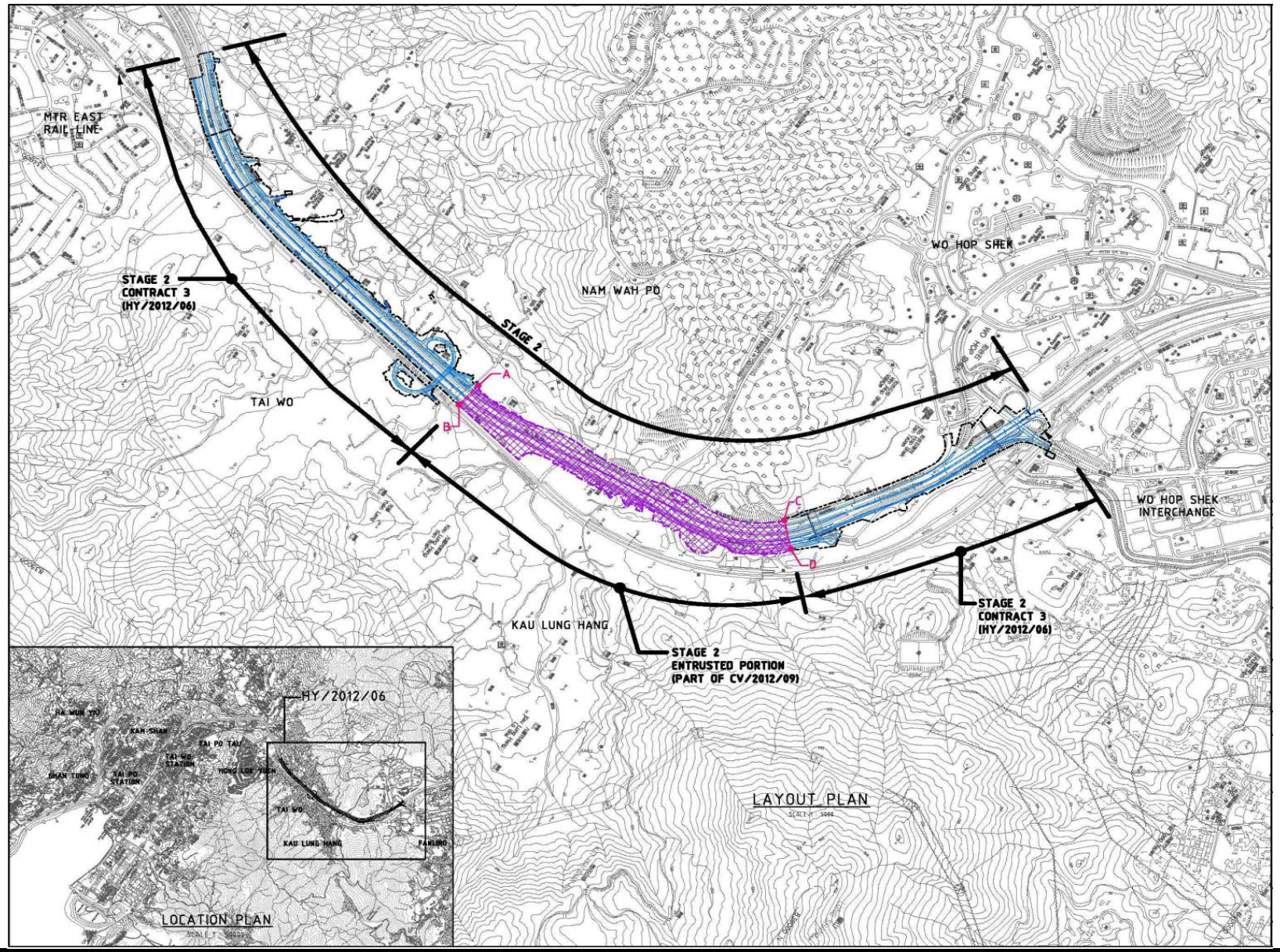
Chemical and Waste Management

- C&D material should be sorted and removed timely.
- All plants on site should be properly maintained to prevent oil leakage.
- Oil stains on soil surface and empty chemical containers should be cleared and disposed of as chemical waste.

Landscape and Visual Impact

- All retained trees should be properly fenced off at the works area.

FIGURES



	EASTING	NORTHING
A	833867.6259	837386.5638
B	833945.6833	837375.1412
C	833721.8117	838310.5250
D	833782.3083	838375.1303

CONTRACT NO. HY/2012/06

WIDENING OF FANLING HIGHWAY

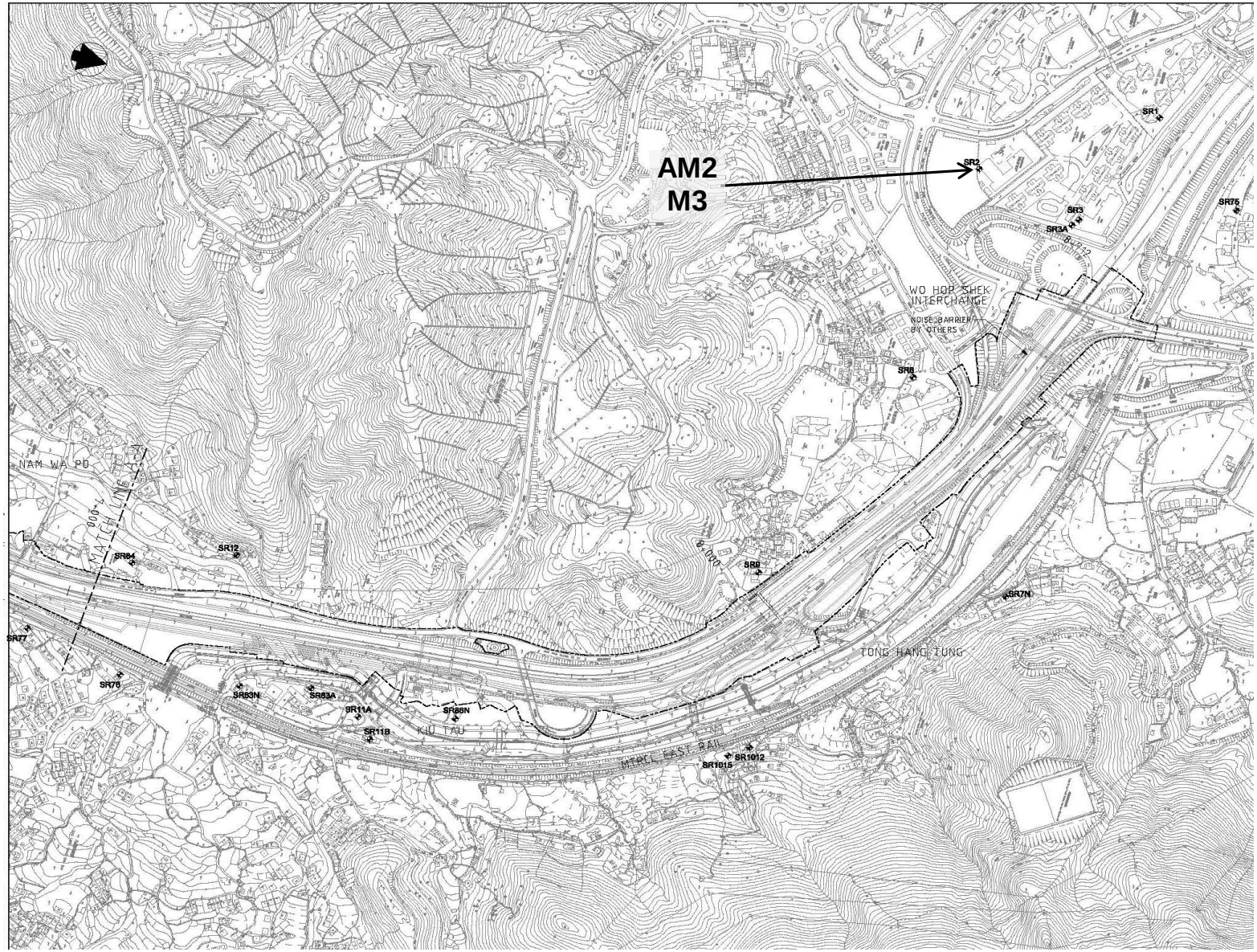
- TAI HANG TO WO HOP SHEK INTERCHANGE

AECOM

Layout Plan

Date: Dec 2013

Figure 1.1



CONTRACT NO. HY/2012/06

WIDENING OF FANLING HIGHWAY

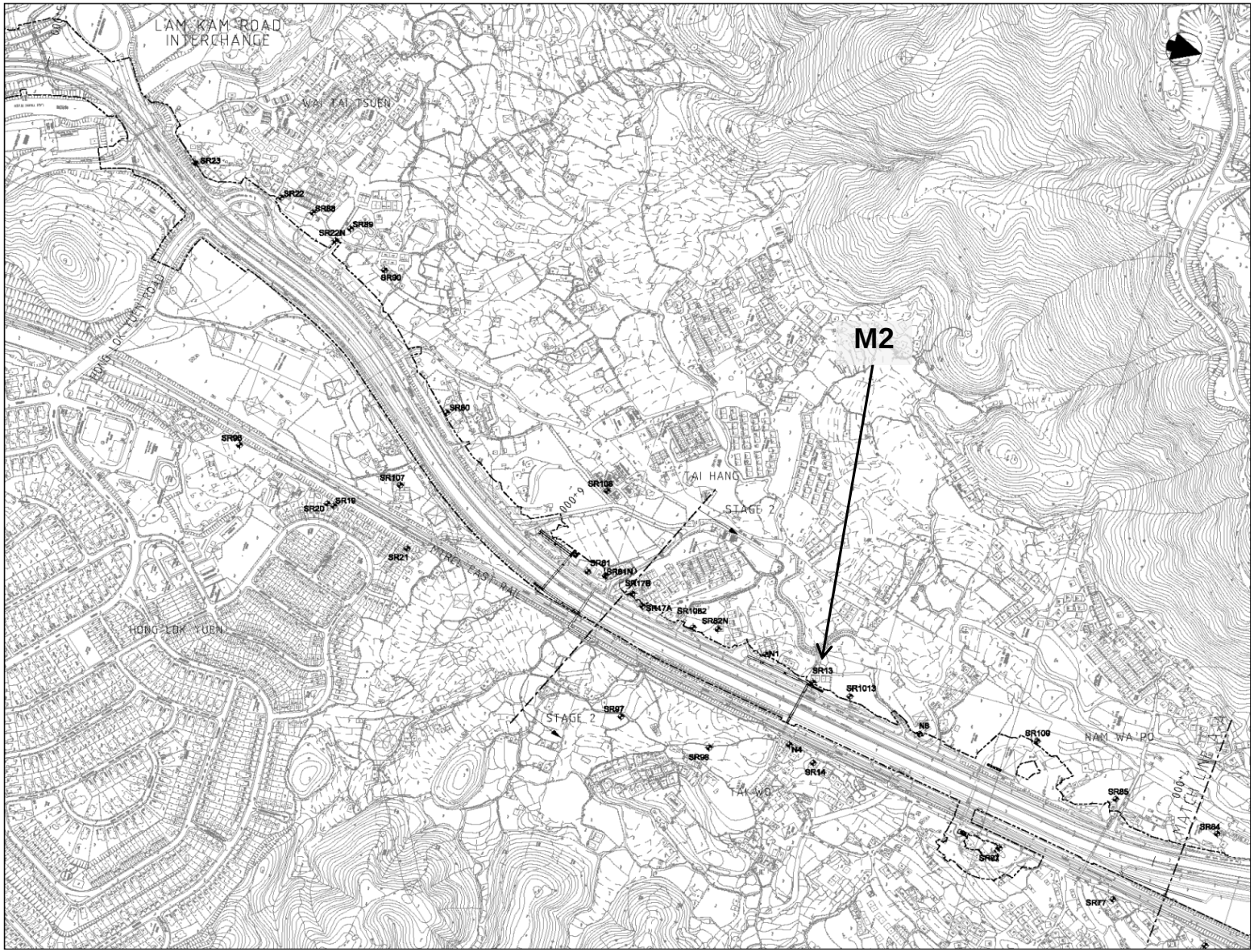
- TAI HANG TO WO HOP SHEK INTERCHANGE

AECOM

Locations of Monitoring Station

Date: Dec 2013

Figure 1.2a



CONTRACT NO. HY/2012/06

WIDENING OF FANLING HIGHWAY

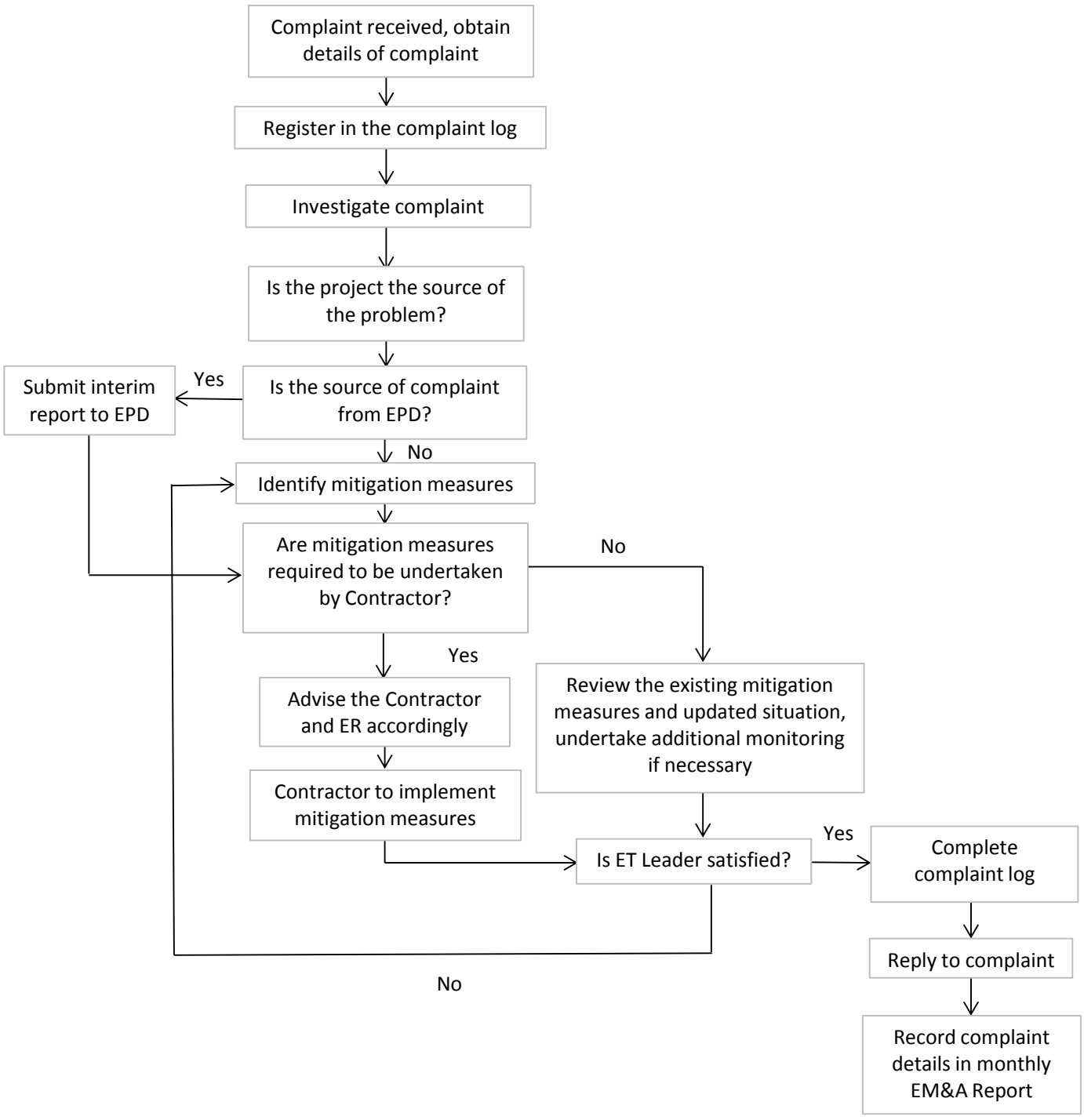
- TAI HANG TO WO HOP SHEK INTERCHANGE

AECOM

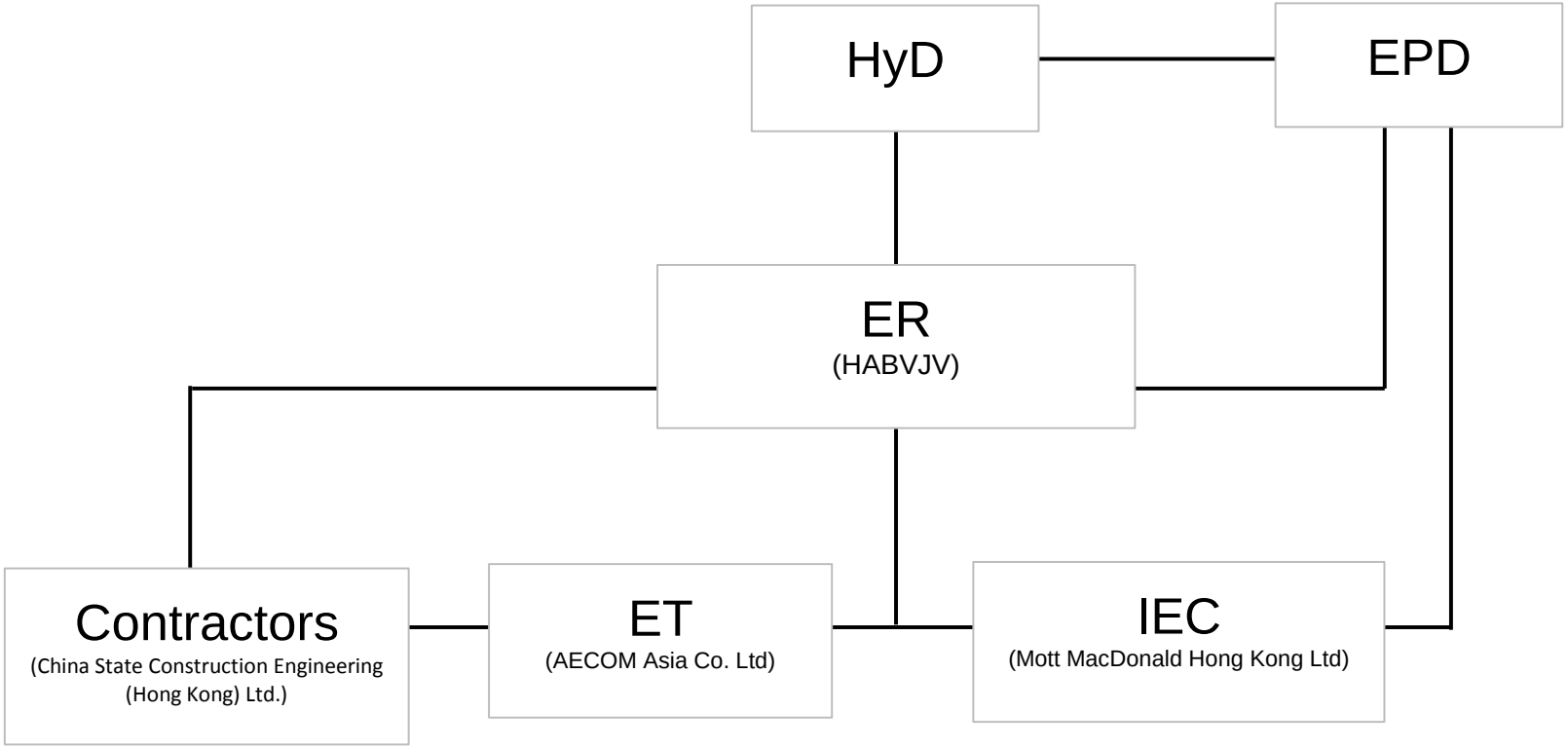
Locations of Monitoring Station

Date: Dec 2013

Figure 1.2b



APPENDIX A
PROJECT ORGANIZATION STRUCTURE



CONTRACT NO. HY/2012/06
WIDENING OF FANLING HIGHWAY
- TAI HANG TO WO HOP SHEK INTERCHANGE

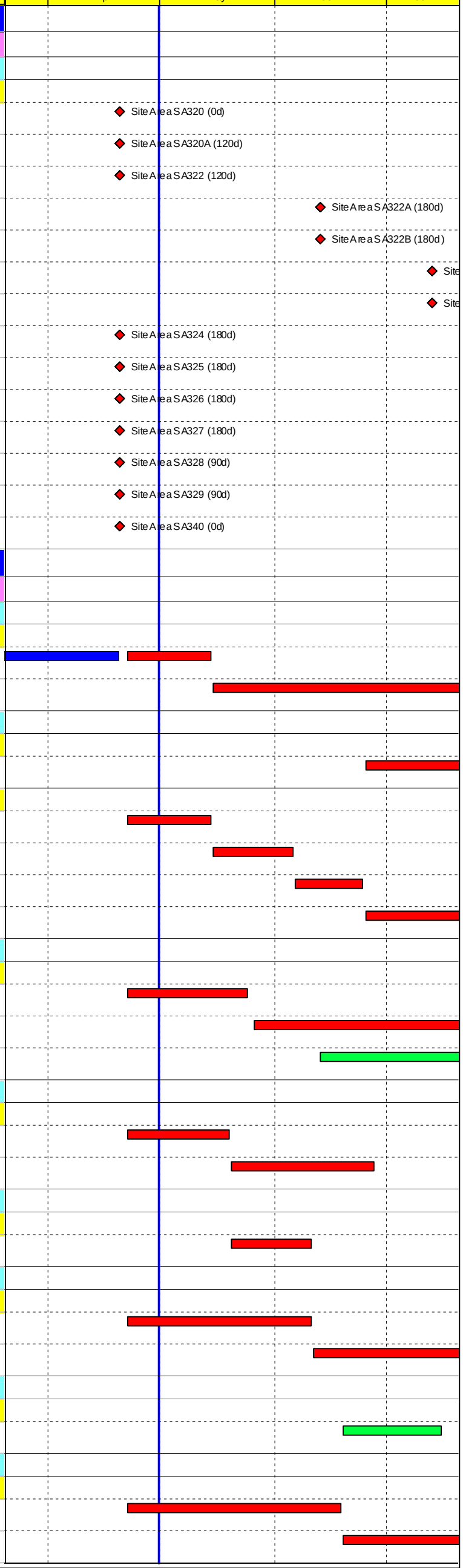
AECOM

Project Organization Structure

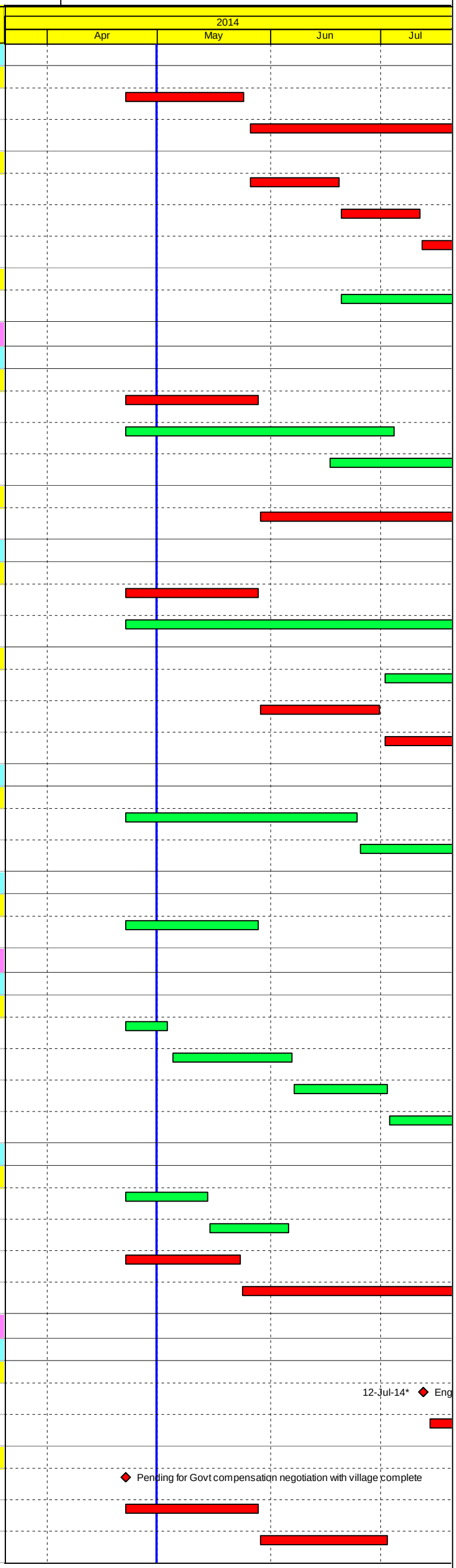
Project No.: 60307376 **Date: Dec 2013** **Appendix A**

APPENDIX B
CONSTRUCTION PROGRAMMES

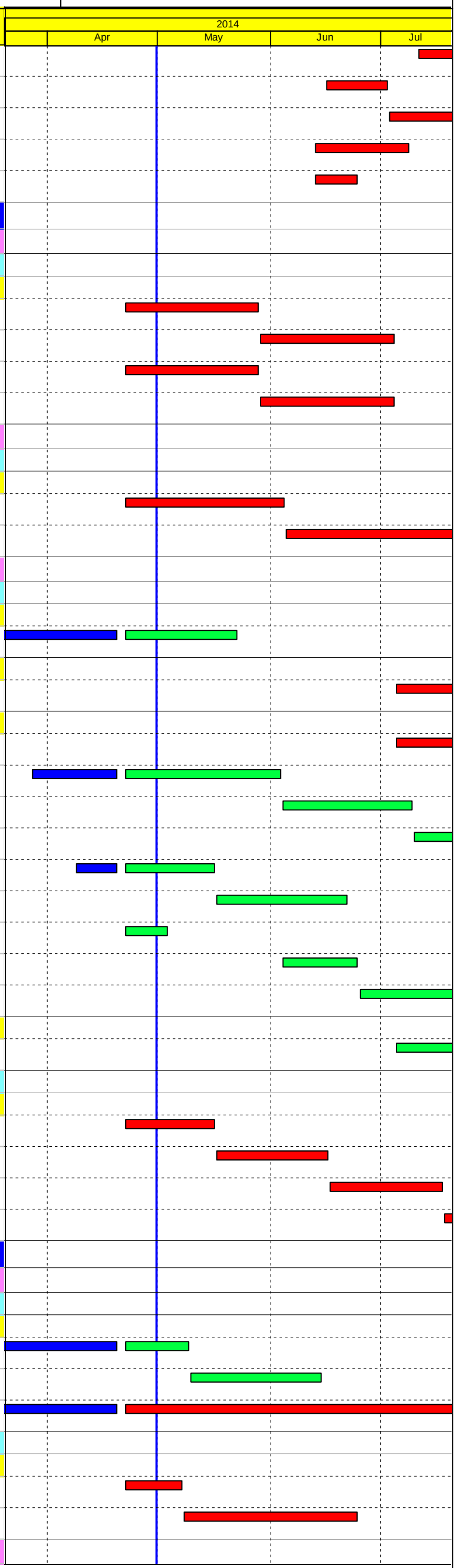
Activity ID	Activity Name	Duration % Complete	Remaining Duration	Original Duration	Start	Finish	Total Float
Contract Condition							
General							
Contract Condition							
Contract Condition							
POSSA320	Site Area SA320 (0d)	0%	0	0	20-Apr-14*		-19
POSSA320A	Site Area SA320A (120d)	0%	0	0	20-Apr-14*		-19
POSSA322	Site Area SA322 (120d)	0%	0	0	20-Apr-14*		-19
POSSA322A	Site Area SA322A (180d)	0%	0	0	13-Jun-14*		0
POSSA322B	Site Area SA322B (180d)	0%	0	0	13-Jun-14*		0
POSSA323A	Site Area SA323A (360d)	0%	0	0	13-Jul-14*		0
POSSA323B	Site Area SA323B (360d)	0%	0	0	13-Jul-14*		0
POSSA324	Site Area SA324 (180d)	0%	0	0	20-Apr-14*		-19
POSSA325	Site Area SA325 (180d)	0%	0	0	20-Apr-14*		-19
POSSA326	Site Area SA326 (180d)	0%	0	0	20-Apr-14*		-19
POSSA327	Site Area SA327 (180d)	0%	0	0	20-Apr-14*		-19
POSSA328	Site Area SA328 (90d)	0%	0	0	20-Apr-14*		-19
POSSA329	Site Area SA329 (90d)	0%	0	0	20-Apr-14*		-19
POSSA340	Site Area SA340 (0d)	0%	0	0	20-Apr-14*		-19
ZONE 2 (Ch. 5880 to 6930)							
Noise Barrier Along TWSR-West and Laying New Utilities							
Site Clearance & Demolition of Existing Structure							
Demolition Work							
Z2.P2N.1242	Pending for design brief from Villager/ Engineer	40%	18	30	01-Jan-14 A	14-May-14	-58
Z2.P2N.1245	Method statement submission/ approval	0%	60	60	15-May-14	25-Jul-14	-58
NB47 (Ch.5880-5930)-TWSR West Side							
Noise Barrier Works							
NB00270	NB47 (Ch5880-5930)- Footing & Wall Structure	0%	30	30	25-Jun-14	30-Jul-14	-108
DSD Southern Trunk Sewer, Water Main Fire Main Works							
TSZ10250	Sheet Piling & Excavation(~6m below ground) (along NB47)	0%	18	18	22-Apr-14	14-May-14	-108
TSZ10260	DSD Trunk Sewer laying (along NB47)	0%	18	18	15-May-14	05-Jun-14	-108
TSZ10270	Backfill up to NB47 footing level	0%	16	16	06-Jun-14	24-Jun-14	-108
TSZ10280	Watermain installation (along NB47)	0%	26	26	25-Jun-14	25-Jul-14	-106
NB48 (Ch.5995-6120)-TWSR West Side							
Noise Barrier Works							
NB00355	NB48 - Pre-drilling	0%	27	27	22-Apr-14	24-May-14	-5
NB00360	NB48 (NB48/1-5 up to THFB) piling (0.19m -54no)	0%	81	81	26-May-14	29-Aug-14	-5
NB00415	NB48 (NB48/5-10) Pre-drilling	0%	64	64	13-Jun-14	27-Aug-14	76
NB49B (Ch.6215-6235)-TWSR West Side							
Noise Barrier Works							
NB00545	NB49B - Pre-drilling	0%	22	22	22-Apr-14	19-May-14	-35
NB00550	NB49B piling (0.19m -22no)	0%	33	33	20-May-14	27-Jun-14	-35
NB54 (Ch.6240-6280)-TWSR West Side							
Noise Barrier Works							
NB00605	NB54 - ID2-1 Pre-drilling	0%	18	18	20-May-14	10-Jun-14	-20
NB57 (Ch.6365-6445)-TWSR West Side							
Noise Barrier Works							
NB00800	NB57 -Pre-drilling	0%	40	40	22-Apr-14	10-Jun-14	-69
NB00810	NB57 piling (0.19m -82no)	0%	123	123	11-Jun-14	05-Nov-14	-69
NB58 (Ch.6445-6480)-TWSR West Side							
Noise Barrier Works							
NB00870	NB58 -Pre-drilling	0%	22	22	19-Jun-14	15-Jul-14	170
NB59 (Ch.6490-6590)-TWSR West Side							
Noise Barrier Works							
NB00940	NB59 -Pre-drilling	0%	47	47	22-Apr-14	18-Jun-14	-56
NB00950	NB59 - piling (0.19m -94no)	0%	144	144	19-Jun-14	08-Dec-14	-56



Activity ID	Activity Name	Duration % Complete	Remaining Duration	Original Duration	Start	Finish	Total Float
NB63 (Ch.6610-6700)-TWSR West Side							
Noise Barrier Works							
NB4550	NB63 - ID3-1 piling (0.19m -18no)-1 rigs	0%	27	27	22-Apr-14	24-May-14	-79
NB4560	NB63 - ID3-1 Footing & Wall Structure	0%	60	60	26-May-14	05-Aug-14	4
DSD Southern Trunk Sewer, Water Main Fire Main Works							
TSZ10300	Sheet Piling & Excavation(~7m below ground) (along NB63)	0%	21	21	26-May-14	19-Jun-14	-79
TSZ10310	DSD Trunk Sewer laying (along NB63)	0%	18	18	20-Jun-14	11-Jul-14	-79
TSZ10320	Backfill up to NB63 footing level	0%	34	34	12-Jul-14	20-Aug-14	-79
DSD Southern Trunk Sewer - Trenchless Construction							
TSZ10950	Construct Pipe jacking pits	0%	60	60	20-Jun-14	29-Aug-14	134
Bridge Construction							
New Tai Hang Footbridge							
General							
THBF0100	Site Clearance	0%	30	30	22-Apr-14	28-May-14	-103
THBF0330	Structure steel Shop drawing submission (THFB)	0%	60	60	22-Apr-14	04-Jul-14	754
THBF0335	Structure steel Shop drawing approval (THFB)	0%	30	30	17-Jun-14	22-Jul-14	754
TWSR-East FL Highway S/B Side Section							
THBF0430	Precautionary work for MTRC I&P area	0%	45	45	29-May-14	22-Jul-14	-103
New Tai Wo Footbridge							
General							
TWFB1010	Site Clearance	0%	30	30	22-Apr-14	28-May-14	1
TWFB1020	Structure steel Shop drawing submission (TWFB)	0%	90	90	22-Apr-14	08-Aug-14	941
TWSR-West/ FL Highway N/B Side Section							
TWFB1270	TWP4, TWP5 - Predrilling	0%	24	24	02-Jul-14	29-Jul-14	48
TWFB1310	TWAB1 - Predrilling	0%	27	27	29-May-14	30-Jun-14	1
TWFB1320	TWAB1 - Pre-bored H pile (18 nos)	0%	54	54	02-Jul-14	02-Sep-14	1
Temporary Tai Wo Footbridge							
Design Works							
TWFB-T1000	Procurement of Temporary bridge Design consultant	0%	52	52	22-Apr-14	24-Jun-14	320
TWFB-T1010	Design preparation	0%	90	90	25-Jun-14	11-Oct-14	320
Demolition of Existing Tai Wo Footbridge							
TWSR-West/ FL Highway N/B Side Section							
TWFB-DE0900	Site Clearance	0%	30	30	22-Apr-14	28-May-14	759
Noise Barrier Along Fanling Highway S/B							
NB51 (Ch.5935-6055)-FH S/B Side							
Noise Barrier Works							
NB02250	NB51 ID1-3 (0-25m), 18nos Predrilling	0%	10	10	22-Apr-14	03-May-14	470
NB02260	NB51 ID1-3 (0-25m) 18nos Piling- 1 rigs	0%	27	27	05-May-14	06-Jun-14	470
NB02270	NB51 ID1-3 (0-25m) - Sheet piling & Excavation	0%	21	21	07-Jun-14	02-Jul-14	470
NB02280	NB51 ID1-3 (0-25m) - Footing & Wall Structure	0%	90	90	03-Jul-14	18-Oct-14	470
NB61A (Ch.6560-6745)-FH S/B Side (MTRC I&P Area)							
Noise Barrier Works							
NB02940	NB61A ID 2-3 (50-75m), 18nos Predrilling	0%	18	18	22-Apr-14	14-May-14	20
NB02950	NB61A ID 2-3 (50-75m) 18nos Piling- 1 rigs	0%	18	18	15-May-14	05-Jun-14	20
NB03010	NB61A (75-190m) - Sheet piling & Excavation	0%	26	26	22-Apr-14	23-May-14	-120
NB03020	NB61A (75-190m) - Footing & Wall Structure	0%	70	70	24-May-14	15-Aug-14	-120
Other Works							
Site Clearance & Demolition of Existing Structure							
Contract Condition							
MCLT1000	Engineer Excise Section 3b Option	0%	0	0		12-Jul-14*	0
Z2.P2N.1280	Re-provision of Man Ching Lung Tong	0%	150	150	14-Jul-14	10-Jan-15	6
General							
Z2.P2N.0990	Pending for Govt compensation negotiation with village complete	0%	0	0	22-Apr-14		-137
Z2.P2N.1000	Liaison with relevant villages houses's owner and related parties	0%	30	30	22-Apr-14	28-May-14	-137
Z2.P2N.1010	Submission of contractor's design for site formation	0%	28	28	29-May-14	02-Jul-14	-137



Activity ID	Activity Name	Duration % Complete	Remaining Duration	Original Duration	Start	Finish	Total Float
Z2.P2N.1020	Approval of contractor's Design by Engineer	0%	14	14	11-Jul-14	26-Jul-14	-137
Z2.P2N.1030	Submission of DIA & SIA report to DSD	0%	14	14	16-Jun-14	02-Jul-14	-137
Z2.P2N.1040	Consent from DSD	0%	21	21	03-Jul-14	26-Jul-14	-137
Z2.P2N.1050	Temporary access road construction	0%	21	21	13-Jun-14	08-Jul-14	-110
Z2.P2N.1060	Site clearance	0%	10	10	13-Jun-14	24-Jun-14	-110
South Buffer Zone 1 (SBZ1) (within Zone 2)(Ch.6740 to 6930)							
General							
General							
General							
POSSA328a	Tree Felling/Transplant	0%	30	30	22-Apr-14	28-May-14	-3
POSSA328a10	Site Clearance/ Trip Pit etc	0%	30	30	29-May-14	04-Jul-14	-3
POSSA329a	Tree Felling/Transplant	0%	30	30	22-Apr-14	28-May-14	-20
POSSA329a10	Site Clearance/ Trip Pit etc	0%	30	30	29-May-14	04-Jul-14	-20
Noise Barrier Along TWSR-West and Laying New Utilities							
NB64 (Ch.6860-6920)-TWSR West Side							
Noise Barrier Works							
NB001000	NB64 -Pre-drilling	0%	35	35	22-Apr-14	04-Jun-14	-142
NB001010	NB64 -piling (0.19m -78no)	0%	90	90	05-Jun-14	19-Sep-14	-142
Bridge Construction							
Kau Lung Hang Vehicular Bridge							
General							
Z2.KLH.1070	Consent from Engineer	10.71%	25	28	28-Nov-13 A	22-May-14	32
KLH Bridge - West Ramp							
Z2.KLH.0900	West Abutment- Pre-drilling work	0%	20	20	05-Jul-14	28-Jul-14	-3
KLH Bridge - Deck 3							
Z2.KLH.1325	Construct Temp Road - For diversion of existing TWR east	0%	20	20	05-Jul-14	28-Jul-14	-20
Z2.KLH.1790	East Abutment - Pre-bored H-pile piling works (13 Nos.)	12.82%	34	39	28-Mar-14 A	03-Jun-14	21
Z2.KLH.1800	East Abutment - Pile testing	0%	30	30	04-Jun-14	09-Jul-14	21
Z2.KLH.1810	East Abutment - Pile caps, abutment wall construction	0%	75	75	10-Jul-14	08-Oct-14	21
Z2.KLH.1830	VBP7 - Pre-bored H-pile piling works (7 Nos.)	4.76%	20	21	09-Apr-14 A	16-May-14	200
Z2.KLH.1840	VBP7- Pile testing	0%	30	30	17-May-14	21-Jun-14	200
Z2.KLH.1860	VBP8 - Pre-drilling work	0%	10	10	22-Apr-14	03-May-14	102
Z2.KLH.1870	VBP8 - Pre-bored H-pile piling works (6 Nos.)	0%	18	18	04-Jun-14	24-Jun-14	78
Z2.KLH.1880	VBP8 - Pile testing	0%	30	30	25-Jun-14	30-Jul-14	78
KLH Bridge - Deck 2							
Z2.KLH.1190	Temp road diversion at TWSR-W for TTA for VBP5 works	0%	45	45	05-Jul-14	26-Aug-14	23
Demolition of Existing Nam Wa Po Footbridge							
General							
Z2.NWP.0500	Site Clearance	0%	20	20	22-Apr-14	16-May-14	-93
Z2.NWP.1000	Modification of Existing Planter for Pier of Temporary Footbridge	0%	25	25	17-May-14	16-Jun-14	-93
Z2.NWP.1010	Removal of Existing Staircase Portion	0%	26	26	17-Jun-14	17-Jul-14	-93
Z2.NWP.1020	Temp. Steel Ramp, Pier, Deck Construction	0%	45	45	18-Jul-14	08-Sep-14	-93
North Buffer Zone 2 (NBZ2) (within Zone 4) (Ch. 7925 to 8100)							
Site Formation							
Site Formation Works							
Site Formation Work							
Z4SF1060	Backfilling up to formation level for Drainage work	53.33%	14	30	20-Feb-14 A	09-May-14	18
Z4SF1065	Drainage Work	0%	30	30	10-May-14	14-Jun-14	18
Z4SF1070	Backfilling (~20000m3)	0%	180	180	11-Mar-14 A	25-Nov-14	-88
Retaining Wall W76							
Structure Works							
RW761080	Base slab - W76 (~7m high)	0%	12	12	22-Apr-14	07-May-14	-20
RW761085	Wall construction - W76 (~7m high)	0%	40	40	08-May-14	24-Jun-14	-20
Bridge Construction							



Remaining Level o...
Actual Level of Effort
Actual Work
Remaining Work
Critical Remaining ...
Milestone
Crit. Milestone

Project File: HY/2012/06: IWP Rev. 5 (1404)

Layout: 3 Month Rolling Program

Page 3 of 5

Primavera Systems, Inc.

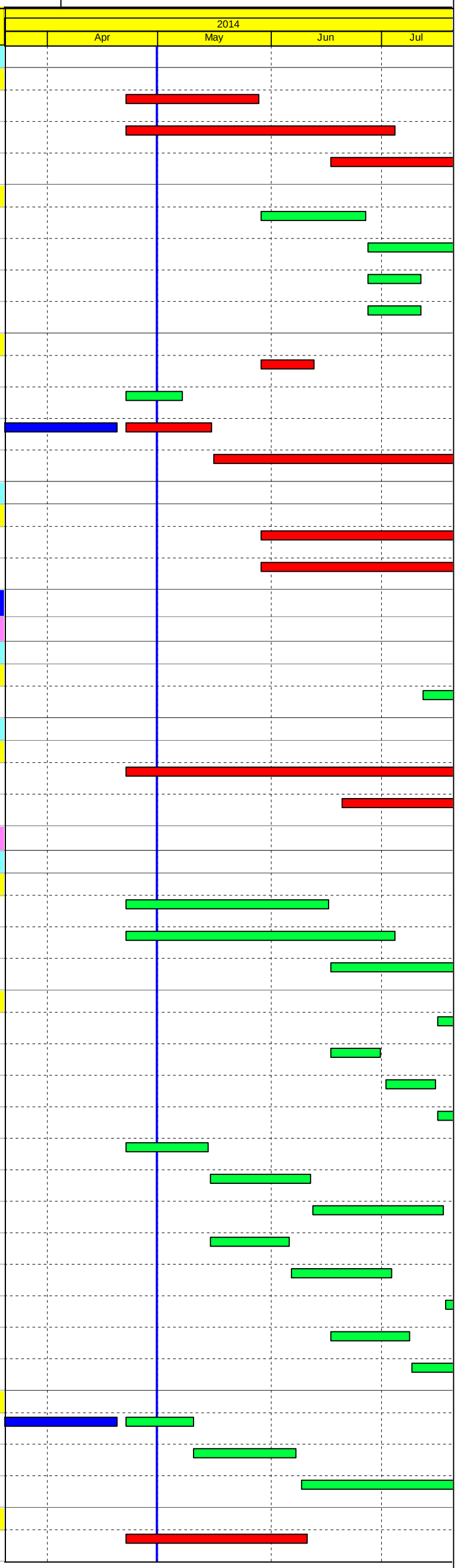
Contract No. HY/2012/06

Widening of Fanling Highway - Tai Hang to Wo Hop Shek Interchange

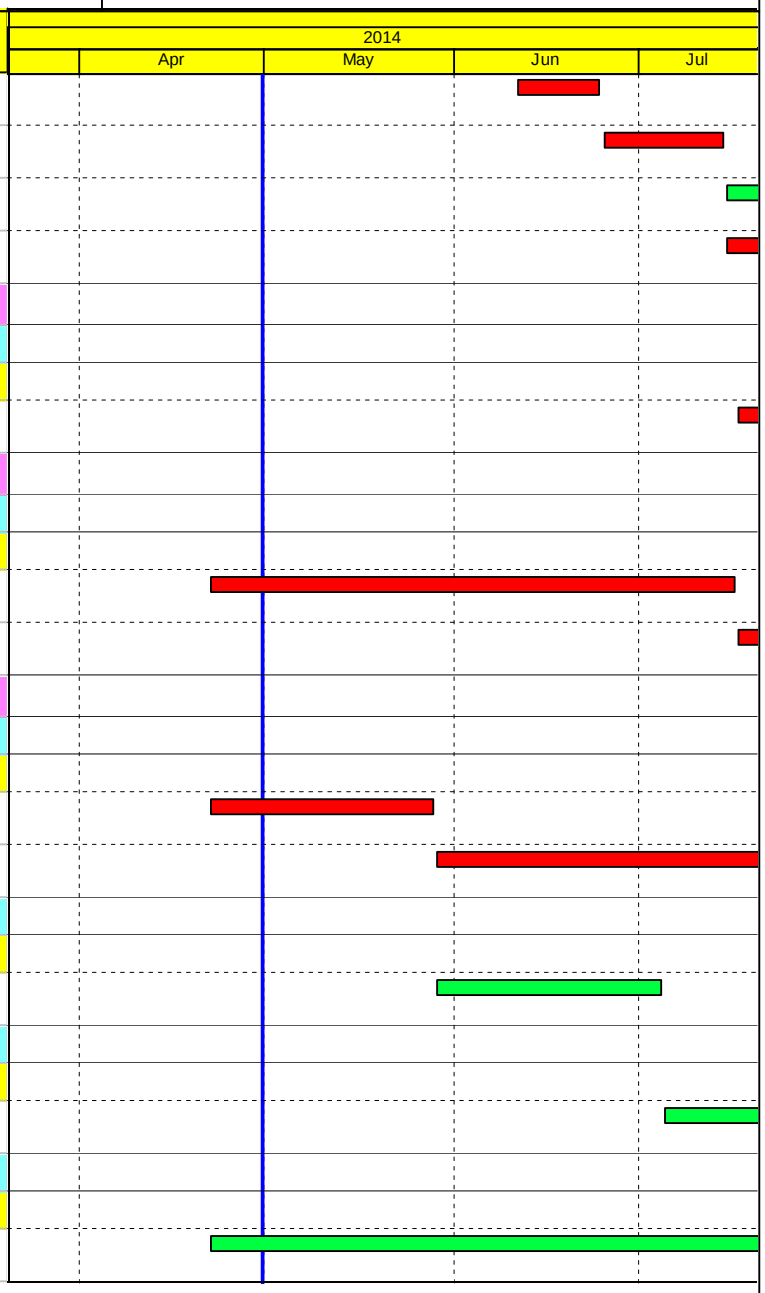
3 Month Rolling Program(20-Apr-14)

Date	Revision	C..	Ap...
07...	IWP Rev 4		
28...	IWP Rev 5		

Activity ID	Activity Name	Duration % Complete	Remaining Duration	Original Duration	Start	Finish	Total Float
New Ho Ka Yuen Footbridge							
General							
HKY1020	Site Clearance (TWSR-W side)	0%	30	30	22-Apr-14	28-May-14	-70
HKY1030	Structure steel Shop drawing submission (HKYB)	0%	60	60	22-Apr-14	04-Jul-14	-59
HKY1040	Structure steel Shop drawing approval (HKYB)	0%	30	30	17-Jun-14	22-Jul-14	-59
TWSR-West/ FL Highway N/B Side Section							
HKY1140	HKYP6 - Predrilling	0%	24	24	29-May-14	26-Jun-14	84
HKY1150	HKYP6 - Pre-bored H pile (8 nos)	0%	24	24	27-Jun-14	25-Jul-14	84
HKY1172	HKYP1 - Predrilling	0%	12	12	27-Jun-14	11-Jul-14	105
HKY1220	HKYAB3 - Predrilling	0%	12	12	27-Jun-14	11-Jul-14	138
TWSR-East FL Highway S/B Side Section							
HKY1500	HKYAB1 - Predrilling	0%	12	12	29-May-14	12-Jun-14	-5
HKY1770	HKYP5 - Predrilling	0%	12	12	22-Apr-14	07-May-14	117
HKY1810	HKYAB2 - Predrilling	42.42%	19	33	14-Jan-14 A	15-May-14	-48
HKY1820	HKYAB2 - Pre-bored H pile (22 nos)	0%	66	66	16-May-14	02-Aug-14	-48
Demolition of Existing Ho Ka Yuen Footbridge							
TWSR-West/ FL Highway N/B Side Section							
HKY1880	Construct Temp Ramp for existing HKY footbridge	0%	90	90	29-May-14	13-Sep-14	-70
HKY1900	Erect temp platform for demolishing Ramp & staircase at TWSR-W	0%	45	45	29-May-14	22-Jul-14	-24
ZONE 4 (Ch. 7925 to 8700)							
Noise Barrier Along TWSR-West and Laying New Utilities							
NB75 (Ch.7930-8090)-FH N/B Side							
Noise Barrier Works							
NB4100	NB75 -Pre-drilling (Ch7990-8000)-(HKY-P1)	0%	24	24	12-Jul-14	08-Aug-14	105
NB77 (Ch.8090-8450)-FH N/B Side							
Noise Barrier Works							
NB4290	NB77 -Pre-drilling (Ch8090-8190)	0%	96	96	22-Apr-14	15-Aug-14	-77
NB4300	NB77 - piling (NB77/01-08, 0.19m -64no)	0%	96	96	20-Jun-14	14-Oct-14	-71
Bridge Construction							
New Wo Hop Shek Pedstrian & Cycle Bridge							
General							
WHS1010	Site Clearance & Temp Platform erection (SA340)	0%	45	45	22-Apr-14	16-Jun-14	411
WHS1020	Structure steel Shop drawing submission (WHSB)	0%	60	60	22-Apr-14	04-Jul-14	413
WHS1030	Structure steel Shop drawing approval (WHSB)	0%	30	30	17-Jun-14	22-Jul-14	413
TWSR-West/ FL Highway N/B Side Section							
WHS1160	WHSP2 - Pre-bored H pile (8 nos)	0%	24	24	16-Jul-14	12-Aug-14	411
WHS1230	WHSAB1 - Predrilling	0%	12	12	17-Jun-14	30-Jun-14	411
WHS1240	WHSAB1 - Pre-bored H pile (4 nos)	0%	12	12	02-Jul-14	15-Jul-14	411
WHS1250	WHSAB1 - Pile Test	0%	28	28	16-Jul-14	12-Aug-14	1091
WHS1894	WHSP3 - Pre-bored H pile (6 nos)	0%	18	18	22-Apr-14	14-May-14	519
WHS1896	WHSP3 - Pile Test	0%	28	28	15-May-14	11-Jun-14	648
WHS1898	WHSP3 - Pile cap, Pier and Pier Head	0%	30	30	12-Jun-14	17-Jul-14	520
WHS1910	WHSP4 - Pre-bored H pile (6 nos)	0%	18	18	15-May-14	05-Jun-14	543
WHS1920	WHSP4 - Pile Test	0%	28	28	06-Jun-14	03-Jul-14	679
WHS1930	WHSP4 - Pile cap, Pier and Pier Head	0%	30	30	18-Jul-14	21-Aug-14	520
WHS1940	WHSP5 - Predrilling	0%	18	18	17-Jun-14	08-Jul-14	528
WHS1950	WHSP5 - Pre-bored H pile (6 nos)	0%	18	18	09-Jul-14	29-Jul-14	528
Crossing Fanling Highway Section							
WHS1450	WHSP1 - Pre-bored H pile (6 nos)	16.67%	15	18	03-Mar-14 A	10-May-14	830
WHS1460	WHSP1 - Pile Test	0%	28	28	10-May-14	07-Jun-14	1035
WHS1470	WHSP1 - Pile cap, Pier and Pier Head	0%	52	52	09-Jun-14	08-Aug-14	830
TWSR-East FL Highway S/B Side Section							
WHS2045	Temp footbridge construction for pedestrian diversion	0%	40	40	22-Apr-14	10-Jun-14	-153



Activity ID	Activity Name	Duration % Complete	Remaining Duration	Original Duration	Start	Finish	Total Float
WHS2050	North Abutment Wall (AW1) - Predrilling	0%	12	12	11-Jun-14	24-Jun-14	-153
WHS2060	North Abutment Wall (AW1) - Pre-bored H pile (4 nos)	0%	16	16	25-Jun-14	14-Jul-14	-153
WHS2070	North Abutment Wall (AW1) - Pile Test	0%	28	28	15-Jul-14	11-Aug-14	896
WHS2075	North Abutment Wall (AW1) - Temp Shoring	0%	45	45	15-Jul-14	04-Sep-14	-153
Slip Road Y Construction							
Drainage & Road Works							
TWSR-East FL Highway S/B Side Section							
RDZ41000	Construct Slip Rd Y (Ch8250-8370)(SA340) (Z4 TTA-Stage 1)	0%	130	130	17-Jul-14	18-Dec-14	-146
Fanling Highway Construction							
Drainage & Road Works							
TWSR-East FL Highway S/B Side Section							
RDZ41004	Site Clearance & Tree Felling	0%	70	70	22-Apr-14	16-Jul-14	-146
RDZ41005	Construct FH S/B Lane 1,2 (Ch8250-8370)(SA340) (Z4 TTA-Stage 1)	0%	130	130	17-Jul-14	18-Dec-14	-146
Other Works							
Retaining Wall W77A							
TWSR-East FL Highway S/B Side Section							
RWZ4.1050	Site Clearance	0%	30	30	22-Apr-14	28-May-14	-85
RWZ4.1060	Base slab & Wall (0-3m high)- RW77A (Ch.50-130)	0%	60	60	29-May-14	08-Aug-14	-85
Retaining Wall W77B							
TWSR-East FL Highway S/B Side Section							
RWZ4.1092	Site Clearance	0%	30	30	29-May-14	04-Jul-14	20
Retaining Wall W78							
TWSR-East FL Highway S/B Side Section							
RWZ4.0900	Site Clearance	0%	30	30	05-Jul-14	08-Aug-14	50
TCSS Works							
TCSS Pre-Construction Works							
TCSS0100	Acquire Design Criteria from Drawing & procurement	0%	180	180	22-Apr-14	25-Nov-14	534



Remaining Level o...
Actual Level of Effort
Actual Work
Remaining Work
Critical Remaining ...
Milestone
Crit. Milestone

Project File: HY/2012/06: IWP Rev. 5 (1404)

Layout: 3 Month Rolling Program

Page 5 of 5

Primavera Systems, Inc.

Contract No. HY/2012/06

Widening of Fanling Highway - Tai Hang to Wo Hop Shek Interchange

3 Month Rolling Program(20-Apr-14)

Date	Revision	C..	Ap...
07...	IWP Rev 4		
28...	IWP Rev 5		

APPENDIX C
IMPLEMENTATION SCHEDULE OF ENVIRONMENTAL MITIGATION MEASURES (EMIS)

Appendix C - Implementation Schedule of Environmental Mitigation Measures (EMIS)

Air Quality – Schedule of Recommended Mitigation Measures

Impact	Mitigation Measures	Timing	Implementation Status
Air Quality during construction	Restricting heights from which materials are dropped, as far as practicable to minimize the fugitive dust arising from unloading/loading.	During construction	V
	All stockpiles of excavated materials or spoil of more than $50m^3$ shall be enclosed, covered or dampened during dry or windy conditions.		@
	Effective water sprays shall be used to control potential dust emission sources such as unpaved haul roads and active construction areas.		@
	All spraying of materials and surfaces shall avoid excessive water usage.		V
	Vehicles that have the potential to create dust while transporting materials shall be covered, with the cover properly secured and extended over the edges of the side and tail boards.		V
	Materials shall be dampened, if necessary, before transportation.		V
	Travelling speeds shall be controlled to reduce traffic induced dust dispersion and re-suspension within the site from the operating haul trucks.		V
	Vehicle washing facilities shall be provided to minimize the quantity of material deposited on public roads.		@

Noise – Schedule of Recommended Mitigation Measures

Impact	Mitigation Measures	Timing	Implementation Status
Noise during construction	Use of silenced plant or plant equipped with mufflers or dampers in substitute of ordinary plant.	During construction	V
	Reduce the number of equipment and their percentage on-time.		V
	3.5 m and 5.5 m high temporary noise barrier at culvert construction work area (Figure 2a of the Environmental Permit).		#
	3 m high temporary noise barrier along the northern edge of Bridge 12 at ground level (Figure 2b of the Environmental Permit).		#
	2 m high temporary noise barrier along the northern edge of Bridge 12 at bridge level (Figure 2b of the Environmental Permit).		#
	2.5 m high temporary noise barrier along Tai Wo Service Road West (Figure 2c of the Environmental Permit).		#
	3.5m and 7m high temporary noise barrier along Tai Wo Services Road West near Tai Hang (Figure 2c of the Environmental Permit).		#
	7 m high temporary noise barrier along Tai Wo Service Road West near Tai Wo Footbridge work area (Figure 2d of the Environmental Permit).		#
	7 m high temporary noise barrier near Kiu Tau Footbridge work area (Figure 2d of the Environmental Permit).		#
	2.5 m high temporary noise barrier near river diversion work area (Figure 2e of the Environmental Permit).		#

Water Quality – Schedule of Recommended Mitigation Measures

Impact	Mitigation Measures	Timing	Implementation Status
Water quality during construction	Demolition and reconstruction of bridges - Prevent off-site migration through use of sheet piles. - Minimise duration of works as far as practical. - All sewer and drainage connections should be sealed to prevent debris, soil, sand, etc, from entering public sewers/drains. - Site surface runoff should be settled to remove sand/silt before it is discharged into the existing storm drains.	During construction	#
	Road Widening Works, Earthworks and Culvert Extension Works - Wastewater generated from any concrete batching washdown of equipment or similar activities should be discharged into foul sewers, after the removal of settable solids, and pH adjustment as necessary. All sewage discharges from the study area should meet the TM standards and approval from EPD through the licensing process is required. - Sand traps, oil interceptors and other pollution prevention installations should be provided, properly cleaned and maintained. - Runoff from exposed working areas, unfinished slopes and from unlined temporary channels should be directed to stilling basins and/or silt traps before discharging to the drainage outfalls. - Regular inspections of stilling basins and/or silt traps is required to ensure that sediment is not conveyed into the existing drainage system. - Open stockpiles should be covered with a tarpaulin cover. - During the wet season, any exposed top soils should be covered with a tarpaulin, shotcreted or hydroseeded. - Sand and silt from wash-water from vehicle washing should be settled out before discharging into storm drains. - Fuels should be stored in bunded areas such that spillage can be easily collected.		V

Waste – Schedule of Recommended Mitigation Measures

Impact	Mitigation Measures	Timing	Implementation Status
Waste management during construction	General Waste - Transport of wastes off site as soon as possible. - Maintenance of accurate waste records. - Minimisation of waste generation for disposal (via reduction/recycling/re-use). - No on-site burning will be permitted. - Use of re-useable metal hoardings/signboards.	During construction	V
	Vegetation from site clearance - Segregation of materials to facilitate disposal. - Mulching to reduce bulk and where possible review opportunities for the possible beneficial use within landscaping areas.		V
	Demolition Wastes - Segregation of materials to facilitate disposal. - Appropriate stockpile management.		V
	Excavated Materials - Segregation of materials to facilitate disposal / reuse. - Appropriate stockpile management. - Re-use of excavated material on or off site (where possible). - Special handling and disposal procedures in the event that contaminated materials are excavated.		V
	Construction Wastes - Segregation of materials to facilitate recycling/reuse (within designated area in appropriate containers/stockpiles). - Appropriate stockpile management. - Planning to reduce over ordering and waste generation. - Recycling and re-use of materials where possible (e.g. metal, wood from formwork) - For material which cannot be re-used/recycled, collection should be carried out by an approved waste contractor for landfill disposal.		V
	Bentonite Slurries - Bentonite slurries should be reused as far as possible. - Disposal in accordance with Practice Note For Professional Persons ProPECC PN 1/94.		#

	Chemical Wastes - Storage within locked, covered and bunded area. - The storage area shall not be located adjacent to sensitive receivers e.g. drains. - Minimise waste production and recycle oils/solvents where possible. - A spill response procedure shall be in place and absorption material available for minor spillages. - Use appropriate and labelled containers. - Educate site workers on site cleanliness/waste management procedures. - If chemical wastes are to be generated, the contractor must register with EPD as a chemical waste producer. - The chemical wastes shall be collected by a licensed chemical waste collector.		@
	Municipal Wastes - Waste shall be stored within a temporary refuse collection facility, in appropriate containers prior to collection and disposal. - Regular, daily collections are required by an approved waste collector.		V

Ecology – Schedule of Recommended Mitigation Measures

Impact	Mitigation Measures	Timing	Implementation Status
Ecology during construction	Accurate Delineation of Works Area - Boundaries of proposed works areas shall be clearly identified and separated from external areas by a physical barrier to prevent encroachment of adjacent habitats. - Individual trees which fall within the works areas but which work plans do not require removal are to be retained and fenced off to maximize protection.	During construction	V
	Vegetation Clearance - No fires shall be lit within the works area for the purpose of burning cleared vegetation. - The Contractor shall give consideration to mulching the cleared vegetation for recycling within the works area / adjacent land.		V
	Dust generation There are a number of measures which shall be taken as specified in the Air Pollution Control (Construction Dust) Regulation on 'Dust Control Requirements, including the following key measures to be applied during construction: - Vehicle washing facilities to be provided at every discernible or designated vehicle exit point; - All temporary site access roads shall be sprayed with water to suppress dust as necessary; - All dusty materials should be sprayed with water immediately prior to any handling; and - All debris should be covered entirely by impervious sheeting or stored in a sheltered debris collection area.		V
	Surface Run-off In general, mitigation measures shall be in accordance with ProPECC PN1/94 on 'Construction Site Drainage'. Key measures include: - Bund and cover stock piles to avoid run-off; - Channel any run-off through a system of oil, grease and sediment / silt traps and reuse water on site where ever practical; - All vehicle maintenance to be undertaken within a bunded area; and - Maximise vegetation retention on-site to maximise absorption (minimise transport).		V

Landscape and Visual Impact – Schedule of Recommended Mitigation Measures

Impact	Mitigation Measures	Timing	Responsibility
Landscape & Visual during construction	Preservation of Existing Vegetation - Trees identified for retention within the project limit would be protected during the works; - The tree transplanting and planting works shall be implemented by approved Landscape Contractors.	During construction	V
	Temporary Works Areas - Where feasible the works areas would be screened using hoarding and existing vegetation would be retained where possible to reduce the landscape and visual impacts arising from the construction activity. The landscape of these works areas would be restored following the completion of the construction phase.		V
	Hoarding - A hoarding would be erected where practicable in the most visually sensitive locations to screen the temporary construction works from the local VSRs.		V
	Top Soils - The works will result in disturbance to extensive areas of topsoil. Topsoil worthy of retention should be stockpiled for use following completion of the civil engineering works. It should either be temporarily vegetated with hydroseeded grass or turned over on a regular basis.		#
	Protection of Important Landscape Features - Important features such as temples, Island House and kilns within the study area, although remote from the proposed works retained and adequately protected.		#

Legend:
V = implemented;
x = not implemented;
@ = partially implemented;
N/A = not applicable - No such work was undertaken or no such material was used on site;
= to be implemented.

APPENDIX D
SUMMARY OF ACTION AND LIMIT LEVELS

Appendix D - Summary of Action and Limit Levels

Table 1 – Action and Limit Levels for 1-hour TSP

Location	Action Level	Limit Level
AM2	317.8 μg/m3	500 μg/m3

Table 2 – Action and Limit Levels for 24-hour TSP

Location	Action Level	Limit Level
AM2	200.7 μg/m3	260 μg/m3

Table 3 – Action and Limit Levels for Construction Noise (0700-1900 hrs of normal weekdays)

Location	Action Level	Limit Level
M2	When one documented complaint, related to 0700 – 1900 hours on normal weekdays, is received from any one of the sensitive receivers	75 dB(A)
M3*		65/70 dB(A)

*Daytime noise Limit Level of 70 dB(A) applies to education institutions, while 65dB(A) applies during school examination period

APPENDIX E
CALIBRATION CERTIFICATES OF MONITORING EQUIPMENTS

AECOM

Total Suspended Particulates (TSP) Sampler
Field Calibration Report

Station: Fanling Government Secondary School (AM2)
Operator: Shum Kam Yuen
Date: 8-Feb-14
Next Due Date: 8-May-14
Model No: TE-5170
Verified Against: O.T.S -- 988
Equipment No.: A-001-74T
Expiration Date: 20-May-2014

Ambient Condition					
Temperature, Ta	289.6	Kelvin	Pressure, Pa	758.6	mmHg

Orifice Transfer Standard Information					
Equipment No.:	988	Slope, mc	1.99238	Intercept, bc	-0.00351
Last Calibration Date:	20-May-13	**mc x Qstd + bc = [H x (Pa/760) x (298/Ta)]$^{1/2}$**			
Next Calibration Date:	20-May-14				

Calibration of TSP Sampler

Calibration Point	H in. of water	[H x (Pa/760) x (298/Ta)]$^{1/2}$	Qstd (m^3/min) **X - axis**	W in. of oil	[ΔW x (Pa/760) x (298/Ta)]$^{1/2}$ **Y-axis**
1	6.3	2.54	1.28	5.2	2.31
2	5.1	2.29	1.15	4.1	2.05
3	4.6	2.17	1.09	3.4	1.87
4	3.7	1.95	0.98	3.0	1.76
5	2.3	1.54	0.77	1.6	1.28

By Linear Regression of Y on X

Slope , mw = **1.9796** **Intercept, bw =** **-0.2325**

Correlation Coefficient* = **0.9948**

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 1.21 m^3/min (43 CFM)

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

m x Qstd + b = [W x (Pa/760) x (298/Ta)]$^{1/2}$

Therefore, Set Point W = (m x Qstd + b)^2 x (760 / Pa) x (Ta / 298) = **4.55**

*If Correlation Coefficient < 0.990, check and recalibrate again.

Remarks:

QC Reviewer: HY Shum Signature: HY Date: 12/2/14

TISCH ENVIROMENTAL, INC.
145 SOUTH MIAMI AVE.
VILLAGE OF CLEVES, OH 45002
513.467.9000
877.263.7610 TOLL FREE
513.467.9009 FAX
WWW.TISCH-ENV.COM

AIR POLLUTION MONITORING EQUIPMENT

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - May 20, 2013 Rootsmeter S/N 0438320 Ta (K) - 297
Operator Tisch Orifice I.D. - 0988 Pa (mm) - 751.84

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.3900	3.2	2.00
2	NA	NA	1.00	0.9720	6.4	4.00
3	NA	NA	1.00	0.8670	7.9	5.00
4	NA	NA	1.00	0.8270	8.7	5.50
5	NA	NA	1.00	0.6800	12.6	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)		Va	(x axis) Qa	(y axis)
0.9884	0.7110	1.4090		0.9957	0.7163	0.8889
0.9842	1.0125	1.9926		0.9915	1.0201	1.2570
0.9821	1.1327	2.2278		0.9894	1.1412	1.4054
0.9811	1.1863	2.3365		0.9884	1.1952	1.4740
0.9759	1.4352	2.8179		0.9832	1.4459	1.7777
Qstd slope (m) =		1.94727		Qa slope (m) =		1.21935
intercept (b) =		0.02332		intercept (b) =		0.01471
coefficient (r) =		0.99998		coefficient (r) =		0.99998
y axis = SQRT[H2O(Pa/760)(298/Ta)]				y axis = SQRT[H2O(Ta/Pa)]		

CALCULATIONS

Vstd = Diff. Vol[(Pa-Diff. Hg)/760](298/Ta)
Qstd = Vstd/Time

Va = Diff Vol [(Pa-Diff Hg)/Pa]
Qa = Va/Time

For subsequent flow rate calculations:

Qstd = 1/m{[SQRT(H2O(Pa/760)(298/Ta))]- b}
Qa = 1/m{[SQRT H2O(Ta/Pa)]- b}

EQUIPMENT CALIBRATION RECORD

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

Standard Equipment

Equipment:	*Rupprecht & Patashnick TEOM®*		
Venue:	*Cyberport (Pui Ying Secondary School)*		
Model No.:	*Series 1400AB*		
Serial No:	Control: *140AB219899803*		
	Sensor: *1200C143659803*	K_o: *12500*	
Last Calibration Date*:	*18 May 2013*		

*Remarks: Recommended interval for hardware calibration is 1 year

Calibration Result

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

Hour	Date (dd-mm-yy)	Time	Ambient Condition		Concentration[1] (mg/m^3) **Y-axis**	Total Count[2]	Count/ Minute[3] **X-axis**
			Temp (°C)	R.H. (%)			
1	*18-05-13*	*12:30 - 13:30*	*28.1*	*78*	*0.04714*	*1887*	*31.45*
2	*18-05-13*	*13:30 - 14:30*	*28.1*	*78*	*0.04932*	*1970*	*32.83*
3	*18-05-13*	*14:30 - 15:30*	*28.2*	*77*	*0.05156*	*2056*	*34.27*
4	*18-05-13*	*15:30 - 16:30*	*28.1*	*78*	*0.05083*	*2026*	*33.77*

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

By Linear Regression of Y or X
Slope (K-factor): *0.0015*
Correlation coefficient: *0.9978*

Validity of Calibration Record: *17 May 2014*

Remarks:

QC Reviewer: *YW Fung* Signature: Date: 20 May 2013

EQUIPMENT CALIBRATION RECORD

Type:	***Laser Dust Monitor***
Manufacturer/Brand:	***SIBATA***
Model No.:	***LD-3***
Equipment No.:	***A.005.11a***
Sensitivity Adjustment Scale Setting:	***799 CPM***
Operator:	*Mike Shek (MSKM)*

Standard Equipment

Equipment:	*Rupprecht & Patashnick TEOM®*		
Venue:	*Cyberport (Pui Ying Secondary School)*		
Model No.:	*Series 1400AB*		
Serial No:	Control: *140AB219899803*		
	Sensor: *1200C143659803*	K_o:	*12500*
Last Calibration Date*:	*18 May 2013*		

*Remarks: Recommended interval for hardware calibration is 1 year

Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration): *799* CPM
Sensitivity Adjustment Scale Setting (After Calibration): *799* CPM

Hour	Date (dd-mm-yy)	Time	Ambient Condition		Concentration[1] (mg/m^3) **Y-axis**	Total Count[2]	Count/ Minute[3] **X-axis**
			Temp (°C)	R.H. (%)			
1	*18-05-13*	*12:15 - 13:15*	*28.1*	*78*	*0.04685*	*1871*	*31.18*
2	*18-05-13*	*13:15 - 14:15*	*28.1*	*78*	*0.04941*	*1979*	*32.98*
3	*18-05-13*	*14:15 - 15:15*	*28.2*	*77*	*0.05127*	*2055*	*34.25*
4	*18-05-13*	*15:15 - 16:15*	*28.1*	*78*	*0.05060*	*2021*	*33.68*

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

By Linear Regression of Y or X
Slope (K-factor): *0.0015*
Correlation coefficient: *0.9976*

Validity of Calibration Record: *17 May 2014*

Remarks:

QC Reviewer: *YW Fung* Signature: Date: 20 May 2013

EQUIPMENT CALIBRATION RECORD

Type:	***Laser Dust Monitor***
Manufacturer/Brand:	***SIBATA***
Model No.:	***LD-3B***
Equipment No.:	***A.005.13a***
Sensitivity Adjustment Scale Setting:	***643 CPM***
Operator:	*Mike Shek (MSKM)*

Standard Equipment

Equipment:	*Rupprecht & Patashnick TEOM®*		
Venue:	*Cyberport (Pui Ying Secondary School)*		
Model No.:	*Series 1400AB*		
Serial No:	Control: *140AB219899803*		
	Sensor: *1200C143659803*	K_o: *12500*	
Last Calibration Date*:	*18 May 2013*		

*Remarks: Recommended interval for hardware calibration is 1 year

Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration): *643* CPM
Sensitivity Adjustment Scale Setting (After Calibration): *643* CPM

Hour	Date (dd-mm-yy)	Time	Ambient Condition		Concentration[1] (mg/m^3) **Y-axis**	Total Count[2]	Count/ Minute[3] **X-axis**
			Temp (°C)	R.H. (%)			
1	*18-05-13*	*12:15 - 13:15*	*28.1*	*78*	*0.04685*	*1867*	*31.12*
2	*18-05-13*	*13:15 - 14:15*	*28.1*	*78*	*0.04941*	*1975*	*32.92*
3	*18-05-13*	*14:15 - 15:15*	*28.2*	*77*	*0.05127*	*2048*	*34.13*
4	*18-05-13*	*15:15 - 16:15*	*28.1*	*78*	*0.05060*	*2017*	*33.62*

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

By Linear Regression of Y or X
Slope (K-factor): *0.0015*
Correlation coefficient: *0.9986*

Validity of Calibration Record: *17 May 2014*

Remarks:

QC Reviewer: *YW Fung* Signature: Date: 20 May 2013

EQUIPMENT CALIBRATION RECORD

Type:	***Laser Dust Monitor***
Manufacturer/Brand:	***SIBATA***
Model No.:	***LD-3B***
Equipment No.:	***A.005.16a***
Sensitivity Adjustment Scale Setting:	***521 CPM***
Operator:	*Mike Shek (MSKM)*

Standard Equipment

Equipment:	*Rupprecht & Patashnick TEOM®*		
Venue:	*Cyberport (Pui Ying Secondary School)*		
Model No.:	*Series 1400AB*		
Serial No:	Control: *140AB219899803*		
	Sensor: *1200C143659803*	K_o: *12500*	
Last Calibration Date*:	*18 May 2013*		

*Remarks: Recommended interval for hardware calibration is 1 year

Calibration Result

Sensitivity Adjustment Scale Setting (Before Calibration): *521* CPM
Sensitivity Adjustment Scale Setting (After Calibration): *521* CPM

Hour	Date (dd-mm-yy)	Time	Ambient Condition		Concentration[1] (mg/m^3) **Y-axis**	Total Count[2]	Count/ Minute[3] **X-axis**
			Temp (°C)	R.H. (%)			
1	*27-07-13*	*11:00 - 12:00*	*27.3*	*75*	*0.04734*	*1893*	*31.55*
2	*27-07-13*	*12:00 - 13:00*	*27.3*	*75*	*0.04789*	*1915*	*31.92*
3	*27-07-13*	*13:00 - 14:00*	*27.4*	*74*	*0.04953*	*1976*	*32.93*
4	*27-07-13*	*14:00 - 15:00*	*27.4*	*75*	*0.04867*	*1949*	*32.48*

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

By Linear Regression of Y or X
Slope (K-factor): *0.0015*
Correlation coefficient: *0.9934*

Validity of Calibration Record: *26 July 2014*

Remarks:

QC Reviewer: *YW Fung* Signature: Date: 29 July 2013

綜合試驗有限公司
SOILS & MATERIALS ENGINEERING CO., LTD.
G/F., 9/F., 12/F., 13/F. & 20/F., Leader Centre, 37 Wong Chuk Hang Road, Aberdeen, Hong Kong. Tel : (852) 2873 6860
香港黃竹坑道37號利達中心地下，9樓，12樓，13樓及20樓 Fax : (852) 2555 7533
E-mail: smec@cigismec.com Website: www.cigismec.com
HOKLAS 028

CERTIFICATE OF CALIBRATION

Certificate No.: 13CA1107 01-01 **Page** 1 **of** 2

Item tested

Description:	Sound Level Meter (Type 1)	,	Microphone
Manufacturer:	Rion Co., Ltd.	,	Rion Co., Ltd.
Type/Model No.:	NL-31	,	UC-53A
Serial/Equipment No.:	00320528 / N.007.03A	,	90565
Adaptors used:	-	,	-

Item submitted by

Customer Name:	AECOM ASIA CO., LTD.
Address of Customer:	-
Request No.:	-
Date of receipt:	07-Nov-2013

Date of test: 08-Nov-2013

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Multi function sound calibrator	B&K 4226	2288444	22-Jun-2014	CIGISMEC
Signal generator	DS 360	33873	15-Apr-2014	CEPREI
Signal generator	DS 360	61227	15-Apr-2014	CEPREI

Ambient conditions

Temperature:	22 ± 1 °C
Relative humidity:	60 ± 10 %
Air pressure:	1000 ± 10 hPa

Test specifications

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

Test results

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

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

Actual Measurement data are documented on worksheets.

Approved Signatory: Huang Jian Min/Feng Jun Qi **Date:** 11-Nov-2013 **Company Chop:** SOILS & MATERIALS ENGINEERING COMPANY LTD. 綜合試驗有限公司

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

綜合試驗有限公司
SOILS & MATERIALS ENGINEERING CO., LTD.
G/F., 9/F., 12/F., 13/F. & 20/F., Leader Centre, 37 Wong Chuk Hang Road, Aberdeen, Hong Kong.
香港黃竹坑道37號利達中心地下，9樓，12樓，13樓及20樓
E-mail: smec@cigismec.com Website: www.cigismec.com
Tel : (852) 2873 6860
Fax : (852) 2555 7533
HOKLAS 028

CERTIFICATE OF CALIBRATION

Certificate No.: 13CA1107 01-02 **Page:** 1 **of** 2

Item tested

Description:	Acoustical Calibrator (Class 1)
Manufacturer:	Rion Co., Ltd.
Type/Model No.:	NC-73
Serial/Equipment No.:	10307223 / N.004.08
Adaptors used:	-

Item submitted by

Curstomer:	AECOM ASIA CO., LTD.
Address of Customer:	-
Request No.:	-
Date of receipt:	07-Nov-2013

Date of test: 08-Nov-2013

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Lab standard microphone	B&K 4180	2341427	17-Apr-2014	SCL
Preamplifier	B&K 2673	2239857	16-Apr-2014	CEPREI
Measuring amplifier	B&K 2610	2346941	24-Apr-2014	CEPREI
Signal generator	DS 360	61227	15-Apr-2014	CEPREI
Digital multi-meter	34401A	US36087050	10-Dec-2013	CEPREI
Audio analyzer	8903B	GB41300350	15-Apr-2014	CEPREI
Universal counter	53132A	MY40003662	15-Apr-2014	CEPREI

Ambient conditions

Temperature:	22 ± 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:** 11-Nov-2013 **Company Chop:** SOILS & MATERIALS ENGINEERING COMPANY LTD. 綜合試驗有限公司

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

APPENDIX F
EM&A MONITORING SCHEDULES

Contract No. HY/2012/06
Widening of Fanling Highway – Tai Hang to Wo Hop Shek Interchange
Impact Monitoring and Audit Schedule for April 2014

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

Contract No. HY/2012/06
Widening of Fanling Highway – Tai Hang to Wo Hop Shek Interchange
Tentative Impact Monitoring and Audit Schedule for May 2014

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

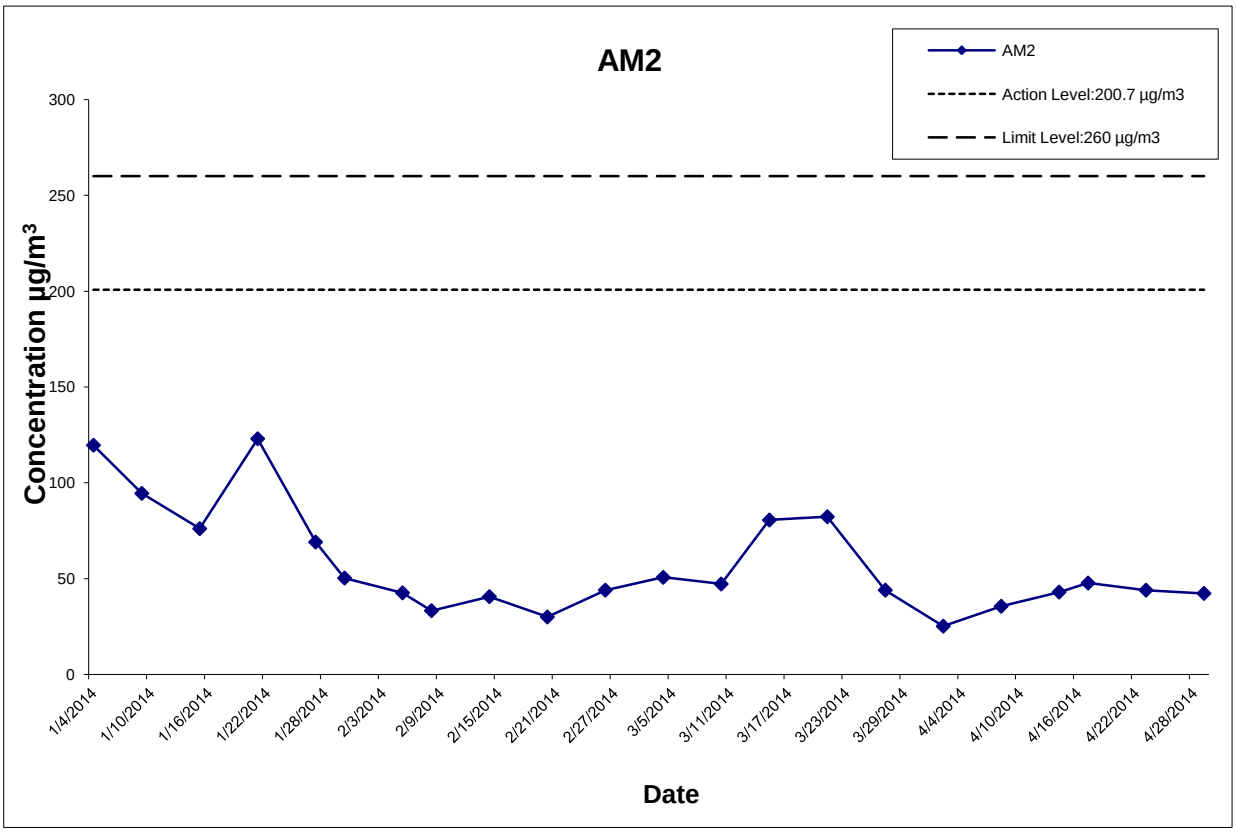
The schedule is subject to change due to unforeseeable circumstances (e.g. adverse weather, etc)

APPENDIX G
IMPACT AIR QUALITY MONITORING RESULTS AND THEIR GRAPHICAL PRESENTATION

Appendix G
Impact Air Quality Monitoring Results

24-hour TSP Monitoring Results at Station AM2 (Fanling Government Secondary School)

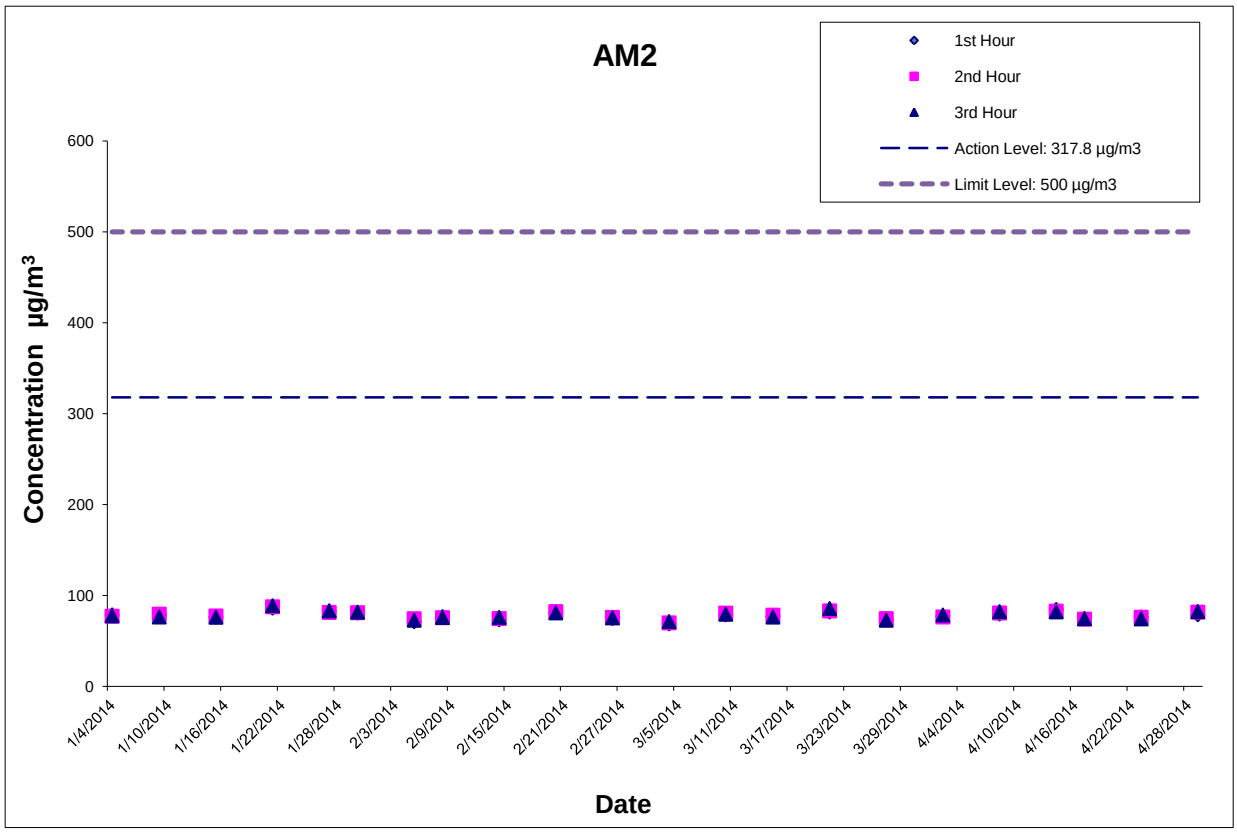
Date	Weather Condition	Air Temp. (^{o}C)	Atmospheric Pressure(hPa)	Flow Rate (m^3/min.)		Av. flow (m^3/min)	Total vol. (m^3)	Filter Weight (g)		Particulate weight(g)	Elapse Time		Sampling Time(hrs.)	Conc. ($\mu g/m^3$)	Actino Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)
				Initial	Final			Initial	Final		Initial	Final				
2-Apr-14	Rainy	19.4	1011.9	1.314	1.314	1.314	1892.2	2.7261	2.7737	0.0476	3753.02	3777.02	24.00	25.2	200.7	260
8-Apr-14	Fine	19.9	1014.6	1.314	1.314	1.314	1892.2	2.7022	2.7696	0.0674	3777.02	3801.02	24.00	35.6	200.7	260
14-Apr-14	Sunny	22.8	1014.7	1.314	1.314	1.314	1892.2	2.6934	2.7748	0.0814	3801.02	3825.02	24.00	43.0	200.7	260
17-Apr-14	Fine	24.1	1012.0	1.314	1.314	1.314	1892.2	2.7491	2.8394	0.0903	3825.02	3849.02	24.00	47.7	200.7	260
23-Apr-14	Cloudy	22.4	1012.3	1.314	1.314	1.314	1892.2	2.7202	2.8035	0.0833	3849.02	3873.02	24.00	44.0	200.7	260
29-Apr-14	Sunny	23.9	1013.1	1.314	1.314	1.314	1892.2	2.7230	2.8031	0.0801	3873.02	3897.02	24.00	42.3	200.7	260
													Average	39.6		
													Min	25.2		
													Max	47.7		



Appendix G
Impact Air Quality Monitoring Results

1-hour TSP Monitoring Results at Station AM2
(Fanling Government Secondary School)

Date	Start Time (hh:mm)	1st Hour Conc. ($\mu g/m^3$)	2nd Hour Conc. ($\mu g/m^3$)	3rd Hour Conc. ($\mu g/m^3$)
2-Apr-14	13:31	77.2	76.2	78.4
8-Apr-14	11:30	79.4	80.6	82.1
14-Apr-14	12:15	84.4	82.6	81.8
17-Apr-14	12:16	74.1	73.8	74.4
23-Apr-14	12:20	76.2	75.9	74.1
29-Apr-14	13:35	78.7	81.5	82.2
			Average	78.5
			Min	73.8
			Max	84.4



APPENDIX H
METEOROLOGICAL DATA FOR THE REPORTING MONTH

Extract of Meteorological Observations for Tai Po Automatic Weather Station, April 2014

Date	Mean Pressure at M.S.L. (hPa)	Air Temperature			Mean Dew Point Temperature (deg C)	Relative Humidity		
		Max. (deg C)	Mean (deg C)	Min. (deg C)		Max. (%)	Mean (%)	Min. (%)
1-Apr	1011	20.5	19.6	19	19	99	96	91
2-Apr	1011.7	20.2	19.3	18.1	18.3	98	94	85
3-Apr	1013.5	20.1	19.3	18.4	18.5	98	95	85
4-Apr	1016.6	21.9	19.9	17.9	16.2	97	80	61
5-Apr	1016.4	23.4	20.3	16.4	13.9	92	69	38
6-Apr	1017.2	21.1	19.2	17.3	16.6	97	85	64
7-Apr	1016.5	20	19.2	17.4	16.4	95	84	78
8-Apr	1014.7	20.5	19.8	19.1	18.6	98	93	84
9-Apr	1014	26.6	22.1	18.8	19.8	99	88	70
10-Apr	1015	23.9	22.1	21	18.6	91	81	66
11-Apr	1013.6	24.5	22.5	20.9	19.6	92	84	72
12-Apr	1012	27.3	24	21.8	20.4	91	81	65
13-Apr	1011.6	30.4	25.6	21.7	21.7	93	80	57
14-Apr	1014.7	24.4	22.8	21.9	19.7	95	83	67
15-Apr	1015.8	23.1	21.8	20.5	16.9	87	74	54
16-Apr	1013.1	23.7	22	21	19	89	83	74
17-Apr	1011.7	28	24	21.7	21	94	84	65
18-Apr	1011.9	27.9	24.2	21.1	21	94	83	67
19-Apr	1011.5	27.1	24.3	21.6	21.7	95	86	74
20-Apr	1010.8	28.8	25	22.5	22.7	95	87	74
21-Apr	1012.4	24.4	23.3	22.7	21.7	94	91	88
22-Apr	1012.4	28.2	24.5	22.5	22.3	94	88	71
23-Apr	1012.2	24.2	22	20.9	21	96	94	90
24-Apr	1011.5	22.4	21.7	21.2	20.2	95	92	86
25-Apr	1012	23.7	22.6	21.6	21.3	96	93	87
26-Apr	1012.8	24.4	22.5	21.4	20.9	98	91	79
27-Apr	1013.1	30.2	25.3	20.4	20.3	95	76	54
28-Apr	1013.4	26.7	24.5	22.3	18.3	87	69	53
29-Apr	1012.9	26	23.5	21.6	20.1	93	82	69
30-Apr	1011.6	24	22.3	20.4	20.1	97	88	79
Mean	1013.2	24.6	22.3	20.4	19.5	94	85	72
Maximum	1017.2	30.4	25.6	22.7	22.7	99	96	91
Minimum	1010.8	20	19.2	16.4	13.9	87	69	38

Extract of Meteorological Observations for Tai Po Automatic Weather Station, April 2014

Date	Total Rainfall (mm)	Prevailing Wind Direction (degrees)	Mean Wind Speed (km/h)
1-Apr	*****	***	*****
2-Apr	*****	***	*****
3-Apr	*****	***	*****
4-Apr	*****	***	*****
5-Apr	*****	***	*****
6-Apr	*****	***	*****
7-Apr	*****	***	*****
8-Apr	*****	***	*****
9-Apr	*****	***	*****
10-Apr	*****	***	*****
11-Apr	*****	***	*****
12-Apr	*****	***	*****
13-Apr	*****	***	*****
14-Apr	*****	***	*****
15-Apr	*****	***	*****
16-Apr	*****	***	*****
17-Apr	*****	***	*****
18-Apr	*****	***	*****
19-Apr	*****	***	*****
20-Apr	*****	***	*****
21-Apr	*****	***	*****
22-Apr	*****	***	*****
23-Apr	*****	***	*****
24-Apr	*****	***	*****
25-Apr	*****	***	*****
26-Apr	*****	***	*****
27-Apr	*****	***	*****
28-Apr	*****	***	*****
29-Apr	*****	***	*****
30-Apr	*****	***	*****
Mean	-----	***	*****
Total	*****	---	-----
Maximum	*****	---	*****
Minimum	*****	---	*****

*** unavailable
# missing (less than 24 hourly observations a day)
Rainfall measured in increment of 0.5 mm. Amount of < 0.5 mm cannot be detected

Extract of Meteorological Observations for Tai Mei Tuk Automatic Weather Station, April 2014

Date	Mean Pressure at M.S.L. (hPa)	Air Temperature			Mean Dew Point Temperature (deg C)	Relative Humidity		
		Max. (deg C)	Mean (deg C)	Min. (deg C)		Max. (%)	Mean (%)	Min. (%)
1-Apr	******	21	19.8	19	****	***	***	***
2-Apr	******	20.6	19.3	18	****	***	***	***
3-Apr	******	20.8	19.4	18.5	****	***	***	***
4-Apr	******	23.3	20.2	18.2	****	***	***	***
5-Apr	******	25.5	20.8	16.8	****	***	***	***
6-Apr	******	22.4	19.1	17.3	****	***	***	***
7-Apr	******	20.3	19	17.5	****	***	***	***
8-Apr	******	21.5	20	19.2	****	***	***	***
9-Apr	******	27.4	22.3	19.4	****	***	***	***
10-Apr	******	25.6	22	20.2	****	***	***	***
11-Apr	******	27.6	23.1	20.8	****	***	***	***
12-Apr	******	30.3	24.8	21.5	****	***	***	***
13-Apr	******	32.4	26.4	22.1	****	***	***	***
14-Apr	******	24.7	22.7	21	****	***	***	***
15-Apr	******	25.1	22.1	19.9	****	***	***	***
16-Apr	******	25.9	22.3	20.9	****	***	***	***
17-Apr	******	30.1	24.7	21.9	****	***	***	***
18-Apr	******	30.7	25.1	21.9	****	***	***	***
19-Apr	******	30.9	25.4	22.5	****	***	***	***
20-Apr	******	30.2	25.7	22.9	****	***	***	***
21-Apr	******	24.3	23.2	22.5	****	***	***	***
22-Apr	******	29.5	25.2	22.4	****	***	***	***
23-Apr	******	24.4	21.8	20.7	****	***	***	***
24-Apr	******	22.2	21.4	20.8	****	***	***	***
25-Apr	******	24.2	22.8	21.8	****	***	***	***
26-Apr	******	25.7	22.7	21.5	****	***	***	***
27-Apr	******	31.3	25.9	20.6	****	***	***	***
28-Apr	******	29.6	25.2	22.4	****	***	***	***
29-Apr	******	27.9	23.9	21.9	****	***	***	***
30-Apr	******	25	22.6	20.5	****	***	***	***
Mean	******	26	22.6	20.5	****	***	***	***
Maximum	******	32.4	26.4	22.9	****	***	***	***
Minimum	******	20.3	19	16.8	****	***	***	***

Extract of Meteorological Observations for Tai Mei Tuk Automatic Weather Station, April 2014

Date	Total Rainfall (mm)	Prevailing Wind Direction (degrees)	Mean Wind Speed (km/h)
1-Apr	10.0	60	10.0
2-Apr	35.0	60	12.4
3-Apr	39.5	60	9.8
4-Apr	0.0	80	15.7
5-Apr	0.0	60	13.2
6-Apr	12.5	50	17.8
7-Apr	2.5	60	13.0
8-Apr	16.5	70	6.7
9-Apr	0.0	90	8.2
10-Apr	0.0	80	17.3
11-Apr	0.0	70	11.8
12-Apr	0.0	60	8.4
13-Apr	0.0	270	4.8
14-Apr	0.0	90	15.9
15-Apr	0.0	90	19.7
16-Apr	0.0	70	9.4
17-Apr	0.0	60	6.6
18-Apr	0.0	120	5.2
19-Apr	0.0	60	6.4
20-Apr	0.0	60	3.8
21-Apr	0.0	80	13.8
22-Apr	0.0	60	4.3
23-Apr	5.0	80	20.5
24-Apr	0.5	90	18.5
25-Apr	0.0	90	12.2
26-Apr	1.5	50	10.9
27-Apr	0.0	270	6.0
28-Apr	0.0	140	9.7
29-Apr	0.0	80	12.6
30-Apr	4.0	50	9.6
Mean	-----	60	11.1
Total	127	---	-----
Maximum	39.5	---	20.5
Minimum	0.0	---	3.8

*** unavailable
# missing (less than 24 hourly observations a day)
Rainfall measured in increment of 0.5 mm. Amount of < 0.5 mm cannot be detected

APPENDIX I
IMPACT DAYTIME CONSTRUCTION NOISE MONITORING RESULTS AND THEIR GRAPHICAL PRESENTATION

Appendix I Impact Daytime Construction Noise Monitoring Resu

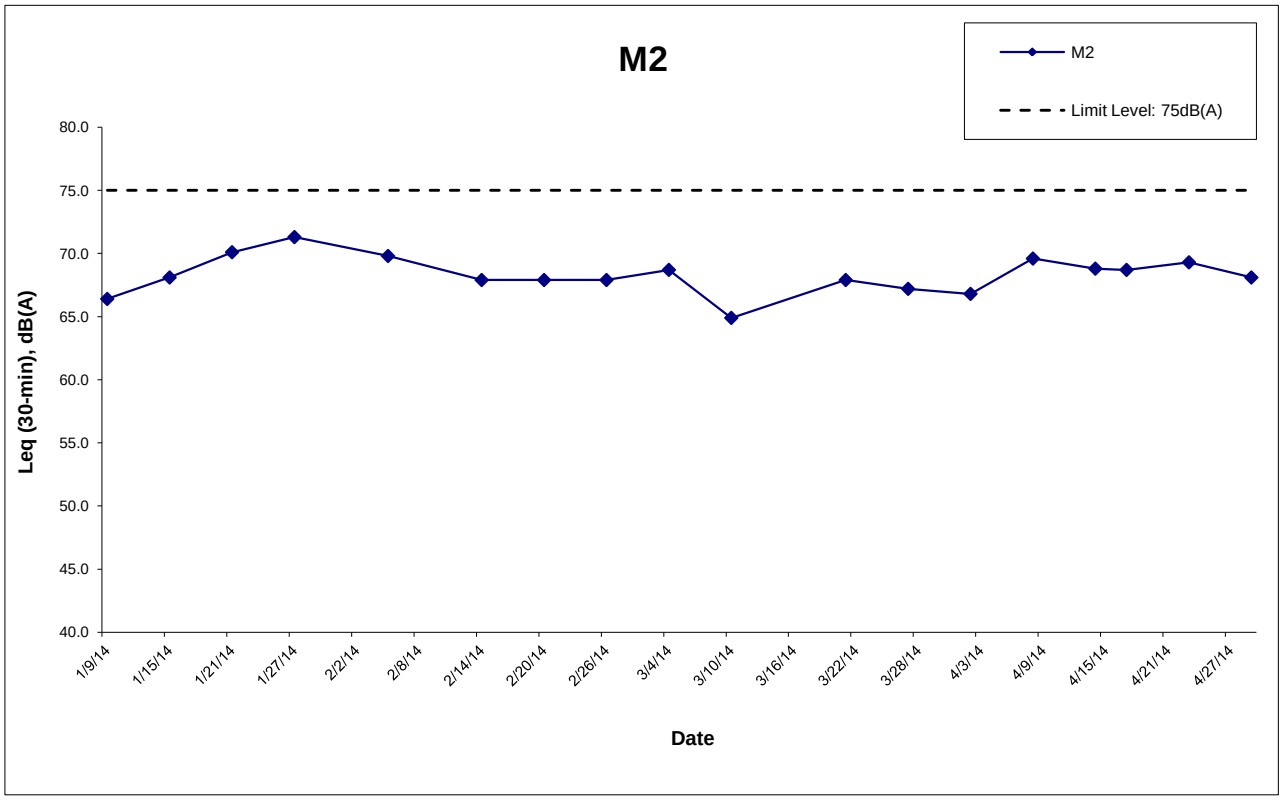
Location : M2 (West Tai Wo - Free Field)
Day time 07:00-19:00 hrs Normal Weekdays Impact Noise Monitoring Results

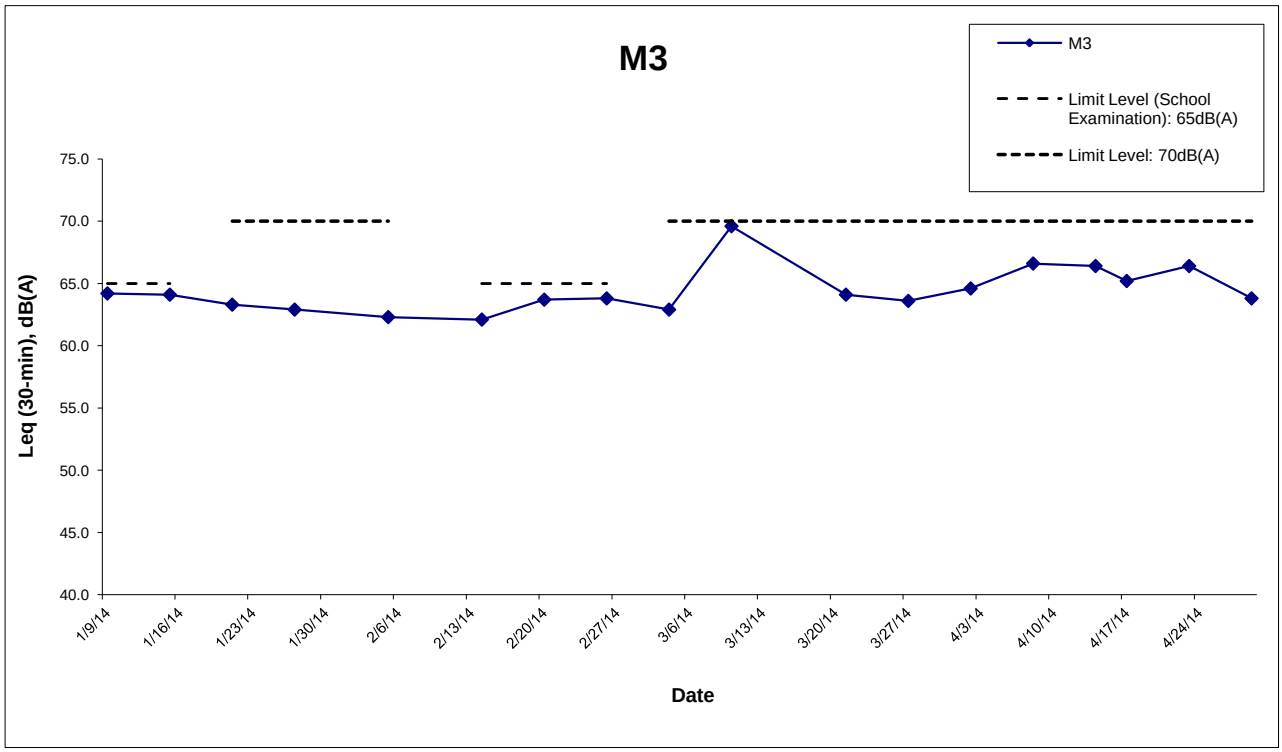
Date	Measured Noise Level for 30-min, dB(A)				Limit Level, dB(A)	Exceedance (Y/N)
	Start Time	Leq*	L10*	L90*		
2-Apr-14	14:01	66.8	69.5	62.2	75	N
8-Apr-14	10:40	69.6	71.9	66.8	75	N
14-Apr-14	13:15	68.8	71.2	66.9	75	N
17-Apr-14	15:27	68.7	70.3	66.2	75	N
23-Apr-14	15:37	69.3	71.6	67.2	75	N
29-Apr-14	14:22	68.1	69.8	65.8	75	N
	Min	66.8	69.5	62.2		
	Max	69.6	71.9	67.2		
	Average	68.6	70.8	66.1		

Location : M3 (Fanling Government Secondary School- Façade)
Day time 07:00-19:00 hrs Normal Weekdays Impact Noise Monitoring Results

Date	Measured Noise Level for 30-min, dB(A)				Limit Level, dB(A)^	Exceedance (Y/N)
	Start Time	Leq	L10	L90		
2-Apr-14	15:06	64.6	67.0	61.2	70	N
8-Apr-14	11:30	66.6	68.2	64.0	70	N
17-Apr-14	16:32	65.2	67.4	62.5	70	N
14-Apr-14	13:55	66.4	69.2	62.6	70	N
23-Apr-14	16:27	66.4	68.1	64.5	70	N
29-Apr-14	13:38	63.8	65.5	61.1	70	N
	Min	63.8	65.5	61.1		
	Max	66.6	69.2	64.5		
	Average	65.6	67.7	62.8		

* +3dB(A) Façade effect correction included
^ Limit Level of 70dB(A) applies to education institutes while 65dB(A) applies during school examination period.





Remark:

^ Limit Level of 70dB(A) applies to education institutes while 65dB(A) applies during school examination period.

APPENDIX J
EVENT ACTION PLAN

Appendix J – Event Action Plan

Event / Action Plan for Air Quality

Event	Action			
	ET Leader	**IEC**	**ER**	**Contractor**
Action Level				
Exceedance for one sample	1. Identify source; 2. Inform IEC and ER; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to dailv.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method.	1. Notify Contractor.	1. Rectify any unacceptable practice; 2. Amend working methods if appropriate.
Exceedance for two or more consecutive samples	1. Identify source; 2. Inform IEC and ER; 3. Repeat measurements to confirm findings; 4. Increase monitoring frequency to daily; 5. Discuss with IEC and Contractor on remedial actions required; 6. If exceedance continues, arrange meeting with IEC and ER; 7. If exceedance stops, cease additional monitoring.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ER on the effectiveness of the proposed remedial measures; 5. Supervise Implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented.	1. Submit proposals for remedial actions to IEC within 3 working days of notification; 2. Implement the agreed proposals; 3. Amend proposal if appropriate.

Event / Action Plan for Air Quality

Event Action Level	Action			
	ET Leader	**IEC**	**ER**	**Contractor**
Limit Level				
Exceedance for one sample	1. Identify source; 2. Inform IEC, ER, Contractor and EPD; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily; 5. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results.	1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise ER on the effectiveness of the proposed remedial measures; 5. Supervise implementation of remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Amend proposal if appropriate.
Exceedance for two or more consecutive samples	1. Notify IEC, ER, Contractor and EPD; 2. Identify source; 3. Repeat measurement to confirm findings; 4. Increase frequency to daily; 5. Analyse Contractor's working procedures to determine possible mitigation to be; 6. Arrange meeting with IEC and ER to discuss the remedial actions to be taken; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring.	1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise ER accordingly; 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. In consultation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Ensure remedial measures properly implemented; 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by ER until the exceedance is abated.

Event / Action Plan for Noise Impact

Event Limit Level	Action			
	ET Leader	**IEC**	**ER**	**Contractor**
Action Level	1. Notify IEC and the Contractor. 2. Carry out investigation. 3. Report the results of investigation to IEC and the Contractor. 4. Discuss with the Contractor and formulate remedial measures. 5. Increase monitoring frequency to check mitigation effectiveness.	1. Review with analysed results submitted by ET. 2. Review the proposed remedial measures by the Contractor and advise ER accordingly. 3. Supervise the implement of remedial measures.	1. Confirm receipt of notification of failure in writing. 2. Notify the Contractor. 3. Require the Contractor to propose remedial measures for the analysed noise problem. 4. Ensure remedial measures are properly implemented.	1. Submit noise mitigation proposals to IEC. 2. Implement noise mitigation proposals.
Limit Level	1. Notify, IEC, ER, EPD and the Contractor. 2. Identify the source. 3. Repeat measurement to confirm findings. 4. Increase monitoring frequency. 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented. 6. Inform IEC, ER, and EPD the causes & actions taken for the exceedances. 7. Assess effectiveness of the Contractor's remedial actions and keep IEC, EPD and ER informed of the results. 8. If exceedance stops, cease additional monitoring.	1. Discuss amongst ER, ET Leader and the Contractor on the potential remedial actions. 2. Review the Contractor's remedial actions whenever necessary to assure their effectiveness and advise ER accordingly. 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing. 2. Notify the Contractor. 3. Require the Contractor to propose remedial measures for the analysed noise problem. 4. Ensure remedial measures are properly implemented. 5. If exceedance continues, consider what activity of the work is responsible and instruct the Contractor to stop that activity of work until the exceedance is abated.	1. Take immediate action to avoid further exceedance. 2. Submit proposals for remedial actions to IEC within 3 working days of notification. 3. Implement the agreed proposals. 4. Resubmit proposals if problem still not under control. 5. Stop the relevant activity of works as determined by the ER until the exceedance is abated.

APPENDIX K
SITE INSPECTION SUMMARIES

Site Inspection Summary

Inspection Information

Contract No.	HY/2012/06
Date:	1 April 2014
Time:	14:00
Inspection No.:	19

Non-compliance

Nil

Observations

Follow-up Observation

Nil.

New Observation

Nil.

Remarks

Nil

Inspection Information

Contract No.	HY/2012/06
Date:	10 April 2014
Time:	14:00
Inspection No.:	20

Non-compliance

Nil

Observations

Follow-up Observation

Nil.

New Observation

1. The Contractor was reminded to cover the open stockpile under the bridge at Area 340.
2. The Contractor was reminded to close all the gaps between the drip tray and the generator at Area 346.

Remarks

Nil

Inspection Information

Contract No.	HY/2012/06
Date:	15 April 2014
Time:	14:00
Inspection No.:	21

Non-compliance

Nil

Observations

Follow-up Observation

1. The open stockpile under the bridge has been coved (Closed).

2. The drain hole has been blocked to prevent oil leakage (Closed).

New Observation

3. Stagnant water was observed on the access road at Area 320. The Contractor was reminded to clear the water to prevent mosquito breeding.

Remarks

Nil

Inspection Information

Contract No.	HY/2012/06
Date:	22 April 2014
Time:	14:00
Inspection No.:	22

Non-compliance

Nil

Observations

Follow-up Observations

1. Stagnant water has been cleared (Closed).

New Observations

2. The generator was observed to be too close to the sensitive receiver. The Contractor was reminded to re-position it to reduce the noise generated to the house nearby.

3. The air compressors were observed to be too close to the sensitive receiver. The Contractor was reminded to re-position them to reduce the noise generated to the house nearby.

Remarks

Nil

Inspection Information

Contract No.	HY/2012/06
Date:	29 April 2014
Time:	14:00
Inspection No.:	23

Non-compliance

Nil

Observations

Follow-up Observations

1. The generator was re-positioned farther from the house (Closed).

2. Air compressors were re-positioned farther from the house (Closed).

New Observations

3. Mud trails were observed at the site exit. The Contractor was reminded to wash the wheels of vehicles before vehicles leave the site.

Remarks

Nil

APPENDIX L
STATISTICS ON COMPLAINTS, NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

Appendix L

Statistics on Complaints, Notifications of Summons and Successful Prosecutions

	Date Received	Subject	Status	Total no. followed up by the ET this month	Total no. followed up by the ET since project commencement
Environmental complaints	19 December 2013	EPD referred a complaint from Lot no. 116 of Fui Sha Wai at Tai Hang of Tai Po which is concerned about the construction noise and diesel-like smell generated from construction activities nearby which caused nuisance and health problems on 19 December 2013 morning.	Closed	1	2
	24 February 2014	EPD referred an air-and-odour complaint on 24 February 2014. The complainant complained about the construction site located near the bus stop in Fui Sha Wai, Tai Hang, Tai Wo Service Road West. When construction works were carried out, odour, white smoke and dust were generated. The complainant asked for follow-up actions.	Closed		
Notification of summons	-	-	-	0	0
Successful Prosecutions	-	-	-	0	0