

Highways Department

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**Agreement No. HMW  
5/2009 (EP) Traffic  
Improvements to Tuen  
Mun Road Town Centre  
Section**

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Quarterly Environmental  
Monitoring and Audit  
Summary Report  
(November 2011 to  
January 2012)

Final



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Certified by Environmental Team Leader  
Coleman Ng  
Ove Arup & Partners Hong Kong Ltd



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Verified by Independent Environmental Checker  
David Yeung  
ENVIRON Hong Kong Ltd

## Contents

	Page
Executive Summary	A
1 Project Information	1
1.1 Project Background and Programme	1
1.2 Project Organization	1
2 EM&A Requirements	3
2.1 Monitoring Parameters	3
2.2 Environmental Quality Performance Limits	4
2.3 Environmental Mitigation Measures	4
3 Implementation Status	4
3.1 Implementation Status of Mitigation Measures	4
4 Environmental Monitoring Results	8
4.1 Air Monitoring Results and Observations	8
4.2 Noise Monitoring Results and Observations	8
4.3 Landscape and Visual Monitoring Audit Results	9
5 Waste Disposal	10
6 Environmental Performance	10
6.1 Non-Compliance Record	10
6.2 Review of Reasons of Non-Compliance	10
6.3 Notification of Summons and Successful Prosecution	10
6.4 Complaint Record	11
7 Conclusions and Recommendations	14
7.1 Conclusions	14
7.2 Recommendations	14
8 Reference	15
Appendix A	
Construction programme	
Appendix B	
Environmental Mitigation Measures	
Appendix C	
Impact Air Monitoring Results	
Appendix D	
Wind Data	
Appendix E	
Impact Noise Monitoring Results	
Appendix F	
Details of LR, LCA and VSR	

## Appendix G

### Complaint Log

## Executive Summary

This is the sixth quarterly Environmental Monitoring and Audit (EM&A) summary report prepared by Ove Arup & Partners Hong Kong Limited (Arup), the designated Environmental Team (ET), for the Project "Traffic Improvements to Tuen Mun Road Town Centre Section". This report presents the results of EM&A works conducted for the period from 1 November 2011 to 31 January 2012.

### Environmental Monitoring Works – Breaches of Action and Limit Levels

#### *Air Quality*

All 24-hour TSP measurements during the reporting period were below the Action and Limit Level. No exceedance of Action and Limit Level was found.

#### *Noise*

Totally 9 limit level exceedances (4 in November 2011, 3 in December 2011 and 2 in January 2012) of noise monitoring were recorded during the reporting period. Based on the on-site observations and interpretation from the results, noise exceedance was not related to the construction activities. No particular remedial work is required.

However, two noise complaints (In November 2011), hence, two Action Level exceedance, were recorded in the reporting period.

Construction works were carried out during the restricted hours, the conditions stipulated in CNPs of related construction works were strictly followed by the Contractor. No non-compliance was recorded.

#### *Landscape and Visual Audit*

In the reporting period, landscape and visual site audit in accordance with the requirements stipulated in the EM&A manual were conducted. Total 519 trees were felled and the pruning of the transplanted trees was carried out during the reporting period, no substantial change of LR, LCA and VSR was noted.

#### *Waste Disposal*

Inert C&D materials with actual amount of 13,923.000 m<sup>3</sup> were generated and disposed of at public fills at Tuen Mun Area 38 in the reporting period. 385.130 m<sup>3</sup> general refuse were generated and disposed of at WENT landfill during the reporting period.

### Environmental Auditing

The environmental site audits were conducted on a weekly basis. No non-conformance to the environmental requirements was identified during the reporting period.

### Complaint Log

Four environmental complaints (2 in November 2011 and 2 in January 2012) regarding the construction noise and water issue were recorded during the reporting period. After the investigation, it is concluded that all complaints were attributable to the Contract. The corresponding mitigation measures due to the complaints were recommended to carry out by the Contractor. Nevertheless, the Contractor was reminded to implement proper mitigation measure as stipulated in EM&A Manual to minimize any environmental implication.

### Notifications of Summons and Successful Prosecutions

No summonses or prosecution related to the environmental issues were made against the Project in the reporting period.

# 1 Project Information

## 1.1 Project Background and Programme

Ove Arup & Partners Hong Kong Limited (Arup) was appointed by Highways Department (HyD) as the Environmental Team (ET) for *Agreement No. CE22/2005 (HY) Supplementary Agreement 1 Traffic Improvements to Tuen Mun Road Town Centre Section* (the Project) under Agreement No. HMW 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section. The Project was commenced on August 2010 and to be completed on January 2014. Location of the works area is indicated in **Figure 1.1**.

The Project involves widening the following sections of TMR from dual-two carriageway to dual-three carriageway:

- Wong Chu Road Section, (from Wong Chu Road Interchange to Tuen Hing Road);
- Tuen Mun Town Plaza Section, (from Yan Oi Town Square to Tuen Hing Road).

The Project is a designated project under Schedule 2 of the Environmental Impact Assessment (EIA) Ordinance (Cap. 499). Environmental Monitoring and Audit (EM&A) work is required in accordance with the conditions stipulated in the Environmental Permit (EP) (EP-342/2009/A) and the EM&A Manual of the Project.

The rolling construction programme during the reporting period is attached in **Appendix A**. The major construction activities carried out by the Contractor in the reporting period are summarized in **Table 1.1**.

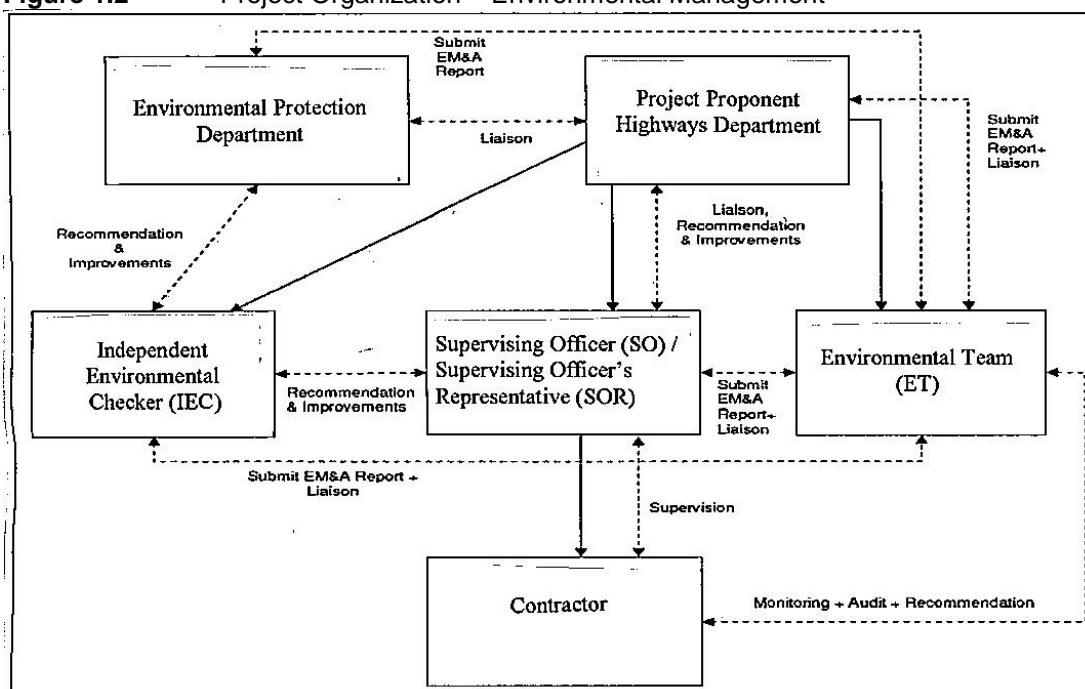
**Table 1.1** Construction activities in the reporting period

Locations	Major Works Undertaken
All area	Site clearance, ground investigation, footbridge construction, noise barrier construction; piling works, underground utilities and drainage diversion

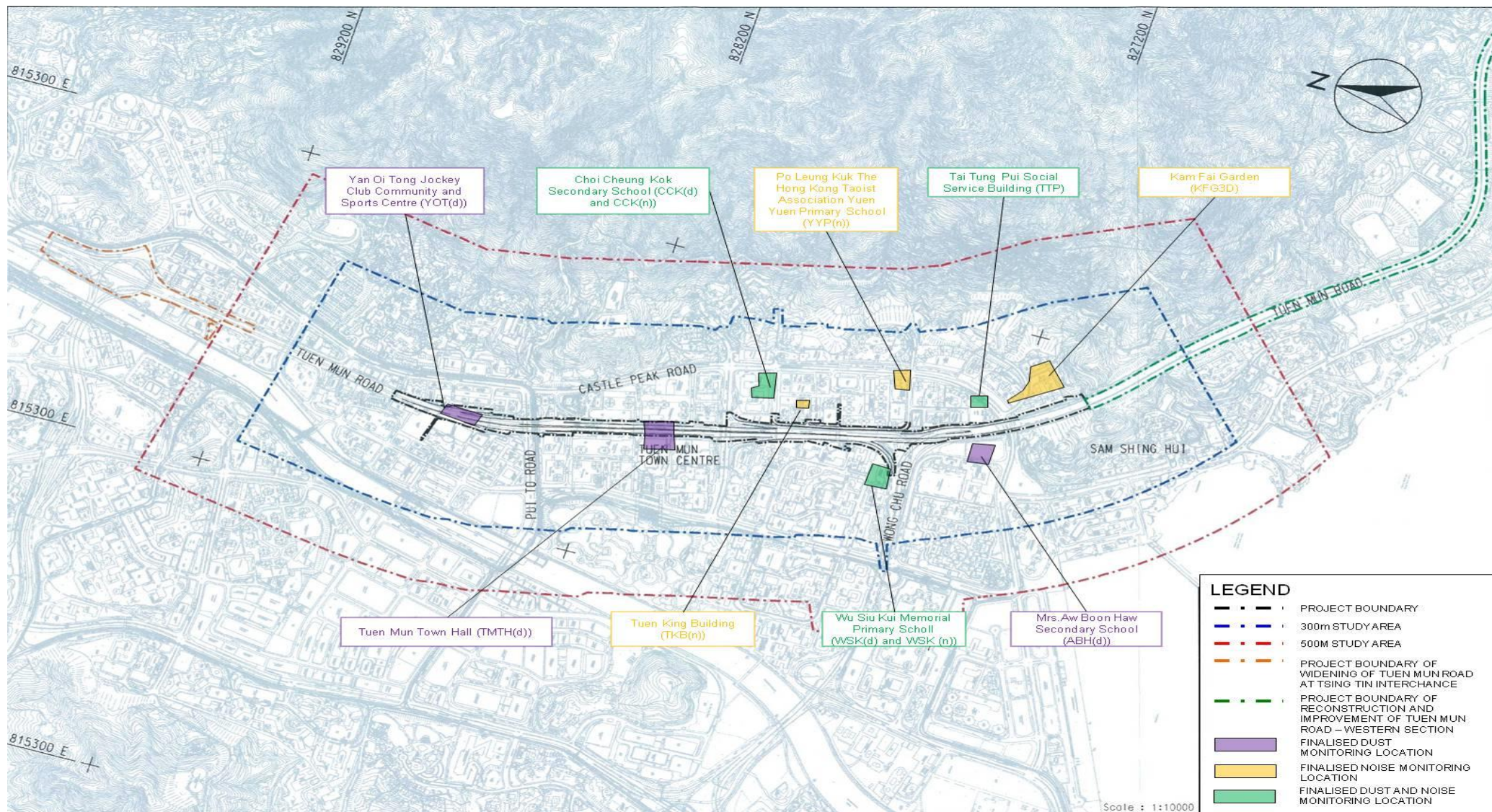
## 1.2 Project Organization

The Project organization structure in relation to the environmental management is shown in **Figure 1.2**. Contacts of key environmental staff of the Project are shown in **Table 1.2**.

**Figure 1.2** Project Organization – Environmental Management





**Figure 1.1** Location of works area and air, noise environmental monitoring stations

**Table 1.2** Contacts of key environmental staff

Organization	Name	Telephone
<b>Environmental Protection Department</b>		
Environmental Protection Officer (Strategic Assessment)22	Thomas To	2835 1103
<b>Project Proponent</b>		
Highways Department: Senior Engineer	Kenneth Chan	2762 3422
<b>Supervising Officer / Supervising Officer's Representative</b>		
AECOM Asia Co. Ltd.: Chief Resident Engineer	Patrick Lee	2969 9200
<b>Independent Environmental Checker</b>		
ENVIRON Hong Kong Limited: Independent Environmental Checker	David Yeung	3743 0717
<b>Environmental Team</b>		
Ove Arup & Partners Hong Kong Ltd: Environmental Team Leader	Coleman Ng	2268 3097
<b>Contractor</b>		
China Harbour Engineering Company Limited		
Site Agent	W.S. Ng	2403 0529
Environmental Officer	Marko Chan	2403 0527

## 2 EM&A Requirements

### 2.1 Monitoring Parameters

Air quality monitoring shall be measured in terms of the TSP levels for 24-hour periods. For noise monitoring, construction noise shall be measured in terms of the A-weighted equivalent continuous sound pressure level ( $L_{eq}$ ). Furthermore, the monitoring of the implementation of the landscape and visual mitigation measures shall be checked to ensure that they are fully required. **Table 2.1 and Figure 1.1** show the names and locations of the monitoring locations. The monitoring parameters, frequency and performance limits are summarised in **Table 2.2**.

**Table 2.1** Summary of air and noise monitoring stations

ID	Premise
<b>Air</b>	
AM1	Chung Sing Benevolent Society Mrs. Aw Boon Haw Secondary School
AM2	Tung Wah Group of Hospitals Tai Tung Pui Social Service Building
AM3	Shun Tak Fraternal Association Wu Siu Kui Memorial Primary School
AM4	The Chinese Manufacturers' Association Of Hong Kong Choi Cheung Kok Secondary School
AM5	Tuen Mun Town Hall
AM6	Yan Oi Tong Jockey Club Community and Sports Centre
<b>Noise</b>	
N1	Kam Fai Garden
N2	Tung Wah Group of Hospitals Tai Tung Pui Social Service Building
N3	Po Leung Kuk The Hong Kong Taoist Association Yuen Yuen Primary School
N4	Shun Tak Fraternal Association Wu Siu Kui Memorial Primary School
N5	Tuen King Building
N6	The Chinese Manufacturers' Association Of Hong Kong Choi Cheung Kok Secondary School



**Table 2.2** Monitoring parameters, frequency, locations and performance limits

Monitoring	Parameters	Frequency	Location	Action Level	Limit Level
Air	1-hour TSP	3 times every 6 days (Note 1)	AM1	290 µg/m³	500 µg/m³
			AM2	291 µg/m³	
			AM3	287 µg/m³	
			AM4	292 µg/m³	
			AM5	286 µg/m³	
			AM6	290 µg/m³	
	24-hour TSP	Once every 6 days	AM1	146 µg/m³	260 µg/m³
			AM2	151 µg/m³	
			AM3	150 µg/m³	
			AM4	150 µg/m³	
			AM5	146 µg/m³	
			AM6	147 µg/m³	
Noise	0700 - 1900 hour on normal weekdays - L <sub>eq</sub> (30min)	Once per week	N1, N2 & N5	When one documented complaint is received	75 dB(A)
			N3, N4 & N6		70/65 (Note 3)
	0700 - 2300 hours on holiday; and 1900 – 2300 hours on all other days - L <sub>eq</sub> (5min) (Note 2)	--	N1, N2, N3, N4, N5 & N6		--
					2300 – 0700 hours of next day - L <sub>eq</sub> (5min) (Note 2)
Landscape and Visual	Landscape resources (LR), landscape character area(LCA) and view sensitive receiver (VSR) (Note 4)	Twice site audit per month	Entire site area	N/A	N/A

Notes:

- 1-hr TSP monitoring would be required in case of receiving complaints
- If works are to be carried out during restricted hours, the conditions stipulated in the Construction Noise Permit (CNP) issued by the Noise Control Authority have to be followed.
- For normal day-time working hours, the noise criteria are 70 dB(A) and 65 dB(A) for normal reaching periods and examination period respectively.
- The details of each LR, LCA and VSR are summarized in **Appendix F**.

## 2.2 Environmental Quality Performance Limits

All the monitoring results will be checked against the Action and Limit levels described in the Baseline Monitoring Report, of which they are summarised in **Table 2.1**.

## 2.3 Environmental Mitigation Measures

The environmental mitigation measures carried out were basically followed the requirements described in the EIA Report. Major mitigation measures during the construction phase in relation air quality, noise, water quality, ecology, waste management as well as landscape and visual are summarised in **Appendix B**.

# 3 Implementation Status

## 3.1 Implementation Status of Mitigation Measures

Environmental site inspections were carried out on a weekly basis to monitor environmental issues on the construction sites to ensure that all mitigation measures were implemented timely and properly. Key mitigation measures observed were: vehicles were washed to remove any dusty materials from its body and wheels before leaving a construction site, quiet powered mechanical equipment (QPME) were used as well as sufficient waste disposal points were provided and regular collection for disposal.



**Table 3.1** summaries the site inspections in the reporting period and corresponding follow-up status by the Contractor.

**Table 3.1** Key findings of weekly environmental site audit in the reporting period

Monitoring Parameter	Inspection Date	Location	Key Observations & Recommendations	Contractor's Follow-Up Status
Air Quality	3 Nov 11	Tuen Mun Town Plaza & Tsing Hoi Circuit	Tarpaulin cover should be provided for exposed soil to minimize dust disturbance in the area.	The reminder has been noted. Closed on 10 Nov 11.
	10 Nov 11	Yan Oi Bridge (near Tuen Fat Road)	The contractor should provide 3-sided with top cover for the cement mixing area to minimise dust disturbance to the nearby area.	The cement mixing area has been well covered. Closed on 17 Nov 11.
	17 Nov 11	Chi Lok Fa Yuen	The contractor should replace the damaged sand bag bundings in the site entrance.	The damaged sand bag bundings have been replaced. Closed on 24 Nov 11.
	17 Nov 11	Tsing Hoi Circuit	The contractor should provide tarpaulin cover to the exposed stockpiles to avoid dust disturbance.	Tarpaulin cover has been provided. Closed on 24 Nov 11.
		On Ting Estate	The contractor should provide 3-sided with top enclosure for the cement mixing zone to avoid dust disturbance.	3-sided with top enclosure has been provided. Closed on 24 Nov 11.
	24 Nov 11	Yan Oi Street, Chi Lok Fa Yuen & On Ting Estate	For cement bags of quantity over 20, the contractor was reminded to provide impervious sheeting (e.g. tarpaulin) to avoid dust disturbance in dry season.	The reminder has been noted. Closed on 1 Dec 11.
		Tsing Hoi Circuit	The contractor should ensure frequent water spraying for the exposed soil on unpaved road.	Water spraying has been provided. Closed on 1 Dec 11.
	1 Dec 11	Yan Oi Street	3-sided with top enclosure cover was observed for cement mixing zone. However, the contractor should keep good condition of the cover to minimize dust disturbance.	The condition of the cover has been improved. Closed on 8 Dec 11.
	8 Dec 11	Yan Ching Street & Under TMT Plaza	Tarpaulin cover should be provided to exposed stockpiles. Otherwise, the stockpiles should be removed as soon as possible	Tarpaulin cover has been provided. Closed on 15 Dec 11.
	8 Dec 11	Kam Fai Fa Yuen	The contractor was reminded to provide frequent water spraying into haul road to minimize dust disturbance.	The reminder has been noted. Closed on 15 Dec 11.
	15 Dec 11	All Area	The contractor was reminded to enhance water spraying frequency at exposed area during dry season to minimize dust disturbance.	The reminder has been noted. Closed on 24 Nov 11.

Monitoring Parameter	Inspection Date	Location	Key Observations & Recommendations	Contractor's Follow-Up Status
Air Quality	21 Dec 11	On Ting Estate	The contractor was reminded to check the condition of piling machine engine to avoid dark smoke emission.	The reminder has been noted. Closed on 28 Nov 11.
	28 Dec 11	On Ting Estate	The contractor was reminded to provide tarpaulin cover for excavated soils & open stockpiles after working hours.	The reminder has been noted. Closed on 5 Jan 12.
	19 Jan 12	Yan Ching Street	Excavated materials and stockpiles should be covered by tarpaulin or removed from the site after daily work.	Tarpaulin has been provided. Closed on 25 Jan 12.
Water Quality	3 Nov 11	Tuen Hi Road (under Pui To Road)	The contractor should remove the muds near the site entrance and keep the site entrance clean.	Muds have been removed. Closed on 10 Nov 11.
	10 Nov 11	Tuen Fat Road (under TMT Plaza)	The contractor was reminded to avoid water spillage from the circulation tank into traffic road.	The reminder has been noted. Closed on 17 Nov 11.
	8 Dec 11	On Ting Estate	The contractor should provide good condition of desilting tank (Larger capacity) to avoid muddy water overflow into public road.	A larger desilting tank has been provided. Closed on 15 Dec 11.
	15 Dec 11	On Ting Estate	Stagnant water near the sedimentation tank should be removed to avoid accumulation. The contractor was also reminded to provide proper connection between sedimentation tank and treatment facility (ie. Aqua Sed)	Stagnant water has been removed. Closed on 22 Dec 11.
	1 Dec 11	General	The contractor was reminded to replace all damaged sandbags and increase the sandbag bunding's height where appropriate.	The reminder has been noted. Closed on 8 Dec 11.
	19 Jan 12	Tsing Hoi Circuit	The contractor was reminded to clear the muds on the public road.	The reminder has been noted. Closed on 25 Jan 12.
Noise	28 Dec 11	On Ting Estate	The contractor was reminded to schedule the construction works such that the noise impact to regimentals nearby can be minimized. Also the contractor is reminded to consider noise mitigation measures where appropriate. (e.g. Noise Barrier)	The reminder has been noted. Closed on 5 Jan 12.
	5 Jan 12	Tuen Fat Road (Under Tuen Hing Bridge)	The breaker tip of rock breaker should be shielded or covered by appropriate acoustic materials. (e.g. Acoustic insulating jacket)	Acoustic insulating jacket has been provided for breakers. Closed on 12 Jan 12.

Monitoring Parameter	Inspection Date	Location	Key Observations & Recommendations	Contractor's Follow-Up Status
<b>Landscape and Visual</b>	24 Nov 11	Yan Oi Street	The contractor should provide fencing for tree inside the site area.	Fencing has been provided. Closed on 1 Dec 11.
	21 Dec 11	Junction of Wong Chu Road & Tuen Mun Road	The contractor was reminded to provide fencing to retained trees in the site area.	The reminder has been noted. Closed on 28 Dec 11.
<b>Waste / Chemical Management</b>	3 Nov 11	Yan Ching Street (under Yan Ching Bridge) & Tuen Hi Road (under Pui To Road)	The contractor was reminded to dispose of the general waste and debris to avoid accumulation.	The reminder has been noted. Closed on 10 Nov 11.
		Tuen Mun Road (near On Ting Estate)	Drip tray should be provided for the air compressor and generator placing.	Drip trays have been provided. Closed on 10 Nov 11.
	17 Nov 11	Yan Ching Bridge	The contractor should remove the debris from the site to avoid accumulation.	Debris has been removed. Closed on 24 Nov 11.
	24 Nov 11	Yan Oi Street	Chemical containers should be placed in designated storage area.	The chemical containers have been placed in designated storage area. Closed on 1 Dec 11.
	1 Dec 11	Yan Oi Street	The contractor was reminded to remove the debris from the site area.	The reminder has been noted. Closed on 8 Dec 11.
	8 Dec 11	General	The contractor was reminded to keep good housekeeping in the site area.	The reminder has been noted. Closed on 15 Dec 11.
	5 Jan 12	Tuen Fat Road (Under TMT Plaza)	All chemical containers with chemical should be stored in designated storage area.	Storage area has been provided. Closed on 12 Jan 12.
	12 Jan 12	Tsing Hoi Circuit	The contractor was reminded to provide drip trays for chemical placing.	The reminder has been noted. Closed on 19 Jan 12.
	19 Jan 12	Tsing Hoi Circuit	The contractor was reminded to provide drip trays for chemical placing.	Drip trays have been provided. Closed on 25 Jan 12.

## 4 Environmental Monitoring Results

### 4.1 Air Monitoring Results and Observations

#### 4.1.1 Air Quality Monitoring Results

Monitoring of 24-hour TSP were conducted at monitoring stations AM1, AM2, AM3, AM4, AM5 and AM6 in the reporting period. All monitoring data and graphical presentation of the monitoring results are provided in **Appendix C** and are summarised in **Table 4.1**. Wind data obtained from the Hong Kong Observatory – Tuen Mun anemometer station during the reporting period is presented in **Appendix D**.

**Table 4.1** Summary of 24-hour TSP monitoring results in the reporting period

Location	Average 24-hour TSP Concentration, $\mu\text{g}/\text{m}^3$ (Range)			
	Nov 11	Dec 11	Jan 12	Mean
AM1	38 (15 – 65)	84 (40 – 132)	55 (31 – 87)	58 (15 – 132)
AM2	39 (7 – 65)	76 (56 – 112)	54 (31 – 75)	55 (7 – 112)
AM3	30 (11 – 62)	94 (73 – 129)	61 (46 – 107)	60 (11 – 129)
AM4	38 (24 – 59)	96 (78 – 127)	62 (37 – 102)	64 (24 – 127)
AM5	38 (14 – 66)	99 (61 – 140)	63 (28 – 102)	65 (14 – 140)
AM6	41 (11 – 79)	93 (77 – 129)	45 (32 – 64)	58 (11 – 129)

All 24-hour TSP measurements during the reporting period were below the Action/Limit Level. No exceedance of action and limit level was found.

#### 4.1.2 General Observations

Major construction works including site clearance, site hoarding construction, ground investigation and underground utilities diversion were implemented during the reporting period.

### 4.2 Noise Monitoring Results and Observations

#### 4.2.1 Noise Monitoring Results

##### Non-restricted Hours

Monitoring of the construction noise level was conducted during non-restricted hours in the reporting period at monitoring locations N1, N2, N3, N4, N5 and N6. All monitoring data and graphical presentation of the monitoring results are provided in **Appendix E** and are summarised in **Table 4.2**.

**Table 4.2** Summary of impact noise monitoring in the reporting period

Location	Noise Level, $L_{eq}(30\text{min})$ , dB(A) (Range)			
	Nov 11	Dec 11	Jan 12	Mean
N1	76 (75 – 77)	75 (74 – 77)	74 (74 – 75)	75 (74 – 77)
N2	75 (74 – 76)	75 (74 – 76)	75 (74 – 76)	75 (74 – 76)
N3	68 (66 – 68)	67 (66 – 68)	67 (67 – 68)	67 (66 – 68)

Location	Noise Level, $L_{eq}(30min)$ , dB(A) (Range)			
	Nov 11	Dec 11	Jan 12	Mean
N4	66 (65 – 67)	65 (65 – 67)	66 (66 – 67)	66 (65 – 67)
N5	70 (69 – 71)	70 (69 – 71)	70 (69 – 71)	70 (69 – 71)
N6	69 (68 – 70)	68 (68 – 69)	68 (68 – 68)	69 (68 – 70)

### Restricted Hours

In the reporting period, the construction works and activities such as mobilization of materials and plants etc were carried out during restricted hours. The granted Construction Noise Permits (CNPs) were issued by EPD for the related activities before the works commencement, the Contractor strictly followed the conditions stipulated in the CNPs. There was no non-compliance recorded during the reporting period.

#### 4.2.2 Exceedance of Limit and Action Levels for Construction Noise

Totally 9 limit level exceedances (4 in November 2011, 3 in December 2011 and 2 in January 2012) for noise measurement during non-restricted hours in the reporting period and are summarized in **Table 4.3**.

**Table 4.3** Summary of exceedance of Limit Levels for construction noise in the reporting period

Location (Note 1)	No. of exceedance of Limit Level			
	Nov 11	Dec 11	Jan 12	Total
N1	2	1	0	3
N2	2	1	2	5
N6	0	1	0	1

#### Notes:

1. No Limit Level exceedance was recorded at monitoring location N3, N4 and N5 during the reporting period.

Based on the field observations, it was revealed that the exceedances were mainly caused by traffic vehicles along Tuen Mun Road. It was therefore concluded that the noise exceedance was not related to the construction activities. The details of the limit level exceedances had been presented in the corresponding monthly EM&A report (Nov 2011 to Jan 2012).

Two environmental complaints (In November 2011) regarding noise nuisance were recorded in the reporting period. Therefore, two Action Level exceedances of construction noise were recorded in the reporting period.

Summary of above exceedance investigation of the Project is provided in the following Section 6.4 and **Appendix G**.

#### 4.2.3 General Observations

The construction site had been under normal operation during the noise monitoring period and no unusual operation was observed. Traffic noise had been noticed at the monitoring location during the noise monitoring period.

### 4.3 Landscape and Visual Monitoring Audit Results

In the reporting period, landscape and visual site audit in accordance with the requirements stipulated in the EIA Report was conducted during the routine monthly site audit. The details of each LR, LCA and VSR are summarized in **Appendix F**. The implementation and maintenance of landscape and visual mitigation measures, listed in EIA Report, were checked during the site audit. During the reporting period, no substantial change of LR,



LCA and VSR was noted, no non-compliance has been triggered, total 519 trees were felled and the pruning of the transplanted trees was carried out in accordance with the Specification for Tree Protection and Transplanting Works in Landscape Plan. The summary reports are presented in the corresponding monthly EM&A report (Nov 2011 to Jan 2012).

## 5 Waste Disposal

The amounts of different types of waste generated by the activities of the Project in the reporting period are shown in **Table 5.1**. It is anticipated that the amount of different types of waste will be increased in the forth-coming month due to the increasing of the scale of construction works, attention should be paid and the mitigation measures recommended in the EIA Report should be implemented and maintained. No liquid waste was generated in the reporting period.

**Table 5.1** Amounts of waste generated in reporting period

Waste Type	Amount				Disposal Locations
	Nov 11	Dec 11	Jan 12	Total	
Inert C&D Materials	0 m <sup>3</sup>	0 m <sup>3</sup>	0 m <sup>3</sup>	0 m <sup>3</sup>	Broken concrete (Note 1)
	0 m <sup>3</sup>	0 m <sup>3</sup>	0 m <sup>3</sup>	0 m <sup>3</sup>	Reused in the Contract
	0 m <sup>3</sup>	0 m <sup>3</sup>	0 m <sup>3</sup>	0 m <sup>3</sup>	Reused in other Projects
	3,090.750 m <sup>3</sup>	7,371.000 m <sup>3</sup>	3,461.250 m <sup>3</sup>	13,923.000 m <sup>3</sup>	Disposal of at public fill at Tuen Mun Area 38
Chemical Waste	0 kg	0 kg	0 kg	0 kg	N/A
Paper / cardboard packaging	215 kg	0 kg	0 kg	215 kg	Recycler
Plastic	0 kg	0 kg	0 kg	0 kg	
Metal	0 kg	0 kg	0 kg	0 kg	
General Refuse	214.500 m <sup>3</sup>	82.875 m <sup>3</sup>	87.750 m <sup>3</sup>	385.130 m <sup>3</sup>	Disposal of at WENT landfill

Notes:

1. Broken concrete for recycling into aggregates.

## 6 Environmental Performance

### 6.1 Non-Compliance Record

There was no non-compliance received in the reporting period.

### 6.2 Review of Reasons of Non-Compliance

Totally 9 limit level exceedances (4 in November 2011, 3 in December 2011 and 2 in January 2012) of noise monitoring were recorded from the monitoring data at locations N1, N2 and N6 during the reporting period, which triggered the Event and Action Plan for remedial action. Based on the on-site observations and interpretation from the results, it was revealed that the exceedances were mainly caused by traffic noise along Tuen Mun Road and was not related to the construction activities. No particular remedial work is required.

### 6.3 Notification of Summons and Successful Prosecution

No summons or prosecutions related to environmental issues were received or made against the Project in the reporting period.

## 6.4 Complaint Record

Four environmental complaints (2 in November 2011 and 2 in January 2012) regarding the construction noise and water quality were recorded during the reporting period.

The **First** complaint was received by ICC on 28 Oct 11 regarding the noise nuisance of night works on noise nuisance of night works under TMT Plaza (Loading and unloading) and noise from workers. The complaint was received by ET on 16 Nov 11, therefore, it is reported in the reporting month (Nov 11) accordingly.

As confirmed by the Contractor and Supervising Officer's Representative, the related night works was carried out under TMT Plaza. The noise nuisance was mainly due to the loading and unloading of construction materials (Rubble, wooden boards, steel bars and scaffolding materials) onto the ground and noise from workers. During the complaint day, 1 unit of dump truck with crane and 1 unit of crane lorry were employed.

The relevant construction noise permit (CNP) no. GW-RW0446-11 was obtained for the loading and unloading works prior commencement. The conditions stipulated in the CNP were strictly followed by the Contractor. EPD had been informed prior the work commencement. No abnormal activities were observed during the complaint period. Based on the above-mentioned information, it is concluded that the complaint was work-related under the Project.

In order to minimize the potential noise nuisance generated from the construction works, ET recommended that the Contractor should undertake following mitigation measures to minimize the noise nuisance.

1. Well maintain the machines condition to minimize noise nuisance;
2. Relocate operating machinery as far as possible from nearby sensitive receivers;
3. Machines that may be in intermittent use should be shut down between work periods or should be throttled down;
4. Improve the working practices, minimize the noise nuisance during the working activities as far as possible; and
5. Enhance the workers awareness by regular training to minimize noise nuisance during the restricted hours.

The **Second** complaint was received by ICC on 22 Nov 11 regarding the noise nuisance of night works on Tuen Mun Road (Tuen Mun Bound).

As confirmed by the Contractor and Supervising Officer's Representative, the related night works was carried out under TMT Plaza. The noise nuisance was mainly due to the road paving works. During the complaint day, 1 unit of road marking material boiler enclosed with acoustic enclosures, 1 unit of paver, 1 unit of roller equipped with sound baffles and silencers, 1 unit of dump truck, 1 unit of portable generator, 1 unit of road marker remover, 1 unit of sweeper and 1 unit of lorry have been deployed.

The relevant construction noise permit (CNP) no. GW-RW0699-11 was obtained for the road paving works in the designated area prior commencement. The conditions stipulated in the CNP were strictly followed by the Contractor. EPD had been informed prior the work commencement. No abnormal activities were observed during the complaint period. Based on the above-mentioned information, it is concluded that the complaint was work-related under the Project.

In order to minimize the potential noise nuisance generated from the road paving works, ET recommended that the Contractor should undertake following mitigation measures to minimize the noise nuisance.

1. Well maintain the machines condition to minimize noise nuisance;
2. Relocate operating machinery as far as possible from nearby sensitive receivers;

3. Machines that may be in intermittent use should be shut down between work periods or should be throttled down; and
4. Improve the working practices; minimize the noise nuisance during the working activities as far as possible.

The **Third** complaint was received by ICC on 21 Jan 12 regarding the accumulated water from the road work in Tuen Mun Road (Kowloon Bound) near Waldorf Garden and Parklane Square.

As confirmed by the Contractor and Supervising Officer's Representative, the complaint was related to the accumulated water generated by the road work on 21 Jan 12.

Immediate checking has been done by site workers after receiving the complaint. It was found that certain amount of water in Tuen Mun Road (Kowloon Bound) near Waldorf Garden and Parklane Square was accumulated due to water leakage from damaged underground water pipes during operation. As advised by the Supervising Officer's Representative, the Contractor had cleared the accumulated water from the pipes, ensuring no water leakage from the pipes to the road surface after receiving the complaint. Weekly site inspections by ET on 26 Jan 12 and 2 Feb 12 revealed that the site condition was satisfactory and no water accumulation was observed.

Based on the above information, it is therefore concluded that the complaint was work related under the Project. The Contractor was reminded to take necessary resources to ensure well maintenance for the water pipes and prevent re-occurrence.

In view of this, ET recommended that the Contractor should undertake following mitigation measures to minimize the nuisance.

1. Routine inspection and maintenance for the water pump and pipes should be strengthened.
2. Site workers should be well trained to avoid water pipes leakage.

The **Fourth** complaint was received by ICC on 29 Jan 12 regarding water spillage from the site to the carriage road in Tuen Mun Road (Kowloon Bound) near Chi Lok Fa Yuen.

As confirmed by the Contractor and Supervising Officer's Representative, the complaint was related to water spillage from the site to the carriage road on 29 Jan 12.

Immediate checking has been done by site workers after receiving complaint. It was found that water spillage in Tuen Mun Road (Kowloon Bound) near Chi Lok Fa Yuen was occurred due to the leakage of water from water-filled barrier during water refilling operation. As advised by the Supervising Officer's Representative, the Contractor have ensured all caps are well installed in the water-filled barriers, ensuring no water leakage is from the barriers to the road surface after receiving the complaint. Weekly site inspections by ET on 2 Feb 12 revealed that the site condition was satisfactory and no water spillage was observed.

Based on the above information, it is therefore concluded that the complaint was work related under the Project. The Contractor was reminded to take necessary resources to ensure frequent monitoring for the water-filled barrier and prevent re-occurrence.

In view of this, ET recommended that the Contractor should undertake following mitigation measures to minimize the nuisance.

1. Routine inspection and maintenance for the water-filled barriers should be strengthened.
2. Site workers should be well trained for the water refilling operation for the water-filled barriers.

The recommendations that advised by ET had been noted by the Contractor and would be implemented as far as possible. The updated statistical summary of complaint is presented

in **Table 6.1**. The updated complaint logs (C016 to C019) of the Project in the reporting period are shown in **Appendix G**.

**Table 6.1** Summary of complaints for the contract

Reporting Period	Complaint Statistics		Area of Concern	Validity to the Project	Status
	Number	Cumulative			
02/08/10 – 31/10/10	0	0	-	-	-
01/11/10 – 30/11/10	1	1	Noise	Yes (Ref.: C001)	Closed on 30 Nov 10.
01/12/10 – 31/01/11	0	1	-	-	-
01/02/11 – 28/02/11	1	2	Noise	Yes (Ref.: C002)	Closed on 2 Mar 11.
01/03/11 – 31/03/11	0	2	-	-	-
01/04/11 – 30/04/11	2	4	Water	Yes (Ref.: C003)	Closed on 16 Apr 11.
			Noise	Yes (Ref.: C004)	Closed on 16 May 11.
01/05/11 – 31/05/11	1	5	Water	Yes (Ref.: C005)	Closed on 10 Jun 11.
01/06/11 – 30/06/11	1	6	Air	Yes (Ref.: C006)	Closed on 23 Jun 11.
	1	7	Noise	Yes (Ref.: C007)	Closed on 24 Jun 11.
	1	8	Water	Yes (Ref.: C008)	Closed on 4 Jul 11.
	1	9	Air	Yes (Ref.: C009)	Closed on 14 Jul 11.
01/07/11 – 31/07/11	1	10	Noise	Yes (Ref.: C010)	Closed on 4 Aug 11.
	1	11	Water	Yes (Ref.: C011)	Closed on 4 Aug 11.
01/08/11 – 31/08/11	0	11	-	-	-
01/09/11 – 30/09/11	1	12	Noise	Yes (Ref.: C012)	Closed on 29 Sep 11.
	1	13	Water	Yes (Ref.: C013)	Closed on 14 Oct 11.
	1	14	Water	Yes (Ref.: C014)	Closed on 14 Oct 11.
01/10/11 – 31/10/11	1	15	Water	Yes (Ref.: C015)	Closed on 28 Oct 11.
01/11/11 – 30/11/11	1	16	Noise	Yes (Ref.: C016)	Closed on 24 Nov 11.
	1	17	Noise	Yes (Ref.: C017)	Closed on 30 Nov 11.
01/12/11 – 31/12/11	0	17	-	-	-
01/01/12 – 31/01/12	1	18	Water	Yes (Ref.: C018)	Closed on 6 Feb 12.

Reporting Period	Complaint Statistics		Area of Concern	Validity to the Project	Status
	Number	Cumulative			
	1	19	Water	Yes (Ref.: C019)	Closed on 6 Feb 12.

## 7 Conclusions and Recommendations

### 7.1 Conclusions

The construction phase of the Project was commenced on 2 August 2010. The EM&A programme has been implemented since then, including air quality, noise, landscape and visual and environmental site audits.

No Action and Limit Level exceedance was recorded for impact air quality monitoring in the reporting period.

Totally 9 limit level exceedances (4 in November 2011, 3 in December 2011 and 2 in January 2012) of noise monitoring were recorded during the reporting period. Based on the field observations and interpretation of the results, the noise exceedance the exceedances were mainly caused by traffic vehicles along Tuen Mun Road. It was concluded that the exceedance were not project related and no particular remedial work is required. Two noise complaints (In November 2011), hence, two Action Level exceedences, were recorded in the reporting period.

Four environmental complaints (2 in November 2011 and 2 in January 2012) regarding construction noise and water quality were recorded in the reporting period. After the investigations, it is concluded that the complaints were attributable to the Contract. The corresponding mitigation measures due to the complaints were recommended to carry out by the Contractor. Nevertheless, the Contractor was reminded to implement proper mitigation measure as stipulated in EM&A Manual to minimize any environmental implication.

No summons or prosecution related to environmental issues was received in the reporting period.

In accordance with the requirements stipulated in the EM&A manual, landscape and visual site audit was conducted regularly during the reporting period. Total 519 trees were felled and the pruning of the transplanted trees was carried out. No substantial change of LR, LCA and VSR was noted.

Weekly environmental site audit was carried out during the reporting period. The major environmental concerns were related to air quality, noise, water quality, waste management and tree maintenance.

### 7.2 Recommendations

Impact monitoring will be continued to carry out in the following month and followed by the requirement stipulated in the EM&A manual. Attention will be paid to environmental issues identified in EIA Report and weekly site audit. Mitigation measures recommended in EIA Report and Implementation Schedule of Mitigation Measure will be fully implemented.

Construction noise is one of the key environmental issues especially in restricted hours. The conditions stipulated in CNPs should be strictly followed when the construction works were carried out during the restricted hours.

Construction dust is another key environmental issue. The implemented construction dust mitigation measures including covering of exposed slope / soil with tarpaulin sheet etc., should be maintained and improved as necessary. Adequate water spraying should be provided for the unpaved area to minimize dust disturbance.



Water quality impact is also key environmental issue. The drainage system should be well maintained. The solid and liquid waste management should be strictly followed in accordance with the requirements described in the EIA report.

The retained trees should be protected and fenced properly. The Contractor was reminded to avoid trunks damage during construction works and, take the proper remedial measures immediately when damage was observed.

Moreover, the corresponding mitigation measures due to the complaints were recommended to carry out by the Contractor and are presented in Section 6.4. The Contractor was reminded to implement proper mitigation measure to minimize any environmental nuisance.

## 8 Reference

- [1] AECOM Asia Co. Ltd. December 2008. Agreement No. CE 22/2005 (HY) Supplementary No. 1 Traffic Improvements to Tuen Mun Road Town Centre Section – Environmental Monitoring & Audit Manual.
- [2] Ove Arup & Partners Hong Kong Limited. July 2010. Agreement No. HMW 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section – Baseline Monitoring Report (Revision\_4)
- [3] Ove Arup & Partners Hong Kong Limited. Agreement No. HMW 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section – Monthly Environmental Monitoring and Audit Report – November 2011 (Final)
- [4] Ove Arup & Partners Hong Kong Limited. Agreement No. HMW 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section – Monthly Environmental Monitoring and Audit Report – December 2011 (Final)
- [5] Ove Arup & Partners Hong Kong Limited. Agreement No. HMW 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section – Monthly Environmental Monitoring and Audit Report – January 2012 (Final)

Appendix A

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**Construction  
Programme**

## **Design and Build of Traffic Improvement to Tuen Mun Road Town Centre Section**

Activity Name		Original Duration	Remaining Duration	Start	Finish	Latest Start	Latest Finish	Calendar																
								October 21				November 22				December 23				January 24				
								03	10	17	24	31	07	14	21	28	05	12	19	26	02	09	16	23
<b>Design of Permanent Works</b>																								
<b>Package of Noise Barrier / Enclosure</b>																								
DDANS1740	DC DDA certify for Noise Barrier/Enclosure Architectural Works	42		01-Jun-11	31-Oct-11	06-Feb-13	06-Feb-13																	
DDANS1750	Submit & Endorsement DDA by SO	35	35	31-Oct-11	04-Dec-11	06-Feb-13	13-Mar-13																	
<b>Package of Vehicular Bridge S1</b>																								
DDAS11100	DC DDA certify for Vehicular Bridge S1 Foundation (N. abutment to Pier 2)	7		02-May-11	31-Oct-11	25-Nov-11	25-Nov-11																	
DDAS11110	Submit & Endorsement DDA by SO	35	35	31-Oct-11	04-Dec-11	25-Nov-11	30-Dec-11																	
DDAS11140	DC DDA certify for Vehicular Bridge S1 Pier & Deck (S. abutment to Pier 7)	42		01-Jun-11	31-Oct-11	01-Nov-11	01-Nov-11																	
DDAS11150	Submit & Endorsement DDA by SO	35	35	31-Oct-11	04-Dec-11	01-Nov-11	06-Dec-11																	
DDAS11180	DC DDA certify for Vehicular Bridge S1 Pier & Deck (Pier 3 to Pier 7)	42		03-May-11	31-Oct-11	29-Dec-11	29-Dec-11																	
DDAS11190	Submit & Endorsement DDA by SO	35	35	31-Oct-11	04-Dec-11	29-Dec-11	02-Feb-12																	
DDAS11220	DC DDA certify for Vehicular Bridge S1 Pier & Deck (N. abutment to Pier 3)	42		01-Jun-11	31-Oct-11	04-Apr-12	04-Apr-12																	
DDAS11230	Submit & Endorsement DDA by SO	35	35	31-Oct-11	04-Dec-11	04-Apr-12	09-May-12																	
DDAS11260	DC DDA certify for Vehicular Bridge S1 Noise Barrier NE19	42		02-Jul-11	31-Oct-11	16-Mar-12	16-Mar-12																	
DDAS11270	Submit & Endorsement DDA by SO	35	35	31-Oct-11	04-Dec-11	16-Mar-12	20-Apr-12																	
DDAS11300	DC DDA certify for Modification Existing Wong Chu Road	42		01-Jun-11	31-Oct-11	02-Nov-11	02-Nov-11																	
DDAS11310	Submit & Endorsement DDA by SO	35	35	31-Oct-11	04-Dec-11	03-Nov-11	07-Dec-11																	
<b>Package of Footbridge and Associated Lift</b>																								
DDAFB1080	DC DDA certify for Yan Oi Bridge Superstructure	120		01-Mar-11	31-Oct-11	26-Jan-12	26-Jan-12																	
DDAFB1090	Submit & Endorsement DDA by SO	35	35	31-Oct-11	04-Dec-11	26-Jan-12	01-Mar-12																	
DDAFB2090	Submit & Endorsement DDA by SO	35		01-Jun-11	31-Oct-11	05-Nov-11	06-Nov-11																	
DDAFB3040	DC DDA certify for Sku On Bridge Superstructure	35	22	19-Oct-11	21-Nov-11	01-Nov-12	23-Nov-12																	
DDAFB3080	Submit & Endorsement DDA by SO	84		08-Apr-11	31-Oct-11	21-Jul-12	21-Jul-12																	
DDAFB3090	Submit & Endorsement DDA by SO	35	35	31-Oct-11	04-Dec-11	22-Jul-12	26-Aug-12																	
DDAFB4040	DC DDA certify for Chi Lok Bridge Superstructure	35		08-Apr-11	31-Oct-11	14-Dec-11	14-Dec-11																	
DDAFB4080	Submit & Endorsement DDA by SO	135		01-Feb-11	31-Oct-11	24-Dec-11	24-Dec-11																	
DDAFB4090	Submit & Endorsement DDA by SO	35	35	31-Oct-11	04-Dec-11	24-Dec-11	26-Jan-12																	
<b>Package of Geotechnical Works</b>																								
DDAGE1120	DC DDA certify for Reinforced Earth Wall 6SW-AFR10	140		02-Jan-11	31-Oct-11	23-Jun-14	23-Jun-14																	
DDAGE1130	Submit & endorsed by GEO	28		28-31-Oct-11	27-Nov-11	23-Jun-14	21-Jul-14																	
DDAGE1140	Submit & Endorsement DDA by SO	35	35	28-Nov-11	01-Jan-12	21-Jul-14	25-Aug-14																	
DDAGE1170	Submit & endorsed by GEO	28		01-Jun-11	31-Oct-11	29-Feb-12	29-Feb-12																	
DDAGE1180	Submit & Endorsement DDA by SO	35	35	31-Oct-11	04-Dec-11	29-Feb-12	04-Apr-12																	
<b>Package of Provisional Works for TCSS Installation</b>																								
DDATS1030	Submit & Endorsement DDA by SO	35		09-Dec-10	31-Oct-11	11-Oct-11	11-Oct-11																	
<b>Package of At-Grade Irrigation Systems</b>																								
DDAIS1010	Submit & endorsed by Statutory Authorities/Government Departments	28		02-Jul-11	31-Oct-11	06-Jul-14	06-Jul-14																	
DDAIS1015	Final DDA prepare & sub. At-grade Irrigation Systems	15	15	31-Oct-11	14-Nov-11	07-Jul-14	21-Jul-14																	
DDAIS1020	DC DDA certify for At-grade Irrigation Systems	42	15	24-Jul-11	14-Nov-11	06-Jul-14	21-Jul-14																	
DDAIS1030																								

**3 Months Rolling Programme (cutoff: 31-10-11)**

Date	Revision	Checked	Approved
24-Oct-11	1110	Tim	
31-Oct-11	1110 RA	Tim	

HY/2009/03

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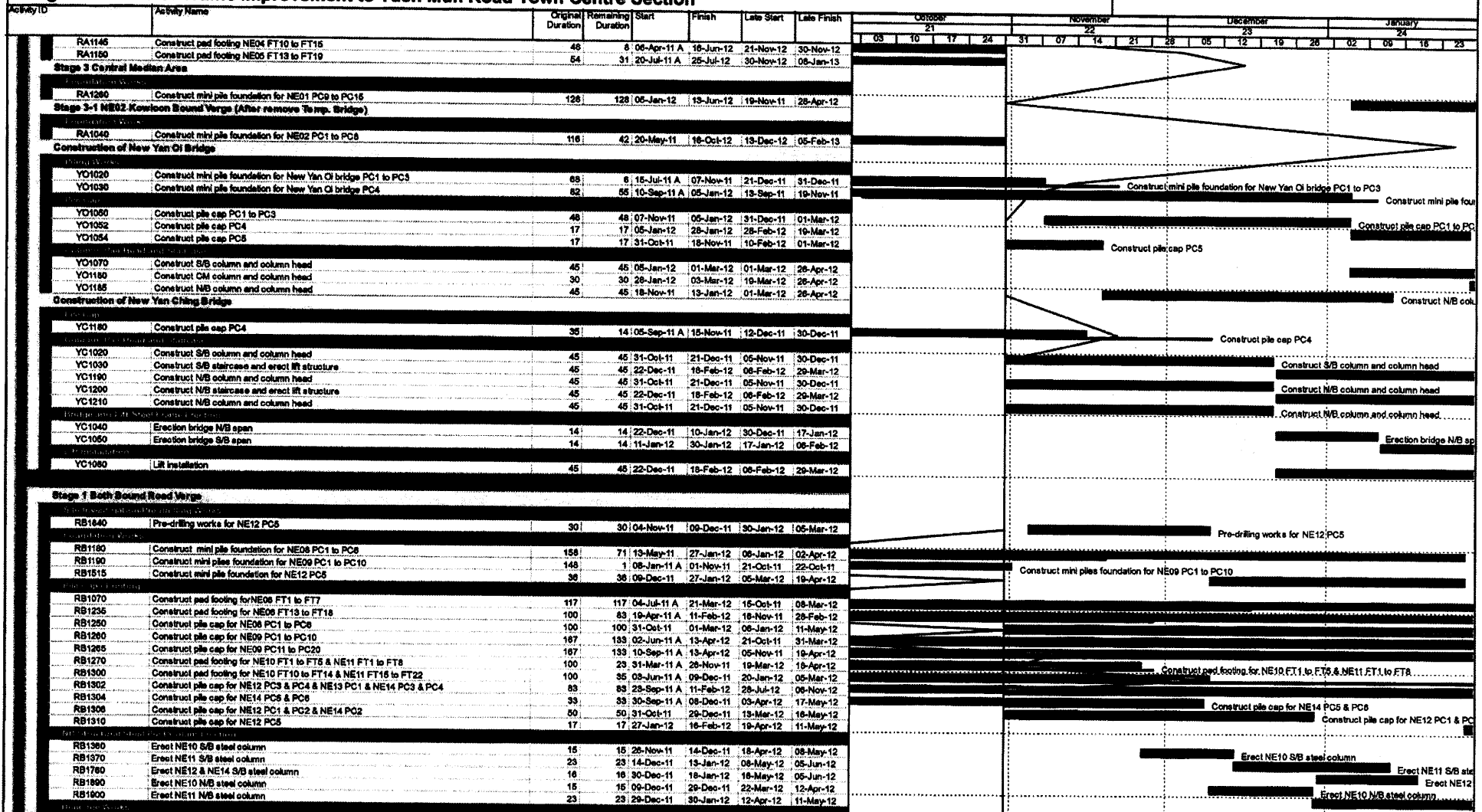
## Design and Build of Traffic Improvement to Tuen Mun Road Town Centre Section

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Late Start	Late Finish	October				November				December				January			
								03	10	17	24	31	07	14	21	28	05	12	19	26	02	09	16
Trail Green Panel																							
Trail Green Panel																							
GS1580	Site trail for green wall panel	365	125	05-Mar-11 A	03-Mar-12	08-Nov-12	13-Mar-13																
GS1900	Trail pile & test for friction pile	365	125	08-Mar-11 A	03-Mar-12	08-Nov-12	13-Mar-13																
Procurement																							
Material Procurement and Fabrication																							
Material Procurement and Fabrication																							
MP1020	Yan Qi Bridge span	90	90	12-Nov-11	03-Mar-12	05-Jan-12	28-Apr-12																
MP1030	Yan Qi Bridge Passenger Lift	90	90	05-Jan-12	28-Apr-12	16-Mar-12	09-Jul-12																
MP1040	Yan Ching Bridge span	90	23	08-Aug-11 A	25-Nov-11	30-Jul-14	25-Aug-14																
MP1050	Yan Ching Bridge Passenger Lift	90	23	08-Aug-11 A	21-Dec-11	08-Jan-12	06-Feb-12																
MP1080	Chi Lok Bridge span	90	90	19-Dec-11	12-Apr-12	30-Nov-11	21-Mar-12																
MP1090	Chi Lok Bridge Passenger Lift	90	90	27-Jan-12	17-May-12	01-Feb-12	22-May-12																
MP1100	Noise Barrier/Enclosure steel structure for Scheme A Area	422	422	07-Nov-11	12-Apr-13	11-Jan-12	23-Feb-13																
MP1110	Noise Barrier/Enclosure steel structure for Scheme B Area	505	421	08-Oct-11 A	30-Mar-13	10-Dec-11	18-Mar-13																
MP1120	Noise Barrier/Enclosure steel structure for Scheme C Area	488	488	06-Dec-11	05-Jul-13	22-Oct-11	10-May-13																
MP1130	Noise Barrier/Enclosure steel structure for Scheme D Area	558	432	30-Sep-11 A	18-Apr-13	18-Jan-12	25-Apr-13																
MP1280	LRT Passenger Lift	90	1	11-May-11	31-Oct-11	13-Dec-11	14-Dec-11																
Section 1 of Works																							
Improvement Works at Tuen Ming Road / Castle Peak Road																							
Improvement Works at Tuen Ming Road / Castle Peak Road																							
SEC11420	Construct drainage near Tuen Mun Women Health Centre	101		27	25-Feb-11 A	30-Nov-11	25-Jul-14	25-Aug-14															
SEC11130	Re-align existing footpath near Tuen Mun Women Health Centre	60		52	02-Jul-11 A	31-Dec-11	25-Jun-14	25-Aug-14															
SEC11160	Construct new central median	90		27	01-Oct-11 A	30-Nov-11	26-Jul-12	25-Aug-12															
Improvement Works at Fu Fat Lane / Castle Peak Road																							
Improvement Works at Fu Fat Lane / Castle Peak Road																							
SEC11360	Submit and approve TTA for re-align central median	120		82	22-Sep-11 A	20-Jan-12	04-Dec-11	23-Feb-12															
SEC11440	Construct drainage along Yuen Long bound slow lane	60		44	30-Mar-11 A	20-Dec-11	10-Sep-11	03-Nov-11															
SEC11450	Construct drainage along Kowloon bound slow lane	60		74	28-Aug-11 A	31-Jan-12	10-Sep-11	08-Dec-11															
SEC11170	Re-align existing footpath along Yuen Long bound slow lane	60		30	15-Jun-11 A	31-Jan-12	04-Nov-11	08-Dec-11															
Improvement Works at Hei Weng Road / Castle Peak Road																							
Improvement Works at Hei Weng Road / Castle Peak Road																							
SEC11300	Submit and approve TTA for re-align central median	120		120	24-Nov-11	22-Mar-12	14-Nov-11	12-Mar-12															
SEC11220	Construct cross road duct and construct new slip road along Kowloon bound	60		28	23-Aug-11 A	01-Dec-11	20-Oct-11	21-Nov-11															
SEC11230	Construct new road island at Kowloon bound	30		30	02-Dec-11	09-Jan-12	22-Nov-11	28-Dec-11															
SEC11240	Remove existing central median	60		60	10-Jan-12	22-Mar-12	29-Dec-11	12-Mar-12															
Section 2 of Works																							
Stage 1 Kowloon Bound Road Verge & T1																							
Stage 1 Kowloon Bound Road Verge & T1																							
RA1030	Construct mini pile foundation for NE01 PC1 to PC8 & PC16	140		2	01-Apr-11 A	01-Nov-11	29-Dec-11	31-Dec-11															
RA1080	Construct pile cap NE01 PC1 to PC8 & PC16	72		72	31-Oct-11	28-Jan-12	04-Jan-12	31-Mar-12															
RA1100	Construct pad footing NE03 FT1 & pile cap PC2 to PC4	64		64	28-Sep-11 A	16-Jan-12	25-Nov-11	15-Feb-12															
RA1430	Construct drainage S/B verge CH29270 to CH29400 and T1 alignment	77		77	17-Jan-12	21-Apr-12	15-Feb-12	19-May-12															
Stage 2 Both bound Road Verge near Yan Ching Bridge																							
Stage 2 Both bound Road Verge near Yan Ching Bridge																							
RA1140	Construct pad footing NE05 FT1 to FT7	56		50	06-May-11	14-Jan-13	19-Nov-12	19-Jan-13															
3 Months Rolling Programme (cutoff: 31-10-11)																							
3 Months Rolling Programme (cutoff: 31-10-11)																							
Remaining Level of Effort		Actual Work		Date		Revision		Checked		Approved													
Actual Level of Effort		Remaining ...		24-Oct-11		1110		Tim															
				31-Oct-11		1110 RA		Tim															
Page 2 of 6																							

HY/2009/03

31-Oct-11?

## Design and Build of Traffic Improvement to Tuen Mun Road Town Centre Section



Remaining Level of Effort  
 Actual Level of Effort

Actual Work  
 Remaining ...

3 Months Rolling Programme (cutoff: 31-10-11)

Page 3 of 6

Date	Revision	Checked	Approved
24-Oct-11	1110	Tim	
31-Oct-11	1110 RA	Tim	



31-Oct-11?

Activity ID	Activity Name		Original Duration	Remaining Duration	Start	Finish	Late Start	Late Finish	October				November				December				January			
									08	10	17	24	31	07	14	21	28	05	12	19	26	02	09	16
<b>Stage 1 NE15 East Side, Tsing Hoi Circuit Re-alignment &amp; S/B Foundation</b>																								
RC1400	(Relocation existing fire hydrant (WS-9) for NE16 PC8 & PC9)		80	36	29-Sep-11 A	10-Dec-11	28-Nov-11	12-Jan-12																
RC1203	Construct Socket H-pile foundation for NE16 PC10		18	18	31-Oct-11	21-Nov-11	29-Dec-11	20-Jan-12																
RC1206	Construct Socket H-pile foundation for NE16 PC35		38	38	30-Dec-11	15-Feb-12	17-Jan-12	02-Mar-12																
RC1740	Construct mini pile foundation for NE17 PC8 to PC8		64	64	01-Nov-11	17-Jan-12	12-Jul-11	29-Dec-11																
RC1076	Construct pad footing NE16 FT1 to FT7		117	105	30-Sep-11 A	07-Mar-12	05-Sep-11	12-Jan-12																
RC1080	Construct pad footing NE16 FT27 to FT34 (with retaining FR01)		133	50	12-May-11	29-Dec-11	05-Sep-11	05-Nov-11																
RC1270	Construct pile cap NE16 PC1 to PC8 & NE16 PC10		117	103	19-Sep-11 A	08-Mar-12	14-Sep-11	20-Jan-12																
RC1750	Construct pad footing NE16 FT11 to FT16 & NE17 FT1 to FT5		77	66	14-Sep-11 A	20-Jan-12	02-Dec-11	24-Feb-12																
RC1757	Construct pile cap NE17 PC8 to PC8		50	50	08-Dec-11	10-Feb-12	19-Nov-11	20-Jan-12																
RC1026	Construct drainage along Tsing Hoi Circuit (Tsing Ho Square to Tsing Sin Street)		100	5	04-Jul-11 A	05-Nov-11	12-Jul-11	19-Oct-11																
RC1030	Road re-alignment along Tsing Hoi Circuit (Siu On bridge to Tsing Ho Square)		90	1	11-Mar-11 A	31-Oct-11	11-Oct-11	12-Oct-11																
RC1035	Road re-alignment along Tsing Hoi Circuit (Tsing Ho Square to Tsing Sin Street)		90	28	08-Aug-11 A	30-Nov-11	12-Oct-11	12-Nov-11																
<b>Stage 2 Central Median</b>																								
RB1400	Construct mini pile foundation for NE08 PC7 to PC10		106	78	28-Jul-11 A	28-Sep-12	11-Aug-12	14-Nov-12																
RB1020	Construct pad footing for NE10 FT8 to FT9 & NE11 FT9 to FT14		83	80	22-Jun-11 A	31-Oct-12	08-Aug-12	17-Oct-12																
LRT1050	Lift car installation		30	18	12-Sep-11 A	17-Nov-11	25-Nov-11	14-Dec-11																
LRT1080	Finishing & E&M works		30	15	12-Sep-11 A	16-Nov-11	13-Dec-11	03-Jan-12																
LRT1080	T&C		30	30	31-Oct-11	03-Dec-11	25-Nov-11	03-Jan-12																
LRT1070	Remove Existing LRT lift		35	35	05-Dec-11	17-Jan-12	03-Jan-12	16-Feb-12																
<b>Stage 3 Central Median &amp; N/S Bridge</b>																								
CL1225	Construct mini pile foundation for NE17 PC20 to PC22		97	97	05-Jan-12	07-May-12	31-Jul-12	24-Nov-12																
RC1230	Construct Socket H-piles foundation for NE16 PC35		18	18	24-Nov-11	15-Dec-11	23-Nov-12	14-Dec-12																
RC1360	Construct pile cap NE16 PC36		17	17	15-Dec-11	07-Jan-12	14-Dec-12	07-Jan-13																
CL1250	Pre-drilling works for Chi Lok bridge near Tsing Hoi Circuit PC3		14	14	01-Nov-11	16-Nov-11	09-Aug-14	25-Aug-14																
CL1040	Construct mini pile foundation for Chi Lok bridge S/B PC1 & PC2		45	45	31-Oct-11	22-Dec-11	21-Oct-11	14-Dec-11																
CL1045	Construct mini pile foundation for Chi Lok bridge S/B PC3		27	27	22-Dec-11	30-Jan-12	19-Dec-11	27-Jan-12																
CL1050	Construct mini pile foundation for Chi Lok bridge N/B PC5 & PC6		85	55	23-Aug-11 A	05-Jan-12	10-Oct-11	14-Dec-11																
CL1060	Construct S/B pile cap PC1 & PC2 (2 nos.)		33	33	22-Dec-11	08-Feb-12	14-Dec-11	28-Jan-12																
CL1070	Construct S/B pile cap PC5 & PC6 (2 nos.)		33	33	05-Jan-12	18-Feb-12	14-Dec-11	28-Jan-12		</														

■ Remaining Level of Effort      ■ Actual Work  
 ■ Actual Level of Effort      ■ Remaining ...

### 3 Months Rolling Programme (cutoff: 31-10-11)

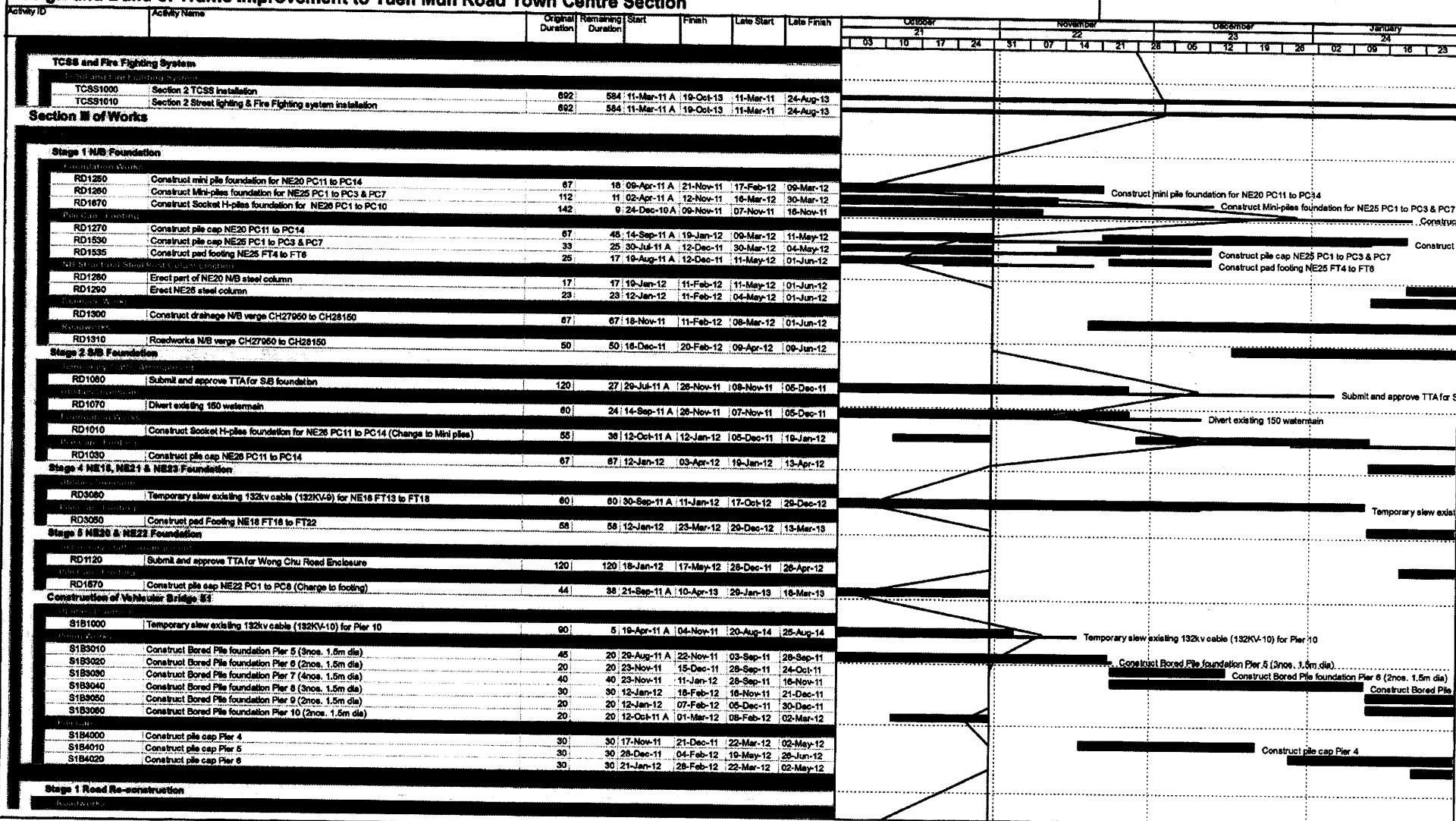
Page 4 of 6

Date	Revision	Checked	Approved
24-Oct-11	1110	Tim	
31-Oct-11	1110 RA	Tim	

HY/2009/03

31-Oct-11?

## Design and Build of Traffic Improvement to Tuen Mun Road Town Centre Section



Remaining Level of Effort  
 Actual Work  
 Actual Level of Effort  
 Remaining ...

3 Months Rolling Programme (cutoff: 31-10-11)

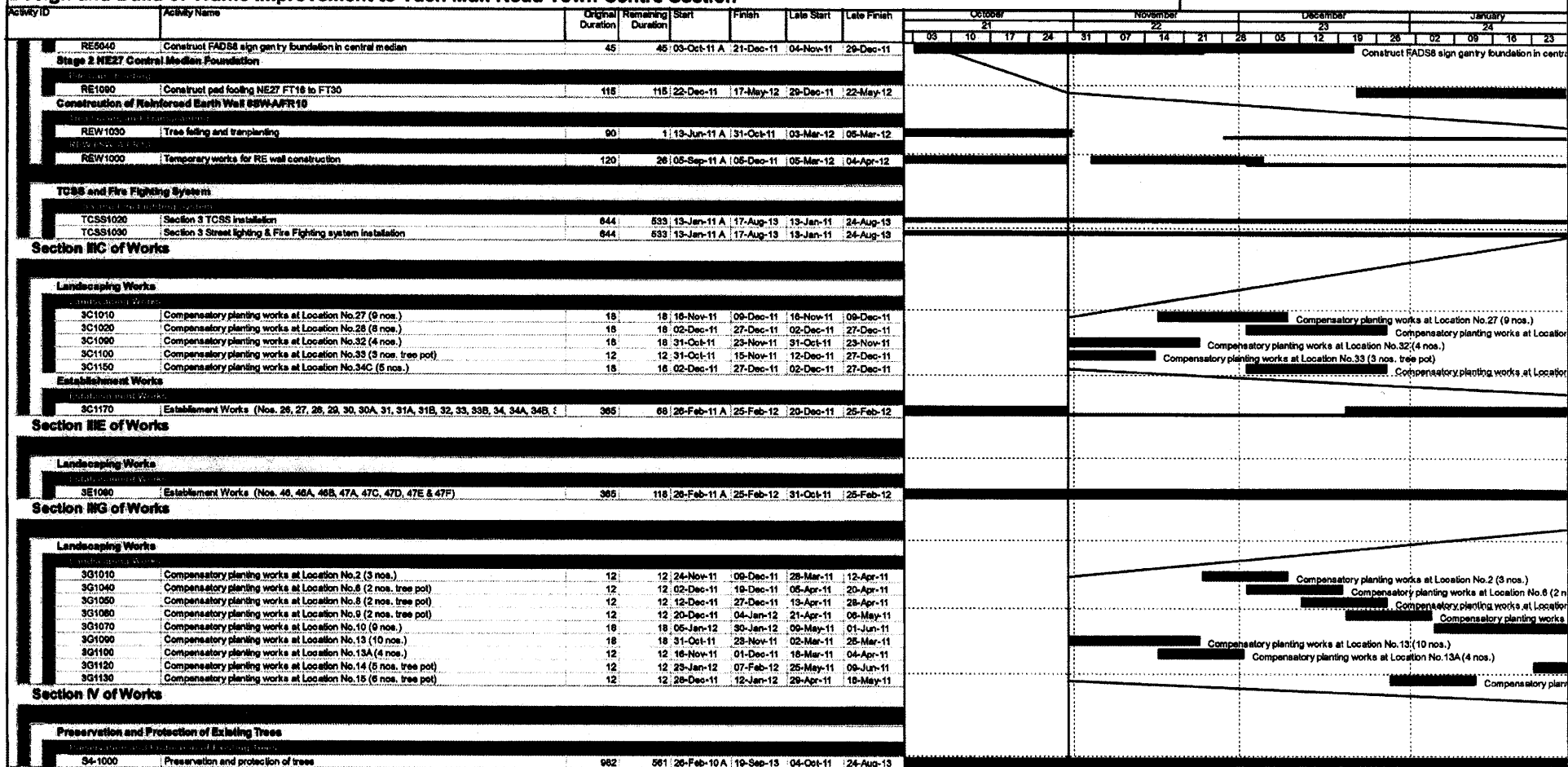
Page 5 of 6

Date	Revision	Checked	Approved
24-Oct-11	1110	Tim	
31-Oct-11	1110 RA	Tim	

HY/2009/03

31-Oct-11?

## Design and Build of Traffic Improvement to Tuen Mun Road Town Centre Section



Remaining Level of Effort    Actual Work  
 Actual Level of Effort    Remaining ...

3 Months Rolling Programme (cutoff: 31-10-11)

Date	Revision	Checked	Approved
24-Oct-11	1110	Tim	
31-Oct-11	1110 RA	Tim	

Appendix B

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**Environmental  
Mitigation Measures**

## Environmental Mitigation Measures

The environmental mitigation measures carried out were basically followed the requirements described in the EIA Report. Major mitigation measures during the construction phase in relation to the air quality, noise, water quality, ecology, waste management as well as landscape and visual are summarised as follows:

### Air Quality (Dust) related

- Skip hoist for material transport should be totally enclosed by impervious sheeting;
- Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving a construction site;
- The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores;
- Where a site boundary adjoins a road, streets or other accessible to the public, hording of not less than 2.4m high from ground level should be provided along the entire length except for a site entrance or exit;
- Every stack of more than 20 bags of cement should be covered entirely by impervious sheeting places in an area sheltered on the top and the 3 sides;
- All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet;
- The height from which excavated materials are dropped should be controlled to a minimum practical height to limit fugitive dust generation from unloading;
- The load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure dust materials do not leak from the vehicle; and
- Instigation of an environmental monitoring and auditing program to monitor the construction process in order to enforce controls and modify method of work if dusty conditions arise.

### Construction Noise related

Mitigation measures are implemented in three levels, namely Level 1, which involves adoption of quiet PME; Level 2, which involves provision of movable noise barrier; and Level 3, which involves scheduling of construction activities.

#### **Level 1 – Adoption of Quiet PME**

- Quieter PME to be used in the assessment are given in **Table A**.

**Table A** Listing of Quiet PME items

Powered Mechanical Equipment (PME)	Identification Code / BS5228	Maximum SWL, dB(A)
Excavator	C8/33	102
Crane	C7/114	101
Truck	C3/59	105
Concrete Truck	C6/35	100
Poker Vibrator	CNP 173	102
Asphalt Paver	C8/24	101
Roller, vibratory	C3/115	102



**Level 2 – Use of Movable Noise Barrier**

- Use of movable noise barrier (3m high or above) is proposed to be provided for the PMEs operated in the vicinity of the NSRs given in **Table B** during the construction phase.

**Table B** NSRs – with movable noise barrier

NSR	Description
FEC	Far East Consortium Tuen Mun Central Building
FM	Forward Mansion
HTB	Hing Tai Building
TMTP1	Tuen Mun Town Plaza
WG2	Waldorf Garden
CMA*	CMA Choi Cheung Kok Secondary School
LWF*	Yan Oi Tong Madam Lau Wong Fat Primary School
TMF	Tuen Mun Fa Yuen
LCK*	Lui Cheung Kwong Lutheran College
CLFY1	Chi Lok Fa Yuen
TFH	On Ting Estate ( Ting Fuk House)
LCKP*	Lui Cheung Kwong Lutheran Primary School
TTP	Tung Wah Group of Hospitals Tai Tung Pui Social Service Building
CSBS*	CSBS Mrs. Aw Boon Haw Secondary School
KFG3D	Kam Fai Garden

Remark: NSR with asterisk means educational institution.

**Level 3 – Scheduling of Construction Activities**

- It is proposed that site clearance and the following activities not to be undertaken in the vicinity of the NSR LCK at stage 2 (Ch. 28050 – 28200 of TMR) so as to reduce construction noise impact during normal teaching hours.
  - Truck would not operate concurrently with other PMEs during tree transplanting and noise barrier foundation work.
  - Tree Transplanting would not be undertaken concurrently with Bulk Excavation and Utilities Diversion.
  - Construction of Storm Water Drain would not be undertaken concurrently with Noise Barrier/Enclosure Foundation.
  - Construction of Sub-base and Road Base would not be undertaken concurrently with Noise Barrier/Enclosure Installation.
  - Road Surfacing, Construction of Road kerbs, Central Dividers, Parapets, and Installation of Crash Cushion and Sign Gantry would not be undertaken concurrently.
  - Installation of Gantry and Directional Lighting, and Street Lighting would not be undertaken concurrently.
- In order to avoid or reduce the construction noise problems at the schools during examination, the Contractor of the Project is suggested to liaison with all the relevant schools (CMA, LWF, LCK, LCKP and CSBS) to check out their examination periods and

activities at the beginning of the work programme. Thus, the Contractor can make good planning and arrangement of works and provide sufficient mitigation plans to alleviate the noise impacts.

- Good Site Practice:
  - Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program.
  - Machines and plant (such as trucks) that may be in intermittent use should be shut down between works periods or should be throttled down to a minimum.
  - Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs.
  - Mobile plant should be sited as far away from NSRs as possible.
  - Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction activities.

### **Water Quality related**

#### **Construction Runoff and Drainage**

The site practices outlined in ProPECC PN 1/94 "Construction Site Drainage" should be followed as far as practicable in order to minimise surface runoff and the chance of erosion, and also to retain and reduce any suspended solids prior to discharge. These practices include the following items:

- Before commencing any site formation work, all sewer and drainage connections should be sealed to prevent debris, soil, sand etc. from entering public sewers/drains.
- Silt removal facilities such as silt traps or sedimentation facilities should be provided to remove silt particles from runoff to meet the requirements of the TM standards under the WPCO. The design of silt removal facilities should be based on the guidelines provided in ProPECC PN 1/94. All drainage facilities and erosion and sediment control structures should be inspected monthly and maintained to ensure proper and efficient operation at all times and particularly during rainstorms.
- Careful programming of the works to minimise surface excavations for the road improvement works during the wet season. If excavation of soil cannot be avoided during the wet season, exposed slope surfaces should be covered by a tarpaulin or other means. Other measures that need to be implemented before, during, and after rainstorms are summarized in ProPECC PN 1/94.
- Exposed soil surfaces should be protected by paving or fill material as soon as possible to reduce the potential of soil erosion.
- Open stockpiles of construction materials or construction wastes on-site should be covered with tarpaulin or similar fabric during rainstorms. These materials should not be placed near water courses.

#### **General Construction Activities**

Debris and refuse generated on-site should be collected, handled and disposed of properly to avoid entering the nearby local stormwater drainage system. Stockpiles of cement and other construction materials should be kept covered when not being used.

- Oils and fuels should only be used and stored in designated areas which have pollution prevention facilities. All fuel tanks and storage areas should be provided with locks and be sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank. The bund should be drained of rainwater after a rain event.

**Sewage Effluents**

Temporary sanitary facilities, such as portable chemical toilets, should be employed on-site. A licensed contractor would be responsible for appropriate disposal and maintenance of these facilities.

**Waste Management related****Good Site Practices**

Adverse impacts related to waste management are not expected to arise, provided that good site practices are adhered to. Recommendations for good site practices during the construction activities include:

- Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site;
- Training of site personnel in proper waste management and chemical handling procedures;
- Provision of sufficient waste disposal points and regular collection for disposal;
- Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers;
- Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; and
- A recording system for the amount of wastes generated, recycled and disposed of (including the disposal sites).

**Waste Reduction Measures**

Good management and control can prevent the generation of a significant amount of waste. Waste reduction is best achieved at the planning and design stage, as well as by ensuring the implementation of good site practices. Recommendations to achieve waste reduction include:

- Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal;
- Encourage collection of aluminium cans by providing separate labelled bins to enable this waste to be segregated from other general refuse generated by the workforce;
- Any unused chemicals or those with remaining functional capacity shall be recycled;
- Use of reusable non-timber formwork to reduce the amount of C&D material;
- Prior to disposal of C&D waste, it is recommended that wood, steel and other metals shall be separated for re-use and / or recycling to minimise the quantity of waste to be disposed of to landfill;
- Proper storage and site practices to minimise the potential for damage or contamination of construction materials; and
- Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste.

In addition to the above measures, specific mitigation measures are recommended below for the identified waste arising to minimise environmental impacts during handling, transportation and disposal of these wastes.

**Construction and Demolition Material**

In order to minimise the impact resulting from collection and transportation of inert C&D material for off-site disposal, it is recommended that the excavated fill material shall be re-used on-site as backfill material as far as possible. The surplus excavated material should be disposed of at the designated public fill reception facility, as agreed with the Secretary of the Public Fill Committee, for other beneficial uses. C&D waste would require disposal to the designated landfill site. In order to monitor the disposal of C&D materials at the public fill reception facility and landfill and to control fly-tipping, a trip-ticket system should be included (see ETWB TCW No. 31/2004 for details).

### **Chemical Wastes**

After use, chemical wastes (for example, cleaning fluids, solvents, lubrication oil and fuel) should be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Spent chemicals should be collected by a licensed collector for disposal at the CWTC or other licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.

### **General Refuse**

General refuse should be stored in enclosed bins or compaction units separate from C&D material. A reputable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material. An enclosed and covered area is preferred to reduce the occurrence of 'wind blown' light material.

### **Ecology related**

Following EIAO-TM Annex 16 guidelines, mitigation measures are discussed in this section to avoid, minimise and compensate for identified ecological impacts.

#### **Avoid**

Construction activities should be confined to developed areas of low ecological value. There should be no direct impact on other habitats within the Study Area.

#### **Minimise**

Noise mitigation measures, including installation of noise-emitting construction plant away from egret, careful scheduling of noisy works with high disturbance impact to avoid breeding season of ardeid species (i.e. mid March to August) to prevent impacts on nesting activities of Little Egret, operation of well-maintained machinery, and use of noise reduction facilities could be implemented to mitigate noise impacts arising from construction activities such as road widening and road paving. Temporary noise barrier should also be used to reduce the level of noise during construction. Noise impact would be minimised during operation phase as permanent noise barrier has been proposed to be constructed. These measures could minimise disturbance to habitats within and adjacent to the proposed Works Area.

In order to minimise the impact of construction dust to the vegetation and associated wildlife within and around the proposed Works Area, practical measures such as regular watering, complete coverage of dusty material storage piles, and the use of minimum practical height for dropping excavated material should be implemented.

Standard good site practice measures should be implemented and should include:

- Placement of equipment in designated Works Areas within the existing disturbed land.
- Construction activities should be restricted to the proposed Works Area.
- The proposed Works Area should be reinstated immediately after completion of the works.
- Open burning on proposed works site is illegal, and will be strictly enforced.

- Waste skips should be provided to collect general refuse and construction wastes, which should be disposed regularly and properly off-site.
- Soil contaminated by fuel leaked from construction plants should be removed and treated.

Mitigation measures should be implemented to prevent and minimise the indirect impacts to the nearby Tuen Mun River Channel by controlling construction site runoff and drainage from the proposed Works Area. Site runoff could be directed towards regularly cleaned and maintained sand traps, silt traps and where appropriate, oil/grease separators to minimise risk of sedimentation and pollution to the river channel. Debris and rubbish generated on-site should be collected, handled and disposed properly.

In order to prevent and minimise the chance of bird collision during operation phase, falcon sticker, tinted materials, embedded opaque stripes and superimposed patterns of thin opaque stripes are methods that could be used during the design of noise barrier.

### **Compensate**

Compensatory planting is recommended as the current roadside plantation must be removed to give way to the works. Species of choice should be composed of similar native species and the felling and planting ratio should be no less than 1:1 in terms of quality and quantity.

### **Landscape and Visual related**

- Topsoil, where identified, should be stripped and stored for re-use in the construction of the soft landscape works, where practical.
- Existing trees to be retained on site should be carefully protected during construction.
- Trees unavoidably affected by the works should be transplanted where practical.
- Compensatory tree planting should be provided to compensate for felled trees.
- Control of night-time lighting.
- Erection of decorative screen hoarding compatible with the surrounding setting.

**Summary of Implementation Schedule of Mitigation Measures**

EIA Ref #	EM&A Ref#	Environmental Protection Measures / Mitigation Measures	Location / Timing	Status *		
				Nov 11	Dec 11	Jan 12
		<b>Noise Control</b>				
3.8.1	2.8.1	<p>Good site practice and management can significantly reduce the noise impact of construction site activities on nearby NSRs</p> <ul style="list-style-type: none"> <li>only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction works;</li> <li>machines and plant that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum;</li> <li>plant known to emit noise strongly in one direction should, where possible, be orientated to direct noise away from the NSRs;</li> <li>mobile plant should be sited as far away from NSRs as possible; and</li> <li>material stockpiles and other structures should be effectively utilized, where practicable, to screen noise from on-site construction activities.</li> </ul>	Works Sites / During Construction Phase	✓  ✓  ✓  ✓  ✓	Rdr  ✓  ✓  ✓	✓  ✓  ✓  ✓  Obs
3.8.4	2.8.3	Use of quieter mechanical equipment	Works Sites / During Construction Phase	✓	✓	✓
3.8.9	2.8.4	<p>Provision of movable noise barrier in the vicinity of the following NSRs</p> <ul style="list-style-type: none"> <li>FEC (Far East Consortium Tuen Mun Central Building)</li> <li>FM (Forward Mansion)</li> <li>HTB (Hing Tai Building)</li> <li>TMTP1 (Tuen Mun Town Plaza)</li> <li>WG2 (Waldorf Garden)</li> <li>CMA (CMA Choi Cheung Kok Secondary School)</li> <li>LWF (Yan Oi Tong Madam Lau Wong Fat Primary School)</li> <li>TMF (Tuen Mun Fa Yuen)</li> <li>LCK (Lui Cheung Kwong Lutheran College)</li> </ul>	Works Sites from the listed NSRs / During Construction Phase	N/O	N/O	N/O

Notes (\*): ✓ – Compliance; N/A - Not Applicable; N/O – Not Observed; Rdr – Reminder; Obs – Observation; N/C - Non Compliance

EIA Ref #	EM&A Ref#	Environmental Protection Measures / Mitigation Measures	Location / Timing	Status *		
				Nov 11	Dec 11	Jan 12
		<ul style="list-style-type: none"> <li>CLFY1 (Chi Lok Fa Yuen)</li> <li>TFH (On Ting Estate (Ting Fuk House))</li> <li>LCKP (Lui Cheung Kwong Lutheran Primary School)</li> <li>TTP (Tung Wah Group of Hospitals Tai Tung Pui Social Service Building)</li> <li>CSBS (CSBS Mrs. Aw Boon Haw Secondary School)</li> <li>KFG3D (Kam Fai Garden)</li> </ul>				
3.8.12	2.8.5	<p>Site clearance and the following activities not to be undertaken in the vicinity of the NSR LCK so as to reduce construction noise impact during normal teaching hours.</p> <ul style="list-style-type: none"> <li>truck would not operate concurrently with other PME's during tree transplanting and noise barrier foundation work.</li> <li>tree transplanting would not be undertaken concurrently with bulk excavation and utilities diversion.</li> <li>construction of storm water drain would not be undertaken concurrently with noise barrier/enclosure foundation.</li> <li>construction of sub-base and road base would not be undertaken concurrently with noise barrier/enclosure installation.</li> <li>road surfacing, construction of road kerbs, central dividers, parapets, and installation of crash cushion and sign gantry would not be undertaken concurrently.</li> <li>installation of gantry and directional lighting, and street lighting would not be undertaken concurrently.</li> </ul>	Work site in the vicinity of Lui Cheung Kwong Lutheran College (LCK) / Stage 2 (Ch. 28050 – 28200 of TMR) during Construction Phase	✓	✓	✓

Notes (\*): ✓ – Compliance; N/A - Not Applicable; N/O – Not Observed; Rdr – Reminder; Obs – Observation; N/C - Non Compliance



EIA Ref #	EM&A Ref#	Environmental Protection Measures / Mitigation Measures	Location / Timing	Status *		
				Nov 11	Dec 11	Jan 12
3.8.13	2.8.6	Liaise with all the relevant schools to check out their examination periods and activities in the beginning of the work programme in order to make good planning and arrangement of works and provide sufficient mitigation plans to alleviate noise impacts.	CMA Choi Cheung Kok Secondary School (CMA), Yan Oi Tong Madam Lau Wong Fat Primary School (LWF), Lui Cheung Kwong Lutheran College (LCK), Lui Cheung Kwong Lutheran Primary School (LCKP) and CSBS Mrs. Aw Boon Haw Secondary School (CSBS) / During Construction Phase	✓	✓	✓

# All recommendations and requirements resulted during the course of EIA Process, including ACE and / or accepted public comment to the proposed project.

EIA Ref #	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Status *		
				Nov 11	Dec 11	Jan 12
		<b><i>Air Quality Control</i></b>				
4.8.1	3.11.2	Implementation of dust suppression measures stipulated in Air Pollution Control (Construction Dust) Regulation. <ul style="list-style-type: none"> <li>• skip hoist for material transport should be totally enclosed by impervious sheeting</li> <li>• every vehicle should be washed to remove any dusty materials from its body and wheels before leaving a construction site</li> </ul>	Works Sites / During Construction Phase	✓	✓	✓
				✓	✓	✓

Notes (\*): ✓ – Compliance; N/A - Not Applicable; N/O – Not Observed; Rdr – Reminder; Obs – Observation; N/C - Non Compliance

EIA Ref #	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Status *		
				Nov 11	Dec 11	Jan 12
		<ul style="list-style-type: none"> <li>the area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores</li> <li>where a site boundary adjoins a road, streets or other accessible to the public, hording of not less than 2.4m high from ground level should be provided along the entire length except for a site entrance or exit</li> <li>every stack of more than 20 bags of cement should be covered entirely by impervious sheeting places in an area sheltered on the top and the 3 sides</li> <li>all dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet</li> <li>the height from which excavated materials are dropped should be controlled to a minimum practical height to limit fugitive dust generation from unloading</li> <li>the load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure dust materials do not leak from the vehicle</li> <li>instigation of an environmental monitoring and auditing program to monitor the construction process in order to enforce controls and modify method of work if dusty conditions arise.</li> </ul>		✓	✓	✓
				✓	✓	✓
				Obs	Obs	✓
				✓	✓	✓
				✓	✓	✓
				✓	✓	✓
				✓	✓	✓

# All recommendations and requirements resulted during the course of EIA Process, including ACE and / or accepted public comment to the proposed project.

EIA Ref #	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Status *		
				Nov 11	Dec 11	Jan 12
		<b>Water Quality Control</b>				
5.8.2	4.3.2	Construction run-off and Drainage <ul style="list-style-type: none"> <li>Silt removal facilities such as silt traps or sedimentation facilities should be provided to remove silt particles from runoff to meet the requirements of the TM standards under the WPCO. The design of silt removal facilities should be based on the guidelines provided in ProPECC PN 1/94. All drainage facilities and erosion and sediment control structures should be inspected monthly and maintained to ensure proper and efficient operation at</li> </ul>	Works Sites / During Construction Phase	✓	✓	✓

Notes (\*): ✓ – Compliance; N/A - Not Applicable; N/O – Not Observed; Rdr – Reminder; Obs – Observation; N/C - Non Compliance

EIA Ref #	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Status *		
				Nov 11	Dec 11	Jan 12
		<p>all times and particularly during rainstorms.</p> <ul style="list-style-type: none"> <li>Careful programming of the works to minimise surface excavations for the road improvement works during the wet season. If excavation of soil cannot be avoided during the wet season, exposed slope surfaces should be covered by a tarpaulin or other means. Other measures that need to be implemented before, during, and after rainstorms are summarized in ProPECC PN 1/94.</li> <li>Exposed soil surfaces should be protected by paving or fill material as soon as possible to reduce the potential of soil erosion.</li> <li>Open stockpiles of construction materials or construction wastes on-site should be covered with tarpaulin or similar fabric during rainstorms. These materials should not be placed near water courses.</li> </ul>		✓	✓	✓
5.8.3 - 5.8.4	4.3.3	<p>General Construction Activities</p> <ul style="list-style-type: none"> <li>Debris and refuse generated on-site should be collected, handled and disposed of properly to avoid entering the nearby local stormwater drainage system.</li> <li>Stockpiles of cement and other construction materials should be kept covered when not being used.</li> <li>Oils and fuels should only be used and stored in designated areas which have pollution prevention facilities. All fuel tanks and storage areas should be provided with locks and be sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank. The bund should be drained of rainwater after a rain event</li> </ul>	Works Sites / During Construction Phase	Rdr	Rdr	✓
				✓	✓	Obs
				✓	✓	✓
5.8.5	4.3.4	<p>Sewage from Construction Workforce</p> <ul style="list-style-type: none"> <li>Temporary sanitary facilities, such as portable chemical toilets, should be employed on-site. A licensed contractor would be responsible for appropriate disposal and maintenance of these facilities</li> </ul>	Works Sites / During Construction Phase	✓	✓	✓

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Notes (\*): ✓ – Compliance; N/A - Not Applicable; N/O – Not Observed; Rdr – Reminder; Obs – Observation; N/C - Non Compliance

EIA Ref #	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Status *		
				Nov 11	Dec 11	Jan 12
		<b>Waste Management</b>				
6.6.1	5.2.2	<b>Good Site Practices</b> <ul style="list-style-type: none"> <li>Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site.</li> <li>Training of site personnel in proper waste management and chemical waste handling procedures.</li> <li>Provision of sufficient waste disposal points and regular collection for disposal.</li> <li>Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers.</li> <li>Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors.</li> <li>A recording system for the amount of wastes generated, recycled and disposed of (including the disposal sites).</li> </ul>	Works Sites / During Construction Phase	✓  ✓ ✓ ✓ Obs ✓	✓  ✓ ✓ ✓ ✓ ✓	✓  ✓ ✓ ✓ ✓ ✓
6.6.5	5.2.6	<b>Chemical Wastes</b> <ul style="list-style-type: none"> <li>After use, chemical wastes (for example, cleaning fluids, solvents, lubrication oil and fuel) should be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.</li> <li>Spent chemicals should be collected by a licensed collector for disposal at the CWTC or other licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.</li> </ul>	Works Sites / During Construction Phase	✓  ✓	✓  ✓	Rdr  ✓

Notes (\*): ✓ – Compliance; N/A - Not Applicable; N/O – Not Observed; Rdr – Reminder; Obs – Observation; N/C - Non Compliance

EIA Ref #	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Status *		
				Nov 11	Dec 11	Jan 12
6.6.6	5.2.7	<p><i>General Refuse</i></p> <ul style="list-style-type: none"> <li>General refuse should be stored in enclosed bins or compaction units separate from C&amp;D material.</li> <li>A reputable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&amp;D material.</li> <li>An enclosed and covered area is preferred to reduce the occurrence of 'wind blown' light material.</li> </ul>	Works Sites / During Construction Phase	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓
6.6.2	5.2.3	<p><i>Waste Reduction Measures</i></p> <p>Good management and control can prevent the generation of a significant amount of waste. Waste reduction is best achieved at the planning and design stage, as well as by ensuring the implementation of good site practices. Recommendations to achieve waste reduction include:</p> <ul style="list-style-type: none"> <li>Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal.</li> <li>Encourage collection of aluminium cans, PET bottles and paper by providing separate labelled bins to enable these wastes to be segregated from other general refuse generated by the work force.</li> <li>Any unused chemicals or those with remaining functional capacity shall be recycled.</li> <li>Use of reusable non-timber formwork to reduce the amount of C&amp;D material.</li> <li>Prior to disposal of C&amp;D waste, it is recommended that wood, steel and other metals shall be separated for re-use and / or recycling to minimise the quantity of waste to be disposed of to landfill.</li> <li>Proper storage and site practices to minimise the potential for damage or contamination of construction materials.</li> <li>Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste.</li> </ul>	Works Sites / During Construction Phase	✓ ✓ ✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓ ✓

Notes (\*): ✓ – Compliance; N/A - Not Applicable; N/O – Not Observed; Rdr – Reminder; Obs – Observation; N/C - Non Compliance

EIA Ref #	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Status *		
				Nov 11	Dec 11	Jan 12
6.6.4	5.2.5	<p><i>Construction and Demolition (C&amp;D) Material</i></p> <ul style="list-style-type: none"> <li>The excavated fill material shall be re-used on-site as backfill material as far as possible.</li> <li>The surplus excavated material should be disposed of at the designated public fill reception facility, as agreed with the Secretary of the Public Fill Committee, for other beneficial uses.</li> <li>C&amp;D waste would require disposal to the designated landfill site.</li> <li>In order to monitor the disposal of C&amp;D materials at the public fill reception facility and landfill and to control fly-tipping, a trip-ticket system should be included. One may make reference to ETWB TCW No. 31/2004 for details.</li> </ul>	Works Sites / During Construction Phase	✓  ✓ ✓ ✓	✓  ✓ ✓ ✓	✓  ✓ ✓ ✓

# All recommendations and requirements resulted during the course of EIA Process, including ACE and / or accepted public comment to the proposed project.

Notes (\*): ✓ – Compliance; N/A - Not Applicable; N/O – Not Observed; Rdr – Reminder; Obs – Observation; N/C - Non Compliance

EIA Ref #	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Status *		
				Nov 11	Dec 11	Jan 12
		<b>Ecology</b>				
7.9.2	6.2.2	Construction activities should be confined to developed areas of low ecological value, and there should be no direct impact on other habitats within the Study Area.	Works Sites / During Construction Phase	✓	✓	✓
7.9.3	6.2.3	Noise mitigation measures, including installation of noise-emitting construction plant away from egret, careful scheduling of noisy works with high disturbance impact to avoid breeding season of ardeid species (i.e. mid March to August) to prevent impacts on nesting activities of Little Egret, operation of well-maintained machinery, careful programming of works and use of noise reduction facilities could be implemented to mitigate noise impacts arising from construction activities such as road widening and road paving. Temporary noise barrier should also be used to reduce the level of noise during construction. Noise impact would be minimised during operation phase as permanent noise barrier has been proposed to be constructed. The use of low noise road surfacing could also reduce the level of noise during operation.	Works Sites / During Construction Phase	✓	✓	✓
7.9.4	6.2.4	In order to minimise the impact of construction dust to the vegetation and associated wildlife within and around the proposed Works Area, the following mitigation measures should be implemented: <ul style="list-style-type: none"> <li>regular watering</li> <li>complete coverage of dusty material storage piles</li> <li>the use of minimum practical height for dropping excavated material</li> </ul>	Works Sites / During Construction Phase	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓
7.9.6	6.2.6	To minimise the indirect impacts to the nearby Tuen Mun River Channel, the following mitigation measures should be implemented: <ul style="list-style-type: none"> <li>Site runoff could be directed towards regularly cleaned and maintained sand traps, silt traps and where appropriate</li> <li>Oil/grease separators to minimise risk of sedimentation and pollution to the river channel.</li> <li>Debris and rubbish generated on-site should be collected, handled and disposed properly.</li> </ul>	Works Sites / During Construction Phase	✓ N/O ✓	✓ N/O ✓	✓ N/O ✓

Notes (\*): ✓ – Compliance; N/A - Not Applicable; N/O – Not Observed; Rdr – Reminder; Obs – Observation; N/C - Non Compliance



EIA Ref #	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Status *		
				Nov 11	Dec 11	Jan 12
7.9.5	6.2.5	Standard good site practice measures should be implemented and should include: <ul style="list-style-type: none"> <li>• Placement of equipment in designated Works Areas within the existing disturbed land.</li> <li>• Construction activities should be restricted to the proposed Works Area.</li> <li>• The proposed Works Area should be reinstated immediately after completion of the works.</li> <li>• Open burning on proposed works site is illegal, and will be strictly enforced.</li> <li>• Waste skips should be provided to collect general refuse and construction wastes, which should be disposed regularly and properly off-site.</li> <li>• Soil contaminated by fuel leaked from construction plants should be removed and treated.</li> </ul>	Works Sites / During Construction Phase	✓ ✓ ✓ ✓ ✓ N/O	✓ ✓ ✓ ✓ ✓ N/O	✓ ✓ ✓ ✓ ✓ N/O
7.9.7	6.2.7	To minimise the chance of bird collision during operation phase, falcon sticker, tinted materials, embedded opaque stripes and superimposed patterns of thin opaque stripes are methods that could be used during the design of noise barrier.	Works Sites / During Operation Phase	N/O	N/O	N/O
7.9.8	6.2.8	Compensatory planting is recommended as the current roadside plantation must be removed to give way to the works. Species of choice should be composed of similar native species and the felling and planting ratio should be no less than 1:1 in terms of quantity.	Works Sites / During Operation Phase	N/O	N/O	N/O

# All recommendations and requirements resulted during the course of EIA Process, including ACE and / or accepted public comment to the proposed project.

Notes (\*): ✓ – Compliance; N/A - Not Applicable; N/O – Not Observed; Rdr – Reminder; Obs – Observation; N/C - Non Compliance

EIA Ref #	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Status *		
				Nov 11	Dec 11	Jan 12
	Landscape and Visual					
Table 8.8	7.3.1	CM1 Topsoil, where identified, should be stripped and stored for re-use in the construction of the soft landscape works, where practical.	Works Sites / During Construction Phase	✓	✓	✓
Table 8.8	7.3.1	CM2 Existing trees to be retained on site should be carefully protected during construction.		Obs	Obs	✓
Table 8.8	7.3.1	CM3 Trees unavoidably affected by the works should be transplanted where practical.		✓	✓	✓
Table 8.8	7.3.1	CM4 Compensatory tree planting should be provided to compensate for felled trees.		✓	✓	✓
Table 8.8	7.3.1	CM5 Control of night-time lighting.		✓	✓	✓
Table 8.8	7.3.1	CM6 Erection of decorative screen hoarding compatible with the surrounding setting.		✓	✓	✓

# All recommendations and requirements resulted during the course of EIA Process, including ACE and / or accepted public comment to the proposed project.

Notes (\*): ✓ – Compliance; N/A - Not Applicable; N/O – Not Observed; Rdr – Reminder; Obs – Observation; N/C - Non Compliance

EIA Ref #	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Status *		
				Nov 11	Dec 11	Jan 12
		<b><i>Land Contamination</i></b>				
9.8.3	8.2.2	<p>To minimize construction workers' potential contact with the contaminated materials</p> <ul style="list-style-type: none"> <li>The use of bulk earth-moving excavator equipment would minimise construction workers' potential contact with the contaminated materials;</li> <li>Exposure to any contaminated materials can be minimised by the wearing of appropriate clothing and personal protective equipment such as gloves (when interacting directly with suspected contaminated material), providing adequate hygiene and washing facilities and preventing smoking and eating during such activities;</li> <li>Stockpiling of contaminated soil should be avoided as far as possible. If this cannot be avoided, the stockpile of contaminated materials should be segregated from the uncontaminated ones. Moreover, the contaminated materials should be properly covered with waterproof material (e.g. tarpaulin sheet) to avoid leaching of contaminants, especially during rainy season.</li> <li>Vehicles containing any excavated materials should be suitably covered to limit potential dust emissions or contaminated wastewater run-off, and truck bodies and tailgates should be sealed to prevent any leakage during transport or during wet conditions;</li> <li>Only licensed waste haulers should be used to collect and transport any contaminated material to an appropriate disposal site and procedures should be developed to ensure that illegal disposal of waste does not occur;</li> <li>Necessary waste disposal permits should be obtained, as required, from the appropriate authorities, in accordance with the Waste Disposal Ordinance (Cap 354), Waste Disposal (Chemical Waste) (General) Regulation (Cap 35), as required;</li> <li>Records of the quantities of wastes generated and disposed of should be maintained; Adequate washing facilities should be provided on site; and</li> <li>In accordance with good construction practice, silt traps should be used to reduce the impact to drainage caused by suspended solids arising from disturbed ground,</li> </ul>	Excavation zones / During excavation	N/O	N/O	N/O

Notes (\*): ✓ – Compliance; N/A - Not Applicable; N/O – Not Observed; Rdr – Reminder; Obs – Observation; N/C - Non Compliance

EIA Ref #	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Status *		
				Nov 11	Dec 11	Jan 12
		or any construction materials such as cement and gravel. Groundwater should be disposed of in accordance with the Water Pollution Control Ordinance (Cap 358).				

# All recommendations and requirements resulted during the course of EIA Process, including ACE and / or accepted public comment to the proposed project.

Notes (\*): ✓ – Compliance; N/A - Not Applicable; N/O – Not Observed; Rdr – Reminder; Obs – Observation; N/C - Non Compliance

## Appendix C

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### **Impact Air Monitoring Results**

Agreement No. HMW 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section  
Impact Air Quality Monitoring Result at Mrs Aw Boon Haw Secondary School (AM1) - 24 hour TSP

Filter No.	Month	Date	Receptor No.	Weather condition	Site condition	Pressure (mmHg)		Temperature (oC)		Flow Recorder Reading (CFM)		Filter Weight (g)		TSP weight (g)	Flow Rate (m³/min)		Average Flow Rate (m³/min)	Elapse Time		Sampling Time	Total vol. (m³)	(ug/m³) AM1
						Initial	Final	Initial	Final	Initial	Final	Initial	Final		Initial	Final		Start	Finish			
130488	Nov-11	1-Nov-11	AM1	Fine	Normal Operation	761.0	760.0	24.0	25.0	50.0	50.0	2.7028	2.8440	0.1412	1.5010	1.4970	1.4990	11881.30	11905.30	1440.00	2158.56	65.4
130494	Nov-11	7-Nov-11	AM1	Cloudy	Normal Operation	758.0	756.0	25.0	22.0	50.0	50.0	2.7049	2.7366	0.0317	1.4948	1.5011	1.4980	11905.30	11929.30	1440.00	2157.05	14.7
130501	Nov-11	12-Nov-11	AM1	Fine	Normal Operation	762.0	762.0	22.0	23.0	50.0	50.0	2.7755	2.9018	0.1263	1.5079	1.5050	1.5065	11929.30	11953.30	1440.00	2169.29	58.2
130507	Nov-11	18-Nov-11	AM1	Cloudy	Normal Operation	756.0	759.0	24.0	24.0	50.0	50.0	2.7791	2.8888	0.1097	1.4954	1.4988	1.4971	11953.30	11977.30	1440.00	2155.82	50.9
130513	Nov-11	24-Nov-11	AM1	Fine	Normal Operation	765.0	765.0	20.0	20.0	50.0	50.0	2.7593	2.8022	0.0429	1.5172	1.5172	1.5172	11977.30	12001.30	1440.00	2184.77	19.6
130519	Nov-11	30-Nov-11	AM1	Fine	Normal Operation	761.0	761.0	23.0	23.0	50.0	50.0	2.7846	2.8227	0.0381	1.4943	1.4943	1.4943	12001.30	12025.30	1440.00	2151.79	17.7
130525	Dec-11	6-Dec-11	AM1	Cloudy	Normal Operation	763.0	762.0	19.0	22.0	50.0	50.0	2.7735	2.9020	0.1285	1.5080	1.4982	1.5031	12025.30	12049.30	1440.00	2164.46	59.4
130531	Dec-11	12-Dec-11	AM1	Fine	Normal Operation	765.0	764.0	15.0	17.0	50.0	50.0	2.7751	2.8632	0.0881	1.5223	1.5152	1.5188	12049.30	12073.30	1440.00	2187.00	40.3
150538	Dec-11	16-Dec-11	AM1	Fine	Normal Operation	767.0	768.0	17.0	16.0	50.0	50.0	2.7798	3.0145	0.2347	1.5186	1.5226	1.5206	12073.30	12097.30	1440.00	2189.66	107.2
130544	Dec-11	22-Dec-11	AM1	Fine	Normal Operation	764.0	765.0	17.0	15.0	50.0	50.0	2.7559	2.9389	0.1830	1.5152	1.5223	1.5188	12097.30	12121.30	1440.00	2187.00	83.7
130550	Dec-11	28-Dec-11	AM1	Sunny	Normal Operation	766.0	765.0	17.0	17.0	50.0	50.0	2.7584	3.0459	0.2875	1.5174	1.5163	1.5169	12121.30	12145.30	1440.00	2184.26	131.6
130556	Jan-12	3-Jan-12	AM1	Fine	Normal Operation	765.0	768.0	17.0	13.0	50.0	50.0	2.7702	2.9096	0.1394	1.5163	1.5318	1.5241	12145.30	12169.30	1440.00	2194.63	63.5
130563	Jan-12	9-Jan-12	AM1	Fine	Normal Operation	766.0	766.0	15.0	15.0	50.0	50.0	2.7629	2.9534	0.1905	1.5234	1.5234	1.5234	12169.30	12193.30	1440.00	2193.70	86.8
130562	Jan-12	13-Jan-12	AM1	Cloudy	Normal Operation	761.0	758.0	17.0	17.0	50.0	50.0	2.764	2.8462	0.0822	1.5118	1.5084	1.5101	12193.30	12217.30	1440.00	2174.54	37.8
130575	Jan-12	20-Jan-12	AM1	Cloudy	Normal Operation	761.0	760.0	17.0	16.0	50.0	50.0	2.7462	2.8126	0.0664	1.5118	1.5136	1.5127	12217.30	12241.30	1440.00	2178.29	30.5
130581	Jan-12	26-Jan-12	AM1	Cloudy	Normal Operation	764.0	764.0	11.0	11.0	50.0	50.0	2.7598	2.8812	0.1214	1.5353	1.5353	1.5353	12241.30	12265.30	1440.00	2210.83	54.9

Average (ug/m³)	57.6
Max (ug/m³)	131.6
Min (ug/m³)	14.7

Action Level (ug/m³)	146
Limit Level (ug/m³)	260

Agreement No. HMW 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section  
Impact Air Quality Monitoring Result at Tai Tung Pui Social Service Building (AM2) - 24 hour TSP

Filter No.	Month	Date	Receptor No.	Weather condition	Site condition	Pressure (mmHg)		Temperature (oC)		Flow Recorder Reading (CFM)		Filter Weight (g)		TSP weight (g)	Flow Rate (m³/min)		Average Flow Rate (m³/min)	Elapse Time		Sampling Time	Total vol. (m³)	(ug/m³) AM2
						Initial	Final	Initial	Final	Initial	Final	Initial	Final		Initial	Final		Start	Finish			
130489	Nov-11	1-Nov-11	AM2	Fine	Normal Operation	761.0	760.0	24.0	25.0	50.0	50.0	2.7048	2.8312	0.1264	1.4600	1.4564	1.4582	6035.10	6059.10	1440.00	2099.81	60.2
130495	Nov-11	7-Nov-11	AM2	Cloudy	Normal Operation	758.0	756.0	25.0	22.0	50.0	50.0	2.7341	2.7721	0.0380	1.4543	1.4601	1.4572	6059.10	6083.10	1440.00	2098.37	18.1
130502	Nov-11	12-Nov-11	AM2	Fine	Normal Operation	762.0	762.0	22.0	23.0	50.0	50.0	2.7873	2.9242	0.1369	1.4662	1.4636	1.4649	6083.10	6107.10	1440.00	2109.46	64.9
130508	Nov-11	18-Nov-11	AM2	Cloudy	Normal Operation	756.0	759.0	24.0	24.0	50.0	50.0	2.7616	2.8614	0.0998	1.4549	1.4580	1.4565	6107.10	6131.10	1440.00	2097.29	47.6
130514	Nov-11	24-Nov-11	AM2	Fine	Normal Operation	765.0	765.0	20.0	20.0	50.0	50.0	2.7514	2.8237	0.0723	1.4746	1.4746	1.4746	6131.10	6155.10	1440.00	2123.42	34.0
130520	Nov-11	30-Nov-11	AM2	Fine	Normal Operation	761.0	761.0	23.0	23.0	50.0	50.0	2.7924	2.8056	0.0132	1.4013	1.4013	1.4013	6155.10	6179.10	1440.00	2017.87	6.5
130526	Dec-11	6-Dec-11	AM2	Cloudy	Normal Operation	763.0	762.0	19.0	22.0	50.0	50.0	2.7665	2.9931	0.2266	1.4145	1.4051	1.4098	6179.10	6203.10	1440.00	2030.11	111.6
130532	Dec-11	12-Dec-11	AM2	Fine	Normal Operation	765.0	764.0	15.0	17.0	50.0	50.0	2.7728	2.8871	0.1143	1.4282	1.4214	1.4248	6203.10	6227.10	1440.00	2051.71	55.7
150539	Dec-11	16-Dec-11	AM2	Fine	Normal Operation	767.0	768.0	17.0	16.0	50.0	50.0	2.7726	2.8995	0.1269	1.4246	1.4285	1.4266	6227.10	6251.10	1440.00	2054.23	61.8
130545	Dec-11	22-Dec-11	AM2	Fine	Normal Operation	764.0	765.0	17.0	15.0	50.0	50.0	2.7737	2.9216	0.1479	1.4214	1.4282	1.4248	6251.10	6275.10	1440.00	2051.71	72.1
130551	Dec-11	28-Dec-11	AM2	Sunny	Normal Operation	766.0	765.0	17.0	17.0	50.0	50.0	2.7503	2.9067	0.1564	1.4235	1.4224	1.4230	6275.10	6299.10	1440.00	2049.05	76.3
130557	Jan-12	3-Jan-12	AM2	Fine	Normal Operation	765.0	768.0	17.0	13.0	50.0	50.0	2.7754	2.9076	0.1322	1.4224	1.4372	1.4298	6299.10	6323.10	1440.00	2058.91	64.2
130564	Jan-12	9-Jan-12	AM2	Fine	Normal Operation	766.0	766.0	15.0	15.0	50.0	50.0	2.7641	2.9189	0.1548	1.4292	1.4292	1.4292	6323.10	6347.10	1440.00	2058.05	75.2
130568	Jan-12	13-Jan-12	AM2	Cloudy	Normal Operation	761.0	758.0	17.0	17.0	50.0	50.0	2.7555	2.8679	0.1124	1.4181	1.4149	1.4165	6347.10	6371.10	1440.00	2039.76	55.1
130576	Jan-12	20-Jan-12	AM2	Cloudy	Normal Operation	761.0	760.0	17.0	16.0	50.0	50.0	2.7528	2.8468	0.0940	1.4181	1.4198	1.4190	6371.10	6395.10	1440.00	2043.29	46.0
130582	Jan-12	26-Jan-12	AM2	Cloudy	Normal Operation	764.0	764.0	11.0	11.0	50.0	50.0	2.7596	2.8286	0.0690	1.5488	1.5488	1.5488	6395.10	6419.10	1440.00	2230.27	30.9

Average (ug/m³)	55.0
Max (ug/m³)	111.6
Min (ug/m³)	6.5

Action Level (ug/m³)	151
Limit Level (ug/m³)	260



Agreement No. HMW 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section  
Impact Air Quality Monitoring Result at Wu Siu Kui Primary School (AM3) - 24 hour TSP

Filter No.	Month	Date	Receptor No.	Weather condition	Site condition	Pressure (mmHg)		Temperature (oC)		Flow Recorder Reading (CFM)		Filter Weight (g)		TSP weight (g)	Flow Rate (m³/min)		Average Flow Rate (m³/min)	Elapse Time		Sampling Time	Total vol. (m³)	(ug/m³) AM3
						Initial	Final	Initial	Final	Initial	Final	Initial	Final		Initial	Final		Start	Finish			
130482	Nov-11	1-Nov-11	AM3	Fine	Normal Operation	761.0	760.0	24.0	25.0	50.0	50.0	2.7308	2.8683	0.1375	1.5433	1.5394	1.5414	10201.39	10225.39	1440.00	2219.54	61.9
130496	Nov-11	7-Nov-11	AM3	Cloudy	Normal Operation	758.0	756.0	25.0	22.0	50.0	50.0	2.7175	2.7413	0.0238	1.5372	1.5434	1.5403	10225.39	10249.39	1440.00	2218.03	10.7
130503	Nov-11	12-Nov-11	AM3	Fine	Normal Operation	762.0	762.0	22.0	23.0	50.0	50.0	2.7806	2.8332	0.0526	1.5500	1.5472	1.5486	10249.39	10273.39	1440.00	2229.98	23.6
130509	Nov-11	18-Nov-11	AM3	Cloudy	Normal Operation	756.0	759.0	24.0	24.0	50.0	50.0	2.7586	2.8144	0.0558	1.5378	1.5411	1.5395	10273.39	10297.39	1440.00	2216.81	25.2
130515	Nov-11	24-Nov-11	AM3	Fine	Normal Operation	765.0	765.0	20.0	20.0	50.0	50.0	2.7628	2.8247	0.0619	1.5591	1.5591	1.5591	10297.39	10321.39	1440.00	2245.10	27.6
130521	Nov-11	30-Nov-11	AM3	Fine	Normal Operation	761.0	761.0	23.0	23.0	50.0	50.0	2.7809	2.8453	0.0644	1.4912	1.4912	1.4912	10321.39	10345.39	1440.00	2147.33	30.0
130527	Dec-11	6-Dec-11	AM3	Cloudy	Normal Operation	763.0	762.0	19.0	22.0	50.0	50.0	2.7741	2.9417	0.1676	1.5047	1.4951	1.4999	10345.39	10369.39	1440.00	2159.86	77.6
150534	Dec-11	12-Dec-11	AM3	Fine	Normal Operation	765.0	764.0	15.0	17.0	50.0	50.0	2.7657	3.0462	0.2805	1.5186	1.5117	1.5152	10369.39	10393.39	1440.00	2181.82	128.6
150540	Dec-11	16-Dec-11	AM3	Fine	Normal Operation	767.0	768.0	17.0	16.0	50.0	50.0	2.7576	2.9179	0.1603	1.5150	1.5189	1.5170	10393.39	10417.39	1440.00	2184.41	73.4
130546	Dec-11	22-Dec-11	AM3	Fine	Normal Operation	764.0	765.0	17.0	15.0	50.0	50.0	2.7714	3.0144	0.2430	1.5117	1.5186	1.5152	10417.39	10441.39	1440.00	2181.82	111.4
130552	Dec-11	28-Dec-11	AM3	Sunny	Normal Operation	766.0	765.0	17.0	17.0	50.0	50.0	2.7425	2.9191	0.1766	1.5139	1.5128	1.5134	10441.39	10465.39	1440.00	2179.22	81.0
130558	Jan-12	3-Jan-12	AM3	Fine	Normal Operation	765.0	768.0	17.0	13.0	50.0	50.0	2.7592	2.8762	0.1170	1.5128	1.5279	1.5204	10465.39	10489.39	1440.00	2189.30	53.4
130565	Jan-12	9-Jan-12	AM3	Fine	Normal Operation	766.0	766.0	15.0	15.0	50.0	50.0	2.7720	3.0060	0.2340	1.5197	1.5197	1.5197	10489.39	10513.39	1440.00	2188.37	106.9
130569	Jan-12	13-Jan-12	AM3	Cloudy	Normal Operation	761.0	758.0	17.0	17.0	50.0	50.0	2.774	2.8745	0.1005	1.5083	1.5051	1.5067	10513.39	10537.39	1440.00	2169.65	46.3
130577	Jan-12	20-Jan-12	AM3	Cloudy	Normal Operation	761.0	760.0	17.0	16.0	50.0	50.0	2.7542	2.8600	0.1058	1.5083	1.5101	1.5092	10537.39	10561.39	1440.00	2173.25	48.7
130583	Jan-12	26-Jan-12	AM3	Cloudy	Normal Operation	764.0	764.0	11.0	11.0	50.0	50.0	2.7764	2.8858	0.1094	1.5943	1.5943	1.5943	10561.39	10585.39	1440.00	2295.79	47.7

Average (ug/m³)	59.6
Max (ug/m³)	128.6
Min (ug/m³)	10.7

Action Level (ug/m³)	150
Limit Level (ug/m³)	260

Agreement No. HMW 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section  
Impact Air Quality Monitoring Result at Choi Cheung Kok Secondary School (AM4) - 24 hour TSP

Filter No.	Month	Date	Receptor No.	Weather condition	Site condition	Pressure (mmHg)		Temperature (oC)		Flow Recorder Reading (CFM)		Filter Weight (g)		TSP weight (g)	Flow Rate (m³/min)		Average Flow Rate (m³/min)	Elapse Time		Sampling Time	Total vol. (m³)	(ug/m³) AM4
						Initial	Final	Initial	Final	Initial	Final	Initial	Final		Initial	Final		Start	Finish			
130491	Nov-11	1-Nov-11	AM4	Fine	Normal Operation	761.0	760.0	24.0	25.0	50.0	50.0	2.7091	2.7777	0.0686	1.5085	1.5047	1.5066	11083.12	11107.12	1440.00	2169.50	31.6
130497	Nov-11	7-Nov-11	AM4	Cloudy	Normal Operation	758.0	756.0	25.0	22.0	50.0	50.0	2.7277	2.7795	0.0518	1.5026	1.5087	1.5057	11107.12	11131.12	1440.00	2168.14	23.9
130504	Nov-11	12-Nov-11	AM4	Fine	Normal Operation	762.0	762.0	22.0	23.0	50.0	50.0	2.7715	2.8754	0.1039	1.5151	1.5124	1.5138	11131.12	11155.12	1440.00	2179.80	47.7
130510	Nov-11	18-Nov-11	AM4	Cloudy	Normal Operation	756.0	759.0	24.0	24.0	50.0	50.0	2.7479	2.8352	0.0873	1.5032	1.5064	1.5048	11155.12	11179.12	1440.00	2166.91	40.3
130516	Nov-11	24-Nov-11	AM4	Fine	Normal Operation	765.0	765.0	20.0	20.0	50.0	50.0	2.7701	2.8252	0.0551	1.5240	1.5240	1.5240	11179.12	11203.12	1440.00	2194.56	25.1
130522	Nov-11	30-Nov-11	AM4	Fine	Normal Operation	761.0	761.0	23.0	23.0	50.0	50.0	2.7695	2.8981	0.1286	1.5192	1.5192	1.5192	11203.12	11227.12	1440.00	2187.65	58.8
130528	Dec-11	6-Dec-11	AM4	Cloudy	Normal Operation	763.0	762.0	19.0	22.0	50.0	50.0	2.7679	2.9670	0.1991	1.5334	1.5233	1.5284	11227.12	11251.12	1440.00	2200.82	90.5
150535	Dec-11	12-Dec-11	AM4	Fine	Normal Operation	765.0	764.0	15.0	17.0	50.0	50.0	2.7541	2.9814	0.2273	1.5480	1.5407	1.5444	11251.12	11275.12	1440.00	2223.86	102.2
150541	Dec-11	16-Dec-11	AM4	Fine	Normal Operation	767.0	768.0	17.0	16.0	50.0	50.0	2.7547	2.9286	0.1739	1.5442	1.5483	1.5463	11275.12	11299.12	1440.00	2226.60	78.1
130547	Dec-11	22-Dec-11	AM4	Fine	Normal Operation	764.0	765.0	17.0	15.0	50.0	50.0	2.75	3.0329	0.2829	1.5407	1.5480	1.5444	11299.12	11323.12	1440.00	2223.86	127.2
130553	Dec-11	28-Dec-11	AM4	Sunny	Normal Operation	766.0	765.0	17.0	17.0	50.0	50.0	2.7495	2.9343	0.1848	1.5430	1.5419	1.5425	11323.12	11347.12	1440.00	2221.13	83.2
130559	Jan-12	3-Jan-12	AM4	Fine	Normal Operation	765.0	768.0	17.0	13.0	50.0	50.0	2.763	2.8885	0.1255	1.5419	1.5577	1.5498	11347.12	11371.12	1440.00	2231.71	56.2
130566	Jan-12	9-Jan-12	AM4	Fine	Normal Operation	766.0	766.0	15.0	15.0	50.0	50.0	2.7763	3.0044	0.2281	1.5491	1.5491	1.5491	11371.12	11395.12	1440.00	2230.70	102.3
130572	Jan-12	13-Jan-12	AM4	Cloudy	Normal Operation	761.0	758.0	17.0	17.0	50.0	50.0	2.7431	2.9047	0.1616	1.5372	1.5337	1.5355	11395.12	11419.12	1440.00	2211.05	73.1
130578	Jan-12	20-Jan-12	AM4	Cloudy	Normal Operation	761.0	760.0	17.0	16.0	50.0	50.0	2.751	2.8328	0.0818	1.5372	1.5391	1.5382	11419.12	11443.12	1440.00	2214.94	36.9
130584	Jan-12	26-Jan-12	AM4	Cloudy	Normal Operation	764.0	764.0	11.0	11.0	50.0	50.0	2.7683	2.8602	0.0919	1.5022	1.5022	1.5022	11443.12	11467.12	1440.00	2163.17	42.5

Average (ug/m³)	63.7
Max (ug/m³)	127.2
Min (ug/m³)	23.9

Action Level (ug/m³)	150
Limit Level (ug/m³)	260

Agreement No. HMW 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section  
Impact Air Quality Monitoring Result at Tuen Mun Town Hall (AM5) - 24 hour TSP

Filter No.	Month	Date	Receptor No.	Weather condition	Site condition	Pressure (mmHg)		Temperature (oC)		Flow Recorder Reading (CFM)		Filter Weight (g)		TSP weight (g)	Flow Rate (m³/min)		Average Flow Rate (m³/min)	Elapse Time		Sampling Time	Total vol. (m³)	(ug/m³) AM5
						Initial	Final	Initial	Final	Initial	Final	Initial	Final		Initial	Final		Start	Finish			
130492	Nov-11	1-Nov-11	AM5	Fine	Normal Operation	761.0	760.0	24.0	25.0	50.0	50.0	2.7025	2.7320	0.0295	1.5207	1.5168	1.5188	10869.27	10893.27	1440.00	2187.00	13.5
130498	Nov-11	7-Nov-11	AM5	Cloudy	Normal Operation	758.0	756.0	25.0	22.0	50.0	50.0	2.724	2.8079	0.0839	1.5146	1.5208	1.5177	10893.27	10917.27	1440.00	2185.49	38.4
130505	Nov-11	12-Nov-11	AM5	Fine	Normal Operation	762.0	762.0	22.0	23.0	50.0	50.0	2.7714	2.9158	0.1444	1.5275	1.5246	1.5261	10917.27	10941.27	1440.00	2197.51	65.7
130511	Nov-11	18-Nov-11	AM5	Cloudy	Normal Operation	756.0	759.0	24.0	24.0	50.0	50.0	2.753	2.8404	0.0874	1.5152	1.5185	1.5169	10941.27	10965.27	1440.00	2184.26	40.0
130517	Nov-11	24-Nov-11	AM5	Fine	Normal Operation	765.0	765.0	20.0	20.0	50.0	50.0	2.7551	2.8158	0.0607	1.5365	1.5365	1.5365	10965.27	10989.27	1440.00	2212.56	27.4
130523	Nov-11	30-Nov-11	AM5	Fine	Normal Operation	761.0	761.0	23.0	23.0	50.0	50.0	2.7895	2.8742	0.0847	1.4585	1.4585	1.4585	10989.27	11013.27	1440.00	2100.24	40.3
130529	Dec-11	6-Dec-11	AM5	Cloudy	Normal Operation	763.0	762.0	19.0	22.0	50.0	50.0	2.7584	2.9356	0.1772	1.4703	1.4619	1.4661	11013.27	11037.27	1440.00	2111.18	83.9
150536	Dec-11	12-Dec-11	AM5	Fine	Normal Operation	765.0	764.0	15.0	17.0	50.0	50.0	2.7654	3.0189	0.2535	1.4824	1.4764	1.4794	11037.27	11061.27	1440.00	2130.34	119.0
150542	Dec-11	16-Dec-11	AM5	Fine	Normal Operation	767.0	768.0	17.0	16.0	50.0	50.0	2.7424	2.9319	0.1895	1.4793	1.4827	1.4810	11061.27	11085.27	1440.00	2132.64	88.9
130548	Dec-11	22-Dec-11	AM5	Fine	Normal Operation	764.0	765.0	17.0	15.0	50.0	50.0	2.7404	3.0390	0.2986	1.4764	1.4824	1.4794	11085.27	11109.27	1440.00	2130.34	140.2
130554	Dec-11	28-Dec-11	AM5	Sunny	Normal Operation	766.0	765.0	17.0	17.0	50.0	50.0	2.7511	2.8802	0.1291	1.4783	1.4774	1.4779	11109.27	11133.27	1440.00	2128.10	60.7
130560	Jan-12	3-Jan-12	AM5	Fine	Normal Operation	765.0	768.0	17.0	13.0	50.0	50.0	2.761	2.8621	0.1011	1.4774	1.4905	1.4840	11133.27	11157.27	1440.00	2136.89	47.3
130567	Jan-12	9-Jan-12	AM5	Fine	Normal Operation	766.0	766.0	15.0	15.0	50.0	50.0	2.7631	2.9803	0.2172	1.4834	1.4834	1.4834	11157.27	11181.27	1440.00	2136.10	101.7
130573	Jan-12	13-Jan-12	AM5	Cloudy	Normal Operation	761.0	758.0	17.0	17.0	50.0	50.0	2.7553	2.9191	0.1638	1.4735	1.4706	1.4721	11181.27	11205.27	1440.00	2119.75	77.3
130579	Jan-12	20-Jan-12	AM5	Cloudy	Normal Operation	761.0	760.0	17.0	16.0	50.0	50.0	2.7482	2.8763	0.1281	1.4735	1.4750	1.4743	11205.27	11229.27	1440.00	2122.92	60.3
130585	Jan-12	26-Jan-12	AM5	Cloudy	Normal Operation	764.0	764.0	11.0	11.0	50.0	50.0	2.7607	2.8210	0.0603	1.5011	1.5011	1.5011	11229.27	11253.27	1440.00	2161.58	27.9

Average (ug/m³)	64.5
Max (ug/m³)	140.2
Min (ug/m³)	13.5

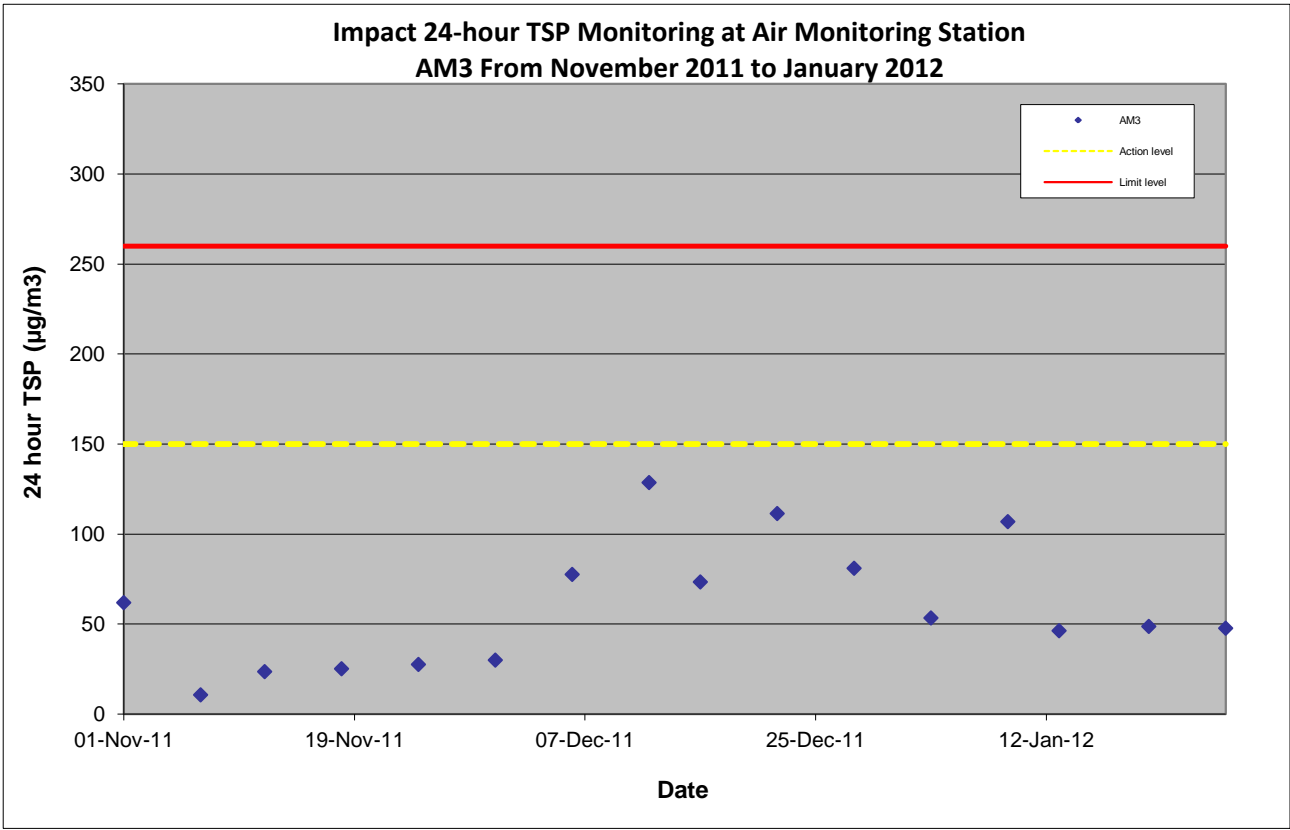
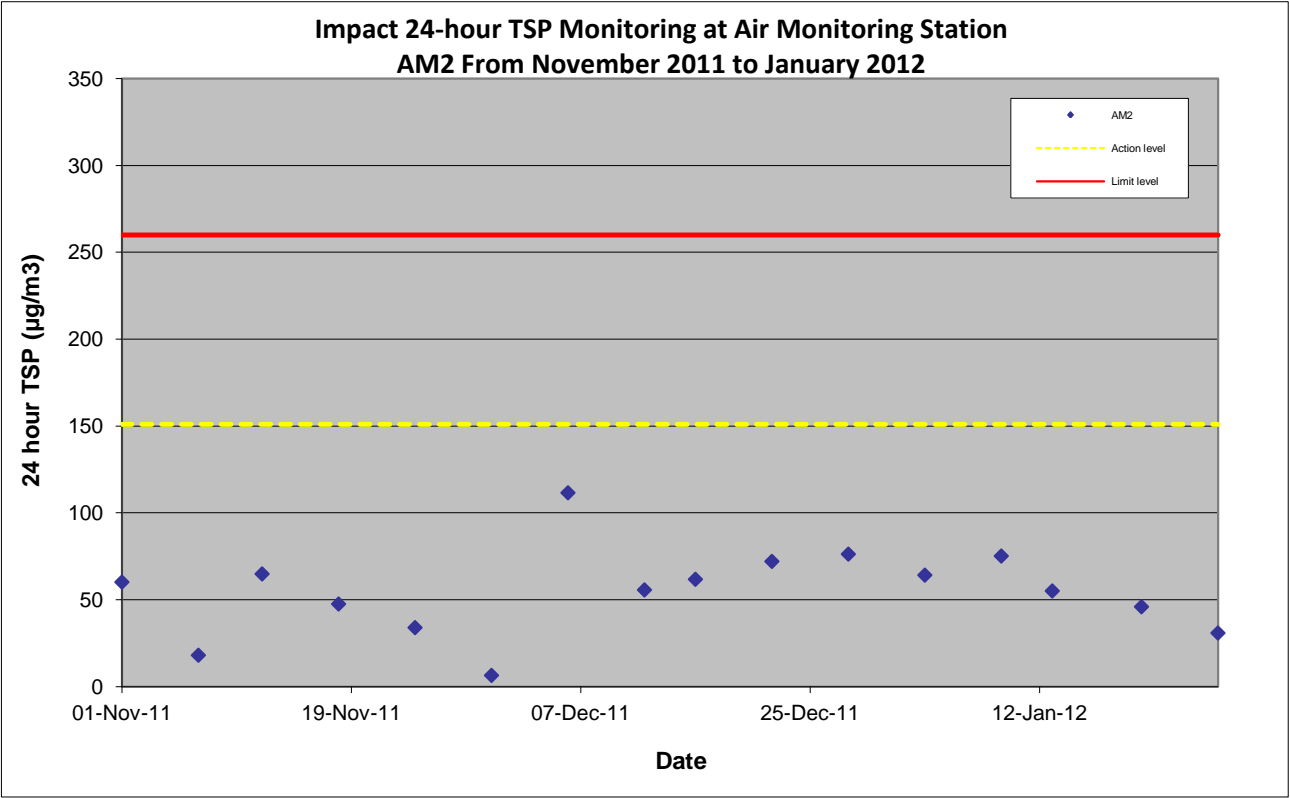
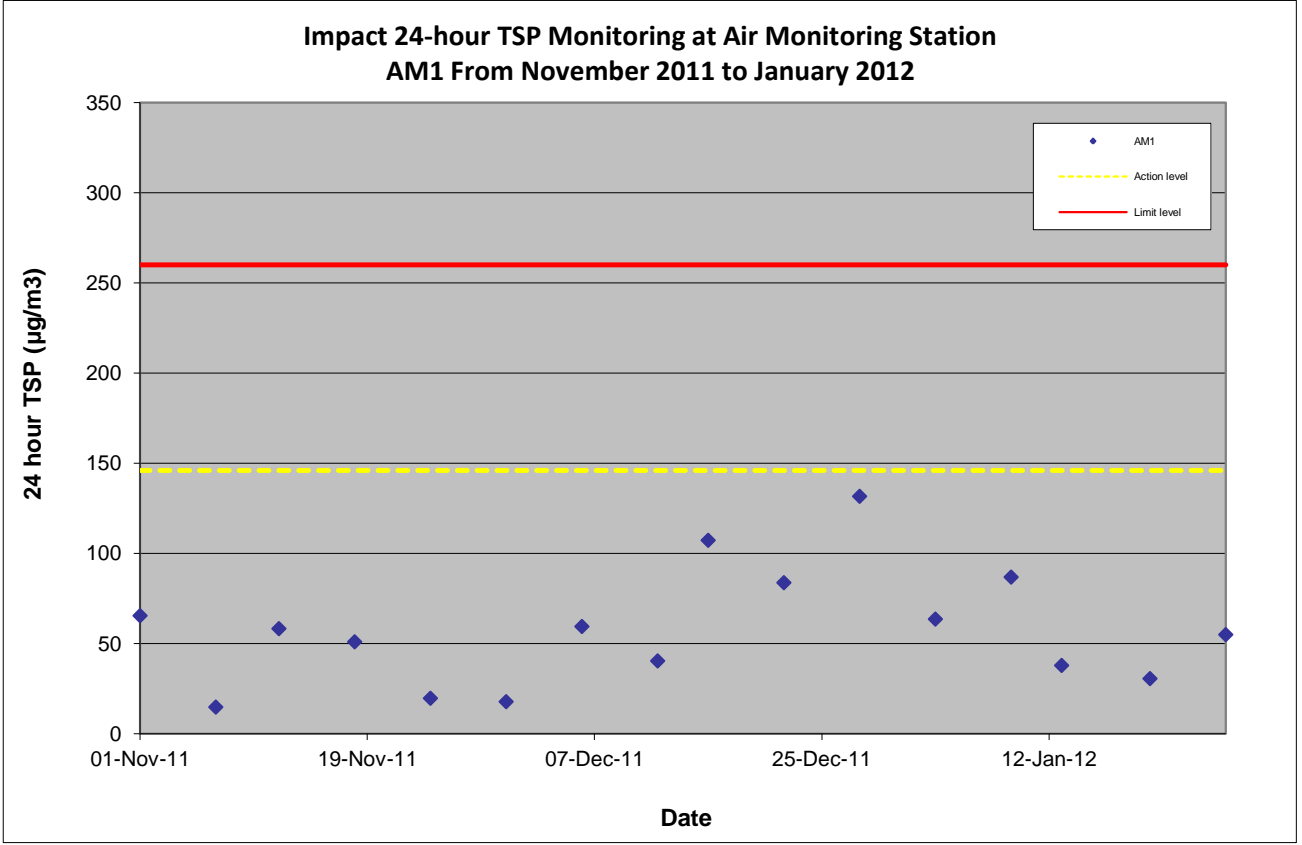
Action Level (ug/m³)	146
Limit Level (ug/m³)	260

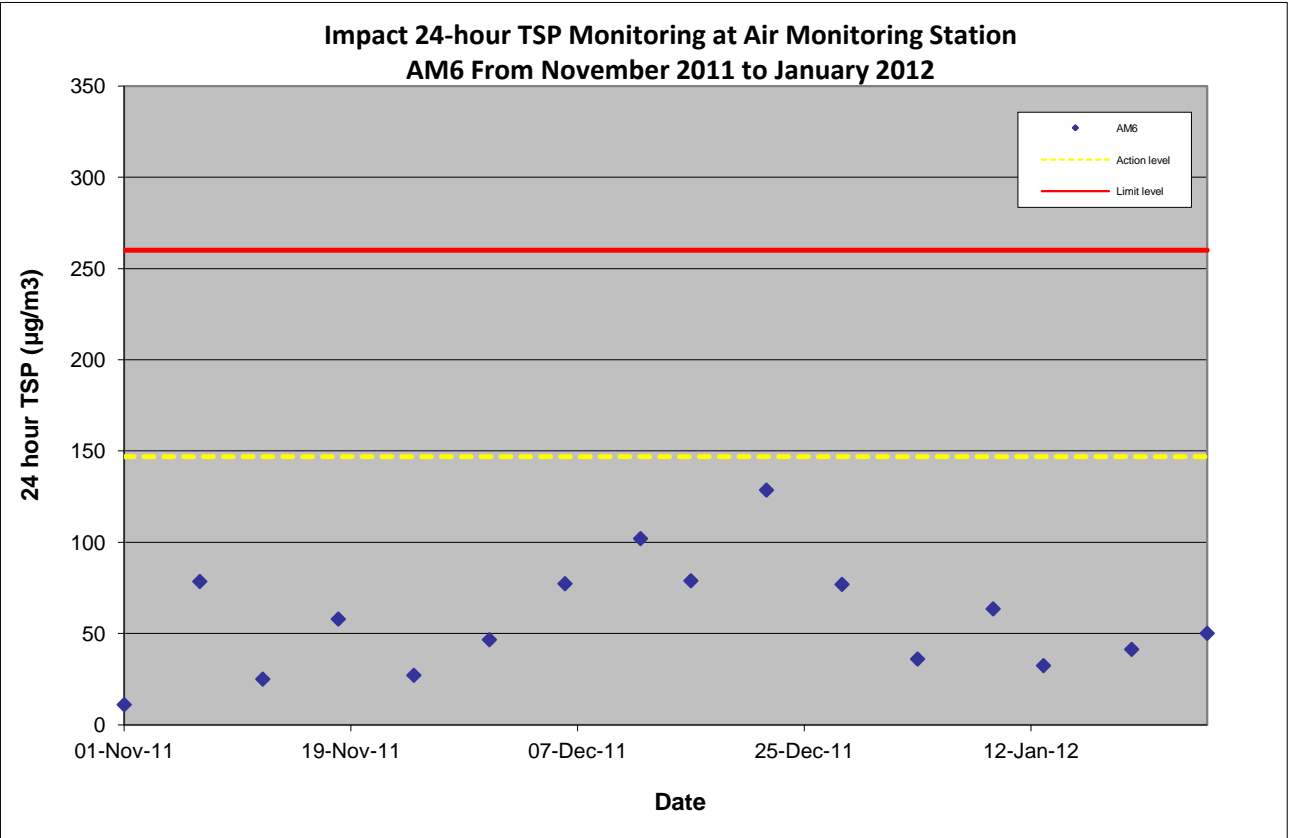
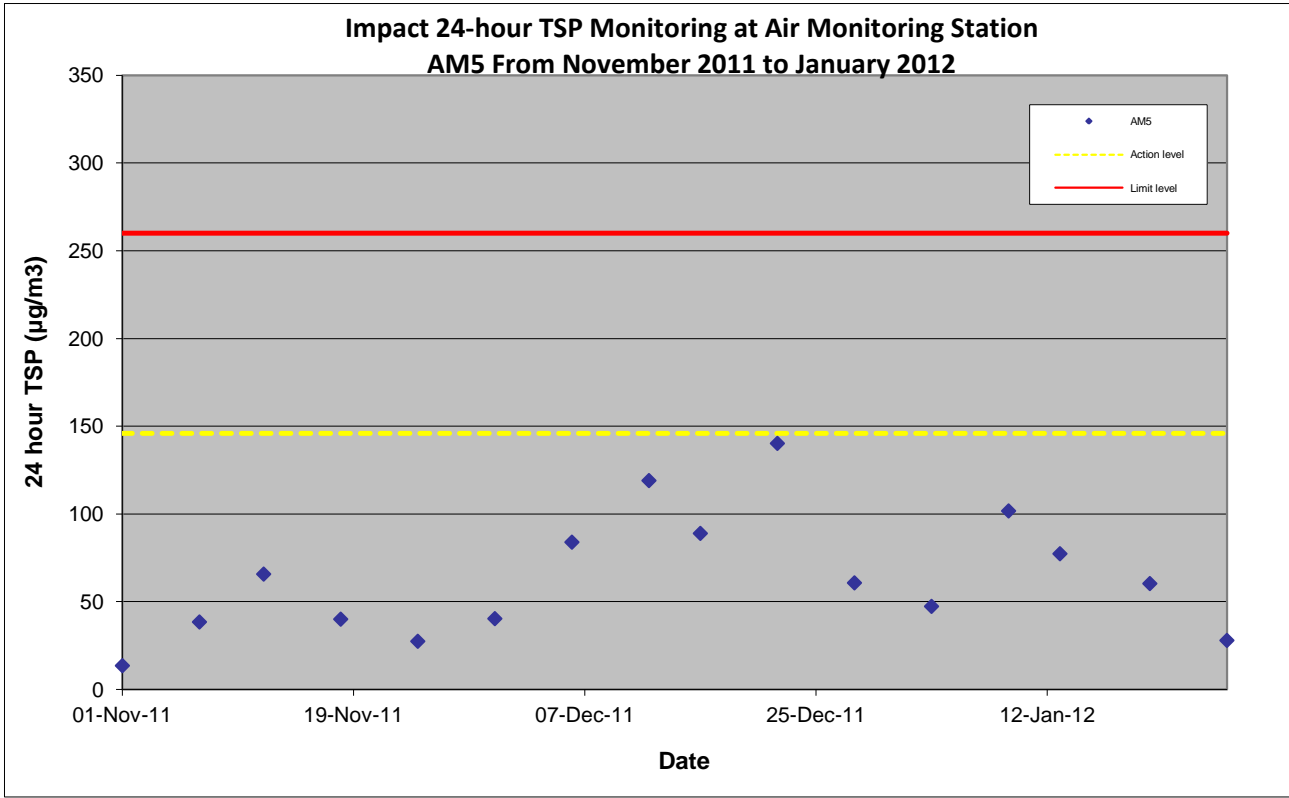
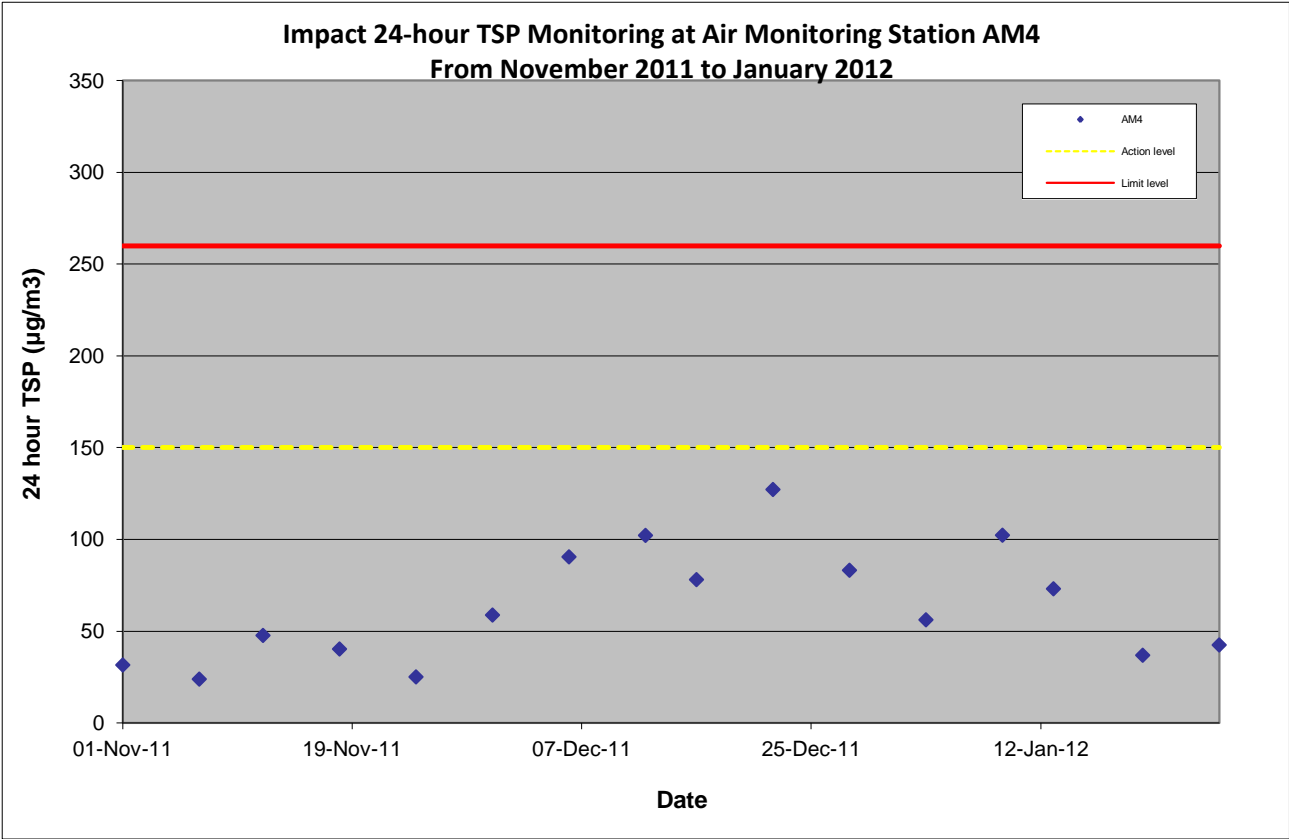
Agreement No. HMW 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section  
Impact Air Quality Monitoring Result at Yan Oi Tong Community and Sports Centre (AM6) - 24 hour TSP

Filter No.	Month	Date	Receptor No.	Weather condition	Site condition	Pressure (mmHg)		Temperature (oC)		Flow Recorder Reading (CFM)		Filter Weight (g)		TSP weight (g)	Flow Rate (m³/min)		Average Flow Rate (m³/min)	Elapse Time		Sampling Time (mins.)	Total vol. (m³)	(ug/m³) AM6
						Initial	Final	Initial	Final	Initial	Final	Initial	Final		Initial	Final		Start	Finish			
130493	Nov-11	1-Nov-11	AM6	Fine	Normal Operation	761.0	760.0	24.0	25.0	50.0	50.0	2.7089	2.7325	0.0236	1.4867	1.4830	1.4849	7202.80	7226.80	1440.00	2138.18	11.0
130499	Nov-11	7-Nov-11	AM6	Cloudy	Normal Operation	758.0	756.0	25.0	22.0	50.0	50.0	2.7257	2.8935	0.1678	1.4809	1.4868	1.4839	7226.80	7250.80	1440.00	2136.74	78.5
130506	Nov-11	12-Nov-11	AM6	Fine	Normal Operation	762.0	762.0	22.0	23.0	50.0	50.0	2.7887	2.8424	0.0537	1.4931	1.4904	1.4918	7250.80	7274.80	1440.00	2148.12	25.0
130512	Nov-11	18-Nov-11	AM6	Cloudy	Normal Operation	756.0	759.0	24.0	24.0	50.0	50.0	2.7495	2.8731	0.1236	1.4815	1.4846	1.4831	7274.80	7298.80	1440.00	2135.59	57.9
130518	Nov-11	24-Nov-11	AM6	Fine	Normal Operation	765.0	765.0	20.0	20.0	50.0	50.0	2.7691	2.8276	0.0585	1.5017	1.5017	1.5017	7298.80	7322.80	1440.00	2162.45	27.1
130524	Nov-11	30-Nov-11	AM6	Fine	Normal Operation	761.0	761.0	23.0	23.0	50.0	50.0	2.7951	2.8984	0.1033	1.5397	1.5397	1.5397	7322.80	7346.80	1440.00	2217.17	46.6
130530	Dec-11	6-Dec-11	AM6	Cloudy	Normal Operation	763.0	762.0	19.0	22.0	50.0	50.0	2.7759	2.9483	0.1724	1.5536	1.5437	1.5487	7346.80	7370.80	1440.00	2230.06	77.3
150537	Dec-11	12-Dec-11	AM6	Fine	Normal Operation	765.0	764.0	15.0	17.0	50.0	50.0	2.7806	3.0103	0.2297	1.5679	1.5608	1.5644	7370.80	7394.80	1440.00	2252.66	102.0
150543	Dec-11	16-Dec-11	AM6	Fine	Normal Operation	767.0	768.0	17.0	16.0	50.0	50.0	2.7462	2.9242	0.1780	1.5642	1.5683	1.5663	7394.80	7418.80	1440.00	2255.40	78.9
130549	Dec-11	22-Dec-11	AM6	Fine	Normal Operation	764.0	765.0	17.0	15.0	50.0	50.0	2.757	3.0468	0.2898	1.5608	1.5679	1.5644	7418.80	7442.80	1440.00	2252.66	128.6
130555	Dec-11	28-Dec-11	AM6	Sunny	Normal Operation	766.0	765.0	17.0	17.0	50.0	50.0	2.7572	2.9303	0.1731	1.5630	1.5619	1.5625	7442.80	7466.80	1440.00	2249.93	76.9
130561	Jan-12	3-Jan-12	AM6	Fine	Normal Operation	765.0	768.0	17.0	13.0	50.0	50.0	2.7703	2.8517	0.0814	1.5619	1.5774	1.5697	7466.80	7490.80	1440.00	2260.30	36.0
130570	Jan-12	9-Jan-12	AM6	Fine	Normal Operation	766.0	766.0	15.0	15.0	50.0	50.0	2.7649	2.9084	0.1435	1.5690	1.5690	1.5690	7490.80	7514.80	1440.00	2259.36	63.5
130574	Jan-12	13-Jan-12	AM6	Cloudy	Normal Operation	761.0	758.0	17.0	17.0	50.0	50.0	2.7311	2.8036	0.0725	1.5573	1.5540	1.5557	7514.80	7538.80	1440.00	2240.14	32.4
130580	Jan-12	20-Jan-12	AM6	Cloudy	Normal Operation	761.0	760.0	17.0	16.0	50.0	50.0	2.756	2.8486	0.0926	1.5573	1.5592	1.5583	7538.80	7562.80	1440.00	2243.88	41.3
130586	Jan-12	26-Jan-12	AM6	Cloudy	Normal Operation	764.0	764.0	11.0	11.0	50.0	50.0	2.7474	2.8607	0.1133	1.5702	1.5702	1.5702	7562.80	7586.80	1440.00	2261.09	50.1

Average (ug/m³)	58.3
Max (ug/m³)	128.6
Min (ug/m³)	11.0

Action Level (ug/m³)	147
Limit Level (ug/m³)	260





Appendix D

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**Wind Data**

### Wind Monitoring Data - November 2011

Date	Wind Direction (degree)	Wind Speed (km/h)
1-Nov-11	70	25.3
7-Nov-11	60	39.7
12-Nov-11	30	10.7
18-Nov-11	70	14.8
24-Nov-11	80	31.3
30-Nov-11	50	15.9

Source extracted from Hong Kong Observatory (HKO)

### Wind Monitoring Data - December 2011

Date	Wind Direction (degree)	Wind Speed (km/h)
6-Dec-11	60	27.7
12-Dec-11	20	23.5
16-Dec-11	20	29.5
22-Dec-11	20	24.5
28-Dec-11	60	19.6

Source extracted from Hong Kong Observatory (HKO)

### Wind Monitoring Data - January 2012

Date	Wind Direction (degree)	Wind Speed (km/h)
3-Jan-12	70	29.7
9-Jan-12	20	13.5
13-Jan-12	50	21.9
20-Jan-12	60	33.2
26-Jan-12	50	38

Source extracted from Hong Kong Observatory (HKO)



Appendix E

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**Impact Noise  
Monitoring Results**

**Agreement No. 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section - Environmental Team**  
**Day-time Noise Monitoring Results - 2 November 2011**

ID	Premise	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
			L <sub>Aeq</sub> ,30min	Limit	L <sub>10</sub> ,5min	L <sub>90</sub> ,5min	L <sub>Aeq</sub> ,30min	L <sub>Aeq</sub> ,30min
N1	Kam Fai Garden	09:45 - 10:15	76	75	79	73	76	Measured ≤ Baseline
N2	Tai Tung Pui Social Service Building	10:40 - 11:10	76	75	78	73	78	Measured ≤ Baseline
N3	Yuen Yuen Primary School	11:25 - 11:55	68	70	70	67	69	Measured ≤ Baseline
N4	Wu Siu Kui Primary School	08:30 - 09:00	65	65	67	64	67	Measured ≤ Baseline
N5	Tuen King Building	13:10 - 13:40	71	75	73	69	70	65
N6	Choi Cheung kok Secondary School	14:00 - 14:30	70	70	72	68	69	64

Note: (#): Construction Noise Level = Measured Noise Level - Baseline Noise Level  
 (#): Limit Level of 65 dB(A) is adopted for N4 due to school examination hours

**Agreement No. 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section - Environmental Team**  
**Day-time Noise Monitoring Results - 8 November 2011**

ID	Premise	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
			L <sub>Aeq</sub> ,30min	Limit	L <sub>10</sub> ,5min	L <sub>90</sub> ,5min	L <sub>Aeq</sub> ,30min	L <sub>Aeq</sub> ,30min
N1	Kam Fai Garden	10:00 - 10:30	75	75	76	71	76	Measured ≤ Baseline
N2	Tai Tung Pui Social Service Building	10:50 - 11:20	74	75	76	71	78	Measured ≤ Baseline
N3	Yuen Yuen Primary School	11:40 - 12:10	67	70	69	66	69	Measured ≤ Baseline
N4	Wu Siu Kui Primary School	08:30 - 09:00	66	70	67	64	67	Measured ≤ Baseline
N5	Tuen King Building	13:30 - 14:00	71	75	73	68	70	62
N6	Choi Cheung kok Secondary School	14:10 - 14:40	69	70	71	67	69	Measured ≤ Baseline

Note: (#): Construction Noise Level = Measured Noise Level - Baseline Noise Level

**Agreement No. 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section - Environmental Team**  
**Day-time Noise Monitoring Results - 14 November 2011**

ID	Premise	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
			L <sub>Aeq</sub> ,30min	Limit	L <sub>10</sub> ,5min	L <sub>90</sub> ,5min	L <sub>Aeq</sub> ,30min	L <sub>Aeq</sub> ,30min
N1	Kam Fai Garden	09:45 - 10:15	77	75	79	73	76	68
N2	Tai Tung Pui Social Service Building	10:40 - 11:10	76	75	77	72	78	Measured ≤ Baseline
N3	Yuen Yuen Primary School	11:20 - 11:50	68	70	70	67	69	Measured ≤ Baseline
N4	Wu Siu Kui Primary School	08:30 - 09:00	66	70	68	65	67	Measured ≤ Baseline
N5	Tuen King Building	13:00 - 13:30	71	75	72	68	70	62
N6	Choi Cheung kok Secondary School	14:00 - 14:30	69	70	71	67	69	Measured ≤ Baseline

Note: (#): Construction Noise Level = Measured Noise Level - Baseline Noise Level

**Agreement No. 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section - Environmental Team**  
**Day-time Noise Monitoring Results - 25 November 2011**

ID	Premise	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
			L <sub>Aeq</sub> ,30min	Limit	L <sub>10</sub> ,5min	L <sub>90</sub> ,5min	L <sub>Aeq</sub> ,30min	L <sub>Aeq</sub> ,30min
N1	Kam Fai Garden	09:40 - 10:10	75	75	77	73	76	Measured ≤ Baseline
N2	Tai Tung Pui Social Service Building	10:35 - 11:05	75	75	77	72	78	Measured ≤ Baseline
N3	Yuen Yuen Primary School	11:20 - 11:50	66	70	68	65	69	Measured ≤ Baseline
N4	Wu Siu Kui Primary School	08:30 - 09:00	67	70	68	64	67	Measured ≤ Baseline
N5	Tuen King Building	13:20 - 13:50	69	75	71	67	70	Measured ≤ Baseline
N6	Choi Cheung kok Secondary School	14:00 - 14:30	68	70	70	66	69	Measured ≤ Baseline

Note: (#): Construction Noise Level = Measured Noise Level - Baseline Noise Level

**Agreement No. 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section - Environmental Team**  
**Day-time Noise Monitoring Results - 1 December 2011**

ID	Premise	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
			L <sub>Aeq</sub> ,30min	Limit	L <sub>10</sub> ,5min	L <sub>90</sub> ,5min	L <sub>Aeq</sub> ,30min	L <sub>Aeq</sub> ,30min
N1	Kam Fai Garden	09:45 - 10:15	77	75	79	72	76	68
N2	Tai Tung Pui Social Service Building	10:40 - 11:10	76	75	78	71	78	Measured ≤ Baseline
N3	Yuen Yuen Primary School	11:25 - 11:55	68	70	70	67	69	Measured ≤ Baseline
N4	Wu Siu Kui Primary School	08:30 - 09:00	67	70	68	64	67	Measured ≤ Baseline
N5	Tuen King Building	13:00 - 13:30	70	75	72	67	70	Measured ≤ Baseline
N6	Choi Cheung kok Secondary School	14:00 - 14:30	68	65	70	66	69	Measured ≤ Baseline

Note: (#): Construction Noise Level = Measured Noise Level - Baseline Noise Level  
 (#): Limit Level of 65 dB(A) is adopted for N6 due to school examination hours

**Agreement No. 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section - Environmental Team**  
**Day-time Noise Monitoring Results - 7 December 2011**

ID	Premise	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
			L <sub>Aeq</sub> ,30min	Limit	L <sub>10</sub> ,5min	L <sub>90</sub> ,5min	L <sub>Aeq</sub> ,30min	L <sub>Aeq</sub> ,30min
N1	Kam Fai Garden	09:40 - 10:10	75	75	77	72	76	Measured ≤ Baseline
N2	Tai Tung Pui Social Service Building	10:35 - 11:05	74	75	76	71	78	Measured ≤ Baseline
N3	Yuen Yuen Primary School	11:20 - 11:50	67	70	69	66	69	Measured ≤ Baseline
N4	Wu Siu Kui Primary School	08:30 - 09:00	65	70	66	64	67	Measured ≤ Baseline
N5	Tuen King Building	13:00 - 13:30	71	75	72	68	70	64
N6	Choi Cheung kok Secondary School	13:30 - 14:20	69	70	71	67	69	Measured ≤ Baseline

Note: (#): Construction Noise Level = Measured Noise Level - Baseline Noise Level

**Agreement No. 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section - Environmental Team**  
**Day-time Noise Monitoring Results - 13 December 2011**

ID	Premise	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
			L <sub>Aeq</sub> ,30min	Limit	L <sub>10</sub> ,5min	L <sub>90</sub> ,5min	L <sub>Aeq</sub> ,30min	L <sub>Aeq</sub> ,30min
N1	Kam Fai Garden	09:50 - 10:20	74	75	77	71	76	Measured ≤ Baseline
N2	Tai Tung Pui Social Service Building	10:45 - 11:15	75	75	77	72	78	Measured ≤ Baseline
N3	Yuen Yuen Primary School	11:30 - 12:00	67	70	69	66	69	Measured ≤ Baseline
N4	Wu Siu Kui Primary School	08:30 - 09:00	66	70	68	64	67	Measured ≤ Baseline
N5	Tuen King Building	13:15 - 13:35	69	75	72	67	70	Measured ≤ Baseline
N6	Choi Cheung kok Secondary School	14:20 - 14:50	68	70	70	66	69	Measured ≤ Baseline

Note: (#): Construction Noise Level = Measured Noise Level - Baseline Noise Level

**Agreement No. 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section - Environmental Team**  
**Day-time Noise Monitoring Results - 23 December 2011**

ID	Premise	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
			L <sub>Aeq</sub> ,30min	Limit	L <sub>10</sub> ,5min	L <sub>90</sub> ,5min	L <sub>Aeq</sub> ,30min	L <sub>Aeq</sub> ,30min
N1	Kam Fai Garden	09:50 - 10:20	75	75	77	71	76	Measured ≤ Baseline
N2	Tai Tung Pui Social Service Building	10:40 - 11:10	75	75	77	71	78	Measured ≤ Baseline
N3	Yuen Yuen Primary School	11:25 - 11:55	66	70	67	65	69	Measured ≤ Baseline
N4	Wu Siu Kui Primary School	08:30 - 09:00	65	70	66	64	67	Measured ≤ Baseline
N5	Tuen King Building	13:10 - 13:40	71	75	72	68	70	62
N6	Choi Cheung kok Secondary School	14:10 - 14:40	69	70	71	67	69	Measured ≤ Baseline

Note: (#): Construction Noise Level = Measured Noise Level - Baseline Noise Level

**Agreement No. 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section - Environmental Team**  
**Day-time Noise Monitoring Results - 29 December 2011**

ID	Premise	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
			L <sub>Aeq</sub> ,30min	Limit	L <sub>10</sub> ,5min	L <sub>90</sub> ,5min	L <sub>Aeq</sub> ,30min	L <sub>Aeq</sub> ,30min
N1	Kam Fai Garden	09:45 - 10:15	74	75	76	71	76	Measured ≤ Baseline
N2	Tai Tung Pui Social Service Building	10:40 - 11:10	74	75	76	71	78	Measured ≤ Baseline
N3	Yuen Yuen Primary School	11:30 - 12:00	67	70	68	65	69	Measured ≤ Baseline
N4	Wu Siu Kui Primary School	08:30 - 09:00	66	70	67	64	67	Measured ≤ Baseline
N5	Tuen King Building	13:00 - 13:30	69	75	72	67	70	Measured ≤ Baseline
N6	Choi Cheung kok Secondary School	14:00 - 14:30	68	70	71	67	69	Measured ≤ Baseline

Note: (#): Construction Noise Level = Measured Noise Level - Baseline Noise Level

**Agreement No. 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section - Environmental Team**  
**Day-time Noise Monitoring Results - 4 January 2012**

ID	Premise	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
			L <sub>Aeq</sub> 30min	Limit	L <sub>10</sub> 5min	L <sub>90</sub> 5min	L <sub>Aeq</sub> 30min	L <sub>Aeq</sub> 30min
N1	Kam Fai Garden	09:45 - 10:15	75	75	77	72	76	Measured ≤ Baseline
N2	Tai Tung Pui Social Service Building	10:40 - 11:10	74	75	76	71	78	Measured ≤ Baseline
N3	Yuen Yuen Primary School	11:25 - 11:55	68	70	70	66	69	Measured ≤ Baseline
N4	Wu Siu Kui Primary School	08:30 - 09:00	67	70	69	65	67	Measured ≤ Baseline
N5	Tuen King Building	13:00 - 13:30	70	75	72	68	70	Measured ≤ Baseline
N6	Choi Cheung kok Secondary School	14:00 - 14:30	68	70	70	66	69	Measured ≤ Baseline

Note: (#): Construction Noise Level = Measured Noise Level - Baseline Noise Level

**Agreement No. 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section - Environmental Team**  
**Day-time Noise Monitoring Results - 10 January 2012**

ID	Premise	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
			L <sub>Aeq</sub> 30min	Limit	L <sub>10</sub> 5min	L <sub>90</sub> 5min	L <sub>Aeq</sub> 30min	L <sub>Aeq</sub> 30min
N1	Kam Fai Garden	10:00 - 10:30	75	75	76	72	76	Measured ≤ Baseline
N2	Tai Tung Pui Social Service Building	10:50 - 11:20	76	75	78	73	78	Measured ≤ Baseline
N3	Yuen Yuen Primary School	11:30 - 12:00	68	70	70	66	69	Measured ≤ Baseline
N4	Wu Siu Kui Primary School	08:30 - 09:00	66	70	68	65	67	Measured ≤ Baseline
N5	Tuen King Building	13:10 - 13:40	69	75	72	67	70	Measured ≤ Baseline
N6	Choi Cheung kok Secondary School	14:00 - 14:30	68	70	70	67	69	Measured ≤ Baseline

Note: (#): Construction Noise Level = Measured Noise Level - Baseline Noise Level

**Agreement No. 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section - Environmental Team**  
**Day-time Noise Monitoring Results - 16 January 2012**

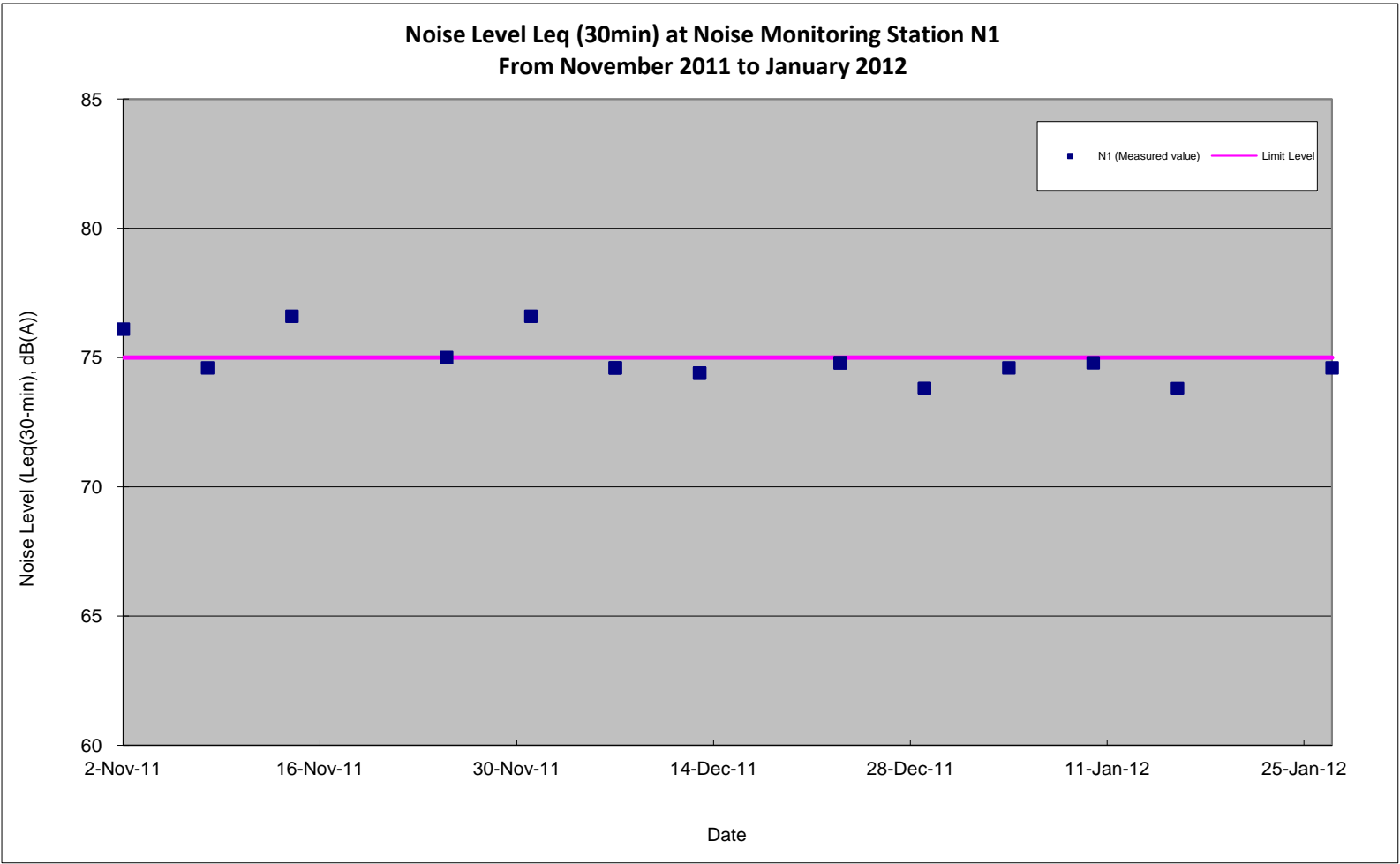
ID	Premise	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
			L <sub>Aeq</sub> 30min	Limit	L <sub>10</sub> 5min	L <sub>90</sub> 5min	L <sub>Aeq</sub> 30min	L <sub>Aeq</sub> 30min
N1	Kam Fai Garden	09:45 - 10:15	74	75	75	72	76	Measured ≤ Baseline
N2	Tai Tung Pui Social Service Building	10:35 - 11:05	74	75	76	72	78	Measured ≤ Baseline
N3	Yuen Yuen Primary School	11:15 - 11:45	67	70	69	65	69	Measured ≤ Baseline
N4	Wu Siu Kui Primary School	08:30 - 09:00	66	70	67	64	67	Measured ≤ Baseline
N5	Tuen King Building	13:00 - 13:30	71	75	72	68	70	64
N6	Choi Cheung kok Secondary School	14:00 - 14:30	68	70	70	66	69	Measured ≤ Baseline

Note: (#): Construction Noise Level = Measured Noise Level - Baseline Noise Level

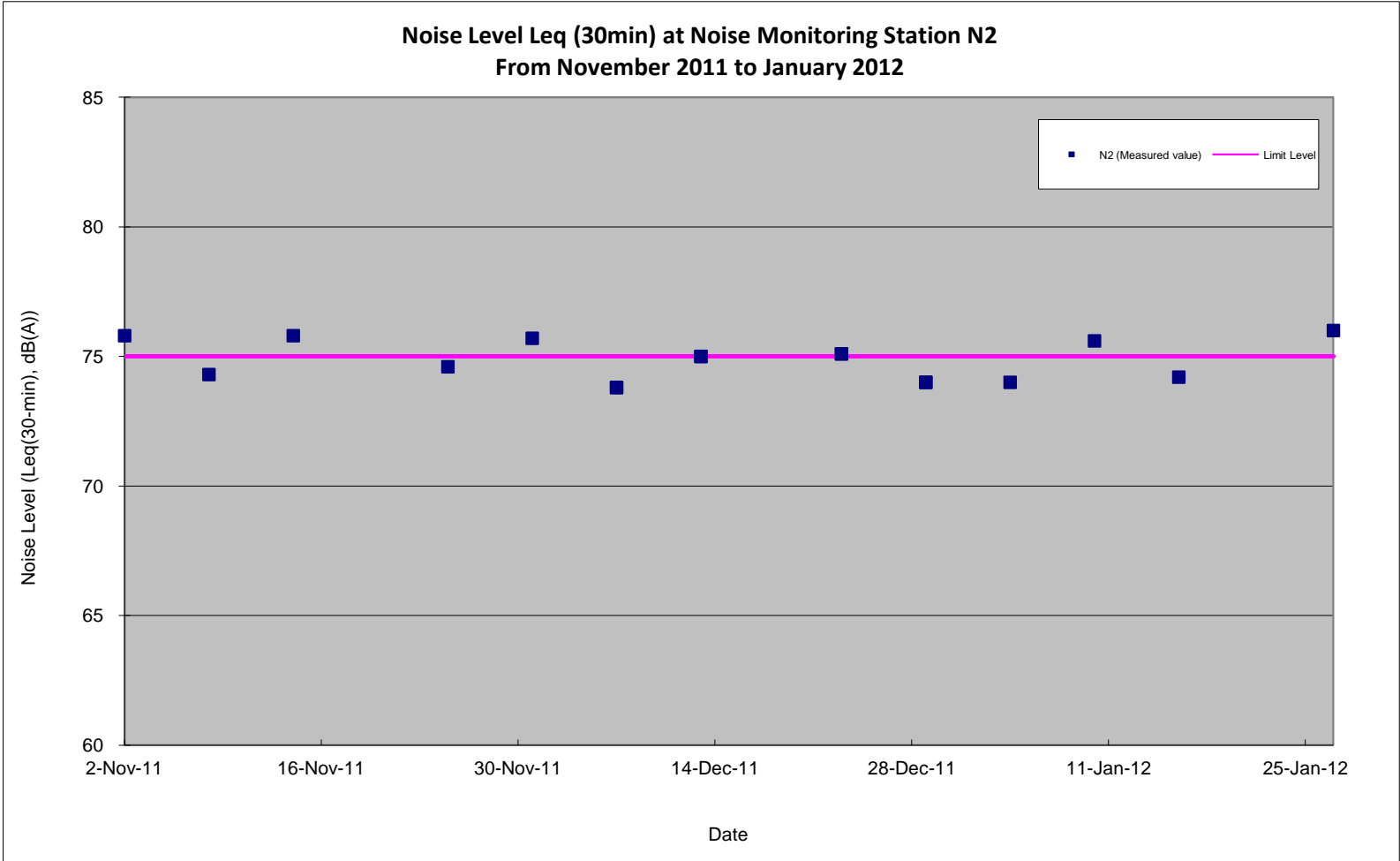
**Agreement No. 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section - Environmental Team**  
**Day-time Noise Monitoring Results - 27 January 2012**

ID	Premise	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
			L <sub>Aeq</sub> 30min	Limit	L <sub>10</sub> 5min	L <sub>90</sub> 5min	L <sub>Aeq</sub> 30min	L <sub>Aeq</sub> 30min
N1	Kam Fai Garden	09:45 - 10:15	75	75	77	72	76	Measured ≤ Baseline
N2	Tai Tung Pui Social Service Building	10:40 - 11:10	76	75	79	73	78	Measured ≤ Baseline
N3	Yuen Yuen Primary School	11:30 - 12:00	67	70	68	65	69	Measured ≤ Baseline
N4	Wu Siu Kui Primary School	08:30 - 09:00	66	70	67	65	67	Measured ≤ Baseline
N5	Tuen King Building	13:00 - 13:30	71	75	73	69	70	64
N6	Choi Cheung kok Secondary School	14:00 - 14:30	68	70	70	66	69	Measured ≤ Baseline

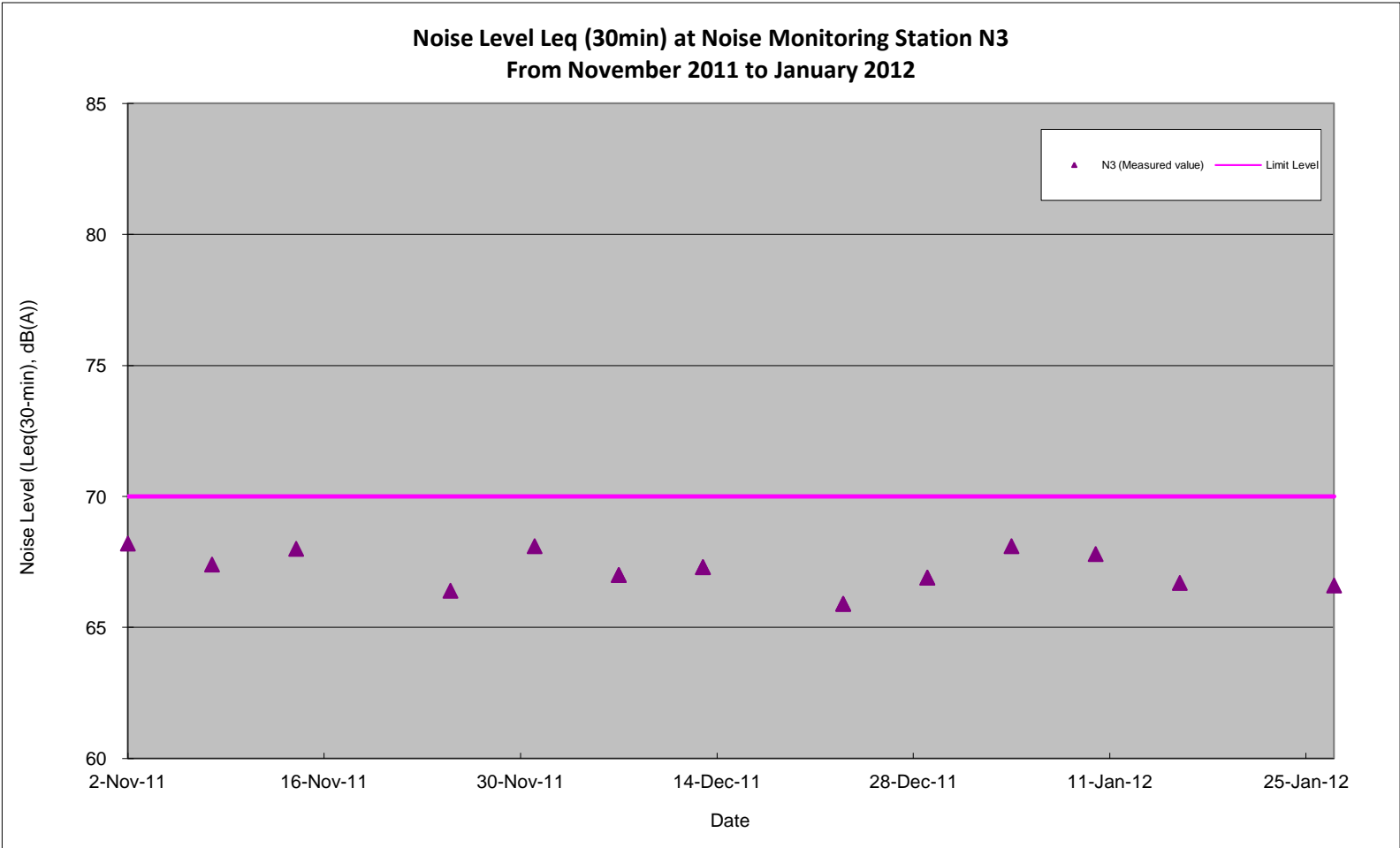
Note: (#): Construction Noise Level = Measured Noise Level - Baseline Noise Level



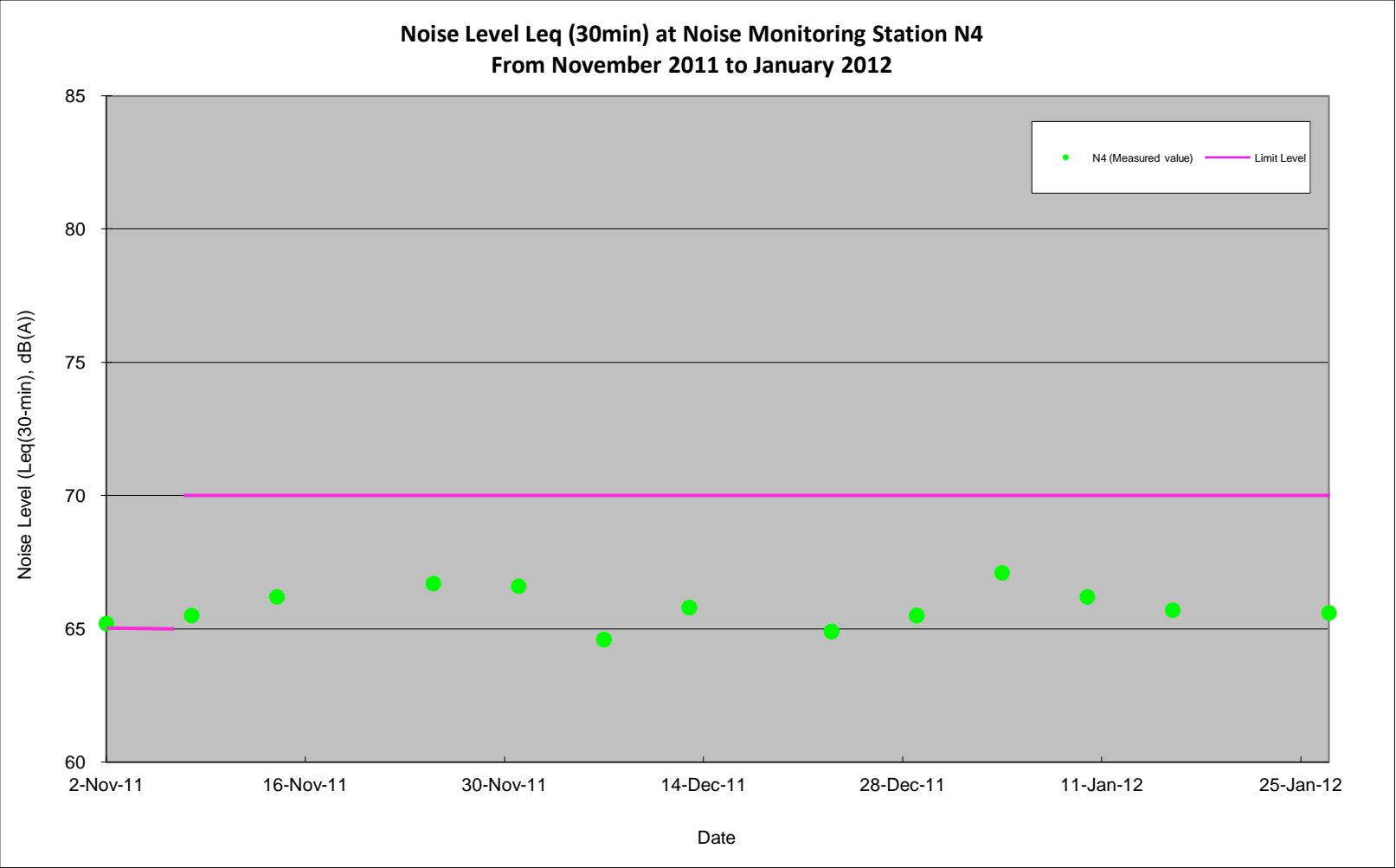
Note: For compliance comparison, please refer to above table and report.



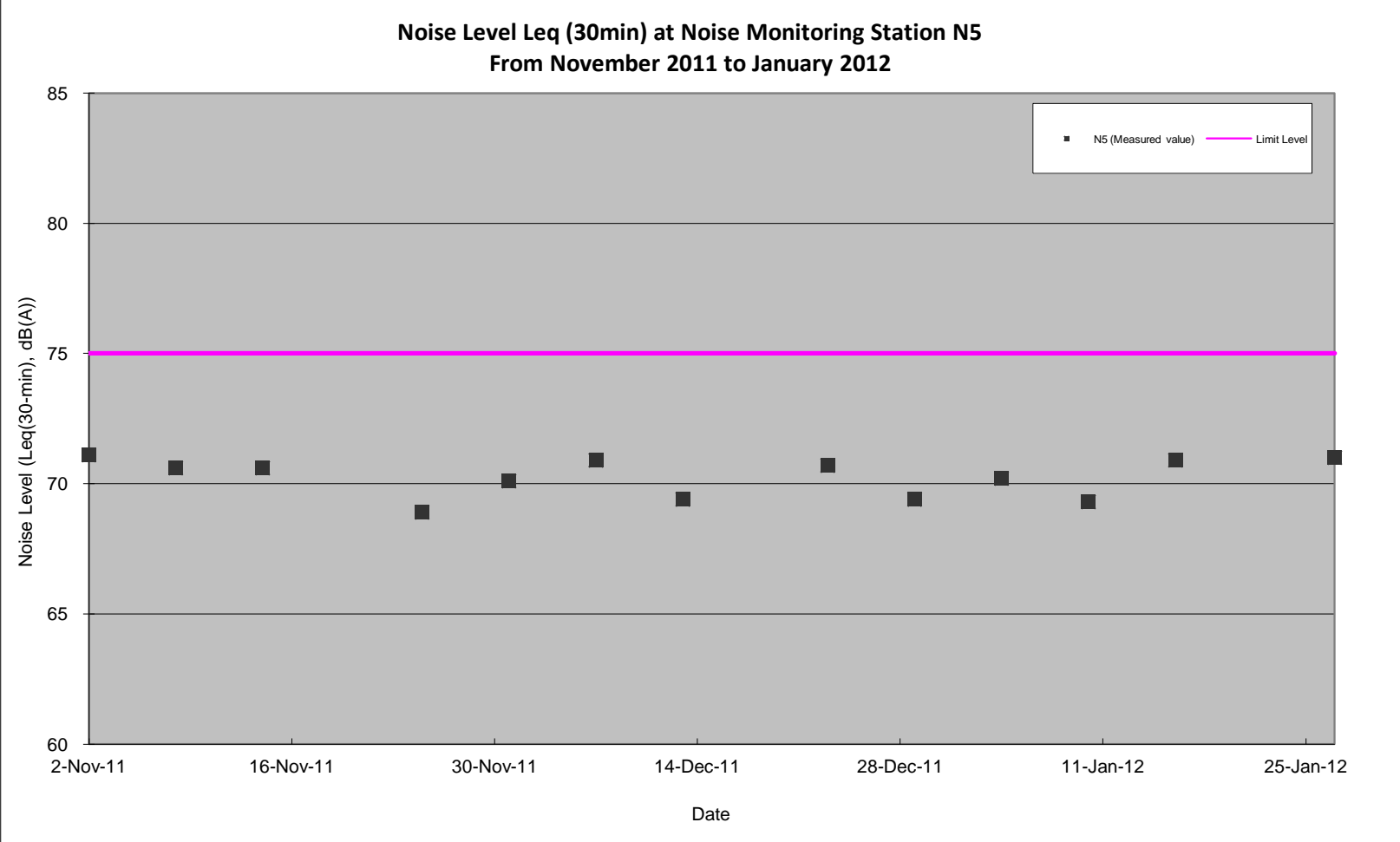
Note: For compliance comparison, please refer to above table and report.



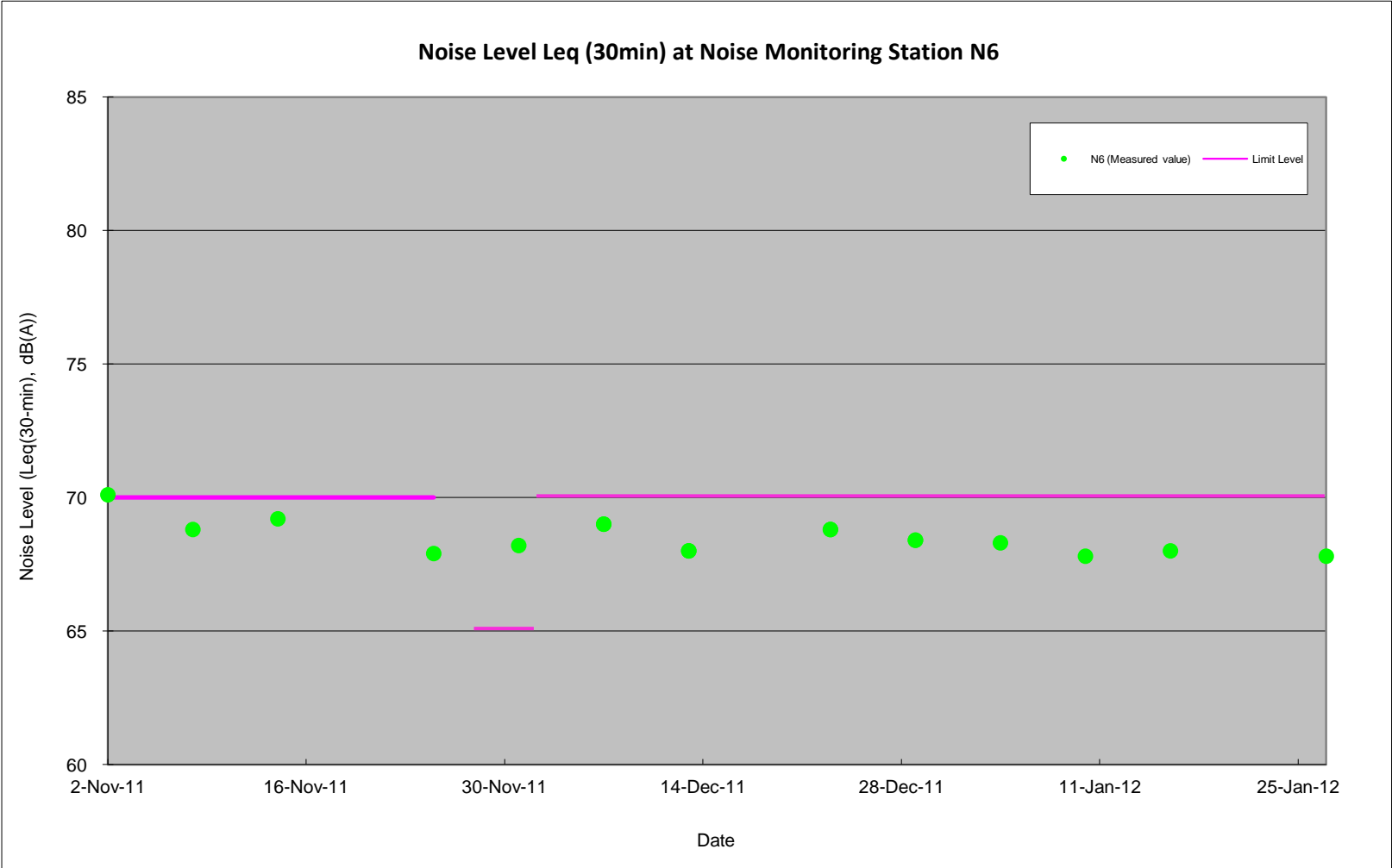
Note: For compliance comparison, please refer to above table and report.



Note: For compliance comparison, please refer to above table and report.



Note: For compliance comparison, please refer to above table and report.



Note: For compliance comparison, please refer to above table and report.

Appendix F

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**Details of LR, LCA and  
VSR**

### Landscape and Visual Impact Monitoring Locations

The landscape and visual conditions of the site and its vicinity shall be reviewed with regards to parameters assessed in the EIA Report, including landscape resources (LR), landscape character area (LCA) and view condition of visual sensitive receiver (VSR). The components of each assessed parameter of LR, LCA and VSR are summarised in **Tables A**.

**Table A** Parameters of landscape resources, landscape character areas and landscape sensitive receivers assessed during baseline site survey

ID No.	Names
<b>Landscape Resources</b>	
LR1	Tsing Sin Playground
LR2	Roadside Planting along Tuen Mun Road Adjacent to Kam Fai Garden
LR3	Street trees along Castle Peak Road – Castle Peak Bay
LR4	Street trees along Tuen Mun Road west of Chi Lok Fa Yuen and east of On Ting Estate
LR5	Street trees along Tuen Mun Road west of Waldorf Garden and CMA Choi Cheung Kok Prevocational School
LR6	Street trees along Tuen Mun Road near Tuen Mun Town Plaza
LR7	Street trees along Tuen Mun Road east of Yan Oi Tong
LR8	Trees at roadside planting areas near Yan Oi Tong Circuit
LR9	Trees at planting area near Tuen Mun Town Plaza
LR10	Trees at planting area near New Town Mansion
LR11	Trees at planting area near On Ting Estate
LR12	Tsing Hoi Playground
<b>Landscape Character Areas</b>	
LZ1	Tuen Mun Residential Urban Landscape
LZ2	Tuen Mun Mixed Modern Comprehensive Urban Development Landscape
LZ3	Tuen Mun 'Hui' Urban Landscape
<b>Visual Sensitive Receivers</b>	
C/R1	Tuen Mun Town Plaza, Waldorf Garden
C/R2	Tuen Cultural Centre, Tuen Mun Town Plaza
C/R3	Chelsea Height
GIC1	Tuen Mun Church and Tuen Mun Tseng Choi Street Joint-user Complex
GIC2	Sin Hing Tong Temple
GIC3	Semple Memorial Secondary School and Chung Shing Benevolent Society Mrs. Aw Boon Haw Secondary School
GIC4	Car park (Open)
GIC5	Yan Oi Tong Community & Sports Centre
GIC6	Tuen Mun Government Secondary School, Choi Cheung Kok Secondary School



ID No.	Names
GIC7	Madam Lau Wong Fat Primary School, Lui Cheung Kwong College, Leung Kau Kui College, Lui Cheung Kwong Primary School, Wu Siu Kui Primary School
GIC8	Sam Shing Temple
O1	San Hui Playground
O2	Tsing Sin Playground
O3	Siu Lun Sports Ground
O4	Hoi Sin Playground
R1	Residential Area of Tuen Mun San Hui
R2	Residential Area along Yan Oi Tong Circuit
R3	On Ting Estate and Siu On Court
R4	Residential Area along Tsing Hoi Circuit
R5	Handsome Court, Alpine Garden, Hoi Tak Garden and Harvest Garden, Kam Fai Garden
R6	Siu Lun Court
R7	Goodview Garden and Tsui Ning Garden
R8	Sam Shing Estate
R9	Hanford Garden
T1	Tuen Mun Road – Vehicular and Pedestrian

Appendix G

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**Complaint Log**

Agreement No. HMW 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section  
Complaint Log

ET's Complaint Log Ref. no.	Incoming Complaint Ref no.	Name of Complainant	Date of Complaint receive	Complaint Date/ Period	Complaint Location	Area of Concern	Details of Complaint	Date of Complaint received by ET	ET's Investigation Date	Investigation / Mitigation Measures	Validity to the Project	Status
C016-TCS	A complaint was received by ICC on 28 Oct 11 and the Supervising Officer Representative was informed on 28 Oct 11.	Ms Chan	28 Oct 11	Weekday morning	Tuen Mun Road facing TMT Plaza Block 2	Noise	The complaint was related to noise nuisance of night works under TMT Plaza (Loading and unloading) and noise from workers.	16 Nov 11	16 Nov ~ 24 Nov 11	<p>As confirmed by the Contractor and Supervising Officer's Representative, the related night works was carried out under TMT Plaza. The noise nuisance was mainly due to the loading and unloading of construction materials (Rubble, wooden boards, steel bars and scaffolding materials) onto the ground and noise from workers. During the complaint day, 1 unit of dump truck with crane and 1 unit of crane lorry were employed.</p> <p>The relevant construction noise permit (CNP) no. GW-RW0446-11 was obtained for the loading and unloading works prior commencement. The conditions stipulated in the CNP were strictly followed by the Contractor. EPD had been informed prior the work commencement. No abnormal activities were observed during the complaint period. Based on the above-mentioned information, it is concluded that the complaint was work-related under the Project.</p> <p>In order to minimize the potential noise nuisance generated from the construction works, ET recommended that the Contractor should undertake following mitigation measures to minimize the noise nuisance.</p> <ol style="list-style-type: none"><li>1. Well maintain the machines condition to minimize noise nuisance;</li><li>2. Relocate operating machinery as far as possible from nearby sensitive receivers;</li><li>3. Machines that may be in intermittent use should be shut down between work periods or should be throttled down;</li><li>4. Improve the working practices, minimize the noise nuisance during the working activities as far as possible; and</li><li>5. Enhance the workers awareness by regular training to minimize noise nuisance during the restricted hours.</li></ol>	Yes	Closed on 24 Nov 11

Agreement No. HMW 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section  
Complaint Log

ET's Complaint Log Ref. no.	Incoming Complaint Ref no.	Name of Complainant	Date of Complaint receive	Complaint Date/ Period	Complaint Location	Area of Concern	Details of Complaint	Date of Complaint received by ET	ET's Investigation Date	Investigation / Mitigation Measures	Validity to the Project	Status
C017-TCS	A complaint was received by ICC on 22 Nov 11 and the Supervising Officer Representative was informed on 22 Nov 11.	Ms Tam	22 Nov 11	Midnight	Tuen Mun Road (Tuen Mun Bound) near TMT Plaza Block 2 and Block 8	Noise	The complaint was related to noise nuisance of night works on Tuen Mun Road (Tuen Mun Bound)	22 Nov 11	22 Nov ~ 30 Nov 11	<p>As confirmed by the Contractor and Supervising Officer's Representative, the related night works was carried out under TMT Plaza. The noise nuisance was mainly due to the road paving works. During the complaint day, 1 unit of road marking material boiler enclosed with acoustic enclosures, 1 unit of paver, 1 unit of roller equipped with sound baffles and silencers, 1 unit of dump truck, 1 unit of portable generator, 1 unit of road marker remover, 1 unit of sweeper and 1 unit of lorry have been deployed.</p> <p>The relevant construction noise permit (CNP) no. GW-RW0699-11 was obtained for the road paving works in the designated area prior commencement. The conditions stipulated in the CNP were strictly followed by the Contractor. EPD had been informed prior the work commencement. No abnormal activities were observed during the complaint period. Based on the above-mentioned information, it is concluded that the complaint was work-related under the Project.</p> <p>In order to minimize the potential noise nuisance generated from the road paving works, ET recommended that the Contractor should undertake following mitigation measures to minimize the noise nuisance.</p> <ol style="list-style-type: none"><li>1. Well maintain the machines condition to minimize noise nuisance;</li><li>2. Relocate operating machinery as far as possible from nearby sensitive receivers;</li><li>3. Machines that may be in intermittent use should be shut down between work periods or should be throttled down; and</li><li>4. Improve the working practices; minimize the noise nuisance during the working activities as far as possible.</li></ol>	Yes	Closed on 30 Nov 11

Agreement No. HMW 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section  
Complaint Log

ET's Complaint Log Ref. no.	Incoming Complaint Ref no.	Name of Complainant	Date of Complaint receive	Complaint Date/ Period	Complaint Location	Area of Concern	Details of Complaint	Date of Complaint received by ET	ET's Investigation Date	Investigation / Mitigation Measures	Validity to the Project	Status
C018-TCS	A complaint was received by ICC on 21 Jan 12 and the Supervising Officer Representative was informed via the e-mail on 30 Jan 12.	Unknown	21 Jan 12	21 Jan 12 around 11:00 a.m.	Tuen Mun Road (Kowloon Bound) near Waldorf Garden and Parklane Square.	Water	The complaint was related to the accumulated water from the road work.	1 Feb 12	1 Feb ~ 6 Feb 12	<p>As confirmed by the Contractor and Supervising Officer's Representative, the complaint was related to the accumulated water generated by the road work on 21 Jan 12.</p> <p>Immediate checking has been done by site workers after receiving the complaint. It was found that certain amount of water in Tuen Mun Road (Kowloon Bound) near Waldorf Garden and Parklane Square was accumulated due to water leakage from damaged underground water pipes during operation. As advised by the Supervising Officer's Representative, the Contractor had cleared the accumulated water from the pipes, ensuring no water leakage from the pipes to the road surface after receiving the complaint. Weekly site inspections by ET on 26 Jan 12 and 2 Feb 12 revealed that the site condition was satisfactory and no water accumulation was observed.</p> <p>Based on the above information, it is therefore concluded that the complaint was work related under the Project. The Contractor was reminded to take necessary resources to ensure well maintenance for the water pipes and prevent re-occurrence.</p> <p>In view of this, ET recommended that the Contractor should undertake following mitigation measures to minimize the nuisance.</p> <ol style="list-style-type: none"><li>1. Routine inspection and maintenance for the water pump and pipes should be strengthened.</li><li>2. Site workers should be well trained to avoid water pipes leakage.</li></ol>	Yes	Closed on 6 Feb 12

Agreement No. HMW 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section  
Complaint Log

ET's Complaint Log Ref. no.	Incoming Complaint Ref no.	Name of Complainant	Date of Complaint receive	Complaint Date/ Period	Complaint Location	Area of Concern	Details of Complaint	Date of Complaint received by ET	ET's Investigation Date	Investigation / Mitigation Measures	Validity to the Project	Status
C019-TCS	A complaint was received by ICC on 29 Jan 12 and the Supervising Officer Representative was informed via the e-mail on 29 Jan 12.	Unknown	29 Jan 12	29 Jan 12 around 12:00 p.m.	Tuen Mun Road (Kowloon Bound) near Chi Lok Fa Yuen.	Water	The complaint was related to water spillage from the site to the carriage road.	1 Feb 12	1 Feb ~ 6 Feb 12	<p>As confirmed by the Contractor and Supervising Officer's Representative, the complaint was related to water spillage from the site to the carriage road on 29 Jan 12.</p> <p>Immediate checking has been done by site workers after receiving complaint. It was found that water spillage in Tuen Mun Road (Kowloon Bound) near Chi Lok Fa Yuen was occurred due to the leakage of water from water-filled barrier during water refilling operation. As advised by the Supervising Officer's Representative, the Contractor have ensured all caps are well installed in the water-filled barriers, ensuring no water leakage is from the barriers to the road surface after receiving the complaint. Weekly site inspections by ET on 2 Feb 12 revealed that the site condition was satisfactory and no water spillage was observed.</p> <p>Based on the above information, it is therefore concluded that the complaint was work related under the Project. The Contractor was reminded to take necessary resources to ensure frequent monitoring for the water-filled barrier and prevent re-occurrence.</p> <p>In view of this, ET recommended that the Contractor should undertake following mitigation measures to minimize the nuisance.</p> <ol style="list-style-type: none"><li>1. Routine inspection and maintenance for the water-filled barriers should be strengthened.</li><li>2. Site workers should be well trained for the water refilling operation for the water-filled barriers.</li></ol>	Yes	Closed on 6 Feb 12