

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  
(February 2014 to April  
2014)

Final



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## Executive Summary

This is the fifteenth 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 February 2014 to 30 April 2014.

### 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*

No Limit Level exceedance was recorded in the reporting period.

Totally 6 Action Level exceedances (0 in February, 2 in March 2014 and 4 in April 2014) of noise monitoring were recorded during 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 521 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 971 m<sup>3</sup> were generated and disposed of at public fills at Tuen Mun Area 38 in the reporting period. 83 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

Six environmental complaint regarding noise were recorded during the reporting period. After the investigations, it is concluded that the complaint was attributable to the Contract. The corresponding mitigation measure due to the complaint was recommended to be carried out by the Contractor.

### 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/C) 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**.

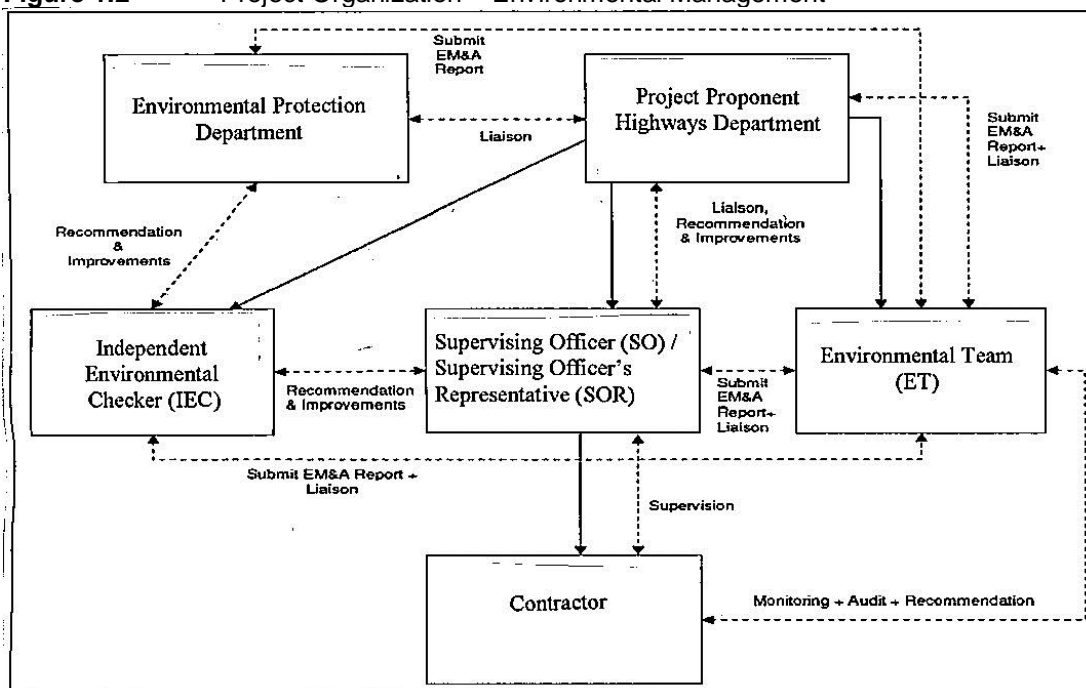
**Table 1.1** Construction activities in the reporting period

Locations	Major Works Undertaken
All area	Road resurfacing

## 1.2 Project Organization

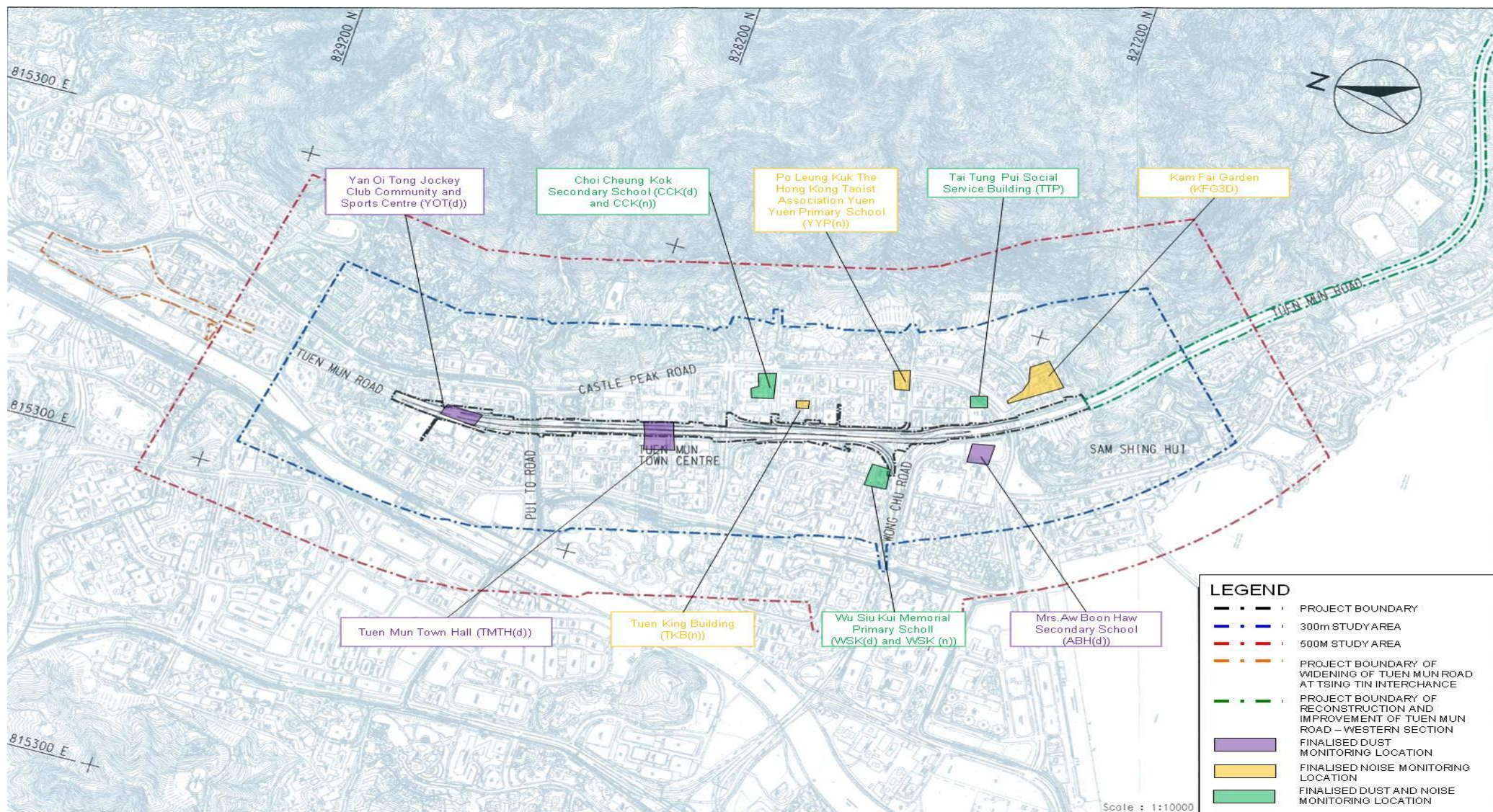
The Project organization structure in relation to the environmental management is shown in **Figure 1.2**. Contacts of key environmental staff of the Project are shown in **Table 1.2**.

**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	Peter Law	2762 3539
<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 <sup>(Note 1)</sup>	AM1	290 µg/m <sup>3</sup>	500 µg/m <sup>3</sup>
			AM2	291 µg/m <sup>3</sup>	
			AM3	287 µg/m <sup>3</sup>	
			AM4	292 µg/m <sup>3</sup>	
			AM5	286 µg/m <sup>3</sup>	
			AM6	290 µg/m <sup>3</sup>	
	24-hour TSP	Once every 6 days	AM1	146 µg/m <sup>3</sup>	260 µg/m <sup>3</sup>
			AM2	151 µg/m <sup>3</sup>	
			AM3	150 µg/m <sup>3</sup>	
			AM4	150 µg/m <sup>3</sup>	
			AM5	146 µg/m <sup>3</sup>	
			AM6	147 µg/m <sup>3</sup>	
Noise	0700 - 1900 hour on normal weekdays - $L_{eq(30min)}$	Once per week	N1, N2 & N5	When one documented complaint is received	75 dB(A)
			N3, N4 & N6		70/65 <sup>(Note 3)</sup>
	0700 - 2300 hours on holiday; and 1900 - 2300 hours on all other days - $L_{eq(5min)}$ <sup>(Note 2)</sup>	--	N1, N2, N3, N4, N5 & N6		--
					2300 - 0700 hours of next day - $L_{eq(5min)}$ <sup>(Note 2)</sup>
Landscape and Visual	Landscape resources (LR), landscape character area(LCA) and view sensitive receiver (VSR) <sup>(Note 4)</sup>	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	Location	Inspection Date	Key Observations & Recommendations	Contractor's Follow-Up Status
Air Quality	S1 Bridge	20 Feb 14	The Contractor is reminded to provide temporary cover for the stock pile.	Agreed with the ET's advice.
	S1 Bridge	20 Mar 14	The Contractor is reminded to cover the stockpile with tarpaulin sheet entirely while not in use.	Agreed with the ET's advice.
	Tsing Hoi Circuit	24 Apr 14	The Contractor is reminded to cover the stock piles to prevent dust suspension.	Agreed with the ET's advice.
Waste / Chemical Management	All areas	06 Feb 14	The Contractor is reminded to maintain good housekeeping practices.	Agreed with the ET's advice.
	Yan Oi Circuit	13 Feb 14	The Contractor is reminded to store chemicals in the designated chemical storage area.	Agreed with the ET's advice.
	Tsing Hoi Circuit	14 Mar 14	The Contractor is reminded to remove unwanted construction materials to avoid waste accumulation.	Agreed with the ET's advice.
	Tsing Hoi Circuit	27 Mar 14	The Contractor is reminded to provide drip trays for chemical drums.	Agreed with the ET's advice.
	Tsing Hoi Circuit	10 Apr 14	The Contractor is reminded to remove construction waste and general refuses regularly to avoid waste accumulation.	Agreed with the ET's advice.
	Tsing Hoi Circuit	17 Apr 14	The Contractor is reminded to remove construction waste regularly to void waste accumulation.	Agreed with the ET's advice.

## 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)			
	Feb 14	Mar 14	Apr 14	Mean
AM1	20 (10 - 37)	21 (14 - 40)	18 (9 - 28)	20 (8 - 39)
AM2	20 (10 - 31)	22 (11 - 36)	23 (14 - 37)	22 (9 - 36)
AM3	25 (10 - 43)	23 (14 - 38)	17 (9 - 23)	22 (8 - 42)
AM4	31 (11 - 49)	27 (22 - 34)	23 (17 - 34)	27 (11 - 49)
AM5	25 (10 - 39)	26 (22 - 32)	20 (14 - 25)	23 (10 - 39)

Location	Average 24-hour TSP Concentration, $\mu\text{g}/\text{m}^3$ (Range)			
	Feb 14	Mar 14	Apr 14	Mean
AM6	23 (7 - 40)	33 (25 - 48)	24 (15 - 31)	27 (7 - 48)

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, $L_{\text{eq}(30\text{min})}$ , dB(A) (Range)			
	Feb 14	Mar 14	Apr 14	Mean
N1	70 (69 - 70)	69 (68 - 69)	69 (68 - 70)	69 (69 - 70)
N2	70 (69 - 70)	69 (69 - 69)	69 (68 - 70)	69 (68 - 70)
N3	65 (64 - 66)	65 (64 - 65)	65 (64 - 66)	65 (64 - 66)
N4	64 (64 - 65)	64 (64 - 64)	64 (63 - 64)	64 (63 - 65)
N5	69 (68 - 70)	68 (68 - 69)	68 (68 - 69)	68 (68 - 70)
N6	68 (67 - 69)	68 (68 - 68)	68 (67 - 68)	68 (67 - 69)

#### 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

No Limit Level exceedances of noise monitoring was recorded in the reporting period.

Six noise complaints, hence six Action Level exceedance, were recorded in the reporting period. After the investigation it is concluded that the complaints were attributable to the Contractor. The corresponding mitigation measure due to the complaint was recommended to be varied out by the Contractor.

#### 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

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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 521 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 (Feb 2014 to Apr 2014).

## 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
	Feb 14	Mar 14	Apr 14	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
	358 m <sup>3</sup>	370 m <sup>3</sup>	243 m <sup>3</sup>	971 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	500 kg	0 kg	273 kg	773 kg	Recycler
Plastic	0 kg	0 kg	0 kg	0 kg	
Metal	0 kg	0 kg	0 kg	0 kg	
General Refuse	10 m <sup>3</sup>	24 m <sup>3</sup>	49 m <sup>3</sup>	83 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

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

No Limit Level exceedance of noise monitoring was recorded from the monitoring data during the reporting period.

Six noise complaints, hence six Action Level exceedance, were recorded in the reporting period. After the investigation it is concluded that the complaints were attributable to the Contractor. The corresponding mitigation measure due to the complaint was recommended to be varied out by the Contractor.

### 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

Six environmental complaint regarding construction noise were recorded during the reporting period.

The first complaint was by ICC on 27 Feb 14 and the Supervising Officer Representative was informed on 3 Mar 14. The complaint was related to noise nuisance of night works near Eldo Court and Rose Dale Garden.

As confirmed by the Contractor and Supervising Officer's Representative, the related night works was carried out in Tuen Mun Road (near Eldo Court and Rose Dale Garden). The noise nuisance was mainly caused by road resurfacing works. On 26 and 27 Feb 2014

midnight, 1 unit of roller, 1 unit of road paver, 1 unit of miller, 1 unit of lorry and 1 unit of dump truck have been deployed.

The relevant construction noise permit (CNP) no. GW-RW-0849-13 was obtained for the corresponding work in the designated area prior to commencement. The conditions stipulated in the CNP were strictly followed by the Contractor. EPD had been informed prior to 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 resurfacing 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. Idle equipments should be either turned off or throttled down; and
4. Improve the working practices to minimize the noise nuisance during the working activities as far as possible.

The second complaint was received by ICC on 4 Mar 14 and the Supervising Officer Representative was informed on 4 Mar 14. The complaint was related to noise nuisance of night works near Waldorf Plaza.

As confirmed by the Contractor and Supervising Officer's Representative, the related night works was carried out in Tuen Mun Road (near Waldorf Plaza). The noise nuisance was mainly caused by traffic sign installation on noise panel.

The relevant construction noise permit (CNP) no. GW-RW-0847-13 was obtained for the corresponding work in the designated area prior to commencement. The conditions stipulated in the CNP were strictly followed by the Contractor. EPD had been informed prior to 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 installation 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. Idle equipments should be either turned off or throttled down; and
4. Improve the working practices to minimize the noise nuisance during the working activities as far as possible.

The third complaint was by ICC on 3 Apr 14 and the Supervising Officer Representative was informed on 3 Apr 14. The complaint was related to noise nuisance of night works near Hong King Garden.

As confirmed by the Contractor and Supervising Officer's Representative, the road surface maintenance work was carried near Hong King Garden on midnight from 25 Mar to 30 Mar 2014. The noise nuisance was mainly caused by road surface maintenance work.

The relevant construction noise permit (CNP) no. GW-RW-0227-14 was obtained for the corresponding work in the designated area prior to commencement. The conditions stipulated in the CNP were strictly followed by the Contractor. EPD had been informed prior to 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 resurfacing 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. Idle equipments should be either turned off or throttled down; and
4. Improve the working practices to minimize the noise nuisance during the working activities as far as possible.

The fourth complaint was received by ICC on 9 Apr 14 and the Supervising Officer Representative was informed on 9 Apr 14. The complaint was related to noise nuisance of night works near CSBS Mrs. Aw Boon Haw Secondary School.

As confirmed by the Contractor and Supervising Officer's Representative, the related night works was carried out in Tuen Mun Road (near CSBS Mrs. Aw Boon Haw Secondary School) on 8 Apr and 9 Apr 2014 midnight. The noise nuisance was mainly caused by asphalt laying work.

The relevant construction noise permit (CNP) no. GW-RW-0227-14 was obtained for the corresponding work in the designated area prior to commencement. The conditions stipulated in the CNP were strictly followed by the Contractor. EPD had been informed prior to 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 installation 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. Idle equipments should be either turned off or throttled down; and
4. Improve the working practices to minimize the noise nuisance during the working activities as far as possible.

The fifth complaint was received by ICC on 9 Apr 14 and the Supervising Officer Representative was informed on 9 Apr 14. The complaint was related to noise nuisance of night works near CSBS Mrs. Aw Boon Haw Secondary School.

As confirmed by the Contractor and Supervising Officer's Representative, the related night works was carried out in Tuen Mun Road (near CSBS Mrs. Aw Boon Haw Secondary School) on 8 Apr and 9 Apr 2014 midnight. The noise nuisance was mainly caused by asphalt laying work.

The relevant construction noise permit (CNP) no. GW-RW-0227-14 was obtained for the corresponding work in the designated area prior to commencement. The conditions stipulated in the CNP were strictly followed by the Contractor. EPD had been informed prior to 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 installation 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. Idle equipments should be either turned off or throttled down; and
4. Improve the working practices to minimize the noise nuisance during the working activities as far as possible.

The sixth complaint was received by ICC on 20 Apr 14 and the Supervising Officer Representative was informed on 20 Apr 14. The complaint was related to noise nuisance of night works near Tuen Mun Town Center.

As confirmed by the Contractor and Supervising Officer's Representative, the related night works was carried out in Tuen Mun Road (near Tuen Mun Town Center) on 1 Apr – 15 Apr 2014 midnight. The noise nuisance was mainly caused by installation of theme wall on noise panel.

The relevant construction noise permit (CNP) no. GW-RW-0229-14 was obtained for the corresponding work in the designated area prior to commencement. The conditions stipulated in the CNP were strictly followed by the Contractor. EPD had been informed prior to 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 installation 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. Idle equipments should be either turned off or throttled down; and
4. Improve the working practices to minimize the noise nuisance during the working activities as far as possible.

The updated statistical summary of complaint is presented in **Table 6.1**. The updated complaint logs (C043-C048) 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.

Reporting Period	Complaint Statistics		Area of Concern	Validity to the Project	Status
	Number	Cumulative			
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.
	1	19	Water	Yes (Ref.: C019)	Closed on 6 Feb 12.
01/02/12 – 29/02/12	0	19	-	-	-
01/03/12 – 31/03/12	1	20	Water	Yes (Ref.: C020)	Closed on 22 Mar 12.
	1	21	Noise	Yes (Ref.: C021)	Closed on 28 Mar 12.
	1	22	Noise	Yes (Ref.: C022)	Closed on 5 Apr 12.
	1	23	Water	Yes (Ref.: C023)	Closed on 5 Apr 12.
01/04/12 – 30/04/12	0	23	-	-	-
01/05/12 – 31/05/12	1	24	Water	Yes (Ref.: C024)	Closed on 24 May 12.
	1	25	Noise	Yes (Ref.: C025)	Closed on 7 Jun 12.
	1	26	Noise	Yes (Ref.: C026)	Closed on 7 Jun 12.
01/06/12 – 30/06/12	0	26	-	-	-

Reporting Period	Complaint Statistics		Area of Concern	Validity to the Project	Status
	Number	Cumulative			
01/07/12 – 31/07/12	0	26	-	-	-
01/08/12 – 31/08/12	0	26	-	-	-
01/09/12 – 30/09/12	0	26	-	-	-
01/10/12 – 31/10/12	0	26	-	-	-
01/11/12 – 30/11/12	1	27	Noise	Yes (Ref.: C027)	Closed on 8 Nov 12.
	1	28	Noise	Yes (Ref.: C028)	Closed on 8 Nov 12.
01/12/12 – 31/12/12	1	29	Noise	Yes (Ref.: C029)	Closed on 31 Dec 12.
	1	30	Noise	Yes (Ref.: C030)	Closed on 31 Dec 12.
	1	31	Noise	Yes (Ref.: C031)	Closed on 31 Dec 12.
01/01/13 – 31/01/13	0	31	-	-	-
01/02/13 – 28/02/13	1	32	Noise	Yes (Ref.: C032)	Closed on 15 Feb 13.
	1	33	Noise	Yes (Ref.: C033)	Closed on 15 Feb 13.
	1	34	Noise	Yes (Ref.: C034)	Closed on 15 Feb 13.
	1	35	Noise	Yes (Ref.: C035)	Closed on 15 Feb 13.
01/03/13 – 31/03/13	0	35	-	-	-
01/04/13 – 30/04/13	1	36	Noise	Yes (Ref.: C036)	Closed on 9 May 13.
01/05/13 – 31/05/13	0	36	-	-	-
01/06/13 – 30/06/13	1	37	Noise	Yes (Ref.: C037)	Closed on 11 July 13.
01/07/13 – 31/07/13	1	38	Noise	Yes (Ref.: C038)	Closed on 25 July 13.
01/08/13 – 31/08/13	1	39	Noise	Yes (Ref.: C039)	Closed on 29 Aug 13.
01/09/13 – 30/09/13	1	40	Noise	Yes (Ref.: C040)	Closed on 26 Sep 13.
	1	41	Noise	Yes (Ref.: C041)	Closed on 26 Sep 13.
01/10/13 – 31/10/13	0	41	-	-	-
01/11/13 – 30/11/13	0	41	-	-	-
01/12/13 – 31/12/13	1	42	Air	Yes (Ref.: C042)	Closed on 10 Jan 14.
01/01/14 – 31/01/14	0	42	-	-	-

Reporting Period	Complaint Statistics		Area of Concern	Validity to the Project	Status
	Number	Cumulative			
01/02/14 – 28/02/14	0	42	-	-	-
01/03/14 – 31/03/14	1	43	Noise	Yes (Ref.: C043)	Closed on 20 Mar 14.
	1	44	Noise	Yes (Ref.: C044)	Closed on 20 Mar 14.
01/04/14 – 30/04/14	1	45	Noise	Yes (Ref.: C045)	Closed on 11 Apr 14.
	1	46	Noise	Yes (Ref.: C046)	Closed on 17 Apr 14.
	1	47	Noise	Yes (Ref.: C047)	Closed on 17 Apr 14.
	1	48	Noise	Yes (Ref.: C048)	Closed on 30 Apr 14.

## 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.

No Limit Level exceedance of noise monitoring was recorded from the monitoring data during the reporting period.

Six noise complaints, hence six Action Level exceedance, were recorded in the reporting period. After the investigation it is concluded that the complaints were attributable to the Contractor. The corresponding mitigation measure due to the complaint was recommended to be varied out by the Contractor.

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 521 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 – February 2014 (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 – March 2014 (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 – April 2014 (Final)

Appendix A

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**Construction  
Programme**

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

Activity ID	Activity Name	Activity % Complete	Original Duration	Remaining Duration	Start	Finish	BL1 Start	BL1 Finish	Late Start	Late Finish	Total Float	2014		
												Feb 49	Mar 50	Apr 51
<b>Preliminaries and General Requirements</b>														
<b>Preliminaries and General Requirements</b>														
<b>Contract Key Dates</b>														
<b>Project Completion</b>														
KD1090	Completion of Section IB of Works (Extended up to 7-Nov-13)	100%	0	0		29-Sep-13 A		20-Dec-13		20-Feb-15				
KD1100	Completion of Section II of Works (Extended up to 19-Feb-14)	100%	0	0		19-Feb-14 A		20-Feb-14		22-Dec-14		◆ Completion of Section II of Works (Extended up to 19-Feb-14)		
KD1110	Completion of Section IIA of Works (Extended up to 19-Feb-14)	100%	0	0		19-Feb-14 A		20-Feb-14		19-Feb-15		◆ Completion of Section IIA of Works (Extended up to 19-Feb-14)		
KD1120	Completion of Section IIB of Works (Extended up to 19-Feb-15)	0%	0	0		19-Feb-15*		19-Feb-15		19-Feb-15	0			
KD1130	Completion of Section III of Works (Extended up to 20-Dec-13)	100%	0	0		20-Dec-13 A		20-Dec-13		19-Feb-15	ended up to 20-Dec-13)			
KD1140	Completion of Section IIIA of Works Extended up to 20-Dec-13)	100%	0	0		20-Dec-13 A		20-Dec-13		19-Feb-15	ended up to 20-Dec-13)			
KD1150	Completion of Section IIIB of Works (Extended up to 20-Dec-14)	0%	0	0		20-Dec-14*		20-Dec-14		20-Dec-14	0			
KD1210	Completion of Section IIIB of Works (Extended up to 20-Dec-14)	100%	0	0		24-Feb-13 A		20-Dec-13		20-Feb-15				
KD1220	Completion of Section IV of Works (Extended up to 19-Feb-14)	100%	0	0		19-Feb-14 A		20-Feb-14		20-Feb-15		◆ Completion of Section IV of Works (Extended up to 19-Feb-14)		
<b>Section II of Works</b>														
<b>Scheme A (CH29405 - CH29050)</b>														
<b>Wall and Roof Panel Installation</b>														
<b>Stage 4 Steel Frame &amp; Panel</b>														
RA1532	Install roof cladding & translucent roof panel NE02 S/B	100%	38	0	16-Jul-13 A	20-Nov-13 A	20-Jun-13	03-Aug-13	22-Dec-14	22-Dec-14				
RA1550	Install green and transparent wall panel NE04	100%	57	0	11-May-13 A	20-Nov-13 A	26-Jun-13	02-Sep-13	22-Dec-14	22-Dec-14				
RA1790	Install green and transparent wall panel NE05	100%	39	0	14-Apr-13 A	25-Oct-13 A	26-Jul-13	10-Sep-13	22-Dec-14	22-Dec-14				
RA1800	Install green and transparent wall panel NE01	100%	21	0	15-Apr-13 A	28-Dec-13 A	26-Aug-13	19-Sep-13	22-Dec-14	22-Dec-14		wall panel NE01		
RA1810	Install green and transparent wall panel NE02	100%	46	0	22-Jun-13 A	23-Oct-13 A	21-Oct-13	12-Dec-13	22-Dec-14	22-Dec-14				
<b>Scheme B (CH29050 - CH28520)</b>														
<b>Wall and Roof Panel Installation</b>														
<b>Stage 3 Steel Frame &amp; Panel</b>														
RB1690	Install roof cladding & translucent roof panel NE06 & 07 N/B & S/B	100%	68	0	09-Jun-13 A	19-Dec-13 A	20-Jun-13	09-Sep-13	22-Dec-14	22-Dec-14		el NE06 & 07 N/B & S/B		
RB1694	Install translucent roof panel NE10 to 14 S/B	100%	67	0	18-Dec-12 A	11-Dec-13 A	20-Feb-13	14-May-13	22-Dec-14	22-Dec-14				
RB1702	Install roof cladding & translucent roof panel NE10 to 14 N/B	100%	74	0	18-Dec-12 A	11-Dec-13 A	20-Feb-13	25-May-13	22-Dec-14	22-Dec-14		14 N/B		
RB1710	Planting for green roof NE06 & NE07	100%	74	0	27-Sep-13 A	28-Dec-13 A	12-Nov-13	13-Feb-14	22-Dec-14	22-Dec-14		& NE07		
RB1720	Install green and transparent wall panel NE06 & 07	100%	28	0	25-Sep-13 A	20-Jan-14 A	21-Oct-13	22-Nov-13	22-Dec-14	22-Dec-14		Install green and transparent wall panel NE06 & 07		
RB2180	Install green and transparent wall panel NE10 to 14	100%	132	0	16-Nov-12 A	11-Dec-13 A	22-Jan-13	08-Jul-13	22-Dec-14	22-Dec-14				
<b>Scheme C (CH28520 - CH28200)</b>														
<b>Wall and Roof Panel Installation</b>														
<b>Stage 4 Steel Frame &amp; Panel</b>														
RC1466	Install roof translucent roof panel NE16 (Tuen Hing Rd to Siu On Bridge) NB & SB	100%	90	0	03-Apr-13 A	20-Jan-14 A	10-May-13	27-Aug-13	22-Dec-14	22-Dec-14		Install roof translucent roof panel NE16 (Tuen Hing Rd to Siu On Bridge) NB & SB		
RC1470	Install roof cladding & translucent roof panel NE16 (Siu On Bridge to NE17) NB & SB	100%	57	0	05-Jul-13 A	05-Nov-13 A	19-Sep-13	28-Nov-13	22-Dec-14	22-Dec-14				
RC1480	Install translucent roof panel NE17 NB & SB	100%	41	0	10-Oct-13 A	05-Nov-13 A	21-Oct-13	06-Dec-13	22-Dec-14	22-Dec-14				
RC1484	Green roof planting for NE16	100%	100	0	02-Sep-13 A	12-Jan-14 A	23-Sep-13	22-Jan-14	22-Dec-14	22-Dec-14		of planting for NE16		
RC1865	Install green and transparent wall panel NE16	100%	109	0	21-May-13 A	20-Jan-14 A	09-Jul-13	15-Nov-13	22-Dec-14	22-Dec-14		Install green and transparent wall panel NE16		
RC1875	Install green and transparent wall panel NE17	100%	80	0	18-Aug-13 A	20-Dec-13 A	10-Sep-13	16-Dec-13	22-Dec-14	22-Dec-14		NE17		
<b>Scheme D (CH28200 - CH27785)</b>														
<b>Wall and Roof Panel Installation</b>														
<b>Stage 6 Steel Frame &amp; Panel</b>														
RD1620	Planting for green roof NE18	100%	61	0	24-Oct-13 A	12-Jan-14 A	25-Nov-13	11-Feb-14	22-Dec-14	22-Dec-14		or green roof NE18		
RD1630	Install green and transparent wall panel NE18	100%	52	0	31-Aug-13 A	20-Nov-13 A	23-Sep-13	23-Nov-13	22-Dec-14	22-Dec-14				
<b>Section III of Works</b>														
<b>Scheme D (CH28200 - CH27785)</b>														
<b>NB Structural Steel Post/Column Erection</b>														
<b>Stage 4 NE18, NE21 &amp; NE23 Foundation</b>														
RD3000	Erect NE23 steel column	100%	36	0	03-Sep-13 A	20-Nov-13 A	21-Sep-13	04-Nov-13	19-Feb-15	19-Feb-15				
RD3010	Erect NE21 steel column	100%	13	0	30-Oct-13 A	05-Nov-13 A	20-Nov-13	04-Dec-13	19-Feb-15	19-Feb-15				
<b>Wall and Roof Panel Installation</b>														
<b>Stage 6 Steel Frame &amp; Panel</b>														
RD1600	Install roof cladding & translucent roof panel NE18 N/B & S/B	100%	69	0	11-Sep-13 A	20-Nov-13 A	23-Sep-13	14-Dec-13	22-Dec-14	22-Dec-14				
RD1602	Install roof cladding & translucent roof panel NE20	100%	53	0	14-Jun-13 A	20-Nov-13 A	16-Aug-13	21-Oct-13	22-Dec-14	22-Dec-14				
RD1610	Install roof cladding & translucent roof panel NE26	100%	98	0	09-Sep-13 A	06-Nov-13 A	21-Sep-13	18-Jan-14	19-Feb-15	19-Feb-15				
RD1625	Planting for green roof NE20	100%	36	0	27-Sep-13 A	23-Oct-13 A	24-Oct-13	05-Dec-13	22-Dec-14	22-Dec-14				
RD1635	Install green and transparent wall panel NE20	100%	24	0	15-Jun-13 A	20-Dec-13 A	16-Aug-13	12-Sep-13	22-Dec-14	22-Dec-14		NE20		
RD3095	Install absorptive transparent wall panel NE19	100%	52	0	12-Aug-13 A	20-Dec-13 A	13-Nov-13	16-Jan-14	19-Feb-15	19-Feb-15		NE19		
RD3100	Install absorptive & transparent wall panel NE21	100%	18	0	14-Nov-13 A	30-Nov-13 A	20-Nov-13	10-Dec-13	19-Feb-15	19-Feb-15				

█ Remaining Level of Effort    █ Critical Remaining Work  
█ Actual Work    ◆ Milestone  
█ Remaining Work

**TMR-TCS Updated Revised Works Programme WP04A (20 Feb 2014)**

Date	Revision	Checked	Approved
20-Dec-13	WP04A (Updated up to 20-12-13)	ZJ	
20-Jan-14	WP04A (Updated up to 20-01-14)	ZJ	
20-Feb-14	WP04A (Updated up to 20-02-14)	ZJ	

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

Activity ID	Activity Name	Activity % Complete	Original Duration	Remaining Duration	Start	Finish	BL1 Start	BL1 Finish	Late Start	Late Finish	Total Float	2014		
												Feb	Mar	Apr
												Feb 49	Mar 50	Apr 51
RD3110	Install absorptive & transparent wall panel NE23	100%	30	0	07-Nov-13 A	20-Dec-13 A	20-Nov-13	27-Dec-13	19-Feb-15	19-Feb-15				
RD3120	Install absorptive & transparent wall panel NE24	100%	35	0	14-May-13 A	20-Dec-13 A	20-Jun-13	31-Jul-13	19-Feb-15	19-Feb-15				
RD3150	Install absorptive & transparent wall panel NE26	100%	48	0	11-Aug-13 A	20-Dec-13 A	07-Sep-13	06-Nov-13	19-Feb-15	19-Feb-15				
<b>Bituminous Surfacing Works</b>														
<b>Construction of Vehicular Bridge S1</b>														
S1B1080	Road paving and features	100%	45	0	19-Nov-13 A	23-Nov-13 A	20-Nov-13	14-Jan-14	20-Feb-15	20-Feb-15				
<b>Scheme E (CH27785 - CH27000)</b>														
<b>Wall and Roof Panel Installation</b>														
<b>Stage 4 Steel Frame &amp; Panel</b>														
RE1140	Install transparent roof panel NE27	100%	146	0	12-Jun-13 A	10-Nov-13 A	03-Aug-13	28-Jan-14	19-Feb-15	19-Feb-15				
RE1150	Install green and transparent wall panel NE27	100%	85	0	27-Jun-13 A	20-Dec-13 A	02-Sep-13	13-Dec-13	19-Feb-15	19-Feb-15				
<b>Outstanding Works</b>														
<b>Outstanding Roadworks</b>														
<b>Road Re-surfacing and Reconstruction CH28500 to CH29400</b>														
<b>(Rose Dale Garden to Tuen Hing Road)</b>														
RO1100	Yuen Long Bound	100%	218	0	16-Mar-13 A	21-Dec-13 A	14-May-13	06-Feb-14	19-Feb-15	19-Feb-15				
RO1110	Kowloon Bound Bound	95%	221	11	16-Mar-13 A	05-Mar-14*	14-May-13	10-Feb-14	21-Feb-14	06-Mar-14	1			
<b>Road Re-surfacing and Reconstruction CH27550 to CH28500</b>														
<b>(Tuen Hing Road to Kam Fai Garden)</b>														
RO1200	Yuen Long Bound	90%	364	36	07-Jan-13 A	03-Apr-14*	14-May-13	05-Aug-14	21-Feb-14	04-Apr-14	2			
RO1210	Kowloon Bound Bound	85%	263	39	15-Apr-13 A	10-Apr-14*	14-May-13	31-Mar-14	21-Feb-14	11-Apr-14	1			
<b>Roadworks T5 Alignment</b>														
<b>(Tsing Hoi Circuit)</b>														
RO1300	Roadworks T5 alignment (Tsing Hoi Circuit)	90%	268	27	04-Mar-13 A	22-Mar-14*	14-May-13	05-Apr-14	21-Feb-14	24-Mar-14	1			
<b>TCSS and Fire Fighting System</b>														
<b>TCSS and Fire Fighting System</b>														
TCSS1020	TCSS installation	94.35%	644	36	13-Jan-11 A	03-Apr-14	07-Oct-11	06-Dec-13	13-Jan-11	04-Apr-14	2			
TCSS1030	Street lighting & Fire Fighting system installation	94.35%	644	36	13-Jan-11 A	03-Apr-14	07-Oct-11	06-Dec-13	13-Jan-11	04-Apr-14	2			

█ Remaining Level of Effort    █ Critical Remaining Work  
█ Actual Work    ◆ ◆ Milestone  
█ Remaining Work

**TMR-TCS Updated Revised Works Programme WP04A (20 Feb 2014)**

Date	Revision	Checked	Approved
20-Dec-13	WP04A (Updated up to 20-12-13)	ZJ	
20-Jan-14	WP04A (Updated up to 20-01-14)	ZJ	
20-Feb-14	WP04A (Updated up to 20-02-14)	ZJ	

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 egretry, 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 *		
				Feb 14	Mar 14	Apr 14
<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	✓	✓	✓
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 *		
				Feb 14	Mar 14	Apr 14
		<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 PMEs 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 *		
				Feb 14	Mar 14	Apr 14
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 *		
				Feb 14	Mar 14	Apr 14
		<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 *		
				Feb 14	Mar 14	Apr 14
		<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>		✓	✓	✓
				✓	✓	✓
				✓	✓	✓
				✓	✓	✓
				✓	✓	✓
				✓	✓	✓
				✓	✓	✓

# 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 *		
				Feb 14	Mar 14	Apr 14
		<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 *		
				Feb 14	Mar 14	Apr 14
		<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	Rdr
				✓	✓	✓
				✓	✓	✓
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 *		
				Feb 14	Mar 14	Apr 14
		<b>Waste Management</b>				
6.6.1	5.2.2	<p><i>Good Site Practices</i></p> <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	✓	✓	✓
6.6.5	5.2.6	<p><i>Chemical Wastes</i></p> <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	✓	✓	✓

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 *		
				Feb 14	Mar 14	Apr 14
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 *		
				Feb 14	Mar 14	Apr 14
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	✓	✓	✓
				✓	✓	✓
				✓	✓	✓
				✓	✓	✓

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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 *		
				Feb 14	Mar 14	Apr 14
		<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 *		
				Feb 14	Mar 14	Apr 14
7.9.5	6.2.5	<p>Standard good site practice measures should be implemented and should include:</p> <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

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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 *		
				Feb 14	Mar 14	Apr 14
<b><i>Landscape and Visual</i></b>						
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.		✓	✓	✓
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 *		
				Feb 14	Mar 14	Apr 14
		<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 *		
				Feb 14	Mar 14	Apr 14
		or any construction materials such as cement and gravel. Groundwater should be disposed of in accordance with the Water Pollution Control Ordinance (Cap 358).				

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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 (m <sup>3</sup> /min)		Average Flow Rate (m <sup>3</sup> /min)	Elapse Time		Sampling Time	Total vol. (m <sup>3</sup> )	(ug/m <sup>3</sup> ) AM1
						Initial	Final	Initial	Final	Initial	Final	Initial	Final		Initial	Final		Start	Finish			
123457	Feb-14	5-Feb-14	AM1	Fine	Normal Operation	765.0	766.0	17.0	17.0	40.0	40.0	2.8846	2.9012	0.0166	1.2000	1.2008	1.2004	15385.30	15409.30	1440.00	1728.58	9.6
123463	Feb-14	11-Feb-14	AM1	Fine	Normal Operation	761.0	765.0	8.0	8.0	40.0	40.0	2.887	2.9295	0.0425	1.2000	1.2008	1.2004	15409.30	15433.30	1440.00	1728.58	24.6
123469	Feb-14	17-Feb-14	AM1	Fine	Normal Operation	762.0	760.0	18.0	18.0	40.0	40.0	2.8816	2.8981	0.0165	1.2166	1.2200	1.2183	15433.30	15457.30	1440.00	1754.35	9.4
123475	Feb-14	22-Feb-14	AM1	Fine	Normal Operation	765.0	766.0	15.0	15.0	40.0	40.0	2.8866	2.9180	0.0314	1.1954	1.1938	1.1946	15457.30	15481.30	1440.00	1720.22	18.3
123481	Feb-14	28-Feb-14	AM1	Fine	Normal Operation	765.0	767.0	18.0	18.0	40.0	40.0	2.8781	2.9416	0.0635	1.2044	1.2052	1.2048	15481.30	15505.30	1440.00	1734.91	36.6
123487	Mar-14	6-Mar-14	AM1	Cloudy	Normal Operation	765.0	767.0	19.0	17.0	40.0	40.0	2.8761	2.9450	0.0689	1.2168	1.2184	1.2176	15505.30	15529.30	1440.00	1753.34	39.3
123493	Mar-14	12-Mar-14	AM1	Fine	Normal Operation	759.0	759.0	19.0	22.0	40.0	40.0	2.8705	2.8947	0.0242	1.2146	1.2206	1.2176	15529.30	15553.30	1440.00	1753.34	13.8
123499	Mar-14	18-Mar-14	AM1	Fine	Normal Operation	760.0	760.0	20.0	20.0	40.0	40.0	2.8914	2.9174	0.0260	1.2096	1.2032	1.2064	15553.30	15577.30	1440.00	1737.22	15.0
102934	Mar-14	24-Mar-14	AM1	Fine	Normal Operation	764.0	762.0	21.0	22.0	40.0	40.0	2.5697	2.6029	0.0332	1.2083	1.2083	1.2083	15577.30	15601.30	1440.00	1739.95	19.1
102940	Mar-14	29-Mar-14	AM1	Cloudy	Normal Operation	756.0	756.0	26.0	21.0	40.0	40.0	2.542	2.5862	0.0442	1.2095	1.2057	1.2076	15601.30	15625.30	1440.00	1738.94	25.4
125001	Apr-14	4-Apr-14	AM1	Fine	Normal Operation	756.0	756.0	20.0	20.0	40.0	40.0	2.9408	2.9547	0.0139	1.1924	1.2028	1.1976	15625.30	15649.30	1440.00	1724.54	8.1
125007	Apr-14	10-Apr-14	AM1	Fine	Normal Operation	757.0	756.0	22.0	22.0	40.0	40.0	2.9556	2.9897	0.0341	1.2050	1.2050	1.2050	15649.30	15673.30	1440.00	1735.20	19.7
125013	Apr-14	16-Apr-14	AM1	Cloudy	Normal Operation	760.0	760.0	22.0	22.0	40.0	40.0	2.9533	2.9787	0.0254	1.2016	1.2007	1.2012	15673.30	15697.30	1440.00	1729.66	14.7
125019	Apr-14	22-Apr-14	AM1	Cloudy	Normal Operation	764.0	762.0	24.0	24.0	40.0	40.0	2.9177	2.9562	0.0385	1.2041	1.2041	1.2041	15697.30	15721.30	1440.00	1733.90	22.2
125025	Apr-14	28-Apr-14	AM1	Fine	Normal Operation	762.0	762.0	25.0	25.0	40.0	40.0	2.9167	2.9643	0.0476	1.2031	1.2015	1.2023	15721.30	15745.30	1440.00	1731.31	27.5

<b>Average (ug/m<sup>3</sup>)</b>	20.2
<b>Max (ug/m<sup>3</sup>)</b>	39.3
<b>Min (ug/m<sup>3</sup>)</b>	8.1

<b>Action Level (ug/m<sup>3</sup>)</b>	146
<b>Limit Level (ug/m<sup>3</sup>)</b>	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 (m <sup>3</sup> /min)		Average Flow Rate (m <sup>3</sup> /min)	Elapse Time		Sampling Time	Total vol. (m <sup>3</sup> )	(ug/m <sup>3</sup> ) AM2
						Initial	Final	Initial	Final	Initial	Final	Initial	Final		Initial	Final		Start	Finish			
123458	Feb-14	5-Feb-14	AM2	Fine	Normal Operation	765.0	766.0	17.0	17.0	40.0	40.0	2.8931	2.9091	0.0160	1.2204	1.2213	1.2209	9539.10	9563.10	1440.00	1758.02	9.1
123464	Feb-14	11-Feb-14	AM2	Fine	Normal Operation	761.0	765.0	8.0	8.0	40.0	40.0	2.8803	2.9354	0.0551	1.2388	1.2426	1.2407	9563.10	9587.10	1440.00	1786.61	30.8
123470	Feb-14	17-Feb-14	AM2	Fine	Normal Operation	762.0	760.0	18.0	18.0	40.0	40.0	2.9034	2.9433	0.0399	1.2152	1.2134	1.2143	9587.10	9611.10	1440.00	1748.59	22.8
123476	Feb-14	22-Feb-14	AM2	Fine	Normal Operation	765.0	766.0	15.0	15.0	40.0	40.0	2.8858	2.9104	0.0246	1.2252	1.2261	1.2257	9611.10	9635.10	1440.00	1764.94	13.9
123482	Feb-14	28-Feb-14	AM2	Fine	Normal Operation	765.0	767.0	18.0	18.0	40.0	40.0	2.8723	2.9149	0.0426	1.2180	1.2198	1.2189	9635.10	9659.10	1440.00	1755.22	24.3
123488	Mar-14	6-Mar-14	AM2	Cloudy	Normal Operation	765.0	767.0	19.0	17.0	40.0	40.0	2.8677	2.9280	0.0603	1.1886	1.1951	1.1919	9659.10	9683.10	1440.00	1716.26	35.1
123494	Mar-14	12-Mar-14	AM2	Fine	Normal Operation	759.0	759.0	19.0	22.0	40.0	40.0	2.8873	2.9179	0.0306	1.1832	1.1763	1.1798	9683.10	9707.10	1440.00	1698.84	18.0
123500	Mar-14	18-Mar-14	AM2	Fine	Normal Operation	760.0	760.0	20.0	20.0	40.0	40.0	2.8845	2.9018	0.0173	1.1818	1.1818	1.1818	9707.10	9731.10	1440.00	1701.79	10.2
102935	Mar-14	24-Mar-14	AM2	Fine	Normal Operation	764.0	762.0	21.0	22.0	40.0	40.0	2.7275	2.7682	0.0407	1.1831	1.1790	1.1811	9731.10	9755.10	1440.00	1700.71	23.9
102941	Mar-14	29-Mar-14	AM2	Cloudy	Normal Operation	756.0	756.0	26.0	21.0	40.0	40.0	2.5144	2.5544	0.0400	1.1646	1.1759	1.1703	9755.10	9779.10	1440.00	1685.16	23.7
125002	Apr-14	4-Apr-14	AM2	Fine	Normal Operation	756.0	756.0	20.0	20.0	40.0	40.0	2.9353	2.9966	0.0613	1.1782	1.1782	1.1782	9779.10	9803.10	1440.00	1696.61	36.1
125008	Apr-14	10-Apr-14	AM2	Fine	Normal Operation	757.0	756.0	22.0	22.0	40.0	40.0	2.9494	2.9721	0.0227	1.1746	1.1736	1.1741	9803.10	9827.10	1440.00	1690.70	13.4
125014	Apr-14	16-Apr-14	AM2	Cloudy	Normal Operation	760.0	760.0	22.0	22.0	40.0	40.0	2.9396	2.9766	0.0370	1.1772	1.1772	1.1772	9827.10	9851.10	1440.00	1695.17	21.8
125020	Apr-14	22-Apr-14	AM2	Cloudy	Normal Operation	764.0	762.0	24.0	24.0	40.0	40.0	2.9201	2.9550	0.0349	1.1762	1.1744	1.1753	9851.10	9875.10	1440.00	1692.43	20.6
125026	Apr-14	28-Apr-14	AM2	Fine	Normal Operation	762.0	762.0	25.0	25.0	40.0	40.0	2.9214	2.9630	0.0416	1.1721	1.1721	1.1721	9875.10	9899.10	1440.00	1687.82	24.6

<b>Average (ug/m<sup>3</sup>)</b>	21.9
<b>Max (ug/m<sup>3</sup>)</b>	36.1
<b>Min (ug/m<sup>3</sup>)</b>	9.1
<b>Action Level (ug/m<sup>3</sup>)</b>	151
<b>Limit Level (ug/m<sup>3</sup>)</b>	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 (m <sup>3</sup> /min)		Average Flow Rate (m <sup>3</sup> /min)	Elapse Time		Sampling Time	Total vol. (m <sup>3</sup> )	(ug/m <sup>3</sup> ) AM3
						Initial	Final	Initial	Final	Initial	Final	Initial	Final		Initial	Final		Start	Finish			
123459	Feb-14	5-Feb-14	AM3	Fine	Normal Operation	765.0	766.0	17.0	17.0	40.0	40.0	2.9053	2.9816	0.0763	1.2571	1.2580	1.2576	13705.39	13729.39	1440.00	1810.87	42.1
123465	Feb-14	11-Feb-14	AM3	Fine	Normal Operation	761.0	765.0	8.0	8.0	40.0	40.0	2.8760	2.8969	0.0209	1.2741	1.2775	1.2758	13729.39	13753.39	1440.00	1837.15	11.4
123471	Feb-14	17-Feb-14	AM3	Fine	Normal Operation	762.0	760.0	18.0	18.0	40.0	40.0	2.8963	2.9698	0.0735	1.2524	1.2508	1.2516	13753.39	13777.39	1440.00	1802.30	40.8
123477	Feb-14	22-Feb-14	AM3	Fine	Normal Operation	765.0	766.0	15.0	15.0	40.0	40.0	2.8848	2.9206	0.0358	1.2616	1.2624	1.2620	13777.39	13801.39	1440.00	1817.28	19.7
123483	Feb-14	28-Feb-14	AM3	Fine	Normal Operation	765.0	767.0	18.0	18.0	40.0	40.0	2.8592	2.8768	0.0176	1.2550	1.2566	1.2558	13801.39	13825.39	1440.00	1808.35	9.7
123489	Mar-14	6-Mar-14	AM3	Cloudy	Normal Operation	765.0	767.0	19.0	17.0	40.0	40.0	2.8619	2.9084	0.0465	1.2367	1.2426	1.2397	13825.39	13849.39	1440.00	1785.10	26.0
123495	Mar-14	12-Mar-14	AM3	Fine	Normal Operation	759.0	759.0	19.0	22.0	40.0	40.0	2.8988	2.9650	0.0662	1.2319	1.2258	1.2289	13849.39	13873.39	1440.00	1769.54	37.4
124098	Mar-14	18-Mar-14	AM3	Fine	Normal Operation	760.0	760.0	20.0	20.0	40.0	40.0	2.8724	2.8963	0.0239	1.2307	1.2307	1.2307	13873.39	13897.39	1440.00	1772.21	13.5
102936	Mar-14	24-Mar-14	AM3	Fine	Normal Operation	764.0	762.0	21.0	22.0	40.0	40.0	2.7336	2.7572	0.0236	1.2318	1.2281	1.2300	13897.39	13921.39	1440.00	1771.13	13.3
102942	Mar-14	29-Mar-14	AM3	Cloudy	Normal Operation	756.0	756.0	26.0	21.0	40.0	40.0	2.7114	2.7572	0.0458	1.2152	1.2254	1.2203	13921.39	13945.39	1440.00	1757.23	26.1
125003	Apr-14	4-Apr-14	AM3	Fine	Normal Operation	756.0	756.0	20.0	20.0	40.0	40.0	2.9583	2.9728	0.0145	1.2275	1.2275	1.2275	13945.39	13969.39	1440.00	1767.60	8.2
125009	Apr-14	10-Apr-14	AM3	Fine	Normal Operation	757.0	756.0	22.0	22.0	40.0	40.0	2.9688	3.0088	0.0400	1.2242	1.2233	1.2238	13969.39	13993.39	1440.00	1762.20	22.7
125015	Apr-14	16-Apr-14	AM3	Cloudy	Normal Operation	760.0	760.0	22.0	22.0	40.0	40.0	2.9067	2.9338	0.0271	1.2266	1.2266	1.2266	13993.39	14017.39	1440.00	1766.30	15.3
125021	Apr-14	22-Apr-14	AM3	Cloudy	Normal Operation	764.0	762.0	24.0	24.0	40.0	40.0	2.9245	2.9580	0.0335	1.2257	1.2240	1.2249	14017.39	14041.39	1440.00	1763.78	19.0
125027	Apr-14	28-Apr-14	AM3	Fine	Normal Operation	762.0	762.0	25.0	25.0	40.0	40.0	2.9557	2.9915	0.0358	1.2220	1.2220	1.2220	14041.39	14065.39	1440.00	1759.68	20.3

Average (ug/m <sup>3</sup> )	21.7
Max (ug/m <sup>3</sup> )	42.1
Min (ug/m <sup>3</sup> )	8.2

Action Level (ug/m <sup>3</sup> )	150
Limit Level (ug/m <sup>3</sup> )	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 (m <sup>3</sup> /min)		Average Flow Rate (m <sup>3</sup> /min)	Elapse Time		Sampling Time	Total vol. (m <sup>3</sup> )	(ug/m <sup>3</sup> ) AM4
						Initial	Final	Initial	Final	Initial	Final	Initial	Final		Initial	Final		Start	Finish			
123460	Feb-14	5-Feb-14	AM4	Fine	Normal Operation	765.0	766.0	17.0	17.0	40.0	40.0	2.905	2.9567	0.0517	1.1714	1.1723	1.1719	14587.12	14611.12	1440.00	1687.46	30.6
123466	Feb-14	11-Feb-14	AM4	Fine	Normal Operation	761.0	765.0	8.0	8.0	40.0	40.0	2.8911	2.9750	0.0839	1.1900	1.1938	1.1919	14611.12	14635.12	1440.00	1716.34	48.9
123472	Feb-14	17-Feb-14	AM4	Fine	Normal Operation	762.0	760.0	18.0	18.0	40.0	40.0	2.88	2.9439	0.0639	1.1662	1.1644	1.1653	14635.12	14659.12	1440.00	1678.03	38.1
123478	Feb-14	22-Feb-14	AM4	Fine	Normal Operation	765.0	766.0	15.0	15.0	40.0	40.0	2.8811	2.9294	0.0483	1.1763	1.1772	1.1768	14659.12	14683.12	1440.00	1694.52	28.5
123484	Feb-14	28-Feb-14	AM4	Fine	Normal Operation	765.0	767.0	18.0	18.0	40.0	40.0	2.8657	2.8840	0.0183	1.1690	1.1708	1.1699	14683.12	14707.12	1440.00	1684.66	10.9
123490	Mar-14	6-Mar-14	AM4	Cloudy	Normal Operation	765.0	767.0	19.0	17.0	40.0	40.0	2.8839	2.9332	0.0493	1.1814	1.1877	1.1846	14707.12	14731.12	1440.00	1705.75	28.9
123496	Mar-14	12-Mar-14	AM4	Fine	Normal Operation	759.0	759.0	19.0	22.0	40.0	40.0	2.898	2.9547	0.0567	1.1762	1.1695	1.1729	14731.12	14755.12	1440.00	1688.90	33.6
124099	Mar-14	18-Mar-14	AM4	Fine	Normal Operation	760.0	760.0	20.0	20.0	40.0	40.0	2.8662	2.9137	0.0475	1.1749	1.1749	1.1749	14755.12	14779.12	1440.00	1691.86	28.1
102937	Mar-14	24-Mar-14	AM4	Fine	Normal Operation	764.0	762.0	21.0	22.0	40.0	40.0	2.703	2.7446	0.0416	1.1761	1.1721	1.1741	14779.12	14803.12	1440.00	1690.70	24.6
102943	Mar-14	29-Mar-14	AM4	Cloudy	Normal Operation	756.0	756.0	26.0	21.0	40.0	40.0	2.5764	2.6122	0.0358	1.1581	1.1691	1.1636	14803.12	14827.12	1440.00	1675.58	21.4
125004	Apr-14	4-Apr-14	AM4	Fine	Normal Operation	756.0	756.0	20.0	20.0	40.0	40.0	2.9321	2.9666	0.0345	1.1714	1.1714	1.1714	14827.12	14851.12	1440.00	1686.82	20.5
125010	Apr-14	10-Apr-14	AM4	Fine	Normal Operation	757.0	756.0	22.0	22.0	40.0	40.0	2.9428	2.9984	0.0556	1.1678	1.1669	1.1674	14851.12	14875.12	1440.00	1680.98	33.1
125016	Apr-14	16-Apr-14	AM4	Cloudy	Normal Operation	760.0	760.0	22.0	22.0	40.0	40.0	2.9228	2.9503	0.0275	1.1704	1.1704	1.1704	14875.12	14899.12	1440.00	1685.38	16.3
125022	Apr-14	22-Apr-14	AM4	Cloudy	Normal Operation	764.0	762.0	24.0	24.0	40.0	40.0	2.9266	2.9749	0.0483	1.1694	1.1677	1.1686	14899.12	14923.12	1440.00	1682.71	28.7
125028	Apr-14	28-Apr-14	AM4	Fine	Normal Operation	762.0	762.0	25.0	25.0	40.0	40.0	2.9204	2.9490	0.0286	1.1654	1.1654	1.1654	14923.12	14947.12	1440.00	1678.18	17.0

<b>Average (ug/m<sup>3</sup>)</b>	27.3
<b>Max (ug/m<sup>3</sup>)</b>	48.9
<b>Min (ug/m<sup>3</sup>)</b>	10.9
<b>Action Level (ug/m<sup>3</sup>)</b>	150
<b>Limit Level (ug/m<sup>3</sup>)</b>	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 (m <sup>3</sup> /min)		Average Flow Rate (m <sup>3</sup> /min)	Elapse Time		Sampling Time	Total vol. (m <sup>3</sup> )	(ug/m <sup>3</sup> ) AM5
						Initial	Final	Initial	Final	Initial	Final	Initial	Final		Initial	Final		Start	Finish			
123461	Feb-14	5-Feb-14	AM5	Fine	Normal Operation	765.0	766.0	17.0	17.0	40.0	40.0	2.907	2.9753	0.0683	1.2323	1.2331	1.2327	14373.27	14397.27	1440.00	1775.09	38.5
123467	Feb-14	11-Feb-14	AM5	Fine	Normal Operation	761.0	765.0	8.0	8.0	40.0	40.0	2.8714	2.9022	0.0308	1.2495	1.2530	1.2513	14397.27	14421.27	1440.00	1775.09	17.1
123473	Feb-14	17-Feb-14	AM5	Fine	Normal Operation	762.0	760.0	18.0	18.0	40.0	40.0	2.874	2.8907	0.0167	1.2275	1.2258	1.2267	14421.27	14445.27	1440.00	1766.38	9.5
123479	Feb-14	22-Feb-14	AM5	Fine	Normal Operation	765.0	766.0	15.0	15.0	40.0	40.0	2.8777	2.9163	0.0386	1.2368	1.2376	1.2372	14445.27	14469.27	1440.00	1781.57	21.7
123485	Feb-14	28-Feb-14	AM5	Fine	Normal Operation	765.0	767.0	18.0	18.0	40.0	40.0	2.8828	2.9478	0.0650	1.2301	1.2318	1.2310	14469.27	14493.27	1440.00	1772.57	36.7
123491	Mar-14	6-Mar-14	AM5	Cloudy	Normal Operation	765.0	767.0	19.0	17.0	40.0	40.0	2.8712	2.9151	0.0439	1.1938	1.2010	1.1974	14493.27	14517.27	1440.00	1724.26	25.5
123497	Mar-14	12-Mar-14	AM5	Fine	Normal Operation	759.0	759.0	19.0	22.0	40.0	40.0	2.9048	2.9423	0.0375	1.1878	1.1801	1.1840	14517.27	14541.27	1440.00	1704.89	22.0
124100	Mar-14	18-Mar-14	AM5	Fine	Normal Operation	760.0	760.0	20.0	20.0	40.0	40.0	2.8553	2.9089	0.0536	1.1863	1.1863	1.1863	14541.27	14565.27	1440.00	1708.27	31.4
102938	Mar-14	24-Mar-14	AM5	Fine	Normal Operation	764.0	762.0	21.0	22.0	40.0	40.0	2.5844	2.6235	0.0391	1.1876	1.1831	1.1854	14565.27	14589.27	1440.00	1706.90	22.9
102944	Mar-14	29-Mar-14	AM5	Cloudy	Normal Operation	756.0	756.0	26.0	21.0	40.0	40.0	2.4403	2.4881	0.0478	1.1670	1.1796	1.1733	14589.27	14613.27	1440.00	1689.55	28.3
125005	Apr-14	4-Apr-14	AM5	Fine	Normal Operation	756.0	756.0	20.0	20.0	40.0	40.0	2.9243	2.9558	0.0315	1.1822	1.1822	1.1822	14613.27	14637.27	1440.00	1702.37	18.5
125011	Apr-14	10-Apr-14	AM5	Fine	Normal Operation	757.0	756.0	22.0	22.0	40.0	40.0	2.9342	2.9760	0.0418	1.1782	1.1771	1.1777	14637.27	14661.27	1440.00	1695.82	24.6
125017	Apr-14	16-Apr-14	AM5	Cloudy	Normal Operation	760.0	760.0	22.0	22.0	40.0	40.0	2.9216	2.9520	0.0304	1.1811	1.1811	1.1811	14661.27	14685.27	1440.00	1700.78	17.9
125023	Apr-14	22-Apr-14	AM5	Cloudy	Normal Operation	764.0	762.0	24.0	24.0	40.0	40.0	2.9258	2.9480	0.0222	1.1800	1.1780	1.1790	14685.27	14709.27	1440.00	1697.76	13.1
125029	Apr-14	28-Apr-14	AM5	Fine	Normal Operation	762.0	762.0	25.0	25.0	40.0	40.0	2.9365	2.9769	0.0404	1.1754	1.1754	1.1754	14709.27	14733.27	1440.00	1692.58	23.9

<b>Average (ug/m<sup>3</sup>)</b>	23.4
<b>Max (ug/m<sup>3</sup>)</b>	38.5
<b>Min (ug/m<sup>3</sup>)</b>	9.5

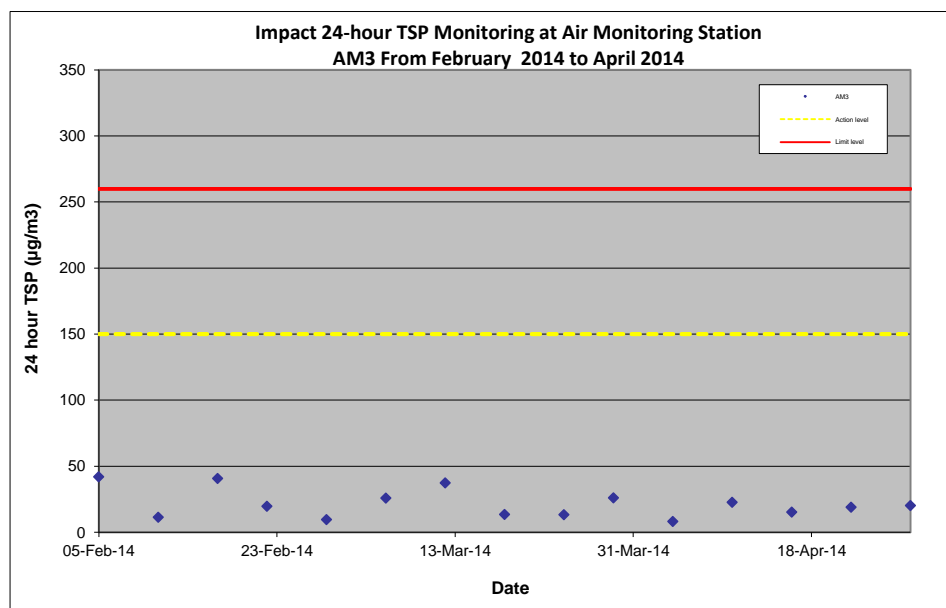
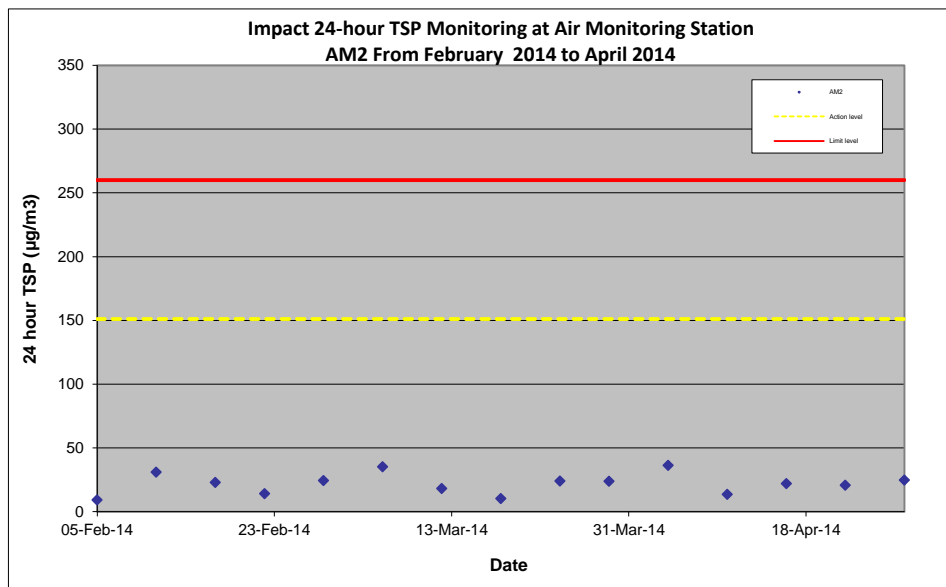
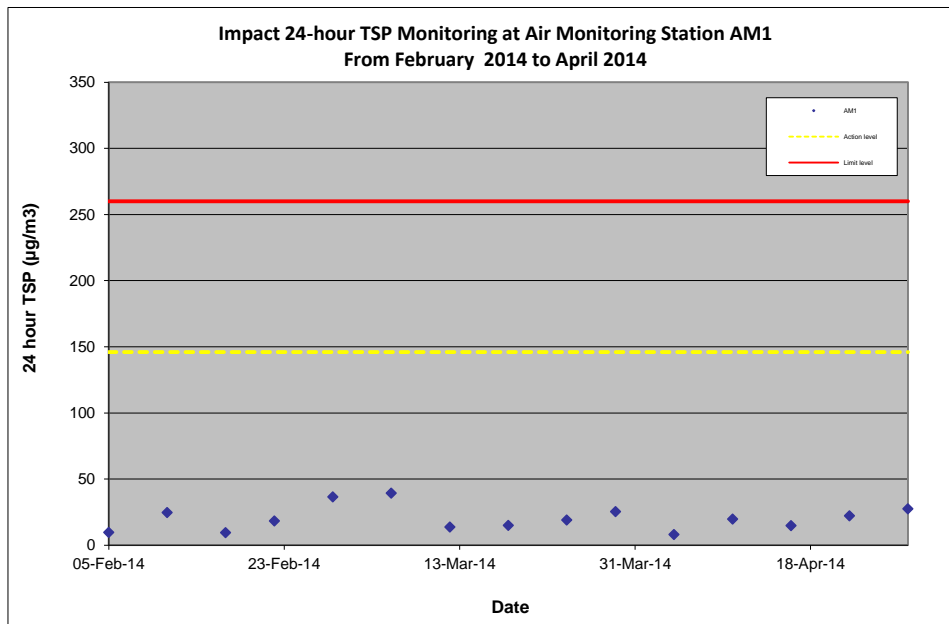
<b>Action Level (ug/m<sup>3</sup>)</b>	146
<b>Limit Level (ug/m<sup>3</sup>)</b>	260

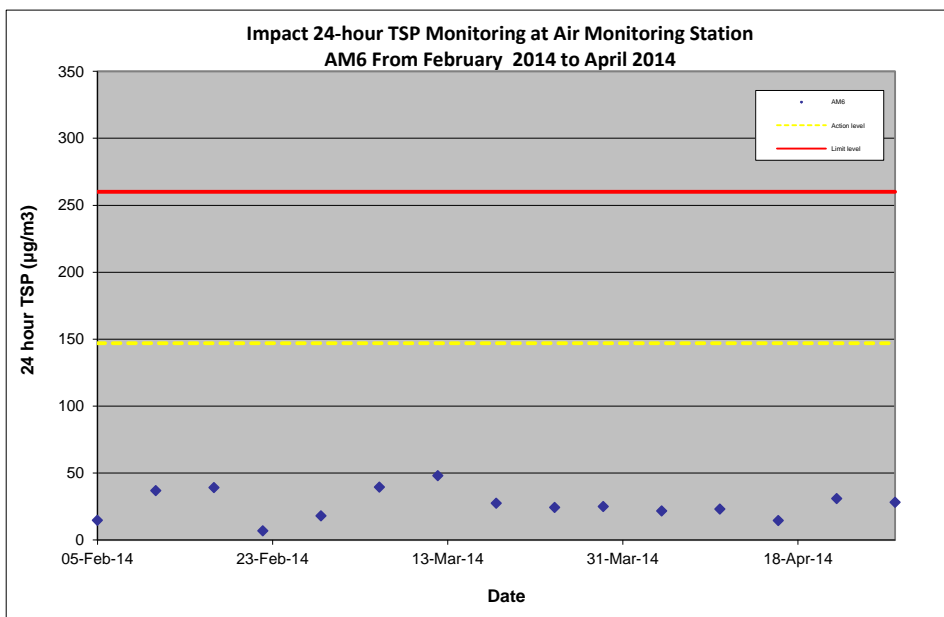
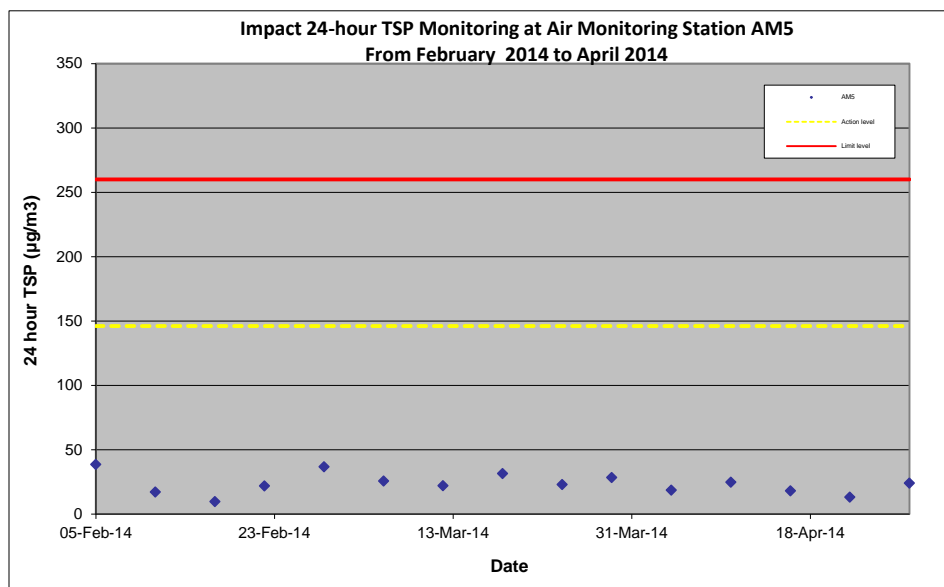
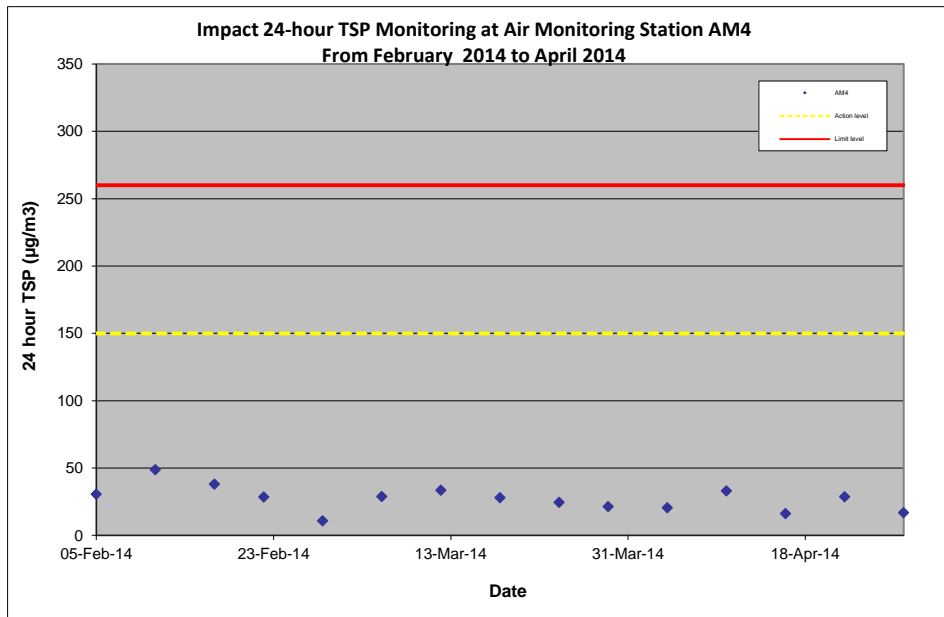
**Agreement No. HMW 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section  
Impact Air Quality Monitoring Result at Yan Oi Tong Community and Sports Centre (AM6) - 24 hour TSP**

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 (m <sup>3</sup> /min)		Average Flow Rate (m <sup>3</sup> /min)	Elapse Time		Sampling Time (mins.)	Total vol. (m <sup>3</sup> )	(ug/m <sup>3</sup> ) AM6
						Initial	Final	Initial	Final	Initial	Final	Initial	Final		Initial	Final		Start	Finish			
123462	Feb-14	5-Feb-14	AM6	Fine	Normal Operation	765.0	766.0	17.0	17.0	40.0	40.0	2.8872	2.9147	0.0275	1.2965	1.2975	1.2970	10706.80	10730.80	1440.00	1867.68	14.7
123468	Feb-14	11-Feb-14	AM6	Fine	Normal Operation	761.0	765.0	8.0	8.0	40.0	40.0	2.8845	2.9544	0.0699	1.3177	1.3220	1.3199	10730.80	10754.80	1440.00	1900.58	36.8
123474	Feb-14	17-Feb-14	AM6	Fine	Normal Operation	762.0	760.0	18.0	18.0	40.0	40.0	2.8725	2.9451	0.0726	1.2905	1.2884	1.2895	10754.80	10778.80	1440.00	1856.81	39.1
123480	Feb-14	22-Feb-14	AM6	Fine	Normal Operation	765.0	766.0	15.0	15.0	40.0	40.0	2.884	2.8969	0.0129	1.3020	1.3030	1.3025	10778.80	10802.80	1440.00	1875.60	6.9
123486	Feb-14	28-Feb-14	AM6	Fine	Normal Operation	765.0	767.0	18.0	18.0	40.0	40.0	2.8836	2.9173	0.0337	1.2937	1.2958	1.2948	10802.80	10826.80	1440.00	1864.44	18.1
123492	Mar-14	6-Mar-14	AM6	Cloudy	Normal Operation	765.0	767.0	19.0	17.0	40.0	40.0	2.8774	2.9468	0.0694	1.2156	1.2218	1.2187	10826.80	10850.80	1440.00	1754.93	39.5
123498	Mar-14	12-Mar-14	AM6	Fine	Normal Operation	759.0	759.0	19.0	22.0	40.0	40.0	2.8888	2.9722	0.0834	1.2105	1.2039	1.2072	10850.80	10874.80	1440.00	1738.37	48.0
102933	Mar-14	18-Mar-14	AM6	Fine	Normal Operation	760.0	760.0	20.0	20.0	40.0	40.0	2.5597	2.6076	0.0479	1.2092	1.2092	1.2092	10874.80	10898.80	1440.00	1741.25	27.5
102939	Mar-14	24-Mar-14	AM6	Fine	Normal Operation	764.0	762.0	21.0	22.0	40.0	40.0	2.5658	2.6080	0.0422	1.2104	1.2065	1.2085	10898.80	10922.80	1440.00	1740.17	24.3
102945	Mar-14	29-Mar-14	AM6	Cloudy	Normal Operation	756.0	756.0	26.0	21.0	40.0	40.0	2.4777	2.5208	0.0431	1.1927	1.2035	1.1981	10922.80	10946.80	1440.00	1725.26	25.0
125006	Apr-14	4-Apr-14	AM6	Fine	Normal Operation	756.0	756.0	20.0	20.0	40.0	40.0	2.9322	2.9699	0.0377	1.2057	1.2057	1.2057	10946.80	10970.80	1440.00	1736.21	21.7
125012	Apr-14	10-Apr-14	AM6	Fine	Normal Operation	757.0	756.0	22.0	22.0	40.0	40.0	2.9335	2.9734	0.0399	1.2023	1.2014	1.2019	10970.80	10994.80	1440.00	1730.66	23.1
125018	Apr-14	16-Apr-14	AM6	Cloudy	Normal Operation	760.0	760.0	22.0	22.0	40.0	40.0	2.9199	2.9450	0.0251	1.2048	1.2048	1.2048	10994.80	11018.80	1440.00	1734.91	14.5
125024	Apr-14	22-Apr-14	AM6	Cloudy	Normal Operation	764.0	762.0	24.0	24.0	40.0	40.0	2.9227	2.9763	0.0536	1.2038	1.2021	1.2030	11018.80	11042.80	1440.00	1732.25	30.9
125030	Apr-14	28-Apr-14	AM6	Fine	Normal Operation	762.0	762.0	25.0	25.0	40.0	40.0	2.9465	2.9952	0.0487	1.1999	1.1999	1.1999	11042.80	11066.80	1440.00	1727.86	28.2

<b>Average (ug/m<sup>3</sup>)</b>	26.6
<b>Max (ug/m<sup>3</sup>)</b>	48.0
<b>Min (ug/m<sup>3</sup>)</b>	6.9

<b>Action Level (ug/m<sup>3</sup>)</b>	147
<b>Limit Level (ug/m<sup>3</sup>)</b>	260





Appendix D

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**Wind Data**



#### Wind Monitoring Data - Feb 2014

Date	Wind Direction (degree)	Wind Speed (km/h)
5-Feb-14	80	35.6
11-Feb-14	30	28.1
17-Feb-14	50	18.5
22-Feb-14	70	40.3
28-Feb-14	60	28.7

Source extracted from Hong Kong Observatory (HKO)

#### Wind Monitoring Data - Mar 2014

Date	Wind Direction (degree)	Wind Speed (km/h)
6-Mar-14	70	43.2
12-Mar-14	40	14.7
18-Mar-14	50	12.8
24-Mar-14	60	25
29-Mar-14	40	9.5

Source extracted from Hong Kong Observatory (HKO)

#### Wind Monitoring Data - Apr 2014

Date	Wind Direction (degree)	Wind Speed (km/h)
4-Apr-14	90	27
10-Apr-14	80	24.3
16-Apr-14	60	23.1
22-Apr-14	50	8
28-Apr-14	20	18.9

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 - 6 February 2014**

ID	Premise	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
			L <sub>Aeq,30min</sub>	Limit	L <sub>10,5min</sub>	L <sub>90,5min</sub>	L <sub>Aeq,30min</sub>	L <sub>Aeq,30min</sub>
N1	Kam Fai Garden	9:50-10:20	69	75	72	67	76	Measured ≤ Baseline
N2	Tai Tung Pui Social Service Building	10:35-11:05	69	75	72	68	78	Measured ≤ Baseline
N3	Yuen Yuen Primary School	11:15-11:45	64	70	67	63	69	Measured ≤ Baseline
N4	Wu Siu Kui Primary School	08:30-09:00	65	70	67	64	67	Measured ≤ Baseline
N5	Tuen King Building	13:30-14:00	70	75	72	67	70	Measured ≤ Baseline
N6	Choi Cheung kok Secondary School	14:30-15:00	69	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 - 12 February 2014**

ID	Premise	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
			L <sub>Aeq,30min</sub>	Limit	L <sub>10,5min</sub>	L <sub>90,5min</sub>	L <sub>Aeq,30min</sub>	L <sub>Aeq,30min</sub>
N1	Kam Fai Garden	10:00-10:30	70	75	72	67	76	Measured ≤ Baseline
N2	Tai Tung Pui Social Service Building	10:45-11:15	70	75	72	66	78	Measured ≤ Baseline
N3	Yuen Yuen Primary School	11:30-12:00	66	70	68	64	69	Measured ≤ Baseline
N4	Wu Siu Kui Primary School	8:30-9:00	64	70	66	63	67	Measured ≤ Baseline
N5	Tuen King Building	13:20-13:50	69	75	72	67	70	Measured ≤ Baseline
N6	Choi Cheung kok Secondary School	14:20-14:50	68	70	69	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 - 18 February 2014**

ID	Premise	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
			L <sub>Aeq,30min</sub>	Limit	L <sub>10,5min</sub>	L <sub>90,5min</sub>	L <sub>Aeq,30min</sub>	L <sub>Aeq,30min</sub>
N1	Kam Fai Garden	9:50-10:20	70	75	72	67	76	Measured ≤ Baseline
N2	Tai Tung Pui Social Service Building	10:35-11:05	69	75	72	67	78	Measured ≤ Baseline
N3	Yuen Yuen Primary School	11:15-11:45	66	70	68	64	69	Measured ≤ Baseline
N4	Wu Siu Kui Primary School	08:30-09:00	64	70	65	63	67	Measured ≤ Baseline
N5	Tuen King Building	13:20-13:50	68	75	71	66	70	Measured ≤ Baseline
N6	Choi Cheung kok Secondary School	14:20-14:50	67	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 - 24 February 2014**

ID	Premise	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
			L <sub>Aeq,30min</sub>	Limit	L <sub>10,5min</sub>	L <sub>90,5min</sub>	L <sub>Aeq,30min</sub>	L <sub>Aeq,30min</sub>
N1	Kam Fai Garden	9:55-10:25	69	75	72	67	76	Measured ≤ Baseline
N2	Tai Tung Pui Social Service Building	10:40-11:10	70	75	72	68	78	Measured ≤ Baseline
N3	Yuen Yuen Primary School	11:20-11:50	66	70	67	63	69	Measured ≤ Baseline
N4	Wu Siu Kui Primary School	8:40-9:10	64	70	66	63	67	Measured ≤ Baseline
N5	Tuen King Building	13:20-13:50	69	75	71	67	70	Measured ≤ Baseline
N6	Choi Cheung kok Secondary School	14:20-14:50	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 - 3 March 2014**

ID	Premise	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
			L <sub>Aeq,30min</sub>	Limit	L <sub>10,5min</sub>	L <sub>90,5min</sub>	L <sub>Aeq,30min</sub>	L <sub>Aeq,30min</sub>
N1	Kam Fai Garden	9:50-10:20	68	75	71	66	76	Measured ≤ Baseline
N2	Tai Tung Pui Social Service Building	10:35-11:05	69	75	71	66	78	Measured ≤ Baseline
N3	Yuen Yuen Primary School	11:15-11:45	64	70	67	63	69	Measured ≤ Baseline
N4	Wu Siu Kui Primary School	08:30-09:00	64	70	67	64	67	Measured ≤ Baseline
N5	Tuen King Building	13:30-14:00	69	75	71	67	70	Measured ≤ Baseline
N6	Choi Cheung kok Secondary School	14:30-15:00	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 - 13 March 2014**

ID	Premise	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
			L <sub>Aeq,30min</sub>	Limit	L <sub>10,5min</sub>	L <sub>90,5min</sub>	L <sub>Aeq,30min</sub>	L <sub>Aeq,30min</sub>
N1	Kam Fai Garden	10:00-10:30	68	75	71	67	76	Measured ≤ Baseline
N2	Tai Tung Pui Social Service Building	10:45-11:15	69	75	71	67	78	Measured ≤ Baseline
N3	Yuen Yuen Primary School	11:30-12:00	65	70	67	64	69	Measured ≤ Baseline
N4	Wu Siu Kui Primary School	8:30-9:00	64	70	66	63	67	Measured ≤ Baseline
N5	Tuen King Building	13:20-13:50	69	75	71	66	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 - 19 March 2014**

ID	Premise	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
			L <sub>Aeq,30min</sub>	Limit	L <sub>10,5min</sub>	L <sub>90,5min</sub>	L <sub>Aeq,30min</sub>	L <sub>Aeq,30min</sub>
N1	Kam Fai Garden	9:50-10:20	69	75	71	67	76	Measured ≤ Baseline
N2	Tai Tung Pui Social Service Building	10:35-11:05	69	75	71	67	78	Measured ≤ Baseline
N3	Yuen Yuen Primary School	11:15-11:45	65	70	67	64	69	Measured ≤ Baseline
N4	Wu Siu Kui Primary School	08:30-09:00	64	70	66	63	67	Measured ≤ Baseline
N5	Tuen King Building	13:20-13:50	68	75	70	66	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 - 25 March 2014**

ID	Premise	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
			L <sub>Aeq,30min</sub>	Limit	L <sub>10,5min</sub>	L <sub>90,5min</sub>	L <sub>Aeq,30min</sub>	L <sub>Aeq,30min</sub>
N1	Kam Fai Garden	9:55-10:25	68	75	71	66	76	Measured ≤ Baseline
N2	Tai Tung Pui Social Service Building	10:40-11:10	69	75	71	67	78	Measured ≤ Baseline
N3	Yuen Yuen Primary School	11:20-11:50	65	70	67	63	69	Measured ≤ Baseline
N4	Wu Siu Kui Primary School	8:40-9:10	64	70	66	63	67	Measured ≤ Baseline
N5	Tuen King Building	13:20-13:50	68	75	71	67	70	Measured ≤ Baseline
N6	Choi Cheung kok Secondary School	14:20-14:50	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 - 3 April 2014**

ID	Premise	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
			L <sub>Aeq,30min</sub>	Limit	L <sub>10,5min</sub>	L <sub>90,5min</sub>	L <sub>Aeq,30min</sub>	L <sub>Aeq,30min</sub>
N1	Kam Fai Garden	9:50-10:20	69	75	71	67	76	Measured ≤ Baseline
N2	Tai Tung Pui Social Service Building	10:35-11:05	69	75	71	66	78	Measured ≤ Baseline
N3	Yuen Yuen Primary School	11:15-11:45	66	70	67	63	69	Measured ≤ Baseline
N4	Wu Siu Kui Primary School	08:30-09:00	64	70	66	63	67	Measured ≤ Baseline
N5	Tuen King Building	13:30-14:00	69	75	71	67	70	Measured ≤ Baseline
N6	Choi Cheung kok Secondary School	14:30-15:00	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 - 9 April 2014**

ID	Premise	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
			L <sub>Aeq,30min</sub>	Limit	L <sub>10,5min</sub>	L <sub>90,5min</sub>	L <sub>Aeq,30min</sub>	L <sub>Aeq,30min</sub>
N1	Kam Fai Garden	10:00-10:30	69	75	72	67	76	Measured ≤ Baseline
N2	Tai Tung Pui Social Service Building	10:45-11:15	69	75	71	66	78	Measured ≤ Baseline
N3	Yuen Yuen Primary School	11:30-12:00	64	70	67	63	69	Measured ≤ Baseline
N4	Wu Siu Kui Primary School	8:30-9:00	63	70	66	63	67	Measured ≤ Baseline
N5	Tuen King Building	13:20-13:50	68	75	70	66	70	Measured ≤ Baseline
N6	Choi Cheung kok Secondary School	14:20-14:50	67	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 - 14 April 2014**

ID	Premise	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
			L <sub>Aeq,30min</sub>	Limit	L <sub>10,5min</sub>	L <sub>90,5min</sub>	L <sub>Aeq,30min</sub>	L <sub>Aeq,30min</sub>
N1	Kam Fai Garden	9:50-10:20	68	75	71	66	76	Measured ≤ Baseline
N2	Tai Tung Pui Social Service Building	10:35-11:05	69	75	72	67	78	Measured ≤ Baseline
N3	Yuen Yuen Primary School	11:15-11:45	65	70	67	64	69	Measured ≤ Baseline
N4	Wu Siu Kui Primary School	08:30-09:00	63	70	66	62	67	Measured ≤ Baseline
N5	Tuen King Building	13:20-13:50	68	75	70	66	70	Measured ≤ Baseline
N6	Choi Cheung kok Secondary School	14:20-14:50	67	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 - 24 April 2014**

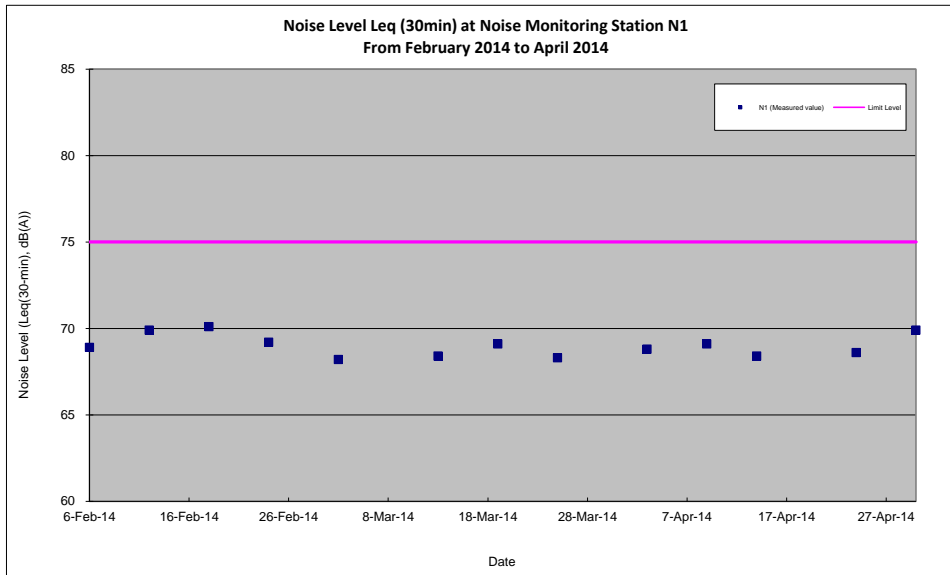
ID	Premise	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
			L <sub>Aeq,30min</sub>	Limit	L <sub>10,5min</sub>	L <sub>90,5min</sub>	L <sub>Aeq,30min</sub>	L <sub>Aeq,30min</sub>
N1	Kam Fai Garden	9:55-10:25	69	75	71	66	76	Measured ≤ Baseline
N2	Tai Tung Pui Social Service Building	10:40-11:10	68	75	71	67	78	Measured ≤ Baseline
N3	Yuen Yuen Primary School	11:20-11:50	64	70	67	63	69	Measured ≤ Baseline
N4	Wu Siu Kui Primary School	8:40-9:10	63	70	65	62	67	Measured ≤ Baseline
N5	Tuen King Building	13:20-13:50	69	75	71	67	70	Measured ≤ Baseline
N6	Choi Cheung kok Secondary School	14:20-14:50	68	70	70	66	69	Measured ≤ Baseline

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

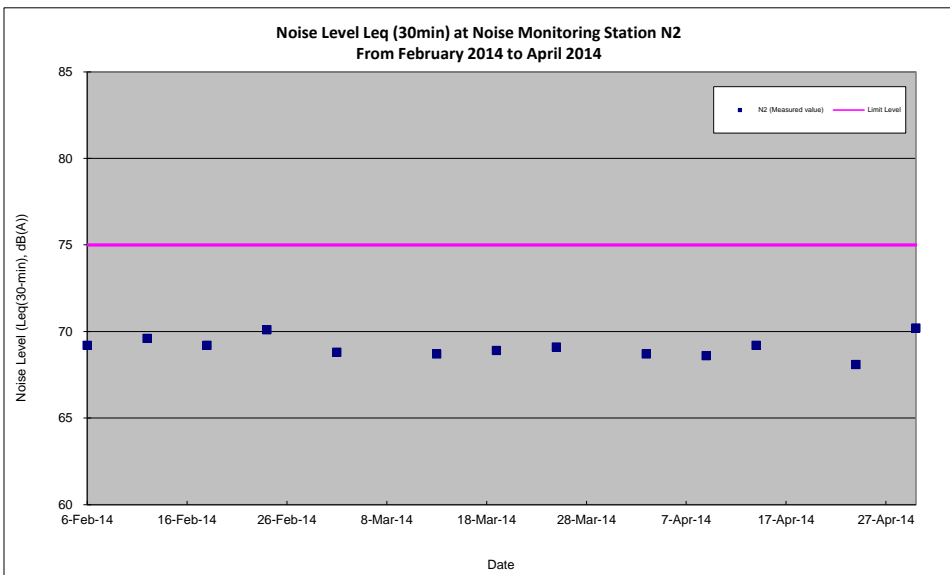
**Agreement No. 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section - Environmental Team**  
**Day-time Noise Monitoring Results - 30 April 2014**

ID	Premise	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
			L <sub>Aeq,30min</sub>	Limit	L <sub>10,5min</sub>	L <sub>90,5min</sub>	L <sub>Aeq,30min</sub>	L <sub>Aeq,30min</sub>
N1	Kam Fai Garden	09:45 - 10:15	70	75	73	67	76	Measured ≤ Baseline
N2	Tai Tung Pui Social Service Building	10:35 - 11:05	70	75	73	68	78	Measured ≤ Baseline
N3	Yuen Yuen Primary School	11:25 - 11:55	64	70	67	63	69	Measured ≤ Baseline
N4	Wu Siu Kui Primary School	08:35 - 09:05	64	70	67	63	67	Measured ≤ Baseline
N5	Tuen King Building	13:10 - 13:40	68	75	70	66	70	Measured ≤ Baseline
N6	Choi Cheung kok Secondary School	14:00 - 14:30	68	70	70	66	69	Measured ≤ Baseline

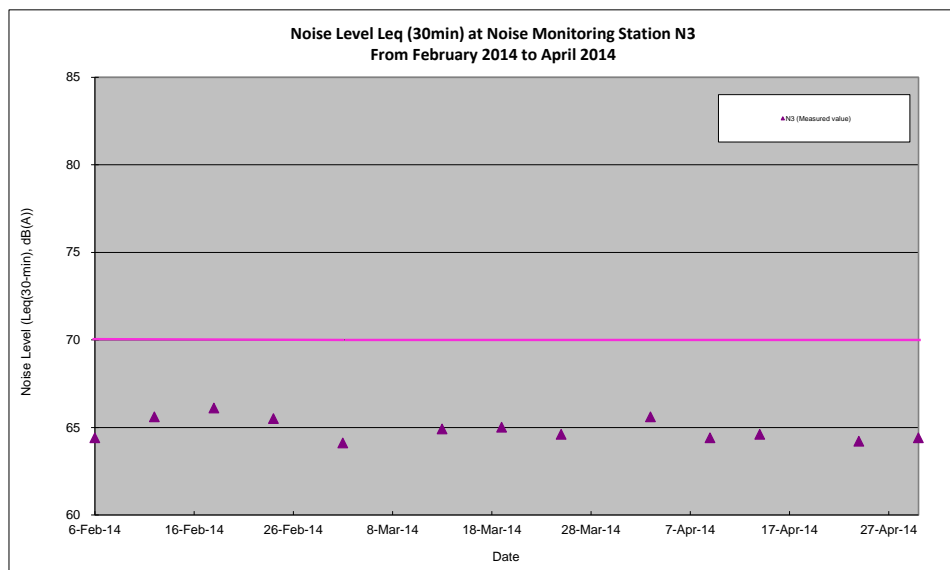
Note: (#): Construction Noise Level = Measured Noise Level - Baseline Noise Level



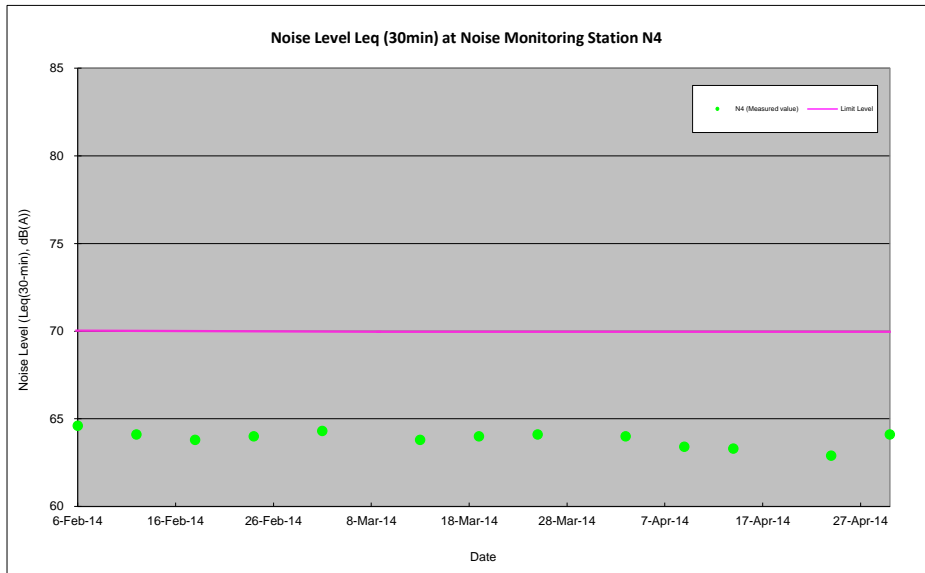
Note: For compliance comparison, please refer to above table and report.



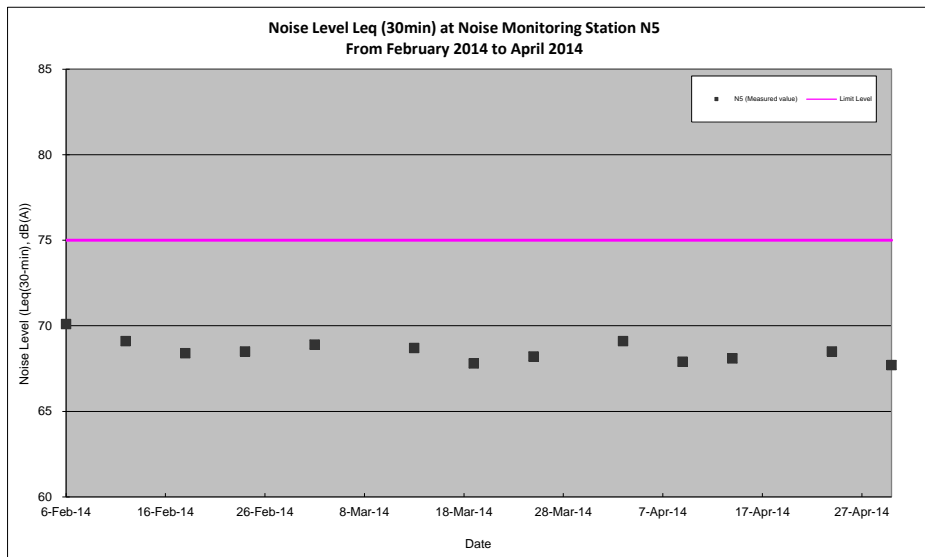
Note: For compliance comparison, please refer to above table and report.



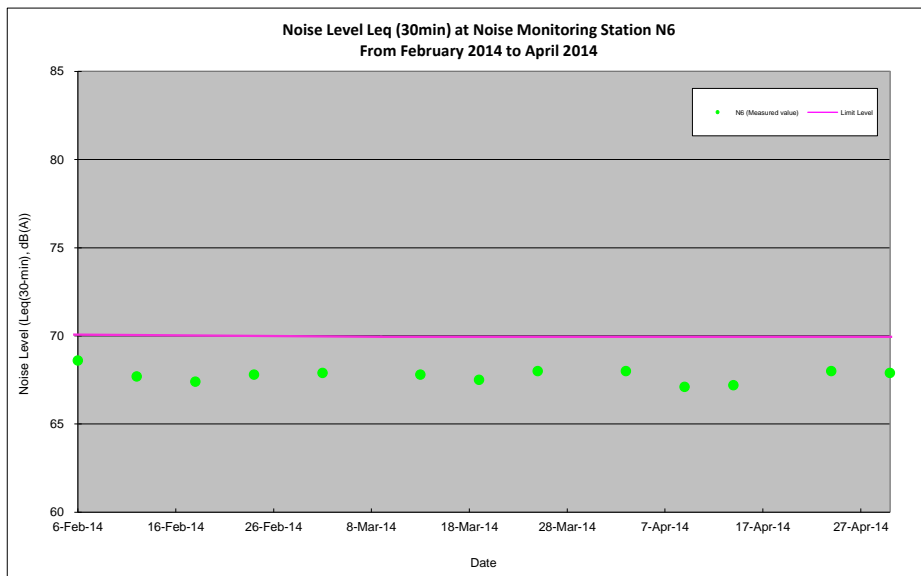
Note: For compliance comparison, please refer to above table and report.



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
C043-TCS	A complaint was received by ICC on 27 Feb 14 and the Supervising Officer Representative was informed on 3 Mar 14.	Mr. Wong	3 Mar 14	26 – 27 Feb 14 Nighttime around 01:00.	Tuen Mun Road (near Eldo Court and Rose Dale Garden)	Noise	The complaint was related to noise nuisance of night works near Eldo Court and Rose Dale Garden.	10 Mar 14	10 Mar ~ 20 Mar 14	<p>As confirmed by the Contractor and Supervising Officer's Representative, the related night works was carried out in Tuen Mun Road (near Eldo Court and Rose Dale Garden). The noise nuisance was mainly caused by road resurfacing works. On 26 and 27 Feb 2014 midnight, 1 unit of roller, 1 unit of road paver, 1 unit of miller, 1 unit of lorry and 1 unit of dump truck have been deployed.</p> <p>The relevant construction noise permit (CNP) no. GW-RW-0849-13 was obtained for the corresponding work in the designated area prior to commencement. The conditions stipulated in the CNP were strictly followed by the Contractor. EPD had been informed prior to 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 resurfacing 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. Idle equipments should be either turned off or throttled down; and</li> <li>4. Improve the working practices to minimize the noise nuisance during the working activities as far as possible.</li> </ol>	Yes	Closed on 20 Mar 14

**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
C044-TCS	A complaint was received by ICC on 4 Mar 14 and the Supervising Officer Representative was informed on 4 Mar 14.	Unknown	4 Mar 14	4 Mar 14 Nighttime around 01:00.	Tuen Mun Road (near Waldorf Plaza)	Noise	The complaint was related to noise nuisance of night works near Waldorf Plaza.	11 Mar 14	11 Mar ~ 20 Mar 14	<p>As confirmed by the Contractor and Supervising Officer's Representative, the related night works was carried out in Tuen Mun Road (near Waldorf Plaza) on 3 Mar 2014 midnight. The noise nuisance was mainly caused by traffic sign installation on noise panel.</p> <p>The relevant construction noise permit (CNP) no. GW-RW-0847-13 was obtained for the corresponding work in the designated area prior to commencement. The conditions stipulated in the CNP were strictly followed by the Contractor. EPD had been informed prior to 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 installation 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. Idle equipments should be either turned off or throttled down; and</li> <li>4. Improve the working practices to minimize the noise nuisance during the working activities as far as possible.</li> </ol>	Yes	Closed on 20 Mar 14

**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
C045-TCS	A complaint was received by ICC on 3 Apr 14 and the Supervising Officer Representative was informed on 3 Apr 14.	Unknown	3 Apr 14	15-30 Mar 14 Nighttime around 02:00 – 03:00.	Tsing Hoi Circuit (near Hong King Garden)	Noise	The complaint was related to noise nuisance of night works near Hong King Garden.	7 Apr 14	7 Apr ~ 11 Apr 14	<p>As confirmed by the Contractor and Supervising Officer's Representative, the road surface maintenance work was carried near Hong King Garden on midnight from 25 Mar to 30 Mar 2014. The noise nuisance was mainly caused by road surface maintenance work.</p> <p>The relevant construction noise permit (CNP) no. GW-RW-027-14 was obtained for the corresponding work in the designated area prior to commencement. The conditions stipulated in the CNP were strictly followed by the Contractor. EPD had been informed prior to 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 installation 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. Idle equipments should be either turned off or throttled down; and</li> <li>4. Improve the working practices to minimize the noise nuisance during the working activities as far as possible.</li> </ol>	Yes	Closed on 11 Apr 14

**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
C046-TCS	A complaint was received by ICC on 9 Apr 14 and the Supervising Officer Representative was informed on 9 Apr 14.	Mr. Ho	9 Apr 14	8 & 9 Apr 14 Nighttime	Tuen Mun Road (near CSBS Mrs. Aw Boon Haw Secondary School)	Noise	The complaint was related to noise nuisance of night works near CSBS Mrs. Aw Boon Haw Secondary School.	10 Apr 14	11 Apr ~ 17 Apr 14	<p>As confirmed by the Contractor and Supervising Officer's Representative, the related night works was carried out in Tuen Mun Road (near CSBS Mrs. Aw Boon Haw Secondary School) on 8 Apr and 9 Apr 2014 midnight. The noise nuisance was mainly caused by asphalt laying work.</p> <p>The relevant construction noise permit (CNP) no. GW-RW-0227-14 was obtained for the corresponding work in the designated area prior to commencement. The conditions stipulated in the CNP were strictly followed by the Contractor. EPD had been informed prior to 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 installation 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. Idle equipments should be either turned off or throttled down; and</li> <li>4. Improve the working practices to minimize the noise nuisance during the working activities as far as possible.</li> </ol>	Yes	Closed on 17 Apr 14

**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
C047-TCS	A complaint was received by ICC on 9 Apr 14 and the Supervising Officer Representative was informed on 9 Apr 14.	Unknown	9 Apr 14	8 Apr 14 Nighttime around 00:00.	Tuen Mun Road (near CSBS Mrs. Aw Boon Haw Secondary School)	Noise	The complaint was related to noise nuisance of night works near CSBS Mrs. Aw Boon Haw Secondary School.	11 Apr 14	11 Apr ~ 17 Apr 14	<p>As confirmed by the Contractor and Supervising Officer's Representative, the related night works was carried out in Tuen Mun Road (near CSBS Mrs. Aw Boon Haw Secondary School) on 8 Apr and 9 Apr 2014 midnight. The noise nuisance was mainly caused by asphalt laying work.</p> <p>The relevant construction noise permit (CNP) no. GW-RW-0227-14 was obtained for the corresponding work in the designated area prior to commencement. The conditions stipulated in the CNP were strictly followed by the Contractor. EPD had been informed prior to 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 installation 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. Idle equipments should be either turned off or throttled down; and</li> <li>4. Improve the working practices to minimize the noise nuisance during the working activities as far as possible.</li> </ol>	Yes	Closed on 17 Apr 14



**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
C048-TCS	A complaint was received by ICC on 20 Apr 14 and the Supervising Officer Representative was informed on 20 Apr 14.	Mr. Lee	20 Apr 14	1 Apr – 15 Apr 14 Nighttime	Tuen Mun Road (near Tuen Mun Town Center and Tuen Mun Town Hall)	Noise	The complaint was related to noise nuisance of night works near Tuen Mun Town Center.	22 Apr 14	22 Apr ~ 30 Apr 14	<p>As confirmed by the Contractor and Supervising Officer's Representative, the related night works was carried out in Tuen Mun Road (near Tuen Mun Town Center) on 1 Apr – 15 Apr 2014 midnight. The noise nuisance was mainly caused by installation of theme wall on noise panel.</p> <p>The relevant construction noise permit (CNP) no. GW-RW-0229-14 was obtained for the corresponding work in the designated area prior to commencement. The conditions stipulated in the CNP were strictly followed by the Contractor. EPD had been informed prior to 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 installation 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. Idle equipments should be either turned off or throttled down; and</li> <li>4. Improve the working practices to minimize the noise nuisance during the working activities as far as possible.</li> </ol>	Yes	Closed on 30 Apr 14