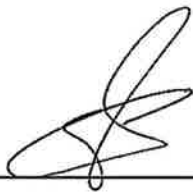


Highways Department

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

Quarterly Environmental
Monitoring and Audit
Summary Report (August
2012 to October 2012)

Final



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



Verified by Independent Environmental Checker
David Yeung
ENVIRON Hong Kong Ltd

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Executive Summary

This is the ninth 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 August 2012 to 31 October 2012.

Environmental Monitoring Works – Breaches of Action and Limit Levels

Air Quality

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

Noise

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

No noise complaint, hence, no Action Level exceedances, was recorded in the reporting period.

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

Landscape and Visual Audit

In the reporting period, landscape and visual site audit in accordance with the requirements stipulated in the EM&A manual were conducted. Total 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 8,467.875 m³ were generated and disposed of at public fills at Tuen Mun Area 38 in the reporting period. 648.375 m³ 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

No environmental complaint was recorded during the reporting period.

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	Footbridge demolition, footbridge construction, noise barrier construction, pilling works, underground utilities and drainage diversion

1.2 Project Organization

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

Figure 1.2 Project Organization – Environmental Management

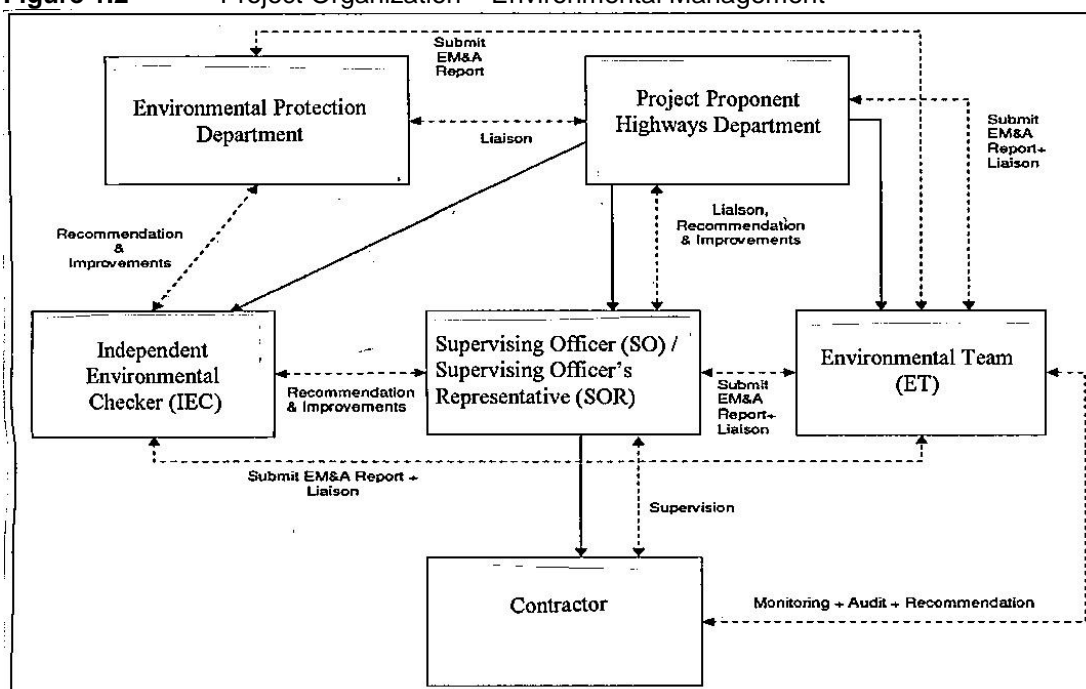


Figure 1.1 Location of works area and air, noise environmental monitoring stations

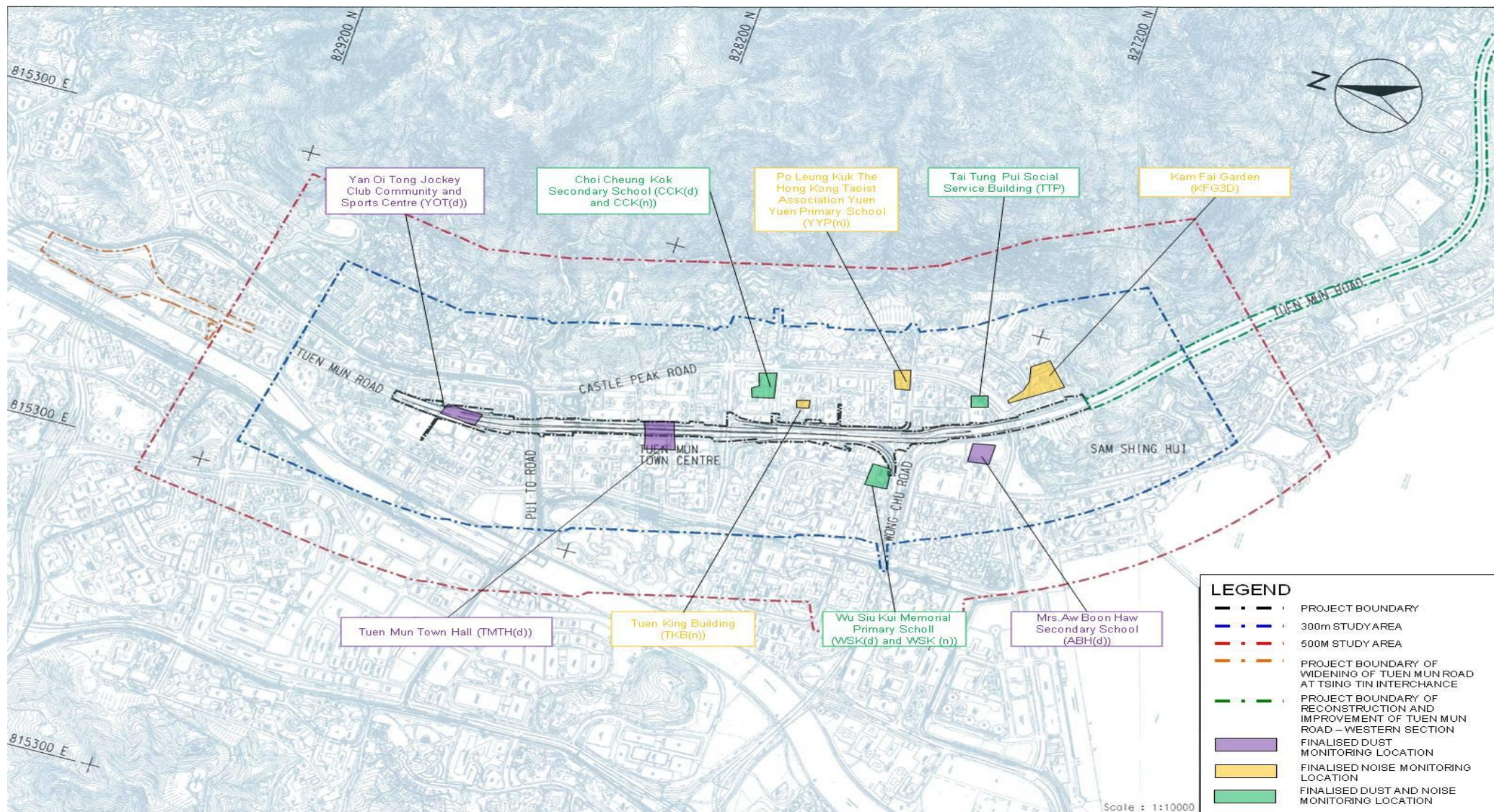


Table 1.2 Contacts of key environmental staff

Organization	Name	Telephone
Environmental Protection Department		
Environmental Protection Officer (Strategic Assessment)22	Thomas To	2835 1103
Project Proponent		
Highways Department: Senior Engineer	Peter Law	2762 3539
Supervising Officer / Supervising Officer's Representative		
AECOM Asia Co. Ltd.: Chief Resident Engineer	Patrick Lee	2969 9200
Independent Environmental Checker		
ENVIRON Hong Kong Limited: Independent Environmental Checker	David Yeung	3743 0717
Environmental Team		
Ove Arup & Partners Hong Kong Ltd: Environmental Team Leader	Coleman Ng	2268 3097
Contractor		
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
Air	
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
Noise	
N1	Kam Fai Garden
N2	Tung Wah Group of Hospitals Tai Tung Pui Social Service Building
N3	Po Leung Kuk The Hong Kong Taoist Association Yuen Yuen Primary School
N4	Shun Tak Fraternal Association Wu Siu Kui Memorial Primary School
N5	Tuen King Building
N6	The Chinese Manufacturers' Association Of Hong Kong Choi Cheung Kok Secondary School

Table 2.2 Monitoring parameters, frequency, locations and performance limits

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

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	Tsing Hoi Circuit	16 Aug 12	Dark smoke emission was observed from the piling machine. The Contractor should arrange maintenance for the machine.	Maintenance has been arranged. No dark smoke has been observed. Closed on 24 Aug 12.
	Tsing Sin Carpark	23 Aug 12	Regular water spraying should be provided for exposed earth of large area.	Water spraying has been executed. Closed on 30 Aug 12.
	Tsing Hoi Circuit Central Median	30 Aug 12	Proper 3-sided with top enclosure should be provided for cement mixing operation.	Proper enclosure has been provided. Closed on 6 Sep 12.
	Pui To Road	13 Sep 12	Tarpaulin sheet coverage on exposed earth should be implemented before vehicles egressing.	Tarpaulin sheet has been provided. Closed on 20 Sep 12.
	Yick Yuen	27 Sep 12	Regular water spraying should be implemented on exposed earth.	Water spraying has been executed. Closed on 4 Oct 12.
	Chi Lok Garden	4 Oct 12	Cement water generated from the cement pumping lorry on the ground should be cleared as soon as possible.	Cement water has been cleared. Closed on 11 Oct 12.
	Tsing Hoi Circuit	11 Oct 12	The Contractor was reminded to provide water spraying for dusty material transfer operation.	Water spraying has been executed. Closed on 18 Oct 12.
	Yan Ching Street	18 Oct 12	Stockpiles should be entirely covered by tarpaulin sheet to suppress dust disturbance.	Tarpaulin sheet has been provided. Closed on 25 Oct 12.
	Pui To Road & S1 Bridge	25 Oct 12	The Contractor should implement water spraying for the rock breaking/ cement breaking operation.	Water spraying has been implemented. Closed on 1 Nov 12.
Water Quality	Kam Fai Garden	1 Aug 12	The Contractor was reminded to maintain the wheel washing facility at the site entrance.	The reminder has been noted. Closed on 10 Aug 12.
	Tsing Hoi Circuit	10 Aug 12	Barrier or other measures should be provided to avoid muddy water sprayed to public.	Barrier has been provided. Closed on 16 Aug 12.
	Chi Lok Bridge	16 Aug 12	Accumulated water should be removed from the site.	Accumulated water has been drained. Closed on 24 Aug 12.

Monitoring Parameter	Location	Inspection Date	Key Observations & Recommendations	Contractor's Follow-Up Status
Water Quality	Tsing Sin Carpark	16 Aug 12	The Contractor was reminded to clear the muds near site entrance.	Muds have been cleared. Closed on 24 Aug 12.
	Yan Ching Bridge	30 Aug 12	The Contractor should remove the accumulated water in the hole of noise barrier footing.	The hole has been filled. Closed on 6 Sep 12.
	All Areas	13 Sep 12	Sufficient pumps should be stand-by on site for operation after heavy rain.	The reminder has been noted. Closed on 20 Sep 12.
	Tsing Hoi Circuit	13 Sep 12	Muds and cements should be kept away from road side. The Contractor should clean the site entrance.	Cleaning of entrance has been carried out. Closed on 20 Sep 12.
	Tsing Sin Carpark	13 Sep 12	In case the wheel washing bay capacity is insufficient, bundings should be provided to divert the wheel washing muddy water to sump pit and then pump to sedimentation tank prior to discharging.	Sand bag bundings have been provided. Closed on 20 Sep 12.
	Tsing Hoi Circuit	20 Sep 12	The Contractor was reminded to replace or remove the damaged sand bags.	Damaged sand bags have been removed. Closed on 27 Sep 12.
	S1 Bridge	4 Oct 12	The Contractor was reminded to provide WWTP on site for waste water treatment prior to discharge.	The reminder has been noted. Closed on 11 Oct 12.
	Siu On Footbridge	25 Oct 12	The temporary stockpile should be covered with tarpaulin sheet properly to avoid surface runoff to public drainage during rain.	Stockpile has been covered with tarpaulin. Closed on 1 Nov 12.
Noise	Tuen Fat Road	1 Aug 12	The Contractor was reminded to provide acoustic jacket for the breaker during operation.	The reminder has been noted. Closed on 10 Aug 12.
	Tsing Hoi Carpark	10 Aug 12	Doors of the air compressor should be closed during operation.	Doors of the air compressor have been closed. Closed on 16 Aug 12.
	Chi Lok Fa Yuen	30 Aug 12	The Contractor was reminded to affix valid noise label to all hand-held breakers.	Valid noise label has been affixed. Closed on 6 Sep 12.
	Pui To Road & S1 Bridge	25 Oct 12	The Contractor was reminded to provide acoustic jacket to the breaker head to minimize the noise nuisance.	The reminder has been noted. Closed on 1 Nov 12.
Waste / Chemical Management	New Yan Oi Bridge	10 Aug 12	Waste cement bags should be covered by tarpaulin and disposal in regular basis to avoid accumulation.	Tarpaulin cover has been provided. Closed on 16 Aug 12.
	New Yan Oi Bridge & Siu On Bridge	23 Aug 12	The Contractor should exercise on-site segregation of construction waste and disposed it regularly.	Regular disposal has been exercised. Closed on 30 Aug 12.

Monitoring Parameter	Location	Inspection Date	Key Observations & Recommendations	Contractor's Follow-Up Status
Waste / Chemical Management	Tsing Hoi Circuit	6 Sep 12	The Contractor was reminded to provide drip tray for chemical containers	Drip tray has been provided. Closed on 13 Sep 12.
	Chi Lok Bridge	20 Sep 12	The Contractor was reminded to provide a designated storage area for painting chemicals placing.	The reminder has been noted. Closed on 27 Sep 12.
	Siu On Footbridge	4 Oct 12	Construction waste should be recycled or reused as far as practicable. Regular disposal should be implemented as last resort.	C&D waste has been disposed of. Closed on 11 Oct 12.
	Yan Oi Footbridge	11 Oct 12	Drip trays should be provided to chemical containers.	Drip tray has been provided. Closed on 18 Oct 12.
	Yan Oi Tong Street	11 Oct 12	Regular disposal of construction waste and general refuse should be done to maintain good housekeeping.	The construction waste and general refused has been disposed of. Closed on 18 Oct 12.
	Pui To Road	18 Oct 12	Drip trays should be provided for chemical containers.	Drip tray has been provided. Closed on 25 Oct 12.
	Siu On Footbridge	18 Oct 12	The Contractor should arrange regular disposal of the C&D materials to avoid accumulation.	Disposal of C&D wastes has been arranged. Closed on 25 Oct 12.

4 Environmental Monitoring Results

4.1 Air Monitoring Results and Observations

4.1.1 Air Quality Monitoring Results

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

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

Location	Average 24-hour TSP Concentration, $\mu\text{g}/\text{m}^3$ (Range)			
	Aug 12	Sep 12	Oct 12	Mean
AM1	7 (4 - 18)	8 (4 - 11)	21 (8 - 69)	12 (4 - 69)
AM2	9 (4 - 26)	9 (5 - 15)	12 (5 - 24)	10 (4 - 26)
AM3	16 (3 - 56)	10 (4 - 21)	15 (9 - 23)	14 (3 - 56)
AM4	11 (3 - 31)	8 (4 - 12)	16 (7 - 28)	12 (3 - 31)
AM5	9 (4 - 16)	11 (6 - 15)	16 (8 - 24)	12 (4 - 24)

Location	Average 24-hour TSP Concentration, $\mu\text{g}/\text{m}^3$ (Range)			
	Aug 12	Sep 12	Oct 12	Mean
AM6	6 (3 - 10)	11 (4 - 16)	11 (7 - 18)	9 (3 - 18)

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

4.1.2 General Observations

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

4.2 Noise Monitoring Results and Observations

4.2.1 Noise Monitoring Results

Non-restricted Hours

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

Table 4.2 Summary of impact noise monitoring in the reporting period

Location	Noise Level, $L_{eq}(30min)$, dB(A) (Range)			
	Aug 12	Sep 12	Oct 12	Mean
N1	74 (73 - 75)	75 (74 - 76)	73 (72 - 74)	74 (72 - 76)
N2	73 (72 - 74)	75 (74 - 75)	74 (73 - 75)	74 (72 - 75)
N3	67 (66 - 68)	67 (66 - 67)	67 (67 - 68)	67 (66 - 68)
N4	65 (65 - 66)	66 (65 - 67)	65 (64 - 66)	65 (64 - 67)
N5	70 (69 - 70)	70 (68 - 71)	69 (69 - 69)	69 (68 - 71)
N6	68 (68 - 69)	69 (68 - 70)	68 (67 - 68)	68 (67 - 70)

Restricted Hours

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

4.2.2 Exceedance of Limit and Action Levels for Construction Noise

Totally 2 limit level exceedances (0 in Aug, 2 in Sep and 0 in Oct 2012) were recorded for noise measurement during non-restricted hours in the reporting period and are summarized in **Table 4.3**.

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

Location (Note 1)	No. of exceedance of Limit Level			
	Aug 12	Sep 12	Oct 12	Total
N1	0	2	0	2

Notes:

1. No Limit Level exceedance was recorded at monitoring location N2, N3, N4, N5 and N6 during the reporting period.

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

No noise complaint, hence, no Action Level exceedance, was recorded in the reporting period

Summary of above exceedance investigation of the Project is provided in the following Section 6.2.

4.2.3 General Observations

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

4.3 Landscape and Visual Monitoring Audit Results

In the reporting period, landscape and visual site audit in accordance with the requirements stipulated in the EIA Report was conducted during the routine monthly site audit. The details of each LR, LCA and VSR are summarized in **Appendix F**. The implementation and maintenance of landscape and visual mitigation measures, listed in EIA Report, were checked during the site audit. During the reporting period, no substantial change of LR, LCA and VSR was noted, no non-compliance has been triggered, total 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 (Aug 2012 to Oct 2012).

5 Waste Disposal

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

Table 5.1 Amounts of waste generated in reporting period

Waste Type	Amount				Disposal Locations
	Aug 12	Sep 12	Oct 12	Total	
Inert C&D Materials	0 m ³	0 m ³	0 m ³	0 m ³	Broken concrete (Note 1)
	0 m ³	292.500 m ³	292.500 m ³	585.000 m ³	Reused in the Contract
	0 m ³	0 m ³	0 m ³	0 m ³	Reused in other Projects
	3,627.000 m ³	2,754.375 m ³	2,086.500 m ³	8,467.875 m ³	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	0 kg	0 kg	242 kg	242 kg	Recycler
Plastic	0 kg	0 kg	0 kg	0 kg	
Metal	0 kg	0 kg	0 kg	0 kg	

Waste Type	Amount				Disposal Locations
	Aug 12	Sep 12	Oct 12	Total	
General Refuse	214.500 m ³	165.750 m ³	268.125 m ³	648.375 m ³	Disposal of at WENT landfill

Notes:

1. Broken concrete for recycling into aggregates.

6 Environmental Performance

6.1 Non-Compliance Record

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

6.2 Review of Reasons of Non-Compliance

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

6.3 Notification of Summons and Successful Prosecution

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

6.4 Complaint Record

No environmental complaint was recorded during the reporting period.

The updated statistical summary of complaint is presented in **Table 6.1**.

Table 6.1 Summary of complaints for the contract

Reporting Period	Complaint Statistics		Area of Concern	Validity to the Project	Status
	Number	Cumulative			
02/08/10 – 31/10/10	0	0	-	-	-
01/11/10 – 30/11/10	1	1	Noise	Yes (Ref.: C001)	Closed on 30 Nov 10.
01/12/10 – 31/01/11	0	1	-	-	-
01/02/11 – 28/02/11	1	2	Noise	Yes (Ref.: C002)	Closed on 2 Mar 11.
01/03/11 – 31/03/11	0	2	-	-	-
01/04/11 – 30/04/11	2	4	Water	Yes (Ref.: C003)	Closed on 16 Apr 11.
			Noise	Yes (Ref.: C004)	Closed on 16 May 11.
01/05/11 – 31/05/11	1	5	Water	Yes (Ref.: C005)	Closed on 10 Jun 11.
01/06/11 – 30/06/11	1	6	Air	Yes (Ref.: C006)	Closed on 23 Jun 11.
	1	7	Noise	Yes (Ref.: C007)	Closed on 24 Jun 11.

Reporting Period	Complaint Statistics		Area of Concern	Validity to the Project	Status
	Number	Cumulative			
	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	-	-	-
01/07/12 – 31/07/12	0	26	-	-	-
01/08/12 – 31/08/12	0	26	-	-	-

Reporting Period	Complaint Statistics		Area of Concern	Validity to the Project	Status
	Number	Cumulative			
01/09/12 – 30/09/12	0	26	-	-	-
01/10/12 – 31/10/12	0	26	-	-	-

7 Conclusions and Recommendations

7.1 Conclusions

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

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

Totally 2 limit level exceedances (2 in September 2012) of noise monitoring were recorded during the reporting period. Based on the field observations and interpretation of the results, the noise exceedance the exceedances were mainly caused by traffic vehicles along Tuen Mun Road. It was concluded that the exceedance were not project related and no particular remedial work is required. No noise complaint, hence, no Action Level exceedance, was recorded in the reporting period

No environmental complaint was recorded in the reporting period.

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 – August 2012 (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 – September 2012 (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 – October 2012 (Final)

Appendix A

**Construction
Programme**

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

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Late Start	Late Finish	2012						
								Aug 31	Sep 30	Oct 31	Nov 30			
Preliminaries and General Requirements														
Project Completion														
Contract Key Dates														
KD1070	Completion of Section I of Works (Extended up to 19-Oct-12)	0	0		19-Oct-12*		19-Oct-12							
KD1080	Completion of Section IA of Works (Extended up to 19-Oct-12)	0	0		19-Oct-12*		19-Oct-12							◆ Completion of Se
KD1100	Completion of Section II of Works (Extended up to 08-Oct-13)	0	0		27-Dec-13*		08-Oct-13							◆ Completion of Se
Design of Permanent Works														
Package of Geotechnical Works														
Detailed Design Approval (DDA)														
DDAGE1180	Submit & Endorsement DDA by SO	35		14-Dec-11 A	23-Aug-12	03-Aug-12	04-Aug-12							Submit & Endorsement DDA by SO
Package of Provisional Works for TCSS Installation														
Detailed Design Approval (DDA)														
DDATS1030	Submit & Endorsement DDA by SO	35		09-Dec-10 A	23-Aug-12	05-Jun-12	06-Jun-12							Submit & Endorsement DDA by SO
Package of At-Grade Irrigation System														
Detailed Design Approval (DDA)														
DDAIS1030	Submit & Endorsement DDA by SO	35		28-Mar-12 A	31-Aug-12	29-Sep-14	08-Oct-14							Submit & Endorsement DDA by SO
Package of Landscaping Works														
Detailed Design Approval (DDA)														
DDALW1030	Submit & Endorsement DDA by SO	35		28-Mar-12 A	31-Aug-12	29-Sep-14	08-Oct-14							Submit & Endorsement DDA by SO
DDALW1070	Submit & Endorsement DDA by SO	35		11-May-12 A	31-Aug-12	20-Aug-12	29-Aug-12							Submit & Endorsement DDA by SO
Project General Submission														
Trial Green Panel														
Trial Green Panel														
GS1580	Site trial for green wall panel	365		05-Mar-11 A	23-Aug-12	26-Mar-13	26-Mar-13							Site trial for green wall panel
GS1600	Site trial for green roof panel	365		05-Mar-11 A	23-Aug-12	26-Mar-13	26-Mar-13							Site trial for green roof panel
Procurement														
Material Procurement and Fabrication														
Procurement and Fabrication														
MP1030	Yan Oi Bridge Passenger Lift	90	24	14-May-12 A	19-Sep-12	05-Aug-13	31-Aug-13							Yan Oi Bridge Passenger Lift
MP1060	Siu On Bridge span	93	24	01-Jun-12 A	19-Sep-12	10-Sep-14	08-Oct-14							Siu On Bridge span
MP1070	Siu On Bridge Passenger Lift	90	24	14-May-12 A	19-Sep-12	18-Jul-13	14-Aug-13							Siu On Bridge Passenger Lift

Remaining Level of Effort
 Critical R...
 Actual Work
 ◆ Milestone
 Remaining Work

3 Months Rolling Programme WP04 (23 Aug 2012)

Date	Revision	Checked	Approved
23-Aug-12	WP04-3MRP 1208	Renato	

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

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Late Start	Late Finish	2012			
								Aug 31	Sep 30	Oct 31	Nov 30
MP1080	Chi Lok Bridge span	80	0	30-May-12 A	26-Jul-12 A	09-Oct-14	09-Oct-14				
MP1090	Chi Lok Bridge Passenger Lift	90	0	01-Feb-12 A	30-Jul-12 A	16-Jul-12	16-Jul-12				
MP1100	Noise Barrier/Enclosure steel structure for Scheme A Area	84	84	24-Aug-12	03-Dec-12	07-Sep-12	25-Mar-13				
MP1110	Noise Barrier/Enclosure steel structure for Scheme B Area	89	13	29-Jun-12 A	06-Sep-12	07-Sep-12	23-Jan-13				
MP1120	Noise Barrier/Enclosure steel structure for Scheme C Area	271	271	17-Oct-12	16-Sep-13	28-Jan-13	27-Aug-13				
MP1130	Noise Barrier/Enclosure steel structure for Scheme D Area	289	289	02-Oct-12	23-Sep-13	02-Apr-13	23-Jul-13				
MP1140	Noise Barrier/Enclosure steel structure for Scheme E Area	189	189	25-Sep-12	20-May-13	02-Oct-12	28-Apr-13				
MP1160	Noise Barrier/Enclosure wall panel for Scheme B Area	337	337	11-Sep-12	31-Oct-13	07-Aug-13	08-Oct-13				
MP1210	Noise Barrier/Enclosure roof panel for Scheme B Area	280	280	11-Sep-12	22-Aug-13	07-Aug-13	08-Oct-13				

Section 1 of Works

Improvement Works at Fu Fat Lane / Castle Peak Road

Roadworks

SEC11190	Install the cross road duct & remove existing central median	45	18	13-Feb-12 A	12-Sep-12	11-Sep-12	03-Oct-12				
SEC11200	Relocation existing road lighting & construct new central median	45	14	04-Jul-12 A	29-Sep-12	04-Oct-12	19-Oct-12				

Improvement Works at Hoi Wing Road / Castle Peak Road

Roadworks

SEC11230	Construct new road island at Kowloon bound	30	0	02-Jan-12 A	09-Aug-12 A	19-Oct-12	19-Oct-12				
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Establishment Works in Portion 1

Establishment Works

SEC11080	Establishment Works	385	385	20-Oct-12	19-Oct-13	20-Oct-12	19-Oct-13				
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Section II of Works

Stage 1 Kowloon Bound Road Verge & T1

NB Structural Steel Post/Column Erection

RA1110	Erect NE01 S/B steel column	25	25	16-Oct-12	14-Nov-12	16-May-13	17-Jun-13				
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Stage 2 Both bound Road Verge near Yan Ching Bridge

Utilities Diversion

RA1830	Diversion of existing PCCW cable	60	26	11-Jul-12 A	21-Sep-12	06-Sep-12	09-Oct-12				
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Pile Cap / Footing

RA1125	Construct pile cap NE03 PC5 to PC7 & FT08	67	49	02-Aug-12 A	19-Oct-12	06-Sep-12	05-Nov-12				
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RA1130	Construct pad footing NE02 PC8 & NE04 FT1 to FT5	100	0	17-May-12 A	24-Oct-12 A	07-Jan-13	07-Jan-13				
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NB Structural Steel Post/Column Erection

RA1210	Erect NE05 N/B & S/B steel columns	44	44	22-Sep-12	15-Nov-12	24-Jan-13	19-Mar-13				
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Remaining Level of Effort
 Critical R...
 Actual Work
 Milestone
 Remaining Work

3 Months Rolling Programme WP04 (23 Aug 2012)

Date	Revision	Checked	Approved
23-Aug-12	WP04-3MRP 1208	Renato	

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

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Late Start	Late Finish	2012			
								Aug 31	Sep 32	Oct 33	Nov 34
Stage 3 Central Median Area											
Pile Cap / Footing											
RA1372	Construct pile cap NE01 PC8 to PC15	117	33	02-Jun-12A	15-Oct-12	21-Jan-13	05-Mar-13				
RA1374	Construct pile cap NE02 PC9 to PC14	100	77	03-Jul-12A	05-Feb-13	26-Feb-13	03-Jun-13				
RA1376	Construct pad footing NE04 FT6 to FT9	67	67	23-Aug-12	12-Nov-12	11-Sep-12	01-Dec-12				
RA1378	Construct pad footing NE05 FT8 to FT12	83	17	03-Mar-12A	01-Dec-12	25-Jan-13	18-Feb-13				
Concrete Column at Central Barrier											
RA1380	Construct concrete column for NE01	81	81	16-Oct-12	23-Jan-13	01-Feb-13	18-May-13				
RA1400	Construct concrete column for NE04	44	44	12-Nov-12	05-Jan-13	01-Dec-12	25-Jan-13				
RA1410	Construct concrete column for NE05	75	25	13-Jul-12A	11-Dec-12	25-Jan-13	27-Feb-13				
Stage 3-1 NE02 Kowloon Bound Verge (After remove Temp. Bridge)											
Foundation Works											
RA1040	Construct mini pile foundation for NE02 PC1 to PC7	104	67	20-May-11 A	24-Jan-13	19-Jan-13	16-Apr-13				
Pile Cap / Footing											
RA1070	Construct pile cap NE02 PC1 to PC7	58	50	21-Oct-11 A	27-Mar-13	16-Apr-13	17-Jun-13				
Construction of Temporary Yan Oi Bridge											
Remove Temporary Bridge											
TB1070	Remove temporary bridge	60	60	23-Aug-12*	03-Nov-12	07-Nov-12	19-Jan-13				
Construction of New Yan Oi Bridge											
Late Inception/Pre-Drilling Works											
YO1220	Pre-drilling works for New Yan Oi bridge N/B PC8 & PC7	30	30	05-Nov-12	08-Dec-12	23-Apr-13	30-May-13				
Pile Cap											
YO1052	Construct pile cap PC4	24	0	17-Jul-12A	10-Aug-12A	11-Dec-12	11-Dec-12				
Column, Pier Head and Staircase											
YO1070	Construct S/B column and column head	45	12	12-Jan-12A	05-Sep-12	04-Jan-13	18-Jan-13				
YO1080	Construct S/B staircase and erect lift structure	30	16	28-Jun-12A	03-Nov-12	14-Aug-13	31-Aug-13				
YO1180	Construct CM column and column head	30	30	23-Aug-12	27-Sep-12	11-Dec-12	18-Jan-13				
YO1185	Construct N/B column and column head	45	32	16-Dec-11 A	29-Sep-12	08-Dec-12	18-Jan-13				
Bridge and Lift Steel Frame Erection											
YO1100	Erection bridge N/B span	6	6	02-Oct-12	08-Oct-12	18-Jan-13	25-Jan-13				
YO1110	Erection bridge S/B span	6	6	09-Oct-12	15-Oct-12	25-Jan-13	01-Feb-13				
Lift Installation											
YO1140	Lift installation	30	30	05-Nov-12	08-Dec-12	02-Sep-13	08-Oct-13				
E&M and Finishing Works											
YO1120	Finishing works	75	75	18-Oct-12	15-Jan-13	11-Jul-13	08-Oct-13				
YO1130	E&M installation	75	75	18-Oct-12	15-Jan-13	11-Jul-13	08-Oct-13				

Remaining Level of Effort
 Actual Work
 Remaining Work
 Critical R...
 Milestone

3 Months Rolling Programme WP04 (23 Aug 2012)

Date	Revision	Checked	Approved
23-Aug-12	WP04-3MRP 1208	Renato	

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

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Late Start	Late Finish	2012			
								Aug 31	Sep 30	Oct 31	Nov 30
Stage 1 Both Bound Road Verge											
Utilities Overhaul											
RB2122	Relocation existing bus stop	16	16	22-Sep-12	12-Oct-12	08-Oct-12	29-Oct-12				
RB2124	Diversion existing PCCW 24 ways, HGC, 11kv & sewer	55	55	13-Oct-12	17-Dec-12	29-Oct-12	04-Jan-13				
Pile Cap / Footing											
RB1070	Construct pad footing for NE06 FT1 to FT3	50	27	18-Jul-12 A	22-Sep-12	30-Nov-12	04-Jan-13				
RB1245	Construct pad footing for NE07 FT4 & FT5	33	33	24-Aug-12	04-Oct-12	14-Nov-12	24-Dec-12				
RB1300	Construct pad footing for NE10 FT10 to FT14 & NE11 FT15 to FT22	100	50	03-Jun-11 A	22-Oct-12	25-Oct-12	22-Dec-12				
RB1302	Construct pile cap for NE12 PC3 & PC4 & NE13 PC1 & NE14 PC3 & PC4	83	34	23-Sep-11 A	03-Oct-12	01-Aug-12	10-Sep-12				
RB1310	Construct pile cap for NE12 PC5	17	5	10-Jul-12 A	28-Oct-12	22-Dec-12	31-Dec-12				
Concrete Column at Central Barrier											
RB1590	Construct concrete column for NE12 (4nos.)	31	31	04-Oct-12	10-Nov-12	10-Sep-12	18-Oct-12				
RB1600	Construct concrete column for NE13 (2nos.)	13	13	10-Nov-12	24-Nov-12	18-Oct-12	03-Nov-12				
NB Structural Steel Post/Column Erection											
RB1342	Erect NE06 S/B steel column	16	16	23-Aug-12*	10-Sep-12	28-Oct-12	14-Nov-12				
RB1380	Erect NE10 S/B steel column	15	15	11-Sep-12	28-Sep-12	14-Nov-12	01-Dec-12				
RB1370	Erect NE11 S/B steel column	23	23	29-Sep-12	27-Oct-12	01-Dec-12	31-Dec-12				
RB1760	Erect NE12 & NE14 S/B steel column	16	16	29-Oct-12	15-Nov-12	15-Mar-13	03-Apr-13				
RB1870	Erect NE06 N/B steel column	20	20	23-Aug-12*	14-Sep-12	30-Nov-12	24-Dec-12				
RB1871	Erect NE07 N/B steel column	4	4	04-Oct-12	08-Oct-12	24-Dec-12	31-Dec-12				
RB1890	Erect NE10 N/B steel column	15	15	30-Oct-12	15-Nov-12	31-Dec-12	18-Jan-13				
RB1900	Erect NE11 N/B steel column	23	23	16-Nov-12	12-Dec-12	18-Jan-13	18-Feb-13				
Drainage Works											
RB1380	Construct drainage N/B verge CH28600 to CH28950 (L=350m.)	117	117	30-Oct-12	21-Mar-13	29-Jan-13	26-Jun-13				
Roadworks											
RB1395	Roadworks for re-alignment of Tuen Lung Street	80	0	18-Jun-12 A	09-Aug-12 A	14-Nov-12	14-Nov-12				
Stage 2 Central Median											
Pile Cap / Footing											
RB1015	Construct pad footing for NE06 FT8 to FT12 & NE07 FT3	100	0	10-Apr-12 A	05-Aug-12 A	08-Jan-13	09-Jan-13				
Concrete Column at Central Barrier											
RB1540	Construct concrete column for NE06	83	83	23-Aug-12	07-Nov-12	09-Jan-13	26-Mar-13				
RB1550	Construct concrete column for NE07	13	0	20-Jul-12 A	12-Aug-12 A	26-Mar-13	28-Mar-13				
RB1580	Construct concrete column for NE08	58	0	17-Jun-12 A	05-Aug-12 A	09-Jan-13	09-Jan-13				
RB1570	Construct concrete column for NE10	50	6	28-May-12 A	30-Aug-12	10-Nov-12	17-Nov-12				
RB1580	Construct concrete column for NE11	68	13	06-Jun-12 A	13-Sep-12	17-Nov-12	03-Dec-12				
NB Structural Steel Truss Erection											
RB1620	Erect NE06 & 07 longitudinal steel truss at central median of TMR	16	16	07-Nov-12	26-Nov-12	28-Mar-13	18-Apr-13				

Remaining Level of Effort
 Actual Work
 Remaining Work
 Critical R...
 Milestone

3 Months Rolling Programme WP04 (23 Aug 2012)

Date	Revision	Checked	Approved
23-Aug-12	WP04-3MRP 1208	Renato	

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

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Late Start	Late Finish	2012				
								Aug	Sep	Oct	Nov	
RB1622	Erect NE08 longitudinal steel truss at central median of TMR	16	16	23-Aug-12	10-Sep-12	19-Jul-13	07-Aug-13	31	32	33	34	Erect NE08 longitudinal steel truss
Roadworks												
RB1650	Roadworks central barrier CH28500 to CH29000 (L=500m.)	83	83	10-Sep-12	19-Dec-12	26-Mar-13	10-Jul-13					
Stage 3 Steel Frame & Panel												
Main span Erection at YL/B & KL/B of TMR												
RB1672	Erection NE08 S/B roof beam	16	16	11-Sep-12	29-Sep-12	07-Aug-13	26-Aug-13					Erection NE08 S/B roof beam
Wall and Roof Panel Installation												
RB1692	Install roof cladding & translucent roof panel NE08 S/B	38	38	11-Sep-12	27-Oct-12	07-Aug-13	21-Sep-13					Install roof cladding
RB1712	Planting for green roof NE08	14	14	27-Oct-12	13-Nov-12	21-Sep-13	08-Oct-13					Planting
RB2170	Install green and transparent wall panel NE08	10	10	02-Oct-12	13-Oct-12	25-Sep-13	08-Oct-13					Install green and transparent wall panel
Stage 1 NE15 East Side, Tsing Hoi Circuit Re-alignment & S/B Foundation												
Foundation Works												
RC1203	Construct Socket H-piles foundation for NE16 PC10	42	5	17-Apr-12A	28-Aug-12	19-Jan-13	25-Jan-13					Construct Socket H-piles foundation for NE16 PC10
RC1735	Water diversion along Tsing Hoi Circuit (by others)	49	16	12-Apr-12A	10-Sep-12	21-Aug-12	08-Sep-12					Water diversion along Tsing Hoi Circuit
Pile Cap / Footing												
RC1080	Construct pat footing NE16 FT27 to FT34 (with retaining FR91)	133	50	12-May-11 A	07-Jan-13	21-Dec-12	25-Feb-13					Construct pat footing NE16 FT27 to FT34
RC1320	Construct pile cap NE16 PC10	17	17	28-Aug-12	17-Sep-12	25-Jan-13	16-Feb-13					Construct pile cap NE16 PC10
RC1750	Construct pat footing NE16 FT11 to FT15 & NE17 FT1 to FT6	85	23	14-Sep-11 A	20-Sep-12	31-Dec-12	28-Jan-13					Construct pat footing NE16 FT11 to FT15 & NE17 FT1 to FT6
RC1755	Construct pile cap NE16 PC35	17	17	17-Oct-12	08-Nov-12	01-Dec-12	21-Dec-12					Construct pile cap NE16 PC35
RC1757	Construct pile cap NE17 PC7 to PC8	33	33	24-Aug-12	04-Oct-12	26-Feb-13	10-Apr-13					Construct pile cap NE17 PC7 to PC8
RC1780	Construct pile cap NE16 PC8 & PC9	33	10	16-Jul-12A	27-Dec-12	25-Feb-13	07-Mar-13					Construct pile cap NE16 PC8 & PC9
N/B Structural Steel Post/Column Erection												
RC1120	Erection part of NE16 S/B steel column (PC10, FT11 to FT15)	18	18	17-Oct-12	07-Nov-12	28-Jan-13	21-Feb-13					Erection part of NE16 S/B steel column
Drainage Works												
RC1800	Construct drainage S/B verge CH28250 to CH28400	50	18	15-Mar-11 A	26-Oct-12	25-May-13	17-Jun-13					Construct drainage S/B verge
Roadworks												
RC1810	Roadworks S/B verge CH28250 to CH28400	38	38	04-Oct-12	17-Nov-12	25-May-13	10-Jul-13					Roadworks S/B verge
Stage 2 NE15 West Side												
Foundation Works												
RC1210	Construct mini pile foundation for NE15 PC7 to PC12	97	0	20-Apr-12A	04-Aug-12A	04-Oct-12	04-Oct-12					Construct mini pile foundation for NE15 PC7 to PC12
Pile Cap / Footing												
RC1295	Construct pile cap NE15 PC7 to PC12	100	93	18-Aug-12A	13-Dec-12	04-Oct-12	25-Jan-13					Construct pile cap NE15 PC7 to PC12
Stage 3 Central Median & N/B Foundation												
Utilities Diversion												
RC1730	Temporary slew existing 132kv cable (132KV-6) for NE16 PC22	30	7	24-Apr-12A	30-Aug-12	05-Nov-12	13-Nov-12					Temporary slew existing 132kv cable
Foundation Works												
RC1360	Construct Socket H-piles foundation for NE16 PC22	48	34	03-Aug-12A	03-Oct-12	03-Oct-12	13-Nov-12					Construct Socket H-piles foundation for NE16 PC22

Remaining Level of Effort
 Actual Work
 Remaining Work
 Critical R...
 Milestone

3 Months Rolling Programme WP04 (23 Aug 2012)

Date	Revision	Checked	Approved
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Design and Build of Traffic Improvement to Tuen Mun Road Town Centre Section

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Late Start	Late Finish	2012				
								Aug 31	Sep 30	Oct 31	Nov 30	
Pile Cap / Footing												
RC1580	Construct pile cap NE16 PC22	17	17	03-Oct-12	24-Oct-12	13-Nov-12	01-Dec-12					
RC1585	Construct pat footing NE16 FT16 to FT21	100	33	05-Apr-12A	03-Oct-12	08-Aug-12	15-Sep-12					
RC1845	Construct pat footing NE16 FT23 to FT26 & NE17 FT9 to FT14	167	167	23-Aug-12	15-Mar-13	14-Jun-12	04-Jan-13					
Concrete Column at Central Barrier												
RC1410	Construct concrete column for NE16	158	158	17-Oct-12	30-Apr-13	08-Aug-12	16-Feb-13					
NB Structural Steel Truss Erection												
RC1440	Erect NE16 central truss	28	28	30-Apr-13	05-Jun-13	16-Feb-13	22-Mar-13					
Stage 4 Steel Frame & Panel												
NB Structural Steel Post/Column Erection												
RC1447	Erection NE16 roof beam (Tuen Hing Rd to Siu On Bridge) NB & SB	50	50	05-Jun-13	05-Aug-13	22-Mar-13	27-May-13					
Wall and Roof Panel Installation												
RC1486	Install roof translucent roof panel NE16 (Tuen Hing Rd to Siu On Bridge) NB & SB	90	90	05-Jun-13	21-Sep-13	22-Mar-13	18-Jul-13					
RC1470	Install roof cladding & translucent roof panel NE16 (Siu On Bridge to NE17) NB & SB	57	57	21-Sep-13	29-Nov-13	16-Jul-13	19-Sep-13					
RC1484	Green roof planting for NE16	112	112	03-Aug-13	16-Dec-13	27-May-13	08-Oct-13					
Construction of Temporary Chi Lok Bridge												
Remove Temporary Bridge												
TB2050	Remove temporary bridge	60	60	31-Oct-12	11-Jan-13	28-Aug-12	09-Nov-12					
Construction of New Chi Lok Bridge												
Column, Post Head and Staircase												
CL1300	Construct S/B staircase and lift structure	45	0	24-Apr-12A	08-Aug-12A	31-Aug-12	31-Aug-12					
CL1310	Construct N/B staircase and lift structure	45	0	17-Jul-12A	15-Aug-12A	31-Aug-12	31-Aug-12					
Bridge and Lift Steel Frame Erection												
CL1140	Erection bridge N/B span	7	0	28-Jul-12A	28-Jul-12A	23-Jun-12	23-Jun-12					
Lift Installation												
CL1170	Lift installation	45	40	08-Aug-12A	10-Oct-12	18-Jul-12	31-Aug-12					
E&M and Finishing Works												
CL1150	Finishing works	90	71	02-Aug-12A	17-Nov-12	18-Jul-12	09-Oct-12					
CL1180	E&M installation	90	90	24-Aug-12	10-Dec-12	23-Jun-12	10-Oct-12					
Completion of New Chi Lok Bridge												
CL1180	Completion of new Chi Lok bridge	0	0		10-Dec-12		08-Oct-13					
Construction of New Siu On Bridge												
Pile Cap												
SO1250	Construct pile cap PCA	28	0	17-Jul-12A	06-Aug-12A	08-Aug-12	08-Aug-12					
Column, Post Head and Staircase												
SO1270	Construct column and column head N/B PC5 to PC7	60	20	31-May-12A	14-Sep-12	22-Sep-12	18-Oct-12					
SO1280	Construct column and column head PCA	45	45	23-Aug-12	16-Oct-12	08-Aug-12	02-Oct-12					
SO1300	Construct S/B staircase and lift structure	45	0	15-Jun-12A	07-Aug-12A	15-Aug-13	15-Aug-13					

Remaining Level of Effort
 Critical R...
 Actual Work
 Remaining Work
 Milestone

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

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Late Start	Late Finish	2012			
								Aug	Sep	Oct	Nov
SO1310	Construct N/B staircase and lift structure	45	36	04-Jul-12A	22-Dec-12	22-Jul-13	31-Aug-13				
Bridge and Lift Steel Frame Erection											
SO1085	Erection bridge span between THC to PC4	7	7	17-Oct-12	25-Oct-12	02-Oct-12	10-Oct-12				
SO1080	Erection bridge S/B span	7	7	26-Oct-12	02-Nov-12	10-Oct-12	18-Oct-12				
SO1100	Erection bridge N/B span	7	7	03-Nov-12	10-Nov-12	18-Oct-12	27-Oct-12				
E&M and Finishing Works											
SO1110	Finishing works	90	90	12-Nov-12	02-Mar-13	22-Jun-13	08-Oct-13				
SO1120	E&M installation	90	90	12-Nov-12	02-Mar-13	22-Jun-13	08-Oct-13				
TCSS and Fire Fighting System											
TCSS and Fire Fighting System											
TCSS1000	Section 2 TCSS installation	692	376	11-Mar-11 A	27-Nov-13	11-Mar-11	08-Oct-13				
TCSS1010	Section 2 Street lighting & Fire Fighting system installation	692	376	11-Mar-11 A	27-Nov-13	11-Mar-11	08-Oct-13				
Section III of Works											
Stage 1 N/B Foundation											
Pile Cap / Footing											
RD1710	Construct pile cap and wall NE26 PC1 to PC10	77	68	08-Mar-12A	14-Nov-12	08-Oct-12	31-Dec-12				
NB Structural Steel Post/Column Erection											
RD1290	Erect NE25 steel column	23	23	02-Oct-12	29-Oct-12	02-Apr-13	04-May-13				
RD1380	Erect NE26 S/B steel column	29	29	14-Nov-12	18-Dec-12	04-May-13	08-Jun-13				
Drainage Works											
RD1300	Construct drainage N/B verge CH27950 to CH28150	67	6	30-Jan-12A	29-Aug-12	08-Jun-12	13-Jun-12				
Roadworks											
RD1310	Roadworks N/B verge CH27950 to CH28150	50	4	30-Jan-12A	29-Aug-12	08-Jun-12	11-Jun-12				
Stage 2 S/B Foundation											
Pile Cap / Footing											
RD1090	Construct pile cap NE26 PC11 to PC13	50	42	22-Aug-12A	05-Feb-13	02-Apr-13	29-May-13				
Stage 3 Central Median Foundation											
Site Investigation / Pre-drilling Works											
RD1360	Pre-drilling works for NB foundation NE20 PC1 to PC7	21	21	29-Aug-12	22-Sep-12	11-Jun-12	07-Jul-12				
Foundation Works											
RD1420	Construct mini pile foundation for NE20 PC1	42	42	22-Sep-12	14-Nov-12	07-Jul-12	25-Aug-12				
Pile Cap / Footing											
RD1470	Construct pad footing NE24 FT1 to FT12	200	39	18-May-12A	09-Oct-12	26-Mar-13	15-May-13				
Concrete Column at Central Barrier											
RD1510	Construct concrete column for NE26	94	94	23-Aug-12	13-Dec-12	24-Nov-12	21-Mar-13				

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								Aug 31	Sep 30	Oct 31	Nov 30
NR Structural Steel Pile Column Erection											
RD1490	Erect NE24 steel column	36	36	08-Oct-12	21-Nov-12	12-Jul-13	23-Aug-13				
Stage 4 NE18, NE21 & NE23 Foundation											
Pile Cap / Footing											
RD3040	Construct pad footing NE18 FT1 to FT9	133	133	11-Sep-12	23-Feb-13	08-Sep-12	21-Feb-13				
RD3050	Construct pad Footing NE18 FT18 to FT23	133	77	29-Mar-12A	23-Nov-12	11-Dec-12	18-Mar-13				
RD3070	Construct pad footing NE23 FT1 to FT12	200	100	16-Jun-12A	24-May-13	13-Mar-13	17-Jul-13				
Stage 5 NE20 & NE22 Foundation											
Pile Cap / Footing											
RD1890	Construct pile cap NE20 FT9 to FT11	50	0	08-Jul-12A	04-Aug-12A	25-May-13	25-May-13				
Concrete Column at Central Barrier											
RD1800	Construct concrete column for NE22	106	106	23-Aug-12	31-Dec-12	02-Jan-13	15-May-13				
Drainage Works											
RD1870	Construct drainage for Wong Chu road	93	93	08-Oct-12	28-Jan-13	18-Feb-13	14-Jun-13				
Stage 6 Steel Frame & Panel											
Wall and Roof Panel Installation											
RD3120	Install absorptive & transparent wall panel NE24	35	35	21-Nov-12	04-Jan-13	23-Aug-13	04-Oct-13				
RD3130	Install absorptive & transparent wall panel NE25	26	26	30-Oct-12	28-Nov-12	03-Sep-13	04-Oct-13				
Construction of Vehicular Bridge #1											
Temporary Traffic Arrangement											
S1B1510	Submit and approve TTA for Modification of existing Wong Chu Road flyover	120	120	23-Aug-12	20-Dec-12	20-Sep-12	17-Jan-13				
Piling Works											
S1B3080	Construct Bored Pile foundation Pier 2 (2nos. 1.5m dia)	40	0	06-Jun-12A	09-Aug-12A	04-Oct-12	04-Oct-12				
S1B3090	Construct Bored Pile foundation Pier 1 (1nos. 1.5m dia)	20	18	15-Aug-12A	12-Sep-12	04-Oct-12	26-Oct-12				
S1B3110	Construct socket H-pile foundation North Abutment	47	0	13-Mar-12A	28-Jul-12A	11-Oct-12	11-Oct-12				
Pile Cap											
S1B4030	Construct pile cap Pier 7	36	4	26-Jul-12A	19-Sep-12	31-Aug-12	05-Sep-12				
S1B4040	Construct pile cap Pier 8	36	20	31-May-12A	14-Sep-12	08-Aug-12	31-Aug-12				
S1B4070	Construct pile cap Pier 3	36	0	14-Jul-12A	10-Aug-12A	05-Sep-12	05-Sep-12				
S1B4080	Construct pile cap Pier 2	36	36	11-Sep-12	25-Oct-12	28-Nov-12	12-Jan-13				
S1B4090	Construct pile cap Pier 1	36	36	18-Oct-12	28-Nov-12	28-Nov-12	12-Jan-13				
S1B4100	Construct South Abutment	60	60	23-Aug-12	03-Nov-12	04-Aug-12	16-Oct-12				
S1B4110	Construct North Abutment	60	60	05-Nov-12	16-Jan-13	18-Oct-12	31-Dec-12				
Pier and Pier Head											
S1B5030	Construct Column & Column Head for Pier 7	35	35	20-Sep-12	02-Nov-12	08-Sep-12	18-Oct-12				
S1B5040	Construct Column & Column Head for Pier 8	35	35	05-Oct-12	15-Nov-12	29-Nov-12	12-Jan-13				
S1B5050	Construct Column & Column Head for Pier 9	35	35	03-Nov-12	13-Dec-12	17-Nov-12	31-Dec-12				
S1B5070	Construct Column & Column Head for Pier 3	35	35	23-Aug-12	04-Oct-12	05-Sep-12	18-Oct-12				

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								Aug	Sep	Oct	Nov		
81B5080	Construct Column & Column Head for Pier 2	35	35	16-Nov-12	28-Dec-12	12-Jan-13	28-Feb-13						
Bridge S1 Deck Construction													
81B1060	Falseworks for Bridge Deck Pier 7 to Pier 3	40	36	11-Aug-12 A	18-Nov-12	18-Sep-12	02-Nov-12						
81B1440	Deck Construction Pier 7 to Pier 3	60	60	17-Nov-12	29-Jan-13	02-Nov-12	15-Jan-13						
Stage 2 NE27 Central Median Foundation													
Concrete Column at Central Barrier													
RE1100	Erect NE27 N/B steel column	45	45	15-Oct-12*	08-Dec-12	08-Feb-13	11-Apr-13						
Roadworks													
RE1200	Existing N/B road reconstruction ML CH27550 to CH27750	67	20	25-Jun-12 A	15-Sep-12	10-Sep-13	04-Oct-13						
Stage 3 NE27 S/B Foundation													
Pile Cap / Footing													
RE1040	Construct pad footing and pile cap NE27 PC1 to FT15	118	118	25-Aug-12	14-Jan-13	06-Aug-12	22-Dec-12						
Construction of Reinforced Earth Wall 6SW-AFR10													
REW (SW-AFR10)													
REW1010	Construct RE wall 6SW-AFR10 (7 bays)	95	1	05-Mar-12 A	28-Aug-12	04-Aug-12	06-Aug-12						
TCSS and Fire Fighting System													
TCSS and Fire Fighting System													
TCSS1020	Section 3 TCSS installation	644	289	13-Jan-11 A	14-Aug-13	13-Jan-11	08-Oct-13						
TCSS1030	Section 3 Street Lighting & Fire Fighting system installation	644	289	13-Jan-11 A	14-Aug-13	13-Jan-11	08-Oct-13						
Section IIIC of Works													
Landscaping Works													
Landscaping Works													
3C1010	Compensatory planting works at Location No.27 (9 nos.)	18	18	23-Aug-12	17-Sep-12	28-Aug-13	20-Sep-13						
3C1020	Compensatory planting works at Location No.28 (8 nos.)	18	18	10-Sep-12	03-Oct-12	13-Sep-13	06-Oct-13						
3C1100	Compensatory planting works at Location No.33 (3 nos. tree pot)	12	12	23-Aug-12	07-Sep-12	23-Sep-13	08-Oct-13						
3C1150	Compensatory planting works at Location No.34C (5 nos.)	18	18	10-Sep-12	03-Oct-12	13-Sep-13	08-Oct-13						
Section IIIG of Works													
Landscaping Works													
Landscaping Works													
3G1010	Compensatory planting works at Location No.2 (3 nos.)	12	12	10-Sep-12	25-Sep-12	21-Mar-13	05-Apr-13						
3G1040	Compensatory planting works at Location No.8 (2 nos. tree pot)	12	12	18-Sep-12	03-Oct-12	29-Mar-13	15-Apr-13						
3G1050	Compensatory planting works at Location No.8 (2 nos. tree pot)	12	12	28-Sep-12	11-Oct-12	08-Apr-13	23-Apr-13						

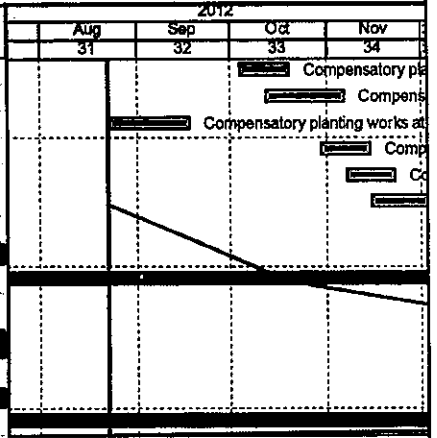
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								Aug 31	Sep 30	Oct 31	Nov 30		
3G1060	Compensatory planting works at Location No.9 (2 nos. tree pot)	12	12	04-Oct-12	19-Oct-12	16-Apr-13	01-May-13						
3G1070	Compensatory planting works at Location No.10 (9 nos.)	18	18	12-Oct-12	06-Nov-12	24-Apr-13	17-May-13						
3G1090	Compensatory planting works at Location No.13 (10 nos.)	18	18	23-Aug-12	17-Sep-12	05-Mar-13	28-Mar-13						
3G1140	Compensatory planting works at Location No.17 (3 nos.)	12	12	30-Oct-12	14-Nov-12	10-May-13	27-May-13						
3G1150	Compensatory planting works at Location No.18 (8 nos.)	12	12	07-Nov-12	22-Nov-12	20-May-13	04-Jun-13						
3G1160	Compensatory planting works at Location No.18A (8 nos.)	18	18	15-Nov-12	10-Dec-12	28-May-13	20-Jun-13						
Establishment Works													
Establishment Works													
3G1360	Establishment Work(Nos.1A,2,4-6,8-10,12,13,13A-B,14-18,18A-C,20,20A, 21,22,24,)	365	188	25-Feb-12 A	24-Feb-13	23-Aug-12	24-Feb-13						
Section IV of Works													
Preservation and Protection of Existing Trees													
Preservation and Protection of Existing Trees													
S4-1000	Preservation and protection of trees	982	334	26-Feb-10 A	08-Oct-13	23-Aug-12	08-Oct-13						



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Appendix B

**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 *		
				Aug 12	Sep 12	Oct 12
Noise Control						
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"> only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction works; machines and plant that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; plant known to emit noise strongly in one direction should, where possible, be orientated to direct noise away from the NSRs; mobile plant should be sited as far away from NSRs as possible; and material stockpiles and other structures should be effectively utilized, where practicable, to screen noise from on-site construction activities. 	Works Sites / During Construction Phase	Obs ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓	✓ ✓ ✓ ✓
3.8.4	2.8.3	Use of quieter mechanical equipment	Works Sites / During Construction Phase	✓	✓	✓
3.8.9	2.8.4	<p>Provision of movable noise barrier in the vicinity of the following NSRs</p> <ul style="list-style-type: none"> 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) 	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 *		
				Aug 12	Sep 12	Oct 12
		<ul style="list-style-type: none"> • 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) 				
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"> • 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. 	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 *		
				Aug 12	Sep 12	Oct 12
3.8.13	2.8.6	Liaise with all the relevant schools to check out their examination periods and activities in the beginning of the work programme in order to make good planning and arrangement of works and provide sufficient mitigation plans to alleviate noise impacts.	CMA Choi Cheung Kok Secondary School (CMA), Yan Oi Tong Madam Lau Wong Fat Primary School (LWF), Lui Cheung Kwong Lutheran College (LCK), Lui Cheung Kwong Lutheran Primary School (LCKP) and CSBS Mrs. Aw Boon Haw Secondary School (CSBS) / During Construction Phase	✓	✓	✓

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

EIA Ref #	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Status *		
				Aug 12	Sep 12	Oct 12
		<i>Air Quality Control</i>				
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"> • 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 	Works Sites / During Construction Phase	✓	✓	✓
				✓	Obs	✓

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 *		
				Aug 12	Sep 12	Oct 12
		<ul style="list-style-type: none"> 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 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. 		✓	✓	✓
				✓	✓	✓
				Obs	✓	✓
				Obs	✓	Rdr
				✓	✓	✓
				✓	✓	✓
				✓	✓	✓

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 *		
				Aug 12	Sep 12	Oct 12
		Water Quality Control				
5.8.2	4.3.2	Construction run-off and Drainage <ul style="list-style-type: none"> 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 	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 *		
				Aug 12	Sep 12	Oct 12
		<p>all times and particularly during rainstorms.</p> <ul style="list-style-type: none"> 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. 		✓	✓	✓
5.8.3 - 5.8.4	4.3.3	<p>General Construction Activities</p> <ul style="list-style-type: none"> 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 	Works Sites / During Construction Phase	✓	✓	✓
				✓	Obs	Obs
				✓	✓	✓
5.8.5	4.3.4	<p>Sewage from Construction Workforce</p> <ul style="list-style-type: none"> 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 	Works Sites / During Construction Phase	✓	✓	✓

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

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

EIA Ref #	EM&A Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Status *		
				Aug 12	Sep 12	Oct 12
		Waste Management				
6.6.1	5.2.2	<p><i>Good Site Practices</i></p> <ul style="list-style-type: none"> 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 waste 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. A recording system for the amount of wastes generated, recycled and disposed of (including the disposal sites). 	Works Sites / During Construction Phase	✓ ✓ Obs ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓
6.6.5	5.2.6	<p><i>Chemical Wastes</i></p> <ul style="list-style-type: none"> 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. 	Works Sites / During Construction Phase	Obs ✓	✓ ✓	✓ ✓

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 *		
				Aug 12	Sep 12	Oct 12
6.6.6	5.2.7	<p><i>General Refuse</i></p> <ul style="list-style-type: none"> 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. 	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"> 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, 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. 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. Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste. 	Works Sites / During Construction Phase	✓	✓	✓
				✓	✓	✓
				✓	✓	✓
				✓	✓	✓
				✓	✓	Obs
				✓	✓	✓
				✓	✓	✓

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 *		
				Aug 12	Sep 12	Oct 12
6.6.4	5.2.5	<p><i>Construction and Demolition (C&D) Material</i></p> <ul style="list-style-type: none"> 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. One may make reference to ETWB TCW No. 31/2004 for details. 	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 *		
				Aug 12	Sep 12	Oct 12
		Ecology				
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"> regular watering complete coverage of dusty material storage piles the use of minimum practical height for dropping excavated material 	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"> 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. 	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 *		
				Aug 12	Sep 12	Oct 12
7.9.5	6.2.5	Standard good site practice measures should be implemented and should include: <ul style="list-style-type: none"> • 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. 	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 *		
				Aug 12	Sep 12	Oct 12
<i>Landscape and Visual</i>						
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.		✓	✓	✓

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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 *		
				Aug 12	Sep 12	Oct 12
		<i>Land Contamination</i>				
9.8.3	8.2.2	<p>To minimize construction workers' potential contact with the contaminated materials</p> <ul style="list-style-type: none"> The use of bulk earth-moving excavator equipment would minimise construction workers' potential contact with the contaminated materials; 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; 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. 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; 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; 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; Records of the quantities of wastes generated and disposed of should be maintained; Adequate washing facilities should be provided on site; and 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, 	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 *		
				Aug 12	Sep 12	Oct 12
		or any construction materials such as cement and gravel. Groundwater should be disposed of in accordance with the Water Pollution Control Ordinance (Cap 358).				

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

Appendix C

**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 ³ /min)		Average Flow Rate (m ³ /min)	Elapse Time		Sampling Time	Total vol. (m ³)	(ug/m ³) AM1
						Initial	Final	Initial	Final	Initial	Final	Initial	Final		Initial	Final		Start	Finish			
130789	Aug-12	1-Aug-12	AM1	Fine	Normal Operation	754.0	754.0	28.0	28.0	50.0	50.0	2.7378	2.7771	0.0393	1.5050	1.5050	1.5050	13009.30	13033.30	1440.00	2167.20	18.1
130795	Aug-12	7-Aug-12	AM1	Fine	Normal Operation	754.0	754.0	28.0	28.0	50.0	50.0	2.7596	2.7718	0.0122	1.5050	1.5050	1.5050	13033.30	13057.30	1440.00	2167.20	5.6
130801	Aug-12	13-Aug-12	AM1	Fine	Normal Operation	754.0	754.0	28.0	28.0	50.0	50.0	2.7575	2.7692	0.0117	1.5050	1.5050	1.5050	13057.30	13081.30	1440.00	2167.20	5.4
130807	Aug-12	18-Aug-12	AM1	Fine	Normal Operation	754.0	754.0	28.0	28.0	50.0	50.0	2.7413	2.7521	0.0108	1.5050	1.5050	1.5050	13081.30	13105.30	1440.00	2167.20	5.0
130813	Aug-12	24-Aug-12	AM1	Fine	Normal Operation	754.0	754.0	28.0	28.0	50.0	50.0	2.7556	2.7674	0.0118	1.5050	1.5050	1.5050	13105.30	13129.30	1440.00	2167.20	5.4
130819	Aug-12	30-Aug-12	AM1	Fine	Normal Operation	754.0	754.0	28.0	28.0	50.0	50.0	2.7614	2.7703	0.0089	1.5050	1.5050	1.5050	13129.30	13153.30	1440.00	2167.20	4.1
102166	Sep-12	5-Sep-12	AM1	Fine	Normal Operation	756.0	756.0	28.0	28.0	36.0	36.0	2.836	2.8415	0.0055	1.0034	1.0034	1.0034	13153.30	13177.30	1440.00	1444.90	3.8
102172	Sep-12	11-Sep-12	AM1	Fine	Normal Operation	755.0	754.0	29.0	29.0	36.0	36.0	2.8254	2.8384	0.0130	1.0005	0.9996	1.0001	13177.30	13201.30	1440.00	1440.07	9.0
102186	Sep-12	17-Sep-12	AM1	Fine	Normal Operation	755.0	756.0	28.0	28.0	36.0	36.0	2.8308	2.8475	0.0167	1.0154	1.0163	1.0159	13201.30	13225.30	1440.00	1462.82	11.4
130825	Sep-12	22-Sep-12	AM1	Fine	Normal Operation	754.0	755.0	27.0	27.0	36.0	36.0	2.8461	2.8591	0.0130	1.0168	1.0177	1.0173	13225.30	13249.30	1440.00	1464.84	8.9
130831	Sep-12	28-Sep-12	AM1	Fine	Normal Operation	754.0	754.0	29.0	29.0	36.0	36.0	2.8481	2.8596	0.0115	1.0122	1.0122	1.0122	13249.30	13273.30	1440.00	1457.57	7.9
130837	Oct-12	3-Oct-12	AM1	Fine	Normal Operation	760.0	759.0	26.0	26.0	40.0	36.0	2.8567	2.8727	0.0160	1.1832	1.0239	1.1036	13273.30	13297.30	1440.00	1589.11	10.1
130843	Oct-12	9-Oct-12	AM1	Fine	Normal Operation	757.0	759.0	25.0	25.0	40.0	36.0	2.8434	2.8554	0.0120	1.1827	1.0263	1.1045	13297.30	13321.30	1440.00	1590.48	7.5
130849	Oct-12	15-Oct-12	AM1	Fine	Normal Operation	761.0	760.0	24.0	24.0	40.0	36.0	2.8266	2.8405	0.0139	1.1896	1.0296	1.1096	13321.30	13345.30	1440.00	1597.82	8.7
130855	Oct-12	20-Oct-12	AM1	Fine	Normal Operation	762.0	762.0	23.0	23.0	40.0	36.0	2.8287	2.8463	0.0176	1.1933	1.0339	1.1136	13345.30	13369.30	1440.00	1603.58	11.0
130861	Oct-12	26-Oct-12	AM1	Fine	Normal Operation	761.0	760.0	24.0	25.0	40.0	36.0	2.8327	2.9435	0.1108	1.1896	1.0272	1.1084	13369.30	13393.30	1440.00	1596.10	69.4

Average (ug/m³)	12.0
Max (ug/m³)	69.4
Min (ug/m³)	3.8

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

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

Filter No.	Month	Date	Receptor No.	Weather condition	Site condition	Pressure (mmHg)		Temperature (oC)		Flow Recorder Reading (CFM)		Filter Weight (g)		TSP weight (g)	Flow Rate (m ³ /min)		Average Flow Rate (m ³ /min)	Elapse Time		Sampling Time	Total vol. (m ³)	(ug/m ³) AM2
						Initial	Final	Initial	Final	Initial	Final	Initial	Final		Initial	Final		Start	Finish			
130790	Aug-12	1-Aug-12	AM2	Fine	Normal Operation	754.0	754.0	28.0	28.0	50.0	50.0	2.7593	2.8151	0.0558	1.4861	1.4861	1.4861	7163.10	7187.10	1440.00	2139.98	26.1
130796	Aug-12	7-Aug-12	AM2	Fine	Normal Operation	754.0	754.0	28.0	28.0	50.0	50.0	2.765	2.7783	0.0133	1.4861	1.4861	1.4861	7187.10	7211.10	1440.00	2139.98	6.2
130802	Aug-12	13-Aug-12	AM2	Fine	Normal Operation	754.0	754.0	28.0	28.0	50.0	50.0	2.7588	2.7686	0.0098	1.4861	1.4861	1.4861	7211.10	7235.10	1440.00	2139.98	4.6
130808	Aug-12	18-Aug-12	AM2	Fine	Normal Operation	754.0	754.0	28.0	28.0	50.0	50.0	2.7535	2.7688	0.0153	1.4861	1.4861	1.4861	7235.10	7259.10	1440.00	2139.98	7.1
130814	Aug-12	24-Aug-12	AM2	Fine	Normal Operation	754.0	754.0	28.0	28.0	50.0	50.0	2.7459	2.7548	0.0089	1.4861	1.4861	1.4861	7259.10	7283.10	1440.00	2139.98	4.2
130820	Aug-12	30-Aug-12	AM2	Fine	Normal Operation	754.0	754.0	28.0	28.0	50.0	50.0	2.7476	2.7602	0.0126	1.4861	1.4861	1.4861	7283.10	7307.10	1440.00	2139.98	5.9
102167	Sep-12	5-Sep-12	AM2	Fine	Normal Operation	756.0	756.0	28.0	28.0	40.0	40.0	2.8316	2.8392	0.0076	1.1438	1.1438	1.1438	7307.10	7331.10	1440.00	1647.07	4.6
102173	Sep-12	11-Sep-12	AM2	Fine	Normal Operation	755.0	754.0	29.0	29.0	40.0	40.0	2.8247	2.8384	0.0137	1.1407	1.1398	1.1403	7331.10	7355.10	1440.00	1641.96	8.3
102187	Sep-12	17-Sep-12	AM2	Fine	Normal Operation	755.0	756.0	28.0	28.0	40.0	40.0	2.8247	2.8494	0.0247	1.1481	1.1491	1.1486	7355.10	7379.10	1440.00	1653.98	14.9
130826	Sep-12	22-Sep-12	AM2	Fine	Normal Operation	754.0	755.0	27.0	27.0	40.0	40.0	2.8415	2.8519	0.0104	1.1496	1.1505	1.1501	7379.10	7403.10	1440.00	1656.07	6.3
130832	Sep-12	28-Sep-12	AM2	Fine	Normal Operation	754.0	754.0	29.0	29.0	40.0	40.0	2.8392	2.8551	0.0159	1.1448	1.1448	1.1448	7403.10	7427.10	1440.00	1648.51	9.6
130838	Oct-12	3-Oct-12	AM2	Fine	Normal Operation	760.0	759.0	26.0	26.0	40.0	40.0	2.8339	2.8482	0.0143	1.1579	1.1569	1.1574	7427.10	7451.10	1440.00	1666.66	8.6
130844	Oct-12	9-Oct-12	AM2	Fine	Normal Operation	757.0	759.0	25.0	25.0	40.0	40.0	2.835	2.8427	0.0077	1.1575	1.1594	1.1585	7451.10	7475.10	1440.00	1668.17	4.6
130850	Oct-12	15-Oct-12	AM2	Fine	Normal Operation	761.0	760.0	24.0	24.0	40.0	40.0	2.8254	2.8408	0.0154	1.1638	1.1628	1.1633	7475.10	7499.10	1440.00	1675.15	9.2
130856	Oct-12	20-Oct-12	AM2	Fine	Normal Operation	762.0	762.0	23.0	23.0	40.0	40.0	2.8266	2.8670	0.0404	1.1673	1.1673	1.1673	7499.10	7523.10	1440.00	1680.91	24.0
130862	Oct-12	26-Oct-12	AM2	Fine	Normal Operation	761.0	760.0	24.0	25.0	40.0	40.0	2.8156	2.8389	0.0233	1.1638	1.1603	1.1621	7523.10	7547.10	1440.00	1673.35	13.9

Average (ug/m³)	9.9
Max (ug/m³)	26.1
Min (ug/m³)	4.2

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

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

Filter No.	Month	Date	Receptor No.	Weather condition	Site condition	Pressure (mmHg)		Temperature (oC)		Flow Recorder Reading (CFM)		Filter Weight (g)		TSP weight (g)	Flow Rate (m ³ /min)		Average Flow Rate (m ³ /min)	Elapse Time		Sampling Time	Total vol. (m ³)	(ug/m ³) AM3
						Initial	Final	Initial	Final	Initial	Final	Initial	Final		Initial	Final		Start	Finish			
130791	Aug-12	1-Aug-12	AM3	Fine	Normal Operation	754.0	754.0	28.0	28.0	50.0	50.0	2.7602	2.8042	0.0440	1.5549	1.5549	1.5549	11329.39	11353.39	1440.00	2239.06	19.7
130797	Aug-12	7-Aug-12	AM3	Fine	Normal Operation	754.0	754.0	28.0	28.0	50.0	50.0	2.7662	2.7761	0.0099	1.5549	1.5549	1.5549	11353.39	11377.39	1440.00	2239.06	4.4
130803	Aug-12	13-Aug-12	AM3	Fine	Normal Operation	754.0	754.0	28.0	28.0	50.0	50.0	2.7383	2.7492	0.0109	1.5549	1.5549	1.5549	11377.39	11401.39	1440.00	2239.06	4.9
130809	Aug-12	18-Aug-12	AM3	Fine	Normal Operation	754.0	754.0	28.0	28.0	50.0	50.0	2.7548	2.7775	0.0227	1.5549	1.5549	1.5549	11401.39	11425.39	1440.00	2239.06	10.1
130815	Aug-12	24-Aug-12	AM3	Fine	Normal Operation	754.0	754.0	28.0	28.0	50.0	50.0	2.7623	2.8885	0.1262	1.5549	1.5549	1.5549	11425.39	11449.39	1440.00	2239.06	56.4
130821	Aug-12	30-Aug-12	AM3	Fine	Normal Operation	754.0	754.0	28.0	28.0	50.0	50.0	2.7308	2.7385	0.0077	1.5549	1.5549	1.5549	11449.39	11473.39	1440.00	2239.06	3.4
102168	Sep-12	5-Sep-12	AM3	Fine	Normal Operation	756.0	756.0	28.0	28.0	40.0	40.0	2.8251	2.8624	0.0373	1.2164	1.2164	1.2164	11473.39	11497.39	1440.00	1751.62	21.3
102174	Sep-12	11-Sep-12	AM3	Fine	Normal Operation	755.0	754.0	29.0	29.0	40.0	40.0	2.8255	2.8379	0.0124	1.2133	1.2124	1.2129	11497.39	11521.39	1440.00	1746.50	7.1
102188	Sep-12	17-Sep-12	AM3	Fine	Normal Operation	755.0	756.0	28.0	28.0	40.0	40.0	2.8347	2.8501	0.0154	1.2087	1.2097	1.2092	11521.39	11545.39	1440.00	1741.25	8.8
130827	Sep-12	22-Sep-12	AM3	Fine	Normal Operation	754.0	755.0	27.0	27.0	40.0	40.0	2.8357	2.8474	0.0117	1.2102	1.2111	1.2107	11545.39	11569.39	1440.00	1743.34	6.7
130833	Sep-12	28-Sep-12	AM3	Fine	Normal Operation	754.0	754.0	29.0	29.0	40.0	40.0	2.8443	2.8510	0.0067	1.2054	1.2054	1.2054	11569.39	11593.39	1440.00	1735.78	3.9
130839	Oct-12	3-Oct-12	AM3	Fine	Normal Operation	760.0	759.0	26.0	26.0	40.0	40.0	2.8278	2.8433	0.0155	1.2185	1.2175	1.2180	11593.39	11617.39	1440.00	1753.92	8.8
130845	Oct-12	9-Oct-12	AM3	Fine	Normal Operation	757.0	759.0	25.0	25.0	40.0	40.0	2.8320	2.8714	0.0394	1.2180	1.2199	1.2190	11617.39	11641.39	1440.00	1755.29	22.4
130851	Oct-12	15-Oct-12	AM3	Fine	Normal Operation	761.0	760.0	24.0	24.0	40.0	40.0	2.8244	2.8645	0.0401	1.2243	1.2234	1.2239	11641.39	11665.39	1440.00	1762.34	22.8
130857	Oct-12	20-Oct-12	AM3	Fine	Normal Operation	762.0	762.0	23.0	23.0	40.0	40.0	2.8131	2.8305	0.0174	1.2277	1.2277	1.2277	11665.39	11689.39	1440.00	1767.89	9.8
130863	Oct-12	26-Oct-12	AM3	Fine	Normal Operation	761.0	760.0	24.0	25.0	40.0	40.0	2.8179	2.8371	0.0192	1.2243	1.2209	1.2226	11689.39	11713.39	1440.00	1760.54	10.9

Average (ug/m³)	13.8
Max (ug/m³)	56.4
Min (ug/m³)	3.4

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

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

Filter No.	Month	Date	Receptor No.	Weather condition	Site condition	Pressure (mmHg)		Temperature (oC)		Flow Recorder Reading (CFM)		Filter Weight (g)		TSP weight (g)	Flow Rate (m ³ /min)		Average Flow Rate (m ³ /min)	Elapse Time		Sampling Time	Total vol. (m ³)	(ug/m ³) AM4
						Initial	Final	Initial	Final	Initial	Final	Initial	Final		Initial	Final		Start	Finish			
130792	Aug-12	1-Aug-12	AM4	Fine	Normal Operation	754.0	754.0	28.0	28.0	50.0	50.0	2.7455	2.8139	0.0684	1.5398	1.5398	1.5398	12211.12	12235.12	1440.00	2217.31	30.8
130798	Aug-12	7-Aug-12	AM4	Fine	Normal Operation	754.0	754.0	28.0	28.0	50.0	50.0	2.76	2.7773	0.0173	1.5398	1.5398	1.5398	12235.12	12259.12	1440.00	2217.31	7.8
130804	Aug-12	13-Aug-12	AM4	Fine	Normal Operation	754.0	754.0	28.0	28.0	50.0	50.0	2.7272	2.7516	0.0244	1.5398	1.5398	1.5398	12259.12	12283.12	1440.00	2217.31	11.0
130810	Aug-12	18-Aug-12	AM4	Fine	Normal Operation	754.0	754.0	28.0	28.0	50.0	50.0	2.7521	2.7775	0.0254	1.5398	1.5398	1.5398	12283.12	12307.12	1440.00	2217.31	11.5
130816	Aug-12	24-Aug-12	AM4	Fine	Normal Operation	754.0	754.0	28.0	28.0	50.0	50.0	2.7537	2.7608	0.0071	1.5398	1.5398	1.5398	12307.12	12331.12	1440.00	2217.31	3.2
130822	Aug-12	30-Aug-12	AM4	Fine	Normal Operation	754.0	754.0	28.0	28.0	50.0	50.0	2.7329	2.7413	0.0084	1.5398	1.5398	1.5398	12331.12	12355.12	1440.00	2217.31	3.8
102169	Sep-12	5-Sep-12	AM4	Fine	Normal Operation	756.0	756.0	28.0	28.0	40.0	40.0	2.8294	2.8362	0.0068	1.2383	1.2383	1.2383	12355.12	12379.12	1440.00	1783.15	3.8
102175	Sep-12	11-Sep-12	AM4	Fine	Normal Operation	755.0	754.0	29.0	29.0	40.0	40.0	2.825	2.8468	0.0218	1.2356	1.2348	1.2352	12379.12	12403.12	1440.00	1778.69	12.3
102189	Sep-12	17-Sep-12	AM4	Fine	Normal Operation	755.0	756.0	28.0	28.0	40.0	40.0	2.8387	2.8540	0.0153	1.1589	1.1598	1.1594	12403.12	12427.12	1440.00	1669.46	9.2
130828	Sep-12	22-Sep-12	AM4	Fine	Normal Operation	754.0	754.0	27.0	27.0	40.0	40.0	2.8315	2.8465	0.0150	1.1603	1.1603	1.1603	12427.12	12451.12	1440.00	1670.83	9.0
130834	Sep-12	28-Sep-12	AM4	Fine	Normal Operation	754.0	754.0	29.0	29.0	40.0	40.0	2.8357	2.8446	0.0089	1.1556	1.1556	1.1556	12451.12	12475.12	1440.00	1664.06	5.3
130840	Oct-12	3-Oct-12	AM4	Fine	Normal Operation	760.0	759.0	26.0	26.0	40.0	40.0	2.8296	2.8409	0.0113	1.1684	1.1674	1.1679	12475.12	12499.12	1440.00	1681.78	6.7
130846	Oct-12	9-Oct-12	AM4	Fine	Normal Operation	757.0	759.0	25.0	25.0	40.0	40.0	2.8246	2.8432	0.0186	1.1679	1.1698	1.1689	12499.12	12523.12	1440.00	1683.14	11.1
130852	Oct-12	15-Oct-12	AM4	Fine	Normal Operation	761.0	760.0	24.0	24.0	40.0	40.0	2.8379	2.8802	0.0423	1.1741	1.1731	1.1736	12523.12	12547.12	1440.00	1689.98	25.0
130858	Oct-12	20-Oct-12	AM4	Fine	Normal Operation	762.0	762.0	23.0	23.0	40.0	40.0	2.8182	2.8317	0.0135	1.1774	1.1774	1.1774	12547.12	12571.12	1440.00	1695.46	8.0
130864	Oct-12	26-Oct-12	AM4	Fine	Normal Operation	761.0	760.0	24.0	25.0	40.0	40.0	2.8079	2.8557	0.0478	1.1741	1.1707	1.1724	12571.12	12595.12	1440.00	1688.26	28.3

Average (ug/m³)	11.7
Max (ug/m³)	30.8
Min (ug/m³)	3.2

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

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

Filter No.	Month	Date	Receptor No.	Weather condition	Site condition	Pressure (mmHg)		Temperature (oC)		Flow Recorder Reading (CFM)		Filter Weight (g)		TSP weight (g)	Flow Rate (m ³ /min)		Average Flow Rate (m ³ /min)	Elapse Time		Sampling Time	Total vol. (m ³)	(ug/m ³) AM5
						Initial	Final	Initial	Final	Initial	Final	Initial	Final		Initial	Final		Start	Finish			
130793	Aug-12	1-Aug-12	AM5	Fine	Normal Operation	754.0	754.0	28.0	28.0	50.0	50.0	2.7604	2.7884	0.0280	1.5089	1.5089	1.5089	11997.27	12021.27	1440.00	2172.82	12.9
130799	Aug-12	7-Aug-12	AM5	Fine	Normal Operation	754.0	754.0	28.0	28.0	50.0	50.0	2.7558	2.7655	0.0097	1.5089	1.5089	1.5089	12021.27	12045.27	1440.00	2172.82	4.5
130805	Aug-12	13-Aug-12	AM5	Fine	Normal Operation	754.0	754.0	28.0	28.0	50.0	50.0	2.761	2.7953	0.0343	1.5089	1.5089	1.5089	12045.27	12069.27	1440.00	2172.82	15.8
130811	Aug-12	18-Aug-12	AM5	Fine	Normal Operation	754.0	754.0	28.0	28.0	50.0	50.0	2.7401	2.7495	0.0094	1.5089	1.5089	1.5089	12069.27	12093.27	1440.00	2172.82	4.3
130817	Aug-12	24-Aug-12	AM5	Fine	Normal Operation	754.0	754.0	28.0	28.0	50.0	50.0	2.7368	2.7446	0.0078	1.5089	1.5089	1.5089	12093.27	12117.27	1440.00	2172.82	3.6
130823	Aug-12	30-Aug-12	AM5	Fine	Normal Operation	754.0	754.0	28.0	28.0	50.0	50.0	2.7531	2.7791	0.0260	1.5089	1.5089	1.5089	12117.27	12141.27	1440.00	2172.82	12.0
102170	Sep-12	5-Sep-12	AM5	Fine	Normal Operation	756.0	756.0	28.0	28.0	40.0	40.0	2.8287	2.8547	0.0260	1.1735	1.1735	1.1735	12141.27	12165.27	1440.00	1689.84	15.4
102176	Sep-12	11-Sep-12	AM5	Fine	Normal Operation	755.0	754.0	29.0	29.0	40.0	40.0	2.8377	2.8568	0.0191	1.1705	1.1696	1.1701	12165.27	12189.27	1440.00	1684.87	11.3
102190	Sep-12	17-Sep-12	AM5	Fine	Normal Operation	755.0	756.0	28.0	28.0	40.0	40.0	2.8342	2.8560	0.0218	1.1679	1.1688	1.1684	12189.27	12213.27	1440.00	1682.42	13.0
130829	Sep-12	22-Sep-12	AM5	Fine	Normal Operation	754.0	754.0	27.0	27.0	40.0	40.0	2.8371	2.8478	0.0107	1.1693	1.1693	1.1693	12213.27	12237.27	1440.00	1683.79	6.4
130835	Sep-12	28-Sep-12	AM5	Fine	Normal Operation	754.0	754.0	29.0	29.0	40.0	40.0	2.8504	2.8611	0.0107	1.1649	1.1649	1.1649	12237.27	12261.27	1440.00	1677.46	6.4
130841	Oct-12	3-Oct-12	AM5	Fine	Normal Operation	760.0	759.0	26.0	26.0	40.0	40.0	2.829	2.8425	0.0135	1.1769	1.1760	1.1765	12261.27	12285.27	1440.00	1694.09	8.0
130847	Oct-12	9-Oct-12	AM5	Fine	Normal Operation	757.0	759.0	25.0	25.0	40.0	40.0	2.8186	2.8357	0.0171	1.1765	1.1782	1.1774	12285.27	12309.27	1440.00	1695.38	10.1
130853	Oct-12	15-Oct-12	AM5	Fine	Normal Operation	761.0	760.0	24.0	24.0	40.0	40.0	2.8298	2.8675	0.0377	1.1822	1.1814	1.1818	12309.27	12333.27	1440.00	1701.79	22.2
130859	Oct-12	20-Oct-12	AM5	Fine	Normal Operation	762.0	762.0	23.0	23.0	40.0	40.0	2.8157	2.8567	0.0410	1.1854	1.1854	1.1854	12333.27	12357.27	1440.00	1706.98	24.0
130865	Oct-12	26-Oct-12	AM5	Fine	Normal Operation	761.0	760.0	24.0	25.0	40.0	40.0	2.8179	2.8444	0.0265	1.1822	1.1791	1.1807	12357.27	12381.27	1440.00	1700.14	15.6

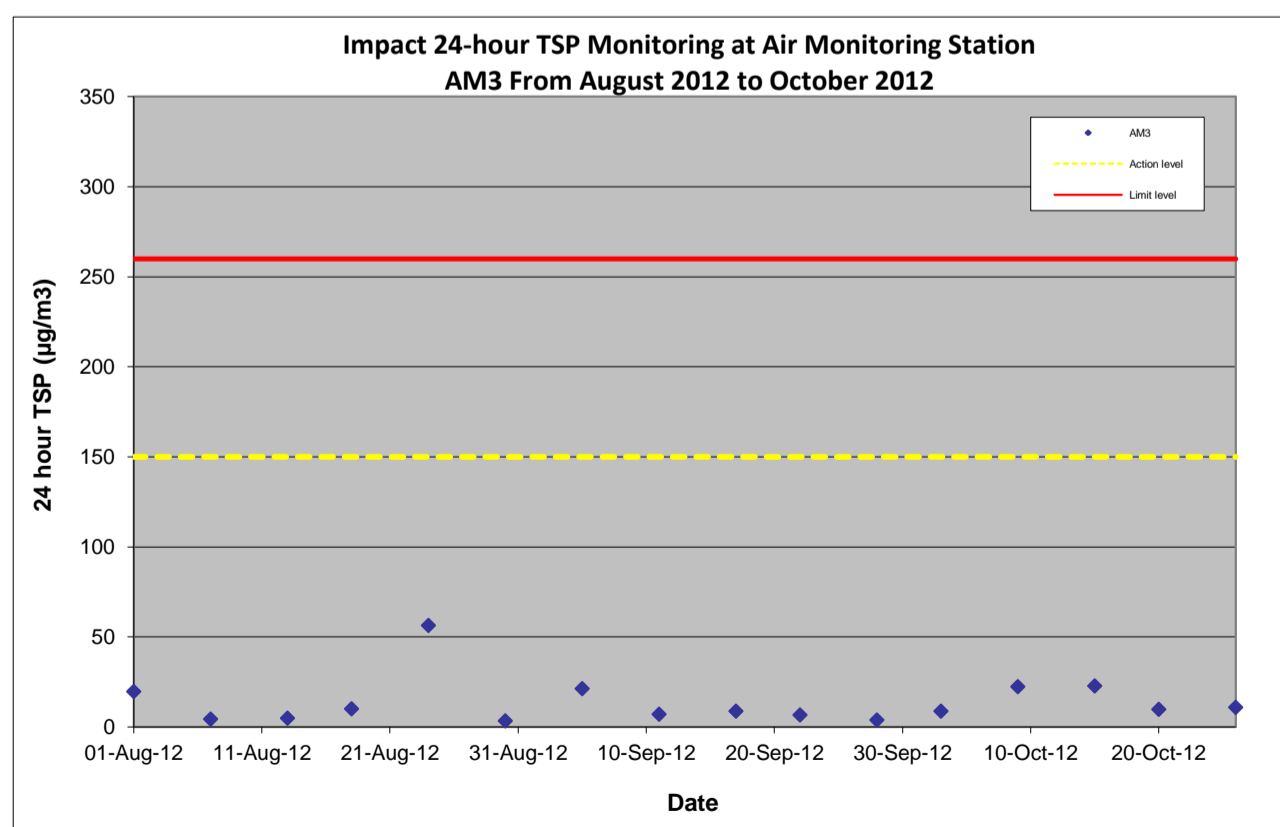
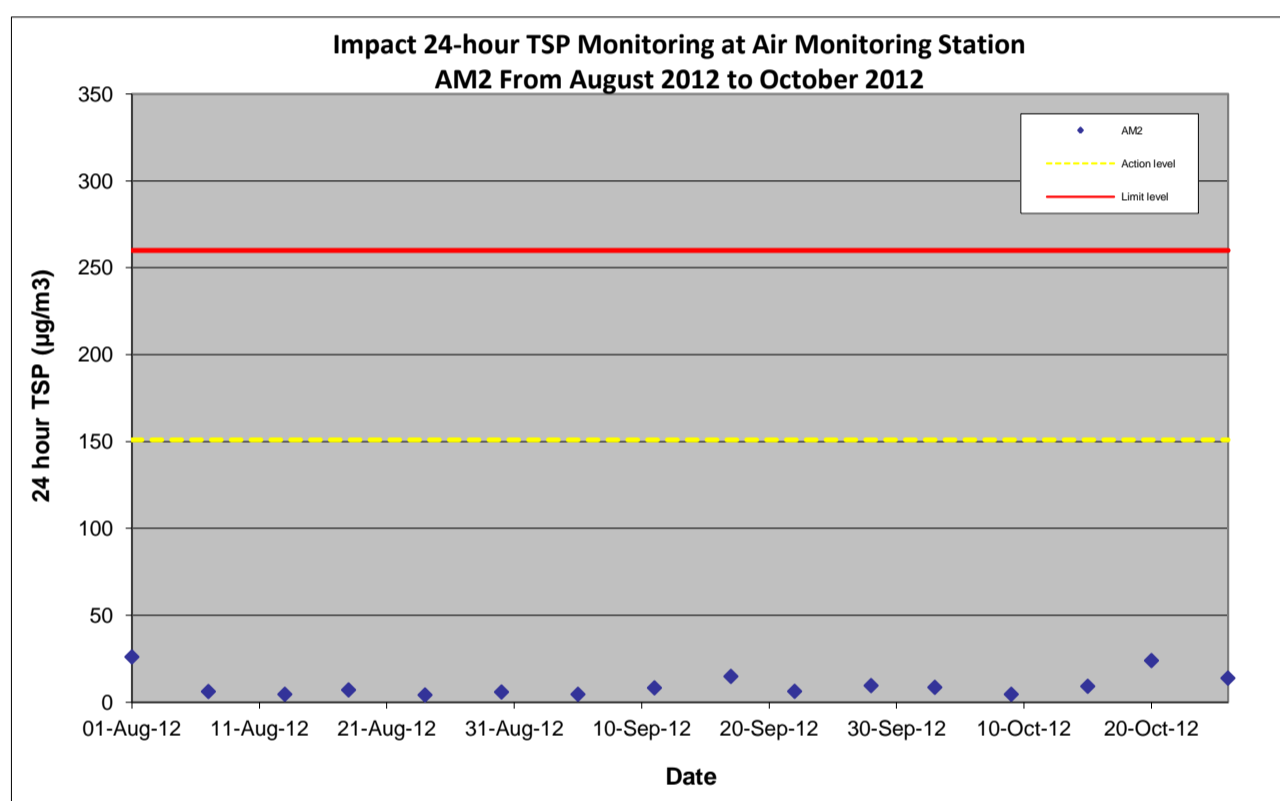
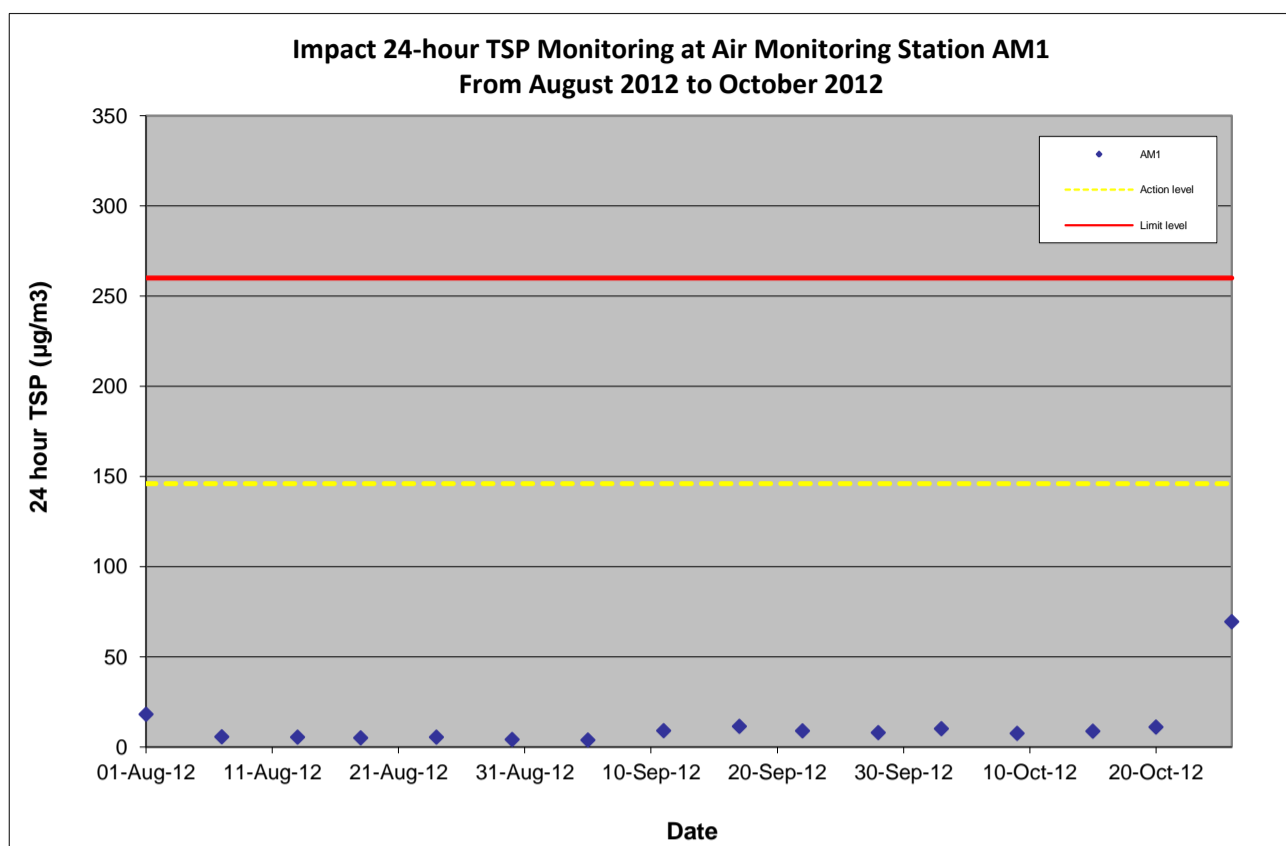
Average (ug/m³)	11.6
Max (ug/m³)	24.0
Min (ug/m³)	3.6
Action Level (ug/m³)	146
Limit Level (ug/m³)	260

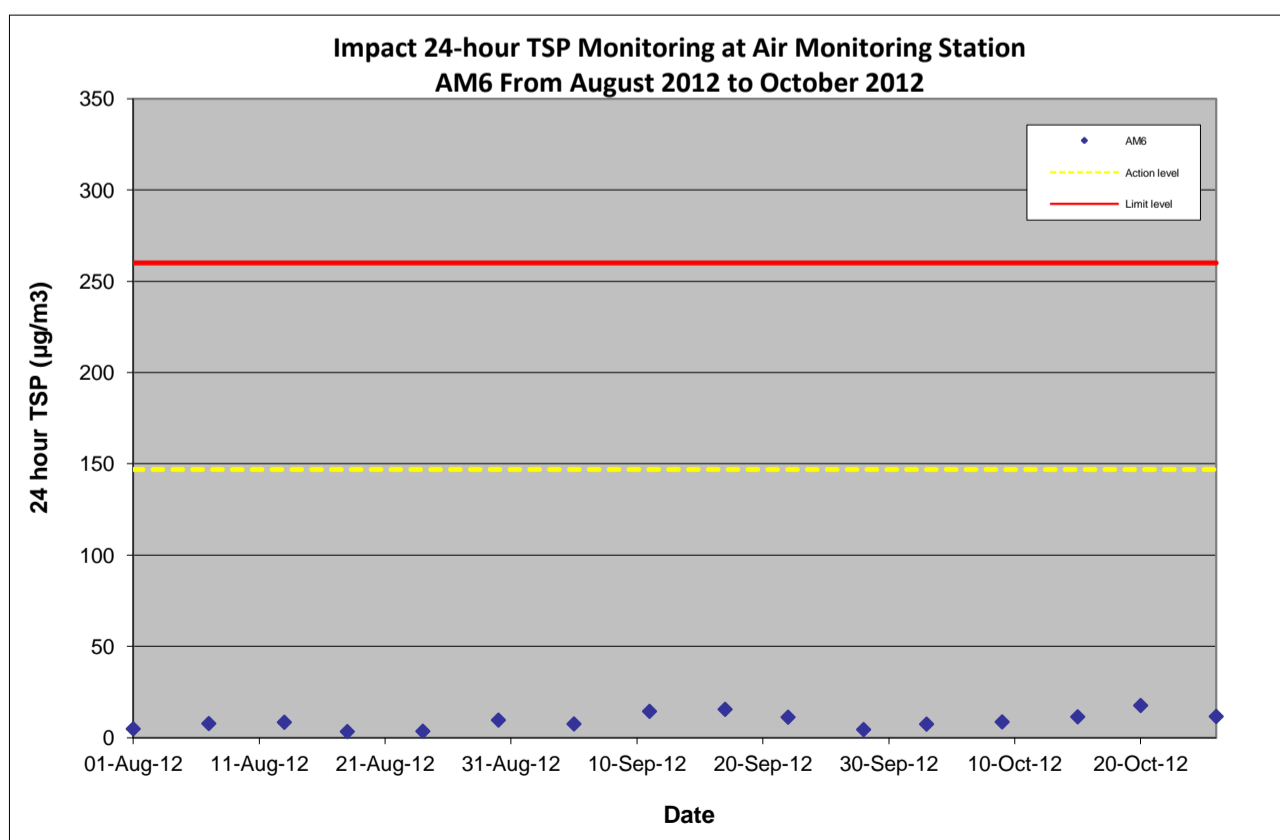
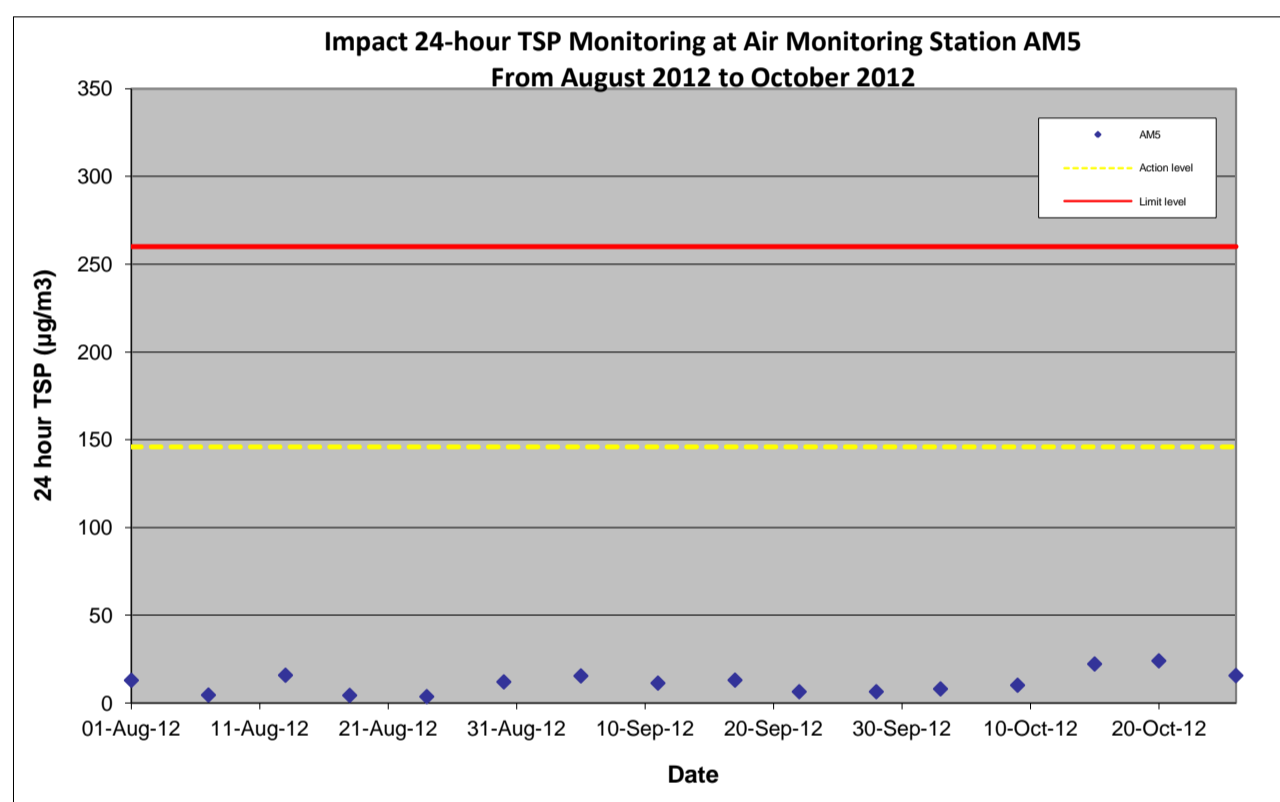
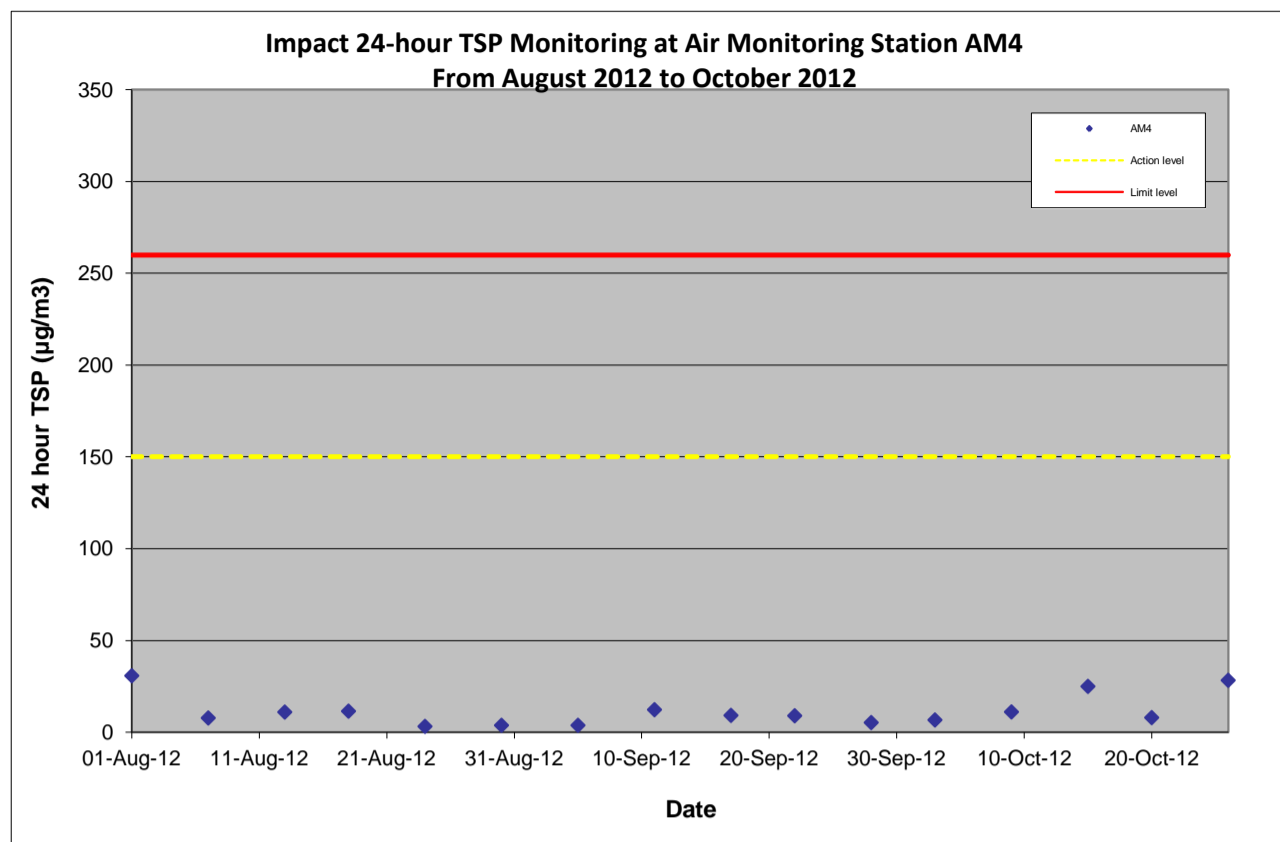
**Agreement No. HMW 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section
Impact Air Quality Monitoring Result at Yan Oi Tong Community and Sports Centre (AM6) - 24 hour TSP**

Filter No.	Month	Date	Receptor No.	Weather condition	Site condition	Pressure (mmHg)		Temperature (oC)		Flow Recorder Reading (CFM)		Filter Weight (g)		TSP weight (g)	Flow Rate (m ³ /min)		Average Flow Rate (m ³ /min)	Elapse Time		Sampling Time (mins.)	Total vol. (m ³)	(ug/m ³) AM6
						Initial	Final	Initial	Final	Initial	Final	Initial	Final		Initial	Final		Start	Finish			
130794	Aug-12	1-Aug-12	AM6	Fine	Normal Operation	754.0	754.0	28.0	28.0	50.0	50.0	2.7529	2.7633	0.0104	1.5137	1.5137	1.5137	6290.80	6314.80	2400.58	2424.58	4.8
130800	Aug-12	7-Aug-12	AM6	Fine	Normal Operation	754.0	754.0	28.0	28.0	50.0	50.0	2.7495	2.7662	0.0167	1.5137	1.5137	1.5137	6314.80	6338.80	2424.58	2448.58	7.7
130806	Aug-12	13-Aug-12	AM6	Fine	Normal Operation	754.0	754.0	28.0	28.0	50.0	50.0	2.7424	2.7608	0.0184	1.5137	1.5137	1.5137	6338.80	6362.80	2448.58	2472.58	8.4
130812	Aug-12	18-Aug-12	AM6	Fine	Normal Operation	754.0	754.0	28.0	28.0	50.0	50.0	2.7531	2.7602	0.0071	1.5137	1.5137	1.5137	6362.80	6386.80	2472.58	2496.58	3.3
130818	Aug-12	24-Aug-12	AM6	Fine	Normal Operation	754.0	754.0	28.0	28.0	50.0	50.0	2.7578	2.7654	0.0076	1.5137	1.5137	1.5137	6386.80	6410.80	2496.58	2520.58	3.5
130824	Aug-12	30-Aug-12	AM6	Fine	Normal Operation	754.0	754.0	28.0	28.0	50.0	50.0	2.7421	2.7630	0.0209	1.5137	1.5137	1.5137	6410.80	6434.80	2520.58	2544.58	9.6
102171	Sep-12	5-Sep-12	AM6	Fine	Normal Operation	756.0	756.0	28.0	28.0	40.0	40.0	2.8148	2.8276	0.0128	1.1924	1.1924	1.1924	8474.80	8498.80	1440.00	1717.06	7.5
102177	Sep-12	11-Sep-12	AM6	Fine	Normal Operation	755.0	754.0	29.0	29.0	40.0	40.0	2.8265	2.8512	0.0247	1.1894	1.1886	1.1890	8498.80	8522.80	1440.00	1712.16	14.4
102191	Sep-12	17-Sep-12	AM6	Fine	Normal Operation	755.0	756.0	28.0	28.0	40.0	40.0	2.8409	2.8676	0.0267	1.1926	1.1936	1.1931	8522.80	8546.80	1440.00	1718.06	15.5
130830	Sep-12	22-Sep-12	AM6	Fine	Normal Operation	754.0	754.0	27.0	27.0	40.0	40.0	2.8437	2.8630	0.0193	1.1941	1.1941	1.1941	8546.80	8570.80	1440.00	1719.50	11.2
130836	Sep-12	28-Sep-12	AM6	Fine	Normal Operation	754.0	754.0	29.0	29.0	40.0	40.0	2.8496	2.8572	0.0076	1.1892	1.1892	1.1892	8570.80	8594.80	1440.00	1712.45	4.4
130842	Oct-12	3-Oct-12	AM6	Fine	Normal Operation	760.0	759.0	26.0	26.0	40.0	40.0	2.8301	2.8429	0.0128	1.2027	1.2017	1.2022	8594.80	8618.80	1440.00	1731.17	7.4
130848	Oct-12	9-Oct-12	AM6	Fine	Normal Operation	757.0	759.0	25.0	25.0	40.0	40.0	2.8166	2.8315	0.0149	1.2022	1.2042	1.2032	8618.80	8642.80	1440.00	1732.61	8.6
130854	Oct-12	15-Oct-12	AM6	Fine	Normal Operation	761.0	760.0	24.0	24.0	40.0	40.0	2.8189	2.8387	0.0198	1.2087	1.2078	1.2083	8642.80	8666.80	1440.00	1739.88	11.4
130860	Oct-12	20-Oct-12	AM6	Fine	Normal Operation	762.0	762.0	23.0	23.0	40.0	40.0	2.8274	2.8582	0.0308	1.2123	1.2123	1.2123	8666.80	8690.80	1440.00	1745.71	17.6
130866	Oct-12	26-Oct-12	AM6	Fine	Normal Operation	761.0	760.0	24.0	25.0	40.0	40.0	2.8212	2.8413	0.0201	1.2087	1.2052	1.2070	8690.80	8714.80	1440.00	1738.01	11.6

Average (ug/m³)	9.2
Max (ug/m³)	17.6
Min (ug/m³)	3.3

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





Appendix D

Wind Data

Wind Monitoring Data - August 2012

Date	Wind Direction (degree)	Wind Speed (km/h)
1-Aug-12	280	14.7
7-Aug-12	230	15
13-Aug-12	230	11
18-Aug-12	170	16
24-Aug-12	10	13.3
30-Aug-12	220	14

Source extracted from Hong Kong Observatory (HKO)

Wind Monitoring Data - September 2012

Date	Wind Direction (degree)	Wind Speed (km/h)
5-Sep-12	80	28.4
11-Sep-12	120	14.5
17-Sep-12	10	15.7
22-Sep-12	100	17.7
28-Sep-12	20	29.8

Source extracted from Hong Kong Observatory (HKO)

Wind Monitoring Data - October 2012

Date	Wind Direction (degree)	Wind Speed (km/h)
3-Oct-12	90	20.3
9-Oct-12	90	14.9
15-Oct-12	110	14
20-Oct-12	100	26.3
26-Oct-12	60	35.7

Source extracted from Hong Kong Observatory (HKO)

Appendix E

**Impact Noise
Monitoring Results**

Agreement No. 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section - Environmental Team
Day-time Noise Monitoring Results - 2 August 2012

ID	Premise	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
			L _{Aeq,30min}	Limit	L _{10,5min}	L _{90,5min}	L _{Aeq,30min}	L _{Aeq,30min}
N1	Kam Fai Garden	09:45 - 10:15	74	75	75	71	76	Measured ≤ Baseline
N2	Tai Tung Pui Social Service Building	10:35 - 11:05	73	75	75	71	78	Measured ≤ Baseline
N3	Yuen Yuen Primary School	11:25 - 11:55	67	70	69	66	69	Measured ≤ Baseline
N4	Wu Siu Kui Primary School	08:35 - 09:05	66	70	67	64	67	Measured ≤ Baseline
N5	Tuen King Building	13:10 - 13:40	70	75	72	67	70	Measured ≤ Baseline
N6	Choi Cheung kok Secondary School	14:00 - 14:30	68	70	70	66	69	Measured ≤ Baseline

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

Agreement No. 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section - Environmental Team
Day-time Noise Monitoring Results - 8 August 2012

ID	Premise	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
			L _{Aeq,30min}	Limit	L _{10,5min}	L _{90,5min}	L _{Aeq,30min}	L _{Aeq,30min}
N1	Kam Fai Garden	09:45 - 10:15	73	75	75	71	76	Measured ≤ Baseline
N2	Tai Tung Pui Social Service Building	10:35 - 11:05	73	75	75	70	78	Measured ≤ Baseline
N3	Yuen Yuen Primary School	11:25 - 11:55	66	70	68	65	69	Measured ≤ Baseline
N4	Wu Siu Kui Primary School	08:35 - 09:05	66	70	68	65	67	Measured ≤ Baseline
N5	Tuen King Building	13:10 - 13:40	69	75	71	67	70	Measured ≤ Baseline
N6	Choi Cheung kok Secondary School	14:00 - 14:30	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 - 14 August 2012

ID	Premise	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
			L _{Aeq,30min}	Limit	L _{10,5min}	L _{90,5min}	L _{Aeq,30min}	L _{Aeq,30min}
N1	Kam Fai Garden	09:45 - 10:15	75	75	77	72	76	Measured ≤ Baseline
N2	Tai Tung Pui Social Service Building	10:35 - 11:05	74	75	76	71	78	Measured ≤ Baseline
N3	Yuen Yuen Primary School	11:25 - 11:55	68	70	70	66	69	Measured ≤ Baseline
N4	Wu Siu Kui Primary School	08:35 - 09:05	65	70	66	64	67	Measured ≤ Baseline
N5	Tuen King Building	13:10 - 13:40	70	75	72	68	70	Measured ≤ Baseline
N6	Choi Cheung kok Secondary School	14:00 - 14:30	68	70	70	67	69	Measured ≤ Baseline

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

Agreement No. 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section - Environmental Team
Day-time Noise Monitoring Results - 20 August 2012

ID	Premise	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
			L _{Aeq,30min}	Limit	L _{10,5min}	L _{90,5min}	L _{Aeq,30min}	L _{Aeq,30min}
N1	Kam Fai Garden	09:45 - 10:15	73	75	75	71	76	Measured ≤ Baseline
N2	Tai Tung Pui Social Service Building	10:35 - 11:05	74	75	76	71	78	Measured ≤ Baseline
N3	Yuen Yuen Primary School	11:25 - 11:55	67	70	69	65	69	Measured ≤ Baseline
N4	Wu Siu Kui Primary School	08:35 - 09:05	65	70	67	63	67	Measured ≤ Baseline
N5	Tuen King Building	13:10 - 13:40	69	75	72	67	70	Measured ≤ Baseline
N6	Choi Cheung kok Secondary School	14:00 - 14:30	68	70	70	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 - 31 August 2012

ID	Premise	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
			L _{Aeq,30min}	Limit	L _{10,5min}	L _{90,5min}	L _{Aeq,30min}	L _{Aeq,30min}
N1	Kam Fai Garden	09:45 - 10:15	74	75	76	71	76	Measured ≤ Baseline
N2	Tai Tung Pui Social Service Building	10:35 - 11:05	72	75	75	70	78	Measured ≤ Baseline
N3	Yuen Yuen Primary School	11:25 - 11:55	68	70	70	65	69	Measured ≤ Baseline
N4	Wu Siu Kui Primary School	08:35 - 09:05	65	70	68	64	67	Measured ≤ Baseline
N5	Tuen King Building	13:10 - 13:40	70	75	73	67	70	Measured ≤ Baseline
N6	Choi Cheung kok Secondary School	14:00 - 14:30	69	70	71	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 - 5 October 2012

ID	Premise	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
			L _{Aeq} ,30min	Limit	L ₁₀ ,5min	L ₉₀ ,5min	L _{Aeq} ,30min	L _{Aeq} ,30min
N1	Kam Fai Garden	09:45 - 10:15	73	75	76	71	76	Measured ≤ Baseline
N2	Tai Tung Pui Social Service Building	10:35 - 11:05	74	75	76	72	78	Measured ≤ Baseline
N3	Yuen Yuen Primary School	11:25 - 11:55	67	70	69	65	69	Measured ≤ Baseline
N4	Wu Siu Kui Primary School	08:35 - 09:05	64	70	66	63	67	Measured ≤ Baseline
N5	Tuen King Building	13:10 - 13:40	69	75	72	67	70	Measured ≤ Baseline
N6	Choi Cheung kok Secondary School	14:00 - 14:30	68	70	70	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 October 2012

ID	Premise	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
			L _{Aeq} ,30min	Limit	L ₁₀ ,5min	L ₉₀ ,5min	L _{Aeq} ,30min	L _{Aeq} ,30min
N1	Kam Fai Garden	09:45 - 10:15	74	75	77	72	76	Measured ≤ Baseline
N2	Tai Tung Pui Social Service Building	10:35 - 11:05	74	75	77	71	78	Measured ≤ Baseline
N3	Yuen Yuen Primary School	11:25 - 11:55	67	70	69	65	69	Measured ≤ Baseline
N4	Wu Siu Kui Primary School	08:35 - 09:05	65	70	68	63	67	Measured ≤ Baseline
N5	Tuen King Building	13:10 - 13:40	69	75	71	66	70	Measured ≤ Baseline
N6	Choi Cheung kok Secondary School	14:00 - 14:30	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 - 18 October 2012

ID	Premise	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
			L _{Aeq} ,30min	Limit	L ₁₀ ,5min	L ₉₀ ,5min	L _{Aeq} ,30min	L _{Aeq} ,30min
N1	Kam Fai Garden	09:45 - 10:15	74	75	76	72	76	Measured ≤ Baseline
N2	Tai Tung Pui Social Service Building	10:35 - 11:05	75	75	76	72	78	Measured ≤ Baseline
N3	Yuen Yuen Primary School	11:25 - 11:55	67	70	68	65	69	Measured ≤ Baseline
N4	Wu Siu Kui Primary School	08:35 - 09:05	66	70	69	64	67	Measured ≤ Baseline
N5	Tuen King Building	13:10 - 13:40	69	75	72	66	70	Measured ≤ Baseline
N6	Choi Cheung kok Secondary School	14:00 - 14:30	67	70	69	65	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 October 2012

ID	Premise	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
			L _{Aeq} ,30min	Limit	L ₁₀ ,5min	L ₉₀ ,5min	L _{Aeq} ,30min	L _{Aeq} ,30min
N1	Kam Fai Garden	09:45 - 10:15	72	75	75	70	76	Measured ≤ Baseline
N2	Tai Tung Pui Social Service Building	10:35 - 11:05	73	75	75	71	78	Measured ≤ Baseline
N3	Yuen Yuen Primary School	11:25 - 11:55	68	70	69	66	69	Measured ≤ Baseline
N4	Wu Siu Kui Primary School	08:35 - 09:05	65	70	67	63	67	Measured ≤ Baseline
N5	Tuen King Building	13:10 - 13:40	69	75	71	67	70	Measured ≤ Baseline
N6	Choi Cheung kok Secondary School	14:00 - 14:30	68	70	70	66	69	Measured ≤ Baseline

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

Agreement No. 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section - Environmental Team
Day-time Noise Monitoring Results - 30 October 2012

ID	Premise	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
			L _{Aeq} ,30min	Limit	L ₁₀ ,5min	L ₉₀ ,5min	L _{Aeq} ,30min	L _{Aeq} ,30min
N1	Kam Fai Garden	09:45 - 10:15	73	75	75	71	76	Measured ≤ Baseline
N2	Tai Tung Pui Social Service Building	10:35 - 11:05	73	75	75	71	78	Measured ≤ Baseline
N3	Yuen Yuen Primary School	11:25 - 11:55	67	70	69	65	69	Measured ≤ Baseline
N4	Wu Siu Kui Primary School	08:35 - 09:05	66	70	68	64	67	Measured ≤ Baseline
N5	Tuen King Building	13:10 - 13:40	69	75	72	66	70	Measured ≤ Baseline
N6	Choi Cheung kok Secondary School	14:00 - 14:30	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 - 6 September 2012

ID	Premise	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
			L _{Aeq} ,30min	Limit	L ₁₀ ,5min	L ₉₀ ,5min	L _{Aeq} ,30min	L _{Aeq} ,30min
N1	Kam Fai Garden	09:45 - 10:15	76	75	78	72	76	Measured ≤ Baseline
N2	Tai Tung Pui Social Service Building	10:35 - 11:05	75	75	78	72	78	Measured ≤ Baseline
N3	Yuen Yuen Primary School	11:25 - 11:55	66	70	68	65	69	Measured ≤ Baseline
N4	Wu Siu Kui Primary School	08:35 - 09:05	66	70	67	64	67	Measured ≤ Baseline
N5	Tuen King Building	13:10 - 13:40	69	75	72	67	70	Measured ≤ Baseline
N6	Choi Cheung kok Secondary School	14:00 - 14:30	68	70	71	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 September 2012

ID	Premise	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
			L _{Aeq} ,30min	Limit	L ₁₀ ,5min	L ₉₀ ,5min	L _{Aeq} ,30min	L _{Aeq} ,30min
N1	Kam Fai Garden	09:45 - 10:15	76	75	78	73	76	Measured ≤ Baseline
N2	Tai Tung Pui Social Service Building	10:35 - 11:05	75	75	78	72	78	Measured ≤ Baseline
N3	Yuen Yuen Primary School	11:25 - 11:55	67	70	70	66	69	Measured ≤ Baseline
N4	Wu Siu Kui Primary School	08:35 - 09:05	67	70	69	65	67	Measured ≤ Baseline
N5	Tuen King Building	13:10 - 13:40	70	75	72	67	70	Measured ≤ Baseline
N6	Choi Cheung kok Secondary School	14:00 - 14:30	68	70	71	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 - 21 September 2012

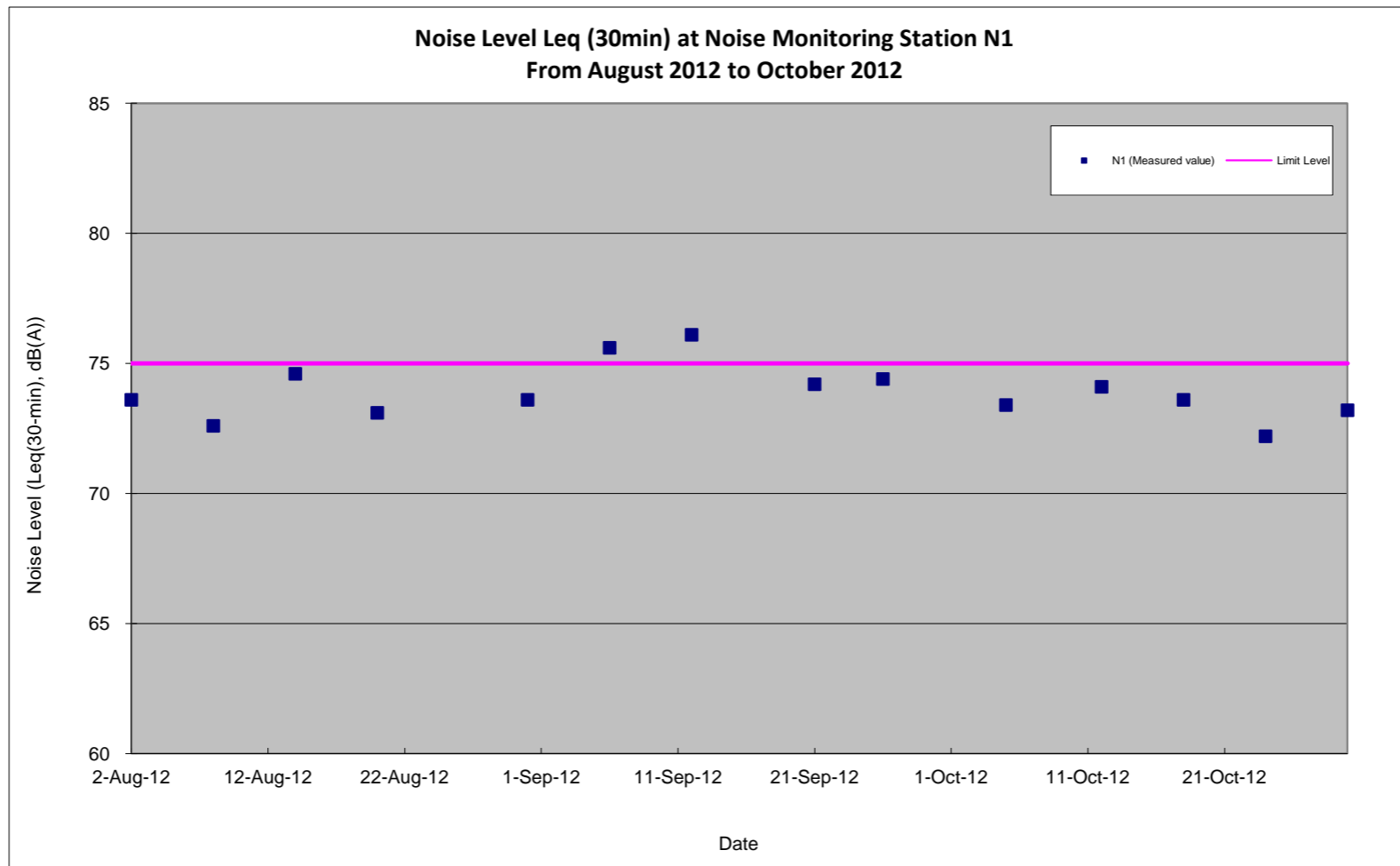
ID	Premise	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
			L _{Aeq} ,30min	Limit	L ₁₀ ,5min	L ₉₀ ,5min	L _{Aeq} ,30min	L _{Aeq} ,30min
N1	Kam Fai Garden	09:45 - 10:15	74	75	77	71	76	Measured ≤ Baseline
N2	Tai Tung Pui Social Service Building	10:35 - 11:05	75	75	77	72	78	Measured ≤ Baseline
N3	Yuen Yuen Primary School	11:25 - 11:55	67	70	70	65	69	Measured ≤ Baseline
N4	Wu Siu Kui Primary School	08:35 - 09:05	65	70	67	63	67	Measured ≤ Baseline
N5	Tuen King Building	13:10 - 13:40	68	75	71	67	70	Measured ≤ Baseline
N6	Choi Cheung kok Secondary School	14:00 - 14:30	68	70	70	66	69	Measured ≤ Baseline

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

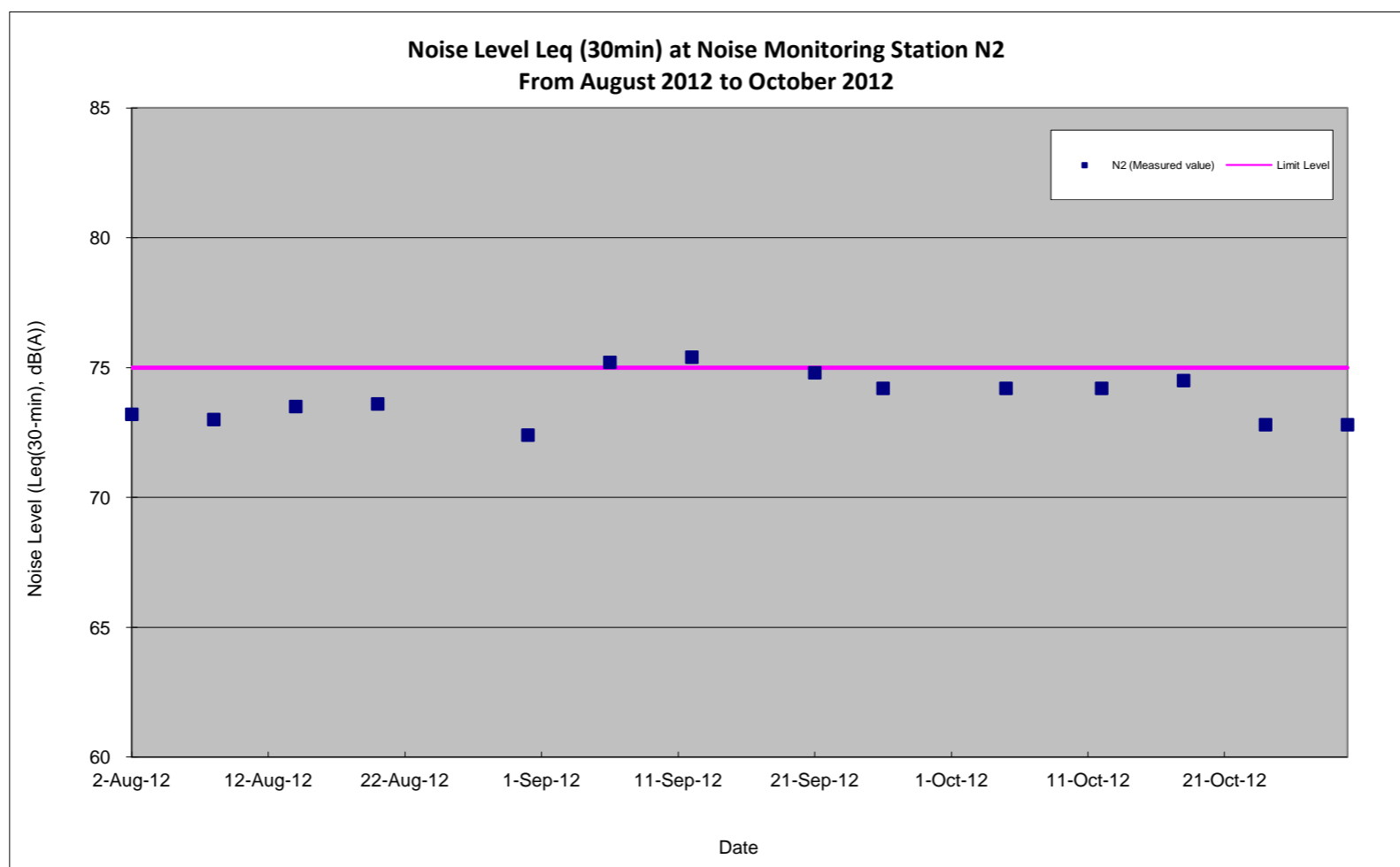
Agreement No. 5/2009 (EP) Traffic Improvements to Tuen Mun Road Town Centre Section - Environmental Team
Day-time Noise Monitoring Results - 26 September 2012

ID	Premise	Time	Measured Noise Level, dB(A)				Baseline Noise Level, dB(A)	Construction Noise Level, dB(A)
			L _{Aeq} ,30min	Limit	L ₁₀ ,5min	L ₉₀ ,5min	L _{Aeq} ,30min	L _{Aeq} ,30min
N1	Kam Fai Garden	09:45 - 10:15	74	75	78	71	76	Measured ≤ Baseline
N2	Tai Tung Pui Social Service Building	10:35 - 11:05	74	75	77	71	78	Measured ≤ Baseline
N3	Yuen Yuen Primary School	11:25 - 11:55	66	70	68	64	69	Measured ≤ Baseline
N4	Wu Siu Kui Primary School	08:35 - 09:05	66	70	68	64	67	Measured ≤ Baseline
N5	Tuen King Building	13:10 - 13:40	71	75	73	68	70	65
N6	Choi Cheung kok Secondary School	14:00 - 14:30	70	70	72	67	69	64

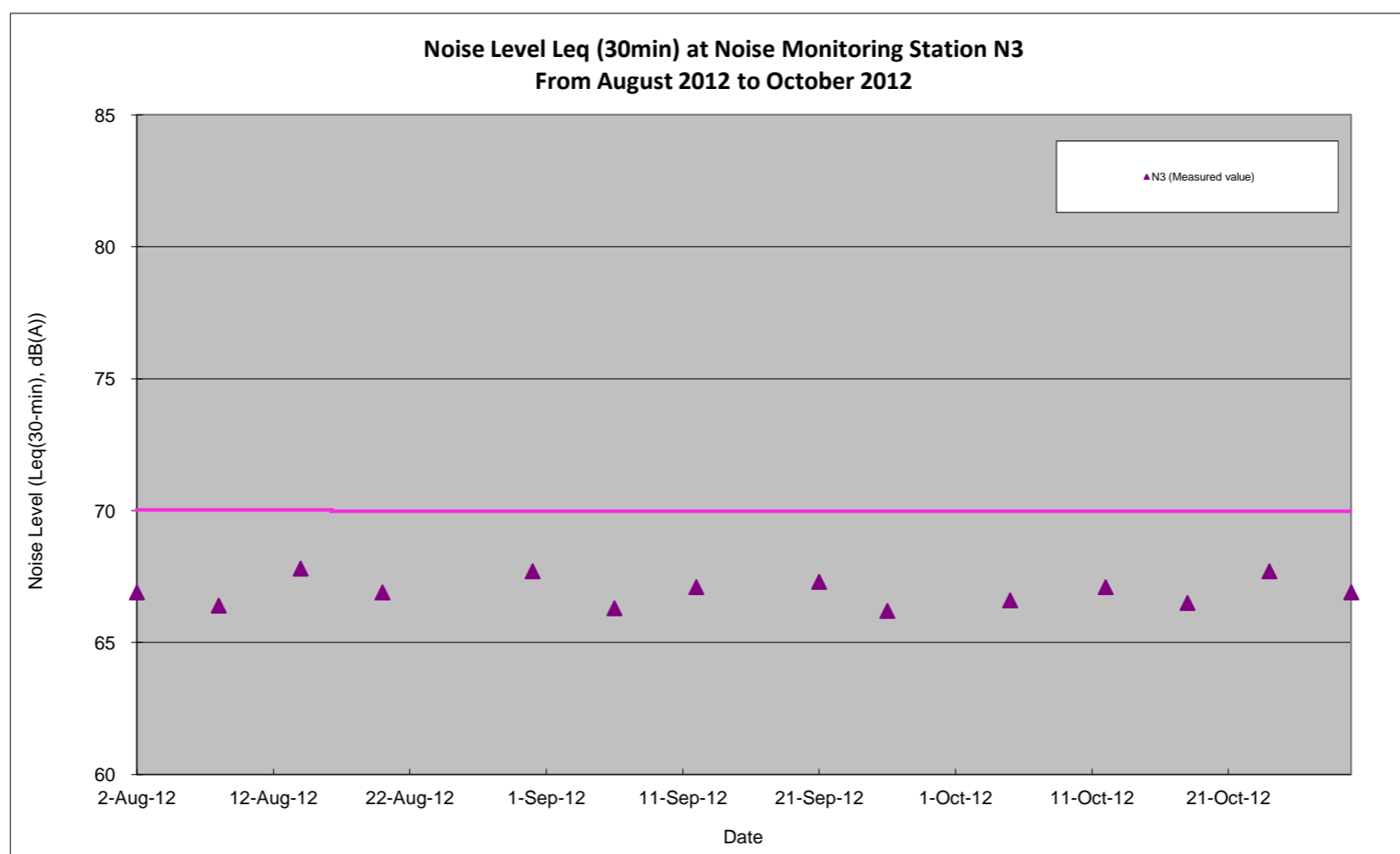
Note: (#): Construction Noise Level = Measured Noise Level - Baseline Noise Level



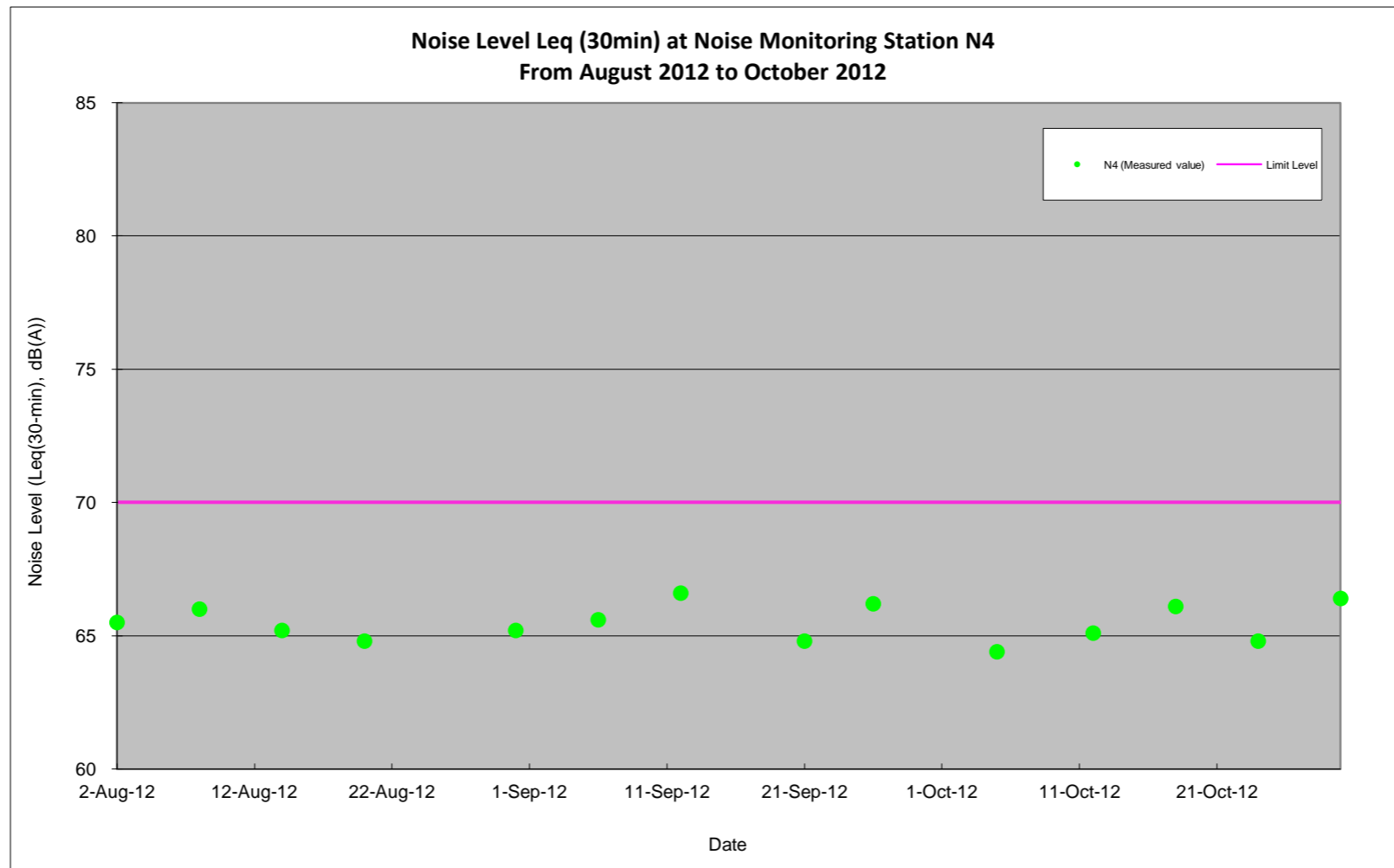
Note: For compliance comparison, please refer to above table and report.



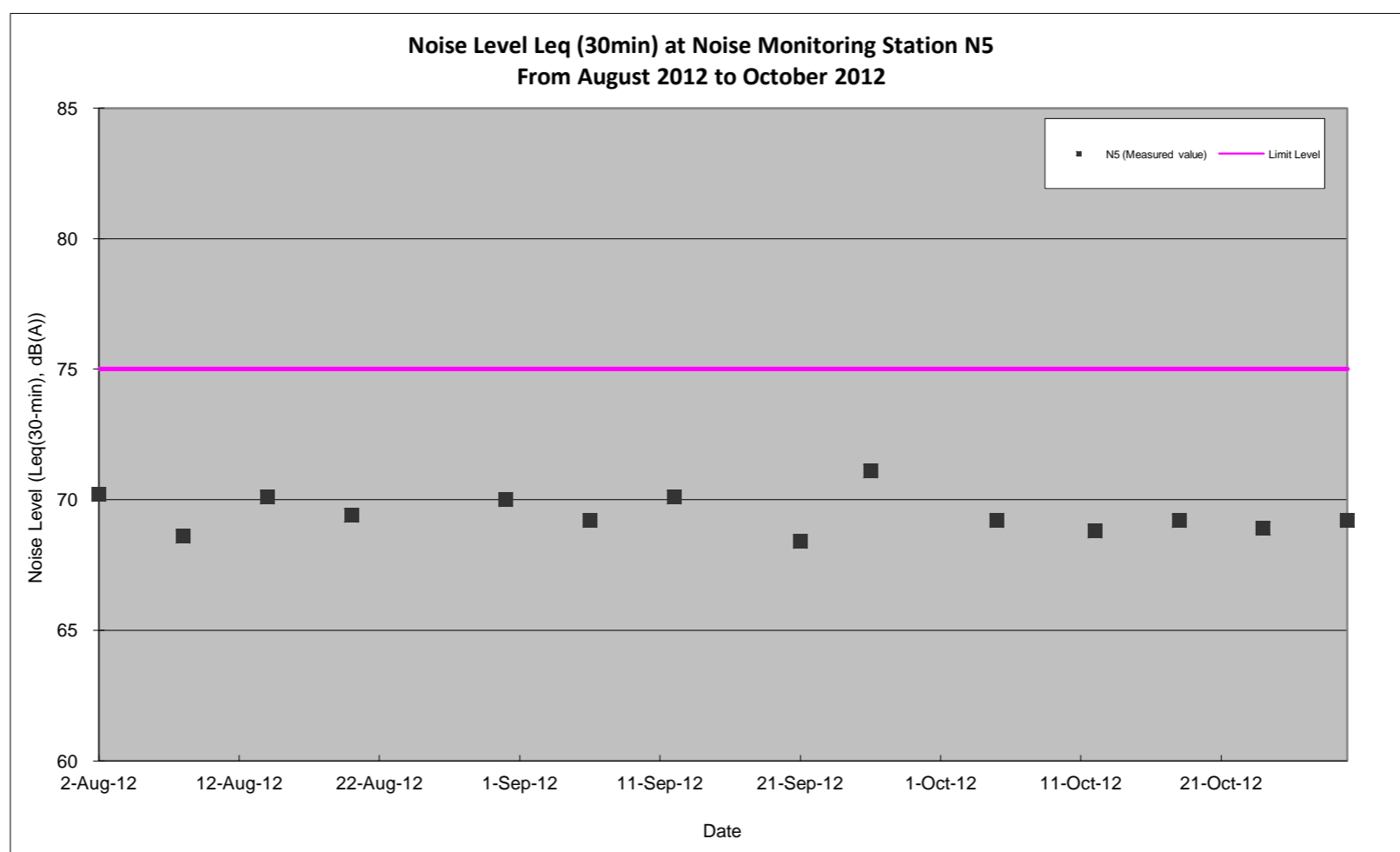
Note: For compliance comparison, please refer to above table and report.



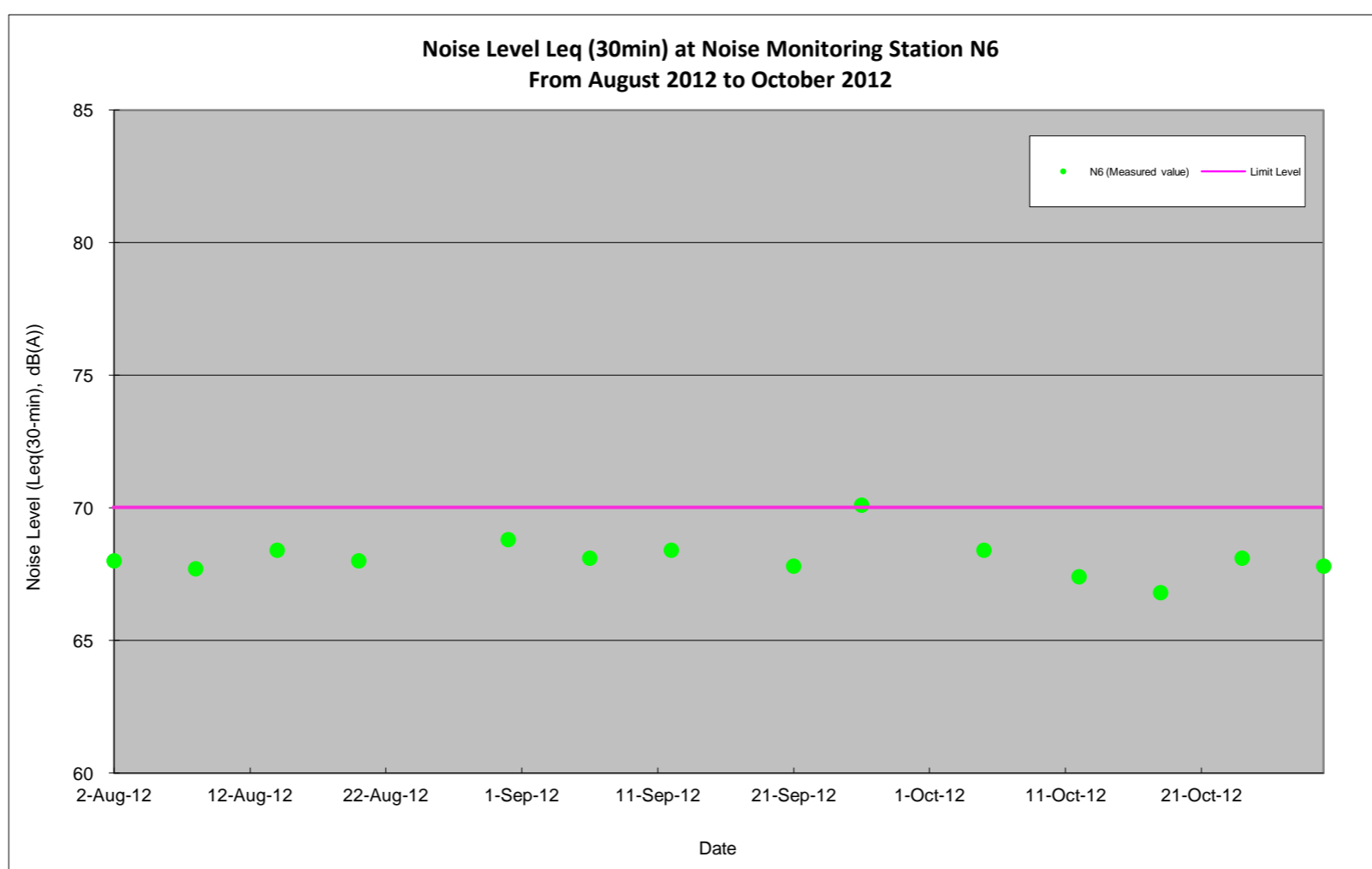
Note: For compliance comparison, please refer to above table and report.



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

**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
Landscape Resources	
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
Landscape Character Areas	
LZ1	Tuen Mun Residential Urban Landscape
LZ2	Tuen Mun Mixed Modern Comprehensive Urban Development Landscape
LZ3	Tuen Mun 'Hui' Urban Landscape
Visual Sensitive Receivers	
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

Complaint Log

No complaints were recorded in this reporting period.