

Highways Department

Agreement No. CE 20/2009 (EP)



**Environmental Team for the Widening of
Tolo Highway / Fanling Highway between
Island House Interchange and Fanling**

(Stage 1)

**Between Island House Interchange and
Tai Hang - Investigation**

**Quarterly EM&A Summary Report
for February 2013 – April 2013**

[05/2013]

	Name	Signature
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27 May 2013
By Fax (2805 5028) and Post

Attn.: Mr. James Penny

Dear Sir,

**Widening of Tolo Highway between
Island House Interchange and Tai Hang
Environmental Permit No.: EP-324/2008/A
Submission of Quarterly EM&A Summary Report for February to April 2013 (Stage 1)**

We refer to the Quarterly EM&A Summary Report for February to April 2013 for the captioned Project submitted by ET via email on 15 and 23 May 2013. We confirm we have no comment.

Yours faithfully
for MOTT MACDONALD HONG KONG LIMITED

A handwritten signature in black ink, appearing to read 'Terence Kong'.

Terence Kong
Independent Environmental Checker

c.c. HyD – Mr. Raymond T W Kong / Mr. Dennis Wong / Mr. William Chiang
ETL, AECOM – Mr. Y T Tang

(Fax: 2761 4864)
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EXECUTIVE SUMMARY

The proposed widening of Tolo Highway and Fanling Highway between Island House Interchange and Fanling (the Project) is a Designated Project under the Environmental Impact Assessment Ordinance (Cap. 499) (EIAO) and is governed by an Environmental Permit (EP-324/2008)(EP) issued by EPD on 23 December 2008. Subsequently, EPD issued a Variation of Environmental Permit (EP-324/2008/A) (VEP) on 31 January 2012.

The Project aims to widen Tolo Highway and Fanling Highway to dual 4-lane carriageway in order to alleviate the current traffic congestion problems and to cope with the increasing transport demands to and from the urban areas and also cross boundary traffic.

The construction works for this Project will be delivered in 2 stages i.e. Stage 1 (between Island House Interchange and Tai Hang) and Stage 2 (between Tai Hang and Wo Hop Shek Interchange). The construction works of Stage 1 were commenced on 23 November 2009 and will tentatively be completed in December 2013; while construction programme of Stage 2 is currently under review. This report focuses on Stage 1 of the Project only.

The construction phase of Stage 1 under the EPs and the Environmental Monitoring and Audit (EM&A) programme for Stage 1 of the Project commenced on 23 November 2009. The impact environmental monitoring and audit includes air quality and noise monitoring.

This report documents the findings of EM&A works conducted in the period between 1 February 2013 and 30 April 2013. As informed by the Contract 1 Contractor (CSHK), construction activities in the reporting period were:-

- Temporary shoring, sheetpiling and excavation;
- Pile cap construction (Noise Barrier);
- Installation of soil nails;
- At-grade road construction;
- Widening and demolition of central dividers;
- Retaining wall construction;
- Bridge deck construction;
- Noise barrier footing construction;
- Noise barrier panels installation;
- Asphalt laying;
- Installation of Drainage Pipes;
- Modification of Edge coping; and;
- Pre-bored socket H-pile.

The construction works carried out by the Contract 2 Contractor (GCL) in the reporting period were:-

- Condition survey of existing structures;
- Initial and record survey;
- Survey Setting out works for slopes and structures;
- Setting up the temporary traffic arrangement;
- Excavation of trial trenches to locate existing utilities;
- Construction of haul road;
- Extension of box culvert and subway;
- Structural works of bridges;
- Construction of Pilecap / Spread footing of Noise Barrier / Semi Noise Enclosure;
- Slope works, including installation of soil nails;
- NTHA mitigation works;
- Retaining wall construction;
- Noise barrier construction;
- Modification / Demolition of existing bridge structures;
- Entrusted watermains works;
- Sewer Installation;
- Road and drainage works; and
- Landscaping works.

Environmental Monitoring Works

A summary of monitoring and audit activities conducted in the reporting quarter is listed below:-

24-hour TSP monitoring	15 sessions
1-hour TSP monitoring	45 sessions
Daytime Noise monitoring	12 regular sessions
Environmental Site inspection	12 sessions (Contract 1) / 12 sessions (Contract 2)

Breaches of Action and Limit Levels for Air Quality

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

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

Breaches of Action and Limit Levels for Noise

No exceedance of Limit Level was recorded for noise monitoring in the reporting quarter.

One noise complaint related to 0700 – 1900 hours on normal weekdays was received and followed up by Environmental Team in the reporting period. Hence, one Action Level exceedance was recorded.

Complaint, Notification of Summons and Successful Prosecution

There were four (4) complaints (included one (1) air quality related complaint, two (2) noise related complaints and 1 water related complaint) followed up by Environmental Team in reporting quarter. Investigations were carried out. The findings and proposed mitigation measures of the complaints were submitted to all relevant parties except that the air quality related complaint was still under investigation at the end of April and the investigation result would be reported in the next reporting period.

No notification of summons and successful prosecution was received in the reporting quarter.

1 INTRODUCTION

Background

- 1.1. Tolo Highway and Fanling Highway are expressways in the North East New Territories connecting Sha Tin, Tai Po and Fanling. These highways form a vital part of the strategic Route 9, which links Hong Kong Island to Shenzhen. At present, this section of Route 9 is dual 3-lane carriageway. However, at several major interchanges along this section of Route 9, the highway is only dual-2 lane. Severe congestion is a frequent occurrence during peak periods, particularly in the Kowloon bound direction.
- 1.2. The objective of the Project “Widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling” is to widen Tolo Highway and Fanling Highway to dual 4-lane carriageway in order to alleviate the current traffic congestion problems and to cope with the increasing transport demands to and from the urban areas and also cross boundary traffic.
- 1.3. The Project is a designated project and is governed by an Environmental Permit (EP-324/2008)(EP) issued by EPD on 23 December 2008. Subsequently, EPD issued a Variation of Environmental Permit (EP-324/2008/A) (VEP) on 31 January 2012.
- 1.4. The scope of the Project comprises mainly:
 - (i) Widening of a 5.7 km section of Tolo Highway and 3.0 km section of Fanling Highway between Island House Interchange and Wo Hop Shek Interchange from the existing dual 3-lane to dual 4-lane, including construction of new vehicular bridges;
 - (ii) Widening of interchange sections at Island House Interchange, Tai Po North Interchange, and Lam Kam Road Interchange from dual 2-lane to dual 3-lane, except Sha Tin bound carriageway at Tai Po North Interchange, which is widened from 3-lane to 4-lane, including realignment of various slip roads;
 - (iii) Modification and reconstruction of highways, vehicular bridges, underpasses and footbridges.
- 1.5. The construction works for this Project will be delivered in 2 stages i.e. Stage 1 (between Island House Interchange and Tai Hang) and Stage 2 (between Tai Hang and Wo Hop Shek Interchange). The construction works of Stage 1 commenced on 23 November 2009 and will tentatively be completed in December 2013; while construction programme of Stage 2 is currently under review. This report focuses on Stage 1 of the Project only.
- 1.6. The construction works for Stage 1 of the Project will be implemented under 2 works contracts (Contract 1 and Contract 2). Contract 1 covers the section of Tolo Highway between Island House Interchange and Ma Wo, Contract 2 covers the section of Tolo Highway between Ma Wo and Tai Hang.
- 1.7. Hyder-Arup-Black and Veatch Joint Venture (HABVJV) are appointed by Highways Department (HyD) as the consultants for the design and construction assignment for the Tolo project under Agreement No. CE 58/2000 Supplementary Agreement No. 3 (SA3) (i.e. the Engineer for the Contracts).
- 1.8. China State Construction Engineering (Hong Kong) Ltd. (CSHK) was commissioned as the Contractor of Contract 1 of Stage 1 of the Project, while Gammon Construction Limited (GCL) was commissioned as the Contractor of Contract 2 of Stage 1 of the Project.
- 1.9. AECOM Asia Co. Ltd. was employed by Highways Department as the Environmental Team (ET) to undertake the Environmental Monitoring and Audit (EM&A) works for Stage 1 of the Project and Mott MacDonald Hong Kong Ltd. acts as the Independent Environmental Checker (IEC) for the Contracts.
- 1.10. The construction phase of Stage 1 under the EPs commenced on 23 November 2009.
- 1.11. According to the updated EM&A Manual of Stage 1 of the Project, there is a need of an EM&A programme including air quality and noise monitoring. The EM&A programme for Stage 1 of the Project commenced on 23 November 2009.

Scope of Report

- 1.12. This is the fourteenth Quarterly EM&A Summary Report under the Agreement No. CE 20/2009 (EP) - Widening of Tolo Highway between Island House Interchange and Tai Hang – Investigation. This report presents a summary of the environmental monitoring and audit works, list of activities and mitigation measures proposed by the ET for Stage 1 of the Project between 1 February 2013 and 30 April 2013.

Project Organization

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

Table 1.1 Contact Information of Key Personnel

Party	Position	Name	Telephone	Fax
ER of Stage 1, Contract 1 (Hyder-Arup-Black & Veatch Joint Venture)	Chief Resident Engineer /TOLO1	James Tsang	9038 8797	2667 4000
ER of Stage 1, Contract 2 (Hyder-Arup-Black & Veatch Joint Venture)	Chief Resident Engineer /TOLO2	Paul Appleton	9097 5833	2653 2348
IEC of Stage 1 (Mott MacDonald Hong Kong Limited)	Independent Environmental Checker	Terence Kong	2828 5919	2827 1823
Contractor of Stage 1, Contract 1 (China State Construction Engineering (Hong Kong) Limited)	Site Agent	Eddie Tang	9863 7686	2667 5666
	Environmental Officer	Michael Tsang	9277 4956	2667 5666
Contractor of Stage 1, Contract 2 (Gammon Construction Limited)	Site Agent	John Chan	3126 1202	2559 3410
	Environmental Officer	Thomson Chang	9213 6569	2559 3410
		Crispin Ao	9223 8773	2559 3410
Ao Ho Fo	9220 5848	2559 3410		
ET of Stage 1 (AECOM Asia Company Limited)	ET Leader	Y T Tang	3922 9393	2371 7609

Summary of Construction Works

- 1.14. The construction phase of Stage 1 under the EPs commenced on 23 November 2009. Details of the construction works carried out by the Contract 1 Contractor (CSHK) in this reporting period are listed below:-
- Temporary shoring, sheetpiling and excavation;
 - Pile cap construction (Noise Barrier);
 - Installation of soil nails;
 - At-grade road construction;
 - Widening and demolition of central dividers;
 - Retaining wall construction;
 - Bridge deck construction;
 - Noise barrier footing construction;
 - Noise barrier panels installation;
 - Asphalt laying;
 - Installation of Drainage Pipes;
 - Modification of Edge coping; and;
 - Pre-bored socket H-pile.
- 1.15. The construction works carried out by the Contract 2 Contractor (GCL) in the reporting period were:-
- Slope works, including installation of soil nails. Condition survey of existing structures;
 - Initial and record survey;
 - Survey Setting out works for slopes and structures;
 - Setting up the temporary traffic arrangement;
 - Excavation of trial trenches to locate existing utilities;
 - Construction of haul road;
 - Extension of box culvert and subway;
 - Structural works of bridges;
 - Construction of Pilecap / Spread footing of Noise Barrier / Semi Noise Enclosure;
 - Slope works, including installation of soil nails;
 - NTHA mitigation works;
 - Retaining wall construction;
 - Noise barrier construction;
 - Modification / Demolition of existing bridge structures;
 - Entrusted watermains works;
 - Sewer Installation;
 - Road and drainage works; and
 - Landscaping works.
- 1.16. The Construction Programmes are shown in Appendix B.
- 1.17. The general layout plan of the Project site showing the contract areas is shown in Figure 1.1.
- 1.18. The environmental mitigation measures implementation schedule are presented in Appendix C.

2 ENVIRONMENTAL MONITORING AND AUDIT REQUIREMENTS

Monitoring Parameters

- 2.1. The updated EM&A Manual designated 4 air quality monitoring stations and 7 noise monitoring stations to monitor environmental impacts on air quality and noise due to Stage 1 of the Project.
- 2.2. For air quality, monitoring locations AM2 (Shan Tong New Village) and AM3 (Riverain Bayside) were set up at the proposed locations in accordance with updated EM&A Manual. However, for monitoring locations: Dynasty View and Tai Po Garden, proposed in the updated EM&A Manual, as approval could not be obtained from the owner's corporation of the premises, impact air quality monitoring was conducted at alternative monitoring locations: AM1 (Ha Wun Yiu) and AM4 (Tai Kwong Secondary School). The monitoring station at 13 Ha Wun Yiu (AM1) was relocated to Fan Sin Temple, 3 Sheung Wun Yiu (AM1A) in February 2010.
- 2.3. For noise, monitoring stations NM3 (Wong Shiu Chi Middle School), NM6 (PLK Tin Ka Ping Primary School) and NM7 (Riverain Bayside) were set up at the proposed locations in accordance with updated EM&A Manual. However, for monitoring locations: Tai Po Garden, Dynasty View, Hong Kong Teachers' Association Lee Heng Kwei Secondary School and Grand Palisades, proposed in the updated EM&A Manual, as approval of access could not be obtained from the owner's corporation of the premises or the principal of the education institutes, impact noise monitoring was conducted at alternative monitoring locations: NM1 (Tai Kwong Secondary School), NM2 (Ha Wun Yiu), NM4 (Uptown Plaza) and NM5 (The Paragon).
- 2.4. As Tai Kwong Secondary School was closed down with effect from 1 September 2011, air quality (AM4) and noise (NM1) monitoring stations were relocated to 168 Shek Kwu Lung Village, naming AM4A and NM1A respectively, starting from 1 September 2011. The same air quality Action and Limit of AM4 were adopted for AM4A. For the measured construction noise level, the same noise Action Level of NM1 was adopted for NM1A, whereas Limit Level for residential noise sensitive receiver was adopted for NM1A.
- 2.5. The monitoring locations used during the reporting period are depicted in Figure 2.1.
- 2.6. The updated EM&A Manual also required environmental site inspections for air quality, noise, water quality, chemical, waste management, ecology and landscape and visual impact.

Environmental Quality Performance Limits (Action/Limit Levels)

- 2.7. The environmental quality performance limits (i.e. Action/Limit Levels) of air quality monitoring were derived from the baseline air quality monitoring results at the respective monitoring stations (AM1, AM2, AM3 and AM4), while the environmental quality performance limits of noise monitoring were defined in the EM&A Manual.
- 2.8. The environmental quality performance limits of air quality and noise monitoring and are given in Appendix D.

Environmental Mitigation Measures

- 2.9. Relevant environmental mitigation measures were stipulated in the Particular Specification and EPs (EP-324/2008 and EP-324/2008/A) for the Contractor to adopt. A list of environmental mitigation measures and their implementation statuses are given in Appendix C.

3 AIR QUALITY MONITORING

- 3.1. Air quality monitoring, including 1-hour and 24-hour TSP, was conducted at least 3 times every 6 days and at least once every 6 days respectively at the 4 monitoring stations (AM1A, AM2, AM3 and AM4A), in accordance with the updated EM&A Manual.
- 3.2. The weather was mostly sunny, with several fine, cloudy and rainy days in the reporting quarter. The major dust source in the reporting period included construction activities from Stage 1 of the Project, as well as nearby traffic emissions.
- 3.3. The number of monitoring events and exceedances recorded in each month of the reporting quarter are presented in Table 3.1 and Table 3.2 respectively.

Table 3.1 Summary of Number of Monitoring Events for 1-hr & 24-hr TSP Concentration

Monitoring Parameter	Location	No. of monitoring events		
		Feb 13	Mar 13	Apr 13
1-hr TSP	AM1A	15	15	15
	AM2	15	15	15
	AM3	15	15	15
	AM4A	15	15	15
24-hr TSP	AM1A	5	5	5
	AM2	5	5	5
	AM3	5	5	5
	AM4A	5	5	5

Table 3.2 Summary of Number of Exceedances for 1-hr & 24-hr TSP Monitoring

Monitoring Parameter	Location	Level of Exceedance	Level of Exceedance		
			Feb 13	Mar 13	Apr 13
1-hr TSP	AM1A	Action	0	0	0
		Limit	0	0	0
	AM2	Action	0	0	0
		Limit	0	0	0
	AM3	Action	0	0	0
		Limit	0	0	0
	AM4A	Action	0	0	0
		Limit	0	0	0
		Total	0	0	0
	24-hr TSP	AM1A	Action	0	0
Limit			0	0	0
AM2		Action	0	0	0
		Limit	0	0	0
AM3		Action	0	0	0
		Limit	0	0	0
AM4A		Action	0	0	0
		Limit	0	0	0
		Total	0	0	0

- 3.4. All 1-hour TSP results were below the Action and Limit Level at all monitoring locations in the reporting quarter.
- 3.5. All 24-hour TSP results were below the Action and Limit Level at all monitoring locations in the reporting period.
- 3.6. The graphical plots of the impact air quality monitoring results are provided in Appendix E.

4 CONSTRUCTION NOISE MONITORING

- 4.1. Construction noise monitoring was conducted at the 7 monitoring stations (NM1A, NM2, NM3, NM4, NM5, NM6 and NM7) for at least once per week during 07:00 – 19:00 in the reporting quarter.
- 4.2. The major noise sources during the noise monitoring included construction activities of Stage 1 of the Project and nearby traffic noise. In addition, for NM3 and NM6, general school activities are also a major noise source during the noise monitoring.
- 4.3. The number of construction noise monitoring events and exceedances are summarized in Table 4.1 and Table 4.2 respectively.

Table 4.1 Summary of Number of Monitoring Events for Construction Noise

Monitoring Parameter	Location	No. of monitoring events		
		Feb 13	Mar 13	Apr 13
	NM1A	4	4	4
	NM2	4	4	4
	NM3	4	4	4
	NM4	4	4	4
	NM5	4	4	4
	NM6	4	4	4
	NM7	4	4	4

Table 4.2 Summary of Number of Monitoring Exceedances for Construction Noise

Monitoring Parameter	Location	Level of Exceedance	Level of Exceedance		
			Feb 13	Mar 13	Apr 13
	NM1A	Level of Exceedance	0	0	0
	NM2		0	0	0
	NM3		0	0	0
	NM4		0	0	0
	NM5		0	0	0
	NM6		0	0	0
	NM7		0	0	0
		Total	0	0	0

- 4.4. All measured construction noise levels were below the Limit level and the graphical plots of the trends of the monitoring results are provided in Appendix F. No Limit exceedance of construction noise monitoring was recorded in the reporting quarter.
- 4.5. One noise complaint related to 0700 – 1900 hours on normal weekdays was received and followed up by Environmental Team in the reporting period. Hence, one Action Level exceedance was recorded.

5 ENVIRONMENTAL SITE INSPECTION AND AUDIT

5.1. Site Inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control and mitigation measures for Stage 1 of the Project. In the reporting quarter, 12 site inspections were carried out for each of Contract 1 and Contract 2 of the Project.

5.2. Particular observations and reminder during the site inspections for Contract 1 are described below:-

Air Quality

5.2.1. Insufficient mitigation measure was observed for an exposed slope at area TB1 West Abutment. The Contractor was reminded to cover the exposed slope by tarpaulin sheets properly.

5.2.2. Mud trails were observed at Gate 33. The Contractor was reminded to implement preventive measures to avoid the spread of mud trails on the public road.

5.2.3. Stockpiles of dusty materials were exposed without being covered at Area NB 22. The Contractor was reminded to cover the materials with tarpaulin.

5.2.4. Cement bags at Area Gate 3 were exposed. The Contractor was reminded to cover the cement bags properly.

Noise

5.2.5. No adverse observation was identified in the reporting quarter.

Water Quality

5.2.6. Turbid water was accumulated around the chemical storage at area Wall 20A. The Contractor was reminded to remove the turbid water.

5.2.7. Standing water was observed at Gate 3. The Contractor was reminded to remove the standing water to prevent mosquito breeding.

5.2.8. Oil stains were observed on the ground at Area NB 19. The Contractor was reminded to remove the oil stains.

Chemical and Waste Management

5.2.9. No adverse observation was identified in the reporting quarter.

Landscape and Visual Impact

5.2.10. No adverse observation was identified in the reporting quarter.

Miscellaneous

5.2.11. No adverse observation was identified in the reporting quarter.

5.3. Particular observations during the site inspections for Contract 2 are described below:-

Air Quality

5.3.1. Soil stockpiles were accumulated without cover at Area Bridge 15A North Ramp. The Contractor was reminded to cover the soil stockpiles.

Noise

5.3.2. No adverse observation was identified in the reporting quarter.

Water Quality

- 5.3.3. The U-channel at Gate 23 was blocked by some debris. The Contractor was reminded to remove the debris and maintain the U-channel properly.

Chemical and Waste Management

- 5.3.4. C&D wastes were not well sorted at Area Bridge 15A North Ramp. The Contractor was reminded to properly sort the C&D wastes.
- 5.3.5. General wastes were disposed near the river. The Contractor was reminded to clear the wastes.
- 5.3.6. Oil was spilled from the construction machine at area Bridge 12A. The Contractor was reminded to remove the oil stains.
- 5.3.7. Recycling bins at area Bridge 15A were not labeled. The Contractor was reminded to label the recycling bins properly.
- 5.3.8. Some oil leaked out from the excavator at Area Trunk Sewer. The Contractor was reminded to remove the oil stains on the ground.
- 5.3.9. Construction wastes were placed near the retained trees at Area LB 2. The Contractor was reminded to remove the wastes and avoid disposing of the wastes near the retained trees.
- 5.3.10. General refuse was dumped on bare ground at Area C. The Contractor was reminded to clear the general refuse regularly.
- 5.3.11. General refuse was found dumped into the recycling bins. The Contractor was reminded to remove the general refuse and dump only the recycling materials into the recycling bins.

Landscape and Visual Impact

- 5.3.12. No adverse observation was identified in the reporting quarter.

Miscellaneous

- 5.3.13. No adverse observation was identified in the reporting quarter.

6 ADVICE ON THE SOLID AND LIQUID WASTE MANAGEMENT STATUS

- 6.1.1 The Contract 1 Contractor (CSHK) and the Contract 2 Contractor (GCL) are registered as chemical waste producers for Stage 1 of the Project. C&D material sorting was carried out on site. Sufficient numbers of receptacles were available for general refuse collection.
- 6.1.2 As advised by the Contract 1 Contractor (CSHK), 1,359m³ of inert C&D material was disposed as public fill to Tuen Mun 38 (of which 203m³ was broken concrete), while 254m³ of general refuse were disposed at NENT landfill. 31,367kg of metal, 381kg of paper/cardboard and 8,818kg of plastic were collected by recycling contractor in the reporting quarter. 3,805m³ and 2,569m³ of inert C&D materials were reused on site and in NENT for backfilling respectively. On the other hand, 0kg chemical waste was collected by licensed contractor in the reporting period.
- 6.1.3 As advised by the Contract 2 Contractor (GCL), 290m³ of inert C&D material were disposed to Tuen Mun 38 and 790m³ of general refuse was disposed to NENT landfill in the reporting period. 480 kg of paper/cardboard packaging were collected by recycling contractor in the reporting period. No chemical waste was collected by licensed contractor in the reporting period.
- 6.1.4 The Contract 1 Contractor (CSHK) and the Contract 2 Contractor (GCL) are advised to maintain on site waste sorting and recording system and maximize reuse / recycle of C&D wastes.

7 SUMMARY OF NON-COMPLIANCE (EXCEEDANCES) OF THE ENVIRONMENTAL QUALITY

- 7.1. All 1-hour TSP monitoring results complied with the Action / Limit Levels in the reporting period.
- 7.2. All 24-hour TSP monitoring results complied with the Action / Limit Levels in the reporting period.
- 7.3. No Limit Level exceedance of construction noise monitoring was recorded in the reporting period.
- 7.4. One noise complaint related to 0700 – 1900 hours on normal weekdays was received and followed up by Environmental Team in the reporting period. Hence, one Action Level exceedance was recorded.

8 ENVIRONMENTAL COMPLAINTS, NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

- 8.1. A 24-hour complaint hotline at 6628 8366 has been established for Stage 1 (both Contract 1 and Contract 2) of the Project. Also a 24-hour hotline at 8201 6669 is established for Contract 1 of the Project. The hotline numbers are displayed at the site entrances, fencings and project signboards, as well as printed on publications for the public, such as newsletters.
- 8.2. No notification of summons and prosecution was received in the reporting quarter.
- 8.3. There were four (4) complaints followed up by Environmental Team, including one (1) air quality related complaint, two (2) noise complaints and one (1) water related complaint, in reporting period as the below:

Environmental Enquiry No.: EC-29

On 28 January 2013, Highway received a water complaint from a citizen regarding muddy water discharged from construction site nearby Tai Wo Estate to Lam Tsuen River, which contaminated the river water on 26 January 2013. The contaminated river water would flow to Tolo Harbour causing water quality impact. According to the information provided by the Contractor (Gammon Construction Ltd.) and confirmed by the Engineer of the Project, construction works including excavation at TW5, LB2-EA & RWTW3A, rebar fixing at LB2WA & LB3EA end wall, welding capping plate at TW4 and strike formwork at RWTW2 & RWTW3 were carried out on 26 January 2013. Desilting tanks and wastewater treatment facility (at Gate 15) were provided in construction site near Tai Po Tai Wo Road Linkbridge. All effluents from construction site/construction activities were treated by the wastewater treatment plant before discharge. Moreover, concrete blinding at site entrance was provided to prevent any effluent discharging / running off from the construction site areas to public drains. A valid discharge license (WT00007162-2010) was obtained since 8 August 2010 by the Contractor to discharge any industrial effluent arising from the construction activities into specified area and discharge sampling were taken by the Contractor at sampling point (Gate 15) regularly (bi-monthly basis). Discharge sampling (at Gate 15 sampling point) was collected on 19 December 2012 (which

the sampling day near to the day of complaint) and no exceedance was recorded for Suspended Solids (SS) Limit Level (30mg/L) as stated in the discharge License. The lab result of discharge sampling (at Gate 15 sampling point) on 19 December 2012 was checked by ET.

Judged from the flow direction of the effluent discharged from the construction site, it is unlikely that the effluent arising from the construction activities conducted by the Contractor would pass to the point under inquiry. Mitigation measures and wastewater treatments were provided by the Contractor to prevent any muddy water discharged from the construction sites to public drains. The SS result of discharge sampling (at Gate 15 sampling point and near to the day of complaint) was also below the limit level of discharge License.

Upon our investigation, the wastewater mentioned in the complaint was considered not related to the effluent discharged from the construction sites of this project. Therefore, the water complaint was considered as non project-related.

Environmental Enquiry No.: EC-30

EPD referred a noise complaint from a resident of Parc Versailles. The complainant expressed that it was very noisy when vehicles passed through Tolo Highway towards Tai Po North in a direction to Yuen Long, causing impact on the residents. The complainant requested to construct noise barrier. According to the information provided by the Contractor (Gammon Construction Limited) and confirmed by the Engineer of the Project, mitigation measures had been implemented to minimise the noise emission from the Project area. As shown from Figure 1 below, permanent noise barrier 37 had been constructed to minimise the noise when vehicles pass through newly opened slip road K. Moreover, the construction of Noise Barrier 36 and the noise barrier at bridge 15A will be completed at the end of May 2013 before Bridge 15A, which is located near the complained traffic location, is opened to traffic as shown from Figure 1. Construction of other Noise Barriers including RWTW3 and RWTW3A will also be completed at the end of May 2013 before Linkbridge 1,2 and 3, which are also located near Parc Versailles, are opened to traffic.

With reference to the noise monitoring results recorded near the days of complaint at the nearest EM&A monitoring station (NM1A – 168 Shek Kwu Lung Village), the noise levels (Leq 30mins) on 27 February 2013 and 5 March 2013 were found to be 63.2 dB(A) and 62.1dB(A) respectively, which were below the limit level of 75dB(A).

Based on the complaint details and our investigation, the noise mentioned in the complaint was considered due to traffic noise and was not related to the noise from construction activities. Therefore, the noise complaint was considered as non project-related.

Environmental Enquiry No.: EC-31

EPD referred a noise complaint from a resident of Wang Fuk Court at Tai Po. The complainant expressed that the construction work during midnight at Tolo Highway disturbed resident's sleep on 10 April 2013. According to the information provided by the Contractor (China State Construction Engineering (HK) Ltd.) and confirmed by the Engineer of the Project, utility duct laying works had been carried out at Tolo Highway between 01:00 – 05:00 on 10 April 2013. A valid Construction Noise Permit (CNP no.: GW-RN0144-13) was obtained for the use of Powered Mechanical Equipments (PMEs) and carrying out of construction work at Tolo Highway during restricted hours (01:00 – 05:00 in weekday). The numbers and types of PMEs operated on the dates were complied with the CNP. Besides, list of plants used during the construction works (provided by the Contractor and confirmed by the Engineer) on 10 April 2013 were also checked for verification.

However, the noise complaint was considered project-related. Responding to the noise complaint, the Contractor surrendered the CNP to EPD on 10 April 2013. The current working method and noise mitigation measures for carrying out the works will be reviewed. In addition, the Contractor is advised to implement the mitigation measures as stated in "Recommended Mitigation Measures" as below:.

- Strictly comply with the requirements of the approved CNP for works carried out in restricted hours;
- Better scheduling of works to minimize noise nuisance;
- Instruct the site workers to keep the noise in minimum during construction works in restricted hours; and
- Foster better public relations with the sensitive receivers nearby.

Environmental Enquiry No.: EC-32

EPD referred a complaint about dust emission in construction site of the Tolo Highway widening construction works at Shek Kwu Lung. The complainant expressed that there were about seven to eight trucks unloading the rock at Shek Kwu Lung on 25 April 2013. Generation of fugitive dust would be his concern if the mentioned activities were carried out without the use of hoarding and spraying with water. The complaint was still under investigation at the end of April and the result would be reported in the next reporting period.

- 8.4. Cumulative statistics on complaints, notifications of summons and successful prosecutions are summarized in Appendix G.

9 COMMENTS, RECOMMENDATIONS AND CONCLUSIONS

Comments on Mitigation Measures

- 9.1. According to the environmental site inspections performed in the reporting quarter, the following recommendations were provided:-

Air Quality Impact

- All plants on site should be properly maintained to avoid dark smoke emission.
- All vehicles should be washed to remove any dusty materials before leaving the site.
- Haul roads should be sufficiently dampened to minimize fugitive dust generation.
- Wheel washing facilities should be properly maintained to ensure properly functioning.
- Temporary exposed slopes and open stockpiles should be properly covered.
- Enclosure should be erected for cement mixing operations.
- Provide water spraying to suppress fugitive dust for any dusty construction activity.
- Exposed cemented bags should be covered.

Construction Noise Impact

- Properly erect the temporary noise barriers in accordance with the Environmental Permit requirement.
- Noise barriers should be closely packed and properly aligned to ensure effective noise reduction.
- Noisy operations should be oriented to a direction away from sensitive receivers as far as possible.
- Sound insulation materials shall be wrapped at the breaker tip for concrete breaking works.
- Noise Emission Label (NEL) shall be affixed to the air compressor and hand-held breaker operating within works area.
- Better scheduling of construction works to minimize noise nuisance.

Water Quality Impact

- Silt, debris and leaves accumulated at public drains, wheel washing bays and perimeter u-channels and desilting facilities should be cleaned up regularly.
- Silty effluent should be treated/desilted before discharged. Untreated effluent should be prevented from entering public drain channel.

- Proper drainage channels/bunds should be provided at the site boundaries to collect/intercept the surface run-off from works areas.
- Exposed slopes and stockpiles should be covered up properly during rainstorm.
- Stagnant water accumulated within works area should be removed.

Chemical and Waste Management

- C&D materials and wastes should be sorted, recycled/treated and removed timely.
- All chemical containers and oil drums should be properly stored.
- All plants and vehicles on site should be properly maintained to prevent oil leakage.
- All drain holes of the drip trays utilized within works areas should be properly plugged to avoid any oil leakage.
- Oil stains on soil surface and empty chemical containers should be cleared and disposed of as chemical waste.
- Only the recycling materials should be dumped into the recycling bins.
- Recycling bins should be properly labeled.
- Refuse should not be placed near the retained trees.

Landscape and Visual Impact

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

Recommendations on EM&A Programme

- 9.2. The impact air quality and noise monitoring programme ensured that any deterioration in environmental condition was readily detected and timely actions taken to rectify any non-compliance. Assessment and analysis of monitoring results collected demonstrated the environmental acceptability of Stage 1 of the Project. The weekly environmental site inspections ensured that all the environmental mitigation measures recommended in the ERR were effectively implemented.
- 9.3. The EM&A programme effectively monitored the environmental impacts from the construction activities and no particular recommendation was advised for the improvement of the programme.

Conclusions

- 9.4. The construction phase and EM&A programme of Stage 1 of the Project commenced on 23 November 2009.
- 9.5. Air quality and noise monitoring, weekly site inspections were carried out in the reporting quarter, in accordance with the updated EM&A manual.
- 9.6. All 1-hour TSP monitoring results complied with the Action / Limit Level in the reporting quarter.
- 9.7. All 24-hour TSP monitoring results complied with the Action / Limit Level in the reporting quarter.
- 9.8. No Limit Level exceedance of construction noise monitoring was recorded in the reporting period.
- 9.9. There were four (4) complaints followed up by Environmental Team, including one (1) air quality related complaint, two (2) noise complaints (one noise complaint was related to 0700 – 1900 hours on normal weekdays, hence one Action Level exceedances was recorded) and one (1) water related complaint, in reporting quarter. The findings and proposed mitigation measures of the complaints were submitted to all relevant parties except that the air quality related complaint was still under investigation at the end of April and the investigation result would be reported in the next reporting period.
- 9.10. No notification of summons and prosecution was received in the reporting quarter.