

Meinhardt Infrastructure and Environment Limited

**Entrusted Portion of Widening of Tolo  
Highway / Fanling Highway between Island  
House Interchange and Fanling Stage 2**

Quarterly EM&A Report

(February 2014 to April 2014)

Certified by: Fredrick Leong 

Position: Environmental Team Leader

Date: 14 May 2014



Our ref AFK/TK/jn/bw/T329380/22.05/L-0024  
T 2828 5919  
E [terence.kong@mottmac.com.hk](mailto:terence.kong@mottmac.com.hk)  
Your ref

Hyder-Arup-Black & Veatch Joint Venture  
c/o Hyder Consulting Limited  
47/F Hopewell Centre  
183 Queen's Road East  
Wanchai, Hong Kong

14 May 2014  
By Fax (2805 5028) & Post

Dear Sir,

**Attn: Mr. James Penny**

**EM&A for Widening of Tolo Highway/Fanling Highway between Island House Interchange and Fanling Stage 2 (between Tai Hang to Wo Hop Shek Interchange) – Entrusted Works  
Environmental Permit No. EP-324/2008/B  
Quarterly EM&A Summary Report for February 2014 to April 2014 for the portion of Stage 2 works entrusted to CEDD under Contract No. CV/2012/09**

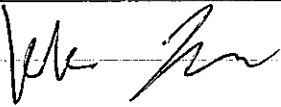

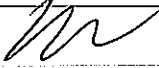
We refer to the Quarterly EM&A Summary Report for February 2014 to April 2014 for the Project received on 9 and 12 May 2014 submitted by ET via email. We confirm we have no comment.

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. Chung Lok Chin (Fax: 2714 5198) / Ms. Jackei Yin (Fax: 2761 4864)  
CEDD/BCP – Mr. Chris Wong / Mr. Desmond Lam (Fax: 2714 0103)  
AECOM – Mr. Alan Lee (Fax: 3922 9797)  
Meinhardt Infrastructure and Environment Limited – Mr. Fredrick Leong (Fax: 2540 1580)

Date	Revision	Prepared By	Checked By	Approved By
14 May 2014	0	Ivan TING Cindy KWOK	Fredrick LEONG	Helen COCHRANE
				

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## **EXECUTIVE SUMMARY**

This report documents the findings of EM&A works conducted in the quarter between 1 February 2014 to 30 April 2014.

The impact stage EM&A programme for the Project includes air quality, noise and water quality monitoring.

The EM&A programme was carried out by the ET in accordance with the EM&A Manual requirements. It is concluded from the environmental monitoring and audit works that adequate environmental mitigation measures have been implemented by the civil works contractors where appropriate in the reporting quarter.

In the reporting quarter, a total of 9 exceedance events were recorded. The exceedances were concluded not to be project related. No necessary remedial actions have been taken.

No environmental non-compliance was noted. No environmental complaint was received. No environmental related prosecution or notification of summons was received in the reporting quarter.

The box culvert works has been partially completed by the end of March 2014 except the last construction activity, installation of a base slab at Box Culvert ID4. Due to the loading requirement of a fresh water main under the box culvert, installation of the base slab at Box Culvert ID4 has to be scheduled to be carried out in November 2015 after the utilities diversions complete. The construction works are temporary suspended until the utilities diversion works complete.

As such, water quality monitoring has been conducted for the first week of April 2014 only to cover the temporary suspension of the construction work. The 4-week post construction water quality monitoring will be commenced after the installation of the base slab finishes, hence the completion of the box culvert works.

## **1 INTRODUCTION AND PROJECT INFORMATION**

### **1.1 Background**

1.1.1 The Project is a Designated Project under the Environmental Impact Assessment Ordinance (EIAO) (Cap. 499). An Environmental Impact Assessment (EIA) Report together with an Environmental Monitoring and Audit (EM&A) Manual were approved on 14 July 2000 (Register Number: EIA-043/2000). The Project is governed by an Environmental Permit (EP) (EP-324/2008) which was granted on 23 December 2008. A variation of EP (VEP) was applied and the VEP (EP-324/2008/A) was subsequently granted on 31 January 2012. An additional VEP has been applied on 24 February 2014 and the VEP (EP-324/2008/B) was subsequently granted on 17 March 2014.

1.1.2 Chun Wo Construction & Engineering Co Ltd (Chun Wo) was commissioned by the Civil Engineering and Development Department (CEDD) as the Civil Contractor for the Entrusted Portion of Widening of Tolo Highway/Fanling Highway between Island House Interchange and Fanling Stage 2. Meinhardt Infrastructure & Environment Ltd (MIEL) has been appointed by Chun Wo as the Environmental Team (ET) to fulfill the corresponding EM&A requirements pursuant to Environmental Permit No. EP-324/2008/B in accordance with the Updated EM&A Manual (dated March 2014) for Widening of Tolo Highway/Fanling Highway between Island House Interchange and Fanling Stage 2. The EM&A programme commenced in 5 November 2013.

1.1.3 **Figure 1** shows the works areas for the Entrusted Portion of Widening of Tolo Highway/Fanling Highway between Island House Interchange and Fanling Stage 2.

### **1.2 Construction Programme and Activities**

1.2.1 The construction programme is presented in **Appendix A**. The major construction activities undertaken in the reporting quarter are summarized below:

- Cable detection and trial trenches;
- Tree felling works;
- Pre-drilling works and piling works;
- Extension of box culvert ID04, ID05 and BC01;
- Bored pile and Bored pile wall construction;
- Construction of haul road and temporary soil platform for geotechnical works;
- Slope upgrading works;
- Noise barrier installation; and
- Waterworks.

### **1.3 Project Organisation**

1.3.1 The project organization structure is shown in **Appendix B**. The key personnel contact names and numbers for the Project, together with the general enquiry hotline, are summarised in **Table 1.1**.

**Table 1.1 Contact Information of Key Personnel**

Party	Role	Position	Name	Telephone	Fax
AECOM	Engineer's Representative	Senior Resident Engineer	Mr. Alan Lee	2472 7228	2472 0132
		Resident Engineer (Environmental)	Mr. Perry Yam	2674 2273	--
Mott MacDonald	Independent Environmental Checker (IEC)	IEC	Mr. Terence Kong	2828 5919	2827 1823
Chun Wo	Contractor	Site Agent	Mr. Daniel Ho	2638 6144	2638 7077
		Environmental Officer	Mr. Victor Huang	2638 6181	
		Environmental Officer	Mr. Sam Lam	2638 6147	
Meinhardt	Environmental Team (ET)	ET Leader	Mr. Fredrick Leong	2859 1739	2540 1580
Enquiry Hotline	General Enquiry	--	Ms Helena Mak	6355 1731	--

## 1.4 Purpose of the Report

- 1.4.1 This is the Quarterly EM&A Report which summaries the impact monitoring results and audit findings for the Project during the reporting period of February 2014 to April 2014.

## 2 SUMMARY OF EM&A REQUIREMENTS

### 2.1 Monitoring Requirements

- 2.1.1 In accordance with the Updated EM&A Manual, environmental parameters including Air Quality, Noise and Water quality have been monitored. The specific parameters, monitoring frequency and the respective Action and Limit Levels are given in **Table 2.1** and the locations of the monitoring and control stations are shown in the **Figure 2** and **Figure 3**.

**Table 2.1 Monitoring Parameter**

Parameter	Unit	Action Level	Limit Level	Frequency
<b>Air Quality</b>				
1 hour TSP	µg/m <sup>3</sup>	292.7	500	Three times every 6 days
24 hour TSP	µg/m <sup>3</sup>	170.3	260	Once every 6 days
<b>Construction Noise</b>				
Leq 30min	dB(A)	When one documented valid complaint is received	75	Once every Week
<b>Water Quality</b>				
Depth		--	--	Three occasions per week
Temperature	°C	--	--	Three occasions per week
Salinity	ppt	--	--	Three occasions per week

Parameter	Unit	Action Level	Limit Level	Frequency
pH	--	--	--	Three occasions per week
DO	mg/L	6.7	4mg/L or 40% saturation at 15 degree Celsius	Three occasions per week
DO Saturation	%	--	--	Three occasions per week
Turbidity	NTU	81.9NTU or 120% of upstream control station's Tby of the same day	91.9NTU or 130% of upstream control station's Tby of the same day	Three occasions per week
SS	mg/L	42.6 mg/L or 120% of upstream control station's SS of the same day	46.8 mg/L or 130% of upstream station's SS of the same day and specific sensitive receiver water quality requirements	Three occasions per week

*Temporary Suspension of Box Culvert Works and Temporary of Water Quality Monitoring*

2.1.2 The box culvert works has been partially completed by the end of March 2014 except the last construction activity, installation of a base slab at Box Culvert ID4. Due to the loading requirement of a fresh water main under the box culvert, installation of the base slab at Box Culvert ID4 has to be scheduled to be carried out in November 2015 after the utilities diversions complete. The construction works are temporary suspended until the utilities diversion works complete.

2.1.3 As such, water quality monitoring has been conducted for the first week of April 2014 only to cover the temporary suspension of the construction work. The 4-week post construction water quality monitoring will be commenced after the installation of the base slab finishes, hence the completion of the box culvert works.

**2.2 Environmental Mitigation Measures**

2.2.1 Environmental mitigation measures have been recommended in the EM&A Manual and are given in **Appendix C**. The implementation status for the reporting quarter is also given in the Appendix.

**3 SUMMARY OF EM&A Monitoring Data**

**3.1 Monitoring Data**

3.1.1 Monitoring has been conducted in accordance to the specification in the EM&A Manual in the reporting quarter. Meteorological data for the reporting quarter has been extracted from Hong Kong Observatory and are given in **Appendix D**. Monitoring Data with graphical presentation for the reporting quarter have been given in **Appendix E**. A summary on the monitoring results has also given in **Table 3.1**.

**Table 3.1 Summary of Monitoring Data in the Reporting Quarter**

Monitoring Location	Minimum	Maximum	Average
<b>Air Quality</b>			
1 hour Total Suspended Particulate			
SR77	129.0µg/m <sup>3</sup>	232.0µg/m <sup>3</sup>	180.8µg/m <sup>3</sup>



Monitoring Location	Minimum	Maximum	Average
<b>24 hour Total Suspended Particulate</b>			
SR77	67.1µg/m <sup>3</sup>	221.5µg/m <sup>3</sup>	134.3µg/m <sup>3</sup>
<b>Construction Noise</b>			
SR77	54.5dB(A)	66.9dB(A)	62.2dB(A)
<b>Water Quality</b>			
<b>DO</b>			
I5	6.7mg/L	9.3mg/L	7.9mg/L
Baseline Data	6.6mg/L	8.8mg/L	8.0mg/L
30% disturbance due to human activity	4.6mg/L	6.2mg/L	5.6mg/L
<b>Turbidity</b>			
I5	9.1NTU	86.7NTU	28.5NTU
Baseline Data	12.4NTU	91.5NTU	26.1NTU
30% disturbance due to human activity	16.1NTU	118.9NTU	34.0NTU
<b>SS</b>			
I5	3.7mg/L	72.5mg/L	13.9mg/L
Baseline Data	6.5mg/L	46.5mg/L	16.4mg/L
30% disturbance due to human activity	8.5mg/L	60.5mg/L	21.3mg/L

3.1.2 The maximum recorded suspended solid in the reporting quarter is 72.5mg/L which is higher than the 30% disturbance of the baseline maximum value (60.5mg/L). However, respective investigation has been conducted and concluded the exceedances would not be project related.

3.1.3 The other recorded water quality monitoring levels during the reporting quarter were not exceed the 30% disturbance over the baseline level for quarterly average.

### 3.2 Summary of Monitoring Exceedances

3.2.1 The number of exceedances event recorded in the reporting quarter is summarized in **Table 3.2**.

3.2.2 Investigations for the exceedances events in the reporting quarter have been completed. The exceedances were considered not to be related to the construction works. The respective investigation reports have been presented in the respective Monthly EM&A Reports.

**Table 3.2 Summary of Exceedance Events in the Reporting Quarter**

Parameter		Number of Exceedances Events	Number of Project Related Exceedance Events
<b>Air Quality</b>			
1 hour Total Suspended Particulate	Action Level	0	0
	Limit Level	0	0
24 hour Total Suspended Particulate	Action Level	3	0
	Limit Level	0	0
<b>Construction Noise</b>			
Leq 30min	Action Level	0	0
	Limit Level	0	0
<b>Water Quality</b>			
DO	Action Level	0	0
	Limit Level	0	0

Parameter		Number of Exceedances Events	Number of Project Related Exceedance Events
Turbidity	Action Level	1	0
	Limit Level	0	0
SS	Action Level	0	0
	Limit Level	5	0

3.2.3 Contractor has been reminded to strengthen the mitigation measures including:

- Watering of exposed slope and earths to avoid fugitive dust emission;
- Water spraying should be properly implemented whenever necessary for the unpaved roads, access roads and construction areas;
- Silty effluent should be treated/desilted before discharged. Untreated effluent should be prevented from entering public drain channel;
- Channels or earth bunds or sand bag barriers should be provided on site to prevent surface runoff and properly direct stormwater to silt removal facilities;
- Ensuring regular maintenance and cleaning of waste storage area;
- Improving site cleanliness especially avoid general refuse being left within the construction site;
- All types of wastes, both on land and floating in the river stream, should be collected and sorted properly, and also be disposed timely and properly; and
- Ensuring the provision of tree protection zone for all existing trees to be transplanted or retained.

## 4 WASTE MANAGEMENT

4.1.1 The Contractor has registered as a chemical waste producer of the Project. The C&D materials and waste sorting were carried out on-site. Receptacles were provided for general refuse collection.

4.1.2 During the reporting quarter, a total of 8,323m<sup>3</sup> of excavated material has been generated. 5,263m<sup>3</sup> of inert C&D materials was disposed of at public fill to Tuen Mun Area 38, while 2,144m<sup>3</sup> of inert C&D materials were reused on site. 440m<sup>3</sup> of general refuse was disposed of at North East New Territories (NENT) Landfill. No plastics and no paper/cardboard packaging, plastics and metals were collected by recycling contractor in the reporting quarter. 39m<sup>3</sup> of chemical waste was collected by licensed contractor in the reporting quarter. Details of the waste management data are presented in **Appendix F**.

## 5 ENVIRONMENTAL NON-CONFORMANCE

5.1.1 No environmental non-compliance were recorded in the reporting quarter. No environmental complaints were received in the reporting quarter. Investigations have been conducted. No environmental related prosecution or notification of summons was received in the reporting quarter. The summary for the non-compliance, complaints and prosecutions is provided in **Appendix G**.

## **6 CONCLUSION, COMMENTS AND RECOMMENDATIONS**

- 6.1.1 The EM&A programme was carried out by the ET in accordance with the EM&A Manual requirements. It is concluded from the environmental monitoring and audit works that adequate environmental mitigation measures have been implemented by the civil works contractors where appropriate in the reporting quarter.
- 6.1.2 In the reporting quarter, a total of 9 exceedance events have been recorded. No exceedances were concluded not to be project related. No necessary remedial actions have been taken.
- 6.1.3 No environmental non-compliances were noted. No environmental complaint was received. No environmental related prosecution or notification of summons were received in the reporting quarter.
- 6.1.4 The box culvert works has been partially completed by the end of March 2014 except the last construction activity, installation of a base slab at Box Culvert ID4. Due to the loading requirement of a fresh water main under the box culvert, installation of the base slab at Box Culvert ID4 has to be scheduled to be carried out in November 2015 after the utilities diversions complete. The construction works are temporary suspended until the utilities diversion works complete.
- 6.1.5 As such, water quality monitoring has been conducted for the first week of April 2014 only to cover the temporary suspension of the construction work. The 4-week post construction water quality monitoring will be commenced after the installation of the base slab finishes, hence the completion of the box culvert works.