


China State Construction Engineering (Hong Kong) Ltd.

Contract No. CV/2007/03

**Development at Anderson Road –  
Site Formation and Associated  
Infrastructure Works**

**Quarterly EM&A Summary Report for  
December 2011 – February 2012**

March 2012

	Name	Signature
Prepared & Checked:	Jill Wong	
Reviewed, Approved & Certified:	Edith Ng (ETL)	

Version: 0

Date: 29 March 2012

**Disclaimer**

This report is prepared for China State Construction Engineering (Hong Kong) Ltd. and is given for its sole benefit in relation to and pursuant to Contract No. CV/2007/03 Development at Anderson Road – Site Formation and Associated Infrastructure Works and may not be disclosed to, quoted to or relied upon by any person other than China State Construction Engineering (Hong Kong) Ltd. without our prior written consent. No person (other than China State Construction Engineering (Hong Kong) Ltd.) into whose possession a copy of this report comes may rely on this report without our express written consent and China State Construction Engineering (Hong Kong) Ltd. may not rely on it for any purpose other than as described above.

AECOM Asia Co. Ltd.

11/F, Grand Central Plaza, Tower 2, 138 Shatin Rural Committee Road, Shatin, NT, Hong Kong.  
Tel: (852) 3105 8686 Fax: (852) 2317 7609 www.aecom.com

Ref.: OAPANDSNEM00\_0\_0837L.12

29 March 2012

By Fax (3656 3100 / 2407 8382) and Post

Engineer's Representative  
Ove Arup & Partners  
Level 5, Festival Walk  
80 Tat Chee Avenue  
Kowloon Tong, Kowloon  
Hong Kong

Attention: Mr. Dennis Leung

Dear Sir,

**Re: Contract No. CV/2007/03 (Environmental Permit No. EP -140/2002)  
Development at Anderson Road  
Site Formation and Associated Infrastructure Works  
Quarterly EM&A Report for December 2011 to February 2012**

Reference is made to the Environmental Team's submission of the draft Quarterly EM&A Report for December 2011 to February 2012 received by E-mail on 27 March 2012 and the subsequent revision by E-mail on 28 March 2012.

Please be informed that we have no further comment on the captioned submission.

Thank you very much for your kind attention and please do not hesitate to contact the undersigned should you have any queries.

Yours sincerely,



David Yeung  
Independent Environmental Checker

c.c. AECOM            Attn: Ms. Edith Ng  
      CSCEC            Attn: Mr. Wilson Lau

Fax: 2891 0305  
Fax: 2702 6553

Q:\Projects\OAPANDSNEM00\Corr\OAPANDSNEM00\_0\_0837L.12.doc

## Table of Content

	Page
<b>EXECUTIVE SUMMARY .....</b>	<b>1</b>
<b>1 INTRODUCTION.....</b>	<b>5</b>
1.1 Scope of Report .....	5
1.2 Project Organization.....	5
1.3 Summary of Construction Works .....	5
<b>2 SUMMARY OF EM&amp;A PROGRAMME REQUIREMENTS .....</b>	<b>7</b>
2.1 Monitoring Parameters.....	7
2.2 Environmental Quality Performance Limits (Action/Limit Levels) .....	7
2.3 Environmental Mitigation Measures.....	7
<b>3 MONITORING RESULTS .....</b>	<b>8</b>
3.1 Air Quality.....	8
3.2 Construction Noise.....	10
3.3 Environmental Site Inspection .....	12
<b>4 ADVICE ON SOLID AND LIQUID WASTE MANAGEMENT STATUS .....</b>	<b>14</b>
4.1 Summary of Solid and Liquid Waste Management.....	14
<b>5 SUMMARY OF NON-COMPLIANCE (EXCEEDANCES) OF ENVIRONMENTAL QUALITY</b>	<b>15</b>
5.1 Summary of Exceedances and Review of the Reasons for Non-compliance .....	15
<b>6 COMPLAINT, NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTION .....</b>	<b>16</b>
6.1 Summary of Environmental complaints, notification of summons and successful prosecutions .....	16
<b>7 COMMENTS, RECOMMENDATIONS AND CONCLUSIONS.....</b>	<b>19</b>
7.1 Comments on Mitigation Measures .....	19
7.2 Recommendations on EM&A Programme.....	20
7.3 Conclusions.....	20

### **List of Tables**

Table 1.1	Contact Information of Key Personnel
Table 3.1	Summary of Number of Exceedances for 1-hr and 24-hr TSP Concentration
Table 3.2	Summary of Number of Exceedances for Construction Noise
Table 4.1	Summary of Quantity of Waste for Disposal
Table 6.1	Summary of Environmental Complaints, Summons and Prosecutions

### **List of Figures**

Figure 1.1	General Layout Plan
Figure 2.1	Monitoring Locations

### **List of Appendices**

Appendix A	Project Organization Structure
Appendix B	Implementation Schedule of Environmental Mitigation Measures (EMIS)
Appendix C	Summary of Action and Limit Levels
Appendix D	Graphical Presentation of Impact Air Quality Monitoring Results over the Past Four Months
Appendix E	Graphical Presentation of Noise Monitoring Results over the Past Four Months
Appendix F	Cumulative Statistics on Exceedances, Complaints, Notification of Summons and Successful Prosecutions

## EXECUTIVE SUMMARY

The Project “Development at Anderson Road – Site Formation and Associated Infrastructure Works” (hereafter called “the Project”) is proposed to form platforms for housing development and associated uses in area of about 20 hectares, and to carry out necessary infrastructural upgrading or improvement works to cater for the proposed development.

China State Construction Engineering (Hong Kong) Limited (CSCE) was commissioned as the Contractor of the Project. AECOM Asia Co. Ltd. (AECOM) was employed by CSCE as the Environmental Team (ET) to undertake the Environmental Monitoring and Audit (EM&A) works for the Project.

The impact EM&A for the Project includes air quality and noise monitoring. The EM&A programme for Sau Ming Primary School (ID 4) and Sau Mau Ping Catholic Primary School (ID 5) commenced on 1 May 2008, while for Kwun Tong Government Secondary School (ID 1A), On Yat House (ID 2) and Sau Nga House (ID 3) commenced on 1 June 2008.

The monitoring stations ID 4 & ID 5 will serve both the entire Development of Anderson Road (Schedule 3 Designated Project (DP)) project as well as the Widening of Po Lam Road (Schedule 2 DP) project.

The construction for the Widening of Po Lam Road (Schedule 2 DP) project was commenced in this reporting period, i.e. on 21 September 2011.

This report documents the findings of EM&A works for ID 1A, ID 2, ID 3, ID 4 and ID 5 conducted in the period from 1 December 2011 to 29 February 2012. As informed by the Contractor, construction activities in the reporting quarter were:

- Blasting;
- Drainage works;
- Slope upgrading works;
- Excavation work at Portions A, B, C, D, E, H, J4, S1a, S2a, S2b;
- Temporary traffic arrangement at J/O Po Lam Road & Sau Mau Ping Road, Portion J2, J3 and J4;
- Site clearance;
- Erection of hoardings and chain link fence;
- Establishment of temporary access and temporary drainage;
- Slope stabilization;
- Tree transplanting and protection;
- Maintenance works;
- Bridge structural works;
- Retaining structures structural works;
- RE wall panel installation;
- Slope drainage and maintenance access;
- Erection and maintenance of blasting cages and fencing;
- Pre-stressing works of bridge;
- Toe / Beam planter construction;
- Permanent backfilling at RW22;
- Bored pile(column method), capping beam & panel wall construction at R15;
- Lowering down of bored pile at R15;
- Construction of Bridge A, B and D;
- U-channel and box-culvert works at Portion D and E; and
- Preparation works for area J1a and J1b (R15b)

## **Environmental Monitoring Works**

### **EM&A Programme**

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 sessions
Environmental Site Inspection	13 sessions

### **Breaches of Action and Limit Levels**

No exceedance of Action and Limit Level was recorded for 1-hour TSP and 24-hour TSP monitoring in the reporting quarter.

According to the information provided by the Contractor, no Action Level exceedance was recorded for noise since no noise related complaint was received in the reporting quarter.

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

## Complaint, Notification of Summons and Successful Prosecution

Based on the information provided by the Contractor, five (5) environmental complaints and no notification of summons and successful prosecution were received in the reporting quarter.

- CEDD (ICC) referred a complaint about fugitive dust accumulated on the water barrier and traffic cones at Portion J2 (Clear Water Bay Road near Anderson Road crossing). The complainant has made other calls on 17 and 26 January 2012 regarding the same issue.

Fugitive dust emission was potentially generated from the vehicles passing the haul roads at Portion J2 (Clear Water Bay Road near Anderson Road crossing). The fugitive dust on the water barrier and traffic cones within the site boundary was cleaned after received complaint.

According to the routine 1-hour TSP and 24-hour TSP monitoring data recorded at the nearest monitoring station ID 1A (roof of Kwun Tong Government Secondary School) on 16 and 27 Jan 2012, the measured 24-hour TSP level were found to be 51.4 $\mu\text{g}/\text{m}^3$  and 81.4 $\mu\text{g}/\text{m}^3$ . The measured 1-hour TSP levels on 16 and 27 Jan 2012 were found to be 81.3 $\mu\text{g}/\text{m}^3$ ; 81.1 $\mu\text{g}/\text{m}^3$ ; 80.2 $\mu\text{g}/\text{m}^3$  and 81.1 $\mu\text{g}/\text{m}^3$ ; 81.8 $\mu\text{g}/\text{m}^3$ ; 79.8 $\mu\text{g}/\text{m}^3$  respectively. All measured 1-hour and 24-hour TSP levels were below the Action and Limit level.

Despite that the 1-hour and 24-hour TSP levels were below the Action and Limit level, The Contractor was recommended to increase the frequency of watering at the haul road to minimize the construction dust impacts.

No further complaint was received and the complaint was closed.

- CEDD (ICC) referred a complaint about no wheel washing facility was provided for dump trucks at the construction site entrance of the junction of New Clear Water Bay and Anderson Road on 17 February 2012.

High pressure water jet was provided by the Contractor in the construction site entrance. Fugitive dust emission was potentially generated from the vehicles passing the haul roads at Portion J2. Frequent cleaning on the public road was carried out by the water truck.

According to the routine 1-hour TSP and 24-hour TSP monitoring data recorded at the nearest monitoring station ID 1A (roof of Kwun Tong Government Secondary School) on 14 and 20 Feb 2012, the measured 24-hour TSP level were found to be 50.3 $\mu\text{g}/\text{m}^3$  and 79.1 $\mu\text{g}/\text{m}^3$ . The measured 1-hour TSP level on 14 and 20 Feb 2012 were found to be 76.1 $\mu\text{g}/\text{m}^3$ ; 82.4 $\mu\text{g}/\text{m}^3$ ; 82.9 $\mu\text{g}/\text{m}^3$  and 79.9 $\mu\text{g}/\text{m}^3$ ; 78.6 $\mu\text{g}/\text{m}^3$ ; 76.4 $\mu\text{g}/\text{m}^3$  respectively. All measured 1-hour and 24-hour TSP level were below the Action and Limit Level.

Despite that the 1-hour and 24-hour TSP levels were below the Action and Limit level. The Contractor was recommended to increase the frequency of watering at the haul road and cleaning on public road to minimize the construction dust impacts and ensure the wheel washing facility was provided to remove any dusty materials from their bodies and wheels before leaving construction site.

No further complaint was received and the complaint was closed.

- CEDD (ICC) referred a complaint about gravel on the haul road at Anderson Road and New Clear Water Bay Road on 21 February 2012.

High pressure water jet was provided by the Contractor in the construction site entrance. Gravel was potentially generated when the vehicles passing the haul roads at Portion J2.

According to the routine 1-hour TSP and 24-hour TSP monitoring data recorded at the nearest monitoring station ID 1A (roof of Kwun Tong Government Secondary School) on 20 Feb 2012, the measured 24-hour TSP level was found to be 79.1µg/m<sup>3</sup>. The measured 1-hour TSP levels on 20 Feb 2012 were found to be 79.9µg/m<sup>3</sup>; 78.6µg/m<sup>3</sup>; 76.4µg/m<sup>3</sup>. All measured 1-hour TSP and 24-hour TSP level were below the Action and Limit Level.

In order to minimize the dust impact, cleaning on the public road was carried out in the early March 2012. The Contractor should ensure the wheel washing facility was provided to remove any dusty materials from their bodies and wheels before leaving construction site.

No further complaint was received and the complaint was closed.

- CEDD (ICC) referred a complaint about gravel accumulated on the haul road at Clear Water Bay Road on 22 February 2012.

High pressure water jet was provided by the Contractor in the construction site entrance. Gravel was potentially generated from the vehicles passing the haul roads at Portion J2.

According to the routine 1-hour TSP and 24-hour TSP monitoring data recorded at the nearest monitoring station ID 1A (roof of Kwun Tong Government Secondary School) on 20 Feb 2012, the measured 24-hour TSP level was found to be 79.1µg/m<sup>3</sup>. The measured 1-hour TSP levels on 20 Feb 2012 were found to be 79.9µg/m<sup>3</sup>; 78.6µg/m<sup>3</sup>; 76.4µg/m<sup>3</sup>. All measured 1-hour TSP and 24-hour TSP level were below the Action and Limit Level.

In order to minimize the dust impact, cleaning on the public road was carried out in the early March 2012. The Contractor should ensure the wheel washing facility was provided to remove any dusty materials from their bodies and wheels before leaving construction site.

No further complaint was received and the complaint was closed.

- CEDD (ICC) referred a complaint querying on the presence of wheel washing facility at the construction site entrance at Clear Water Bay Road on 27 February 2012

High pressure water jet was provided by the Contractor in the construction site at Clear Water Bay Road.

According to the routine 1-hour TSP and 24-hour TSP monitoring data recorded at the nearest monitoring station ID 1A (roof of Kwun Tong Government Secondary School) on 22 Feb 2012, the measured 24-hour TSP level was found to be 24.6µg/m<sup>3</sup>. The measured 1-hour TSP levels on 20 Feb 2012 were found to be 67.9µg/m<sup>3</sup>; 70.7µg/m<sup>3</sup>; 71.9µg/m<sup>3</sup>. All measured 1-hour TSP and 24-hour TSP level were below the Action and Limit Level.

Despite that the 1-hour and 24-hour TSP levels were below the Action and Limit level. The Contractor was recommended to ensure the wheel washing facility was operated at the construction site entrance and closely monitor the effectiveness of the wheel washing facility.

No further complaint was received and the complaint was closed.

Please refer to the monthly EM&A report (January and February 2012 Version 0) accordingly for the details of the captioned complaint.



## 1 INTRODUCTION

### 1.1 Scope of Report

1.1.1 This is the quarterly Environmental Monitoring and Audit (EM&A) Report for the reporting period from 1 December 2011 to 29 February 2012 under the Project “Contract CV/2007/03 - Development at Anderson Road – Site Formation and Associated Infrastructure Works” (hereafter called “the Project”), which serving for both the entire Development of Anderson Road (Schedule 3 Designated Project (DP)) project as well as the Widening of Po Lam Road (Schedule 2 DP) project (which was commenced on 21 September 2011).

1.1.2 This report presents a summary of the EM&A works, list of activities and mitigation measures proposed by the Environmental Team (ET) for the Project during the reporting period.

### 1.2 Project Organization

1.2.1 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 (Ove Arup)	Chief Resident Engineer	Dennis Leung	3656 3000	3656 3100
	Senior Resident Engineer	Victor Leung	3656 3000	3656 3100
IEC (ENVIRON)	Independent Environmental Checker	David Yeung	3743 0717	3548 6988
Contractor (CSCE)	Site Agent	Wilson Lau	2704 2095	2702 6553
	Environmental Manager	Leo Chung	2704 2095	2702 6553
ET (AECOM)	ET Leader	Edith Ng	3922 9407	2317 7609

### 1.3 Summary of Construction Works

1.3.1 The Contactor has carried out major activities in the reporting quarter. Details of the works undertaken in this reporting period are listed below:

- Blasting;
- Drainage works;
- Slope upgrading works;
- Excavation work at Portions A, B, C, D, E, H, J4, S1a, S2a, S2b;
- Temporary traffic arrangement at J/O Po Lam Road & Sau Mau Ping Road, Portion J2, J3 and J4;
- Site clearance;
- Erection of hoardings and chain link fence;
- Establishment of temporary access and temporary drainage;
- Slope stabilization;
- Tree transplanting and protection;
- Maintenance works;
- Bridge structural works;
- Retaining structures structural works;
- RE wall panel installation;
- Slope drainage and maintenance access;
- Erection and maintenance of blasting cages and fencing;
- Pre-stressing works of bridge;
- Toe / Beam planter construction;

- Permanent backfilling at RW22;
- Bored pile(column method), capping beam & panel wall construction at R15;
- Lowering down of bored pile at R15;
- Construction of Bridge A, B and D;
- U-channel and box-culvert works at Portion D and E; and
- Preparation works for area J1a and J1b (R15b)

1.3.2 The general layout plan of the Project site showing the contract area is shown in Figure 1.1.

1.3.3 The environmental mitigation measures implementation schedule (EMIS) are presented in Appendix B.

## **2 SUMMARY OF EM&A PROGRAMME REQUIREMENTS**

### **2.1 Monitoring Parameters**

- 2.1.1 The EM&A Manual designated five monitoring stations to monitor environmental impacts on air quality and noise due to the Project. The monitoring locations are depicted in Figure 2.1.
- 2.1.2 The monitoring stations ID 4 & ID 5 will serve both the entire Development of Anderson Road (Schedule 3 Designated Project (DP)) project as well as the Widening of Po Lam Road (Schedule 2 DP) project.

### **2.2 Environmental Quality Performance Limits (Action/Limit Levels)**

- 2.2.1 The environmental quality performance limits (i.e. Action/Limit Levels) were derived from the baseline air quality and noise monitoring results of Kwun Tong Government Secondary School (ID 1A), On Yat House (ID 2), Sau Nga House (ID 3), Sau Ming Primary School (ID 4) and Sau Mau Ping Catholic Primary School (ID 5) and / or as defined in the EM&A Manual for air quality and noise impacts.
- 2.2.2 The baseline condition of air quality (for ID 1A, ID 2 & ID 3) in the Project site was reviewed in August 2008 upon agreed by ER and IEC. Reviewed Action Levels for air quality at ID 1A, ID 2 and ID 3 were established in September 2008. The latest Action and Limit Levels (established in September 2008) for all monitoring parameters are summarized in Appendix C.

### **2.3 Environmental Mitigation Measures**

- 2.3.1 Relevant environmental mitigation measures were stipulated in the Particular Specification and EP (No.: EP-140/2002) for the Contractor to adopt. A list of environmental mitigation measures and their implementation statuses are given in Appendix B.

### **3 MONITORING RESULTS**

#### **3.1 Air Quality**

- 3.1.1 Air quality monitoring, including 1-hr and 24-hr TSP, was conducted for at least three times every 6 days and for at least once every 6 days respectively at the 5 monitoring stations (ID 1A, ID 2, ID 3, ID 4 and ID 5), in accordance with the EM&A Manual.
- 3.1.2 Forty-fifth (45) sessions of 1-hr TSP monitoring and fifteen (15) sessions of 24-hr TSP monitoring were conducted for the 5 monitoring stations (ID 1A, ID 2, ID 3, ID4 & ID5) in the reporting quarter.
- 3.1.3 The weather was mostly sunny and fine, with occasionally cloudy period in the reporting quarter. The trend of impact air quality monitoring results for the reporting quarter is given in Appendix D. Major dust source included construction activities of the Project, concurrent construction activities of another project carried out in the vicinity and nearby traffic emissions.
- 3.1.4 No exceedance of Action and Limit Level was recorded for 1-hour TSP and 24-hour TSP monitoring in the reporting quarter.
- 3.1.5 Table 3.1 presents the number of exceedances recorded in each month of the reporting quarter. The number of monitoring events included regular impact monitoring events and additional ones, if any.

**Table 3.1 Summary of Number of Exceedances for 1-hr and 24-hr TSP Concentration**

Monitoring Parameter	Location	Level of Exceedance	Month			
			Dec 11	Jan 12	Feb 12	
1-hr TSP	ID 1A	No. of monitoring events	15	15	15	
		Action	0	0	0	
		Limit	0	0	0	
	ID 2	No. of monitoring events	15	15	15	
		Action	0	0	0	
		Limit	0	0	0	
	ID 3	No. of monitoring events	15	15	15	
		Action	0	0	0	
		Limit	0	0	0	
	ID 4	No. of monitoring events	15	15	15	
		Action	0	0	0	
		Limit	0	0	0	
	ID 5	No. of monitoring events	15	15	15	
		Action	0	0	0	
		Limit	0	0	0	
	<b>Total</b>			<b>0</b>	<b>0</b>	<b>0</b>
	24-hr TSP	ID 1A	No. of monitoring events	5	5	5
			Action	0	0	0
			Limit	0	0	0
		ID 2	No. of monitoring events	5	5	5
			Action	0	0	0
Limit			0	0	0	
ID 3		No. of monitoring events	5	5	5	
		Action	0	0	0	
		Limit	0	0	0	
ID 4		No. of monitoring events	5	5	5	
		Action	0	0	0	
		Limit	0	0	0	
ID 5		No. of monitoring events	5	5	5	
		Action	0	0	0	
		Limit	0	0	0	
<b>Total</b>			<b>0</b>	<b>0</b>	<b>0</b>	

### **3.2 Construction Noise**

- 3.2.1 Noise was conducted at the 5 monitoring stations (ID 1A, ID 2, ID 3, ID 4 and ID 5) for at least once per week during the construction phase (0700 – 1900) of the Project.
- 3.2.2 Twelve (12) noise monitoring events were carried out for all monitoring stations in the reporting quarter.
- 3.2.3 According to the information provided by the Contractor, no Action Level exceedance was recorded for noise since no noise related complaint was received in the reporting quarter.
- 3.2.4 No Limit Level exceedance of noise was recorded in the reporting quarter.
- 3.2.5 The graphical plots of trends of the noise monitoring results in the reporting quarter are provided in Appendix E. Major noise source included construction activities of the Project, concurrent construction activities of another project carried out in the vicinity, nearby traffic emissions and noise from school activities and community noise.
- 3.2.6 Table 3.2 presents the number of exceedances recorded in each month of the reporting quarter. The number of monitoring events included regular monitoring events and additional ones, if any.

**Table 3.2 Summary of Number of Exceedances for Construction Noise**

Monitoring Parameter	Location	Level of Exceedance	Month			
			Dec 11	Jan 12	Feb 12	
Construction Noise	ID 1A	No. of monitoring events	4	4	4	
		Limit	0	0	0	
	ID 2	No. of monitoring events	4	4	4	
		Limit	0	0	0	
	ID 3	No. of monitoring events	4	4	4	
		Limit	0	0	0	
	ID 4	No. of monitoring events	4	4	4	
		Limit	0	0	0	
	ID 5	No. of monitoring events	4	4	4	
		Limit	0	0	0	
	<b>Total Action Level*</b>			<b>0</b>	<b>0</b>	<b>0</b>
	<b>Total Limit Level</b>			<b>0</b>	<b>0</b>	<b>0</b>

**Remarks:** \* Number of Action Level exceedance for construction noise is the number of documented noise related complaint received in the reporting period from any one of the sensitive receivers.

### 3.3 Environmental Site Inspection

3.3.1 There were 13 site inspections conducted in the reporting quarter to monitor the implementation of proper environmental pollution control and mitigation measures for the Project. The major concerns for the Project are air quality, noise, water quality and chemical and waste management. Particular observations and non-compliance and their statuses are described below.

3.3.2 The Contractor has rectified most of the observations as identified during environmental site inspection in the reporting period within agreed time frame. Rectifications of remaining identified items are undergoing by the Contractor. Follow-up inspections on the status on provision of mitigation measures will be conducted to ensure all identified items are mitigated properly.

#### 3.3.3 Air Quality Impact

- Mud trails were observed at the Gate no. 3 in Portion H. The Contractor should ensure that the wheel washing facility provided at site entrance/exit was operating effectively to wash off the deposited silt on vehicles' bodies and wheels. Mud trails on public road should be cleared.
- Access roads, exposed surfaces/slopes and earth movement works areas at Branch Q31 to Q33 in Portion D and exposed slopes in R15 works area were found dusty and dry. The Contractor was recommended that regular water spraying or equivalent measure should be provided to the access roads, exposed surfaces/slopes and dusty construction works areas to minimize the dust impacts to sensitive receivers nearby.
- Dust suppression measure provided at cement mixing works area in R15 works area was found insufficient. The Contractor should ensure that proper shelter, in form of covering on the top and at the 3 sides of the cement mixing works station, should be provided prior to any cement mixing work was carrying out on-site.
- Dark smoke emission was observed from a drill rig worked at Portion C2 and smoke was observed emitting from the excavator in works area R22. The Contractor should repair the mentioned drill rig and excavator and conduct regular maintenance and checking of the machineries worked on site.

#### 3.3.4 Construction Noise Impact

- Flaps of the engine part of air compressor employed near Bridge B works area were opened. The Contractor should close the flaps of engine part of the air compressors employed within works area to minimize the noise impacts.
- The absorptive material wrapping to the breaking tip of the breaker working in works area at Branch Q33 in Portion D, R15 works area, R22 works area, Portion I (Branch M) and Bridge A near New Clear Water Bay Road were found improper. The Contractor should replace the broken absorptive material wrapping and ensure that proper absorptive material wrapping was provided to breaking tip of the breaker prior to rock breaking works was carrying out.
- Noise mitigation measures provided in rock breaking works area in R6, 24E, R22 works areas and CH1950 near R25 work area were insufficient. The Contractor should ensure that proper noise barriers should be provided at rock breaking works areas prior to any rock breaking works was carried out to minimize the noise impacts to the sensitive receivers nearby.



- Noise Emission Label (NEL) was found missing from the air compressor in works area 24E. The Contractor was reminded to affix NEL to the air compressor employed within works area.

### 3.3.5 Water Quality Impact

- Drainage system for handling run-off from Retaining Wall R15B works area should be improved. Proper drainage channel should be provided to divert the surface run-off from works areas and wheel washing facility to treatment systems prior to discharge.
- Mud was found accumulated inside the u-channel at R15. The Contractor was reminded to clear the accumulated mud inside the drainage channel. Also, the Contractor was recommended to further enhance the drainage systems by modifying the desilting pit and drainage channels. The sedimentation tank deployed in works area should be utilized to handle the surface run-off from works area properly.
- Muddy run-off was observed discharging to the public drainage at Bridge A. The Contractor was highly recommended to divert the muddy run-off to desilting facility as soon as possible and closely monitor the drainage system to ensure the drainage system is properly maintained. The Contractor was advised that no substandard surface run-off from construction site shall be discharged to public drains.
- Silty water was observed inside the desilting facility at R25a works area (Branch Q) and discharging to DSD chamber. The Contractor was highly recommended to further improve and review the treatment measures of desilting facility at R25a works area (Branch Q) to treat the wastewater from works area properly prior to discharge. Also, deposited silt inside the desilting facility and DSD chamber should be cleared.
- Exposed slope was observed near the u-channel at R16. Protective measure should be provided to prevent muddy water discharge to the public drainage.

### 3.3.6 Chemical and Waste Management

- Oil leakage was observed on ground underneath the excavator at Portion C2 Tung Lee workshop and Q3 works area on Anderson Road and a generator and a lubricant oil container were found placed on bare ground in Portion C2. The Contractor was recommended to clear the oil stain, carry out checking and regular maintenance and provide drip tray for the excavator, the generators and lubricant oil containers to avoid the oil leakage on the bare ground.
- Oil leakage and oil stains were found on ground near the generator at Portion M (Kai Tak Barging Point), 24E works area and QZ works area on Anderson Road. The Contractor should clear the oil leakage and oil stains on ground and disposed of as chemical waste to avoid any leaked oil from flowing outside the works area.
- Improper stored chemical container was observed in the CH1950 works area. The Contractor was recommended to provide drip tray to chemical containers stored in works area to retain any leaked chemical.

### 3.3.7 Landscape and Visual Impact

- Tree protection nets for the retained trees at Bridge A were found loosely installed and C&D materials were found placed near retained trees. The Contractor should reinstate the tree protective measures to the retained trees and remove the C&D materials placed near the retained trees.

## 4 ADVICE ON SOLID AND LIQUID WASTE MANAGEMENT STATUS

### 4.1 Summary of Solid and Liquid Waste Management

4.1.1 The Contractor is registered as a chemical waste producer for this Project. C&D materials and wastes sorting were carried out on site. Receptacles were available for C&D wastes and general refuse collection.

4.1.2 As advised by the Contractor, quantity of waste for disposal in the reporting quarter is summarized in the Table 4.1.

**Table 4.1 Summary of Quantity of Waste for Disposal**

Type of waste	Month		
	Dec 11	Jan 12	Feb 12
Total C&D material (m <sup>3</sup> )	154,154.4m <sup>3</sup>	120,112.2m <sup>3</sup>	57,821.62m <sup>3</sup>
Hard Rock and Large Broken Concrete	92,226.74m <sup>3</sup>	91,188.89m <sup>3</sup>	27,186.1m <sup>3</sup>
Reuse in the Project	0m <sup>3</sup>	0m <sup>3</sup>	0 m <sup>3</sup>
Reuse in other Projects	29,610.72m <sup>3</sup>	0m <sup>3</sup>	14,813.4m <sup>3</sup>
Disposed to barging point	32,316.94m <sup>3</sup>	28,923.31m <sup>3</sup>	15,822.12m <sup>3</sup>
Metals	28,320kg	26,890kg	84,770kg
Paper cardboard packing	10kg	10kg	10kg
Plastics	10kg	0kg	10kg
Chemical waste	0L	0L	0L
General refuse	378.79tonnes	210.2tonnes	108.78tonnes

4.1.3 The Contractor is advised to properly maintain on site C&D materials and wastes collection, sorting and recording system and maximize reuse / recycle of C&D materials and wastes. The Contractor is reminded to properly maintain the site tidiness and dispose of the wastes accumulated on site regularly and properly.

4.1.4 The Contractor is reminded that chemical waste containers should be properly treated and stored temporarily in designated chemical waste storage area on site in accordance with the Code of Practise on the Packaging, Labelling and Storage of Chemical Wastes.

## **5 SUMMARY OF NON-COMPLIANCE (EXCEEDANCES) OF ENVIRONMENTAL QUALITY**

### **5.1 Summary of Exceedances and Review of the Reasons for Non-compliance**

- 5.1.1 There was no Action and Limit Level exceedance recorded for 1-hr TSP and 24-hr TSP in the reporting quarter.
- 5.1.2 According to the information provided by the Contractor, no Action Level exceedance was recorded for noise since no noise related complaint was received in the reporting quarter.
- 5.1.3 No Limit Level exceedance for noise was recorded at all monitoring stations in the reporting quarter.

## 6 COMPLAINT, NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTION

### 6.1 Summary of Environmental complaints, notification of summons and successful prosecutions

6.1.1 Based on the information provided by the Contractor, five (5) environmental complaints and no notification of summons and successful prosecution was received in the reporting quarter.

- CEDD (ICC) referred a complaint about fugitive dust accumulated on the water barrier and traffic cones at Portion J2 (Clear Water Bay Road near Anderson Road crossing). The complainant has made other calls on 17 and 26 January 2012 regarding the same issue.

Fugitive dust emission was potentially generated from the vehicles passing the haul roads at Portion J2 (Clear Water Bay Road near Anderson Road crossing). The fugitive dust on the water barrier and traffic cones within the site boundary was cleaned after received complaint.

According to the routine 1-hour TSP and 24-hour TSP monitoring data recorded at the nearest monitoring station ID 1A (roof of Kwun Tong Government Secondary School) on 16 and 27 Jan 2012, the measured 24-hour TSP level were found to be 51.4 $\mu\text{g}/\text{m}^3$  and 81.4 $\mu\text{g}/\text{m}^3$ . The measured 1-hour TSP levels on 16 and 27 Jan 2012 were found to be 81.3 $\mu\text{g}/\text{m}^3$ ; 81.1 $\mu\text{g}/\text{m}^3$ ; 80.2 $\mu\text{g}/\text{m}^3$  and 81.1 $\mu\text{g}/\text{m}^3$ ; 81.8 $\mu\text{g}/\text{m}^3$ ; 79.8 $\mu\text{g}/\text{m}^3$  respectively. All measured 1-hour and 24-hour TSP levels were below the Action and Limit level.

Despite that the 1-hour and 24-hour TSP levels were below the Action and Limit level, The Contractor was recommended to increase the frequency of watering at the haul road to minimize the construction dust impacts.

No further complaint was received and the complaint was closed.

- CEDD (ICC) referred a complaint about no wheel washing facility was provided for dump trucks at the construction site entrance of the junction of New Clear Water Bay and Anderson Road on 17 February 2012.

High pressure water jet was provided by the Contractor in the construction site entrance. Fugitive dust emission was potentially generated from the vehicles passing the haul roads at Portion J2. Frequent cleaning on the public road was carried out by the water truck.

According to the routine 1-hour TSP and 24-hour TSP monitoring data recorded at the nearest monitoring station ID 1A (roof of Kwun Tong Government Secondary School) on 14 and 20 Feb 2012, the measured 24-hour TSP level were found to be 50.3 $\mu\text{g}/\text{m}^3$  and 79.1 $\mu\text{g}/\text{m}^3$ . The measured 1-hour TSP level on 14 and 20 Feb 2012 were found to be 76.1 $\mu\text{g}/\text{m}^3$ ; 82.4 $\mu\text{g}/\text{m}^3$ ; 82.9 $\mu\text{g}/\text{m}^3$  and 79.9 $\mu\text{g}/\text{m}^3$ ; 78.6 $\mu\text{g}/\text{m}^3$ ; 76.4 $\mu\text{g}/\text{m}^3$  respectively. All measured 1-hour and 24-hour TSP level were below the Action and Limit Level.

Despite that the 1-hour and 24-hour TSP levels were below the Action and Limit level. The Contractor was recommended to increase the frequency of watering at the haul road and cleaning on public road to minimize the construction dust impacts and ensure the wheel washing facility was provided to remove any dusty materials from their bodies and wheels before leaving construction site.

No further complaint was received and the complaint was closed.

- CEDD (ICC) referred a complaint about gravel on the haul road at Anderson Road and New Clear Water Bay Road on 21 February 2012.

High pressure water jet was provided by the Contractor in the construction site entrance. Gravel was potentially generated when the vehicles passing the haul roads at Portion J2.

According to the routine 1-hour TSP and 24-hour TSP monitoring data recorded at the nearest monitoring station ID 1A (roof of Kwun Tong Government Secondary School) on 20 Feb 2012, the measured 24-hour TSP level was found to be 79.1µg/m<sup>3</sup>. The measured 1-hour TSP levels on 20 Feb 2012 were found to be 79.9µg/m<sup>3</sup>; 78.6µg/m<sup>3</sup>; 76.4µg/m<sup>3</sup>. All measured 1-hour TSP and 24-hour TSP level were below the Action and Limit Level.

In order to minimize the dust impact, cleaning on the public road was carried out in the early March 2012. The Contractor should ensure the wheel washing facility was provided to remove any dusty materials from their bodies and wheels before leaving construction site.

No further complaint was received and the complaint was closed.

- CEDD (ICC) referred a complaint about gravel accumulated on the haul road at Clear Water Bay Road on 22 February 2012.

High pressure water jet was provided by the Contractor in the construction site entrance. Gravel was potentially generated from the vehicles passing the haul roads at Portion J2.

According to the routine 1-hour TSP and 24-hour TSP monitoring data recorded at the nearest monitoring station ID 1A (roof of Kwun Tong Government Secondary School) on 20 Feb 2012, the measured 24-hour TSP level was found to be 79.1µg/m<sup>3</sup>. The measured 1-hour TSP levels on 20 Feb 2012 were found to be 79.9µg/m<sup>3</sup>; 78.6µg/m<sup>3</sup>; 76.4µg/m<sup>3</sup>. All measured 1-hour TSP and 24-hour TSP level were below the Action and Limit Level.

In order to minimize the dust impact, cleaning on the public road was carried out in the early March 2012. The Contractor should ensure the wheel washing facility was provided to remove any dusty materials from their bodies and wheels before leaving construction site.

No further complaint was received and the complaint was closed.

- CEDD (ICC) referred a complaint querying on the presence of wheel washing facility at the construction site entrance at Clear Water Bay Road on 27 February 2012

High pressure water jet was provided by the Contractor in the construction site at Clear Water Bay Road.

According to the routine 1-hour TSP and 24-hour TSP monitoring data recorded at the nearest monitoring station ID 1A (roof of Kwun Tong Government Secondary School) on 22 Feb 2012, the measured 24-hour TSP level was found to be 24.6µg/m<sup>3</sup>. The measured 1-hour TSP levels on 20 Feb 2012 were found to be 67.9µg/m<sup>3</sup>; 70.7µg/m<sup>3</sup>; 71.9µg/m<sup>3</sup>. All measured 1-hour TSP and 24-hour TSP level were below the Action and Limit Level.

Despite that the 1-hour and 24-hour TSP levels were below the Action and Limit level. The Contractor was recommended to ensure the wheel washing facility was operated at the construction site entrance and closely monitor the effectiveness of the wheel washing facility.

No further complaint was received and the complaint was closed.

Please refer to the monthly EM&A report (January and February 2012 Version 0) accordingly for the details of the captioned complaint.

- 6.1.2 Table 6.1 summarized the complaint, summons and successful prosecution received in the reporting period.

**Table 6.1 Summary of Environmental Complaints, Summons and Prosecutions**

	<b>Dec 11</b>	<b>Jan 12</b>	<b>Feb 12</b>	<b>Total</b>
Complaint Logged	0	1	4	<b>5</b>
Summons Served	0	0	0	<b>0</b>
Successful Prosecution	0	0	0	<b>0</b>

- 6.1.3 Cumulative Statistics on Exceedances, Complaints, Notification of Summons and Successful Prosecutions recorded since the commencement of the Project are given in Appendix F.

## 7 COMMENTS, RECOMMENDATIONS AND CONCLUSIONS

### 7.1 Comments on Mitigation Measures

7.1.1 According to the environmental site inspections performed in the reporting quarter, the following comments are provided:

#### 7.1.2 Air Quality Impact

- Regular water spraying or equivalent measure should be provided to the access roads, exposed surfaces/slopes and dusty construction works areas to minimize the dust impacts to sensitive receivers nearby.
- Wheel washing facility, by means of high-jet water hose and/or wheel washing bay, should be provided and operating effectively at all site entrances/exits to wash off deposited silt from vehicles' wheels and bodies. Regular review on the wheel washing facilities in works area should be conducted.
- Temporary exposed slopes/surfaces should be completely covered up with tarpaulin sheet or shotcreted or hydroseeded if no works is going to carry out on them.
- Proper shelter, in form of covering on the top and at the 3 sides of the cement mixing works station, should be provided prior to any cement mixing work was carrying out on-site.
- Conduct regular inspection of the working machineries within works area to avoid any dark smoke emission.

#### 7.1.3 Construction Noise Impact

- Proper and effective noise mitigation measures (e.g. provision of noise barriers, absorptive material coverage on scaffolding and absorptive material wrappings to the breaking tips of the breakers) should be implemented at the breaking and drilling works areas to minimize the noise impacts to sensitive receivers nearby. The Contractor should conduct regular review on and maintain the noise screening measures provided within works area.
- Noise Emission Labels (NELs) shall be affixed to the hand-held breakers working within works areas.
- The flaps of engine part of the machineries employed within works area should be kept closed to minimize the noise impacts.

#### 7.1.4 Water Quality Impact

- Effective temporary drainage systems/channels and wastewater treatment systems should be provided and operated properly in works area to cater the surface run-off generated from works area and wheel washing facility. Surface run-off should be properly treated prior to discharge. Any untreated run-off should be avoided from overflowing to public drains. Temporary drainage systems/channels and wastewater treatment systems should be maintained and reviewed regularly and deposited silt and debris inside the temporary drainage channels/systems should be cleared regularly.
- Further enhance the drainage systems by modifying the desilting pit and drainage channels. The sedimentation tank deployed in works area should be utilized to handle the surface run-off from works area properly.

- Exposed slope in works area should be covered up completely with tarpaulin sheet to avoid any soil relocation/erosion during rainstorm.

#### 7.1.5 Chemical and Waste Management

- Proper roof covering should be provided at maintenance works area to minimize the generation of oily run-off from works area.
- All chemical containers and oil drums should be placed inside drip tray to retain any leaked oil/ chemical, if there is such case.
- Conduct regular inspection of the working machineries within works area to avoid any oil leakage from malfunction plants. Drip tray or equivalent measure should be provided to retain any leaked oil, if there is such case.
- Any oil stains and oil mixture found within the works area should be cleared and disposed of them as chemical waste. Regular inspection should be conducted at works area to avoid accumulation of chemical waste in works area.

#### 7.1.6 Landscape and Visual Impact

- Proper tree protection measures (e.g. provision of netting to demarcate the protection zone) should be provided to existing trees to avoid accidental damage to them.

### 7.2 Recommendations on EM&A Programme

- 7.2.1 The impact air quality and noise monitoring programme ensured that any environmental impact to the receivers would be readily detected and timely actions could be taken to rectify any non-compliance. Assessment and analysis of monitoring results collected demonstrated the environmental acceptability of the Project. The weekly site inspection ensured that all the environmental mitigation measures recommended in the EIA report were effectively implemented.
- 7.2.2 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.

### 7.3 Conclusions

- 7.3.1 Air quality and noise monitoring and weekly site inspection were carried out from December 2011 to February 2012, in accordance with the EM&A Manual.
- 7.3.2 All 1-hour and 24-hour TSP monitoring results complied with the Action and Limit level at all monitoring locations in the reporting quarter.
- 7.3.3 As per Contractor's information, no Action Level exceedance of noise was recorded as no noise complaint was noted in the reporting period and no Limit Level exceedance of noise were recorded in the reporting quarter.
- 7.3.4 Referring to the information given by the Contractor, five (5) environmental complaints and no summons or prosecution was made against the Project in the reporting quarter.



- 7.3.5 Environmental site inspections were carried out 13 times in the reporting period. Recommendations on remedial actions were given to the Contractor for the deficiencies identified during the site audit.