
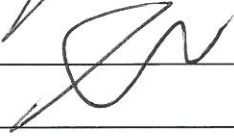


China State Construction Engineering (Hong Kong) Ltd.

Contract No. CV/2007/03

**Development at Anderson Road –  
Site Formation and Associated  
Infrastructure Works****Quarterly EM&A Summary Report for  
September 2011 – November 2011**

December 2011

	Name	Signature
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Reviewed, Approved & Certified:	Edith Ng (ETL)	

Version: 0

Date: 29 December 2011

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30 December 2011

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 September to November 2011**

Reference is made to the Environmental Team's submission of the draft Quarterly EM&A Report for September to November 2011 received by E-mail on 19 December 2011 and the subsequent revision by E-mail on 29 December 2011.

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

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## 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 September 2011 to 30 November 2011. As informed by the Contractor, construction activities in the reporting quarter were:

- Blasting;
- Drainage work;
- Slope upgrading works;
- Excavation work at Portion A, B, C, D, E, H, J2, J4, S1a, S1b, S2a, S2b;
- Permanent backfilling at Portion S1c and S1a (former temple area) and RW22;
- Construction of bridge deck;
- Ground investigation and instrumentation;
- Trial Pit Excavation;
- Temporary traffic arrangement at J/O Po Lam Road & Sau Mau Ping Road; at Portion J2, J3 and J4;
- Site clearance;
- Erection of hoardings and chain link fence;
- Establishment of temporary access road and temporary drainage;
- U-channel and box-culvert works at Portion D and E;
- Site investigation;
- Slope stabilization;
- Tree transplanting and protection;
- Slope Formation Works at Portion I;
- Maintenance works;
- Condition survey;
- Construction of Bridge A, B and D;
- Bridge structural works;
- Bridge Pre-bored H-piles;
- Retaining structures' structural works;
- RE wall panel installation and backfilling;
- Trench excavation and pipe laying;
- Slope drainage and maintenance access;
- Plate load test;

- Pre-stressing works of bridges;
- Toe / beam planter construction;
- Bored pile(column method), capping beam & panel wall construction at R15;
- Lowering down of temporary piling platform of R15;
- Lowering down of bored pile at R15;
- Panel wall construction at R15;
- Preparation works for area J1a and J1b (R15b).
- Bored piling works; and
- Erection and maintenance of blasting cages & fences.

## 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	16 sessions
1-hour TSP monitoring	48 sessions
Daytime Noise monitoring	14 sessions
Environmental Site Inspection	14 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.

As refer to information provided by the Contractor, one (1) Action Level exceedance was recorded since one (1) noise related complaints were received in the reporting quarter.

A complaint was received by RSS, which was received on 21 September 2011, regarding the construction noise impact from blasting activities carried out within the Project site after 1700.

Tyre mat was provided to enclose the blasting area in order to mitigate the noise impacts to nearby noise sensitive receivers.

Construction noise impact was likely contributed by the blasting activities of the Project. The complaint was considered as project-related.

The Contractor will inform the 1823 Call Centre if blasting activities are delayed to 1700. No further complaint was received and the complaint was closed on 22 September 2011.

Please refer to the monthly EM&A report (September 2011 Version 0) accordingly for the details of the captioned complaint/Action Level exceedance for construction noise impact.

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, one (1) environmental complaint and no notification of summons and successful prosecution was received in the reporting quarter.

A complaint was received by RSS, which was received on 21 September 2011, regarding the construction noise and dust impact from blasting activities carried out within the Project site after 1700.

Tyre mat was provided to enclose the blasting area in order to mitigate the noise impacts to nearby noise sensitive receivers.

For dust mitigation measures, tarpaulin sheet shelter and regular water spraying were provided in the blasting area to minimize the dust impact to sensitive receivers nearby.

Construction noise and dust impact was likely contributed by the blasting activities of the Project. The complaint was considered as project-related.

The Contractor has increased the frequency of watering at the blasting area to minimize the construction dust impacts during blasting. 1823 Call Centre will be informed if blasting activities are delayed to 1700.

No further complaint was received and the complaint was closed on 22 September 2011.

Please refer to the monthly EM&A report (September 2011 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 September 2011 to 30 November 2011 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	Michael Wright	3656 3000	3656 3100
	Resident Engineer (Safety and Environmental)	Thomas Wong	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 (ENSR)	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 work;
- Slope upgrading works;
- Excavation work at Portion A, B, C, D, E, H, J2, J4, S1a, S1b, S2a, S2b;
- Permanent backfilling at Portion S1c and S1a (former temple area) and RW22;
- Construction of bridge deck;
- Ground investigation and instrumentation;
- Trial Pit Excavation;
- Temporary traffic arrangement at J/O Po Lam Road & Sau Mau Ping Road; at Portion J2, J3 and J4;
- Site clearance;
- Erection of hoardings and chain link fence;
- Establishment of temporary access road and temporary drainage;
- U-channel and box-culvert works at Portion D and E;
- Site investigation;



- Slope stabilization;
- Tree transplanting and protection;
- Slope Formation Works at Portion I;
- Maintenance works;
- Condition survey;
- Construction of Bridge A, B and D;
- Bridge structural works;
- Bridge Pre-bored H-piles;
- Retaining structures' structural works;
- RE wall panel installation and backfilling;
- Trench excavation and pipe laying;
- Slope drainage and maintenance access;
- Plate load test;
- Pre-stressing works of bridges;
- Toe / beam planter construction;
- Bored pile(column method), capping beam & panel wall construction at R15;
- Lowering down of temporary piling platform of R15;
- Lowering down of bored pile at R15;
- Panel wall construction at R15;
- Preparation works for area J1a and J1b (R15b).
- Bored piling works; and
- Erection and maintenance of blasting cages & fences.

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-eight (48) sessions of 1-hr TSP monitoring and sixteen (16) 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, 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			
			Sep 11	Oct 11	Nov 11	
1-hr TSP	ID 1A	No. of monitoring events	15	15	18	
		Action	0	0	0	
		Limit	0	0	0	
	ID 2	No. of monitoring events	15	15	18	
		Action	0	0	0	
		Limit	0	0	0	
	ID 3	No. of monitoring events	15	15	18	
		Action	0	0	0	
		Limit	0	0	0	
	ID 4	No. of monitoring events	15	15	18	
		Action	0	0	0	
		Limit	0	0	0	
	ID 5	No. of monitoring events	15	15	18	
		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	6
			Action	0	0	0
			Limit	0	0	0
		ID 2	No. of monitoring events	5	5	6
			Action	0	0	0
Limit			0	0	0	
ID 3		No. of monitoring events	5	5	6	
		Action	0	0	0	
		Limit	0	0	0	
ID 4		No. of monitoring events	5	5	6	
		Action	0	0	0	
		Limit	0	0	0	
ID 5		No. of monitoring events	5	5	6	
		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 Fourteen (14) noise monitoring events were carried out for all monitoring stations in the reporting quarter.

3.2.3 As refer to information provided by the Contractor, one (1) noise related complaint was received in the reporting quarter; so one (1) Action Level exceedance was recorded.

A complaint was received by RSS, which was received on 21 September 2011, regarding the construction noise impact from blasting activities carried out within the Project site after 1700.

Tyre mat was provided to enclose the blasting area in order to mitigate the noise impacts to nearby noise sensitive receivers.

Construction noise impact was likely contributed by the blasting activities of the Project. The complaint was considered as project-related.

The Contractor will inform the 1823 Call Centre if blasting activities are delayed to 1700. No further complaint was received and the complaint was closed on 22 September 2011.

Please refer to the monthly EM&A report (September 2011 Version 0) accordingly for the details of the captioned complaint/Action Level exceedance for construction noise impact.

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			
			Sep 11	Oct 11	Nov 11	
Construction Noise	ID 1A	No. of monitoring events	5	4	5	
		Limit	0	0	0	
	ID 2	No. of monitoring events	5	4	5	
		Limit	0	0	0	
	ID 3	No. of monitoring events	5	4	5	
		Limit	0	0	0	
	ID 4	No. of monitoring events	5	4	5	
		Limit	0	0	0	
	ID 5	No. of monitoring events	5	4	5	
		Limit	0	0	0	
	<b>Total Action Level*</b>			<b>1</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 14 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

- Fugitive dust emission was observed during the rock breaking and excavation works carrying out in R15 of Portion Q. The Contractor should provide water sprinklers or equivalent measures to minimize the dust impacts during dusty work process (e.g. rock breaking, excavation and earth movement works).
- Although no rock breaking/drilling works was carrying out in Portion I (Branch M) during the site inspection, the Contractor should ensure that water spraying facilities or equivalent measures were provided in rock breaking/drilling works area to minimize the dust impacts.
- Wheel washing facility was found missing in Branch X and Retaining Wall R15b works area. Also, wheel washing facilities at works area near site office in Portion D was found not operating. The Contractor should provide and maintain operation of wheel washing facility, by means of high-jet water hose and/or wheel washing bay, at all site entrances/exits to wash off the deposited silt from vehicles' bodies and wheels effectively. Moreover, regular review on the wheel washing facilities in works area should be conducted.
- Temporary exposed slopes/surfaces at R15 were covered up with tarpaulin sheet incompletely. Exposed slopes were also observed in Retaining Wall R15b works area. The Contractor was recommended to cover up the temporary exposed slopes/surfaces with tarpaulin sheet completely or provide shotcreting or hydroseeding to them in order to minimize the fugitive dust emission if no works is going to carry out on them.

#### 3.3.4 Construction Noise Impact

- Absorptive material wrapping at the breaking tip of the breaker worked at R15 of Portion Q was found improper. The Contractor should provide proper absorptive material wrapping to the breaking tips of the breakers worked on site to minimize the noise impacts.
- Noise Emission Labels (NELs) were found missing from the hand-held breakers employed in works area in Branch X (QZ) at Anderson Road and Portion I. The Contractor should ensure that NELs was affixed to the hand-held breakers working within works areas.
- Although no rock breaking/drilling works was carrying out in Portion I (Branch M) during the site inspection, noise screening measures provided at rock breaking/drilling works area should be improved. Proper noise screening measures (like absorptive material coverage on scaffolding) should be completely cover the boundaries of the rock breaking/drilling works area to minimize the noise impacts to sensitive receivers nearby. The Contractor should ensure that proper absorptive material wrapping was provided to the breaking tips of the breakers working in rock breaking works areas.

#### Status of Non-Compliance recorded

- A non-compliance was recorded by IEC on 18 August 2011 regarding inadequate provision of noise barriers and acoustic insulation material wrapping for breaking tip of the breaker during rock breaking work was carrying out in Portion S2b.

Noise barriers and absorptive material wrapping to the breaking tip of the breaker were provided at rock breaking works areas in Portion S2b to minimize the noise impacts to the sensitive receivers nearby. The Contractor was reminded that sufficient and proper noise barriers and acoustic insulation material wrapping for the breaking tip of the breaker should be provided at rock breaking areas to lower the construction noise impacts.

The non-compliance was closed on 13 October 2011.

#### 3.3.5 Water Quality Impact

- Provision and modification of temporary drainage system/channels and wastewater treatment system in Portion Q (R15) was undergoing. The Contractor should provide proper temporary drainage systems/channels and wastewater treatment systems in works area to collect the surface run-off generated from works area and desilt the surface run-off prior to discharge.
- Wheel washing facility at Portion Q (R15) has been reviewed and relocated. Geotextile coverage on gullies, concrete paved sump pit, bunds and channels were provided for collection of wheel washing run-off. However, the effectiveness of treatment system for wheel washing run-off from Portion Q (R15) should be further improved to ensure that run-off was properly desilted prior to discharging to public drains. Any untreated run-off should be avoided from overflowing to public drains.
- Deposited silt and silty water was found accumulated at works area near site offices in Portion D. Deposited silt in wheel washing bays and drainage channels should be cleared regularly and regular review on the wheel washing bays and drainage channels should be conducted. Deposited silt and silty water accumulated on ground should be cleared.
- Temporary exposed slopes/surfaces at R15 were covered up with tarpaulin sheet incompletely. Exposed slopes were also observed in Retaining Wall R15b works area. The Contractor was recommended to cover up the temporary exposed slopes/surfaces with tarpaulin sheet completely or provide shotcreting or hydroseeding to them in order to avoid generation of silty surface run-off if no works is going to carry out on them.
- Deposited silt and debris was observed inside drainage channels in R15 of Portion Q, Bridge B(Portion L), Portion S1b (works area near the site offices), DSD's chamber in Portion F and inside the desilting pit in Portion H. Accumulation of silty run-off and deposited silt and debris were observed inside the temporary drainage channels at Portion S1b and E1 (works area near the site offices), although clearance of deposited silt and debris from the temporary drainage channels was noted. The Contractor was reminded to properly maintain and review the temporary drainage systems provided within works area. Deposited silt and debris inside the temporary drainage channels should be cleared frequently. Also, the Contractor should ensure that proper treatment facilities were provided to cater the surface run-off from the works area.
- Wastewater treatment facility provided in Bridge B (Portion L) works area was found not operating. The Contractor should ensure that wastewater treatment facilities were operating properly and effectively to handle the run-off from works area.



- Although sedimentation tank and pumping system was observed in Retaining Wall R15b works area, but they are not in operation. Proper temporary drainage channels/systems, in together with treatment facilities, should be provided within the works area to cater the surface run-off from wheel washing facility and works areas effectively. Temporary drainage channels/systems within works area should be reviewed regularly.
- Wastewater treatment facility/system provided at Branch X at Anderson Road was insufficient. A desilting tank was provided at Branch X at Anderson Road, but the setup of wastewater treatment facility/system and temporary drainage system was still undergoing. In September 2011, additional sump pit was provided in the works area at Branch X at Anderson Road to intercept the surface run-off from works area. However, the wastewater treatment facility/system and temporary drainage system should be further improved. The Contractor should ensure that proper wastewater treatment facilities and temporary drainage system were provided in works areas and they are operating properly and effectively to handle the run-off from works area and wheel washing facility.
- Temporary drainage systems and wastewater treatment systems provided in Portion I was found ineffective. The Contractor was recommended to provide proper temporary drainage systems and wastewater treatment systems (e.g. addition of desilting pit) in works area to cater the surface run-off from works areas and treat the run-off properly prior to discharge.
- Maintenance work was found conducting in improper works area outside the Sub-Contractor's (Tung Lee) workshop in Portion C2. The Contractor should ensure that all kinds of maintenance works should be conducted at designated maintenance areas where they are roofed, paved and equipped with proper drainage and treatment systems.

#### Status of Non-Compliance recorded

- Deposited silt and refuse/debris inside the DSD's chamber in Portion F were cleared. The Contractor was reminded to properly maintain and review the temporary drainage systems provided within works area. Deposited silt and debris inside the temporary drainage channels should be cleared regularly. The non-compliance recorded by IEC on 7, 14 and 28 July 2011 regarding this issue was closed on 1 September 2011.
- Deposited silt inside the drainage channels and desilting pit in Portion I was cleared. The Contractor was reminded to clear the deposited debris and silt inside the temporary drainage channels/systems and desilting pit frequently and maintain and review them regularly to avoid blockage of temporary drainage channels/systems. Sand bags/bunds were provided to direct the surface run-off from works areas to desilting facility. The Contractor was reminded that effluent discharging to public drains shall be well treated. The non-compliance recorded by IEC on 11 August 2011 regarding this issue was closed on 1 September 2011.
- Non-compliance was recorded by IEC on 25 August 2011 regarding improper handling of wheel washing run-off in Portion Q (R15).

Wheel washing facility at Portion Q (R15) has been reviewed and relocated. Geotextile coverage on gullies, concrete paved sump pit, concrete bunds and channels were provided for catering and treating the surface run-off generated from works area. Temporary exposed slopes/surfaces were covered up with tarpaulin sheet to minimize the generation of silty run-off. Deposited silt and debris inside drainage channels in R15 of Portion Q were also cleared.

The Contractor was reminded to properly maintain and review the temporary drainage systems and wastewater treatment systems provided within works area to cater the surface run-off from works area effectively. Deposited silt and debris inside the temporary drainage

channels should be cleared regularly. Any untreated run-off should be avoided from overflowing to public drains.

The non-compliance recorded by IEC on 25 August 2011 regarding improper handling of wheel washing run-off in Portion Q (R15) was closed on 20 October 2011.

### 3.3.6 Chemical and Waste Management

- Roof covering of Sub-Contractor's (Tung Lee) maintenance workshop at Portion C2 should be improved. The Contractor should extend the roof covering within 2 weeks time to ensure proper covering was provided to maintenance works area.
- Oil leakage was observed from an excavator worked at Branch X at Anderson Road and a breaking tip of the breaker placed in Portion I. The Contractor was recommended to repair the machineries and provide drip tray or equivalent measures to retain any leaked oil. Oil stains on ground should be cleared and disposed of as chemical waste.
- Improper stored chemical containers and oil drums were observed at CP19 works area (works area along Sau Mau Ping Road near Slope S20), works area at Branch X at Anderson Road and Tung Lee's workshop in Portion C2. The Contractor was recommended to provide drip tray to chemical containers and oil drums stored in works area to retain any leaked chemical/oil, if there is such case.
- Oil stains on ground and oily mixture accumulation inside the drip tray were observed at Tung Lee's workshop in Portion C2. Oil stain was also observed on ground in works area Q3 near R15. The Contractor should clear the oil mixture and dispose of it as chemical waste.

### 3.3.7 Others

- Nil.

## 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 was 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		
	Sep 11	Oct 11	Nov 11
Total C&D material (m <sup>3</sup> )	99,067m <sup>3</sup>	185,315m <sup>3</sup>	183,080.31m <sup>3</sup>
Hard Rock and Large Broken Concrete	53,855m <sup>3</sup>	132,550m <sup>3</sup>	137,526.91m <sup>3</sup>
Reuse in the Project	10,975m <sup>3</sup>	6,019m <sup>3</sup>	1,762.19 m <sup>3</sup>
Reuse in other Projects	0m <sup>3</sup>	5,123m <sup>3</sup>	0m <sup>3</sup>
Disposed to barging point	34,237m <sup>3</sup>	41,623m <sup>3</sup>	43,791.21m <sup>3</sup>
Metals	56,670kg	9,990kg	15,290kg
Paper cardboard packing	10kg	20kg	20kg
Plastics	10kg	20kg	10kg
Chemical waste	0L	0L	1,820L
General refuse	279.61tonnes	291tonnes	174.01tonnes

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 As refer to information provided by the Contractor, one (1) Action Level exceedance was recorded since one (1) noise related complaint was received in the reporting quarter.

A complaint was received by RSS, which was received on 21 September 2011, regarding the construction noise impact from blasting activities carried out within the Project site after 1700.

Tyre mat was provided to enclose the blasting area in order to mitigate the noise impacts to nearby noise sensitive receivers.

Construction noise impact was likely contributed by the blasting activities of the Project. The complaint was considered as project-related.

The Contractor will inform the 1823 Call Centre if blasting activities are delayed to 1700. No further complaint was received and the complaint was closed on 22 September 2011.

Please refer to the monthly EM&A report (September 2011 Version 0) accordingly for the details of the captioned complaint/Action Level exceedance for construction noise impact.

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, one (1) environmental complaint and no notification of summons and successful prosecution was received in the reporting quarter.

A complaint was received by RSS, which was received on 21 September 2011, regarding the construction noise and dust impact from blasting activities carried out within the Project site after 1700.

Tyre mat was provided to enclose the blasting area in order to mitigate the noise impacts to nearby noise sensitive receivers.

For dust mitigation measures, tarpaulin sheet shelter and regular water spraying were provided in the blasting area to minimize the dust impact to sensitive receivers nearby.

Construction noise and dust impact was likely contributed by the blasting activities of the Project. The complaint was considered as project-related.

The Contractor has increased the frequency of watering at the blasting area to minimize the construction dust impacts during blasting. 1823 Call Centre will be informed if blasting activities are delayed to 1700.

No further complaint was received and the complaint was closed on 22 September 2011.

Please refer to the monthly EM&A report (September 2011 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**

	Sep 11	Oct 11	Nov 11	Total
Complaint Logged	1	0	0	1
Summons Served	0	0	0	0
Successful Prosecution	0	0	0	0

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

- The Contractor should ensure that sprinklers, water spraying facilities or equivalent measures should be provided and operating at dusty works areas (e.g. at rock breaking, drilling, excavation and earth movement works areas) to suppress fugitive dust emission effectively.
- 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.

#### 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.

#### 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.
- Wheel washing facility at all site entrances/exits should be well maintained with regular clearance of deposited silt. Regular review on the wheel washing facilities in works area should be conducted.
- Temporary exposed slopes/surfaces should be completely covered up with tarpaulin sheets or shotcreted or hydroseeded to minimize the generation of silty run-off, especially during rainstorm.
- All kinds of maintenance works should be conducted at designated maintenance areas where they are roofed, paved and equipped with proper drainage and treatment systems.

#### 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.

### 7.2 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 September 2011 to November 2011, 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, one (1) Action Level exceedance of noise were recorded as one (1) noise related complaint were 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, one (1) environmental complaint and no summons or prosecution was made against the Project in the reporting quarter.
- 7.3.5 Environmental site inspections were carried out 14 times in the reporting period. Recommendations on remedial actions were given to the Contractor for the deficiencies identified during the site audit.