

PENTA-OCEAN CONSTRUCTION COMPANY LIMITED

**REMAINING ENGINEERING
INFRASTRUCTURE WORKS FOR
PAK SHEK KOK DEVELOPMENT
PACKAGE 1
(CONTRACT NO.: TP 35/02)**

**QUARTERLY EM&A SUMMARY
REPORT
(FROM APRIL TO JUNE 2003)**

Prepared by: Linda Law
Linda Law
Environmental Officer

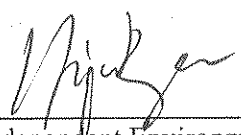
Checked by: C. L. Lau
C. L. Lau
Environmental Team Leader

Approved by: Tony Wong
Tony Wong
Operations Manager



INDEPENDENT ENVIRONMENTAL CHECKER

CHECK CERTIFICATE

Verified: 

Independent Environmental Checker

Name: Ms Winsome WS Yip
Senior Environmental Consultant
Hyder Consulting Limited



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FIGURE

- Figure 1 Location of Noise Monitoring Locations
- Figure 2 Location of Air Monitoring Locations
- Figure 3 Location of Air and Noise Monitoring Stations at HKIB Staff Accommodation
- Figure 4 Location of Noise Monitoring Station at CUHK Residence No. 10
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EXECUTIVE SUMMARY

This report is the second quarterly EM&A summary report (No.2) and has been prepared to document the impact monitoring works conducted for the Contract of the Remaining Engineering Infrastructure Works for Pak Shek Kok Development Package 1 (Contract No: TP 35/02) during the reporting period from 01 April to 30 June 2003.

Construction Progress in this Quarter

The major construction works in this quarter included Earthworks and Forming/removal of each mound, Drainage and Sewage works, Predrilling works, Waterworks, Casting of Precast unit, Sheetpiling, Building a retained earth wall along the relocated cycle truck, Construction and Maintenance of Wheel-washing Facilities, Subway and Pump House, Erection of Hoarding and Signboard, Moving Site Accommodation for the Engineer and Site Clearance.

Environmental Monitoring Progress

The summary of the monitoring activities in this quarter is listed below:

- Noise Monitoring (Day-time): 13 Occasions at 3 designated locations;
- Noise Monitoring (Evening-time): 13 Occasions at 3 designated locations;
- Noise Monitoring (Holiday): 13 Occasions at 3 designated locations;
- 24-hour TSP Monitoring: 17 Occasions at 1 designated location;
- 1-hour TSP Monitoring: 40 Occasions at 2 designated locations;
- Weekly-site inspection: 14 Occasions.

Noise Monitoring

No exceedances of Action and Limit levels for noise monitoring were recorded in this quarter.

Air Monitoring

No 24-hour TSP monitoring was carried out at HKIB Staff Accommodation in the reporting period because the application for the permission to set up and providing power supply for the monitoring equipment (High Volume Sampler) is still under process. 24-hour TSP monitoring is pending approval by CUHK of access to monitoring location. Hence, only 1-hour TSP monitoring at HKIB Staff Accommodation was conducted to monitor the air quality in this reporting period.

No exceedances of Action and Limit levels were recorded for 24-hr TSP and 1-hr TSP monitoring in this quarter.

Environmental Complaints

No environmental complaints were received in this reporting period.

Notification of summons and successful prosecutions

No notification of summons and prosecutions with respect to environmental issues registered in this quarter.

The monitored environmental data indicated that no unacceptable environmental impacts arising from the Project had been caused to the surrounding sensitive receivers. The environmental measures had been effective in controlling potential impacts to within acceptable sensitive receivers. However, the Contractor had been recommended to introduce more effort on environmental mitigation measures to minimize the environmental impact from the Project.



1.0 INTRODUCTION

Penta-Ocean Construction Co., Ltd. (POC) appointed Environmental Team (ET) of ETS-Testconsult Limited (ETL) to undertake the Environmental Monitoring and Audit for Remaining Engineering Infrastructure Works for Pak Shek Kok Development Package 1 (Contract No.: TP 35/02).

Under the requirements of Section 10 of Environmental Permit to Construct and Operate a Designate Project (EP-108/2001/AEP-108/2001), EM&A programme as set out in the EM&A Manual is required to be implemented. In accordance with the EM&A manual, environmental monitoring of air quality and noise is required for the Project. The EM&A requirement for each parameter are described in details in subsequent sections, including:

- All monitoring parameters;
- Action and Limit levels for all environmental parameters;
- Event-Action Plans;
- Environmental mitigation measures, as recommended in the project EIA study report;
- Environmental requirements in contract documents.

This quarterly EM&A summary report summarizes the impact monitoring results and audit findings of the EM&A program during the reporting period from 01 April to 30 June 2003. It covers 3 monthly reports produced for April 2003, May 2003 and June 2003.

2.0 PROJECT INFORMATION

2.1 Background

Remaining Engineering Infrastructure Works for Pak Shek Kok Development Package 1 (Contract No.: TP 35/02) was planned and designed by the Territory Development Department (TDD).

As the main Contractor of the captioned project: contracted by, POC will follow the environmental monitoring recommendation stated at the EM&A Manual that was prepared with reference to the EIA Study for Feasibility Study on the Pak Shek Kok Development Area (PSKDA) Environmental Monitoring and Audit Manual under Agreement No. CE 90/96.

2.2 Site Description

Generally, the construction site is located at Pak Shek Kok development area. Surrounding the construction site, there are two air sensitive receivers: HKIB Staff Accommodation and Cheung Shue Tan Village and three noise sensitive receivers: HKIB Staff Accommodation, CUHK Residence No.10 and Cheung Shue Tan Village.

Figure 1 and 2 show the noise and air monitoring locations of this project.

2.3 Construction Programme

The details of construction programme (from December to June 2003) are shown in Appendix F.

2.4 Project Organization and Management Structure

The organization chart and lines of communication with respect to the on-site environmental management and monitoring program are shown in Appendix A.



2.5 Contact Details of Key Personnel

The key personnel contact names and telephone numbers, and construction programme are shown in table 2.1.

Table 2.1 Contact Details of Key Personnel

Organization	Project Role	Name of Key Staff	Tel. No.	Fax No.
TDD	Employer	Mr. H W Lau	2158 5629	---
Hyder	Engineer	Mr. Herman Fong	2911 2233	2805 5028
Hyder	Independent Environmental Checker	Ms Winsome Yip	2911 2233	2827 2891
POC	Contractor	Mr. Roger Lau	9870 6390	2691 6012
ETL	Contractor's Environmental Team	Mr C L Lau (Environmental Team Leader)	2946 7792	2695 3944

3.0 CONSTRUCTION PROGRESS IN THIS QUARTER

The site area of this project is shown in Appendix G.

A summary of the major construction activities undertaken in this quarter is shown in Table 3.1.

Table 3.1 Major Construction Activities in this quarter

Location	Major Construction Activity
Area 8A, Area 9B (Zone S3), Area 10A, D1, Zone C, J & R	Earthworks and forming/removal of earth mound
Area 1, Area 2, Area 8A, Area 9A & 9B (Zone S3), D1, Zone N1, N2 & Q	Drainage and sewerage work
Area 1, Area 8A, Area 5, D1 side road	Waterworks
Box Culvert C10, Area 10A	Casting of Precast unit
Box Culvert C10	Cofferdam and construction sheet piling
Road D1 Bridge	Predrilling works
HY/98/02	Moving Site Accommodation for Engineer
Zone N3	Subway and Pump House
Cycle Track	Building a retained earth wall along the cycle track
Zone A, L, Q, E	Construction of the existing wheel washing facility
Zone E, Q, L, A	Maintain wheel-washing facilities
Zone P, G, S3 & J Rest, Area 1, Area 7A	Site Clearance
---	Erection of hoarding and signboard
---	Pipe jacking works for Watermain 600 diameter
---	Construction of Pak Shek Kok Underpass extension

4.0 AIR QUALITY MONITORING

4.1 Monitoring Locations

1-hour and 24-hour TSP monitoring are required to be conducted to monitor the air quality, at designated monitoring locations:

- HKIB Staff Accommodation (on ground floor near the entrance facing south-east) for 1-hr TSP monitoring;
- Cheung Shue Tan Village (near the outer building, temple) for 1-hr TSP monitoring;



- Cheung Shue Tan Village (in front of Man Kee Store) for 24-hr TSP monitoring.

No 24-hour TSP monitoring was carried out at HKIB Staff Accommodation in the reporting period because the application for the permission to set up and providing power supply for the monitoring equipment (High Volume Sampler) is still under process. 24-hour TSP monitoring is pending approval by CUHK of access to monitoring location. Hence, only 1-hour TSP monitoring was conducted to monitor the air quality in this reporting period.

4.2 Monitoring Parameters, Frequency, Duration and Schedule

Table 4.1 summarizes the monitoring parameters, monitoring duration and frequencies of air quality monitoring. The air quality monitoring schedule for 24-hr and 1-hr TSP monitoring at designated monitoring locations in this quarter is summarized in table 4.2.

Table 4.1 Monitoring parameters, duration and frequency of impact air quality monitoring

Parameter	Duration	Frequency
24-hr TSP	24 hr (0000-2400)	Once every six days
1-hr TSP	1 hr (0700-1900)	Three times every six days

Table 4.2 Monitoring Schedule for the air quality monitoring stations

Air quality monitoring stations	Location	Monitoring Period						
		24-hr TSP				1-hr TSP		
		Start		Finish		Date	Start	Finish
		Date	Time	Date	Time			
AM1	HKIB Staff Accommodation					01/04/2003	09:54	10:54
						02/04/2003	14:10	15:10
						03/04/2003	10:00	11:00
						08/04/2003	10:53	11:53
						10/04/2003	09:40	10:40
						12/04/2003	14:10	15:10
						14/04/2003	11:20	12:20
						15/04/2003	14:25	15:25
						17/04/2003	10:18	11:18
						22/04/2003	10:43	11:43
						24/04/2003	10:28	11:28
						26/04/2003	15:10	16:10
						29/04/2003	09:16	10:16
						30/04/2003	15:28	16:28
						02/05/2003	13:30	14:30
						03/05/2003	10:39	12:39
						06/05/2003	10:23	11:23
						09/05/2003	09:30	10:30
						10/05/2003	14:30	15:30
						13/05/2003	16:52	17:52
						15/05/2003	13:10	14:10
						17/05/2003	10:47	11:47
						20/05/2003	10:48	11:48
						22/05/2003	17:15	18:15
						24/05/2003	13:04	14:04
						27/05/2003	08:40	09:40
						29/05/2003	09:08	10:08
						31/05/2003	09:20	10:20
						03/06/2003	09:51	10:51
						05/06/2003	14:08	15:08
				07/06/2003	10:34	11:34		
				10/06/2003	10:04	11:04		
				12/06/2003	16:36	17:36		
				14/06/2003	10:06	11:06		
				17/06/2003	13:27	14:27		
				19/06/2003	10:46	11:46		
				21/06/2003	10:20	11:20		
				24/06/2003	13:49	14:49		
				26/06/2003	13:00	14:00		
				28/06/2003	10:30	11:30		



Remaining Engineering Infrastructure Works for
Pak Shek Kok Development Package 1
Contract No.: TP 35/02

ENA 30405
Quarterly EM&A Report No.2

Air quality monitoring stations	Location	Monitoring Period						
		24-hr TSP				1-hr TSP		
		Start		Finish		Date	Start	Finish
		Date	Time	Date	Time			
AM3	Cheung Shue Tan Village (near the outer building, temple)					01/04/2003	14:22	15:22
						02/04/2003	15:34	16:34
						03/04/2003	15:00	16:00
						08/04/2003	15:10	16:10
						10/04/2003	10:54	11:54
						12/04/2003	15:28	16:28
						14/04/2003	14:45	15:45
						15/04/2003	09:41	10:41
						17/04/2003	16:12	17:12
						22/04/2003	17:24	18:24
						24/04/2003	13:15	14:15
						26/04/2003	16:33	17:33
						29/04/2003	10:55	11:55
						30/04/2003	16:50	17:50
						02/05/2003	14:48	15:48
						03/05/2003	10:56	11:56
						06/05/2003	17:10	18:10
						09/05/2003	10:43	11:43
						10/05/2003	16:00	17:00
						13/05/2003	09:35	10:35
						15/05/2003	14:23	15:23
						17/05/2003	14:38	15:38
						20/05/2003	13:48	14:48
						22/05/2003	13:02	14:02
						24/05/2003	14:42	15:42
						27/05/2003	17:48	18:48
						29/05/2003	10:39	11:39
						31/05/2003	11:00	12:00
						03/06/2003	14:39	15:39
						05/06/2003	10:30	11:30
						07/06/2003	13:56	14:56
				10/06/2003	17:18	18:18		
				12/06/2003	13:32	14:32		
				14/06/2003	15:53	16:53		
				17/06/2003	10:35	11:35		
				19/06/2003	16:21	17:21		
				21/06/2003	13:08	14:08		
				24/06/2003	10:42	11:42		
				26/06/2003	14:20	15:20		
				28/06/2003	09:05	10:05		
AM3A	Cheung Shue Tan (in front of Man Kee Store)	01/04/03	14:28	02/04/03	14:28			
		07/04/03	14:20	08/04/03	14:21			
		11/04/03	13:26	12/04/03	13:26			
		17/04/03	16:13	18/04/03	16:13			
		23/04/03	11:30	24/04/03	11:30			
		29/04/03	10:45	30/04/03	10:45			
		05/05/03	14:30	06/05/03	14:30			
		09/05/03	14:00	10/05/03	14:00			
		15/05/03	14:40	16/05/03	14:40			
		21/05/03	11:40	22/05/03	11:41			
		27/05/03	18:25	28/05/03	18:25			
		02/06/03	18:00	03/06/03	18:00			
		06/06/03	14:30	07/06/03	14:30			
		12/06/03	14:10	13/06/03	14:10			
		18/06/03	14:36	19/06/03	14:36			
24/06/03	10:48	25/06/03	10:48					
30/06/03	13:56	01/07/03	13:56					

4.3 Wind Data Monitoring

Wind data (wind speed and wind direction) were directly extracted from Sha Tin Station (located at Sha Tin Race Course) of Hong Kong Observatory. All wind data during this reporting period are shown in Appendix D.



4.4 Action and Limit Levels

Action and Limit levels for 24-hr TSP and 1-hr TSP derived as illustrated in Table 4.3.

Table 4.3 Action and Limit Levels for 24-hr TSP and 1-hr TSP

Monitoring Location	24-hr TSP ($\mu\text{g}/\text{m}^3$)		1-hr TSP ($\mu\text{g}/\text{m}^3$)	
	Action Level	Limit Level	Action Level	Limit Level
AM1	164 *	260 *	325 *	500 *
AM3	---	---	306	500
AM3A	183	260	---	---

* = Reference to the information contained in the Baseline Monitoring Report submitted under the "Advance Engineering Infrastructure Works for Pak Shek Kok Development – Southern Access Road and Sewage Pumping Station No.3

4.5 Event-Action Plans

Please refer to Appendix E for details.

4.6 Air Quality Monitoring Results

4.6.1 24-hour TSP Monitoring

Only 24-hour TSP monitoring was carried out at monitoring station, AM3A in the reporting period. 24-hour TSP monitoring at monitoring station, AM1 was not

carried out in this reporting period because the permission for setting up the monitoring equipment, High Volume Sampler, at HKIB Staff Accommodation is still under processing. Graphical presentation of 24-hour TSP monitoring results for these reporting months is shown in Appendix B.

No exceedances of Action and Limit Level of 24-hour TSP monitoring results were recorded during the reporting period.

4.6.2 1-hour TSP Monitoring

1-hour TSP monitoring was carried out at monitoring stations, AM1 and AM3 in the reporting period. Graphical presentation of 1-hour TSP monitoring results for these reporting months is shown in Appendix B.

No exceedances of Action and Limit Level of 1-hour TSP monitoring results were recorded during the reporting period.

5.0 Noise Monitoring

5.1 Monitoring Locations

As the requirement in EM&A Manual, noise monitoring was conducted at designated monitoring locations:

- HKIB Staff Accommodation (on ground floor near the entrance facing south-east);
- Cheung Shue Tan Village (near the outer building, temple);
- CUHK Residence No.10.



5.2 Monitoring Parameters, duration, Frequency and Schedule

Noise monitoring for the A-weighted levels L_{eq} , L_{10} and L_{90} were recorded. The following guide on the regular monitoring frequency for each monitoring station on a per week basis when noise generating activities are underway:

- One set of measurements between 0700-1900 hours on normal weekdays (6 consecutive $L_{eq(5-min)}$);
- One set of measurements between 1900-2300 hours (3 consecutive $L_{eq(5-min)}$)*;
- One set of measurements between 2300-0700 hours of next day (3 consecutive $L_{eq(5-min)}$)*;
- One set of measurements between 0700-1900 hours on holidays (3 consecutive $L_{eq(5-min)}$)*.

(*): Noise monitoring to be conducted only when there is construction work.

Duration, frequencies and parameters of noise measurement are presented in Table 5.1.

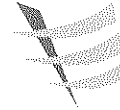
Table 5.1 Duration, Frequencies and Parameters of Noise Monitoring

Time period	Duration/min	Parameters	Frequency
Day-time: 0700-1900 hrs on normal weekday	30	L_{eq} , L_{10} , L_{90}	Once per week
Evening-time: 1900-2300 hrs	15	L_{eq} , L_{10} , L_{90}	Once per week
Night-time: 2300-0700 hrs of next day	15	L_{eq} , L_{10} , L_{90}	Once per week
Holiday: 0700-1900 hrs	15	L_{eq} , L_{10} , L_{90}	Once per week

The noise monitoring programme of monitoring locations (Day-time, Evening-time, Holiday and Night-time) is summarized in Table 5.2.

Table 5.2 Monitoring Schedule for noise monitoring stations

Noise monitoring stations	Monitoring Period							
	Day-time		Evening-time		Holiday		Night-time	
NM1	03/04/03	10:05	03/04/03	20:08	06/04/03	10:45	---	---
	10/04/03	09:42	10/04/03	19:30	13/04/03	15:06	---	---
	17/04/03	10:26	17/04/03	19:00	20/04/03	13:56	---	---
	24/04/03	10:33	24/04/03	19:00	27/04/03	14:00	---	---
	02/05/03	13:40	02/05/03	20:18	07/05/03	16:10	---	---
	06/05/03	10:25	06/05/03	19:00	11/05/03	11:35	---	---
	13/05/03	17:03	13/05/03	19:00	18/05/03	15:49	---	---
	20/05/03	10:50	20/05/03	20:20	25/05/03	14:53	---	---
	27/05/03	08:42	27/05/03	19:51	---	---	---	---
	03/06/03	09:53	03/06/03	20:50	01/06/03	15:30	---	---
	10/06/03	10:09	10/06/03	19:54	08/06/03	14:32	---	---
	17/06/03	13:29	17/06/03	19:50	15/06/03	15:16	---	---
	24/06/03	13:51	24/06/03	20:15	22/06/03	16:47	---	---
	---	---	---	---	29/06/03	14:05	---	---
NM2	03/04/03	11:13	03/04/03	20:29	06/04/03	11:15	---	---
	10/04/03	15:45	10/04/03	19:53	13/04/03	16:38	---	---
	17/04/03	15:06	17/04/03	19:22	20/04/03	14:25	---	---
	24/04/03	11:18	24/04/03	19:34	27/04/03	14:40	---	---
	02/05/03	14:55	02/05/03	19:12	07/05/03	15:16	---	---
	06/05/03	16:24	06/05/03	19:23	11/05/03	11:07	---	---
	13/05/03	18:16	13/05/03	19:23	18/05/03	17:10	---	---
	20/05/03	13:00	20/05/03	19:10	25/05/03	15:43	---	---
	27/05/03	11:35	27/05/03	19:30	---	---	---	---
	03/06/03	15:52	03/06/03	21:23	01/06/03	14:20	---	---
	10/06/03	11:18	10/06/03	19:32	08/06/03	14:05	---	---
	17/06/03	16:39	17/06/03	19:28	15/06/03	14:42	---	---
	24/06/03	15:30	24/06/03	19:40	22/06/03	15:08	---	---
	---	---	---	---	29/06/03	14:49	---	---



Noise monitoring stations	Monitoring Period							
	Day-time		Evening-time		Holiday		Night-time	
NM3	03/04/03	15:06	03/04/03	20:47	06/04/03	14:10	---	---
	10/04/03	10:56	10/04/03	19:02	13/04/03	15:48	---	---
	17/04/03	16:18	17/04/03	19:50	20/04/03	14:55	---	---
	24/04/03	13:18	24/04/03	20:20	27/04/03	15:10	---	---
	02/05/03	15:35	02/05/03	19:41	07/05/03	15:38	---	---
	06/05/03	17:12	06/05/03	19:55	11/05/03	10:41	---	---
	13/05/03	09:42	13/05/03	19:56	18/05/03	16:35	---	---
	20/05/03	13:51	20/05/03	19:41	25/05/03	18:06	---	---
	27/05/03	17:50	27/05/03	19:00	---	---	---	---
	03/06/03	14:32	03/06/03	21:58	01/06/03	14:58	---	---
	10/06/03	17:20	10/06/03	19:00	08/06/03	13:37	---	---
	17/06/03	10:37	17/06/03	19:00	15/06/03	14:15	---	---
	24/06/03	10:45	24/06/03	19:00	22/06/03	16:02	---	---
		---	---	---	---	29/06/03	15:12	---

Remark (*): The noise monitoring cancelled due to no construction works.

5.3 Action and Limit Levels

The Action and Limit levels for noise levels derived as illustrated in Table 5.3.

Table 5.3 Action and Limit Levels for noise monitoring

Time Period	Time Period	Action	Limit
Normal hours	0700-1900 hrs on normal weekdays	When one documented complaint is received	75 dB(A) *
Holiday	0700-1900 hrs on holidays		70 dB(A) **
Evening-time	1900-2300 hrs on all other days		55 dB(A) **
Night-time	2300-0700 hrs of next day		

* = Reduce to 70 dB(A) for schools and 65 dB(A) during school examination periods.

** = Area Sensitivity Rating (ASR) C is selected from the "Technical Memorandum on Noise from Construction Work Other Than Percussive Piling".

5.4 Event-Action Plans

Please refer to the Appendix E for details.

5.5 Noise Monitoring Results

Day-time, Evening-time and Holiday noise monitoring were carried out at monitoring stations, NM1, NM2 and NM3 in this reporting period. No night-time noise monitoring were required since no construction works were processed during the night-time period. Graphical presentation of the monitoring results for these reporting months are shown in Appendix C.

No day-time, evening-time and holiday noise monitoring results at all monitoring stations exceeded the Action Level since no documented complaints were received in this reporting period. Besides, no exceedances in Limit Level were recorded according to the results from day-time, evening-time and holiday noise monitoring.

6.0 WASTEWATER MONITORING

6.1 According to the Discharge of Industrial Trade Effluent Licence (Licence No.: 2946), POC is required to carry out wastewater monitoring of suspended solids quarterly at all effluent discharge points within the site.



- 6.2 POC appointed ET of ETL to sampling the wastewater samples at the effluent discharge points. The collected sample will be transport to the Environmental Laboratory of ETL for suspended solids content analysis. The Environmental Laboratory of ETL is HOKLAS accredited and the test method used for suspended solids analysis is also HOKLAS accredited in accordance with the 2540D of Standard Methods for the Examination of Water and Wastewater (APHA 19th edition).
- 6.3 Under the Wastewater Discharge Licence (No.: 2946), the discharge limit of Suspended Solids content of the effluent at this site should be 30mg/L. It means that the suspended solids of wastewater discharged should be less than 30mg/L or otherwise no wastewater can be discharged under this Licence.
- 6.4 At Zone N1 and Zone N2, it was found that there were the drainage work and subway at March 2003. Under these construction activities, the seepage of marine water at the Zone N1 and Zone N2 was observed. As a result, POC required to pump, treat by passing through sedimentation trap and then discharge the marine water out through the discharge points at Zone N1 and Zone N2 to Tolo Harbour.
- Hence, the wastewater monitoring was carried out by ET at 19 March 2003 under the supervision of the RE and POC at two discharges points at Zone N1 and Zone N2. The locations of these two discharge points were shown in the figures at Appendix G (Figure No.: 727/D/H/L/1023 and 727/D/H/L/1024).
- 6.5 During this monitoring, two wastewater samples were collected from these two effluent discharge points and transport to ETL immediately for analysis. The results of suspended solids content of these two wastewater samples were found below 30mg/L and within the discharge limit of the Discharge Licence. The test report for this monitoring was attached in Appendix I.
- 6.6 The next wastewater monitoring should be at June 2003. However, there was no discharge of wastewater occurred at the construction site in June 2003 and hence no wastewater monitoring was taken before June 2003.

7.0 Review of the Reasons for and the implications of Non-compliance

According to the summary of environmental monitoring results, no exceedances of noise and air quality monitoring were recorded in this quarter. Hence, no further mitigation measures and action were required.

8.0 Summary of Environmental Complaints

No environmental complaints on this Project were received in this quarter. A statistical summary of environmental complaints is presented in Table 8.1.

Table 8.1 Statistical Summary of Environmental Complaints

Reporting Month	Complaints Statistics		
	Frequency	Cumulative	Complaint Nature
April 2003	0	0	N/A
May 2003	0	0	N/A
June 2003	0	0	N/A

9.0 Environmental Summons

No notifications of summon or prosecutions were recorded during this quarter.



10.0 Status of Environmental Licensing and Permitting

All permits/licenses obtained in this quarter are summarises in Table 10.1.

Table 10.1 Summary of environmental licensing and permit status

Description	Permit No.	Valid Period		Section
		From	To	
Environmental	EP-108/2001	05/11/02	---	Whole work site
Construction Noise Permit	GW-TN0083-2003	28/03/03	27/09/03	<p><u>Group A:</u></p> <ul style="list-style-type: none"> • 2 Dump trucks (CNP 067) • 2 Excavator, tracked (CNP 081) • 1 Generator, super silenced, 70dB(A) at 7m (CNP 103) • 1 Lorry (CNP 141) <p><u>Group B:</u></p> <ul style="list-style-type: none"> • 1 Dump trucks (CNP 067) • 2 Excavator, tracked (CNP 081) • 1 Generator, super silenced, 70dB(A) at 7m (CNP 103) • 1 Water pump (electric) (CNP 141) <p><u>Group C:</u></p> <ul style="list-style-type: none"> • 1 Dump trucks (CNP 067) • 2 Excavator, tracked (CNP 081) • 1 Generator, super silenced, 70dB(A) at 7m (CNP 103) • 1 Water pump (electric) (CNP 141) • 1 Crane, mobile (diesel) (CNP 048)
Construction Noise Permit	GW-TN0151-2003	27/05/03	26/11/03	<ul style="list-style-type: none"> • 2 Excavators, tracked • 2 Generators, 1 Lorry (CNP 141) • 1 Crane, mobile (diesel) • 1 Vibration hammer
Construction Noise Permit	GW-TN0022-2003	16/05/03	15/11/03	<ul style="list-style-type: none"> • 2 Drop hammer driving steel sheet pile; or • 1 hydraulic hammer driving steel sheet pile.
Waste Producer	5213 729 P2800 11	03/10/02	---	Generating waste at the work site
Wastewater Discharge License	No. 2946	18/12/02	18/12/07	Discharge of trade Effluent, surface run-off and all other wastewater arising from the construction site and sedimentation tank

11.0 WASTE MANAGEMENT

11.1 Summary of Waste Quantities

The summary of waste generated at the site in the reporting period is summarized in Table 11.1.

Table 11.1 Summary of Quantities of Waste generated at this reporting period

Type of Waste	Quantity	Disposal Location
C&D Material (Inert) (m ³)	0	N/A
C&D material (Non-inert) (m ³)	1.2	Disposed of at SENT landfills
	30	Disposed of at NENT landfills
General Refuse (m ³)	5	Disposed of at SENT landfills
	27.5	Disposed of at NENT landfills
Chemical Waste (m ³)	0	N/A



12.0 SITE INSPECTION / AUDIT

12.1 Summary of Weekly Site Inspection and Monthly Joint Site Audit Findings

Weekly site inspection was carried out by the ET. A total 14 weekly site inspections were undertaken in this quarter. Monthly joint site audit was carried out by the RE, the IEC, POC and ET at 29 April, 29 May and 26 June 2003 in this quarter. The summary of weekly site inspection and monthly joint site audit findings from this quarter is shown in Table 12.1.

Table 12.1 Summary of Weekly Site Inspection and Monthly Joint Site Audit Findings

April 2003				
Item	IEC/ET	Aspects	Findings	Mitigation Measures Taken / Proposed
1	IEC/ ET	Water	The capacity of the sedimentation tank at the surface channel (next to cycle track) might not be adequate to treat the flow from the site, especially in rainy season. The contractor should ensure that all discharge at any time to comply with discharge standard specified in the licence.	<ul style="list-style-type: none"> To select larger sedimentation tank to ensure the discharge comply with the discharge standard; To use more adequate measures to protect the channel; To remove the sand/silt in the tank regularly; To inspect and maintain the drain/tank regularly to ensure proper and efficient operation at all times.
2	IEC/ ET	Air	Not all Stockpiles were covered by tarpaulin or hydroseed.	<ul style="list-style-type: none"> To cover and hydroseed stockpiles and slope area; Open stockpiles with a volume of greater than 50m³ should be covered by clean tarpaulin sheets; Watering applied to stockpile and exposed loose soil surface of site works; To perform more frequent water spraying activities to enhance the effectiveness for the grass growth during dry season.
3	IEC/ ET	Water	At the surface channel, sand might enter the channel during rainstorm. The contractor should ensure that mitigation measures should be implemented to prevent sand entering the channel/release to discharge.	<ul style="list-style-type: none"> To divert the site runoff to sedimentation tanks/traps before any directly discharge to the drainage; To place sand bays at the end of channel in order to prevent any washing away of soil/sand into the drainage system; To provide more manpower to clean up of sand and soil accumulated in the channel.
4	IEC/ ET	Water	Rubbish was found in the sedimentation tank at the surface channel.	<ul style="list-style-type: none"> To remove the rubbish in the tank immediately; To remind staff to clean the rubbish accumulated more frequently as necessary; To provide rubbish bin/skips in that area for collected the rubbish; To remind staff to dispose rubbish into the rubbish bins/skips as possible.
5	IEC/ ET	Waste	Rubbish was found accumulated within the site near the Science Park.	<ul style="list-style-type: none"> To remove the rubbish at the site immediately; To remind staff to clean the rubbish accumulated more frequently as necessary; To provide rubbish bin/skips for collected the rubbish; To remind staff to dispose rubbish into the rubbish bins/skips as possible.



May 2003				
Item	IEC/ET	Aspects	Findings	Mitigation Measures Taken / Proposed
1	IEC/ET	Water	From previous audits regarding the concern of overflow of contaminated runoff next to the cycle track, the contractor put effort to block the discharge point. However, there were gaps and the point is sealed and no contaminated runoff can be discharged.	<ul style="list-style-type: none">• To sealed the discharge point to ensure no contaminated runoff can be discharged.
2	IEC/ET	Air	Some stockpiles / slopes were not covered. However, the contractor indicated that hydro seeding will be carried in that day's afternoon after the inspection.	<ul style="list-style-type: none">• To cover by using clean tarpaulin sheets and hydroseed stockpiles and slope area;• Watering applied to stockpile and exposed loose soil surface of site works;• To perform more frequent water spraying activities after hydro seeding to enhance the effectiveness for the grass growth.
3	IEC/ET	Water	Although no sand was observed on site during the audit, however, we concern that sand may enter / wash onto the cycle track during rainstorm. It is recommended that the contractor to implement measures for the issue.	<ul style="list-style-type: none">• To place sand bays along the cycle track in order to prevent any washing away of soil/sand onto the cycle track during rainstorm;• To provide more manpower to clean up of sand and soil accumulated in the channel;• To divert the site runoff to sedimentation tanks/traps before any directly discharge to the drainage.
4	IEC/ET	Air	Some vehicles were not completely free from sand at exit and some light vehicles left the site without using the wheel-washing facilities. The contractor shall ensure that all vehicles leaving the site are free from sand/mud. Sand was observed on public road just outside the site exit.	<ul style="list-style-type: none">• To instruct all vehicle to have wheel-washing and ensure all vehicle are free from sand/mud before the site;• To remove the soil on the public road which carried by the vehicle more frequency.
5	IEC/ET	Water	Access road has insufficient backfall toward washing facility at Northern exit. It is recommended to provide backward after the wheel-washing facility so that wastewater will not flow to public road.	<ul style="list-style-type: none">• To provide backward after the wheel-washing facility so that wastewater will not flow to public road.
6	IEC/ET	Waste	Rubbish was found accumulated at the zone near the South exit (by the pipe installation). However, the contractor emphasized that the rubbish was belonging to other contractors and no works were carried out recently at that zone. It is suggested to provide a bin for collection of rubbish.	<ul style="list-style-type: none">• To provide rubbish bin/skips for collected the rubbish in the site;• To remind staff to dispose rubbish into the rubbish bins/skips as possible;• To remind staff to clean the rubbish accumulated more frequently as necessary;• To remove the rubbish at the site immediately.



June 2003				
Item	IEC/ET	Aspects	Findings	Mitigation Measures Taken / Proposed
1	IEC/ET	Water	Stagnant water in idle sediment tank and u-channel water observed near the wheel washing bay at southern site entrance.	<ul style="list-style-type: none"> The stagnant water should be drained out as to prevent mosquito breeding. POC should provide more manpower to clean up of stagnant water in the idle sediment tank and u-channel.
2	IEC/ET	Water	Silty runoff flowing into Tolo Harbour was observed near the site exit at Northern and Southern end respectively.	<ul style="list-style-type: none"> The silty runoff should be collected and treated before discharge.
3	IEC/ET	Water	Silty runoff from stockpile area was collected and flow via sand trap before discharge into Nullah. However, the capacity of the sand trap was inadequate and the effluent was silty.	<ul style="list-style-type: none"> The silty runoff should be diverted to sedimentation tanks/traps before any directly discharge to the drainage. The exposed surface/slope of the stockpiles should be covered by tarpaulin sheeting to minimize wash away of soil during rainstorm.
4	IEC/ET	Water	Silty runoff getting into Nullah was observed at opposite of the stockpile area.	<ul style="list-style-type: none"> The silty runoff should be collected and treated before discharge.
5	ET	Air	Some stockpiles / slopes were not covered.	<ul style="list-style-type: none"> To cover by using clean tarpaulin sheets and hydroseed stockpiles and slope area; Watering applied to stockpile and exposed loose soil surface of site works; To perform more frequent water spraying activities after hydro seeding to enhance the effectiveness for the grass growth.
6	ET	Waste	Rubbish was found accumulated at site.	<ul style="list-style-type: none"> To provide rubbish bin/skips for collected the rubbish in the site; To remind staff to dispose rubbish into the rubbish bins/skips as possible; To remind staff to clean the rubbish accumulated more frequently as necessary

13.0 IMPLEMENTATION STATUS

13.1 Implementation Status of Environmental Mitigation Measures

POC has been implementing the required environmental mitigation measures according to Implementation of Mitigation Measures (clause 4.2, 5.2 and 6.2) in Environmental Management Plan for Contract No. TP 35/02 Remaining Engineering Infrastructure Works for PaK Shek Kok Development Package 1 (Revision 2). A summary of the implementation schedule of the mitigation measures is presented in Appendix H.

Air Quality

Only partial stockpiles were covered by using tarpaulin sheets and hydroseeded. The Contractor was reminded to water, hydro-seed or cover all the stockpiles by using clean tarpaulin sheets.

Noise

All mitigation measures stated in Appendix H were implemented properly in this reporting period.

Water Quality

The Contractor was reminded to provide more effort to implement mitigation measures, such as prevent oil leakage from the drip tray for all site machines, discharge of site



runoff after suitable treatment processes, proper maintenance of sedimentation system and drainage facilities (e.g. sedimentation tank and U-channels), and remove the sand/rubbish accumulated in the drain/channel and sedimentation tanks regularly. Besides, the exposed surface/slope of the stockpiles should be covered by tarpaulin sheeting to minimize wash away of soil during rainstorm.

Waste Management

POC has been implementing most mitigation measures on waste management. However, rubbish was observed at the site and no skips or bins were provided for collecting rubbish at site. The Contractor was remained to provide more manpower to clean up of rubbish accumulated at the site and provide rubbish bin/skids for collected the rubbish.

13.2 Implementation Status of Event and Action Plan

There were no exceedances in air quality and noise monitoring parameters recorded in this quarter. Hence, no further mitigation measures were required.

13.3 Implementation Status of Environmental Complaint Handling

No complaints had been received during this quarter.

14.0 Conclusions and Recommendations

All 1-hr TSP and 24-hr TSP levels in air quality monitoring were recorded below the Action and Limit levels in this quarter. At the same time, no noise monitoring exceedances were recorded and no complaints were received in this quarter. Therefore, no further mitigation measures and actions were required.

The monitored environmental data indicated that no unacceptable environmental impacts arising from the Project had been caused to the surrounding sensitive receivers. The environmental measures had been effective in controlling potential impacts to within acceptable sensitive receivers. However, the Contractor had been recommended to introduce more effort on environmental mitigation measures to minimize the environmental impact from the Project.

Based on the site inspections and audit findings during the reporting period, the following recommendation for further improvement of the current conditions are as below:

- All stockpiles with a volume of greater than 50m³ should be covered with clean tarpaulin sheets, watering or hydro-seeding to avoid wind and water erosion;
- Providing more manpower to clean up of rubbish accumulated at the site;
- Providing rubbish bin/skids for collected the rubbish;
- Site inspection and maintenance of all sedimentation system and drainage facilities by the contractor's site staff should be conducted regularly to ensure proper and efficient operation all the times;
- Draining the stagnant water out from the idle sedimentation tank and u-channel to prevent mosquito breeding;
- Diverting silty runoff to sedimentation system before discharge;
- Placing enough sand bags or other protection should be applied to prevent the slity surface runoff onto the drains system;
- Removing the sand/rubbish accumulated in the drain/channel regularly;
- Removing the oil in the drip tray and treat as chemical waste regularly
- Checking and maintaining all the site machines to prevent oil leakage regularly;
- Providing briefing to the concerned site staff on remedial actions in case of oil spillage, such as handling method of chemical waste;
- Maintain good waste management at the site.