

PENTA-OCEAN CONSTRUCTION COMPANY LIMITED

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

**MONTHLY EM&A REPORT
(OCTOBER 2002)**

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EXECUTIVE SUMMARY

This monthly EM&A report (No.1) has been prepared to document the impact water quality monitoring works conducted for the Reclamation for Ma Liu Shui Interchange and Reprovisioning of Existing Pier (Contact No.: CV/2001/04) during the monitoring period from 22 to 31 October 2002.

Environmental Monitoring and Audit Progress

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

- Noise Monitoring: 2 Occasions
- 24-hour TSP Monitoring: 2 Occasions
- 1-hour TSP Monitoring: 5 Occasions
- Site inspection: 2 Occasions

Noise Monitoring

No exceedances of Action and Limit levels for noise monitoring were recorded in the reporting month.

Air Monitoring

No exceedances of Action and Limit levels were found for impact air quality monitoring in the reporting month.

Site Inspection

According to the weekly site inspections, noise and air quality were found satisfactory but water quality was found relatively poor during the site inspection period. No sedimentation tanks were observed to be connected to the drainage system and hence the Contractor was recommended that sedimentation tank or sediment trap should be connected to the drainage system so that the wastewater generated at the site can be treated before discharged to Tolo Harbour. The collection pit for wastewater from wheel washing system at northern site entrance was found inadequate for settlement of soil and dust efficiently. Hence, the Contractor was also reminded that wheel washing system should be well maintained and larger collection pit should be used to provide sufficient clean water for wheel washing. Also, the Contractor was reminded that all stockpiles should be covered with tarpaulin to avoid wind and water erosion.

Environmental Complaints

No environmental complaints were received in this monitoring month.

Future Key Issues

Base on the site inspections and forecast of engineering works in the coming month, key issues to be considered are as follows:

- Noise and air quality impact due to construction works;
- Maintain wheel washing system properly;
- Installing sedimentation tank or sediment trap connecting to the drainage system;
- Covering all stockpiles with tarpaulin to avoid wind and water erosion;
- Covering and enclosing chemical waste containers to prevent rainfall entering;
- Well organized on sorting of C&D waste;
- Maintain good waste management at the site;
- Maintain good site practice in order to minimize the environmental impacts at the site;
- Follow-up improvements on waste management issues.

1. 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 monthly EM&A report summarizes the impact monitoring results and audit findings of the EM&A program during the reporting period from 22 to 31 October 2002.

2. 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 project comprises the remaining engineering infrastructure works for the Pak Shek Kok Development Package 1 and the proposed scope includes:

- Construction of Local Roads L1, L2, L4 (part) and L5 (part);
- Construction of Distributor Road D1;
- Construction of Sewage Pumping Station Nos. 1 and 2;
- Construction of cycle track to an existing subway;
- Extension of Existing Pak Shek Kok Underpass beneath Road D1;

- Construction of box culvert C10;
- Construction of water main
- Construction of associated drainage and sewerage works;
- Construction of footpath, cycle track network and roadside planting areas;

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.
Hyder	Independent Environmental Checker	Ms Jacquelyn Anderson	2911 2233	2827 2891
POC	Main 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 OCTOBER 2002

A summary of the major construction activities undertaken in this monitoring month is shown in Table 3.1. The implementation of the corresponding mitigation measures is summarized in Table 3.2.

Table 3.1 Major Construction Activities in October 2002

Activity	Construction Activity
Section 1	• Ground investigation
Section 3	• Preloading mound formation
Section 5	• Vibrating wire pizometer; • Preloading mound formation
Section 8	• Excavate exposed mound

Table 3.2 Implementation of Environmental Mitigation Measures

General construction works	<ul style="list-style-type: none"> • Effective water sprays used on the site at potential dust emission sources such as unpaved area; • The heights from which fill materials are dropped should be controlled to a practical height to minimize the fugitive dust arising from unloading; • Minimize of exposed soil areas to reduce the potential for increased siltation and contamination of run-off; • Remove the construction waste accumulated inside or outside the site regularly; • Keep good waste management.
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4.0 AIR QUALITY MONITORING

4.1 Monitoring Requirement

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);
- 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 month 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. Only 1-hour TSP monitoring was conducted to monitor the air quality in the interim report.

4.2 Monitoring Equipment

Continuous 24-hour TSP air quality monitoring was performed using a GMWS2310 High Volume Air Sampler (HVS) located at each of the designated monitoring station. One portable dust meter was used to carry out the 1-hour TSP monitoring. Table 4.1 summarizes the equipment used in the air quality monitoring programme. A copy of the calibration certificate for the HVS and portable dust meter are attached in Appendix A1.

Table 4.1 Air Quality Monitoring Equipment

Equipment	Model and Make
HVS Sampler	Greasby GMWS2310
Calibrator	G25 A
1-hour TSP Dust Meter	TSI Model 8520 Dust Trak™ Aerosol Monitor

4.3 Monitoring Parameters, Frequency and Duration

Table 4.2 summarizes the monitoring parameters, monitoring duration and frequencies of air quality monitoring.

Table 4.2 Monitoring parameters, duration and frequencies of baseline 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

4.4 Monitoring Locations and Schedule

Two designated air quality monitoring locations – Cheung Shue Tan Village and HKIB Staff Accommodation were selected. Table 4.3 tabulates the air quality monitoring locations of this project.

Table 4.3 Air quality monitoring locations

Air quality Monitoring stations	Locations
AM1	HKIB Staff Accommodation (on ground floor near the entrance facing south-east) for 1-hr TSP monitoring
AM3	Cheung Shue Tan Village (near the outer building, temple) for 1-hr TSP monitoring
AM3A	Cheung Shue Tan (in front of Man Kee Store) for 24-hr TSP monitoring

The air quality monitoring schedule for 24-hr and 1-hr TSP monitoring at designated monitoring locations is summarized in table 4.4.

Table 4.4 Monitoring Schedule for the air quality monitoring stations

Baseline air quality monitoring stations	Location	Monitoring Period	
		24-hr TSP	1-hr TSP
AM1	HKIB Staff Accommodation	---	22/10/02 (16:20 – 17:20)
			24/10/02 (08:15 – 09:15)
			26/10/02 (15:45 – 16:45)
			29/10/02 (09:00 – 10:00)
			31/10/02 (11:06 – 12:06)
AM3	Cheung Shue Tan Village (near the outer building, temple)	---	22/10/02 (17:48 – 18:48)
			24/10/02 (10:30 – 11:30)
			26/10/02 (11:00 – 12:00)
			29/10/02 (11:30 – 12:30)
			31/10/02 (11:25 – 12:25)
AM3A	Cheung Shue Tan (in front of Man Kee Store)	22/10/02 (17:22)	---
		23/10/02 (17:22)	
		29/10/02 (11:15)	
		30/10/02 (11:15)	

4.5 Monitoring Methodology

4.5.1 24-hour TSP Monitoring

Instrumentation

High volume sampler, as HVS, (Greasby GMWS2310) complete with appropriate sampling inlets are employed for 24-hour TSP. The sampler is composed of a motor, a filter holder, a flow controller and a sampling inlet and its performance specification complies with that required by USEPA standard Title 40, Code of Federation Regulations Chapter 1 (Part 50).

Installation

The installation of HVS refers to the requirement stated in EM&A Manual.

Operation/Analytical Procedures

Operating/analytical procedures for the operation of HVS are as below:

Prior to the commencement of the dust sampling, the flow rate of the high volume sampler was properly set (between 0.6m³/min and 1.7m³/min.) in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard Title 40, CFR Part 50.

- For TSP sampling, fiberglass filters (GA-55) were used.
- The power supply was checked to ensure the sampler worked properly.
- On sampling, the sampler was operated 5 minutes to establish thermal equilibrium before placing any filter media at the designated air monitoring station.
- The filter holding frame was then removed by loosening the four nuts and carefully a weighted and conditioned filter was centered with the stamped number upwards, on a supporting screen.
- The filter was aligned on the screen so that the gasket formed an air-tight seal on the outer edges of the filter. Then the filter holder frame was tightened to the filter holder with swing bolts. The applied pressure should be sufficient to avoid air leakage at the edges.
- The programmable timer will be set for a sampling period of 24 hours. Information was recorded on the record sheet, which included the starting time, the weather condition and the filter number (the initial weight of the filter paper can be found out by using the filter number.).
- After sampling, the filter was transferred from the filter holder of the HVS to a sealed plastic bag and sent to the laboratory for weighting. The elapsed time was also recoded.
- Before weighting, all filters were equilibrated in a desiccator for 24 hour with the temperature of 25°C \pm 3°C and the relative humidity (RH) <50% \pm 5%.

Maintenance & Calibration

- The HVS and their accessories should be maintained in good working condition, such as replacing motor brushes routinely and checking electrical wiring to ensure a continuous power supply.
- HVS should be calibrated at bi-monthly intervals.

4.5.2 1-hour TSP Monitoring

Measuring Procedures

The measuring procedures of the 1-hr dust meter are in accordance with the Manufacturer's instruction Manual as follows:

- Set POWER to ON, check the battery indicator to ensure whether the power supply is enough to conduct the TSP monitoring;
- Calibrate the dust meter by zero check;
- Set the time constant of the dust meter;
- Press sample to start the TSP monitoring.

Maintenance & Calibration

- 1-hr dust meter should be checked at 3-month intervals and calibrated at 1-year intervals throughout all stages of baseline air quality monitoring.

4.6 Action and Limit Levels

The Action and Limit levels for 24-hr TSP and 1-hr TSP derived as illustrated in Table 4.5.

Table 4.5 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

4.7 Event-Action Plans

Please refer to the EM&A Manual for details.

4.8 Results

4.8.1 24-hour TSP Monitoring

Only 24-hour TSP monitoring was carried out at monitoring station, AM3A in the reporting month. 24-hour TSP monitoring at monitoring station, AM1 was not carried out in this month because the permission for setting up the monitoring equipment, High Volume Sampler, at HKIB Staff Accommodation is still under processing. All monitoring data of 24-hour TSP monitoring is provided in Appendix B2. Graphical presentation of 24-hour TSP monitoring results for the reporting month is shown in Appendix B3.

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

4.8.2 1-hour TSP Monitoring

1-hour TSP monitoring was carried out at monitoring stations, AM1 and AM3 in the reporting month. All monitoring data of 1-hour TSP monitoring is provided in Appendix B2. Graphical presentation of 1-hour TSP monitoring results for the reporting month is shown in Appendix B3.

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

5. Noise Monitoring

5.1 Monitoring Requirements

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) for 1-hr TSP monitoring;
- CUHK Residence No.10.

5.2 Monitoring Equipment

Integrating Sound Level Meters were used for noise monitoring. They were Type 1 sound level meters capable of giving a continuous readout of the noise level reading including equivalent continuous sound pressure level (L_{eq}) and percentile sound pressure level (L_x). They comply with International Electro technical Commission Publications 651:1979 (Type1) and speed in m/s was used to monitor the wind speed. Table 5.1 summarized the noise monitoring equipment model being used. A copy of the calibration certificates for noise meters and calibrator are attached in Appendix C1.

Table 5.1 Noise Monitoring Equipment

Equipment	Model
Integrating Sound Level Meter	Rion NL-14 Sound Level Meter
Calibrator	Rion NL-73 Sound Level Meter
Portable Wind Speed Indicator	TSI Model 8340-M Air Velocity Meter

5.3 Monitoring Parameters, duration and Frequency

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 5.2.

Table 5.2 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

5.4 Monitoring Locations and Period

In accordance with the EM&A Manual, there are three noise monitoring locations: HKIB Staff Accommodation, Cheung Shue Tan Village and CUHK Residence No.10. The location of the monitoring stations are described in Table 5.3 and depicted in Figure 2.

Table 5.3 Noise Monitoring Locations

Noise Monitoring stations	Location
NM1	HKIB Staff Accommodation (on ground floor near the entrance facing south-east)
NM2	CUHK Residence No.10
NM3	Cheung Shue Tan Village (near the outer building, a temple)

The noise monitoring programme of monitoring locations is summarized in Table 5.4.

Table 5.4 Monitoring Periods for the noise monitoring stations

Baseline noise monitoring stations	Location	Monitoring Period
NM1	HKIB Staff Accommodation (on ground floor near the entrance facing south-east)	22/10/02 (16:50 – 17:20)
		29/10/02 (09:00 – 09:30)
NM2	CUHK Residence No.10	22/10/02 (15:00 – 15:30)
		29/10/02 (10:15 – 10:45)
NM3	Cheung Shue Tan Village (near the outer building, a temple)	22/10/02 (17:38 – 18:08)
		29/10/02 (11:30 – 12:00)

5.5 Monitoring Procedures and Calibration Details

Operation/Analysis Procedures

- The Sound Level Meter was set on a tripod at a height of 1.2m above the ground.
- For free field measurement, the meter was positioned away from any nearby reflective surfaces.
- The battery condition was checked to ensure the correct functioning of the meter.
- Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:
 - Frequency weighting: A
 - Time weighting : Fast
 - Time measurement : 5 mins
- Prior to and after each noise measurement, the meter was calibrated using a Calibrator for 94 dB at 1000HZ. If the difference in the calibration level before and after measurement was more than 1 dB(A), the measurement would be considered invalid and repeat measurement would be required after re-calibration or repair of the equipment.
- The wind speed was frequently checked with a portable wind meter.
- During the monitoring period, the Leq, L10 and L90 were recorded. In addition, site conditions and noise sources were recorded on a standard record sheet.
- Noise monitoring was cancelled in the presence of fog, rain, wind with a steady speed exceeding 5m/s, or wind gusts exceeding 10m/s.

Maintenance and Calibration

- The microphone head of the sound level meter and calibrator is cleaned with soft cloth at quarterly intervals.
- The meter is sent to be supplier or HOKLAS laboratory to check and calibrated at yearly intervals.

5.6 Action and Limit Levels

The Action and Limit levels for noise levels derived as illustrated in Table 5.5.

Table 5.5 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) *
Evening-time	1900-2300 hrs		70 dB(A) **
Night-time	2300-0700 hrs of next day		
Holiday	0700-1900 hrs		55 dB(A) **

* = 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".

5.7 Event-Action Plans

Please refer to the EM&A Manual for details.

5.8 Results

Only day-time Noise monitoring was carried out at monitoring stations, NM1, NM2 and NM3 in the reporting month. All noise levels are provided in Appendix C2. Graphical presentation of the monitoring results for the reporting month is shown in Appendix C3.

No day-time noise levels recorded at all monitoring stations exceeded the Action and Limit Level in the reporting month.

6.0 ENVIRONMENTAL NON-CONFORMANCE

6.1 Summary of air and noise monitoring

No exceedances of Action and Limit Level of 24-hour and 1-hour TSP monitoring results were recorded during the reporting month.

No day-time noise levels recorded at all monitoring stations exceeded the Action and Limit Level in the reporting month.

6.2 Summary of Environmental Complaints

No environmental complaints were received in this monitoring month.

7.0 SITE INSPECTION

Weekly site inspection was carried out by the ET. Four site inspections were undertaken in this monitoring month. Site inspection at 31 October 2002 was carried out by the Engineer's Representative, the IEC, POC and ET. Details of the site inspection findings are attached in Appendix D.

7.1 Summary of site inspection findings

The summaries of site inspection findings are shown in Table 7.1.

Table 7.1 The summary of site inspection findings

Inspection Parameter	Findings
Water Quality	Water quality was found unsatisfactory during the site inspection period. According to the site inspection record, it is shown that the collection pit for wastewater from wheel washing system at northern site entrance is inadequate for settlement of soil and dust efficiently. Wastewater generated from the site is directly discharged to Tolo Harbour without connecting sedimentation tank or sediment trap.
Air Quality	Air quality was found satisfactory during the site inspection period. No noticeable dust was generated at the area of reclamation site. Some parts of stockpiles were not covered with tarpaulin to avoid wind and water erosion.
Noise Quality	Noise quality was found satisfactory during the site inspection period. Only low impact in noise quality was observed from the public traffic outside the site. All construction works were carried out following the valid noise permit.
Waste Management	Waste management was found satisfactory during the site inspection period. No accumulation of construction waste and general refuse was observed at the site. However, leaking of wastewater from general refuse storage tank was observed. In the chemical waste storage area, insufficient mitigation measures were found, such as the waste containers were not enclosed and covered to prevent rainfall entering. No specific sorting areas for C&D materials were observed.

7.2 Status of Environmental Licensing and Permitting

All permits/licenses obtained in August are summarises in Table 7.2.

Table 7.2 Summary of environmental licensing and permit status

Description	Permit No.	Valid Period		Section
		From	To	
Environmental Permit	EP-108/2001	05/11/02	---	Whole work site
Construction Noise Permit	GW-TN0225-2002	19/06/02	18/12/02	•
Waste Producer	5213 729 P2800 11	03/10/02	---	Generating waste at the work site

7.3 Recommendations on site inspection findings

Based on the site inspection findings, the recommendations are as below:

- Wheel washing system should be well maintained and the collection pit should be large enough to provide sufficient clean water for wheel washing;

- Sedimentation tank or sediment trap should be connected to the drainage system so that the wastewater generated at the site can be treated before discharged to Tolo Harbour;
- All stockpiles should be covered with tarpaulin to avoid wind and water erosion;
- Chemical waste containers should be enclosed on at least 3 sides and the storage area should be covered to prevent rainfall entering;
- Sorting of C&D waste should be well organized;
- Maintain good waste management at the site;
- Remove the construction wastes accumulated inside and outside the construction site periodically.

8.0 WASTE MANAGEMENT

8.1 Waste Management Audit

Waste management audit was carried out by the ET on a weekly basis. The audit findings were recorded in the waste/chemical management section of site inspection record sheets. (Refer to Appendix D)

8.2 Records of Waste Quantities

All type of wastes arising from the construction work are classified into the following:

- General refuses;
- Chemical waste;
- Construction & demolition (C&D) material.

The quantities of waste for disposal in this month are summarized in Table 8.1.

Table 8.1 Summary of Quantities of Waste for Disposal

Type of Waste	Quantity	Disposal Location
Construction & Demolition Material (Inert) (m ³)	0	NA
Construction & Demolition material (Non-inert) (m ³)	0	NA
General Refuse (m ³)		General Refuse Collection Point
Chemical Waste (m ³)	0	NA

9.0 Conclusion

According to the summary of air and noise monitoring results, no exceedances of Action and Limit Level of 24-hour and 1-hour TSP monitoring results were recorded during the reporting month. Besides, no day-time noise levels recorded at all monitoring stations exceeded the Action and Limit Level in the reporting month.

According to the weekly site inspections, noise and air quality were found satisfactory but water quality was found relatively poor during the site inspection period. No sedimentation tanks were observed to be connected to the drainage system and hence the Contactor was recommended that sedimentation tank or sediment trap should be connected to the drainage system so that the wastewater generated at the site can be treated before discharged to Tolo Harbour. The collection pit for wastewater from wheel washing system at northern site entrance was found

inadequate for settlement of soil and dust efficiently. Hence, the Contractor was also reminded that wheel washing system should be well maintained and larger collection pit should be used to provide sufficient clean water for wheel washing. Also, the Contractor was reminded that all stockpiles should be covered with tarpaulin to avoid wind and water erosion.

10.0 FUTURE KEY ISSUES

10.1 Upcoming EM&A Schedule in November and December 2002

The Proposed EM&A program in coming November and December 2002 are presented as following table:

Table 8.1 – Upcoming EM&A Schedule in November and December 2002

Type of Monitoring	November 2002	December 2002
Noise Monitoring	05, 12, 19, 26	03, 10, 17, 24, 31
1-hour TSP	02, 05, 07, 09, 12, 14, 16, 19, 21, 23, 26, 28, 20	03, 05, 07, 10, 12, 14, 17, 19, 21, 23, 24, 28, 31
24-hour TSP	05, 12, 19, 26	03, 10, 17, 24, 31
Site Inspection	07, 14, 21, 28	05, 12, 19, 28

10.2 Upcoming construction works schedule in November 2002

The major construction works planned to be carried out in next months and their possible impact is tabulated (Table 8.2) for reference.

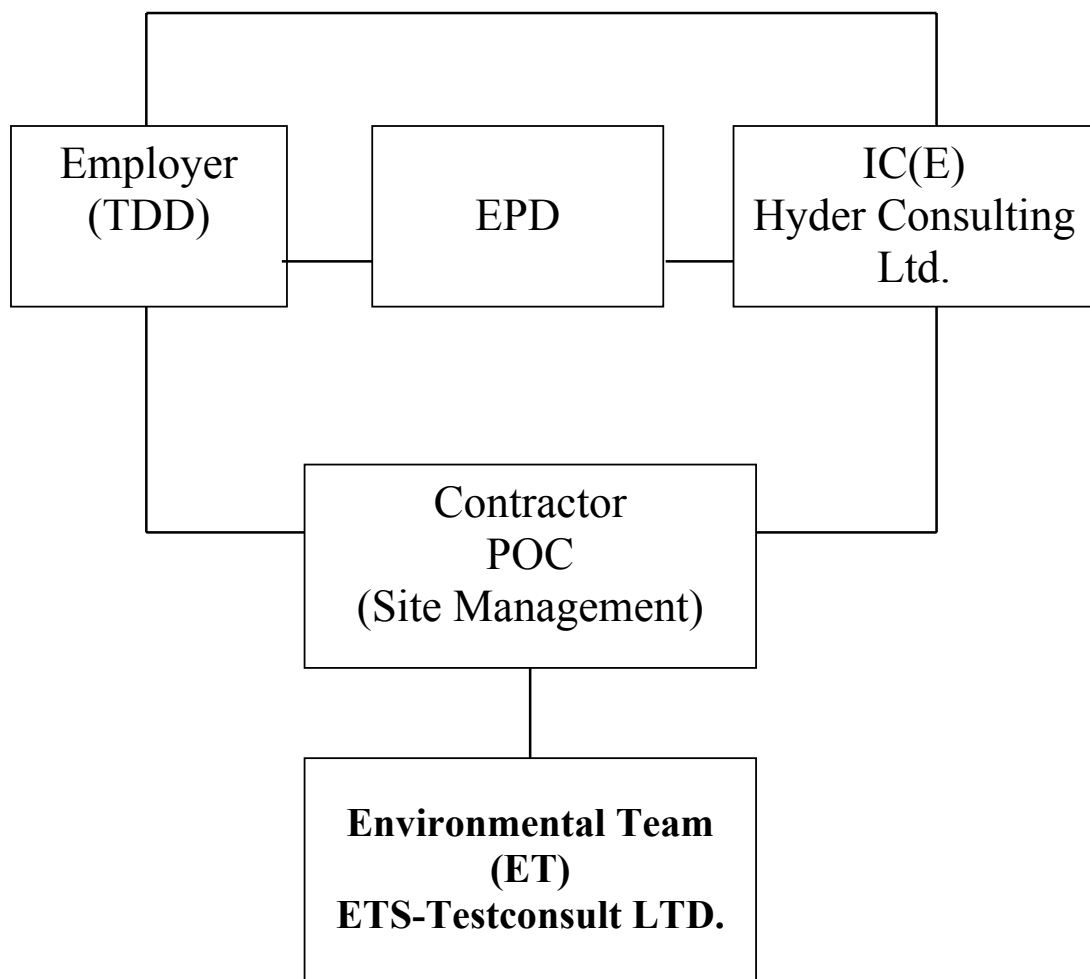
Table 8.2 – Construction Plan in November 2002

Month	Works Planned to be Carried Out
November 2002	<ul style="list-style-type: none"> - Vibrating wire pizometer; - Ground investigation; - Excavate exposed mound; - Preloading mound formation; - Establish and move equipment; - Surface settlement marker;

Appendix A

Organization Chart and Lines of Communication

Lines of Communication



Appendix B1

Calibration Certificates for Air Quality Monitoring Equipments

Appendix B2

Air Quality Monitoring Results

Summary of Air Quality Monitoring Results

Monitoring Parameter : 24-hr TSP Monitoring
Monitoring Station : AM3A
Location : Cheung Shue Tan (in front of Man Kee Store)

Stat		Finish		Elapse Time		Sampling Time (hrs)	Flow Rate (m ³ /min.)		Average (m ³ /min.)	Filter Weight (g)		Conc. (µg/m ³)	Weather Condition
Date	Time	Date	Time	Initial	Final		Initial	Final		Initial	Final		
22/10/02	17:22	23/10/02	17:22	8689.99	8713.99	24.00	0.95	0.95	0.95	2.8760	3.0061	95	Cloudy
29/10/02	11:15	30/10/02	11:15	8713.99	8737.99	24.00	0.95	0.95	0.95	2.8691	3.0082	102	Cloudy

Summary of Air Quality Monitoring Results

Monitoring Parameter : 1-hr TSP Monitoring
Monitoring Station : AM1
Location : HKIB Staff Accommodation

Date	Monitoring Period		1-hr TSP ($\mu\text{g}/\text{m}^3$)			Weather
	Start	Finish	Minimum	Maximum	Average	
22/10/02	16:20	17:20	79	153	79	Cloudy
24/10/02	08:15	09:15	60	260	83	Fine
26/10/02	15:45	16:45	43	280	93	Sunny
29/10/02	09:00	10:00	86	211	103	Cloudy
31/10/02	10:06	11:06	42	130	78	Cloudy

Monitoring Parameter : 1-hr TSP Monitoring
Monitoring Station : AM3
Location : Cheung Shue Tan Village (near the outer building, a temple)

Date	Monitoring Period		1-hr TSP ($\mu\text{g}/\text{m}^3$)			Weather
	Start	Finish	Minimum	Maximum	Average	
22/10/02	17:48	18:48	45	146	86	Cloudy
24/10/02	10:30	11:30	43	187	69	Fine
26/10/02	11:00	12:00	59	180	75	Sunny
29/10/02	11:30	12:30	87	316	133	Cloudy
31/10/02	11:25	12:25	52	118	86	Cloudy

Appendix B3

Graphical Plots of Air Quality Monitoring Data

Appendix C1

Calibration Certificates for Noise Monitoring Equipments

Appendix C2
Noise Monitoring Results

Monitoring Location: NM1 (HKIB Staff Accommodation)

Date	Sampling Time (hh:mm)		Noise Level dB (A)			Wind Speed (m/s)	Weather Condition
	Start	Stop	L _{eq}	L ₁₀	L ₉₀		
22/10/2002	16:50	17:20	69.9	72.8	66.9	1.34	Cloudy
29/10/2002	09:00	09:30	61.6	67.2	58.6	0.13	Cloudy

Monitoring Location: NM2 (CUHK Residence No.10)

Date	Sampling Time (hh:mm)		Noise Level dB (A)			Wind Speed (m/s)	Weather Condition
	Start	Stop	L _{eq}	L ₁₀	L ₉₀		
22/10/2002	15:00	15:30	69.0	71.3	67.8	1.79	Cloudy
29/10/2002	10:15	10:45	58.1	66.0	53.4	0.21	Cloudy

Monitoring Location: NM3 (Cheung Shue Tan Village)

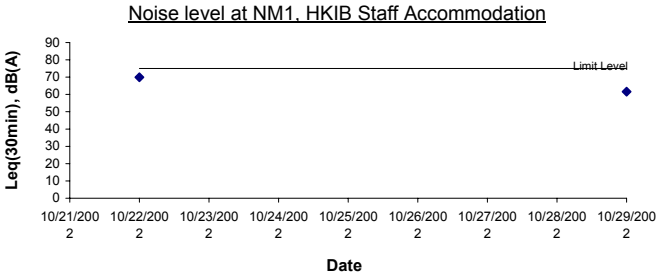
Date	Sampling Time (hh:mm)		Noise Level dB (A)			Wind Speed (m/s)	Weather Condition
	Start	Stop	L _{eq}	L ₁₀	L ₉₀		
22/10/2002	17:38	18:08	68.8	70.6	67.9	0.34	Cloudy
29/10/2002	11:30	12:00	58.4	63.3	54.7	0.06	Cloudy

Appendix C3

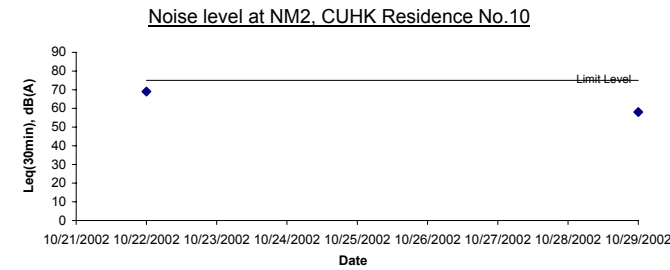
Graphical Plots of Noise Monitoring Data

Noise monitoring

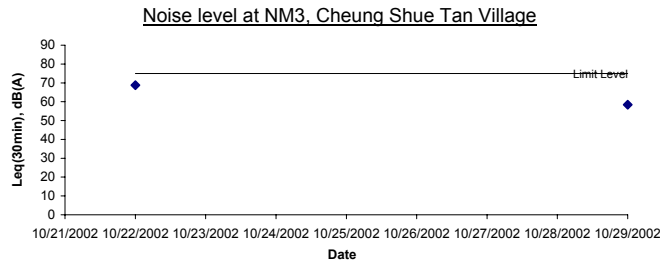
Date	NM1	Target Level
10/22/2002	69.9	75.00
10/29/2002	61.6	75.00



Date	NM2	Target Level
10/22/2002	69	75.00
10/29/2002	58.1	75.00

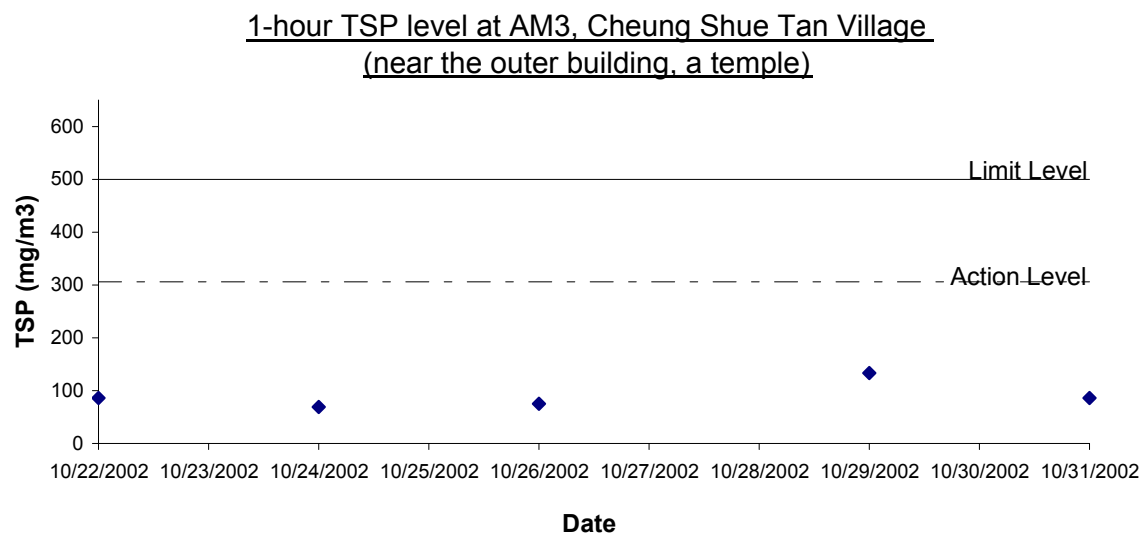


Date	NM3	Target Level
10/22/2002	68.8	75.00
10/29/2002	58.4	75.00



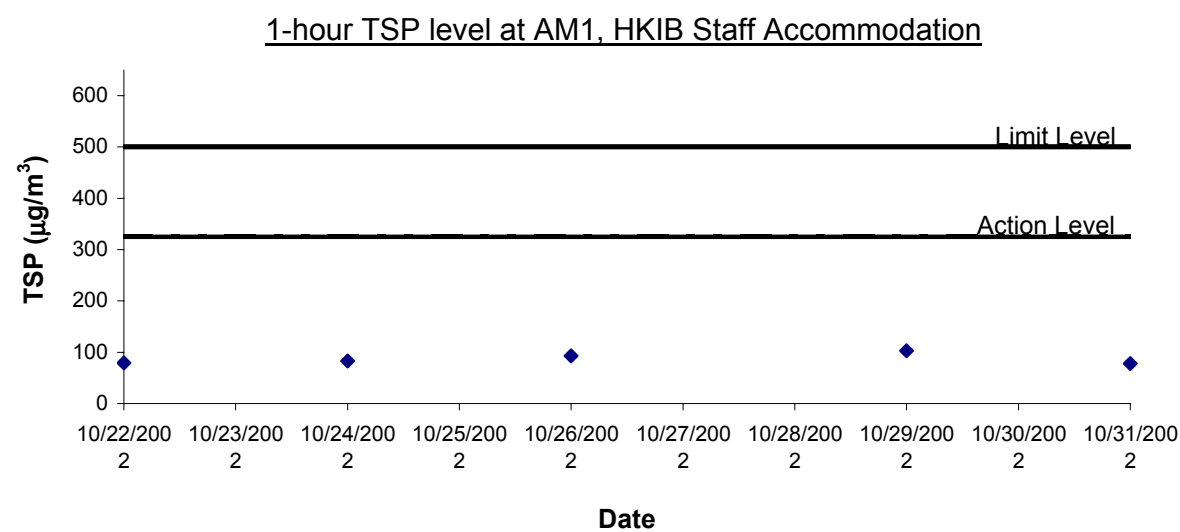
1-hour TSP level at AM3, Cheung Shue Tan Village (near the outer building, a temple)

Date	TSP ($\mu\text{g}/\text{m}^3$)	Action level	Limit Level
10/22/2002	86	306	500
10/24/2002	69	306	500
10/26/2002	75	306	500
10/29/2002	133	306	500
10/31/2002	86	306	500



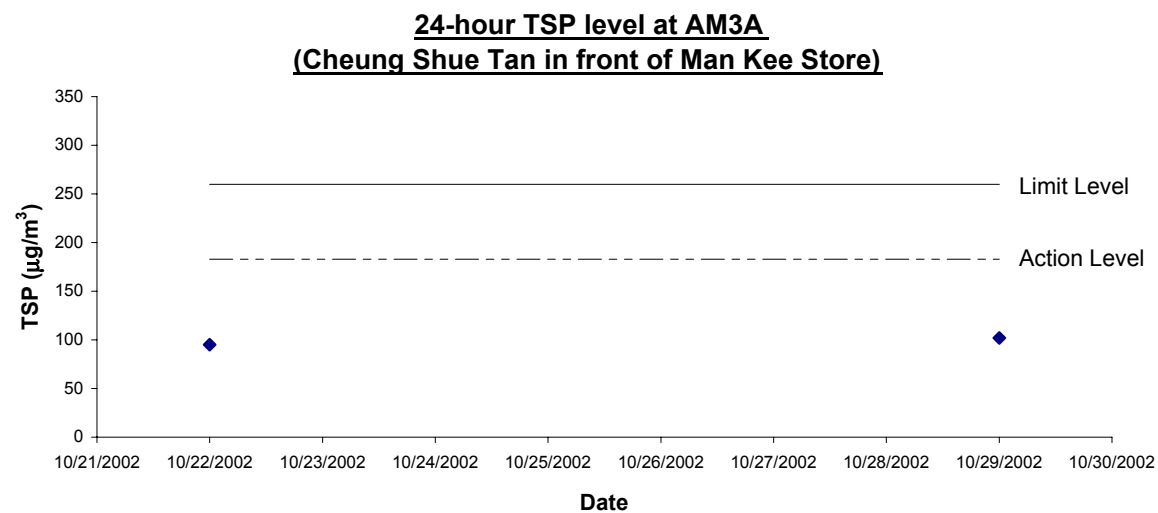
1-hour TSP level at AM1, HKIB Staff Accommodation

Date	TSP (µg/m³)	Action level	Limit Level
10/22/2002	79	325	500
10/24/2002	83	325	500
10/26/2002	93	325	500
10/29/2002	103	325	500
10/31/2002	78.0	325	500



24-hour TSP level at AM3A (Cheung Shue Tan in front of Man Kee Store)

date	TSP ($\mu\text{g}/\text{m}^3$)	Action Level	Limit Level
10/22/2002	95	183	260
10/29/2002	102	183	260



Appendix D
Site Inspection Records

Figures