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TEST REPORT

LEADER - WAI KEE (C&T) JOINT VENTURE

**REMAINING ENGINEERING
INFRASTRUCTURE WORKS FOR
PAK SHEK KOK DEVELOPMENT
PACKAGE 2A
(CONTRACT NO.: TP 37/03)
MONTHLY EM&A REPORT
(NOVEMBER 2005)**

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EXECUTIVE SUMMARY

This monthly EM&A report (No.7) 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 2A (Contract No: TP 37/03) during the reporting period from 01 to 30 November 2005.

Construction Progress

The major construction works in this reporting month were as below:

- Drainage works (Excavation, pipe laying and breaking) at Section 5, 6 7 and 8
- Road works at Section 5 and 6
- Construction of vertical seawall at Landscape Node P2
- Piling works at Voided Abutment of Ma Liu Shui Bridge
- Waterworks at Section 5, 6 and 7
- Utilities works at Section 5, 6 and 7
- Cycle track diversion at Landscape Node P3

Environmental Monitoring Progress

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

- Noise Monitoring (Day-time): 5 Occasion at 4 designated locations
- 24-hour TSP Monitoring: 5 Occasions at 3 designated locations
- 1-hour TSP Monitoring: 13 Occasions at 3 designated locations
- Weekly-site inspection: 4 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 recorded for 24-hr and 1-hr TSP monitoring in the reporting month.

Wastewater Monitoring

During this reporting month, water quality monitoring was carried out at Ma Liu Shui Pier 1 at 11 November 2005. One wastewater sample was collected from the discharge point during the monitoring. The result of suspended solids content of the wastewater sample was complied the discharge limit of the Discharge Licence. The next wastewater monitoring should be at February 2006.

Site Inspection

Environmental site inspections conducted in this reporting month are presented as follows:

<u>Concerned Parties</u>	<u>Dates of Audit / Inspection</u>
Weekly site inspection (ET)	03, 10, 17, 25
Monthly site inspection (IEC/LWKJV/RE)	25

The observations were raised during this reporting month. The site inspection findings are presented as follows:

Item	Aspects	Findings	Action(s) taken by LWKJV	ET Verification
1	Air	Stockpiles at Road L4, Node 2 and SA14 were found not covered during weekly site inspections on 11/11/2005 and 17/11/2005. Although stockpiles at Road L4 and Node 2 were removed, that at SA14 was still observed without cover during the weekly site inspection on 25/11/2005.	LWKJV replied to cover the exposed stockpile with tarpaulin sheets or provide regular watering to avoid the generation of dust.	Since the finding was still observed during the last weekly site inspection of this reporting month, it will be verified at the first weekly site inspection of the coming month.
2	Air	Potential fugitive dust emission was observed on the haul road at SA14 during weekly site inspection on 17/11/2005.	LWKJV replied to increase the frequency of water spraying during dry season.	During the subsequent weekly site inspection (25/11/2005), the finding was found improved and hence no further action was required.
3	Air	Black Smoke was found emitted from an excavator at Node 2 during the weekly site inspection on 02/11/2005.	LWKJV replied to repair the excavator immediately. Besides, LWKJV was reminded to maintain all site equipment regularly in order to avoid black smoke emission.	During the subsequent weekly site inspection (11/11/2005), no black smoke was emitted from the excavator and hence no further action was required.



Item	Aspects	Findings	Action(s) taken by LWKJV	ET Verification
4	Air	Black Smoke was found emitted from an excavator at Ma Liu Shui during the weekly site inspection on 25 /11/05.	LWKJV replied to repair the excavator immediately. Besides, LWKJV was reminded to maintain all site equipment regularly in order to avoid black smoke emission.	Since the finding was observed during the last weekly site inspection of this reporting month, it will be verified at the coming month.
5	Water	Follow up action to the finding observed at the previous month, the drainage channel at Ma Liu Shui was clean up and no muddy water was found accumulated during weekly site inspection (02/11/2005).	Since the finding had been improved, no further action was required.	Since the finding was improved, no further action was required.
6	Water	Mud / silt was found accumulated in the drainage channel at Ma Liu Shui during weekly site inspection (25/11/2005).	LWKJV replied to clean up the mud and silt accumulated in order to maintain the capacity of the channel.	Since the finding was observed during the last weekly site inspection of this reporting month, it will be verified at the coming month.
7	Water	Follow up action to the finding observed at the previous month, no standing water was accumulated in planter wall at Node 3 during the weekly site inspection (11/11/2005).	Since the finding had been improved, no further action was required.	Since the finding was improved, no further action was required.
8	Water	Silt curtain at Node 3 was found not fully enclosed during weekly site inspection on 11/11/2005.	LWKJV replied to close the opening of the silt curtain immediately after the passing of barge / vessel.	During the subsequent weekly site inspection (17/11/2005), the silt curtain at Node 3 was found enclosed and hence no further action was required.
9	Site Practice	Rubbish skip at Road L4 was found full during the weekly site inspections on 11/11/2005 and 17/11/2005..	LWKJV replied to clean up the rubbish skip and arrange the site workers to collect the rubbish regularly or if necessary.	During the subsequent weekly site inspection (25/11/2005), the rubbish in the skip had been collected and hence no further action was required.
10	Site Practice	No Environmental Permit was found displaced at the entrance of SA3 during weekly site inspection on 11/11/2005.	LWKJV replied to post the valid Environmental Permit immediately.	During the subsequent weekly site inspection (17/11/2005), valid Environmental Permit was found post at the SA3 Entrance and hence no further action was required.
11	Site Practice	Rubbish (e.g. waste paper and waste bottles) was found disposed on the ground next to the rubbish skip at Road L4 during weekly site inspection on 25/11/2005.	LWKJV replied to clean up the rubbish on the ground and arrange the site workers to collect the rubbish regularly or if necessary.	Since the finding was observed during the last weekly site inspection of this reporting month, it will be verified at the coming month.

Waste Management

According to weekly site inspection, ET found that the Contractor followed the recommended procedures stipulated in the Waste Management Plan (WMP) on handling and disposal of wastes. 8040m³ inert C&D materials, 3000 kg general refuse, 10kg metals, 4kg paper/cardboard packaging and 9kg plastics were generated. All inert C&D materials were reused in the Contract and other wastes were handling under the instruction and procedure stated in the WMP in this reporting month.

Environmental Complaints

No environmental complaints were received in this monitoring month.

Notification of summons and successful prosecutions

No notification of summons and prosecutions with respect to environmental issues were registered in this reporting 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 facilities properly;
- Cleanup the access road regularly;
- Watering, hydro-seeding or covering all stockpiles with tarpaulin to avoid wind and water erosion;
- Diverting the silty runoff to sedimentation trap or sedimentation tanks;
- Use and maintenance of silt curtain properly during marine works;
- Maintain good site practice and waste management to minimize environmental impacts at the site;
- Follow-up improvements on waste management issues.



1.0 INTRODUCTION

Leader – Wai Kee (C&T) Joint Venture (LWKJV) appointed Environmental Team (ET) of ETS-Testconsult Limited (ETL) to undertake the Environmental Monitoring and Audit (EM&A) for Remaining Engineering Infrastructure Works for Pak Shek Kok Development Package 2A (Contract No.: TP 37/03).

In accordance with the 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 01 to 30 November 2005.

2.0 PROJECT INFORMATION

2.1 Background

Remaining Engineering Infrastructure Works for Pak Shek Kok Development Package 2A (Contract No.: TP 37/03) was planned and designed by the Civil Engineering and Development Department (CEDD).

As the main Contractor of the captioned project: contracted by, LWKJV 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

Details of construction programme 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.
CEDD	Mr. M. S. Lam	Employer	2158 5630	2693 2918
Hyder	Mr. Herman Fong	Engineer	2603 6638	2603 7883
LWJV	Mr. T. T. Wong	Project Manager	2442 1123	2442 9733
Hyder	Ir. Coleman Ng	Independent Environmental Checker	2911 2233	2805 5028
ETL	Mr. C.L. Lau	Environmental Team Leader	2946 7791	2695 3944

3.0 CONSTRUCTION PROGRESS IN THIS REPORTING MONTH

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

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

Table 3.1 Major Construction Activities in this reporting month

Major Construction Activity	Location
Drainage Works (Excavation, pipe lying and breaking)	Section 5, 6, 7, 8
Road Works	Section 5 & 6
Construction of vertical seawall	Landscape Node P2
Piling Works	Voided Abutment of Ma Liu Shui Bridge
Utilities Works	Section 5, 6, 7 & 8
Waterworks	Section 5 & 6
Cycle track diversion	Landscape Node P3

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 haul roads and unpaved areas; • 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; • Water, hydro-seed or cover the open stockpile and exposed loose soil areas by using clean tarpaulin sheets; • Provide proper and efficient drainage facilities (e.g. wheel washing facilities) and sedimentation system to ensure that site runoff should be treated before discharged to drains; • Remove the sand/rubbish accumulated in the drain/channel regularly; • Use and maintenance of silt curtain properly during marine works; • Provide good site practice (e.g. selection of quieter plant and working methods and reduction in number of plant operating in critical areas close to NSRs) to limit noise emissions at source; • Remove the construction waste accumulated inside or outside the site regularly.
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4.0 AIR QUALITY MONITORING

4.1 Monitoring Requirement

1-hour and 24-hour TSP monitoring were required to 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;
- Near Wen Chih Tang at the CUHK.



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 certificates for the HVS and portable dust meter are attached in Appendix B1.

Table 4.1 Air Quality Monitoring Equipment

Equipment	Model and Make
HVS	Greasby GMWS2310
Calibrator	Tisch TE-5025A
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, frequencies 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

4.4 Monitoring Locations and Schedule

Table 4.3 tabulates the air quality monitoring locations of this project.

Table 4.3 Air quality monitoring locations

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
AM5	Near Wen Chih Tang at the CUHK

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

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	---				01/11/05	08:30	09:30
						03/11/05	10:00	11:00
						05/11/05	09:50	10:50
						08/11/05	09:00	10:00
						10/11/05	09:30	10:30
						12/11/05	08:10	09:10
						15/11/05	09:00	10:00
						17/11/05	10:20	11:20
						19/11/05	09:30	10:30
						22/11/05	09:56	10:56
						24/11/05	07:00	08:00
						26/11/05	09:45	10:45
						29/11/05	08:58	09:58



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)					01/11/05	09:45	10:45
						03/11/05	15:45	16:45
						05/11/05	15:00	16:00
						08/11/05	13:15	14:15
						10/11/05	15:40	16:40
						12/11/05	10:50	11:50
						15/11/05	10:30	11:30
						17/11/05	16:30	17:30
						19/11/05	14:30	15:30
						22/11/05	13:50	14:50
						24/11/05	16:15	17:15
						26/11/05	13:05	14:05
						29/11/05	13:00	14:00
AM5	Near Wen Chih Tang at the CUHK					01/11/05	13:20	14:20
						03/11/05	14:30	15:30
						05/11/05	11:05	12:05
						08/11/05	14:40	15:40
						10/11/05	16:50	17:50
						12/11/05	13:00	14:00
						15/11/05	13:05	14:05
						17/11/05	14:45	15:45
						19/11/05	10:45	11:45
						22/11/05	08:45	09:45
						24/11/05	09:25	10:25
						26/11/05	11:00	12:00
						29/11/05	15:40	16:40
AM1	HKIB Staff Accommodation	02/11/05	14:15	03/11/05	13:36			
		08/11/05	09:10	09/11/05	09:09			
		14/11/05	16:20	15/11/05	16:25			---
		19/11/05	09:35	20/11/05	10:33			
		25/11/05	14:30	26/11/05	14:29			
AM3A	Cheung Shue Tan (in front of Man Kee Store)	02/11/05	13:55	03/11/05	14:15			
		08/11/05	15:15	09/11/05	15:18			
		14/11/05	16:38	15/11/05	16:50			---
		19/11/05	14:40	20/11/05	15:04			
		25/11/05	15:00	26/11/05	15:19			
AM5	Near Wen Chih Tang at the CUHK	02/11/05	14:05	03/11/05	14:15			
		08/11/05	14:45	09/11/05	14:33			
		14/11/05	16:28	15/11/05	16:47			---
		19/11/05	10:52	20/11/05	11:42			
		25/11/05	14:40	26/11/05	14:49			

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 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 recorded.
- Before weighting, all filters were equilibrated in a desiccator for 24 hour with the temperature of 25°C ± 3°C and the relative humidity (RH) <50% ±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;
- Record the maximum, minimum and average reading directly from the dust meter by press STATISTICS when monitoring complete.

Maintenance & Calibration

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

4.5.3 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 month are shown in Appendix D.

4.6 Action and Limit Levels

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 **	---	---
AM5	174	260	329	500

* = 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.

** = Reference to the information contained in the Baseline Monitoring Report submitted under the "Remaining Engineering Infrastructure Works for Pak Shek Kok Development Package 1 – Contract No. TP 35/02.

4.7 Event-Action Plans

Please refer to Appendix E for details.

4.8 Results

4.8.1 24-hour TSP Monitoring

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.

5.0 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);
- CUHK Residence No.10;
- Near Wen Chih Tang at the CUHK.

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 804:1985 (Type1), and speed in m/s was used to monitor the wind speed.



Table 5.1 summarized 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-31 Sound Level Meter
Calibrator	Rion NL-73 Sound Level Calibrator
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 this reporting month, there were four noise monitoring locations: HKIB Staff Accommodation, Cheung Shue Tan Village, CUHK Residence No.10 and Near Wen Chih Tang at the CUHK. The location of the monitoring stations are described in Table 5.3 and depicted in Figure 1.

Table 5.3 Noise Monitoring Locations

Noise Monitoring station	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)
NM8	Near Wen Chih Tang at the CUHK

The noise-monitoring programme of monitoring locations (Day-time, Evening-time, Holiday and Night-time) is summarized in Table 5.4.

Table 5.4 Monitoring Periods for noise monitoring stations

Monitoring stations	Monitoring Period							
	Day-time		Evening-time		Holiday		Night-time	
NM1	01/11/05	08:32	---	---	---	---	---	---
	08/11/05	09:01	---	---	---	---	---	---
	15/11/05	08:28	---	---	---	---	---	---
	22/11/05	10:00	---	---	---	---	---	---
	29/11/05	09:00	---	---	---	---	---	---
NM2	01/11/05	11:00	---	---	---	---	---	---
	08/11/05	10:20	---	---	---	---	---	---
	15/11/05	13:55	---	---	---	---	---	---
	22/11/05	16:50	---	---	---	---	---	---
	29/11/05	09:40	---	---	---	---	---	---



Monitoring stations	Monitoring Period							
	Day-time		Evening-time		Holiday		Night-time	
NM3	01/11/05	13:22	---	---	---	---	---	---
	08/11/05	13:21	---	---	---	---	---	---
	15/11/05	14:45	---	---	---	---	---	---
	22/11/05	13:55	---	---	---	---	---	---
	29/11/05	13:02	---	---	---	---	---	---
NM8	01/11/05	13:22	---	---	---	---	---	---
	08/11/05	14:30	---	---	---	---	---	---
	15/11/05	13:10	---	---	---	---	---	---
	22/11/05	08:50	---	---	---	---	---	---
	29/11/05	15:42	---	---	---	---	---	---

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 1dB(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.
- Free Field correction to the measurements should be made. Correction factor of +3dB(A) should be made to the free Field measurements.
- Noise monitoring would be 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) *
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		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 Appendix E for details.



5.8 Results

Only Day-time noise monitoring were carried out at monitoring stations in this reporting month. No Evening-time, Night-time and Holiday noise monitoring were required since no construction works were processed during the night-time period. 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 monitoring results at all monitoring stations exceeded the Action Level since no documented complaints on noise issue were received in this reporting month. Besides, no exceedances in Limit Level were recorded according to the results from Day-time noise monitoring.

6.0 WASTEWATER MONITORING

Effluent Discharge Licence of this Project is valid from 06 December 2004 (Discharge Licence No.: 3246-Part A and Part B).

Water quality monitoring was carried out at Ma Liu Shui Pier 1 at 11 November 2005. One wastewater sample was collected from the discharge point during the monitoring. The result of suspended solids content of the wastewater sample was complied the discharge limit of the Discharge Licence. The test report was attached at Appendix I. The test report had been submitted to the EPD at 28 November 2005 (Ref No.: J0402/03.09/05/6230L).

Since the Discharge Licence required carrying out wastewater monitoring at effluent discharge point quarterly, the next wastewater monitoring should be at February 2006.

7.0 ENVIRONMENTAL NON-CONFORMANCE

7.1 Summary of environmental 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 level measured at all monitoring stations exceeded the Action and Limit Level in the reporting month. No evening-time, night-time and holiday noise monitoring were required since no construction works were processed during these periods.

During this reporting month, water quality monitoring was carried out at Ma Liu Shui Pier 1 at 11 November 2005. One wastewater sample was collected from the discharge point during the monitoring. The result of suspended solids content of the wastewater sample was complied the discharge limit of the Discharge Licence. The next wastewater monitoring should be at February 2006.

7.2 Summary of Environmental Complaints

No environmental complaints were received in this monitoring month.

7.3 Summary of Notification of Summons and Prosecution

There was no notification of summons respect to environmental issues registered in this month.



8.0 SITE INSPECTION

Weekly site inspections were carried out by the ET in this reporting month (03, 10, 17 and 24 November 2005). Monthly joint site inspection at 25 November 2005 was carried out by Engineer's Representative, IEC and LWKJV. The implementation status of the mitigation measures on site inspections in this reporting month is presented in Appendix H.

8.1 Summary of the site inspection findings and Action(s) taken by LWKJV and ET

Summaries of the site inspection findings in this reporting month are shown in Table 8.1.

Table 8.1 The summary of the site inspection findings and Action(s) taken by LWKJV and ET

Item	Aspects	Findings	Action(s) taken by LWKJV	ET Verification
1	Air	Stockpiles at Road L4, Node 2 and SA14 were found not covered during weekly site inspections on 11/11/2005 and 17/11/2005. Although stockpiles at Road L4 and Node 2 were removed, that at SA14 was still observed without cover during the weekly site inspection on 25/11/2005.	LWKJV replied to cover the exposed stockpile with tarpaulin sheets or provide regular watering to avoid the generation of dust.	Since the finding was still observed during the last weekly site inspection of this reporting month, it will be verified at the first weekly site inspection of the coming month.
2	Air	Potential fugitive dust emission was observed on the haul road at SA14 during weekly site inspection on 17/11/2005.	LWKJV replied to increase the frequency of water spraying during dry season.	During the subsequent weekly site inspection (25/11/2005), the finding was found improved and hence no further action was required.
3	Air	Black Smoke was found emitted from an excavator at Node 2 during the weekly site inspection on 02/11/2005.	LWKJV replied to repair the excavator immediately. Besides, LWKJV was reminded to maintain all site equipment regularly in order to avoid black smoke emission.	During the subsequent weekly site inspection (11/11/2005), no black smoke was emitted from the excavator and hence no further action was required.
4	Air	Black Smoke was found emitted from an excavator at Ma Liu Shui during the weekly site inspection on 25/11/05.	LWKJV replied to repair the excavator immediately. Besides, LWKJV was reminded to maintain all site equipment regularly in order to avoid black smoke emission.	Since the finding was observed during the last weekly site inspection of this reporting month, it will be verified at the coming month.
5	Water	Follow up action to the finding observed at the previous month, the drainage channel at Ma Liu Shui was clean up and no muddy water was found accumulated during weekly site inspection (02/11/2005).	Since the finding had been improved, no further action was required.	Since the finding was improved, no further action was required.
6	Water	Mud / silt was found accumulated in the drainage channel at Ma Liu Shui during weekly site inspection (25/11/2005).	LWKJV replied to clean up the mud and silt accumulated in order to maintain the capacity of the channel.	Since the finding was observed during the last weekly site inspection of this reporting month, it will be verified at the coming month.
7	Water	Follow up action to the finding observed at the previous month, no standing water was accumulated in planter wall at Node 3 during the weekly site inspection (11/11/2005).	Since the finding had been improved, no further action was required.	Since the finding was improved, no further action was required.
8	Water	Silt curtain at Node 3 was found not fully enclosed during weekly site inspection on 11/11/2005.	LWKJV replied to close the opening of the silt curtain immediately after the passing of barge / vessel.	During the subsequent weekly site inspection (17/11/2005), the silt curtain at Node 3 was found enclosed and hence no further action was required.
9	Site Practice	Rubbish skip at Road L4 was found full during the weekly site inspections on 11/11/2005 and 17/11/2005..	LWKJV replied to clean up the rubbish skip and arrange the site workers to collect the rubbish regularly or if necessary.	During the subsequent weekly site inspection (25/11/2005), the rubbish in the skip had been collected and hence no further action was required.
10	Site Practice	No Environmental Permit was found displaced at the entrance of SA3 during weekly site inspection on 11/11/2005.	LWKJV replied to post the valid Environmental Permit immediately.	During the subsequent weekly site inspection (17/11/2005), valid Environmental Permit was found post at the SA3 Entrance and hence no further action was required.



Item	Aspects	Findings	Action(s) taken by LWKJV	ET Verification
11	Site Practice	Rubbish (e.g. waste paper and waste bottles) was found disposed on the ground next to the rubbish skip at Road L4 during weekly site inspection on 25/11/2005.	LWKJV replied to clean up the rubbish on the ground and arrange the site workers to collect the rubbish regularly or if necessary.	Since the finding was observed during the last weekly site inspection of this reporting month, it will be verified at the coming month.

8.2 Status of Environmental Licensing and Permitting

All permits/licenses valid in this reporting month are summarized in Table 8.2.

Table 8.2 Summary of environmental licensing and permit status

Description	Permit No.	Valid Period		Section
		From	To	
Construction Noise Permit for the Construction Site of Remaining Engineering Infrastructure Works for Pak Shek Kok Development Package 2A adjacent to Ma Liu Shui Interchange, N.T. (CEDD Contract No. TP37/03)	GW-RN0517-05	07/11/05	05/05/06	Group A One Derrick Barge (CNP061) One Tug Boat (CNP221) Group B One Derrick Barge (CNP061) One Excavator, tracked (CNP081) Four Dump Truck, 5.5 tonne < gross vehicle weight ≤ 38 tonne
Construction Noise Permit for Marine Work at Reclamation area of Science Park Phase 2 & 3, Pak Shek Kok	GW-RN0248-05	14/06/05	13/12/05	Group A One Tug Boat (CNP221) Group B One Derrick Barge (CNP061)
Construction Noise Permit for the Construction Works of the Project at Seafront in Vicinity of Existing Ma Liu Shui Pier, N.T.	GW-RN0379-05	23/08/05	22/02/06	Group A One Poker, vibrator, hand-held (CNP170) One Concrete pump, lorry mounted (CNP047) One Concrete lorry mixer (CNP044) Group B One Dump Truck (CNP067) One Excavator, tracked (CNP081) Group C One Grout Pump One Grout Mixer
Construction Noise Permit for the Construction Works of the Project at Pak Shek Kok Development Package 2A, Tai Po	GW-RN0265-05	14/06/05	13/12/05	Group A One Poker, vibrator, hand-held (CNP170) One Concrete lorry mixer (CNP044) One Excavator, tracked (CNP081) Group B One Dump Truck (CNP067) One Excavator, tracked (CNP081) Group C One Asphalt Paver (CNP004) One Roller, Vibratory (CNP186) One Road Roller (CNP185)
Wastewater Discharge License	3246 – Part A	06/12/04	05/12/09	Discharge of trade Effluent, surface run-off and all other wastewater arising from the construction site and sedimentation tank to Coastal water or communal drain for the carriage of surface drainage water.
Wastewater Discharge License	3246 – Part B	06/12/04	05/12/09	Discharge of trade Effluent, surface run-off and all other wastewater arising from the construction site and on-site aerobic waste water treatment system to soak-away pit.

8.3 Recommendations on site inspection findings in Site Inspections of this month

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

- All stockpiles should be covered with clean tarpaulin sheets, spraying with water or hydro-seeding to avoid wind and water erosion;
- 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;
- Checking and maintaining all the site machines to prevent dust emission;
- Providing briefing to the concerned site staff on remedial actions, such as handling method of chemicals and chemical waste;
- Use and maintenance of silt curtain properly during marine works;
- Provide good site practice (e.g. selection of quieter plant and working methods and reduction in number of plant operating in critical areas close to NSRs) to limit noise emissions at source;
- Maintain good waste management at the site.

9.0 WASTE MANAGEMENT

9.1 Waste Management Audit

Waste management audit was carried out by the ET on a weekly basis. The implementation status of the mitigation measures on waste management in this reporting month is presented in Appendix H.

9.2 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 9.1.

Table 9.1 Summary of Quantities of Waste for Disposal in this reporting month

Type of Waste		Quantity	Disposal Location	Cumulative Quantity
Inert C&D Materials	Total Quantity Generated (m ³)	8040	Reused in the Contract	79595
	Broken Concrete (m ³)	40	N/A	665
	Reused in the Contract (m ³)	8000	N/A	79000
	Reused in other Projects (m ³)	0	N/A	0
	Disposal as Public Fill (m ³)	0	N/A	0
C&D Waste	Metals (1000kg)	0.010	N/A	37.385
	Paper/Cardboard Packaging (1000kg)	0.004	N/A	0.066
	Plastics (1000kg)	0.009	N/A	0.023
	Chemical Waste (1000kg)	0	N/A	1
	Other, e.g. General Refuse (1000kg)	3	SENT	74.29

10.0 IMPLEMENTATION STATUS

10.1 Implementation Status of Environmental Mitigation Measures

LWKJV has been implementing the required environmental mitigation measures according to the Mitigation Protection Measures stated in Implementation Schedule of the EM&A Manual. The implementation status of the environmental mitigation measures in this reporting month is presented in Appendix H.

Air Quality

The Contractor was reminded to water or cover all the stockpiles by using clean tarpaulin sheets. The Contractor was also reminded to cleanup the access road regularly to avoid dust emission and provide effective wheel washing facilities.

Noise

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



Water Quality

The Contractor was reminded to provide more effort to implement mitigation measures, such as diverting site runoff to suitable treatment processes before discharge, sedimentation system and drainage facilities.

Waste Management

LWKJV has been implementing most mitigation measures on waste management.

10.2 Implementation Status of Event and Action Plan

There were no exceedances in air quality and noise monitoring parameters recorded in this monitoring month. No further mitigation measures were required.

10.3 Implementation Status of Environmental Complaint Handling

No complaints had been received during this monitoring month.

11.0 CONCLUSION

Impact monitoring of air quality and noise were carried out at designated locations in accordance with the EM&A Manual in this reporting month.

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 level measured at all monitoring stations exceeded the Action and Limit Level in the reporting month. No Evening-time, Night-time and Holiday noise monitoring were required since no construction works were processed during these periods.

During this reporting month, water quality monitoring was carried out at Ma Liu Shui Pier 1 at 11 November 2005. One wastewater sample was collected from the discharge point during the monitoring. The result of suspended solids content of the wastewater sample was complied the discharge limit of the Discharge Licence. The next wastewater monitoring should be at February 2006.

According to the ET weekly site inspection and IEC monthly site audit carried out this month, it indicated that site practices of the LWKJV were generally undertaken in an environmentally acceptable manner and the overall site environmental performance was satisfactory.

12.0 FUTURE KEY ISSUES

12.1 Upcoming EM&A Schedule in coming two months

The Proposed EM&A program in coming two months are presented as following table:

Table 12.1 – Upcoming EM&A Schedule in coming two months

Type of Monitoring	December 2005	January 2006
Noise Monitoring (Day-time)	06, 13, 20, 29	03, 10, 17, 24
1-hour TSP	01, 03, 06, 08, 10, 13, 15, 17, 20, 22, 24, 27, 29, 31	03, 05, 07, 10, 12, 14, 17, 19, 21, 24, 26, 27
24-hour TSP	01, 07, 13, 19, 23, 29	04, 10, 16, 21, 27
Site Inspection	01, 08, 15, 22, 29	05, 12, 19, 26

12.2 Upcoming construction works schedule in the coming month

The major construction works planned to be carried out in next two months and their possible impact is tabulated (Table 12.2) for reference.



Table 12.2 – Construction Plan in the coming month

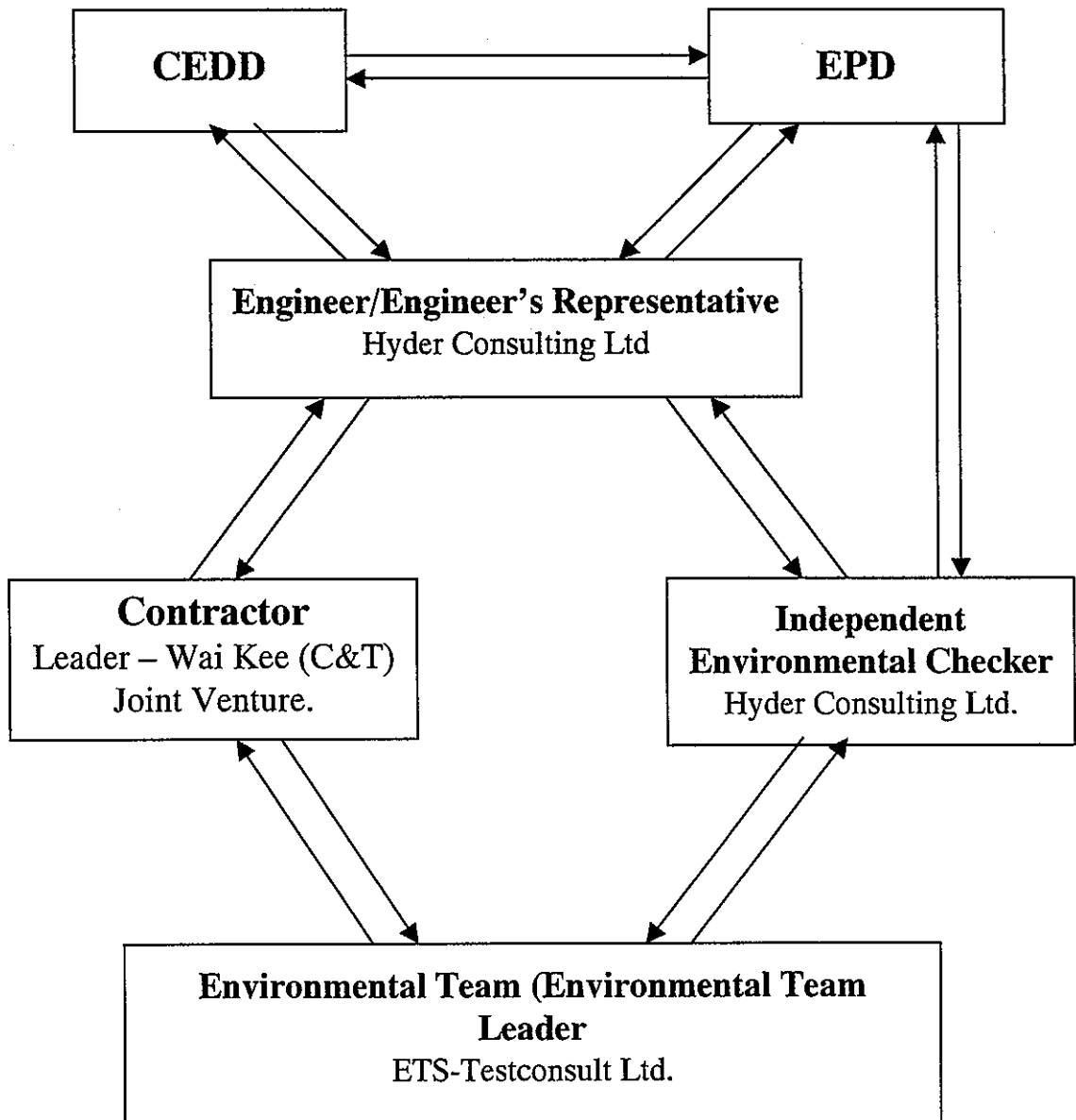
Month	Works Planned to be Carried Out
Between December 2005 and January 2006	<ul style="list-style-type: none">▪ Drainage Works (excavation, pipe lying and breaking) at Section 5, 6, 7,8;▪ Road Works at Section 5 & 6;▪ Piling works at Ma Liu Shui Bridge;▪ Taking up existing seawall at Landscape Node P3;▪ Reinststate existing box culvert & drain pipes at Landscape Node P1 & P2;▪ Waterworks at Section 5, 6 & 7;▪ Utilities works at Section 5, 6 & 7.



Appendix A

Organization Chart and Lines of Communication

Lines of Communication





Appendix B1

Calibration Certificates for Air Quality Monitoring Equipments



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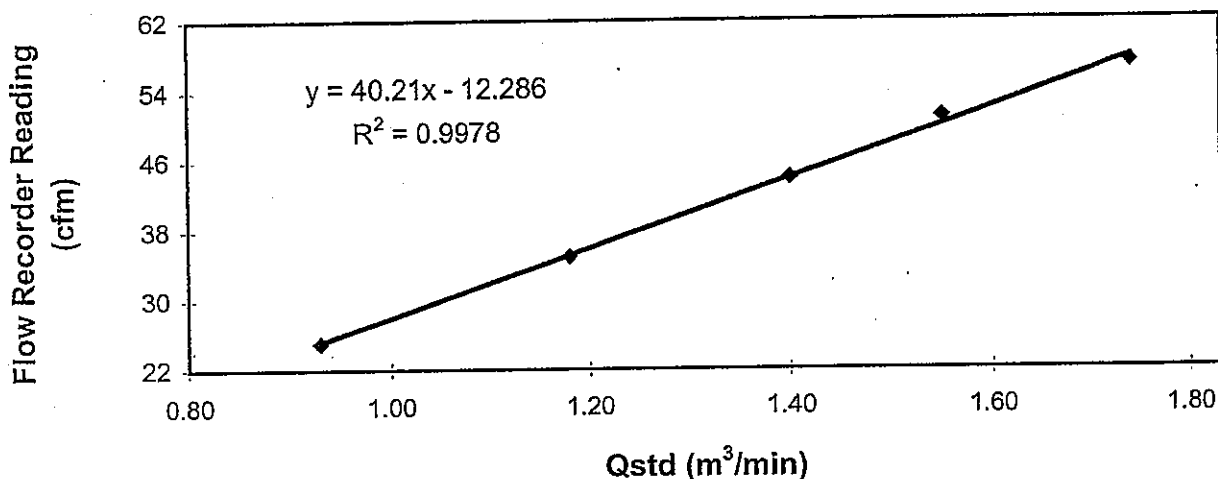
TEST REPORT

Calibration Report
of
High Volume Air Sampler

Manufacturer : Greasby GMW Date of Calibration : 13 September 2005
Serial No. : 1178 (ET/EA/003/01) Calibration Due Date : 12 November 2005
Method : Based on Operations Manual for Graseby Model GS2310 series using calibration kit TE-5025A

Results	Flow recorder reading (cfm)	57	51	44	35	25
	Qstd (Actual flow rate, m ³ /min)	1.74	1.55	1.40	1.18	0.93
	Pressure : 751.56 mm Hg	Temp. : 304 K				

Sampler1178 Calibration Curve
Site: Pak Shek Kok Monitoring Station AM1 (24hr.)
Date of Calibration: 13 September 2005



Acceptance Criteria : Correlation coefficient (r) of the calibration curve greater than 0.990 after a 5 point calibration

The high volume sampler complies * / does not comply * with the specified requirements and is deemed acceptable * / unacceptable * for use.

Calibrated by : K W Mak
K W Mak
(Technician)

Approved by : Linda Law
Linda Law
(Environmental Officer)



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TEST REPORT

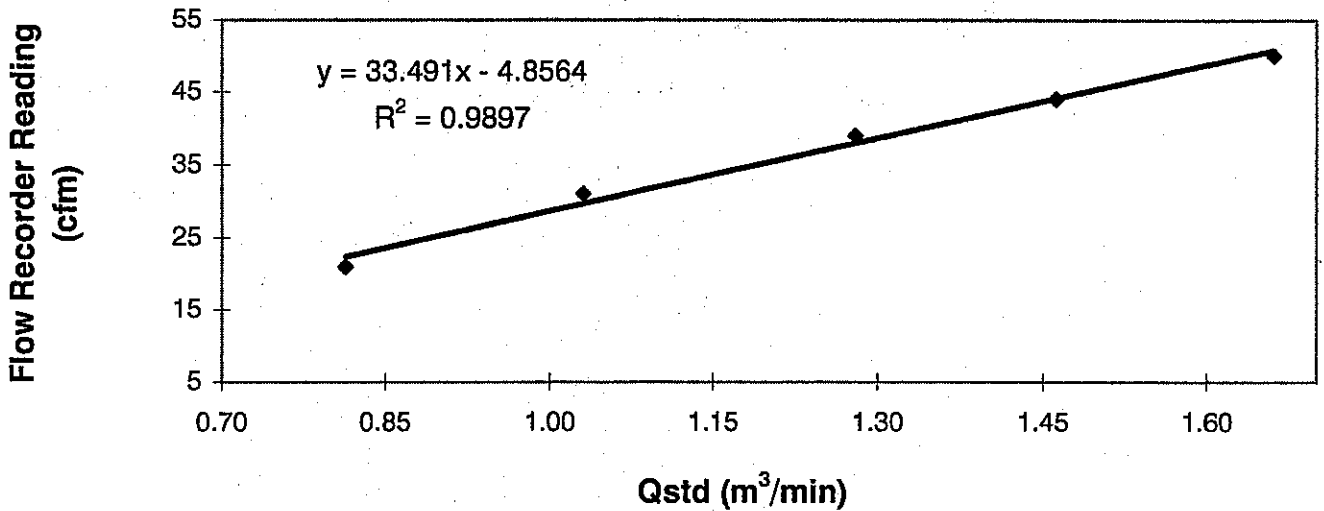
Calibration Report
of
High Volume Air Sampler

Manufacturer : Greasby GMW Date of Calibration : 14 November 2005
Serial No. : 1178 (ET / EA / 003 / 01) Calibration Due Date : 13 January 2006
Method : Based on Operations Manual for Graseby Model GS2310 series using calibration kit TE-5025A

Results :

Flow recorder reading (cfm)	50	44	39	31	21
Qstd (Actual flow rate, m ³ /min)	1.66	1.46	1.28	1.03	0.81
Pressure :	759.59 mm Hg		Temp. :	298 K	

Sampler 1178 Calibration Curve
Site: Pak Shek Kok (AM1) (24hr.)
Date of Calibration: 14 November 2005



Acceptance Criteria : Correlation coefficient (r) of the calibration curve greater than 0.990 after a 5 point calibration

The high volume sampler complies * / ~~does not comply~~ * with the specified requirements and is deemed acceptable * / unacceptable * for use.

Calibrated by : Ken Leung
Ken Leung
(Technician)

Approved by : Linda Law
Linda Law
(Environmental Officer)



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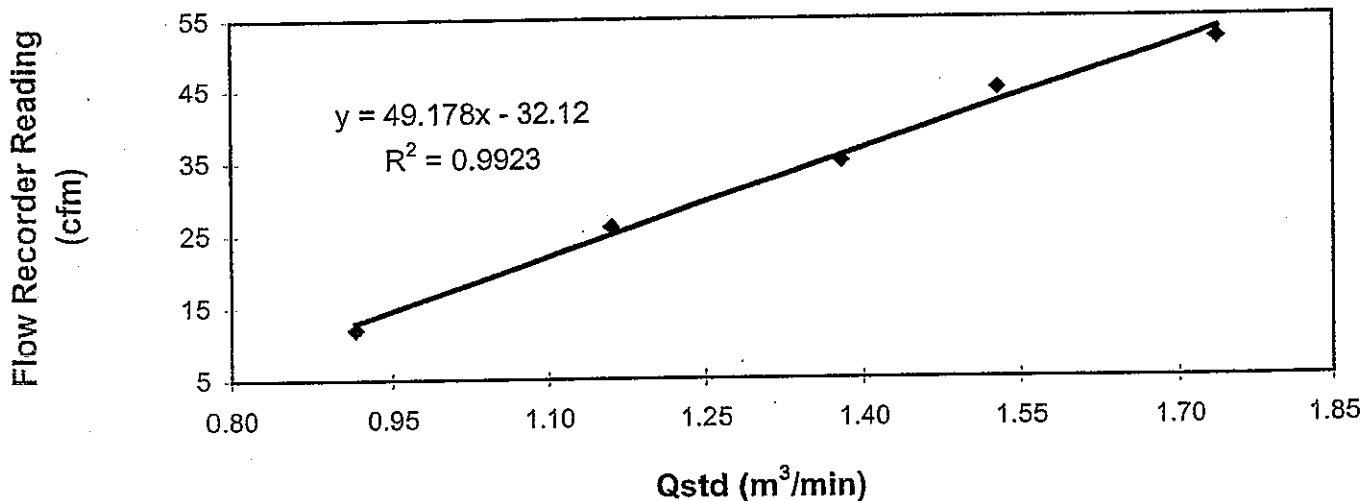
TEST REPORT

Calibration Report
of
High Volume Air Sampler

Manufacturer : Greasby GMW Date of Calibration : 13 September 2005
Serial No. : 7179 (ET / EA / 003 / 16) Calibration Due Date : 12 November 2005
Method : Based on Operations Manual for Graseby Model GS2310 series using calibration kit TE-5025A

Results	Flow recorder reading (cfm)	52	45	35	26	12
	Qstd (Actual flow rate, m ³ /min)	1.74	1.53	1.38	1.16	0.92
	Pressure : 751.56 mm Hg	Temp. : 304 K				

Sampler 7179 Calibration Curve
Site: Pak Shek Kok (AM3A)
Date of Calibration: 13 September 2005



Acceptance Criteria : Correlation coefficient (r) of the calibration curve greater than 0.990 after a 5 point calibration

The high volume sampler complies * / ~~does not comply~~ * with the specified requirements and is deemed acceptable * / ~~unacceptable~~ * for use.

Calibrated by : Mak Kai Wan
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(Technician)

Approved by : Linda Law
Linda Law
(Environmental Officer)



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TEST REPORT

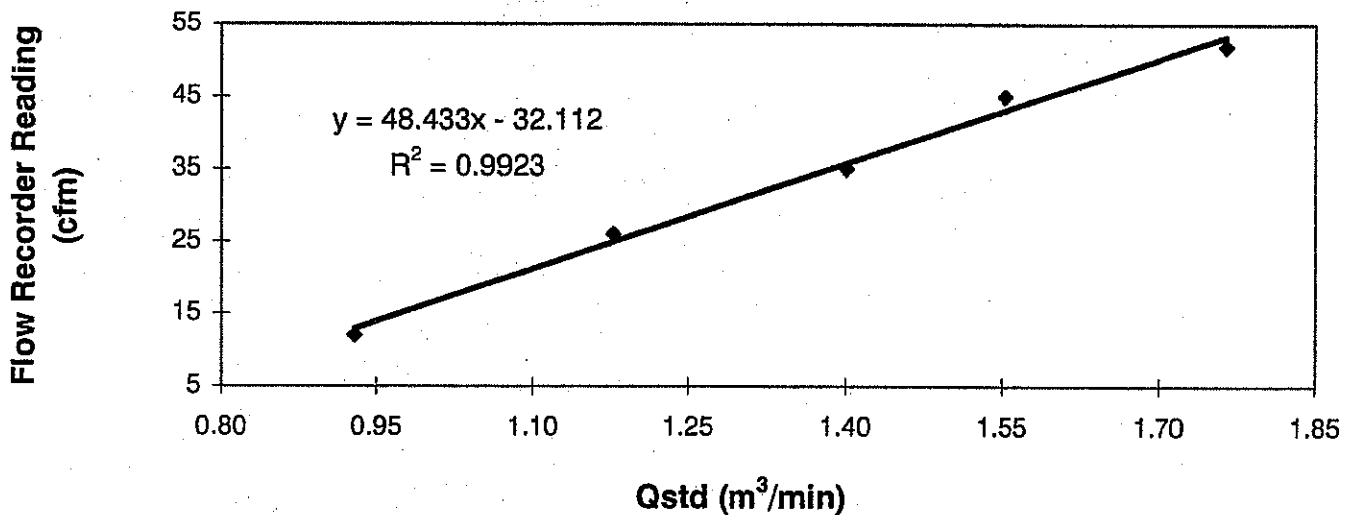
Calibration Report
of
High Volume Air Sampler

Manufacturer : Greasby GMW **Date of Calibration** : 14 November 2005
Serial No. : 7179 (ET / EA / 003 / 16) **Calibration Due Date** : 13 January 2006
Method : Based on Operations Manual for Graseby Model GS2310 series using calibration kit TE-5025A

Results :

Flow recorder reading (cfm)	52	45	35	26	12
Qstd (Actual flow rate, m ³ /min)	1.76	1.55	1.40	1.18	0.93
Pressure :	759.59 mm Hg			Temp. :	298 K

Sampler 7179 Calibration Curve
Site: Pak Shek Kok (AM3A)
Date of Calibration: 14 November 2005



Acceptance Criteria : Correlation coefficient (r) of the calibration curve greater than 0.990 after a 5 point calibration

The high volume sampler complies * / ~~does not comply~~ * with the specified requirements and is deemed acceptable * / unacceptable * for use.

Calibrated by : Ken Leung
Ken Leung
(Technician)

Approved by : Linda Law
Linda Law
(Environmental Officer)



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TEST REPORT

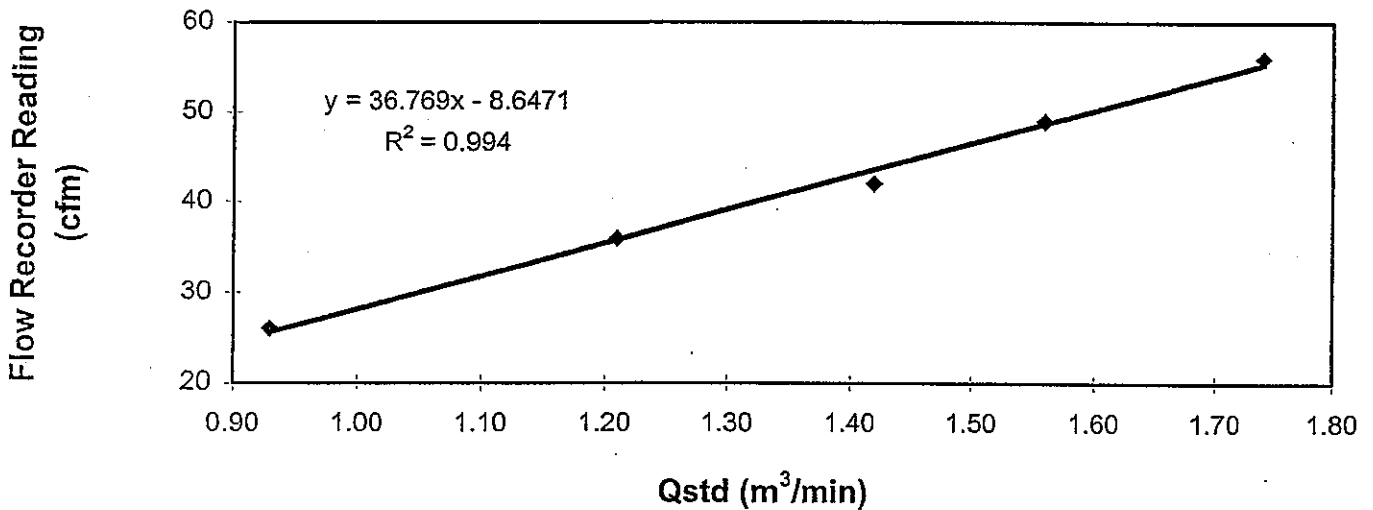
Calibration Report
of
High Volume Air Sampler

Manufacturer : Greasby GMW Date of Calibration : 13 September 2005
Serial No. : 1172 (ET / EA / 003 / 11) Calibration Due Date : 12 November 2005
Method : Based on Operations Manual for Graseby Model GS2310 series using calibration kit TE-5025A

Results :

Flow recorder reading (cfm)	56	49	42	36	26
Qstd (Actual flow rate, m ³ /min)	1.74	1.56	1.42	1.21	0.93
Pressure :	751.56 mm Hg			Temp. : 304 K	

Sampler 1172 Calibration Curve
Site: Pak Shek Kok (AM5)
Date of Calibration: 13 September 2005



Acceptance Criteria : Correlation coefficient (r) of the calibration curve greater than 0.990 after a 5 point calibration

The high volume sampler complies * / does not comply* with the specified requirements and is deemed acceptable * / unacceptable* for use.

Calibrated by : Mak Kai Wai
K W Mak
(Technician)

Approved by : Linda Law
Linda Law
(Environmental Officer)



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Fax : 2695 3944 Web site : www.ets-testconsult.com

TEST REPORT

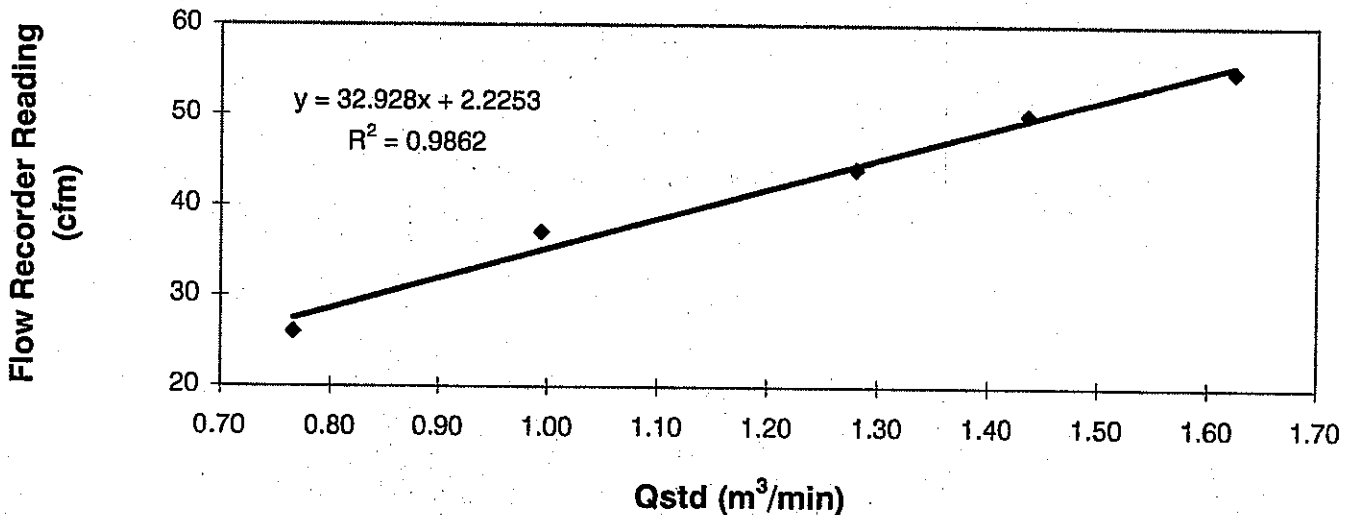
**Calibration Report
of
High Volume Air Sampler**

Manufacturer : Greasby GMW Date of Calibration : 14 November 2005
Serial No. : 1172 (ET / EA / 003 / 11) Calibration Due Date : 13 January 2006
Method : Based on Operations Manual for Graseby Model GS2310 series using calibration kit TE-5025A

Results :

Flow recorder reading (cfm)	55	50	44	37	26
Qstd (Actual flow rate, m ³ /min)	1.62	1.44	1.28	0.99	0.77
Pressure :	759.59 mm Hg		Temp. :	298 K	

**Sampler 1172 Calibration Curve
Site: Pak Shek Kok (AM5)
Date of Calibration: 14 November 2005**



Acceptance Criteria : Correlation coefficient (r) of the calibration curve greater than 0.990 after a 5 point calibration

The high volume sampler complies * / ~~does not comply~~ * with the specified requirements and is deemed acceptable * / ~~unacceptable~~ * for use.

Calibrated by :
Ken Leung
(Technician)

Approved by :
Linda Law
(Environmental Officer)



東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

8/F, Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan Street, Fotan, Hong Kong
Tel : 2695 8318 E-mail : etl@ets-testconsult.com
Fax : 2695 3944 Web site : www.ets-testconsult.com

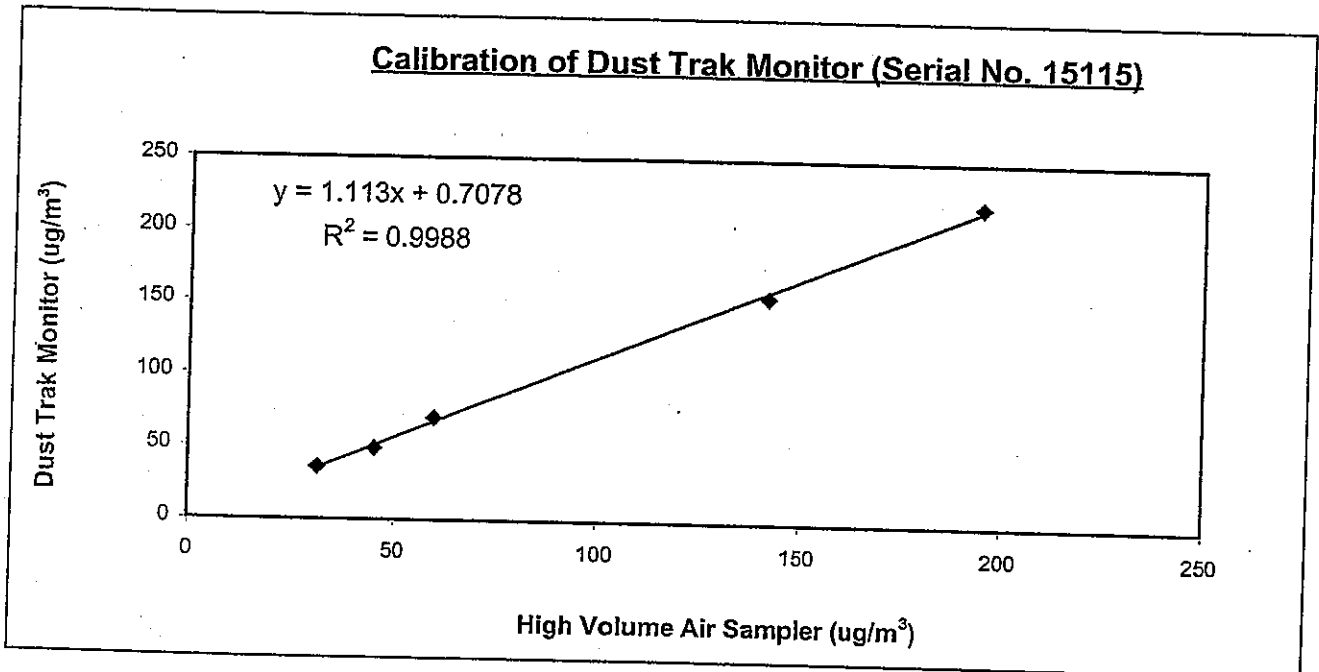
TEST REPORT

Internal Calibration Report
of
Dust Trak Monitor

Manufacturer : TSI - 8520 Dust Trak Date of Calibration : 17 September 2005
Serial No. : 15115 (EA/001/02) Calibration Due Date : 16 March 2006
Method : Place two Dust Trak Monitor together at same environment condition for parallel measurement with five point calibration

Results :

Dust Trak Monitor ($\mu\text{g}/\text{m}^3$)	36	49	70	155	220
High Volume Air Sampler ($\mu\text{g}/\text{m}^3$)	31	45	60	142	195
High Volume Air Sampler Serial No.: 1178			Calibration Date: 12 / 11 / 2005		



Acceptance Criteria : Correlation coefficient (r) of the calibration curve greater than 0.990 after a five point calibration

The Dust Trak Monitor complies * / ~~does not comply~~ * with the internal calibration procedures and is deemed acceptable * / ~~unacceptable~~ * for use.

Calibrated by : K W Mak
K W Mak
(Technician)

Approved by : H. T. Chow
H. T. Chow
(Asst. Environmental Officer)



Appendix B2

Air Quality Monitoring Results

Summary of 24-hr TSP Monitoring Results

Monitoring Station : AM1
Location : HKIB Staff Accommodation

Start Date	Time	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	Initial	Final		Initial	Final		Initial	Final		
02/11/05	14:15	03/11/05	13:36	9240.88	9264.23	23.35	1.26	1.26	1.26	2.8928	3.0049	64	Sunny
08/11/05	09:10	09/11/05	09:09	9264.23	9288.21	23.98	1.26	1.26	1.26	2.8787	3.0158	76	Sunny
14/11/05	16:20	15/11/05	16:25	9288.21	9312.30	24.09	1.13	1.13	1.13	2.8936	2.9747	50	Sunny
19/11/05	09:35	20/11/05	10:33	9312.30	9337.26	24.96	1.13	1.13	1.13	2.9066	3.0741	99	Sunny
25/11/05	14:30	26/11/05	14:29	9337.26	9361.24	23.98	1.13	1.13	1.13	2.9118	3.0820	105	Sunny

Monitoring Station : AM3A
Location : Cheung Shue Tan (in front of Man Kee Store)

Start Date	Time	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	Initial	Final		Initial	Final		Initial	Final		
02/11/05	13:55	03/11/05	14:15	14589.06	14613.28	24.22	1.37	1.37	1.37	2.8824	3.0007	59	Sunny
08/11/05	15:15	09/11/05	15:18	14613.28	14638.07	24.79	1.37	1.37	1.37	2.8866	3.0098	60	Sunny
14/11/05	16:38	15/11/05	16:50	14638.07	14662.27	24.20	1.32	1.32	1.32	2.8901	2.9581	35	Sunny
19/11/05	14:40	20/11/05	15:04	14662.27	14686.67	24.40	1.43	1.43	1.43	2.8867	3.0559	81	Sunny
25/11/05	15:00	26/11/05	15:19	14686.67	14710.99	24.32	1.43	1.43	1.43	2.9216	3.1106	91	Sunny

Monitoring Station : AM5
Location : Near Wen Chin Tung at the CUHK

Start Date	Time	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	Initial	Final		Initial	Final		Initial	Final		
02/11/05	14:05	03/11/05	14:15	4623.30	4647.47	24.17	0.95	0.95	0.95	2.8888	2.9531	47	Sunny
08/11/05	14:45	09/11/05	14:33	4647.47	4671.03	23.56	0.95	0.95	0.95	2.8946	2.9787	63	Sunny
14/11/05	16:28	15/11/05	16:47	4671.03	4695.35	24.32	1.00	1.00	1.00	2.8884	2.9344	32	Sunny
19/11/05	10:52	20/11/05	11:42	4695.35	4720.18	24.83	1.06	1.06	1.06	2.8695	2.9823	71	Sunny
25/11/05	14:40	26/11/05	14:49	4720.18	4744.33	24.15	1.06	1.06	1.06	2.9065	3.0602	100	Sunny

Summary of 1-hr TSP Monitoring Results

Monitoring Station : AM1 (HKIB Staff Accommodation)

Date	Monitoring Period		1-hr TSP ($\mu\text{g}/\text{m}^3$)			Weather
	Start	Finish	Minimum	Maximum	Average	
01/11/05	08:30	09:30	114	407	186	Cloudy
03/11/05	10:00	11:00	106	402	190	Sunny
05/11/05	09:50	10:50	107	402	169	Sunny
08/11/05	09:00	10:00	104	398	163	Sunny
10/11/05	09:30	10:30	45	492	165	Sunny
12/11/05	08:10	09:10	102	397	169	Sunny
15/11/05	09:00	10:00	72	354	93	Cloudy
17/11/05	10:20	11:20	107	402	175	Sunny
19/11/05	09:30	10:30	60	572	182	Sunny
22/11/05	09:56	10:56	80	377	133	Sunny
24/11/05	07:00	08:00	92	389	152	Sunny
26/11/05	09:45	10:45	55	672	197	Sunny
29/11/05	08:58	09:58	92	386	169	Cloudy

Monitoring Station : AM3 – 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	
01/11/05	09:45	10:45	87	362	128	Cloudy
03/11/05	15:45	16:45	96	375	136	Sunny
05/11/05	15:00	16:00	72	362	127	Sunny
08/11/05	13:15	14:15	84	356	124	Sunny
10/11/05	15:40	16:40	32	387	131	Sunny
12/11/05	10:50	11:50	64	327	91	Sunny
15/11/05	10:30	11:30	82	370	87	Cloudy
17/11/05	16:30	17:30	66	303	120	Sunny
19/11/05	14:30	15:30	45	458	129	Sunny
22/11/05	13:50	14:50	76	315	97	Sunny
24/11/05	16:15	17:15	68	320	96	Sunny
26/11/05	13:05	14:05	42	493	113	Sunny
29/11/05	13:00	14:00	65	320	92	Cloudy

Summary of 1-hr TSP Monitoring Results

Monitoring Station : AM5 – Near Wen Chih Tang at the CUHK

Date	Monitoring Period		1-hr TSP ($\mu\text{g}/\text{m}^3$)			Weather
	Start	Finish	Minimum	Maximum	Average	
01/11/05	13:20	14:20	90	374	150	Cloudy
03/11/05	14:30	15:30	93	368	160	Sunny
05/11/05	11:05	12:05	80	373	140	Sunny
08/11/05	14:40	15:40	87	371	132	Sunny
10/11/05	16:50	17:50	38	399	116	Sunny
12/11/05	13:00	14:00	80	343	103	Sunny
15/11/05	13:05	14:05	64	366	98	Cloudy
17/11/05	14:45	15:45	79	352	132	Sunny
19/11/05	10:45	11:45	53	409	136	Sunny
22/11/05	08:45	09:45	87	398	118	Sunny
24/11/05	09:25	10:25	79	349	111	Sunny
26/11/05	11:00	12:00	49	550	128	Sunny
29/11/05	15:40	16:40	79	342	104	Cloudy

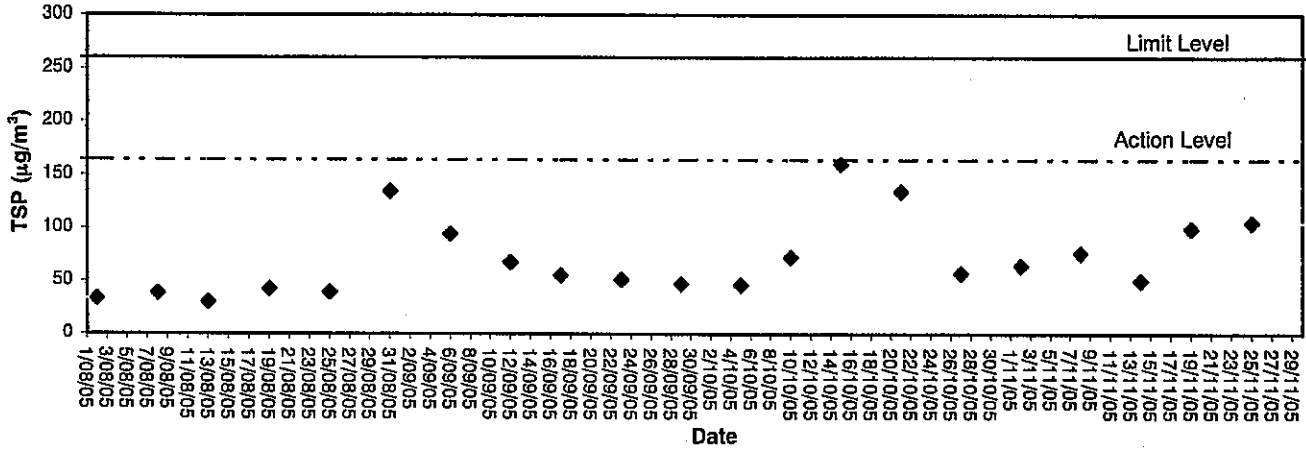


Appendix B3

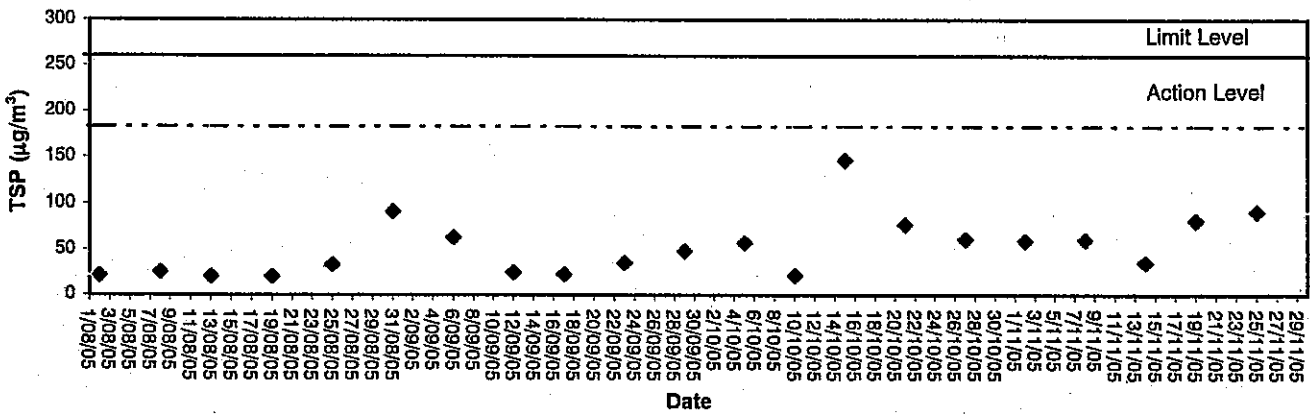
Graphical Plots of Air Quality Monitoring Data



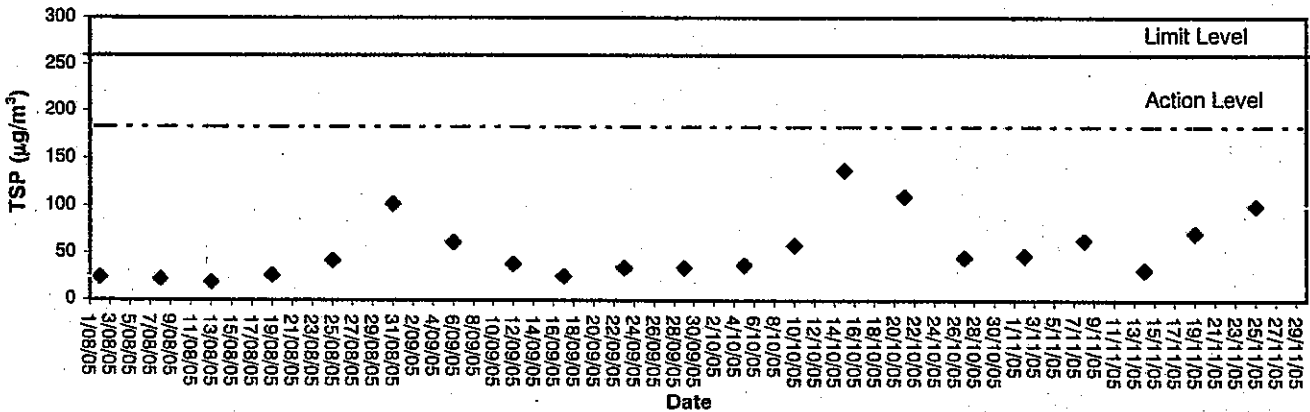
24-hour TSP level at AM1 (HKIB Staff Accommodation)



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

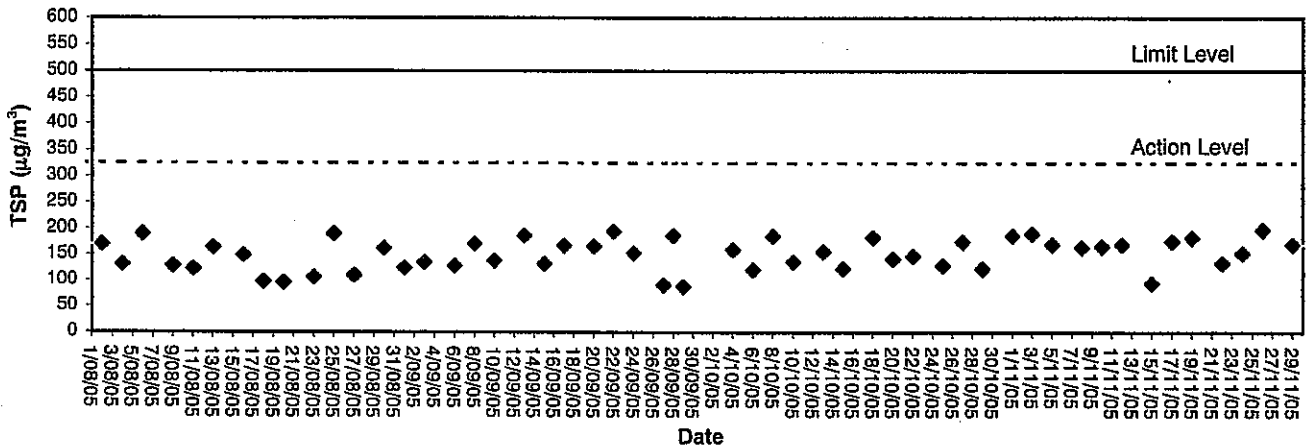


24-hour TSP level at AM5 (Wen Chih Tang at the CUHK)

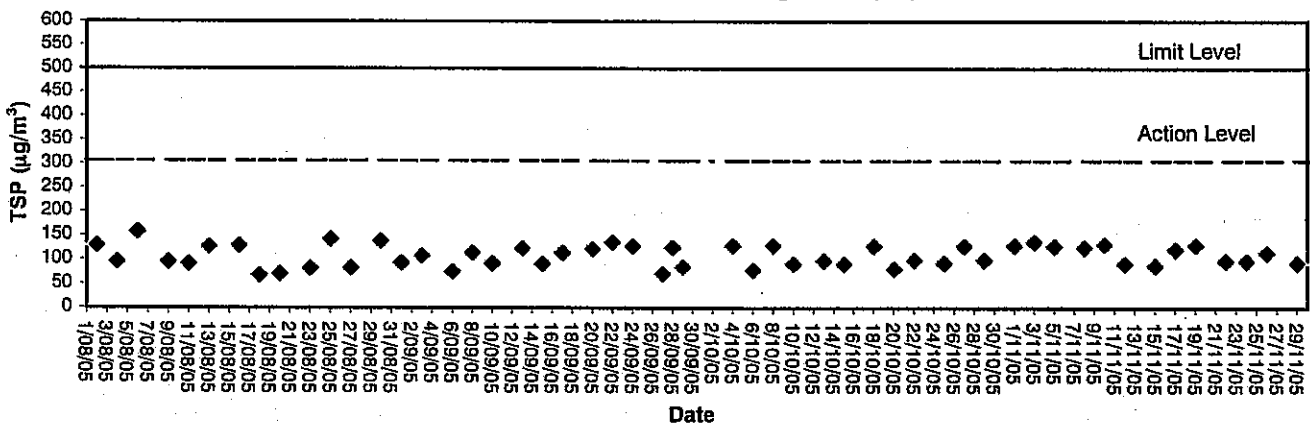




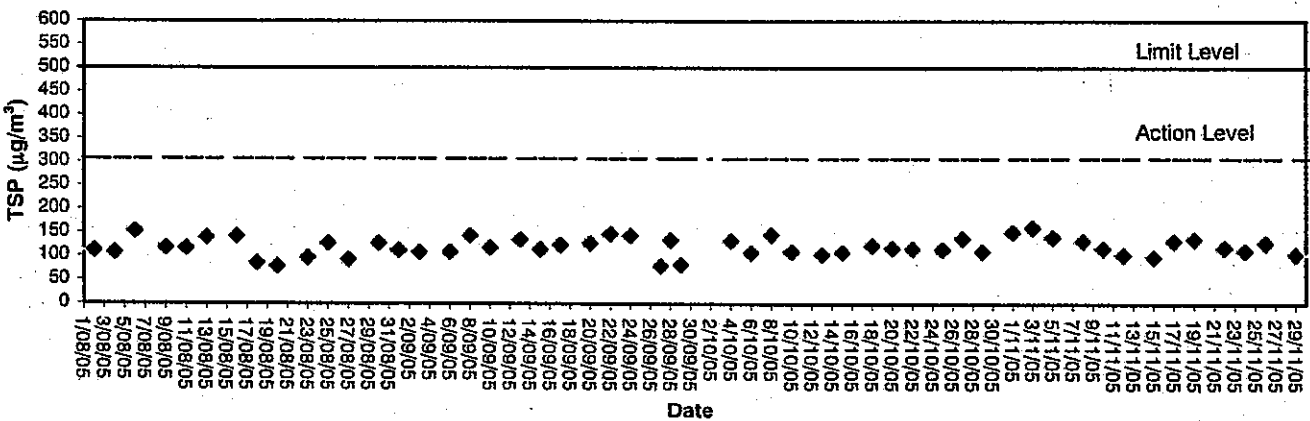
1-hour TSP level at AM1, HKIB Staff Accommodation



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



**1-hour TSP level at AM5
Wen Chih Tang at the CUHK**





Appendix C1

Calibration Certificates for Noise Monitoring Equipments



Hong Kong Calibration Ltd.

香港校正有限公司

Calibration Certificate

Certificate No. 51472

Page 1 of 3 Pages

Customer : ETS-Testconsult Limited

Address : 8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan St., Fotan, Hong Kong.

Order No. : Q50535

Date of receipt : 7-Apr-05

Item Tested

Description : Precision Integrating Sound Level Meter

Manufacturer : Rion

Model : NL-31

Serial No. : 00531142

Test Conditions

Date of Test : 20-Apr-05

Supply Voltage : -

Ambient Temperature : $(22.5 \pm 2.5)^{\circ}\text{C}$

Relative Humidity : $(50 \pm 20) \%$

Test Specifications

Calibration check according to customer's requirement.

Calibration procedure : Z01.

Test Results

All results were within the manufacturer's, IEC 651 Type 1, IEC 804 Type 1 specification.

The results are shown in the attached page(s).

Test equipment used:

<u>Equipment No.</u>	<u>Cert. No.</u>	<u>Due Date</u>	<u>Traceable to</u>
S017	C051022	21-Mar-06	PRC-NIM
S024	S41431	22-May-05	PRC-NIM

The values given in this Calibration Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Hong Kong Calibration Ltd. shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to International System of Units (SI).

The test results apply to the above Unit-Under-Test only

Calibrated by :

Approved by :

Alan Chu - Manager

Date: 20-Apr-05

This Certificate is issued by:

Hong Kong Calibration Ltd.

Unit 8B, 24/F., Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street, Kwai Chung, NT, Hong Kong.

Tel: 2425 8801 Fax: 2425 8646



Calibration Certificate

Certificate No. 51472

Page 2 of 3 Pages

Results :

1. SPL Accuracy

UUT Setting			UUT Reading (dB)	Correction (dB)
Level Range (dB)	Weight	Response		
20 – 100	L _A	Fast	94.0	+ 0.1
		Slow		+ 0.1
	L _C L _p	Fast		0.0
		Fast		0.0
30 – 120	L _A	Fast	94.0	+ 0.1
		Slow		+ 0.1
	L _C L _p	Fast		+ 0.1
		Fast		+ 0.1
30 – 120	L _A	Fast	114.0	+ 0.1
		Slow		+ 0.1
	L _C L _p	Fast		0.0
		Fast		0.0

IEC 651 Type 1 Spec. : ± 0.7 dB

Uncertainty : ± 0.2 dB

2. Level Stability : 0.0 dB

IEC 651 Type 1 Spec. : ± 0.3 dB

Uncertainty : ± 0.01 dB



Calibration Certificate

Certificate No. 51472

Page 3 of 3 Pages

3. Frequency Weighting

A weighting

Frequency	Attenuation (dB)	IEC 651 Type 1 Spec.
31.5 Hz	- 39.6	- 39.4 dB, ± 1.5 dB
63 Hz	- 26.2	- 26.2 dB, ± 1.5 dB
125 Hz	- 16.2	- 16.1 dB, ± 1 dB
250 Hz	- 8.7	- 8.6 dB, ± 1 dB
500 Hz	- 3.2	- 3.2 dB, ± 1 dB
1 kHz	0.0 (Ref.)	0 dB, ± 1 dB
2 kHz	+ 1.3	+ 1.2 dB, ± 1 dB
5 kHz	+ 1.1	+ 1.0 dB, ± 1 dB
8 kHz	- 1.1	- 1.1 dB, + 1.5 dB ~ - 3 dB
16 kHz	- 6.7	- 6.6 dB, + 3 dB ~ ∞

Uncertainty : ± 0.1 dB

4. Time Averaging

Applied Burst duty Factor	UUT Reading (dB)	Correction (dB)	IEC 804 Type 1 Spec.
continuous	40.0	--	--
1/10	39.9	+ 0.1	± 0.5 dB
1/10 ²	39.9	+ 0.1	
1/10 ³	39.9	+ 0.1	± 1.0 dB
1/10 ⁴	39.8	+ 0.2	

Uncertainty : ± 0.1 dB

- Remark : 1. UUT : Unit-Under-Test
 2. True Value = UUT Reading + Correction.
 3. The uncertainty claimed is for a confidence probability of not less than 95%.
 4. Atmospheric Pressure : 1 000 hPa.

----- END -----



Calibration Certificate

Certificate No. 51473

Page 1 of 2 Pages

Customer : ETS-Testconsult Limited

Address : 8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan St., Fotan, Hong Kong.

Order No. : Q50535

Date of receipt : 7-Apr-05

Item Tested

Description : Sound Level Calibrator (Equip No.: ET/0527/004)

Manufacturer : Rion

Model : NC-73

Serial No. : 10196943

Test Conditions

Date of Test : 20-Apr-05

Supply Voltage : --

Ambient Temperature : (22.5 ± 2.5)°C

Relative Humidity : (50 ± 20) %

Test Specifications

Calibration check according to customer's requirement.

Calibration procedure : F21, Z02.

Test Results

All results were within the manufacturer's specification.

The results are shown in the attached page(s).

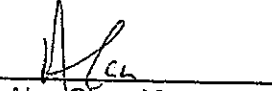
Test equipment used:

<u>Equipment No.</u>	<u>Cert. No.</u>	<u>Due Date</u>	<u>Traceable to</u>
S014	43147	7-Jul-05	PRC-NIM
S024	S41431	22-May-05	PRC-NIM
S041	43734	12-Aug-05	PRC-NIM

The values given in this Calibration Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Hong Kong Calibration Ltd. shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to International System of Units (SI).
The test results apply to the above Unit-Under-Test only

Calibrated by : 

Approved by : 
Alan Chu - Manager

Date: 20-Apr-05



Calibration Certificate

Certificate No. 51473

Page 2 of 2 Pages

Results :

1. Level Accuracy (at 1 kHz)

UUT Nominal Value	Measured Value	Mfr's Spec.
94 dB	94.1 dB	± 1 dB

Uncertainty : ± 0.2 dB

2. Frequency Accuracy

UUT Nominal Value	Measured Value	Mfr's Spec.
1 kHz	0.991 kHz	± 2 %

Uncertainty : ± 0.1 %

3. Level Stability : 0.0 dB

Uncertainty : ± 0.01 dB

4. Total Harmonic Distortion : < 0.3 %

Mfr's Spec. : < 3 %

Uncertainty : ± 2.3 % of reading

Remark : 1. UUT : Unit-Under-Test

2. The uncertainty claimed is for a confidence probability of not less than 95%.

3. Atmospheric Pressure : 1 000 hPa

4. The above measured values are the mean of 3 measurement.

-----END-----



Appendix C2

Noise Monitoring Results

Day-time Noise Monitoring

Monitoring Location: NM1 (HKIB Staff Accommodation)

Date	Start Sampling Time (hh:mm)	Noise Level dB (A)			Wind Speed (m/s)	Weather Condition
		L _{eq(30min)}	L10	L90		
01/11/05	08:32	59.2	61.2	57.3	0.8	Cloudy
08/11/05	09:01	54.5	60.8	57.2	1.0	Fine
15/11/05	08:28	59.2	60.8	57.4	1.0	Cloudy
22/11/05	10:00	58.4	60.2	55.7	1.2	Sunny
29/11/05	09:00	58.0	60.2	54.9	1.1	Cloudy

Monitoring Location: NM2 (CUHK Residence No.10)

Date	Start Sampling Time (hh:mm)	Noise Level dB (A)			Wind Speed (m/s)	Weather Condition
		L _{eq(30min)}	L10	L90		
01/11/05	11:00	56.5	58.8	53.4	0.9	Cloudy
08/11/05	10:20	55.6	58.8	52.2	0.8	Fine
15/11/05	13:55	59.9	61.3	58.7	0.8	Cloudy
22/11/05	16:50	59.5	61.2	56.0	1.0	Sunny
29/11/05	09:40	55.9	58.1	52.8	1.1	Cloudy

Mon Monitoring Location: NM3 (Cheung Shue Tan Village)

Date	Start Sampling Time (hh:mm)	Noise Level dB (A)			Wind Speed (m/s)	Weather Condition
		L _{eq(30min)}	L10	L90		
01/11/05	13:22	53.0	55.3	49.4	0.6	Cloudy
08/11/05	13:21	52.7	57.0	49.8	0.9	Fine
15/11/05	14:45	62.0	64.1	61.1	1.0	Cloudy
22/11/05	13:55	56.9	58.6	52.5	0.8	Sunny
29/11/05	13:02	53.1	55.3	49.2	1.3	Cloudy

Monitoring Location: NM8 (Near Wen Chih Tang at the CUHK)

Date	Start Sampling Time (hh:mm)	Noise Level dB (A)			Wind Speed (m/s)	Weather Condition
		L _{eq(30min)}	L10	L90		
01/11/05	13:22	55.0	57.3	51.6	0.8	Sunny
08/11/05	14:30	53.3	57.7	50.2	0.8	Fine
15/11/05	13:10	62.6	65.2	62.0	1.2	Cloudy
22/11/05	08:50	61.0	62.4	57.4	1.4	Sunny
29/11/05	15:42	56.1	57.9	53.0	0.9	Cloudy

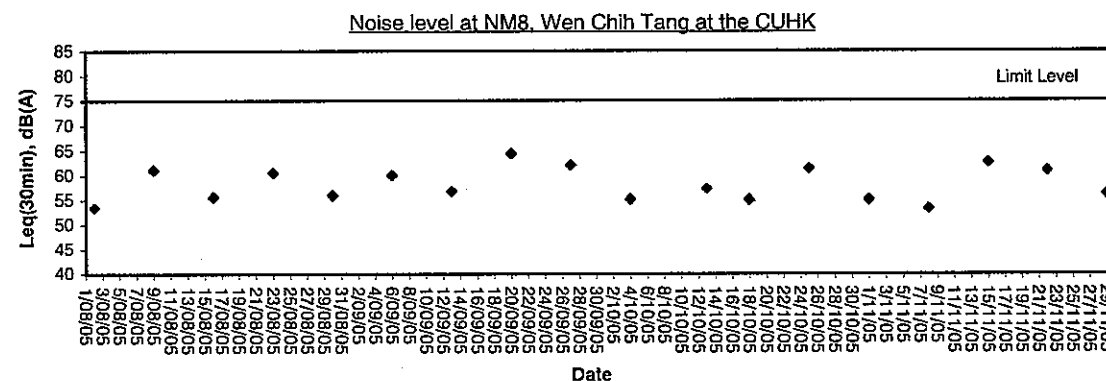
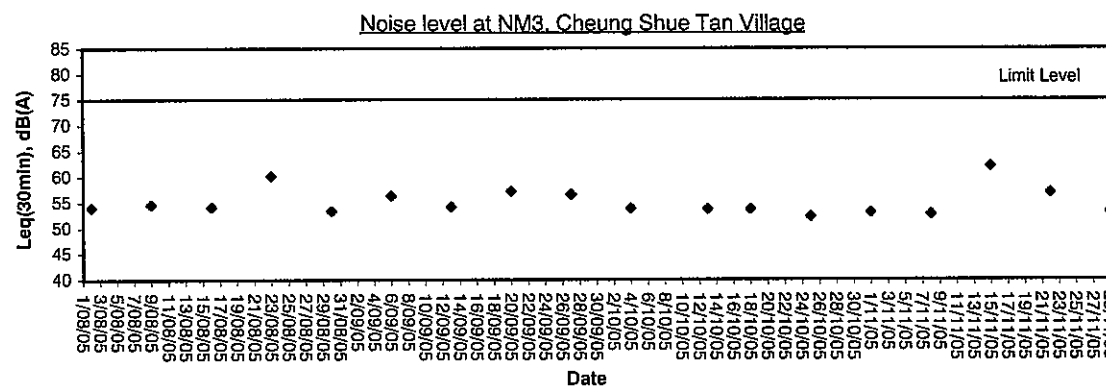
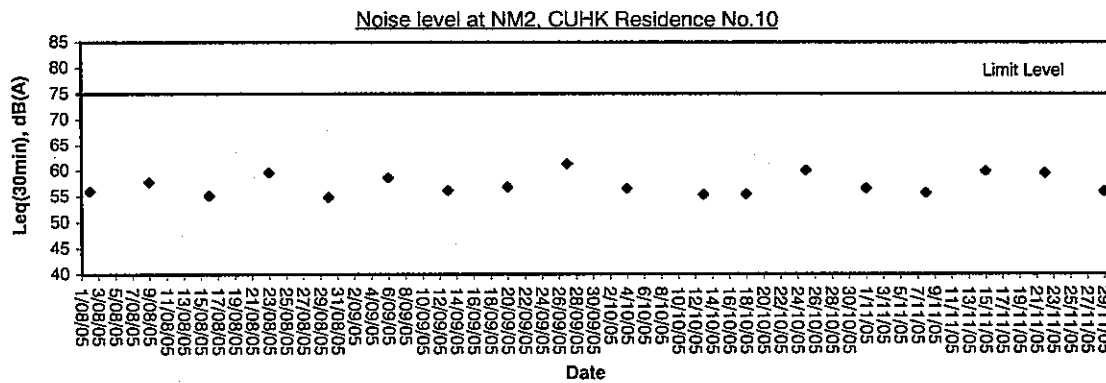
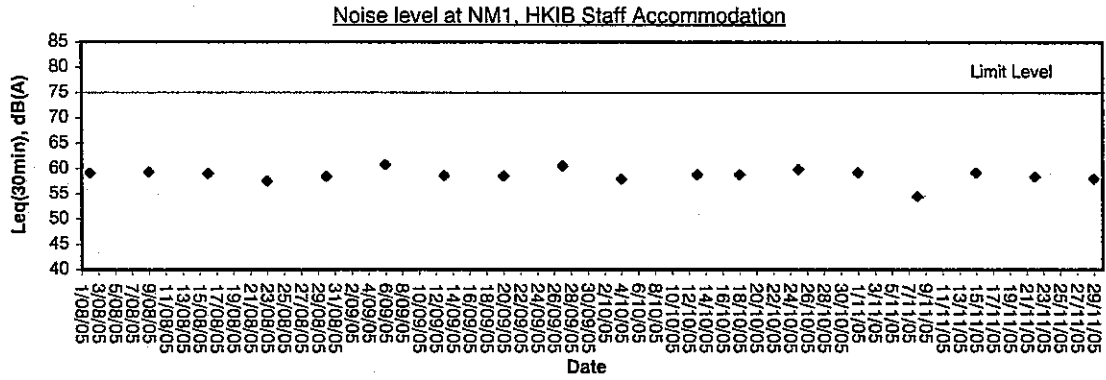


Appendix C3

Graphical Plots of Noise Monitoring Data



Noise Monitoring (Day-time)





Appendix D

Weather Condition

Weather Condition

Date	Rainfall (mm)	Max. Temp (°C)	Min. Temp. (°C)	Relative Humidity (%)	Wind Direction	Wind Speed (m/s)
01/11/05	Trace	23.8	22.0	63	E	<5
02/11/05	-	26.6	23.3	75	E	<5
03/11/05	-	27.0	23.7	76	E	<5
04/11/05	-	26.9	23.6	82	E	<5
05/11/05	-	27.6	23.8	86	E	<5
06/11/05	-	28.3	24.4	82	SW	<5
07/11/05	-	28.5	24.9	88	E	<5
08/11/05	-	27.1	24.9	87	E	<5
09/11/05	Trace	27.2	24.7	86	E	<5
10/11/05	-	28.4	24.1	86	NE	<5
11/11/05	-	27.9	24.2	85	E	<5
12/11/05	-	28.4	24.4	81	E	<5
13/11/05	-	26.2	24.7	81	E	<5
14/11/05	Trace	26.6	24.5	84	E	<5
15/11/05	1.6	24.5	20.3	81	EN	<5
16/11/05	-	23.3	19.2	72	N	<5
17/11/05	Trace	23.5	19.1	73	N	<5
18/11/05	-	23.2	19.1	69	N	<5
19/11/05	-	21.4	17.1	68	N	<5
20/11/05	-	20.6	15.4	68	N	<5
21/11/05	-	20.6	16.5	63	N	<5
22/11/05	-	21.8	16.2	63	N	<5
23/11/05	-	23.6	18.3	65	N	<5
24/11/05	-	22.9	18.9	71	E	<5
25/11/05	-	22.7	19.9	79	E	<5
26/11/05	-	24.8	19.7	78	E	<5
27/11/05	-	24.0	20.1	78	NE	<5
28/11/05	-	26.1	21.5	79	N	<5
29/11/05	Trace	25.1	21.9	75	E	<5
30/11/05	Trace	22.5	20.5	79	E	<5

Remark: Data of wind speed and wind direction were extracted from Hong Kong Observatory (Shatin Station).



Appendix E

Event-Action Plans

Event / Action Plan for Construction Noise

EVENT	ACTION			CNOTRACTOR
	ET Leader	IC(E)	ER	
Action Level	<ol style="list-style-type: none"> 1. Notify IC(E) and Contractor 2. Carry out investigation 3. Report the results of investigation to the IC(E) and Contractor 4. Discuss with the Contractor and formulate remedial measures 5. Increase monitoring frequency to check mitigation effectiveness 	<ol style="list-style-type: none"> 1. Review the analyzed results submitted by the ET 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly 3. Supervise the implementation of remedial measures 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing 2. Notify Contractor 3. Require Contractor to propose remedial measures for the analyzed noise problem 4. Ensure remedial measures are properly implemented 	<ol style="list-style-type: none"> 1. Submit noise mitigation proposal to IC(E) 2. Implement noise mitigation proposals
Limit Level	<ol style="list-style-type: none"> 1. Notify IC(E), ER, and Contractor 2. Identify source 3. Repeat measurement to confirm findings 4. Increase monitoring frequency 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented 6. Inform IC(E), ER and EPD the causes & action taken for the exceedances 7. Assess effectiveness of Contractor's remedial action and keep IC(E), EPD and ER informed to the results 8. If exceedance stops, cease additional monitoring 	<ol style="list-style-type: none"> 1. Discuss amongst ER, ET and Contractor on the potential remedial actions 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly 3. Supervise the implementation of remedial measures 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing 2. Notify Contractor 3. Require Contractor to propose remedial measures for the analysed noise problem 4. Ensure remedial measures are properly implemented 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance 2. Submit proposals for remedial actions to IC(E) within 3 working days of notification 3. Implement the agreed proposals 4. Resubmit proposals if problem still not under control 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated



Appendix F
Construction Programme

Task ID	Description	Start	Finish	Start	Finish	Start	Finish	Start	Finish	Start	Finish
SUASS1000	CEOD Approval of A.D.	29	31DEC04	28JUL05	31DEC04	28JUL05	31DEC04	28JUL05	31DEC04	28JUL05	31DEC04
Major Sub-Subactivity											
SUASS10100	Submit & Approve Preliminary Design	38	19AUG04	28SEP04	19AUG04	28SEP04	19AUG04	28SEP04	19AUG04	28SEP04	19AUG04
SUASS10200	Submit Preliminary Design to ACABAS	3	30SEP04	04OCT04	30SEP04	04OCT04	30SEP04	04OCT04	30SEP04	04OCT04	30SEP04
SUASS10300	ACABAS Approval	1	18OCT04	19OCT04	18OCT04	19OCT04	18OCT04	19OCT04	18OCT04	19OCT04	18OCT04
SUASS10400	Aesthetic Review	58	20OCT04	12JAN05	20OCT04	12JAN05	20OCT04	12JAN05	20OCT04	12JAN05	20OCT04
SUASS10500	ACABAS Submission (Landscape)	0	18MAY05	28MAY05	18MAY05	28MAY05	18MAY05	28MAY05	18MAY05	28MAY05	18MAY05
SUASS10600	Detail Design	101	100	18MAY05	28MAY05	18MAY05	28MAY05	18MAY05	28MAY05	18MAY05	28MAY05
SUASS10700	Submit Detail Design to the Engineer	0	100	27MAY05	27MAY05	27MAY05	27MAY05	27MAY05	27MAY05	27MAY05	27MAY05
SUASS10800	Engineer Approval	24	100	28JUL05	28JUL05	28JUL05	28JUL05	28JUL05	28JUL05	28JUL05	28JUL05
SUASS10900	CEOD Approval of A.D.	30	100	28JUL05	28JUL05	28JUL05	28JUL05	28JUL05	28JUL05	28JUL05	28JUL05

Task ID	Description	Start	Finish	Start	Finish	Start	Finish	Start	Finish	Start	Finish
Utilities											
Contractor Site Accommodation											
PRCS0100	Mobilization	12	100	28JUN04	10JUL04	28JUN04	10JUL04	28JUN04	10JUL04	28JUN04	10JUL04
PRCS0200	Erect Contractor Site Office	28	100	12JUL04	31JUL04	12JUL04	31JUL04	12JUL04	31JUL04	12JUL04	31JUL04

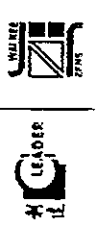
Task ID	Description	Start	Finish	Start	Finish	Start	Finish	Start	Finish	Start	Finish
PRPR0300	Arrange ULG Meeting	80	100	28JUN04	18JUL04	28JUN04	18JUL04	28JUN04	18JUL04	28JUN04	18JUL04
PRPR0400	Arrange TMLG Meeting	48	100	28JUN04	23JUL04	28JUN04	23JUL04	28JUN04	23JUL04	28JUN04	23JUL04
PRPR0500	Tree Survey	6	100	28JUN04	08AUG04	28JUN04	08AUG04	28JUN04	08AUG04	28JUN04	08AUG04
PRPR0600	Engineer Approval of Tree Survey	12	100	07AUG04	30AUG04	07AUG04	30AUG04	07AUG04	30AUG04	07AUG04	30AUG04
PRPR0700	Tree Transplant	24	100	31AUG04	31AUG04	31AUG04	31AUG04	31AUG04	31AUG04	31AUG04	31AUG04
PRPR0800	Tree Felling	12	100	30AUG04	30AUG04	30AUG04	30AUG04	30AUG04	30AUG04	30AUG04	30AUG04
PRPR0900	Procure Third Party Insurance	12	100	10JUN04	10JUN04	10JUN04	10JUN04	10JUN04	10JUN04	10JUN04	10JUN04
PRPR1000	Erect Project Sign Board	16	100	20AUG04	12MAY05	20AUG04	12MAY05	20AUG04	12MAY05	20AUG04	12MAY05
PRPR1100	1st Site Safety/Environmental Committee Meeting	24	100	28JUN04	20JUL04	28JUN04	20JUL04	28JUN04	20JUL04	28JUN04	20JUL04
PRPR1200	1st SSEMC Meeting	24	100	28JUN04	27JUL04	28JUN04	27JUL04	28JUN04	27JUL04	28JUN04	27JUL04
PRPR1300	Propose Location of Temporary Landing Facilities	24	100	10JUN04	10JUN04	10JUN04	10JUN04	10JUN04	10JUN04	10JUN04	10JUN04
PRPR1400	Engineer Approval of Temp Landing Location	12	100	27JUL04	17AUG04	27JUL04	17AUG04	27JUL04	17AUG04	27JUL04	17AUG04
PRPR1500	Provide Temp Landing Facilities	15	100	18AUG04	18AUG04	18AUG04	18AUG04	18AUG04	18AUG04	18AUG04	18AUG04
PRPR1610	Engineer Revise Dredging Plan to EPD	1	100	08SEP04	08SEP04	08SEP04	08SEP04	08SEP04	08SEP04	08SEP04	08SEP04
PRPR1700	Apply Dumping Permit	18	100	10JUN04	08JUL04	10JUN04	08JUL04	10JUN04	08JUL04	10JUN04	08JUL04
PRPR1800	Approval of Dumping Permit	42	100	08JUL04	15MAR05	08JUL04	15MAR05	08JUL04	15MAR05	08JUL04	15MAR05
PRPR1900	Propose Accurate Position Control at Disposal	6	100	25AUG04	25OCT04	25AUG04	25OCT04	25AUG04	25OCT04	25AUG04	25OCT04
PRPR2000	Engineer Approval of Proposal	12	100	28OCT04	28DEC04	28OCT04	28DEC04	28OCT04	28DEC04	28OCT04	28DEC04
PRPR2100	Provide Water Quality Monitoring Equipment	21	100	10JUN04	11OCT04	10JUN04	11OCT04	10JUN04	11OCT04	10JUN04	11OCT04
PRPR2200	Initial Sounding Plan	12	100	13SEP04	13SEP04	13SEP04	13SEP04	13SEP04	13SEP04	13SEP04	13SEP04
PRPR2300	Ordering of Precast Concrete Pipes	700	100	10JUL04	10JUL04	10JUL04	10JUL04	10JUL04	10JUL04	10JUL04	10JUL04
PRPR2400	Ordering of DI Pipes and Fittings	1	100	08FEB05	08FEB05	08FEB05	08FEB05	08FEB05	08FEB05	08FEB05	08FEB05
PRPR2500	Concrete Trial Mix	6	100	13JUL04	13JUL04	13JUL04	13JUL04	13JUL04	13JUL04	13JUL04	13JUL04
PRPR2600	Manufacture & Delivery of Seawall Blocks	220	70	10DEC04	18DEC05	10DEC04	18DEC05	10DEC04	18DEC05	10DEC04	18DEC05

Task ID	Description	Start	Finish	Start	Finish	Start	Finish	Start	Finish	Start	Finish
Utilities											
Contractor Site Accommodation											
MSSS0100	Complete Laying of Utilities	0	1580	06JAN06	31JUL05	06JAN06	31JUL05	06JAN06	31JUL05	06JAN06	31JUL05

Legend

- Early bar
- Progress bar
- Critical bar
- Summary bar
- Start milestone point
- Finish milestone point

Primavera Systems, Inc.



Complete Laying of Utilities

Manufacture & Delivery of Seawall Blocks

ID	Activity	Start	Finish	Personnel	Early Start	Early Finish	Early Start	Early Finish	Early Start	Early Finish	Early Start	Early Finish	Early Start	Early Finish	Early Start	Early Finish	Early Start	Early Finish	Early Start	Early Finish
A27TMAS100	ITTA No. 01 - Sul Cheung St. (S/S Slow Lane)	1	180	0	13FEB06	13FEB06	07MAR06	07MAR06	07MAR06	07MAR06	07MAR06	07MAR06	07MAR06	07MAR06	07MAR06	07MAR06	07MAR06	07MAR06	07MAR06	07MAR06
A27TMAS200	ITTA No. 02 - Sul Cheung St. (S/S Fast Lane)	1	180	0	24APR06	24APR06	17MAY06	17MAY06	17MAY06	17MAY06	17MAY06	17MAY06	17MAY06	17MAY06	17MAY06	17MAY06	17MAY06	17MAY06	17MAY06	17MAY06
A27TMAS300	ITTA No. 03 - Existing Ma Liu Shui Bridge	1	460	0	27MAY06	27MAY06	22JUL06	22JUL06	22JUL06	22JUL06	22JUL06	22JUL06	22JUL06	22JUL06	22JUL06	22JUL06	22JUL06	22JUL06	22JUL06	22JUL06
A27TMAS400	ITTA No. 04 - Cycle Track	1	50	0	29MAY06	29MAY06	05JUN06	05JUN06	05JUN06	05JUN06	05JUN06	05JUN06	05JUN06	05JUN06	05JUN06	05JUN06	05JUN06	05JUN06	05JUN06	05JUN06
A27TMAS500	ITTA No. 05 - Sul Cheung St. Roundabout	1	1010	0	27MAY06	27MAY06	25SEP06	25SEP06	25SEP06	25SEP06	25SEP06	25SEP06	25SEP06	25SEP06	25SEP06	25SEP06	25SEP06	25SEP06	25SEP06	25SEP06
A27TMAS600	ITTA No. 06 - Sul Cheung St. Roundabout	1	1910	0	22JUN06	22JUN06	20OCT06	20OCT06	20OCT06	20OCT06	20OCT06	20OCT06	20OCT06	20OCT06	20OCT06	20OCT06	20OCT06	20OCT06	20OCT06	20OCT06
A27TMAS700	ITTA No. 07 - Sul Cheung St. Roundabout	1	1010	0	13JUL06	13JUL06	10NOV06	10NOV06	10NOV06	10NOV06	10NOV06	10NOV06	10NOV06	10NOV06	10NOV06	10NOV06	10NOV06	10NOV06	10NOV06	10NOV06
A27TMAS800	ITTA No. 08 - Sul Cheung St. & EHL/SLB	1	50	0	21AUG06	21AUG06	20AUG06	20AUG06	20AUG06	20AUG06	20AUG06	20AUG06	20AUG06	20AUG06	20AUG06	20AUG06	20AUG06	20AUG06	20AUG06	20AUG06
A27TMAS900	ITTA No. 09 - Road D1 & Sul Cheung St. R/A	1	10	0	02DEC06	02DEC06	04DEC06	04DEC06	04DEC06	04DEC06	04DEC06	04DEC06	04DEC06	04DEC06	04DEC06	04DEC06	04DEC06	04DEC06	04DEC06	04DEC06
A27TMAS1000	Implement Permanent Traffic Scheme	1	10	0	25DEC06	25DEC06	26DEC06	26DEC06	26DEC06	26DEC06	26DEC06	26DEC06	26DEC06	26DEC06	26DEC06	26DEC06	26DEC06	26DEC06	26DEC06	26DEC06

Activity	Start	Finish	Personnel	Early Start	Early Finish	Early Start	Early Finish	Early Start	Early Finish	Early Start	Early Finish	Early Start	Early Finish	Early Start	Early Finish	Early Start	Early Finish	Early Start	Early Finish	Early Start	Early Finish		
Utility Diversion at Sul Cheung Street																							
A2NBUD0100	Trial Pile	12	100	18AUG04	06SEP04	18AUG04	06SEP04	18AUG04	06SEP04	18AUG04	06SEP04	18AUG04	06SEP04	18AUG04	06SEP04	18AUG04	06SEP04	18AUG04	06SEP04	18AUG04	06SEP04	18AUG04	06SEP04
A2NBUD0200	Liaison with CLP & WSD for Diversion Works	30	100	23AUG04	17SEP04	23AUG04	17SEP04	23AUG04	17SEP04	23AUG04	17SEP04	23AUG04	17SEP04	23AUG04	17SEP04	23AUG04	17SEP04	23AUG04	17SEP04	23AUG04	17SEP04	23AUG04	17SEP04
A2NBUD0300	Submit TTA for Approval	24	100	16SEP04	23SEP04	16SEP04	23SEP04	16SEP04	23SEP04	16SEP04	23SEP04	16SEP04	23SEP04	16SEP04	23SEP04	16SEP04	23SEP04	16SEP04	23SEP04	16SEP04	23SEP04	16SEP04	23SEP04
A2NBUD0400	Implement TTA	1	100	03NOV04	03NOV04	03NOV04	03NOV04	03NOV04	03NOV04	03NOV04	03NOV04	03NOV04	03NOV04	03NOV04	03NOV04	03NOV04	03NOV04	03NOV04	03NOV04	03NOV04	03NOV04	03NOV04	03NOV04
A2NBUD0500	CLP 11kV Cables Diversion	21	100	10JAN05	18JAN05	10JAN05	18JAN05	10JAN05	18JAN05	10JAN05	18JAN05	10JAN05	18JAN05	10JAN05	18JAN05	10JAN05	18JAN05	10JAN05	18JAN05	10JAN05	18JAN05	10JAN05	18JAN05
A2NBUD0510	CLP 132kV Cable Ducts Diversion	11	100	26DEC04	08JAN05	26DEC04	08JAN05	26DEC04	08JAN05	26DEC04	08JAN05	26DEC04	08JAN05	26DEC04	08JAN05	26DEC04	08JAN05	26DEC04	08JAN05	26DEC04	08JAN05	26DEC04	08JAN05
A2NBUD0600	Watermain Diversion & Advance Notice to WSD	30	100	08NOV04	11JAN05	08NOV04	11JAN05	08NOV04	11JAN05	08NOV04	11JAN05	08NOV04	11JAN05	08NOV04	11JAN05	08NOV04	11JAN05	08NOV04	11JAN05	08NOV04	11JAN05	08NOV04	11JAN05
A2NBUD0610	Watermain Connection by WSD	18	100	22JAN05	22JAN05	22JAN05	22JAN05	22JAN05	22JAN05	22JAN05	22JAN05	22JAN05	22JAN05	22JAN05	22JAN05	22JAN05	22JAN05	22JAN05	22JAN05	22JAN05	22JAN05	22JAN05	22JAN05
A2NBUD0700	Diversion of Ext. Drainage at VA (V00053B)	24	130	09DEC05	08JAN06	09DEC05	08JAN06	09DEC05	08JAN06	09DEC05	08JAN06	09DEC05	08JAN06	09DEC05	08JAN06	09DEC05	08JAN06	09DEC05	08JAN06	09DEC05	08JAN06	09DEC05	08JAN06

Activity	Start	Finish	Personnel	Early Start	Early Finish	Early Start	Early Finish	Early Start	Early Finish	Early Start	Early Finish	Early Start	Early Finish	Early Start	Early Finish	Early Start	Early Finish	Early Start	Early Finish	Early Start	Early Finish		
Existing Structures Survey																							
A2NBES0100	Existing Bridge & Road Survey	12	100	07JUL04	20JUL04	07JUL04	20JUL04	07JUL04	20JUL04	07JUL04	20JUL04	07JUL04	20JUL04	07JUL04	20JUL04	07JUL04	20JUL04	07JUL04	20JUL04	07JUL04	20JUL04	07JUL04	20JUL04
A2NBES0200	Submit Monitoring Proposal	12	100	18AUG04	18AUG04	18AUG04	18AUG04	18AUG04	18AUG04	18AUG04	18AUG04	18AUG04	18AUG04	18AUG04	18AUG04	18AUG04	18AUG04	18AUG04	18AUG04	18AUG04	18AUG04	18AUG04	18AUG04
A2NBES0300	Engineer Approval of Monitoring Proposal	12	100	24AUG04	30AUG04	24AUG04	30AUG04	24AUG04	30AUG04	24AUG04	30AUG04	24AUG04	30AUG04	24AUG04	30AUG04	24AUG04	30AUG04	24AUG04	30AUG04	24AUG04	30AUG04	24AUG04	30AUG04

Activity	Start	Finish	Personnel	Early Start	Early Finish	Early Start	Early Finish	Early Start	Early Finish	Early Start	Early Finish	Early Start	Early Finish	Early Start	Early Finish	Early Start	Early Finish	Early Start	Early Finish	Early Start	Early Finish			
Pre-drilling Works																								
A2NBPR0100	Submit the Coordinates of Culvert	1	100	28AUG04	28AUG04	28AUG04	28AUG04	28AUG04	28AUG04	28AUG04	28AUG04	28AUG04	28AUG04	28AUG04	28AUG04	28AUG04	28AUG04	28AUG04	28AUG04	28AUG04	28AUG04	28AUG04	28AUG04	
A2NBPR0200	Pre-drilling (Voided Abutment)	48	100	25SEP04	11NOV04	25SEP04	11NOV04	25SEP04	11NOV04	25SEP04	11NOV04	25SEP04	11NOV04	25SEP04	11NOV04	25SEP04	11NOV04	25SEP04	11NOV04	25SEP04	11NOV04	25SEP04	11NOV04	25SEP04
A2NBPR0400	Pre-drilling (Pier)	30	100	25SEP04	23OCT04	25SEP04	23OCT04	25SEP04	23OCT04	25SEP04	23OCT04	25SEP04	23OCT04	25SEP04	23OCT04	25SEP04	23OCT04	25SEP04	23OCT04	25SEP04	23OCT04	25SEP04	23OCT04	25SEP04
A2NBPR0600	Pre-drilling (North Abutment)	24	100	27AUG04	24SEP04	27AUG04	24SEP04	27AUG04	24SEP04	27AUG04	24SEP04	27AUG04	24SEP04	27AUG04	24SEP04	27AUG04	24SEP04	27AUG04	24SEP04	27AUG04	24SEP04	27AUG04	24SEP04	27AUG04
A2NBPR0700	Submit Proposed Founding Level (Voided Abut.)	12	100	01APR05	20APR05	01APR05	20APR05	01APR05	20APR05	01APR05	20APR05	01APR05	20APR05	01APR05	20APR05	01APR05	20APR05	01APR05	20APR05	01APR05	20APR05	01APR05	20APR05	
A2NBPR0800	Engineer Approve Founding Level (Voided Abut.)	12	100	21APR05	20APR05	21APR05	20APR05	21APR05	20APR05	21APR05	20APR05	21APR05	20APR05	21APR05	20APR05	21APR05	20APR05	21APR05	20APR05	21APR05	20APR05	21APR05	20APR05	
A2NBPR1100	Submit Proposed Founding Level (Pier)	8	100	01APR05	20APR05	01APR05	20APR05	01APR05	20APR05	01APR05	20APR05	01APR05	20APR05	01APR05	20APR05	01APR05	20APR05	01APR05	20APR05	01APR05	20APR05	01APR05	20APR05	
A2NBPR1200	Engineer Approval of Founding Level (Pier)	12	100	21APR05	20APR05	21APR05	20APR05	21APR05	20APR05	21APR05	20APR05	21APR05	20APR05	21APR05	20APR05	21APR05	20APR05	21APR05	20APR05	21APR05	20APR05	21APR05	20APR05	
A2NBPR1300	Submit Proposed Founding Level (N-Abutment)	8	100	01APR05	20APR05	01APR05	20APR05	01APR05	20APR05	01APR05	20APR05	01APR05	20APR05	01APR05	20APR05	01APR05	20APR05	01APR05	20APR05	01APR05	20APR05	01APR05	20APR05	
A2NBPR1400	Engineer Approval of Founding Level (N-Abutment)	12	100	21APR05	20APR05	21APR05	20APR05	21APR05	20APR05	21APR05	20APR05	21APR05	20APR05	21APR05	20APR05	21APR05	20APR05	21APR05	20APR05	21APR05	20APR05	21APR05	20APR05	
A2NBPR1500	Preloading at North Abutment & Up Ramp	100	461	27JUN05	15OCT05	27JUN05	15OCT05	27JUN05	15OCT05	27JUN05	15OCT05	27JUN05	15OCT05	27JUN05	15OCT05	27JUN05	15OCT05	27JUN05	15OCT05	27JUN05	15OCT05	27JUN05	15OCT05	

Activity	Start	Finish	Personnel	Early Start	Early Finish	Early Start	Early Finish	Early Start	Early Finish	Early Start	Early Finish	Early Start	Early Finish	Early Start	Early Finish	Early Start	Early Finish	Early Start	Early Finish	Early Start	Early Finish			
Piling Works																								
A2NBPW0100	Mobilization of Piling Plants	6	100	06AUG05	22AUG05	06AUG05	22AUG05	06AUG05	22AUG05	06AUG05	22AUG05	06AUG05	22AUG05	06AUG05	22AUG05	06AUG05	22AUG05	06AUG05	22AUG05	06AUG05	22AUG05	06AUG05	22AUG05	
A2NBPW0200	Construct Pier AV1-AV17	60	10	12	23AUG05	07DEC05	23AUG05	07DEC05	23AUG05	07DEC05	23AUG05	07DEC05	23AUG05	07DEC05	23AUG05	07DEC05	23AUG05	07DEC05	23AUG05	07DEC05	23AUG05	07DEC05	23AUG05	07DEC05
A2NBPW1000	Construct Pier P1-P12	36	240	0	28SEP05	10NOV05	28OCT05	09DEC05	09DEC05	09DEC05	09DEC05	09DEC05	09DEC05	09DEC05	09DEC05	09DEC05	09DEC05	09DEC05	09DEC05	09DEC05	09DEC05	09DEC05	09DEC05	09DEC05
A2NBPW1500	Construct N-Abutment Pile AN1-AN6	24	240	0	11NOV05	09DEC05	09DEC05	09DEC05	09DEC05	09DEC05	09DEC05	09DEC05	09DEC05	09DEC05	09DEC05	09DEC05	09DEC05	09DEC05	09DEC05	09DEC05	09DEC05	09DEC05	09DEC05	09DEC05
A2NBPW1510	Load Test at Voided Abutment & Pier (Optional)	24	10	0	09DEC05	06JAN06	06DEC05	06JAN06	06DEC05	06JAN06	06DEC05	06JAN06	06DEC05	06JAN06	06DEC05	06JAN06	06DEC05	06JAN06	06DEC05	06JAN06	06DEC05	06JAN06	06DEC05	
A2NBPW1600	Load Test at North Abutment (Optional)	24	240	0	09DEC05	07JAN06	06JAN06	06JAN06	06DEC05	06JAN06	06DEC05	06JAN06</												

ID #	Description	Start	Finish	Start	Finish	Start	Finish	Start	Finish	Start	Finish
A2NBVA000	Construct Ground Beams (Stage 3)	12/12	07/JAN/06	20/JAN/06	09/JAN/06	21/JAN/06	07/FEB/06				
A2NBVA010	Construct Ground Beams (Stage 4)	12/12	07/FEB/06	08/FEB/06	23/JAN/06	18/MAR/06	07/FEB/06				
A2NBVA020	Construct Ground Beams (Stage 5)	12/12	07/FEB/06	20/FEB/06	03/MAR/06	14/MAR/06	07/FEB/06				
A2NBVA030	Construct Wall (Stage 1)	18/130	07/FEB/06	27/FEB/06	22/FEB/06	14/MAR/06	07/FEB/06				
A2NBVA040	Construct Wall (Stage 2)	18/130	07/FEB/06	20/MAR/06	15/MAR/06	05/APR/06	07/FEB/06				
A2NBVA050	Construct Wall (Stage 3)	16/16	07/FEB/06	24/FEB/06	08/FEB/06	25/FEB/06	07/FEB/06				
A2NBVA060	Construct Wall (Stage 4)	16/16	07/FEB/06	15/MAR/06	17/MAR/06	18/MAR/06	07/FEB/06				
A2NBVA070	Construct Wall (Stage 5)	16/16	07/FEB/06	03/APR/06	17/MAR/06	05/APR/06	07/FEB/06				
A2NBVA100	Construct Slab	38/870	05/APR/06	17/MAY/06	24/JUN/06	05/AUG/06	07/FEB/06				
A2NBPA0100	Construct Pile Cap	12/400	07/JAN/06	20/JAN/06	25/FEB/06	10/MAR/06	07/FEB/06				
A2NBPA0200	Construct Columns	21/400	07/JAN/06	18/FEB/06	11/MAR/06	05/APR/06	07/FEB/06				

ID #	Description	Start	Finish	Start	Finish	Start	Finish	Start	Finish	Start	Finish
A2NBVA030	Construct RC Wall Type A	18/240	08/JAN/06	26/JAN/06	08/FEB/06	28/FEB/06	08/JAN/06				
A2NBVA040	Fix RE Wall to Face of Abutment & RC Wall	36/330	01/FEB/06	14/MAR/06	11/MAR/06	22/APR/06	01/FEB/06				
A2NBVA050	Construct Pile Cap	30/270	13/APR/06	23/MAY/06	18/MAY/06	27/JUN/06	13/APR/06				
A2NBVA100	Construct Abutment Walls	18/240	01/FEB/06	21/FEB/06	01/MAR/06	21/MAR/06	01/FEB/06				
A2NBVA120	Construct RC Wall Type A	24/240	02/FEB/06	21/MAR/06	22/MAR/06	19/APR/06	02/FEB/06				
A2NBVA140	Construct RC Wall Type B	36/270	02/MAR/06	01/MAY/06	24/APR/06	08/JUN/06	02/MAR/06				
A2NBVA160	Construct RC Wall Type C	36/330	01/FEB/06	14/MAR/06	11/MAR/06	22/APR/06	01/FEB/06				
A2NBVA180	Construct RC Wall Type C	18/330	01/MAR/06	06/APR/06	24/APR/06	18/MAY/06	01/MAR/06				

ID #	Description	Start	Finish	Start	Finish	Start	Finish	Start	Finish	Start	Finish
A2NBDA0100	Erect Scaffolding	18/18	05/APR/06	25/APR/06	06/APR/06	28/APR/06	05/APR/06				
A2NBDA0200	Erect Formwork (Bottom Slab)	12/18	02/APR/06	10/MAY/06	27/APR/06	11/MAY/06	02/APR/06				
A2NBDA0300	Steel Fixing	8/130	01/MAY/06	16/MAY/06	28/MAY/06	05/JUN/06	01/MAY/06				
A2NBDA0400	Erect Formwork (Kicker)	8/130	02/MAY/06	29/MAY/06	06/JUN/06	14/JUN/06	02/MAY/06				
A2NBDA0500	Concreting	1/130	03/MAY/06	30/MAY/06	15/JUN/06	15/JUN/06	03/MAY/06				
A2NBDA0600	Erect Formwork (Diaphragm & Top Slab)	10/130	01/JUN/06	12/JUN/06	16/JUN/06	27/JUN/06	01/JUN/06				
A2NBDA0700	Steel Fixing	8/130	03/JUN/06	21/JUN/06	28/JUN/06	07/JUL/06	03/JUN/06				
A2NBDA0800	Concreting	1/130	02/JUN/06	22/JUN/06	08/JUL/06	08/JUL/06	02/JUN/06				
A2NBDA0900	Install, Stress Tendons & Grouting	24/16	08/JUL/06	04/AUG/06	10/JUL/06	05/AUG/06	08/JUL/06				
A2NBDA1000	Remove Formwork & Scaffolding	8/450	01/AUG/06	21/AUG/06	04/OCT/06	18/OCT/06	01/AUG/06				
A2NBDA1100	Construct Piercap	70/16	05/AUG/06	28/OCT/06	07/AUG/06	27/OCT/06	05/AUG/06				
A2NBDA1200	Construct Centre Barrier	36/16	02/SEP/06	03/NOV/06	22/SEP/06	04/NOV/06	02/SEP/06				

ID #	Description	Start	Finish	Start	Finish	Start	Finish	Start	Finish	Start	Finish
A2NBDC0100	Erect Scaffolding	18/240	02/MAR/06	12/APR/06	20/APR/06	11/MAY/06	02/MAR/06				
A2NBDC0200	Erect Formwork (Bottom Slab)	12/16	01/MAY/06	24/MAY/06	13/MAY/06	25/MAY/06	01/MAY/06				
A2NBDC0300	Steel Fixing	8/16	02/MAY/06	03/JUN/06	28/MAY/06	05/JUN/06	02/MAY/06				
A2NBDC0400	Erect Formwork (Kicker)	8/16	05/JUN/06	13/JUN/06	06/JUN/06	14/JUN/06	05/JUN/06				
A2NBDC0500	Concreting	1/16	04/JUN/06	14/JUN/06	15/JUN/06	15/JUN/06	04/JUN/06				
A2NBDC0600	Erect Formwork (Diaphragm & Top Slab)	10/16	01/JUN/06	26/JUN/06	16/JUN/06	27/JUN/06	01/JUN/06				
A2NBDC0700	Steel Fixing	8/16	02/JUN/06	08/JUL/06	28/JUN/06	07/JUL/06	02/JUN/06				
A2NBDC0800	Concreting	1/16	07/JUL/06	08/JUL/06	08/JUL/06	08/JUL/06	07/JUL/06				
A2NBDC0900	Install, Stress Tendons & Grouting	24/16	07/JUL/06	04/AUG/06	10/JUL/06	05/AUG/06	07/JUL/06				
A2NBDC1000	Remove Formwork & Scaffolding	8/380	01/AUG/06	28/AUG/06	04/OCT/06	18/OCT/06	01/AUG/06				
A2NBDC1100	Construct Piercap	70/16	03/AUG/06	28/OCT/06	07/AUG/06	27/OCT/06	03/AUG/06				

Legend:

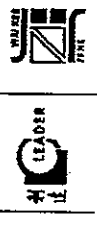
- Empty bar
- Progress bar
- Critical bar
- Summary bar
- Start milestone point
- Finish milestone point

Project Information:

Project Name: Leader - Wat Kee (C&T) Joint Venture
 Project ID: TP37/03 - Revised Works Programme - RP04



Client: LEADER
 Consultant: WAT KEE

AS ID	Description	Orig Dur	Total Float	Percent Complete	Early Start	Early Finish	Late Start	Late Finish	2005												
									JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
AZMBDC1200	Completed Centre Barrier	30	1d	0	21SEP06	03NOV06	22SEP06	04NOV06	Completed CA												
Discharge Works																					
AZBMAW0100	Install Drainage System	18	7d	0	05OCT06	26OCT06	14OCT06	04NOV06	<ul style="list-style-type: none"> ■ Install Drainage ■ Install Aluminium ■ Install Pub ■ Soft Lighting 												
AZBMAW0200	Install Aluminium Rail	18	7d	0	05OCT06	26OCT06	14OCT06	04NOV06													
AZBMAW0300	Install Public Lighting Post	12	13d	0	27OCT06	10NOV06	13NOV06	25NOV06													
AZBMAW0400	Soft Lighting	6	45d	0	05AUG06	11AUG06	27SEP06	03OCT06													
Roads and Pavement																					
AZBMRP0100	North Abutment - Backfill to Formation	40	98d	0	08APR06	23MAY06	03AUG06	18SEP06	<ul style="list-style-type: none"> ■ North Abutment - Backfill to Formation ■ North Abutment - Lay Subbase ■ Road Pav 												
AZBMRP0200	North Abutment - Lay Subbase	8	93d	0	30JUN06	10JUL06	26OCT06	04NOV06													
AZBMRP0300	Road Pavement	18	1d	0	04NOV06	24NOV06	08NOV06	25NOV06													
Road Marking, Traffic Signs and Fencing																					
AZBMRM0100	Apply Road Marking	6	1d	0	25NOV06	01DEC06	27NOV06	02DEC06	<ul style="list-style-type: none"> ■ Apply ■ Ered Sign 												
AZBMRM0200	Ered Signage	12	1d	0	11NOV06	24NOV06	18NOV06	25NOV06													
Remaining Work																					
AZREEA0100	Remove Ext Surcharge Mound	22	45d	0	24OCT06	17NOV06	15DEC06	11JAN06	<ul style="list-style-type: none"> ■ Remove Ext Surcharge Mound 												
Bay 1																					
AZREWA0100	Bay 1	16	45d	0	18NOV06	08DEC06	12JAN06	01FEB06													
AZREWA0200	Bay 2	14	45d	0	07DEC06	27DEC06	02FEB06	17FEB06													
AZREWA0300	Bay 3	14	45d	0	23DEC06	10JAN06	18FEB06	08MAR06													
AZREWA0400	Bay 4	14	45d	0	11JAN06	20JAN06	07MAR06	22MAR06													
AZREWA0500	Bay 5	14	47d	0	18NOV06	03DEC06	14JAN06	01FEB06													
AZREWA0600	Bay 6	14	47d	0	08DEC06	20DEC06	02FEB06	17FEB06													
AZREWA0700	Bay 7	14	47d	0	21DEC06	07JAN06	18FEB06	08MAR06													
AZREWA0800	Bay 8	14	47d	0	06JAN06	24JAN06	07MAR06	22MAR06													
AZREWA0900	Bay 9	14	26d	0	28DEC06	12JAN06	02FEB06	17FEB06													
AZREWA1000	Bay 10	14	26d	0	13JAN06	20JAN06	18FEB06	08MAR06													
AZREWA1100	Bay 11	14	26d	0	01FEB06	18FEB06	07MAR06	22MAR06													
AZREWA1200	Filling to Road Formation Levels	20	26d	0	08FEB06	28FEB06	11MAR06	03APR06	<ul style="list-style-type: none"> ■ Filling to Road Formation Levels 												
Road B1																					
Discharge Works																					
AZRDON0100	Decide Exact Location of Manholes & Catchpits	1	125d	0	30SEP06	30SEP06	28FEB06	28FEB06	<ul style="list-style-type: none"> ■ Decide Exact Location of Manholes & Catchpits 												
AZRDOW0200	S615 - S705	38	5d	0	10FEB06	23MAR06	18FEB06	31MAR06	<ul style="list-style-type: none"> ■ S615 - S705 ■ S628 - S638 ■ S616 - S629 ■ S688 - S710 ■ S610A - S610 (TTA No. 01) ■ S610 - S710 (TTA No. 04) ■ Replace 600 Pipe by 900 Pipe (TTA No. 04) ■ Reconstruct Ext MH w 1800 Chamber (TTA No. 08) ■ Contract Gullies to Existing Pipe (TTA No. 08) 												
AZRDOW0300	S628 - S628	31	90d	0	24MAY06	20JUN06	18SEP06	25OCT06													
AZRDOW0350	S610 - S629	24	85d	0	01MAR06	28MAR06	12JUN06	10JUL06													
AZRDOW0400	S688 - S710	27	50d	0	21DEC06	23JAN06	01MAR06	31MAR06													
AZRDOW0500	S610A - S610 (TTA No. 01)	20	19d	0	14FEB06	09MAR06	09MAR06	30MAR06													
AZRDOW0600	S610 - S710 (TTA No. 04)	22	26d	0	30MAY06	24JUN06	30JUN06	28JUL06													
AZRDOW0700	Replace 600 Pipe by 900 Pipe (TTA No. 04)	20	20d	0	30MAY06	23JUN06	23JUN06	17JUL06													
AZRDOW0800	Reconstruct Ext MH w 1800 Chamber (TTA No. 08)	22	31d	0	22AUG06	18SEP06	27SEP06	23OCT06													
AZRDOW0900	Contract Gullies to Existing Pipe (TTA No. 08)	18	5d	0	12SEP06	02OCT06	18SEP06	08OCT06	<ul style="list-style-type: none"> ■ Reconstruct Ext MH w ■ Contract Gullies to 												
Utility Works																					
AZRDUT0300	NWT & HGC - Laying Cable Duct	17	5d	0	27MAR06	15APR06	01APR06	21APR06	<ul style="list-style-type: none"> ■ NWT & HGC - Laying Cable Duct ■ NWT & HGC Cable Connection ■ WT&T - Laying Cable Duct ■ WT&T - Cable Connection ■ PCCW - Laying Cable Duct ■ PCCW - Cable Connection 												
AZRDUT0310	NWT & HGC Cable Connection	27	13d	0	17APR06	18MAY06	03MAY06	03JUN06													
AZRDUT0400	WT&T - Laying Cable Duct	17	5d	0	17APR06	08MAY06	22APR06	12MAY06													
AZRDUT0410	WT&T - Cable Connection	28	170d	0	08MAY06	07JUN06	27NOV06	28DEC06													
AZRDUT0500	PCCW - Laying Cable Duct	40	5d	0	17APR06	03JUN06	22APR06	06JUN06													
AZRDUT0610	PCCW - Cable Connection	28	147d	0	05JUN06	05JUL06	27NOV06	28DEC06													



Legend:
 ■ Early bar
 ■ Progress bar
 ■ Critical bar
 ■ Summary bar
 ◆ Start milestone point
 ◆ Finish milestone point

Activity ID	Activity Description	Orig. Dur.	Units	Percent Complete	Early Start	Early Finish	Late Start	Late Finish	
AZCP0000	Public Lighting Controller	15	880	0	18JUL06	28JUL06	06DEC06	18DEC06	
AZCP0000	Lighting Drawoff & Cable Duct	15	880	0	18JUL06	03AUG06	31OCT06	16NOV06	
Roads and Paving									
AZCRP0100	Trim Formation & Lay Subbase	6	960	0	14AUG06	22AUG06	06DEC06	14DEC06	
AZCRP0200	Road Pavement	6	960	0	23AUG06	31AUG06	15DEC06	23DEC06	
AZCRP0300	Construct Footpath	18	880	0	14AUG06	02SEPT06	27NOV06	10DEC06	
Road Marking, Traffic Sign and Fencing									
AZCPM0100	Apply Road Marking	2	860	0	11SEP06	12SEP06	25DEC06	28DEC06	
AZCPM0200	Erect Signage	6	680	0	04SEP06	09SEP06	18DEC06	23DEC06	
AZCPM0300	Install Railing, Fencing & etc	6	680	0	04SEP06	09SEP06	18DEC06	23DEC06	
Amenity Area									
AZAMW0100	Construct U-Channels	18	1160	0	18JUL06	07AUG06	08DEC06	28DEC06	
Utility Works									
AZAMU0100	Water Point WP-1.3 to Water Meter No.1	18	610	0	09SEP06	26SEP06	22NOV06	12DEC06	
AZAMU0200	Water Point WP-2.3 to Water Meter No.2	17	1360	0	23JUN06	18JUL06	07DEC06	28DEC06	
AZAMU0300	Water Point WP-3.6 to Water Meter No.3	20	1070	0	22JUL06	21AUG06	27NOV06	28DEC06	
AZAMU0400	Water Point WP-2 to Water Meter No.6	12	610	0	30SEP06	14OCT06	13DEC06	28DEC06	
Section 3									
LA L10 Shed Subway									
Earthworks									
A3MSEA0100	Remove Surcharge Mound	18	60	0	30SEP06	22OCT06	07OCT06	28OCT06	
Pump House Construction									
A3MSPH0100	Construct Base Slab	8	60	0	07NOV06	15NOV06	12NOV06	21NOV06	
A3MSPH0200	Construct Wall into Barrel Base Slab	8	60	0	16NOV06	24NOV06	22NOV06	30NOV06	
A3MSPH0300	Construct Wall up to Top Slab	12	60	0	08DEC06	22DEC06	15DEC06	30DEC06	
A3MSPH0400	Construct Top Slab	12	60	0	08JAN06	21JAN06	16JAN06	03FEB06	
A3MSPH0500	Install Hoisting Beam	6	60	0	02JAN06	07JAN06	07JAN06	13JAN06	
Subway Entry Construction									
A3MSSE0100	Excavation	24	60	0	24OCT06	19NOV06	29OCT06	29NOV06	
A3MSSE0200	Construct Subway #1 Base Slab	6	300	0	21NOV06	30NOV06	28DEC06	06JAN06	
A3MSSE0300	Construct Subway #2 Base Slab	9	170	0	17NOV06	26NOV06	07DEC06	16DEC06	
A3MSSE0400	Construct Subway #3 Base Slab	9	160	0	07NOV06	16NOV06	18NOV06	28NOV06	
A3MSSE0500	Construct Subway #4 Base Slab	12	60	0	25NOV06	05DEC06	01DEC06	14DEC06	
A3MSSE0600	Construct Subway #1 Wall + Top Slab	16	100	0	24DEC06	13JAN06	07JAN06	25JAN06	
A3MSSE0700	Construct Subway #2 Wall + Top Slab	16	100	0	08DEC06	23DEC06	17DEC06	06JAN06	
A3MSSE0800	Construct Subway #3 Wall + Top Slab	16	100	0	17NOV06	05DEC06	29NOV06	18DEC06	
A3MSSE0900	Construct Subway #4 Wall + Top Slab	16	50	0	08JAN06	28JAN06	14JAN06	03FEB06	
A3MSSE1000	Backfilling	18	60	0	20JAN06	11FEB06	24JAN06	17FEB06	
Subway East Ramp Construction									
A3MSSE0100	Excavation (East Ramp)	24	60	0	31OCT06	28NOV06	06NOV06	02DEC06	
A3MSSE0200	Construct E1 Ramp Base Slab	6	110	0	12DEC06	17DEC06	24DEC06	02JAN06	
A3MSSE0300	Construct E2 Ramp Base Slab	6	110	0	08DEC06	10DEC06	17DEC06	23DEC06	
A3MSSE0400	Construct E3 Ramp Base Slab	6	90	0	28NOV06	03DEC06	08DEC06	14DEC06	
A3MSSE0500	Construct E4 Ramp Base Slab	6	80	0	18NOV06	28NOV06	28NOV06	07DEC06	
A3MSSE0600	Construct E5 Ramp Base Slab	6	110	0	02DEC06	10DEC06	16DEC06	23DEC06	
A3MSSE0700	Construct E6 Ramp Base Slab	6	90	0	23NOV06	01DEC06	03DEC06	12DEC06	
A3MSSE1000	Construct E7 Ramp Base Slab	12	60	0	06NOV06	22NOV06	19NOV06	28NOV06	

Leader - Wai Kee (C&T) Joint Venture
TP3703 - Revised Works Programme - RP04

IT 018	10JUN04
1ST DRG	20OCT07
2ND DRG	28SEP06
IN DRG	17OCT05
3RD DRG	13A

█ Entity bar
█ Progress bar
█ Critical bar
█ Summary bar
◆ Start milestone point
◆ Finish milestone point

AS ID	AS ID	Description	Orig Dur	Total Float	Percent Complete	Early Start	Early Finish	Late Start	Late Finish	Rev
A3MSSE1100	6	Construct E8 Ramp Base Slab	6	131	0	23NOV05	01DEC05	08DEC05	18DEC05	1
A3MSSE1300	8	Construct E9 Ramp Base Slab	8	156	0	02DEC05	10DEC05	20DEC05	30DEC05	2
A3MSSE1400	6	Construct E1 Ramp Walls	6	94	0	21DEC05	28DEC05	03JAN06	06JAN06	3
A3MSSE1500	6	Construct E2 Ramp Walls	6	94	0	14DEC05	20DEC05	24DEC05	02JAN06	4
A3MSSE1600	6	Construct E3 Ramp Walls	6	94	0	07DEC05	13DEC05	17DEC05	23DEC05	5
A3MSSE1700	8	Construct E4 Ramp Walls	8	94	0	28NOV05	06DEC05	08DEC05	16DEC05	6
A3MSSE2000	10	Construct E5 Ramp Walls	10	54	0	18DEC05	31DEC05	24DEC05	06JAN06	7
A3MSSE2100	10	Construct E6 Ramp Walls	10	54	0	07DEC05	17DEC05	13DEC05	23DEC05	8
A3MSSE2200	12	Construct E7 Ramp Walls	12	54	0	23NOV05	06DEC05	28NOV05	12DEC05	9
A3MSSE2300	10	Construct E8 Ramp Walls	10	88	0	07DEC05	17DEC05	17DEC05	30DEC05	10
A3MSSE2500	8	Construct E9 Ramp Walls	8	94	0	18DEC05	24DEC05	31DEC05	06JAN06	11
A3MSSE2600	20	Backfilling	20	50	0	18DEC05	10JAN06	22DEC05	18JAN06	12
A3MSSE2700	18	Install Roof Steel Posts	18	820	0	11JAN06	02FEB06	27MAR06	17APR06	13
A3MSSE2800	12	Construct Roof Slab E8	12	824	0	03FEB06	16FEB06	18APR06	02MAY06	14
A3MSSE2900	12	Construct Roof Slab E5	12	824	0	17FEB06	02MAR06	03MAY06	18MAY06	15
A3MSSE3000	12	Construct Roof Slab E4, E7	12	824	0	03MAR06	16MAR06	17MAY06	30MAY06	16
A3MSSE3100	12	Construct Roof Slab E3, E6	12	820	0	17MAR06	30MAR06	01JUN06	14JUN06	17
A3MSSE3200	12	Construct Roof Slab E2	12	820	0	31MAR06	14APR06	15JUN06	28JUN06	18
A3MSSE3500	12	Construct Roof Slab E1, E9	12	824	0	15APR06	28APR06	28JUN06	13JUL06	19
Subtotal/Summary										
A3MSW0100	41	Excavation (Western Ramp)	41	203	0	28NOV05	16JAN06	21DEC05	10FEB06	20
A3MSW0200	6	Construct W1 Ramp Base Slab	6	439	0	17JAN06	25JAN06	10MAR06	18MAR06	21
A3MSW0300	8	Construct W2 Ramp Base Slab	8	420	0	08JAN06	14JAN06	27FEB06	07MAR06	22
A3MSW0400	10	Construct W3 Ramp Base Slab	10	203	0	23DEC05	05JAN06	18JAN06	28JAN06	23
A3MSW0500	12	Construct W4 Ramp Base Slab	12	203	0	09DEC05	22DEC05	04JAN06	17JAN06	24
A3MSW0600	10	Construct W5 Ramp Base Slab	10	203	0	23DEC05	05JAN06	18JAN06	28JAN06	25
A3MSW0700	8	Construct W6 Ramp Base Slab	8	524	0	08JAN06	14JAN06	10MAR06	18MAR06	26
A3MSW0800	10	Construct W1 Ramp Walls	10	203	0	24FEB06	07MAR06	20MAR06	30MAR06	27
A3MSW0900	10	Construct W2 Ramp Walls	10	203	0	13FEB06	23FEB06	08MAR06	18MAR06	28
A3MSW1000	10	Construct W3 Ramp Walls	10	203	0	01FEB06	11FEB06	24FEB06	07MAR06	29
A3MSW1100	20	Construct W4 Ramp Walls	20	203	0	08JAN06	26JAN06	01FEB06	23FEB06	30
A3MSW1200	20	Construct W5 Ramp Walls	20	203	0	01FEB06	23FEB06	23FEB06	18MAR06	31
A3MSW1300	10	Construct W6 Ramp Walls	10	203	0	24FEB06	07MAR06	20MAR06	30MAR06	32
A3MSW1400	20	Backfilling	20	203	0	08MAR06	30MAR06	31MAR06	24APR06	33
A3MSW1500	18	Install Roof Posts	18	206	0	31MAR06	21APR06	25APR06	18MAY06	34
A3MSW1600	12	Construct Roof Slab W3	12	203	0	22APR06	08MAY06	17MAY06	30MAY06	35
A3MSW1700	12	Construct Roof Slab W4	12	203	0	08MAY06	28MAY06	01JUN06	14JUN06	36
A3MSW1800	12	Construct Roof Slab W2, W5	12	203	0	22MAY06	06JUN06	15JUN06	28JUN06	37
A3MSW1900	12	Construct Roof Slab W1, W6	12	203	0	08JUN06	18JUN06	28JUN06	13JUL06	38
Pumping and Drainage System										
A3MSPD0100	30	Pumping System Installation	30	1884	0	08MAR06	12APR06	25SEP06	31OCT06	39
A3MSPD0200	20	Drainage System Installation	20	203	0	20JUN06	13JUL06	14JUL06	05AUG06	40
Miscellaneous Works										
A3MSW0100	24	Miscellaneous IM&I Works	24	444	0	08OCT06	04NOV06	28NOV06	28DEC06	41
A3MSW0100	24	Finishing Works at Barrel	24	203	0	14JUL06	10AUG06	07AUG06	02SEP06	42

Leader - Wal Kae (C&T) Joint Venture
 TP37/03 - Revised Works Programme - RP04



Early bar
 Progress bar
 Critical bar
 Summary bar
 Start milestone point
 Finish milestone point
 Primavera Systems, Inc.

ID	Description	Start	Finish	Early Start	Early Finish	Mid Start	Mid Finish	Late Start	Late Finish	Duration	Percent Complete
A3MSFW0200	Finishing Works at East Ramp	04SEP06	07SEP06	04SEP06	07SEP06					24	200
A3MSFW0300	Finishing Works at West Ramp	02OCT06	05OCT06	02OCT06	05OCT06					24	200
E & M Works											
A3MSEI0100	Electrical Installation at Barrel & Pump House	01NOV06	01NOV06	01NOV06	01NOV06					24	800
A3MSEI0200	Electrical Installation at East Ramp	01NOV06	01NOV06	01NOV06	01NOV06					24	440
A3MSEI0300	Electrical Installation at West Ramp	01NOV06	01NOV06	01NOV06	01NOV06					24	200
Testing and Commissioning											
A3MSTD0100	Pumping System & Electrical Installation	20NOV06	20NOV06	20NOV06	20NOV06					24	200
Loading and Unloading Area											
Drainage Works											
A3LDW0100	Decide Location of Manholes & Catchpits	27APR06	27APR06							1	1720
A3LDW0200	F302 - F306	03JUL06	03JUL06							26	230
A3LDW0300	Trial Pit for F306 - F308A (Omitted)	28JAN05 A	28JAN05 A							10	100
A3LDW0400	F306 - F308A	19OCT06	19OCT06							11	3180
A3LDW0500	F306 - F308A (TTA No. 06)	27NOV06	27NOV06							11	810
A3LDW0600	F308A - Existing Sewer Manhole	02NOV06	02NOV06							21	3180
A3LDW0700	S712 - S922	25APR06	25APR06							21	230
A3LDW0800	S917 - S916	09MAY06	09MAY06							11	230
A3LDW0900	S976 - S924	03JUN06	03JUN06							21	230
A3LDW1000	S678 - S623 (TTA no. 04)	04AUG06	04AUG06							26	460
A3LDW1100	S713 - S834	28JUL06	28JUL06							21	230
Utility Works											
A3LUT0100	CLP - Laying LV Cable	07SEP06	07SEP06							6	230
A3LUT0200	CLP - Construct Pillar Box	03MAY06	03MAY06							5	1470
A3LUT0300	Install Public Lighting Post	18SEP06	18SEP06							6	870
Public Lighting, Duct and Road											
A3LUPK0100	Construct Dwarf Wall	02AUG06	02AUG06							50	230
A3LUPK0200	Construct Dwarf Wall (TTA No. 04)	11AUG06	11AUG06							6	460
A3LUPK0300	Lay Kerb (TTA No. 04)	19OCT06	19OCT06							12	230
A3LUPK0400	Lay Kerb (TTA No. 06)	02DEC06	02DEC06							6	860
A3LUPK0500	Lighting Draught & Cable Duct (TTA No. 04)	05OCT06	05OCT06							18	230
A3LUPK0600	Lighting Draught & Cable Duct (TTA No. 06)	04SEP06	04SEP06							6	870
Roads and Pavement											
A3LURP0100	Trim Formation & Lay Subbase (TTA No. 06)	06OCT06	06OCT06							6	430
A3LURP0200	Road Pavement (TTA No. 06)	14DEC06	14DEC06							8	430
A3LURP0300	Construct Footpath (TTA No. 04)	11NOV06	11NOV06							24	230
A3LURP0400	Construct Footpath (TTA No. 06)	09DEC06	09DEC06							6	230
Road Lighting, Traffic Signs and Fencing											
A3LURM0100	Apply Road Marking	20DEC06	20DEC06							2	230
A3LURM0200	Erect Signage	16DEC06	16DEC06							6	230
A3LURM0300	Install Fencing, Fencing & etc	16DEC06	16DEC06							6	230
Amenity Area											
A3AMUW0100	Construct U-Channel	18NOV06	18NOV06							38	610
Utility Works											
A3AMUT0100	Water Point WP#2 to Water Meter No.3	16NOV06	16NOV06							16	610
A3AMUT0200	Water Point WP#2 to Water Meter No.5	10OCT06	10OCT06							10	610
A3AMUT0300	Water Point WP#2 to Water Meter No.6	11DEC06	11DEC06							14	610

Decide Location of Manholes & Catchpits

F302 - F306

F306 - F308A

F306A - Existing Sewer Manhole

S712 - S922

S917 - S916

S976 - S924

S678 - S623 (TTA no. 04)

S713 - S834

CLP - Laying LV Cable

CLP - Construct Pillar Box

Install Public Lighting Post

Construct Dwarf Wall

Construct Dwarf Wall (TTA No. 04)

Lay Kerb (TTA No. 04)

Lay Kerb (TTA No. 06)

Lighting Draught & Cable Duct (TTA No. 04)

Lighting Draught & Cable Duct (TTA No. 06)

Trim Formation & Lay Subbase (TTA No. 06)

Road Pavement (TTA No. 06)

Construct Footpath (TTA No. 04)

Construct Footpath (TTA No. 06)

Apply Road Marking

Erect Signage

Install Fencing, Fencing & etc

Construct U-Channel

Water Point WP#2 to Water Meter No.3


Water Point WP#2 to Water Meter No.5

Water Point WP#2 to Water Meter No.6

Trial Pit for F306 - F308A (Omitted)

Start date	10JUN04	Early bar
Finish date	20OCT07	Progress bar
Start date	26SEP06	Critical bar
End date	17OCT06	Summary bar
Task number	15A	Start milestone point
		Finish milestone point

c Primavera Systems, Inc.



Walker
Leader

Item No.	Code	Description	Unit	Qty	Unit Price	Total Price	Start	Finish	
1	ASRSDW0100	Decide Exact Location of Manholes & Catchpits	1	100	28JUL04 A	28JUL04 A	28JUL04	28JUL04	
2	ASRLDW0150	Hand Over 2x2500 Pipe Upstream for Connection	0	100	20APR05 A				
3	ASRLDW1100	S413 - S407 (2x2500)	84	100	10SEP04 A	18JUL05 A	10SEP04	18JUL05	
4	ASRLDW1200	F424 to F427 (In Zone ZC)	31	100	10SEP04 A	12JAN05 A	10SEP04	12JAN05	
5	ASRLDW1300	Outlet - S413 (2x2500)	33	100	22NOV04 A	28NOV04 A	22NOV04	28NOV04	
6	ASRLDW2100	S407 - S407A (2x2500)	30	100	03JAN05 A	18JUL05 A	03JAN05	18JUL05	
7	ASRLDW2200	Connection Point for F431 to F428 (In Zone ZC)	30	100	18DEC04 A	18JUL05 A	18DEC04	18JUL05	
8	ASRLDW2300	SL4-019a - S413 & gullies	18	100	18JAN05 A	28APR05 A	18JAN05	28APR05	
9	ASRLDW2400	SL4-020a - S412a	12	100	01MAR05 A	17MAR05 A	01MAR05	17MAR05	
10	ASRLDW2500	CP#10 - S412a	12	100	21FEB05 A	14APR05 A	21FEB05	14APR05	
11	ASRLDW2600	SL4-023a - S412a	12	100	01MAR05 A	09APR05 A	01MAR05	09APR05	
12	ASRLDW3100	S408 - S407 (1800)	12	100	03MAY05 A	03MAY05 A	03MAY05	03MAY05	
13	ASRLDW3200	Panel Interceptor - SL017a & S412	18	100	05MAR05 A	15JUL05 A	05MAR05	15JUL05	
14	ASRLDW3300	Connection Point - SL4-020a - S413	18	100	31JAN05 A	18MAR05 A	31JAN05	18MAR05	
15	ASRLDW3400	S407A - Upstream	20	100	05MAY05 A	18JUL05 A	05MAY05	18JUL05	
16	ASRLDW3500	SL4-025a - SL4-025a & gullies	18	100	07MAR05 A	17MAY05 A	07MAR05	17MAY05	
17	ASRLDW4100	Connection Point to F435	18	100	19DEC04 A	06APR05 A	19DEC04	06APR05	
18	ASRLDW4200	SL4-022a - SL4-020a & gullies	16	100	06MAR05 A	28APR05 A	06MAR05	28APR05	
19	ASRLDW4300	F427 - F428	15	100	10SEP04 A	08SEP05 A	10SEP04	08SEP05	
20	ASRLDW4400	F414a - F414	6	-34d	80	11APR05 A	28SEP05	11APR05	18AUG05
21	ASRLDW4500	Connection Point - S404 - S408	18	-96d	80	09MAR05 A	30SEP05	09MAR05	03JUN05
22	ASRLDW4600	CP#4 & CP#3 - SL4-009a	10		100	02JUL05 A	24AUG05 A	02JUL05	24AUG05
23	ASRLDW5100	F422 - F422	12		100	06JUL05 A	28JUL05 A	06JUL05	28JUL05
24	ASRLDW5110	F422 - F421	8		100	06APR05 A	28JUL05 A	06APR05	28JUL05
25	ASRLDW5200	SL4-018 - S407 & gullies	36	-56d	80	27JUL05 A	17OCT05	27JUL05	18JUN05
26	ASRLDW5300	CP#7 & CP#6 - S408	10	-66d	80	14JUN05 A	16OCT05	14JUN05	13JUN05
27	ASRLDW5400	S408 - SL4-009a	10	-66d	40	23AUG05 A	05OCT05	23AUG05	18JUN05

Item No.	Code	Description	Unit	Qty	Unit Price	Total Price	Start	Finish	
28	ASRSDW0100	Decide Exact Location of Manholes & Catchpits	1	100	28JUL04 A	28JUL04 A	28JUL04	28JUL04	
29	ASRLDW0150	Hand Over 2x2500 Pipe Upstream for Connection	0	100	20APR05 A				
30	ASRLDW1100	S413 - S407 (2x2500)	84	100	10SEP04 A	18JUL05 A	10SEP04	18JUL05	
31	ASRLDW1200	F424 to F427 (In Zone ZC)	31	100	10SEP04 A	12JAN05 A	10SEP04	12JAN05	
32	ASRLDW1300	Outlet - S413 (2x2500)	33	100	22NOV04 A	28NOV04 A	22NOV04	28NOV04	
33	ASRLDW2100	S407 - S407A (2x2500)	30	100	03JAN05 A	18JUL05 A	03JAN05	18JUL05	
34	ASRLDW2200	Connection Point for F431 to F428 (In Zone ZC)	30	100	18DEC04 A	18JUL05 A	18DEC04	18JUL05	
35	ASRLDW2300	SL4-019a - S413 & gullies	18	100	18JAN05 A	28APR05 A	18JAN05	28APR05	
36	ASRLDW2400	SL4-020a - S412a	12	100	01MAR05 A	17MAR05 A	01MAR05	17MAR05	
37	ASRLDW2500	CP#10 - S412a	12	100	21FEB05 A	14APR05 A	21FEB05	14APR05	
38	ASRLDW2600	SL4-023a - S412a	12	100	01MAR05 A	09APR05 A	01MAR05	09APR05	
39	ASRLDW3100	S408 - S407 (1800)	12	100	03MAY05 A	03MAY05 A	03MAY05	03MAY05	
40	ASRLDW3200	Panel Interceptor - SL017a & S412	18	100	05MAR05 A	15JUL05 A	05MAR05	15JUL05	
41	ASRLDW3300	Connection Point - SL4-020a - S413	18	100	31JAN05 A	18MAR05 A	31JAN05	18MAR05	
42	ASRLDW3400	S407A - Upstream	20	100	05MAY05 A	18JUL05 A	05MAY05	18JUL05	
43	ASRLDW3500	SL4-025a - SL4-025a & gullies	18	100	07MAR05 A	17MAY05 A	07MAR05	17MAY05	
44	ASRLDW4100	Connection Point to F435	18	100	19DEC04 A	06APR05 A	19DEC04	06APR05	
45	ASRLDW4200	SL4-022a - SL4-020a & gullies	16	100	06MAR05 A	28APR05 A	06MAR05	28APR05	
46	ASRLDW4300	F427 - F428	15	100	10SEP04 A	08SEP05 A	10SEP04	08SEP05	
47	ASRLDW4400	F414a - F414	6	-34d	80	11APR05 A	28SEP05	11APR05	18AUG05
48	ASRLDW4500	Connection Point - S404 - S408	18	-96d	80	09MAR05 A	30SEP05	09MAR05	03JUN05
49	ASRLDW4600	CP#4 & CP#3 - SL4-009a	10		100	02JUL05 A	24AUG05 A	02JUL05	24AUG05
50	ASRLDW5100	F422 - F422	12		100	06JUL05 A	28JUL05 A	06JUL05	28JUL05
51	ASRLDW5110	F422 - F421	8		100	06APR05 A	28JUL05 A	06APR05	28JUL05
52	ASRLDW5200	SL4-018 - S407 & gullies	36	-56d	80	27JUL05 A	17OCT05	27JUL05	18JUN05
53	ASRLDW5300	CP#7 & CP#6 - S408	10	-66d	80	14JUN05 A	16OCT05	14JUN05	13JUN05
54	ASRLDW5400	S408 - SL4-009a	10	-66d	40	23AUG05 A	05OCT05	23AUG05	18JUN05

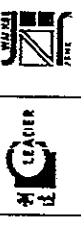
Legend:
 ■ Empty bar
 ■ Progress bar
 ■ Critical bar
 ■ Summary bar
 ◆ Start milestone point
 ◆ Finish milestone point

Project Information:
 Project Name: Leader - Wai Kee (G&T) Joint Venture
 Revision: TP37/03 - Revised Works Programme - RP04
 Date: 18/06/05

Company Logo:
 LEADER
 WAI KEE
 G&T

Activity ID	Description	Start	Finish	Duration	Earliest Start	Earliest Finish	Latest Start	Latest Finish	Slack
ASRLDW5500	F428 - Downstream	15	18	3	15	18	15	18	0
ASRLDW5600	Connection Point - S410 - S407 (1800)	15	18	3	15	18	15	18	0
ASRLDW5700	SL4-010a - S409 & gullies	18	18	0	18	18	18	18	0
ASRLDW5800	SL4-011a - S410 & gullies	18	18	0	18	18	18	18	0
ASRLDW5900	CPa11 - SL4-011b	18	18	0	18	18	18	18	0
ASRLDW6000	CPa1 - SL4-015a	18	18	0	18	18	18	18	0
ASRLDW6100	SL4-007c - S409 & gullies	18	18	0	18	18	18	18	0
ASRLDW6200	SL4-017a - SL4-028a & gullies	18	18	0	18	18	18	18	0
ASRLDW6300	SL4-015b - SL4-015a & gullies	18	18	0	18	18	18	18	0
ASRLDW6400	SL4-028a - SL4-028a	18	18	0	18	18	18	18	0
ASRLDW6500	UC - CPa1 & CPa2	22	22	0	22	22	22	22	0
ASRLDW6600	UC - CPa3	10	10	0	10	10	10	10	0
ASRLDW6700	UC - CPa4	10	10	0	10	10	10	10	0
ASRLDW6800	UC - CPa5, CPa6, CPa7 & CPa8	25	25	0	25	25	25	25	0
ASRLDW6900	UC - CPa9	10	10	0	10	10	10	10	0
ASRLDW7000	UC - CPa11	10	10	0	10	10	10	10	0
ASRLDW7100	Additional Sub-soil Drain (South) (VO047A)	12	12	0	12	12	12	12	0
ASRLDW7200	Additional UC at Footpath (South) (VO047A)	18	18	0	18	18	18	18	0
ASRLDW7300	Additional UC at Cycle Track (North) (VO051)	18	18	0	18	18	18	18	0
ASRLDW7400	Demolish Existing 625, 825 & 1050 Drainpipe	30	30	0	30	30	30	30	0
ASRLUT0000	D.I. Pipes & Fittings Delivery On Site	33	33	0	33	33	33	33	0
ASRLUT0001	Order Additional Vertical Bands (VO064)	76	76	0	76	76	76	76	0
ASRLUT0100	Watermain - Lay Fresh Main (In Zone 2C)	30	30	0	30	30	30	30	0
ASRLUT0200	Watermain - Lay Salt Main (In Zone 2C)	30	30	0	30	30	30	30	0
ASRLUT0300	Watermain - Lay Fresh & Salt Main (VO064)	10	10	0	10	10	10	10	0
ASRLUT0400	Watermain - Lay Fresh Main (In Zone 2P)	18	18	0	18	18	18	18	0
ASRLUT0500	CLP - Lay 11kV Cable (South)	48	48	0	48	48	48	48	0
ASRLUT0600	CLP - Lay 11kV Cable (North)	38	38	0	38	38	38	38	0
ASRLUT0700	HGC - Lay Cable (South)	18	18	0	18	18	18	18	0
ASRLUT0800	HGC - Lay Cable (North)	18	18	0	18	18	18	18	0
ASRLUT0900	NWT - Lay Cross Road Duct (South)	12	12	0	12	12	12	12	0
ASRLUT1000	NWT - Lay Cross Road Duct (North)	6	6	0	6	6	6	6	0
ASRLUT1100	HKCG - Lay 110 Main (Roundabout - Interchange)	18	18	0	18	18	18	18	0
ASRLUT1200	HKCG - Gas Governor Kiosk	38	38	0	38	38	38	38	0
ASRLUT1300	PCCW - Lay Cable (South)	42	42	0	42	42	42	42	0
ASRLUT1400	PCCW - Lay Cable (North)	38	38	0	38	38	38	38	0
ASRLUT1500	Water Point - WP12-2 to M11	12	12	0	12	12	12	12	0
ASRLUT1600	Water Point - WP13-2 to M13	6	6	0	6	6	6	6	0
ASRLUT1700	Water Point - WP14-1 to WP13	12	12	0	12	12	12	12	0
ASRLUT1800	Water Point - WP15-1 to M15	6	6	0	6	6	6	6	0
ASRLPW0100	Construct Dwarf Wall (South)	58	58	0	58	58	58	58	0

Connection Point - S410 - S407 (1800)
 SL4-010a - S409 & gullies
 SL4-011a - S410 & gullies
 CPa11 - SL4-011b
 CPa1 - SL4-015a
 SL4-007c - S409 & gullies
 SL4-017a - SL4-028a & gullies
 SL4-015b - SL4-015a & gullies
 SL4-028a - SL4-028a
 UC - CPa1 & CPa2
 UC - CPa3
 UC - CPa4
 UC - CPa5, CPa6, CPa7 & CPa8
 UC - CPa9
 UC - CPa11
 Additional Sub-soil Drain (South) (VO047A)
 Additional UC at Footpath (South) (VO047A)
 Additional UC at Cycle Track (North) (VO051)
 Demolish Existing 625, 825 & 1050 Drainpipe
 D.I. Pipes & Fittings Delivery On Site
 Order Additional Vertical Bands (VO064)
 Watermain - Lay Fresh Main (In Zone 2C)
 Watermain - Lay Salt Main (In Zone 2C)
 Watermain - Lay Fresh & Salt Main (VO064)
 Watermain - Lay Fresh Main (In Zone 2P)
 CLP - Lay 11kV Cable (South)
 CLP - Lay 11kV Cable (North)
 HGC - Lay Cable (South)
 HGC - Lay Cable (North)
 NWT - Lay Cross Road Duct (South)
 NWT - Lay Cross Road Duct (North)
 CATV - Lay Cable (South)
 HKCG - Lay 110 Main (Roundabout - Interchange)
 HKCG - Gas Governor Kiosk
 PCCW - Lay Cable (South)
 PCCW - Lay Cable (North)
 Water Point - WP12-2 to M11
 Water Point - WP13-2 to M13
 Water Point - WP14-1 to WP13
 Water Point - WP15-1 to M15
 Construct Dwarf Wall (South)




Legend:
 ■ Early bar
 ■ Process bar
 ■ Critical bar
 ■ Summary bar
 ◆ Start milestone point
 ◆ Finish milestone point
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ACT	Orig Dur	Total Dur	Percent Complete	Early Start	Early Finish	Late Start	Late Finish	Description
ABCTUT020	12	-121d	0	04NOV05	17NOV05	10JUN05	24JUN05	CLP - 11KV Cable Connection (in ZG 1)
ABCTUT090	17	-120d	100	28FEB05 A	14MAR05 A	28FEB05 A	14MAR05 A	CLP - Lay LV Cable (in ZJ, South)
ABCTUT0910	11	-120d	0	28OCT05	07NOV05	02JUN05	15JUN05	CLP - Lay LV Cable (in ZJ, North)
ABCTUT1000	11	-120d	0	21OCT05	02NOV05	28MAY05	06JUN05	CLP - Lay LV Cable (in ZG 1)
ABCTUT1010	11	-102d	0	28SEP05	12OCT05	28MAY05	06JUN05	CLP - Lay LV Cable (in Remaining ZG 1)
ABCTUT1020	12	-120d	0	03NOV05	16NOV05	10JUN05	24JUN05	CLP - LV Cable Connection (in ZG 1)
ABCTUT1400	35	-120d	100	06JAN05 A	06JAN05 A	06JAN05 A	06JAN05 A	HKCG - Lay 250 Gas Main (in ZJ) (Deleted)
ABCTUT1600	14	-120d	100	06JAN05 A	06JAN05 A	06JAN05 A	06JAN05 A	HKCG - Lay 250 Gas Main (in ZG 1) (Deleted)
Public Lighting, Signs and Kerbs								
ABCTPK0100	15	-111d	0	04OCT05	21OCT05	23MAY05	06JUN05	Lay Kerb (in ZJ, South)
ABCTPK0310	10	-120d	0	08NOV05	18NOV05	16JUN05	27JUN05	Lay Kerb (in ZJ, North)
ABCTPK0200	12	-131d	0	18NOV05	29NOV05	10JUN05	24JUN05	Lay Kerb (in ZG 1)
ABCTPK0300	24	-131d	0	16NOV05	13DEC05	10JUN05	06JUL05	Lighting Ducts and Drawings
ABCTPK0400	12	-131d	0	14DEC05	26DEC05	17JUL05	23JUL05	Lighting Posts
Roads and Pavement								
ABCTRP0100	28	-106d	0	22OCT05	29NOV05	16JUN05	16JUL05	Lay Cycle Track Pavement (in ZJ, South)
ABCTRP0110	18	-120d	0	16NOV05	06DEC05	28JUN05	19JUL05	Lay Cycle Track Pavement (in ZJ, North)
ABCTRP0200	15	-126d	0	26NOV05	13DEC05	02JUL05	18JUL05	Lay Cycle Track Pavement (in ZG 1)
Road Markings and Roadworks								
ABCTRM0100	4	-126d	0	14DEC05	17DEC05	20JUL05	23JUL05	Apply Road Marking
ABCTRM0200	12	-118d	0	28NOV05	09DEC05	11JUL05	23JUL05	Erect Signage
ABCTRM0300	21	-118d	0	18NOV05	13DEC05	20JUN05	23JUL05	Construct Fence
Landscaping and Works								
ABCTL0100	46	-111d	0	12OCT05	09DEC05	30MAY05	23JUL05	Construct Planter Wall (in ZJ, South)
ABCTL0110	18	-118d	0	18NOV05	09DEC05	04JUL05	23JUL05	Construct Planter Wall (in ZJ, North)
ABCTL0200	18	-126d	0	30NOV05	20DEC05	04JUL05	23JUL05	Construct Planter Wall (in ZG 1)
Section 7								
Temporary Traffic Management Scheme								
TTA Implementation								
ATTTMS0050	1	-120d	100	06SEP04 A	21FEB05 A	06SEP04 A	21FEB05 A	Apply & Issue XP for TTA Nos. 10 - 12
ATTTMS0100	1	-120d	100	24FEB05 A	24FEB05 A	24FEB05 A	24FEB05 A	Implement TTA No. 10
ATTTMS0200	1	-120d	100	11MAY05 A	11MAY05 A	11MAY05 A	11MAY05 A	Implement TTA No. 11
ATTTMS0300	1	-120d	100	21MAR05 A	21MAR05 A	21MAR05 A	21MAR05 A	Implement TTA No. 12
ATTTMS0400	71	-144d	98	07JUL05 A	28SEP05	07JUL05 A	07APR05	Apply & Issue XP for TTA Nos. 48 - 51
ATTTMS0500	1	-144d	0	07OCT05	07OCT05	15APR05	15APR05	Implement TTA No. 48 (VO030E, 063A & 073)
ATTTMS0500	1	-144d	0	31OCT05	31OCT05	08MAY05	08MAY05	Implement TTA No. 49 (VO030E, 063A & 073)
ATTTMS0700	1	-144d	0	28NOV05	28NOV05	08JUN05	08JUN05	Implement TTA No. 50 (VO030E, 063A & 073)
ATTTMS0800	1	-144d	0	21DEC05	21DEC05	02JUL05	02JUL05	Implement TTA No. 51 (VO030E)
Underside Road No. 3								
Landscaping and Works								
ATLCHS0100	16	-120d	100	23SEP04 A	30SEP04 A	23SEP04 A	30SEP04 A	Drilling (Two Drillholes)
ATLCHS0200	3	-120d	100	25OCT04 A	27OCT04 A	25OCT04 A	27OCT04 A	Taking Up of Existing Amour to +2.5
ATLCHS0220	2	-120d	100	30OCT04 A	01NOV04 A	30OCT04 A	01NOV04 A	Taking Up of Existing Underdrayer to +2.5
ATLCHS0240	14	-120d	100	03NOV04 A	19NOV04 A	03NOV04 A	13NOV04 A	Taking Up of Existing Rubble to +2.5
ATLCHS0300	6	-120d	100	21NOV04 A	28NOV04 A	21NOV04 A	28NOV04 A	Demolish Existing Outfall Units
ATLCHS0400	8	-158d	0	07NOV05	14NOV05	02JUN05	06JUN05	Taking Up Existing 3200 Dia. Concrete Pipe
ATLCHS0420	6	-158d	0	02NOV05	08NOV05	28MAY05	01JUN05	Taking Up of Existing Amour, Below +2.5

Start date: 10JUN04
 Finish date: 20OCT07
 Data date: 28SEP05
 Run date: 17OCT05
 Page number: 20A

Legend:
 ■ Early bar
 ■ Progress bar
 ■ Critical bar
 ■ Summary bar
 ◆ Start milestone point
 ◆ Finish milestone point

Leader - Wal Kee (C&T) Joint Venture
TP37/03 - Revised Works Programme - RP04

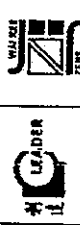



Item	Dir	Qty	Unit	Start	Finish	Notes
Watermain - Lay Sat Main (TTA No. 11) Aborted	34	100	10MAY05 A	24JUN05 A	24JUN05 A	
Watermain - SW Main (TTA No. 48) (VO063A)	12	-144d	017OCT05	29OCT05	07MAY05	
Watermain - SW Main (TTA No. 49) (VO063A)	12	-144d	015NOV05	29NOV05	07JUN05	
Watermain - SW Main (TTA No. 50) (VO063A)	24	-125d	013NOV05	29DEC05	30JUL05	
CLP - Lay LV Cable	12	-50d	08AUG05 A	28SEP05	08AUG05 A	
PCCW - Lay Cable	55	-88d	022NOV05	26JAN06	08NOV05	
PCCW - Lay Cable (Landscape Node P3)	12	-78d	014APR06	27APR06	06JAN06	
Watermain (in ZU)	18	-93d	031OCT05	19NOV05	11JUL05	
Issue Allocation Warrant to WSD (VO068)	24	-78d	028SEP05	27OCT05	27JUN05	
Relocation of Fire Hydrant in ZU by WSD (VO068)	24	-78d	028OCT05	24NOV05	28JUL05	
HKCG - 315kV Diversion at SP Road (Additional)	15	100	11JUL05 A	27JUL05 A	11JUL05 A	
CLP - 132kV Diversion at SP Road (Additional)	50	100	08AUG05 A	18AUG05 A	08AUG05 A	
Public Lighting (in ZU)	60	-42d	010DEC05	21FEB06	21OCT05	
Public Lighting (in ZS)	60	-68d	018FEB06	29APR06	31OCT05	
Lay Paving Block (in ZU)	30	-42d	022FEB06	28MAR06	02JAN06	
Lay Paving Block (in ZS)	60	-93d	028MAR06	08JUN06	05DEC05	
Finishing Works (in ZU)	30	-17d	017FEB06	15MAR06	16JAN06	
Finishing Works (in ZS)	55	-58d	027FEB06	03MAY06	18DEC05	
Irrigation System (in ZU)	30	-78d	016APR06	13MAY06	04JAN06	
Irrigation System (in ZS)	52	-92d	022APR06	30MAY06	02JAN06	
E&M Works	30	-78d	010APR06	18MAY06	04JAN06	
Testing & Commissioning	30	-92d	010MAY06	12JUN06	16JAN06	
Road Marking, Traffic Sign and Fencing	30	-98d	010MAY06	08JUN06	16JAN06	
Erect Signage	12	-93d	030MAY06	13JUN06	08FEB06	
Apply Road Marking	20	-92d	010OCT05	02NOV05	04JUL05	
Planter Wall (in ZS, South End - 100m)	20	-92d	0518APR05 A	09OCT05	18APR05 A	
Planter Wall (in ZS, 100 - 200m)	20	-98d	029OCT05	21NOV05	04JUL05	
Planter Wall (in ZS, 200 - 300m)	20	-98d	05OCT05	28OCT05	06JUN05	
Planter Wall (in ZS, 300 - 400m)	20	-132d	021MAR06	13APR06	13OCT05	
Planter Wall (in ZS, 400 - North End)	55	-78d	021MAY05 A	08DEC05	21MAY05 A	
Planter Wall (in ZU)	30	-93d	010OCT05	06OCT05	16JUN05 A	
Fill Rock to Parapet Wall Formation (VO068)	120	-93d	010OCT05	03MAR06	20JUN05	
Parapet Wall along Seawall (500m)	24	-88d	021MAR06	18APR06	08DEC05	
Parapet Wall along Landscape Node P3 (100m)	60	-17d	028SEP05	08DEC05	07SEP05	
Construct Curve Treills (in ZU)	47	-17d	010DEC05	06FEB06	18NOV05	
Construct Percola (in ZU)	24	-88d	027JAN06	25FEB06	07NOV05	
Construct Percola (in ZS)	30	-78d	013MAR06	07APR06	28NOV05	
Water Point WP28-1 to 28-8 (in ZU)	15	-88d	022DEC05	10JAN06	28AUG05	
Water Point WP27-2 to 27-4 (in ZS)	16	-73d	011JAN06	27JAN06	18OCT05	
Water Point WP26-1 to 26-2 (in ZS)	18	-132d	028APR06	18MAY06	18NOV05	
Water Point WP25-2 to 25-4 (in ZS)					06DEC05	

Legend:
 ■ Early bar
 ■ Progress bar
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 ◆ Start milestone point
 ◆ Finish milestone point

C:\Program Systems, Inc.
 20030707
 20030707
 28SEP05
 17OCT05
 23A

Leader - Wal Keo (C&T) Joint Venture
 TP37/03 - Revised Works Programme - RP04

Item No.	Description	Start	End	Duration	Start	End	Duration	Start	End	Duration
ABLANS0100	Drilling (Two Drilloles)	16	100	23SEP04 A	04OCT04 A	23SEP04 A	04OCT04 A	23SEP04 A	04OCT04 A	16NOV05
ABLANS0200	Taking Up of Existing Armour to +2.5	3	100	28OCT04 A	30OCT04 A	28OCT04 A	30OCT04 A	28OCT04 A	30OCT04 A	28DEC04 A
ABLANS0220	Taking Up of Existing Underlayer to +2.5	4	100	01NOV04 A	01NOV04 A	01NOV04 A	01NOV04 A	01NOV04 A	01NOV04 A	01NOV04 A
ABLANS0240	Taking Up of Existing Rubble to +2.5	38	100	08NOV04 A	08NOV04 A	08NOV04 A	08NOV04 A	08NOV04 A	08NOV04 A	08NOV04 A
ABLANS0260	Demolish Existing Outfall Units	5	100	13NOV04 A	13NOV04 A	13NOV04 A	13NOV04 A	13NOV04 A	13NOV04 A	13NOV04 A
ABLANS0310	DSD Approval of Removal of 5 Cells Culvert	1	100	20NOV04 A	20NOV04 A	20NOV04 A	20NOV04 A	20NOV04 A	20NOV04 A	20NOV04 A
ABLANS0400	Taking Up Existing 5 Cells Box Culvert Units	12	100	10MAR05 A	22MAR05 A	10MAR05 A	22MAR05 A	10MAR05 A	22MAR05 A	22MAR05 A
ABLANS0420	Taking Up of Existing Armour Below +2.5	6	100	13DEC04 A	22JAN05 A	13DEC04 A	22JAN05 A	13DEC04 A	22JAN05 A	22JAN05 A
ABLANS0440	Taking Up of Existing Underlayer Below +2.5	3	100	17DEC04 A	08APR05 A	17DEC04 A	08APR05 A	17DEC04 A	08APR05 A	08APR05 A
ABLANS0500	Taking Up of Existing Rubble Below +2.5	23	100	14JAN05 A	22APR05 A	14JAN05 A	22APR05 A	14JAN05 A	22APR05 A	22APR05 A
ABLANS0540	Paving Leveling Stone	25	100	23APR05 A	19MAY05 A	23APR05 A	19MAY05 A	23APR05 A	19MAY05 A	19MAY05 A
ABLANS0600	Block Wall Construction	51	100	18MAY05 A	12JUN05 A	18MAY05 A	12JUN05 A	18MAY05 A	12JUN05 A	12JUN05 A
ABLANS0700	Backfill Rubble Behind	14	-1460	15JUN05 A	02OCT05	15JUN05 A	02OCT05	15JUN05 A	02OCT05	09MAY05
ABLANS0800	Reinstate 5 Cells Box Culvert Units	18	-1460	02JUL05 A	07OCT05	02JUL05 A	07OCT05	02JUL05 A	07OCT05	14MAY05
ABLANS0900	Fabrication of 5 Cells Outfall Units	70	230	20	02JUL05 A	20	02JUL05 A	20	02JUL05 A	15DEC05
ABLANS1000	Install 5 Cells Outfall Units	12	230	0	20NOV05	0	20NOV05	0	20NOV05	10DEC05
ABLANS1100	Install Remaining Blocks for Both Sides Outfall	4	230	0	05DEC05	0	05DEC05	0	05DEC05	28DEC05
ABLANS1200	Reinstate Armour & Underlayer	10	233	0	08DEC05	0	08DEC05	0	08DEC05	31DEC05
Landscape Node No. 2										
Landscape Node Structure										
ABLANS1300	Drilling (Two Drilloles)	19	100	27SEP04 A	18OCT04 A	27SEP04 A	18OCT04 A	27SEP04 A	18OCT04 A	18OCT04 A
ABLANS1320	Taking Up of Existing Armour to +2.5	3	100	08NOV04 A	08NOV04 A	08NOV04 A	08NOV04 A	08NOV04 A	08NOV04 A	08NOV04 A
ABLANS1340	Taking Up of Existing Underlayer to +2.5	2	100	12NOV04 A	13NOV04 A	12NOV04 A	13NOV04 A	12NOV04 A	13NOV04 A	13NOV04 A
ABLANS1360	Taking Up of Existing Rubble to +2.5	20	100	14NOV04 A	11JAN05 A	14NOV04 A	11JAN05 A	14NOV04 A	11JAN05 A	11JAN05 A
ABLANS1380	Demolish Existing Outfall Units	5	100	17NOV04 A	20NOV04 A	17NOV04 A	20NOV04 A	17NOV04 A	20NOV04 A	20NOV04 A
ABLANS1400	Taking Up Existing 2500 Dia. Concrete Pipe	10	100	12APR05 A	23JUN05 A	12APR05 A	23JUN05 A	12APR05 A	23JUN05 A	23JUN05 A
ABLANS1420	Taking Up of Existing Armour Below +2.5	4	100	08DEC04 A	08DEC04 A	08DEC04 A	08DEC04 A	08DEC04 A	08DEC04 A	08DEC04 A
ABLANS1440	Taking Up of Existing Underlayer Below +2.5	3	100	10DEC04 A	11JAN05 A	10DEC04 A	11JAN05 A	10DEC04 A	11JAN05 A	11JAN05 A
ABLANS1460	Taking Up of Existing Rubble Below +2.5	20	100	09DEC04 A	25AUG05 A	09DEC04 A	25AUG05 A	09DEC04 A	25AUG05 A	25AUG05 A
ABLANS1500	Paving Leveling Stone	40	100	01SEP05 A	20SEP05 A	01SEP05 A	20SEP05 A	01SEP05 A	20SEP05 A	20SEP05 A
ABLANS1600	Block Wall Construction (Stage 1)	30	-560	0	21SEP05 A	0	21SEP05 A	0	21SEP05 A	11AUG05
ABLANS1610	Block Wall Construction (Stage 2)	30	245	0	17OCT05	0	17OCT05	0	17OCT05	17OCT05
ABLANS1700	Backfill Rubble Behind (Stage 1)	7	-560	0	10OCT05	0	10OCT05	0	10OCT05	18AUG05
ABLANS1710	Backfill Rubble Behind (Stage 2)	7	245	0	21NOV05	0	21NOV05	0	21NOV05	20DEC05
ABLANS1800	Reinstate 2500 Dia. Pipe Culvert	14	302	0	28NOV05	0	28NOV05	0	28NOV05	28NOV05
ABLANS1900	Fabrication of Box Culvert Outfall	70	303	0	12DEC05	0	12DEC05	0	12DEC05	11JAN06
ABLANS1000	Install Box Culvert Outfall	12	303	0	13DEC05	0	13DEC05	0	13DEC05	23JAN06
ABLANS1100	Install Remaining Blocks for Both Sides Outfall	4	320	0	25DEC05	0	25DEC05	0	25DEC05	02FEB06
ABLANS1200	Reinstate Armour & Underlayer	10	320	0	29DEC05	0	29DEC05	0	29DEC05	12FEB06
ABLANS1210	Diversion of Ext. Cycle Track (Phase 2)	1	100	28MAY05 A	28MAY05 A	28MAY05 A	28MAY05 A	28MAY05 A	28MAY05 A	28MAY05 A
ABLANS1300	Removal of Ext. Cycle Track Pavement (Phase 2)	4	100	30MAY05 A	11JUN05 A	30MAY05 A	11JUN05 A	30MAY05 A	11JUN05 A	11JUN05 A
ABLANS1400	Take Up / Divert Ext. Utility Services (Phase 2)	12	100	30MAY05 A	08JUN05 A	30MAY05 A	08JUN05 A	30MAY05 A	08JUN05 A	08JUN05 A

Legend:
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 ◆ Start milestone point
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Leader - Wal Kee (C&T) Joint Venture
 TP3703 - Revised Works Programme - RP04

ACT ID	ACT Description	Orig. Est. Cost	Total Cost	Percent Complete	Start	Finish	Lead Time
ABLNS1500	Reinstate Ext. Utility Services	24	-476	0	27OCT05	28NOV05	30AUG05
ABLNS1600	Reinstate Ext. Cycle Track	12	-580	0	07DEC05	20DEC05	28SEP05
ABLNS1700	Resume Ext. Cycle Track	1	-580	0	21DEC05	21DEC05	14OCT05

ACT ID	ACT Description	Orig. Est. Cost	Total Cost	Percent Complete	Start	Finish	Lead Time
ABALMA0100	Taking Up of Armour to +2.5(South Section)	2		100	10NOV04	11NOV04	11NOV04
ABALMA0110	Taking Up of Underlayer to +2.5 (South Section)	2		100	15NOV04	16NOV04	18NOV04
ABALMA0200	Taking Up of Rubble to +2.5 (South Section)	8		100	01DEC04	17JAN05	17JAN05
ABALMA0210	Taking Up of Armour Below +2.5 (South Section)	3		100	27NOV04	01DEC04	01DEC04
ABALMA0220	Taking Up Underlayer Below +2.5 (South Section)	3		100	06DEC04	12DEC04	12DEC04
ABALMA0230	Taking Up of Rubble Below +2.5 (South Section)	12		100	13DEC04	11JUL05	11JUL05
ABALMA0240	Placing Leveling Stone (South Section)	10		100	12JUL05	30JUL05	30JUL05
ABALMA0400	Block Wall Construction (South Section)	25		100	02AUG05	17AUG05	17AUG05
ABALMA0500	Backfill the Rubble Behind (South Section)	6	-463	60	18AUG05	28SEP05	18AUG05
ABALMA0600	Backfill G200 Rockfill Behind (South Section)	5	-463	0	03OCT05	14AUG05	18AUG05
ABALMA0610	Diversion of Ext. Cycle Track (Phase 1)	1		100	28MAY05	28MAY05	28MAY05
ABALMA0620	Removal of Ext. Cycle Track Pavement (Phase 1)	2		100	11JUN05	30MAY05	11JUN05
ABALMA0630	Take Up / Divert Ext. Utility Services (Phase 1)	18		100	06JUN05	30MAY05	06JUN05
ABALMA0700	Taking Up of Armour to +2.5 (North Section)	2		100	06NOV04	06NOV04	10NOV04
ABALMA0710	Taking Up of Underlayer to +2.5 (North Section)	2		100	15NOV04	16NOV04	16NOV04
ABALMA0800	Taking Up of Rubble to +2.5 (North Section)	8		100	17NOV04	17NOV04	17NOV04
ABALMA0820	Taking Up of Armour Below +2.5 (North Section)	3		100	21NOV04	21NOV04	21NOV04
ABALMA0830	Taking Up Underlayer Below +2.5 (North Section)	2		100	01DEC04	01DEC04	04DEC04
ABALMA0840	Taking Up of Rubble Below +2.5 (North Section)	30		100	18FEB05	18FEB05	18FEB05
ABALMA0910	Placing Leveling Stone (North Section)	10		100	20FEB05	13MAY05	20FEB05
ABALMA1000	Block Wall Construction (North Section)	25		100	01MAR05	24MAY05	01MAR05
ABALMA1100	Backfill the Rubble Behind (North Section)	6		100	15MAR05	25JUN05	15MAR05
ABALMA1200	Backfill G200 Rockfill Behind (North Section)	9	-933	0	28SEP05	02OCT05	27JUN05
ABALMA1300	Reinstatement of Armour & Underlayer	14	1160	0	03OCT05	16OCT05	26JAN05

ACT ID	ACT Description	Orig. Est. Cost	Total Cost	Percent Complete	Start	Finish	Lead Time
ABWPDW0100	Decide Exact Location of Manholes & Catchpits	1		100	27SEP04	27SEP04	27SEP04
ABWPDW0200	S745 - S739	55		100	21OCT04	08MAY05	21OCT04
ABWPDW0300	S717 - S729	78		100	22DEC04	25AUG05	22DEC04
ABWPDW0400	S729 - S730	14	280	0	06JAN05	10FEB05	25FEB05
ABWPDW0500	S730 - S732	50	270	0	23NOV05	21JAN05	24DEC05
ABWPDW0550	F421 - TM05	18	-476	5	23JUL05	04NOV05	23JUL05
ABWPDW0600	F414 - F421 (in 2K)	12	-306	0	28SEP05	13OCT05	18AUG05
ABWPDW0650	S745 - Existing Box Culvert	27	250	80	06JUL05	09DEC05	06JUL05
ABWPDW0700	S745 - S747	75		100	05NOV04	18DEC04	05NOV04
ABWPDW0710	S747 - Existing Box Culvert	18	180	30	07JUL05	17DEC05	07JUL05
ABWPDW0800	225HR & Catchpit/2000.I. along Parapet Wall (Z5)	48	260	0	10MAR05	06MAY05	11APR05
ABWPDW0900	225HR & Catchpit/2000.I. along Parapet Wall (Z4)	24	260	0	30MAY05	27JUN05	28JUN05
ABWPDW1000	225HR & Catchpit/2000.I. along Parapet Wall (Z4)	12	250	0	16MAY05	28MAY05	15JUN05
ABWPDW1100	225HR & Catchpit/2000.I. along Parapet Wall (Z5)	6	250	0	06MAY05	15MAY05	06JUN05
ABWPDW1200	225HR & Catchpit/2000.I. Parapet Wall (J.M.L.I)	80	260	0	02DEC05	09MAR05	04JAN05

Work Item Promenade

Start date: 10JUN04
 Finish date: 20OCT07
 Data date: 28SEP05
 Run date: 17OCT05
 Pkg number: 2AA

Legend:
 ■ Early bar
 ■ Progress bar
 ■ Critical bar
 ■ Summary bar
 ◆ Start milestone point
 ◆ Finish milestone point

LEADER
 WALTER
 T&E

Leader - Wai Kee (C&T) Joint Venture
 TP37/03 - Revised Works Programme - RP04

c Primavera Systems, Inc.

AT ID	Description	Orig Dur	Total Effort	Percent Complete	Early Start	Early Finish	Late Start	Late Finish	
ABWPDW1000	225 Perforated Drain (in ZR)	18	18d	0	06MAR06	30MAR06	21APR06	21APR06	
ABWPDW2000	225 Perforated Drain (in ZK)	18	28d	0	14MAR06	03APR06	17APR06	08MAY06	
ABWPDW2100	225 Perforated Drain (in ZJ)	9	37d	0	08FEB06	18FEB06	24MAR06	03APR06	
ABWPDW2200	225 Perforated Drain (in ZJ5)	5	48d	0	08FEB06	08FEB06	29MAR06	03APR06	
ABWPDW2300	225 Perforated Drain (ZJ - Node P1 South)	24	18d	0	08FEB06	07MAR06	01MAR06	28MAR06	
ABWPDW2350	225 Perforated Drain (ZJ, ZM, ZL1)	18	19d	0	23DEC05	14JAN06	13JAN06	04FEB06	
ABWPDW2400	Remove Existing 3200 Drainpipe	30		100	28APR05 A	06JUN05 A	28APR05 A	06JUN05 A	
Utility Works									
ABWPUT0000	D.I. Pipes & Fittings Delivery On Site	30	28d	0	01OCT05	30OCT05	05SEP05	04OCT05	
ABWPUT0100	Watermain - Lay S&T Main	18	68d	0	16NOV05	08DEC05	08SEP05	27SEP05	
ABWPUT0200	PCCW - Lay Cable (in ZK)	48	17d	0	21JAN06	25MAR06	07JAN06	06MAR06	
ABWPUT0300	PCCW - Lay Cable (in ZK)	22	17d	0	15APR06	11MAY06	25MAR06	20APR06	
ABWPUT0400	PCCW - Lay Cable (in ZJ)	10	17d	0	03APR06	14APR06	14MAR06	24MAR06	
ABWPUT1000	PCCW - Lay Cable (in ZJ5)	8	17d	0	27MAR06	01APR06	07MAR06	13MAR06	
ABWPUT1100	PCCW - Lay Cable (in ZJ, ZM, ZL1)	44	32d	0	23DEC05	18FEB06	03FEB06	25MAR06	
ABWPUT1200	HKCG - 32GRP Riser	3	28d	0	06JAN06	11JAN06	13FEB06	15FEB06	
ABWPUT1300	HKCG - 90 GRP Riser	5	28d	0	12JAN06	17JAN06	16FEB06	21FEB06	
ABWPUT1400	HKCG - 63 GRP Riser	3	28d	0	16JAN06	20JAN06	22FEB06	24FEB06	
Public Lighting, Ducts and Driveways Along Promenade									
ABWPPK0300	Public Lighting Ducts (K&U)	60	86d	0	14MAR06	24MAY06	24JUN06	04SEP06	
ABWPPK0400	Install Public Lighting	24	86d	0	25MAY06	22JUN06	05SEP06	02OCT06	
Roads and Pavement									
ABWPPR0100	Lay Paving Block (in ZR)	48	25d	0	06JUL06	02SEP06	07AUG06	02OCT06	
ABWPPR0200	Lay Paving Block (in ZK)	24	25d	0	16JUN06	14JUL06	17JUL06	12AUG06	
ABWPPR0300	Lay Paving Block (in ZJ)	12	27d	0	30MAY06	13JUN06	06JUL06	16JUL06	
ABWPPR0400	Lay Paving Block (in ZJ5)	12	27d	0	19MAY06	29MAY06	17JUN06	30JUN06	
ABWPPR0500	Lay Paving Block (in ZJ, ZM, ZL1)	80	32d	0	03FEB06	09MAY06	13MAR06	16JUN06	
Finishing Works									
ABWFFH0100	Finishing Works	60	58d	0	06JUN06	16AUG06	29AUG06	08NOV06	
E & M Works									
ABWFFM0000	Irrigation System	50	117d	0	22APR06	21JUN06	06SEP06	06NOV06	
ABWFFM1000	E & M Works	30	86d	0	23JUN06	26JUL06	03OCT06	08NOV06	
Apply Road Markings									
ABWFFR0200	Apply Road Marking	30	25d	0	04SEP06	05OCT06	03OCT06	08NOV06	
ABWFFR0300	Erect Signage	21	25d	0	14SEP06	09OCT06	14OCT06	08NOV06	
Install Road Markings									
ABWFFL0100	Planter Wall (in ZR)	83	0	20	22AUG05 A	09MAR06	22AUG05 A	09MAR06	
ABWFFL0200	Planter Wall (in ZK)	28	28d	0	08FEB06	19MAR06	14MAR06	15APR06	
ABWFFL0300	Planter Wall (in ZJ)	13	28d	0	23JAN06	08FEB06	27FEB06	13MAR06	
ABWFFL0400	Planter Wall (in ZJ5)	8	27d	0	23JAN06	02FEB06	25FEB06	08MAR06	
ABWFFL0500	Planter Wall (ZJ - Landscape Node 1 South)	40	18d	0	19DEC05	07FEB06	11JAN06	28FEB06	
ABWFFL0600	Planter Wall (ZM, ZL1, ZJ)	90	18d	20	02JUL05 A	22DEC05	02JUL05 A	12JAN06	
ABWFFL0650	Fill Rock to Parapet Wall Formation (VO1066)	60	25d	20	10AUG05 A	24NOV05	10AUG05 A	23DEC05	
ABWFFL0700	Parapet Wall along Seawall (in ZR)	47	25d	0	03MAR06	27APR06	01APR06	27MAY06	
ABWFFL0800	Parapet Wall along Seawall (in ZK)	22	25d	0	23MAY06	17JUN06	22JUN06	18JUL06	
ABWFFL0900	Parapet Wall along Seawall (in ZJ)	12	25d	0	09MAY06	23MAY06	06JUN06	21JUN06	
ABWFFL1000	Parapet Wall along Seawall (in ZJ5)	8	25d	0	20APR06	06MAY06	29MAY06	07JUN06	

Legend

- █ Early bar
- █ Progress bar
- █ Critical bar
- █ Summary bar
- ▲ Start milestone point
- ▲ Finish milestone point

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AT ID	Description	Orig Dur	Total Dur	Percent Complete	Early Start	Early Finish	End Start	End Finish
ASWPHL1100	Parapet Wall along Seawall (in ZJ ZM, ZL1)	80	25d	0	25NOV05	02MAR06	24DEC05	31MAR06
ASWPHL1200	Construct Parapet (2 nos.)	72	66d	0	14MAR06	06JUN06	26AUG06	26AUG06
ASWPHL1300	Water Point WP24-4 to 24-1	15	21d	0	31MAR06	16APR06	22APR06	13MAY06
ASWPHL1400	Water Point WP20-3 to 22-1	16	16d	0	31MAR06	21APR06	22APR06	13MAY06
ASWPHL1500	Water Point WP21-3 to 21-1	12	26d	0	05APR06	16APR06	09MAY06	22MAY06
ASWPHL1600	Water Point WP20-6 to 20-1	21	37d	0	20FEB06	15MAR06	05APR06	29APR06
ASWPHL1700	Water Point WP19-1 to 19-1	15	16d	0	06MAR06	21MAR06	29MAR06	15APR06
ASWPHL1800	Water Point WP18-3 to 19-2	12	21d	0	09MAR06	21MAR06	01APR06	15APR06
ASWPHL1900	Water Point WP17-5 to 17-1	18	16d	0	16JAN06	07FEB06	08FEB06	28FEB06
ASWPHL2000	Water Point WP16-3 to 16-1	12	22d	0	16JAN06	28JAN06	10FEB06	28FEB06
ASWPHL2200	ASD's Contractor Works	303	-57d	0	28SEP05	27SEP06	22JUL05	22JUL06

AT ID	Description	Orig Dur	Total Dur	Percent Complete	Early Start	Early Finish	End Start	End Finish
ASLMA0100	Propose Monitoring Plan for DSD's Submarine Pipe	30		100	01SEP04 A	06SEP04 A	01SEP04 A	06SEP04 A
ASLMA0200	Engineer & DSD Approval of Monitoring Plan	30		100	07SEP04 A	01MAR05 A	07SEP04 A	01MAR05 A
ASLMA0300	Setup Monitoring for DSD's Submarine Pipeline	30		100	14MAR05 A	14MAR05 A	14MAR05 A	14MAR05 A
ASLMA0400	Drilling & CPPT	30		100	11SEP04 A	11OCT04 A	11SEP04 A	11OCT04 A
ASLMA0500	Taking Up of Existing Armour to +2.5	2		100	08NOV04 A	08NOV04 A	08NOV04 A	08NOV04 A
ASLMA0610	Taking Up of Existing Underlayer to +2.5	3		100	11NOV04 A	13NOV04 A	11NOV04 A	13NOV04 A
ASLMA0620	Taking Up of Existing Rubble to +2.5	3		100	17NOV04 A	19NOV04 A	17NOV04 A	19NOV04 A
ASLMA0630	Taking Up of Underlayer Below +2.5	3		100	24NOV04 A	27NOV04 A	24NOV04 A	27NOV04 A
ASLMA0640	Taking Up of Existing Rubble Below +2.5	6		100	10DEC04 A	18DEC04 A	10DEC04 A	18DEC04 A
ASLMA0700	Dredging of Marine Mud	13		100	11MAR05 A	11MAR05 A	11MAR05 A	11MAR05 A
ASLMA0800	Placing of Rubble Foundation	20		100	18FEB05 A	18FEB05 A	18FEB05 A	18FEB05 A
ASLMA0850	Placing Leveling Stone	23		100	20APR05 A	28SEP05	20APR05 A	28SEP05
ASLMA0950	Block Wall Construction 2 Layers from Bottom (N)	6		100	04MAY05 A	31MAY05 A	04MAY05 A	31MAY05 A
ASLMA0960	Block Wall Construction 2 Layers from Bottom (S)	6		100	17JUL05 A	24AUG05 A	17JUL05 A	24AUG05 A
ASLMA0910	Block Wall Construction to Top Level	50		100	26APR05 A	28AUG05 A	26APR05 A	28AUG05 A
ASLMA0920	Placing of Bormstones	3		100	28AUG05 A	11SEP05 A	28AUG05 A	11SEP05 A
ASLMA1000	Backfill the Rubble Behind	14	201d	80	12SEP05 A	26SEP05 A	12SEP05 A	22APR06
ASLMA1100	Backfill the G200 Rockfill Behind	4	201d	0	30SEP05	03OCT05	23APR06	28APR06

AT ID	Description	Orig Dur	Total Dur	Percent Complete	Early Start	Early Finish	End Start	End Finish
ASLW0100	Submit Shop Drawings & Calculation of Roof Cover	30		100	16AUG05 A	16SEP05 A	16AUG05 A	16SEP05 A
ASLW0200	Engineer Approval of Shop Drawings & Calculation	30	56d	90	16SEP05 A	10OCT05	16SEP05 A	15DEC05
ASLW0300	Procurement of Pyramid Skylight	120	89d	0	12OCT05	04MAR06	23JAN06	16JUN06
ASLW0500	Procurement of Structural Steel	120	56d	0	12OCT05	04MAR06	16DEC05	11MAY06
ASLW0600	Delivery of Pyramid Skylight	30	86d	0	06MAR06	10APR06	17JUN06	22JUL06
ASLW0700	Delivery of Structural Steel	30	56d	0	06MAR06	10APR06	12MAY06	16JUN06
ASLW0800	Inspection & Testing	30	56d	0	11APR06	16MAY06	17JUN06	22JUL06
ASLW0900	Fabrication & Painting of Steel Works	48	66d	0	17MAY06	13JUL06	24JUL06	16SEP06
ASLW1000	Concrete Coping with 10 tonne Bollard & Handrail	30	176d	0	04OCT05	08NOV05	27APR06	02JUN06
ASLW1100	Construct Shelter Footing	24	108d	0	23JAN06	21FEB06	03JUN06	30JUN06
ASLW1200	Construct Shelter Column	30	144d	0	22FEB06	28MAR06	14AUG06	16SEP06

Section 9
Public Lighting Sign

ASD's Contractor Works

- Propose Monitoring Plan for DSD's Submarine Pipe
- Engineer & DSD Approval of Monitoring Plan
- Setup Monitoring for DSD's Submarine Pipeline
- Drilling & CPPT
- Taking Up of Existing Armour to +2.5
- Taking Up of Existing Underlayer to +2.5
- Taking Up of Existing Rubble to +2.5
- Taking Up of Underlayer Below +2.5
- Taking Up of Existing Rubble Below +2.5
- Dredging of Marine Mud
- Placing of Rubble Foundation
- Placing Leveling Stone
- Block Wall Construction 2 Layers from Bottom (N)
- Block Wall Construction 2 Layers from Bottom (S)
- Block Wall Construction to Top Level
- Placing of Bormstones
- Backfill the Rubble Behind
- Backfill the G200 Rockfill Behind
- Submit Shop Drawings & Calculation of Roof Cover
- Engineer Approval of Shop Drawings & Calculation
- Procurement of Pyramid Skylight
- Procurement of Structural Steel
- Delivery of Pyramid Skylight
- Delivery of Structural Steel
- Inspection & Testing
- Fabrication & Painting of Steel Works
- Concrete Coping with 10 tonne Bollard & Handrail
- Construct Shelter Footing
- Construct Shelter Column

Final Works

- Start Shop Drawings & Calculation of Roof Cover
- Engineer Approval of Shop Drawings & Calculation
- Procurement of Pyramid Skylight
- Procurement of Structural Steel
- Delivery of Pyramid Skylight
- Delivery of Structural Steel
- Inspection & Testing
- Fabrication & Painting of Steel Works
- Concrete Coping with 10 tonne Bollard & Handrail
- Construct Shelter Footing
- Construct Shelter Column

Legend:
 Start date: 10JUN04
 Finish date: 20OCT07
 Data date: 28SEP05
 Run date: 17OCT05
 Page number: 28A
 Start milestone point:
 Finish milestone point:

ASD's Contractor Works

WALSH
LEADER
PART

Loader - Wai Koo (C&T) Joint Venture
TP37/03 - Revised Works Programme - RP04

ID	Description	Orig Bar	Total Bar	Percent Complete	Early Start	Early Finish	Late Start	Late Finish	
A19SLW1000	Concrete Shingle Roof	24	560	0	14JUL06	10AUG06	16SEP06	16OCT06	
A19SLW1400	Public Lighting	8	560	0	11AUG06	19AUG06	17OCT06	25OCT06	
A19SLW1500	Rubber, Step & Land Site	18	560	0	21AUG06	09SEP06	26OCT06	18NOV06	
A19SLW1600	Surface Mounted Seats	18	560	0	11SEP06	30SEP06	17NOV06	07DEC06	
A19SLW1700	Construct In Situ Concrete Paving	18	560	0	02OCT06	23OCT06	08DEC06	28DEC06	
Section 10									
Remainder Works									
Miscellaneous Works									
B0RWMM0100	EI to Demolish HY/9802 CRE Office	1	1074	0	03MAR06	03MAR06	11JUL06	11JUL06	
B0RWMM0200	Demolish HY/9802 CRE Office (P1)	30	1074	0	25MAR06	26APR06	02AUG06	05SEP06	
B0RWMM0300	EI to Demolish HY/9802 Contractor's Office	1		100	22NOV04 A	22NOV04 A	22NOV04 A	22NOV04 A	
B0RWMM0400	Demolish HY/9802 Contractor's Office (P1)	30		100	21MAY05 A	27MAY05 A	21MAY05 A	27MAY05 A	
B0RWMM0500	EI to Remove Run-in & Reinstate FP/CT	1	1260	0	02MAY06	02MAY06	02OCT06	02OCT06	
B0RWMM0600	Remove Run-in & Reinstate FP/CT (P1)	18	1116	0	15JUN06	06JUL06	25OCT06	15NOV06	
B0RWMM0700	EI to Demolish Existing Paving	1	1074	0	02MAY06	02MAY06	06SEP06	06SEP06	
B0RWMM0800	Demolish Existing Paving (P1)	18	1074	0	24MAY06	14JUN06	20SEP06	19OCT06	
B0RWMM0900	EI to Fencing Around LO Site	1	1116	0	07JUL06	07JUL06	18NOV06	18NOV06	
B0RWMM1000	Fencing Around LO Site (P1)	18	1116	0	26JUL06	16AUG06	08DEC06	28DEC06	
Section 11									
Area S&T, S&T10 & S&T11									
Landscape Siteworks									
B1AASL0100	Soil Mix (Section 5)	24	-1320	0	09FEB06	07MAR06	30AUG06	27SEP06	
B1AASL0200	Soil Mix (In ZS, South End - 100m)	10	-876	0	03DEC05	14DEC05	13SEP06	24SEP06	
B1AASL0300	Soil Mix (In ZS, 100 - 200m)	10	-880	0	11JAN06	21JAN06	13SEP06	24SEP06	
B1AASL0400	Soil Mix (In ZS, 200 - 300m)	10	-880	0	11JAN06	21JAN06	02NOV06	12NOV06	
B1AASL0500	Soil Mix (In ZS, 300 - 400m)	10	-732	0	28JAN06	10FEB06	02NOV06	12NOV06	
B1AASL0600	Soil Mix (In ZS, 400 - North End)	10	-1320	0	17MAY06	27MAY06	07DEC06	17DEC06	
B1AASL0700	Soil Mix (In Z1, 300m)	30	-784	0	25JAN06	02MAR06	24OCT06	28NOV06	
B1AASL0800	Planting Works	90	-1320	0	09MAR06	21JUN06	28SEP06	12JAN06	
B1AASL0900	Groundcovers Works	50	-1320	0	28MAY06	27JUL06	19DEC06	18FEB06	
B1AASL1000	Root Barrier (ZS, 100m - 200m) (VO/055A)	12	-780	0	03DEC05	16DEC06	30AUG06	12SEP06	
B1AASL1100	Root Barrier (ZS, 200m - 300m) (VO/055A)	12	-850	0	22DEC05	06JAN06	19OCT06	01NOV06	
B1AASL1200	Root Barrier (ZS, 300m - 400m) (VO/055A)	12	-850	0	22DEC05	06JAN06	19OCT06	01NOV06	
B1AASL1300	Root Barrier (ZS, 400m - N. End) (VO/055A)	2	-1160	0	28APR06	28APR06	05DEC06	06DEC06	
Section 12									
Area S&T, S&T10, S&T11, S&T12 & S&T13									
Landscape Siteworks									
B2ABSL0100	Soil Mix (In ZR, 365m)	47	160	0	22APR06	17JUN06	15MAY06	10JUL06	
B2ABSL0200	Soil Mix (In ZK, 160m)	24	284	0	19APR06	17MAY06	23MAY06	20JUN06	
B2ABSL0300	Soil Mix (In ZL, 65m)	12	376	0	24MAR06	07APR06	08MAY06	23MAY06	
B2ABSL0400	Soil Mix (In Z1.5, 50m)	7	370	0	10MAR06	23MAR06	20APR06	08MAY06	
B2ABSL0500	Soil Mix (Z1 - Landscape Node 1 South, 260m)	30	180	0	25MAR06	29APR06	17APR06	22MAY06	
B2ABSL0600	Soil Mix (ZM, Z1.1, Z1)	71	160	0	08FEB06	03MAY06	27FEB06	23MAY06	
B2ABSL0700	Planting Works	90	160	0	04MAY06	18AUG06	23MAY06	06SEP06	
B2ABSL0800	Groundcovers Works	30	160	0	19AUG06	17OCT06	07SEP06	06NOV06	
B2ABSL0900	Root Barrier (In ZM) (VO/065)	12	220	0	18JAN06	28JAN06	10FEB06	25FEB06	
B2ABSL1000	Root Barrier (In ZR) (VO/065)	2	340	0	31MAR06	01APR06	12MAY06	13MAY06	

Start date 10JUN04
 Finish date 20OCT07
 Data date 28SEP05
 Run date 17OCT05
 Prep number 27A

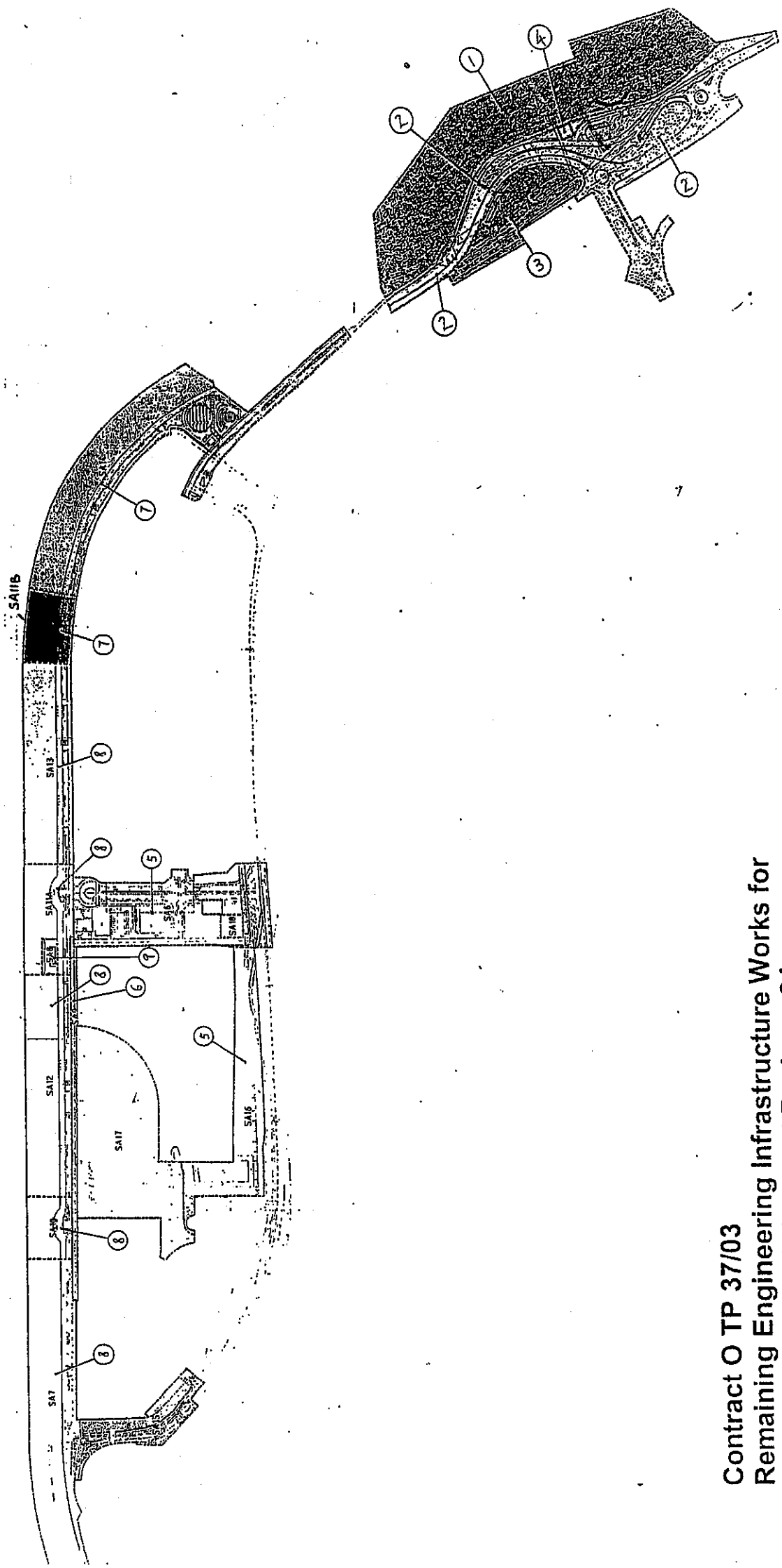
Early bar
 Progress bar
 Critical bar
 Summary bar
 Start milestone point
 Finish milestone point

C Primavera Systems, Inc.

Leader - Wai Kee (C&T) Joint Venture
 TP3703 - Revised Works Programme - RP04



Appendix G
Construction Site Area



Contract O TP 37/03
 Remaining Engineering Infrastructure Works for
 Pak Shek Kok Development Package 2A

Location and Key Pan




Appendix H

**The Implementation Status
of
Mitigation Measures and Follow-up Actions during Weekly
Site Inspections**

Contract No.: TP 37/03 Remaining Engineering Infrastructure Works for
 Pak Shek Kok Development Package 2A

SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES

Inspection Date : 2 November 2007 Inspected by Name : (RSS) Sunny Fung (LWKJM) Fung (ET) H.T. Chow
 Time : 14:30 Signature : 

Weather Condition : Sunny (Fine) Overcast / Drizzle / Rain / Storm / Hazy
 Wind : Calm (Light) Breeze / Strong Temperature : 24°C Humidity : High / Moderate (Low)

	Implementation Stages*		Remark
	Yes	No / N/A	
Mitigation Measures on Waste Management			
Air Quality			
▪ The heights from which fill materials are dropped should be controlled to a practical height to minimize the fugitive dust arising from unloading.	✓		
▪ During transportation by truck, material should be loaded to a level lower than the side and tail boards, and should be dampened or covered before transport.	✓		
▪ All stockpile of aggregate or spoil should be enclosed or covered and water applied in dry or windy condition.	✓		
▪ The haul road should be either paved or regular watering.	✓		
▪ Unpaved areas should be watered regularly to avoid dust generation.	✓		
▪ The public road around the site entrance should be kept clean and free from dust.	✓		
▪ Vehicle speed should be limited to 20 km/hr.	✓		
▪ Wheel washing facilities should be provided at all main entrance of work site.	✓		
▪ The enclosures should be around the main dust-generating activities.	✓		
▪ Dusty materials should be sprayed prior to loading.	✓		
▪ All plant and equipment should be well maintained e.g. without black smoke emission.	✓		
▪ Vehicle and equipment should be switched off while not in use.	✓		
▪ Open burning should be prohibited.	✓		
Noise			
▪ The constructions works should be scheduled to minimize noise nuisance.	✓		
▪ Only well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.	✓		
▪ Machines and plants that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	✓		
▪ Plant known to emit noise strongly in on direction, should, where possible, be orientated so that the noise is directed away from nearby NSRs.	✓		
▪ Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.	✓		
▪ Noise enclosures, noise barriers, or portable noise barriers used where necessary.	✓		
▪ Air compressors and hand held breakers should have noise labels.	✓		
▪ Compressors and generators should operate with door closed.	✓		
▪ Construction Noise Permits should be available for inspection.	✓		

SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES

	Implementation Stages*			Remark
	Yes	No	N/A	
Mitigation Measures on Waste Management				
Water Quality				
General Construction Activities				
▪ Temporary ditches shall be provided to facilitate runoff discharge into appropriate watercourses, via a sediment trap / sedimentation tanks, prior to discharge.	✓			
▪ Permanent drainage channels shall incorporate sediment basins / traps, and baffles.	✓			
▪ All traps shall incorporate oil and grease removal facilities.	✓			
▪ Sediment traps / sedimentation tanks shall be regular cleaned and maintained regularly.	✓			
▪ All drainage facilities should be adequate for controlled release of storm flows.	✓			
▪ Minimizing of exposed soil areas to reduce the potential for increased siltation and contamination of runoff.	✓			
▪ Open stockpiles of more than 50m ³ should be covered.	✓			
▪ Temporary stockpiles of excavated materials should be covered during rainstorms.	✓			
▪ Manholes should be covered and sealed.	✓			
▪ All chemical stores shall be contained (bunded) such that spills are not allowed to gain access to water bodies.	✓			
▪ Vehicles and plant should be cleaned of earth, mud and debris before leaving the site.	✓			
▪ Vehicle washing facilities should be provided at every site exit.	✓			
▪ Vehicle washing facilities should be adequate to settle out the sand and silt.	✓			
▪ Washing area and road exiting from washing facility should be paved.	✓			
▪ Access road should have sufficient back fall toward washing facility.	✓			
Dredging Activities				
▪ Dredging of designated contaminated marine mud shall only be undertaken by a suitable grab dredger using a close grab.	✓			
▪ Mechanical grabs shall be designed and maintained to avoid spillage and shall be seal tightly while being lifted.	✓			
▪ All vessels shall be sized such that adequate clearance is maintained between vessel and the sea bed and under water pipelines at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller on the water within the site.	✓			
▪ The works shall cause no visible foam, oil, grease, scum litter or other objectionable matter to be present on the water within the site.	✓			
▪ All barges shall be fitted with tight fitting seals to their bottom openings to prevent leakage of materials.	✓			
▪ Excess material shall be cleaned from the decks and exposed fittings of the barges before the vessels are moved.	✓			
▪ Loading of barges shall be controlled to prevent splashing of dredging material to the surrounding water and the barges shall not be filled to a level which will cause overflowing of material or polluted water during loading or transportation.	✓			
▪ Adequate freeboard shall be maintained on barges to ensure that decks are not washed by wave action.	✓			



SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES

	Implementation Stages*			Remark
	Yes	No	N/A	
Mitigation Measures on Waste Management				
Filling Activities				
Use of silt screen around the filling face to reduce the losses to the surrounding.			✓	
All vessels shall be sized such that adequate clearance is maintained between vessel and the sea bed and under water pipeline at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash or pipelines damaged.			✓	
The works shall cause no visible foam, oil, grease, scum, litter or other objectionable matter to be present on the water within the site.			✓	
All barges shall be fitted with tight fitting seals to their bottom openings to prevent leakage of material.			✓	
Loading of barges shall be controlled to prevent splashing of dredged material to the surrounding water and barges shall not be filled to a level which will cause overflowing of material or polluted water during loading transportation.			✓	
Waste Management				
Marine Dredged Sediment				
Relevant licence / permits for disposal of marine dredged sediment are available for inspection.			✓	
Bottom opening of barges is fitted with tight fitting seals to prevent leakage of material. Excess material is cleaned from the decks and exposed fittings of barges and hopper dredgers before the vessel is moved.			✓	
Monitoring of the barging loading is conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels are equipped with automatic self-monitoring devices as specified by the EPD.			✓	
Transport of dredged marine sediments to the disposal site is by split barge of not less than 750m ³ capacity, well maintained and capable of rapid opening and discharge at the disposal site.			✓	
Inspection of the barge loading to ensure that loss of material does not take place during transportation.			✓	
Construction and Demolition (C&D) Waste				
Most of the C&D materials generated from the construction are sorted immediately in-situ to find out if they can be re-used for this job site or for other job sites.	✓			
Sufficient spaces are identified and provided during the construction stage for the collection, temporary storage and on-site sorting of C&D materials.	✓			
Proper protective measures, such as fences and tarpaulin, are provided, in order to protect the temporary stockpiled materials for later reuse / recycle.	✓			
Avoiding cross contamination to reusable and / or recyclable materials collected (e.g. covering the reusable materials)	✓			
In order to reduce the impacts to the public, except for those sorted inert C&D materials to be reused on site, all other sorted non-inert materials (e.g. general refuse and waste formworks) shall be removed off site as soon as practicable in order to optimise the use of the on-site storage space. If the non-inert materials need to be stored on site for a short period, the materials shall be centralized and stored at specific areas far away the sensitive receivers.	✓			
All Public Fill arising from the demolition works shall be limited to a size not more than 250mm and free of reinforcement bars, timber, etc. before re-using it.	✓			
Recyclable materials sorted from the site should be collected by potential recycling contractors under the Contractor's arrangement.	✓			
Trip ticket system will be implemented to ensure proper waste disposal at public filling and landfills	✓			
Appropriate measures should be employed to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers.	✓			
Proper resource planning and calculations before ordering the construction materials to be used will ensure that the wastage of the materials can be minimized	✓			



SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES

	Implementation Stages*			Remark
	Yes	No	N/A	
Mitigation Measures on Waste Management				
• Proper storage will minimize the damage and thus the wastage of the materials	✓			
• Training of site personnel in proper waste management procedures. The workers shall be constantly educated for the awareness of the proper handling of waste and to reduce the amount of waste while Site Agent shall be constantly met to discuss the effectiveness of the implementation of the waste management plan. Information to promote the waste management and the reduction concept shall be posted at the site to raise alertness of the personnel concerned.	✓			
• Chemical Waste				
• It is required to register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes.	✓			
• After use, chemical wastes (e.g. cleaning fluids, solvents, lubrication oil and fuel) should be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.	✓			
• Chemical wastes should be stored and collected by an approved operator for disposal at the Chemical Waste Treatment Facility or other licensed facility in accordance with the Chemical Waste (General) Regulation.	✓			
• Containers used for the storage of chemical wastes				
• Be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed	✓			
• Have a capacity of less than 450L unless the specification have been approved by the EPD	✓			
• Display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Chemical Waste (General) Regulations and Codes of Practice	✓			
• Labelling	✓			
• Every container of chemical waste would bear an appropriate label, which would contain the particulars details.	✓			
• The waste produced would ensure that the information contained on the label is accurate and sufficient so as to enable proper and safe handling, storage and transport of the chemical waste	✓			
• Storage Area				
• Be clearly labeled and used solely for the storage of chemical waste	✓			
• Be enclosed on at least 3 sides	✓			
• Have an impermeable floor and bunding of sufficient capacity to accommodate 110% of the volume of the largest container or 20% of the total volume of waste stored in that area, whichever is the greatest	✓			
• Have adequate ventilation	✓			
• Be covered to prevent rainfall entering	✓			
• Be arranged so that incompatible materials are adequately separated	✓			
• Be clean and maintain regularly	✓			
• Disposal				
• Be via a licensed waste collector	✓			
• To a licensed disposal facility, such as Chemical Waste Treatment Centre	✓			
• Be a reuser of the waste, under approval from the EPD	✓			



SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES

	Implementation Stages*			Remark
	Yes	No	N/A	
Mitigation Measures on Waste Management				
• Spillage				
• Establish source of spill or discharge and determine nature of material, where possible halt discharge			✓	
• Commencing at the source of the spill, establish all current and potential impacted areas			✓	
• Commence containment of spill using bunds made from available materials and ground water cut-off trenches where necessary			✓	
• After spill is contained remove material (including contaminated soil where necessary) using pumps and/or absorbent materials			✓	
• Dispose of materials as chemical wastes				
• General Refuse				
• General refuse generated on-site is in enclosed bins or compaction units separate from construction and chemical waste	✓			
• A reputable waste collector is employed by the Contractor to remove general refuse from the site, separately from the construction and chemical waste.	✓			
• General refuse generated is removed on daily or every second day basis to minimise odour, pest and litter impacts	✓			
• Aluminium cans are recovered from the waste stream by individual collectors if they are segregated or easily accessible, so separate, labelled bins for their deposit should be provided if feasible.	✓			
• Office wastes are reduced through recycling of paper if volumes are large enough to warrant collection.	✓			
• Site Practice				
• Good site practices should be adopted to clean the rubbish and litter on the construction sites so as to prevent the rubbish and litter from dropping into the nearby environment. Construction sites should be cleaned on a regular basis.	✓			
• The Contractor assigned worker is responsible for good site practices, arrangements for collection and effective disposal of all wastes generated at the site.	✓			
• Proper storage and site practices to minimise the potential for damage or contamination of construction materials.	✓			
• The Environmental Permit should be displaced conspicuously on site	✓			
• Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste.	✓			
• Any unused chemicals or those with remaining functional capacity should be recycled.	✓			
• A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be used, e.g. trip ticket system for chemical waste disposal. Quantities could be determined by weighing each load or other suitable methods.	✓			
• Suitable collection sites around site offices will be required. For environmental hygiene reasons and to minimize odor, refuse should not be stored for a period exceeding 48 hours, however, removal every 24 hours is preferable.	✓			
• Minimize windblown litter and dust during transportation by either covering trucks or transporting wastes in enclosed container.	✓			
• All generators, fuel and oil storage are within bundle areas.	✓			
• Oil leakage from machinery, vehicle and plant is prevented.	✓			
• Chemical storage area, drainage systems, silt traps, sumps and oil interceptors are cleaned and maintained regularly.	✓			

Contract No.: TP 37/03 Remaining Engineering Infrastructure Works for
 Pak Shek Kok Development Package 2A

SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES

Inspection Date : 11 November 2007 Inspected by Name : (ASS) Kevin Lee (LWK/M) Ben-ty (ET) H.T. Chow
 Time : 10:00 Signature : [Signature]
 Weather Condition : Sunny / Fine / Overcast / Drizzle / Rain / Storm / Hazy Temperature : 29°C
 Wind : Calm / Light / Breeze / Strong Humidity : Moderate / High / Low

	Implementation Stages*			Remark
	Yes	No	N/A	
Mitigation Measures on Waste Management				
Air Quality				
▪ The heights from which fill materials are dropped should be controlled to a practical height to minimize the fugitive dust arising from unloading.	✓			
▪ During transportation by truck, material should be loaded to a level lower than the side and tail boards, and should be dampened or covered before transport.	✓			
▪ All stockpile of aggregate or spoil should be enclosed or covered and water applied in dry or windy condition.		✓		(3)
▪ The haul road should be either paved or regular watering.	✓			
▪ Unpaved areas should be watered regularly to avoid dust generation.	✓			
▪ The public road around the site entrance should be kept clean and free from dust.	✓			
▪ Vehicle speed should be limited to 20 km/hr.	✓			
▪ Wheel washing facilities should be provided at all main entrance of work site.	✓			
▪ The enclosures should be around the main dust-generating activities.	✓			
▪ Dusty materials should be sprayed prior to loading.	✓			
▪ All plant and equipment should be well maintained e.g. without black smoke emission.	✓			
▪ Vehicle and equipment should be switched off while not in use.	✓			
▪ Open burning should be prohibited.	✓			
Noise				
▪ The constructions works should be scheduled to minimize noise nuisance.	✓			
▪ Only well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.	✓			
▪ Machines and plants that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	✓			
▪ Plant known to emit noise strongly in on direction, should, where possible, be orientated so that the noise is directed away from nearby NSRs.	✓			
▪ Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.	✓			
▪ Noise enclosures, noise barriers, or portable noise barriers used where necessary.	✓			
▪ Air compressors and hand held breakers should have noise labels.	✓			
▪ Compressors and generators should operate with door closed.	✓			
▪ Construction Noise Permits should be available for inspection.	✓			



SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES

	Implementation Stages*		Remark
	Yes	No / N/A	
Mitigation Measures on Waste Management			
Water Quality			
General Construction Activities			
▪ Temporary ditches shall be provided to facilitate runoff discharge into appropriate watercourses, via a sediment trap / sedimentation tanks, prior to discharge.	✓		
▪ Permanent drainage channels shall incorporate sediment basins / traps, and baffles.	✓		
▪ All traps shall incorporate oil and grease removal facilities.	✓		
▪ Sediment traps / sedimentation tanks shall be regular cleaned and maintained regularly.	✓		
▪ All drainage facilities should be adequate for controlled release of storm flows.	✓		
▪ Minimizing of exposed soil areas to reduce the potential for increased siltation and contamination of runoff.	✓		
▪ Open stockpiles of more than 50m ² should be covered.	✓		
▪ Temporary stockpiles of excavated materials should be covered during rainstorms.	✓		
▪ Manholes should be covered and sealed.	✓		
▪ All chemical stores shall be contained (bunded) such that spills are not allowed to gain access to water bodies.	✓		
▪ Vehicles and plant should be cleaned of earth, mud and debris before leaving the site.	✓		
▪ Vehicle washing facilities should be provided at every site exit.	✓		
▪ Vehicle washing facilities should be adequate to settle out the sand and silt.	✓		
▪ Washing area and road exiting from washing facility should be paved.	✓		
▪ Access road should have sufficient back fall toward washing facility.	✓		
Dredging Activities			
▪ Dredging of designated contaminated marine mud shall only be undertaken by a suitable grab dredger using a close grab.	✓		
▪ Mechanical grabs shall be designed and maintained to avoid spillage and shall be seal tightly while being lifted.	✓		
▪ All vessels shall be sized such that adequate clearance is maintained between vessel and the sea bed and under water pipelines at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller on the water within the site.	✓		
▪ The works shall cause no visible foam, oil, grease, scum litter or other objectionable matter to be present on the water within the site.	✓		
▪ All barges shall be fitted with tight fitting seals to their bottom openings to prevent leakage of materials.	✓		
▪ Excess material shall be cleaned from the decks and exposed fittings of the barges before the vessels are moved.	✓		
▪ Loading of barges shall be controlled to prevent splashing of dredging material to the surrounding water and the barges shall not be filled to a level which will cause overflowing of material or polluted water during loading or transportation.	✓		
▪ Adequate freeboard shall be maintained on barges to ensure that decks are not washed by wave action.	✓		



SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES

	Implementation Stages*			Remark
	Yes	No	N/A	
Mitigation Measures on Waste Management				
Filling Activities				
• Use of silt screen around the filling face to reduce the losses to the surrounding.	✓			
• All vessels shall be sized such that adequate clearance is maintained between vessel and the sea bed and under water pipeline at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash or pipelines damaged.	✓			
• The works shall cause no visible foam, oil, grease, scum, litter or other objectionable matter to be present on the water within the site.	✓			
• All barges shall be fitted with tight fitting seals to their bottom openings to prevent leakage of material.	✓			
• Loading of barges shall be controlled to prevent splashing of dredged material to the surrounding water and barges shall not be filled to a level which will cause overflowing of material or polluted water during transportation.	✓			
Waste Management				
Marine Dredged Sediment				
• Relevant licence / permits for disposal of marine dredged sediment are available for inspection.	✓			
• Bottom opening of barges is fitted with tight fitting seals to prevent leakage of material. Excess material is cleaned from the decks and exposed fittings of barges and hopper dredgers before the vessel is moved.	✓			
• Monitoring of the barging loading is conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels are equipped with automatic self-monitoring devices as specified by the EPD.	✓			
• Transport of dredged marine sediments to the disposal site is by split barge of not less than 750m ³ capacity, well maintained and capable of rapid opening and discharge at the disposal site.	✓			
• Inspection of the barge loading to ensure that loss of material does not take place during transportation.	✓			
Construction and Demolition (C&D) Waste				
• Most of the C&D materials generated from the construction are sorted immediately in-situ to find out if they can be re-used for this job site or for other job sites.	✓			
• Sufficient spaces are identified and provided during the construction stage for the collection, temporary storage and on-site sorting of C&D materials.	✓			
• Proper protective measures, such as fences and tarpaulin, are provided, in order to protect the temporary stockpiled materials for later reuse / recycle.	✓			
• Avoiding cross contamination to reusable and / or recyclable materials collected (e.g. covering the reusable materials)	✓			
• In order to reduce the impacts to the public, except for those sorted inert C&D materials to be reused on site, all other sorted non-inert materials (e.g. general refuse and waste formworks) shall be removed off site as soon as practicable in order to optimise the use of the on-site storage space. If the non-inert materials need to be stored on site for a short period, the materials shall be centralized and stored at specific areas far away the sensitive receivers.	✓			
• All Public Fill arising from the demolition works shall be limited to a size not more than 250mm and free of reinforcement bars, timber, etc. before re-using it.	✓			
• Recyclable materials sorted from the site should be collected by potential recycling contractors under the Contractor's arrangement.	✓			
• Trip ticket system will be implemented to ensure proper waste disposal at public filling and landfills	✓			
• Appropriate measures should be employed to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers.	✓			
• Proper resource planning and calculations before ordering the construction materials to be used will ensure that the wastage of the materials can be minimized	✓			



SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES

	Implementation Stages*			Remark
	Yes	No	N/A	
	Mitigation Measures on Waste Management			
• Proper storage will minimize the damage and thus the wastage of the materials	✓			
• Training of site personnel in proper waste management procedures. The workers shall be constantly educated for the awareness of the proper handling of waste and to reduce the amount of waste while Site Agent shall be constantly met to discuss the effectiveness of the implementation of the waste management plan. Information to promote the waste management and the reduction concept shall be posted at the site to raise alertness of the personnel concerned.	✓			
• Chemical Waste				
• It is required to register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes.	✓			
• After use, chemical wastes (e.g. cleaning fluids, solvents, lubrication oil and fuel) should be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.	✓			
• Chemical wastes should be stored and collected by an approved operator for disposal at the Chemical Waste Treatment Facility or other licensed facility in accordance with the Chemical Waste (General) Regulation.	✓			
• Containers used for the storage of chemical wastes				
• Be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed	✓			
• Have a capacity of less than 450L unless the specification have been approved by the EPD	✓			
• Display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Chemical Waste (General) Regulations and Codes of Practice	✓			
• Labelling				
• Every container of chemical waste would bear an appropriate label, which would contain the particulars details.	✓			
• The waste produced would ensure that the information contained on the label is accurate and sufficient so as to enable proper and safe handling, storage and transport of the chemical waste	✓			
• Storage Area				
• Be clearly labeled and used solely for the storage of chemical waste	✓			
• Be enclosed on at least 3 sides	✓			
• Have an impermeable floor and bunding of sufficient capacity to accommodate 110% of the volume of the largest container or 20% of the total volume of waste stored in that area, whichever is the greatest	✓			
• Have adequate ventilation	✓			
• Be covered to prevent rainfall entering	✓			
• Be arranged so that incompatible materials are adequately separated	✓			
• Be clean and maintain regularly	✓			
• Disposal				
• Be via a licensed waste collector	✓			
• To a licensed disposal facility, such as Chemical Waste Treatment Centre	✓			
• Be a reuser of the waste, under approval from the EPD	✓			

Table for follow-up Action:

Item	Details of defective works or observations	Location	Further action to be taken (Included persons / party to take action)	Expected Date for Action taken
#1	Follow up to the previous site inspection finding item ①, the excavator "19" was repaired.	Node 2	Follow up action was completed, no further action to be taken.	N/A
#2	Follow up to the previous site inspection finding item ②, no standing water was observed.	SA14	Follow up action was completed, no further action to be taken.	N/A
Remark ①	The silt curtain was not fully enclosed the marine working area.	Node 3	The Contractor was reminded reminded to use of curtain around the working area. S.A.	17-11-05
Remark ②	Rubbish skip was found full load.	Road L4	The Contractor was reminded to keep the rubbish skip clear and more frequently.	17-11-05
Remark ③	The stockpile at L4 was not covered.	Road L4	The Contractor was reminded to covered all stockpiles.	17-11-05
Remark ④	No environmental permit displayed on site exit.	SA3	The Contractor was reminded to display on conspicuously site.	17-11-05

Signature:	<i>Jun</i>	RSS	LWKJV	ET
Name:	WV-lee			<i>S.A.</i>
Date:	11/11/05			H.T. Chow 11-11-2005

Contract No.: TP 37/03 Remaining Engineering Infrastructure Works for Pak Shek Kok Development Package 2A

SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES

Inspection Date : 17 November 2008 Inspected by Name : (RSS) Eric Leung (LWKJM) Ben Fye (ET) H.T. Chow
 Time : 15:30 Signature : *[Signature]*

Weather Condition : Sunny / Fine / Overcast / Drizzle / Rain / Storm / Hazy
 Wind : Calm / Light / Breeze / Strong Temperature : 24°C Humidity : High / Moderate / Low

	Implementation Stages*		Remark
	Yes	No / N/A	
Air Quality			
• The heights from which fill materials are dropped should be controlled to a practical height to minimize the fugitive dust arising from unloading.	<input checked="" type="checkbox"/>		
• During transportation by truck, material should be loaded to a level lower than the side and tail boards, and should be dampened or covered before transport.	<input checked="" type="checkbox"/>		
• All stockpile of aggregate or spoil should be enclosed or covered and water applied in dry or windy condition.	<input checked="" type="checkbox"/>		(2)
• The haul road should be either paved or regular watering.	<input checked="" type="checkbox"/>		
• Unpaved areas should be watered regularly to avoid dust generation.	<input checked="" type="checkbox"/>		(3)
• The public road around the site entrance should be kept clean and free from dust.	<input checked="" type="checkbox"/>		
• Vehicle speed should be limited to 20 km/hr.	<input checked="" type="checkbox"/>		
• Wheel washing facilities should be provided at all main entrance of work site.	<input checked="" type="checkbox"/>		
• The enclosures should be around the main dust-generating activities.	<input checked="" type="checkbox"/>		
• Dusty materials should be sprayed prior to loading.	<input checked="" type="checkbox"/>		
• All plant and equipment should be well maintained e.g. without black smoke emission.	<input checked="" type="checkbox"/>		
• Vehicle and equipment should be switched off while not in use.	<input checked="" type="checkbox"/>		
• Open burning should be prohibited.	<input checked="" type="checkbox"/>		
Noise			
• The constructions works should be scheduled to minimize noise nuisance.	<input checked="" type="checkbox"/>		
• Only well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.	<input checked="" type="checkbox"/>		
• Machines and plants that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	<input checked="" type="checkbox"/>		
• Plant known to emit noise strongly in on direction, should, where possible, be orientated so that the noise is directed away from nearby NSRs.	<input checked="" type="checkbox"/>		
• Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.	<input checked="" type="checkbox"/>		
• Noise enclosures, noise barriers, or portable noise barriers used where necessary.	<input checked="" type="checkbox"/>		
• Air compressors and hand held breakers should have noise labels.	<input checked="" type="checkbox"/>		
• Compressors and generators should operate with door closed.	<input checked="" type="checkbox"/>		
• Construction Noise Permits should be available for inspection.	<input checked="" type="checkbox"/>		



SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES

	Implementation Stages*		Remark
	Yes	No / N/A	
Water Quality			
General Construction Activities			
Temporary ditches shall be provided to facilitate runoff discharge into appropriate watercourses, via a sediment trap / sedimentation tanks, prior to discharge.	✓		
Permanent drainage channels shall incorporate sediment basins / traps, and baffles.	✓		
All traps shall incorporate oil and grease removal facilities.	✓		
Sediment traps / sedimentation tanks shall be regular cleaned and maintained regularly.	✓		
All drainage facilities should be adequate for controlled release of storm flows.	✓		
Minimizing of exposed soil areas to reduce the potential for increased siltation and contamination of runoff.	✓		
Open stockpiles of more than 50m ² should be covered.	✓		
Temporary stockpiles of excavated materials should be covered during rainstorms.	✓		
Manholes should be covered and sealed.	✓		
All chemical stores shall be contained (bunded) such that spills are not allowed to gain access to water bodies.	✓		
Vehicles and plant should be cleaned of earth, mud and debris before leaving the site.	✓		
Vehicle washing facilities should be provided at every site exit.	✓		
Vehicle washing facilities should be adequate to settle out the sand and silt.	✓		
Washing area and road exiting from washing facility should be paved.	✓		
Access road should have sufficient back fall toward washing facility.	✓		
Dredging Activities			
Dredging of designated contaminated marine mud shall only be undertaken by a suitable grab dredger using a close grab.		✓	
Mechanical grabs shall be designed and maintained to avoid spillage and shall be seal tightly while being lifted.		✓	
All vessels shall be sized such that adequate clearance is maintained between vessel and the sea bed and under water pipelines at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller on the water within the site.		✓	
The works shall cause no visible foam, oil, grease, scum litter or other objectionable matter to be present on the water within the site.		✓	
All barges shall be fitted with tight fitting seals to their bottom openings to prevent leakage of materials.		✓	
Excess material shall be cleaned from the decks and exposed fittings of the barges before the vessels are moved.		✓	
Loading of barges shall be controlled to prevent splashing of dredging material to the surrounding water and the barges shall not be filled to a level which will cause overflowing of material or polluted water during loading or transportation.		✓	
Adequate freeboard shall be maintained on barges to ensure that decks are not washed by wave action.		✓	

SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES

	Implementation Stages*			Remark
	Yes	No	N/A	
Mitigation Measures on Waste Management				
Filling Activities				
Use of silt screen around the filling face to reduce the losses to the surrounding.	✓			
All vessels shall be sized such that adequate clearance is maintained between vessel and the sea bed and under water pipeline at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash or pipelines damaged.	✓			
The works shall cause no visible foam, oil, grease, scum, litter or other objectionable matter to be present on the water within the site.	✓			
All barges shall be fitted with tight fitting seals to their bottom openings to prevent leakage of material.	✓			
Loading of barges shall be controlled to prevent splashing of dredged material to the surrounding water and barges shall not be filled to a level which will cause overflowing of material or polluted water during loading transportation.	✓			
Waste Management				
Marine Dredged Sediment				
Relevant licence / permits for disposal of marine dredged sediment are available for inspection.			✓	
Bottom opening of barges is fitted with tight fitting seals to prevent leakage of material. Excess material is cleaned from the decks and exposed fittings of barges and hopper dredgers before the vessel is moved.			✓	
Monitoring of the barging loading is conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels are equipped with automatic self-monitoring devices as specified by the EPD.			✓	
Transport of dredged marine sediments to the disposal site is by split barge of not less than 750m ³ capacity, well maintained and capable of rapid opening and discharge at the disposal site.			✓	
Inspector of the barge loading to ensure that loss of material does not take place during transportation.			✓	
Construction and Demolition (C&D) Waste				
Most of the C&D materials generated from the construction are sorted immediately in-situ to find out if they can be re-used for this job site or for other job sites.	✓			
Sufficient spaces are identified and provided during the construction stage for the collection, temporary storage and on-site sorting of C&D materials.	✓			
Proper protective measures, such as fences and tarpaulin, are provided, in order to protect the temporary stockpiled materials for later reuse / recycle.	✓			
Avoiding cross contamination to reusable and / or recyclable materials collected (e.g. covering the reusable materials)	✓			
In order to reduce the impacts to the public, except for those sorted inert C&D materials to be reused on site, all other sorted non-inert materials (e.g. general refuse and waste formworks) shall be removed off site as soon as practicable in order to optimise the use of the on-site storage space. If the non-inert materials need to be stored on site for a short period, the materials shall be centralized and stored at specific areas far away from the sensitive receivers.	✓			
All Public Fill arising from the demolition works shall be limited to a size not more than 250mm and free of reinforcement bars, timber, etc. before re-using it.	✓			
Recyclable materials sorted from the site should be collected by potential recycling contractors under the Contractor's arrangement.	✓			
Trip ticket system will be implemented to ensure proper waste disposal at public filling and landfills	✓			
Appropriate measures should be employed to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers.	✓			
Proper resource planning and calculations before ordering the construction materials to be used will ensure that the wastage of the materials can be minimized	✓			



SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES

	Implementation Stages*		Remark
	Yes	No	
	N/A		
Mitigation Measures on Waste Management			
• Proper storage will minimize the damage and thus the wastage of the materials	✓		
• Training of site personnel in proper waste management procedures. The workers shall be constantly educated for the awareness of the proper handling of waste and to reduce the amount of waste while Site Agent shall be constantly met to discuss the effectiveness of the implementation of the waste management plan. Information to promote the waste management and the reduction concept shall be posted at the site to raise alertness of the personnel concerned.	✓		
• Chemical Waste			
• It is required to register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes.	✓		
• After use, chemical wastes (e.g. cleaning fluids, solvents, lubrication oil and fuel) should be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.	✓		
• Chemical wastes should be stored and collected by an approved operator for disposal at the Chemical Waste Treatment Facility or other licensed facility in accordance with the Chemical Waste (General) Regulation.	✓		
• Containers used for the storage of chemical wastes			
• Be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed	✓		
• Have a capacity of less than 450L unless the specification have been approved by the EPD	✓		
• Display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Chemical Waste (General) Regulations and Codes of Practice	✓		
• Labelling			
• Every container of chemical waste would bear an appropriate label, which would contain the particulars details.	✓		
• The waste produced would ensure that the information contained on the label is accurate and sufficient so as to enable proper and safe handling, storage and transport of the chemical waste	✓		
• Storage Area			
• Be clearly labeled and used solely for the storage of chemical waste	✓		
• Be enclosed on at least 3 sides	✓		
• Have an impermeable floor and bunding of sufficient capacity to accommodate 110% of the volume of the largest container or 20% of the total volume of waste stored in that area, whichever is the greatest	✓		
• Have adequate ventilation	✓		
• Be covered to prevent rainfall entering	✓		
• Be arranged so that incompatible materials are adequately separated	✓		
• Be clean and maintain regularly	✓		
• Disposal			
• Be via a licensed waste collector	✓		
• To a licensed disposal facility, such as Chemical Waste Treatment Centre	✓		
• Be a reuser of the waste, under approval from the EPD	✓		



SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES

	Implementation Stages*		Remark
	Yes	No / N/A	
Mitigation Measures on Waste Management			
• Spillage			
• Establish source of spill or discharge and determine nature of material, where possible halt discharge		✓	
• Commencing at the source of the spill, establish all current and potential impacted areas		✓	
• Commence containment of spill using bunds made from available materials and ground water cut-off trenches where necessary		✓	
• After spill is contained remove material (including contaminated soil where necessary) using pumps and/or absorbent materials		✓	
• Dispose of materials as chemical wastes		✓	
• General Refuse			
• General refuse generated on-site is in enclosed bins or compaction units separate from construction and chemical waste			
• A reputable waste collector is employed by the Contractor to remove general refuse from the site, separately from the construction and chemical waste.	✓		
• General refuse generated is removed on daily or every second day basis to minimise odour, pest and litter impacts	✓		
• Aluminium cans are recovered from the waste stream by individual collectors if they are segregated or easily accessible, so separate, labelled bins for their deposit should be provided if feasible.	✓		
• Office wastes are reduced through recycling of paper if volumes are large enough to warrant collection.	✓		
• Site Practice			
• Good site practices should be adopted to clean the rubbish and litter on the construction sites so as to prevent the rubbish and litter from dropping into the nearby environment. Construction sites should be cleaned on a regular basis.		✓	#2
• The Contractor assigned worker is responsible for good site practices, arrangements for collection and effective disposal of all wastes generated at the site.	✓		
• Proper storage and site practices to minimise the potential for damage or contamination of construction materials.	✓		
• The Environmental Permit should be displayed conspicuously on site	✓		
• Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste.	✓		
• Any unused chemicals or those with remaining functional capacity should be recycled.	✓		
• A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be used, e.g. trip ticket system for chemical waste disposal. Quantities could be determined by weighing each load or other suitable methods.	✓		
• Suitable collection sites around site offices will be required. For environmental hygiene reasons and to minimize odor, refuse should not be stored for a period exceeding 48 hours, however, removal every 24 hours is preferable.	✓		
• Minimize windblown litter and dust during transportation by either covering trucks or transporting wastes in enclosed container.	✓		
• All generators, fuel and oil storage are within bundle areas.	✓		
• Oil leakage from machinery, vehicle and plant is prevented.	✓		
• Chemical storage area, drainage systems, silt traps, sumps and oil interceptors are cleaned and maintained regularly.	✓		

Contract No.: TP 37/03 Remaining Engineering Infrastructure Works for
Pak Shek Kok Development Package 2A

Table for follow-up Action:

Item	Details of defective works or observations	Location	Further action to be taken (Included persons / party to take action)	Expected Date for Action taken
#1	Follow up to the previous site inspection item ① on 11-11-05, the sill curtain was enclosed the machine working area	Node 3	Follow up action was completed, no further action to be taken.	N/A
#2	Follow up to the previous site inspection item ② on 11-11-05, the rubbish skip still found full load at "Road L4".	Road L4	The Contractor was reminded to keep the rubbish skip clear and more frequently.	24-11-2005
#3	Follow up to the previous site inspection item ③ on 11-11-05, stockpile at "Road L4" was removed.	Road L4	Follow up action was completed, no further action to be taken.	N/A
#4	Follow up to the previous site inspection item ④ on 11-11-05, the environmental permit was displaced on site entrance.	SA3	-	N/A
Remark ①	Oil containers were found at stockpile next to the Node-1.	Node 1	The Contractor was reminded to place them at appropriate storage area.	24-11-2005
Remark ②	The stockpile at Node-2 was not covered. and SA14	Node 2 & SA14	The Contractor was reminded to covered all stockpiles.	24-11-2005
Remark ③	Potential fugitive dust emission at SA14 was observed.	SA14	The Contractor was reminded to watered unpaved areas regularly to avoid dust generation.	24-11-2005

Signature:	RSS	LWK/JV	ET
Name:	Eric Leung	Per-128	H.T. Cheong
Date:	17-11-05	17/11/05	17-11-2005

Contract No.: TP 37/03 Remaining Engineering Infrastructure Works for
 Pak Shek Kok Development Package 2A

SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES

Inspection Date : 25/11/05
 Time : 14:30
 Weather Condition : Sunny / Fine / Overcast / Drizzle / Rain / Storm / Hazy
 Wind : Calm (Light) / Breeze / Strong
 Inspected by : Name : (RSS) Eric Leung
 Signature : *Eric Leung*
 (ET) *Eric Leung*
 Temperature : 29
 Humidity : High / Moderate / Low
Eric Leung

	Implementation Stages*			Remark
	Yes	No	N/A	
Mitigation Measures on Waste Management				
Air Quality				
• The heights from which fill materials are dropped should be controlled to a practical height to minimize the fugitive dust arising from unloading.	✓			
• During transportation by truck, material should be loaded to a level lower than the side and tail boards, and should be dampened or covered before transport.	✓			
• All stockpile of aggregate or spoil should be enclosed or covered and water applied in dry or windy condition.	✓			
• The haul road should be either paved or regular watering.	✓			
• Unpaved areas should be watered regularly to avoid dust generation.	✓			
• The public road around the site entrance should be kept clean and free from dust.	✓			
• Vehicle speed should be limited to 20 km/hr.	✓			
• Wheel washing facilities should be provided at all main entrance of work site.	✓			
• The enclosures should be around the main dust-generating activities.	✓			
• Dusty materials should be sprayed prior to loading.	✓			
• All plant and equipment should be well maintained e.g. without black smoke emission.	✓			
• Vehicle and equipment should be switched off while not in use.	✓			
• Open burning should be prohibited.	✓			
Noise				
• The constructions works should be scheduled to minimize noise nuisance.	✓			
• Only well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.	✓			
• Machines and plants that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	✓			
• Plant known to emit noise strongly in on direction, should, where possible, be orientated so that the noise is directed away from nearby NSRs.	✓			
• Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.	✓			
• Noise enclosures, noise barriers, or portable noise barriers used where necessary.	✓			
• Air compressors and hand held breakers should have noise labels.	✓			
• Compressors and generators should operate with door closed.	✓			
• Construction Noise Permits should be available for inspection.	✓			



SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES

	Implementation Stages*		Remark
	Yes	No / N/A	
Mitigation Measures on Waste Management			
Water Quality			
General Construction Activities			
▪ Temporary ditches shall be provided to facilitate runoff discharge into appropriate watercourses, via a sediment trap / sedimentation tanks, prior to discharge.	✓		
▪ Permanent drainage channels shall incorporate sediment basins / traps, and baffles.	✓		
▪ All traps shall incorporate oil and grease removal facilities.	✓		
▪ Sediment traps / sedimentation tanks shall be regular cleaned and maintained regularly.	✓		
▪ All drainage facilities should be adequate for controlled release of storm flows.	✓		
▪ Minimizing of exposed soil areas to reduce the potential for increased siltation and contamination of runoff.	✓		
▪ Open stockpiles of more than 50m ³ should be covered.	✓		
▪ Temporary stockpiles of excavated materials should be covered during rainstorms.	✓		
▪ Manholes should be covered and sealed.	✓		Item # 2
▪ All chemical stores shall be contained (bunded) such that spills are not allowed to gain access to water bodies.	✓		
▪ Vehicles and plant should be cleaned of earth, mud and debris before leaving the site.	✓		
▪ Vehicle washing facilities should be provided at every site exit.	✓		
▪ Vehicle washing facilities should be adequate to settle out the sand and silt.	✓		
▪ Washing area and road exiting from washing facility should be paved.	✓		
▪ Access road should have sufficient back fall toward washing facility.	✓		
Dredging Activities			
▪ Dredging of designated contaminated marine mud shall only be undertaken by a suitable grab dredger using a close grab.	✓		
▪ Mechanical grabs shall be designed and maintained to avoid spillage and shall be seal tightly while being lifted.	✓		
▪ All vessels shall be sized such that adequate clearance is maintained between vessel and the sea bed and under water pipelines at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller on the water within the site.	✓		
▪ The works shall cause no visible foam, oil, grease, scum litter or other objectionable matter to be present on the water within the site.	✓		
▪ All barges shall be fitted with tight fitting seals to their bottom openings to prevent leakage of materials.	✓		
▪ Excess material shall be cleaned from the decks and exposed fittings of the barges before the vessels are moved.	✓		
▪ Loading of barges shall be controlled to prevent splashing of dredging material to the surrounding water and the barges shall not be filled to a level which will cause overflowing of material or polluted water during loading or transportation.	✓		
▪ Adequate freeboard shall be maintained on barges to ensure that decks are not washed by wave action.	✓		



SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES

	Implementation Stages*			Remark
	Yes	No	N/A	
Mitigation Measures on Waste Management				
Filling Activities				
▪ Use of silt screen around the filling face to reduce the losses to the surrounding.	✓			
▪ All vessels shall be sized such that adequate clearance is maintained between vessel and the sea bed and under water pipeline at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash or pipelines damaged.	✓			
▪ The works shall cause no visible foam, oil, grease, scum, litter or other objectionable matter to be present on the water within the site.	✓			
▪ All barges shall be fitted with tight fitting seals to their bottom openings to prevent leakage of material.	✓			
▪ Loading of barges shall be controlled to prevent splashing of dredged material to the surrounding water and barges shall not be filled to a level which will cause overflowing of material or polluted water during loading/transportation.	✓			
Waste Management				
Marine Dredged Sediment				
• Relevant licence / permits for disposal of marine dredged sediment are available for inspection.	✓			
• Bottom opening of barges is fitted with tight fitting seals to prevent leakage of material. Excess material is cleaned from the decks and exposed fittings of barges and hopper dredgers before the vessel is moved.	✓			
• Monitoring of the barging loading is conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels are equipped with automatic self-monitoring devices as specified by the EPD.	✓			
• Transport of dredged marine sediments to the disposal site is by split barge of not less than 750m ³ capacity, well maintained and capable of rapid opening and discharge at the disposal site.	✓			
• Inspection of the barge loading to ensure that loss of material does not take place during transportation.	✓			
Construction and Demolition (C&D) Waste				
• Most of the C&D materials generated from the construction are sorted immediately in-situ to find out if they can be re-used for this job site or for other job sites.	✓			
• Sufficient spaces are identified and provided during the construction stage for the collection, temporary storage and on-site sorting of C&D materials.	✓			
• Proper protective measures, such as fences and tarpaulin, are provided, in order to protective the temporary stockpiled materials for later reuse / recycle.	✓			
• Avoiding cross contamination to reusable and / or recyclable materials collected (e.g. covering the reusable materials)	✓			
• In order to reduce the impacts to the public, except for those sorted inert C&D materials to be reused on site, all other sorted non-inert materials (e.g. general refuse and waste formworks) shall be removed off site as soon as practicable in order to optimise the use of the on-site storage space. If the non-inert materials need to be stored on site for a short period, the materials shall be centralized and stored at specific areas far away the sensitive receivers.	✓			
• All Public Fill arising from the demolition works shall be limited to a size not more than 250mm and free of reinforcement bars, timber, etc. before re-using it.	✓			
• Recyclable materials sorted from the site should be collected by potential recycling contractors under the Contractor's arrangement.	✓			
• Trip ticket system will be implemented to ensure proper waste disposal at public filling and landfills	✓			
• Appropriate measures should be employed to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers.	✓			
• Proper resource planning and calculations before ordering the construction materials to be used will ensure that the wastage of the materials can be minimized	✓			

SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES

	Implementation Stages*			Remark
	Yes	No	N/A	
Mitigation Measures on Waste Management				
• Proper storage will minimize the damage and thus the wastage of the materials	✓			
• Training of site personnel in proper waste management procedures. The workers shall be constantly educated for the awareness of the proper handling of waste and to reduce the amount of waste while Site Agent shall be constantly met to discuss the effectiveness of the implementation of the waste management plan. Information to promote the waste management and the reduction concept shall be posted at the site to raise alertness of the personnel concerned.	✓			
• Chemical Waste				
• It is required to register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes.	✓			
• After use, chemical wastes (e.g. cleaning fluids, solvents, lubrication oil and fuel) should be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.	✓			
• Chemical wastes should be stored and collected by an approved operator for disposal at the Chemical Waste Treatment Facility or other licensed facility in accordance with the Chemical Waste (General) Regulation.	✓			
• Containers used for the storage of chemical wastes				
• Be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed	✓			
• Have a capacity of less than 450L unless the specification have been approved by the EPD	✓			
• Display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Chemical Waste (General) Regulations and Codes of Practice	✓			
• Labelling				
• Every container of chemical waste would bear an appropriate label, which would contain the particulars details.	✓			
• The waste produced would ensure that the information contained on the label is accurate and sufficient so as to enable proper and safe handling, storage and transport of the chemical waste	✓			
• Storage Area				
• Be clearly labeled and used solely for the storage of chemical waste	✓			
• Be enclosed on at least 3 sides	✓			
• Have an impermeable floor and bunding of sufficient capacity to accommodate 110% of the volume of the largest container or 20% of the total volume of waste stored in that area, whichever is the greatest	✓			
• Have adequate ventilation	✓			
• Be covered to prevent rainfall entering	✓			
• Be arranged so that incompatible materials are adequately separated	✓			
• Be clean and maintain regularly	✓			
• Disposal				
• Be via a licensed waste collector	✓			
• To a licensed disposal facility, such as Chemical Waste Treatment Centre	✓			
• Be a reuser of the waste, under approval from the EPD	✓			



SITE INSPECTION CHECKLIST ON THE IMPLEMENTATION OF ENVIRONMENTAL MITIGATION MEASURES

	Implementation Stages*			Remark
	Yes	No	N/A	
Mitigation Measures on Waste Management				
• Spillage				
• Establish source of spill or discharge and determine nature of material, where possible halt discharge			✓	
• Commencing at the source of the spill, establish all current and potential impacted areas			✓	
• Commence containment of spill using bunds made from available materials and ground water cut-off trenches where necessary			✓	
• After spill is contained remove material (including contaminated soil where necessary) using pumps and/or absorbent materials			✓	
• Dispose of materials as chemical wastes			✓	
• General Refuse				
• General refuse generated on-site is in enclosed bins or compaction units separate from construction and chemical waste	✓			
• A reputable waste collector is employed by the Contractor to remove general refuse from the site, separately from the construction and chemical waste.	✓			
• General refuse generated is removed on daily or every second day basis to minimise odour, pest and litter impacts	✓			
• Aluminium cans are recovered from the waste stream by individual collectors if they are segregated or easily accessible, so separate, labelled bins for their deposit should be provided if feasible.	✓			
• Office wastes are reduced through recycling of paper if volumes are large enough to warrant collection.	✓			
• Site Practice				
• Good site practices should be adopted to clean the rubbish and litter on the construction sites so as to prevent the rubbish and litter from dropping into the nearby environment. Construction sites should be cleaned on a regular basis.				
• The Contractor assigned worker is responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site.	✓			Con #1
• Proper storage and site practices to minimise the potential for damage or contamination of construction materials.				
• The Environmental Permit should be displaced conspicuously on site	✓			Con #1
• Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste.	✓			
• Any unused chemicals or those with remaining functional capacity should be recycled.	✓			
• A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be used, e.g. trip ticket system for chemical waste disposal. Quantities could be determined by weighing each load or other suitable methods.	✓			
• Suitable collection sites around site offices will be required. For environmental hygiene reasons and to minimize odor, refuse should not be stored for a period exceeding 48 hours, however, removal every 24 hours is preferable.	✓			
• Minimize windblown litter and dust during transportation by either covering trucks or transporting wastes in enclosed container.	✓			
• All generators, fuel and oil storage are within bundle areas.	✓			
• Oil leakage from machinery, vehicle and plant is prevented.	✓			
• Chemical storage area, drainage systems, silt traps, sumps and oil interceptors are cleaned and maintained regularly.	✓			

Table for follow-up Action:

Item	Details of defective works or observations	Location	Further action to be taken (Included persons / party to take action)	Expected Date for Action taken
#1	Follow up to the previous site inspection item #2 on 17/11/05, the rubbish skip was found cleared up. However, rubbish such as plastic bottles and waste paper was observed on the ground next to the rubbish skip.	Road L4	The Contractor was reminded to dispose the rubbish to the rubbish skip and also provide more manpower to maintain good house keeping.	01/12/05
#2	Follow up to the previous site inspection item ① on 17/11/05, 0:1 containers found at stockpile next to the Node 1 were empty and clean, but the Contractor failed to place them in proper place.	Node 1	No further action was required.	N/A
#3	Follow up to the previous site inspection item ② on 17/11/05, the stockpile at Node 2 was removed but stockpile at SA14 was still observed without covered.	SA14	The contractor was reminded to provide water - spraying during operation and to cover with tarpaulin sheets during the period without operation.	01/12/05.
#4	Follow up the previous site inspection item ③ on 17/11/05, although no potential fugitive dust emission at SA14 was observed, the Contractor was reminded to water the haul road and up-paved area more frequently especially during dry season.	SA14	No further action was required.	N/A
remark ④	Black Smoke was emitted from the Excavator at Ma Liu Shui.	Ma Liu Shui	The Contractor was reminded to maintain all site machine properly to avoid black smoke emission.	01/12/05
remark ⑤	Silt and mud was accumulated at the drainage channel at Ma Liu Shui.	Ma Liu Shui	The Contractor was reminded to clean up the mud and silt accumulated in order to maintain the channel's capability.	01/12/05
Signature:	RSS <i>Eric Leung</i>	LWKJV	ET <i>Eric Lam</i>	
Name:	Eric Leung		Linda Lam	
Date:	25-11-2005		25/11/05	



Appendix I
IEC and RE Comments on Monthly EM&A Report
—
October 2005

IEC and RE Comments on Monthly Environmental Monitoring and Audit Report – October 2005

Item No.	Document Reference	Comment	ET Response
---	---	No RE and IEC comments were noticed.	No responses were required since no comments were noticed.



Appendix J

Wastewater Monitoring

Test Reports of Wastewater Samples from Discharge Points



ENVIRO LABS LIMITED

環境化驗有限公司

TEST REPORT

JOB NO. : A-051003-1
DATE OF ISSUE : 21 November 2005
PAGE : 1 of 1

1. Client

Leader - Wai Kee (C&T) Joint Venture
Unit 1001-1005, 10/F., Grand Central Plaza, Tower 1, 138 Shatin Rural Committee Road, Sha Tin, N.T., HK
Attn.: Mr. Ben Yip

2. Sample Identification

Sample Description : One batch of water samples said to be wastewater
Sampling : Conducted by Enviro Labs Ltd.
Sampling Point : Outlet of sedimentation tank at
Construction Site of Remaining Engineering Infrastructure Works for Pak Shek Kok
Development Package 2A, Pak Shek Kok, N.T. (Contract No. TP 37/03)
Preservation : Delivered and stored under refrigerated condition
Sampling Date : 11 Nov 2005
Received Date : 11 Nov 2005

3. Test Method

Parameter	Reference Method	Testing Period
(i) Total Suspended Solids (TSS) Dried at 103-105°C	APHA ¹ 17e 2540 D	14 Nov 2005

1. APHA Standard Methods for the Examination of Water and Wastewater

4. Test Result*

Sample Label	Test Parameter	Sample No.	Test Result	Discharge Limit**	Unit
MLS Pier 1	Total Suspended Solids	051003-2	9.7	≤30	mg/L

* Test results relate only to the items received.

** Information provided by the client. (It is not a test result, information for reference only).

--- END OF REPORT ---



APPROVED SIGNATORY:

Kenneth Lam
(Laboratory Manager)

Rm 611-612, Hong Leong Plaza, 39 Lok Yip Road,
Fanling, N.T., Hong Kong

Tel: (852) 2676 2983

Fax: (852) 2676 2960

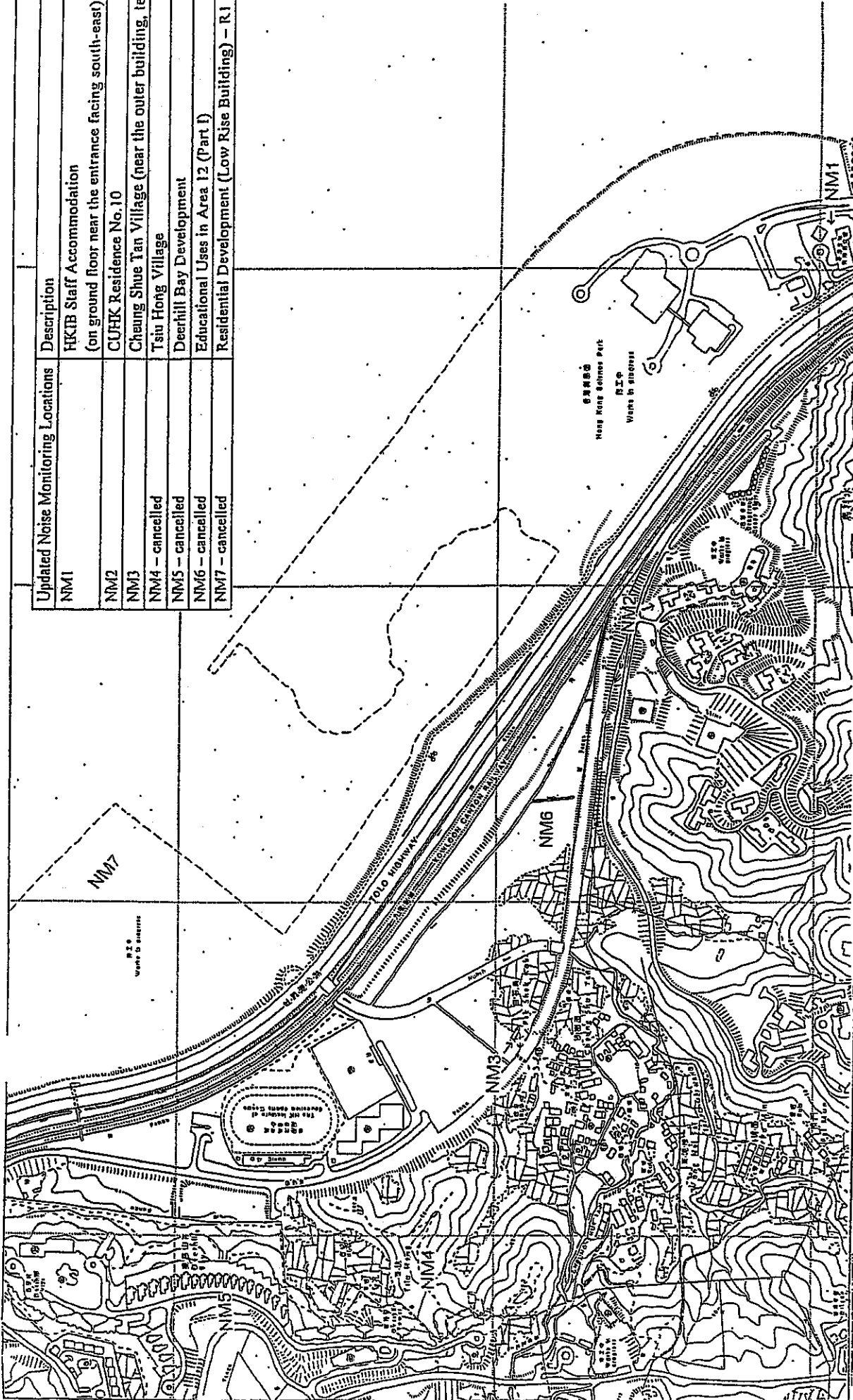
<http://www.envirolabs.com.hk>

e-mail: elk@envirolabs.com.hk



Figures

Updated Noise Monitoring Locations	Description
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, temple)
NM4 - cancelled	Tsin Hong Village
NM5 - cancelled	Deerhill Bay Development
NM6 - cancelled	Educational Uses in Area 12 (Part I)
NM7 - cancelled	Residential Development (Low Rise Building) - R1



Scale : ---

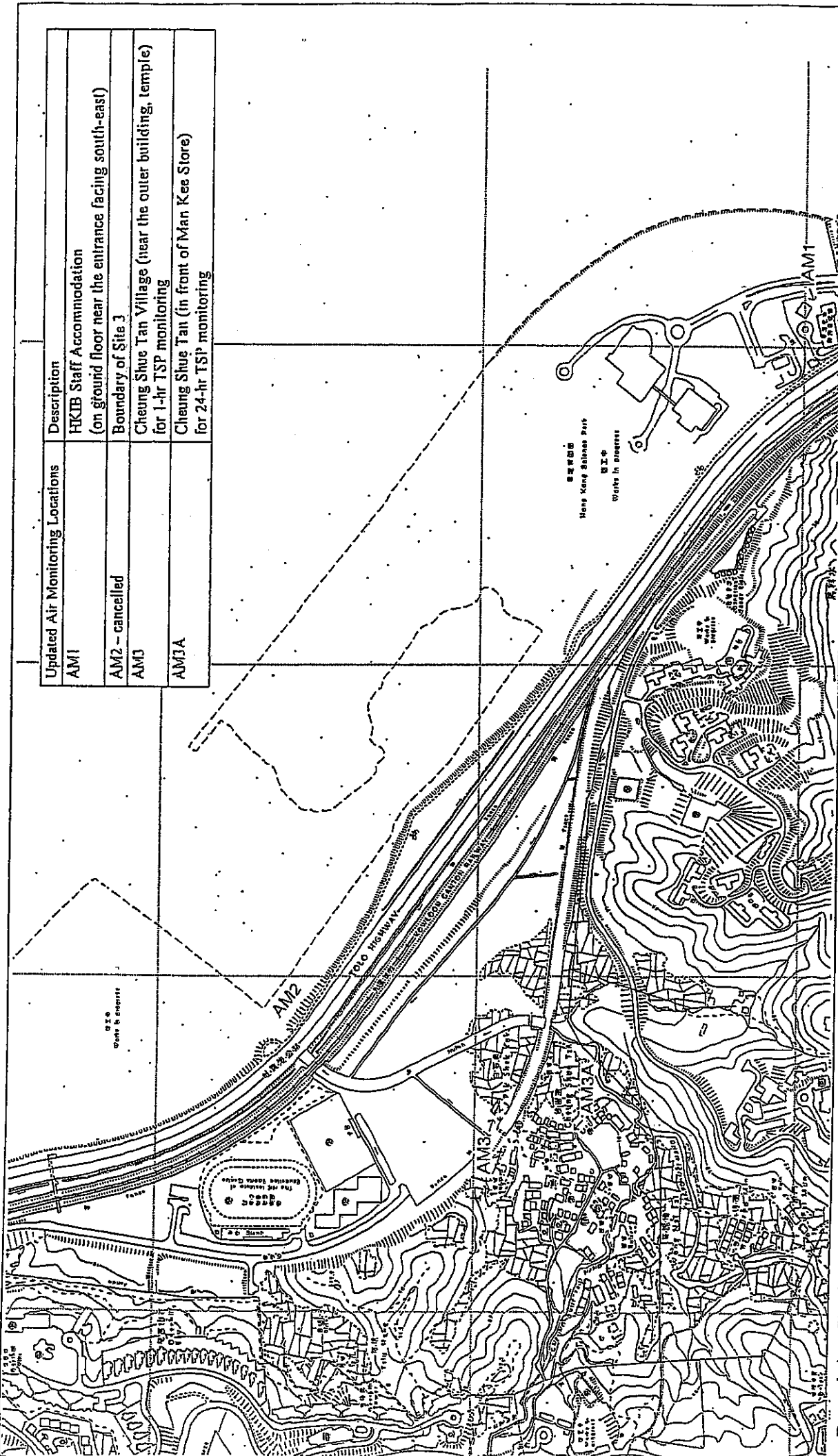
Revised Date: ...

June 2004

Remaining Engineering Infrastructure Works for
 Pak Shek Kok Development Package 2A
 Contract No. TP 37/03
 Figure 1 Location of Noise Monitoring Stations



東業德勤測試顧問有限公司
 ETS-TESTCONSULT LIMITED

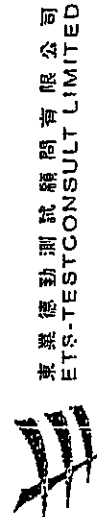


Updated Air Monitoring Locations	Description
AM1	HKIB Staff Accommodation (on ground floor near the entrance facing south-east)
AM2 - cancelled	Boundary of Site 3
AM3	Cheung Shue Tan Village (near the outer building, temple) for 1-hr TSP monitoring
AM3A	Cheung Shue Tan (in front of Man Kee Store) for 24-hr TSP monitoring

Scale : ---

Revised Date:

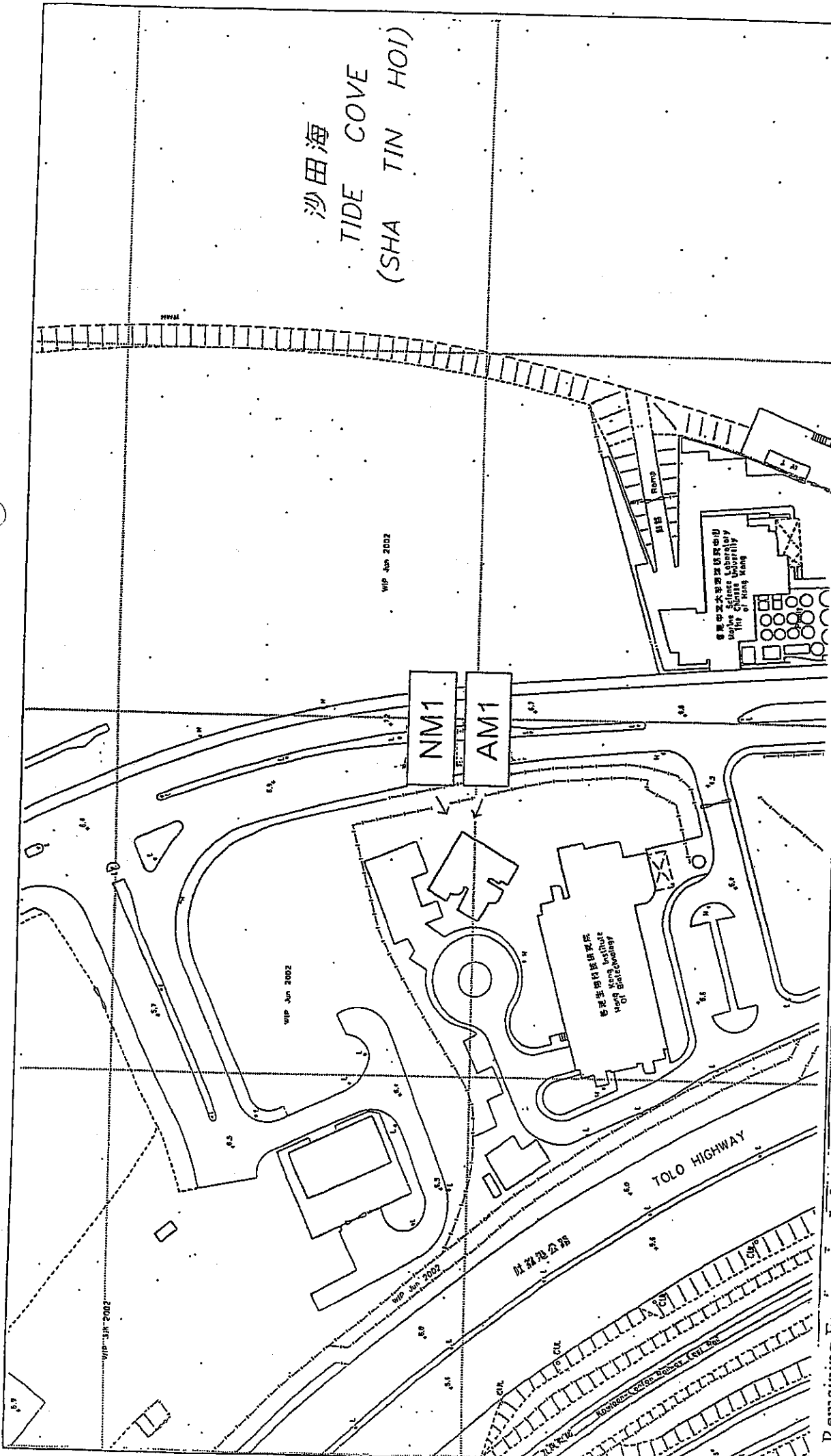
June 2004



東業德動測試顧問有限公司
ETS-TESTCONSULT LIMITED

Remaining Engineering Infrastructure Works for
Pak Shek Kok Development Package 2 A
Contract No. IP 37/03
Figure 2 Location of Air Monitoring Stations

沙田海
TIDE COVE
(SHA TIN HOI)



Scale : ---

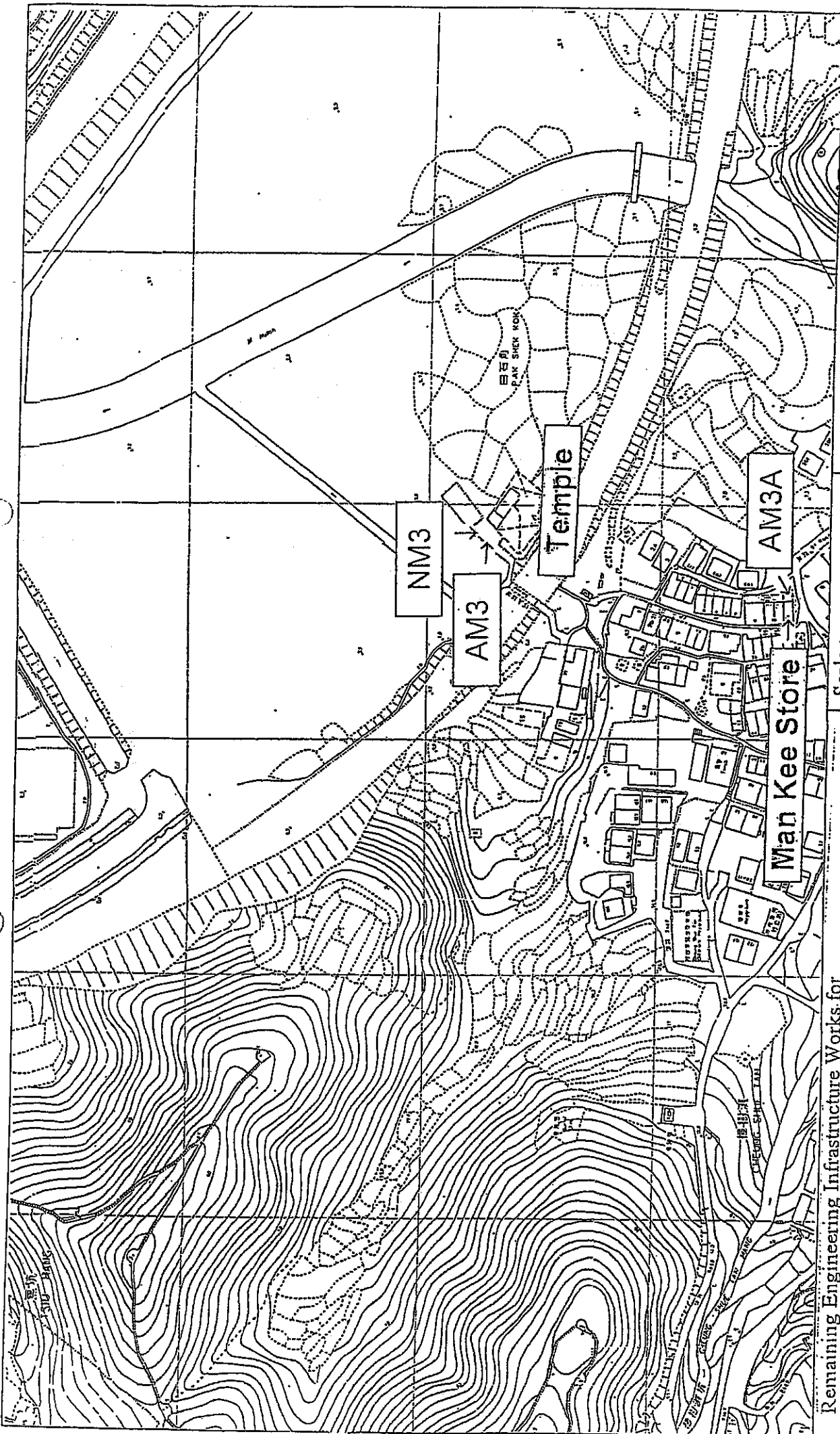
Revised Date:

June 2004



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ETS-TESTCONSULT LIMITED

Remaining Engineering Infrastructure Works for
Pak Shek Kok Development Package 2A
Contract No. TP 37/03
Figure 3 Location of Air and Noise Monitoring Stations
at HKIB Staff Accommodation



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ETS-TESTCONSULT LIMITED

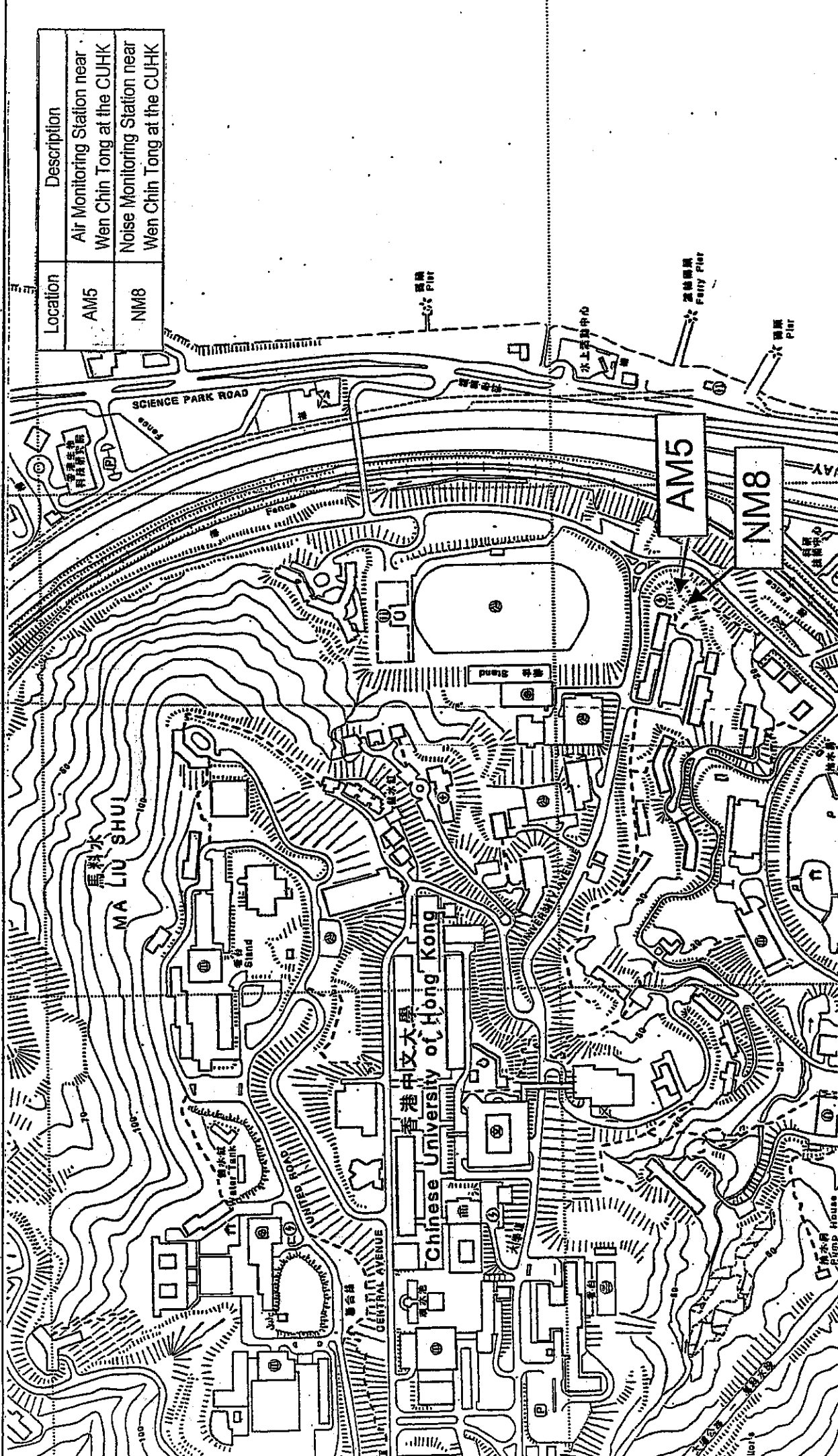
Scale : ---

Revised Date:

June 2004

Remaining Engineering Infrastructure Works for
Pak Shek Kok Development Package 2 A
Contract No. TP 37/03
Figure 5 Location of Air and Noise Monitoring Stations
at Cheung Shue Tan Village

Location	Description
AM5	Air Monitoring Station near Wen Chin Tong at the CUHK
NM8	Noise Monitoring Station near Wen Chin Tong at the CUHK



Remaining Engineering Infrastructure Works for Pak Shek Kok Development

Package 2A Contract No. TP 37/03

Figure 7 Additional Locations of Air and Noise Monitoring Stations at the Chinese University of Hong Kong

Scale : ---

Revised Date :
October 2004



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ETS-TESTCONSULT LIMITED