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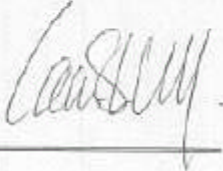
DATE: 12 AUGUST 2003

**HONG KONG DRAINAGE SERVICES DEPARTMENT
CONTRACT NO. DC/2000/08
VILLAGE FLOOD PROTECTION WORKS FOR WANG
CHAU, MAI PO LO WAI AND MAI PO SAN TSUEN AND
DRAINAGE IMPROVEMENT WORKS AT TAN KWAI
TSUEN**

**ENVIRONMENTAL MONITORING & AUDIT (EM&A)
REPORT – JULY 2003 (REVISION A)**

PREPARED FOR

CHING CHIT CHEUNG CONSTRUCTION CO., LIMITED

Quality Index			
Date	Reference No.	Prepared by	Approved By
12 August 2003	TCS/00116/03/600/R0399	Kin Ho Ho (Environmental Consultant)	Cliff Lam (Environmental Team Leader)
			

This report has been prepared by Action-United Environmental Services & Consulting with all reasonable skill, care and diligence within the terms of the Agreement with the client, incorporating our General Terms and Conditions of Business and taking account of the resources devoted to it by agreement with the client.

We disclaim any responsibility to the client and others in respect of any matters outside the scope of the above.

This report is confidential to the client and we accept no responsibility of whatever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies upon the report at their own risk.

Ove Arup & Partners
奧雅納工程顧問

Our ref 23597/L030/ST/II

Date 12 August 2003

Level 5, Festival Walk
80 Tat Chee Avenue
Kowloon Tong, Kowloon
Hong Kong
Tel +852 2528 3031
Fax +852 2268 3950
Direct Tel +852 2268 3211
sam.tsoi@arup.com

www.arup.com

Engineer's Representative
Drainage Services Department
Drainage Projects Division
45/F Revenue Tower
Wan Chai, Hong Kong

Attn: Mr Cheng Pan



By Fax & By Post
Fax No 2827 8700

Dear Sir,

**Agreement No DP 01/2002
Hire of Services for an Independent Environmental Checker for Contract No DC/2000/08 Village Flood
Protection Works for Wang Chau, Mai Po Lo Wai and Mai Po San Tsuen and Drainage Improvement
Works at Tan Kwai Tsuen
Verification of EM&A Report for July 2003 (Revision A)**

We refer to ET's fax dated 12 August 2003 (ref: TCS/00116/03/300/F0405) regarding the captioned subject.

We hereby verify that the captioned report shall be submitted to the EPD in accordance with the requirement as stipulated in the EP/FEP.

If you require any further information, please do not hesitate to contact the undersigned or our Mr Fredrick Leong at 2268 3639.

Yours sincerely,



Sam Tsoi
Independent Environmental Checker

cc AUES - Mr TW Tam (by fax only: 2959 6079)
CCC - Mr Wayne Kee (by fax only: 2482 4746)

Abbreviations

A1	Air Sensitive Receiver
AUES	Action United Environmental Services
ET	Environmental Team
DSD	Drainage Services Department
EAP	Event and Action Plan
EIA	Environmental Impact Assessment
EM&A	Environmental Monitoring and Audit
EP	Environmental Permit
EPD	Environmental Protection Department
FEP	Further Environmental Permit
HOKLAS	Hong Kong Laboratory Accreditation Scheme
HVS	High Volume Sampler
IEC	Independent Environmental Checker
N1	Noise Sensitive Receiver
QA/QC	Quality Assurance and Quality Control
TAT	Trigger/ Action/ Target
TSP	Total Suspended Particulates
W(D)1	Water Sensitive Receiver (Downstream)
W(U)1	Water Sensitive Receiver (Upstream)

Executive Summary

Ching Chit Cheung Construction Co., Ltd. (The Contractor) has been awarded the Contract DC/2000/08 from the Drainage Services Department (DSD) to undertake the Village Flood Protection Works for Wang Chau, Mai Po Lo Wai and Mai Po San Tsuen and Drainage Improvement Works at Tan Kwai Tsuen (the Project).

Action-United Environmental Services and Consulting (AUES) has been commissioned by the Contractor to undertake an impact Environmental Monitoring and Audit (EM&A) program for this project.

This report presents the findings of the impact EM&A reporting month (No. 10) for the Project from **27 June 2003** to **26 July 2003** in accordance with the Environmental Monitoring & Audit (EM&A) Manual.

Environmental Monitoring and Audit Progress

The impact EM&A program was undertaken in accordance with the EM&A manual. A summary of the monitoring activities in this reporting month is listed below:

- Waste Management Audit 1 Time

Air Quality

No monitoring was undertaken as there was no construction work in this reporting month.

Construction Noise

No monitoring was undertaken as there was no construction work in this reporting month.

Water Quality

No monitoring was undertaken as there was no construction work in this reporting month.

Ecological Monitoring

Ecological monitoring was completed last month on 8 June 2003.

Environmental Complaints

No environmental complaint was received in this reporting month.

Environmental Summons

No summon or prosecution related to any environmental issue was received in this reporting month.

Site Inspection and Audit

Environmental site inspections have been suspended until the start of August when construction works at the site will resume. The ET undertook an independent waste management audit on 24 July 2003 for construction works at Wang Chau and Tan Kwai Tsuen.

Future Key Issues

The construction works of the box culvert, the pumping station and the flood protection wall has been temporarily suspended at Mai Po Lo Wai and Mai Po San Tsuen from April until the end of July. This is to allow for the breeding season of the egrets and related waterfowl in and around Mai Po village egretty (Site of Special Scientific Interest) to go undisturbed.

No construction noise, air and water quality impacts are envisaged during the suspension of works, the associated environmental impact monitoring has therefore been suspended for the period and will resume when the construction work restarts in August 2003. Ecological monitoring of the Mai Po village egrettry to study the breeding success of the egrets and related waterfowl was completed on 8 June 2003.

Table of Contents

1.0	INTRODUCTION	1
1.1	PROJECT BACKGROUND.....	1
1.2	STRUCTURE OF THE MONTHLY EM&A REPORT	1
2.0	PROJECT ACTIVITIES	2
2.1	CONSTRUCTION WORKS IN JULY 2003	2
3.0	STATUS OF ENVIRONMENTAL PERMITS	3
3.1	ENVIRONMENTAL PERMITS	3
5.1	MONITORING EQUIPMENT.....	4
5.2	MONITORING LOCATION.....	4
5.3	TRIGGER/ACTION/TARGET LEVELS OF AIR QUALITY	4
5.4	MONITORING PROCEDURE AND CALIBRATION DETAILS	5
5.5	IMPACT AIR QUALITY MONITORING RESULTS AND AUDITS	6
6.0	NOISE MONITORING	7
6.1	MONITORING EQUIPMENT.....	7
6.2	MONITORING LOCATION.....	7
6.3	TRIGGER/ACTION/TARGET LEVELS OF CONSTRUCTION NOISE.....	7
6.4	MONITORING PROCEDURE AND CALIBRATION DETAILS	8
6.5	NOISE MONITORING RESULTS AND AUDITS	8
7.0	WATER QUALITY MONITORING	9
7.1	MONITORING EQUIPMENT.....	9
7.2	MONITORING LOCATIONS.....	9
7.3	TRIGGER/ACTION/TARGET LEVELS OF WATER QUALITY	9
7.4	MONITORING METHODOLOGY.....	10
7.5	WATER MONITORING RESULTS AND AUDITS.....	10
8.0	WASTE MANAGEMENT.....	11
9.0	ECOLOGICAL MONITORING	12
10.0	ENVIRONMENTAL NON-COMPLIANCE AND COMPLAINT	13
11.0	SITE INSPECTION	14
12.0	IMPLEMENTATION STATUS OF MITIGATION MEASURES	14
13.0	IMPACT FORECAST AND MONITORING SCHEDULE FOR AUG 2003	15
13.1	KEY ISSUES FOR THE COMING MONTH.....	15
13.2	UPCOMING EM&A SCHEDULE IN AUGUST 2003	15
13.3	CONSTRUCTION WORKS FOR THE 3 MONTHS ROLLING PROGRAM	16
14.0	CONCLUSIONS AND RECOMMENDATIONS	16

List of Tables

Table 2-1	Major Construction Activities in July 2003
Table 3-1	Summary of the Licence/Permit Status
Table 4-1	EM&A Activities in July 2003
Table 5-1	Air Quality Monitoring Equipment
Table 5-2	Location of Air Monitoring Station
Table 5-3	Trigger/Action/Target Levels for 24-Hr TSP Monitoring
Table 5-4	Trigger/Action/Target Levels for 1-Hr TSP Monitoring
Table 5-5	Impact Air Quality Monitoring Results
Table 6-1	Noise Monitoring Equipment
Table 6-2	Location of Noise Monitoring Station
Table 6-3	Trigger/Action Levels for Construction Noise
Table 6-4	Target Levels for Construction Noise
Table 6-5	Summary of Construction Noise Monitoring Results
Table 7-1	Water Quality Monitoring Equipment
Table 7-2	Locations of Water Monitoring Stations
Table 7-3	Trigger/Action/Target Levels for Water Quality
Table 7-4	Analytical Methods of Water Samples
Table 7-5	Summary of Impact Water Quality Monitoring Results
Table 7-6	Laboratory Testing Results of Suspended Solids and Total Zinc
Table 8-1	Summary of Quantities of Waste for Disposal
Table 9-1	Ecological Monitoring Equipment
Table 10-1	Statistical Summary of Environmental Complaints
Table 10-2	Statistical Summary of Environmental Summons

List of Appendices

Appendix A	Locations of Environmental Monitoring Stations
Appendix B	HOKLAS Certificates and QA/QC Procedures
Appendix C	Schedule of Calibration Certificates
Appendix D	Graphical Plots of Air Quality Monitoring Results
Appendix E	Graphical Plot of Noise Monitoring Results
Appendix F	Meteorological Data
Appendix G	Raw Data of Water Quality Monitoring
Appendix H	Graphical Plots of Water Quality Monitoring Results
Appendix I	Tentative Environmental Mitigation Implementation Schedule
Appendix J	Construction Program
Appendix K	Record of Waste Management Audit

1.0 INTRODUCTION

1.1 PROJECT BACKGROUND

Ching Chit Cheung Construction Co., Ltd. (the Contractor) has been awarded the Contract DC/2000/08 from the Drainage Services Department (DSD) to construct the Village Flood Protection Works for Wang Chau, Mai Po Lo Wai and Mai Po San Tsuen and drainage improvement works at Tan Kwai Tsuen (the Project).

Action-United Environmental Services and Consulting (AUES) has been commissioned by the Contractor to implement an environmental monitoring and audit (EM&A) program in compliance with the legal and the contractual requirements of the Project.

The construction works at Mai Po Lo Wai and Mai Po San Tsuen are the section classified as Designated Project governed by an Environmental Permit (EP) issued by the environmental protection department (EPD). A Further Environmental Permit (FEP-01/088/2002) was issued to the Contractor on 22 Aug 2002. According to Condition 4.0 of the FEP, an Environmental Monitoring and Audit (EM&A) program is required for Mai Po Lo Wai and Mai Po San Tsuen of this Project.

This monthly EM&A report (No. 10) presents the results of EM&A works conducted from 27 June to 26 July 2003 (the reporting month).

1.2 STRUCTURE OF THE MONTHLY EM&A REPORT

The structure of this EM&A report is organized into 14 sections as follows:

Section 1	Introduction
Section 2	Project Activities
Section 3	Status of Environmental Permit
Section 4	Summary of Impact EM&A Activities in July 2003
Section 5	Air Quality Monitoring
Section 6	Noise Monitoring
Section 7	Water Quality Monitoring
Section 8	Waste Management
Section 9	Ecological Monitoring
Section 10	Environmental Complaint and Non-Compliance
Section 11	Site Inspection
Section 12	Implementation Status of Mitigation Measures
Section 13	Forecast and Schedule
Section 14	Conclusion

2.0 PROJECT ACTIVITIES

2.1 CONSTRUCTION WORKS IN JULY 2003

A summary of the major construction activities undertaken in the reporting month is shown in **Table 2-1**.

Table 2-1 Major Construction Activities in July 2003

Site Area	Construction	Description of Construction Activities
Wang Chau	Pump House	Backfilling work
		Wall and slab construction and Outlet main Construction
	Control building	Wall and slab construction and backfilling works
	U/G storage tank/ outlet main	Backfilling works.
Mai Po	Pump House	NIL
	Box Culvert	NIL
	Flood Wall	NIL
Tan Kwai Tsuen	Drainage Improvement	Sheet piling and Excavation
		Base slab and wall construction, box culvert construction
		Drainage channel (including break wall & slab)
		Filling work (Granular)

3.0 STATUS OF ENVIRONMENTAL PERMITS

3.1 ENVIRONMENTAL PERMITS

The current status of all environmental permits, licences, and/or notification to EPD for the Project as of July 2003 is presented in **Table 3-1**.

Table 3-1 Summary of the Licence/Permit Status

Item	Item Description	Permit Status
1	Further Environmental Permit, FEP-01/088/2002	Issued to Ching Chit Cheung on 29 July 2002
2	Air Pollution Control (Construction Dust) – Mai Po	Notified EPD on 13 Aug 02
3	Air Pollution Control (Construction Dust) – Wang Chau	Notified EPD on 13 Aug 02
4	Air Pollution Control (Construction Dust) – Tan Kwai Tsuen	Notified EPD on 13 Aug 02
5	Water Pollution Control (Discharge Licence) – Septic Tanks, RE and Contractor's Offices No.IS38N/1	Issued on 7 February 03
6	Water Pollution Control (Discharge Licence) – Mai Po No.IS39/1	Valid (27 Nov 02 – 30 Nov 07)
7	Water Pollution Control (Discharge Licence) – Wang Chau, No.IU366/1	Valid (9 Sep 02 – 30 Sept 07)
8	Marine Dumping (South Cheung Chau) – Uncontaminated Mud - Mai Po Lo Wai & Mai Po San Tsuen, EP/MD/04-036	Valid (4 Aug 03 – 3 Feb 04)
9*	Noise Control (Percussive Piling) – Tan Kwai Tsuen, PP-TW0038-02	Valid (4 Sep 02 – 31 Jul 03)
10	Chemical Waste Producer Registration – Mai Po WPN: 5113-542-C3234-03	Issued on 23 October 02
11	Chemical Waste Producer Registration – Wang Chau WPN: 5113-528-C3234-01	Issued on 10 October 02
12	Chemical Waste Producer Registration – Tan Kwai Tsuen, WPN: 5211-519-C3234-02	Issued on 3 October 02
13	Water Pollution Control (Discharge Licence) - Tan Kwai Tsuen No.IT301/1	Valid (4 Feb 03 – 31 Jan 08)

*The Noise permit will expire in the next reporting month.

4.0 SUMMARY OF EM&A ACTIVITIES IN JULY 2003

24-Hr and 1-Hr TSP:

Monitoring at designated (A1) station has been suspended for the period from April until the end of July 2003.

Noise:

Monitoring at designated (N1) station has been suspended for the period from April until the end of July 2003.

Water Quality:

Monitoring at the two designated (W(U)1 & W(D)1) stations has been suspended for the period from April until the end of July 2003.

Ecological Monitoring

Ecological monitoring was completed on 8 June 2003.

5.0 AIR QUALITY MONITORING

The potential air quality impact arising from the construction is measured in terms of 1-Hr and 24-Hr Total Suspended Particulates (TSP).

5.1 MONITORING EQUIPMENT

24-Hr TSP Monitoring

The impact dust monitoring of 24-Hr TSP is undertaken in accordance with the Code of Federal Regulations Chapter 1 (Part 50) Appendix B. For all monitoring events, the 24-Hr TSP levels are determined by drawing air through a pre-conditioned, pre-weighed glass fiber filter inside a high volume sampler (HVS) at a controlled flow rate for 24 ± 1 hours.

1-Hr TSP Monitoring

The 1-Hr TSP levels are determined by using the 1-Hr TSP portable meter, which is capable of measuring and recording 1-hour time weighted average dust concentration between 0.01 and 100 mg/m³. **Table 5-1** summaries the equipment that was used in the air quality monitoring program.

Table 5-1 Air Quality Monitoring Equipment

Equipment	Model
24-Hr TSP Monitoring	
HVS	Grasby Anderson GMWS 2310 HVS
Calibration Kit	TE-5025A TISCH Orifice
1-Hr TSP Monitoring	
Portable meter	TSI DustTrak Aerosol Monitor

5.2 MONITORING LOCATION

The air quality monitoring location is presented in **Table 5-2**. The geographic location of the monitoring station is shown in **Appendix A**:

Table 5-2 Location of Air Monitoring Station

Monitoring Station	Name of Location	Description
A1	Mai Po Lo Wai	An open area close to a village house

5.3 TRIGGER/ACTION/TARGET LEVELS OF AIR QUALITY

The Trigger/Action/Target (TAT) Levels for air quality monitoring proposed in the baseline monitoring report are presented in **Table 5-3 and 5-4** respectively.

Table 5-3 Trigger/Action/Target Levels for 24-Hr TSP Monitoring

Monitoring Station	Name of Location	Trigger Level mg/m ³	Action Level mg/m ³	Target Level mg/m ³
A1	Mai Po Lo Wai	114	187	260

Table 5-4 Trigger/Action/Target Levels for 1-Hr TSP Monitoring

Air Monitoring Stations	Name of Location	Trigger Level mg/m ³	Action Level mg/m ³	Target Level mg/m ³
A1	Mai Po Lo Wai	165	333	500

5.4 MONITORING PROCEDURE AND CALIBRATION DETAILS

Installation

The HVS is placed at the aforesaid location, which is freestanding with no obstruction. The following criteria were considered in the installation of the HVS.

- A horizontal platform with appropriate support to secure the samplers;
- The distance between the sampler and obstacle, such as buildings, must be at least twice the height that the obstacle protrudes above the sampler;
- A minimum of 2 m separation from walls, parapets and penthouses for rooftop samplers;
- A minimum of 2 m separation from any supporting structure measured horizontally;
- No furnace or incinerator flue nearby;
- Unrestricted airflow around the sampler;
- A minimum separation of 20 m from the drip-line; and
- Any wire fence and gate to protect the sampler will not cause any obstruction during monitoring.

Preparation of Filter Papers by HOKLAS-accredited laboratory

- Sufficient glass-fibre filters, that are clean and without pinholes were selected and properly labelled;
- All filters are equilibrated in the conditioning environment for 24 hours before weighing. The conditioning environment temperature is around 25 °C and not variable by more than ± 3 °C; the relative humidity (RH) is < 50% and not variable by more than $\pm 5\%$. A convenient working RH is 40%; and
- *ALS Technichem (HK) Pty Ltd* has comprehensive quality assurance and quality control programs for TSP analysis and has attained HOKLAS accreditation for a range of other environmental testing. The certificate for the laboratory is shown in **Appendix B**.

Field Monitoring

- The power supply is checked to ensure that the HVS worked properly;
- The filter holder and the area surrounding the filter are cleaned;
- The filter holder is removed by loosening the four bolts and a new filter, with stamped number upward, on a supporting screen aligned carefully;
- The filter is properly aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter;
- The swing bolts are fastened to hold the filter holder down on the frame. The pressure applied should be sufficient to avoid air leakage at the edges;
- Then the shelter lid is closed and secured with the aluminum strip;
- The HVS is warmed-up for about 5 minutes to establish run-temperature conditions;
- A new flow rate record sheet is set into the flow recorder;
- The flow rate of the HVS is checked and adjusted at around 1.1 m³/min. The range specified in the EM&A Manual is between 0.6-1.7 m³/min;
- The programmable timer is set for a sampling period of 24 hrs \pm 1 hr, and the starting time, weather condition and the filter number were recorded;

- The initial elapsed time is recorded;
- At the end of sampling, the sampled filter is removed carefully and folded in half length so that only surfaces with collected particulate matter are in contact;
- It is then placed in a clean plastic envelope and sealed;
- All monitoring information is recorded on a standard data sheet; and
- Filters are sent to *ALS Technichem (HK) Pty Ltd* for analysis.

Maintenance & Calibration

- The HVS and its accessories is maintained in good working condition, such as routinely replacing motor brushes and checking electrical wiring to ensure a continuous power supply;
- The HVS is calibrated at quarterly intervals using TE-5025A TISCH Calibration Kit throughout all stages of the air quality monitoring; and
- The portable dust meter is calibrated by the manufacturer before the instrument is shipped to the site. The zero response of the instrument is checked before and after each monitoring event. The schedule of calibration and/or certificates is provided in ***Appendix C***.

5.5 IMPACT AIR QUALITY MONITORING RESULTS AND AUDITS

Monitoring at designated (A1) station has been suspended from April until the end of July 2003 as no construction activities were carried out in the reporting month.

6.0 NOISE MONITORING

6.1 MONITORING EQUIPMENT

An Integrating Sound Level Meter is used for noise monitoring. It is a Type 1 sound level meter capable of giving a continuous readout of the noise level readings including equivalent continuous sound pressure level (L_{eq}) and percentile sound pressure level (L_x). It complies with International Electrotechnical Commission Publications 651:1979 (Type 1) and 804:1985 (Type 1). A portable electronic wind speed indicator capable of measuring the wind speed in m/s is employed to check the wind speed. **Table 6-1** details the noise monitoring equipment used.

Table 6-1 Noise Monitoring Equipment

Equipment	Model
Integrating Sound Level Meter	Rion NL-14
Calibrator	Rion NC-73
Portable Wind Speed Indicator	Testo Anemometer

6.2 MONITORING LOCATION

The noise monitoring is undertaken at one designated monitoring location as shown in **Table 6-2** and geographically in **Appendix A**.

Table 6-2 Location of Noise Monitoring Station

Monitoring stations	Location	ASR	Description
N1	Mai Po Lo Wai	A	Village house - Facing the construction site

ASR refers to Area Sensitivity Rating as defined in the Technical Memorandum under the Noise Control Ordinance.

6.3 TRIGGER/ACTION/TARGET LEVELS OF CONSTRUCTION NOISE

The Trigger/Action/Target (TAT) Levels for noise monitoring based on the baseline monitoring data have been adopted. **Table 6-3** and **Table 6.4** present the established TAT levels for the noise monitoring.

Table 6-3 Trigger / Action Levels for Construction Noise

Time Period		Trigger Level	Action Level
Normal hours	07:00-19:00 hrs on normal weekdays	Receipt of a single documented complaint of construction noise level.	Receipt of more than one documented complaint of construction noise in any two weeks period on the same event or at the same location.
Restricted hours	07:00-23:00 hrs on public holidays; and 19:00-23:00 hrs on all other days		
	23:00-07:00 hrs of next day		

Table 6-4 Target Levels for Construction Noise

Time Period		Target Level
Normal hours	07:00-19:00 hrs on normal weekdays	Leq (30 min) 75 dB(A) Leq (30 min) 70 dB(A) for schools and 65 dB(A) during examination periods.
Restricted hours	07:00-23:00 hrs on public holidays; and 19:00-23:00 hrs on all other days	60 dB(A) for ASR* "A" Areas
	23:00-07:00 hrs of next day	45 dB(A) for ASR* "A" Areas

ASR refers to Area Sensitivity Rating as defined in the Technical Memorandum of Noise Control Ordinance.

6.4 MONITORING PROCEDURE AND CALIBRATION DETAILS

Field Monitoring

- The Sound Level Meter is set on a tripod at a height of 1.2 m above the ground.
- For free field measurement, the meter is positioned away from any nearby reflective surfaces. For reference, a correction of +3dB(A) is made to the free field measurements.
- The battery condition is checked to ensure the correct functioning of the meter.
- Parameters such as frequency weighting, the time weighting and the measurement time are set as follows:
 - Frequency weighting : A
 - Time weighting : Fast
 - Time measurement : 30 minutes / 5 minutes
- Prior to noise measurement, the meter was calibrated using a Calibrator for 94 dB at 1000 Hz (if the difference in the calibration level before and after measurement are more than 1 dB(A), the measurement will be considered invalid and repeat of noise measurement will 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 L_{eq} , L_{90} and L_{10} are recorded. In addition, site conditions and noise sources are recorded on a standard record sheet.
- During normal construction working hours (0700-1900 Monday to Saturday), monitoring of $L_{Aeq, 30min}$ noise levels (as six consecutive $L_{Aeq, 5min}$ readings) are carried out.
- Noise measurement is paused during periods of high intrusive noise (e.g. dog barking, human noise or another sources are not come from the construction works) if possible. Observations are recorded when intrusive noise is unavoidable.

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 HOKLAS laboratory for calibration at yearly intervals. The schedule of calibration and certificates are provided in **Appendix C**.

6.5 NOISE MONITORING RESULTS AND AUDITS

Monitoring at designated (N1) station has been suspended from April until the end of July 2003 as no construction activities are carried out in the reporting month.

7.0 WATER QUALITY MONITORING

7.1 MONITORING EQUIPMENT

The equipment for the water quality monitoring is presented in *Table 7-1*.

Table 7-1 Water Quality Monitoring Equipment

Equipment	Model / Description
Water Depth Detector	Steel Ruler
Water Sampling Equipment	Telfon bailor
Thermometer	YSI Model 55
Sample Container	High density polythene bottles (provided by laboratory)
Storage Container	Cooled box with ice pack

7.2 MONITORING LOCATIONS

Water quality monitoring is undertaken at the two designated locations as shown in *Table 7-2* and geographically in *Appendix A*. The water samples are analysed for Suspended Solids and Total Zinc.

Table 7-2 Locations of Marine Water Monitoring Stations

Station	Location
W(U)1	Upstream of site - Control Station
W(D)1	Downstream of site - Impact Station

7.3 TRIGGER/ACTION/TARGET LEVELS OF WATER QUALITY

The Trigger/Action/Target (TAT) Levels for water monitoring proposed in the baseline monitoring report are presented in *Table 7-3*.

Table 7-3 Trigger / Action / Target Levels for Water Quality

Parameter	Trigger Level	Action Level	Target Level
Suspended Solids (mg/L)	Trigger Level is exceeded if Suspended Solids (SS) at water sampling station W(D)1 exceeds 203mg/L and 120% of SS level at the upstream control water sampling station W(U)1 at the same monitoring day	Action Level is exceeded if Suspended Solids (SS) at water sampling station W(D)1 exceeds 203mg/L and 130% of SS level at the upstream control water sampling station W(U)1 at the same monitoring day	Target Level is exceeded if SS at water sampling station W(D)1 exceeds 203 mg/L and 130% of the SS level at water sampling station W(U)1 for three consecutive monitoring days.
Total Zinc (ug/L)	Trigger Level is exceeded if Zinc at water sampling station W(D)1 exceeds 145 ug/L, and 120% of zinc level at the upstream control water sampling station W(U)1 at the same monitoring day	Action Level is exceeded if Zinc at water sampling station W(D)1 exceeds 145ug/L and 130% of zinc level at the upstream water sampling station W(U)1 at the same monitoring day	Target Level is exceeded if Zinc at water sampling station W(D)1 exceeds 145ug/L and 130% of zinc level at water sampling station W(U)1 for three consecutive monitoring days.

7.4 MONITORING METHODOLOGY

Sampling

A strain steel ruler is used for the determination of water depth at each designated monitoring station. As the water column at the monitoring station is less than 1.5 m at the time of sampling, one water sample is taken in the middle of the water column.

Water samples are collected using a telfon bailor and the samples are stored in high-density polythene bottles. Sampling bottles are pre-rinsed with the same water samples. The sample bottles are then packed in cool boxes (cooled at 4°C without being frozen), and delivered to *ALS Technichem (HK) Pty Ltd* for analysis of suspended solids and zinc.

The results of the in-situ measurements are recorded on the field data sheets and subsequently input into a computer database for data interpretation.

Laboratory Analysis

All laboratory work is carried out by a local HOKLAS-accredited laboratory. The analyses followed the standard methods according to the APHA Standard Methods for the Examination of Water and Wastewater unless otherwise specified. The analytical methods of the water samples are presented in *Table 7-4* below:

Table 7-4 Analytical Methods of Water Samples

Determinants	Testing Method	Detection Limit
Suspended Solids	APHA 19ed 2540D	2 mg/L
Zinc	APHA 17ed 3111B	10 ug/L

7.5 WATER MONITORING RESULTS AND AUDITS

Monitoring at the two designated (W(U)1 & W(D)1) stations has been suspended from April until the end of July 2003 as no construction activities were carried out in the reporting month.

8.0 WASTE MANAGEMENT

The ET carried out a waste management audit on 24 July 2003. A summary of the waste audit findings and follow up actions are presented in **Table 8-1**. The audit findings are presented in **Appendix K** and some observations are noted as follows:

ET's Waste Audit Findings:

- Trip ticket records of waste disposal were taken;
- General refuse were disposed of at licensed sites;
- No chemical waste was produced;
- Contractor reminded that any generators and chemical drums/containers should be provided with drip trays; and
- Waste skips should be provided onsite to collect waste when necessary and to improve house keeping.

Table 8-1 Summary of Waste Audit Findings and Follow Up Action

Item	Aspects	Key Audit Findings	Date Observed
Site Observation			
1	Waste	No waste management issues observed at Wang Chau or Tan Kwai Tsuen	24 July 2003
Follow Up Action			
1	Waste	N/A	

Records of Waste Quantities

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

- Excavated material;
- Construction & demolition (C&D) material;
- Chemical waste; and
- Dredged materials.

The quantities of waste for disposal in this reporting month are summarized in **Table 8-2**.

Table 8-2 Summary of Quantities of Waste for Disposal

Type of Waste	Quantity	Disposal Location
Excavated Material (Contaminated) (m ³)	Nil	From Mai Po site to East Sha Chau
Excavated Material (Uncontaminated) (m ³)	Nil	From Mai Po site to South Cheung Chau
Soil Material from Wang Chau (m ³)	Nil	WENT
Soil Material from Tan Kwai Tsuen (m ³)	Nil	WENT
Construction & Demolition Material (Inert) (m ³)	Nil	NA
Construction & Demolition Material (Non-inert) (m ³)	Nil	NA
Chemical Waste (m ³)	Nil	NA

9.0 ECOLOGICAL MONITORING

The EIA has recommended that ecological assessment at the Mai Po Village Egretty be undertaken between April and July each year during the village flood protection works.

Monitoring Parameters and Frequency

The monitoring of the egretty is carried out during the construction phase of the project to identify and evaluate any impacts from the village flood protection works. Annual counts and species identification of nesting birds are conducted during the nesting season from April through to July. Nest productivity is estimated from sample numbers of eggs and chicks in nests at each egretty. The nest occupancy and productivity is then determined based on 4 counts at each egretty conducted between 1 April and 31 July. Trends in numbers and species representation at egrettries are assessed for any indications of adverse impacts from channel construction. The monitoring results are reported in the relevant monthly report.

Monitoring Location

The monitoring location of the egretty is at Mai Po Lo Wai and Mai Po San Tsuen in accordance with the EM&A Manual.

Monitoring Methodology

A combined monitoring methodology is used consisting of nest counting from a distance which determines the nesting population of the study area and egg counting / hatching which determines the breeding success of the egrets. Little Egrets are the target species of this monitoring exercise as they accounted for 40% of the total nests in the Mai Po Village Egretty in 2002. A maximum of 30 Little Egret nests will be studied and where possible the breeding success of other nesting ardeids would also be monitored.

Nests are to be tagged with a red ribbon and marked with a numbered plastic label. Each nest is visited on average once a month with the main focus being on the peak-breeding season. The first and second surveys are aimed at investigating clutch size and hatching success. Sufficient time (about 21 days) will be given to allow the eggs to hatch so that the hatching success of the eggs can be estimated. A mirror attached to a pole will be used to view nests high from the ground. A digital camera is used to record contents of each nest during every visit.

The hatching success of a tagged nest is defined as the number of chicks hatched divided by the clutch size. The clutch size is determined as the total number of eggs present before hatching occurs in the monitoring sample under study. Those nests where re-visits are not possible due to the loss of tags or labels will not be considered in the estimation of clutch size and hatching success.

Monitoring Equipment

The main equipment used for the breeding success monitoring and the nesting population count is presented as follows:

Table 9-1 Ecological Monitoring Equipment

Equipment	Model
Binoculars	Leica 10x42
Digital Camera	Leica Digilux 4.3

Ecological Monitoring and audit

Ecological monitoring at the Mai Po Village egrettry was completed on 8 June 2003.

10.0 ENVIRONMENTAL NON-COMPLIANCE AND COMPLAINT

Environmental Compliance Requirement

Should there be any monitoring exceedance of TAT Levels, the Event and Action Plan (EAP) will be triggered. The EAP is as outlined in the EM&A Manual.

Summary of monitoring exceedances

Air Quality Monitoring

No exceedance was registered in the reporting month.

Construction Noise Monitoring

No exceedance was registered in the reporting month.

Water Quality Monitoring

No exceedance was registered in the reporting month.

Summary of Environmental Complaints

No environmental complaint was received in the reporting month. A statistical summary of environmental complaints since project commencement is presented in **Table 10-1**.

Table 10-1 Statistical Summary of Environmental Complaints

Reporting Month	Complaint Statistics		
	Frequency	Cumulative	Complaint Nature
September 2002	0	0	NA
October 2002	0	0	NA
November 2002	0	0	NA
December 2002	0	0	NA
January 2003	0	0	NA
February 2003	0	0	NA
March 2003	0	0	NA
April 2003	0	0	NA
May 2003	0	0	NA
June 2003	0	0	NA
July 2003	0	0	NA

Environmental Summons

No summon was received in the reporting month. A statistical summary of legal proceedings since project commencement is presented in **Table 10-2**.

Table 10-2 Statistical Summary of Environmental Summons

Reporting Month	Summon Statistics		
	Frequency	Cumulative	Nature of Summons
September 2002	0	0	NA
October 2002	0	0	NA
November 2002	0	0	NA
December 2002	0	0	NA
January 2003	0	0	NA
February 2003	0	0	NA
March 2003	0	0	NA
April 2003	0	0	NA
May 2003	0	0	NA
June 2003	0	0	NA
July 2003	0	0	NA

11.0 SITE INSPECTION

Environmental site inspections have been suspended for the period from April until the start of August, when works at the site will resume. The ET undertook an independent site inspection and waste management audit on 24 July 2003 for works at Wang Chau and Tan Kwai Tsuen. Details of the ET's waste management audit are presented in **Appendix K**.

12.0 IMPLEMENTATION STATUS OF MITIGATION MEASURES

The Contractor has been implementing the required environmental mitigation measures according to the tentative Environmental Mitigation Implementation Schedule. A summary of the implementation status of the mitigation measures is presented in **Appendix I**.

13.0 IMPACT FORECAST AND MONITORING SCHEDULE FOR AUGUST 2003

13.1 KEY ISSUES FOR THE COMING MONTH

The construction works of the box culvert, the pumping station and the flood protection wall will begin again in the coming construction month. Any potential dust, noise and water quality impact due to works will be carefully monitored. Key issues to be considered in the coming month include:

- Construction noise impact due to construction works at Mai Po Lo Wai and Mai Po San Tsuen;
- Air quality impact due to vehicular movement and loading and unloading of stockpiles;
- Water quality impact due to surface water runoff particularly during the rainy season; and
- Follow-up management of chemical and general waste issues if any.

13.2 UPCOMING EM&A SCHEDULE IN AUGUST 2003

The EM&A schedules for the coming reporting month is presented as follows:

Table 13-1 Upcoming EM&A Schedule in August 2003

Date of Monitoring		Water Quality#	Noise (Leq30)	Air Quality (1-Hr and 24-Hr)
1-Aug-03	Fri			
2-Aug-03	Sat			
3-Aug-03	Sun			
4-Aug-03	Mon			
5-Aug-03	Tue			
6-Aug-03	Wed			
7-Aug-03	Thu			
8-Aug-03	Fri			
9-Aug-03	Sat			
10-Aug-03	Sun			
11-Aug-03	Mon			
12-Aug-03	Tue			
13-Aug-03	Wed			
14-Aug-03	Thu			
15-Aug-03	Fri			
16-Aug-03	Sat			
17-Aug-03	Sun			
18-Aug-03	Mon			
19-Aug-03	Tue			
20-Aug-03	Wed			
21-Aug-03	Thu			
22-Aug-03	Fri			
23-Aug-03	Sat			
24-Aug-03	Sun			
25-Aug-03	Mon			
26-Aug-03	Tue			
27-Aug-03	Wed			
28-Aug-03	Thu			
29-Aug-03	Fri			
30-Aug-03	Sat			
31-Aug-03	Sun			

**EM&A monitoring will be rescheduled if T3 or above, thunderstorm and/or any rainstorm signals is/are hoisted.
 #No water sample will be collected if insufficient water discharge is observed.*

13.3 CONSTRUCTION WORKS FOR THE 3 MONTHS ROLLING PROGRAM

The 3-month rolling program for construction works is attached in *Appendix J*.

14.0 CONCLUSIONS AND RECOMMENDATIONS

The EM&A program in July 2003 is undertaken in accordance with the EM&A manual.

Air Quality Monitoring

Monitoring at designated (A1) station has been suspended for the period from April until the end of July 2003. No exceedance was registered in the reporting month.

Construction Noise Monitoring

Monitoring at designated (N1) station has been suspended for the period from April until the end of July 2003. No exceedance was registered in the reporting month.

Water Quality Monitoring

Monitoring at the two designated (W(U)1 & W(D)1) stations has been suspended for the period from April until the end of July 2003. No exceedance was registered in the reporting month.

Ecology

The final ecological monitoring session at the Mai Po Village egretty was conducted on 8 June 2003.

Environmental Complaint/Summons

No environmental complaint or summon was received during the reporting month.

Recommendations

The Contractor should ensure compliance of environmental requirements and the proper implementation of all necessary mitigation measures if and when necessary.