



PROJECT NO.: TCS/00512/09

**DSD CONTRACT NO. DC/2009/13  
CONSTRUCTION OF SEWAGE TREATMENT WORKS AT  
YUNG SHUE WAN AND SOK KWU WAN**

**SOK KWU WAN PORTION AREA  
MONTHLY ENVIRONMENTAL MONITORING AND AUDIT  
(EM&A) REPORT (NO.14) – SEPTEMBER 2011**

PREPARED FOR  
**LEADER CIVIL ENGINEERING CORPORATION LIMITED**

**Quality Index**

<b>Date</b>	<b>Reference No.</b>	<b>Prepared By</b>	<b>Approved By</b>
13 October 2011	TCS00512/09/600/R0345v2		
		Nicola Hon Environmental Consultant	T.W. Tam Environmental Team Leader

<b>Version</b>	<b>Date</b>	<b>Description</b>
1	10 October 2011	First Submission
2	13 October 2011	Amended against IEC's comments on 12 October 2011

# Scott Wilson CDM Joint Venture

---

Chief Engineer/Harbour Area Treatment Scheme  
Drainage Services Department  
5/F Western Magistracy  
2A Pok Fu Lam Road  
Hong Kong

Your reference:

Our reference: 05117/6/16/382144

Date: 17 October 2011

Attention: Mr. C K Au

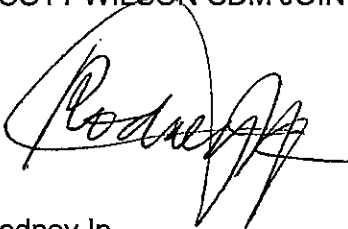
**BY FAX & EMAIL**

Dear Sirs,

**Contract No. DC/2009/13**  
**Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwu Wan**  
**Sok Kwu Wan Portion Area**  
**Monthly Environmental Monitoring and Audit (EM&A) Report No. 14 (September 2011)**

We refer to the Monthly EM&A Monitoring Report No. 14 for September 2011 received under cover of the email from the Environmental Team, Action-United Environmental Services and Consulting (AUES), dated 13 October 2011. We have no comment and have verified the captioned report .

Yours faithfully  
SCOTT WILSON CDM JOINT VENTURE



Rodney Ip

ICWR/SYSL/ecwc

cc    Leader Civil Engineering    (Attn: Mr Vincent Chan)  
      AUES                                (Attn: Mr T.W. Tam)  
      ER/LAMMA                        (Attn: Mr Neil Wong)  
      CDM                                (Attn: Mr Mark Sin)

**EXECUTIVE SUMMARY**

ES.01. This is the 14<sup>th</sup> monthly Environmental Monitoring and Audit (EM&A) Report for Sok Kwu Wan (hereinafter ‘this Report’) for the designated works under the Environmental Permit [EP-281/2007/A], covering a period from 1 to 30 September 2011 (hereinafter ‘the Reporting Period’).

**ENVIRONMENTAL MONITORING AND AUDIT ACTIVITIES**

ES.02. Environmental monitoring activities under the EM&A programme in this Reporting Period are summarized in the following table.

Issues	Environmental Monitoring Parameters / Inspection	Occasions
Air Quality	1-hour TSP	45
	24-hour TSP	15
Construction Noise	Leq (30min) Daytime	20
Water Quality	Marine Water Sampling	13
Inspection / Audit	ET Regular Environmental Site Inspection	4

ES.03. As informed by the Contractor, the marine work of outfall construction has been commenced on 19 July 2011, therefore, water quality was undertaken in this Reporting Period.

**BREACH OF ACTION AND LIMIT (A/L) LEVELS**

ES.04. No exceedance of air quality, construction noise and marine water quality monitoring were recorded in this Reporting Period. No Notification of Exceedance (NOE) was, therefore, issued. The statistics of environmental exceedance, NOE issued and investigation of exceedance are summarized in the following table.

Environmental Issues	Monitoring Parameters	Action Level	Limit Level	Event & Action		
				NOE Issued	Investigation	Corrective Actions
Air Quality	1-hour TSP	0	0	0	--	--
	24-hour TSP	0	0	0	--	--
Construction Noise	Leq <sub>30min</sub> Daytime	0	0	0	--	--
Water Quality	DO	0	0	0	--	--
	Turbidity	0	0	0	--	--
	SS	0	0	0	--	--

Note: NOE – Notification of Exceedance

**ENVIRONMENTAL COMPLAINT**

ES.05. No written or verbal complaint was recorded in this Reporting Period. The statistics of environmental complaint are summarized in the following table.

Reporting Period	Environmental Complaint Statistics		
	Frequency	Cumulative	Complaint Nature
27 July 2010 – 31 August 2011	0	0	NA
1 – 30 September 2011	0	0	NA

**NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS**

ES.06. No environmental summons or successful prosecutions were recorded in this Reporting Period. The statistics of environmental complaint are summarized in the following tables.

Reporting Period	Environmental Summons Statistics		
	Frequency	Cumulative	Complaint Nature
27 July 2010 – 31 August 2011	0	0	NA
1 – 30 September 2011	0	0	NA

Reporting Period	Environmental Prosecution Statistics		
	Frequency	Cumulative	Complaint Nature
27 July 2010 – 31 August 2011	0	0	NA
1 – 30 September 2011	0	0	NA

#### REPORTING CHANGE

ES.07. There is no reporting change in this Reporting Period.

#### SITE INSPECTION BY EXTERNAL PARTIES

ES.08. No site inspection was undertaken by external parties i.e. Environmental Protection Department (EPD) or Agriculture, Fisheries and Conservation Department (AFCD) within the Reporting Period.

#### FUTURE KEY ISSUES

- ES.09. During dry season, special attention should be paid to the dust mitigation measures to avoid fugitive dust emissions from loose soil surface or haul road. Nevertheless, mitigation measures implemented for control the surface runoff including wheel wash facilities, covering of the loose soil surface or stockpile with tarpaulin sheet, etc., should fully implement.
- ES.10. Muddy water and other water quality pollutants via site surface water runoff into the sea body within Fish Culture Zone (FCZ) at Picnic Bay and the secondary recreation contact subzone at Mo Tat Wan is the key issue of the Project. Mitigation measures for water quality should be properly maintained to prevent any muddy or sandy runoff from the loose soil surface overflow on the site boundary.

**TABLE OF CONTENTS**

<b>1</b>	<b>INTRODUCTION</b>	<b>1</b>
<b>2</b>	<b>PROJECT ORGANIZATION AND CONSTRUCTION PROGRESS</b>	<b>3</b>
<b>3</b>	<b>SUMMARY OF BASELINE MONITORING REQUIREMENTS</b>	<b>4</b>
<b>4</b>	<b>IMPACT MONITORING RESULTS - AIR QUALITY</b>	<b>9</b>
<b>5</b>	<b>IMPACT MONITORING RESULTS – CONSTRUCTION NOISE</b>	<b>10</b>
<b>6</b>	<b>IMPACT MONITORING RESULTS – WATER QUALITY</b>	<b>11</b>
<b>7</b>	<b>ECOLOGY</b>	<b>13</b>
<b>8</b>	<b>WASTE MANAGEMENT</b>	<b>14</b>
<b>9</b>	<b>SITE INSPECTION</b>	<b>15</b>
<b>10</b>	<b>ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE</b>	<b>16</b>
<b>11</b>	<b>IMPLEMENTATION STATUS OF MITIGATION MEASURES</b>	<b>17</b>
<b>12</b>	<b>IMPACT FORECAST</b>	<b>23</b>
<b>13</b>	<b>CONCLUSIONS AND RECOMMENDATIONS</b>	<b>24</b>

## **LIST OF TABLES**

Table 2-1	Status of Environmental Licenses and Permits
Table 3-1	Summary of EM&A Requirements
Table 3-2	Location of Air Quality Monitoring Station
Table 3-3	Location of Construction Noise Monitoring Station
Table 3-4	Location of Marine Water Quality Monitoring Station
Table 3-5	Action and Limit Levels for Air Quality
Table 3-6	Action and Limit Levels for Construction Noise
Table 3-7	Action and Limit Levels for Marine Water Quality
Table 4-1	Summary of 24-hour and 1-hour TSP Monitoring Results – AM1
Table 4-2	Summary of 24-hour and 1-hour TSP Monitoring Results – AM2
Table 4-3	Summary of 24-hour and 1-hour TSP Monitoring Results – AM3
Table 5-1	Summarized of Construction Noise Monitoring Results at NM1
Table 5-2	Summarized of Construction Noise Monitoring Results at NM2
Table 5-3	Summarized of Construction Noise Monitoring Results at RNM3
Table 5-4	Summarized of Construction Noise Monitoring Results at NM4
Table 6-1	Summary of Water Quality Results – Mid-ebb Tides (Dissolved Oxygen)
Table 6-2	Summary of Water Quality Results – Mid-ebb Tides (Turbidity & Suspended Solids)
Table 6-3	Summary of Water Quality Results – Mid-flood Tides (Dissolved Oxygen)
Table 6-4	Summary of Water Quality Results – Mid-flood Tides (Turbidity & Suspended Solids)
Table 6-5	Summarized Exceedances of Marine Water Quality
Table 8-1	Summary of Quantities of Inert C&D Materials
Table 8-2	Summary of Quantities of C&D Wastes
Table 8-1	Site Observations
Table 10-1	Statistical Summary of Environmental Complaints
Table 10-2	Statistical Summary of Environmental Summons
Table 10-3	Statistical Summary of Environmental Prosecution
Table 11-1	Environmental Mitigation Measures

## **LIST OF APPENDICES**

Appendix A	Site Layout Plan – Sok Kwu Wan Portion Area
Appendix B	Organization Structure and Contact Details of Relevant Parties
Appendix C	A Master and Three Months Rolling Construction Programme
Appendix D	Location of Monitoring Stations (Air Quality / Construction Noise / Water Quality)
Appendix E	Monitoring Equipments Calibration Certificate
Appendix F	Event and Action Plan
Appendix G	Monitoring Data Sheet
Appendix H	Graphical Plots of Monitoring Results
Appendix I	Meteorological Information
Appendix J	Monthly Summary Waste Flow Table
Appendix K	Weekly Site Inspection Checklist
Appendix L	Implementation Schedule of Mitigation Measures
Appendix M	Tree Inspection Report

## 1 INTRODUCTION

### PROJECT BACKGROUND

- 1.01 The Leader Civil Engineering Corporation Limited (Leader) has been awarded the *Contract DC/2009/13 - Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwu Wan* (the Project) by the Drainage Services Department (DSD) on 4 May 2010. The Project is part of an overall plan approved under a statutory EIA for Outlying Islands Sewerage Stage 1 Phase 2 Package J – Sok Kwu Wan Sewage Collection and Treatment (Register No. AEIAR-075/2003) and Disposal Facilities and Outlying Islands Sewerage Stage 1 Phase 1 Package C – Yung Shue Wan Sewage Treatment Works and Outfall (Register No. EIA-124/BC). The Environmental Permit (EP) No. EP-281/2007 and EP-282/2007 for the Project have been obtained by the DSD on 29 June 2007 for the relevant works. After July 2009, EP-281/2007/A instead EP-281/2007 is EP for Sok Kwu Wan relevant works.
- 1.02 The Project involves construction of sewage treatment works at Sok Kwu Wan and Yung She Wan with a capacity of 1,430m<sup>3</sup>/day and 2,850m<sup>3</sup>/day respectively to provide secondary treatment, construction of 2 pumping stations at Sok Kwu Wan and 1 pumping station at Yung Shue Wan, construction of submarine outfall from the coastline and laying of underground sewerage pipeline. The site layout plan for the captioned work under the Project is showing in **Appendix A**.
- 1.03 According to the Particular Specification (PS) and **Appendix 25** of the Project, Leader should establish an Environmental Team (ET) to implement the environmental monitoring and auditing works to fulfill the requirements as stipulated in the Environmental Monitoring and Audit (EM&A) Manual. This EM&A Manual is referred to the Appendix B of the Review Report on EIA Study – Sok Kwu Wan (Final) in January 2007 (Agreement No. CE 20/2005(DS)).
- 1.04 Action-United Environmental Services and Consulting (AUES) has been commissioned by Leader as the ET to implement the relevant EM&A programme. Organization chart of the Environmental Team for the Project is shown in **Appendix B**. For ease of reporting, the proposed EM&A programme for baseline and impact monitoring is split to following two stand-alone parts:
- (a) Proposed EM&A Programme for Baseline and Impact Monitoring – Sok Kwu Wan (under EP No. 281/2007/A varied on 23 September 2009)
  - (b) Proposed EM&A Programme for Baseline and Impact Monitoring – Yung Shue Wan (under EP No. 282/2007)
- 1.05 According to the EM&A Manual of Sok Kwu Wan and Yung Shue Wan, baseline water quality monitoring should be carried out for consecutive six months before the marine work commencement. Therefore, the baseline reports of Sok Kwu Wan and Yung Shue Wan are divided to two volumes i.e. the Volume 1 for air quality and noise monitoring; and the Volume II for water quality monitoring for separate submission.
- 1.06 There is a concurrent DSD contract “*DC/2007/18 Yung Shue Wan and Sok Kwu Wan Village Sewerage, Stage 1 Works*” undertaking at Sok Kwu Wan since April 2008.
- 1.07 Consider that the construction works of DC/2007/18 and DC/2009/13 at Sok Kwu Wan is under the same Environmental Permit and EM&A Manual, the performance criteria of air quality and construction noise at Sok Kwu Wan under the Project is recommended to adopt the Action/Limit Levels established by contract DC/2007/18. The Baseline Monitoring Report Volume 1 under the Project for air quality and noise at Sok Kwu Wan was submitted on 9 July 2010 and verified by IEC and for EPD endorsement before the relevant land works commencement on 27 July 2010.
- 1.08 This is the **14<sup>th</sup>** monthly EM&A Report – Sok Kwu Wan Portion Area presenting the monitoring results and inspection findings for the Reporting Period from **1 to 30 September 2011**.

---

**REPORT STRUCTURE**

1.09 The Monthly Environmental Monitoring and Audit (EM&A) Report – Sok Kwu Wan is structured into the following sections:-

<b>SECTION 1</b>	<b>INTRODUCTION</b>
<b>SECTION 2</b>	<b>PROJECT ORGANIZATION AND CONSTRUCTION PROGRESS</b>
<b>SECTION 3</b>	<b>SUMMARY OF MONITORING REQUIREMENTS</b>
<b>SECTION 4</b>	<b>AIR QUALITY MONITORING RESULTS</b>
<b>SECTION 5</b>	<b>CONSTRUCTION NOISE MONITORING RESULTS</b>
<b>SECTION 6</b>	<b>WATER QUALITY MONITORING RESULTS</b>
<b>SECTION 7</b>	<b>WASTE MANAGEMENT</b>
<b>SECTION 8</b>	<b>SITE INSPECTIONS</b>
<b>SECTION 9</b>	<b>ENVIRONMENTAL COMPLAINTS AND NON-COMPLIANCE</b>
<b>SECTION 10</b>	<b>IMPLEMENTATION STATUES OF MITIGATION MEASURES</b>
<b>SECTION 11</b>	<b>IMPACT FORECAST</b>
<b>SECTION 12</b>	<b>CONCLUSIONS AND RECOMMENDATION</b>



## 2 PROJECT ORGANIZATION AND CONSTRUCTION PROGRESS

### PROJECT ORGANIZATION AND MANAGEMENT STRUCTURE

- 2.01 Organization structure and contact details of relevant parties with respect to on-site environmental management are shown in [Appendix B](#).

### CONSTRUCTION PROGRESS

- 2.02 The master and three month rolling construction programme are enclosed in [Appendix C](#) and the major construction activities undertaken in this Reporting Period are listed below:-
- Construction for pumping station no.1 & 2
  - Construction of the rising main
  - Rock slope cutting works

### SUMMARY OF ENVIRONMENTAL SUBMISSIONS

- 2.03 Summary of the relevant permits, licences, and/or notifications on environmental protection for this Project in this Reporting Period is presented in [Table 2-1](#).

**Table 2-1 Status of Environmental Licenses and Permits**

Item	Description	License/Permit Status
1	Air Pollution Control (Construction Dust) Regulation	Notified EPD on 19 May 2010 Ref.: 317486
2	Chemical Waste Producer Registration	Issued on 8/6/2010 WPN 5213-912-L2720-01
3	Water Pollution Control Ordinance	Approved on 29/9/2010 Valid to: 30/09/2015 Licence no.: WT00007567-2010
4	Billing Account for Disposal of Construction Waste	Issued on 26 May 2010 A/C No: 7010815
5	Construction Noise Permit	Permit no. GW-RS0771-11 Valid from: 2 Sep 2011 Until: 1 Mar 2012

- 2.04 The “Baseline/Impact Monitoring Methodology (TCS00512/09/600/R0010Ver.4)” was set out in accordance with the Sok Kwu Wan EM&A Manual’ requirements. It was approved by the Engineer Representative (ER) and agreed with the Independent Environmental Checker (IEC) and then submitted to the EPD on 8 July 2010.
- 2.05 Baseline Monitoring Report - Volume 1 for Sok Kwu Wan (TCS00512/09/600/R0020Ver.3) was verified by the IEC on 12 July 2010 and submitted to EPD on 12 July 2010.
- 2.06 Baseline Water Quality Monitoring Report - Volume 2 for Sok Kwu Wan (TCS00512/09/600/R0182v7) was revised against EPD comments and re-submitted on 11 October 2011.

### 3 SUMMARY OF BASELINE MONITORING REQUIREMENTS

#### ENVIRONMENTAL ASPECT

- 3.01 The EM&A baseline monitoring programme cover the following environmental issues:
- Air quality;
  - Construction noise; and
  - Marine water quality
- 3.02 The ET implements the EM&A programme in accordance with the aforementioned requirements. Detailed air quality, construction noise and water quality of the EM&A programme are presented in the following sub-sections.
- 3.03 A summary monitoring parameters for the air quality, noise and marine water monitoring is presented in *Table 3-1*:

**Table 3-1 Summary of EM&A Requirements**

Environmental Issue	Parameters
Air Quality	<ul style="list-style-type: none"> <li>• 1-hour TSP Monitoring by Real-Time Portable Dust Meter; and</li> <li>• 24-hour TSP Monitoring by High Volume Air Sampler.</li> </ul>
Noise	<ul style="list-style-type: none"> <li>• Leq (30min) during normal working hours; and</li> <li>• Leq (15min) during Restricted Hours.</li> </ul>
Marine Water Quality	<p><b><i>In-situ Measurements</i></b></p> <ul style="list-style-type: none"> <li>• Dissolved Oxygen Concentration (DO) (mg/L);</li> <li>• Dissolved Oxygen Saturation (% );</li> <li>• Turbidity (NTU);</li> <li>• pH unit;</li> <li>• Salinity (ppt);</li> <li>• Water depth (m); and</li> <li>• Temperature (°C).</li> </ul> <p><b><i>Laboratory Analysis</i></b></p> <ul style="list-style-type: none"> <li>• Suspended Solids (SS) (mg/L)</li> </ul>

#### MONITORING LOCATIONS

##### Air Quality

- 3.04 Three air monitoring stations: AM1, AM2 and AM3 were designated in the *EM&A Manual Section 2.5*. The detailed air monitoring stations is described in *Table 3-2* and graphical is shown in *Appendix D*.

**Table 3-2 Location of Air Quality Monitoring Station**

Sensitive Receiver	Location
AM1	Squatter house in Chung Mei Village
AM2	Squatter house in Chung Mei Village
AM3	Football court

##### Construction Noise

- 3.05 According to *EM&A Manual Section 3.4*, there were four noise sensitive receivers (NM1-NM4) designated for the construction noise monitoring. NM1, NM2 and NM4 of the three designated monitoring stations were identified and are monitored by the current DSD contract DC/2007/18. However, the premises monitoring station NM3 was rejected by the owner of 1B Sok Kwu Wan and an alternative noise monitoring station RNM3 replacement was proposed by the contract DC/2007/18 ET and accepted by the IEC and EPD before the baseline monitoring commencement in April 2008. The location RNM3 is located at Sok Kwu Wan Sitting-out area which just 3m width footpath away from the original location house 1B. The detailed construction noise monitoring stations to also under the Project is described in *Table 3-3* and graphical is shown in *Appendix D*.

**Table 3-3 Location of Construction Noise Monitoring Station**

Sensitive Receiver	Location
NM1	1, Chung Mei Village
NM2	20, Sok Kwu Wan
RNM3	Sok Kwu Wan Sitting-out Area
NM4	2-storey village house at Ta Shui Wan

### Water Quality

- 3.06 Three control stations (C1-C3) and three impact stations (W1-W3) were recommended in the *EM&A Manual Section 4.5*. Impact stations W1-W3 identified at the sensitive receivers (FCZ and secondary contact recreation subzone) to monitor the impacts from the construction of the submarine outfall as well as the effluent discharge from the proposed STW on water quality. Three control stations: C1, C2 & C3 were specified at locations representative of the project site in its undisturbed condition and located at upstream and downstream of the works area. Detailed and co-ordination of marine water quality monitoring stations is described in *Table 3-4* and the graphical is shown in *Appendix D* and would be performed for EM&A programme.

**Table 3-4 Location of Marine Water Quality Monitoring Station**

Station	Description	Co-ordination	
		Easting	Northing
W1	Secondary recreation contact subzone at Mo Tat Wan	832 968	807 732
W2	Fish culture zone at Picnic Bay	832 670	807 985
W3	Fish culture zone at Picnic Bay	832 045	807 893
C1 (flood)	Control Station	833 703	808 172
C2	Control Station	831 467	807 747
C3 (ebb)	Control Station	832 220	808 862

### **MONITORING FREQUENCY AND PERIOD**

- 3.07 The impact monitoring carried out in the EM&A programme is basically in accordance with the requirements in *EM&A Manual Sections 2.7, 3.6, 4.7 and 4.8*. The monitoring requirements are listed as follows.

#### Air Quality Monitoring

Parameters: 1-hour TSP and 24-hour TSP.

Frequency: Once in every six days for 24-hour TSP and three times in every six days for 1-hour TSP.

Duration: Throughout the construction period.

#### Noise Monitoring

Parameters:  $L_{eq(30min)}$  &  $L_{eq(5min)}$ ,  $L_{10}$  and  $L_{90}$ .  
 $L_{eq(15min)}$  &  $L_{eq(5min)}$ ,  $L_{10}$  and  $L_{90}$  during the construction undertaken during Restricted hours (19:00 to 07:00 hours next of normal working day and full day of public holiday and Sunday)

Frequency: Once per week during 0700-1900 hours on normal weekdays. Restricted hour monitoring should depend on conditions stipulated in Construction Noise Permit.

Duration: Throughout the construction period.

#### Marine Water Quality Monitoring

Parameters: Duplicate in-situ measurements: water depth, temperature, dissolved oxygen, pH, turbidity and salinity;  
HOKLAS-accredited laboratory analysis: suspended solids

- Frequency: Three days a week, at mid ebb and mid flood tides. The interval between 2 sets of monitoring will be more than 36 hours.
- Sampling Depth
- (i.) Three depths: 1m below water surface, 1m above sea bottom and at mid-depth when the water depth exceeds 6m.
  - (ii.) If the water depth is between 3m and 6m, two depths: 1m below water surface and 1m above sea bottom.
  - (iii.) If the water depth is less than 3m, 1 sample at mid-depth is taken
- Duration: During the course of marine works

### **Post-Construction Monitoring – Marine Water**

- 3.08 Upon the marine works (dredging and HDD pipe installation) completion, 4 weeks of post-construction monitoring would be undertaken in accordance with the *Section 4.8 of EM&A Manual*. The requirements of post-construction monitoring such as the parameter, frequency, location and sampling depth is same as the impact monitoring.

### **MONITORING EQUIPMENT**

#### Air Quality Monitoring

- 3.09 The 24-hour and 1-hour TSP levels shall be measured by following the standard high volume sampling method as set out in the *Title 40 of the Code of Federal Regulations, Chapter 1 (Part 50), Appendix B*. If the ET proposes to use a direct reading dust meter to measure 1-hour TSP levels, it shall submit sufficient information to the IEC to approve. The filter paper of 24-hour TSP measurement shall be determined by HOKLAS accredited laboratory.

#### Noise Monitoring

- 3.10 Sound level meter in compliance with the *International Electrotechnical Commission Publications 651: 1979 (Type 1) and 804: 1985 (Type 1)* specifications shall be used for carrying out the noise monitoring. The sound level meter shall be checked using an acoustic calibrator. The wind speed shall be checked with a portable wind speed meter capable of measuring the wind speed in  $\text{m s}^{-1}$ .

#### Water Quality Monitoring

- 3.11 ***Dissolved Oxygen and Temperature Measuring Equipment*** – The instrument should be a portable and weatherproof dissolved oxygen (DO) measuring instrument complete with cable and sensor, and use a DC power source. The equipment should be capable of measuring as included a DO level in the range of 0 – 20mg L<sup>-1</sup> and 0 – 200% saturation; and a temperature of 0 – 45 degree Celsius.
- 3.12 ***pH Meter*** – The instrument shall consist of a potentiometer, a glass electrode, a reference electrode and a temperature-compensating device. It shall be readable to 0.1 pH in a range of 0 to 14.
- 3.13 ***Turbidity (NTU) Measuring Equipment*** – The instrument should be a portable and weatherproof turbidity measuring instrument using a DC power source. It should have a photoelectric sensor capable of measuring turbidity between 0 - 1000 NTU.
- 3.14 ***Water Sampling Equipment*** – A water sampler should comprise a transparent PVC cylinder, with a capacity of not less than 2 litres, which can be effectively sealed with latex cups at both ends. The sampler should have a positive latching system to keep it open and prevent premature closure until released by a messenger when the sampler is at the selected water depth.
- 3.15 ***Water Depth Detector*** – A portable, battery-operated echo sounder should be used for the determination of water depth at each designated monitoring station. This unit can either be hand held or affixed to the bottom of the work boat.
- 3.16 ***Salinity Measuring Equipment*** – A portable salinometer capable of measuring salinity in the range of 0 - 40 parts per thousand (ppt) should be provided for measuring salinity of the water at each monitoring location.

- 3.17 **Sample Containers and Storage** – Water samples for suspended solids should be stored in high density polythene bottles with no preservative added, packed in ice (cooled to 4°C without being frozen).
- 3.18 **Monitoring Position Equipment** - A hand-held or boat-fixed type digital Differential Global Positioning System (DGPS) with way point bearing indication and Radio Technical Commission for maritime (RTCM) Type 16 error message ‘screen pop-up’ facilities (for real-time auto-display of error messages and DGPS corrections from the Hong Kong Hydrographic Office), or other equipment instrument of similar accuracy, should be provided and used during marine water monitoring to ensure the monitoring vessel is at the correct location before taking measurements.
- 3.19 **Suspended Solids Analysis** – Analysis of suspended solids shall be carried out in a HOKLAS or other international accredited laboratory.

#### **EQUIPMENT CALIBRATION**

- 3.20 Calibration of the HVS is performed upon installation in accordance with the manufacturer’s instruction using the NIST-certified standard calibrator (Tisch Calibration Kit Model TE-5025A). The calibration data are properly documented and the records are maintained by ET for future reference.
- 3.21 The 1-hour TSP meter was calibrated by the supplier prior to purchase. Zero response of the equipment was checked before and after each monitoring event. In-house calibration with the High Volume Sampler (HVS) in same condition was undertaken in yearly basis.
- 3.22 The sound level meter and calibrator are calibrated and certified by a laboratory accredited under HOKLAS or any other international accreditation scheme at yearly basis.
- 3.23 The Water Quality Monitoring equipments such as DO meter, pH meter, turbidity measuring instrument and salinometer, are calibrated by HOKLAS accredited laboratory of three month intervals.
- 3.24 All updated calibration certificates of the monitoring equipment used for the impact monitoring programme in the Reporting Period would be attached in [Appendix E](#).

#### **METEOROLOGICAL INFORMATION**

- 3.25 The meteorological information during the construction phase is obtained from the Wong Chuk Hang Station of the Hong Kong Observatory (HKO) due to it nearly the Project site.

#### **DATA MANAGEMENT AND DATA QA/QC CONTROL**

- 3.26 The impact monitoring data are handled by the ET’s systematic data recording and management, which complies with in-house Quality Management System. Standard Field Data Sheets (FDS) are used in the impact monitoring programme.
- 3.27 The monitoring data recorded in the equipment e.g. 1-hour TSP meter, sound level meter and Multi-parameter Water Quality Monitoring System, are downloaded directly from the equipments at the end of each monitoring day. The downloaded monitoring data are input into a computerized database properly maintained by the ET. The laboratory results are input directly into the computerized database and QA/QC checked by personnel other than those who input the data. For monitoring activities require laboratory analysis, the local laboratory follows the QA/QC requirements as set out under the HOKLAS scheme for all laboratory testing.

#### **DETERMINATION OF ACTION/LIMIT (A/L) LEVELS**

- 3.28 According to the Sok Kwu Wan Environmental Monitoring and Audit Manual, the air quality, construction noise and marine water quality were set up, namely Action and Limit levels are listed in [Tables 3-5, 3-6 and 3-7](#) as below.

**Table 3-5 Action and Limit Levels for Air Quality**

Monitoring Station	Action Level ( $\mu\text{g}/\text{m}^3$ )		Limit Level ( $\mu\text{g}/\text{m}^3$ )	
	1-hour	24-hour	1-hour	24-hour
AM1	343	173	500	260
AM2	331	175	500	260
AM3	353	191	500	260

**Table 3-6 Action and Limit Levels for Construction Noise**

Monitoring Location	Action Level	Limit Level
	0700-1900 hours on normal weekdays	
NM1 NM2 RNM3 NM4	When one or more documented complaints are received	75 dB(A) of $L_{\text{eq}(30\text{min})}$ during normal hours from 0700 to 1900 hours on normal weekdays, reduced to 70 dB(A) of $L_{\text{eq}(30\text{min})}$ for schools and 65 dB(A) during school examination periods

**Table 3-7 Action and Limit Levels for Marine Water Quality**

Parameter	Performance Criteria	Impact Station		
		W1	W2	W3
DO Concentration (Surface and Middle) (mg/L)	Action Level	5.39	4.64	4.71
	Limit Level	5.29	4.56	4.54
DO Concentration (Bottom) (mg/L)	Action Level	N/A	3.60	3.37
	Limit Level	N/A	3.06	3.18
Turbidity (Depth-Average) (NTU)	Action Level	4.39	4.84	6.48
	Limit Level	6.06	5.99	6.71
Suspended Solids (Depth-Average) (mg/L)	Action Level	12.41	9.24	10.79
	Limit Level	12.68	11.28	12.25

- 3.29 Should non-compliance of the environmental quality criteria occurs, remedial actions will be triggered according to the Event and Action Plan enclosed in [Appendix F](#).



#### 4 IMPACT MONITORING RESULTS - AIR QUALITY

4.01 As informed by Leader, the construction of relevant land works at Sok Kwu Wan was commenced on 27 July 2010, therefore, the impact EM&A programme was started as compliance with the contract Particular Specification, Sok Kwu Wan EM&A Manual and the EP.

##### Results of Air Quality Monitoring

4.02 In this Reporting Period, **45** and **15** monitoring events were performed for 1-hour TSP and 24-hour TSP monitoring respectively at the designated locations AM1, AM2 and AM3. The results for 24-hour and 1-hour TSP at AM1, AM2 and AM3 are summarized in *Tables 4-1, 4-2 and 4-3* respectively. The 24-hour TSP data are shown in *Appendix G*. The graphical plots of 24-hour and 1-hour TSP are shown in *Appendix H*.

**Table 4-1 Summary of 24-hour and 1-hour TSP Monitoring Results – AM1**

Date	24-hour TSP ( $\mu\text{g}/\text{m}^3$ )	1-hour TSP ( $\mu\text{g}/\text{m}^3$ )				
		Date	Start Time	1 <sup>st</sup> hour measured	2 <sup>nd</sup> hour measured	3 <sup>rd</sup> hour measured
6-Sep-11	22	6-Sep-11	9:31	64	58	63
12-Sep-11	47	12-Sep-11	13:42	58	65	61
17-Sep-11	20	16-Sep-11	13:08	61	52	57
23-Sep-11	71	22-Sep-11	10:06	57	68	51
29-Sep-11	57	28-Sep-11	9:48	57	62	49
Average (Range)	<b>43</b> (22 – 71)	Average (Range)		<b>59</b> (49 – 68)		

**Table 4-2 Summary of 24-hour and 1-hour TSP Monitoring Results – AM2**

Date	24-hour TSP ( $\mu\text{g}/\text{m}^3$ )	1-hour TSP ( $\mu\text{g}/\text{m}^3$ )				
		Date	Start Time	1 <sup>st</sup> hour measured	2 <sup>nd</sup> hour measured	3 <sup>rd</sup> hour measured
6-Sep-11	32	6-Sep-11	9:53	56	53	60
12-Sep-11	34	12-Sep-11	14:02	48	59	66
17-Sep-11	25	16-Sep-11	14:16	59	67	50
23-Sep-11	84	22-Sep-11	10:38	61	73	60
29-Sep-11	99	28-Sep-11	10:03	54	60	58
Average (Range)	<b>55</b> (25 – 99)	Average (Range)		<b>59</b> (48 – 73)		

**Table 4-3 Summary of 24-hour and 1-hour TSP Monitoring Results – AM3**

Date	24-hour TSP ( $\mu\text{g}/\text{m}^3$ )	1-hour TSP ( $\mu\text{g}/\text{m}^3$ )				
		Date	Start Time	1 <sup>st</sup> hour measured	2 <sup>nd</sup> hour measured	3 <sup>rd</sup> hour measured
6-Sep-11	176	6-Sep-11	12:57	59	64	62
12-Sep-11	76	12-Sep-11	15:16	72	64	68
17-Sep-11	40	16-Sep-11	9:52	59	68	53
23-Sep-11	97	22-Sep-11	13:19	47	58	46
29-Sep-11	59	28-Sep-11	10:38	61	68	54
Average (Range)	<b>90</b> (40 – 176)	Average (Range)		<b>60</b> (46 – 72)		

4.03 As shown in *Tables 4-1, 4-2 and 4-3*, 24-hour and 1-hour TSP results fluctuated well below the Action Level during the Reporting Period. No Notification of Exceedance (NOE) of 24-hour and 1-hour TSP air quality criteria or corrective action was therefore required.

4.04 The meteorological information during the impact monitoring days are summarized in *Appendix I*.

## 5 IMPACT MONITORING RESULTS – CONSTRUCTION NOISE

5.01 The noise monitoring results are presented in the following sub-sections.

### Results of Construction Noise Monitoring

5.02 In this Reporting Period, 5 construction noise monitoring events were undertaken at designated location NM1, NM2, RNM3 and NM4. The results for  $L_{eq30min}$  at NM1, NM2, RNM3 and NM3 are summarized in *Tables 5-1, 5-2, 5-3 and 5-4* and graphical plots are shown in *Appendix H*.

**Table 5-1 Summarized of Construction Noise Monitoring Results at NM1**

Date	Start Time	End time	1 <sup>st</sup> Leq5	2 <sup>nd</sup> Leq5	3 <sup>rd</sup> Leq5	4 <sup>th</sup> Leq5	5 <sup>th</sup> Leq5	6 <sup>th</sup> Leq5	Leq30
6-Sep-11	10:24	10:54	52.1	49.6	54.3	56.2	55.9	54.6	54.3
12-Sep-11	9:38	10:08	50.3	52.6	51.9	54.6	52.3	55.1	53.1
16-Sep-11	11:42	12:12	53.8	61.5	55.5	60.6	55.0	52.0	57.8
22-Sep-11	11:47	12:17	52.5	53.0	53.4	52.4	50.5	50.6	52.2
28-Sep-11	14:12	14:42	54.8	59.2	56.3	51.4	60.8	56.7	57.5
<b>Limit Level in dB(A)</b>									<b>75</b>

**Table 5-2 Summarized of Construction Noise Monitoring Results at NM2**

Date	Start Time	End time	1 <sup>st</sup> Leq5	2 <sup>nd</sup> Leq5	3 <sup>rd</sup> Leq5	4 <sup>th</sup> Leq5	5 <sup>th</sup> Leq5	6 <sup>th</sup> Leq5	Leq30
6-Sep-11	11:11	11:41	62.1	60.9	61.7	58.4	61.9	57.7	60.8
12-Sep-11	10:16	10:46	62.3	64.9	61.4	61.9	66.1	60.8	63.4
16-Sep-11	12:31	13:01	60.5	61.5	62.3	60.1	62.6	59.9	61.3
22-Sep-11	12:29	12:59	63.9	64.5	57.7	51.4	59.1	56.6	60.8
28-Sep-11	14:53	15:23	62.3	60.8	59.5	58.4	62.6	63.8	61.6
<b>Limit Level in dB(A)</b>									<b>75</b>

**Table 5-3 Summarized of Construction Noise Monitoring Results at RNM3**

Date	Start Time	End time	1 <sup>st</sup> Leq5	2 <sup>nd</sup> Leq5	3 <sup>rd</sup> Leq5	4 <sup>th</sup> Leq5	5 <sup>th</sup> Leq5	6 <sup>th</sup> Leq5	Leq30	Corrected* Leq30
6-Sep-11	12:04	12:34	53.6	54.9	52.7	56.7	51.9	58.1	55.2	58.2
12-Sep-11	10:58	11:28	62.8	57.2	53.2	56.0	57.8	56.7	58.4	61.4
16-Sep-11	13:17	13:47	60.4	58.5	60.0	59.5	55.5	56.5	58.7	61.7
22-Sep-11	14:36	15:06	57.3	54.7	55.9	54.2	56.5	55.3	55.8	58.8
28-Sep-11	15:29	15:59	59.1	56.8	52.4	54.8	56.2	57.4	56.6	59.6
<b>Limit Level in dB(A)</b>									<b>75</b>	

\* A façade correction of +3dB(A) has been added according to acoustical principles and EPD guidelines.

**Table 5-4 Summarized of Construction Noise Monitoring Results at NM4**

Date	Start Time	End time	1 <sup>st</sup> Leq5	2 <sup>nd</sup> Leq5	3 <sup>rd</sup> Leq5	4 <sup>th</sup> Leq5	5 <sup>th</sup> Leq5	6 <sup>th</sup> Leq5	Leq30
6-Sep-11	12:41	13:11	56.2	59.1	54.8	56.7	55.0	57.2	56.8
12-Sep-11	11:33	12:03	62.4	59.8	64.2	60.9	57.2	63.8	62.0
16-Sep-11	10:36	11:06	66.3	59.3	65.6	54.4	57.2	62.3	62.7
22-Sep-11	15:26	15:56	60.8	61.5	61.9	58.5	63.4	59.1	61.2
28-Sep-11	16:13	16:43	60.8	64.2	61.3	60.9	55.3	59.6	61.1
<b>Limit Level in dB(A)</b>									<b>75</b>

5.03 It was noted that no noise complaint (which is an Action Level exceedance) was received. In view of the results shown in *Tables 5-1, 5-2, 5-3 and 5-4* which were all below 75dB(A), no Action or Limit Level exceedance was triggered during this month.



## 6 IMPACT MONITORING RESULTS – WATER QUALITY

- 6.01 The construction of marine outfall works was commenced on 19 July 2011 and therefore marine water quality monitoring is required in this Reporting Period. In this Reporting Period, 4 events of water quality monitoring were carried out at the designated locations. The monitoring results including in-situ measurements and laboratory testing results are presented in [Appendix G](#). The graphical plots are shown in [Appendix H](#).
- 6.02 During the Reporting Period, field measurements of both control and impact stations showed that marine water of the depth average of the salinity concentration was within **29.18 to 32.73** ppt, and pH value was within **7.60 to 8.35**.
- 6.03 Monitoring results of 3 key parameters: dissolved oxygen (DO), turbidity and suspended solids (SS) in this Reporting Period, are summarized in [Tables 6-1, 6-2, 6-3 and 6-4](#). A summary of exceedances for the 3 parameters are shown in [Table 6-5](#).

**Table 6-1 Summary of Water Quality Results – Mid-ebb Tides (Dissolved Oxygen)**

Sampling date	Dissolved Oxygen conc. of Depth Ave. of Surf. and Mid Layer (mg/L)						Dissolved Oxygen conc. of Depth Ave. of Bottom Layer (mg/L)					
	WY1	WY2	WY3	CY1	CY2	CY3	WY1	WY2	WY3	CY1	CY2	CY3
2-Sep-11	6.14	6.22	6.69	6.39	6.66	6.86	NA	6.00	6.43	5.85	6.36	5.94
6-Sep-11	6.48	6.36	6.47	6.18	6.16	6.76	NA	6.35	6.31	6.51	6.20	6.72
8-Sep-11	6.01	6.35	6.02	6.19	6.57	5.99	NA	6.25	6.19	6.08	6.15	5.81
10-Sep-11	6.95	6.56	6.79	6.94	6.82	6.79	NA	6.76	6.53	6.92	6.59	6.79
12-Sep-11	6.20	6.32	6.18	6.34	6.11	6.11	NA	5.92	5.94	5.98	5.94	5.94
14-Sep-11	6.80	6.55	6.78	6.78	6.64	6.64	NA	5.93	5.91	6.48	5.91	5.91
16-Sep-11	5.89	6.45	6.67	6.38	6.56	6.56	NA	5.88	6.08	5.88	6.05	6.05
20-Sep-11	5.74	5.50	5.38	5.49	4.69	4.69	NA	5.42	5.39	5.32	4.55	4.55
22-Sep-11	5.53	5.85	5.17	5.74	5.33	5.33	NA	5.76	4.67	5.65	5.23	5.23
24-Sep-11	5.67	5.74	5.39	5.41	5.52	5.52	NA	4.78	4.63	4.30	4.92	4.92
26-Sep-11	6.03	7.21	6.33	6.02	6.43	6.43	NA	5.84	5.40	5.35	5.91	5.91
28-Sep-11	6.47	6.62	6.37	6.40	6.72	6.72	NA	5.80	5.80	5.66	6.03	6.03
30-Sep-11	5.98	5.96	5.69	6.09	5.97	5.97	NA	5.75	5.33	5.89	5.65	5.65

**Table 6-2 Summary of Water Quality Results – Mid-ebb Tides (Turbidity & Suspended Solids)**

Sampling date	Turbidity Depth Ave. (NTU)						Suspended Solids Depth Ave. (mg/L)					
	WY1	WY2	WY3	CY1	CY2	CY3	WY1	WY2	WY3	CY1	CY2	CY3
2-Sep-11	2.88	2.82	2.58	2.62	2.92	2.97	2.30	3.23	5.27	3.97	4.57	3.93
6-Sep-11	3.20	3.02	3.22	2.97	3.40	3.03	9.30	3.23	3.10	5.23	3.33	3.90
8-Sep-11	3.14	3.85	4.38	3.63	4.76	3.73	2.20	2.90	2.83	3.33	3.40	3.40
10-Sep-11	3.40	4.89	4.77	3.53	4.33	3.38	3.70	3.07	4.97	6.13	3.97	4.30
12-Sep-11	3.56	3.65	3.02	4.00	3.61	4.23	4.70	3.37	3.80	3.07	3.90	4.67
14-Sep-11	3.72	4.30	4.04	4.12	4.18	4.12	3.00	2.27	4.00	2.37	3.30	4.40
16-Sep-11	4.19	4.07	4.08	4.40	3.78	4.73	2.60	3.77	4.40	4.57	3.37	3.70
20-Sep-11	3.94	4.74	4.37	4.30	4.47	4.33	6.10	4.10	4.27	3.80	3.53	4.10
22-Sep-11	3.10	3.81	3.87	3.23	3.96	3.33	7.50	5.57	6.23	3.77	3.37	2.97
24-Sep-11	4.14	4.06	3.63	4.30	4.65	4.49	6.10	5.33	3.57	5.33	3.63	5.20
26-Sep-11	3.49	3.75	3.57	3.54	3.97	3.82	6.70	7.43	8.40	8.07	8.87	12.10
28-Sep-11	3.88	3.61	3.68	3.85	3.12	3.86	7.00	8.50	6.37	4.87	6.60	4.73
30-Sep-11	2.85	2.82	2.75	3.95	3.92	5.12	3.50	6.60	5.07	5.70	4.83	7.27

**Table 6-3 Summary of Water Quality Results – Mid-flood Tides (Dissolved Oxygen)**

Sampling date	Dissolved Oxygen conc. of Depth Ave. of Surf. and Mid Layer (mg/L)						Dissolved Oxygen conc. of Depth Ave. of Bottom Layer (mg/L)					
	WY1	WY2	WY3	CY1	CY2	CY3	WY1	WY2	WY3	CY1	CY2	CY3
2-Sep-11	6.28	6.54	6.98	6.72	6.63	6.78	NA	5.84	6.68	5.99	6.43	5.86
6-Sep-11	6.21	6.01	6.53	6.42	6.40	6.58	NA	5.84	6.43	6.83	6.16	6.24
8-Sep-11	6.23	6.48	6.35	6.26	6.11	6.78	NA	5.84	5.38	5.89	6.17	6.20
10-Sep-11	6.84	6.32	6.45	6.30	6.64	6.76	NA	6.11	6.19	6.03	6.32	6.81
12-Sep-11	6.80	6.42	6.47	6.44	6.50	6.77	NA	6.57	6.29	6.50	6.48	6.79
14-Sep-11	6.78	6.18	6.08	6.47	5.06	6.57	NA	5.50	5.12	5.06	6.35	5.40
16-Sep-11	6.78	6.57	6.65	6.63	6.01	6.48	NA	6.06	6.00	6.01	6.37	5.77
20-Sep-11	5.73	5.67	4.93	5.49	5.32	5.59	NA	5.44	4.93	5.32	4.51	5.26
22-Sep-11	5.72	4.82	4.82	4.93	4.92	4.87	NA	4.90	4.81	4.92	4.86	4.73
24-Sep-11	5.47	5.10	5.08	4.99	4.27	5.29	NA	4.36	3.96	4.27	4.37	4.53
26-Sep-11	5.99	6.35	6.53	6.35	5.32	6.39	NA	5.41	5.92	5.32	5.87	5.89
28-Sep-11	6.65	6.65	6.49	6.73	6.07	6.64	NA	6.04	6.11	6.07	6.03	6.11
30-Sep-11	6.14	6.02	6.08	6.48	6.47	6.69	NA	5.91	5.77	6.47	5.68	6.59

**Table 6-4 Summary of Water Quality Results – Mid-flood Tides (Turbidity & Suspended Solids)**

Sampling date	Turbidity Depth Ave. (NTU)						Suspended Solids Depth Ave. (mg/L)					
	WY1	WY2	WY3	CY1	CY2	CY3	WY1	WY2	WY3	CY1	CY2	CY3
2-Sep-11	3.15	2.75	2.85	3.15	3.13	2.92	2.10	2.77	2.27	3.40	4.43	3.93
6-Sep-11	3.20	3.17	3.17	2.97	3.20	3.27	1.60	3.20	2.57	2.00	2.63	3.87
8-Sep-11	4.30	4.62	4.95	4.38	4.72	4.30	3.60	2.70	2.50	2.87	2.60	3.97
10-Sep-11	3.66	4.18	3.85	4.13	4.70	3.55	9.70	3.47	3.13	3.90	4.27	4.47
12-Sep-11	3.73	3.77	2.90	3.90	3.33	3.74	1.70	2.83	2.33	3.10	3.10	1.77
14-Sep-11	2.80	3.63	3.69	4.08	4.18	4.07	7.00	2.40	3.30	3.47	2.23	1.67
16-Sep-11	4.05	4.41	4.22	4.64	4.09	4.91	5.70	5.10	4.40	2.83	2.73	3.83
20-Sep-11	3.76	4.27	3.85	4.47	4.51	4.19	4.40	4.90	4.40	3.43	2.60	3.77
22-Sep-11	3.67	3.81	3.84	3.85	4.14	3.55	5.30	4.40	5.70	6.10	5.17	4.77
24-Sep-11	3.87	3.85	3.74	4.32	4.11	4.09	4.70	3.10	2.90	4.03	3.60	2.40
26-Sep-11	4.07	3.35	3.49	3.63	3.47	3.64	5.40	6.30	5.70	7.70	4.83	5.63
28-Sep-11	3.92	3.69	3.66	3.44	4.15	4.34	8.90	6.33	8.97	6.43	7.77	6.17
30-Sep-11	3.15	3.03	2.57	6.12	3.60	6.45	5.10	6.07	8.87	7.07	4.73	6.57

**Table 6-5 Summarized Exceedances of Marine Water Quality**

Station	DO (Ave of Surf. & mid-depth)		DO (Ave. of Bottom Layer)		Turbidity (Depth Ave.)		SS (Depth Ave)		Total Exceedance	
	Action	Limit	Action	Limit	Action	Limit	Action	Limit	Action	Limit
<b>Mid-Ebb</b>										
WY1	0	0	0	0	0	0	0	0	0	0
WY2	0	0	0	0	0	0	0	0	0	0
WY3	0	0	0	0	0	0	0	0	0	0
<b>Mid-Flood</b>										
WY1	0	0	0	0	0	0	0	0	0	0
WY2	0	0	0	0	0	0	0	0	0	0
WY3	0	0	0	0	0	0	0	0	0	0
<b>No of Exceedance</b>	0	0	0	0	0	0	0	0	0	0

6.04 For marine water monitoring, no exceedance of Action/Limit levels was recorded in this Reporting Period. Therefore, no associated corrective actions were then required.

## 7 ECOLOGY

- 7.01 According to Clause 3.7 and Figure 4 in the Environmental Permit No. EP-281/2007/A, a total of 12 numbers *Celtis Timorensis* (uncommon species) in Chung Mei at Sok Kwu Wan, are identified to require labeling, fencing and protection. Out of these, four numbers located in the Pumping Station No.1 area are required to be transplanted in advance of pumping station construction and the transplantation proposal has been submitted to EPD previously.
- 7.02 Regular inspection of the transplanted tree was carried out by the landscaping sub-Contractor (Melofield Nursery and Landscape Contractor Limited) on **5 and 23 September 2011**. As a contingency measure in case that CT7 to CT10 can no longer be recovered, additional 7 no. of *Celtis Timorensis* were planted adjacent to the under-monitoring *Celtis Timorensis* CT7 to CT10 on 30 April 2011. The tree inspection report is presented in **Appendix M**.

## 8 WASTE MANAGEMENT

8.01 Waste management was carried out by an on-site Environmental Officer or an Environmental Supervisor from time to time.

### Records of Waste Quantities

8.02 All types of waste arising from the construction work are classified into the following:

- Construction & Demolition (C&D) Material;
- Chemical Waste;
- General Refuse; and
- Excavated Soil

8.03 The quantities of waste for disposal in this Reporting Period are summarized in *Table 8-1* and *8-2* and the Monthly Summary Waste Flow Table is shown in *Appendix J*. Whenever possible, materials were reused on-site as far as practicable.

**Table 8-1 Summary of Quantities of Inert C&D Materials**

Type of Waste	Quantity	Disposal Location
C&D Materials (Inert) ('000m <sup>3</sup> )	0.004	Sok Kwu Wan Transfer Facility
Reused in the Contract (Inert) ('000m <sup>3</sup> )	0	-
Reused in other Projects (Inert) ('000m <sup>3</sup> )	1,473	-
Disposal as Public Fill (Inert) ('000m <sup>3</sup> )	0	Sok Kwu Wan Transfer Facility

**Table 8-2 Summary of Quantities of C&D Wastes**

Type of Waste	Quantity	Disposal Location
Metal (kg)	0	-
Paper / Cardboard Packing (kg)	0	-
Plastic (kg)	0	-
Chemical Wastes (kg)	0	-
General Refuses (tonne)	2,420	Sok Kwu Wan Transfer Facility

8.04 There was no site effluent discharged but the estimated volume of surface runoff was less than 50m<sup>3</sup> in this monthly period.

**9 SITE INSPECTION**

- 9.01 According to the Environmental Monitoring and Audit Manual, the environmental site inspection should be formulated by ET Leader. Regular environmental site inspections had been carried out by the ET to confirm the environmental performance. In this Reporting Period, weekly site inspection by ET was carried out on **6, 14, 20 and 27 September 2011** and a joint-site visit by IEC Representative, RE, Leader and ET was carried out on **20 September 2011**.
- 9.02 The findings/ deficiencies that observed during the weekly site inspection are listed in **Table 9-1** and the relevant checklists are attached in **Appendix K**.

**Table 9-1 Site Observations**

<b>Date</b>	<b>Findings / Deficiencies</b>	<b>Follow-Up Status</b>
6 September 2011	<ul style="list-style-type: none"> <li>The Contractor should clear the accumulated sediment in the tank to restore its desilting effectiveness.</li> </ul>	The tank has been cleared on 14 September 2011.
14 September 2011	<ul style="list-style-type: none"> <li>The Contractor should remove the scattered general refuse on the hill to minimize dust nuisance and improve site tidiness.</li> </ul>	The general refuse was found to be removed.
20 September 2011	<ul style="list-style-type: none"> <li>Gaps were observed along the silt curtain. The contractor should regularly check and repair as appropriate.</li> </ul>	The silt curtain was found to be repaired.
27 September 2011	<ul style="list-style-type: none"> <li>The Contractor should provide drip tray for the oil drum.</li> </ul>	Drip tray was found to be provided on 3 Oct 2011.

## 10 ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE

10.01 No environmental complaint, summons and prosecution was received in this Reporting Period. The statistical summary table of environmental complaint is presented in *Tables 10-1, 10-2* and *10-3*.

**Table 10-1 Statistical Summary of Environmental Complaints**

Reporting Period	Environmental Complaint Statistics		
	Frequency	Cumulative	Complaint Nature
27 July 2010 – 31 August 2011	0	0	NA
1 – 30 September 2011	0	0	NA

**Table 10-2 Statistical Summary of Environmental Summons**

Reporting Period	Environmental Summons Statistics		
	Frequency	Cumulative	Complaint Nature
27 July 2010 – 31 August 2011	0	0	NA
1 – 30 September 2011	0	0	NA

**Table 10-3 Statistical Summary of Environmental Prosecution**

Reporting Period	Environmental Prosecution Statistics		
	Frequency	Cumulative	Complaint Nature
27 July 2010 – 31 August 2011	0	0	NA
1 – 30 September 2011	0	0	NA

## 11 IMPLEMENTATION STATUS OF MITIGATION MEASURES

11.01 The environmental mitigation measures that recommended in the Sok Kwu Wan Environmental Monitoring and Audit covered the issues of dust, noise, water and waste and they are summarized as following:

### Dust Mitigation Measure

11.02 Installation of 2m high solid fences around the construction site of Pumping Station P2 is recommended. Implementation of the requirements stipulated in the Air Pollution Control (Construction Dust) Regulation and the following good site practices are recommended to control dust emission from the site:

- (a) Stockpiles of imported material kept on site should be contained within hoardings, dampened and / or covered during dry and windy weather;
- (b) Material stockpiled alongside trenches should be covered with tarpaulins whenever works are close to village houses;
- (c) Water sprays should be used during the delivery and handling of cement, sands, aggregates and the like.
- (d) Any vehicle used for moving sands, aggregates and construction waste shall have properly fitting side and tail boards. Materials should not be loaded to a level higher than the side and tail boards, and should be covered by a clean tarpaulin.

### Noise Mitigation Measure

11.03 As detailed in the EIA report, concreting work of the Pumping Station P1a and sewer alignment construction activities would likely cause adverse noise impacts on some of the noise sensitive receivers. Appropriate mitigation measures have therefore been recommended. The mitigation measures recommended in the EIA report are summarised below:

- (a) Use of quiet equipment for the construction activities of the Pumping Stations and sewer alignment;
- (b) Use of temporary noise barrier around the site boundary of Pumping Station P1a;
- (c) Use of kick ripper (saw and lift) method to replace the breaker for pavement removal during sewer alignment construction;
- (d) Restriction on the number of plant during sewer alignment construction;
- (e) Use of noise screening structures in the form of acoustic shed or movable barrier wherever practicable and feasible in areas with sufficient clearance and headroom during the construction of sewer alignment;
- (f) Adoption of manual working method wherever practicable and feasible in areas where the worksites of the proposed sewer alignment are located less than 20m from the residential noise sensitive receivers and less than 30m from the temple and the public library; and
- (g) Implementation of the following good site practices:
  - Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme.
  - Mobile plant, if any, should be sited as far away from NSRs as possible.
  - Machines and plant (such as trucks) 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 one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs.
  - Material stockpiles and other structures should be effectively utilised, wherever practicable, in screening noise from on-site construction activities.

### Water Quality Mitigation Measure

11.04 No-dig method using Horizontal Directional Drilling (HDD) would be used for the installation of outfall pipe of about 480 m from shore to minimize the potential water quality impacts arising from the dredging works required for the submarine outfall construction. For the remaining outfall pipe of about 240m and the diffuser section, open trench dredging would still be required.



- 11.05 During the dredging works, the Contractor should be responsible for the design and implementation of the following mitigation measures.
- Dredging should be undertaken using closed grab dredgers with a total production rate of 55m<sup>3</sup>/hr;
  - Deployment of 2-layer silt curtains with first layer enclosing the grab and the second layer at around 50, from the dredging area while dredging works are in progress;
  - all vessels should be sized such that adequate clearance (i.e. minimum clearance of 0.6m) is maintained between vessels and the sea bed at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash;
  - all pipe leakages should be repaired promptly and plant shall not be operated with leaking pipes;
  - excess material should be cleaned from the decks and exposed fittings of barges before the vessel is moved;
  - adequate freeboard (i.e. minimum of 200m) should be maintained on barges to ensure that decks are not washed by wave action;
  - all barges should be fitted with tight fitting seals to their bottom openings to prevent leakage of material; and
  - loading of barges and hoppers should be controlled to prevent splashing of dredged material to the surrounding water, and barges and hoppers should not be filled to a level which would cause the overflow of materials or sediment laden water during loading or transportation; and
  - the decks of all vessels should be kept tidy and free of oil or other substances that might be accidentally or otherwise washed overboard.

#### Construction Run-off and Drainage

- 11.06 The Contractor should observe and comply with the Water Pollution Control Ordinance and the subsidiary regulations. The Contractor should follow the practices, and be responsible for the design, construction, operation and maintenance of all the mitigation measures as specified in ProPECC PN 1/94 “Construction Site Drainage”. The design of the mitigation measures should be submitted by the Contractor to the Engineer for approval. These mitigation measures should include the following practices to minimise site surface runoff and the chance of erosion, and also to retain and reduce any suspended solids prior to discharge:
- Provision of perimeter channels to intercept storm-runoff from outside the site. These should be constructed in advance of site formation works and earthworks.
  - Works programmes should be designed to minimize works areas at any one time, thus minimising exposed soil areas and reducing the potential for increased siltation and runoff.
  - Sand/silt removal facilities such as sand traps, silt traps and sediment basins should be provided to remove the sand/silt particles from run-off. These facilities should be properly and regularly maintained. These facilities shall be carefully planned to ensure that they would be installed at appropriate locations to capture all surface water generated on site.
  - Careful programming of the works to minimise soil excavation works during rainy seasons.
  - Exposed soil surface should be protected by paving or hydroseeding as soon as possible to reduce the potential of soil erosion.
  - Trench excavation should be avoided in the wet season, and if necessary, these should be excavated and backfilled in short sections.
  - Open stockpiles of construction materials on site should be covered with tarpaulin or similar fabric.

#### General Construction Activities

- 11.07 Debris and rubbish generated on-site should be collected, handled and disposed of properly to avoid entering the nearby coastal waters and stormwater drains. All fuel tanks and storage areas should be provided with locks and be sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank. Open drainage channels and culverts near the works areas should be covered to block the entrance of large debris and refuse.



Wastewater Arising from Workforce

- 11.08 Portable toilets shall be provided by the Contractors, where necessary, to handle sewage from the workforce. The Contractor shall also be responsible for waste disposal and maintenance practices

**Sediment Contamination Mitigation Measure**

- 11.09 The basic requirements and procedures for dredged mud disposal are specified under the WBTC No. 34/2002. The management of the dredging, use and disposal of marine mud is monitored by the MFC, while the licensing of marine dumping is the responsibility of the Director of Environmental Protection (DEP).
- 11.10 The uncontaminated dredged sediment will be loaded onto barges and transported to the designated marine disposal site. Appropriate dredging methods have been incorporated into the recommended water quality mitigation measures including the use of closed-grab dredgers and silt curtains. Category L sediment would be suitable for disposal at a gazetted open sea disposal ground.
- 11.11 During transportation and disposal of the dredged marine sediments, the following measures should be taken to minimize potential impacts on water quality:
- Bottom opening of barges should be fitted with tight fitting seals to prevent leakage of material. Excess material should be cleaned from the decks and exposed fittings of barges and hopper dredgers before the vessel is moved.
  - Monitoring of the barge loading should be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels should be equipped with automatic self-monitoring devices as specified by the DEP.

**Construction Waste Mitigation Measure**

Good Site Practices and Waste Reduction Measures

- 11.12 It is not anticipated that adverse waste management related impacts would arise, provided that good site practices are strictly followed. Recommendations for good site practices for the construction waste arising include:
- Nomination of an approved person, such as a site manager, to be responsible for the implementation of good site practices, arranging for collection and effective disposal to an appropriate facility, of all wastes generated at the site.
  - Training of site personnel in proper waste management and chemical handling procedures.
  - Appropriate measures to minimize windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers.
  - Provision of sufficient waste disposal points and regular collection for disposal.
  - Separation of chemical wastes for special handling and appropriate treatment at the Chemical Waste Treatment Facility.
  - Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors.
  - Maintain records of the quantities of wastes generated, recycled and disposed.
- 11.13 In order to monitor the disposal of C&D waste at landfills and to control fly tipping, a trip-ticket system should be included as one of the contractual requirements and implemented by an Environmental Team undertaking the Environmental Monitoring and Audit work. An Independent Environmental Checker should be responsible for auditing the results of the system.
- 11.14 Good management and control can prevent the generation of significant amount of waste. Waste reduction is best achieved at the planning and design stage, as well as by ensuring the implementation of good site practices. Recommendations to achieve waste reduction include:
- segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal;

- to encourage collection of aluminium cans by individual collectors, separate labelled bins should be provided to segregate this waste from other general refuse generated by the work force;
- any unused chemicals or those with remaining functional capacity should be recycled;
- use of reusable non-timber formwork to reduce the amount of C&D material;
- prior to disposal of C&D waste, it is recommended that wood, steel and other metals should be separated for re-use and / or recycling to minimise the quantity of waste to be disposed of to landfill;
- proper storage and site practices to minimise the potential for damage or contamination of construction materials; and
- plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste.

#### General Site Wastes

- 11.15 A collection area should be provided where waste can be stored prior to removal from site. An enclosed and covered area is preferred for the collection of the waste to reduce 'wind blow' of light material.

#### Chemical Wastes

- 11.16 After use, chemical waste (eg. 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. Any unused chemicals or those with remaining functional capacity should be recycled. Spent chemicals should be properly stored on site within suitably designed containers, and should be collected by an approved operator for disposal at the Chemical Waste Treatment Facility or other licenced facility in accordance with the Waste Disposal (Chemical Waste) (General) Regulation under the Waste Disposal Ordinance.
- 11.17 Any service shop and minor maintenance facilities should be located on hard standings within a bunded area, and sumps and oil interceptors should be provided. Maintenance of vehicles and equipment involving activities with potential for leakages and spillage should only be undertaken with the areas appropriately equipped to control these discharges.

#### Construction and Demolition Material

- 11.18 The C&D material should be separated on-site into three categories: (i) public fill, the inert portion of the C&D material (e.g. concrete and rubble), which should be re-used on-site or disposed of at a public filling area; (ii) C&D waste for re-use and/or recycling, the non-inert portion of the C&D material, (e.g. steel and other metals, wood, glass and plastic); (iii) C&D waste which cannot be re-used and/or recycled. The waste producers are responsible for its disposal at strategic landfills.
- 11.19 In order to minimise the impact resulting from collection and transportation of material for off-site disposal, it was recommended that inert material should be re-used on-site where possible. Prior to disposal of C&D material, it was also recommended that steel and other metals should be separated for re-use and/or recycling where practicable to minimise the quantity of waste to be disposed of to landfill.

#### Ecology Mitigation Measure

##### Terrestrial Ecology

- 11.20 The uncommon tree species should be labelled and probably fenced to avoid direct or indirect disturbance during construction. Works areas should avoid woodland habitats, in particular where these trees are located.
- 11.21 Construction and maintenance of site runoff control measures would be required at all work sites during construction. These should include barriers to direct runoff to sand/silt removal facilities (sand/silt/traps and/or sediment basins); minimisation of earthworks during rainy season (May to September); and coverage of sand/fill piles and exposed earth during storms.

- 11.22 Special attention should be paid during the breeding season of Romer’s Tree Frog (March to September) to ensure their habitat landward to Pumping Station P2 site is well protected from site runoff. Barriers should be deployed completely along the landward side of the pumping station site boundary to prevent any site runoff from entering the tree frog habitat. Intactness of the barriers should be frequently inspected.

Intertidal and Subtidal Ecology

- 11.23 Construction and maintenance of site runoff control measures would be required at all work sites during construction. These should include barriers to direct runoff to sand/silt removal facilities (sand/silt/traps and/or sediment basins); use of silt curtains along coastline; minimisation of earthworks during rainy season (May to September); and coverage of sand/fill piles and exposed earth during storms.
- 11.24 To reduce impacts of sediment resuspension upon nearby habitats and organisms during dredging, all dredging should be done using a closed-grab dredger, and silt curtains should be deployed around the dredger during all dredging activity

Fisheries Mitigation Measure

- 11.25 Closed grab dredger, deployment of silt curtains around the immediate dredging area and low dredging rate have been recommended in Water Quality of the EIA report in order to minimise sediment release into the water column.

Landscape & Visual Mitigation Measure

- 11.26 Mitigation measures recommended in the EIA Report for landscape and visual impacts during the construction stage are summarised below.
- Screening of site construction works by use of hoarding that is appropriate to its site context;
  - Retaining existing trees and minimising damage to vegetation where possible by close co-ordination and on site alignment adjusted of rising main and gravity sewer pipelines. Tree protective measures should be implemented to ensure trees identified as to be retained are satisfactorily protected during the construction phase;
  - Careful and efficient transplanting of affected trees (1 no.) to temporary or final transplant location (the proposed tree to be transported is a semi-mature *Macaranga tanarius* and is located at the proposed Pumping Station P2 location);
  - Short excavation and immediate backfilling of sections upon completion of works to reduce active site area;
  - Conservation of top-soil for reuse.
  - Night-time light source from marine fleets should be directed away from the residential units
- 11.27 The implementation schedule of mitigation measures is presented in [Appendix L](#).
- 11.28 Leader had been implementing the required environmental mitigation measures according to the Sok Kwu Wan Environmental Monitoring and Audit Manual subject to the site condition. Environmental mitigation measures generally implemented by Leader in this Reporting Period are summarized in [Table 11-1](#).

**Table 11-1 Environmental Mitigation Measures**

Issues	Environmental Mitigation Measures
Water Quality	<ul style="list-style-type: none"> <li>• Drainage channels were provided to convey run-off into the treatment facilities; and</li> <li>• Drainage systems were regularly and adequately maintained.</li> </ul>
Air Quality	<ul style="list-style-type: none"> <li>• Cover all excavated or stockpile of dusty material by impervious sheeting or sprayed with water to maintain the entire surface wet;</li> <li>• Public roads around the site entrance/exit had been kept clean and free from dust; and</li> <li>• Tarpaulin covering of any dusty materials on a vehicle leaving the site.</li> </ul>

Issues	Environmental Mitigation Measures
Noise	<ul style="list-style-type: none"><li>• Good site practices to limit noise emissions at the sources;</li><li>• Use of quiet plant and working methods;</li><li>• Use of site hoarding or other mass materials as noise barrier to screen noise at ground level of NSRs; and</li><li>• To minimize plant number use at the worksite.</li></ul>
Waste and Chemical Management	<ul style="list-style-type: none"><li>• Excavated material should be reused on site as far as possible to minimize off-site disposal. Scrap metals or abandoned equipment should be recycled if possible;</li><li>• Waste arising should be kept to a minimum and be handled, transported and disposed of in a suitable manner;</li><li>• The Contractor should adopt a trip ticket system for the disposal of C&amp;D materials to any designed public filling facility and/or landfill; and</li><li>• Chemical waste shall be handled in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Wastes.</li></ul>
General	<ul style="list-style-type: none"><li>• The site was generally kept tidy and clean.</li></ul>

## 12 IMPACT FORECAST

12.01 Key issues to be considered in the coming month include:

### Water Quality

- Erect of sand bag in proper area to avoid any muddy surface runoff from the loose soil surface or haul road during the rainy days; and
- The accumulated stagnant water should be drained away.

### Air Quality

- Vehicles shall be cleaned of mud and debris before leaving the site;
- Stockpile and loose soil surface shall be covered with tarpaulin sheet or other means to eliminate the fugitive dust;
- Water spaying on the dry haul road and exit/entrance of the site in regular basis is reminded; and
- Public roads around the site entrance/exit had been kept clean and free from dust.

### Noise

- Works and equipment should be located to minimize noise nuisance from the nearest sensitive receiver; and
- Idle equipments should be either turned off or throttled down;

### Waste and Chemical Management

- Housekeeping on site shall be improved;
- The Contractor is advised to fence off the construction waste at a designated area in order to maintain the tidiness of the site;
- Drip tray and proper label should be provided for all chemical containers.
- C&D waste should be disposed in regular basis.

### 13 CONCLUSIONS AND RECOMMENDATIONS

#### CONCLUSIONS

- 13.01 This is the **14<sup>th</sup>** monthly EM&A Report covering the construction period from **1 to 30 September 2011**.
- 13.02 No 1-hour TSP or 24-hr TSP monitoring results was found to be triggered the Action or Limit Level in this Reporting Period.
- 13.03 No noise complaint (an Action Level exceedance) was received and no construction noise measurement results that exceeded the Limit Level were recorded in this Reporting Period.
- 13.04 As informed by the Contractor, the marine work of outfall construction has been commenced on 19 July 2011, therefore, water quality was undertaken in this Reporting Period. The monitoring result demonstrated no exceedance of Action or Limit Level in this Reporting Period.
- 13.05 No documented complaint, notification of summons or successful prosecution was received.
- 13.06 In this Reporting Period, weekly site inspection by ET was carried out on **6, 14, 20 and 27 September 2011** and a joint-site visit by IEC Representative, RE, Leader and ET was carried out on **20 September 2011**. All the observation has been rectified during the next week site inspection. The environmental performance of the Project was therefore considered as satisfactory.

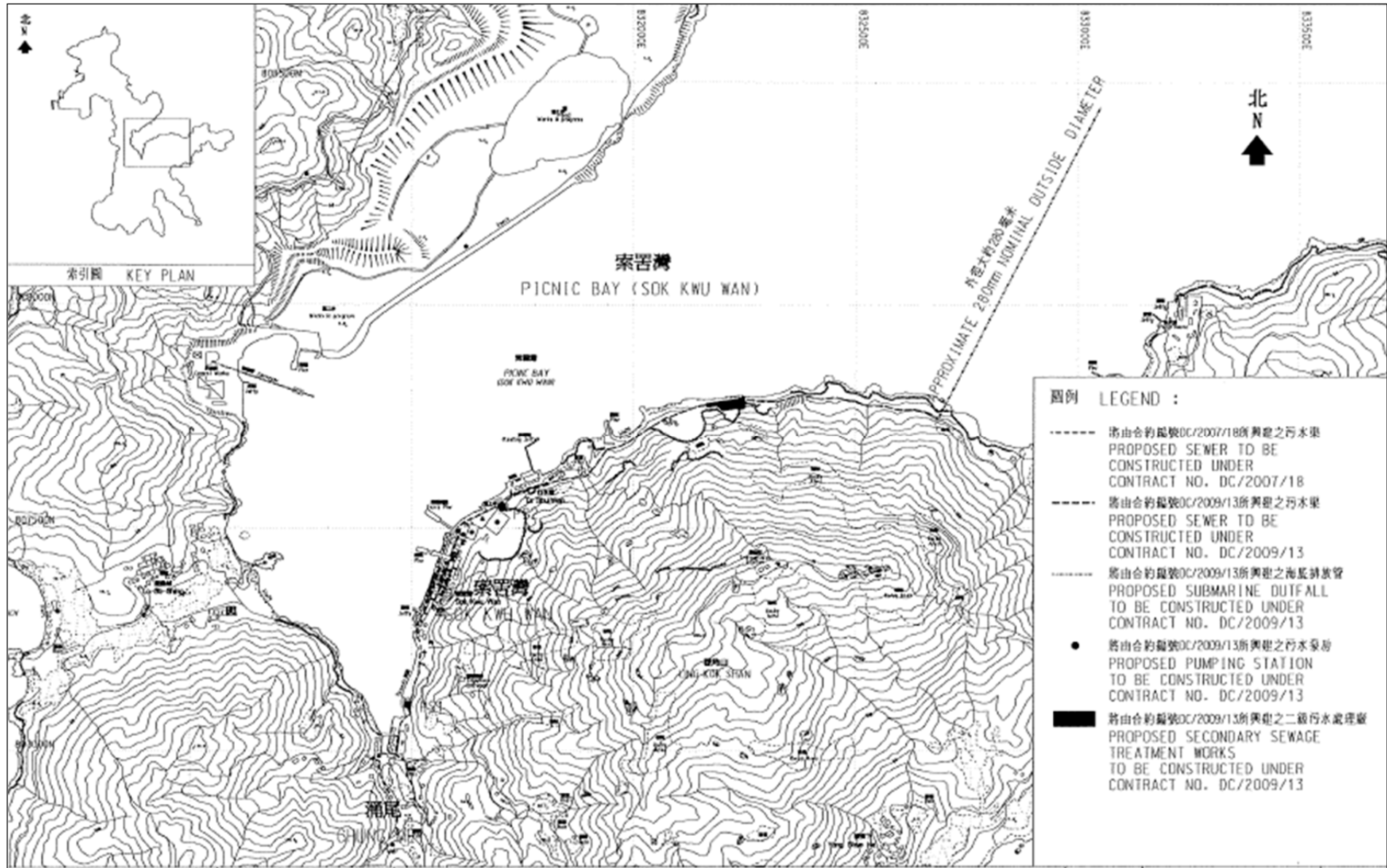
#### RECOMMENDATIONS

- 13.07 During dry season, special attention should be paid to the dust mitigation measures to avoid fugitive dust emissions from loose soil surface or haul road. Nevertheless, mitigation measures implemented for control the surface runoff including wheel wash facilities, covering of the loose soil surface or stockpile with tarpaulin sheet, etc., should fully implement.
- 13.08 Muddy water and other water quality pollutants via site surface water runoff into the sea body within Fish culture zone at Picnic Bay and the Secondary recreation contact subzone at Mo Tat Wan is the key issue of the Project. Mitigation measures for water quality should be properly maintained to prevent any muddy or sandy runoff from the loose soil surface overflow on the site boundary.

## **Appendix A**

### **Site Layout Plan – Sok Kwu Wan Portion Area**







## **Appendix B**

### **Organization Structure and Contact Details of Relevant Parties**

Contact Details of Key Personnel

<b>Organization</b>	<b>Project Role</b>	<b>Name of Key Staff</b>	<b>Tel No.</b>	<b>Fax No.</b>
DSD	Employer	Mr. AU Chi Kwong	-	-
SCJV	Engineer's Representative	Mr. Neil Wong	2982 0240	2982 4129
SCJV	Resident Engineer	Mr. Alfred Cheung	2982 0240	2982 4129
Scott Wilson	Independent Environmental Checker	Mr. Rodney Ip	2410 3750	2428 9922
Leader	Project Manager	Mr. Vincent Chan	2982 1750	2982 1163
Leader	Site Agent	Mr. Stephen Leung	2982 1750	2982 1163
Leader	Environmental Officer	Mr. K.Y. So	2982 8652	2982 8650
Leader	Section Engineer	Mr. Burgess Yip	2982 1750	2982 1163
Leader	Safety Officer	Mr. Edwin Leung	2982 1750	2982 1163
AUES	Environmental Team Leader	Mr. T. W. Tam	2959 6059	2959 6079
AUES	Environmental Consultant	Ms. Nicola Hon	2959 6059	2959 6079
AUES	Assistance Environmental Consultant	Mr. Ray Cheung	2959 6059	2959 6079
AUES	Team Supervisor	Mr. Ben Tam	2959 6059	2959 6079

Legend:

*DSD (Employer) – Drainage Services Department*

*CDM (Engineer) – Scott Wilson CDM Joint Venture*

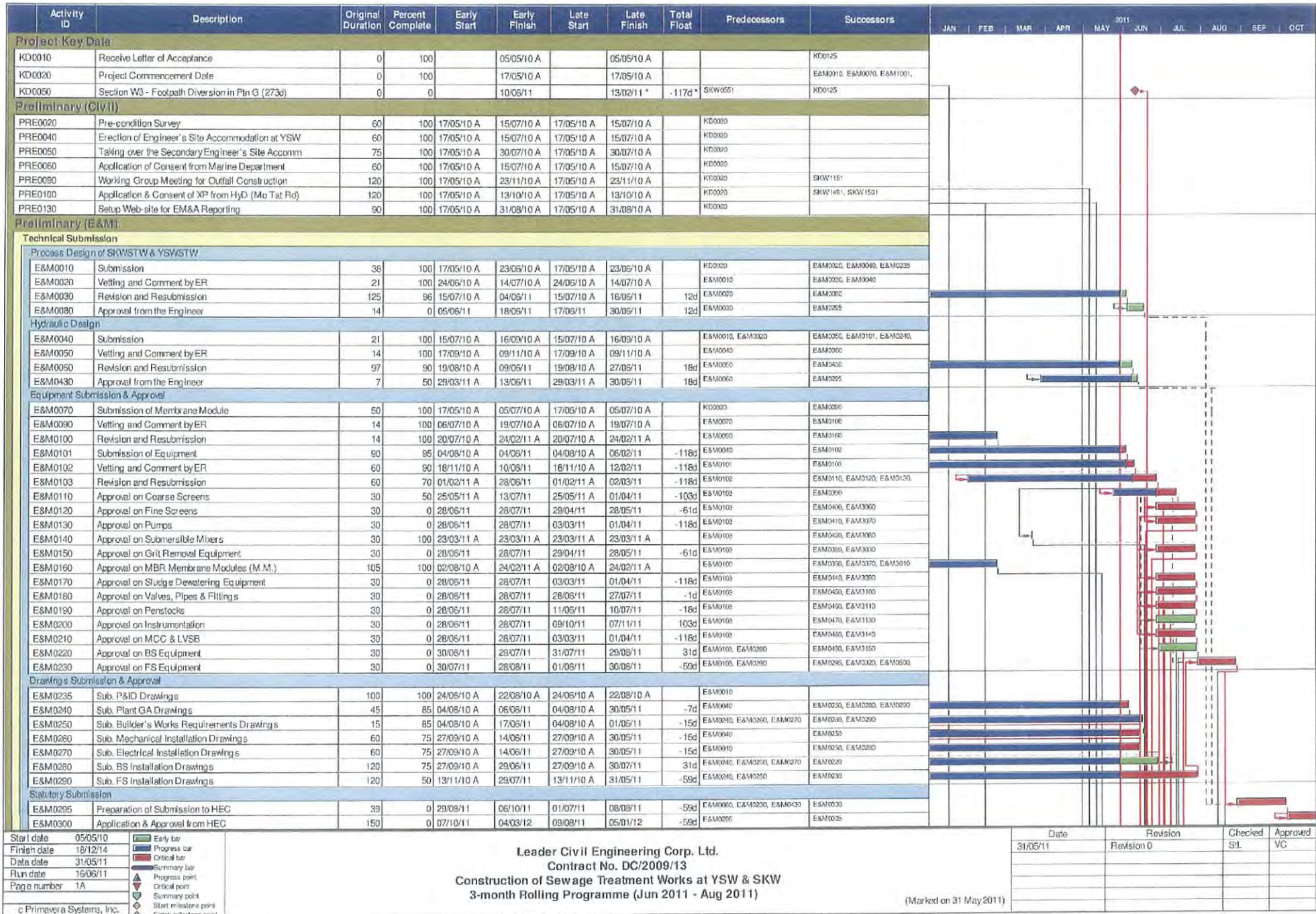
*Leader (Main Contractor) – Leader Civil Engineering Corporation Limited*

*Scott Wilson (IEC) – Scott Wilson Limited*

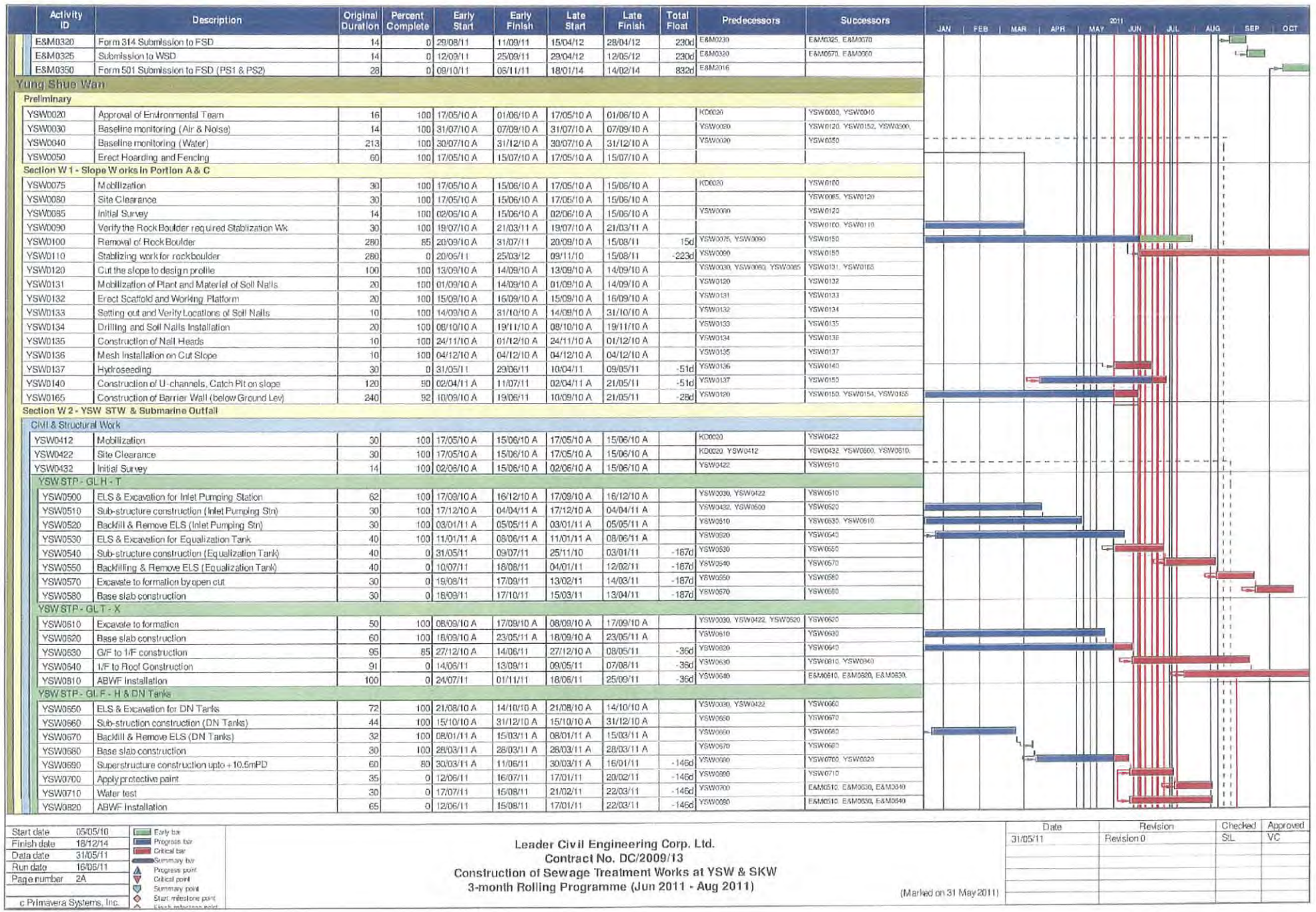
*AUES (ET) – Action-United Environmental Services & Consulting*

## **Appendix C**

### **A Master and Three Months Rolling Construction Programme**







Start date	05/05/10		Early bar
Finish date	18/12/14		Progress bar
Date date	31/05/11		Critical bar
Run date	16/06/11		Summary bar
Page number	2A		Progress point
			Critical point
			Summary point
			Start milestone point
			Task milestone point

**Leader Civil Engineering Corp. Ltd.**  
 Contract No. DC/2009/13  
**Construction of Sewage Treatment Works at YSW & SKW**  
 3-month Rolling Programme (Jun 2011 - Aug 2011)

(Marked on 31 May 2011)

Date	Revision	Checked	Approved
31/05/11	Revision 0	StL	VC



Activity ID	Description	Original Duration	Percent Complete	Early Start	Early Finish	Late Start	Late Finish	Total Float	Predecessors	Successors	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	
<b>Fire Hose Reel / Sprinkler Pump Rm</b>																					
YSW0340	ELS & excavate to formation (+0 MPD approx)	30	0	13/09/11	13/10/11	01/09/11	30/09/11	-12d	YSW0300, YSW0322, YSW0340	YSW0350											
<b>Road, Drain, Cable Draw Pits &amp; Ducting</b>																					
YSW0152	Temporary Diversion of Drainage	92	100	02/12/10 A	09/05/11 A	02/12/10 A	09/05/11 A		YSW0030	YSW0153, YSW0154											
YSW0153	Removal of Ex-U-Channel where clash with B.Wall	50	100	20/11/10 A	20/04/11 A	20/11/10 A	20/04/11 A		YSW0152	YSW0154											
YSW0154	Construction of Subsoil Drain	90	0	19/06/11	17/09/11	08/10/11	05/01/12	11d	YSW0152, YSW0153, YSW0155	YSW0155											
<b>Submarine Outfall</b>																					
YSW0180	Coordination of HEC	53	100	17/05/10 A	08/07/10 A	17/05/10 A	08/07/10 A			YSW0350											
YSW0200	Submission and Approval of Ecologist	60	100	17/05/10 A	15/07/10 A	17/05/10 A	15/07/10 A			YSW0310											
YSW0210	Ecology Survey	90	100	16/07/10 A	11/02/11 A	16/07/10 A	11/02/11 A		YSW0300	YSW0350											
YSW0220	Submission and Approval of In. I Hydro Survey	90	100	17/05/10 A	27/08/10 A	17/05/10 A	27/08/10 A			YSW0330											
YSW0230	Hydrographical Survey (YSW)	45	100	31/08/10 A	31/01/11 A	31/08/10 A	31/01/11 A		YSW0320	YSW0350											
YSW0240	Material Submission, Approval of HDPE pipe	93	100	17/05/10 A	31/03/11 A	17/05/10 A	31/03/11 A			YSW0350											
YSW0250	Submit and Approval of Method Statement for HDD	120	100	24/09/10 A	25/03/11 A	24/09/10 A	25/03/11 A		YSW0240	YSW0260, YSW0270, YSW0340											
YSW0260	Submission of HDD Method Statement to HEC	14	100	26/01/11 A	24/03/11 A	26/01/11 A	24/03/11 A		YSW0250	YSW0320, YSW0340											
YSW0270	Additional G.I. Boreholes (YSW)	62	100	05/11/10 A	19/01/11 A	05/11/10 A	19/01/11 A		YSW0250	YSW0280, YSW0320											
YSW0280	Submission of propose alignment to the Eng	14	100	02/02/11 A	04/03/11 A	02/02/11 A	04/03/11 A		YSW0270	YSW0290, YSW0310, YSW0340											
YSW0290	Submission of Marine Notice	60	100	31/01/11 A	29/03/11 A	31/01/11 A	29/03/11 A		YSW0280	YSW0350											
YSW0310	Construction of Entry Pit and Preparation Work	39	100	15/03/11 A	31/03/11 A	15/03/11 A	31/03/11 A		YSW0290	YSW0320, YSW0330											
YSW0320	Prepare of HDD Drill Rig Set-up (YSW)	39	100	02/04/11 A	28/04/11 A	02/04/11 A	28/04/11 A		YSW0310, YSW0320, YSW0310	YSW0330, YSW0350											
YSW0330	Establishment of HDD plant & equipment	14	100	09/04/11 A	14/04/11 A	09/04/11 A	14/04/11 A		YSW0310, YSW0320	YSW0340											
YSW0340	Setting up at drillhole location	7	100	19/04/11 A	28/04/11 A	19/04/11 A	28/04/11 A		YSW0330, YSW0350, YSW0290	YSW0350											
YSW0350	Drill pilot hole and rearing hole - NS400 - 530m	123	33	29/04/11 A	21/09/11	29/04/11 A	16/05/11	-65d	YSW0340, YSW0310, YSW0320	YSW0360											
<b>E&amp;M Works - YSW-STP</b>																					
E&M0360	Delivery of MBR Memb. Mod. (MBR Tk4)	150	0	31/05/11	27/10/11	24/10/10	22/03/11	-219d	E&M0160	E&M0510											
E&M0370	Delivery of MBR Membrane Modules - 2nd Shipment	150	0	31/05/11	27/10/11	29/09/11	25/02/12	121d	E&M0160	E&M0320											
E&M0380	Delivery of Grit Removal Equipment	180	0	28/07/11	24/01/12	29/05/11	24/11/11	-61d	E&M0150	E&M0530											
E&M0390	Delivery of Coarse Screens	162	0	13/07/11	22/12/11	02/04/11	10/09/11	-103d	E&M0110	E&M0540											
E&M0400	Delivery of Fine Screens	180	0	28/07/11	24/01/12	29/05/11	24/11/11	-61d	E&M0120	E&M0550											
E&M0410	Delivery of Pumps	162	0	28/07/11	06/01/12	02/04/11	10/09/11	-118d	E&M0130	E&M0560											
E&M0420	Delivery of Submersible Mixers	162	0	28/08/11	07/12/11	01/07/11	09/12/11	3d	E&M0140	E&M0570											
E&M0440	Delivery of Sludge Dewatering Equipment	180	0	28/07/11	24/01/12	02/04/11	28/09/11	-118d	E&M0170	E&M0580											
E&M0450	Delivery of Valves, Pipes & Fittings	180	0	28/07/11	24/01/12	28/07/11	23/01/12	-1d	E&M0180	E&M0590, E&M0600											
E&M0460	Delivery of Penstocks	160	0	28/07/11	24/01/12	11/07/11	05/01/12	-18d	E&M0190	E&M0630											
E&M0470	Delivery of Instruments	180	0	28/07/11	24/01/12	08/11/11	05/05/12	103d	E&M0210	E&M0610											
E&M0480	Delivery of MCC LV/SB	177	0	28/07/11	21/01/12	02/04/11	25/09/11	-118d	E&M0210	E&M0620											
E&M0490	Delivery of BS Equipment	180	0	30/07/11	25/01/12	30/08/11	25/02/12	31d	E&M0220	E&M0650											
E&M0500	Delivery FS Equipment	180	0	29/08/11	24/02/12	27/09/11	24/03/12	29d	E&M0230	E&M0330, E&M0640											
<b>Sok Kwu Wan</b>																					
<b>Preliminary</b>																					
SKW0250	Approval of Environmental Team	16	100	17/05/10 A	01/06/10 A	17/05/10 A	01/06/10 A		K0000	SKW0250											
SKW0260	Baseline monitoring (Air & Noise)	14	100	02/06/10 A	15/06/10 A	02/06/10 A	15/06/10 A		SKW0250	SKW0242, SKW0282, SKW0261											
<b>Section W3 - Footpath Diversion in Portion G</b>																					
<b>Civil &amp; Geotechnical Works</b>																					
SKW0240	Site Clearance	21	100	17/05/10 A	06/06/10 A	17/05/10 A	06/06/10 A			SKW0241											
SKW0241	Initial Survey	9	100	07/06/10 A	15/06/10 A	07/06/10 A	15/06/10 A			SKW0242											
SKW0242	Excavation to formation for Bay 1 to 5	57	100	16/06/10 A	11/08/10 A	16/06/10 A	11/08/10 A		SKW0241, SKW0260	SKW0251											
SKW0251	Drill & Install Dowel Bar for Bay 0 & 4	21	100	02/08/10 A	01/09/10 A	02/08/10 A	01/09/10 A		SKW0242	SKW0260											
SKW0301	Erect Formwork, mesh & weephole for Bay 0 & 2	14	100	02/09/10 A	15/09/10 A	02/09/10 A	15/09/10 A		SKW0251	SKW0311											
SKW0311	Concreting for Bay 0 & 2	14	100	16/09/10 A	29/09/10 A	16/09/10 A	29/09/10 A		SKW0301	SKW0321											
SKW0321	Drilling & Install Dowel Bar for Bay 4 & 6	7	100	20/09/10 A	05/10/10 A	30/09/10 A	05/10/10 A		SKW0311	SKW0331											
SKW0331	Erect Formwork, mesh & weephole for Bay 4 & 6	7	100	07/10/10 A	13/10/10 A	07/10/10 A	13/10/10 A		SKW0321	SKW0341											
SKW0341	Concreting for Bay 4 & 6	7	100	14/10/10 A	20/10/10 A	14/10/10 A	20/10/10 A		SKW0331	SKW0351											
SKW0351	Excavation to formation for Bay 7 to 9	21	100	21/10/10 A	10/11/10 A	21/10/10 A	10/11/10 A		SKW0341	SKW0361											
SKW0361	Erect Formwork, mesh weephole for Bay 1, 3 & 5	6	100	11/11/10 A	18/11/10 A	11/11/10 A	16/11/10 A		SKW0351	SKW0371											

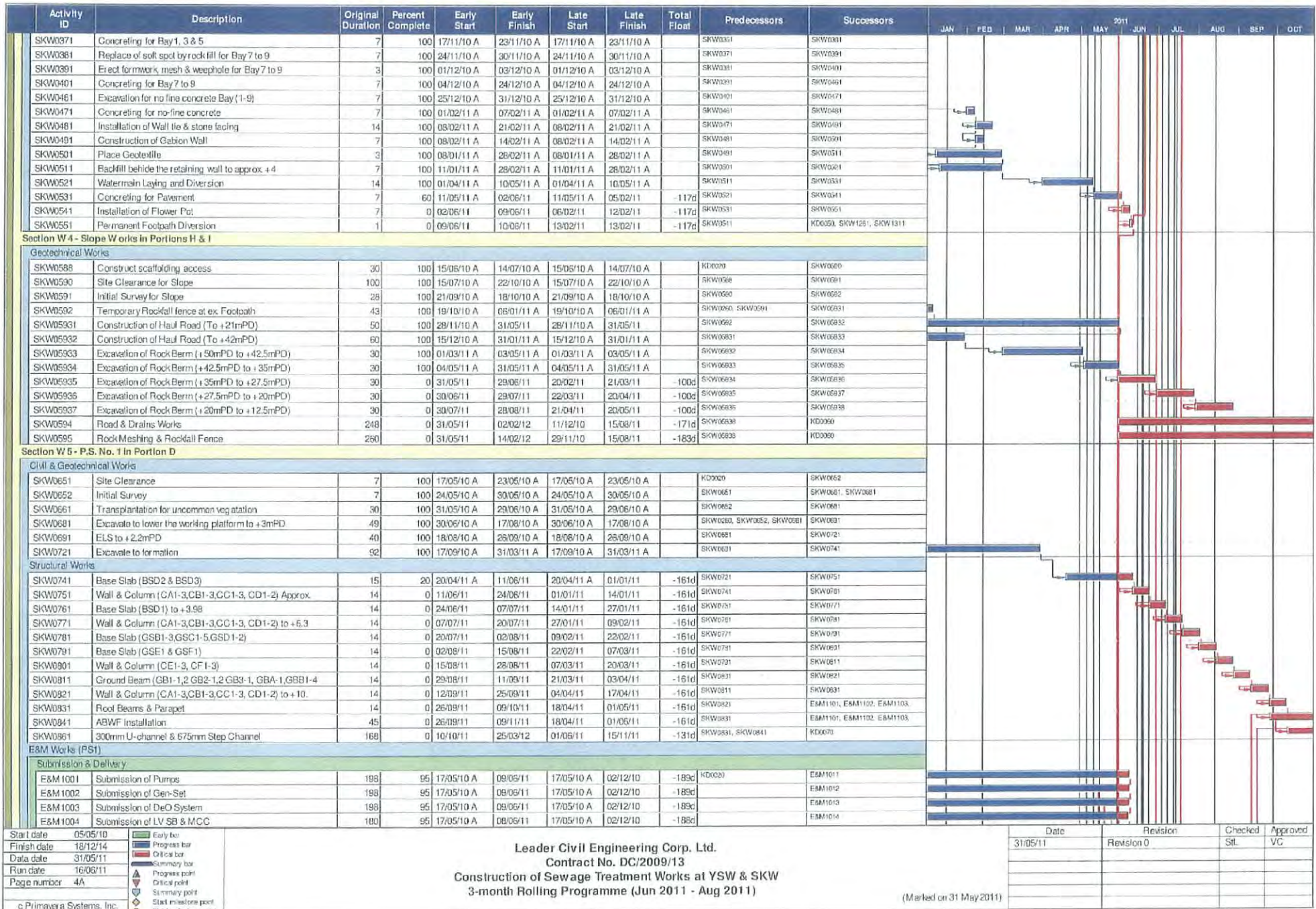
Start date	05/05/10		Early bar
Finish date	18/12/14		Progress bar
Date date	31/05/11		Critical bar
Run date	16/06/11		Summary bar
Page number	3A		Progress point
			Critical point
			Summary point
			Start milestone point
			End milestone point
© Primavera Systems, Inc.			

**Leader Civil Engineering Corp. Ltd.**  
**Contract No. DC/2009/13**  
**Construction of Sewage Treatment Works at YSW & SKW**  
**3-month Rolling Programme (Jun 2011 - Aug 2011)**

Date	Revision	Checked	Approved
31/05/11	Revision 0	STL	VC

(Marked on 31 May 2011)





Start date 05/05/10  
 Finish date 18/12/14  
 Data date 31/05/11  
 Run date 16/08/11  
 Page number 4A

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

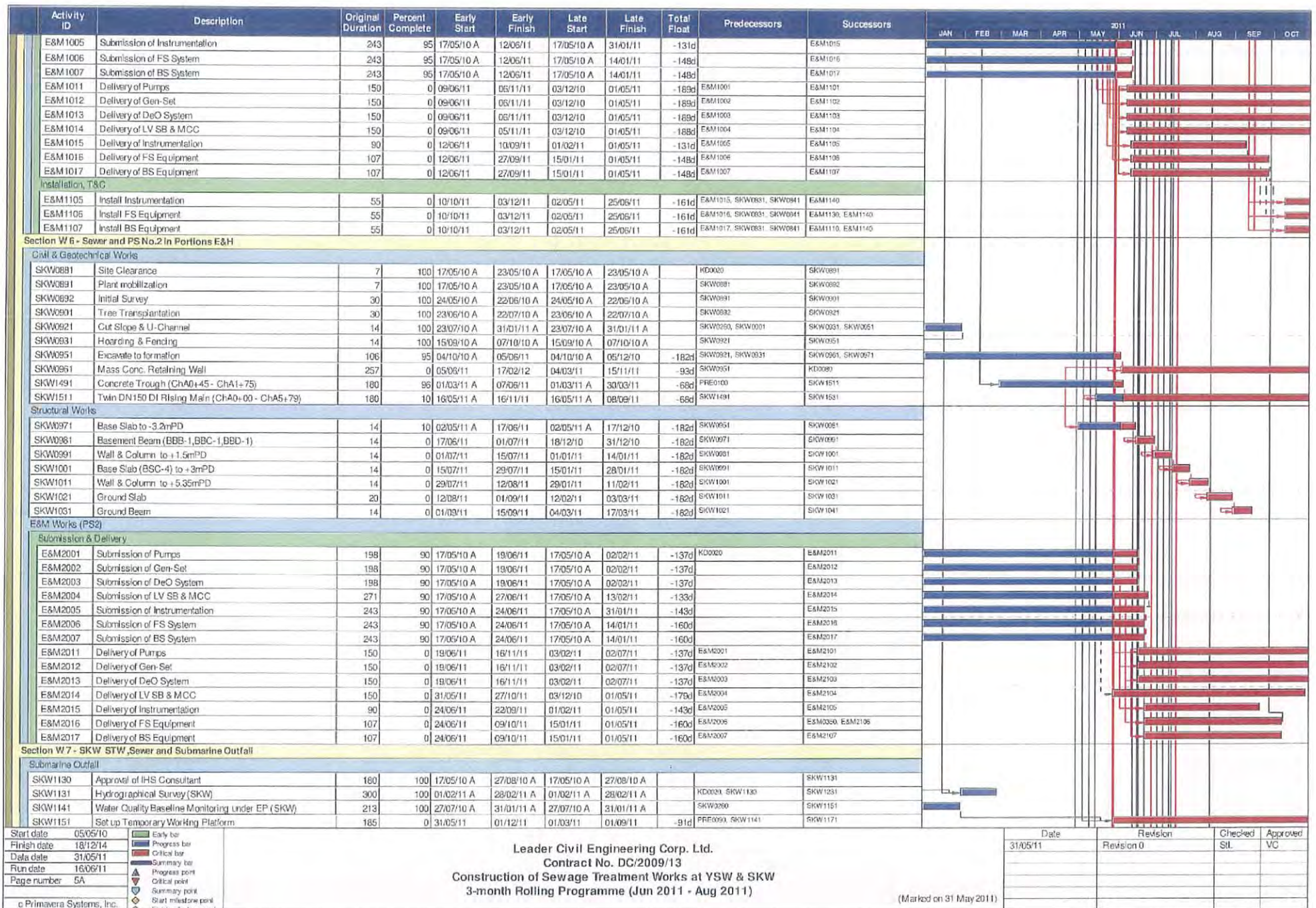
c Primavera Systems, Inc.

Leader Civil Engineering Corp. Ltd.  
 Contract No. DC/2009/13  
 Construction of Sewage Treatment Works at YSW & SKW  
 3-month Rolling Programme (Jun 2011 - Aug 2011)

(Marked on 31 May 2011)

Date	Revision	Checked	Approved
31/05/11	Revision 0	Sit	VC







Activity ID	Description	Original Duration	Percent Complete	Early Start	Early Finish	Late Start	Late Finish	Total Float	Predecessors	Successors	2011										
											JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	
<b>SKW STW</b>																					
<b>Submission &amp; Delivery (E&amp;M)</b>																					
E&M3010	Delivery of MBR M.M. - 1st shipment for Temp STP	150	0	31/05/11	27/10/11	24/04/13	20/09/13	694d	E&M0100	E&M3170											
E&M3030	Delivery of Grit Removal Equipment	180	0	28/07/11	24/01/12	31/08/11	28/02/12	34d	E&M0150	E&M3180											
E&M3060	Delivery of Fine Screens	136	0	28/07/11	11/12/11	15/08/11	28/12/11	18d	E&M0120	E&M3210											
E&M3070	Delivery of Pumps	136	0	28/07/11	11/12/11	15/08/11	28/12/11	18d	E&M0130	E&M3220											
E&M3080	Delivery of Submersible Mixers	180	0	28/06/11	25/12/11	15/09/11	12/03/12	79d	E&M0140	E&M3230											
E&M3090	Delivery of Sludge Dewatering Equipment	210	0	28/07/11	23/02/12	18/07/11	12/02/12	-11d	E&M0170	E&M3240											
E&M3100	Delivery of Valves, Pipes & Fittings	180	0	28/07/11	24/01/12	05/02/13	03/08/13	558d	E&M0180	E&M3250											
E&M3110	Delivery of Penstocks	180	0	28/07/11	24/01/12	18/02/13	16/08/13	571d	E&M0190	E&M3260											
E&M3130	Delivery of Instruments	180	0	28/07/11	24/01/12	04/05/13	30/10/13	646d	E&M0200	E&M3270											
E&M3140	Delivery of MCC LVSB	180	0	28/07/11	24/01/12	09/05/11	04/11/11	-81d	E&M0210	E&M3280											
E&M3150	Delivery of BS Equipment	180	0	30/07/11	25/01/12	20/02/13	18/08/13	571d	E&M0220	E&M3291											
E&M3160	Delivery of FS Equipment	180	0	29/08/11	24/02/12	14/01/12	11/07/12	138d	E&M0230	E&M0540, E&M3300											
<b>Construction of Grid A-G</b>																					
SKW1261	Excavate for SKW STW Structure (Grid A-G)	164	0	10/05/11	21/11/11	14/02/11	27/07/11	-117d	SKW0551	SKW1271, SKW1371											
<b>Rising Main</b>																					
SKW1481	Subm, Approval & Delivery of DI pipes	120	100	17/05/10 A	28/02/11 A	17/05/10 A	28/02/11 A		KD0020	SKW1501											
SKW1501	Concrete Trough (ChB0+00 - ChB1+20)	300	0	31/05/11	25/03/12	14/09/10	10/07/11	-259d	PRE0100, SKW1481	SKW1521											
<b>Section W8- Landscape Softworks in All Portions</b>																					
SKW1591	Tree Survey	21	100	17/05/10 A	06/06/10 A	17/05/10 A	06/06/10 A		KD0020	SKW1621											
SKW1611	Preservation & Protection of Trees	822	46	17/05/10 A	16/08/12	17/05/10 A	15/08/12	-1d	KD0020	KD0100, SKW1631											
SKW1621	Transplantation at SKW	60	100	07/06/10 A	05/10/10 A	07/06/10 A	05/10/10 A		SKW1591												

Start date	05/05/10		Early bar
Finish date	18/12/14		Progress bar
Data date	31/05/11		Critical bar
Run date	16/06/11		Summary bar
Page number	6A		Progress point
			Critical point
			Summary point
			Start milestone point
			Finish milestone point

Leader Civil Engineering Corp. Ltd.  
 Contract No. DC/2009/13  
 Construction of Sewage Treatment Works at YSW & SKW  
 3-month Rolling Programme (Jun 2011 - Aug 2011)

(Marked on 31 May 2011)

Date	Revision	Checked	Approved
31/05/11	Revision 0	SIL	VC



Activity ID	Description	Original Duration	Percent Complete	Early Start	Early Finish	Late Start	Late Finish	Total Float	Predecessors	Successors	2011											
											JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT		
<b>Project Key Date</b>																						
KD0010	Receive Letter of Acceptance	0	100		05/05/10 A		05/05/10 A			KD0125												
KD0020	Project Commencement Date	0	100		17/05/10 A		17/05/10 A			E&M0010, E&M0070, E&M1001,												
KD0050	Section W3 - Footpath Diversion in Ptn G (273d)	0	0		10/06/11		13/02/11 *	-117d	SKW0551	KD0125												
<b>+Preliminary (Civil)</b>																						
		191	100	17/05/10 A	23/11/10 A	17/05/10 A	23/11/10 A		K00020													
<b>Preliminary (E&amp;M)</b>																						
<b>Technical Submission</b>																						
<b>+Process Design of SKWSTW &amp; YSWSTW</b>																						
		398	90	17/05/10 A	18/06/11	17/05/10 A	30/08/11	12d														
<b>+Hydraulic Design</b>																						
		333	91	15/07/10 A	13/06/11	15/07/10 A	30/08/11	18d														
<b>+Equipment Submission &amp; Approval</b>																						
		469	54	17/05/10 A	28/08/11	17/05/10 A	07/11/11	71d														
<b>+Drawings Submission &amp; Approval</b>																						
		401	75	24/06/10 A	29/07/11	24/06/10 A	30/07/11	1d														
<b>+Statutory Submission</b>																						
		189	0	29/08/11	04/03/12	01/07/11	14/02/14	712d														
<b>Yung Shue Wan</b>																						
<b>+Preliminary</b>																						
		220	100	17/05/10 A	31/12/10 A	17/05/10 A	31/12/10 A															
<b>+Section W 1 - Slope Works in Portion A &amp; C</b>																						
		679	69	17/05/10 A	25/03/12	17/05/10 A	15/08/11	-223d														
<b>Section W 2 - YSW STW &amp; Submarine Outfall</b>																						
<b>+Civil &amp; Structural Work</b>																						
		533	57	17/05/10 A	01/11/11	17/05/10 A	05/01/12	86d														
<b>+Submarine Outfall</b>																						
		461	91	17/05/10 A	21/08/11	17/05/10 A	15/08/11	-65d														
<b>+E&amp;M Works - YSW STP</b>																						
		270	0	31/05/11	24/02/12	24/10/10	05/05/12	71d														
<b>Sok Kwu Wan</b>																						
<b>+Preliminary</b>																						
		30	100	17/05/10 A	15/06/10 A	17/05/10 A	15/06/10 A															
<b>Section W 3 - Footpath Diversion in Portion G</b>																						
<b>+Civil &amp; Geotechnical Works</b>																						
		390	96	17/05/10 A	10/06/11	17/05/10 A	10/05/11	-117d														
<b>Section W 4 - Slope Works in Portions H &amp; I</b>																						
<b>+Geotechnical Works</b>																						
		610	38	15/05/10 A	14/02/12	15/06/10 A	15/08/11	-193d														
<b>Section W 5 - P.S. No. 1 in Portion D</b>																						
<b>+Civil &amp; Geotechnical Works</b>																						
		319	100	17/05/10 A	31/03/11 A	17/05/10 A	31/03/11 A															
<b>+Structural Works</b>																						
		341	1	20/04/11 A	25/03/12	01/01/11 A	15/11/11	-131d														
<b>E&amp;M Works (PS1)</b>																						
<b>+Submission &amp; Delivery</b>																						
		539	59	17/05/10 A	08/11/11	17/05/10 A	01/05/11	-189d														
<b>+Installation, T&amp;C</b>																						
		65	0	10/10/11	03/12/11	02/05/11	25/06/11	-161d														
<b>Section W 6 - Sewer and PS No.2 in Portions E&amp;H</b>																						
<b>+Civil &amp; Geotechnical Works</b>																						
		641	48	17/05/10 A	17/02/12	17/05/10 A	15/11/11	-93d														
<b>+Structural Works</b>																						
		132	1	02/05/11 A	15/09/11	18/12/10 A	17/03/11	-182d														

Start date	05/05/10		Early bar
Finish date	18/12/14		Progress bar
Data date	31/05/11		Critical bar
Run date	16/06/11		Summary bar
Page number	1A		Progress point
			Critical point
			Summary point
			Start milestone point
			Finish milestone point

Leader Civil Engineering Corp. Ltd.  
 Contract No. DC/2009/13  
 Construction of Sewage Treatment Works at YSW & SKW  
 3-month Rolling Programme (Jun 2011 - Aug 2011)

*Outline (P.1 of 2)* Marked on 31 May 2011

Date	Revision	Checked	Approved
31/05/11	Revision 0	SL	VC

Activity ID	Description	Original Duration	Percent Complete	Early Start	Early Finish	Late Start	Late Finish	Total Float	Predecessors	Successors	2011											
											JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT		
E&M Works (PS2)																						
	+Submission & Delivery	549	57	17/05/10 A	16/11/11	17/05/10 A	02/07/11	-137d														
Section W 7 - SKW STW, Sewer and Submarine Outfall																						
	+Submarine Outfall	564	79	17/05/10 A	01/12/11	17/05/10 A	01/09/11	-91d														
SKW STW																						
	+Submission & Delivery (E&M)	270	0	31/05/11	24/02/12	09/05/11	30/10/13	614d														
	+Construction of Grid A-G	164	0	10/06/11	21/11/11	14/02/11	27/07/11	-117d														
	+Rising Main	679	29	17/05/10 A	25/03/12	17/05/10 A	10/07/11	-250d														
+Section W B - Landscape Softworks in All Portions																						
		823	51	17/05/10 A	16/08/12	17/05/10 A	15/08/12	-1d														

Start date	05/05/10		Early bar
Finish date	18/12/14		Progress bar
Data date	31/05/11		Critical bar
Run date	16/06/11		Summary bar
Page number	2A		Progress point
			Critical point
			Summary point
			Start milestone point
			Finish milestone point

Leader Civil Engineering Corp. Ltd.  
 Contract No. DC/2009/13  
 Construction of Sewage Treatment Works at YSW & SKW  
 3-month Rolling Programme (Jun 2011 - Aug 2011)

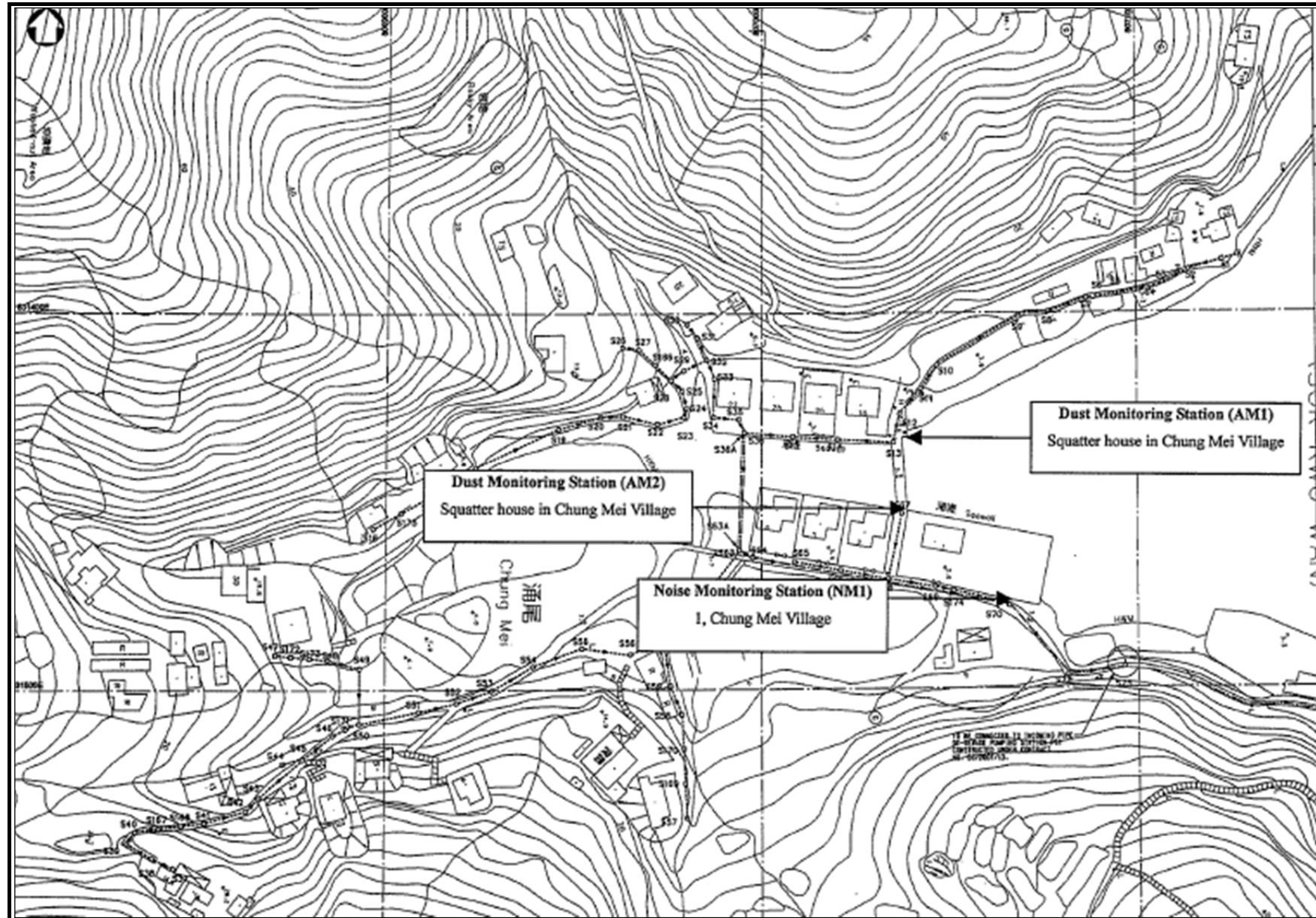
*Outline (P1 fr)* (Marked on 31 May 2011)

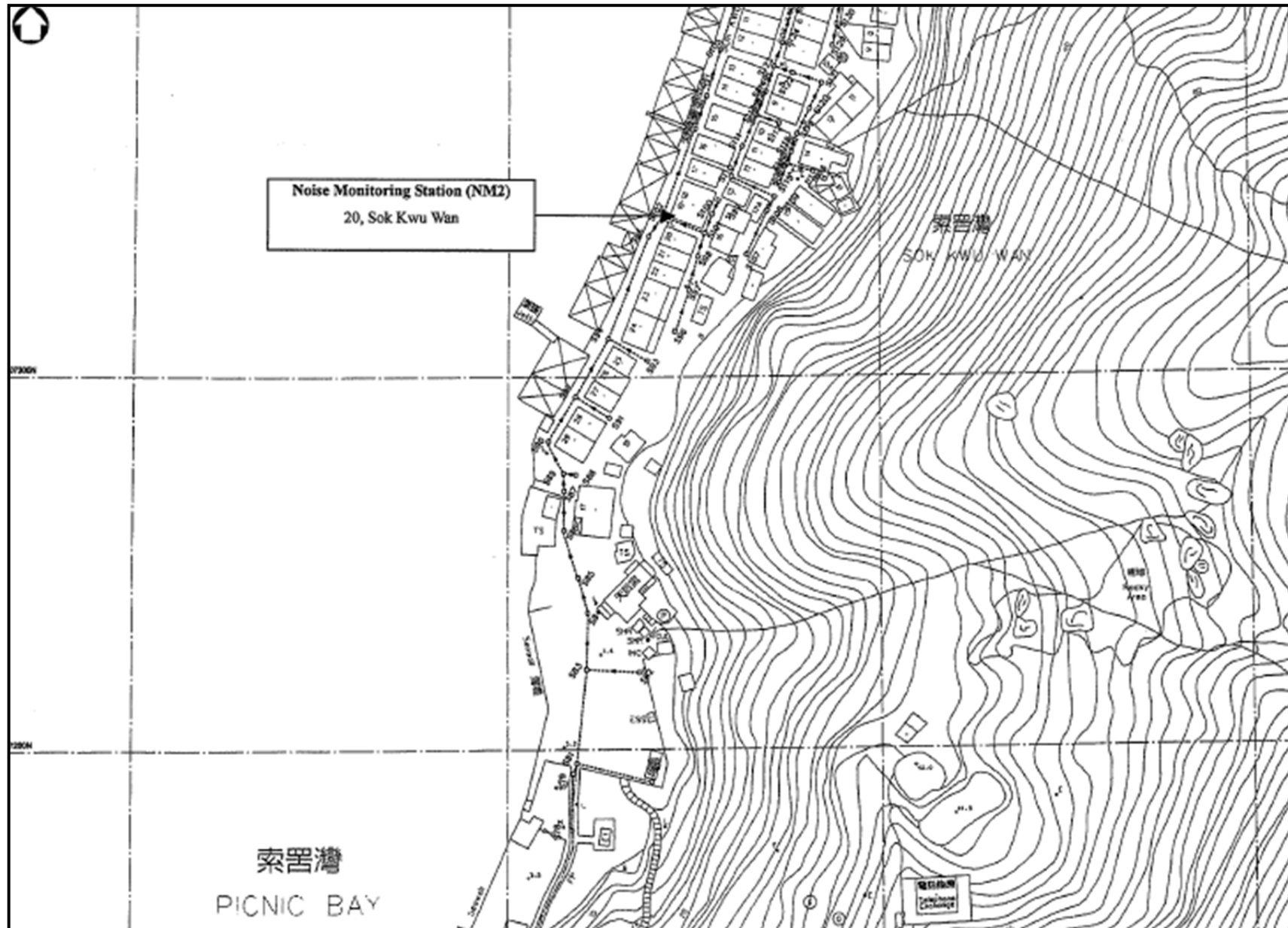
Date	Revision	Checked	Approved
31/05/11	Revision 0	StL	VC

## **Appendix D**

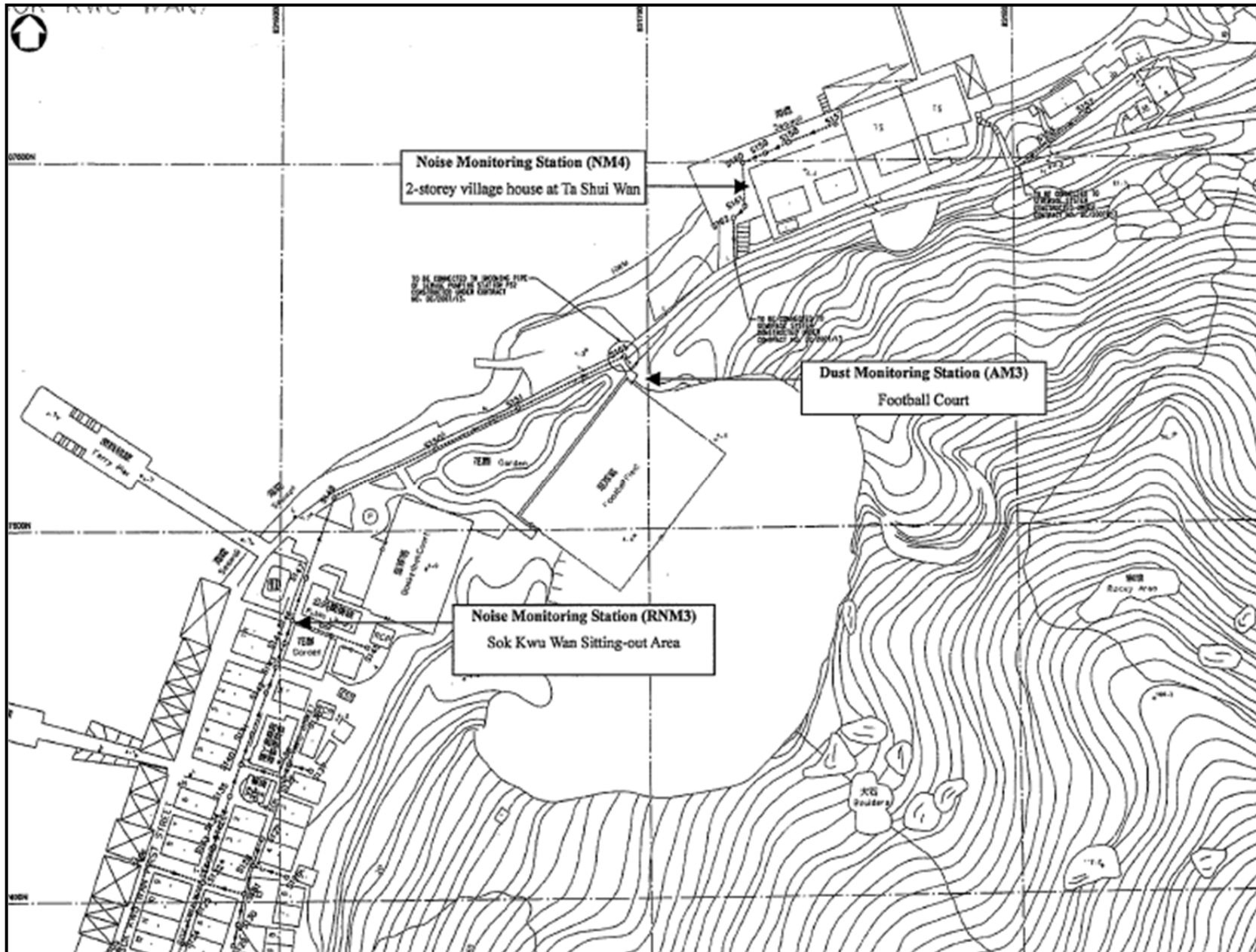
### **Location of Monitoring Stations (Air Quality / Construction Noise / Water Quality)**



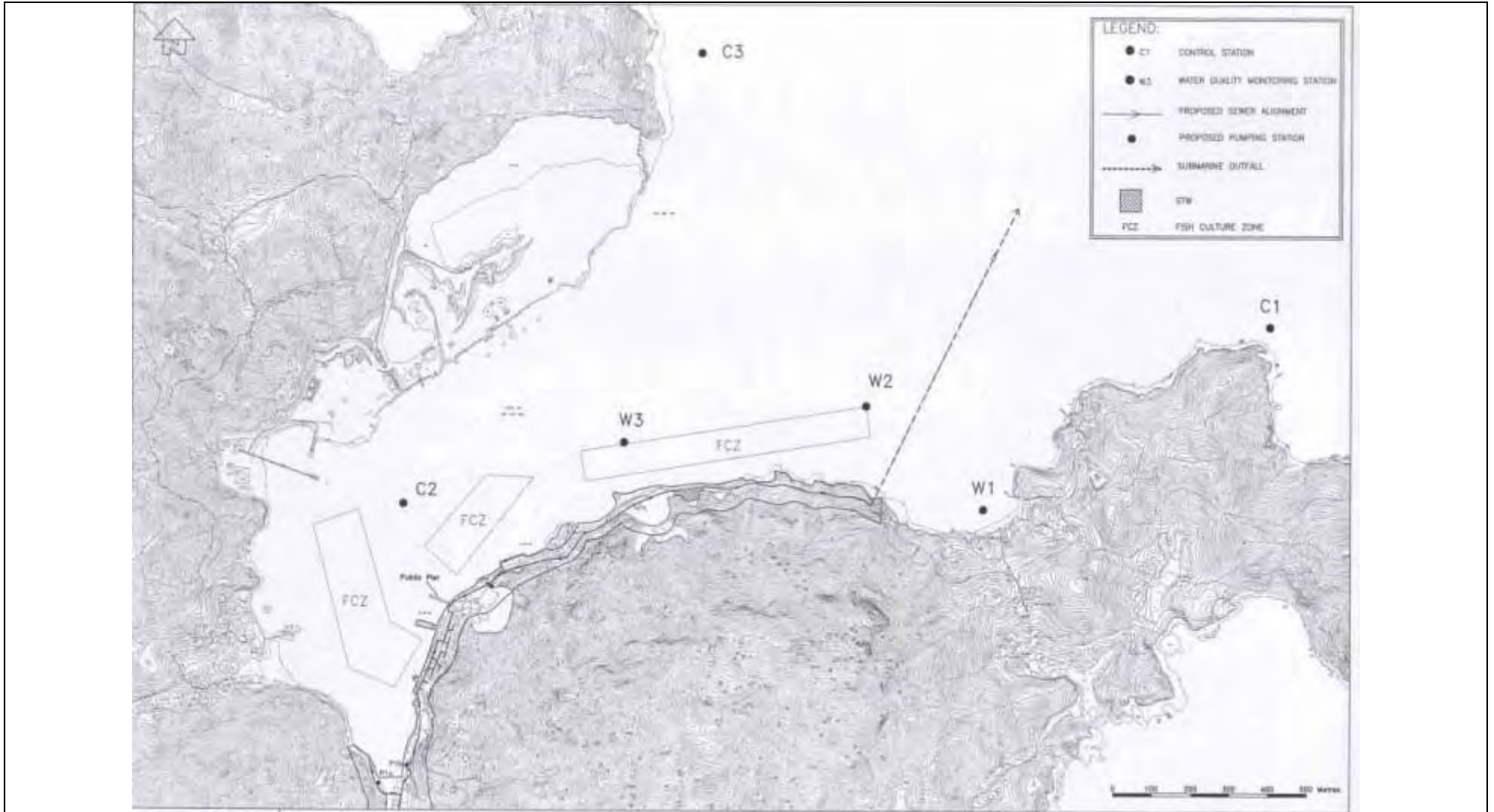












**Appendix E**

**Monitoring Equipments Calibration Certificate**



TISCH ENVIRONMENTAL, INC.  
 145 SOUTH MIAMI AVE.  
 VILLAGE OF CLEVELAND, OH 45002  
 513.467.9000  
 877.263.7610 TOLL FREE  
 513.467.9009 FAX  
 WWW.TISCH-ENV.COM

AIR POLLUTION MONITORING EQUIPMENT

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Jun 02, 2011 Roots-meter S/N 0438320 Ta (K) - 294  
 Operator Tisch Orifice I.D. - 1941 Pa (mm) - 754.38

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF. VOLUME (m3)	DIFF. TIME (min)	METER DIFF. Hg (mm)	ORIFICE DIFF. H2O (in.)
1	NA	NA	1.00	1.4660	3.3	2.00
2	NA	NA	1.00	1.0410	6.4	4.00
3	NA	NA	1.00	0.9310	8.1	5.00
4	NA	NA	1.00	0.8830	8.9	5.50
5	NA	NA	1.00	0.7310	13.0	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)	Va	(x axis) Qa	(y axis)
1.0017	0.6833	1.4185	0.9956	0.6791	0.8829
0.9975	0.9582	2.0061	0.9914	0.9524	1.2486
0.9952	1.0690	2.2429	0.9892	1.0625	1.3959
0.9942	1.1260	2.3524	0.9882	1.1191	1.4641
0.9887	1.3526	2.8371	0.9827	1.3444	1.7657
Qstd slope (m) =		2.11693	Qa slope (m) =		1.32558
intercept (b) =		-0.02568	intercept (b) =		-0.01598
coefficient (r) =		0.99993	coefficient (r) =		0.99993
y axis = SQRT[H2O(Pa/760)(298/Ta)]			y axis = SQRT[H2O(Ta/Pa)]		

CALCULATIONS

$$Vstd = \text{Diff. Vol} \left[ \frac{(Pa - \text{Diff. Hg})}{760} \right] \left( \frac{298}{Ta} \right)$$

$$Qstd = Vstd / \text{Time}$$

$$Va = \text{Diff Vol} \left[ \frac{(Pa - \text{Diff Hg})}{Pa} \right]$$

$$Qa = Va / \text{Time}$$

For subsequent flow rate calculations:

$$Qstd = 1/m \{ [\text{SQRT} (H2O (Pa/760) (298/Ta))] - b \}$$

$$Qa = 1/m \{ [\text{SQRT} H2O (Ta/Pa)] - b \}$$

## TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Squatter house in Chung Mei Village	Date of Calibration: 30-Aug-11
Location ID : AM1	Next Calibration Date: 30-Oct-11
	Technician: Mr. Ben Tam

### CONDITIONS

Sea Level Pressure (hPa)	1001	Corrected Pressure (mm Hg)	750.75
Temperature (°C)	30.9	Temperature (K)	304

### CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.11693
Model->	5025A	Qstd Intercept ->	-0.02568
Serial # ->	1941		

### CALIBRATION

Plate No.	H2O (L) (in)	H2O (R) (in)	H2O (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	5	5	10	1.482	58	56.53	Slope = 33.0652 Intercept = 7.3819 Corr. coeff. = 1.0000
13	4.1	4.1	8.2	1.343	53	51.65	
10	2.9	2.9	5.8	1.132	46	44.83	
7	1.7	1.7	3.4	0.869	37	36.06	
5	0.8	0.8	1.6	0.600	28	27.29	

**Calculations :**

$$Qstd = 1/m[\text{Sqrt}(H2O(Pa/Pstd)(Tstd/Ta))-b]$$

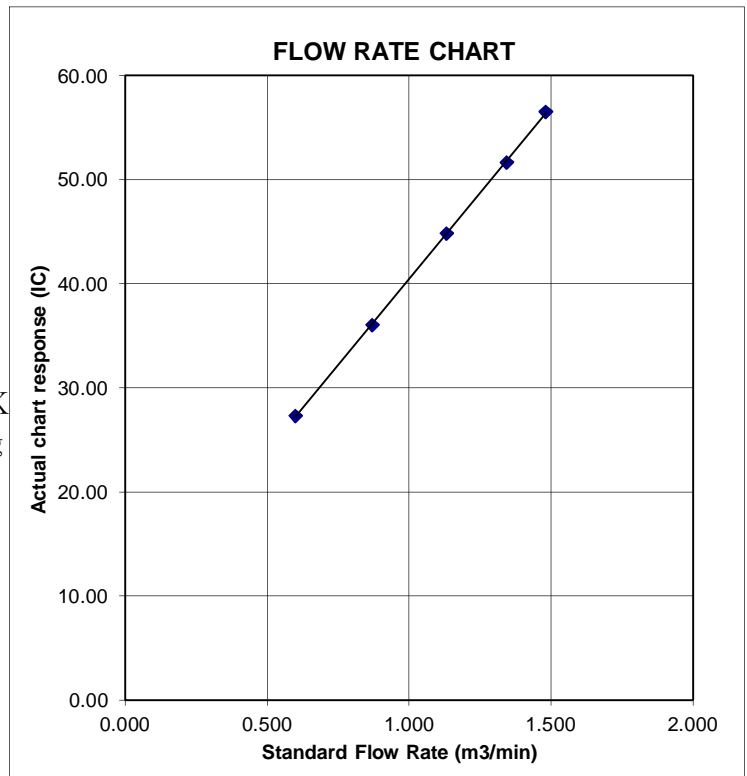
$$IC = I[\text{Sqrt}(Pa/Pstd)(Tstd/Ta)]$$

Qstd = standard flow rate  
 IC = corrected chart responses  
 I = actual chart response  
 m = calibrator Qstd slope  
 b = calibrator Qstd intercept  
 Ta = actual temperature during calibration ( deg K)  
 Pstd = actual pressure during calibration ( mm Hg)

**For subsequent calculation of sampler flow:**

$$1/m(( I )[\text{Sqrt}(298/Tav)(Pav/760)]-b)$$

m = sampler slope  
 b = sampler intercept  
 I = chart response  
 Tav = daily average temperature  
 Pav = daily average pressure



## TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Squatter house in Chung Mei Village  
 Location ID : AM2

Date of Calibration: 30-Aug-11  
 Next Calibration Date: 30-Oct-11  
 Technician: Mr. Ben Tam

### CONDITIONS

Sea Level Pressure (hPa)	1001	Corrected Pressure (mm Hg)	750.75
Temperature (°C)	30.9	Temperature (K)	304

### CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.11693
Model->	5025A	Qstd Intercept ->	-0.02568
Serial # ->	1941		

### CALIBRATION

Plate No.	H2O (L) (in)	H2O (R) (in)	H2O (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	5.9	5.9	11.8	1.609	58	56.53	Slope = 27.9593 Intercept = 11.3495 Corr. coeff. = 0.9999
13	4.3	4.3	8.6	1.376	51	49.70	
10	3.1	3.1	6.2	1.170	45	43.86	
7	1.9	1.9	3.8	0.918	38	37.03	
5	0.9	0.9	1.8	0.636	30	29.24	

**Calculations :**

$$Qstd = 1/m[\text{Sqrt}(H2O(Pa/Pstd)(Tstd/Ta))-b]$$

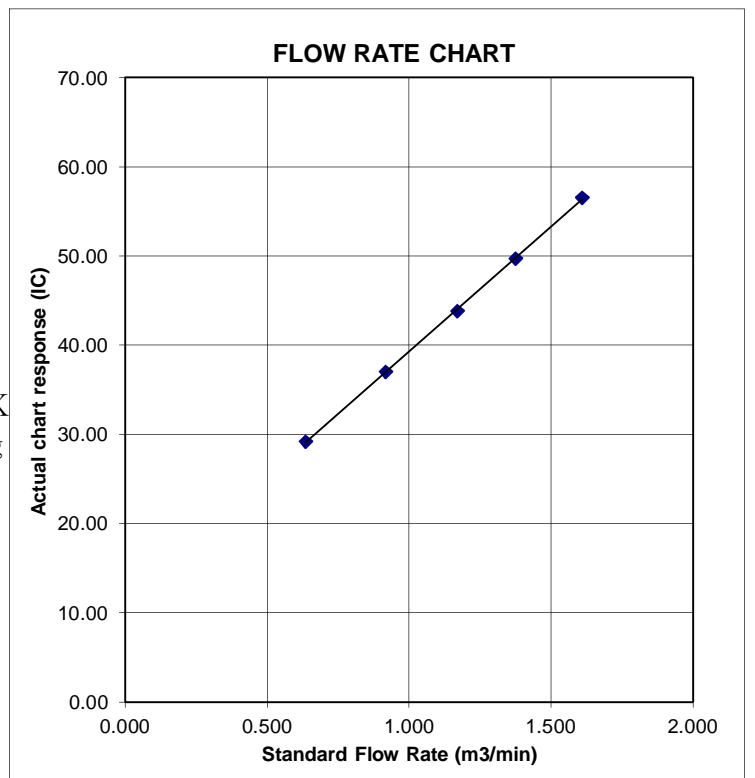
$$IC = I[\text{Sqrt}(Pa/Pstd)(Tstd/Ta)]$$

Qstd = standard flow rate  
 IC = corrected chart responses  
 I = actual chart response  
 m = calibrator Qstd slope  
 b = calibrator Qstd intercept  
 Ta = actual temperature during calibration ( deg K)  
 Pstd = actual pressure during calibration ( mm Hg)

**For subsequent calculation of sampler flow:**

$$1/m(( I )[\text{Sqrt}(298/Tav)(Pav/760)]-b)$$

m = sampler slope  
 b = sampler intercept  
 I = chart response  
 Tav = daily average temperature  
 Pav = daily average pressure



## TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Football court  
 Location ID : AM3

Date of Calibration: 30-Aug-11  
 Next Calibration Date: 30-Oct-11  
 Technician: Mr. Ben Tam

### CONDITIONS

Sea Level Pressure (hPa)	1001	Corrected Pressure (mm Hg)	750.75
Temperature (°C)	30.9	Temperature (K)	304

### CALIBRATION ORIFICE

Make->	TISCH	Qstd Slope ->	2.11693
Model->	5025A	Qstd Intercept ->	-0.02568
Serial # ->	1941		

### CALIBRATION

Plate No.	H2O (L) (in)	H2O (R) (in)	H2O (in)	Qstd (m3/min)	I (chart)	IC corrected	LINEAR REGRESSION
18	5.4	5.4	10.8	1.540	51	49.70	Slope = 23.8212 Intercept = 12.9602 Corr. coeff. = 1.0000
13	4.1	4.1	8.2	1.343	46	44.83	
10	2.9	2.9	5.8	1.132	41	39.96	
7	1.6	1.6	3.2	0.844	34	33.14	
5	0.6	0.6	1.2	0.521	26	25.34	

**Calculations :**

$$Qstd = 1/m[\text{Sqrt}(H2O(Pa/Pstd)(Tstd/Ta))-b]$$

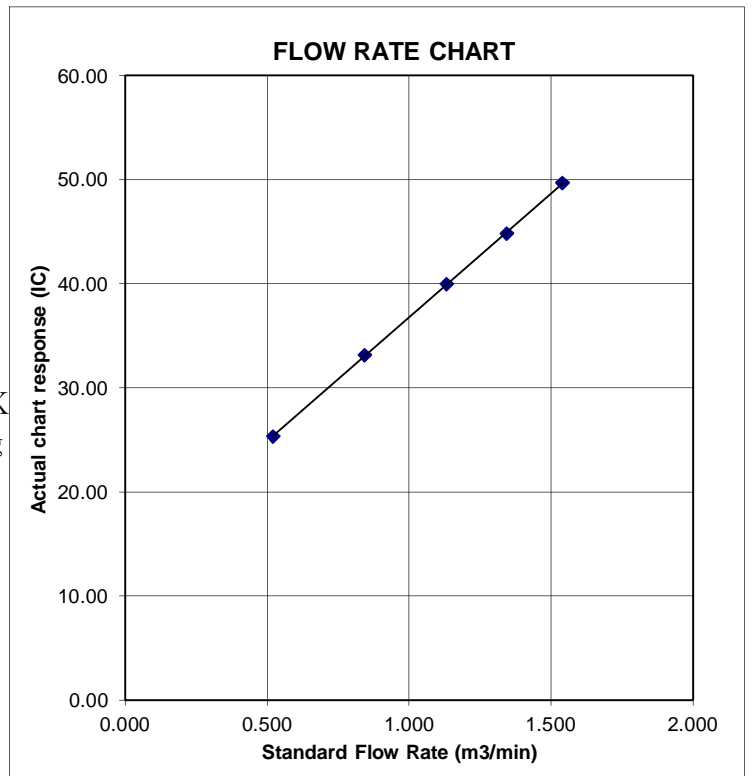
$$IC = I[\text{Sqrt}(Pa/Pstd)(Tstd/Ta)]$$

Qstd = standard flow rate  
 IC = corrected chart responses  
 I = actual chart response  
 m = calibrator Qstd slope  
 b = calibrator Qstd intercept  
 Ta = actual temperature during calibration ( deg K)  
 Pstd = actual pressure during calibration ( mm Hg)

**For subsequent calculation of sampler flow:**

$$1/m(( I )[\text{Sqrt}(298/Tav)(Pav/760)]-b)$$

m = sampler slope  
 b = sampler intercept  
 I = chart response  
 Tav = daily average temperature  
 Pav = daily average pressure



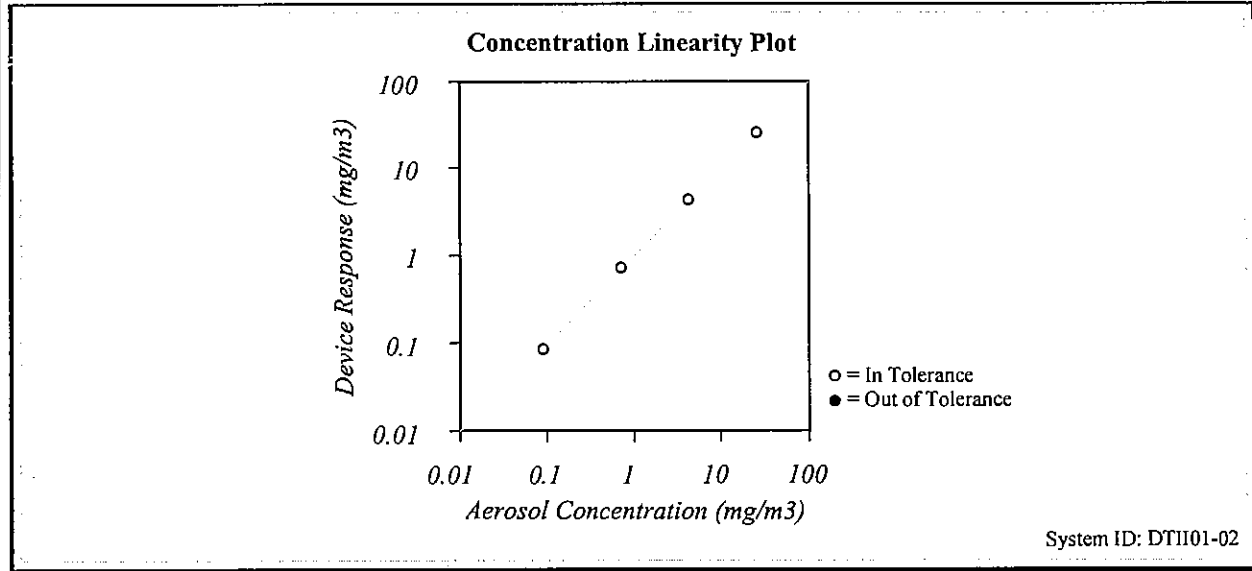


# CERTIFICATE OF CALIBRATION AND TESTING

TSI Incorporated, 500 Cardigan Road, Shoreview, MN 55126 USA  
 Tel: 1-800-874-2811 1-651-490-2811 Fax: 1-651-490-3824 <http://www.tsi.com>

Environment Condition			Model	8520
Temperature	73.6 (23.1)	°F (°C)		
Relative Humidity	16	%RH	Serial Number	21060
Barometric Pressure	28.76 (973.9)	inHg (hPa)		

<input checked="" type="checkbox"/> As Left	<input checked="" type="checkbox"/> In Tolerance
<input type="checkbox"/> As Found	<input type="checkbox"/> Out of Tolerance



Zero Stability Results			
Average:	Minimum:	Maximum:	Time:
0.000 :mg/m <sup>3</sup>	0.000 :mg/m <sup>3</sup>	0.001 :mg/m <sup>3</sup>	4:00 :hrs.

*TSI Incorporated does hereby certify that all materials, components, and workmanship used in the manufacture of this equipment are in strict accordance with the applicable specifications agreed upon by TSI and the customer and with all published specifications. All performance and acceptance tests required under this contract were successfully conducted according to required specifications. There is no NIST standard for optical mass measurements. Calibration of this instrument performed by TSI has been done using emery oil and has been nominally adjusted to respirable mass of standard ISO 12103-1, A1 test dust (Arizona dust). Our calibration ratio is greater than 1.2:1*

Measurement Variable	System ID	Last Cal.	Cal. Due	Measurement Variable	System ID	Last Cal.	Cal. Due
Barometric Pressure	E003733	01-15-11	02-15-12	Temperature	E002873	11-24-10	11-24-11
Humidity	E002873	11-24-10	11-24-11	DC Voltage	E003314	01-05-11	01-05-12
DC Voltage	E003315	01-05-11	01-05-12	Photometer	E003319	07-30-10	01-30-11
Microbalance	E001324	01-04-11	01-04-12	Flow and Temperature	E003769	06-15-10	06-15-11
Pressure	E003511	11-12-10	11-12-11				

Final Function Check
 January 27, 2011

Calibrated Date



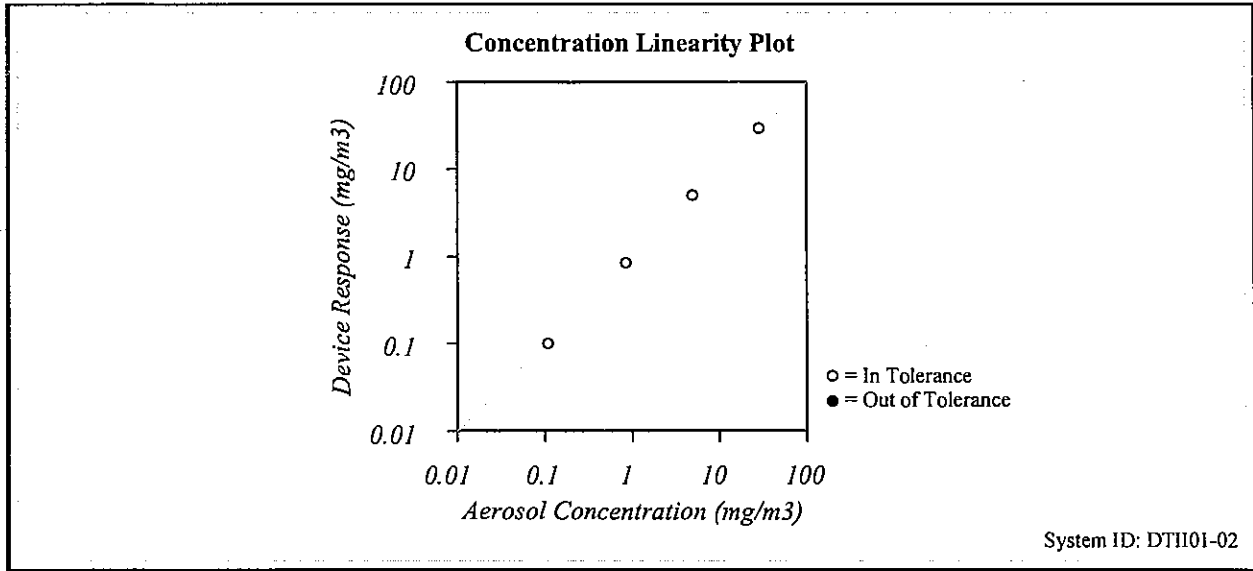


# CERTIFICATE OF CALIBRATION AND TESTING

TSI Incorporated, 500 Cardigan Road, Shoreview, MN 55126 USA  
 Tel: 1-800-874-2811 1-651-490-2811 Fax: 1-651-490-3824 <http://www.tsi.com>

Environment Condition			Model	8520
Temperature	73.8 (23.2)	°F (°C)		
Relative Humidity	14	%RH	Serial Number	23080
Barometric Pressure	29.41 (995.9)	inHg (hPa)		

<input checked="" type="checkbox"/> As Left	<input checked="" type="checkbox"/> In Tolerance
<input type="checkbox"/> As Found	<input type="checkbox"/> Out of Tolerance



Zero Stability Results			
Average:	Minimum:	Maximum:	Time:
0.000 :mg/m <sup>3</sup>	0.000 :mg/m <sup>3</sup>	0.001 :mg/m <sup>3</sup>	4:00 :hrs.

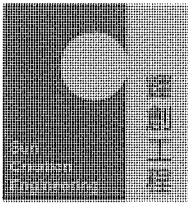
*TSI Incorporated does hereby certify that all materials, components, and workmanship used in the manufacture of this equipment are in strict accordance with the applicable specifications agreed upon by TSI and the customer and with all published specifications. All performance and acceptance tests required under this contract were successfully conducted according to required specifications. There is no NIST standard for optical mass measurements. Calibration of this instrument performed by TSI has been done using emery oil and has been nominally adjusted to respirable mass of standard ISO 12103-1, A1 test dust (Arizona dust). Our calibration ratio is greater than 1.2:1*

Measurement Variable	System ID	Last Cal.	Cal. Due	Measurement Variable	System ID	Last Cal.	Cal. Due
Barometric Pressure	E003733	01-15-11	02-15-12	Temperature	E002873	11-24-10	11-24-11
Humidity	E002873	11-24-10	11-24-11	DC Voltage	E003314	01-05-11	01-05-12
DC Voltage	E003315	01-05-11	01-05-12	Photometer	E003319	01-27-11	07-27-11
Microbalance	E001324	01-04-11	01-04-12	Flow and Temperature	E003769	06-15-10	06-15-11
Pressure	E003511	11-12-10	11-12-11				

*[Signature]*  
 \_\_\_\_\_  
 Calibrated

Final Function Check

February 1, 2011  
 \_\_\_\_\_  
 Date



輝創工程有限公司

Sun Creation Engineering Limited Calibration and Testing Laboratory

Report No. : C112202

## Calibration Report

### ITEM TESTED

DESCRIPTION : Integrating Sound Level Meter (EQ010)  
MANUFACTURER : Bruel & Kjaer  
MODEL NO. : 2238  
SERIAL NO. : 2285721

### TEST CONDITIONS

AMBIENT TEMPERATURE :  $(23 \pm 2)^{\circ}\text{C}$  RELATIVE HUMIDITY :  $(55 \pm 20)\%$   
LINE VOLTAGE : ---

### TEST SPECIFICATIONS

Calibration check

DATE OF TEST : 18 April 2011

JOB NO. : IC11-0947

### TEST RESULTS

The results apply to the particular unit-under-test only.  
All results are within manufacturer's specification.  
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- The Bruel & Kjaer Calibration Laboratory, Denmark
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA
- Agilent Technologies, USA

Tested by :

  
L L Cheung

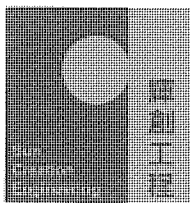
Date : 19 April 2011

The test equipment used for calibration are traceable to the National Standards as specified in this report.  
This report shall not be reproduced except in full and with prior written approval from this laboratory.

Calibration and Testing Laboratory of Sun Creation Engineering Limited

c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong  
Tel: 2927 2606 Fax: 2744 8986 E-mail: callab@suncreation.com Website: www.suncreation.com

Page 1 of 4



# Calibration Report

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 24 hours, and switched on to warm up for over 10 minutes before the commencement of the test.
2. Self-calibration using the B & K Acoustic Calibrator 4231, S/N : 2713428 was performed before the test.
3. The results presented are the mean of 3 measurements at each calibration point.
4. Test equipment :

<u>Equipment ID</u>	<u>Description</u>	<u>Certificate No.</u>
CL280	40 MHz Arbitrary Waveform Generator	C110018
CL281	Multifunction Acoustic Calibrator	C1006860

5. Test procedure : MA101N.

6. Results :

6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

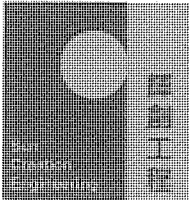
UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
50 - 130	L <sub>AFP</sub>	A	F	94.00	1	94.0	± 0.7

6.1.2 Linearity

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
50 - 130	L <sub>AFP</sub>	A	F	94.00	1	94.0 (Ref.)
				104.00		104.0
				114.00		114.0

IEC 60651 Type 1 Spec. : ± 0.4 dB per 10 dB step and ± 0.7 dB for overall different.

The test equipment used for calibration are traceable to the National Standards as specified in this report. This report shall not be reproduced except in full and with prior written approval from this laboratory.



# Calibration Report

## 6.2 Time Weighting

### 6.2.1 Continuous Signal

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
50 - 130	L <sub>AFP</sub>	A	F	94.00	1	94.0	Ref.
	L <sub>ASP</sub>		S			94.0	± 0.1
	L <sub>AIP</sub>		I			94.1	± 0.1

### 6.2.2 Tone Burst Signal (2 kHz)

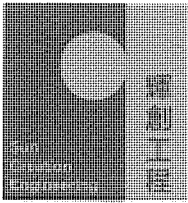
UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Burst Duration		
30 - 110	L <sub>AFP</sub>	A	F	106.0	Continuous	106.0	Ref.
	L <sub>AFMax</sub>				200 ms	105.0	-1.0 ± 1.0
	L <sub>ASP</sub>	S	Continuous		106.0	Ref.	
	L <sub>ASMax</sub>		500 ms		101.9	-4.1 ± 1.0	

## 6.3 Frequency Weighting

### 6.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
50 - 130	L <sub>AFP</sub>	A	F	94.00	31.5 Hz	54.6	-39.4 ± 1.5
					63 Hz	67.7	-26.2 ± 1.5
					125 Hz	77.7	-16.1 ± 1.0
					250 Hz	85.2	-8.6 ± 1.0
					500 Hz	90.7	-3.2 ± 1.0
					1 kHz	94.0	Ref.
					2 kHz	95.2	+1.2 ± 1.0
					4 kHz	95.0	+1.0 ± 1.0
					8 kHz	92.8	-1.1 (+1.5 ; -3.0)
					12.5 kHz	89.7	-4.3 (+3.0 ; -6.0)

The test equipment used for calibration are traceable to the National Standards as specified in this report. This report shall not be reproduced except in full and with prior written approval from this laboratory.



# Calibration Report

## 6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
50 - 130	L <sub>CFP</sub>	C	F	94.00	31.5 Hz	91.1	-3.0 ± 1.5
					63 Hz	93.2	-0.8 ± 1.5
					125 Hz	93.8	-0.2 ± 1.0
					250 Hz	94.0	0.0 ± 1.0
					500 Hz	94.0	0.0 ± 1.0
					1 kHz	94.0	Ref.
					2 kHz	93.8	-0.2 ± 1.0
					4 kHz	93.2	-0.8 ± 1.0
					8 kHz	90.9	-3.0 (+1.5 ; -3.0)
					12.5 kHz	87.8	-6.2 (+3.0 ; -6.0)

## 6.4 Time Averaging

UUT Setting				Applied Value					UUT Reading (dB)	IEC 60804 Type 1 Spec. (dB)	
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Frequency (kHz)	Burst Duration (ms)	Burst Duty Factor	Burst Level (dB)	Equivalent Level (dB)			
30 - 110	L <sub>Aeq</sub>	A	10 sec.	4	1	1/10	110.0	100	99.9	± 0.5	
			60 sec.					1/10 <sup>2</sup>	90	89.6	± 0.5
			5 min.					1/10 <sup>3</sup>	80	79.3	± 1.0
								1/10 <sup>4</sup>	70	69.9	± 1.0

Remarks : - Mfr's Spec. : IEC 60651 Type 1 & IEC 60804 Type 1

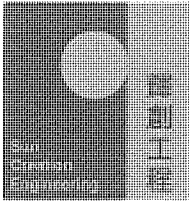
- Uncertainties of Applied Value :
  - 94 dB : 31.5 Hz - 125 Hz : ± 0.40 dB
  - 250 Hz - 500 Hz : ± 0.30 dB
  - 1 kHz : ± 0.20 dB
  - 2 kHz : ± 0.40 dB
  - 4 kHz : ± 0.50 dB
  - 8 kHz : ± 0.70 dB
  - 12.5 kHz : ± 1.20 dB
  - 104 dB : 1 kHz : ± 0.10 dB (Ref. 94 dB)
  - 114 dB : 1 kHz : ± 0.10 dB (Ref. 94 dB)
  - Burst equivalent level : ± 0.2 dB (Ref. 110 dB continuous sound level)

- The uncertainties are for a confidence probability of not less than 95 %.

### Note :

The values given in this Calibration Report 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 environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited 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 the National Standards as specified in this report. This report shall not be reproduced except in full and with prior written approval from this laboratory.



輝創工程有限公司

Sun Creation Engineering Limited Calibration and Testing Laboratory

Certificate No. : C112201

## Certificate of Calibration

*This is to certify that the equipment*

*Description : Acoustical Calibrator (EQ082)*

*Manufacturer : Bruel & Kjaer*

*Model No. : 4231*

*Serial No. : 2713428*

*has been calibrated for the specific items and ranges.  
The results are shown in the Calibration Report No. C112201.*

*The equipment is supplied by*

*Co. Name : Action-United Environmental Services and Consulting*

*Address : Unit A, 20/F., Gold King Industrial Building,  
35-41 Tai Lin Pai Road, Kwai Chung, N.T.*

*Date of Issue : 19 April 2011*

*Certified by :*

*K C Lee*

The test equipment used for calibration are traceable to the National Standards as specified in this report.  
This report shall not be reproduced except in full and with prior written approval from this laboratory.

Calibration and Testing Laboratory of Sun Creation Engineering Limited

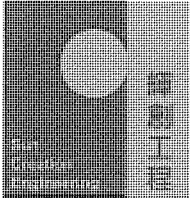
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong

Tel: 2927 2606

Fax: 2744 8986

E-mail: callab@suncreation.com

Website: www.suncreation.com



輝創工程有限公司

Sun Creation Engineering Limited Calibration and Testing Laboratory

Report No. : C112201

## Calibration Report

### ITEM TESTED

DESCRIPTION : Acoustical Calibrator (EQ082)  
MANUFACTURER : Bruel & Kjaer  
MODEL NO. : 4231  
SERIAL NO. : 2713428

### TEST CONDITIONS

AMBIENT TEMPERATURE :  $(23 \pm 2)^{\circ}\text{C}$  RELATIVE HUMIDITY :  $(55 \pm 20)\%$   
LINE VOLTAGE : ---

### TEST SPECIFICATIONS

Calibration check

DATE OF TEST : 18 April 2011

JOB NO. : IC11-0947

### TEST RESULTS

The results apply to the particular unit-under-test only.  
All results are within manufacturer's specification.  
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- The Bruel & Kjaer Calibration Laboratory, Denmark
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA
- Agilent Technologies, USA

Tested by :

  
L L Cheung

Date : 19 April 2011

The test equipment used for calibration are traceable to the National Standards as specified in this report.  
This report shall not be reproduced except in full and with prior written approval from this laboratory.

Calibration and Testing Laboratory of Sun Creation Engineering Limited

c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong

Tel: 2927 2606

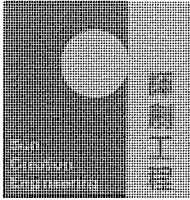
Fax: 2744 8986

E-mail: callab@suncreation.com

Website: www.suncreation.com

Page 1 of 2





# Calibration Report

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 24 hours before the commencement of the test.
2. The results presented are the mean of 3 measurements at each calibration point.
3. Test equipment :

<u>Equipment ID</u>	<u>Description</u>	<u>Certificate No.</u>
CL130	Universal Counter	C103289
CL281	Multifunction Acoustic Calibrator	C1006860
TST150A	Measuring Amplifier	C101008

4. Test procedure : MA100N.

5. Results :

- 5.1 Sound Level Accuracy

UUT Nominal Value	Measured Value (dB)	Mfr's Spec. (dB)	Uncertainty of Measured Value (dB)
94 dB, 1 kHz	94.0	± 0.2	± 0.2
114 dB, 1 kHz	114.0		

- 5.2 Frequency Accuracy

UUT Nominal Value (kHz)	Measured Value (kHz)	Mfr's Spec.	Uncertainty of Measured Value (Hz)
1	1.000 0	1 kHz ± 0.1 %	± 0.1

Remark : - The uncertainties are for a confidence probability of not less than 95 %.

Note :

The values given in this Calibration Report 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 environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.



# ALS Technichem (HK) Pty Ltd

## REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

**CONTACT:** MR BEN TAM  
**CLIENT:** ACTION UNITED ENVIRO SERVICES  
**ADDRESS:** RM A 20/F., GOLDEN KING IND BLDG,  
NO. 35-41 TAI LIN PAI ROAD,  
KWAI CHUNG,  
N.T., HONG KONG.

**WORK ORDER:** HK1119232  
**LABORATORY:** HONG KONG  
**DATE RECEIVED:** 16/08/2011  
**DATE OF ISSUE:** 17/08/2011

**PROJECT:** --

### COMMENTS

It is certified that the item under calibration/checking has been calibrated/checked by corresponding calibrated equipment in the laboratory.  
Maximum Tolerance and calibration frequency stated in the report, unless otherwise stated, the internal acceptance criteria of ALS will be followed.

Scope of Test: Dissolved Oxygen, pH, Salinity and Temperature  
Description: YSI Professional Plus  
Brand Name: YSI  
Model No.: YSI Professional Plus  
Serial No.: 10G101946  
Equipment No.: --  
Date of Calibration: 16 August, 2011

### NOTES

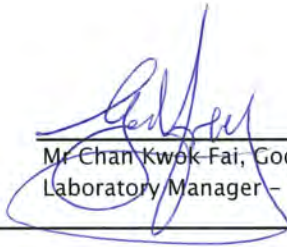
This is the Final Report and supersedes any preliminary report with this batch number.  
Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

### ISSUING LABORATORY: HONG KONG

#### Address

ALS Technichem (HK) Pty Ltd  
11/F Chung Shun Knitting Centre  
1-3 Wing Yip Street  
Kwai Chung  
HONG KONG

**Phone:** 852-2610 1044  
**Fax:** 852-2610 2021  
**Email:** [hongkong@alsglobal.com](mailto:hongkong@alsglobal.com)

  
Mr Chan Kwok-Fai, Godfrey  
Laboratory Manager - Hong Kong

*This report may not be reproduced except with prior written approval from ALS Technichem (HK) Pty Ltd.*

Page 1 of 2

# REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

**Work Order:** HK1119232  
**Date of Issue:** 17/08/2011  
**Client:** ACTION UNITED ENVIRO SERVICES



**Description:** YSI Professional Plus  
**Brand Name:** YSI  
**Model No.:** YSI Professional Plus  
**Serial No.:** 10G101946  
**Equipment No.:** --  
**Date of Calibration:** 16 August, 2011

**Date of next Calibration:** 16 November, 2011

**Parameters:**

**Dissolved Oxygen**      **Method Ref: APHA (21st edition), 4500O: G**

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
4.61	4.76	0.15
6.82	7.00	0.18
8.12	8.31	0.19
Tolerance Limit (±mg/L)		0.20

**pH Value**

**Method Ref: APHA (21st edition), 4500H:B**

Expected Reading (pH Unit)	Displayed Reading (pH Unit)	Tolerance (pH unit)
4.00	4.10	0.10
7.00	7.06	0.06
10.00	9.92	-0.08
Tolerance Limit (±unit)		0.20

**Salinity**

**Method Ref: APHA (21st edition), 2520B**

Expected Reading (g/L)	Displayed Reading (g/L)	Tolerance (%)
0.00	0.00	--
10.00	10.22	2.2
20.00	20.28	1.4
30.00	30.57	1.9
Tolerance Limit (±%)		10.0

**Temperature**

**Method Ref: Section 6 of International Accreditation New Zealand Technical**

**Guide No. 3 Second edition March 2008: Working Thermometer Calibration Procedure.**

Reading of Ref. thermometer (°C)	Displayed Reading (°C)	Tolerance (°C)
9.5	9.1	-0.4
22.0	21.6	-0.4
35.5	35.1	-0.4
Tolerance Limit (°C)		2.0

\_\_\_\_\_  
 Mr Chan Kwok Fai, Godfrey  
 Laboratory Manager - Hong Kong

# REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

Work Order: HK1120797  
Date of Issue: 08/09/2011  
Client: ACTION UNITED ENVIRO SERVICES



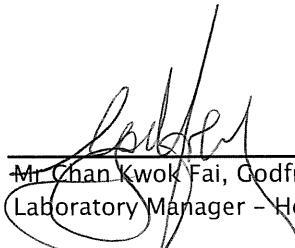
Description: Turbidimeter  
Brand Name: HACH  
Model No.: 2100P  
Serial No.: 950900008735  
Equipment No.: --  
Date of Calibration: 06 September, 2011      Date of next Calibration: 06 December, 2011

## Parameters:

### Turbidity

Method Ref: ALPHA 21st Ed. 2130B

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)
0.00	0.23	--
4.00	3.83	-4.3
40.0	38.4	-4.0
80.0	82.1	2.6
400	408	2.0
800	802	0.3
	Tolerance Limit ( $\pm\%$ )	10.0

  
Mr. Chan Kwok Fai, Godfrey  
Laboratory Manager - Hong Kong





Hong Kong Accreditation Service  
香港認可處

**Certificate of Accreditation**  
認可證書

*This is to certify that*  
特此證明

**ALS TECHNICHEM (HK) PTY LIMITED**

**11/F., Chung Shun Knitting Centre, 1-3 Wing Yip Street, Kwai Chung, New Territories, Hong Kong**  
香港新界葵涌永業街1-3號忠信針織中心11樓

*has been accepted by the HKAS Executive, on the recommendation of the Accreditation Advisory Board, as a*  
為香港認可處執行機關根據認可諮詢委員會建議而接受的

**HOKLAS Accredited Laboratory**  
「香港實驗所認可計劃」認可實驗所

*This laboratory meets the requirements of ISO / IEC 17025 : 2005 – General requirements for the competence of testing and calibration laboratories and it has been accredited for performing specific tests or calibrations as listed in the HOKLAS Directory of Accredited Laboratories within the test category of*  
此實驗所符合ISO / IEC 17025 : 2005 – 《測試及校正實驗所能力的通用規定》所訂的要求，獲認可進行載於香港實驗所認可計劃《認可實驗所名冊》內下述測試類別中的指定  
測試或校正工作

**Environmental Testing**  
環境測試

*This laboratory is accredited in accordance with the recognised International Standard ISO / IEC 17025 : 2005.*  
本實驗所乃根據公認的國際標準 ISO / IEC 17025 : 2005 獲得認可。

*This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (see joint IAF-ILAC-ISO Communiqué).*  
這項認可資格演示在指定範疇所需的技術能力及實驗所質量管理體系的運作  
(見國際認可論壇、國際實驗所認可合作組織及國際標準化組織的聯合公報)。

*The common seal of the Hong Kong Accreditation Service is affixed hereto by the authority of the HKAS Executive*  
香港認可處根據認可處執行機關的權限在此蓋上通用印章

CHAN Sing Sing, Terence, Executive Administrator  
執行幹事 陳成城  
Issue Date : 5 May 2009  
簽發日期：二零零九年五月五日

Registration Number : **HOKLAS 066**  
註冊號碼：

Date of First Registration : 15 September 1995  
首次註冊日期：一九九五年九月十五日



## **Appendix F**

### **Event/Action Plan**

## **Air Quality**



EVENT	ACTION	IC(E)	ER	CONTRACTOR
	ET			
<b>ACTION LEVEL</b>				
1. Exceedance for one sample	<ol style="list-style-type: none"> <li>1. Identify source, investigate the causes of exceedance and propose remedial measures;</li> <li>2. Inform IC(E) and ER;</li> <li>3. Repeat measurement to confirm finding;</li> <li>4. Increase monitoring frequency to daily.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method.</li> </ol>	<ol style="list-style-type: none"> <li>1. Notify Contractor.</li> </ol>	<ol style="list-style-type: none"> <li>1. Rectify any unacceptable practice;</li> <li>2. Amend working methods if appropriate.</li> </ol>
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> <li>1. Identify source;</li> <li>2. Inform IC(E) and ER;</li> <li>3. Advise the ER on the effectiveness of the proposed remedial measures;</li> <li>4. Repeat measurements to confirm findings;</li> <li>5. Increase monitoring frequency to daily;</li> <li>6. Discuss with IC(E) and Contractor on remedial actions required;</li> <li>7. If exceedance continues, arrange meeting with IC(E) and ER;</li> <li>8. If exceedance stops, cease additional monitoring.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method;</li> <li>3. Discuss with ET and Contractor on possible remedial measures;</li> <li>4. Advise the ET on the effectiveness of the proposed remedial measures;</li> <li>5. Supervise Implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. Ensure remedial measures properly implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Submit proposals for remedial to ER within 3 working days of notification;</li> <li>2. Implement the agreed proposals;</li> <li>3. Amend proposal if appropriate.</li> </ol>
<b>LIMIT LEVEL</b>				
1. Exceedance for one sample	<ol style="list-style-type: none"> <li>1. Identify source, investigate the causes of exceedance and propose remedial measures;</li> <li>2. Inform ER, Contractor and EPD;</li> <li>3. Repeat measurement to confirm finding;</li> <li>4. Increase monitoring frequency to daily;</li> <li>5. Assess effectiveness of Contractor's remedial actions and keep IC(E), EPD and ER informed of the results.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method;</li> <li>3. Discuss with ET and Contractor on possible remedial measures;</li> <li>4. Advise the ER on the effectiveness of the proposed remedial measures;</li> <li>5. Supervise implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. Ensure remedial measures properly implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Submit proposals for remedial actions to IC(E) within 3 working days of notification;</li> <li>3. Implement the agreed proposals;</li> <li>4. Amend proposal if appropriate.</li> </ol>
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> <li>1. Notify IC(E), ER, Contractor and EPD;</li> <li>2. Identify source;</li> <li>3. Repeat measurement to confirm findings;</li> <li>4. Increase monitoring frequency to daily;</li> <li>5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented;</li> <li>6. Arrange meeting with IC(E) and ER to discuss the remedial actions to be taken;</li> <li>7. Assess effectiveness of Contractor's remedial actions and keep IC(E), EPD and ER informed of the results;</li> <li>8. If exceedance stops, cease additional monitoring.</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss amongst ER, ET, and Contractor on the potential remedial actions;</li> <li>2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly;</li> <li>3. Supervise the implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. In consolidation with the IC(E), agree with the Contractor on the remedial measures to be implemented;</li> <li>4. Ensure remedial measures properly implemented;</li> <li>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.</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Submit proposals for remedial actions to IC(E) within 3 working days of notification;</li> <li>3. Implement the agreed proposals;</li> <li>4. Resubmit proposals if problem still not under control;</li> <li>5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.</li> </ol>

## **Construction Noise**

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

## **Water Quality**

EVENT	ACTION			
	ET	IC(E)	ER	CONTRACTOR
<b>ACTION LEVEL</b>				
1. Exceedance for one sampling day	<ol style="list-style-type: none"> <li>Repeat in-situ measurement on the next day of exceedance to confirm findings;</li> <li>Identify source(s) of impact;</li> <li>Inform ICE, Contractor, ER, EPD and AFCD; and</li> <li>Check monitoring data, all plant, equipment and Contractor's working methods.</li> </ol>	<ol style="list-style-type: none"> <li>Check monitoring data submitted by ET and Contractor's working methods</li> </ol>	<ol style="list-style-type: none"> <li>Confirm receipt of notification of non-compliance in writing; and</li> <li>Notify Contractor</li> </ol>	<ol style="list-style-type: none"> <li>Information the ER and confirm notification of the non-compliance in writing;</li> <li>Rectify unacceptable practice; and</li> <li>Amend working methods if appropriate</li> </ol>
2. Exceedance for two or more consecutive sampling days	<ol style="list-style-type: none"> <li>Same as the above;</li> <li>Inform ICE, Contractor, ER, EPD and AFCD;</li> <li>Discuss mitigation measures with IC(E), RE and Contractor;</li> <li>Ensure well implementation of mitigation measures; and</li> <li>Increase the monitoring frequency to daily until no exceedance of Action Level</li> </ol>	<ol style="list-style-type: none"> <li>Same as the above;</li> <li>Discuss with ET and Contractor on possible remedial actions;</li> <li>Review the proposed mitigation measures submitted by Contractor and advise the ER accordingly; and</li> <li>Supervise the implementation of mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>Discuss with IC(E) on the proposed mitigation measures;</li> <li>Ensure well implementation of mitigation measures; and</li> <li>Assess the effectiveness of the implemented mitigation measures</li> </ol>	<ol style="list-style-type: none"> <li>Same as the above;</li> <li>Check all plant and equipment and consider changes of working methods;</li> <li>Submit proposal of additional mitigation measures to ER within 3 working days of notification and discuss with ET, IC(E), and ER; and</li> <li>Implement the agreed mitigation measures</li> </ol>
<b>LIMIT LEVEL</b>				
1. Exceedance for one sampling day	<ol style="list-style-type: none"> <li>Repeat in-situ measurement on the next day of exceedance to confirm findings;</li> <li>Identify source(s) of impact;</li> <li>Inform ICE, Contractor, ER, EPD and AFCD;</li> <li>Check monitoring data, all plant, equipment and Contractor's working methods; and</li> <li>Discuss mitigation measures with IC(E), RE and Contractor</li> </ol>	<ol style="list-style-type: none"> <li>Check monitoring data submitted by ET and Contractor's working method</li> <li>Discuss with ER and Contractor on possible remedial actions; and</li> <li>Review the proposed mitigation measures submitted by Contractor and advise the ER accordingly</li> </ol>	<ol style="list-style-type: none"> <li>Confirm receipt of notification failure in writing; and</li> <li>Discuss with IC(E), ET and Contractor on the proposed mitigation measures; and</li> <li>Request Contractor to review the working methods</li> </ol>	<ol style="list-style-type: none"> <li>Inform the ER and confirm notification of the failure in writing;</li> <li>Rectify unacceptable practice;</li> <li>Check all plant and equipment and consider changes of working methods; and</li> <li>Submit proposal of mitigation measures to ER within 3 working days of notification and discuss with ET and ER</li> </ol>
2. Exceedance for two or more consecutive sampling days	<ol style="list-style-type: none"> <li>Same as the above;</li> <li>Ensure mitigation measures are implemented; and</li> <li>Increase the monitoring frequency to daily until no exceedance of Limit Level for two consecutive days</li> </ol>	<ol style="list-style-type: none"> <li>Same as the above; and</li> <li>Supervise the Implementation of mitigation measures</li> </ol>	<ol style="list-style-type: none"> <li>Same as the above;</li> <li>Ensure well implementation of mitigation measures</li> <li>Make agreement on the mitigation measures to be implemented; and</li> <li>Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the construction activities until no exceedance of limit level</li> </ol>	<ol style="list-style-type: none"> <li>Same as the above;</li> <li>Take immediate action to avoid further exceedance;</li> <li>Implement the agreed mitigation measures;</li> <li>Resubmit proposals of mitigation measures if problem still not under control; and</li> <li>As directed by the Engineer, to slow down or to stop all or part of the construction activities until to no exceedance of Limit Level.</li> </ol>

## **Appendix G**

### **Monitoring Data Sheet**

## **24-hour TSP Monitoring Data Sheet**

### Air Quality Monitoring - 24-hour TSP Monitoring data sheet

DATE	SAMPLE NUMBER	ELAPSED TIME			CHART READING			AVG TEMP (oC)	STANDARD			INITIAL FILTER WEIGHT (g)	FINAL FILTER WEIGHT (g)	WEIGHT DUST COLLECTED (g)	DUST 24-hour TSP IN AIR (ug/m <sup>3</sup> )
		INITIAL	FINAL	ACTUAL (min)	MIN	MAX	AVG		AVG PRESS (hPa)	FLOW RATE (m3/min)	AIR VOLUME (std m3)				
<b>24-hour TSP Monitoring Results - AM1</b>															
6-Sep-11	24189	10976.59	11000.32	1423.80	29	32	30.5	29.3	1007.4	0.69	982	2.8457	2.8672	0.0215	22
12-Sep-11	24068	11000.32	11023.51	1391.40	29	33	31.0	28.5	1010.6	0.71	985	2.8056	2.8515	0.0459	47
17-Sep-11	24219	11023.51	11047.29	1426.80	29	32	30.5	29.4	1004.5	0.69	982	2.7502	2.7695	0.0193	20
23-Sep-11	24225	11047.29	11071.22	1435.80	30	33	31.5	25.6	1009.7	0.73	1043	2.7767	2.8504	0.0737	71
29-Sep-11	24248	11071.22	11095.18	1437.60	29	33	31.0	27.2	1002.9	0.75	1072	2.7811	2.8417	0.0606	57
<b>24-hour TSP Monitoring Results - AM2</b>															
6-Sep-11	24190	9486.1	9509.98	1432.80	30	34	32.0	29.3	1007.4	0.73	1042	2.8463	2.8794	0.0331	32
12-Sep-11	24067	9509.98	9533.97	1439.40	29	33	31.0	28.5	1010.6	0.69	1000	2.8158	2.8501	0.0343	34
17-Sep-11	24220	9533.97	9557.69	1423.20	30	33	31.5	29.4	1004.5	0.71	1007	2.7616	2.787	0.0254	25
23-Sep-11	24224	9557.69	9581.17	1408.80	29	34	31.5	25.6	1009.7	0.72	1011	2.7641	2.8491	0.0850	84
29-Sep-11	24247	9581.17	9605.01	1430.40	30	33	31.5	27.2	1002.9	0.71	1017	2.796	2.897	0.1010	99
<b>24-hour TSP Monitoring Results - AM3</b>															
6-Sep-11	24191	5042.59	5066.3	1422.60	29	33	31.0	29.3	1007.4	0.74	1059	2.8416	3.0282	0.1866	176
12-Sep-11	24069	5066.3	5090.16	1431.60	30	32	31.0	28.5	1010.6	0.75	1071	2.8097	2.8915	0.0818	76
17-Sep-11	24218	5090.16	5113.92	1425.60	29	32	30.5	29.4	1004.5	0.72	1028	2.7807	2.8218	0.0411	40
23-Sep-11	24221	5113.92	5137.65	1423.80	30	34	32.0	25.6	1009.7	0.80	1133	2.7829	2.8928	0.1099	97
29-Sep-11	24255	5137.65	5161.41	1425.60	30	33	31.5	27.2	1002.9	0.77	1093	2.7475	2.8117	0.0642	59



## **Marine Water Quality Monitoring Data Sheet**

Contract No. DC/2009/13

Construction of Sewage Treatment Works  
at Yung Shue Wan and Sok Kwu Wan



Sok Kwu Wan

Date 2-Sep-11

Date / Time	Location	Tide*	Co-ordinates		Water Depth m	Sampling Depth m	Temp °C	DO Conc mg/L	DO Saturation %	Turbidity NTU	Salinity ppt	pH unit	SS mg/l
			East	North									
2011/9/2 15:21	W1	ME	832980	807754	2.6	1.058	28.40	6.19	85.8	2.9	30.30	7.70	2.3
						1.055	28.50	6.08	85.2	2.8	33.40	7.90	
2011/9/2 15:49	W2	ME	832605	807999	12.9	1.011	28.70	6.34	82.3	2.4	28.40	7.60	1.1
						1.109	28.60	6.28	88.6	2.5	28.50	7.60	3.9
						6.467	28.40	6.14	84.3	3.0	29.30	7.80	
						6.445	28.40	6.13	84.9	2.9	29.35	7.80	
						11.836	27.90	6.06	83.9	3.1	30.85	7.80	4.7
						11.852	27.80	5.94	83.7	3.1	30.90	7.90	
2011/9/2 14:41	W3	ME	832036	807893	12.8	1.105	28.90	7.00	92.8	2.5	28.40	7.70	7.5
						1.082	28.90	6.84	91.4	2.6	28.45	7.80	
						6.413	28.50	6.42	89.6	2.9	30.64	7.70	3.4
						6.389	28.50	6.49	89.8	2.9	30.60	7.70	
						11.915	28.10	6.32	88.8	2.2	32.60	7.70	4.9
						11.829	28.10	6.54	87.4	2.4	32.50	7.60	
2011/9/2 15:49	C1	ME	833693	808194	13.1	1.121	29.50	6.84	87.8	2.6	30.60	8.10	2.5
						1.063	29.50	6.53	76.1	2.3	30.40	8.00	
						6.584	29.30	6.16	90.8	2.9	31.20	8.10	6.0
						6.471	29.30	6.01	90.1	2.7	31.20	8.10	
						12.119	29.10	5.94	88.3	2.7	32.10	8.00	3.4
						12.065	29.00	5.76	88.6	2.5	32.10	8.00	
2011/9/2 14:28	C2	ME	831484	807756	10.4	0.983	29.40	6.91	95.2	2.5	30.40	8.00	6.3
						1.057	29.40	6.76	89.4	2.9	30.25	7.90	
						5.226	29.20	6.43	92.8	2.9	31.30	8.10	3.5
						5.192	29.20	6.52	92.8	3.1	31.20	8.00	
						9.525	28.60	6.37	93.4	3.1	32.10	7.90	3.9
						9.461	28.60	6.34	88.2	3.1	32.10	8.00	
2011/9/2 15:57	C3	ME	832218	808874	13.5	0.989	29.20	6.96	91.9	3.0	30.40	7.70	6.0
						1.014	29.20	6.78	92.3	3.3	30.50	7.80	
						6.843	28.50	6.78	89.4	2.6	31.30	7.60	4.6
						6.827	28.50	6.91	89.4	2.8	31.30	7.70	
						12.476	28.10	5.91	87.8	2.9	32.50	7.80	1.2
						12.506	28.10	5.96	87.1	3.2	32.50	7.70	
2011/9/2 9:26	W1	MF	832971	807754	2.4	1.215	29.40	6.24	95.3	3.1	30.20	7.90	2.1
						1.225	29.60	6.32	96.2	3.2	30.20	8.00	
2011/9/2 8:59	W2	MF	832596	807891	12.4	1.054	29.30	6.94	87.4	2.5	29.80	7.70	2.4
						1.050	29.40	6.79	86.4	2.6	29.10	7.80	
						6.057	28.30	6.17	84.3	2.4	30.40	7.80	2.9
						6.219	28.30	6.24	82.4	2.7	30.40	7.70	
						11.513	28.10	5.83	86.4	3.0	31.80	7.80	3.0
						11.466	28.10	5.84	86.3	3.3	31.70	7.70	
2011/9/2 8:47	W3	MF	832031	807899	12.3	1.000	28.80	7.03	96.3	2.9	30.40	7.60	1.6
						9.824	28.80	7.16	95.2	2.8	30.10	7.70	
						6.209	28.20	6.82	93.6	2.7	31.20	7.60	3.2
						6.141	28.20	6.91	93.1	2.6	31.60	7.70	
						11.298	27.90	6.64	92.3	3.0	32.30	7.70	2.0
						11.107	27.90	6.72	92.1	3.1	32.30	7.60	
2011/9/2 9:52	C1	MF	833690	808191	13.2	1.109	28.50	7.04	94.3	3.3	29.90	8.00	4.4
						0.986	28.50	7.19	94.6	3.1	30.10	8.00	
						6.716	28.30	6.31	89.4	3.0	31.10	8.00	3.6
						6.578	28.30	6.34	89.3	3.0	31.20	7.90	
						12.342	28.20	5.94	92.3	3.3	32.40	7.90	2.2
						12.266	28.10	6.03	90.1	3.2	32.60	7.90	
2011/9/2 8:26	C2	MF	831453	807761	10.6	1.092	29.10	6.86	93.3	3.2	29.30	8.10	5.2
						0.975	29.10	6.93	94.2	3.3	29.40	8.00	
						5.413	28.80	6.42	95.3	2.9	31.20	8.10	2.8
						5.344	28.80	6.31	96.4	3.0	31.60	8.10	
						9.728	28.50	6.36	94.2	3.1	32.10	7.80	5.3
						9.564	28.50	6.49	94.9	3.3	32.10	7.90	
2011/9/2 10:13	C3	MF	832218	808871	13.8	1.124	28.20	6.92	91.4	3.0	29.10	7.80	4.3
						1.041	28.20	6.84	90.3	3.2	29.20	7.90	
						7.016	28.80	6.74	89.2	2.5	31.30	7.70	5.4
						6.888	28.80	6.62	89.1	2.8	31.30	7.80	
						12.796	28.10	5.91	85.4	2.9	32.40	7.60	2.1
						12.542	28.10	5.81	86.8	3.1	32.40	7.60	

MF- Mid Flood Tide  
ME- Mid Ebb tide

Contract No. DC/2009/13

Construction of Sewage Treatment Works  
at Yung Shue Wan and Sok Kwu Wan



Sok Kwu Wan

Date 6-Sep-11

Date / Time	Location	Tide*	Co-ordinates		Water Depth m	Sampling Depth m	Temp °C	DO Conc mg/L	DO Saturation %	Turbidity NTU	Salinity ppt	pH unit	SS mg/l
			East	North									
2011/9/6 9:07	W1	ME	832982	807753	2.4	1.312	29.50	6.43	94.2	3.0	29.16	7.90	9.3
						1.255	29.40	6.52	94.9	3.4	29.20	7.80	
2011/9/6 8:52	W2	ME	832595	807971	13.6	1.106	29.30	6.46	94.3	2.8	29.10	8.30	2.4
						1.021	29.30	6.32	92.8	3.2	29.16	8.20	
						6.853	29.10	6.36	92.8	3.0	29.80	8.40	3.9
						6.772	29.10	6.31	90.0	3.3	28.89	8.30	
						12.716	28.50	6.41	94.9	2.8	30.20	8.00	3.4
						12.598	28.50	6.28	91.8	3.0	30.25	8.00	
2011/9/6 8:32	W3	ME	832063	807977	12.8	1.212	29.10	6.56	94.2	3.2	29.92	8.10	3.2
						1.109	29.10	6.42	93.8	3.2	29.82	8.00	
						6.542	28.80	6.52	92.8	3.3	30.65	8.10	2.6
						6.456	28.80	6.36	91.6	3.6	30.68	8.10	
						11.916	28.20	6.38	91.4	3.1	32.36	8.00	3.5
11.777	28.20	6.24	90.3	2.9	32.22	8.10							
2011/9/6 9:24	C1	ME	833686	808159	13.8	1.183	29.20	6.16	93.3	2.9	29.96	8.20	1.6
						1.002	29.20	6.08	91.6	2.9	29.50	8.20	
						6.947	28.90	6.32	92.4	3.3	30.41	8.20	9.4
						7.015	28.90	6.16	90.8	3.2	30.59	8.10	
						12.954	29.50	6.59	99.3	2.7	33.53	8.00	4.7
						12.893	29.60	6.42	98.2	2.8	33.63	8.10	
2011/9/6 8:16	C2	ME	831452	807761	10.8	1.162	28.80	6.14	89.3	3.4	30.04	8.00	3.2
						0.984	28.90	6.02	88.4	3.6	30.16	8.10	
						5.483	28.50	6.32	92.4	3.2	31.50	8.10	3.8
						5.391	28.50	6.16	90.3	3.5	31.68	8.00	
						9.905	28.20	6.28	93.8	3.4	34.12	8.10	3.0
						9.79	28.10	6.11	91.4	3.3	34.26	8.00	
2011/9/6 9:42	C3	ME	832197	808846	13.9	1.101	29.10	6.76	97.6	2.8	28.89	8.00	5.1
						0.986	29.10	6.58	96.8	3.3	28.87	8.00	
						7.041	28.60	6.92	95.5	2.8	30.85	8.00	4.1
						6.927	28.60	6.77	94.2	3.3	30.95	7.90	
						13.026	28.20	6.82	94.4	3.2	32.20	7.90	2.5
						12.922	28.20	6.62	94.8	2.8	32.15	8.00	
2011/9/6 15:06	W1	MF	832982	807754	2.3	1.244	28.70	6.28	91.3	3.3	30.91	8.00	1.6
						1.197	28.80	6.13	82.1	3.1	30.16	8.00	
2011/9/6 14:52	W2	MF	832621	807969	12.8	1.109	29.10	6.06	90.6	3.0	29.15	8.00	2.7
						1.062	29.20	5.86	89.7	3.1	29.25	7.90	
						6.513	28.60	6.12	96.2	3.1	30.65	7.90	4.0
						6.420	28.60	6.01	95.5	3.4	30.62	8.00	
						11.933	28.20	5.91	94.3	3.5	32.55	7.80	2.9
						11.861	28.20	5.76	94.2	2.9	32.46	7.90	
2011/9/6 14:36	W3	MF	832056	807991	12.4	1.143	29.20	6.62	94.6	3.3	30.52	7.90	3.3
						1.028	29.20	6.49	94.8	3.4	30.51	8.00	
						6.305	28.50	6.76	92.8	3.3	30.67	7.90	2.6
						6.212	28.50	6.23	92.9	2.8	30.88	7.90	
						11.473	28.20	6.55	91.9	2.9	32.50	8.00	1.8
						11.298	28.20	6.31	90.2	3.3	31.53	7.90	
2011/9/6 15:17	C1	MF	833725	808158	13.1	1.206	28.60	6.51	96.2	2.9	29.32	7.90	2.7
						1.051	28.60	6.32	95.5	3.0	30.51	8.00	
						6.723	28.30	6.47	93.3	3.0	30.31	7.90	1.4
						6.543	28.40	6.36	91.8	2.8	30.92	8.00	
						12.351	28.10	6.86	93.9	2.8	31.31	8.10	1.9
						12.209	28.10	6.79	89.4	3.3	31.50	8.00	
2011/9/6 14:24	C2	MF	831477	807736	10.9	1.096	28.80	6.28	92.8	3.2	29.58	8.00	1.2
						0.972	28.80	6.34	93.4	3.3	29.86	8.10	
						5.541	28.50	6.56	94.3	3.1	30.05	8.00	2.9
						5.476	28.50	6.42	96.2	3.4	29.99	8.10	
						10.081	28.20	6.29	93.2	3.2	32.50	8.10	3.8
						9.854	28.20	6.02	93.6	3.0	32.16	8.00	
2011/9/6 15:38	C3	MF	832243	808848	13.6	1.104	29.10	6.77	97.9	3.1	30.81	8.10	3.9
						1.001	29.10	6.62	88.4	3.2	30.94	8.00	
						6.943	28.70	6.56	90.3	3.1	31.28	7.90	5.3
						6.758	28.80	6.36	87.9	3.4	31.42	8.00	
						12.542	28.10	6.32	90.6	3.3	31.88	7.90	2.4
						12.917	28.10	6.16	88.1	3.5	31.89	7.90	

MF- Mid Flood Tide

ME- Mid Ebb tide

Contract No. DC/2009/13

Construction of Sewage Treatment Works  
at Yung Shue Wan and Sok Kwu Wan



Sok Kwu Wan

Date 8-Sep-11

Date / Time	Location	Tide*	Co-ordinates		Water Depth m	Sampling Depth m	Temp °C	DO Conc mg/L	DO Saturation %	Turbidity NTU	Salinity ppt	pH unit	SS mg/l
			East	North									
2011/9/8 9:31	W1	ME	832984	807754	2.6	1.341	28.30	6.06	89.7	3.1	30.85	8.10	2.2
						1.32	28.40	5.96	88.3	3.2	31.04	8.00	
2011/9/8 9:21	W2	ME	832591	807996	12.8	1.118	29.30	6.32	93.6	3.9	30.54	8.20	3.6
						0.981	29.30	6.28	93.7	4.8	30.66	8.10	
						6.471	29.10	6.42	91.7	3.6	31.10	8.00	2.0
						6.356	29.10	6.38	91.8	3.7	31.20	8.10	
						11.924	29.00	6.28	90.6	3.1	31.64	7.90	3.1
						11.792	29.00	6.21	90.7	3.9	31.55	8.00	
2011/9/8 9:06	W3	ME	832039	807884	12.7	1.094	29.20	6.16	95.2	4.3	29.13	8.00	2.3
						0.896	29.00	6.01	95.8	4.4	29.21	8.10	
						6.452	28.60	6.01	93.2	4.3	30.65	8.00	3.7
						6.337	28.30	5.91	93.6	4.7	30.46	7.90	
						11.762	28.10	6.22	91.6	4.1	31.54	8.10	2.5
11.476	28.10	6.16	91.3	4.6	31.58	8.00							
2011/9/8 9:42	C1	ME	833716	808195	13.6	1.102	29.10	6.16	89.7	4.0	29.45	7.90	1.6
						0.991	29.10	6.02	89.2	4.3	29.45	8.00	
						6.893	28.80	6.28	88.6	3.2	30.00	8.00	5.5
						6.744	28.80	6.29	88.8	3.2	30.15	8.10	
						12.705	28.20	6.16	87.6	3.1	31.50	8.00	2.9
						12.581	28.20	6.00	87.2	4.0	31.46	7.90	
2011/9/8 8:57	C2	ME	831470	807731	10.6	1.132	29.30	6.56	96.8	4.6	29.64	8.00	4.2
						1.068	29.30	6.42	95.5	4.8	29.45	7.90	
						5.42	28.90	6.72	94.2	5.0	30.34	8.00	3.1
						5.296	28.90	6.58	94.3	4.6	30.40	8.00	
						9.644	28.60	6.28	92.2	4.8	31.55	8.00	2.9
						9.438	28.60	6.02	92.1	4.8	31.71	7.90	
2011/9/8 9:59	C3	ME	832224	808879	13.8	1.173	29.10	6.08	90.2	3.1	29.40	7.90	4.2
						1.034	29.10	5.99	90.3	3.8	29.64	8.00	
						6.884	28.70	5.96	90.1	3.8	30.16	7.90	3.1
						6.671	28.70	5.91	90.0	3.2	30.26	8.00	
						12.937	28.20	5.81	89.9	4.2	31.46	8.00	2.9
						12.768	29.20	5.80	89.3	4.3	31.56	8.10	
2011/9/8 17:18	W1	MF	832976	807743	2.4	1.189	27.50	6.28	88.8	4.0	30.00	7.90	3.6
						1.145	27.50	6.17	88.1	4.6	30.15	8.00	
2011/9/8 16:59	W2	MF	832587	807997	12.8	1.157	28.10	6.79	89.9	4.8	30.20	7.80	2.9
						1.061	28.20	6.79	90.3	4.7	30.46	7.90	
						6.384	27.80	6.28	90.4	4.7	31.55	7.90	1.7
						6.299	27.80	6.06	94.1	4.4	31.40	8.00	
						11.950	27.50	5.92	94.2	4.3	31.50	8.00	3.5
						11.782	27.50	5.76	95.2	4.8	31.50	8.00	
2011/9/8 16:49	W3	MF	832031	807898	12.9	1.086	28.30	6.62	59.10	4.9	29.25	8.00	3.0
						0.973	28.30	6.16	93.60	5.0	29.45	8.00	
						6.623	28.10	6.56	88.80	5.0	30.40	7.90	1.5
						6.509	28.10	6.06	94.20	4.9	30.64	8.00	
						11.742	27.40	5.59	94.30	4.9	31.46	8.10	3.0
						11.916	27.30	5.16	93.10	5.0	31.55	8.00	
2011/9/8 17:29	C1	MF	833687	808158	13.4	1.082	28.60	6.28	89.90	4.4	30.15	7.90	3.3
						0.996	28.60	6.29	89.20	4.3	30.22	8.00	
						6.803	28.20	6.29	89.40	4.7	30.23	8.00	3.3
						6.675	28.20	6.16	89.20	4.4	30.31	7.90	
						12.425	27.50	5.92	90.80	4.3	31.20	8.10	2.0
						12.263	27.50	5.86	90.70	4.2	31.23	8.00	
2011/9/8 16:32	C2	MF	831459	807756	10.8	1.102	28.30	6.16	95.2	4.7	29.20	8.00	3.1
						0.991	28.30	6.03	95.3	4.5	29.30	7.90	
						5.466	28.10	6.24	88.2	4.8	30.12	7.90	2.2
						5.381	28.10	6.01	87.2	4.6	30.15	7.90	
						9.921	27.50	6.32	89.2	4.9	31.20	8.00	2.5
						9.767	27.50	6.01	90.2	4.8	31.23	8.00	
2011/9/8 17:49	C3	MF	832242	808874	13.6	1.074	28.90	7.07	90.3	4.2	29.00	8.00	5.5
						0.980	28.90	7.02	90.2	4.5	29.21	8.00	
						6.581	28.30	6.86	89.2	4.0	30.22	8.00	3.0
						6.728	28.30	6.16	89.1	4.5	30.13	8.10	
						12.445	27.50	6.17	82.4	4.6	31.41	8.00	3.4
						12.574	27.50	6.23	85.2	4.0	31.50	7.90	

MF- Mid Flood Tide  
ME- Mid Ebb tide

Contract No. DC/2009/13

Construction of Sewage Treatment Works  
at Yung Shue Wan and Sok Kwu Wan



Sok Kwu Wan

Date 10-Sep-11

Date / Time	Location	Tide*	Co-ordinates		Water Depth m	Sampling Depth m	Temp °C	DO Conc mg/L	DO Saturation %	Turbidity NTU	Salinity ppt	pH unit	SS mg/l
			East	North									
2011/9/10 11:06	W1	ME	832955	807750	2.4	1.205	28.10	6.92	94.3	3.6	30.50	8.10	3.7
						1.169	28.20	6.97	95.3	3.2	30.60	8.00	
2011/9/10 10:56	W2	ME	832616	807997	12.6	1.146	28.20	6.51	94.3	4.9	31.80	7.90	2.8
						1.033	28.10	6.52	94.1	4.9	31.80	8.00	
						6.458	27.90	6.59	92.3	4.9	31.90	8.00	3.6
						6.312	27.60	6.62	92.4	4.9	31.90	8.10	
						11.582	27.40	6.72	90.3	4.9	32.20	8.20	2.8
						11.591	27.30	6.79	90.4	4.9	32.20	8.10	
2011/9/10 10:39	W3	ME	832029	809879	12.9	1.127	28.30	6.82	94.3	4.2	30.10	8.30	4.9
						1.016	28.20	6.72	93.2	4.3	30.20	8.10	
						6.528	27.80	6.76	95.6	5.2	30.40	8.00	3.6
						6.472	27.60	6.86	93.1	5.1	30.40	8.10	
						12.015	27.20	6.54	90.8	5.0	30.80	8.00	6.4
11.95	27.20	6.51	90.1	4.9	30.80	8.00							
2011/9/10 11:19	C1	ME	833722	808188	13.6	1.052	27.90	6.99	94.2	3.6	31.20	8.30	8.2
						0.986	27.90	6.92	94.1	3.5	31.20	8.20	
						6.873	27.50	6.92	90.3	3.5	31.80	8.30	5.5
						6.775	27.50	6.94	90.4	3.5	31.90	8.20	
						12.541	27.30	6.91	89.2	3.5	32.20	8.00	4.7
						12.588	27.30	6.92	89.2	3.6	32.30	8.10	
2011/9/10 10:26	C2	ME	831460	807732	10.6	1.074	28.70	6.92	95.6	4.4	30.30	8.00	4.6
						1.003	28.70	6.83	93.2	4.3	30.30	8.10	
						5.416	28.40	6.81	94.3	4.2	30.80	8.20	5.0
						5.357	28.40	6.72	92.8	4.3	30.80	8.10	
						9.652	27.90	6.62	91.9	4.3	32.20	8.40	2.3
						9.587	27.90	6.56	90.9	4.5	32.20	8.20	
2011/9/10 11:32	C3	ME	832233	808851	13.8	1.141	28.60	6.86	94.1	3.6	32.40	8.20	2.4
						1.038	28.40	6.81	94.2	3.1	32.40	8.10	
						6.862	27.30	6.76	90.1	3.2	32.60	8.20	7.0
						6.915	27.30	6.71	90.2	3.3	32.60	8.10	
						12.855	26.90	6.81	89.2	3.9	33.20	8.10	3.5
						12.781	26.80	6.76	89.3	3.2	33.20	8.10	
2011/9/10 17:36	W1	MF	832952	807718	2.7	1.375	28.80	6.83	90.9	3.5	30.10	8.10	9.7
						1.32	28.60	6.84	90.3	3.9	30.30	8.00	
2011/9/10 17:28	W2	MF	832619	807973	12.9	1.166	29.20	6.48	94.3	4.0	30.60	8.10	1.8
						1.047	29.20	6.41	94.8	4.1	30.60	8.10	
						6.529	28.30	6.21	92.3	4.0	32.20	8.20	7.2
						6.461	28.20	6.16	92.9	4.4	32.60	8.10	
						11.783	28.10	6.16	90.9	4.3	34.30	8.30	1.4
						11.854	28.10	6.06	90.2	4.3	34.20	8.20	
2011/9/10 17:16	W3	MF	832029	807871	12.8	1.085	28.10	6.51	95.2	4.0	30.80	8.00	2.0
						0.991	28.20	6.50	95.9	3.6	30.80	8.00	
						6.472	27.60	6.42	95.9	3.8	31.20	8.10	5.1
						6.365	27.60	6.38	93.9	3.9	31.20	8.00	
						11.903	27.20	6.26	92.4	3.8	32.30	8.00	2.3
11.826	27.10	6.11	92.8	3.9	32.30	8.10							
2011/9/10 17:51	C1	MF	833688	808159	13.5	1.054	28.30	6.33	94.2	4.4	31.20	8.20	3.6
						0.971	28.30	6.36	94.1	4.2	32.10	8.10	
						6.805	27.30	6.26	90.2	4.2	32.22	8.00	4.0
						6.766	27.30	6.26	90.1	4.2	32.50	8.10	
						12.442	27.50	6.03	89.9	3.9	33.60	8.00	4.1
						12.486	27.40	6.02	89.2	3.9	33.60	8.10	
2011/9/10 17:01	C2	MF	831478	807760	10.4	1.062	29.30	6.76	95.6	4.4	29.40	8.00	5.2
						0.984	29.20	6.56	95.3	4.6	29.40	8.00	
						5.283	28.60	6.62	95.2	4.6	30.50	7.90	5.4
						5.154	28.60	6.62	95.1	5.1	30.50	8.00	
						9.522	28.10	6.58	94.8	4.9	32.20	7.80	2.2
						9.408	28.20	6.06	94.3	4.6	32.20	7.90	
2011/9/10 18:16	C3	MF	832212	808877	13.7	1.104	28.30	6.76	90.4	3.5	28.60	8.10	3.3
						1.028	28.20	6.79	90.8	3.3	28.60	8.00	
						6.913	27.80	6.79	88.7	3.9	29.90	8.10	3.8
						6.850	27.80	6.71	88.8	3.8	29.90	8.10	
						12.724	27.60	6.81	84.2	3.5	31.60	8.20	6.3
						12.669	27.60	6.81	84.3	3.4	31.60	8.10	

MF- Mid Flood Tide  
ME- Mid Ebb tide



Contract No. DC/2009/13

**Construction of Sewage Treatment Works  
at Yung Shue Wan and Sok Kwu Wan**



**Sok Kwu Wan**

Date 12-Sep-11

Date / Time	Location	Tide*	Co-ordinates		Water Depth m	Sampling Depth m	Temp °C	DO Conc mg/L	DO Saturation %	Turbidity NTU	Salinity ppt	pH unit	SS mg/l
			East	North									
2011/9/12 12:20	W1	ME	832977	807744	2.3	1.179	28.10	6.26	87.9	3.62	30.90	7.90	4.7
						1.133	28.00	6.13	88.8	3.50	30.80	8.00	
2011/9/12 12:09	W2	ME	832596	807991	12.5	1.116	29.10	6.43	86.8	3.16	30.60	8.10	2.5
						1.045	29.20	6.42	86.7	3.56	30.50	8.00	
						6.289	28.50	6.26	85.2	3.74	31.20	8.40	5.4
						6.213	28.50	6.16	85.8	3.75	31.10	8.20	
						11.462	27.60	5.92	83.6	3.84	31.50	8.50	2.2
						11.583	27.70	5.92	83.2	3.84	31.50	8.40	
2011/9/12 11:51	W3	ME	832045	807883	12.8	1.081	28.30	6.26	85.8	3.16	30.10	8.00	4.5
						1.006	28.40	6.27	88.6	3.17	30.15	8.00	
						6.391	28.20	6.16	83.2	2.92	30.50	8.10	2.4
						6.512	28.20	6.02	85.6	2.96	30.65	8.00	
						11.94	27.50	5.96	81.8	2.92	31.10	8.10	4.5
11.767	27.50	5.92	81.9	2.99	31.15	8.10							
2011/9/12 12:35	C1	ME	833714	808191	13.4	1.101	28.30	6.42	83.6	3.82	29.30	8.30	4.1
						1.024	28.40	6.43	83.8	3.81	29.45	8.30	
						6.785	27.90	6.26	82.1	4.02	30.20	8.20	2.0
						6.642	27.80	6.26	82.0	4.04	30.15	8.10	
						12.316	26.70	5.99	79.1	4.12	30.50	8.00	3.1
						12.455	26.70	5.96	79.2	4.16	30.46	8.10	
2011/9/12 11:37	C2	ME	831453	807759	10.8	1.068	28.80	6.16	80.3	4.28	30.34	8.00	4.1
						0.991	28.80	6.24	82.4	4.46	30.45	8.00	
						5.482	28.20	6.03	80.2	3.28	30.60	8.10	3.0
						5.376	28.20	6.02	81.4	3.26	30.64	8.10	
						9.903	27.80	5.92	79.9	3.21	30.86	8.20	4.6
						9.787	27.80	5.96	79.8	3.16	30.94	8.10	
2011/9/12 12:49	C3	ME	832216	808874	13.6	1.063	28.40	6.24	88.3	4.19	30.15	8.00	5.3
						0.995	28.30	6.21	88.4	4.18	30.10	7.90	
						6.841	27.90	6.02	86.2	4.16	30.46	8.00	4.9
						6.759	27.80	6.01	86.4	4.19	30.50	8.10	
						12.549	27.30	5.96	83.4	4.26	31.15	7.90	3.8
						12.603	27.30	5.93	83.9	4.39	31.30	8.00	
2011/9/12 17:51	W1	MF	832949	807751	2.5	1.306	27.80	6.78	80.7	3.62	30.50	7.80	1.7
						1.229	27.80	6.82	82.1	3.83	30.60	7.90	
2011/9/12 17:41	W2	MF	832604	807999	12.8	1.094	28.20	6.31	83.3	3.45	29.50	8.00	2.6
						0.997	28.20	6.32	84.4	3.69	29.46	8.00	
						6.507	27.50	6.53	80.3	3.68	30.10	8.10	3.4
						6.418	27.50	6.51	80.2	3.92	30.10	8.00	
						11.749	27.10	6.54	79.2	3.96	30.64	8.10	2.5
						11.796	27.00	6.59	79.3	3.92	30.48	8.00	
2011/9/12 17:29	W3	MF	832031	807891	12.8	1.024	27.90	6.32	84.2	2.76	30.10	8.00	2.0
						0.983	27.80	6.42	84.1	2.64	30.10	8.10	
						6.555	27.60	6.56	80.2	2.69	30.46	8.10	2.0
						6.501	27.60	6.57	80.1	2.92	30.50	8.00	
						11.924	26.80	6.32	79.9	2.99	30.80	8.10	3.0
						11.816	26.90	6.26	79.2	3.42	30.80	8.00	
2011/9/12 18:07	C1	MF	833724	808191	13.4	1.035	28.60	6.51	85.2	3.96	29.60	7.80	4.4
						0.894	28.20	6.52	85.3	3.98	29.60	7.90	
						6.813	27.40	6.36	83.6	3.97	30.80	7.90	1.5
						6.697	27.30	6.36	83.9	3.41	30.80	7.90	
						12.352	27.10	6.35	81.1	4.02	31.20	7.90	3.4
						12.391	27.00	6.64	82.4	4.07	31.20	8.00	
2011/9/12 17:15	C2	MF	831468	807756	10.1	1.058	28.40	7.02	81.2	3.28	29.30	8.00	5.3
						0.994	28.30	6.92	81.1	3.92	29.30	8.10	
						5.601	27.50	6.84	80.1	3.44	30.10	8.00	2.0
						5.582	27.50	6.81	80.2	3.16	30.20	8.00	
						9.055	27.20	6.83	78.8	3.31	30.40	8.10	2.0
						8.973	27.00	6.12	78.1	2.86	30.40	8.00	
2011/9/12 18:26	C3	MF	832227	808875	13.5	0.998	28.40	6.76	83.6	3.91	29.50	8.00	1.8
						1.006	28.30	6.26	83.8	3.28	29.50	8.00	
						6.822	27.90	7.02	82.1	3.82	29.90	7.90	1.9
						6.785	27.80	7.03	82.8	3.83	29.90	8.00	
						12.527	27.30	6.79	80.8	3.79	30.40	8.40	1.6
						12.461	27.20	6.79	80.1	3.78	30.40	8.30	

MF- Mid Flood Tide  
ME- Mid Ebb tide

Contract No. DC/2009/13

Construction of Sewage Treatment Works  
at Yung Shue Wan and Sok Kwu Wan



Sok Kwu Wan

Date 14-Sep-11

Date / Time	Location	Tide*	Co-ordinates		Water Depth m	Sampling Depth m	Temp °C	DO Conc mg/L	DO Saturation %	Turbidity NTU	Salinity ppt	pH unit	SS mg/l
			East	North									
2011/9/14 13:24	W1	ME	832977	807744	2.3	1.212	28.80	6.84	78.4	3.6	30.40	8.20	3.0
						1.205	28.80	6.76	77.6	3.8	31.20	8.20	
2011/9/14 13:16	W2	ME	832596	807991	12.8	1.025	29.10	6.87	90.8	3.9	28.90	8.00	2.8
						1.007	29.10	6.76	91.2	3.7	29.10	8.10	
						6.418	28.40	6.33	86.4	4.3	30.00	8.10	2.0
						6.372	28.40	6.23	86.0	4.5	29.80	8.00	
						11.76	27.60	6.01	81.1	4.8	31.70	8.20	2.0
						11.811	27.50	5.85	80.9	4.6	31.90	8.20	
2011/9/14 12:49	W3	ME	832045	807883	12.2	1.011	29.20	7.02	95.6	3.5	29.20	8.00	3.2
						0.986	29.30	6.98	94.2	3.6	29.40	8.10	
						6.107	28.40	6.53	90.7	4.1	30.10	8.10	4.0
						6.082	28.30	6.59	89.6	4.3	30.40	8.00	
						11.243	27.80	5.96	85.3	4.3	32.30	8.10	4.8
11.196	27.70	5.85	83.1	4.4	32.90	8.00							
2011/9/14 13:41	C1	ME	833714	808191	13.2	0.994	29.30	7.17	88.2	3.7	29.40	8.10	2.4
						1.016	29.20	6.96	89.4	4.0	29.50	8.10	
						6.631	28.30	6.50	85.1	3.9	30.80	8.30	1.4
						6.597	28.20	6.47	84.9	4.0	30.10	8.20	
						12.191	27.50	6.80	80.1	4.6	32.40	8.30	3.3
12.205	27.60	6.15	80.3	4.6	31.70	8.20							
2011/9/14 12:36	C2	ME	831453	807759	10.9	1.21	29.70	6.94	99.8	4.0	29.40	8.40	3.3
						1.084	29.70	6.87	99.5	4.0	29.30	8.30	
						5.433	28.50	6.43	92.4	4.1	30.80	8.30	2.3
						5.472	28.60	6.32	93.6	4.2	31.20	8.20	
						9.875	27.80	5.99	89.3	4.4	32.20	8.30	4.3
						9.903	27.70	5.83	88.7	4.4	31.90	8.20	
2011/9/14 13:58	C3	ME	832216	808874	13.6	1.054	29.40	7.03	87.3	3.6	29.70	8.00	5.8
						1.027	29.30	6.94	87.4	3.9	29.50	8.10	
						6.819	28.50	6.66	85.2	3.9	30.10	8.20	1.8
						6.788	28.60	6.78	85.1	4.2	30.20	8.10	
						12.574	27.70	6.61	79.3	4.5	32.80	8.30	5.6
						12.606	27.50	6.31	78.8	4.6	32.60	8.20	
2011/9/14 8:46	W1	MF	832949	807751	2.5	1.241	28.30	6.84	96.4	2.6	31.40	8.20	7.0
						1.262	28.20	6.72	91.3	3.0	30.80	8.10	
2011/9/14 8:32	W2	MF	832604	807999	12.4	1.046	28.90	6.62	90.4	3.1	29.40	8.20	2.0
						1.025	28.80	6.53	88.1	2.9	29.10	8.10	
						6.228	28.50	5.82	83.1	3.5	30.30	8.00	3.4
						6.195	28.50	5.76	81.8	3.6	31.30	8.10	
						11.387	27.80	5.62	77.4	4.3	32.40	8.10	1.8
						11.406	27.90	5.38	75.2	4.4	32.80	8.10	
2011/9/14 8:21	W3	MF	832031	807891	12.1	1.018	29.20	6.84	95.4	3.1	29.10	8.40	3.2
						0.995	29.30	6.72	95.6	3.2	29.20	8.30	
						6.037	28.50	5.44	90.8	3.6	30.30	8.10	2.4
						6.044	28.30	5.32	89.7	3.8	30.40	8.10	
						11.076	27.10	5.16	83.2	4.0	31.40	8.00	4.3
						11.092	27.30	5.08	83.9	4.4	31.60	8.10	
2011/9/14 9:02	C1	MF	833724	808191	13.4	1.015	28.80	7.01	107.2	3.0	29.40	8.20	3.6
						0.992	28.50	7.12	101.3	3.4	29.80	8.10	
						6.723	28.20	5.96	90.8	4.1	30.80	8.40	3.6
						6.684	28.20	5.78	90.1	4.5	31.20	8.30	
						12.425	27.80	5.12	83.2	4.6	32.20	8.20	3.2
						12.409	27.60	4.99	84.3	4.9	31.90	8.30	
2011/9/14 8:09	C2	MF	831468	807756	10.8	1.008	29.60	7.02	103.2	3.9	29.60	8.30	2.3
						0.983	29.60	6.93	102.1	3.4	28.30	8.20	
						5.412	28.60	6.67	99.7	4.2	30.20	8.20	2.0
						5.386	28.70	6.52	95.3	4.5	30.40	8.20	
						9.772	27.60	6.32	90.2	4.9	32.40	8.20	2.4
						9.796	27.60	6.37	91.3	4.2	32.30	8.10	
2011/9/14 9:21	C3	MF	832227	808875	13.6	0.989	28.90	6.88	101.4	3.2	29.80	8.50	1.4
						1.005	28.80	6.92	100.3	3.8	29.20	8.30	
						6.809	28.50	6.19	95.3	4.1	30.30	8.30	2.6
						6.781	28.50	6.27	93.1	4.2	30.70	8.20	
						12.574	27.70	5.32	89.3	4.7	31.80	8.30	1.0
						12.589	27.70	5.47	87.6	4.5	31.60	8.20	

MF- Mid Flood Tide

ME- Mid Ebb tide

Contract No. DC/2009/13

**Construction of Sewage Treatment Works  
at Yung Shue Wan and Sok Kwu Wan**



**Sok Kwu Wan**

Date 16-Sep-11

Date / Time	Location	Tide*	Co-ordinates		Water Depth m	Sampling Depth m	Temp °C	DO Conc mg/L	DO Saturation %	Turbidity NTU	Salinity ppt	pH unit	SS mg/l
			East	North									
2011/9/16 13:59	W1	ME	832981	807752	2.4	1.221	28.70	5.97	84.2	4.2	30.40	8.30	2.6
						1.194	28.70	5.81	83.1	4.2	31.20	8.20	
2011/9/16 13:46	W2	ME	832591	807968	12.1	1.003	28.90	6.72	91.2	3.8	30.10	7.90	3.7
						0.985	28.80	6.63	90.8	3.7	30.40	8.00	
						6.041	28.30	6.28	84.2	4.2	31.90	8.10	4.8
						6.018	28.30	6.16	83.1	4.0	32.00	8.00	
						11.137	27.40	5.93	80.8	4.3	33.00	8.00	2.8
						11.082	27.60	5.83	79.1	4.3	32.80	8.10	
2011/9/16 13:38	W3	ME	832031	807899	12.3	1.112	29.00	6.92	90.8	3.2	29.10	8.40	4.8
						1.054	28.30	6.77	91.2	3.4	29.30	8.20	
						6.172	27.30	6.53	86.2	4.1	30.30	8.30	3.7
						6.146	27.30	6.44	85.3	4.3	30.10	8.20	
						11.318	27.10	6.13	81.4	4.8	32.00	8.00	4.7
11.288	27.10	6.03	80.1	4.6	32.10	8.10							
2011/9/16 14:16	C1	ME	833696	808159	13.4	1.082	29.20	6.77	90.3	4.0	29.80	8.00	6.0
						1.051	29.30	6.71	88.3	4.0	29.40	8.00	
						6.689	28.40	6.04	87.4	4.2	30.90	8.40	4.1
						6.703	28.60	6.01	86.3	4.4	30.20	8.30	
						12.376	27.90	5.92	80.2	4.9	31.40	8.30	3.6
						12.392	28.00	5.83	79.7	4.9	31.80	8.20	
2011/9/16 13:23	C2	ME	832216	808871	10.7	1.021	29.10	6.82	93.2	3.1	30.00	8.10	4.0
						1.014	29.20	6.76	90.8	3.2	30.10	8.10	
						5.374	28.30	6.34	87.2	3.6	31.30	8.00	3.1
						5.361	28.40	6.31	87.1	3.8	32.10	8.10	
						9.721	27.90	6.08	80.7	4.4	32.30	7.90	3.0
						9.708	27.80	6.01	80.3	4.5	32.60	8.00	
2011/9/16 14:40	C3	ME	832215	808876	13.8	1.162	29.10	6.62	89.3	4.2	29.90	8.00	4.4
						1.051	29.30	6.51	88.1	4.4	29.20	8.10	
						6.889	28.50	6.02	83.1	4.6	30.30	8.40	2.2
						6.903	28.70	5.83	81.9	4.7	30.10	8.30	
						12.786	28.30	5.24	79.4	5.3	31.30	8.40	4.5
						12.815	28.10	5.02	79.1	5.1	31.80	8.30	
2011/9/16 8:46	W1	MF	832954	807744	2.3	1.159	28.20	6.82	90.8	4.0	30.80	8.40	5.7
						1.136	28.40	6.74	88.3	4.1	31.60	8.30	
2011/9/16 8:37	W2	MF	832625	807993	12.7	1.068	29.00	6.86	94.3	3.9	29.20	8.30	7.1
						1.031	29.20	6.83	92.2	4.0	29.40	8.20	
						6.384	28.30	6.32	90.1	4.4	29.80	8.00	3.6
						6.361	28.20	6.26	87.2	4.4	28.70	8.10	
						11.757	27.80	6.08	86.2	4.8	31.45	8.10	4.6
						11.720	27.70	6.04	84.8	4.9	31.50	8.10	
2011/9/16 8:21	W3	MF	832057	807888	12.6	1.082	29.10	6.96	93.2	3.7	29.10	8.30	2.5
						1.046	29.30	6.83	93.6	3.8	29.30	8.20	
						6.327	28.60	6.42	88.3	4.0	30.80	7.90	4.1
						6.284	28.50	6.38	87.9	4.3	30.20	8.00	
						11.584	27.60	6.02	81.4	4.6	31.30	8.20	6.6
						11.616	27.70	5.98	83.2	4.8	31.80	8.10	
2011/9/16 8:58	C1	MF	833695	808186	13.6	1.025	29.10	6.87	84.3	4.0	31.60	8.10	3.6
						1.003	29.00	6.89	83.1	4.2	31.80	8.00	
						6.783	28.50	6.41	80.9	4.6	32.10	8.40	2.3
						6.811	28.10	6.33	79.4	4.6	32.40	8.30	
						12.608	27.20	6.02	77.7	5.1	33.60	8.30	2.6
						12.589	26.90	6.00	75.1	5.3	33.10	8.20	
2011/9/16 8:09	C2	MF	832197	808873	10.9	1.020	29.10	7.04	95.4	3.6	29.90	8.10	1.4
						0.994	29.30	6.92	96.2	3.8	30.30	8.10	
						5.481	28.40	6.83	90.8	4.1	31.10	8.40	3.7
						5.460	28.20	6.62	90.0	4.2	31.20	8.20	
						9.887	27.70	6.32	88.4	4.4	32.30	8.20	3.1
						9.916	27.50	6.42	88.3	4.5	32.40	8.30	
2011/9/16 9:16	C3	MF	832224	808874	13.8	1.017	29.10	6.74	88.4	4.3	29.10	8.30	2.9
						0.996	29.20	6.77	86.3	4.6	29.80	8.20	
						6.894	28.30	6.23	81.3	5.0	30.30	8.20	3.8
						6.917	28.40	6.16	82.4	5.0	30.40	8.10	
						12.756	27.80	5.83	79.4	5.2	32.40	8.50	4.8
						12.791	27.90	5.71	77.6	5.4	32.80	8.30	

MF- Mid Flood Tide  
ME- Mid Ebb tide

Contract No. DC/2009/13

**Construction of Sewage Treatment Works  
at Yung Shue Wan and Sok Kwu Wan**



**Sok Kwu Wan**

Date 20-Sep-11

Date / Time	Location	Tide*	Co-ordinates		Water Depth m	Sampling Depth m	Temp °C	DO Conc mg/L	DO Saturation %	Turbidity NTU	Salinity ppt	pH unit	SS mg/l
			East	North									
2011/9/20 16:28	W1	ME	832964	807751	2.3	1.204	28.90	5.73	88.2	4.01	30.69	8.13	6.1
						1.178	28.90	5.74	88.3	3.87	30.71	8.14	
2011/9/20 16:12	W2	ME	832597	807991	12.4	1.048	29.10	5.46	84.0	4.41	30.58	8.20	3.3
						1.013	29.10	5.45	83.8	4.51	30.58	8.15	
						6.25	28.80	5.57	85.7	4.79	30.60	8.18	4.8
						6.201	28.90	5.50	84.6	4.82	30.59	8.14	
						11.453	28.50	5.51	84.8	4.97	30.67	8.13	4.2
						11.492	28.50	5.33	82.0	4.91	30.68	8.13	
2011/9/20 15:59	W3	ME	832030	807898	12.1	1.068	29.00	5.84	88.5	4.02	28.60	8.09	5.1
						1.016	29.00	5.20	79.9	4.09	29.40	8.07	
						6.224	28.70	5.24	80.6	4.51	30.45	8.10	4.2
						6.247	28.70	5.22	80.3	4.54	30.44	8.10	
						11.501	28.50	5.43	83.6	4.51	30.49	8.08	3.5
11.417	28.50	5.35	82.4	4.55	30.50	8.10							
2011/9/20 16:50	C1	ME	833716	808182	13.8	1.059	28.90	5.58	85.8	4.07	30.59	8.13	5.9
						1.031	28.90	5.56	85.5	4.17	30.60	8.13	
						6.702	28.40	5.48	84.4	4.22	30.66	8.14	3.2
						6.648	28.40	5.32	81.9	4.27	30.68	8.14	
						12.295	28.20	5.39	83.0	4.48	30.76	8.14	2.3
						12.351	28.20	5.24	80.8	4.57	30.78	8.14	
2011/9/20 15:39	C2	ME	828016	808811	13.6	1.1	29.00	4.65	71.5	4.65	30.38	8.06	3.3
						1.03	29.00	4.65	71.5	4.73	30.36	8.07	
						5.43	28.50	4.82	74.1	4.28	30.49	8.12	4.0
						5.403	28.50	4.62	71.0	4.33	30.54	8.10	
						9.833	28.10	4.64	71.3	4.42	30.57	8.11	3.3
						9.8	28.10	4.45	68.4	4.42	30.60	8.11	
2011/9/20 17:19	C3	ME	832218	808874	10.9	1.093	28.90	5.42	83.3	4.21	30.48	8.15	3.8
						1.025	28.90	5.48	84.2	4.15	30.59	8.14	
						6.85	28.60	5.51	84.8	4.16	30.75	8.09	4.5
						6.817	28.60	5.34	82.2	4.29	30.79	8.13	
						12.637	28.20	5.31	81.7	4.68	30.79	8.14	4.0
						12.675	28.20	5.29	81.5	4.47	30.82	8.14	
2011/9/20 11:48	W1	MF	832971	807741	2.5	1.236	29.10	5.65	87.5	3.58	29.45	8.13	4.4
						1.209	29.10	5.81	89.7	3.94	30.43	8.10	
2011/9/20 11:38	W2	MF	832602	807987	12.8	1.070	29.00	5.80	89.2	3.89	30.50	8.19	6.3
						1.018	29.00	5.65	87.0	3.94	30.50	8.17	
						6.373	28.50	5.67	87.2	4.12	30.60	8.21	4.7
						6.325	28.50	5.57	85.6	4.37	30.51	8.16	
						11.631	28.20	5.49	84.5	4.65	30.73	8.20	3.7
						11.641	28.20	5.38	83.0	4.66	30.82	8.17	
2011/9/20 11:24	W3	MF	832036	807896	12.7	1.042	29.00	5.03	77.3	3.64	30.38	8.13	6.2
						1.008	29.00	4.99	76.8	3.51	30.38	8.11	
						6.307	28.70	4.84	74.4	3.71	30.59	8.12	3.3
						6.277	28.70	4.87	74.9	3.92	30.59	8.12	
						11.528	28.20	4.94	76.0	4.00	30.67	8.12	3.7
						11.508	28.20	4.91	75.4	4.34	30.68	8.12	
2011/9/20 11:57	C1	MF	831459	807761	13.5	1.025	29.00	5.59	85.5	4.19	29.61	8.13	2.2
						0.963	29.00	5.33	82.1	4.26	30.49	8.13	
						6.773	28.60	5.57	85.7	4.52	30.77	8.14	3.9
						6.731	28.60	5.47	84.2	4.47	30.76	8.16	
						12.462	28.00	5.24	80.9	4.61	31.10	8.19	4.2
						12.463	28.00	5.39	83.1	4.76	31.11	8.18	
2011/9/20 11:08	C2	MF	831459	807758	13.7	1.029	28.90	4.36	66.9	4.25	30.17	7.96	2.3
						0.991	29.00	4.10	63.0	4.40	30.27	7.96	
						5.498	28.80	4.63	71.2	4.51	30.56	8.05	3.4
						5.476	28.80	4.49	69.0	4.72	30.60	8.05	
						9.572	28.40	4.51	69.3	4.85	30.79	8.08	2.1
						9.562	28.40	4.51	69.4	4.30	30.79	8.08	
2011/9/20 12:18	C3	MF	832233	808865	10.7	1.002	28.80	5.97	91.2	3.89	29.67	8.23	5.6
						1.003	29.00	5.44	83.8	3.81	30.53	8.17	
						6.842	28.70	5.55	85.4	4.35	30.63	8.15	3.1
						6.828	28.70	5.38	82.8	4.38	30.64	8.14	
						12.619	28.50	5.33	82.1	4.40	31.10	8.17	2.6
						12.614	28.50	5.19	79.9	4.30	31.05	8.16	

MF- Mid Flood Tide

ME- Mid Ebb tide

Contract No. DC/2009/13

**Construction of Sewage Treatment Works  
at Yung Shue Wan and Sok Kwu Wan**



**Sok Kwu Wan**

Date 22-Sep-11

Date / Time	Location	Tide*	Co-ordinates		Water Depth m	Sampling Depth m	Temp °C	DO Conc mg/L	DO Saturation %	Turbidity NTU	Salinity ppt	pH unit	SS mg/l
			East	North									
2011/9/22 8:26	W1	ME	832978	807748	2.8	1.089	28.40	5.63	86.0	3.17	30.93	8.14	7.5
						1.155	28.40	5.43	83.0	3.03	30.50	8.14	
2011/9/22 8:17	W2	ME	832601	807988	12.4	1.055	28.80	5.93	90.9	3.71	30.93	8.21	5.3
						1.048	28.80	5.88	90.3	4.02	31.15	8.20	
						6.524	28.70	5.86	90.1	3.80	31.50	8.25	5.5
						6.473	28.70	5.71	87.7	3.79	31.50	8.19	
						12.002	28.60	5.79	88.9	3.65	31.67	8.17	5.9
						11.981	28.60	5.73	88.0	3.91	31.72	8.18	
2011/9/22 8:05	W3	ME	832035	807896	12.1	1.129	28.60	5.59	85.5	3.62	30.95	8.27	5.8
						1.069	28.60	5.04	77.1	3.71	31.07	8.21	
						6.393	28.50	5.08	77.9	4.08	31.50	8.04	6.8
						6.364	28.50	4.95	75.9	4.18	31.50	8.12	
						11.778	28.20	4.98	76.2	3.72	31.66	8.20	6.1
11.675	28.20	4.36	66.7	3.91	31.75	8.13							
2011/9/22 8:36	C1	ME	833683	808179	13.1	1.121	28.70	5.68	87.1	3.34	30.18	8.19	3.0
						1.032	28.70	5.73	88.0	3.36	30.17	8.18	
						6.745	28.50	5.85	89.9	3.17	31.21	8.15	2.9
						6.712	28.50	5.69	87.5	3.12	31.21	8.17	
						12.456	28.10	5.69	87.4	3.04	31.50	8.16	5.4
12.437	28.10	5.61	86.2	3.33	31.56	8.16							
2011/9/22 7:48	C2	ME	831459	807759	10.4	1.082	28.50	5.45	83.4	3.77	30.02	8.17	2.9
						1.024	28.50	5.38	82.4	3.96	30.20	8.14	
						5.38	28.20	5.33	81.7	3.99	31.03	8.10	2.7
						5.329	28.20	5.15	78.9	3.95	31.03	8.10	
						9.774	28.10	5.28	80.9	4.03	31.23	8.19	4.5
						9.684	28.00	5.18	79.4	4.07	31.43	8.11	
2011/9/22 8:55	C3	ME	832209	808877	13.2	1.061	28.60	6.32	97.0	3.19	30.10	8.34	3.3
						1.009	28.70	5.99	92.0	3.39	30.10	8.28	
						6.912	28.40	5.86	90.0	3.15	30.80	8.26	3.1
						6.857	28.40	5.80	89.0	3.05	30.80	8.23	
						12.713	27.80	5.77	88.6	3.65	31.17	8.20	2.5
						12.666	27.80	5.62	86.4	3.52	31.17	8.21	
2011/9/22 17:43	W1	MF	832949	807748	2.5	1.232	28.60	5.73	87.8	3.48	31.10	8.12	5.3
						1.201	28.50	5.70	87.0	3.85	31.10	8.12	
2011/9/22 17:31	W2	MF	832600	807998	12.8	1.089	28.50	4.86	74.5	3.74	30.15	8.12	3.5
						1.044	28.50	4.74	72.7	3.75	30.20	8.12	
						6.315	28.20	4.88	74.8	3.67	30.80	8.15	5.6
						6.322	28.20	4.80	73.6	3.79	30.80	8.13	
						11.693	27.80	4.91	75.3	3.83	31.20	7.99	4.1
11.634	27.80	4.88	74.9	4.08	31.10	8.08							
2011/9/22 17:17	W3	MF	832035	807898	12.7	1.062	28.60	4.92	75.5	3.88	30.99	8.14	5.9
						3.954	28.60	4.84	74.2	3.77	30.80	8.14	
						6.274	28.10	4.83	74.1	3.80	30.90	8.14	5.6
						6.210	28.10	4.68	71.8	3.77	31.10	8.12	
						11.433	27.50	4.83	74.1	3.87	31.50	8.10	5.6
11.305	27.50	4.79	73.4	3.96	31.45	8.12							
2011/9/22 17:59	C1	MF	833702	808179	13.5	1.114	28.50	4.99	76.5	3.99	30.95	8.14	3.7
						1.000	28.60	4.82	73.9	3.82	31.09	8.13	
						6.738	28.20	4.97	76.2	3.93	31.12	8.04	4.7
						6.618	28.20	4.93	75.5	3.83	31.11	8.18	
						12.385	27.60	4.99	76.5	3.78	31.46	8.12	9.9
12.313	27.60	4.84	74.3	3.73	31.55	8.12							
2011/9/22 17:03	C2	MF	831468	807757	10.5	1.073	28.60	5.00	76.7	4.05	30.05	8.14	5.2
						0.980	28.60	4.85	74.5	4.08	30.09	8.13	
						5.484	28.10	4.94	75.8	4.05	30.57	8.17	5.0
						5.432	28.10	4.85	74.4	4.20	30.58	8.15	
						9.794	27.90	4.89	75.0	4.26	31.11	8.12	5.3
9.660	27.90	4.83	74.1	4.20	31.11	8.13							
2011/9/22 18:19	C3	MF	832240	808871	13.4	1.077	28.50	4.91	75.0	3.52	30.63	8.13	4.3
						1.015	28.50	4.80	73.6	3.62	30.50	8.13	
						6.934	28.10	4.89	75.0	3.42	31.10	8.13	5.4
						6.825	28.10	4.88	74.9	3.67	31.12	8.13	
						12.653	27.50	4.80	73.6	3.62	31.40	8.14	4.6
						12.691	27.50	4.66	71.4	3.47	31.43	8.13	

MF- Mid Flood Tide  
ME- Mid Ebb tide



Contract No. DC/2009/13

Construction of Sewage Treatment Works  
at Yung Shue Wan and Sok Kwu Wan



Sok Kwu Wan

Date 24-Sep-11

Date / Time	Location	Tide*	Co-ordinates		Water Depth m	Sampling Depth m	Temp °C	DO Conc mg/L	DO Saturation %	Turbidity NTU	Salinity ppt	pH unit	SS mg/l
			East	North									
2011/9/24 9:55	W1	ME	832978	807742	2.8	1.286	28.30	5.66	86.4	4.1	31.14	8.19	6.1
						1.248	28.30	5.68	86.8	4.2	31.24	8.20	
2011/9/24 9:41	W2	ME	832606	807984	12.4	1.124	28.30	5.80	88.6	3.9	30.24	8.19	5.7
						1.012	28.30	5.82	89.0	3.9	30.24	8.19	
						6.594	28.30	5.83	89.0	3.9	31.12	8.31	3.8
						6.48	28.10	5.50	83.7	3.9	31.14	8.19	
						12.074	27.80	4.89	74.0	4.4	31.20	8.13	6.5
						11.994	27.70	4.67	70.7	4.4	31.25	8.11	
2011/9/24 9:27	W3	ME	832035	807889	12.1	1.145	28.30	5.89	90.1	3.2	30.23	8.24	3.5
						1.007	28.30	5.79	88.5	3.2	30.23	8.22	
						6.508	27.90	5.02	76.0	3.8	31.11	8.16	3.4
						6.422	27.90	4.86	73.7	3.8	31.12	8.15	
						11.898	27.70	4.77	72.1	3.9	31.46	8.06	3.8
11.735	27.70	4.49	67.9	3.9	31.55	8.06							
2011/9/24 10:23	C1	ME	833683	808170	13.1	1.113	28.30	5.79	88.5	3.9	30.24	8.20	4.9
						0.993	28.20	5.64	87.6	3.9	30.20	8.19	
						6.905	28.00	5.15	78.2	4.3	31.15	8.15	5.4
						6.845	27.90	5.05	76.7	4.4	31.14	8.13	
						12.734	27.70	4.39	66.4	4.7	31.19	8.08	5.7
						12.688	27.70	4.21	63.6	4.7	31.28	8.07	
2011/9/24 9:14	C2	ME	831459	807759	10.4	1.123	28.40	5.73	87.6	4.3	30.21	8.30	3.8
						1.019	28.40	5.64	86.3	4.3	30.21	8.27	
						5.44	28.10	5.52	83.9	4.8	31.13	8.25	3.6
						5.348	28.00	5.20	79.0	4.8	31.15	8.22	
						9.734	27.80	5.13	77.6	4.8	31.46	8.10	3.5
						9.605	27.70	4.71	71.2	4.8	31.55	8.16	
2011/9/24 10:33	C3	ME	832211	808879	13.2	1.139	28.30	5.61	85.7	4.3	30.23	8.19	4.9
						1.02	28.30	5.60	85.6	4.3	30.23	8.19	
						6.929	27.80	5.01	75.8	4.5	31.08	8.14	5.0
						6.838	27.80	4.55	68.8	4.5	31.10	8.09	
						12.94	27.70	4.45	67.3	4.6	31.48	8.02	5.7
						12.824	27.70	4.25	64.2	4.7	31.88	8.04	
2011/9/24 16:49	W1	MF	832949	807748	2.5	1.27	28.20	5.47	83.3	3.8	30.50	8.09	4.7
						1.221	28.20	5.46	83.2	3.9	30.56	8.12	
2011/9/24 16:37	W2	MF	832611	807989	12.8	1.144	28.20	5.45	83.1	3.6	30.22	8.15	3.2
						1.057	28.20	5.35	81.6	3.6	30.22	8.15	
						6.476	27.80	4.94	74.8	3.8	31.09	8.05	3.2
						6.394	27.80	4.67	70.6	3.7	31.10	8.08	
						11.889	27.70	4.44	67.1	4.2	31.50	8.06	2.9
						11.833	27.70	4.28	64.7	4.2	31.47	8.05	
2011/9/24 16:22	W3	MF	832035	807887	12.7	1.105	28.30	5.54	84.6	3.3	30.23	8.18	2.4
						0.998	28.30	5.49	83.9	3.4	30.23	8.18	
						6.467	27.80	4.81	72.8	3.8	31.10	8.04	2.6
						6.362	27.80	4.47	67.5	3.8	31.11	8.04	
						11.706	27.70	4.16	62.8	4.0	31.80	8.04	3.7
11.680	27.70	3.75	56.7	4.1	31.43	8.02							
2011/9/24 17:20	C1	MF	833713	808189	13.5	1.114	28.10	5.31	80.9	3.9	30.20	8.15	5.6
						1.006	28.10	5.26	80.7	3.9	30.18	8.14	
						6.777	27.80	4.78	72.3	4.4	31.20	8.11	2.8
						6.662	27.80	4.59	69.5	4.5	31.11	8.09	
						12.406	27.70	4.43	67.0	4.6	31.40	8.15	3.7
						12.320	27.70	4.11	62.0	4.6	31.50	8.07	
2011/9/24 16:21	C2	MF	831468	807757	10.5	1.087	28.30	5.55	84.7	4.0	30.23	8.17	4.1
						0.983	28.30	5.58	85.2	3.9	30.23	8.17	
						5.430	27.90	5.03	76.2	4.2	31.07	8.25	3.6
						5.337	27.80	4.69	70.9	4.2	31.10	8.09	
						9.842	27.70	4.42	66.8	4.3	31.40	8.13	3.1
						9.677	27.70	4.31	65.1	4.2	31.75	8.07	
2011/9/24 17:28	C3	MF	832244	808876	13.4	1.094	28.10	5.37	81.7	3.7	30.20	8.17	3.1
						1.003	28.10	5.37	81.7	3.6	30.20	8.14	
						6.813	28.10	5.29	80.5	4.1	31.20	8.13	2.3
						6.779	28.00	5.12	77.9	4.1	31.15	8.10	
						12.571	27.80	4.73	71.6	4.6	31.50	8.16	1.8
						12.720	27.70	4.33	65.5	4.5	31.65	8.07	

MF- Mid Flood Tide  
ME- Mid Ebb tide

Contract No. DC/2009/13

**Construction of Sewage Treatment Works  
at Yung Shue Wan and Sok Kwu Wan**



**Sok Kwu Wan**

Date 26-Sep-11

Date / Time	Location	Tide*	Co-ordinates		Water Depth m	Sampling Depth m	Temp °C	DO Conc mg/L	DO Saturation %	Turbidity NTU	Salinity ppt	pH unit	SS mg/l
			East	North									
2011/9/26 11:47	W1	ME	832974	807718	2.6	1.355	27.20	6.04	85.2	3.82	29.50	7.80	6.7
						1.295	27.00	6.01	84.8	3.16	29.00	7.90	
2011/9/26 11:39	W2	ME	832600	807969	12.9	0.998	27.20	9.69	88.9	2.92	30.10	8.00	7.4
						1.055	27.40	6.83	88.2	3.33	30.90	7.90	
						6.556	26.10	6.21	80.8	3.81	32.80	8.20	6.3
						6.541	26.90	6.11	80.1	3.91	32.40	8.00	
						11.85	25.80	5.90	72.3	4.42	33.10	8.30	8.6
						11.904	25.30	5.78	71.8	4.08	32.90	8.20	
2011/9/26 11:21	W3	ME	832032	807896	12.3	1.113	27.10	6.72	90.1	3.62	28.40	7.90	7.2
						1.155	27.40	6.66	90.0	3.27	28.50	7.90	
						6.05	26.30	6.03	83.1	2.96	30.80	8.00	7.2
						6.155	26.40	5.92	81.9	3.62	30.60	7.90	
						11.351	25.20	5.47	78.3	4.01	31.20	8.00	10.8
11.297	25.30	5.33	78.1	3.91	31.80	8.00							
2011/9/26 12:03	C1	ME	833708	808163	13.1	1.225	27.90	6.43	85.3	2.99	30.20	8.10	8.6
						1.125	27.40	6.13	84.1	3.36	30.80	8.10	
						7.566	26.20	5.88	80.9	3.43	29.20	8.00	7.6
						7.516	26.10	5.62	79.2	3.52	29.30	8.00	
						12.098	25.80	5.41	70.3	3.92	31.80	7.90	8.0
						12.115	25.30	5.28	69.7	4.01	31.20	8.00	
2011/9/26 11:09	C2	ME	832219	807969	10.9	1.055	28.30	6.83	92.3	3.43	29.30	7.90	7.2
						1.106	28.10	6.75	91.8	3.36	28.90	7.90	
						5.455	27.20	6.14	88.1	3.83	30.40	8.00	7.5
						5.354	27.50	6.01	86.2	4.04	31.20	8.00	
						9.874	25.90	5.98	83.8	4.32	32.30	8.00	11.9
						9.884	25.80	5.83	81.9	4.83	30.30	8.00	
2011/9/26 12:26	C3	ME	832222	808876	13.3	1.043	27.80	6.19	86.1	3.32	29.40	7.90	15.4
						1.055	27.60	6.02	87.2	3.36	29.50	7.80	
						6.65	26.40	5.32	80.9	3.92	32.40	7.90	11.9
						6.615	26.20	5.16	78.3	3.93	32.50	8.00	
						12.355	25.10	5.08	74.1	4.32	33.80	7.80	9.0
						12.347	25.40	5.01	74.0	4.06	33.40	7.90	
2011/9/26 17:35	W1	MF	832957	807724	2.4	1.225	27.20	6.03	83.8	3.82	31.80	7.80	5.4
						1.264	27.90	5.95	80.9	4.31	32.40	7.80	
2011/9/26 17:28	W2	MF	832623	807962	12.6	1.033	26.80	6.88	88.9	3.12	32.30	7.90	7.6
						1.046	26.10	6.73	86.2	3.19	32.60	7.90	
						6.314	25.30	5.96	80.1	2.78	30.40	8.00	5.0
						6.282	25.80	5.83	79.1	2.79	30.30	7.90	
						11.611	25.20	5.42	74.3	4.03	31.90	8.00	6.3
						11.581	25.10	5.40	72.4	4.18	31.80	7.90	
2011/9/26 17:19	W3	MF	832031	807879	12.4	0.954	27.20	6.83	89.3	3.81	29.10	7.90	4.4
						0.941	27.10	6.72	88.1	3.76	29.30	8.00	
						6.216	26.30	6.36	82.4	2.74	30.40	8.00	6.0
						6.277	26.20	6.19	81.9	3.16	30.30	7.90	
						11.401	25.10	5.94	78.3	3.83	30.30	8.00	6.7
						11.394	25.80	5.90	77.6	3.62	31.40	7.90	
2011/9/26 17:42	C1	MF	833696	808183	13.2	0.994	26.70	6.83	87.6	2.79	30.30	7.80	7.8
						0.941	26.60	6.76	86.1	2.83	30.20	7.80	
						6.615	25.80	5.99	80.9	3.62	31.40	7.80	8.9
						6.641	25.70	5.83	79.4	3.61	31.80	7.80	
						6.610	25.10	5.38	73.2	4.38	32.80	7.80	6.4
						6.594	25.20	5.26	71.9	4.56	32.30	7.90	
2011/9/26 17:02	C2	MF	832210	808876	10.7	1.014	27.90	6.92	90.3	3.28	30.30	7.90	5.0
						1.054	27.20	6.83	89.2	2.91	29.40	8.00	
						5.347	26.80	6.16	83.6	3.34	31.40	7.90	5.6
						5.486	26.40	6.23	81.9	3.38	31.30	7.90	
						9.715	25.20	5.92	79.3	4.02	32.30	8.00	3.9
						9.618	25.80	5.82	77.9	3.91	32.40	7.90	
2011/9/26 17:58	C3	MF	832219	808880	13.6	1.142	27.90	6.77	86.1	2.94	30.80	7.90	5.4
						1.073	27.80	6.62	85.0	3.38	30.60	7.90	
						6.811	26.80	6.14	79.4	3.61	31.90	7.80	4.4
						6.754	26.30	6.03	79.1	3.41	31.20	7.90	
						12.546	25.20	5.96	72.4	4.28	32.40	8.20	7.1
						12.641	25.30	5.81	70.8	4.19	32.30	8.10	

MF- Mid Flood Tide  
ME- Mid Ebb tide

Contract No. DC/2009/13

**Construction of Sewage Treatment Works  
at Yung Shue Wan and Sok Kwu Wan**



**Sok Kwu Wan**

Date 28-Sep-11

Date / Time	Location	Tide*	Co-ordinates		Water Depth m	Sampling Depth m	Temp °C	DO Conc mg/L	DO Saturation %	Turbidity NTU	Salinity ppt	pH unit	SS mg/l
			East	North									
2011/9/28 12:26	W1	ME	832959	807728	2.3	1.014	26.80	6.56	88.1	3.9	30.90	8.30	7.0
						1.078	26.80	6.38	83.8	3.8	30.85	8.30	
2011/9/28 12:09	W2	ME	832603	807991	12.5	1.028	27.90	6.96	90.9	3.2	28.80	8.40	13.7
						1.046	27.40	6.87	85.2	3.2	28.95	8.40	
						6.21	26.90	6.43	83.9	3.6	30.80	8.20	5.8
						6.25	26.70	6.21	80.1	3.4	30.57	8.20	
						11.514	25.90	5.84	77.6	4.1	31.50	8.40	6.0
						11.456	26.20	5.76	75.4	4.1	31.24	8.40	
2011/9/28 11:56	W3	ME	832032	807899	12.3	1.055	27.80	6.76	93.4	3.5	28.40	8.30	8.4
						1.045	27.60	6.50	91.0	3.8	28.90	8.30	
						6.254	26.90	6.17	85.9	3.1	30.50	8.20	4.7
						6.247	26.80	6.03	83.5	3.9	30.30	8.20	
						11.354	26.10	5.84	80.5	4.2	30.90	8.20	6.0
11.245	26.30	5.76	78.4	3.6	31.50	8.20							
2011/9/28 12:42	C1	ME	833691	808162	13.8	1.0458	28.20	6.73	85.9	3.2	30.70	8.30	4.4
						1.044	28.00	6.51	83.8	3.4	30.60	8.30	
						6.944	27.40	6.18	80.7	4.4	32.60	8.00	4.7
						6.914	27.50	6.17	77.6	4.3	33.30	8.00	
						12.814	26.10	5.70	74.2	3.9	32.80	8.10	5.5
						12.825	26.80	5.61	72.3	3.9	33.10	8.10	
2011/9/28 11:41	C2	ME	832241	808873	10.6	1.145	28.10	6.87	95.4	3.0	29.40	8.20	3.3
						0.994	27.60	6.72	92.8	3.4	30.10	8.20	
						5.345	27.20	6.74	89.1	3.4	31.30	8.30	11.8
						5.248	27.30	6.56	87.4	3.0	33.00	8.30	
						9.644	26.30	6.04	82.1	3.2	32.80	8.30	4.7
						9.471	26.80	6.02	80.9	2.8	32.10	8.30	
2011/9/28 12:59	C3	ME	832209	808849	13.6	1.058	27.80	6.83	85.6	3.4	29.90	8.10	5.2
						1.89	27.50	6.44	85.1	3.5	31.60	8.10	
						6.85	26.80	6.34	78.3	3.9	31.50	8.30	5.3
						6.715	26.40	6.19	76.3	3.9	32.40	8.30	
						12.65	26.10	5.90	71.9	4.1	33.40	8.20	3.7
						12.751	25.80	5.73	69.1	4.4	33.80	8.20	
2011/9/28 17:39	W1	MF	832949	807715	2.2	1.155	27.80	6.76	83.6	4.0	31.70	8.20	8.9
						1.143	27.60	6.53	81.9	3.8	30.90	8.20	
2011/9/28 17:48	W2	MF	832584	807968	12.4	1.070	27.80	6.84	89.4	3.3	30.10	8.20	5.4
						1.048	27.70	6.76	87.0	3.4	30.70	8.20	
						6.240	27.10	6.55	85.6	3.1	31.40	8.00	7.8
						6.179	26.80	6.45	83.9	3.8	31.20	8.00	
						11.452	26.20	6.08	80.8	4.1	32.80	8.10	5.8
						11.417	26.30	6.00	77.1	4.4	32.70	8.10	
2011/9/28 17:19	W3	MF	832036	807890	12.8	1.042	27.90	6.83	92.1	3.2	28.30	8.30	6.6
						1.048	27.40	6.76	90.4	3.4	29.20	8.30	
						6.425	27.10	6.23	86.3	4.0	31.30	8.40	12.7
						6.247	26.80	6.14	85.2	3.8	30.80	8.40	
						11.828	26.70	6.18	80.1	3.9	32.10	8.00	7.6
11.845	26.50	6.03	77.2	3.6	32.30	8.00							
2011/9/28 17:48	C1	MF	833694	808157	13.5	0.937	28.30	6.92	87.4	3.1	30.80	8.10	6.5
						0.914	28.00	6.87	85.2	3.2	30.10	8.10	
						6.751	27.70	6.62	80.9	3.8	31.70	8.20	6.9
						6.617	27.60	6.49	78.4	3.6	31.80	8.20	
						12.529	27.10	6.13	76.3	3.9	32.30	8.20	5.9
						12.491	26.60	6.01	74.2	3.0	33.10	8.20	
2011/9/28 17:08	C2	MF	832206	808874	10.5	1.047	27.80	6.92	93.7	4.0	30.90	8.30	4.9
						1.017	27.60	6.83	91.8	3.6	32.80	8.30	
						5.304	26.90	6.43	89.8	4.1	31.20	8.20	9.8
						5.247	26.20	6.26	88.6	4.4	34.10	8.20	
						9.517	25.80	6.09	83.4	4.2	29.20	8.40	8.6
9.491	25.90	5.97	82.9	4.6	29.80	8.40							
2011/9/28 18:03	C3	MF	832219	808876	13.4	1.040	28.10	6.83	86.8	4.4	30.70	8.30	5.6
						1.014	28.00	6.76	84.1	4.6	30.40	8.30	
						6.717	27.20	6.54	81.2	3.9	31.80	8.00	6.8
						6.791	27.10	6.44	80.8	4.0	29.90	8.00	
						12.414	26.30	6.18	78.3	4.4	30.30	8.20	6.1
						12.517	26.40	6.03	77.6	4.8	32.40	8.20	

MF- Mid Flood Tide  
ME- Mid Ebb tide

**Contract No. DC/2009/13**  
**Construction of Sewage Treatment Works**  
**at Yung Shue Wan and Sok Kwu Wan**



**Sok Kwu Wan**

Date 30-Sep-11

Date / Time	Location	Tide*	Co-ordinates		Water Depth m	Sampling Depth m	Temp °C	DO Conc mg/L	DO Saturation %	Turbidity NTU	Salinity ppt	pH unit	SS mg/l
			East	North									
2011/9/28 14:10	W1	ME	832952	807750	2.6	1.214	28.10	5.94	71.3	2.8	30.60	7.70	3.5
						1.148	27.70	6.01	71.7	2.9	30.80	7.70	
2011/9/30 13:55	W2	ME	832615	807994	12.8	1.045	28.40	6.09	73.0	2.9	30.80	7.70	4.1
						1.048	28.20	6.08	72.7	2.9	30.60	7.80	
						6.471	28.10	5.83	69.4	2.8	30.80	7.60	5.9
						3.317	28.30	5.85	69.6	2.7	30.80	7.70	
						11.714	27.70	5.73	70.3	2.8	31.10	7.70	
						11.721	27.40	5.76	70.4	2.8	31.20	7.70	
2011/9/30 13:42	W3	ME	832026	809872	12.7	0.928	28.20	5.73	69.2	2.9	30.60	7.70	5.1
						0.811	28.20	5.71	69.2	2.7	30.30	7.70	
						6.472	28.10	5.64	68.0	2.6	31.10	7.60	4.7
						6.317	28.10	5.69	68.2	2.7	31.10	7.80	
						11.714	27.80	5.31	67.3	2.8	31.50	7.60	
						11.681	27.80	5.35	67.4	2.8	31.60	7.50	
2011/9/30 14:25	C1	ME	833728	808181	13.6	1.014	28.10	6.21	74.2	2.9	30.60	7.60	6.2
						1.105	28.10	6.18	73.7	2.8	30.80	7.60	
						6.257	27.50	5.93	72.6	4.1	31.20	7.50	5.3
						6.314	27.50	6.04	73.3	4.3	31.20	7.60	
						12.688	26.90	5.88	70.2	4.9	32.30	7.70	
						12.571	26.80	5.89	70.5	4.7	32.20	7.60	
2011/9/30 13:30	C2	ME	831464	807738	10.6	1.014	28.70	6.03	72.2	3.5	30.40	7.80	4.2
						1.055	28.50	6.07	72.5	3.6	30.80	7.90	
						5.294	28.60	5.87	69.4	4.0	31.20	7.60	4.9
						5.217	28.60	5.92	70.3	4.1	31.00	7.60	
						9.617	28.20	5.63	68.2	4.1	31.40	7.60	
						9.625	28.30	5.67	68.3	4.2	31.50	7.60	
2011/9/30 14:48	C3	ME	832233	808854	13.8	1.028	27.30	6.11	72.3	4.8	28.80	7.50	5.9
						0.982	27.50	6.13	72.7	4.6	29.60	7.60	
						6.814	27.30	6.05	71.8	5.1	30.10	7.60	10.0
						6.671	27.30	6.10	72.3	5.1	30.20	7.60	
						12.825	27.10	5.93	71.1	5.5	30.40	7.70	
						12.713	27.20	5.83	70.4	5.6	30.50	7.60	
2011/9/30 8:56	W1	MF	832955	807716	2.4	1.282	28.60	6.12	73.1	3.2	30.10	7.90	5.1
						1.211	28.50	6.15	73.7	3.1	30.40	7.90	
2011/9/30 9:08	W2	MF	832611	807973	12.8	1.254	28.10	6.05	72.1	3.1	30.80	7.80	7.8
						1.201	28.30	6.11	73.1	3.0	30.50	7.80	
						6.314	27.50	6.10	72.9	2.8	30.90	7.70	5.1
						6.281	27.40	5.83	70.5	2.9	31.20	7.80	
						11.801	27.10	5.92	70.9	3.2	31.50	7.70	
						11.846	27.30	5.90	71.1	3.2	31.80	7.70	
2011/9/30 9:20	W3	MF	832026	807874	12.9	1.025	28.30	6.11	72.2	2.5	31.30	7.70	7.2
						0.917	28.30	6.04	71.9	2.4	31.10	7.60	
						6.482	28.30	6.10	71.7	2.6	31.50	7.70	9.6
						6.361	28.10	6.05	72.2	2.6	31.60	7.70	
						11.928	27.80	5.79	70.9	2.7	31.90	7.80	
						11.824	27.80	5.74	70.3	2.6	31.80	7.70	
2011/9/30 8:44	C1	MF	833685	808156	13.4	1.071	28.50	6.38	76.5	6.2	30.80	8.00	5.9
						1.091	28.50	6.49	77.1	6.1	30.70	8.10	
						6.825	28.30	6.51	78.1	5.8	31.80	8.10	8.6
						6.175	28.30	6.53	78.4	5.8	30.90	8.10	
						12.369	27.80	6.43	76.8	6.3	32.30	8.00	
						12.419	28.00	6.50	78.2	6.5	32.60	7.90	
2011/9/30 9:39	C2	MF	831473	807762	10.8	0.994	28.60	5.88	71.3	3.1	30.50	7.60	4.0
						0.971	28.50	5.94	71.9	3.4	30.80	7.60	
						5.581	28.10	6.02	72.4	3.5	31.20	7.80	5.2
						5.417	28.10	5.98	72.1	3.4	31.30	7.60	
						9.828	27.50	5.71	70.3	4.1	31.80	7.70	
						9.791	27.50	5.64	70.2	4.1	31.90	7.60	
2011/9/30 8:30	C3	MF	832213	808877	13.6	1.059	28.20	6.83	81.3	5.2	30.80	7.90	8.0
						0.981	28.60	6.69	80.2	5.1	30.90	7.80	
						6.928	28.20	6.55	78.2	7.2	31.50	7.80	6.1
						6.856	28.20	6.70	79.3	7.1	31.50	7.80	
						12.685	27.50	6.66	80.2	7.0	32.10	7.60	
						12.622	27.50	6.51	79.1	7.1	32.50	7.80	

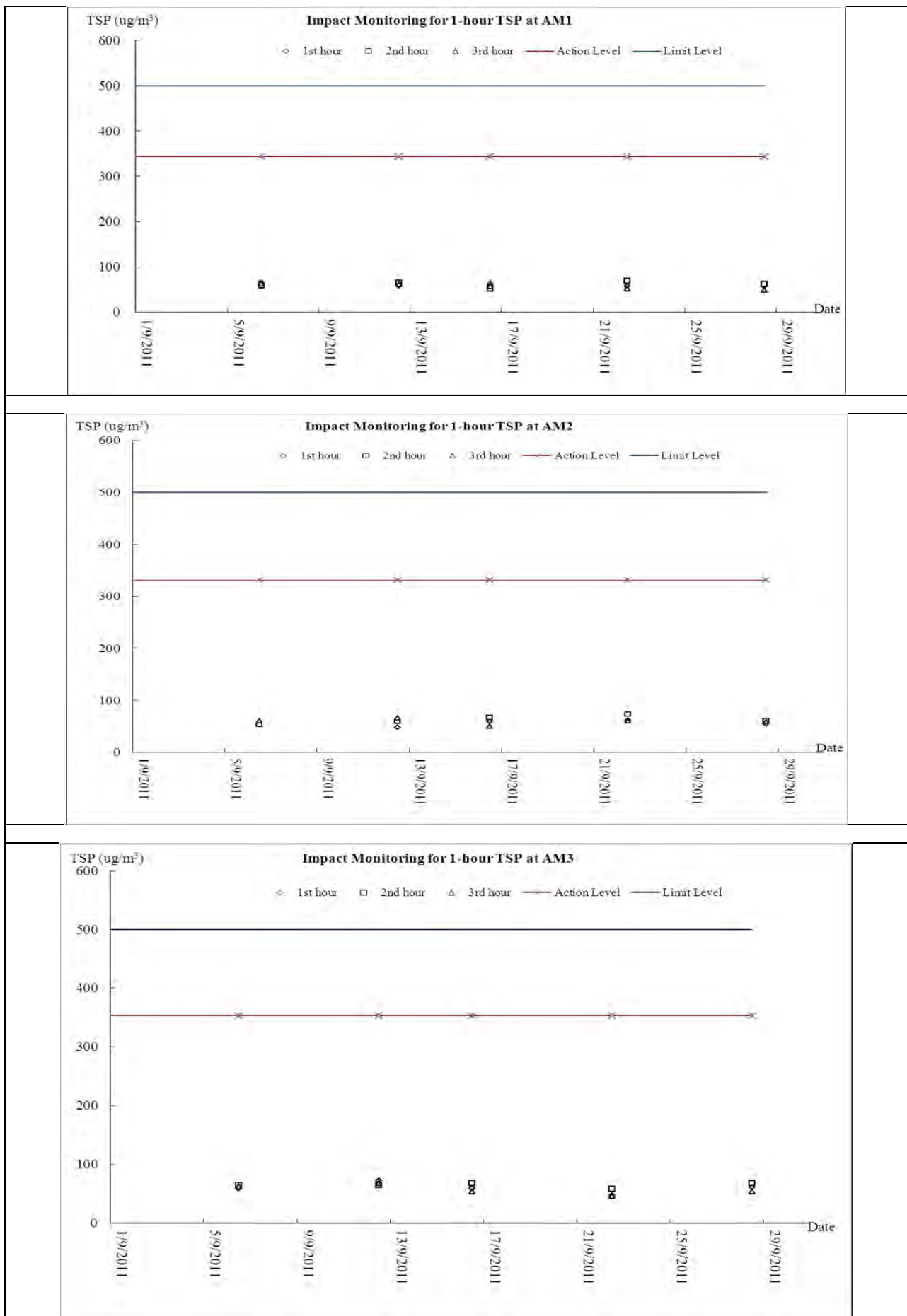
MF- Mid Flood Tide  
ME- Mid Ebb tide

## **Appendix H**

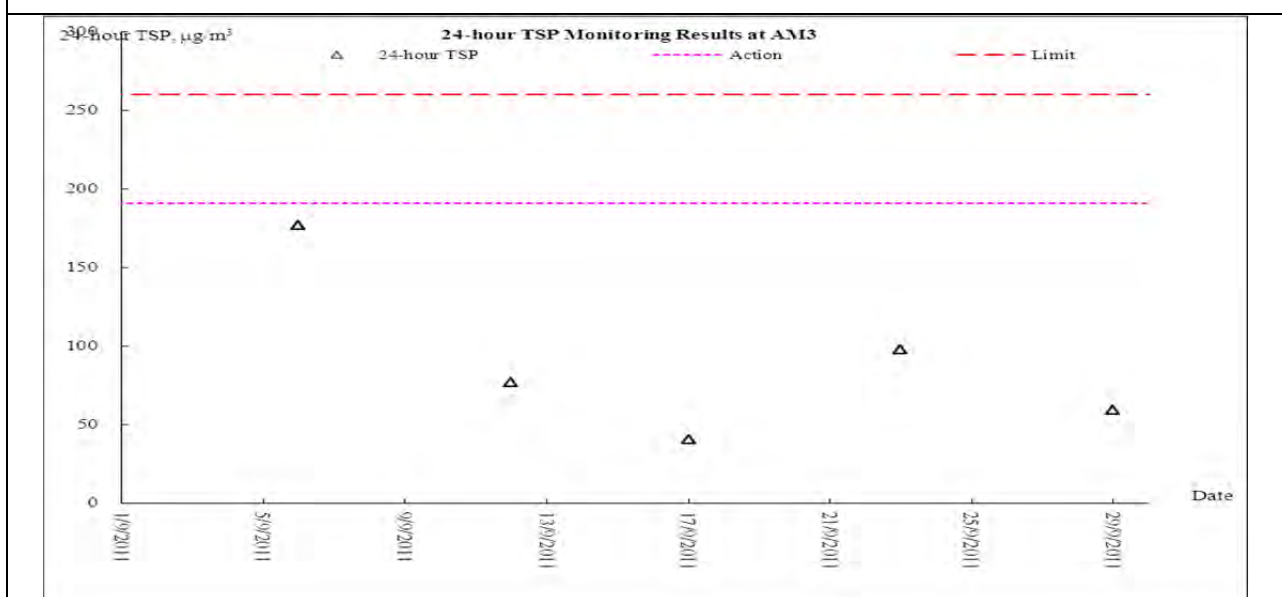
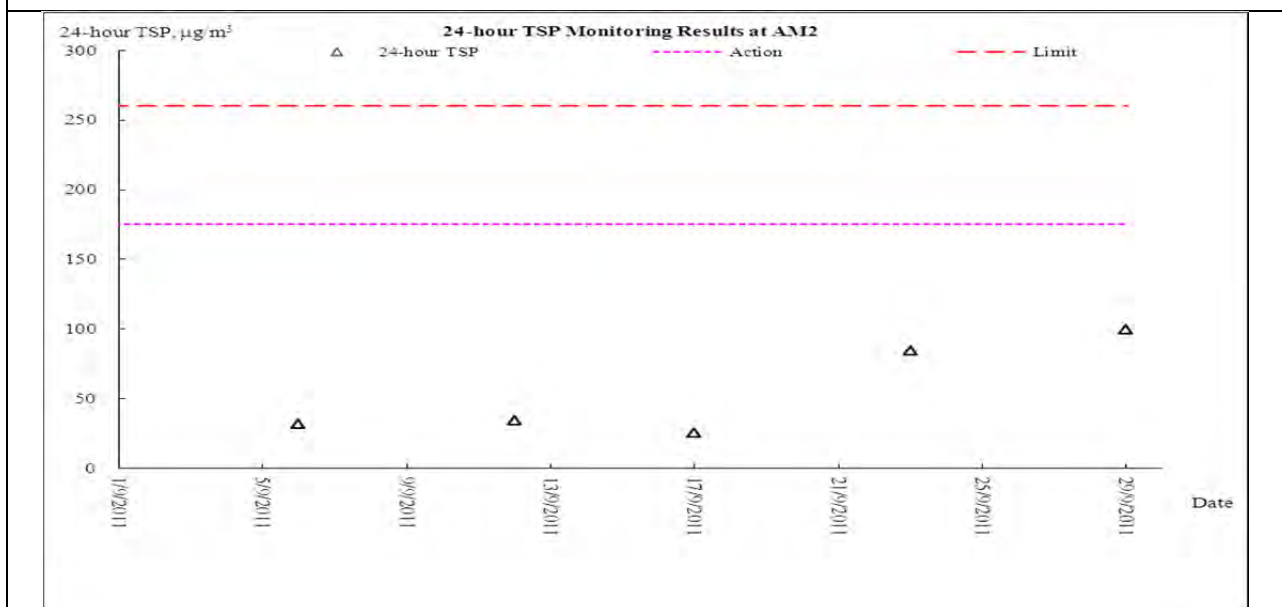
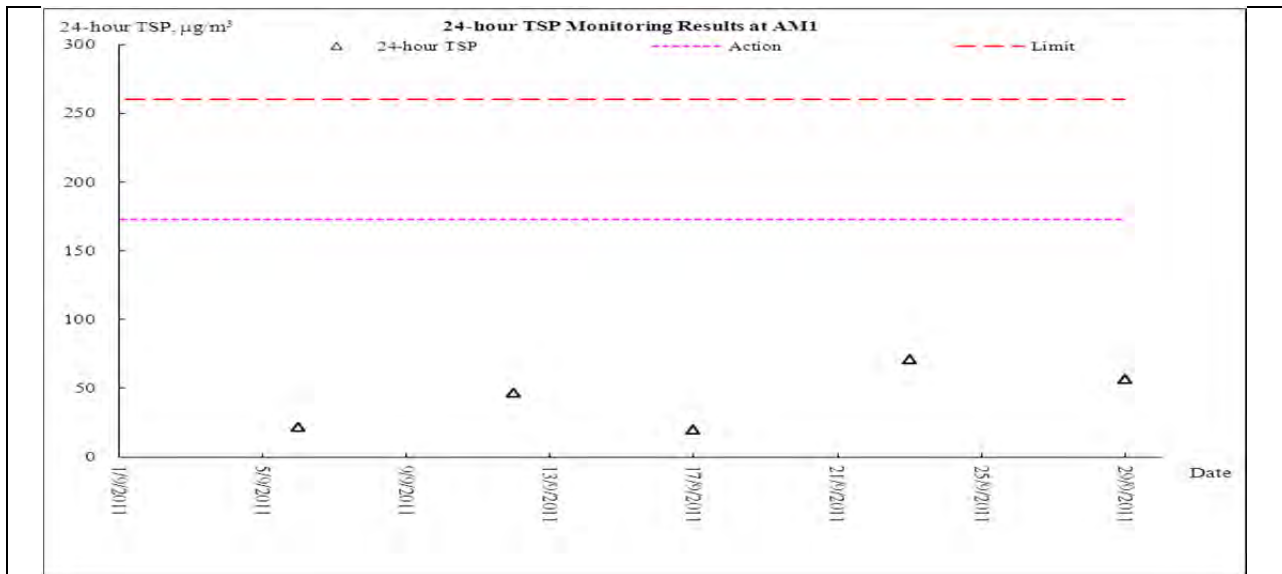
### **Graphical Plots of Monitoring Results**



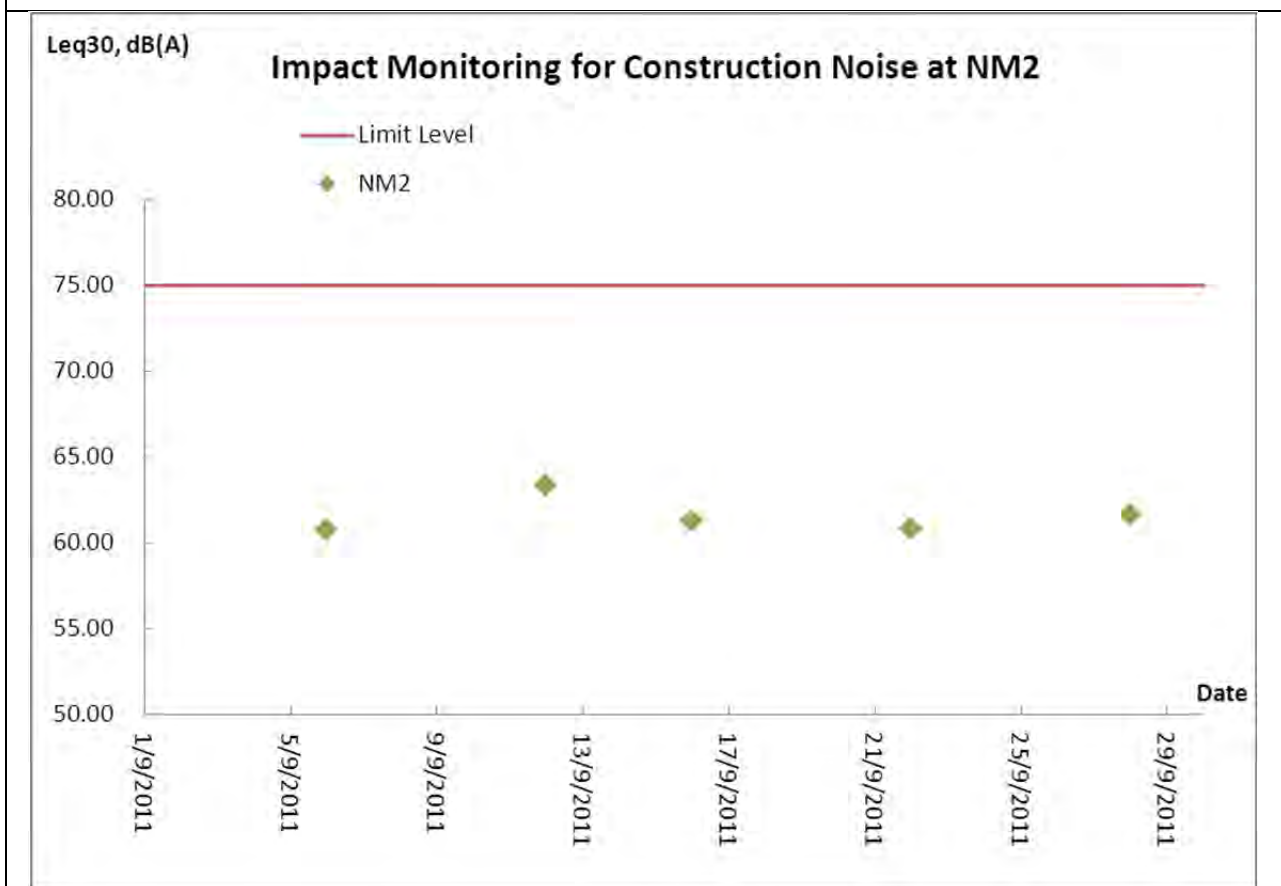
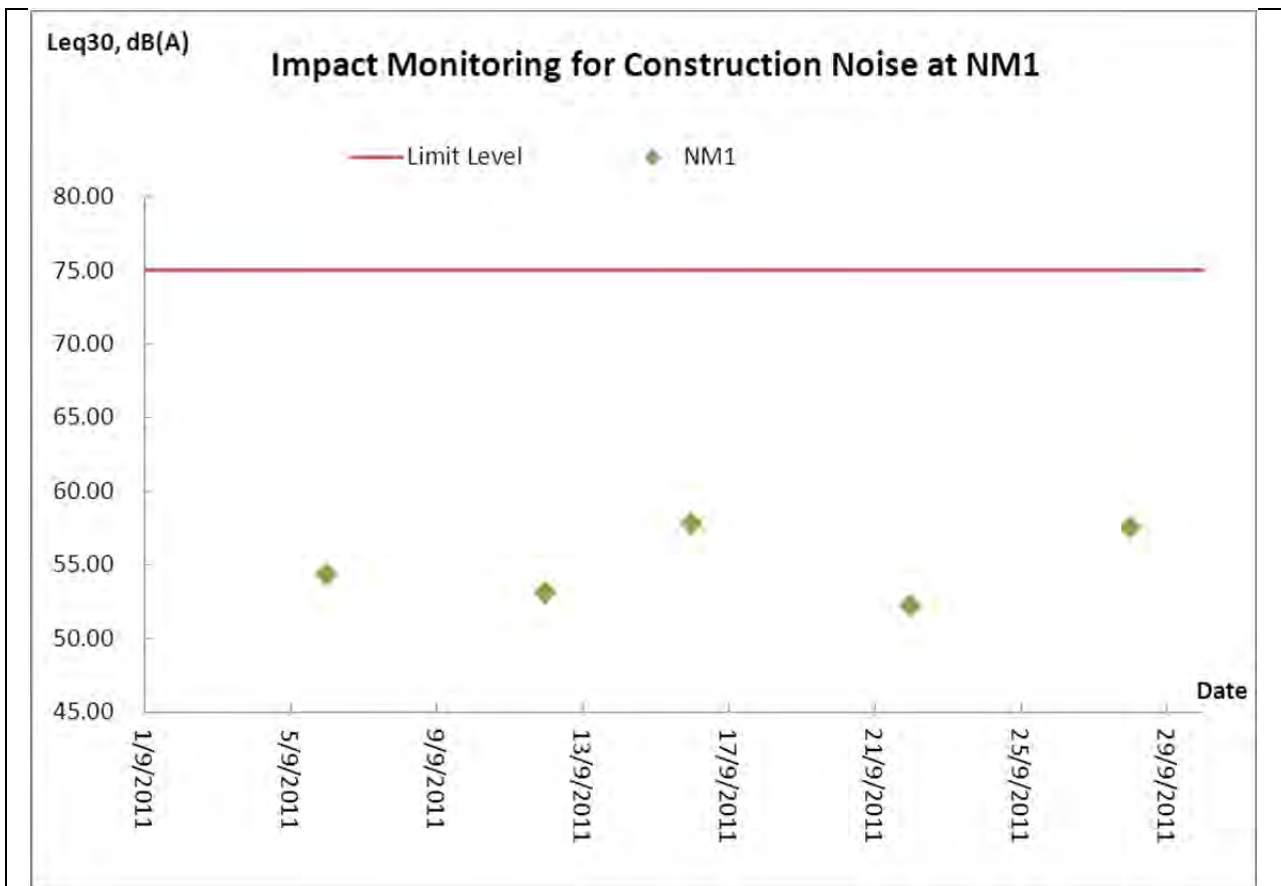
### Air Quality Monitoring – 1 hour TSP Monitoring

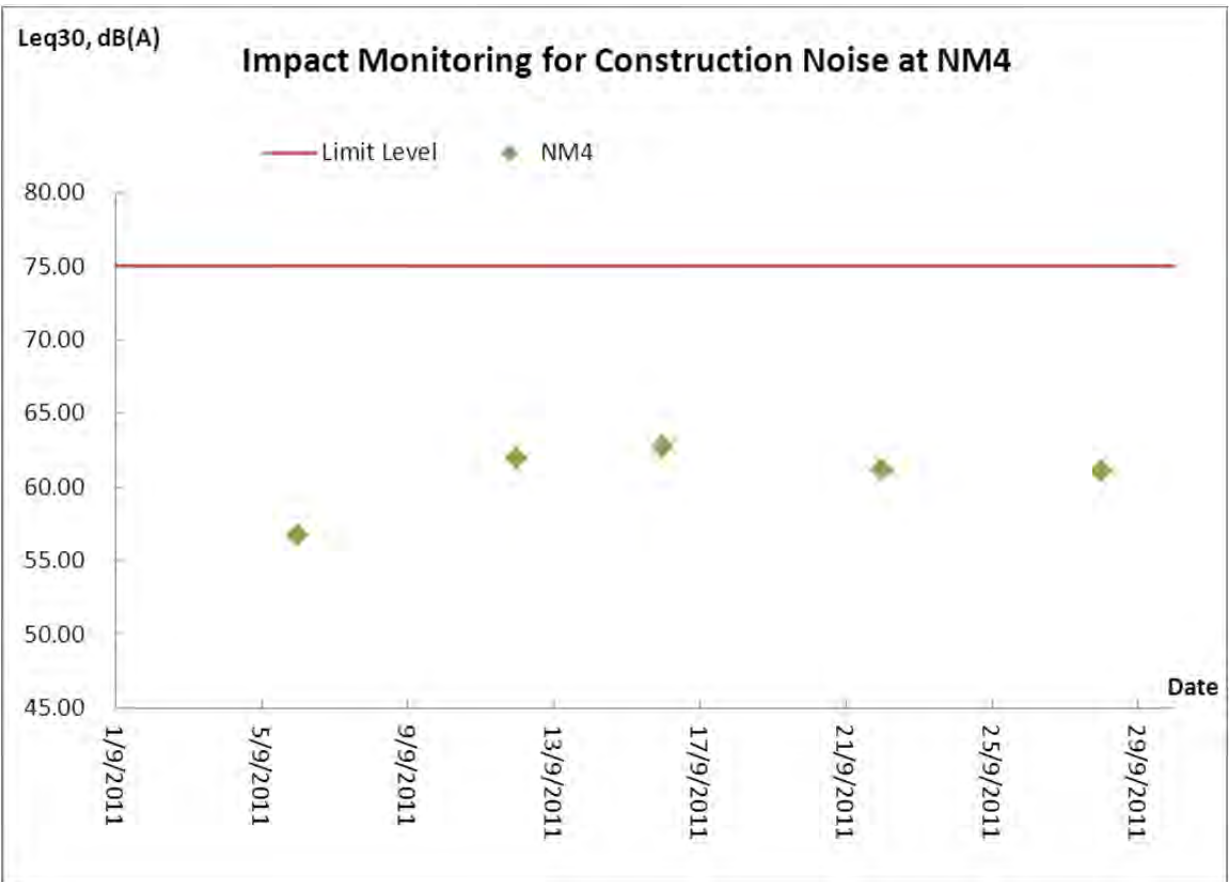
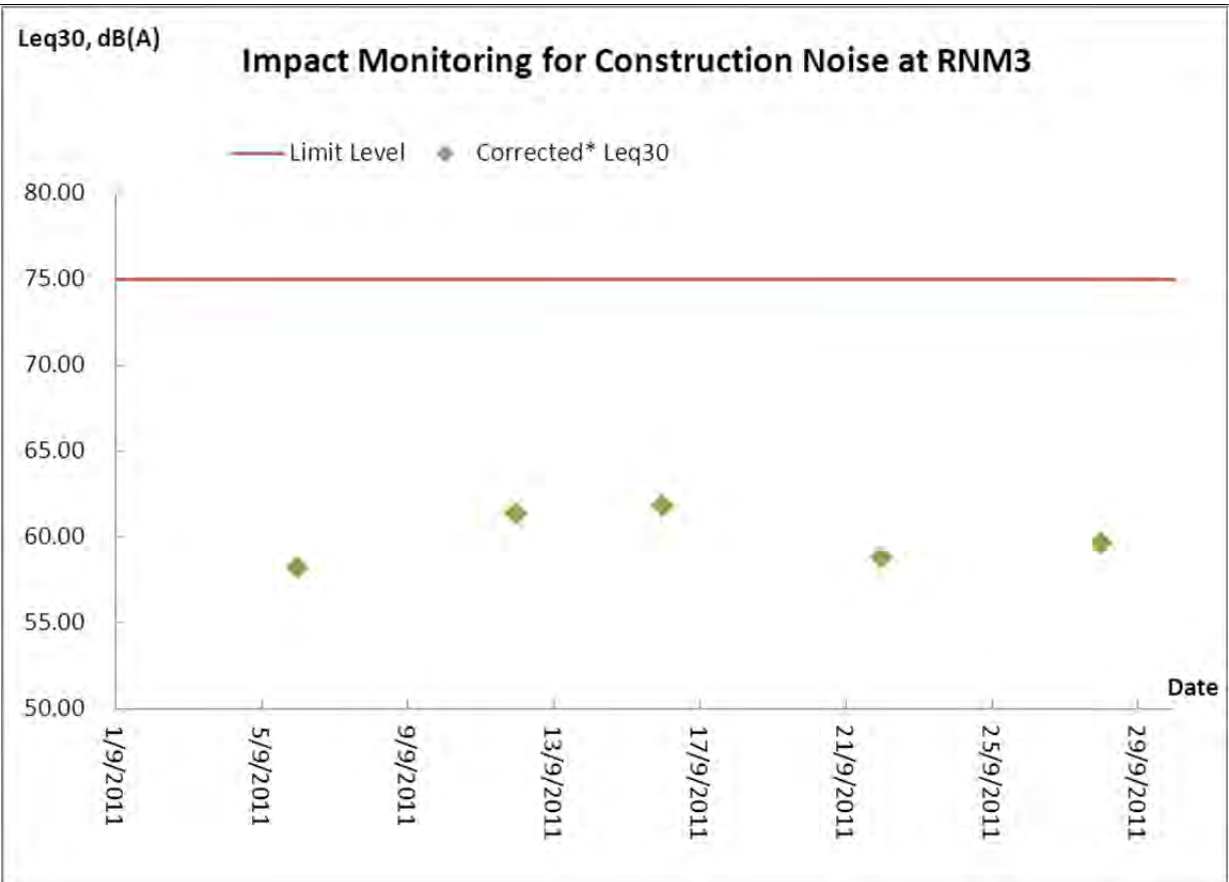


### Air Quality Monitoring – 24 hour TSP Monitoring

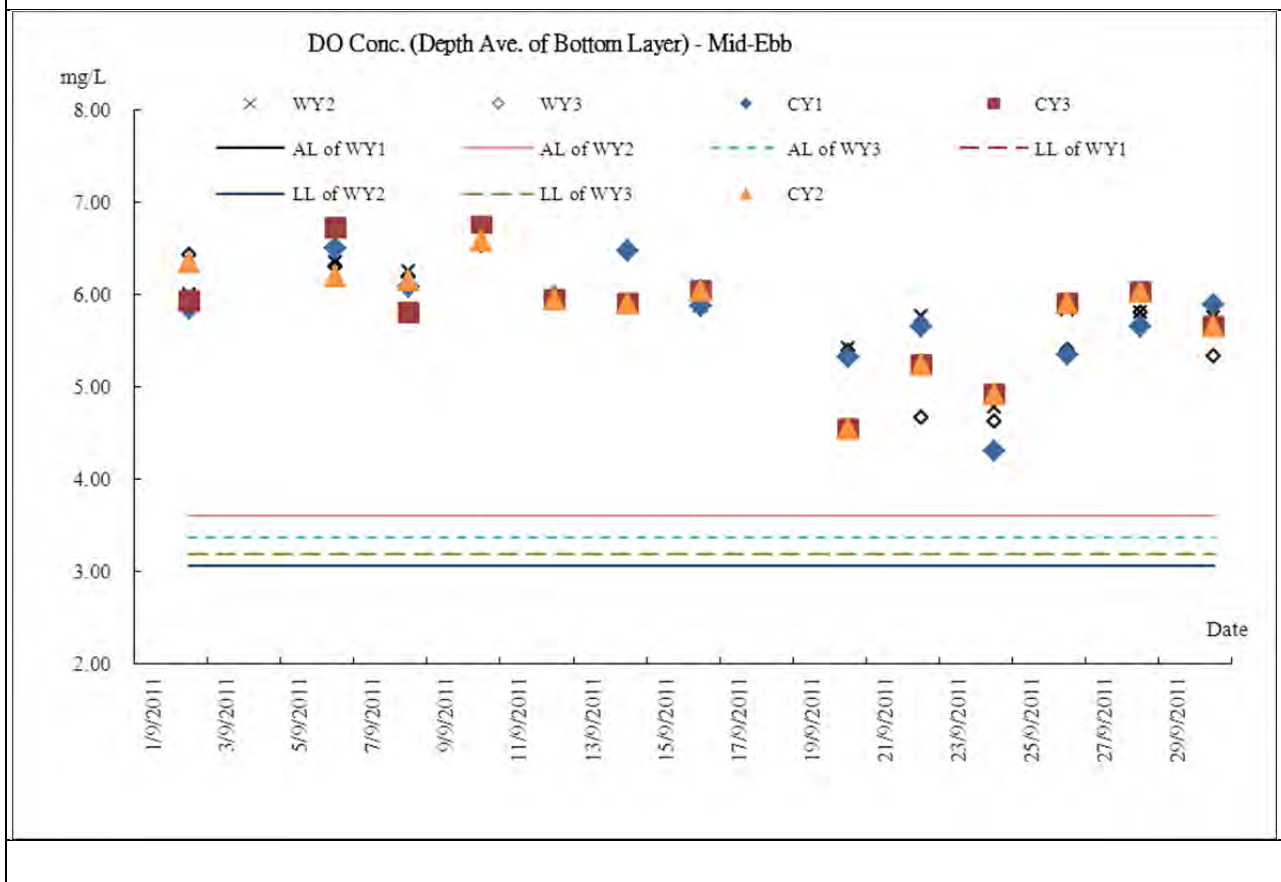
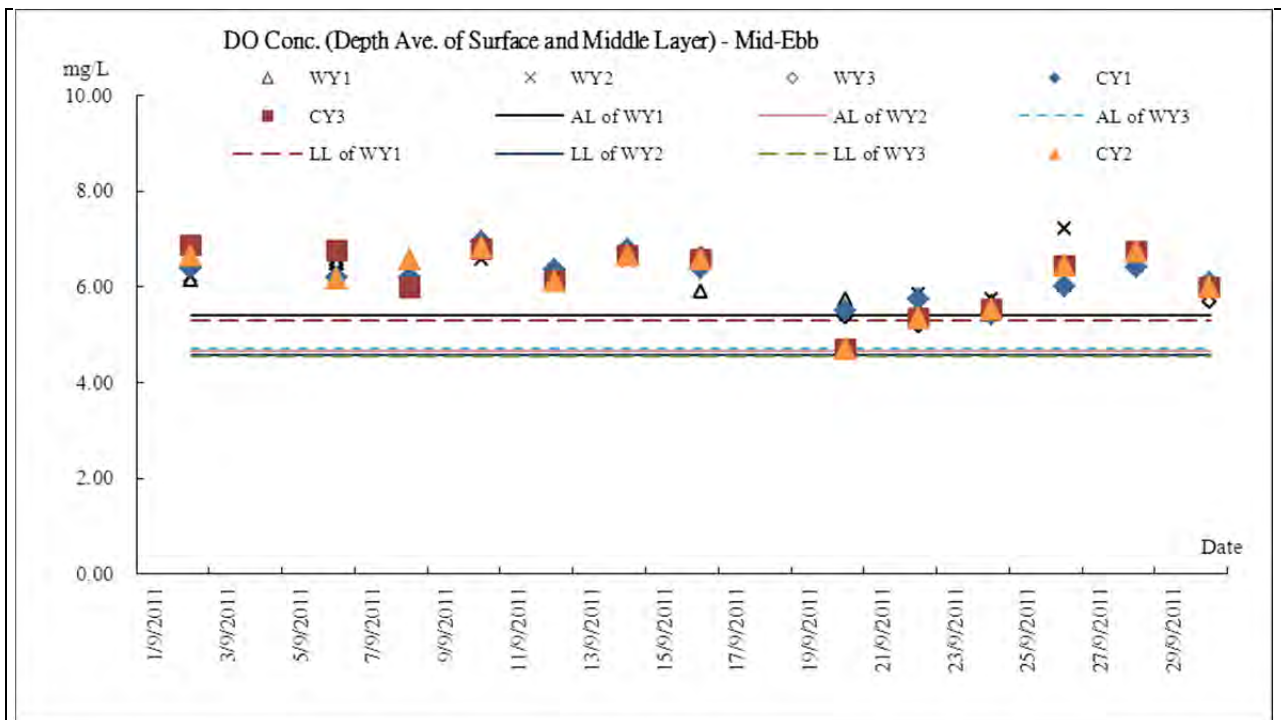


### Construction Noise Monitoring

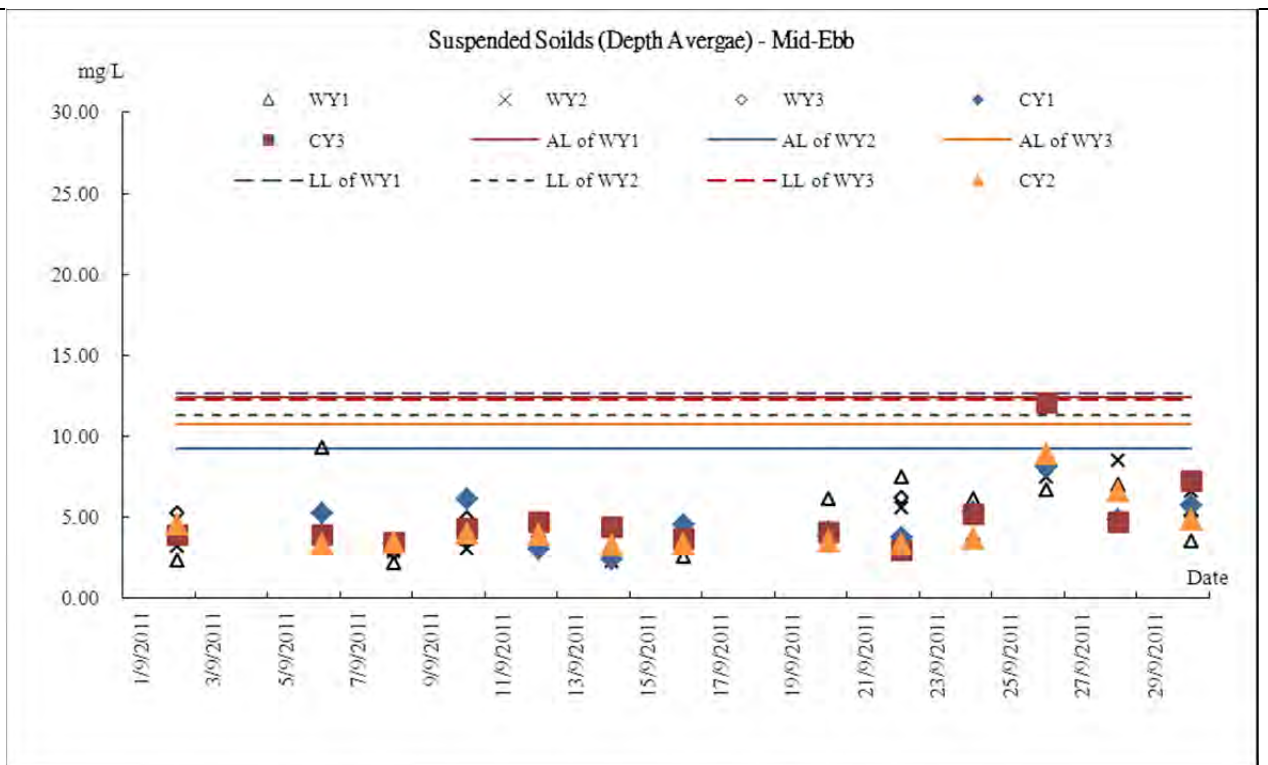
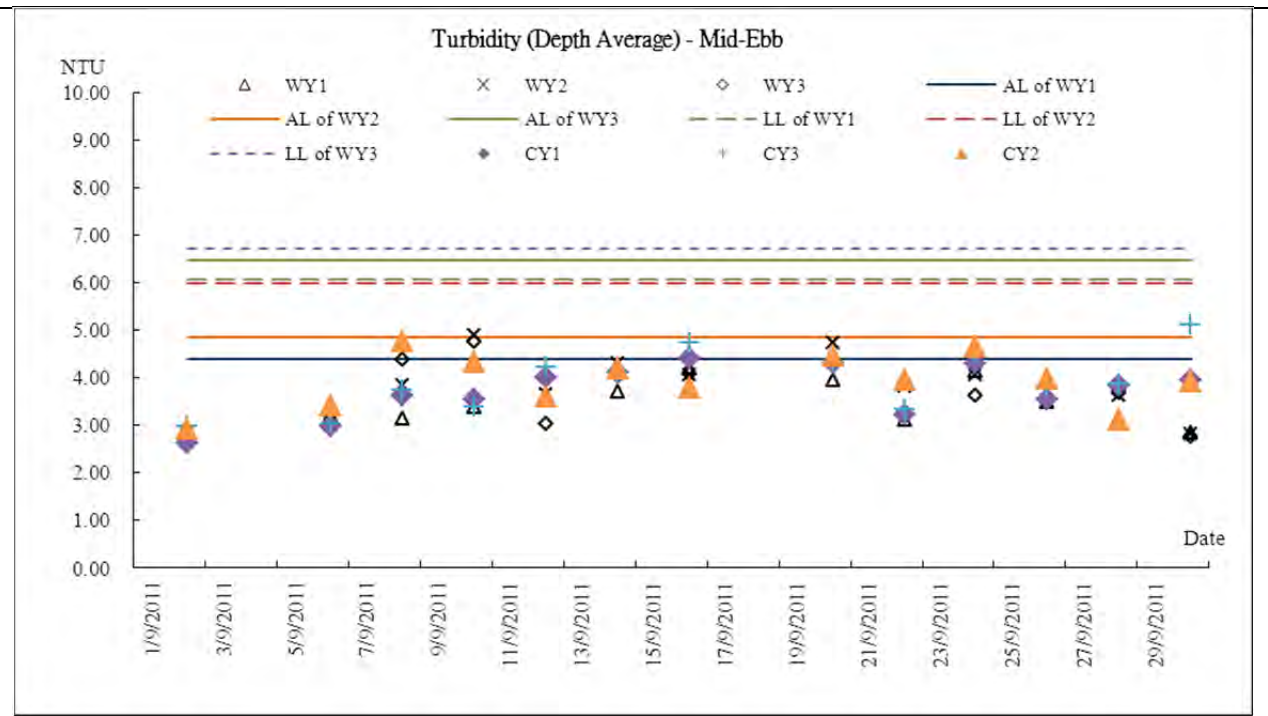




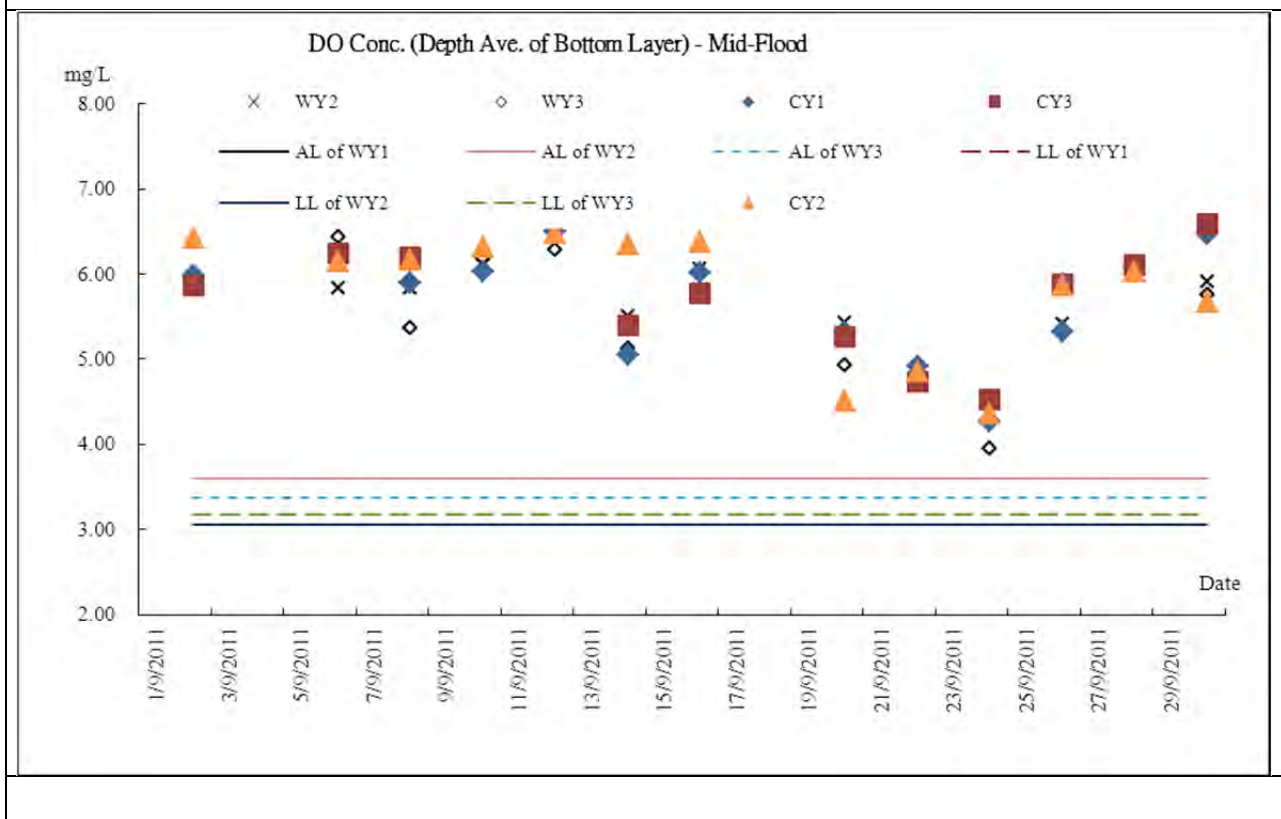
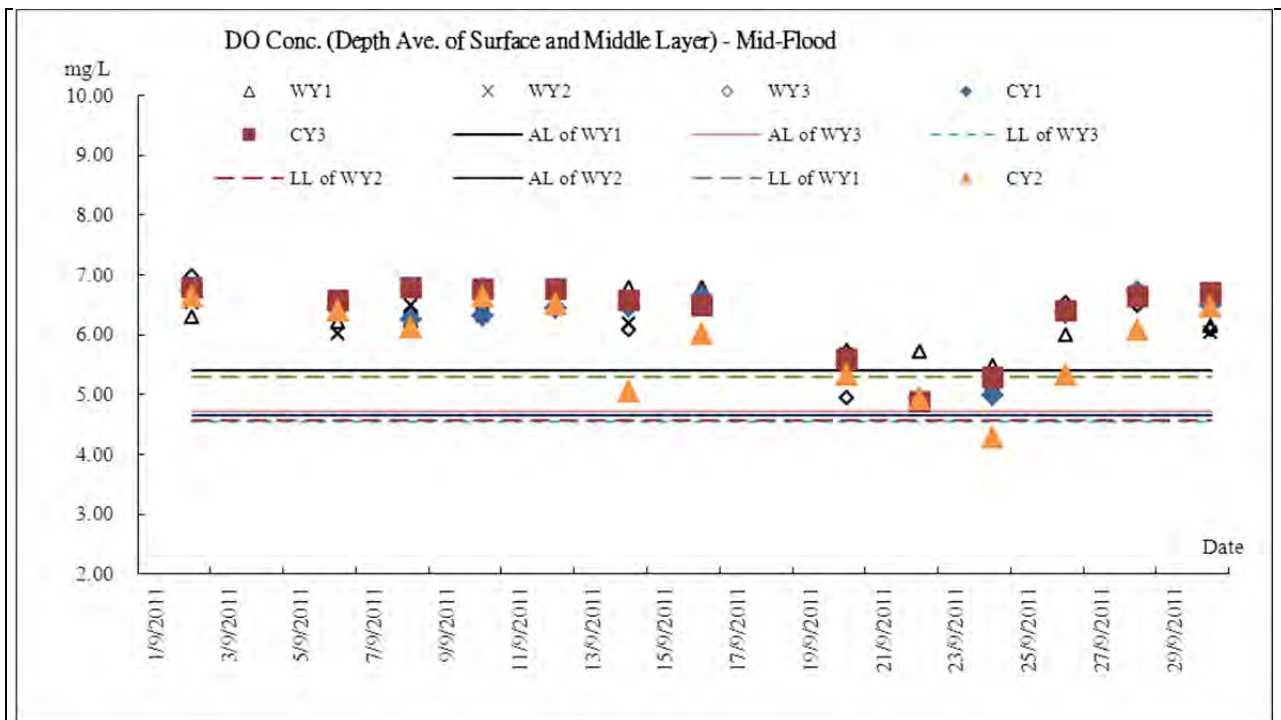
### Marine Water Quality Monitoring - Mid-Ebb Tide

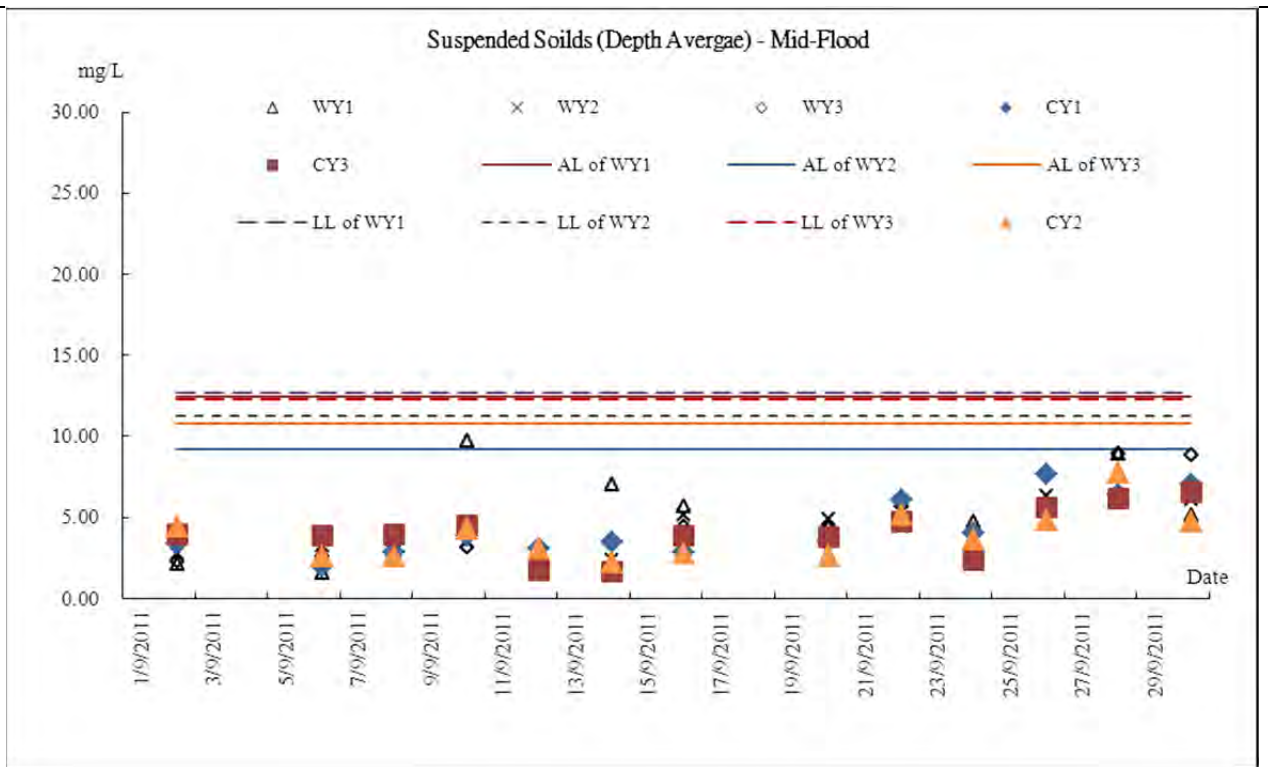
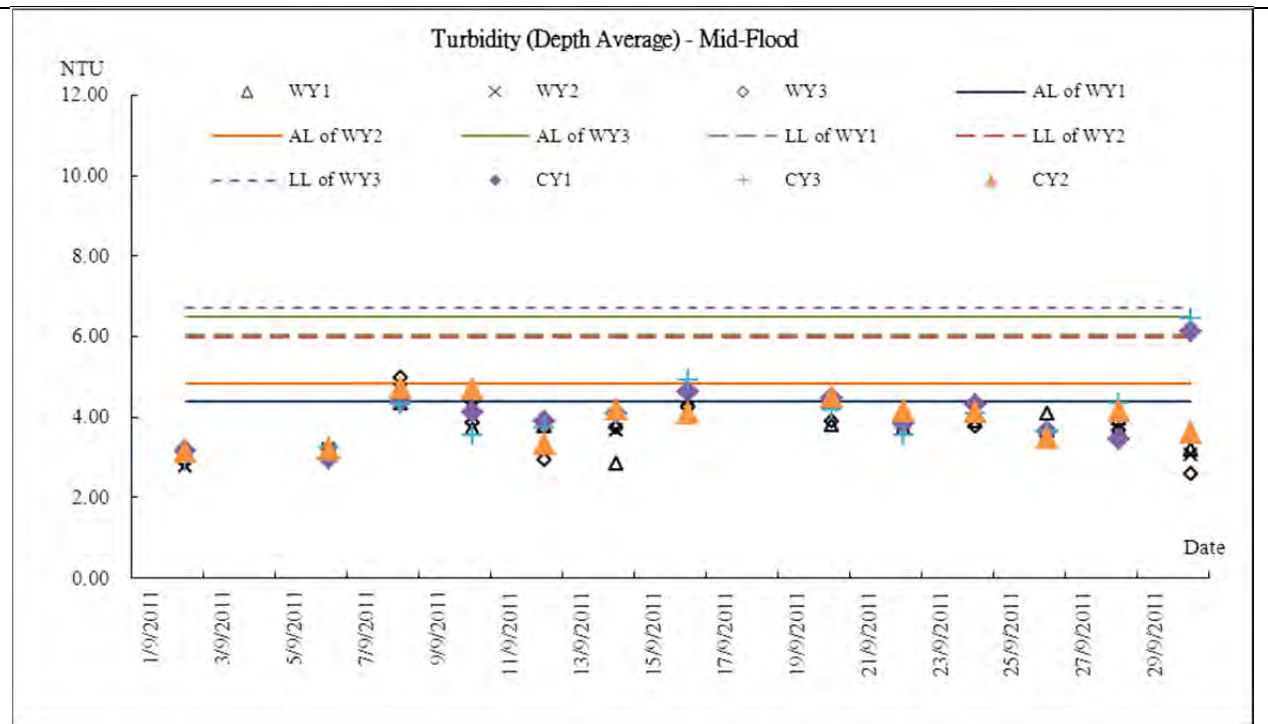






### Marine Water Quality Monitoring - Mid-Flood Tide





# **Appendix I**

## **Meteorological Information**

**Meteorological Data Extracted from HKO during the Reporting Period**

Date		Weather
1-Sep-11	Thu	Mainly cloudy with isolated showers.
2-Sep-11	Fri	Light to moderate easterly winds.
3-Sep-11	Sat	Light to moderate southeasterly winds.
4-Sep-11	Sun	Mainly fine apart from isolated showers.
5-Sep-11	Mon	Mainly fine.
6-Sep-11	Tue	fine and hot
7-Sep-11	Wed	Moderate southeasterly winds.
8-Sep-11	Thu	Sunny periods
9-Sep-11	Fri	Moderate to fresh easterly winds.
10-Sep-11	Sat	fine and hot
11-Sep-11	Sun	Fine and very hot.
12-Sep-11	Mon	Moderate to fresh northeasterly winds.
13-Sep-11	Tue	Mainly fine.
14-Sep-11	Wed	Moderate to fresh easterly winds.
15-Sep-11	Thu	Light to moderate southeasterly winds.
16-Sep-11	Fri	Mainly fine apart from isolated showers.
17-Sep-11	Sat	Moderate southeasterly winds.
18-Sep-11	Sun	fine and hot
19-Sep-11	Mon	A few showers
20-Sep-11	Tue	Light to moderate southwesterly winds.
21-Sep-11	Wed	Moderate to fresh northeasterly winds.
22-Sep-11	Thu	Mainly cloudy with a few light rain patches
23-Sep-11	Fri	Moderate southeasterly winds.
24-Sep-11	Sat	A few showers
25-Sep-11	Sun	Moderate to fresh easterly winds.
26-Sep-11	Mon	Mainly cloudy with occasional showers.
27-Sep-11	Tue	Moderate to fresh east to northeasterly winds
28-Sep-11	Wed	A few squally showers
29-Sep-11	Thu	NO. 8 SOUTHWEST GALE OR STORM SIGNAL
30-Sep-11	Fri	Mainly cloudy with occasional showers.



**Appendix J**  
**Monthly Summary Waste Flow Table**

## Monthly Summary Waste Flow Table for September 2011

Month	Actual Quantities of Inert C&D Materials Generated Monthly												Actual Quantities of C&D Wastes Generated Monthly										
	Total Quantity Generated (a) = (c)+(d)+(e)		Hard Rock and Large Broken Concrete (b)		Reused in the Contract (c)		Reused in other Projects (d)		Disposed as Public Fill (e)		Imported Fill (f)		Metals		Paper/ cardboard packaging		Plastics		Chemical Waste		Others, e.g. rubbish		
	(in '000m <sup>3</sup> )		(in '000m <sup>3</sup> )		(in '000m <sup>3</sup> )		(in '000m <sup>3</sup> )		(in '000m <sup>3</sup> )		(in '000m <sup>3</sup> )		(in '000kg)		(in '000kg)		(in '000kg)		(in '000kg)		(in tonne)		
	YSW	SKW	YSW	SKW	YSW	SKW	YSW	SKW	YSW	SKW	YSW	SKW	YSW	SKW	YSW	SKW	YSW	SKW	YSW	SKW	YSW	SKW	
<b>2010</b>	4.522	0.030	0.068	0.104	0.488	0.000	0.000	0.000	0.000	4.033	0.030	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	18.460
Jan	0.985	3.045	0.003	0.013	0.120	0.419	0.000	2.626	0.865	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.240
Feb	0.377	0.000	0.000	0.043	0.000	0.000	0.000	0.000	0.377	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.350
Mar	0.758	1.175	0.002	0.106	0.006	0.000	0.000	1.175	0.752	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.360
Apr	1.135	1.339	0.017	0.025	0.112	0.180	0.000	1.159	1.023	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.830	5.160
May	0.614	1.362	0.030	0.036	0.014	0.400	0.000	0.962	0.600	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.150	0.860
Jun	0.505	1.014	0.000	0.022	0.000	0.060	0.000	0.954	0.505	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	9.610	1.510
<b>Sub-total</b>	8.8954	7.9653	0.1184	0.3497	0.7397	1.0590	0.0000	6.8760	8.1558	0.0303	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	15.5900	28.9400
Jul	0.824	1.077	0.000	0.004	0.000	0.000	0.000	1.077	0.824	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.000	0.510
Aug	0.491	3.519	0.004	0.006	0.000	0.000	0.000	3.519	0.491	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7.990	1.830
Sep	0.074	1.473	0.037	0.004	0.000	0.000	0.000	1.473	0.074	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	23.030	2.420
Oct																							
Nov																							
Dec																							
<b>Total</b>	10.2846	14.0343	0.1596	0.3640	0.740	1.059	0.000	12.945	9.5449	0.0303	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	51.61	33.70
	24.319		0.524		1.799		12.945		9.575		0.000		0.000		0.000		0.000		0.000		85.31		

Remark: Assume 1.0 m<sup>3</sup> vehicle dump load = 1.6 tonnes C&D materials

YSW: Yung Shue Wan

SKW: Sok Kwu Wan

## **Appendix K**

### **Weekly Site Inspection Checklist**

Project: TCS/00512/09  
**Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwu Wan**  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Inspected by \_\_\_\_\_  
 ETL/ ET's Representative: Ray Cheung  
 RE's Representative: Joseph Ng  
 Contractor's Representative: Edwin Leung  
 IEC's Representative: \_\_\_\_\_  
 Date: 6 September 2011 Time: 10:00

Environmental Permit No. \_\_\_\_\_

**PART A:**

**GENERAL INFORMATION**

Weather:  Sunny  Fine  Cloudy  Rainy  
 Temperature: 29.3 °C  
 Humidity:  High  Moderate  Low  
 Wind:  Strong  Breeze  Light  Calm

EP- 281/2007A

**Area Inspected**

1 Sok Kwu Wan

**PART B:**

**SITE AUDIT**

<b>Note:</b> Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-Up actions N/A: Not Applicable		Not Obs.	Yes	No	Follow Up	N/A	Photo/Remarks
<b>Section 1: Water Quality</b>							
1.01	Is an effluent discharge license obtained for the Project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.02	Is the effluent discharged in accordance with the discharge licence?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.03	Is the discharge of turbid water avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.04	Are there proper desilting facilities in the drainage systems to reduce SS levels in effluent?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Remark 1
1.05	Are there channels, sandbags or bunds to direct surface run-off to sedimentation tanks?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.06	Are there any perimeter channels provided at site boundaries to intercept storm runoff from crossing the site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.07	Is drainage system well maintained?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.08	As excavation proceeds, are temporary access roads protected by crushed stone or gravel?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.09	Are temporary exposed slopes properly covered?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.10	Are earthworks final surfaces well compacted or protected?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.11	Are manholes adequately covered or temporarily sealed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.12	Are there any procedures and equipment for rainstorm protection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.13	Are wheel washing facilities well maintained?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.14	Is runoff from wheel washing facilities avoided?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.15	Are there toilets provided on site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.16	Are toilets properly maintained?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.17	Are the vehicle and plant servicing areas paved and located within roofed areas?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.18	Is the oil leakage or spillage avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.19	Are there any measures to prevent leaked oil from entering the drainage system?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.20	Are there any measures to collect spilt cement and concrete washings during concreting works?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1.21	Are there any oil interceptors/grease traps in the drainage systems for vehicle and plant servicing areas, canteen kitchen, etc?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.22	Are the oil interceptors/grease traps maintained properly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Note:	Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-Up actions N/A: Not Applicable	Not Obs.	Yes	No	Follow Up	N/A	Photo/Remarks
1.23	Is used bentonite recycled where appropriate?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.24	Designated settlement area for runoff/wheel wash waste is provide and located at the streambed with 1-2m deep, 12m long and around 50m <sup>3</sup> capacities for sedimentation.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.25	No excavation is undertaken in the settlement area.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.26	Concreting wastes water should be neutralized below the pH Action Levels before discharge.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.27	Mobile toilets should provide on site and located away the stream course.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.28	License collector should be employed for handling the sewage of mobile toilet.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.29	Is ponding /stand water avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.30	Is open stockpiles well covered by impermeable sheet?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Section 2: Air Quality</b>							
2.01	Are there wheel washing facilities with high pressure jets provided at every vehicle exit point?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.02	Are vehicles washed to remove any dusty materials from their bodies and wheels before leaving construction sites?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.03	Are the excavated materials sprayed with water during handling?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.04	Are stockpiles of dusty materials sprayed with water, covered or placed in sheltered areas?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.05	Is the exposed earth properly treated within six months after the last construction activities?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.06	Are the access roads sprayed with water to maintain the entire road surface wet or paved?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.07	Is the surface where any drilling, cutting, polishing or breaking operation continuously sprayed with water?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.08	Is the load on vehicles covered entirely by clean impervious sheeting?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.09	Is the loading of materials to a level higher than the side and tail boards during transportation by vehicles avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.10	Is the road leading to the construction site within 30m of the vehicle entrance kept clear of dusty materials?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.11	Is dark smoke emission from plant/equipment avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.12	Are de-bagging, batching and mixing processes carried out in sheltered areas during the use of bagged cement?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.13	Are site vehicles travelling within the speed limit not more than 15km/hour?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.14	Are hoardings of not less than 2.4m high provided along the site boundary, which adjoins areas accessible to the public?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.15	Is open burning avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.16	Excavated materials from the stream must remove form site on the same day. The materials shall be stored in covered impermeable skips awaiting removal from site.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Section 3: Noise</b>							
3.01	Are noisy equipment and activities positioned as far as practicable from the sensitive receivers?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.02	Is silenced equipment adopted?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.03	Is idle equipment turned off or throttled down?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.04	Are all plant and equipment well maintained and in good condition?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.05	Are noise barriers or enclosures provided at areas where construction activities cause noise impact on sensitive receivers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.06	Are hand held breakers fitted with valid noise emission labels during operation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.07	Are air compressors fitted with valid noise emission labels during operation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



Note:	Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-Up actions N/A: Not Applicable	Not Obs.	Yes	No	Follow Up	N/A	Photo/Remarks
3.08	Are flaps and panels of mechanical equipment closed during operation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.09	Are Construction Noise Permit(s) applied for percussive piling works?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.10	Are Construction Noise Permit(s) applied for general construction works during restricted hours?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.11	Are valid Construction Noise Permit(s) posted at site entrances?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.12	Use of quiet plant had been used on site to minimise the construction noise impact to the surrounding residences/dwellings (Level 1 mitigation measures).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.13	Temporary/Moveable noise barrier or site hoarding are provide or erect at the site boundary to minimise the noise impact of the closest NSRs or stationary equipments shield by the noise barrier which cannot visible from NSRs (Level 2 mitigation measure)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.14	Temporary/Moveable noise barrier equal to or more than 3m height with 10kg/m2 are provide for noise mitigation measures (Level 2 mitigation measures).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Section 4: Waste/Chemical Management</b>							
4.01	Waste Management Plan had been submit to Engineer for approval.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.02	Are receptacles available for general refuse collection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.03	Is general refuse sorting or recycling implemented?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.04	Is general refuse disposed of properly and regularly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.05	Is the Contractor registered as a chemical waste producer?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.06	Are the chemical waste containers and storage area properly labelled?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.07	Are the chemical wastes stored in proper storage areas?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.08	Is the chemical container or equipment provided with drip tray?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.09	Is the chemical waste storage area used for storage of chemical waste only?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.10	Are incompatible chemical wastes stored in different areas?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.11	Are the chemical wastes disposed of by licensed collectors?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.12	Are trip tickets for chemical wastes disposal available for inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.13	Are chemical/fuel storage areas bounded?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.14	Are designated areas identified for storage and sorting of construction wastes?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.15	Are construction wastes sorted (inert and non-inert) on site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.16	Are construction wastes reused?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.17	Are construction wastes disposed of properly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.18	Are site hoardings and signboards made of durable materials instead of timber?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.19	Is trip ticket system implemented for the disposal of construction wastes and records available for inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.20	Are appropriate procedures followed if contaminated material exists?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.21	Is relevant license/ permit for disposal of construction waste or excavated materials available for inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.22	Site cleanliness and appropriate waste management training had provided for the site workers.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.23	Contaminated sediments will managed according to WBTC No.12/2000 and EWTB TC(W) No. 34/2002.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

<b>Note:</b> Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-Up actions N/A: Not Applicable		Not Obs.	Yes	No	Follow Up	N/A	Photo/Remarks
<b>Section 5: Landscape &amp; Visual</b>							
5.01	Are retained and transplanted trees in health condition?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Refer to Monthly EM&A report - September 2011 - Appendix M
5.02	Are retained and transplanted trees properly protected?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Refer to tree photos
5.03	Are surgery works carried out for the damaged trees?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.04	Is damage to trees outside site boundary due to construction activities avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.05	Is the night-time lighting controlled to minimize glare to sensitive receivers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Section 6: Others</b>							
6.01	Are relevant Environmental Permits posted at all vehicle site entrances/exits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

**(Sok Kwu Wan)**

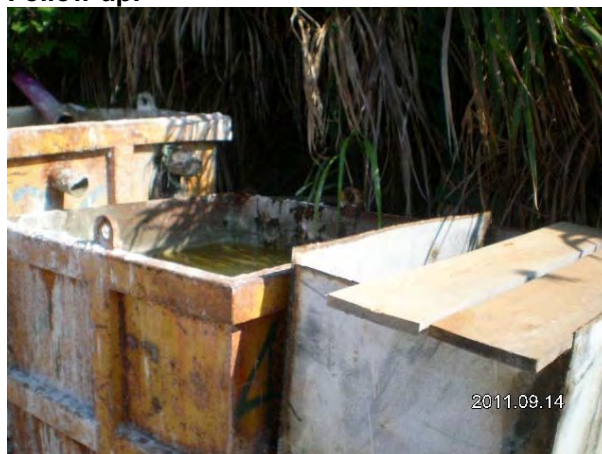
**Remarks:**

**Findings of Site Inspection: (6 September 2011)**



The Contractor should clear the accumulated sediment in the tank to restore its desilting effectiveness.

**Follow up:**



The tank has been cleared but it is reminded to carry out clearance practice regularly. (Rectified on 14-9-2011)





Project: TCS/00512/09  
**Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwu Wan**  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Inspected by \_\_\_\_\_  
 ETL/ ET's Representative: Ray Cheung  
 RE's Representative: Joseph Ng  
 Contractor's Representative: Edwin Leung  
 IEC's Representative: \_\_\_\_\_  
 Date: 14 September 2011 Time: 10:00

**PART A:**

**GENERAL INFORMATION**

Environmental Permit No.

Weather:  Sunny  Fine  Cloudy  Rainy  
 Temperature: 29 °C  
 Humidity:  High  Moderate  Low  
 Wind:  Strong  Breeze  Light  Calm

EP- 281/2007A

**Area Inspected**

1 Sok Kwu Wan

**PART B:**

**SITE AUDIT**

<b>Note:</b>	<b>Not Obs.:</b> Not Observed; <b>Yes:</b> Compliance; <b>No:</b> Non-Compliance;	<b>Not Obs.</b>	<b>Yes</b>	<b>No</b>	<b>Follow Up</b>	<b>N/A</b>	<b>Photo/Remarks</b>
	<b>Follow Up:</b> Observations requiring follow-Up actions <b>N/A:</b> Not Applicable						

**Section 1: Water Quality**

		<b>Not Obs.</b>	<b>Yes</b>	<b>No</b>	<b>Follow Up</b>	<b>N/A</b>	<b>Photo/Remarks</b>
1.01	Is an effluent discharge license obtained for the Project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.02	Is the effluent discharged in accordance with the discharge licence?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.03	Is the discharge of turbid water avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.04	Are there proper desilting facilities in the drainage systems to reduce SS levels in effluent?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.05	Are there channels, sandbags or bunds to direct surface run-off to sedimentation tanks?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.06	Are there any perimeter channels provided at site boundaries to intercept storm runoff from crossing the site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.07	Is drainage system well maintained?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.08	As excavation proceeds, are temporary access roads protected by crushed stone or gravel?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.09	Are temporary exposed slopes properly covered?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.10	Are earthworks final surfaces well compacted or protected?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.11	Are manholes adequately covered or temporarily sealed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.12	Are there any procedures and equipment for rainstorm protection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.13	Are wheel washing facilities well maintained?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.14	Is runoff from wheel washing facilities avoided?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.15	Are there toilets provided on site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.16	Are toilets properly maintained?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.17	Are the vehicle and plant servicing areas paved and located within roofed areas?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.18	Is the oil leakage or spillage avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.19	Are there any measures to prevent leaked oil from entering the drainage system?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.20	Are there any measures to collect spilt cement and concrete washings during concreting works?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1.21	Are there any oil interceptors/grease traps in the drainage systems for vehicle and plant servicing areas, canteen kitchen, etc?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.22	Are the oil interceptors/grease traps maintained properly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Note:	Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-Up actions N/A: Not Applicable	Not Obs.	Yes	No	Follow Up	N/A	Photo/Remarks
1.23	Is used bentonite recycled where appropriate?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.24	Designated settlement area for runoff/wheel wash waste is provide and located at the streambed with 1-2m deep, 12m long and around 50m <sup>3</sup> capacities for sedimentation.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.25	No excavation is undertaken in the settlement area.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.26	Concreting wastes water should be neutralized below the pH Action Levels before discharge.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.27	Mobile toilets should provide on site and located away the stream course.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.28	License collector should be employed for handling the sewage of mobile toilet.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.29	Is ponding /stand water avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.30	Is open stockpiles well covered by impermeable sheet?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Section 2: Air Quality</b>							
2.01	Are there wheel washing facilities with high pressure jets provided at every vehicle exit point?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.02	Are vehicles washed to remove any dusty materials from their bodies and wheels before leaving construction sites?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.03	Are the excavated materials sprayed with water during handling?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.04	Are stockpiles of dusty materials sprayed with water, covered or placed in sheltered areas?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2.05	Is the exposed earth properly treated within six months after the last construction activities?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.06	Are the access roads sprayed with water to maintain the entire road surface wet or paved?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.07	Is the surface where any drilling, cutting, polishing or breaking operation continuously sprayed with water?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.08	Is the load on vehicles covered entirely by clean impervious sheeting?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.09	Is the loading of materials to a level higher than the side and tail boards during transportation by vehicles avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.10	Is the road leading to the construction site within 30m of the vehicle entrance kept clear of dusty materials?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.11	Is dark smoke emission from plant/equipment avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.12	Are de-bagging, batching and mixing processes carried out in sheltered areas during the use of bagged cement?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.13	Are site vehicles travelling within the speed limit not more than 15km/hour?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.14	Are hoardings of not less than 2.4m high provided along the site boundary, which adjoins areas accessible to the public?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.15	Is open burning avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.16	Excavated materials from the stream must remove form site on the same day. The materials shall be stored in covered impermeable skips awaiting removal from site.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Section 3: Noise</b>							
3.01	Are noisy equipment and activities positioned as far as practicable from the sensitive receivers?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.02	Is silenced equipment adopted?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.03	Is idle equipment turned off or throttled down?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.04	Are all plant and equipment well maintained and in good condition?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.05	Are noise barriers or enclosures provided at areas where construction activities cause noise impact on sensitive receivers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.06	Are hand held breakers fitted with valid noise emission labels during operation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.07	Are air compressors fitted with valid noise emission labels during operation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Note:	Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-Up actions N/A: Not Applicable	Not Obs.	Yes	No	Follow Up	N/A	Photo/Remarks
3.08	Are flaps and panels of mechanical equipment closed during operation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.09	Are Construction Noise Permit(s) applied for percussive piling works?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.10	Are Construction Noise Permit(s) applied for general construction works during restricted hours?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.11	Are valid Construction Noise Permit(s) posted at site entrances?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.12	Use of quiet plant had been used on site to minimise the construction noise impact to the surrounding residences/dwellings (Level 1 mitigation measures).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.13	Temporary/Moveable noise barrier or site hoarding are provide or erect at the site boundary to minimise the noise impact of the closest NSRs or stationary equipments shield by the noise barrier which cannot visible from NSRs (Level 2 mitigation measure)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.14	Temporary/Moveable noise barrier equal to or more than 3m height with 10kg/m2 are provide for noise mitigation measures (Level 2 mitigation measures).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Section 4: Waste/Chemical Management</b>							
4.01	Waste Management Plan had been submit to Engineer for approval.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.02	Are receptacles available for general refuse collection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.03	Is general refuse sorting or recycling implemented?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.04	Is general refuse disposed of properly and regularly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Remark 1
4.05	Is the Contractor registered as a chemical waste producer?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.06	Are the chemical waste containers and storage area properly labelled?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.07	Are the chemical wastes stored in proper storage areas?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.08	Is the chemical container or equipment provided with drip tray?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.09	Is the chemical waste storage area used for storage of chemical waste only?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.10	Are incompatible chemical wastes stored in different areas?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.11	Are the chemical wastes disposed of by licensed collectors?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.12	Are trip tickets for chemical wastes disposal available for inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.13	Are chemical/fuel storage areas bounded?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.14	Are designated areas identified for storage and sorting of construction wastes?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.15	Are construction wastes sorted (inert and non-inert) on site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.16	Are construction wastes reused?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.17	Are construction wastes disposed of properly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.18	Are site hoardings and signboards made of durable materials instead of timber?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.19	Is trip ticket system implemented for the disposal of construction wastes and records available for inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.20	Are appropriate procedures followed if contaminated material exists?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.21	Is relevant license/ permit for disposal of construction waste or excavated materials available for inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.22	Site cleanliness and appropriate waste management training had provided for the site workers.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.23	Contaminated sediments will managed according to WBTC No.12/2000 and EWTB TC(W) No. 34/2002.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



<b>Note:</b> Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-Up actions N/A: Not Applicable		Not Obs.	Yes	No	Follow Up	N/A	Photo/Remarks
<b>Section 5: Landscape &amp; Visual</b>							
5.01	Are retained and transplanted trees in health condition?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Refer to Monthly EM&A report - September 2011 - Appendix M
5.02	Are retained and transplanted trees properly protected?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Refer to tree photos
5.03	Are surgery works carried out for the damaged trees?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.04	Is damage to trees outside site boundary due to construction activities avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.05	Is the night-time lighting controlled to minimize glare to sensitive receivers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Section 6: Others</b>							
6.01	Are relevant Environmental Permits posted at all vehicle site entrances/exits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

**(Sok Kwu Wan)**

**Remarks:**

**Findings of Site Inspection: (14 September 2011)**

**Follow up:**



The Contractor should remove the scattered general refuse on the hill to minimize dust nuisance and improve site tidiness.



<b>Project:</b> <u>TCS/00512/09</u>  <u>Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwu Wan</u>  <hr/> <hr/> <b>Date:</b> <u>20 Sept 2011</u>	<b>Inspected by</b> _____ <b>ETL/ ET's Representative:</b> <u>F.N.Wong</u> <b>RE's Representative:</b> <u>Joseph Ng</u> <b>Contractor's Representative:</b> <u>Edwin Leung</u> <b>IEC's Representative:</b> <u>Selina Leung</u>  <b>Time:</b> <u>9:15</u>	<b>Checklist No.</b> <u>TCS512B-20S2011</u>
---	---	---

<b>PART A: GENERAL INFORMATION</b>	<b>Environmental Permit No.</b>
Weather: <input type="checkbox"/> Sunny <input type="checkbox"/> Fine <input checked="" type="checkbox"/> Cloudy <input type="checkbox"/> Rainy	<input checked="" type="checkbox"/> EP- 281/2007A
Temperature: <input type="text" value="27"/> °C	
Humidity: <input checked="" type="checkbox"/> High <input type="checkbox"/> Moderate <input type="checkbox"/> Low	
Wind: <input type="checkbox"/> Strong <input checked="" type="checkbox"/> Breeze <input type="checkbox"/> Light <input type="checkbox"/> Calm	
<b>Area Inspected</b>	
1 Sok Kwu Wan	

**PART B: SITE AUDIT**

<b>Note:</b> Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-Up actions N/A: Not Applicable	Not Obs.	Yes	No	Follow Up	N/A	Photo/Remarks
<b>Section 1: Water Quality</b>						
1.01 Is an effluent discharge license obtained for the Project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.02 Is the effluent discharged in accordance with the discharge licence?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.03 Is the discharge of turbid water avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.04 Are there proper desilting facilities in the drainage systems to reduce SS levels in effluent?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Remark 1
1.05 Are there channels, sandbags or bunds to direct surface run-off to sedimentation tanks?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.06 Are there any perimeter channels provided at site boundaries to intercept storm runoff from crossing the site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.07 Is drainage system well maintained?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.08 As excavation proceeds, are temporary access roads protected by crushed stone or gravel?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.09 Are temporary exposed slopes properly covered?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.10 Are earthworks final surfaces well compacted or protected?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.11 Are manholes adequately covered or temporarily sealed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.12 Are there any procedures and equipment for rainstorm protection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.13 Are wheel washing facilities well maintained?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.14 Is runoff from wheel washing facilities avoided?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.15 Are there toilets provided on site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.16 Are toilets properly maintained?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.17 Are the vehicle and plant servicing areas paved and located within roofed areas?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.18 Is the oil leakage or spillage avoided?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
1.19 Are there any measures to prevent leaked oil from entering the drainage system?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.20 Are there any measures to collect spilt cement and concrete washings during concreting works?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1.21 Are there any oil interceptors/grease traps in the drainage systems for vehicle and plant servicing areas, canteen kitchen, etc?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



<b>Note:</b> Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-up actions N/A: Not Applicable		Not Obs.	Yes	No	Follow Up	N/A	Photo/Remarks
1.22	Are the oil interceptors/grease traps maintained properly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.23	Is used bentonite recycled where appropriate?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.24	Designated settlement area for runoff/wheel wash waste is provide and located at the streambed with 1-2m deep, 12m long and around 50m <sup>3</sup> capacities for sedimentation.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.25	No excavation is undertaken in the settlement area.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.26	Concreting wastes water should be neutralized below the pH Action Levels before discharge.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.27	Mobile toilets should provide on site and located away the stream course.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.28	License collector should be employed for handling the sewage of mobile toilet.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.29	Is ponding /stand water avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.30	Is open stockpiles well covered by impermeable sheet?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Section 2: Air Quality</b>							
2.01	Are there wheel washing facilities with high pressure jets provided at every vehicle exit point?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.02	Are vehicles washed to remove any dusty materials from their bodies and wheels before leaving construction sites?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.03	Are the excavated materials sprayed with water during handling?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.04	Are stockpiles of dusty materials sprayed with water, covered or placed in sheltered areas?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.05	Is the exposed earth properly treated within six months after the last construction activities?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.06	Are the access roads sprayed with water to maintain the entire road surface wet or paved?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.07	Is the surface where any drilling, cutting, polishing or breaking operation continuously sprayed with water?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.08	Is the load on vehicles covered entirely by clean impervious sheeting?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.09	Is the loading of materials to a level higher than the side and tail boards during transportation by vehicles avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.10	Is the road leading to the construction site within 30m of the vehicle entrance kept clear of dusty materials?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.11	Is dark smoke emission from plant/equipment avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.12	Are de-bagging, batching and mixing processes carried out in sheltered areas during the use of bagged cement?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.13	Are site vehicles travelling within the speed limit not more than 15km/hour?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.14	Are hoardings of not less than 2.4m high provided along the site boundary, which adjoins areas accessible to the public?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.15	Is open burning avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.16	Excavated materials from the stream must remove form site on the same day. The materials shall be stored in covered impermeable skips awaiting removal from site.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Section 3: Noise</b>							
3.01	Are noisy equipment and activities positioned as far as practicable from the sensitive receivers?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.02	Is silenced equipment adopted?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.03	Is idle equipment turned off or throttled down?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.04	Are all plant and equipment well maintained and in good condition?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.05	Are noise barriers or enclosures provided at areas where construction activities cause noise impact on sensitive receivers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.06	Are hand held breakers fitted with valid noise emission labels during operation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Note:	Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-Up actions N/A: Not Applicable	Not Obs.	Yes	No	Follow Up	N/A	Photo/Remarks
3.07	Are air compressors fitted with valid noise emission labels during operation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.08	Are flaps and panels of mechanical equipment closed during operation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.09	Are Construction Noise Permit(s) applied for percussive piling works?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.10	Are Construction Noise Permit(s) applied for general construction works during restricted hours?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.11	Are valid Construction Noise Permit(s) posted at site entrances?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.12	Use of quiet plant had been used on site to minimise the construction noise impact to the surrounding residences/dwellings (Level 1 mitigation measures).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.13	Temporary/Moveable noise barrier or site hoarding are provide or erect at the site boundary to minimise the noise impact of the closest NSRs or stationary equipments shield by the noise barrier which cannot visible from NSRs (Level 2 mitigation measure)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.14	Temporary/Moveable noise barrier equal to or more than 3m height with 10kg/m2 are provide for noise mitigation measures (Level 2 mitigation measures).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Section 4: Waste/Chemical Management</b>							
4.01	Waste Management Plan had been submit to Engineer for approval.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.02	Are receptacles available for general refuse collection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.03	Is general refuse sorting or recycling implemented?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.04	Is general refuse disposed of properly and regularly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.05	Is the Contractor registered as a chemical waste producer?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.06	Are the chemical waste containers and storage area properly labelled?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.07	Are the chemical wastes stored in proper storage areas?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.08	Is the chemical container or equipment provided with drip tray?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.09	Is the chemical waste storage area used for storage of chemical waste only?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.10	Are incompatible chemical wastes stored in different areas?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.11	Are the chemical wastes disposed of by licensed collectors?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.12	Are trip tickets for chemical wastes disposal available for inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.13	Are chemical/fuel storage areas bounded?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.14	Are designated areas identified for storage and sorting of construction wastes?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.15	Are construction wastes sorted (inert and non-inert) on site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.16	Are construction wastes reused?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.17	Are construction wastes disposed of properly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.18	Are site hoardings and signboards made of durable materials instead of timber?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.19	Is trip ticket system implemented for the disposal of construction wastes and records available for inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.20	Are appropriate procedures followed if contaminated material exists?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.21	Is relevant license/ permit for disposal of construction waste or excavated materials available for inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.22	Site cleanliness and appropriate waste management training had provided for the site workers.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.23	Contaminated sediments will managed according to WBTC No.12/2000 and EWTB TC(W) No. 34/2002.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

<b>Note:</b> Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-Up actions N/A: Not Applicable		Not Obs.	Yes	No	Follow Up	N/A	Photo/Remarks
<b>Section 5: Landscape &amp; Visual</b>							
5.01	Are retained and transplanted trees in health condition?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Refer to Monthly EM&A report - August 2011 - Appendix M
5.02	Are retained and transplanted trees properly protected?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Remark 2
5.03	Are surgery works carried out for the damaged trees?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.04	Is damage to trees outside site boundary due to construction activities avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.05	Is the night-time lighting controlled to minimize glare to sensitive receivers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Section 6: Others</b>							
6.01	Are relevant Environmental Permits posted at all vehicle site entrances/exits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

**Remarks: (Findings of Site Inspection on 20 Sep 2011)**



1) Gaps were observed along the silt curtain as shown in the following photos. Regular checking and repair as appropriate of the silt curtain is required.

2) Trees were used for supporting of shelter and overhead electric cable within the P/S site. Proper protection of trees is required.



IEC's representative      RE's representative      ET's representative      EO's representative      Contractor's representative

( ) ( ) (Wong Fu Nam) ( ) ( )



Project: TCS/00512/09  
**Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwu Wan**  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Inspected by \_\_\_\_\_  
 ETL/ ET's Representative: F.N. Wong  
 RE's Representative: Joseph Ng  
 Contractor's Representative: Edwin Leung  
 IEC's Representative: \_\_\_\_\_  
 Time: 14:00

Date: 27 September 2011

**PART A:**

**GENERAL INFORMATION**

**Environmental Permit No.**

Weather:  Sunny  Fine  Cloudy  Rainy  
 Temperature: 28 °C  
 Humidity:  High  Moderate  Low  
 Wind:  Strong  Breeze  Light  Calm

EP- 281/2007A

**Area Inspected**

1 Sok Kwu Wan

**PART B:**

**SITE AUDIT**

<b>Note:</b>	<b>Not Obs.:</b> Not Observed; <b>Yes:</b> Compliance; <b>No:</b> Non-Compliance;	<b>Not Obs.</b>	<b>Yes</b>	<b>No</b>	<b>Follow Up</b>	<b>N/A</b>	<b>Photo/Remarks</b>
	<b>Follow Up:</b> Observations requiring follow-Up actions <b>N/A:</b> Not Applicable						

**Section 1: Water Quality**

		<b>Not Obs.</b>	<b>Yes</b>	<b>No</b>	<b>Follow Up</b>	<b>N/A</b>	<b>Photo/Remarks</b>
1.01	Is an effluent discharge license obtained for the Project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.02	Is the effluent discharged in accordance with the discharge licence?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.03	Is the discharge of turbid water avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.04	Are there proper desilting facilities in the drainage systems to reduce SS levels in effluent?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.05	Are there channels, sandbags or bunds to direct surface run-off to sedimentation tanks?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.06	Are there any perimeter channels provided at site boundaries to intercept storm runoff from crossing the site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.07	Is drainage system well maintained?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.08	As excavation proceeds, are temporary access roads protected by crushed stone or gravel?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.09	Are temporary exposed slopes properly covered?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.10	Are earthworks final surfaces well compacted or protected?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.11	Are manholes adequately covered or temporarily sealed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.12	Are there any procedures and equipment for rainstorm protection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.13	Are wheel washing facilities well maintained?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.14	Is runoff from wheel washing facilities avoided?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.15	Are there toilets provided on site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.16	Are toilets properly maintained?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.17	Are the vehicle and plant servicing areas paved and located within roofed areas?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.18	Is the oil leakage or spillage avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.19	Are there any measures to prevent leaked oil from entering the drainage system?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.20	Are there any measures to collect spilt cement and concrete washings during concreting works?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1.21	Are there any oil interceptors/grease traps in the drainage systems for vehicle and plant servicing areas, canteen kitchen, etc?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.22	Are the oil interceptors/grease traps maintained properly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Note:	Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-Up actions N/A: Not Applicable	Not Obs.	Yes	No	Follow Up	N/A	Photo/Remarks
1.23	Is used bentonite recycled where appropriate?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.24	Designated settlement area for runoff/wheel wash waste is provide and located at the streambed with 1-2m deep, 12m long and around 50m <sup>3</sup> capacities for sedimentation.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.25	No excavation is undertaken in the settlement area.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.26	Concreting wastes water should be neutralized below the pH Action Levels before discharge.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.27	Mobile toilets should provide on site and located away the stream course.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.28	License collector should be employed for handling the sewage of mobile toilet.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.29	Is ponding /stand water avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.30	Is open stockpiles well covered by impermeable sheet?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Section 2: Air Quality</b>							
2.01	Are there wheel washing facilities with high pressure jets provided at every vehicle exit point?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.02	Are vehicles washed to remove any dusty materials from their bodies and wheels before leaving construction sites?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.03	Are the excavated materials sprayed with water during handling?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.04	Are stockpiles of dusty materials sprayed with water, covered or placed in sheltered areas?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.05	Is the exposed earth properly treated within six months after the last construction activities?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.06	Are the access roads sprayed with water to maintain the entire road surface wet or paved?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.07	Is the surface where any drilling, cutting, polishing or breaking operation continuously sprayed with water?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.08	Is the load on vehicles covered entirely by clean impervious sheeting?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.09	Is the loading of materials to a level higher than the side and tail boards during transportation by vehicles avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.10	Is the road leading to the construction site within 30m of the vehicle entrance kept clear of dusty materials?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.11	Is dark smoke emission from plant/equipment avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.12	Are de-bagging, batching and mixing processes carried out in sheltered areas during the use of bagged cement?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.13	Are site vehicles travelling within the speed limit not more than 15km/hour?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.14	Are hoardings of not less than 2.4m high provided along the site boundary, which adjoins areas accessible to the public?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.15	Is open burning avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.16	Excavated materials from the stream must remove form site on the same day. The materials shall be stored in covered impermeable skips awaiting removal from site.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Section 3: Noise</b>							
3.01	Are noisy equipment and activities positioned as far as practicable from the sensitive receivers?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.02	Is silenced equipment adopted?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.03	Is idle equipment turned off or throttled down?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.04	Are all plant and equipment well maintained and in good condition?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.05	Are noise barriers or enclosures provided at areas where construction activities cause noise impact on sensitive receivers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.06	Are hand held breakers fitted with valid noise emission labels during operation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.07	Are air compressors fitted with valid noise emission labels during operation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Note:	Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-Up actions N/A: Not Applicable	Not Obs.	Yes	No	Follow Up	N/A	Photo/Remarks
3.08	Are flaps and panels of mechanical equipment closed during operation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.09	Are Construction Noise Permit(s) applied for percussive piling works?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.10	Are Construction Noise Permit(s) applied for general construction works during restricted hours?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.11	Are valid Construction Noise Permit(s) posted at site entrances?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.12	Use of quiet plant had been used on site to minimise the construction noise impact to the surrounding residences/dwellings (Level 1 mitigation measures).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.13	Temporary/Moveable noise barrier or site hoarding are provide or erect at the site boundary to minimise the noise impact of the closest NSRs or stationary equipments shield by the noise barrier which cannot visible from NSRs (Level 2 mitigation measure)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.14	Temporary/Moveable noise barrier equal to or more than 3m height with 10kg/m2 are provide for noise mitigation measures (Level 2 mitigation measures).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Section 4: Waste/Chemical Management</b>							
4.01	Waste Management Plan had been submit to Engineer for approval.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.02	Are receptacles available for general refuse collection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.03	Is general refuse sorting or recycling implemented?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.04	Is general refuse disposed of properly and regularly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.05	Is the Contractor registered as a chemical waste producer?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.06	Are the chemical waste containers and storage area properly labelled?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.07	Are the chemical wastes stored in proper storage areas?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.08	Is the chemical container or equipment provided with drip tray?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Remark 1
4.09	Is the chemical waste storage area used for storage of chemical waste only?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.10	Are incompatible chemical wastes stored in different areas?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.11	Are the chemical wastes disposed of by licensed collectors?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.12	Are trip tickets for chemical wastes disposal available for inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.13	Are chemical/fuel storage areas bounded?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.14	Are designated areas identified for storage and sorting of construction wastes?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.15	Are construction wastes sorted (inert and non-inert) on site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.16	Are construction wastes reused?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.17	Are construction wastes disposed of properly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.18	Are site hoardings and signboards made of durable materials instead of timber?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.19	Is trip ticket system implemented for the disposal of construction wastes and records available for inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.20	Are appropriate procedures followed if contaminated material exists?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.21	Is relevant license/ permit for disposal of construction waste or excavated materials available for inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.22	Site cleanliness and appropriate waste management training had provided for the site workers.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.23	Contaminated sediments will managed according to WBTC No.12/2000 and EWTB TC(W) No. 34/2002.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

<b>Note:</b> Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-Up actions N/A: Not Applicable		Not Obs.	Yes	No	Follow Up	N/A	Photo/Remarks
<b>Section 5: Landscape &amp; Visual</b>							
5.01	Are retained and transplanted trees in health condition?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Refer to Monthly EM&A report - September 2011 - Appendix M
5.02	Are retained and transplanted trees properly protected?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Refer to tree photos
5.03	Are surgery works carried out for the damaged trees?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.04	Is damage to trees outside site boundary due to construction activities avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.05	Is the night-time lighting controlled to minimize glare to sensitive receivers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Section 6: Others</b>							
6.01	Are relevant Environmental Permits posted at all vehicle site entrances/exits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

**(Sok Kwu Wan)**

**Remarks:**

**Findings of Site Inspection: (27 September 2011)**



The Contractor should provide drip tray for the oil drum.

**Follow up:**



Drip tray was provided.







## **Appendix L**

### **Implementation Schedule of Mitigation Measures**

### Implementation Schedule of Air Quality Measures

EIA Ref	EM&A Ref	Environmental Protection Measures*	Location / Timing	Implementation Agent	Implementation Stages**			Relevant Legislation & Guidelines
					D	C	O	
<b>Construction Phase</b>								
3.32	2.34	Installation of 2m high solid fences around the construction site of Pumping Station P2.	Work site / during construction	Contractor		√		
3.34	2.34	Adopting the following good site practices and follow the dust control requirements of the Air Pollution Control (Construction Dust) Regulation: <ul style="list-style-type: none"> <li>• Stockpiles of imported material kept on site should be contained within hoardings, dampened and / or covered during dry and windy weather;</li> <li>• Material stockpiled alongside trenches should be covered with tarpaulins whenever works are close to village houses;</li> <li>• Water sprays should be used during the delivery and handling of cement, sands, aggregates and the like.</li> <li>• Any vehicle used for moving sands, aggregates and construction waste should have properly fitting side and tail boards. Materials should not be loaded to a level higher than the side and tail boards, and should be covered by a clean tarpaulin.</li> </ul>	Work site / during construction	All contractors		√		EIAO-TM, APCO, Air Pollution Control (Construction Dust) Regulation
3.36	Section 2	1 hour and 24 hour dust monitoring and site audit	Designated air monitoring locations / throughout construction period	Contractor/ Environmental Team		√		EM&A Manual

\* All recommendations and requirements resulted during the course of EIA Process, including ACE and/or accepted public comment to the proposed project.

\*\* D=Design, C=Construction, O=Operation

N/A Not applicable

### Implementation Schedule of Noise Measures

EIA Ref	EM&A Ref	Environmental Protection Measures*	Location/Timing	Implementation Agent	Implementation Stages **			Relevant Legislation & Guidelines
					D	C	O	
<b>Construction Phase</b>								
4.41-4.43	3.19	<ul style="list-style-type: none"> <li>• Use of quiet PME for the construction of the pumping stations</li> <li>• Use of temporary noise barrier during the construction of Pumping Station P1a</li> </ul>	Work site /during the construction of Pumping Stations	Contractor		√		EIAO-TM, NCO
4.44 – 4.49	3.19	Implementation of following measures during the sewer construction: <ul style="list-style-type: none"> <li>• Use of quiet PME or method;</li> <li>• Restriction on the number plant (1 item for each type of plant); and</li> <li>• Good Site Practices                             <ul style="list-style-type: none"> <li>➤ Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program.</li> <li>➤ Mobile plant, if any, should be sited as far away from NSRs as possible.</li> <li>➤ Machines and plant (such as trucks) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.</li> <li>➤ Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs.</li> <li>➤ Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction activities.</li> </ul> </li> </ul>	Work site /during the construction of Sewer.	Contractor		√		

EIA Ref	EM&A Ref	Environmental Protection Measures*	Location/Timing	Implementation Agent	Implementation Stages **			Relevant Legislation & Guidelines
					D	C	O	
4.50 – 4.53	3.19	<ul style="list-style-type: none"> <li>Use of noise screening structures such as acoustic shed and barrier wherever practicable and feasible in areas with sufficient clearance and headroom.</li> <li>Adoption of manual working method wherever practicable and feasible in areas where the worksites of the proposed sewer alignment are located less than 20 m from the residential NSRs and less than 30 m from the temple (THT) and the public library.</li> <li>Use of PME for the construction of the section of sewer between the NSR and the Pumping Station P1a should not be allowed during the excavation work of Pumping Station P1a.</li> </ul>	Work site /during the construction of Sewer.	Contractor		√		
4.60	Section 35	Noise monitoring	Designated noise monitoring locations / throughout construction period	Contractor/ Environmental Team		√		EM&A Manual

\* All recommendations and requirements resulted during the course of EIA Process, including ACE and/or accepted public comment to the proposed project.  
 \*\* D=Design, C=Construction, O=Operation  
 N/A Not applicable

### Implementation Schedule of Water Quality Control Measures

EIA Ref	EM&A Ref	Environmental Protection Measures*	Location (duration /completion of measures)	Implementation Agent	Implementation Stages**			Relevant Legislation and Guidelines
					D	C	O	
<b>Construction Phase</b>								
5.77	4.35	No-dig method using Horizontal Directional Drilling (HDD) would be used for the installation of outfall pipe of about 480 m from shore to minimize the potential water quality impacts arising from the dredging works required for the submarine outfall construction.  Silt curtains will be installed around the exit area of the pilot drill.	Marine works site / During construction of submarine outfall	Contractor		√		
5.73 – 5.78	4.36	Dredging Works Implementation of following measures during the dredging works: <ul style="list-style-type: none"> <li>dredging should be undertaken using closed grab dredgers with a maximum total production rate of 55m<sup>3</sup>/hr;</li> <li>deployment of 2-layer silt curtains with the first layer enclosing the grab and the second layer at around 50m from the dredging area while dredging works are in progress;</li> <li>dredging operation should be undertaken during ebb tide only;</li> <li>all vessels should be sized such that adequate clearance (i.e. minimum clearance of 0.6m) is maintained between vessels and the sea bed at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash;</li> <li>all pipe leakages should be repaired promptly and plant should not be operated with leaking pipes;</li> <li>excess material should be cleaned from the decks and exposed fittings of barges before the vessel is moved;</li> <li>adequate freeboard (i.e. minimum of 200mm) should be maintained on barges to ensure that decks are not washed by wave action;</li> <li>all barges should be fitted with tight fitting seals to their bottom openings to prevent leakage of material;</li> <li>loading of barges should be controlled to prevent splashing of dredged material to the surrounding water, and barges should not be filled to a level which will cause the overflow of materials or polluted water during loading or transportation; and</li> </ul>	Marine works site and at the identified water sensitive receivers/ During construction	Contractor		√		



EIA Ref	EM&A Ref	Environmental Protection Measures*	Location (duration /completion of measures)	Implementation Agent	Implementation Stages**			Relevant Legislation and Guidelines
					D	C	O	
		<ul style="list-style-type: none"> <li>the decks of all vessels should be kept tidy and free of oil or other substances that might be accidentally or otherwise washed overboard.</li> </ul>						
5.79	4.37	<p><u>Construction Run-off and Drainage</u></p> <p>Implementation of the following site practices outlined in ProPECC PN 1/94 for “Construction Site Drainage”</p> <ul style="list-style-type: none"> <li>Provision of perimeter channels to intercept storm-runoff from outside the site. These should be constructed in advance of site formation works and earthworks.</li> <li>Works programmes should be designed to minimize works areas at any one time, thus minimizing exposed soil areas and reducing the potential for increased siltation and runoff.</li> <li>Sand / silt removal facilities such as sand traps, silt traps and sediment basins should be provided to remove the sand / silt particles from run-off. These facilities should be properly and regularly maintained. These facilities should be carefully planned to ensure that they would be installed at appropriate locations to capture all surface water generated on site.</li> <li>Careful programming of the works to minimise soil excavation works during rainy seasons.</li> <li>Exposed soil surface should be protected by paving or hydroseeding as soon as possible to reduce the potential of soil erosion.</li> <li>Trench excavation should be avoided in the wet season, and if necessary, these should be excavated and backfilled in short sections.</li> <li>Open stockpiles of construction materials on site should be covered with tarpaulin or similar fabric</li> </ul>	Construction works sites	Contractor		√		ProPECC PN 1/94
5.80	4.38	<p><u>General Construction Activities</u></p> <p>Debris and rubbish generated on-site should be collected, handled and disposed of properly to avoid entering the nearby coastal waters and stormwater drains. All fuel tanks and storage areas should be provided</p>	Construction works sites	Contractor		√		

EIA Ref	EM&A Ref	Environmental Protection Measures*	Location (duration /completion of measures)	Implementation Agent	Implementation Stages**			Relevant Legislation and Guidelines
					D	C	O	
		with locks and be sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank. Open drainage channels and culverts near the works areas should be covered to block the entrance of large debris and refuse.						
5.81	4.39	<u>Wastewater Arising from Workforce</u> Portable toilets should be provided by the Contractors, where necessary, to handle sewage from the workforce. The Contractor should also be responsible for waste disposal and maintenance practices.	Construction works sites	Contractor		√		
5.96	Section 4	Water quality monitoring	Designated water monitoring locations/ throughout construction period	Contractor		√		EM&A Manual

\* All recommendations and requirements resulted during the course of EIA Process, including ACE and/or accepted public comment to the proposed project.

\*\* D=Design, C=Construction, O=Operation

N/A Not applicable

### Implementation Schedule of Sediment Contamination Mitigation Measures

EIA Ref	EM&A Ref	Environmental Protection Measures*	Location / Timing	Implementation Agent	Implementation Stages**			Relevant Legislation & Guidelines
					D	C	O	
6.17	5.3	Follow the requirement and procedures for dredged mud disposal specified under the WBTC No. 34/2002.	Marine works site / during dredging works	Contractor		√		WBTC No. 34/2002
6.18	5.4	Implement appropriate dredging methods which have been incorporated into the recommended water quality mitigation measures.	Marine works site, during dredging works	Contractor		√		
6.19	5.5	During the transportation and disposal of the dredged sediment, the following measures should be taken: <ul style="list-style-type: none"> <li>• Bottom opening of barges should be fitted with tight fitting seals to prevent leakage of material. Excess material should be cleaned from the decks and exposed fittings of barges and hopper dredgers before the vessel is moved.</li> <li>• Monitoring of the barge loading should be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels should be equipped with automatic self monitoring devices as specified by the DEP.</li> </ul>	Marine works site and at the identified sensitive receivers	Contractor		√		

\* All recommendations and requirements resulted during the course of EIA Process, including ACE and/or accepted public comment to the proposed project.

\*\* D=Design, C=Construction, O=Operation

N/A Not applicable

### Implementation Schedule of Solid Waste Management Measures

EIA Ref	EM&A Ref	Environmental Protection Measures*	Location / Timing	Implementation Agent	Implementation Stages **			Relevant Legislation & Guidelines
					D	C	O	
<b>Construction Phase</b>								
7.14	6.4	<u>Good site practices</u> <ul style="list-style-type: none"> <li>Nomination of an approved person, such as a site manager, to be responsible for implementation of good site practices, arranging for collection and effective disposal to an appropriate facility, of all wastes generated at the site</li> <li>Training (proper waste management and chemical handling procedure) should be provided for site staffs</li> <li>Appropriate measures to minimize windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers.</li> <li>Provision of sufficient waste disposal points and regular collection for disposal.</li> <li>Separation of chemical wastes for special handling and appropriate treatment at the Chemical Waste Treatment Facility.</li> <li>Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors.</li> <li>Maintain records of the quantities of wastes generated, recycled and disposed.</li> </ul>	Work sites/During construction	Contractor		√		Waste Disposal Ordinance (Cap.54)
7.15	6.5	To monitor the disposal of C&D waste at landfills and to control fly tipping, a trip-ticket system should be included as one of the contractual requirements and implemented by an Environmental Team undertaking the Environmental Monitoring and Audit work. An Independent Environmental Checker should be responsible for auditing the results of the system.	Work sites/During construction	Contractor		√		WBTC No. 21/2002
7.16	6.6	Recommendations to achieve waste reduction include: <ul style="list-style-type: none"> <li>segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal;</li> <li>to encourage collection of aluminium cans by individual collectors, separate labelled bins should be provided to segregate this waste from other general refuse generated</li> </ul>	Work sites/During construction	Contractor		√		WBTC No. 4/98, 5/98

EIA Ref	EM&A Ref	Environmental Protection Measures*	Location / Timing	Implementation Agent	Implementation Stages **			Relevant Legislation & Guidelines
					D	C	O	
		by the work force; <ul style="list-style-type: none"> <li>any unused chemicals or those with remaining functional capacity should be recycled;</li> <li>use of reusable non-timber formwork to reduce the amount of C&amp;D material;</li> <li>prior to disposal of C&amp;D waste, it is recommended that wood, steel and other metals should be separated for re-use and / or recycling to minimise the quantity of waste to be disposed of to landfill;</li> <li>proper storage and site practices to minimise the potential for damage or contamination of construction materials; and</li> <li>plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste.</li> </ul>						
7.18	6.7	<u>General Site Wastes</u> <ul style="list-style-type: none"> <li>A collection area for construction site waste should be provided where waste can be stored prior to removal from site</li> <li>An enclosed and covered area for the collection of the waste is recommended to reduce 'wind blow' of light material</li> </ul>	Work sites/During construction	Contractor		√		Public Health and Municipal Services Ordinance (Cap. 132)
7.19-7.20	6.8 – 6.9	<u>Chemical Wastes</u> <ul style="list-style-type: none"> <li>After use, chemical waste should be handled according to the Code of Practice on the Package, Labelling and Storage of Chemical Wastes</li> <li>Any unused chemicals or those with remaining functional capacity should be recycled</li> <li>Waste should be properly stored on site within suitably designed containers and should be collected by an approved licensed waste collectors for disposal at the Chemical Waste Treatment Facility or other licenced facility in accordance with the Waste Disposal (Chemical Waste) (General) Regulation under the Waste Disposal Ordance.</li> </ul>	Work sites/During construction	Contractor		√		Waste Disposal (Chemical Waste) (General) Regulation, Code of Practice on the Packaging Labelling and Storage of Chemical Wastes



EIA Ref	EM&A Ref	Environmental Protection Measures*	Location / Timing	Implementation Agent	Implementation Stages **			Relevant Legislation & Guidelines
					D	C	O	
		<ul style="list-style-type: none"> <li>Any service shop and minor maintenance facilities should be located on hard standing within a bunded area, and sumps and oil interceptors should be provided.</li> <li>Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should be undertaken within the designated areas equipped control these discharges</li> </ul>						
7.21-7.22	6.10 – 6.11	<p><u>Construction and Demolition Material</u></p> <ul style="list-style-type: none"> <li>The C&amp;D waste should be separated on-site into three categories: <ul style="list-style-type: none"> <li>➤ public fill, the inert portion of the C&amp;D material (e.g. concrete and rubble), which should be re-used on-site or disposed of at a public filling area;</li> <li>➤ C&amp;D waste for re-use and / or recycling, the non-inert portion of the C&amp;D material, (e.g. steel and other metals, woods, glass and plastic);</li> <li>➤ C&amp;D waste which cannot be re-used and / or recycled (e.g. wood, glass and plastic)</li> </ul> </li> <li>Where possible, inert material should be re-used on-site</li> <li>Where practicable, steel and other metals should be separated for re-use and/or recycling prior to disposal of C&amp;D material</li> </ul>	During all construction phases	Contractors		√		WBTC No. 4/98, 5/98, 21/2002, 25/99, 12/2000

\* All recommendations and requirements resulted during the course of EIA Process, including ACE and/or accepted public comment to the proposed project.

\*\* D=Design, C=Construction, O=Operation

N/A Not applicable

### Implementation Schedule of Ecological Impact Measures

EIA Ref	EM&A Ref	Environmental Protection Measures*	Location / Timing	Implementation Agent	Implementation Stages			Relevant Legislation & Guidelines
					D	C	O	
<b>Construction Phase</b>								
8.157	7.2	<u>Terrestrial Ecology</u> <ul style="list-style-type: none"> <li>Labeling and fencing of the uncommon tree species</li> <li>Avoidance of use of woodland habitats as Works Area, in particular where trees are located</li> </ul>	Work sites / during construction phase	Contractor		√		
8.159 – 8.160	7.3	<u>Subtidal Ecology</u> Use of HDD technique  Dredging <ul style="list-style-type: none"> <li>Use of closed-grab dredger</li> <li>Deploy silt curtains during dredging.</li> </ul>	Marine works site / during dredging works	Contractor		√		
8.161	7.4	Site runoff <ul style="list-style-type: none"> <li>Construction and maintenance of sand / silt removal facilities</li> <li>Silt curtains</li> <li>Timing of earthworks</li> <li>Coverage of sand / fill piles during storms.</li> <li>Barriers along the landward side of Pumping Station P2 site boundary (to prevent site runoff from entering area with Romer's Tree Frog)</li> </ul>	All work sites / during construction phase	Contractor		√		

\* All recommendations and requirements resulted during the course of EIA Process, including ACE and/or accepted public comment to the proposed project.

\*\* D=Design, C=Construction, O=Operation

N/A Not applicable

### Implementation Schedule of Fisheries Impact Measures

EIA Ref	EM&A Ref	Environmental Protection Measures*	Location / Timing	Implementation Agent	Implementation Stages**			Relevant Legislation & Guidelines
					D	C	O	
9.29	8.3	Use of closed grab dredging and silt curtains around the immediate dredging area and low dredging rates as recommended in Water Quality of the EIA report	Marine works site, during dredging works	Contractor		√		TM on EIA Process
9.32	Section 8	Water quality monitoring (see Implementation Schedule for Water Quality Control Measures)	Designated monitoring locations / throughout construction period and 1 year following operation of the STW	Contractor and Environmental Team		√	√	EM&A Manual

\* All recommendations and requirements resulted during the course of EIA Process, including ACE and/or accepted public comment to the proposed project.

\*\* D=Design, C=Construction, O=Operation

N/A Not applicable

### Implementation Schedule of Landscape and Visual Impact Measures

EIA Ref	EM&A Ref	Environmental Protection Measures*	Location / Timing	Implementation Agent	Implementation Stages **			Relevant Legislation & Guidelines
					D	C	O	
<b>Construction Phase</b>								
10.74	9.10	Retaining existing trees and minimizing damage to vegetation by close coordination and on site alignment adjusted of rising main and gravity sewer pipelines.	All sites	Contractor		√		WBTC No. 14/2002
		Careful and efficient transplanting of affected trees to temporary or final transplant location (the proposed tree to be transplanted is a semi-mature <i>Macaranga tanarius</i> and is located at the proposed Pumping Station P2 location).	All sites	Contractor		√		WBTC No. 14/2002
		Short excavation and immediate backfilling sections upon completion of works to reduce active site area.	All sites	Contractor		√		
		Screening of site construction works by use of hoarding that is appropriate to its site.	All sites	Contractor		√		WBTC No. 19/2001
		Conservation of topsoil for reuse.	All sites	Contractor		√		
		Night-time light source from marine fleets should be directed away from the residential units.	Outfall area.	Contractor		√		

\* All recommendations and requirements resulted during the course of EIA Process, including ACE and/or accepted public comment to the proposed project.

\*\* D=Design, C=Construction, O=Operation

N/A Not applicable

## **Appendix M**

### **Tree Inspection Report**



經緯園藝有限公司

Melofield Nursery & Landscape Contractor Ltd

元朗下攸田村 125 號 125, Ha Yau Tin Tsuen, Yuen Long, N.T.

TEL: (852) 2572-0048 FAX: (822)2573-9099 E-mail: melofield@netvigator.com

Contract No. DC/2009/13

Project Name: Construction of Sewage Treatment Works at  
Yung Shue Wan and Sok Kwu Wan

## Sok Kwu Wan

### Tree Inspection Report for *Celtis timorensis*

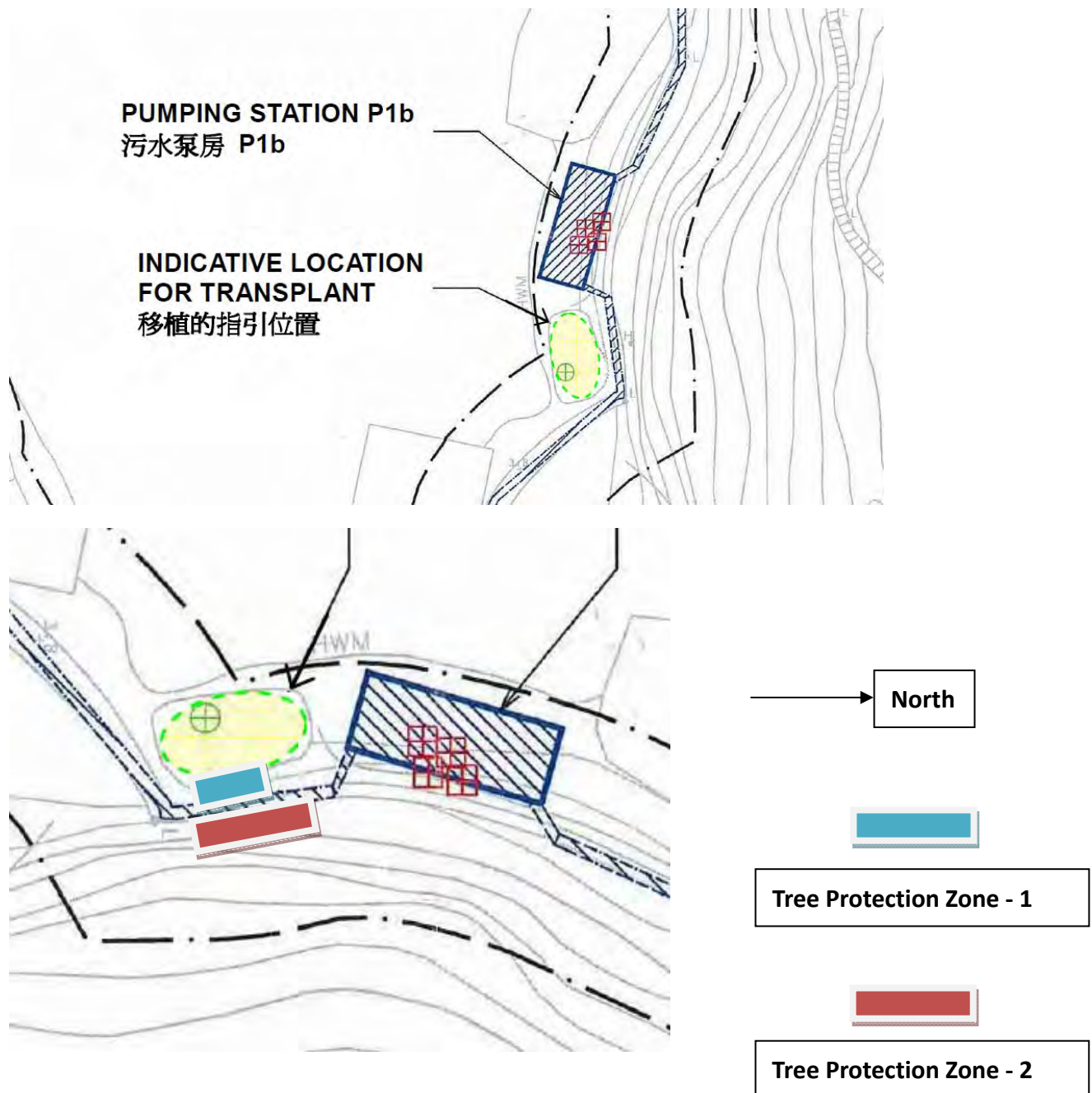
CT7, CT8, CT9, CT10 &  
CT\_1A,CT\_2A,CT\_3A,CT\_4A,CT\_5A,CT\_6A,CT\_7A

Inspection Date : 05-09-2011



## 1. Introduction

According to the requirement in the Environmental Permit EP-281/2007/A, the uncommon tree species, *Celtis timorensis*, found in the pumping station P1b area as shown in figure below shall be properly transplanted to the area immediately south of the Pumping Station P1b before commencement of construction of the Pumping Station P1b



This Tree Inspection Report describes the bi weekly monitoring result of the *Celtis timorensis*, (Label CT7, CT8, CT9, CT10(Original planted) & CT\_1A to CT\_7A (which were additionally planted as a contingency proposal in case CT7, CT8, CT9 & CT10 could not recovered).

## 2. Summary of Inspection

Date of Inspection	5 September 2011, around 13:30
Location	A soil ground adjacent to the Pumping Station P1b Chung Mei, at Sok Kwu Wan, Lamma Island.
Weather	Cloudy, the vegetation are located under the shade of existing trees.
The labeled <i>Celtis timorensis</i> under Tree Protection Zone 1	CT7, CT8, CT9 & CT10
The labeled <i>Celtis timorensis</i> under Tree Protection Zone 2	CT_1A, CT_2A, CT_3A, CT_4A, CT_5A, CT_6A & CT_7A,

## 3. Proposed Bi Weekly Inspection Schedule

Month	Actual / proposed Inspection Date
July, 2011	14 and 25 July 2011
August, 2011	9 and 26 August 2011
September, 2011	5 and 23 September 2011

#### 4. Summary of Inspection Result

Tree No	Speciation	Health Status
CT7	<i>Celtis timorensis</i>	Very Poor
CT8	<i>Celtis timorensis</i>	Very Poor
CT9	<i>Celtis timorensis</i>	Very Poor
CT10	<i>Celtis timorensis</i>	Very Poor
CT_1A	<i>Celtis timorensis</i>	Poor
CT_2A	<i>Celtis timorensis</i>	Poor
CT_3A	<i>Celtis timorensis</i>	Poor
CT_4A	<i>Celtis timorensis</i>	Poor
CT_5A	<i>Celtis timorensis</i>	Poor
CT_6A	<i>Celtis timorensis</i>	Poor
CT_7A	<i>Celtis timorensis</i>	Poor

#### Inspection parameters or criteria

- Good      Leaves and stem grown very lush, additional or larger in size of leaves can be observed in each inspection
- Fair        Green leaves can be found. No major unhealthy condition of the plant is observed. The condition is stable.
- Poor        Fewer green leaves than usual are observed. No new leaf is grown and the condition keep stable. The bark is dry. The plant is weak.
- Very Poor    No new green leaf or bud can be observed. The bark is dry. The plant is weak.

## **5. Description of Inspection Results:**

### **CT7 to CT10**

#### **CT7**

The condition of this tree is poor. No bud was found in the top of the twig.  
The bark is dry. No significant improvement in health. The plant is weak.

#### **CT8**

The condition of this tree is poor. No bud was found in the top of the twig.  
The bark is dry. No significant improvement in health. The plant is weak.

#### **CT9**

The condition of this tree is poor. Few buds were found in the top of the twig.  
The bark is dry. No significant improvement in health. The plant is weak.

#### **CT10**

The condition of this tree is poor. No bud was found in the top of the twig.  
The bark is dry. No significant improvement in health. The plant is weak.

### **CT\_1A to CT\_7A**

#### **CT\_1A**

The condition of this tree is poor. Less leaves were growth on the branches.  
The bark is dry. The plant is weak.

#### **CT\_2A**

The condition of this tree is poor. No bud was found in the top of the twig.  
The bark is dry. No significant improvement in health. The plant is weak.

#### **CT\_3A**

The condition of this tree is poor. Some leaves were found wilting. The bark  
is dry. No significant improvement in health. The plant is weak.

CT\_4A

The condition of this tree is poor. Some new leaves were found in the top of the twig. The bark is dry. No significant improvement in health. The plant is weak.

CT\_5A

The condition of this tree is poor. Some new leaves were found on the branches. The bark is dry. The plant is weak.

CT\_6A

The condition of this tree is poor. Less leaves were growth on the branches. The bark is dry. The plant is weak.

CT\_7A

The condition of this tree is poor. Found some leaves wilt. The bark is dry. No Signification improvement in health. The plant is weak.

**Overall Condition**

The overall health conditions of CT7-10 in Tree protection Zone 1 were not satisfactory. They may better recover under this warm and rainy weather. Remove any insect found on the plant physically to prevent the bud attacked by leaf-feeding insect. No pesticide should be used when the plants are weak.

In the Tree Protection Zone 2, the condition of CT\_1A-7A is Poor. Regular watering and weeding will be carried out during dry weather.



## **Annex A**

**Photo Records of Tree CT7, CT8, CT9, CT10,  
CT\_1A, CT\_2A, CT\_3A, CT\_4A, CT\_5A, CT\_6A & CT\_7A**

**Tree ID: CT7**

**Photo 1: Overall view of CT7**



**Current Status: Poor**

**Justification: No bud was found in the top of the twig. The bark is dry. No significant improvement in health. The plant is weak.**

**Tree ID: CT8**

**Photo 2: Overall view of CT8**



**Current Status: Poor**

**Justification: No bud was found in the top of the twig. The bark is dry. No significant improvement in health. The plant is weak.**

**Tree ID: CT9**

**Photo 3: Overall view of CT9**



**Current Status: Poor**

**Justification: Few bud were found in the top of the twig. The bark is dry. No significant improvement in health. The plant is weak.**

**Tree ID: CT10**

**Photo 4: Overall view of CT10**

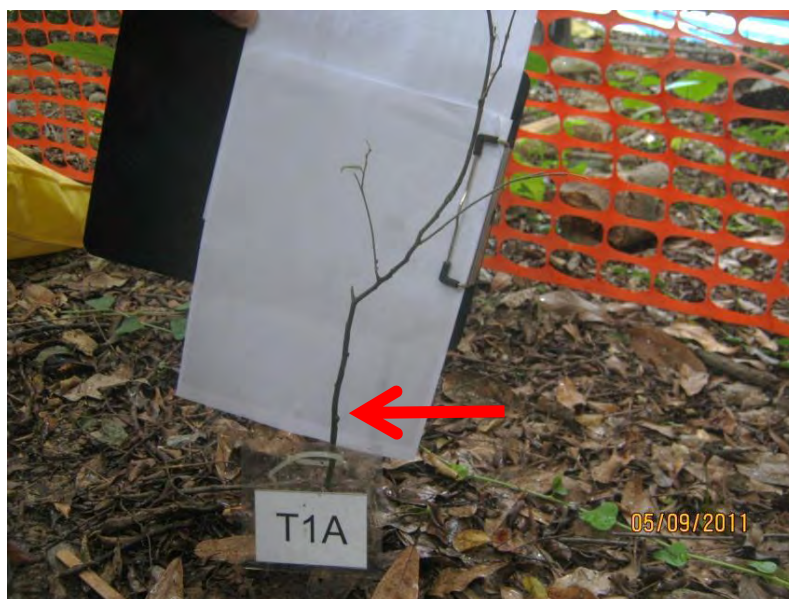


**Current Status: Poor**

**Justification: No bud was found in the top of the twig. The bark is dry. No significant improvement in health. The plant is weak.**

**Tree ID: CT\_1A**

**Photo 5: Overall view of CT\_1A**



**Current Status: Poor**

**Justification: Less leaves were growth on the branches. The bark is dry. The plant is weak.**

**Tree ID:CT\_2A**

**Photo 6: Overall view of CT\_2A**



**Current Status: Poor**

**Justification: No bud was found in the top of the twig. The bark is dry. No significant improvement in health. The plant is weak.**



**Tree ID: CT\_3A**

**Photo 7: Overall view of CT\_3A**



**Current Status: Poor**

**Justification: Found some leaves wilt. The bark is dry. No significant improvement in health. The plant is weak.**

**Tree ID: CT\_4A**

**Photo 8: Overall view of CT\_4A**



**Current Status: Poor**

**Justification: Some new leaves grown was found in the top of the twig. The bark is dry. No significant improvement in health. The plant is weak.**

**Tree ID: CT\_5A**

**Photo 9: Overall view of CT\_5A**



**Current Status: Poor**

**Justification:**

**Some new leaves grown was found on the branches. The bark is dry. The plant is weak.**

**Tree ID: CT\_6A**

**Photo 10: Overall view of CT\_6A**



**Current Status: Poor**

**Justification: Less leaves were growth on the branches. The bark is dry. The plant is weak.**



**Tree ID: CT\_7A**

**Photo 11: Overall view of CT\_7A**



**Current Status: Poor**

**Justification: Found some leaves wilt. The bark is dry. No signification improvement in health. The plant is weak.**

經緯園藝有限公司

Melofield Nursery & Landscape Contractor Ltd

元朗下攸田村 125 號 125, Ha Yau Tin Tsuen, Yuen Long, N.T.

TEL: (852) 2572-0048 FAX: (822)2573-9099 E-mail: melofield@netvigator.com

Contract No. DC/2009/13

Project Name: Construction of Sewage Treatment Works at  
Yung Shue Wan and Sok Kwu Wan

## Sok Kwu Wan

### Tree Inspection Report for *Celtis timorensis*

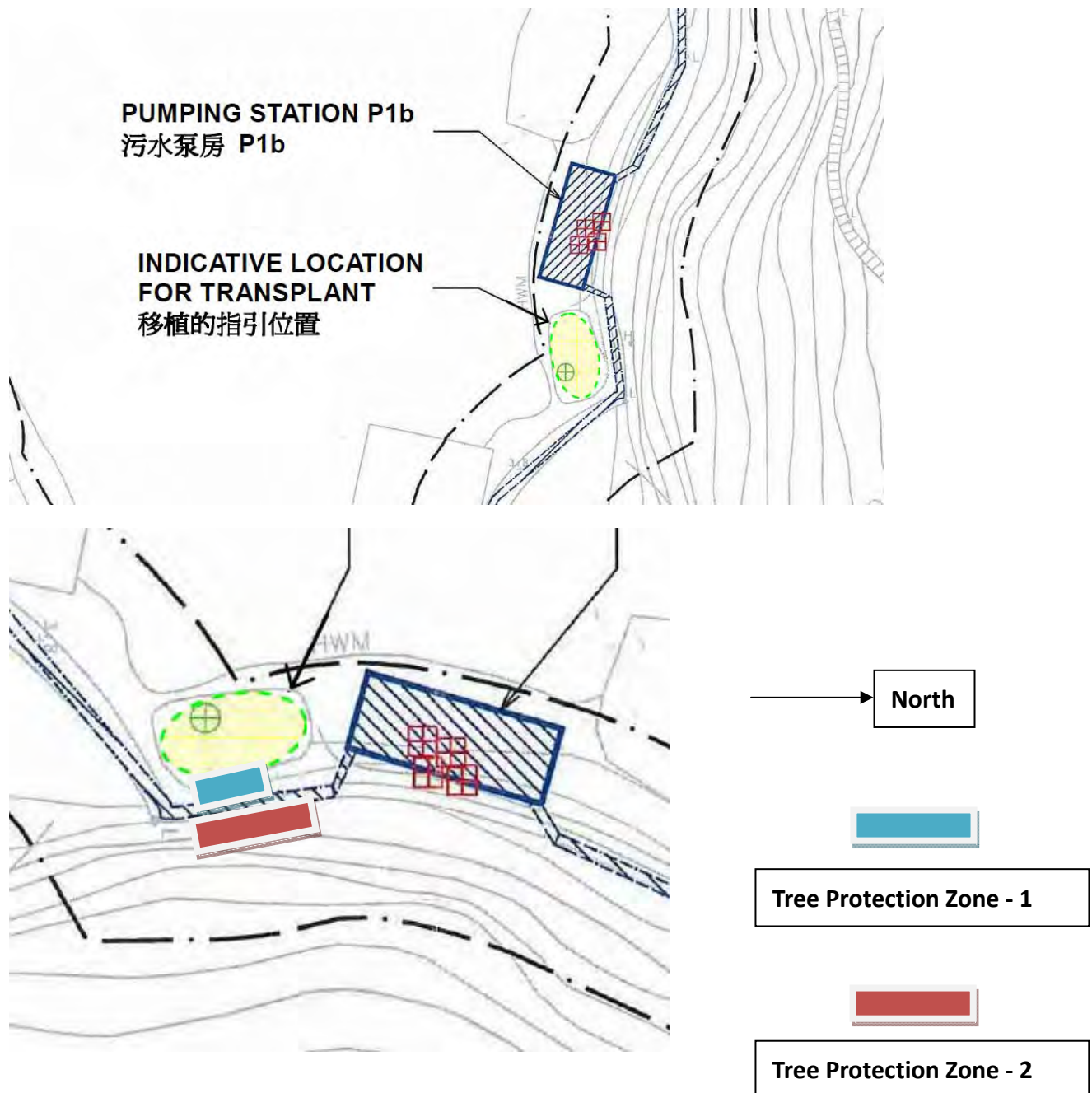
CT7, CT8, CT9, CT10 &  
CT\_1A,CT\_2A,CT\_3A,CT\_4A,CT\_5A,CT\_6A,CT\_7A

Inspection Date : 23-09-2011



## 1. Introduction

According to the requirement in the Environmental Permit EP-281/2007/A, the uncommon tree species, *Celtis timorensis*, found in the pumping station P1b area as shown in figure below shall be properly transplanted to the area immediately south of the Pumping Station P1b before commencement of construction of the Pumping Station P1b



This Tree Inspection Report describes the bi weekly monitoring result of the *Celtis timorensis*, (Label CT7, CT8, CT9, CT10(Original planted) & CT\_1A to CT\_7A (which were additionally planted as a contingency proposal in case CT7, CT8, CT9 & CT10 could not recovered).

## 2. Summary of Inspection

Date of Inspection	23 September 2011, around 13:30
Location	A soil ground adjacent to the Pumping Station P1b Chung Mei, at Sok Kwu Wan, Lamma Island.
Weather	Cloudy, the vegetation are located under the shade of existing trees.
The labeled <i>Celtis timorensis</i> under Tree Protection Zone 1	CT7, CT8, CT9 & CT10
The labeled <i>Celtis timorensis</i> under Tree Protection Zone 2	CT_1A, CT_2A, CT_3A, CT_4A, CT_5A, CT_6A & CT_7A,

## 3. Proposed Bi Weekly Inspection Schedule

Month	Actual / proposed Inspection Date
July, 2011	14 and 25 July 2011
August, 2011	9 and 26 August 2011
September, 2011	5 and 23 September 2011

#### 4. Summary of Inspection Result

Tree No	Speciation	Health Status
CT7	<i>Celtis timorensis</i>	Very Poor
CT8	<i>Celtis timorensis</i>	Very Poor
CT9	<i>Celtis timorensis</i>	Very Poor
CT10	<i>Celtis timorensis</i>	Very Poor
CT_1A	<i>Celtis timorensis</i>	Poor
CT_2A	<i>Celtis timorensis</i>	Poor
CT_3A	<i>Celtis timorensis</i>	Poor
CT_4A	<i>Celtis timorensis</i>	Poor
CT_5A	<i>Celtis timorensis</i>	Poor
CT_6A	<i>Celtis timorensis</i>	Poor
CT_7A	<i>Celtis timorensis</i>	Poor

#### Inspection parameters or criteria

- Good      Leaves and stem grown very lush, additional or larger in size of leaves can be observed in each inspection
- Fair      Green leaves can be found. No major unhealthy condition of the plant is observed. The condition is stable.
- Poor      Fewer green leaves than usual are observed. No new leaf is grown and the condition keep stable. The bark is dry. The plant is weak.
- Very Poor      No new green leaf or bud can be observed. The bark is dry. The plant is weak.

## 5. Description of Inspection Results:

### CT7 to CT10

#### CT7

The condition of this tree is poor. No bud was found in the top of the twig.  
The bark is dry. No significant improvement in health. The plant is weak.

#### CT8

The condition of this tree is poor. No bud was found in the top of the twig.  
The bark is dry. No significant improvement in health. The plant is weak.

#### CT9

The condition of this tree is poor. Few buds were found in the top of the twig.  
The bark is dry. No significant improvement in health. The plant is weak.

#### CT10

The condition of this tree is poor. No bud was found in the top of the twig.  
The bark is dry. No significant improvement in health. The plant is weak.

### CT\_1A to CT\_7A

#### CT\_1A

The condition of this tree is poor. Less leaves were growth on the branches.  
The bark is dry. The plant is weak.

#### CT\_2A

The condition of this tree is poor. No bud was found in the top of the twig.  
The bark is dry. No significant improvement in health. The plant is weak.

#### CT\_3A

The condition of this tree is poor. Some leaves were found wilting. The bark  
is dry. No significant improvement in health. The plant is weak.



CT\_4A

The condition of this tree is poor. Some new leaves were found in the top of the twig. The bark is dry. No significant improvement in health. The plant is weak.

CT\_5A

The condition of this tree is poor. Some new leaves were found on the branches. The bark is dry. The plant is weak.

CT\_6A

The condition of this tree is poor. Less leaves were growth on the branches. The bark is dry. The plant is weak.

CT\_7A

The condition of this tree is poor. Found some leaves wilt. The bark is dry. No Signification improvement in health. The plant is weak.

**Overall Condition**

The overall health conditions of CT7-10 in Tree protection Zone 1 were not satisfactory. They may better recover under this warm and rainy weather. Remove any insect found on the plant physically to prevent the bud attacked by leaf-feeding insect. No pesticide should be used when the plants are weak.

In the Tree Protection Zone 2, the condition of CT\_1A-7A is Poor. Regular watering and weeding will be carried out during dry weather.

## **Annex A**

**Photo Records of Tree CT7, CT8, CT9, CT10,  
CT\_1A, CT\_2A, CT\_3A, CT\_4A, CT\_5A, CT\_6A & CT\_7A**

**Tree ID: CT7**

**Photo 1: Overall view of CT7**



**Current Status: Poor**

**Justification: No bud was found in the top of the twig. The bark is dry. No significant improvement in health. The plant is weak.**

**Tree ID: CT8**

**Photo 2: Overall view of CT8**



**Current Status: Poor**

**Justification: No bud was found in the top of the twig. The bark is dry. No significant improvement in health. The plant is weak.**

**Tree ID: CT9**

**Photo 3: Overall view of CT9**

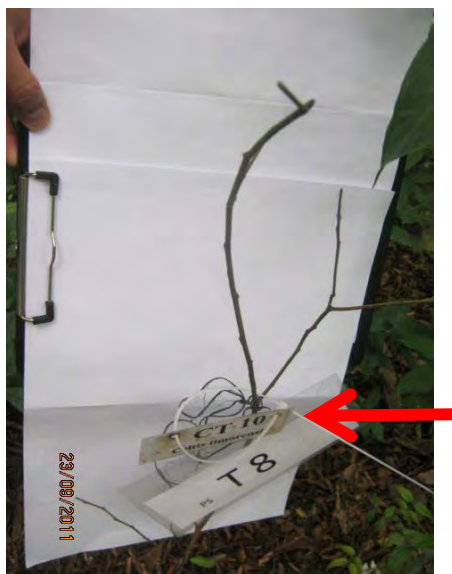


**Current Status: Poor**

**Justification: Few bud were found in the top of the twig. The bark is dry. No significant improvement in health. The plant is weak.**

**Tree ID: CT10**

**Photo 4: Overall view of CT10**



**Current Status: Poor**

**Justification: No bud was found in the top of the twig. The bark is dry. No significant improvement in health. The plant is weak.**

**Tree ID: CT\_1A**

**Photo 5: Overall view of CT\_1A**



**Current Status: Poor**

**Justification: Less leaves were growth on the branches. The bark is dry. The plant is weak.**

**Tree ID:CT\_2A**

**Photo 6: Overall view of CT\_2A**



**Current Status: Poor**

**Justification: No bud was found in the top of the twig. The bark is dry. No significant improvement in health. The plant is weak.**

**Tree ID: CT\_3A**

**Photo 7: Overall view of CT\_3A**



**Current Status: Poor**

**Justification: Found some leaves wilt. The bark is dry. No significant improvement in health. The plant is weak.**

**Tree ID: CT\_4A**

**Photo 8: Overall view of CT\_4A**



**Current Status: Poor**

**Justification: Some new leaves grown was found in the top of the twig. The bark is dry. No significant improvement in health. The plant is weak.**



**Tree ID: CT\_5A**

**Photo 9: Overall view of CT\_5A**



**Current Status: Poor**

**Justification:**

**Some new leaves grown was found on the branches. The bark is dry. The plant is weak.**

**Tree ID: CT\_6A**

**Photo 10: Overall view of CT\_6A**

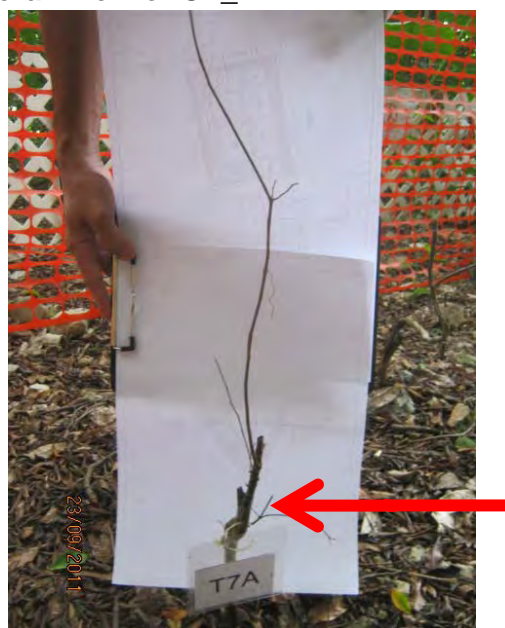


**Current Status: Poor**

**Justification: Less leaves were growth on the branches. The bark is dry. The plant is weak.**

**Tree ID: CT\_7A**

**Photo 11: Overall view of CT\_7A**



**Current Status: Poor**

**Justification: Found some leaves wilt. The bark is dry. No signification improvement in health. The plant is weak.**