



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.19) – FEBRUARY 2012**

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 March 2012	TCS00512/09/600/R0445v2		
		Nicola Hon Environmental Consultant	T.W. Tam Environmental Team Leader

<b>Version</b>	<b>Date</b>	<b>Description</b>
1	9 March 2012	First Submission
2	13 March 2012	Amended against IEC's comments on 13 March 2012.

# Scott Wilson CDM Joint Venture

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

Your reference:

Our reference: 05117/6/16/386865

Date: 14 March 2012

**BY FAX & EMAIL**

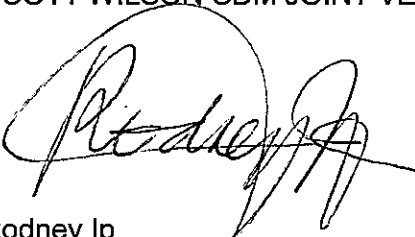
Attention: Mr Kenley C K Kwok

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. 19 (February 2012)**

We refer to the Monthly EM&A Monitoring Report No. 19 for February 2012 received under cover of the email from the Environmental Team, Action-United Environmental Services and Consulting (AUES), dated 13 March 2012. We have no comment and have verified the captioned report.

Yours faithfully  
SCOTT WILSON CDM JOINT VENTURE



Rodney Ip  
Independent Environmental Checker

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 19<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 29 February 2012 (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	12
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, NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

ES.05. No written or verbal environmental complaint, summons or successful prosecutions were recorded in this Reporting Period.

### REPORTING CHANGE

ES.06. There is no reporting change in this Reporting Period.

### SITE INSPECTION BY EXTERNAL PARTIES

ES.07. 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.08. As wet season is approaching, 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.

- ES.09. Moreover, special attention should be also paid on the dust mitigation measures to avoid fugitive dust emissions from loose soil surface or haul road. 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.

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## 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 **19<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 29 February 2012**.

**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>
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<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 of Pumping Station No. 1 & 2
  - Rock Slope Cutting Works
  - Construction of submarine outfall

### 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  $m s^{-1}$ .

#### 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 monitoring 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 detail 24-hour TSP data are shown in *Appendix G* and the graphical plots of 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
2-Feb-12	58	1-Feb-12	10:28	92	93	81
8-Feb-12	97	7-Feb-12	14:38	81	84	71
14-Feb-12	23	13-Feb-12	10:14	78	80	87
20-Feb-12	23	17-Feb-12	10:36	99	97	104
25-Feb-12	39	23-Feb-12	13:15	108	112	119
		29-Feb-12	13:17	92	97	103
Average (Range)	<b>48</b> (23 – 97)	Average (Range)		<b>93</b> (71 – 119)		

**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
2-Feb-12	69	1-Feb-12	10:46	79	87	81
8-Feb-12	63	7-Feb-12	12:26	66	71	81
14-Feb-12	25	13-Feb-12	12:38	98	81	86
20-Feb-12	21	17-Feb-12	10:49	92	87	97
25-Feb-12	41	23-Feb-12	13:05	112	105	117
		29-Feb-12	13:01	104	89	86
Average (Range)	<b>44</b> (21 – 69)	Average (Range)		<b>90</b> (66 – 117)		

**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
2-Feb-12	135	1-Feb-12	12:16	88	80	92
8-Feb-12	89	7-Feb-12	9:47	93	84	80
14-Feb-12	93	13-Feb-12	14:16	102	98	91
20-Feb-12	127	17-Feb-12	13:18	112	107	101
25-Feb-12	47	23-Feb-12	14:00	106	103	119
		29-Feb-12	9:49	77	90	91
Average (Range)	<b>98</b> (47 – 135)	Average (Range)		<b>95</b> (77 – 119)		

4.03 As shown in *Tables 4-1, 4-2 and 4-3*, 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
1-Feb-12	10:23	10:53	57.2	56.3	56.2	59.6	55.1	56.3	57.0
7-Feb-12	10:12	10:42	58.9	55.2	54.0	56.5	60.1	59.2	57.9
13-Feb-12	10:13	10:43	55.1	56.7	53.8	59.2	55.6	56.2	56.4
23-Feb-12	13:00	13:30	51.5	51.8	50.8	52.3	52.4	51.1	51.7
29-Feb-12	11:00	11:30	50.1	53.3	52.5	52.8	51.6	52.9	52.3
<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
1-Feb-12	13:08	13:38	63.6	62.9	59.6	64.1	62.6	60.9	62.5
7-Feb-12	11:40	12:10	58.9	57.6	58.1	55.1	60.8	56.3	58.2
13-Feb-12	11:36	12:06	63.8	60.9	62.1	63.8	59.7	60.1	62.0
23-Feb-12	13:00	13:30	64.0	61.1	64.7	62.4	70.0	70.7	67.0
29-Feb-12	10:00	10:30	60.2	61.1	60.4	60.9	63.2	62.9	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
1-Feb-12	14:16	14:46	59.6	58.3	58.1	59.8	60.1	59.2	59.2	62.2
7-Feb-12	13:23	13:53	55.4	55.5	53.5	55.1	57.9	56.3	55.8	58.8
13-Feb-12	13:47	14:17	52.3	50.9	51.8	53.3	52.6	50.9	52.1	55.1
23-Feb-12	11:20	11:50	65.0	65.4	63.9	67.2	68.3	64.2	66.0	69.0
29-Feb-12	9:00	9:30	51.6	50.3	50.5	53.3	54.1	53.5	52.5	55.5
<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
1-Feb-12	15:40	16:10	59.6	58.3	62.6	59.3	58.2	59.6	59.9
7-Feb-12	14:19	14:49	53.1	56.2	55.9	54.2	57.9	54.6	55.6
13-Feb-12	15:09	15:39	49.6	50.7	52.6	50.3	50.8	52.7	51.3
23-Feb-12	10:40	11:10	57.3	54.7	66.1	55.6	64.3	52.3	61.3
29-Feb-12	9:40	10:10	56.2	54.4	54.5	56.0	55.8	55.4	55.4
<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, 12 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 29.34 to 33.22 ppt, and pH value was within 8.15 to 8.76.
- 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)					
	W1	W2	W3	C1	C2	C3	W1	W2	W3	C1	C2	C3
3-Feb-12	6.85	6.96	7.02	6.99	6.95	7.09	NA	6.59	6.69	6.67	6.57	6.70
7-Feb-12	6.98	6.95	7.02	7.03	6.95	6.90	NA	6.56	6.73	6.82	6.56	6.57
9-Jan-12	7.02	7.16	7.08	7.01	7.20	6.83	NA	6.83	6.76	6.84	6.58	6.57
11-Feb-12	7.42	6.93	7.14	6.91	7.02	7.02	NA	6.57	6.55	6.56	6.82	6.74
13-Feb-12	6.96	6.95	7.04	6.89	7.03	7.03	NA	6.60	6.81	6.63	6.67	6.67
15-Feb-12	7.02	6.88	7.15	6.98	7.12	7.12	NA	6.65	6.67	6.75	6.89	6.89
17-Feb-12	7.07	6.89	7.14	7.08	7.16	7.16	NA	6.58	6.73	6.67	6.70	6.70
21-Feb-12	8.27	8.72	8.52	8.72	8.42	8.42	NA	8.57	8.16	8.57	7.70	7.70
23-Feb-12	8.28	8.28	8.10	8.40	7.82	7.82	NA	7.65	7.23	8.04	7.07	7.07
25-Feb-12	7.46	7.04	7.57	6.28	8.11	8.11	NA	8.32	8.31	7.84	8.05	8.05
27-Feb-12	8.23	8.08	7.96	8.20	7.06	7.06	NA	7.33	7.16	7.83	6.94	6.94
29-Feb-12	8.56	8.58	8.14	8.58	8.27	8.27	NA	8.15	7.76	8.24	6.72	6.72

**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)					
	W1	W2	W3	C1	C2	C3	W1	W2	W3	C1	C2	C3
3-Feb-12	4.10	3.99	4.45	5.65	5.20	4.94	3.10	1.83	1.83	2.50	4.50	2.97
7-Feb-12	3.26	3.98	4.55	5.25	4.43	5.05	2.40	3.20	4.50	2.83	2.35	2.83
9-Jan-12	4.10	4.04	4.21	4.25	4.01	4.96	7.00	5.67	2.53	3.47	4.00	3.00
11-Feb-12	3.97	4.71	5.51	5.59	5.44	4.12	4.60	5.60	4.57	3.93	2.83	5.17
13-Feb-12	3.93	4.70	4.77	4.43	4.83	4.47	5.40	5.07	3.83	4.50	5.43	3.23
15-Feb-12	3.62	4.18	4.74	5.81	4.73	4.95	4.60	3.17	4.20	6.40	5.03	3.93
17-Feb-12	2.67	3.60	4.51	4.37	3.48	4.49	2.40	2.77	3.03	3.87	2.30	2.30
21-Feb-12	4.10	4.57	4.58	4.76	5.13	6.29	5.40	5.80	6.53	6.63	8.43	3.03
23-Feb-12	4.00	4.66	4.39	4.33	4.59	4.33	4.00	3.20	4.13	3.17	2.67	5.13
25-Feb-12	4.11	4.63	4.76	5.16	5.09	5.01	2.10	1.87	3.50	1.60	2.67	4.80
27-Feb-12	4.08	4.84	5.34	5.14	5.37	5.18	4.10	3.67	2.53	2.77	2.60	4.40
29-Feb-12	3.26	4.71	5.52	5.23	6.45	5.32	3.60	4.07	3.63	3.50	2.13	4.77

**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)					
	W1	W2	W3	C1	C2	C3	W1	W2	W3	C1	C2	C3
3-Feb-12	7.08	7.03	7.04	7.09	6.98	7.07	NA	6.71	6.71	6.74	6.63	6.68
7-Feb-12	6.89	6.82	7.17	7.04	7.03	7.10	NA	6.60	6.74	6.59	6.82	6.70
9-Jan-12	6.88	6.90	7.01	6.85	7.08	7.10	NA	6.66	6.78	6.67	6.85	6.88
11-Feb-12	7.00	7.22	7.21	7.30	7.07	7.19	NA	6.94	6.98	7.06	7.10	6.98
13-Feb-12	7.22	7.10	6.97	6.95	6.56	6.96	NA	6.69	6.68	6.56	6.64	6.65
15-Feb-12	7.03	6.79	6.98	6.90	6.61	7.01	NA	6.42	6.55	6.61	6.65	6.76
17-Feb-12	6.95	7.00	7.07	7.19	6.78	7.05	NA	6.76	6.65	6.78	6.62	6.66
21-Feb-12	8.17	8.23	8.04	8.39	8.35	8.19	NA	7.46	7.68	8.35	8.43	8.21
23-Feb-12	8.23	8.29	8.08	8.35	8.25	7.82	NA	7.30	7.17	8.25	7.85	6.72
25-Feb-12	7.89	8.06	7.88	8.08	8.04	8.09	NA	7.98	7.87	8.04	7.75	7.98
27-Feb-12	8.21	8.10	7.84	8.29	8.29	8.24	NA	8.09	7.85	8.29	7.21	8.13
29-Feb-12	8.23	8.10	7.86	8.43	8.07	8.47	NA	8.02	7.88	8.07	6.74	8.36

**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)					
	W1	W2	W3	C1	C2	C3	W1	W2	W3	C1	C2	C3
3-Feb-12	3.92	4.03	4.17	4.61	4.77	4.88	7.20	2.17	2.15	4.00	3.00	3.27
7-Feb-12	3.53	4.31	3.85	4.32	4.24	4.81	3.50	1.70	2.37	2.17	1.87	1.27
9-Jan-12	3.89	4.37	4.74	4.80	3.71	4.96	6.30	4.03	5.73	4.70	4.63	4.30
11-Feb-12	3.96	4.50	4.42	4.57	4.69	4.71	5.40	5.10	4.00	4.43	4.77	3.93
13-Feb-12	3.37	3.80	4.54	5.40	4.92	5.21	3.20	5.00	2.70	5.43	5.27	4.90
15-Feb-12	3.96	4.77	4.87	4.67	5.28	5.80	4.60	4.07	4.67	2.50	3.00	4.37
17-Feb-12	2.68	3.09	3.34	4.89	4.64	4.70	2.80	2.20	1.57	5.00	4.30	4.20
21-Feb-12	3.53	4.80	5.16	5.22	4.87	5.61	2.40	3.20	2.97	5.27	3.20	5.77
23-Feb-12	3.66	4.29	4.79	4.54	4.61	4.28	8.20	4.90	4.50	3.60	2.50	3.17
25-Feb-12	4.10	4.50	4.50	4.15	4.80	3.96	5.00	3.63	2.13	4.03	1.75	3.27
27-Feb-12	3.59	4.71	4.65	5.30	5.27	4.61	2.70	3.13	3.17	3.90	2.20	3.63
29-Feb-12	3.98	4.46	5.11	6.18	4.97	5.88	2.90	6.27	5.93	3.27	2.13	2.03

**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>										
W1	0	0	0	0	0	0	0	0	0	0
W2	0	0	0	0	0	0	0	0	0	0
W3	0	0	0	0	0	0	0	0	0	0
<b>Mid-Flood</b>										
W1	0	0	0	0	0	0	0	0	0	0
W2	0	0	0	0	0	0	0	0	0	0
W3	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 **15 and 29 February 2012**. As a contingency measure in case that CT7 to CT10 can no longer be recovered, additional 7 no. of *Celtis Timorensis* (No. CT\_1A to CT7A) were planted adjacent to the under-monitoring *Celtis Timorensis* CT7 to CT10 on 30 April 2011.
- 7.03 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	-
Reused in the Contract (Inert) ('000m <sup>3</sup> )	0	-
Reused in other Projects (Inert) ('000m <sup>3</sup> )	6.271	WENT Landfill Site
Disposal as Public Fill (Inert) ('000m <sup>3</sup> )	0	-

**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)	5.660	Outlying Islands Transfer Facilities (Sok Kwu Wan)

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 **7, 14, 21 and 28 February 2012** and a joint-site visit by IEC Representative, RE, the Contractor and ET was carried out on **7 February 2012**.
- 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>
7 February 2012	<ul style="list-style-type: none"> <li>No environmental issue was observed during site inspection.</li> </ul>	N.A.
14 February 2012	<ul style="list-style-type: none"> <li>Dust generation at the slope should be minimized to avoid nuisance to adjacent public road. (Portion H)</li> <li>Stagnant water should be removed or larvicidal oil should be applied to suppress mosquito breeding. (Portion H)</li> </ul>	<ul style="list-style-type: none"> <li>The deficiency has been followed during site inspection on 28 February 2012.</li> <li>The deficiency has been followed during site inspection on 21 2012.</li> </ul>
21 February 2012	<ul style="list-style-type: none"> <li>Dust generation was still observed, water spraying device was recommended along the slope to minimize the nuisance to public.</li> </ul>	The deficiency has been followed during site inspection on 28 February 2012.
28 February 2012	<ul style="list-style-type: none"> <li>No environmental issue was observed during site inspection.</li> </ul>	N.A.

## 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 December 2011	1 (Nov 2011)	1 (Nov 2011)	water quality
January 2012	0	1 (Nov 2011)	NA
February 2012	0	1 (Nov 2011)	NA

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

Reporting Period	Environmental Summons Statistics		
	Frequency	Cumulative	Complaint Nature
27 July 2010 – 31 December 2011	0	0	NA
January 2012	0	0	NA
February 2012	0	0	NA

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

Reporting Period	Environmental Prosecution Statistics		
	Frequency	Cumulative	Complaint Nature
27 July 2010 – 31 December 2011	0	0	NA
January 2012	0	0	NA
February 2012	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

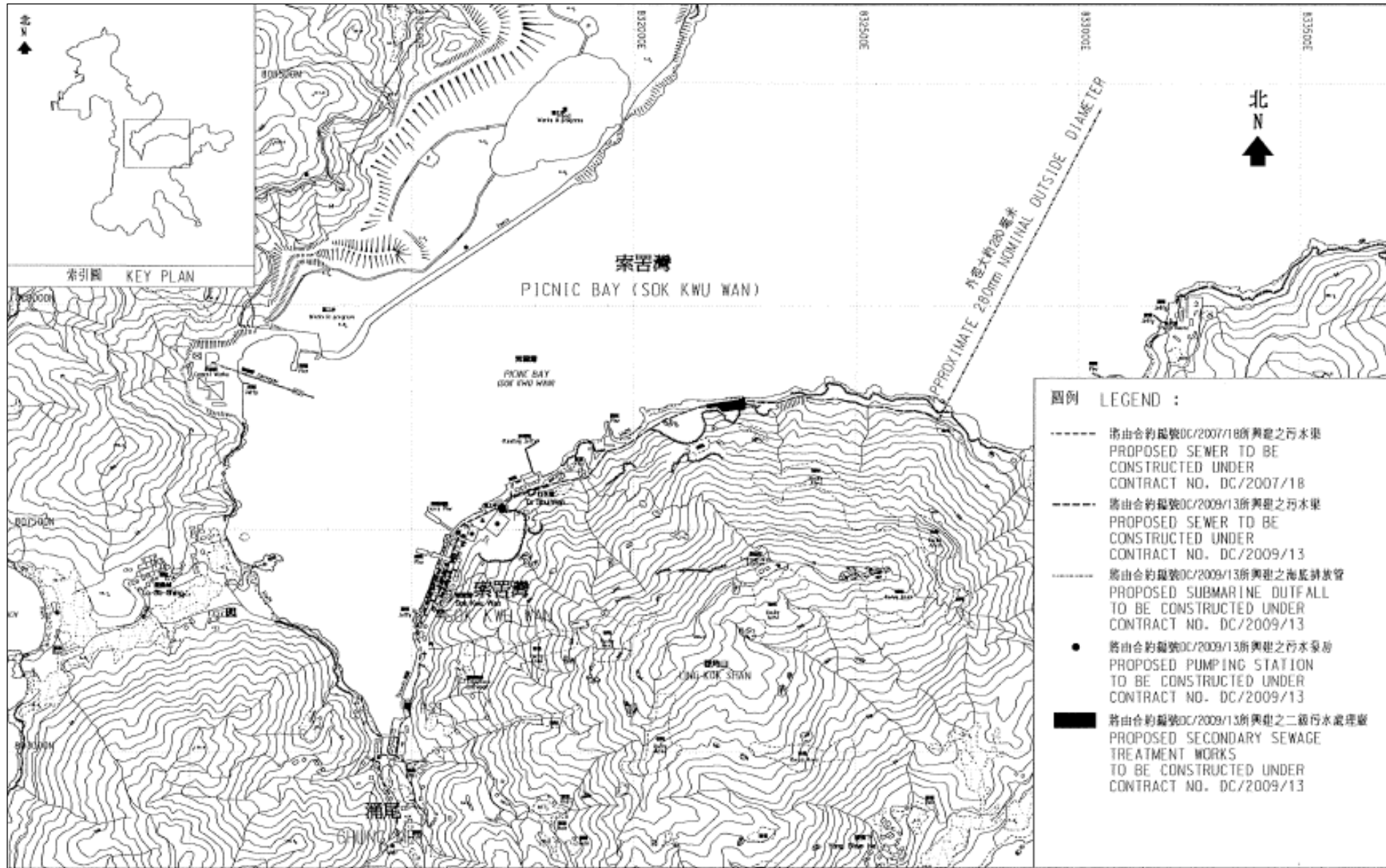
- 13.01 This is the 19<sup>th</sup> monthly EM&A Report covering the construction period from 1 to 29 February 2012.
- 13.02 No 1-hour or 24-hour TSP results were found to be triggered the Action or Limit Level in this Reporting Period.
- 13.03 No noise complaint (an Action Level exceedance) was received and no construction noise measurement results that exceeded the Limit Level were recorded in this Reporting Period.
- 13.04 The monitoring result demonstrated no exceedance of Action or Limit Level of marine water quality monitoring 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 7, 14, 21 and 28 February 2012 and a joint-site visit by IEC Representative, RE, the Contractor and ET was carried out on 7 February 2012. All the observation has been rectified during the next week site inspection. The environmental performance of the Project was therefore considered as satisfactory.
- 13.07 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.

#### RECOMMENDATIONS

- 13.08 As wet season is approaching, 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.
- 13.09 Moreover, special attention should be also paid on the dust mitigation measures to avoid fugitive dust emissions from loose soil surface or haul road. 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.

## **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

Organization	Project Role	Name of Key Staff	Tel No.	Fax No.
DSD	Employer	Mr Kenley C K Kwok	-	-
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. Ron Hung	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**

Activity ID	Original Duration	Early Start	Early Finish	Late Start	Late Finish	Total Float	2010	2011	2012	2013	2014	2015	2016	2017	2018	
<b>Project Key Date</b>																
KD0010	0	05/05/10 A	05/05/10 A		05/05/10 A		Receive Letter of Acceptance									
KD0020	0	17/05/10 A	17/05/10 A		17/05/10 A		Project Commencement Date									
KD0030	0	15/08/11 *	15/08/11		15/08/11	0 *	Section W1 - Slope Works in Portion A & C (456d)									
KD0040	0	14/02/14 *	14/02/14		14/02/14	0 *	Section W2 - YSW STW & Submarine Outfall (1370d)									
KD0050	0	13/02/11 *	13/02/11		13/02/11	0 *	Section W3 - Footpath Diversion in Ptn G (273d)									
KD0060	0	15/08/11 *	15/08/11		15/08/11	0 *	Section W4 - Slope Works in Portion H & I (456d)									
KD0070	0	15/11/11 *	15/11/11		15/11/11	0 *	Section W5 - P.S. No. 1 in Portion D (548d)									
KD0080	0	15/11/11 *	15/11/11		15/11/11	0 *	Section W6 - Sewer & PS No2 in Ptn. E & F (548d)									
KD0090	0	14/02/14 *	14/02/14		14/02/14	0 *	Section W7 - SKW STW, RM & Sm. Outfall (1370d)									
KD0100	0	15/08/12 *	15/08/12		15/08/12	0 *	Section W8 - Landscape Softworks (822d)									
KD0110	0	15/08/13 *	15/08/13		15/08/13	0 *	Section W9 - Establishment Works (1187d)									
KD0115	0	30/06/11 *	30/06/11		30/06/11	0 *	Start Operate Temp. Sewage Treatment in Port. A&H									
KD0125	0	14/02/14 *	14/02/14		14/02/14	0 *	Project Completion									
<b>Preliminary (Civil)</b>																
PRE0020	60	17/05/10	15/07/10	19/05/10	17/07/10 *	2d	Pre-condition Survey									
PRE0040	60	17/05/10 *	15/07/10	19/05/10	17/07/10 *	2d	Erection of Engineer's Site Accommodation at YSW									
PRE0050	75	17/05/10	30/07/10	18/05/10	31/07/10 *	1d	Taking over the Secondary Engineer's Site Accom									
PRE0060	60	17/05/10	15/07/10	18/05/10	16/07/10 *	1d	Application of Consent from Marine Department									
PRE0090	120	17/05/10	13/09/10	17/09/10	14/01/11	123d	Working Group Meeting for Outfall Construction									
PRE0100	120	17/05/10	13/09/10	17/05/10	13/09/10	0	Application & Consent of XP from HyD (Mo Tat Rd)									
PRE0130	90	17/05/10	14/08/10	18/05/10	15/08/10 *	1d	Setup Web-site for EM&A Reporting									
<b>Preliminary (E&amp;M)</b>																
<b>Technical Submission</b>																
<b>Process Design of SKWSTW &amp; YSWSTW</b>																
E&M0010	38	17/05/10	23/06/10	17/05/10	23/06/10	0	Submission									
E&M0020	21	24/06/10	14/07/10	24/06/10	14/07/10	0	Vetting and Comment by ER									
E&M0030	28	15/07/10	11/08/10	20/05/11	16/06/11	309d	Revision and Resubmission									
E&M0080	14	12/08/10	25/08/10	17/06/11	30/06/11	309d	Approval from the Engineer									
<b>Hydraulic Design</b>																
E&M0040	21	15/07/10	04/08/10	15/07/10	04/08/10	0	Submission									
E&M0050	14	05/08/10	18/08/10	27/05/11	09/06/11	295d	Vetting and Comment by ER									
E&M0060	14	19/08/10	01/09/10	10/06/11	23/06/11	295d	Revision and Resubmission									
E&M0430	7	02/09/10	08/09/10	24/06/11	30/06/11	295d	Approval from the Engineer									
<b>Equipment Submission &amp; Approval</b>																
E&M0070	50	17/05/10	05/07/10	08/06/10	27/07/10	22d	Submission of Membrane Module									
E&M0090	14	06/07/10	19/07/10	28/07/10	10/08/10	22d	Vetting and Comment by ER									
E&M0100	14	20/07/10	02/08/10	11/08/10	24/08/10	22d	Revision and Resubmission									
E&M0101	90	05/08/10	02/11/10	05/08/10	02/11/10	0	Submission of Equipment									
E&M0102	60	03/11/10	01/01/11	03/11/10	01/01/11	0	Vetting and Comment by ER									
E&M0103	60	02/01/11	02/03/11	02/01/11	02/03/11	0	Revision and Resubmission									
E&M0110	30	03/03/11	01/04/11	03/03/11	01/04/11	0	Approval on Coarse Screens									
E&M0120	30	03/03/11	01/04/11	03/03/11	01/04/11	0	Approval on Fine Screens									
E&M0130	30	03/03/11	01/04/11	03/03/11	01/04/11	0	Approval on Pumps									
E&M0140	30	03/03/11	01/04/11	03/04/11	02/05/11	31d	Approval on Submersible Mixers									
E&M0150	30	03/03/11	01/04/11	19/03/11	17/04/11	16d	Approval on Grit Removal Equipment									
E&M0160	60	03/08/10	01/10/10	25/08/10	23/10/10	22d	Approval on MBR Membrane Modules (M.M.)									
E&M0170	30	03/03/11	01/04/11	03/03/11	01/04/11	0	Approval on Sludge Dewatering Equipment									
E&M0180	30	03/03/11	01/04/11	18/05/11	16/06/11	76d	Approval on Valves, Pipes & Fittings									
E&M0190	30	03/03/11	01/04/11	18/05/11	16/06/11	76d	Approval on Penstocks									
E&M0200	30	03/03/11	01/04/11	01/08/11	30/08/11	151d	Approval on Instrumentation									
E&M0210	30	03/03/11	01/04/11	03/03/11	01/04/11	0	Approval on MCC & LVSB									
E&M0220	30	03/03/11	01/04/11	11/06/11	10/07/11	100d	Approval on BS Equipment									
E&M0230	30	03/03/11	01/04/11	01/06/11	30/06/11	90d	Approval on FS Equipment									
<b>Drawings Submission &amp; Approval</b>																
E&M0235	60	24/06/10	22/08/10	12/01/11	12/03/11	202d	Sub. P&DI Drawings									
E&M0240	45	05/08/10	18/09/10	18/12/10	31/01/11	135d	Sub. Plant GA Drawings									
E&M0250	45	05/08/10	18/09/10	18/12/10	31/01/11	135d	Sub. Civil Works Requirements Drawings									
E&M0260	90	19/09/10	17/12/10	13/03/11	10/06/11	175d	Sub. Mechanical Installation Drawings									
E&M0270	120	19/09/10	16/01/11	11/02/11	10/06/11	145d	Sub. Electrical Installation Drawings									
E&M0280	120	19/09/10	16/01/11	11/02/11	10/06/11	145d	Sub. BS Installation Drawings									
E&M0290	120	19/09/10	16/01/11	01/02/11	31/05/11	135d	Sub. FS Installation Drawings									
<b>Statutory Submission</b>																
E&M0295	39	02/04/11	10/05/11	01/07/11	08/08/11	90d	Preparation of Submission to HEC									
E&M0300	150	11/05/11	07/10/11	09/08/11	05/01/12	90d	Application & Approval from HEC									
E&M0305	180	08/10/11	04/04/12	06/01/12	03/07/12	90d	Provision of Cables to the STWs									
E&M0320	14	02/04/11	15/04/11	15/04/12	28/04/12	379d	Form 314 Submission to FSD									
E&M0325	14	16/04/11	29/04/11	29/04/12	12/05/12	379d	Submission to WSD									
E&M0330	28	29/09/11	26/10/11	12/07/12	08/08/12	287d	Form 501 Submission to FSD (YSW)									
E&M0340	28	29/09/11	26/10/11	12/07/12	08/08/12	287d	Form 501 Submission to FSD (SKW)									
E&M0350	28	15/04/11	12/05/11	18/01/14	14/02/14	1009d	Form 501 Submission to FSD (PS1 & PS2)									
<b>+Yung Shue Wan</b>																
	1370	17/05/10	14/02/14	17/05/10	14/02/14	0										
<b>Sok Kwu Wan</b>																
<b>Preliminary</b>																
SKW0250	16	17/05/10	01/06/10	17/05/10	01/06/10	0	Approval of Environmental Team									
SKW0260	14	02/06/10	15/06/10	02/06/10	15/06/10	0	Baseline monitoring (Air & Noise)									
SKW0270	213	16/06/10	14/01/11	16/06/10	14/01/11	0	Baseline monitoring (Water)									
<b>Section W3 - Footpath Diversion in Portion G</b>																
<b>Civil &amp; Geotechnical Works</b>																
SKW0240	21	17/05/10	06/06/10	17/05/10	06/06/10	0	Site Clearance									

Start date	05/05/10	Early bar
Finish date	14/02/14	Progress bar
Data date	17/05/10	Critical bar
Run date	11/08/10	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**  
**Works Programme (Rev. 1)**

Date	Revision	Checked	Approved
17/05/10	Revision 0	SiL	VC
31/07/10	Revision 1	SiL	VC

Activity ID	Original Duration	Early Start	Early Finish	Late Start	Late Finish	Total Float	2010	2011	2012	2013	2014	2015	2016	2017	2018
SKW0241	9	07/06/10	15/06/10	07/06/10	15/06/10	0	Initial Survey								
SKW0242	57	16/06/10	11/08/10	16/06/10	11/08/10	0	Excavation to formation for Bay 1 to 5								
SKW0251	21	12/08/10	01/09/10	12/08/10	01/09/10	0	Drill & install Dowel Bar for Bay 1 & 3								
SKW0301	14	02/09/10	15/09/10	02/09/10	15/09/10	0	Erect Formwork, mesh & weephole for Bay 1 & 3								
SKW0311	14	16/09/10	29/09/10	16/09/10	29/09/10	0	Concreting for Bay 1 & 3								
SKW0321	7	30/09/10	06/10/10	30/09/10	06/10/10	0	Drilling & install Dowel Bar for Bay 2 & 5								
SKW0331	7	07/10/10	13/10/10	07/10/10	13/10/10	0	Erect Formwork, mesh & weephole for Bay 2 & 5								
SKW0341	7	14/10/10	20/10/10	14/10/10	20/10/10	0	Concreting for Bay 2 & 5								
SKW0351	21	21/10/10	10/11/10	21/10/10	10/11/10	0	Excavation to formation for Bay 6 to 9								
SKW0361	6	11/11/10	16/11/10	11/11/10	16/11/10	0	Drill & install dowel Bar for Bay 4 & 7								
SKW0371	7	17/11/10	23/11/10	17/11/10	23/11/10	0	Erect formwork, mesh & weephole for Bay 4 & 7								
SKW0381	7	24/11/10	30/11/10	24/11/10	30/11/10	0	Concreting for Bay 4 & 7								
SKW0391	3	01/12/10	03/12/10	01/12/10	03/12/10	0	Drill & install dowel Bar for Bay 6 & 9								
SKW0401	7	04/12/10	10/12/10	04/12/10	10/12/10	0	Erect formwork, mesh & weephole for Bay 6 & 9								
SKW0411	7	11/12/10	17/12/10	11/12/10	17/12/10	0	Concreting for Bay 6 & 9								
SKW0421	1	18/12/10	18/12/10	18/12/10	18/12/10	0	Drill & install dowel Bar for Bay 8								
SKW0431	4	19/12/10	22/12/10	19/12/10	22/12/10	0	Erect formwork, mesh & weephole for Bay 8								
SKW0441	4	23/12/10	26/12/10	23/12/10	26/12/10	0	Concreting for Bay 8								
SKW0461	3	27/12/10	29/12/10	27/12/10	29/12/10	0	Excavation for no fine concrete Bay (1-9)								
SKW0471	7	30/12/10	05/01/11	30/12/10	05/01/11	0	Concreting for no-fine concrete								
SKW0481	14	06/01/11	19/01/11	06/01/11	19/01/11	0	Installation of Wall tie & stone facing								
SKW0491	7	06/01/11	12/01/11	06/01/11	12/01/11	0	Construction of Gabion Wall								
SKW0501	3	06/01/11	08/01/11	06/01/11	08/01/11	0	Place Geotextile								
SKW0511	7	09/01/11	15/01/11	09/01/11	15/01/11	0	Backfill behind the retaining wall to approx. +4								
SKW0521	14	16/01/11	29/01/11	16/01/11	29/01/11	0	Utilities Laying and diversion								
SKW0531	7	30/01/11	05/02/11	30/01/11	05/02/11	0	Concreting for Pavement								
SKW0541	7	06/02/11	12/02/11	06/02/11	12/02/11	0	Installation of Flower Pot								
SKW0551	1	13/02/11	13/02/11	13/02/11	13/02/11	0	Permanent Footpath Diversion								
<b>Section W4 - Slope Works in Portions H &amp; I</b>															
<b>Geotechnical Works</b>															
SKW0588	30	15/06/10	14/07/10	15/06/10	14/07/10	0	Construct scaffolding access								
SKW0590	100	15/07/10	22/10/10	15/07/10	22/10/10	0	Site Clearance for Slope								
SKW0591	28	21/09/10	18/10/10	21/09/10	18/10/10	0	Initial Survey for Slope								
SKW0592	80	19/10/10	06/01/11	19/10/10	06/01/11	0	Temporary Rockfall fence at ex. Footpath								
SKW0593	200	28/11/10	15/06/11	28/11/10	15/06/11	0	Cut Slope								
SKW0594	248	11/12/10	15/08/11	11/12/10	15/08/11	0	Road & Drains Works								
SKW0595	260	29/11/10	15/08/11	29/11/10	15/08/11	0	Rock Meshing & Rockfall Fence								
<b>Section W5 - P.S. No. 1 in Portion D</b>															
<b>Civil &amp; Geotechnical Works</b>															
SKW0651	7	17/05/10	23/05/10	17/05/10	23/05/10	0	Site Clearance								
SKW0652	7	24/05/10	30/05/10	24/05/10	30/05/10	0	Initial Survey								
SKW0661	30	31/05/10	29/06/10	31/05/10	29/06/10	0	Transplantation for uncommon vegetation								
SKW0681	49	30/06/10	17/08/10	30/06/10	17/08/10	0	Excavate to lower the working platform to +3mPD								
SKW0691	40	18/08/10	26/09/10	18/08/10	26/09/10	0	ELS to +2.2mPD								
SKW0721	92	17/09/10	17/12/10	17/09/10	17/12/10	0	Excavate to formation								
<b>Structural Works</b>															
SKW0741	15	18/12/10	01/01/11	18/12/10	01/01/11	0	Base Slab (BSD2 & BSD3)								
SKW0751	14	01/01/11	14/01/11	01/01/11	14/01/11	0	Wall & Column (CA1-3, CB1-3, CC1-3, CD1-2) Approx.								
SKW0761	14	14/01/11	27/01/11	14/01/11	27/01/11	0	Base Slab (BSD1) to +3.98								
SKW0771	14	27/01/11	09/02/11	27/01/11	09/02/11	0	Wall & Column (CA1-3, CB1-3, CC1-3, CD1-2) to +6.3								
SKW0781	14	09/02/11	22/02/11	09/02/11	22/02/11	0	Base Slab (GSB1-3, GSC1-5, GSD1-2)								
SKW0791	14	22/02/11	07/03/11	22/02/11	07/03/11	0	Base Slab (GSE1 & GSF1)								
SKW0801	14	07/03/11	20/03/11	07/03/11	20/03/11	0	Wall & Column (CE1-3, CF1-3)								
SKW0811	14	21/03/11	03/04/11	21/03/11	03/04/11	0	Ground Beam (GB1-1,2 GB2-1,2 GB3-1, GBA-1, GBB1-4								
SKW0821	14	04/04/11	17/04/11	04/04/11	17/04/11	0	Wall & Column (CA1-3, CB1-3, CC1-3, CD1-2) to +10.								
SKW0831	14	18/04/11	01/05/11	18/04/11	01/05/11	0	Roof Beams & Parapet								
SKW0841	45	18/04/11	01/06/11	18/04/11	01/06/11	0	ABWF installation								
SKW0861	168	02/05/11	16/10/11	01/06/11	15/11/11	30d	300mm U-channel & 675mm Step Channel								
<b>E&amp;M Works (PS1)</b>															
<b>Submission &amp; Delivery</b>															
E&M1001	113	17/05/10	06/09/10	10/11/10	02/03/11	177d	Submission of Pumps								
E&M1002	143	17/05/10	06/10/10	11/10/10	02/03/11	147d	Submission of Gen-Set								
E&M1003	133	17/05/10	26/09/10	21/10/10	02/03/11	157d	Submission of DeO System								
E&M1004	180	17/05/10	12/11/10	04/09/10	02/03/11	110d	Submission of LV SB & MCC								
E&M1005	180	17/05/10	12/11/10	04/09/10	02/03/11	110d	Submission of Instrumentation								
E&M1006	213	17/05/10	15/12/10	02/08/10	02/03/11	77d	Submission of FS System								
E&M1007	213	17/05/10	15/12/10	02/08/10	02/03/11	77d	Submission of BS System								
E&M1011	60	07/09/10	05/11/10	03/03/11	01/05/11	177d	Delivery of Pumps								
E&M1012	60	07/10/10	05/12/10	03/03/11	01/05/11	147d	Delivery of Gen-Set								
E&M1013	60	27/09/10	25/11/10	03/03/11	01/05/11	157d	Delivery of DeO System								
E&M1014	60	13/11/10	11/01/11	03/03/11	01/05/11	110d	Delivery of LV SB & MCC								
E&M1015	60	13/11/10	11/01/11	03/03/11	01/05/11	110d	Delivery of Instrumentation								
E&M1016	60	16/12/10	13/02/11	03/03/11	01/05/11	77d	Delivery of FS Equipment								
E&M1017	60	16/12/10	13/02/11	03/03/11	01/05/11	77d	Delivery of BS Equipment								
<b>Installation, T&amp;C</b>															
E&M1101	55	02/05/11	25/06/11	02/05/11	25/06/11	0	Install Pumps								
E&M1102	55	02/05/11	25/06/11	02/05/11	25/06/11	0	Install Gen Set								
E&M1103	55	02/05/11	25/06/11	02/05/11	25/06/11	0	Install DeO System								
E&M1104	55	02/05/11	25/06/11	02/05/11	25/06/11	0	Install LV SB & MCC								
E&M1105	55	02/05/11	25/06/11	02/05/11	25/06/11	0	Install Instrumentation								
E&M1106	55	02/05/11	25/06/11	02/05/11	25/06/11	0	Install FS Equipment								
E&M1107	55	02/05/11	25/06/11	02/05/11	25/06/11	0	Install BS Equipment								
E&M1110	46	26/06/11	10/08/11	27/08/11	11/10/11	62d	Install Valves, Pipes & Fittings								

Start date	05/05/10		Early bar
Finish date	14/02/14		Progress bar
Data date	17/05/10		Critical bar
Run date	11/08/10		Summary bar
Page number	2A		Progress point
			Critical point
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17/05/10	Revision 0	StL	VC
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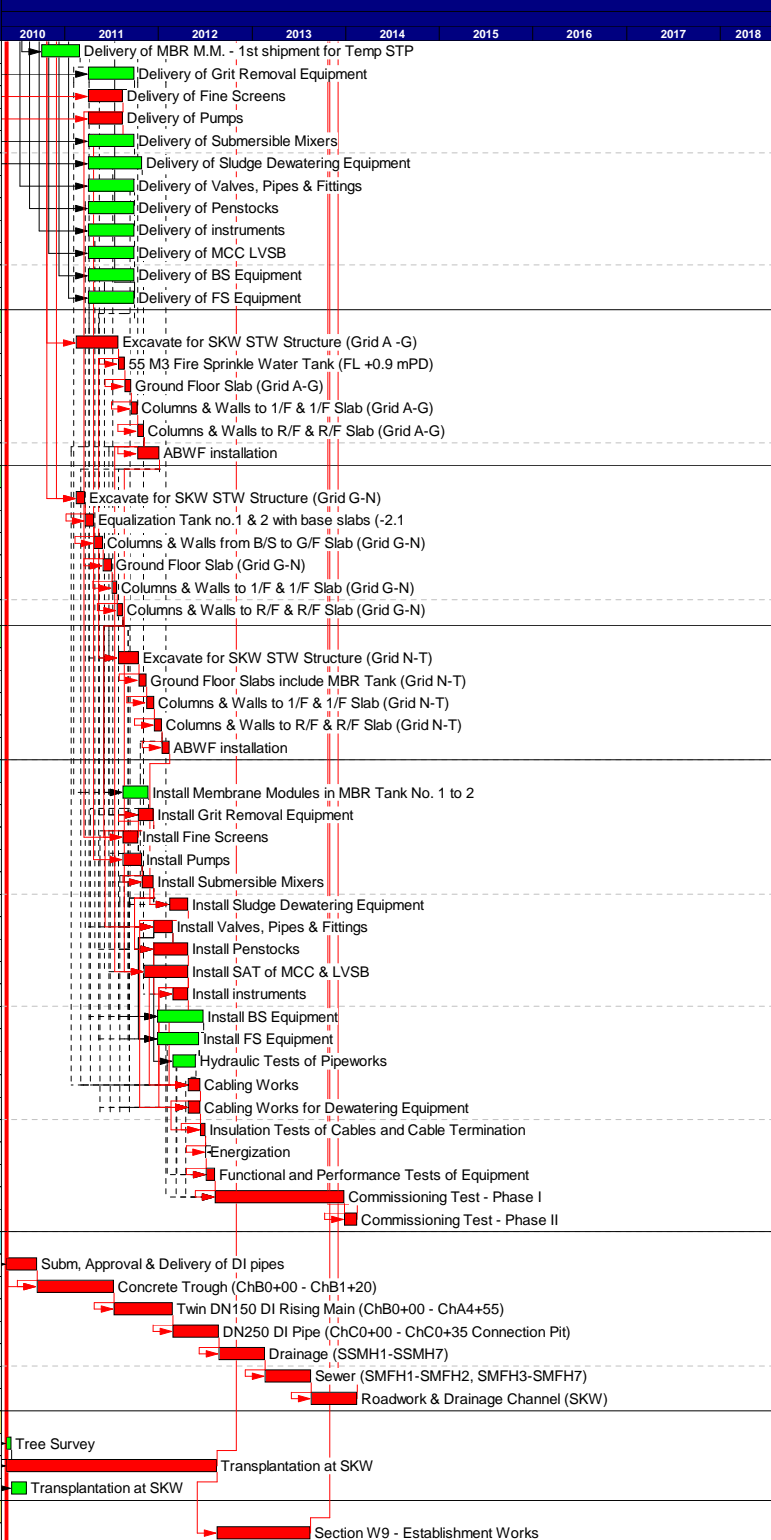
Activity ID	Original Duration	Early Start	Early Finish	Late Start	Late Finish	Total Float	2010	2011	2012	2013	2014	2015	2016	2017	2018	
E&M1120	7	11/08/11	17/08/11	12/10/11	18/10/11	62d										
E&M1130	28	18/08/11	14/09/11	19/10/11	15/11/11	62d										
E&M1140	43	26/06/11	07/08/11	26/06/11	07/08/11	0										
E&M1150	7	08/08/11	14/08/11	08/08/11	14/08/11	0										
E&M1160	3	15/08/11	17/08/11	15/08/11	17/08/11	0										
E&M1170	30	18/08/11	16/09/11	18/08/11	16/09/11	0										
E&M11800	60	17/09/11	15/11/11	17/09/11	15/11/11	0										
<b>Section W6 - Sewer and PS No.2 in Portions E&amp;H</b>																
<b>Civil &amp; Geotechnical Works</b>																
SKW0881	7	17/05/10	23/05/10	17/05/10	23/05/10	0										
SKW0891	7	17/05/10	23/05/10	17/05/10	23/05/10	0										
SKW0892	30	24/05/10	22/06/10	24/05/10	22/06/10	0										
SKW0901	30	23/06/10	22/07/10	23/06/10	22/07/10	0										
SKW0921	14	23/07/10	05/08/10	23/07/10	05/08/10	0										
SKW0931	14	06/08/10	19/08/10	06/08/10	19/08/10	0										
SKW0951	106	20/08/10	03/12/10	20/08/10	03/12/10	0										
SKW0961	257	04/12/10	17/08/11	04/03/11	15/11/11	90d										
SKW1491	180	14/09/10	12/03/11	14/09/10	12/03/11	0										
SKW1511	180	13/03/11	08/09/11	13/03/11	08/09/11	0										
SKW1531	34	09/09/11	12/10/11	09/09/11	12/10/11	0										
SKW1581	34	13/10/11	15/11/11	13/10/11	15/11/11	0										
<b>Structural Works</b>																
SKW0971	14	04/12/10	17/12/10	04/12/10	17/12/10	0										
SKW0981	14	18/12/10	31/12/10	18/12/10	31/12/10	0										
SKW0991	14	01/01/11	14/01/11	01/01/11	14/01/11	0										
SKW1001	14	15/01/11	28/01/11	15/01/11	28/01/11	0										
SKW1011	14	29/01/11	11/02/11	29/01/11	11/02/11	0										
SKW1021	20	12/02/11	03/03/11	12/02/11	03/03/11	0										
SKW1031	14	04/03/11	17/03/11	04/03/11	17/03/11	0										
SKW1041	14	18/03/11	31/03/11	18/03/11	31/03/11	0										
SKW1051	14	01/04/11	14/04/11	01/04/11	14/04/11	0										
SKW1061	90	01/04/11	29/06/11	01/04/11	29/06/11	0										
SKW1081	215	15/04/11	15/11/11	15/04/11	15/11/11	0										
<b>E&amp;M Works (PS2)</b>																
<b>Submission &amp; Delivery</b>																
E&M2001	113	17/05/10	06/09/10	17/05/10	06/09/10	0										
E&M2002	143	17/05/10	06/10/10	17/05/10	06/10/10	0										
E&M2003	133	17/05/10	26/09/10	17/05/10	26/09/10	0										
E&M2004	271	17/05/10	11/02/11	17/05/10	11/02/11	0										
E&M2005	243	17/05/10	14/01/11	17/05/10	14/01/11	0										
E&M2006	213	17/05/10	15/12/10	17/05/10	15/12/10	0										
E&M2007	213	17/05/10	15/12/10	17/05/10	15/12/10	0										
E&M2011	282	07/09/10	15/06/11	07/09/10	15/06/11	0										
E&M2012	252	07/10/10	15/06/11	07/10/10	15/06/11	0										
E&M2013	262	27/09/10	15/06/11	27/09/10	15/06/11	0										
E&M2014	62	12/02/11	14/04/11	12/02/11	14/04/11	0										
E&M2015	90	15/01/11	14/04/11	15/01/11	14/04/11	0										
E&M2016	120	16/12/10	14/04/11	16/12/10	14/04/11	0										
E&M2017	120	16/12/10	14/04/11	16/12/10	14/04/11	0										
<b>Installation, T&amp;C</b>																
E&M2101	60	16/06/11	14/08/11	16/06/11	14/08/11	0										
E&M2102	60	16/06/11	14/08/11	16/06/11	14/08/11	0										
E&M2103	60	16/06/11	14/08/11	16/06/11	14/08/11	0										
E&M2104	60	15/04/11	13/06/11	15/04/11	13/06/11	0										
E&M2105	60	15/04/11	13/06/11	15/04/11	13/06/11	0										
E&M2106	60	15/04/11	13/06/11	15/04/11	13/06/11	0										
E&M2107	60	15/04/11	13/06/11	15/04/11	13/06/11	0										
E&M2110	58	15/08/11	11/10/11	15/08/11	11/10/11	0										
E&M2120	7	12/10/11	18/10/11	12/10/11	18/10/11	0										
E&M2130	28	19/10/11	15/11/11	19/10/11	15/11/11	0										
E&M2140	55	14/06/11	07/08/11	14/06/11	07/08/11	0										
E&M2150	7	08/08/11	14/08/11	08/08/11	14/08/11	0										
E&M2160	3	15/08/11	17/08/11	15/08/11	17/08/11	0										
E&M2170	30	18/08/11	16/09/11	18/08/11	16/09/11	0										
E&M2180	60	17/09/11	15/11/11	17/09/11	15/11/11	0										
<b>Section W7 - SKW STW, Sewer and Submarine Outfall</b>																
<b>Submarine Outfall</b>																
SKW1131	60	17/05/10	15/07/10	17/05/10	15/07/10	0										
SKW1141	183	16/07/10	14/01/11	16/07/10	14/01/11	0										
SKW1151	185	15/01/11	18/07/11	15/01/11	18/07/11	0										
SKW1161	90	19/07/11	16/10/11	19/07/11	16/10/11	0										
SKW1171	120	17/10/11	13/02/12	17/10/11	13/02/12	0										
SKW1181	60	14/02/12	13/04/12	14/02/12	13/04/12	0										
SKW1191	30	14/04/12	13/05/12	14/04/12	13/05/12	0										
SKW1201	210	14/05/12	09/12/12	14/05/12	09/12/12	0										
SKW1211	180	10/12/12	07/06/13	10/12/12	07/06/13	0										
SKW1221	57	08/06/13	03/08/13	08/06/13	03/08/13	0										
SKW1231	60	04/08/13	02/10/13	04/08/13	02/10/13	0										
SKW1241	60	03/10/13	01/12/13	03/10/13	01/12/13	0										
SKW1251	45	02/12/13	15/01/14	02/12/13	15/01/14	0										
SKW1431	30	16/01/14	14/02/14	16/01/14	14/02/14	0										
<b>SKW STW</b>																
<b>Submission &amp; Delivery (E&amp;M)</b>																

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Data date	17/05/10		Critical bar
Run date	11/08/10		Summary bar
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31/07/10	Revision 1	StL	VC

Activity ID	Original Duration	Early Start	Early Finish	Late Start	Late Finish	Total Float	2010	2011	2012	2013	2014	2015	2016	2017	2018
E&M3010	150	02/10/10	28/02/11	21/08/11	17/01/12	323d									
E&M3030	180	02/04/11	28/09/11	18/04/11	14/10/11	16d									
E&M3060	136	02/04/11	15/08/11	02/04/11	15/08/11	0									
E&M3070	136	02/04/11	15/08/11	02/04/11	15/08/11	0									
E&M3080	180	02/04/11	28/09/11	03/05/11	29/10/11	31d									
E&M3090	210	02/04/11	28/10/11	18/07/11	12/02/12	107d									
E&M3100	180	02/04/11	28/09/11	17/06/11	13/12/11	76d									
E&M3110	180	02/04/11	28/09/11	17/06/11	13/12/11	76d									
E&M3130	180	02/04/11	28/09/11	31/08/11	26/02/12	151d									
E&M3140	180	02/04/11	28/09/11	09/05/11	04/11/11	37d									
E&M3150	180	02/04/11	28/09/11	11/07/11	06/01/12	100d									
E&M3160	180	02/04/11	28/09/11	30/07/11	25/01/12	119d									
<b>Construction of Grid A-G</b>															
SKW1261	164	14/02/11	27/07/11	14/02/11	27/07/11	0									
SKW1271	25	28/07/11	21/08/11	28/07/11	21/08/11	0									
SKW1281	25	22/08/11	15/09/11	22/08/11	15/09/11	0									
SKW1291	25	16/09/11	10/10/11	16/09/11	10/10/11	0									
SKW1301	25	11/10/11	04/11/11	11/10/11	04/11/11	0									
SKW1411	85	11/10/11	03/01/12	11/10/11	03/01/12	0									
<b>Construction of Grid G-N</b>															
SKW1311	36	14/02/11	21/03/11	14/02/11	21/03/11	0									
SKW1321	35	22/03/11	25/04/11	22/03/11	25/04/11	0									
SKW1331	35	26/04/11	30/05/11	26/04/11	30/05/11	0									
SKW1341	35	31/05/11	04/07/11	31/05/11	04/07/11	0									
SKW1351	18	05/07/11	22/07/11	05/07/11	22/07/11	0									
SKW1361	24	23/07/11	15/08/11	23/07/11	15/08/11	0									
<b>Construction of Grid N-T</b>															
SKW1371	80	28/07/11	15/10/11	28/07/11	15/10/11	0									
SKW1381	30	16/10/11	14/11/11	16/10/11	14/11/11	0									
SKW1391	30	15/11/11	14/12/11	15/11/11	14/12/11	0									
SKW1401	30	15/12/11	13/01/12	15/12/11	13/01/12	0									
SKW1421	30	14/01/12	12/02/12	14/01/12	12/02/12	0									
<b>SKW STP - E&amp;M Works</b>															
E&M3170	100	16/08/11	23/11/11	18/01/12	26/04/12	155d									
E&M3190	60	15/10/11	13/12/11	15/10/11	13/12/11	0									
E&M3210	60	16/08/11	14/10/11	16/08/11	14/10/11	0									
E&M3220	75	16/08/11	29/10/11	16/08/11	29/10/11	0									
E&M3230	45	30/10/11	13/12/11	30/10/11	13/12/11	0									
E&M3240	74	13/02/12	26/04/12	13/02/12	26/04/12	0									
E&M3250	75	14/12/11	26/02/12	14/12/11	26/02/12	0									
E&M3260	135	14/12/11	26/04/12	14/12/11	26/04/12	0									
E&M3261	174	05/11/11	26/04/12	05/11/11	26/04/12	0									
E&M3270	60	27/02/12	26/04/12	27/02/12	26/04/12	0									
E&M3291	180	29/12/11	25/06/12	07/01/12	04/07/12	9d									
E&M3300	161	29/12/11	06/06/12	26/01/12	04/07/12	28d									
E&M3310	90	27/02/12	26/05/12	11/05/12	08/08/12	74d									
E&M3311	47	27/04/12	12/06/12	27/04/12	12/06/12	0									
E&M3320	47	27/04/12	12/06/12	27/04/12	12/06/12	0									
E&M3321	21	13/06/12	03/07/12	13/06/12	03/07/12	0									
E&M3331	1	04/07/12	04/07/12	04/07/12	04/07/12	0									
E&M3359	35	05/07/12	08/08/12	05/07/12	08/08/12	0									
E&M3360	505	09/08/12	26/12/13	09/08/12	26/12/13	0									
E&M3370	50	27/12/13	14/02/14	27/12/13	14/02/14	0									
<b>Rising Main</b>															
SKW1481	120	17/05/10	13/09/10	17/05/10	13/09/10	0									
SKW1501	300	14/09/10	10/07/11	14/09/10	10/07/11	0									
SKW1521	230	11/07/11	25/02/12	11/07/11	25/02/12	0									
SKW1541	180	26/02/12	23/08/12	26/02/12	23/08/12	0									
SKW1551	180	24/08/12	19/02/13	24/08/12	19/02/13	0									
SKW1561	180	20/02/13	18/08/13	20/02/13	18/08/13	0									
SKW1571	180	19/08/13	14/02/14	19/08/13	14/02/14	0									
<b>Section W8 - Landscape Softworks in All Portions</b>															
SKW1591	21	17/05/10	06/06/10	26/11/13	16/12/13	1289d									
SKW1611	822	17/05/10	15/08/12	17/05/10	15/08/12	0									
SKW1621	60	07/06/10	05/08/10	17/12/13	14/02/14	1289d									
<b>Section W9 - Establishment Works in All Portions</b>															
SKW1631	365	16/08/12	15/08/13	16/08/12	15/08/13	0									



Start date	05/05/10	Early bar
Finish date	14/02/14	Progress bar
Data date	17/05/10	Critical bar
Run date	11/08/10	Summary bar
Page number	4A	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**  
**Works Programme (Rev. 1)**

Date	Revision	Checked	Approved
17/05/10	Revision 0	SiL	VC
31/07/10	Revision 1	SiL	VC

Activity ID	Description	Original Duration	Percent Complete	Early Start	Early Finish	Late Start	Late Finish	Total Float	Predecessors	Successors	2012						
											2011 DEC	JAN	FEB	MAR	APR	MAY	JUN
<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,							
KD0030	Section W1 - Slope Works in Portion A & C (456d)	0	100		14/10/11 A		14/10/11 A			KD0125							
KD0050	Section W3 - Footpath Diversion in Ptn G (273d)	0	100		24/03/11 A		24/03/11 A			KD0125							
KD0115	Start Operate Temp Sewage Treatment in Port. A&H	0	0		02/06/12		30/06/11 *	-338d *	E&M0510	KD0125							
<b>Preliminary (Civil)</b>																	
PRE0020	Pre-condition Survey	60	100	17/05/10 A	15/07/10 A	17/05/10 A	15/07/10 A		KD0020								
PRE0040	Erection of Engineer's Site Accommodation at YSW	60	100	17/05/10 A	15/07/10 A	17/05/10 A	15/07/10 A		KD0020								
PRE0050	Taking over the Secondary Engineer's Site Accom	75	100	17/05/10 A	30/07/10 A	17/05/10 A	30/07/10 A		KD0020								
PRE0060	Application of Consent from Marine Department	60	100	17/05/10 A	15/07/10 A	17/05/10 A	15/07/10 A		KD0020								
PRE0090	Working Group Meeting for Outfall Construction	120	100	17/05/10 A	23/11/10 A	17/05/10 A	23/11/10 A		KD0020	SKW1151							
PRE0100	Application & Consent of XP from HyD (Mo Tat Rd)	120	100	17/05/10 A	13/10/10 A	17/05/10 A	13/10/10 A		KD0020	SKW1491, SKW1501							
PRE0130	Setup Web-site for EM&A Reporting	90	100	17/05/10 A	31/08/10 A	17/05/10 A	31/08/10 A		KD0020								
<b>Preliminary (E&amp;M)</b>																	
<b>Technical Submission</b>																	
<b>Process Design of SKWSTW &amp; YSWSTW</b>																	
E&M0010	Submission	38	100	17/05/10 A	23/06/10 A	17/05/10 A	23/06/10 A		KD0020	E&M0020, E&M0040, E&M0235							
E&M0020	Vetting and Comment by ER	21	100	24/06/10 A	14/07/10 A	24/06/10 A	14/07/10 A		E&M0010	E&M0030, E&M0040							
E&M0030	Revision and Resubmission	125	100	17/05/10 A	30/11/11 A	17/05/10 A	30/11/11 A		E&M0020	E&M0080							
E&M0080	Approval from the Engineer	14	100	02/11/11 A	30/11/11 A	02/11/11 A	30/11/11 A		E&M0030	E&M0295							
<b>Hydraulic Design</b>																	
E&M0040	Submission	21	100	17/05/10 A	16/09/10 A	17/05/10 A	16/09/10 A		E&M0010, E&M0020	E&M0050, E&M0101, E&M0240,							
E&M0050	Vetting and Comment by ER	14	100	17/09/10 A	09/11/10 A	17/09/10 A	09/11/10 A		E&M0040	E&M0060							
E&M0060	Revision and Resubmission	97	100	19/08/10 A	30/11/11 A	19/08/10 A	30/11/11 A		E&M0050	E&M0430							
E&M0430	Approval from the Engineer	7	100	29/03/11 A	30/11/11 A	29/03/11 A	30/11/11 A		E&M0060	E&M0295							
<b>Equipment Submission &amp; Approval</b>																	
E&M0070	Submission of Membrane Module	50	100	17/05/10 A	05/07/10 A	17/05/10 A	05/07/10 A		KD0020	E&M0090							
E&M0090	Vetting and Comment by ER	14	100	06/07/10 A	19/07/10 A	06/07/10 A	19/07/10 A		E&M0070	E&M0100							
E&M0100	Revision and Resubmission	14	100	20/07/10 A	24/02/11 A	20/07/10 A	24/02/11 A		E&M0090	E&M0160							
E&M0101	Submission of Equipment	90	100	04/08/10 A	30/11/11 A	04/08/10 A	30/11/11 A		E&M0040	E&M0102							
E&M0102	Vetting and Comment by ER	60	100	18/11/10 A	30/11/11 A	18/11/10 A	30/11/11 A		E&M0101	E&M0103							
E&M0103	Revision and Resubmission	60	100	01/02/11 A	30/11/11 A	01/02/11 A	30/11/11 A		E&M0102	E&M0110, E&M0120, E&M0130,							
E&M0110	Approval on Coarse Screens	30	100	25/05/11 A	25/05/11 A	25/05/11 A	25/05/11 A		E&M0103	E&M0390							
E&M0120	Approval on Fine Screens	30	100	12/09/11 A	12/09/11 A	12/09/11 A	12/09/11 A		E&M0103	E&M0400, E&M3060							
E&M0130	Approval on Pumps	30	100	23/06/11 A	23/06/11 A	23/06/11 A	23/06/11 A		E&M0103	E&M0410, E&M3070							
E&M0140	Approval on Submersible Mixers	30	100	23/03/11 A	23/03/11 A	23/03/11 A	23/03/11 A		E&M0103	E&M0420, E&M3080							
E&M0150	Approval on Grit Removal Equipment	30	100	10/10/11 A	10/10/11 A	10/10/11 A	10/10/11 A		E&M0103	E&M0380, E&M3030							
E&M0160	Approval on MBR Membrane Modules (M.M.)	105	100	02/08/10 A	24/02/11 A	02/08/10 A	24/02/11 A		E&M0100	E&M0360, E&M0370, E&M3010							
E&M0170	Approval on Sludge Dewatering Equipment	30	100	01/09/11 A	01/09/11 A	01/09/11 A	01/09/11 A		E&M0103	E&M0440, E&M3090							
E&M0180	Approval on Valves, Pipes & Fittings	30	80	19/11/11 A	05/02/12	19/11/11 A	30/11/11	-67d	E&M0103	E&M0450, E&M3100							
E&M0190	Approval on Penstocks	30	100	15/11/11 A	15/11/11 A	15/11/11 A	15/11/11 A		E&M0103	E&M0460, E&M3110							
E&M0200	Approval on Instrumentation	30	100	21/06/11 A	21/06/11 A	21/06/11 A	21/06/11 A		E&M0103	E&M0470, E&M3130							
E&M0210	Approval on MCC & LVSB	30	90	19/11/11 A	02/02/12	19/11/11 A	01/04/11	-307d	E&M0103	E&M0480, E&M3140							
E&M0220	Approval on BS Equipment	30	50	30/11/11 A	26/02/12	30/11/11 A	04/10/11	-145d	E&M0103, E&M0280	E&M0490, E&M3150							
E&M0230	Approval on FS Equipment	30	70	30/11/11 A	03/03/12	30/11/11 A	01/11/11	-123d	E&M0103, E&M0290	E&M0295, E&M0320, E&M0500,							
<b>Drawings Submission &amp; Approval</b>																	
E&M0235	Sub. P&ID Drawings	100	100	24/06/10 A	22/08/10 A	24/06/10 A	22/08/10 A		E&M0010								
E&M0240	Sub. Plant GA Drawings	45	90	04/08/10 A	04/02/12	04/08/10 A	06/11/11	-90d	E&M0040	E&M0250, E&M0280, E&M0290							
E&M0250	Sub. Builder's Works Requirements Drawings	15	90	04/08/10 A	07/02/12	04/08/10 A	07/11/11	-92d	E&M0240, E&M0260, E&M0270	E&M0280, E&M0290							
E&M0260	Sub. Mechanical Installation Drawings	60	90	27/09/10 A	05/02/12	27/09/10 A	06/11/11	-92d	E&M0040	E&M0250							
E&M0270	Sub. Electrical Installation Drawings	60	90	27/09/10 A	05/02/12	27/09/10 A	06/11/11	-92d	E&M0040	E&M0250, E&M0280							
E&M0280	Sub. BS Installation Drawings	120	90	27/09/10 A	11/02/12	27/09/10 A	19/09/11	-145d	E&M0240, E&M0250, E&M0270	E&M0220							
E&M0290	Sub. FS Installation Drawings	120	80	13/11/10 A	23/02/12	13/11/10 A	23/10/11	-123d	E&M0240, E&M0250	E&M0230							
<b>Statutory Submission</b>																	

Start date	05/05/10		Early bar
Finish date	24/02/15		Progress bar
Data date	31/01/12		Critical bar
Run date	15/02/12		Summary bar
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			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 (Feb 2012 - Apr 2012)**

(Marked on 31 Jan 2012)

Date	Revision	Checked	Approved
31/01/12	Revision 0	RH	VC



Activity ID	Description	Original Duration	Percent Complete	Early Start	Early Finish	Late Start	Late Finish	Total Float	Predecessors	Successors	2012								
											DEC	JAN	FEB	MAR	APR	MAY	JUN	U	
E&M0295	Preparation of Submission to HEC	39	100	01/11/11 A	30/11/11 A	01/11/11 A	30/11/11 A		E&M0080, E&M0230, E&M0430	E&M0300									
E&M0300	Application & Approval from HEC	150	90	01/11/11 A	18/03/12	01/11/11 A	05/01/12	-73d	E&M0295	E&M0305									
E&M0305	Provision of Cables to the STWs	180	0	19/03/12	14/09/12	06/01/12	03/07/12	-73d	E&M0300	E&M0680									
E&M0320	Form 314 Submission to FSD	14	0	04/03/12	17/03/12	25/04/12	08/05/12	52d	E&M0230	E&M0325, E&M0670									
E&M0325	Submission to WSD	14	70	01/11/11 A	21/03/12	01/11/11 A	12/05/12	52d	E&M0320	E&M0670, E&M0680									
E&M0350	Form 501 Submission to FSD (PS1 & PS2)	28	0	07/05/12	04/06/12	16/01/15	24/02/15	927d	E&M2016										
<b>Yung Shue Wan</b>																			
<b>Preliminary</b>																			
YSW0020	Approval of Environmental Team	16	100	17/05/10 A	01/06/10 A	17/05/10 A	01/06/10 A		KD0020	YSW0030, YSW0040									
YSW0030	Baseline monitoring (Air & Noise)	14	100	31/07/10 A	22/08/10 A	31/07/10 A	22/08/10 A		YSW0020	YSW0035									
YSW0035	Baseline Monitoring Report Submission (A & N)	14	100	23/08/10 A	07/09/10 A	23/08/10 A	07/09/10 A		YSW0030	YSW0152, YSW0500, YSW0610,									
YSW0040	Baseline monitoring (Water)	213	100	30/07/10 A	31/12/10 A	30/07/10 A	31/12/10 A		YSW0020	YSW0350									
YSW0050	Erect Hoarding and Fencing	60	100	17/05/10 A	15/07/10 A	17/05/10 A	15/07/10 A												
<b>Section W2 - YSW STW &amp; Submarine Outfall</b>																			
<b>Civil &amp; Structural Work</b>																			
YSW0412	Mobilization	30	100	17/05/10 A	15/06/10 A	17/05/10 A	15/06/10 A		KD0020	YSW0422									
YSW0422	Site Clearance	30	100	17/05/10 A	15/06/10 A	17/05/10 A	15/06/10 A		KD0020, YSW0412	YSW0432, YSW0500, YSW0610,									
YSW0432	Initial Survey	14	100	02/06/10 A	15/06/10 A	02/06/10 A	15/06/10 A		YSW0422	YSW0510									
<b>YSW STP - GLH - T</b>																			
YSW0500	ELS & Excavation for Inlet Pumping Station	62	100	17/09/10 A	16/12/10 A	17/09/10 A	16/12/10 A		YSW0035, YSW0422	YSW0510									
YSW0510	Sub-structure construction (Inlet Pumping Str)	30	100	17/12/10 A	04/04/11 A	17/12/10 A	04/04/11 A		YSW0432, YSW0500	YSW0520									
YSW0520	Backfill & Remove ELS (Inlet Pumping Str)	30	100	03/01/11 A	05/05/11 A	03/01/11 A	05/05/11 A		YSW0510	YSW0530, YSW0610									
YSW0530	ELS & Excavation for Equalization Tank	40	100	11/01/11 A	08/06/11 A	11/01/11 A	08/06/11 A		YSW0520	YSW0540									
YSW0540	Sub-structure construction (Equalization Tank)	40	100	13/06/11 A	28/09/11 A	13/06/11 A	28/09/11 A		YSW0530	YSW0550									
YSW0550	Backfilling & Remove ELS (Equalization Tank)	40	100	15/08/11 A	18/10/11 A	15/08/11 A	18/10/11 A		YSW0540	YSW0570									
YSW0570	Excavate to formation by open cut	30	100	02/07/11 A	31/01/12 A	02/07/11 A	31/01/12 A		YSW0550	YSW0580									
YSW0580	Base slab construction	30	90	06/07/11 A	02/02/12	06/07/11 A	01/07/11	-216d	YSW0570	YSW0590									
YSW0590	G/F to 1/F construction	50	70	29/09/11 A	17/02/12	29/09/11 A	16/07/11	-216d	YSW0580	YSW0600									
YSW0600	1/F to Roof construction	50	60	01/11/11 A	08/03/12	01/11/11 A	05/08/11	-216d	YSW0590	YSW0720, YSW0800									
YSW0720	Water Test	36	0	09/03/12	13/04/12	06/08/11	10/09/11	-216d	YSW0600	E&M0530, E&M0540, E&M0550,									
YSW0800	ABWF installation	36	0	09/03/12	13/04/12	06/08/11	10/09/11	-216d	YSW0600	E&M0530, E&M0540, E&M0550,									
<b>YSW STP - GLT - X</b>																			
YSW0610	Excavate to formation	50	100	08/09/10 A	17/09/10 A	08/09/10 A	17/09/10 A		YSW0035, YSW0422, YSW0520	YSW0620									
YSW0620	Base slab construction	60	100	18/09/10 A	23/05/11 A	18/09/10 A	23/05/11 A		YSW0610	YSW0630									
YSW0630	G/F to 1/F construction	95	100	27/12/10 A	19/07/11 A	27/12/10 A	19/07/11 A		YSW0620	YSW0640									
YSW0640	1/F to Roof Construction	91	98	20/07/11 A	01/02/12	20/07/11 A	26/08/11	-160d	YSW0630	YSW0810, YSW0840									
YSW0810	ABWF installation	86	5	02/01/12 A	21/04/12	02/01/12 A	25/09/11	-209d	YSW0640	E&M0610, E&M0620, E&M0630,									
<b>YSW STP - GLF - H &amp; DN Tanks</b>																			
YSW0650	ELS & Excavation for DN Tanks	70	100	21/08/10 A	14/10/10 A	21/08/10 A	14/10/10 A		YSW0035, YSW0422	YSW0660									
YSW0660	Sub-structure construction (DN Tanks)	40	100	15/10/10 A	31/12/10 A	15/10/10 A	31/12/10 A		YSW0650	YSW0670									
YSW0670	Backfill & Remove ELS (DN Tanks)	32	100	08/01/11 A	15/03/11 A	08/01/11 A	15/03/11 A		YSW0660	YSW0680									
YSW0680	Base slab construction	30	100	16/03/11 A	28/03/11 A	16/03/11 A	28/03/11 A		YSW0670	YSW0690									
YSW0690	Superstructure construction upto +10.5mPD	60	100	30/03/11 A	18/06/11 A	30/03/11 A	18/06/11 A		YSW0680	YSW0700, YSW0820									
YSW0700	Apply protective paint	20	0	31/01/12	19/02/12	27/02/11	18/03/11	-338d	YSW0690	YSW0710									
YSW0710	Water test	14	0	20/02/12	04/03/12	19/03/11	01/04/11	-338d	YSW0700	E&M0510, E&M0630, E&M0640									
YSW0820	ABWF installation	34	0	31/01/12	04/03/12	27/02/11	01/04/11	-338d	YSW0690	E&M0510, E&M0630, E&M0640									
<b>YSW STP - GLA - F</b>																			
YSW0730	Completion of HDD	0	100	06/01/12 A		06/01/12 A			YSW0360	YSW0740									
YSW0740	ELS & excavate for Outfall Shaft	22	0	31/01/12	21/02/12	03/07/11	25/07/11	-212d	YSW0730	YSW0750									
YSW0750	Sub-structure construction (outfall shaft)	22	0	22/02/12	14/03/12	25/07/11	16/08/11	-212d	YSW0740	YSW0760									
YSW0760	Backfill & remove ELS (outfall shaft)	24	0	15/03/12	07/04/12	16/08/11	09/09/11	-212d	YSW0750	YSW0770, YSW1470									
YSW0770	Excavate to formation by open cut	22	10	30/01/12 A	27/04/12	30/01/12 A	28/09/11	-212d	YSW0760	YSW0780									
YSW0780	Base slab construction	21	0	27/04/12	18/05/12	29/09/11	19/10/11	-212d	YSW0770	YSW0790									
YSW0790	Superstructure construction upto +10.5mPD	30	0	18/05/12	17/06/12	20/10/11	18/11/11	-212d	YSW0780	YSW0795, YSW0870									
YSW0795	Apply protective paint	30	0	17/06/12	17/07/12	19/11/11	18/12/11	-212d	YSW0790	YSW0830									

Start date	05/05/10	Early bar
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Page number	2A	Progress point
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		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 (Feb 2012 - Apr 2012)

(Marked on 31 Jan 2012)

Date	Revision	Checked	Approved
31/01/12	Revision 0	RH	VC







Activity ID	Description	Original Duration	Percent Complete	Early Start	Early Finish	Late Start	Late Finish	Total Float	Predecessors	Successors	2011												
											DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
E&M2017	Delivery of BS Equipment	107	30	15/01/11 A	26/04/12	15/01/11 A	01/05/11	-361d	E&M2007	E&M2107													
<b>Installation, T&amp;C</b>																							
E&M2101	Install Pumps	55	0	31/03/12	24/05/12	03/07/11	26/08/11	-272d	E&M2011, SKW1051, SKW1061	E&M2110													
E&M2102	Install Gen Set	55	0	31/03/12	24/05/12	03/07/11	26/08/11	-272d	E&M2012, SKW1051, SKW1061	E&M2110													
E&M2103	Install DeO System	55	0	31/03/12	24/05/12	03/07/11	26/08/11	-272d	E&M2013, SKW1051, SKW1061	E&M2110													
E&M2105	Install Instrumentation	55	0	31/03/12	24/05/12	02/05/11	25/06/11	-334d	E&M2015, SKW1051, SKW1061	E&M2140													
E&M2106	Install FS Equipment	55	0	07/05/12	01/07/12	02/05/11	25/06/11	-372d	E&M2016, SKW1051, SKW1061	E&M2140													
E&M2107	Install BS Equipment	55	0	27/04/12	20/06/12	02/05/11	25/06/11	-361d	E&M2017, SKW1051, SKW1061	E&M2110, E&M2140													
<b>Section W7 - SKW STW, Sewer and Submarine Outfall</b>																							
<b>Submarine Outfall</b>																							
SKW1130	Approval of IHS Consultant	180	100	17/05/10 A	27/08/10 A	17/05/10 A	27/08/10 A			SKW1131													
SKW1131	Hydrographical Survey (SKW)	300	100	01/02/11 A	28/02/11 A	01/02/11 A	28/02/11 A		KD0020, SKW1130	SKW1231													
SKW1141	Baseline Monitoring (Water)	213	100	27/07/10 A	31/12/10 A	27/07/10 A	31/12/10 A		SKW0260, SKW0265	SKW1151													
SKW1151	Set up Temporary Working Platform	185	100	15/06/11 A	30/09/11 A	15/06/11 A	30/09/11 A		PRE0090, SKW1141	SKW1171													
SKW1171	ELS for HDD Set-up (SKW)	120	100	01/09/11 A	30/09/11 A	01/09/11 A	30/09/11 A		SKW1151	SKW1181													
SKW1181	Mobilization of HDD plant & equipment to SKW	60	100	06/01/12 A	07/01/12 A	06/01/12 A	07/01/12 A		SKW1171, YSW0360	SKW1191													
SKW1191	Setting up at drillhole location	30	100	09/01/12 A	14/01/12 A	09/01/12 A	14/01/12 A		SKW1181	SKW1201													
SKW1201	Drill pilot hole and reaming hole - NS280 - 750m	196	10	16/01/12 A	25/07/12	16/01/12 A	23/01/13	183d	SKW1191	SKW1211													
SKW1211	Receiving Pit for HDD (SKW)	180	50	16/01/12 A	23/10/12	16/01/12 A	23/04/13	183d	SKW1201	SKW1221													
<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	100	24/02/11 A	17/10/11 A	24/02/11 A	17/10/11 A		E&M0160	E&M3170													
E&M3030	Delivery of Grit Removal Equipment	180	100	10/10/11 A	29/12/11 A	10/10/11 A	29/12/11 A		E&M0150	E&M3190													
E&M3060	Delivery of Fine Screens	136	100	12/09/11 A	30/11/11 A	12/09/11 A	30/11/11 A		E&M0120	E&M3210													
E&M3070	Delivery of Pumps	136	100	23/06/11 A	05/09/11 A	23/06/11 A	05/09/11 A		E&M0130	E&M3220													
E&M3080	Delivery of Submersible Mixers	180	100	26/07/11 A	17/11/11 A	26/07/11 A	17/11/11 A		E&M0140	E&M3230													
E&M3090	Delivery of Sludge Dewatering Equipment	210	50	01/09/11 A	14/05/12	01/09/11 A	12/02/12	-92d	E&M0170	E&M3240													
E&M3100	Delivery of Valves, Pipes & Fittings	180	70	30/08/11 A	30/03/12	30/08/11 A	06/06/14	798d	E&M0180	E&M3250													
E&M3110	Delivery of Penstocks	180	100	12/08/11 A	24/12/11 A	12/08/11 A	24/12/11 A		E&M0190	E&M3260													
E&M3130	Delivery of instruments	180	100	21/06/11 A	03/11/11 A	21/06/11 A	03/11/11 A		E&M0200	E&M3270													
E&M3140	Delivery of MCC LVSB	180	0	03/02/12	31/07/12	09/05/11	04/11/11	-270d	E&M0210	E&M3261													
E&M3150	Delivery of BS Equipment	180	0	27/02/12	24/08/12	24/12/13	21/06/14	666d	E&M0220	E&M3291													
E&M3160	Delivery of FS Equipment	180	0	04/03/12	30/08/12	14/01/12	11/07/12	-50d	E&M0230	E&M0340, E&M3300													
<b>Construction of Grid A-G</b>																							
SKW1261	Excavate for SKW STW Structure (Grid A -G)	164	35	30/07/11 A	16/05/12	30/07/11 A	27/07/11	-294d		SKW1271, SKW1371													
SKW1271	55 M3 Fire Sprinkle Water Tank (FL +0.9 mPD)	25	0	16/05/12	10/06/12	28/07/11	21/08/11	-294d	SKW1261	SKW1281													
<b>Construction of Grid G-N</b>																							
SKW1321	Equalization Tank no.1 & 2 with base slabs (-2.1	35	0	31/01/12	05/03/12	04/08/11	07/09/11	-180d		SKW1331													
SKW1331	Columns & Walls from B/S to G/F Slab (Grid G-N)	35	0	06/03/12	09/04/12	08/09/11	12/10/11	-180d	SKW1321	SKW1341													
SKW1341	Ground Floor Slab (Grid G-N)	35	0	10/04/12	14/05/12	13/10/11	16/11/11	-180d	SKW1331	SKW1351													
SKW1351	Columns & Walls to 1/F & 1/F Slab (Grid G-N)	18	0	15/05/12	01/06/12	17/11/11	04/12/11	-180d	SKW1341	SKW1361													
SKW1361	Columns & Walls to R/F & R/F Slab (Grid G-N)	24	0	02/06/12	25/06/12	05/12/11	28/12/11	-180d	SKW1351	E&M3170, E&M3190, E&M3210,													
<b>Construction of Grid N-T</b>																							
SKW1371	Excavate for SKW STW Structure (Grid N-T)	80	0	16/05/12	04/08/12	28/07/11	15/10/11	-294d	SKW05938, SKW1261	SKW1381													
<b>SKW STP - E&amp;M Works</b>																							
E&M3220	Install Pumps	75	0	31/01/12	14/04/12	29/12/11	12/03/12	-33d	E&M3070	E&M3230, E&M3250, E&M3260,													
E&M3230	Install Submersible Mixers	45	0	15/04/12	29/05/12	13/03/12	26/04/12	-33d	E&M3080, E&M3220	E&M3250, E&M3260, E&M3311,													
<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	100	15/08/11 A	30/09/11 A	15/08/11 A	30/09/11 A		PRE0100, SKW1481	SKW1521													
SKW1521	Twin DN150 DI Rising Main (ChB0+00 - ChA4+55)	250	75	15/08/11 A	02/04/12	15/08/11 A	16/03/12	-17d	SKW1501	SKW1541													
SKW1541	DN250 DI Pipe (ChC0+00 - ChC0+35 Connection Pit)	208	0	02/04/12	27/10/12	17/03/12	10/10/12	-17d	SKW1521	SKW1561													
<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	73	17/05/10 A	08/09/12	17/05/10 A	15/08/12	-24d	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														

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			Summary point
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**Leader Civil Engineering Corp. Ltd.**  
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**3-month Rolling Programme (Feb 2012 - Apr 2012)**

(Marked on 31 Jan 2012)

Date	Revision	Checked	Approved
31/01/12	Revision 0	RH	VC

Activity ID	Description	Original Duration	Percent Complete	Early Start	Early Finish	Late Start	Late Finish	Total Float	Predecessors	Successors	2012						
											2011 DEC	JAN	FEB	MAR	APR	MAY	JUN
<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,							
KD0030	Section W1 - Slope Works in Portion A & C (456d)	0	100		14/10/11 A		14/10/11 A			KD0125							
KD0050	Section W3 - Footpath Diversion in Ptn G (273d)	0	100		24/03/11 A		24/03/11 A			KD0125							
KD0115	Start Operate Temp Sewage Treatment in Port. A&H	0	0		02/06/12		30/06/11 *	-338d *	E&M0510	KD0125							◆
<b>+Preliminary (Civil)</b>																	
		191	100	17/05/10 A	23/11/10 A	17/05/10 A	23/11/10 A		KD0020								
<b>Preliminary (E&amp;M)</b>																	
<b>Technical Submission</b>																	
<b>+Process Design of SKWSTW &amp; YSWSTW</b>																	
		563	100	17/05/10 A	30/11/11 A	17/05/10 A	30/11/11 A										
<b>+Hydraulic Design</b>																	
		563	100	17/05/10 A	30/11/11 A	17/05/10 A	30/11/11 A										
<b>+Equipment Submission &amp; Approval</b>																	
		657	96	17/05/10 A	03/03/12	17/05/10 A	30/11/11	-94d									
<b>+Drawings Submission &amp; Approval</b>																	
		610	90	24/06/10 A	23/02/12	24/06/10 A	07/11/11	-108d									
<b>+Statutory Submission</b>																	
		286	43	01/11/11 A	14/09/12	01/11/11 A	24/02/15	825d									
<b>Yung Shue Wan</b>																	
<b>+Preliminary</b>																	
		229	100	17/05/10 A	31/12/10 A	17/05/10 A	31/12/10 A										
<b>Section W 2 - YSW STW &amp; Submarine Outfall</b>																	
<b>+Civil &amp; Structural Work</b>																	
		823	54	17/05/10 A	16/08/12	17/05/10 A	04/07/12	-43d									
<b>+Submarine Outfall</b>																	
		774	86	17/05/10 A	28/06/12	17/05/10 A	16/12/13	536d									
<b>+E&amp;M Works - YSW STP</b>																	
		711	57	24/02/11 A	03/02/13	24/02/11 A	04/07/12	-214d									
<b>Sok Kwu Wan</b>																	
<b>+Preliminary</b>																	
		53	100	17/05/10 A	08/07/10 A	17/05/10 A	08/07/10 A										
<b>Section W 4 - Slope Works in Portions H &amp; I</b>																	
<b>+Geotechnical Works</b>																	
		855	59	15/06/10 A	16/10/12	15/06/10 A	31/01/12	-428d									
<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>																	
		454	53	20/04/11 A	16/07/12	20/04/11 A	31/01/12	-244d									
<b>E&amp;M Works (PS1)</b>																	
<b>+Submission &amp; Delivery</b>																	
		722	91	17/05/10 A	07/05/12	17/05/10 A	03/11/11	-372d									
<b>+Installation, T&amp;C</b>																	
		153	0	31/01/12	01/07/12	02/05/11	25/06/11	-372d									
<b>Section W 6 - Sewer and PS No.2 in Portions E&amp;H</b>																	
<b>+Civil &amp; Geotechnical Works</b>																	
		881	59	17/05/10 A	13/10/12	17/05/10 A	15/11/11	-333d									
<b>+Structural Works</b>																	
		549	17	02/05/11 A	31/10/12	04/03/11 A	31/01/12	-351d									
<b>E&amp;M Works (PS2)</b>																	
<b>+Submission &amp; Delivery</b>																	
		774	86	17/05/10 A	28/06/12	17/05/10 A	03/11/11	-424d									
<b>+Installation, T&amp;C</b>																	










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											2011 DEC	JAN	FEB	MAR	APR	MAY	JUN
		93	0	31/03/12	01/07/12	02/05/11	26/08/11	-310d									
<b>Section W7 - SKW STW ,Sewer and Submarine Outfall</b>																	
+Submarine Outfall																	
		890	82	17/05/10 A	23/10/12	17/05/10 A	23/04/13	183d									
SKW STW																	
+Submission & Delivery (E&M)																	
		554	66	24/02/11 A	30/08/12	24/02/11 A	21/06/14	660d									
+Construction of Grid A-G																	
		317	30	30/07/11 A	10/06/12	28/07/11 A	21/08/11	-294d									
+Construction of Grid G-N																	
		147	0	31/01/12	25/06/12	04/08/11	28/12/11	-180d									
+Construction of Grid N-T																	
		80	0	16/05/12	04/08/12	28/07/11	15/10/11	-294d									
+SKW STP - E&M Works																	
		120	0	31/01/12	29/05/12	29/12/11	26/04/12	-33d									
+Rising Main																	
		895	69	17/05/10 A	27/10/12	17/05/10 A	10/10/12	-17d									
<b>+Section W8 - Landscape Softworks in All Portions</b>																	
		846	75	17/05/10 A	08/09/12	17/05/10 A	15/08/12	-24d									

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Finish date	24/02/15		Progress bar
Data date	31/01/12		Critical bar
Run date	15/02/12		Summary bar
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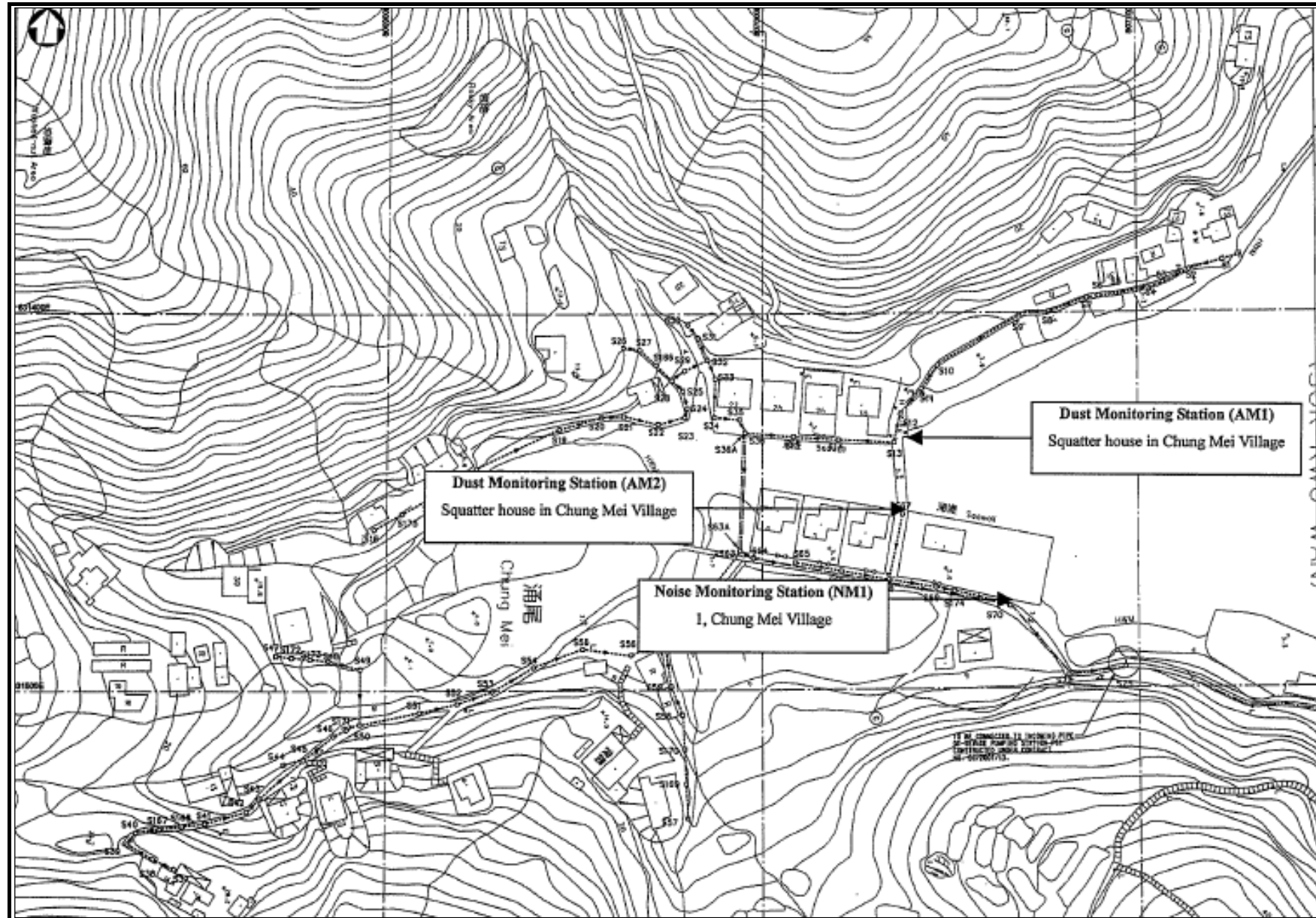
(Marked on 31 Jan 2012)

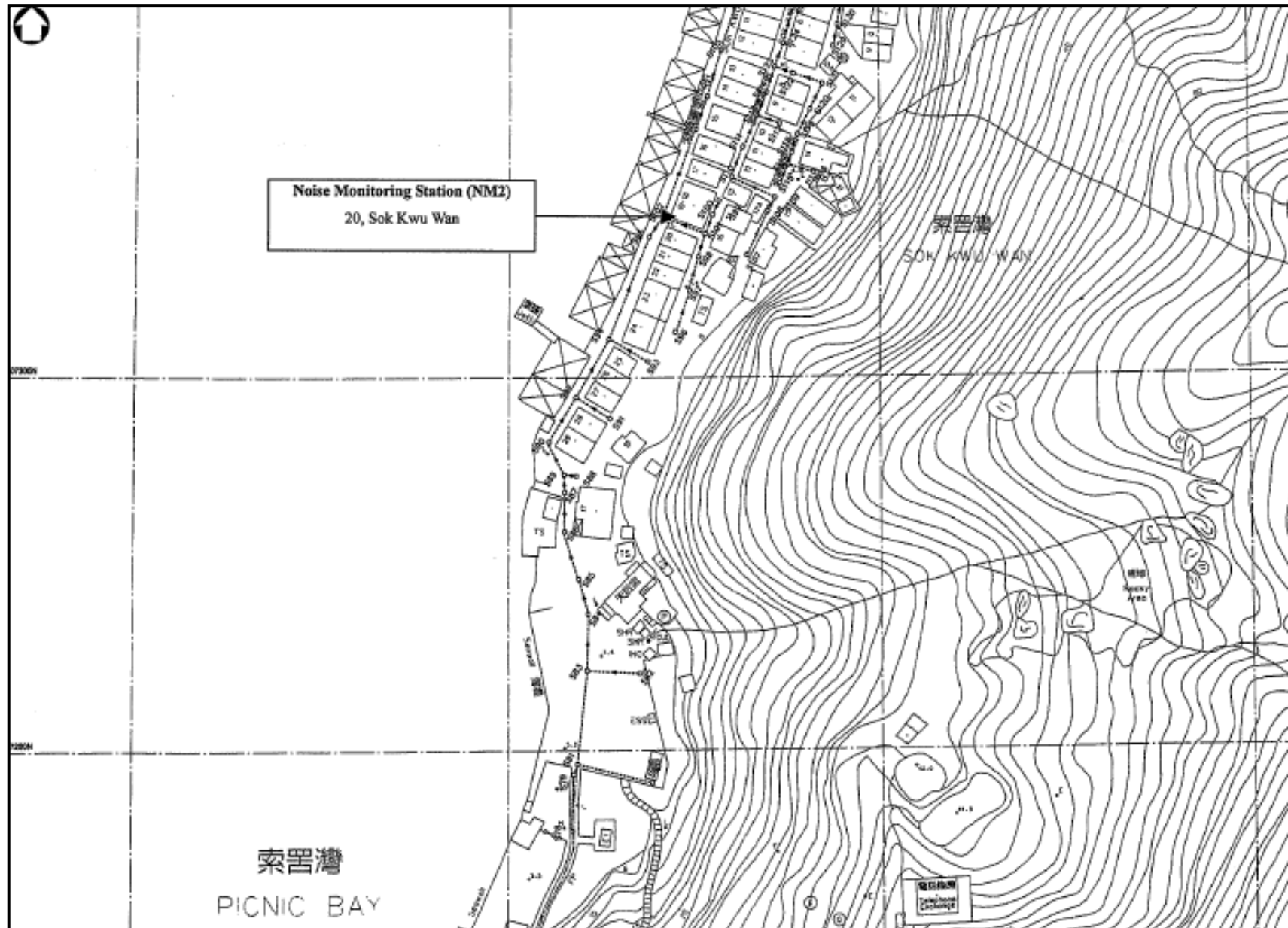
Date	Revision	Checked	Approved
31/01/12	Revision 0	RH	VC

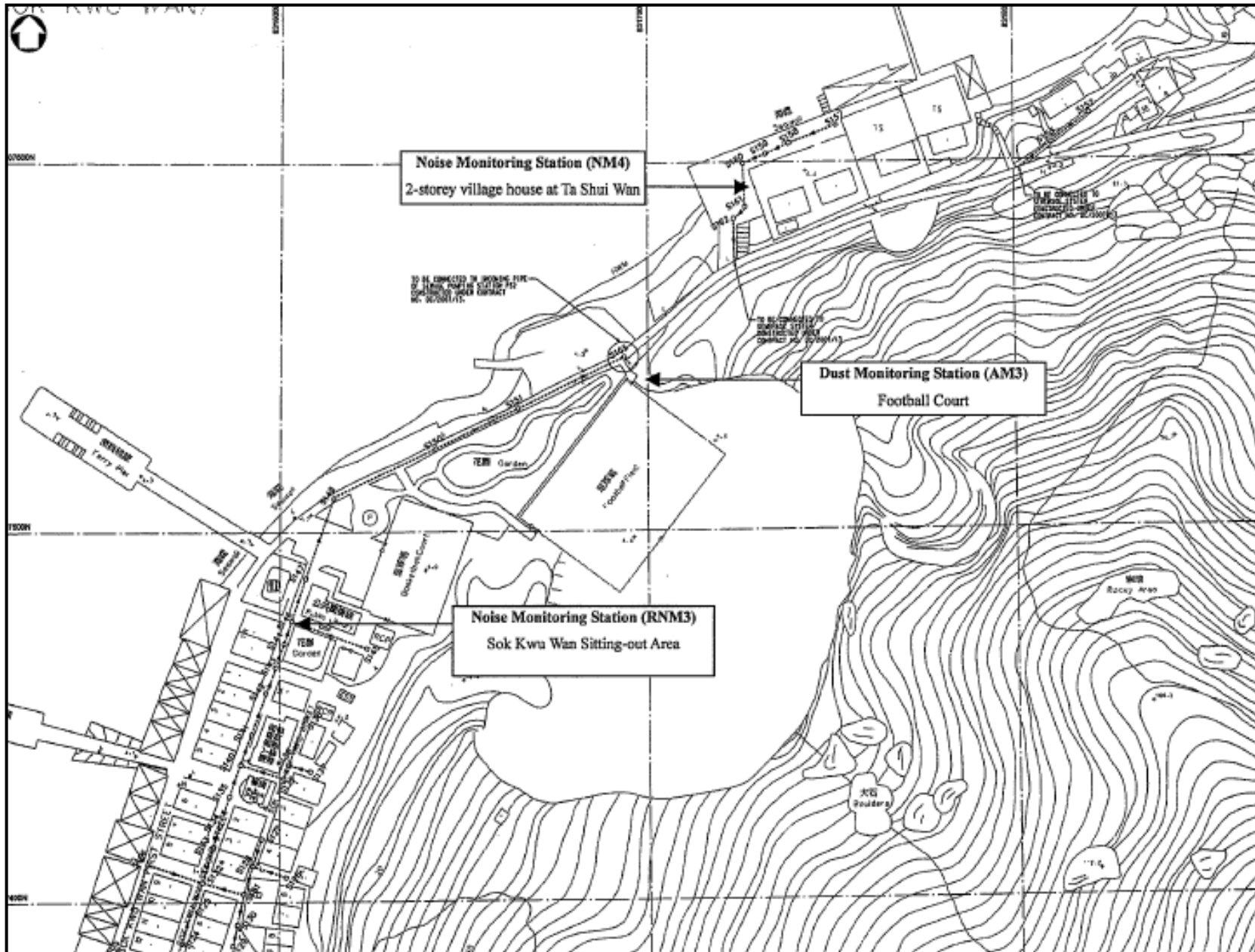
## **Appendix D**

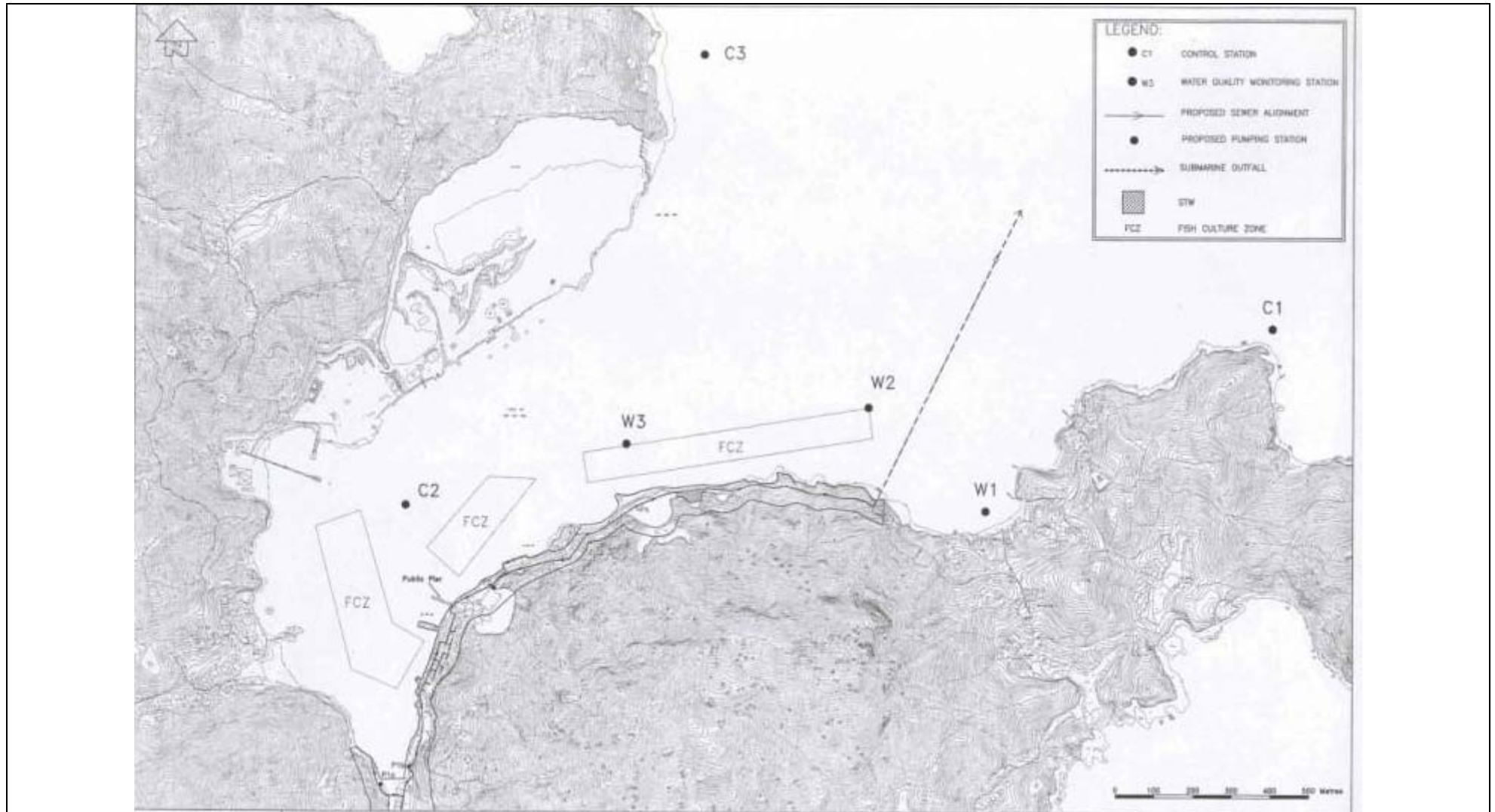
### **Location of Monitoring Stations (Air Quality / Construction Noise / Water Quality)**











**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:

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

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

## TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Football court  
 Location ID : AM3

Date of Calibration: 3-Jan-12  
 Next Calibration Date: 29-Feb-12  
 Technician: Mr. Ben Tam

### CONDITIONS

Sea Level Pressure (hPa)	1020.4	Corrected Pressure (mm Hg)	765.3
Temperature (°C)	17.0	Temperature (K)	290

### 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	1.591	48	49.50	Slope = 20.6159 Intercept = 16.9129 Corr. coeff. = 0.9997
13	4	4	8	1.371	44	45.37	
10	2.7	2.7	5.4	1.129	39	40.22	
7	1.6	1.6	3.2	0.872	34	35.06	
5	0.6	0.6	1.2	0.539	27	27.84	

**Calculations :**

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

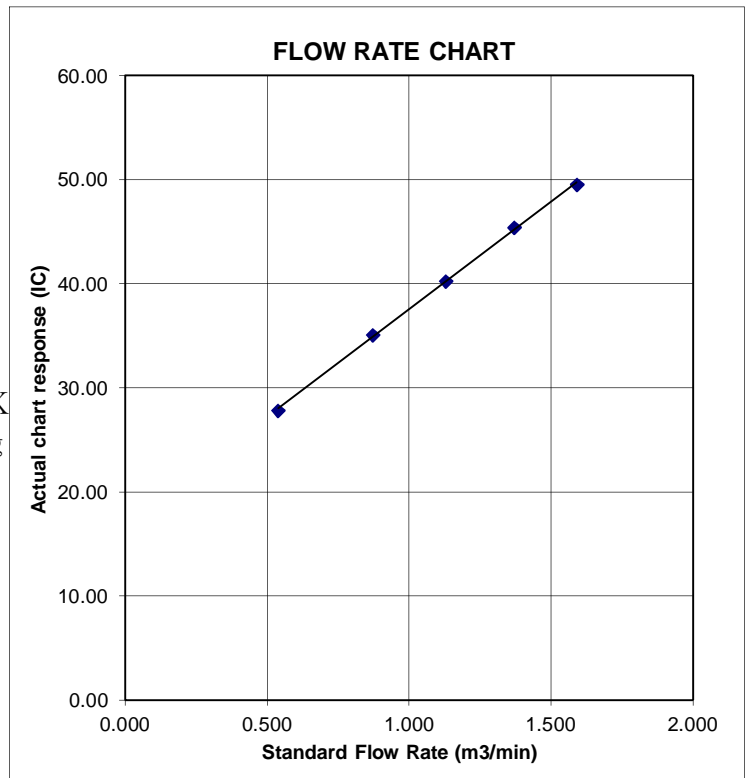
$$IC = I[\text{Sqrt}(Pa/Pstd)(Tstd/Ta)]$$

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: 3-Jan-12  
 Next Calibration Date: 29-Feb-12  
 Technician: Mr. Ben Tam

### CONDITIONS

Sea Level Pressure (hPa)	1020.4	Corrected Pressure (mm Hg)	765.3
Temperature (°C)	17.0	Temperature (K)	290

### 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	1.663	56	57.75	Slope = 25.5288 Intercept = 15.4955 Corr. coeff. = 0.9998
13	4.2	4.2	8.4	1.405	50	51.56	
10	3.1	3.1	6.2	1.209	45	46.40	
7	1.8	1.8	3.6	0.924	38	39.18	
5	1.0	1.0	2	0.692	32	33.00	

**Calculations :**

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

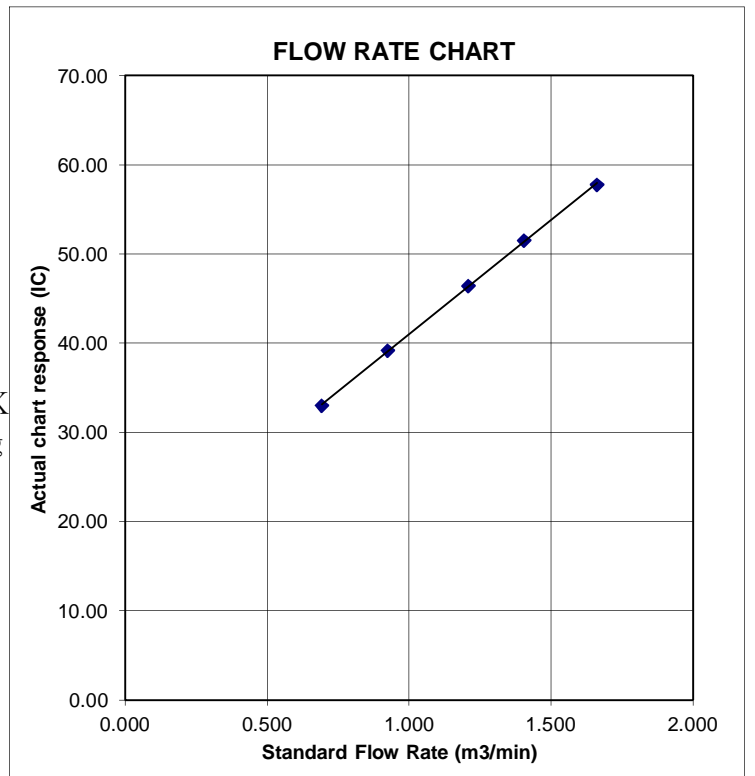
$$IC = I[\text{Sqrt}(Pa/Pstd)(Tstd/Ta)]$$

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	Date of Calibration: 3-Jan-12
Location ID : AM1	Next Calibration Date: 29-Feb-12
	Technician: Mr. Ben Tam

### CONDITIONS

Sea Level Pressure (hPa)	1020.4	Corrected Pressure (mm Hg)	765.3
Temperature (°C)	17.0	Temperature (K)	290

### 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	1.532	57	58.78	Slope = 32.9338 Intercept = 8.3816 Corr. coeff. = 0.9999
13	4	4	8	1.371	52	53.62	
10	3	3	6	1.189	46	47.43	
7	1.7	1.7	3.4	0.898	37	38.15	
5	0.9	0.9	1.8	0.657	29	29.90	

**Calculations :**

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

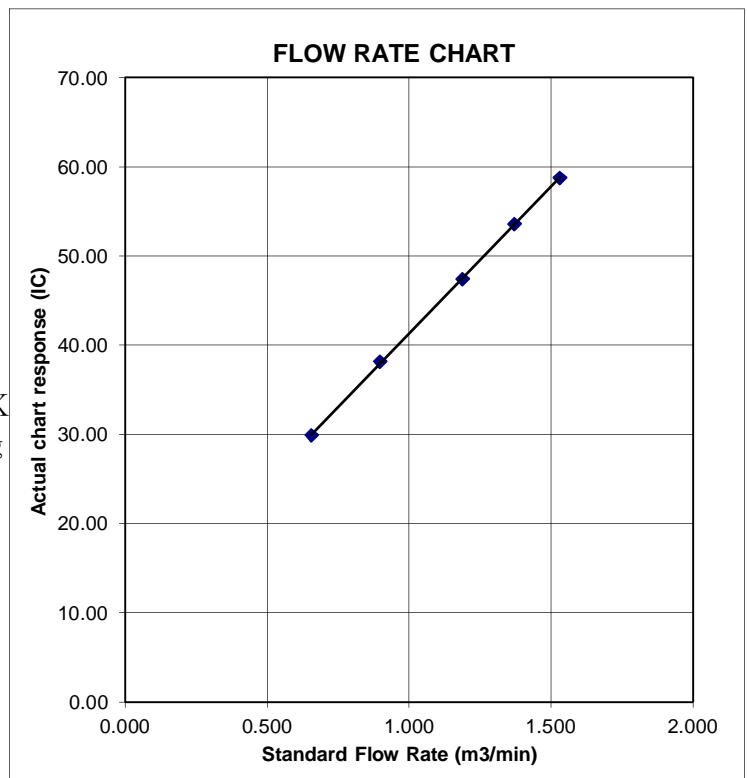
$$IC = I[\text{Sqrt}(Pa/Pstd)(Tstd/Ta)]$$

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)

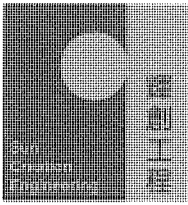
**For subsequent calculation of sampler flow:**

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

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







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

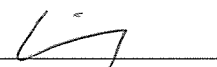
### TEST RESULTS

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

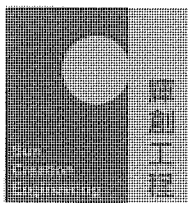
Date : 19 April 2011

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

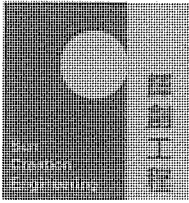
UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
50 - 130	L <sub>AFP</sub>	A	F	94.00	1	94.0	± 0.7

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)

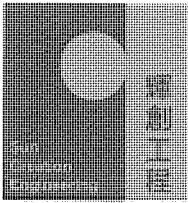
UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Burst Duration		
30 - 110	L <sub>AFP</sub>	A	F	106.0	Continuous	106.0	Ref.
	L <sub>AFMax</sub>				200 ms	105.0	-1.0 ± 1.0
	L <sub>ASP</sub>	S	Continuous		106.0	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.					90	89.6	± 0.5
			5 min.					80	79.3	± 1.0
								70	69.9	± 1.0

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

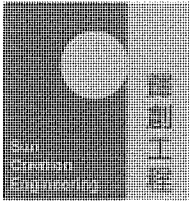
- Uncertainties of Applied Value :
  - 94 dB : 31.5 Hz - 125 Hz : ± 0.40 dB
  - 250 Hz - 500 Hz : ± 0.30 dB
  - 1 kHz : ± 0.20 dB
  - 2 kHz : ± 0.40 dB
  - 4 kHz : ± 0.50 dB
  - 8 kHz : ± 0.70 dB
  - 12.5 kHz : ± 1.20 dB
  - 104 dB : 1 kHz : ± 0.10 dB (Ref. 94 dB)
  - 114 dB : 1 kHz : ± 0.10 dB (Ref.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

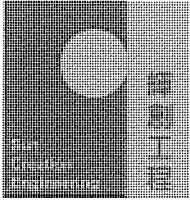
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong

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

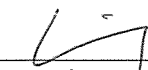
### TEST RESULTS

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

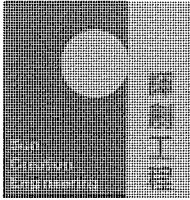
Fax: 2744 8986

E-mail: callab@suncreation.com

Website: www.suncreation.com

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## 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:** HK1127006  
**LABORATORY:** HONG KONG  
**DATE RECEIVED:** 16/11/2011  
**DATE OF ISSUE:** 25/11/2011

**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 November, 2011

#### NOTES

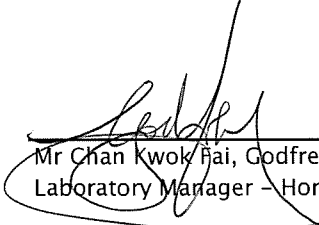
This is the Final Report and supersedes any preliminary report with this batch number.  
Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

#### 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 Hai, Godfrey  
Laboratory Manager - Hong Kong

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Page 1 of 2

ADDRESS 11/F, Chung Shun Knitting Centre, 1-3 Wing Yip Street, Kwai Chung, N.T., Hong Kong PHONE +852 2610 1044 FAX +852 2610 2021  
ALS TECHNICHEM (HK) PTY LTD Part of the ALS Laboratory Group A Campbell Brothers Limited Company

# REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

**Work Order:** HK1127006  
**Date of Issue:** 25/11/2011  
**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 November, 2011

**Date of next Calibration:** 16 February, 2012

**Parameters:**

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

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
6.04	5.98	-0.06
6.85	6.83	-0.02
7.76	7.80	0.04
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)
4.0	4.13	0.13
7.0	7.05	0.05
10.0	9.90	-0.10
Tolerance Limit (±unit)		0.20

**Salinity**

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

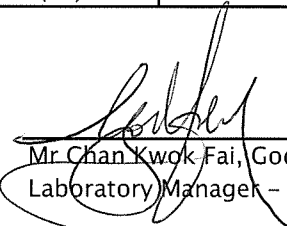
Expected Reading (g/L)	Displayed Reading (g/L)	Tolerance (%)
0.00	0.00	--
10.00	9.50	-5.0
20.00	19.21	-4.0
30.00	28.58	-4.7
Tolerance Limit (±%)		10.0

**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)
11.0	11.0	0.0
24.5	24.0	-0.5
33.0	33.0	0.0
Tolerance Limit (°C)		2.0

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



# 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:** HK1129081  
**LABORATORY:** HONG KONG  
**DATE RECEIVED:** 09/12/2011  
**DATE OF ISSUE:** 16/12/2011

**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, Temperature and Turbidity  
**Description:** YSI Sonde  
**Brand Name:** YSI  
**Model No.:** YSI 6820 / 650MDS  
**Serial No.:** 02J0912/02K0788 AA  
**Equipment No.:** --  
**Date of Calibration:** 16 December, 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

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# REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

Work Order: HK1129081  
 Date of Issue: 16/12/2011  
 Client: ACTION UNITED ENVIRO SERVICES



Description: YSI Sonde  
 Brand Name: YSI  
 Model No.: YSI 6820 / 650MDS  
 Serial No.: 02J0912/02K0788 AA  
 Equipment No.: --  
 Date of Calibration: 16 December, 2011

Date of next Calibration: 16 March, 2012

**Parameters:**

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

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
5.70	5.83	0.13
6.91	7.05	0.14
8.00	8.08	0.08
Tolerance Limit ( $\pm$ mg/L)		0.20

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

Expected Reading (pH Unit)	Displayed Reading (pH Unit)	Tolerance (pH unit)
4.0	3.95	-0.05
7.0	6.95	-0.05
10.0	9.92	-0.08
Tolerance Limit ( $\pm$ unit)		0.20

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

Expected Reading (ppt)	Displayed Reading (ppt)	Tolerance (%)
0	0.00	--
10	10.05	0.5
20	20.10	0.5
30	30.89	3.0
Tolerance Limit ( $\pm$ %)		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 ( $^{\circ}$ C)	Displayed Reading ( $^{\circ}$ C)	Tolerance ( $^{\circ}$ C)
11.0	10.80	-0.2
22.0	21.40	-0.6
32.0	31.83	-0.2
Tolerance Limit ( $^{\circ}$ C)		2.0

  
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Description: YSI Sonde  
Brand Name: YSI  
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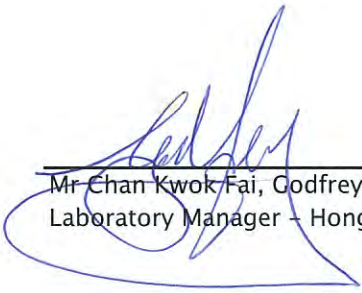
Date of next Calibration: 16 March, 2012

## Parameters:

### Turbidity

Method Ref: APHA 21st Ed. 2130B

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)
0	0.6	--
4	4.3	7.5
10	10.0	0.0
20	21.5	7.5
50	50.9	1.8
100	99.4	-0.6
	Tolerance Limit (±%)	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
ACTION LEVEL				
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>
LIMIT LEVEL				
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	IC(E)	ER	CONTRACTOR
	<b>ET</b>	<b>IC(E)</b>	<b>ER</b>	<b>CONTRACTOR</b>
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>1. Repeat in-situ measurement on the next day of exceedance to confirm findings;</li> <li>2. Identify source(s) of impact;</li> <li>3. Inform ICE, Contractor, ER, EPD and AFCD; and</li> <li>4. Check monitoring data, all plant, equipment and Contractor's working methods.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET and Contractor's working methods</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of non-compliance in writing; and</li> <li>2. Notify Contractor</li> </ol>	<ol style="list-style-type: none"> <li>1. Information the ER and confirm notification of the non-compliance in writing;</li> <li>2. Rectify unacceptable practice; and</li> <li>3. Amend working methods if appropriate</li> </ol>
2. Exceedance for two or more consecutive sampling days	<ol style="list-style-type: none"> <li>1. Same as the above;</li> <li>2. Inform ICE, Contractor, ER, EPD and AFCD;</li> <li>3. Discuss mitigation measures with IC(E), RE and Contractor;</li> <li>4. Ensure well implementation of mitigation measures; and</li> <li>5. Increase the monitoring frequency to daily until no exceedance of Action Level</li> </ol>	<ol style="list-style-type: none"> <li>1. Same as the above;</li> <li>2. Discuss with ET and Contractor on possible remedial actions;</li> <li>3. Review the proposed mitigation measures submitted by Contractor and advise the ER accordingly; and</li> <li>4. Supervise the implementation of mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss with IC(E) on the proposed mitigation measures;</li> <li>2. Ensure well implementation of mitigation measures; and</li> <li>3. Assess the effectiveness of the implemented mitigation measures</li> </ol>	<ol style="list-style-type: none"> <li>1. Same as the above;</li> <li>2. Check all plant and equipment and consider changes of working methods;</li> <li>3. 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>4. Implement the agreed mitigation measures</li> </ol>
<b>LIMIT LEVEL</b>				
1. Exceedance for one sampling day	<ol style="list-style-type: none"> <li>1. Repeat in-situ measurement on the next day of exceedance to confirm findings;</li> <li>2. Identify source(s) of impact;</li> <li>3. Inform ICE, Contractor, ER, EPD and AFCD;</li> <li>4. Check monitoring data, all plant, equipment and Contractor's working methods; and</li> <li>5. Discuss mitigation measures with IC(E), RE and Contractor</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET and Contractor's working method</li> <li>2. Discuss with ER and Contractor on possible remedial actions; and</li> <li>3. Review the proposed mitigation measures submitted by Contractor and advise the ER accordingly</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification failure in writing; and</li> <li>2. Discuss with IC(E), ET and Contractor on the proposed mitigation measures; and</li> <li>4. Request Contractor to review the working methods</li> </ol>	<ol style="list-style-type: none"> <li>1. Inform the ER and confirm notification of the failure in writing;</li> <li>2. Rectify unacceptable practice;</li> <li>3. Check all plant and equipment and consider changes of working methods; and</li> <li>4. 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>1. Same as the above;</li> <li>2. Ensure mitigation measures are implemented; and</li> <li>3. 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>1. Same as the above; and</li> <li>2. Supervise the Implementation of mitigation measures</li> </ol>	<ol style="list-style-type: none"> <li>1. Same as the above;</li> <li>2. Ensure well implementation of mitigation measures</li> <li>3. Make agreement on the mitigation measures to be implemented; and</li> <li>4. Consider and instruct, if necessary, the Contractor to stow 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>1. Same as the above;</li> <li>2. Take immediate action to avoid further exceedance;</li> <li>3. Implement the agreed mitigation measures;</li> <li>4. Resubmit proposals of mitigation measures if problem still not under control; and</li> <li>5. 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>															
2-Feb-12	24565	11570.48	11593.97	1409.40	31	34	32.5	16	1021.5	0.75	1059	2.772	2.8332	0.0612	58
8-Feb-12	24549	11593.97	11617.48	1410.60	32	35	33.5	12.3	1021.2	0.79	1113	2.7754	2.8838	0.1084	97
14-Feb-12	24372	11617.48	11641.27	1427.40	30	32	31.0	19.4	1014.9	0.70	994	2.8779	2.9003	0.0224	23
20-Feb-12	24564	11641.27	11665.26	1439.40	30	32	31.0	15	1018.5	0.71	1015	2.7756	2.7989	0.0233	23
25-Feb-12	24583	11665.26	11689.25	1439.40	29	32	30.5	16.1	1011.6	0.68	986	2.7519	2.79	0.0381	39
<b>24-hour TSP Monitoring Results - AM2</b>															
2-Feb-12	24535	10080.33	10104.08	1425.00	32	36	34.0	16	1021.5	0.75	1070	2.75	2.824	0.0740	69
8-Feb-12	24576	10104.08	10127.82	1424.40	31	35	33.0	12.3	1021.2	0.72	1024	2.7574	2.8224	0.0650	63
14-Feb-12	24563	10127.82	10151.8	1438.80	32	37	34.5	19.4	1014.9	0.76	1091	2.7628	2.7896	0.0268	25
20-Feb-12	24562	10151.8	10175.57	1426.20	33	36	34.5	15	1018.5	0.77	1100	2.7698	2.7929	0.0231	21
25-Feb-12	24601	10175.57	10199.34	1426.20	37	39	38.0	16.1	1011.6	0.90	1288	2.7619	2.8105	0.0486	40
<b>24-hour TSP Monitoring Results - AM3</b>															
2-Feb-12	24534	5636.12	5659.89	1426.2	32	34	33	16	1021.5	0.81	1157	2.7603	2.9169	0.1566	135
8-Feb-12	24577	5659.89	5683.78	1433.4	32	34	33	12.3	1021.2	0.82	1178	2.7592	2.8644	0.1052	89
14-Feb-12	24561	5683.78	5707.51	1423.8	32	34	33	19.4	1014.9	0.80	1135	2.7763	2.8818	0.1055	93
20-Feb-12	24513	5707.51	5731.42	1434.6	32	34	33	15	1018.5	0.81	1165	2.789	2.9366	0.1476	127
25-Feb-12	24584	5731.42	5755.33	1434.6	32	34	33	16.1	1011.6	0.80	1153	2.7647	2.8189	0.0542	47

## **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 3-Feb-12

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									
2012/2/3 17:40	W1	ME	832967	807719	2.4	1.200	15.10	6.83	103.8	3.92	33.88	8.20	3.1
						1.200	15.00	6.86	102.4	4.28	32.18	8.30	
2012/2/3 17:32	W2	ME	832677	807992	12.5	1.000	15.60	7.20	101.6	3.49	30.08	8.20	1.4
						1.000	15.50	7.06	99.4	4.15	31.15	8.30	1.9
						6.250	15.20	6.81	93.2	4.86	33.96	8.30	
						6.250	15.30	6.76	95.1	4.36	32.24	8.40	2.2
						11.500	15.20	6.64	90.6	3.03	32.44	8.30	
11.500	15.10	6.53	92.4	4.02	30.48	8.40							
2012/2/3 17:21	W3	ME	832038	807896	12.4	1.000	15.40	7.13	102.6	4.97	32.09	8.40	1.7
						1.000	15.40	7.26	100.7	4.45	32.26	8.40	0.8
						6.200	15.00	6.90	98.3	3.46	32.24	8.30	
						6.200	15.20	6.80	97.6	5.48	33.82	8.20	3.0
						11.400	15.20	6.72	95.1	4.06	33.36	8.20	
11.400	15.10	6.65	93.0	4.26	30.92	8.30							
2012/2/3 17:51	C1	ME	833708	808186	13.8	1.000	15.50	7.03	103.6	5.82	30.45	8.40	1.8
						1.000	15.50	7.06	102.8	5.96	32.11	8.30	2.0
						6.900	15.20	6.92	99.4	5.97	32.14	8.40	
						6.900	15.30	6.95	98.3	4.48	30.09	8.30	3.7
						12.800	15.00	6.65	95.6	6.38	30.08	8.30	
12.800	15.00	6.68	94.4	5.30	31.15	8.20							
2012/2/3 17:03	C2	ME	831457	807762	10.9	1.000	15.30	7.02	102.3	4.38	30.32	8.40	4.6
						1.000	15.30	7.14	100.6	5.31	30.09	8.20	7.7
						5.450	15.10	6.82	102.7	5.51	32.26	8.30	
						5.450	15.10	6.81	100.8	5.92	32.08	8.30	1.2
						9.900	15.00	6.56	96.4	4.02	31.18	8.30	
						9.900	14.90	6.58	95.3	6.03	33.15	8.40	
2012/2/3 18:12	C3	ME	832210	808882	13.7	1.000	15.30	7.26	102.4	4.49	32.09	8.30	5.6
						1.000	15.20	7.17	102.8	5.06	32.18	8.30	1.7
						6.850	15.20	6.93	97.4	4.08	33.42	8.20	
						6.850	15.10	6.98	96.8	5.83	30.51	8.30	1.6
						12.700	15.00	6.64	91.8	5.24	33.15	8.30	
12.700	15.00	6.75	92.4	4.92	31.16	8.30							
2012/2/3 12:27	W1	MF	832983	807716	2.8	1.400	15.40	7.17	102.4	3.92	32.56	8.20	7.2
						1.400	15.60	6.98	100.6	3.92	31.45	8.30	
2012/2/3 12:16	W2	MF	832672	807993	12.9	1.000	15.90	7.22	7.2	3.40	33.42	8.20	2.5
						1.000	15.90	7.14	7.1	4.51	31.45	8.30	1.8
						6.450	15.40	6.91	6.9	4.31	30.26	8.20	
						6.450	15.20	6.83	6.8	4.02	32.08	8.40	2.2
						11.900	15.40	6.70	6.7	3.96	31.48	8.30	
11.900	15.40	6.71	6.7	3.96	32.15	8.40							
2012/2/3 12:07	W3	MF	832036	807896	12.3	1.000	15.70	7.26	7.3	4.59	32.01	8.40	<0.5
						1.000	15.70	7.17	7.2	3.66	32.15	8.30	0.8
						6.150	15.50	6.90	6.9	3.78	30.14	8.20	
						6.150	15.60	6.82	6.8	4.08	32.59	8.20	3.5
						11.300	15.00	6.73	6.7	5.46	32.18	8.20	
11.300	15.00	6.69	6.7	3.46	30.18	8.20							
2012/2/3 12:45	C1	MF	833693	808183	13.6	1.000	15.50	7.23	7.2	4.32	32.26	8.30	5.1
						1.000	15.80	7.26	7.3	4.82	33.58	8.30	6.1
						6.800	15.70	6.92	6.9	4.96	31.14	8.00	
						6.800	15.70	6.94	6.9	4.86	32.02	8.20	0.8
						12.600	15.20	6.77	6.8	4.08	30.08	8.40	
12.600	15.30	6.70	6.7	4.62	31.59	8.20							
2012/2/3 11:55	C2	MF	831447	807748	11.2	1.000	15.80	7.18	7.2	4.18	33.42	8.20	2.1
						1.000	15.80	7.07	7.1	5.00	31.45	8.30	1.4
						5.600	15.70	6.82	6.8	5.36	30.26	8.30	
						5.600	15.60	6.83	6.8	4.82	32.08	8.30	5.5
						10.200	15.50	6.65	6.7	4.49	31.48	8.30	
10.200	15.50	6.60	6.6	4.76	32.15	8.40							
2012/2/3 13:11	C3	MF	832226	808844	13.7	1.000	15.60	7.18	7.2	5.00	32.01	8.30	5.0
						1.000	15.70	7.25	7.3	4.77	32.15	8.30	3.3
						6.850	15.30	6.94	6.9	5.32	30.14	8.20	
						6.850	15.30	6.91	6.9	4.80	32.59	8.40	1.5
						12.700	15.20	6.65	6.7	4.32	32.18	8.30	
12.700	15.20	6.70	6.7	5.09	30.18	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 7-Feb-12

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									
2012/2/7 17:18	W1	ME	832967	807738	2.4	1.200	16.80	6.97	94.3	3.31	33.18	8.30	2.4
						1.200	16.70	6.99	95.6	3.20	32.23	8.20	
2012/2/7 17:12	W2	ME	832671	807991	14.3	1.000	16.70	7.11	100.8	3.22	30.15	8.30	2.9
						1.000	16.80	7.05	99.4	3.26	30.59	8.20	
						7.150	16.70	6.88	95.1	3.46	31.96	8.20	5.1
						7.150	16.80	6.74	96.8	4.38	32.62	8.40	
						13.300	16.60	6.53	90.4	4.68	32.18	8.30	1.6
						13.300	16.60	6.59	90.7	4.85	31.40	8.40	
2012/2/7 16:59	W3	ME	832038	807896	14.6	1.000	16.80	7.25	102.8	4.99	32.44	8.30	4.8
						1.000	16.80	7.27	101.9	4.38	30.04	8.40	
						7.300	16.80	6.76	101.4	3.78	30.67	8.40	5.0
						7.300	16.70	6.79	99.5	4.91	31.11	8.50	
						13.600	16.60	6.81	96.3	4.21	32.48	8.40	3.7
						13.600	16.60	6.65	95.1	5.02	32.24	8.40	
2012/2/7 17:31	C1	ME	833702	808181	14.9	1.000	16.80	7.06	96.3	4.91	33.44	8.40	1.6
						1.000	16.80	7.32	98.4	5.31	32.07	8.10	
						7.450	16.70	6.88	92.1	5.02	32.86	8.40	4.4
						7.450	16.80	6.87	90.8	5.21	33.18	8.30	
						13.900	16.60	6.89	89.4	5.80	33.18	8.30	2.5
						13.900	16.50	6.75	88.1	5.27	32.96	8.40	
2012/2/7 16:41	C2	ME	831459	807757	11.8	1.000	16.80	7.11	103.6	3.19	31.15	8.20	3.6
						1.000	16.70	7.05	102.3	3.91	32.40	8.40	
						5.900	16.50	6.88	95.9	4.38	32.48	8.30	1.1
						5.900	16.50	6.74	97.3	4.65	33.09	8.30	
						10.800	16.40	6.53	92.4	4.96	31.50	8.30	<0.5
						10.800	16.40	6.59	93.8	5.49	32.28	8.40	
2012/2/7 17:57	C3	ME	832224	808864	16.1	1.000	16.70	6.96	99.7	4.99	30.15	8.30	2.2
						1.000	16.70	7.07	96.8	5.30	32.11	8.20	
						8.050	16.80	6.81	94.2	4.67	33.59	8.40	3.4
						8.050	16.70	6.76	93.8	6.07	30.48	8.30	
						15.100	16.50	6.64	90.1	4.91	32.40	8.40	2.9
						15.100	16.60	6.50	90.7	4.38	31.49	8.20	
2012/2/7 12:51	W1	MF	832961	807734	2.8	1.400	16.80	6.96	99.6	3.49	30.64	8.30	3.5
						1.400	16.70	6.81	98.8	3.56	30.15	8.40	
2012/2/7 12:38	W2	MF	832676	807991	13.9	1.000	16.80	6.94	101.9	3.46	30.46	8.30	2.8
						1.000	16.70	6.97	100.8	3.82	30.59	8.40	
						6.950	16.80	6.62	95.6	3.48	32.21	8.30	1.8
						6.950	16.70	6.74	96.3	5.81	31.13	8.30	
						12.900	16.50	6.59	92.3	4.31	30.38	8.40	0.5
						12.900	16.40	6.60	93.1	4.96	32.65	8.30	
2012/2/7 12:24	W3	MF	832038	807896	13.6	1.000	16.70	7.07	103.8	4.22	32.11	8.40	2.6
						1.000	16.80	7.31	102.6	4.96	32.29	8.30	
						6.800	16.70	7.24	100.2	3.96	31.19	8.40	2.2
						6.800	16.80	7.04	99.0	3.40	33.48	8.40	
						12.600	16.50	6.82	98.4	4.31	32.44	8.30	2.3
						12.600	16.50	6.66	97.1	2.26	34.62	8.40	
2012/2/7 14:11	C1	MF	833694	808170	14.6	1.000	16.70	7.09	99.1	3.96	31.15	8.40	1.5
						1.000	16.80	7.13	99.4	4.88	30.84	8.40	
						7.300	16.50	6.98	95.8	4.59	32.06	8.50	1.9
						7.300	16.60	6.96	96.3	3.26	31.77	8.40	
						13.600	16.40	6.53	90.1	4.92	30.27	8.40	3.1
						13.600	16.40	6.64	91.4	4.31	32.69	8.30	
2012/2/7 12:02	C2	MF	831459	807754	12.1	1.000	16.80	7.11	102.3	3.18	30.31	8.30	1.0
						1.000	16.70	7.08	101.6	4.81	33.42	8.40	
						6.050	16.70	6.92	100.1	4.32	32.48	8.30	2.1
						6.050	16.80	6.99	99.8	3.88	30.21	8.40	
						11.100	16.50	6.83	96.2	3.92	30.96	8.40	2.5
						11.100	16.50	6.80	97.3	5.32	31.15	8.30	
2012/2/7 13:21	C3	MF	832214	808861	14.7	1.000	16.90	7.26	101.3	3.45	31.95	8.30	0.7
						1.000	16.90	7.23	102.4	5.22	30.56	8.30	
						7.350	16.60	6.91	97.6	4.78	33.19	8.40	1.7
						7.350	16.80	6.98	98.5	5.21	31.47	8.30	
						13.700	16.60	6.67	93.8	5.30	32.55	8.40	1.4
						13.700	16.60	6.72	91.6	4.90	32.98	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 9-Jan-12

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									
2012/2/9 12:49	W1	ME	832947	807751	2.6	1.300	13.60	6.94	99.8	4.24	32.59	8.30	7.0
						1.300	13.70	7.09	97.7	3.96	31.42	8.30	
2012/2/9 12:38	W2	ME	832686	807992	14.8	1.000	13.60	7.18	101.0	4.91	30.21	8.40	7.7
						1.000	13.60	7.19	100.1	4.48	31.75	8.10	
						7.400	13.20	7.24	99.8	4.22	29.44	8.40	3.2
						7.400	13.60	7.01	97.2	3.90	30.59	8.20	
						13.800	13.30	6.85	94.6	3.64	30.15	8.20	6.1
						13.800	13.30	6.81	95.1	3.09	31.66	8.30	
2012/2/9 13:46	W3	ME	832036	807890	14.1	1.000	13.60	7.22	102.4	3.78	33.15	8.20	1.9
						1.000	13.60	7.19	102.9	4.99	31.64	8.40	
						7.050	13.50	6.94	101.3	4.92	33.56	8.30	4.8
						7.050	13.40	6.97	100.6	3.88	32.66	8.30	
						13.100	13.20	6.77	97.8	3.48	32.48	8.40	0.9
						13.100	13.30	6.75	96.2	4.22	32.75	8.20	
2012/2/9 13:05	C1	ME	833692	808179	15.2	1.000	13.60	7.11	101.3	3.94	33.46	8.20	2.7
						1.000	13.50	7.14	100.8	3.86	32.49	8.40	
						7.600	13.70	6.81	99.2	4.25	32.24	8.30	2.7
						7.600	13.50	6.96	98.3	4.21	33.54	8.50	
						14.200	13.80	6.92	95.2	4.28	33.19	8.30	5.0
						14.200	13.60	6.75	96.6	4.94	32.15	8.40	
2012/2/9 13:58	C2	ME	831459	807758	13.8	1.000	13.90	7.12	100.8	3.18	30.32	8.30	2.5
						1.000	13.80	8.08	99.7	4.20	32.96	8.30	
						6.900	13.20	6.88	102.3	4.32	31.45	8.40	2.3
						6.900	13.70	6.72	98.6	4.21	31.88	8.20	
						12.800	13.50	6.51	94.6	4.69	32.23	8.30	7.2
						12.800	13.50	6.65	95.1	3.48	32.79	8.30	
2012/2/9 13:28	C3	ME	832218	808884	15.6	1.000	13.50	6.84	100.9	3.96	32.25	8.40	2.2
						1.000	13.70	6.99	97.8	4.61	30.53	8.30	
						7.800	13.60	6.76	98.4	4.92	31.11	8.40	4.8
						7.800	13.80	6.72	96.1	5.44	29.10	8.20	
						14.600	13.50	6.54	95.1	5.99	30.45	8.40	2.0
						14.600	13.80	6.59	94.2	4.83	30.92	8.20	
2012/2/9 17:42	W1	MF	832981	807738	2.7	1.350	13.60	6.83	98.6	3.85	33.18	8.40	6.3
						1.350	13.70	6.92	97.8	3.92	32.15	8.30	
2012/2/9 17:33	W2	MF	832676	807996	14.9	1.000	13.70	7.11	103.8	3.49	30.14	8.40	2.3
						1.000	13.80	6.95	104.9	4.50	33.90	8.50	
						7.450	13.60	6.82	96.3	4.33	32.28	8.30	6.5
						7.450	13.40	6.72	97.2	4.92	32.09	8.30	
						13.900	13.30	6.64	91.1	4.22	30.15	8.30	3.3
						13.900	13.40	6.67	92.4	4.78	33.15	8.40	
2012/2/9 17:22	W3	MF	832036	807891	14.8	1.000	13.60	7.24	103.90	4.18	30.96	8.30	5.2
						1.000	13.70	7.11	102.60	4.81	30.82	8.20	
						7.400	13.70	6.85	99.70	4.38	31.15	8.40	7.1
						7.400	13.40	6.85	99.80	4.59	31.15	8.40	
						13.800	13.50	6.76	95.20	5.21	32.28	8.30	4.9
						13.800	13.50	6.79	96.40	5.24	32.28	8.40	
2012/2/9 18:05	C1	MF	833706	808184	15.6	1.000	13.70	6.96	104.60	4.38	31.15	8.40	6.2
						1.000	13.70	6.95	103.10	4.46	32.28	8.30	
						7.800	13.60	6.79	100.80	4.68	33.48	8.50	4.5
						7.800	13.60	6.70	96.10	4.59	33.86	8.20	
						14.600	15.20	6.65	94.80	5.26	32.16	8.20	3.4
						14.600	13.20	6.69	95.40	5.40	32.28	8.30	
2012/2/9 17:09	C2	MF	831468	807728	14.1	1.000	13.70	7.12	101.3	3.12	30.38	8.30	3.4
						1.000	13.70	7.09	102.6	3.20	33.45	8.40	
						7.050	13.60	7.14	95.1	3.19	31.15	8.30	7.2
						7.050	13.60	6.95	96.4	3.86	32.28	8.40	
						13.100	13.30	6.88	93.8	4.56	32.24	8.40	3.3
						13.100	13.30	6.81	92.9	4.33	33.49	8.30	
2012/2/9 18:26	C3	MF	832249	808846	15.7	1.000	13.80	7.18	100.1	4.88	32.88	8.30	4.9
						1.000	13.80	7.16	99.8	4.21	33.45	8.40	
						7.850	13.70	7.04	95.6	5.87	32.14	8.20	4.1
						7.850	13.50	7.03	97.2	4.96	32.28	8.40	
						14.700	13.20	6.86	93.2	4.75	32.85	8.30	3.9
						14.700	13.20	6.90	92.7	5.10	33.11	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 11-Feb-12

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									
2012/2/11 13:44	W1	ME	832990	807711	2.5	1.250	15.10	7.76	96.3	3.92	30.86	8.40	4.6
						1.250	15.30	7.07	97.7	4.02	30.44	8.30	
2012/2/11 13:32	W2	ME	832692	807988	14.7	1.000	15.20	7.08	100.6	3.99	32.15	8.40	5.4
						1.000	15.30	7.14	99.7	4.26	30.75	8.40	
						7.350	15.20	6.81	95.8	4.21	33.59	8.40	5.2
						7.350	15.10	6.70	96.0	5.09	30.66	8.40	
						13.700	15.00	6.54	92.1	5.28	32.96	8.40	6.2
						13.700	15.00	6.59	91.6	5.41	32.58	8.30	
2012/2/11 14:21	W3	ME	832031	807896	15.6	1.000	15.20	7.26	102.6	4.41	33.15	8.30	2.7
						1.000	15.20	7.38	101.8	5.52	30.85	8.20	
						7.800	15.20	6.94	97.8	5.49	32.08	8.30	7.5
						7.800	15.10	6.99	99.6	5.96	31.44	8.30	
						14.600	15.00	6.51	96.1	5.88	33.82	8.40	3.5
						14.600	15.00	6.59	95.0	5.81	32.86	8.30	
2012/2/11 14:02	C1	ME	833695	808161	15.9	1.000	15.10	7.00	100.3	5.22	33.48	8.40	6.1
						1.000	15.10	6.96	99.8	5.44	31.86	8.30	
						7.950	15.20	6.81	95.3	5.49	30.55	8.30	2.8
						7.950	15.20	6.87	93.6	5.92	32.67	8.30	
						14.900	15.10	6.51	90.8	5.59	31.59	8.20	2.9
						14.900	15.00	6.60	91.1	5.88	32.29	8.40	
2012/2/11 14:50	C2	ME	831458	807764	15.5	1.000	15.00	7.18	101.8	4.18	30.32	8.50	3.0
						1.000	15.20	7.09	99.6	5.88	33.11	8.40	
						7.750	15.00	6.90	98.1	5.22	31.49	8.40	2.9
						7.750	15.10	6.92	99.1	4.21	32.65	8.30	
						14.500	14.90	6.84	95.8	6.69	30.38	8.30	2.6
						14.500	15.00	6.79	96.7	6.48	33.94	8.10	
2012/2/11 14:36	C3	ME	832214	808870	15.8	1.000	15.20	7.26	102.6	4.48	32.66	8.30	5.4
						1.000	15.30	7.19	98.4	4.20	32.96	8.30	
						7.900	15.10	6.82	95.9	4.15	33.11	8.30	4.4
						7.900	15.40	6.81	97.2	3.49	31.08	8.30	
						14.800	15.00	6.76	90.1	2.48	32.14	8.20	5.7
						14.800	15.00	6.72	91.0	5.91	32.11	8.40	
2012/2/11 10:07	W1	MF	832981	807736	2.6	1.300	15.40	7.16	98.6	3.90	33.39	8.30	5.4
						1.300	15.10	6.84	98.9	4.01	32.87	8.40	
2012/2/11 9:59	W2	MF	832679	807992	15.2	1.000	15.00	7.38	101.6	3.82	31.56	8.20	3.6
						1.000	15.20	7.42	100.8	3.40	33.48	8.30	
						7.600	15.00	7.01	98.3	4.49	32.28	8.30	4.2
						7.600	15.10	7.08	97.6	6.30	30.07	8.40	
						14.200	14.90	6.96	95.6	4.38	31.19	8.20	7.5
						14.200	15.00	6.92	94.8	4.60	32.29	8.30	
2012/2/11 9:43	W3	MF	832036	807899	15.3	1.000	14.90	7.24	100.8	3.98	32.15	8.20	2.6
						1.000	15.30	7.33	100.9	4.02	30.11	8.30	
						7.650	15.10	7.09	98.6	4.26	30.49	8.30	5.2
						7.650	15.10	7.17	97.1	4.55	32.23	8.40	
						14.300	15.00	7.01	93.4	4.82	32.28	8.30	4.2
						14.300	15.00	6.95	95.1	4.90	32.95	8.40	
2012/2/11 10:25	C1	MF	833708	808169	15.8	1.000	15.10	7.46	104.8	4.31	34.08	8.40	5.0
						1.000	14.90	7.31	100.1	4.83	30.86	8.40	
						7.900	15.20	7.22	98.7	4.60	30.48	8.30	3.9
						7.900	14.90	7.19	99.6	4.80	32.92	8.40	
						14.800	14.98	7.08	94.2	4.09	31.55	8.40	4.4
						14.800	14.80	7.04	95.1	4.77	30.15	8.30	
2012/2/11 9:26	C2	MF	831458	807759	14.6	1.000	15.20	7.08	102.3	3.91	30.38	8.30	4.8
						1.000	15.10	7.23	101.4	4.03	31.16	8.40	
						7.300	15.10	7.01	99.7	5.28	31.49	8.20	4.9
						7.300	15.20	6.96	99.8	5.10	32.48	8.40	
						13.600	15.00	7.16	92.7	4.96	32.28	8.30	4.6
						13.600	15.00	7.04	95.4	4.86	30.81	8.30	
2012/2/11 10:41	C3	MF	832239	808876	15.6	1.000	15.10	7.33	98.6	4.82	32.68	8.30	3.4
						1.000	15.00	7.25	99.7	4.38	32.48	8.40	
						7.800	15.20	7.11	95.1	4.91	30.81	8.30	3.6
						7.800	15.10	7.08	94.0	4.98	30.45	8.40	
						14.600	15.00	7.04	92.3	4.69	32.48	8.40	4.8
						14.600	15.00	6.92	91.8	4.49	31.92	8.40	

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 13-Feb-12

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									
2012/2/13 16:15	W1	ME	832951	807714	2.8	1.400	20.20	6.90	98.8	3.94	31.59	8.30	5.4
						1.400	20.10	7.02	97.2	3.92	32.08	8.40	
2012/2/13 16:28	W2	ME	832672	807996	15.3	1.000	20.20	7.04	102.4	4.82	31.82	8.30	5.6
						1.000	20.20	7.08	101.7	4.92	32.25	8.50	
						7.650	20.00	6.85	99.8	4.80	30.81	8.30	4.9
						7.650	20.20	6.81	100.8	4.48	30.59	8.50	
						14.300	20.10	6.59	96.1	4.14	31.77	8.40	4.7
						14.300	20.00	6.60	99.6	5.02	32.58	8.40	
2012/2/13 16:42	W3	ME	832038	807896	15.1	1.000	20.30	7.11	101.4	4.30	32.31	8.40	3.9
						1.000	20.30	7.15	100.8	4.07	30.15	8.30	
						7.550	20.10	6.99	99.1	5.08	32.89	8.40	3.4
						7.550	20.10	6.92	98.0	4.95	33.48	8.20	
						14.100	20.10	6.81	95.4	5.14	30.96	8.30	4.2
14.100	20.20	6.80	96.1	5.10	33.14	8.40							
2012/2/13 15:56	C1	ME	833708	808179	15.6	1.000	20.40	7.00	100.9	4.28	32.76	8.40	4.8
						1.000	20.40	6.92	102.4	4.38	30.68	8.30	
						7.800	20.10	6.81	97.8	4.48	32.82	8.40	4.3
						7.800	20.20	6.84	96.1	4.82	31.69	8.20	
						14.600	20.00	6.72	96.5	4.59	30.21	8.30	4.4
						14.600	20.00	6.54	95.0	4.02	32.24	8.10	
2012/2/13 15:24	C2	ME	831468	807757	14.9	1.000	20.40	7.18	102.3	4.11	30.32	8.30	4.9
						1.000	20.40	7.07	100.9	4.64	32.20	8.40	
						7.450	20.20	6.92	95.1	5.10	31.96	8.30	5.0
						7.450	19.90	6.94	97.8	5.10	33.18	8.50	
						13.900	20.10	6.64	92.4	5.08	30.40	8.40	6.4
						13.900	19.90	6.70	93.1	4.92	32.11	8.40	
2012/2/13 15:39	C3	ME	832226	808890	15.9	1.000	20.40	6.95	102.8	4.91	30.48	8.30	3.3
						1.000	20.40	6.94	100.4	4.32	30.48	8.20	
						7.950	20.20	6.51	99.0	4.48	31.18	8.30	2.5
						7.950	19.90	6.56	96.8	4.21	32.55	8.40	
						14.900	20.20	6.49	95.2	4.59	32.25	8.20	3.9
						14.900	20.30	6.46	96.1	4.28	31.40	8.40	
2012/2/13 10:22	W1	MF	832990	807715	2.8	1.400	20.10	7.18	102.3	3.27	31.40	8.30	3.2
						1.400	20.20	7.25	99.1	3.46	31.18	8.40	
2012/2/13 10:14	W2	MF	832672	807992	15.3	1.000	20.30	7.24	100.1	3.61	30.48	8.30	4.6
						1.000	20.40	7.28	99.8	3.50	32.28	8.30	
						7.650	20.10	6.99	97.2	3.92	31.41	8.20	4.4
						7.650	20.00	6.90	95.3	3.80	31.49	8.40	
						14.300	19.90	6.62	92.3	4.00	32.15	8.30	6.0
						14.300	20.10	6.76	93.9	3.95	32.25	8.50	
2012/2/13 9:52	W3	MF	832039	807899	15.2	1.000	20.30	7.09	101.8	4.15	30.08	8.20	2.5
						1.000	20.30	7.08	100.6	4.40	33.86	8.50	
						7.600	20.00	6.84	98.3	4.92	31.15	8.40	2.9
						7.600	20.20	6.88	97.2	4.49	30.55	8.40	
						14.200	20.10	6.65	96.2	4.69	32.44	8.30	2.7
						14.200	20.10	6.70	96.9	4.59	31.64	8.40	
2012/2/13 10:39	C1	MF	833694	808183	15.6	1.000	20.30	7.08	102.1	4.90	30.59	8.20	7.9
						1.000	20.20	7.09	99.6	5.28	30.59	8.40	
						7.800	20.20	6.81	94.3	5.08	31.51	8.40	3.7
						7.800	20.10	6.80	94.9	5.40	31.64	8.30	
						14.600	20.10	6.55	93.1	5.82	32.19	8.50	4.7
						14.600	20.00	6.56	90.9	5.92	32.28	8.40	
2012/2/13 9:31	C2	MF	831468	807759	13.8	1.000	20.30	7.11	102.3	4.11	32.49	8.20	5.3
						1.000	20.20	7.19	101.9	4.92	32.28	8.30	
						6.900	20.20	6.85	99.4	5.28	30.81	8.40	4.9
						6.900	20.30	6.88	99.6	4.01	30.86	8.40	
						12.800	20.00	6.56	98.1	5.81	32.28	8.40	5.6
						12.800	20.00	6.72	96.2	5.38	31.15	8.50	
2012/2/13 10:52	C3	MF	832218	808877	15.9	1.000	20.20	7.14	101.8	5.56	33.55	8.40	4.1
						1.000	20.30	7.19	100.4	5.99	31.18	8.40	
						7.950	20.10	6.80	95.1	5.81	33.44	8.40	5.6
						7.950	20.20	6.72	96.4	4.82	32.38	8.50	
						14.900	20.20	6.62	93.8	4.14	30.48	8.30	5.0
						14.900	20.00	6.68	92.0	4.96	30.38	8.40	

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 15-Feb-12

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									
2012/2/15 17:35	W1	ME	832949	807740	2.6	1.300	20.00	7.08	99.4	3.69	32.18	8.40	4.6
						1.300	20.10	6.96	98.1	3.54	30.45	8.50	
2012/2/15 17:28	W2	ME	832698	807969	15.1	1.000	19.70	7.11	100.5	3.41	33.15	8.30	3.6
						1.000	19.90	6.90	99.6	3.83	33.22	8.30	
						7.550	19.70	6.80	95.1	4.58	31.54	8.40	2.7
						7.550	19.80	6.72	94.7	4.68	30.54	8.40	
						14.100	19.60	6.64	92.8	4.44	32.59	8.50	3.2
						14.100	19.60	6.65	92.9	4.15	33.48	8.50	
2012/2/15 17:19	W3	ME	832057	807906	15.2	1.000	20.10	7.23	103.4	4.38	33.15	8.40	4.4
						1.000	20.10	7.28	102.8	4.38	30.51	8.50	
						7.600	19.40	7.09	99.1	4.48	30.51	8.50	4.0
						7.600	19.80	6.98	98.4	5.01	32.11	8.40	
						14.200	19.60	6.64	98.3	5.21	32.59	8.40	4.2
						14.200	19.70	6.69	96.5	4.96	30.18	8.40	
2012/2/15 17:46	C1	ME	833708	808190	15.3	1.000	19.80	7.22	102.3	5.36	33.36	8.50	7.7
						1.000	19.80	7.08	104.8	5.64	32.15	8.40	
						7.650	19.90	6.81	101.5	5.31	32.11	8.50	3.0
						7.650	19.80	6.82	100.8	5.21	30.28	8.40	
						14.300	19.70	6.76	92.8	6.50	30.31	8.30	8.5
						14.300	19.70	6.74	93.1	6.84	33.18	8.50	
2012/2/15 17:06	C2	ME	831481	807758	15.1	1.000	19.80	7.32	102.3	4.18	30.39	8.30	6.3
						1.000	19.90	7.24	99.6	4.08	33.45	8.30	
						7.550	19.80	7.00	95.1	5.39	32.45	8.40	4.9
						7.550	19.80	6.92	96.3	4.96	32.23	8.40	
						14.100	19.50	6.88	90.5	4.48	32.59	8.40	3.9
						14.100	19.50	6.90	93.8	5.31	33.15	8.40	
2012/2/15 18:02	C3	ME	832214	808877	15.1	1.000	20.10	7.30	100.8	4.98	32.38	8.40	4.7
						1.000	19.90	7.31	99.6	5.84	30.45	8.50	
						7.550	20.00	6.88	95.1	4.85	30.56	8.40	3.0
						7.550	20.10	6.83	96.8	4.81	33.15	8.40	
						14.100	19.20	6.59	90.4	4.77	31.14	8.30	4.1
						14.100	19.20	6.64	91.3	4.43	32.22	8.40	
2012/2/15 12:11	W1	MF	832981	807748	2.8	1.400	19.80	6.92	99.60	3.92	33.15	8.30	4.6
						1.400	19.80	7.14	99.70	3.99	30.80	8.40	
2012/2/15 11:56	W2	MF	832698	807992	15.6	1.000	19.60	6.94	102.40	4.09	33.38	8.30	2.9
						1.000	19.90	6.88	101.80	4.77	29.51	8.20	
						7.800	19.70	6.70	99.10	4.31	32.15	8.30	4.9
						7.800	19.80	6.65	95.40	4.62	30.49	8.30	
						14.600	19.50	6.34	92.80	4.90	33.88	8.30	4.4
						14.600	19.30	6.49	93.10	5.93	31.65	8.40	
2012/2/15 10:53	W3	MF	832026	807901	15.3	1.000	19.40	7.18	103.80	4.38	32.26	8.40	4.1
						1.000	19.50	7.04	100.10	4.52	30.96	8.40	
						7.650	19.50	6.90	97.20	4.92	31.14	8.40	5.1
						7.650	19.60	6.79	98.10	4.65	32.56	8.30	
						14.300	19.40	6.53	95.40	5.92	32.96	8.30	4.8
						14.300	19.30	6.56	93.40	4.81	29.48	8.40	
2012/2/15 11:16	C1	MF	833702	808176	15.8	1.000	19.70	6.99	101.80	4.22	34.16	8.40	3.1
						1.000	19.90	7.07	100.50	4.21	32.59	8.40	
						7.900	19.60	6.80	99.40	4.98	32.45	8.40	2.2
						7.900	19.70	6.72	98.40	3.86	30.64	8.50	
						14.800	19.40	6.65	92.10	5.81	29.11	8.30	2.2
						14.800	19.40	6.56	93.50	4.92	32.51	8.40	
2012/2/15 12:28	C2	MF	831469	807768	14.8	1.000	19.90	7.23	102.30	4.18	30.33	8.30	2.4
						1.000	19.80	7.17	100.80	5.08	33.48	8.40	
						7.400	20.10	6.94	98.10	5.28	32.86	8.40	4.1
						7.400	19.90	6.83	99.70	6.22	30.14	8.30	
						13.800	19.40	6.68	95.30	4.96	33.81	8.30	2.5
						13.800	19.40	6.62	96.40	5.94	32.48	8.40	
2012/2/15 10:53	C3	MF	832246	808880	15.7	1.000	19.80	7.15	100.70	6.56	30.23	8.30	8.5
						1.000	19.80	7.24	99.80	6.49	30.78	8.30	
						7.850	19.80	6.82	95.20	5.38	31.40	8.40	3.2
						7.850	19.90	6.83	94.10	7.07	31.86	8.30	
						14.700	19.50	6.76	92.80	4.46	32.08	8.40	1.4
						14.700	19.50	6.75	93.00	4.82	32.98	8.40	

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 17-Feb-12

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									
2012/2/17 9:20	W1	ME	832946	807717	2.7	1.350	15.25	6.97	102.4	2.60	30.81	8.40	2.4
						1.350	15.20	7.16	97.6	2.74	32.28	8.30	
2012/2/17 9:12	W2	ME	832673	807991	15.8	1.000	15.20	7.11	100.6	3.20	31.11	8.40	3.0
						1.000	15.30	6.93	98.7	3.50	33.55	8.30	
						7.900	15.00	6.81	95.1	3.50	32.49	8.40	2.0
						7.900	15.10	6.72	94.9	3.60	32.22	8.30	
						14.800	15.00	6.55	90.8	3.90	30.96	8.30	3.3
						14.800	14.90	6.60	91.3	3.90	33.38	8.40	
2012/2/17 8:58	W3	ME	832049	807906	15.1	1.000	15.30	7.33	100.3	3.69	30.86	8.40	2.5
						1.000	15.20	7.20	99.6	3.58	32.55	8.30	
						7.550	15.00	7.09	98.1	4.12	31.45	8.30	3.2
						7.550	15.10	6.94	95.3	4.88	33.51	8.20	
						14.100	14.50	6.65	92.0	5.09	32.26	8.30	3.4
						14.100	14.50	6.80	93.8	5.69	32.18	8.20	
2012/2/17 9:36	C1	ME	833707	808189	15.4	1.000	15.20	7.14	103.5	3.90	32.45	8.40	4.2
						1.000	15.20	7.23	102.4	3.87	34.10	8.40	
						7.700	15.00	7.04	97.4	4.01	31.18	8.40	4.4
						7.700	15.00	6.90	95.9	4.96	30.59	8.30	
						14.400	14.90	6.64	90.2	4.99	32.14	8.40	3.0
						14.400	14.80	6.69	89.1	4.48	32.45	8.30	
2012/2/17 8:41	C2	ME	831457	807758	14.2	1.000	15.30	7.29	102.3	2.63	30.31	8.40	1.0
						1.000	15.20	7.36	101.9	2.60	32.23	8.30	
						7.100	14.90	7.04	99.4	3.60	32.49	8.30	2.9
						7.100	15.00	6.95	98.6	3.80	33.24	8.20	
						13.200	14.80	6.72	92.3	4.15	33.18	8.40	3.0
						13.200	14.90	6.68	94.1	4.13	30.48	8.30	
2012/2/17 9:54	C3	ME	832216	808883	15.6	1.000	15.20	7.11	101.1	3.64	33.44	8.30	3.0
						1.000	15.20	7.23	98.6	3.24	33.50	8.40	
						7.800	14.90	6.92	95.4	4.60	32.56	8.30	1.6
						7.800	15.00	6.84	96.8	4.93	32.16	8.30	
						14.600	15.00	6.59	90.1	5.15	33.18	8.40	2.3
						14.600	15.00	6.60	88.4	5.38	34.46	8.40	
2012/2/17 13:57	W1	MF	832943	807713	2.6	1.300	15.00	6.91	101.4	2.60	32.85	8.40	2.8
						1.300	15.10	6.98	102.8	2.76	30.19	8.40	
2012/2/17 13:44	W2	MF	832679	807994	14.9	1.000	15.20	7.07	103.8	2.96	32.48	8.30	3.4
						1.000	15.20	7.13	100.7	2.80	32.46	8.30	
						7.450	15.10	6.90	99.2	2.60	30.16	8.40	0.9
						7.450	15.00	6.91	96.8	2.64	30.03	8.30	
						13.900	15.00	6.75	93.2	3.56	33.55	8.30	2.3
						13.900	15.00	6.76	94.1	3.98	31.64	8.40	
2012/2/17 13:32	W3	MF	832067	807874	15.6	1.000	15.30	7.22	103.8	2.64	30.13	8.40	0.6
						1.000	15.30	7.33	102.6	2.49	32.74	8.30	
						7.800	15.10	6.90	95.1	3.88	32.45	8.30	2.7
						7.800	15.00	6.81	96.1	3.90	33.65	8.40	
						14.600	15.00	6.65	90.8	3.64	31.09	8.40	1.4
						14.600	15.10	6.64	92.5	3.49	31.76	8.40	
2012/2/17 14:18	C1	MF	833692	808193	14.8	1.000	15.30	7.33	104.8	4.46	32.86	8.40	4.6
						1.000	15.30	7.36	105.6	4.65	32.55	8.30	
						7.400	15.00	7.11	98.7	5.51	33.89	8.30	5.1
						7.400	15.20	6.95	98.4	5.20	30.53	8.30	
						13.800	15.00	6.76	94.6	4.61	31.40	8.40	5.3
						13.800	15.00	6.79	94.0	4.90	31.64	8.40	
2012/2/17 13:13	C2	MF	831469	807761	14.2	1.000	15.20	7.18	102.3	4.19	30.91	8.40	3.1
						1.000	15.10	7.06	101.8	4.88	32.24	8.30	
						7.100	14.90	6.92	99.4	4.23	32.45	8.30	6.7
						7.100	15.00	6.80	98.1	4.65	30.99	8.30	
						13.200	15.00	6.59	96.3	5.06	31.11	8.30	3.1
						13.200	15.10	6.64	95.2	4.81	32.86	8.40	
2012/2/17 14:33	C3	MF	832214	808881	15	1.000	15.30	7.23	105.8	4.65	32.86	8.30	5.7
						1.000	15.30	7.18	104.5	4.53	32.64	8.30	
						7.500	15.00	6.84	99.4	4.83	30.16	8.30	3.7
						7.500	15.00	6.96	97.0	4.46	30.78	8.40	
						14.000	14.90	6.70	93.8	4.83	32.49	8.40	3.2
						14.000	15.00	6.61	92.7	4.92	32.84	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 21-Feb-12

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									
2012/2/21 12:48	W1	ME	832967	807717	2.6	1.300	16.20	8.25	100.5	4.03	29.75	8.37	5.4
						1.300	16.20	8.28	100.9	4.16	29.76	8.33	
2012/2/21 12:34	W2	ME	832696	807991	14.6	1.000	16.20	8.85	107.2	4.65	29.59	8.77	2.8
						1.000	16.20	8.77	106.2	4.23	29.60	8.70	
						7.300	16.00	8.65	104.7	4.86	29.71	8.52	4.3
						7.300	16.00	8.61	104.1	4.28	29.72	8.50	
						13.600	15.80	8.58	103.8	4.59	29.75	8.55	10.3
						13.600	15.90	8.55	103.4	4.79	29.75	8.46	
2012/2/21 12:21	W3	ME	832029	707896	14.2	1.000	16.10	8.58	104.3	4.20	29.58	8.44	9.6
						1.000	16.10	8.53	103.8	4.38	29.59	8.41	
						7.100	16.00	8.49	103.2	4.69	29.67	8.28	5.5
						7.100	16.00	8.47	103.0	4.48	29.68	8.27	
						13.200	16.00	8.23	100.2	4.80	29.67	8.25	4.5
13.200	16.00	8.08	98.4	4.91	29.65	8.22							
2012/2/21 12:59	C1	ME	833691	808198	14.9	1.000	15.90	8.85	107.2	4.35	29.59	8.77	9.9
						1.000	15.90	8.77	106.2	4.64	29.60	8.70	
						7.450	15.80	8.65	104.7	4.96	29.71	8.52	3.2
						7.450	15.80	8.61	104.1	4.20	29.72	8.50	
						13.900	15.70	8.58	103.8	5.08	29.75	8.55	6.8
13.900	15.70	8.55	103.4	5.32	29.75	8.46							
2012/2/21 12:08	C2	ME	831468	807750	13.8	1.000	16.20	8.50	103.5	4.92	29.56	8.05	5.5
						1.000	16.20	8.48	103.2	4.31	29.57	8.06	
						6.900	16.10	8.37	102.0	5.82	29.74	8.21	5.2
						6.900	16.10	8.32	101.4	5.22	29.74	8.20	
						12.800	15.90	7.79	94.8	4.83	29.71	8.22	14.6
12.800	15.90	7.60	92.6	5.65	29.70	8.21							
2012/2/21 13:24	C3	ME	832249	808843	15	1.000	16.00	8.64	104.9	6.86	29.64	8.79	3.4
						1.000	16.00	8.40	102.0	6.97	29.66	8.70	
						7.500	15.80	8.48	103.0	5.88	29.77	8.62	2.0
						7.500	15.80	8.46	102.8	6.29	29.78	8.57	
						14.000	15.70	8.41	102.2	5.85	29.79	8.54	3.7
14.000	15.50	8.41	102.2	5.90	29.80	8.48							
2012/2/21 17:42	W1	MF	832954	807738	2.9	1.450	16.00	8.18	99.5	3.59	29.73	8.23	2.4
						1.450	16.00	8.16	99.2	3.46	29.73	8.22	
2012/2/21 17:31	W2	MF	832677	807969	15.8	1.000	16.30	8.26	100.4	3.95	29.80	8.25	2.9
						1.000	16.30	8.21	99.8	3.84	29.80	8.22	
						7.900	15.20	8.27	100.5	4.87	29.86	8.24	3.1
						7.900	15.20	8.17	99.3	4.90	29.86	8.22	
						14.800	16.00	7.51	91.0	5.96	29.77	8.20	3.6
14.800	16.00	7.41	89.7	5.30	29.70	8.19							
2012/2/21 17:18	W3	MF	832038	807896	15.9	1.000	16.30	8.15	99.1	5.81	29.82	8.39	3.8
						1.000	16.30	8.15	99.2	4.65	29.83	8.37	
						7.950	16.10	7.96	97.0	4.70	29.89	8.30	3.0
						7.950	16.10	7.90	96.4	5.08	29.87	8.27	
						14.900	15.80	7.70	94.0	4.88	29.93	8.30	2.1
14.900	15.90	7.66	93.6	5.81	29.96	8.28							
2012/2/21 17:56	C1	MF	833719	808173	15.6	1.000	16.20	8.61	104.9	4.22	29.32	8.89	4.8
						1.000	16.20	8.35	101.7	4.98	29.31	8.77	
						7.800	16.10	8.23	100.3	5.25	29.45	8.80	2.1
						7.800	16.00	8.35	101.8	5.38	29.50	8.70	
						14.600	16.00	8.34	101.8	5.65	29.65	8.77	8.9
14.600	16.00	8.36	102.0	5.82	29.70	8.65							
2012/2/21 17:06	C2	MF	831450	807746	14.8	1.000	16.10	8.53	103.5	4.83	29.43	8.23	2.1
						1.000	16.10	8.51	103.3	4.81	29.44	8.22	
						7.400	15.80	8.75	106.1	4.64	29.68	8.25	4.4
						7.400	15.80	8.72	105.7	4.36	29.68	8.23	
						13.800	15.50	8.45	102.5	5.83	29.83	8.23	3.1
13.800	15.60	8.40	101.8	4.77	29.83	8.22							
2012/2/21 18:16	C3	MF	832228	808872	15.9	1.000	16.10	8.24	100.2	5.97	29.83	8.56	6.8
						1.000	16.00	8.19	99.6	4.88	29.82	8.48	
						7.950	16.00	8.16	99.3	5.18	29.86	8.40	5.4
						7.950	15.90	8.16	99.3	5.87	29.87	8.37	
						14.900	15.50	8.22	100.0	5.83	29.89	8.33	5.1
14.900	15.60	8.20	99.8	5.93	29.88	8.31							

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 23-Feb-12

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									
2/23/2012 15:09:59	W1	ME	832966	807720	2.4	1.200	16.70	8.29	101.2	4.11	29.86	8.28	4.0
						1.200	16.70	8.27	100.9	3.88	29.85	8.25	
2/23/2012 15:01:51	W2	ME	832677	807990	12.5	1.000	16.70	8.53	103.9	4.31	29.63	8.33	2.2
						1.000	16.60	8.43	102.6	4.45	29.64	8.28	
						6.250	16.50	8.13	98.9	4.68	29.83	8.24	3.0
						6.250	15.40	8.01	97.4	4.60	29.83	8.22	
						11.500	16.00	7.79	94.6	4.98	29.55	8.17	4.4
						11.500	16.10	7.51	91.2	4.91	29.60	8.15	
2/23/2012 14:52:20	W3	ME	832035	807895	12.4	1.000	16.50	8.10	99.0	4.20	29.83	8.52	2.8
						1.000	16.40	8.01	97.9	4.02	29.82	8.42	
						6.200	16.20	8.36	101.9	4.55	29.89	8.66	3.9
						6.200	16.10	7.94	96.8	4.49	29.89	8.52	
						11.400	16.20	7.33	89.3	4.51	29.73	8.31	5.7
						11.400	16.00	7.12	86.7	4.56	29.74	8.27	
2/23/2012 15:21:20	C1	ME	833708	808186	13.8	1.000	16.50	8.56	104.3	4.17	29.85	8.59	3.0
						1.000	16.50	8.45	102.9	4.20	29.85	8.48	
						6.900	16.30	8.32	101.5	4.23	29.89	8.33	3.6
						6.900	16.30	8.26	100.7	4.28	29.90	8.30	
						12.800	16.00	8.04	97.9	4.58	29.92	8.24	2.9
						12.800	16.10	8.04	97.9	4.49	29.91	8.23	
2/23/2012 14:42:14	C2	ME	831457	807761	10.9	1.000	16.50	7.97	98.2	4.65	29.85	8.45	2.5
						1.000	16.50	7.88	97.1	4.73	29.85	8.35	
						5.450	16.40	7.81	95.5	4.65	29.95	8.27	1.0
						5.450	16.30	7.61	93.1	4.66	29.95	8.24	
						9.900	16.20	7.17	87.5	4.42	29.76	8.12	4.5
						9.900	16.20	6.97	85.1	4.41	29.79	8.10	
2/23/2012 15:36:07	C3	ME	832210	808882	13.7	1.000	16.40	8.17	99.9	4.21	29.75	8.44	5.4
						1.000	16.40	8.12	99.3	4.15	29.76	8.38	
						6.850	16.20	8.04	98.2	4.16	29.84	8.30	5.2
						6.850	16.20	7.96	97.3	4.29	29.85	8.27	
						12.700	16.20	7.38	90.2	4.68	29.85	8.20	4.8
						12.700	16.20	7.42	90.7	4.47	29.85	8.20	
2/23/2012 15:09:59	W1	MF	832981	807716	2.8	1.400	16.30	8.27	100.80	3.46	29.67	8.16	8.2
						1.400	16.30	8.19	99.90	3.86	29.67	8.15	
2/23/2012 15:01:51	W2	MF	832672	807995	12.9	1.000	16.70	8.43	103.00	3.95	29.84	8.64	5.4
						1.000	16.70	8.24	100.60	4.01	29.83	8.51	
						6.450	16.40	8.26	100.80	4.12	29.86	8.36	6.3
						6.450	16.50	8.22	100.30	4.25	29.86	8.31	
						11.900	16.30	7.36	89.60	4.75	29.67	8.23	3.0
						11.900	16.30	7.23	88.10	4.65	29.68	8.19	
2/23/2012 14:52:20	W3	MF	832038	807896	12.3	1.000	16.50	8.29	101.40	4.64	29.84	8.49	6.3
						1.000	16.50	8.16	100.00	4.51	29.84	8.46	
						6.150	16.20	7.94	96.80	4.71	29.85	8.22	3.5
						6.150	16.20	7.92	96.60	4.93	29.85	8.19	
						11.300	16.20	7.34	89.30	4.90	29.65	8.18	3.7
						11.300	16.20	7.00	85.20	5.05	29.64	8.15	
2/23/2012 15:21:20	C1	MF	833693	808183	13.6	1.000	16.50	8.35	101.80	4.19	29.61	8.21	3.4
						1.000	16.50	8.33	101.50	4.16	29.61	8.18	
						6.800	16.20	8.39	102.30	4.55	29.75	8.23	4.2
						6.800	16.20	8.34	101.70	4.58	29.77	8.18	
						12.600	16.10	8.27	101.00	4.82	29.82	8.19	3.2
						12.600	16.10	8.22	100.30	4.94	29.82	8.17	
2/23/2012 14:42:14	C2	MF	831445	807748	11.2	1.000	16.50	8.08	98.80	4.25	29.66	8.53	1.2
						1.000	16.40	7.99	97.70	4.40	29.66	8.43	
						5.600	16.20	8.02	98.10	4.60	29.80	8.31	1.9
						5.600	16.10	8.08	98.80	4.68	29.80	8.28	
						10.200	16.10	7.85	96.00	4.85	29.81	8.19	4.4
						10.200	16.10	7.84	95.90	4.90	29.82	8.17	
2/23/2012 15:36:07	C3	MF	832226	808846	13.7	1.000	16.40	7.79	96.00	3.89	29.83	8.25	2.1
						1.000	16.40	7.74	95.40	3.90	29.83	8.21	
						6.850	16.20	7.93	96.90	4.35	29.91	8.16	3.2
						6.850	16.20	7.80	95.30	4.40	29.91	8.14	
						12.700	16.20	6.82	83.20	4.55	29.84	8.12	4.2
						12.700	16.20	6.61	80.70	4.56	29.84	8.12	

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 25-Feb-12

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									
2/25/2012 14:18:31	W1	ME	832964	807751	2.6	1.300	16.70	7.48	92.2	4.06	29.80	8.45	2.1
						1.300	16.70	7.43	91.7	4.15	29.81	8.38	
2/25/2012 13:57:58	W2	ME	832683	87976	15.7	1.000	16.70	7.43	91.6	4.50	29.85	8.46	0.9
						1.000	16.60	7.68	94.2	4.87	29.86	8.38	
						7.850	16.30	6.53	79.9	4.33	29.89	8.29	2.5
						7.850	16.30	6.53	79.7	4.76	29.90	8.26	
						14.700	16.30	8.39	102.9	4.70	29.69	8.20	
14.700	16.30	8.24	101.0	4.63	29.68	8.17	2.2						
2/25/2012 13:46:12	W3	ME	832036	807890	15.3	1.000	16.50	7.94	97.2	4.09	29.91	8.40	4.2
						1.000	16.50	7.85	96.2	4.25	29.91	8.31	
						7.650	16.20	7.33	89.6	5.48	29.94	8.19	2.7
						7.650	16.20	7.14	87.3	5.97	29.95	8.17	
						14.300	16.00	8.31	101.4	4.31	29.81	8.12	
14.300	16.00	8.31	101.4	4.48	29.81	8.12	3.6						
2/25/2012 14:27:18	C1	ME	833684	808176	16.3	1.000	16.50	8.19	99.9	4.55	29.85	8.49	2.2
						1.000	16.50	8.12	99.1	4.68	29.86	8.40	
						8.150	16.20	4.64	56.5	5.90	29.90	8.26	1.4
						8.150	16.20	4.17	50.8	5.81	29.90	8.24	
						15.300	16.00	7.82	95.7	6.55	29.92	8.23	1.2
15.300	16.10	7.85	96.1	3.49	29.93	8.21							
2/25/2012 13:35:59	C2	ME	831457	807756	15.8	1.000	16.50	8.09	98.7	5.37	29.82	8.51	3.4
						1.000	16.50	8.08	98.6	4.96	29.83	8.47	
						7.900	16.30	8.19	99.9	4.77	29.83	8.39	1.9
						7.900	16.20	8.08	98.6	4.82	29.91	8.23	
						14.800	16.10	8.08	98.6	4.90	29.87	8.12	
14.800	16.00	8.01	97.7	5.72	29.66	8.08	2.7						
2/25/2012 14:50:35	C3	ME	832218	808883	16.2	1.000	16.50	8.55	104.0	4.80	29.36	8.19	7.7
						1.000	16.50	8.52	103.8	5.65	29.58	8.14	
						8.100	16.20	8.29	101.2	4.88	29.84	8.16	3.8
						8.100	16.20	8.18	99.8	5.24	29.85	8.14	
						15.200	15.90	8.09	98.7	5.49	29.93	8.13	
15.200	15.90	7.99	97.4	4.02	29.94	8.12	2.9						
2/25/2012 08:57:29	W1	MF	832973	807761	2.7	1.350	16.40	7.94	97.4	4.03	29.89	8.45	5.0
						1.350	16.80	7.84	96.2	4.16	29.89	8.39	
2/25/2012 08:49:22	W2	MF	932675	807994	15.9	1.000	16.80	8.13	99.7	4.02	29.89	8.17	3.2
						1.000	16.80	8.14	99.7	4.31	29.64	8.22	
						7.950	16.40	8.02	98.4	4.20	29.89	8.19	4.3
						7.950	16.40	7.95	97.5	4.65	29.89	8.17	
						14.900	16.30	8.01	98.2	4.86	29.90	8.13	
14.900	16.30	7.94	97.4	4.97	29.90	8.12	3.4						
2/25/2012 08:31:15	W3	MF	832029	807929	15.1	1.000	16.50	7.82	95.6	4.26	29.82	8.42	2.3
						1.000	16.50	7.77	95.0	5.03	29.82	8.37	
						7.550	16.40	8.01	97.7	4.96	29.84	8.31	1.6
						7.550	16.40	7.90	96.4	4.24	29.84	8.27	
						14.100	16.40	7.89	96.2	4.33	29.84	8.20	
14.100	16.30	7.84	95.6	4.16	29.84	8.19	2.5						
2/25/2012 09:09:50	C1	MF	833704	808213	16.1	1.000	16.30	8.09	99.3	2.26	29.90	8.61	4.2
						1.000	16.20	8.08	99.1	2.45	29.90	8.54	
						8.050	16.20	8.10	99.3	3.90	29.92	8.38	4.1
						8.050	16.20	8.04	98.6	3.36	29.92	8.34	
						15.100	16.20	8.06	98.9	6.64	29.92	8.29	
15.100	16.20	8.01	98.2	6.31	29.93	8.27	3.8						
2/25/2012 08:09:37	C2	MF	831453	807763	14.9	1.000	16.50	7.56	93.1	4.18	29.68	8.42	<0.5
						1.000	16.50	7.58	93.3	4.96	29.69	8.36	
						7.450	16.40	7.57	93.1	4.23	29.72	8.32	1.3
						7.450	16.40	7.68	94.3	4.11	29.75	8.25	
						13.900	16.20	7.87	96.1	5.92	29.73	8.20	
13.900	16.20	7.63	93.2	5.38	29.75	8.18	2.2						
2/25/2012 09:33:51	C3	MF	832214	808879	15.8	1.000	16.50	8.12	99.5	3.28	29.86	8.63	1.9
						1.000	16.60	8.09	99.2	3.96	29.90	8.53	
						7.900	16.20	8.12	99.5	3.31	29.92	8.43	4.2
						7.900	16.30	8.04	98.6	3.89	29.93	8.36	
						14.800	16.00	7.99	98.0	4.44	29.93	8.24	
14.800	16.00	7.96	97.6	4.90	29.93	8.22	3.7						

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 27-Feb-12

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									
2012/2/27 15:37	W1	ME	832970	807764	2.7	1.350	16.20	8.25	99.0	4.23	29.76	8.60	4.1
						1.350	16.20	8.20	98.5	3.93	29.77	8.47	
2012/2/27 15:27	W2	ME	832676	807994	15.6	1.000	16.50	7.99	95.8	4.41	29.65	8.49	3.1
						1.000	16.50	8.05	96.6	4.90	29.66	8.43	
						7.800	16.00	8.20	98.6	5.26	29.77	8.31	4.7
						7.800	16.00	8.08	97.2	5.16	29.76	8.27	
						14.600	15.80	7.44	89.6	4.38	29.71	8.20	3.2
						14.600	15.80	7.22	87.0	4.92	29.71	8.18	
2012/2/27 15:12	W3	ME	832041	807899	14.8	1.000	15.60	8.06	97.1	4.77	29.75	8.52	3.2
						1.000	15.60	7.96	95.9	4.92	29.73	8.43	
						7.400	15.60	8.00	96.7	5.02	29.83	8.31	1.8
						7.400	15.60	7.83	94.6	5.87	29.83	8.27	
						13.800	15.50	7.24	87.4	5.48	29.61	8.19	2.6
13.800	15.50	7.07	85.4	5.96	29.60	8.17							
2012/2/27 15:46	C1	ME	833703	808201	15.8	1.000	15.50	8.10	97.0	4.79	29.74	8.31	3.3
						1.000	15.50	8.13	97.3	5.42	29.74	8.27	
						7.900	15.40	8.32	99.6	4.80	29.70	8.26	2.1
						7.900	15.20	8.24	98.7	4.46	29.70	8.23	
						14.800	15.00	7.98	95.7	5.78	29.70	8.20	2.9
						14.800	15.00	7.67	92.0	5.59	29.71	8.17	
2012/2/27 14:59	C2	ME	831456	807759	14.7	1.000	15.60	7.07	86.1	5.86	29.90	8.53	1.4
						1.000	15.50	7.03	85.7	4.41	29.92	8.45	
						7.350	15.30	7.10	86.6	5.81	29.95	8.32	4.4
						7.350	15.30	7.04	85.8	4.96	29.94	8.28	
						13.700	15.00	7.14	87.0	5.82	29.90	8.20	2.0
						13.700	15.00	6.74	82.1	5.38	29.90	8.17	
2012/2/27 14:43	C3	ME	832218	808864	16.1	1.000	15.60	8.49	102.2	4.40	29.66	8.36	3.8
						1.000	15.60	8.42	101.4	5.87	29.67	8.31	
						8.050	15.60	8.45	101.6	5.96	29.71	8.39	3.0
						8.050	15.70	8.36	100.6	4.40	29.74	8.32	
						15.100	15.70	7.80	93.8	4.73	29.76	8.25	6.4
						15.100	15.70	7.95	95.6	5.70	29.76	8.22	
2012/2/27 9:18	W1	MF	832964	807753	2.8	1.400	15.60	8.21	98.60	3.69	29.58	8.48	2.7
						1.400	15.60	8.21	98.60	3.49	29.59	8.43	
2012/2/27 9:04	W2	MF	832674	807991	15.6	1.000	15.70	8.13	97.60	4.10	29.70	8.56	3.5
						1.000	15.60	8.09	97.10	4.23	29.70	8.48	
						7.800	15.50	8.11	97.50	4.84	29.74	8.35	2.9
						7.800	16.10	8.07	97.00	4.77	29.74	8.32	
						14.600	16.10	8.13	97.70	5.21	29.75	8.26	3.0
						14.600	16.20	8.05	96.80	5.08	29.75	8.24	
2012/2/27 8:51	W3	MF	832038	807896	15.2	1.000	16.50	7.86	94.70	4.83	29.72	8.49	3.2
						1.000	16.50	7.80	93.90	4.22	29.72	8.42	
						7.600	16.20	7.88	94.90	3.29	29.76	8.30	3.9
						7.600	16.20	7.83	94.40	4.75	29.76	8.27	
						14.200	16.00	7.88	94.90	5.81	29.77	8.24	2.4
						14.200	16.00	7.82	94.20	4.99	29.77	8.22	
2012/2/27 9:26	C1	MF	833697	808196	16.7	1.000	15.70	8.23	98.50	5.45	29.65	8.56	4.8
						1.000	15.70	8.25	98.80	5.46	29.67	8.37	
						8.350	15.70	8.35	99.90	5.88	29.69	8.30	2.9
						8.350	15.40	8.31	99.50	4.85	29.69	8.27	
						15.700	15.40	8.33	99.80	4.34	29.70	8.25	4.0
						15.700	15.50	8.25	98.90	5.82	29.71	8.21	
2012/2/27 8:38	C2	MF	831459	807754	14.9	1.000	15.50	7.11	86.80	4.48	29.80	8.41	1.8
						1.000	15.60	7.13	87.00	5.72	29.80	8.31	
						7.450	15.60	7.59	92.70	6.59	29.84	8.27	2.6
						7.450	15.40	7.36	89.90	4.47	29.85	8.19	
						13.900	15.40	7.29	88.90	6.08	29.84	8.10	2.2
						13.900	15.30	7.13	86.90	4.26	29.87	8.05	
2012/2/27 9:46	C3	MF	832214	808859	16.1	1.000	15.50	8.25	99.40	5.78	29.75	8.58	3.6
						1.000	15.50	8.18	98.60	4.92	29.75	8.50	
						8.050	15.30	8.32	100.30	4.88	29.79	8.60	4.7
						8.050	15.40	8.21	99.00	4.90	29.79	8.41	
						15.100	15.30	8.16	98.40	3.58	29.80	8.20	2.6
						15.100	15.30	8.09	97.60	3.61	29.80	8.21	

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 29-Feb-12

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									
2012/2/29 17:15	W1	ME	832976	807768	2.9	1.450	15.10	8.62	102.4	3.12	29.55	8.49	3.6
						1.450	15.10	8.49	101.0	3.40	29.55	8.43	
2012/2/29 16:23	W2	ME	832678	807996	16.1	1.000	14.90	8.71	103.2	4.51	29.55	8.62	3.6
						1.000	14.90	8.62	102.2	4.54	29.56	8.55	
						8.050	14.70	8.49	100.4	4.92	29.69	8.37	4.0
						8.050	14.70	8.49	100.5	4.73	29.69	8.35	
						15.100	14.80	8.30	98.2	5.50	29.54	8.26	4.6
						15.100	14.80	8.00	94.6	4.03	29.51	8.22	
2012/2/29 16:11	W3	ME	832038	807903	15.6	1.000	15.30	8.01	96.0	5.30	29.68	8.46	3.2
						1.000	15.30	7.91	94.7	4.96	29.68	8.41	
						7.800	15.00	8.31	98.9	4.80	29.70	8.34	2.9
						7.800	15.00	8.33	99.1	6.59	29.70	8.32	
						14.600	14.90	7.82	92.7	6.67	29.42	8.25	4.8
						14.600	14.90	7.70	91.2	4.81	29.42	8.23	
2012/2/29 16:40	C1	ME	833697	808197	16.7	1.000	14.90	8.66	102.9	3.08	29.58	8.49	3.5
						1.000	14.90	8.75	103.8	4.84	29.62	8.36	
						8.350	14.90	8.60	102.0	5.75	29.63	8.32	5.0
						8.350	14.80	8.32	98.7	5.63	29.65	8.21	
						15.700	14.80	8.28	98.1	6.49	29.65	8.21	2.0
						15.700	14.80	8.19	97.6	5.56	29.64	8.21	
2012/2/29 16:00	C2	ME	831451	807763	15.2	1.000	15.50	9.11	109.6	8.56	29.83	8.81	2.0
						1.000	15.50	8.18	98.4	6.53	29.83	8.58	
						7.600	15.50	7.94	95.5	5.59	29.81	8.35	2.5
						7.600	15.50	7.86	94.5	6.82	29.82	8.33	
						14.200	15.50	6.73	80.3	5.31	28.65	8.23	1.9
						14.200	15.50	6.70	80.0	5.88	28.65	8.22	
2012/2/29 16:52	C3	ME	832216	808859	17.1	1.000	14.90	8.54	101.2	5.38	29.50	8.23	4.1
						1.000	14.90	8.50	100.8	4.40	29.51	8.19	
						8.550	14.90	8.54	101.3	5.56	29.67	8.17	2.7
						8.550	14.90	8.62	102.3	4.47	29.67	8.25	
						16.100	14.90	8.50	100.8	4.92	29.69	8.14	7.5
						16.100	14.90	8.45	100.3	7.20	29.69	8.14	
2012/2/29 10:10	W1	MF	832961	807751	2.8	1.400	15.10	8.23	97.90	3.79	29.35	8.54	2.9
						1.400	15.10	8.23	98.00	4.16	29.32	8.50	
2012/2/29 9:21	W2	MF	832677	807996	16.1	1.000	15.30	8.10	96.90	3.98	29.71	8.42	7.1
						1.000	15.30	8.11	97.00	4.12	29.71	8.38	
						8.050	15.30	8.12	97.10	4.16	29.73	8.26	6.1
						8.050	15.30	8.07	96.60	4.55	29.75	8.26	
						15.100	15.30	8.03	96.10	5.02	29.71	8.26	5.6
						15.100	15.30	8.00	95.70	4.90	29.71	8.20	
2012/2/29 9:16	W3	MF	832031	807901	12.9	1.000	15.60	7.82	93.90	4.49	29.45	8.51	7.4
						1.000	15.60	7.79	93.60	5.96	29.45	8.43	
						6.450	15.50	7.91	95.10	4.86	29.78	8.31	5.5
						6.450	15.50	7.92	95.20	5.05	29.78	8.29	
						11.900	15.50	7.89	94.90	6.48	29.79	8.27	4.9
						11.900	15.50	7.86	94.60	3.83	29.79	8.21	
2012/2/29 9:30	C1	MF	833696	808201	14.6	1.000	14.90	8.43	100.10	5.96	29.65	8.46	3.5
						1.000	14.90	8.41	99.90	7.25	29.64	8.44	
						7.300	14.90	8.49	100.90	4.83	29.68	8.61	3.2
						7.300	14.90	8.39	99.70	6.46	29.68	8.45	
						13.600	14.90	8.09	96.10	5.20	29.68	8.34	3.1
						13.600	14.90	8.04	95.60	7.40	29.68	8.34	
2012/2/29 9:00	C2	MF	831463	807755	12.8	1.000	15.70	7.47	90.00	4.77	29.44	8.31	1.5
						1.000	15.70	7.45	89.80	5.21	29.47	8.27	
						6.400	15.70	7.46	90.00	5.38	29.66	8.36	2.7
						6.400	15.70	7.41	89.30	6.20	29.65	8.26	
						11.800	15.70	6.78	81.80	4.96	29.62	8.05	2.2
						11.800	15.70	6.70	80.80	3.31	29.62	8.07	
2012/2/29 9:52	C3	MF	832218	808863	15	1.000	14.90	8.49	100.80	5.93	29.62	8.32	2.4
						1.000	14.90	8.48	100.70	5.95	29.63	8.29	
						7.500	14.90	8.45	100.40	4.81	29.67	8.19	1.6
						7.500	14.90	8.46	100.50	5.82	29.68	8.17	
						14.000	14.90	8.42	100.00	6.86	29.63	8.23	2.1
						14.000	14.90	8.30	98.60	5.91	29.62	8.20	

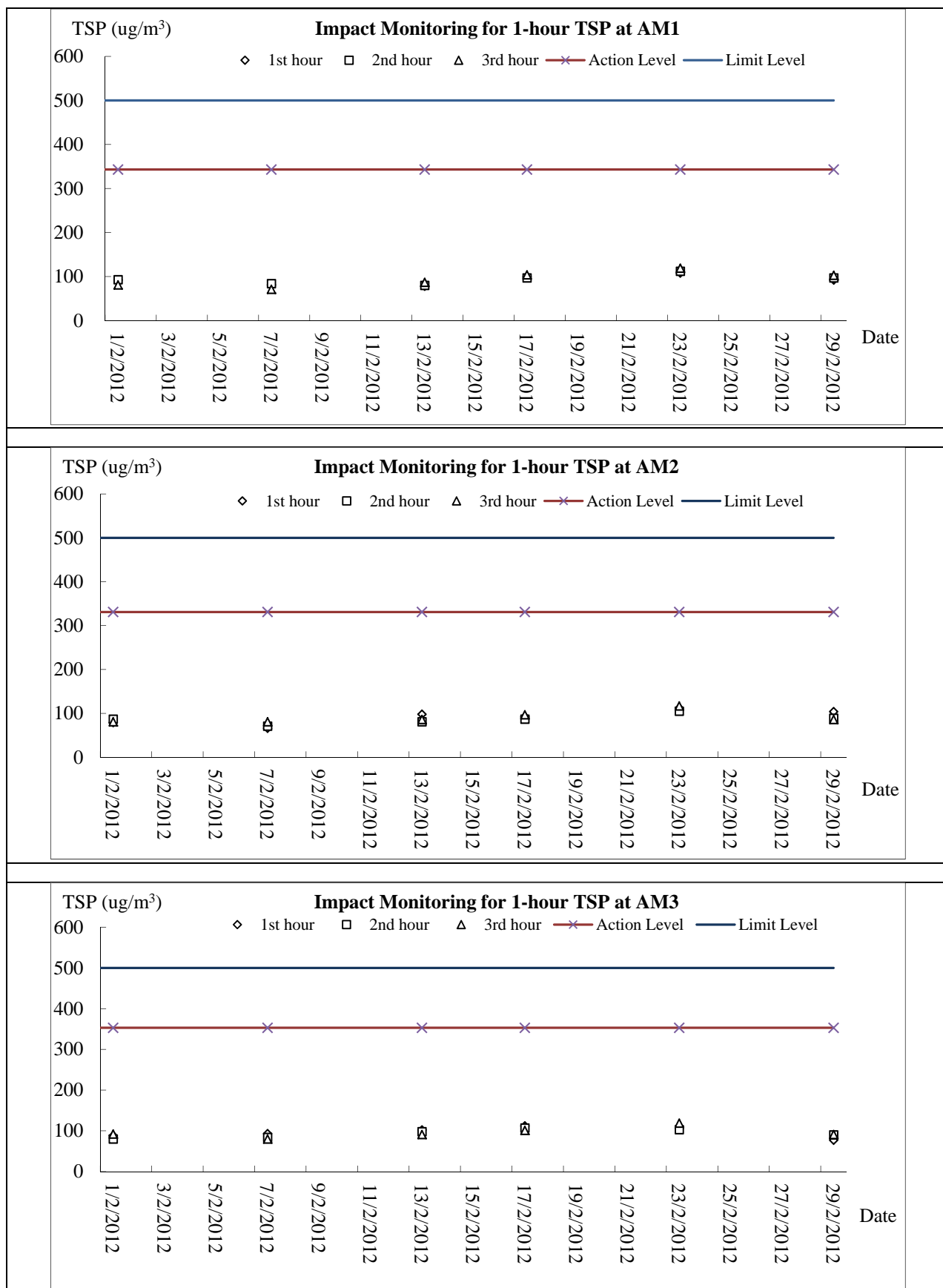
MF- Mid Flood Tide

ME- Mid Ebb tide

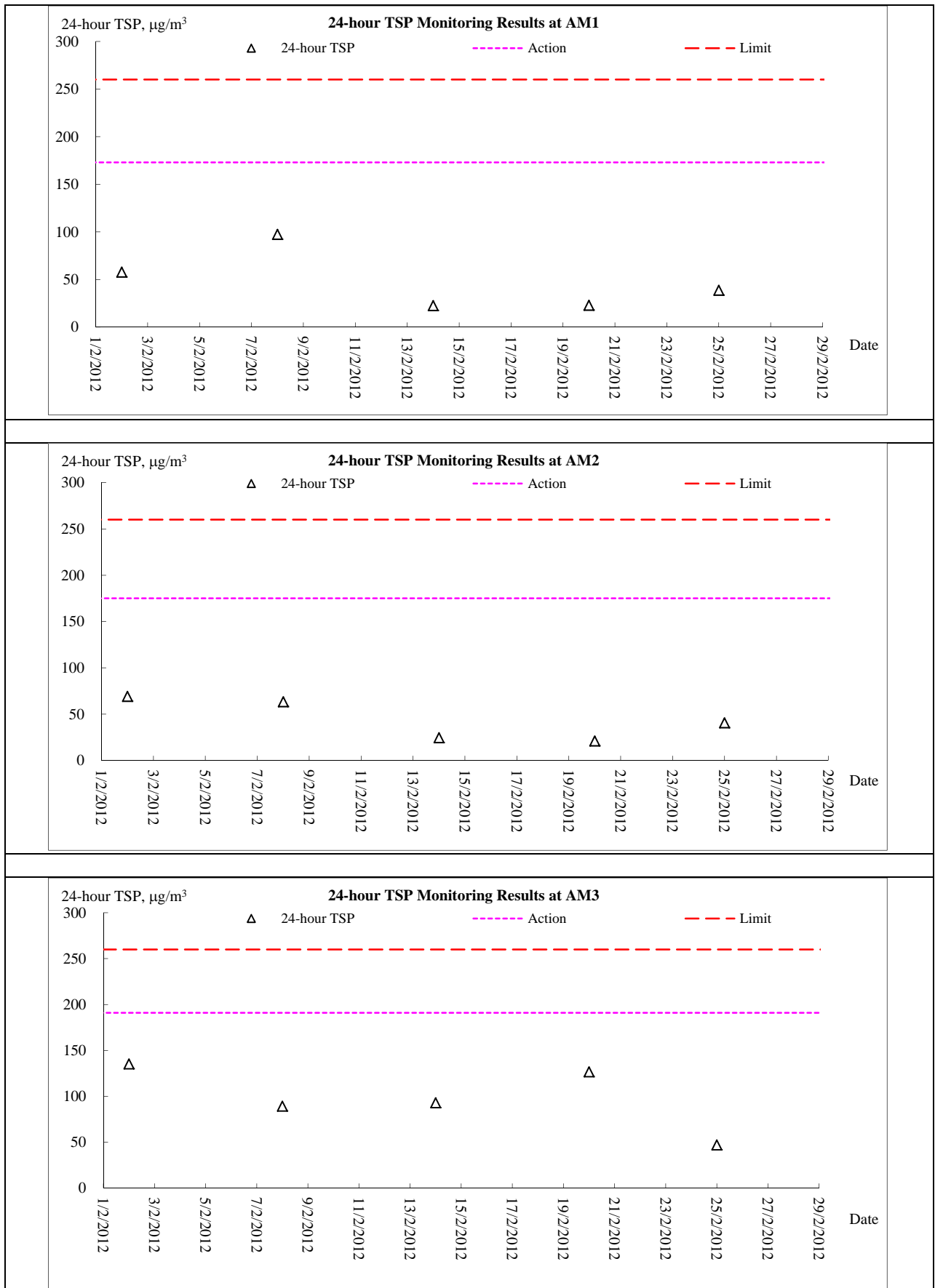
## **Appendix H**

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

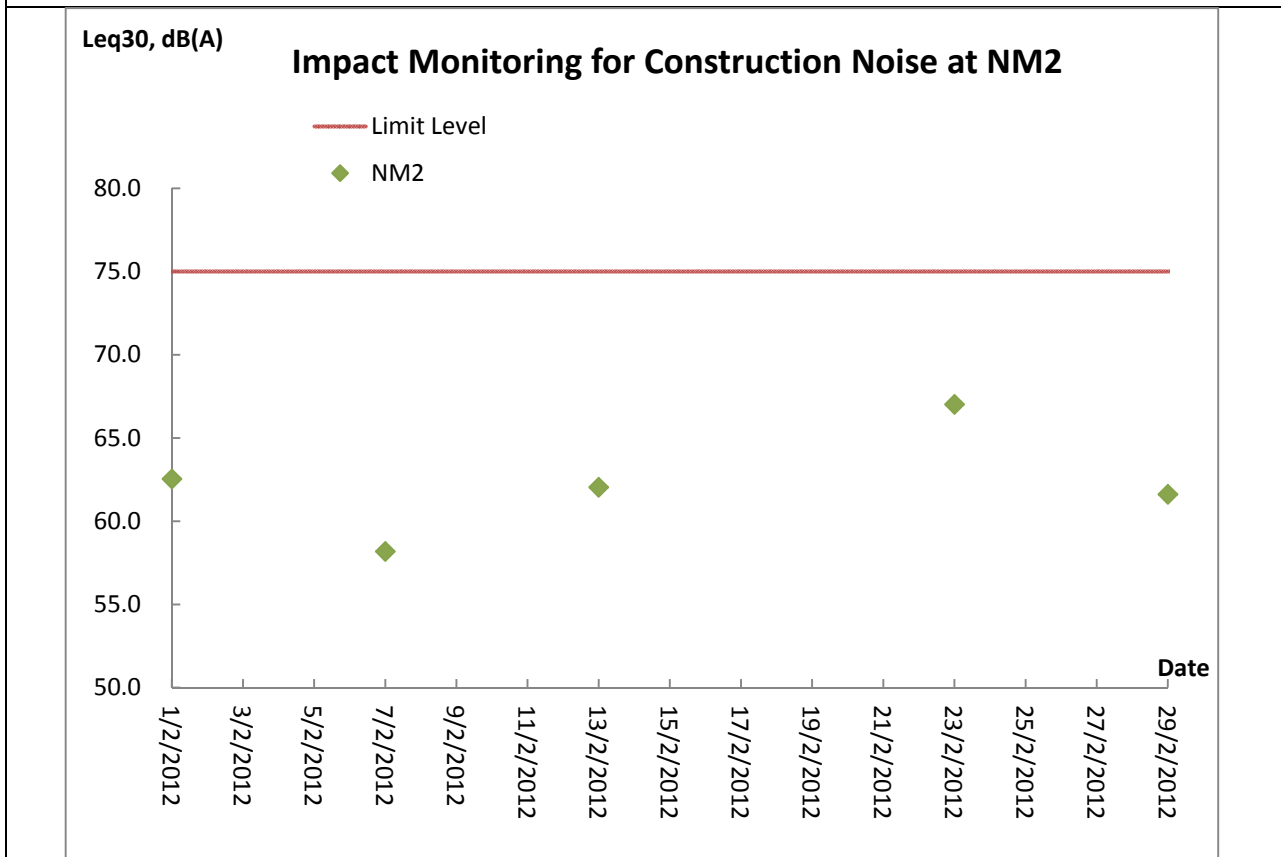
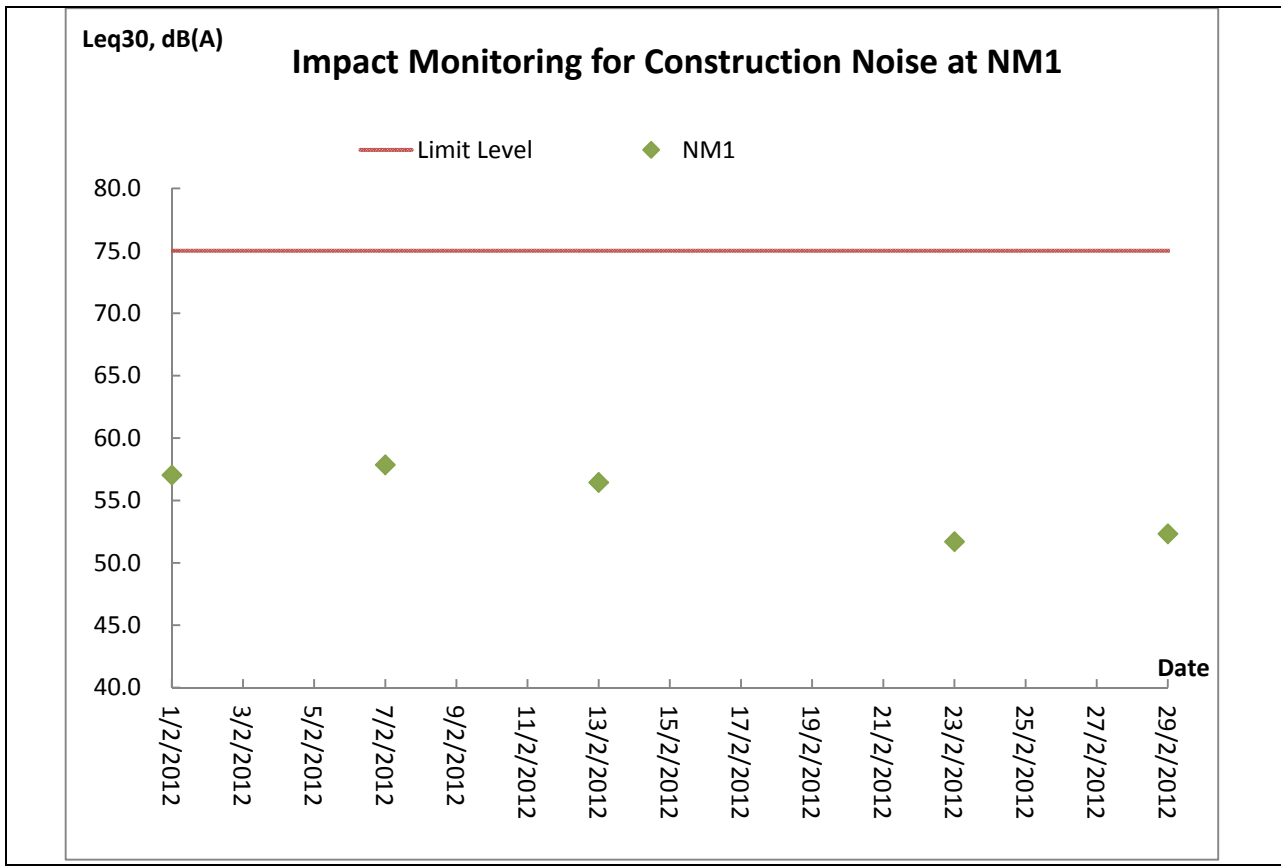
### Air Quality Monitoring – 1 hour TSP Monitoring

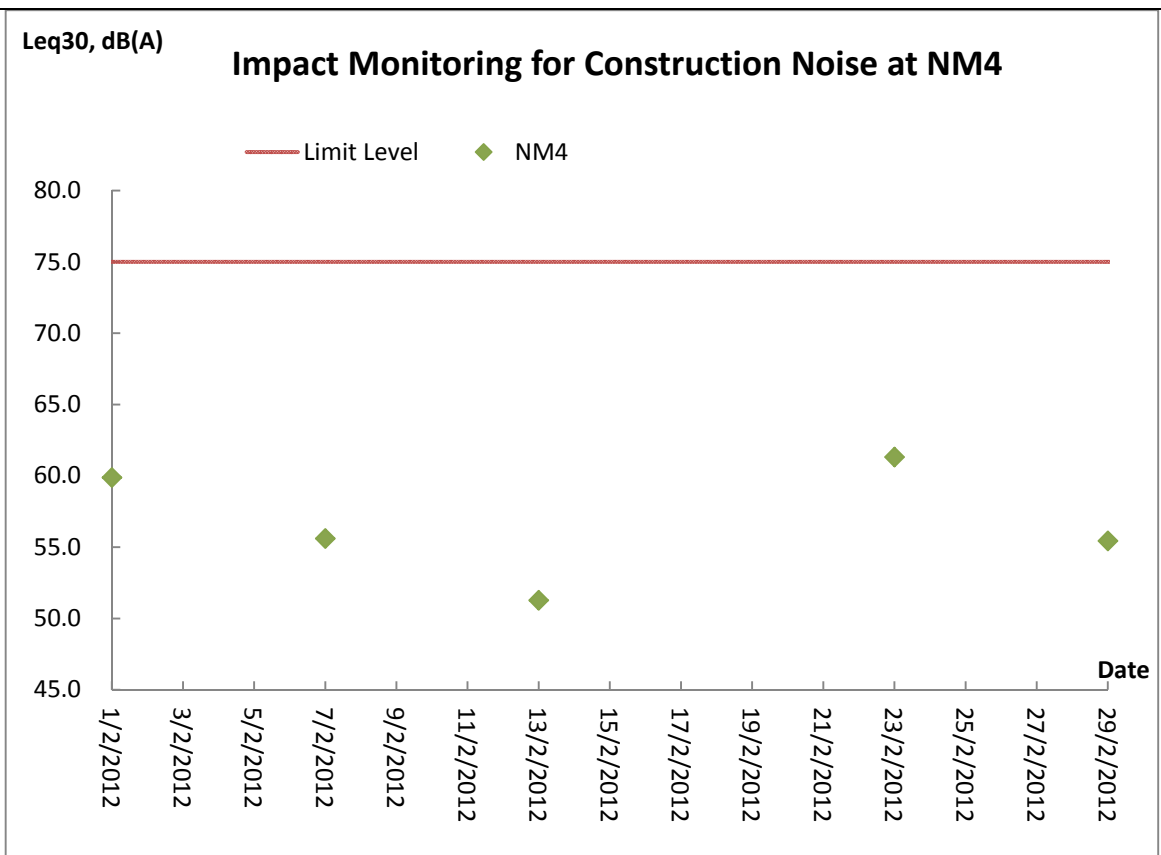
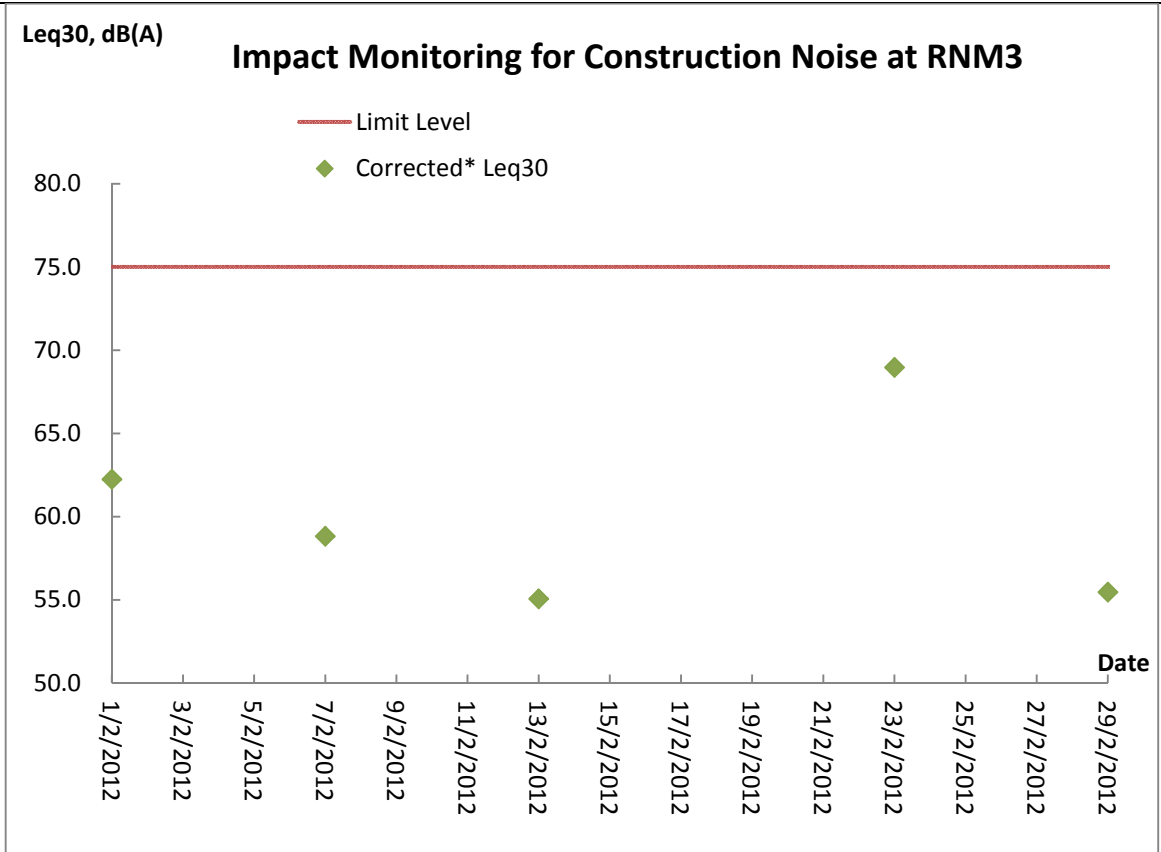


**Air Quality Monitoring – 24 hour TSP Monitoring**



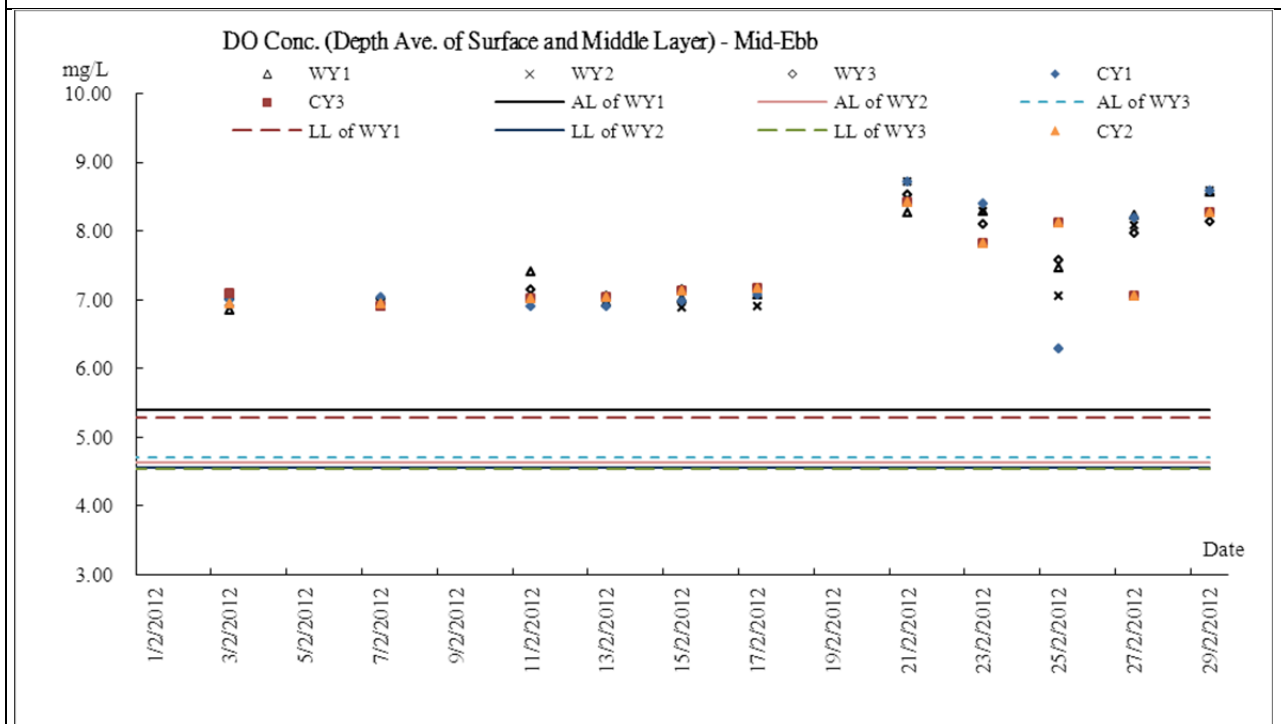
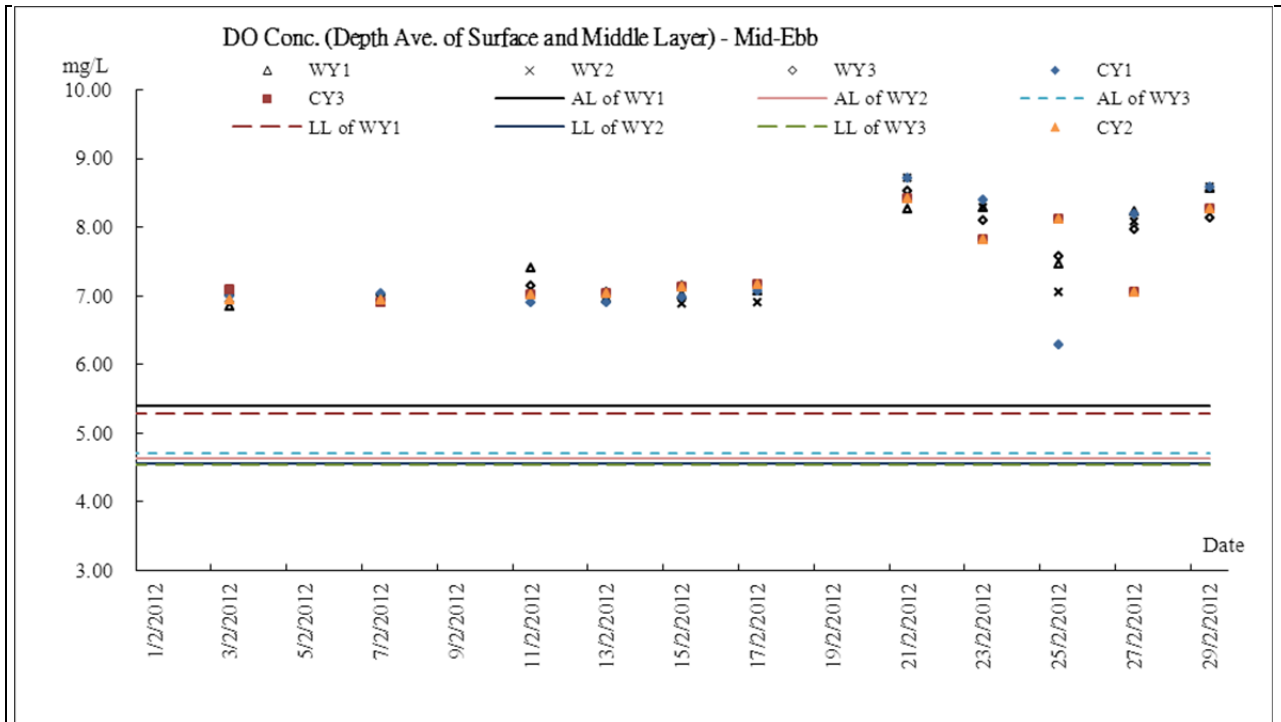
**Construction Noise Monitoring**



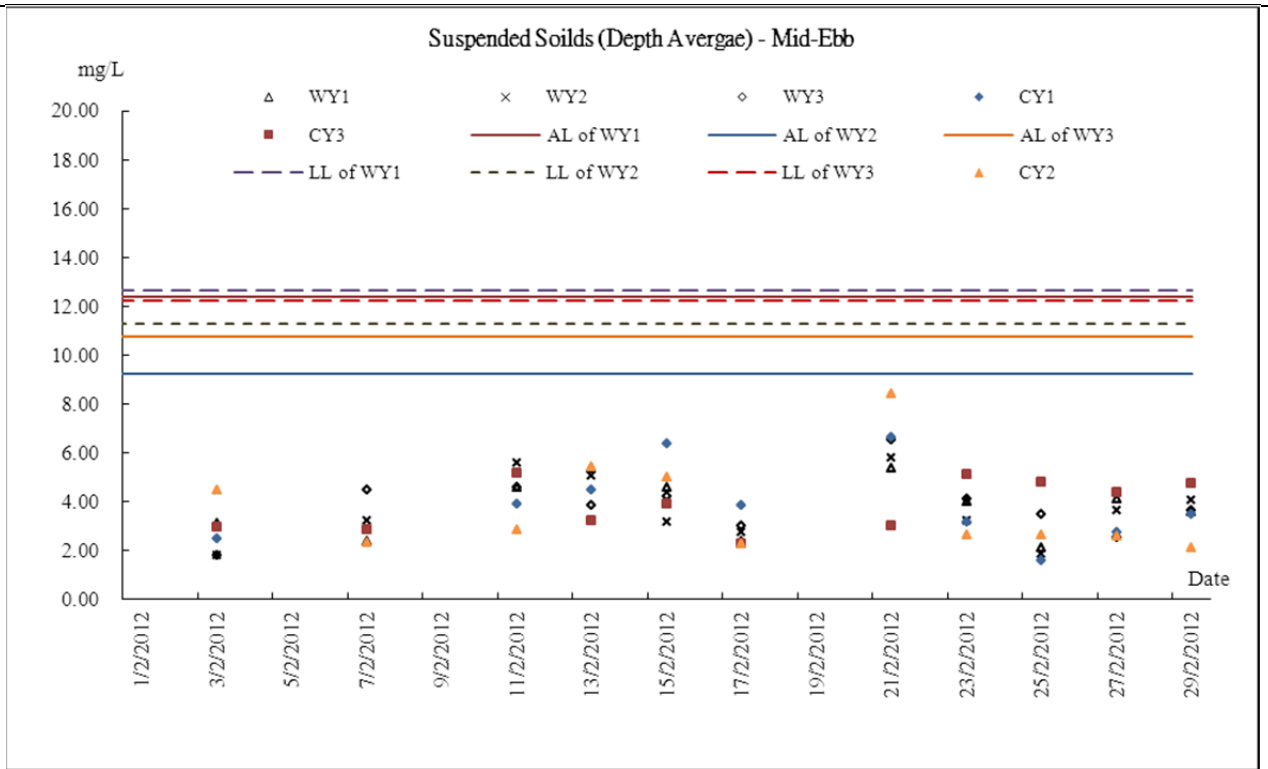
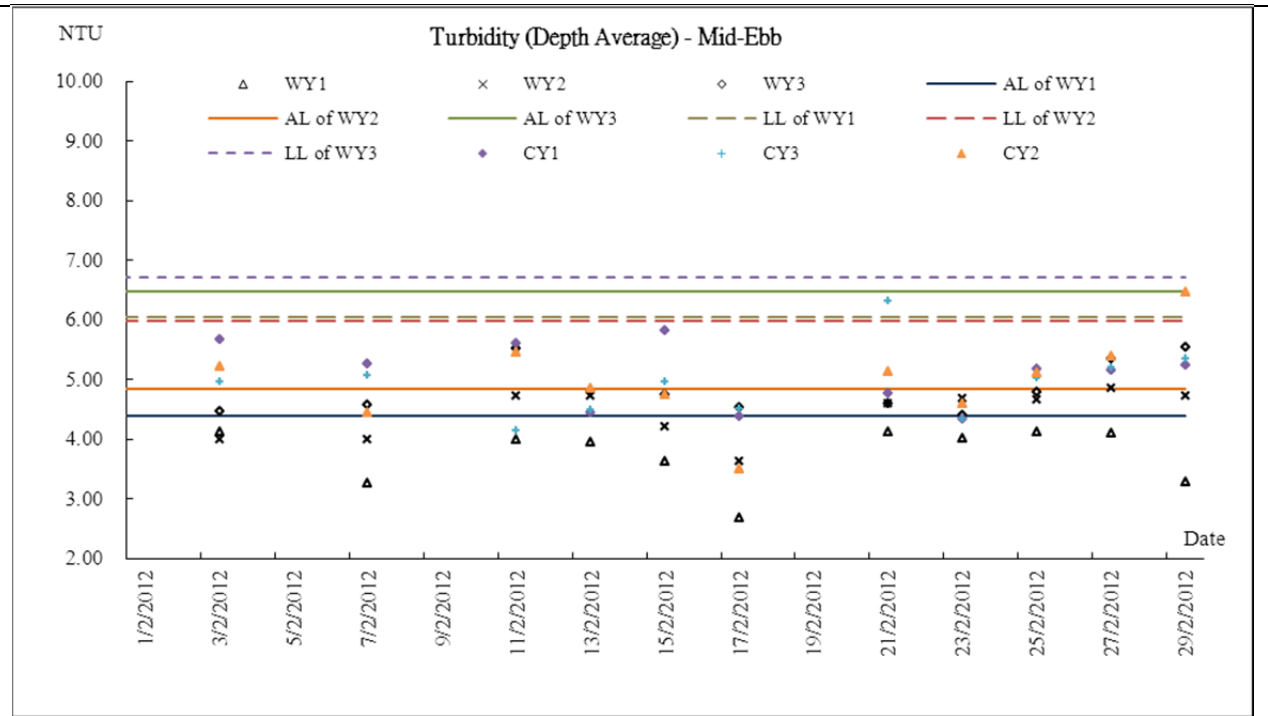




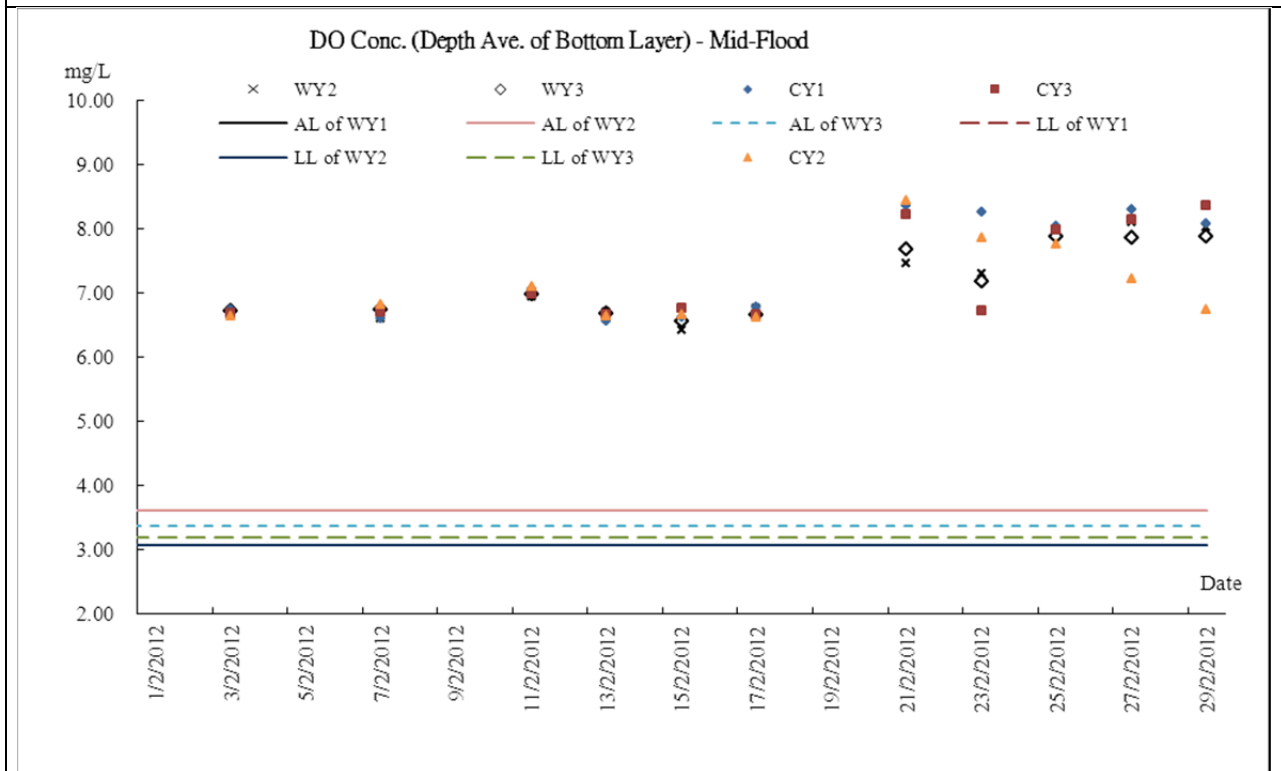
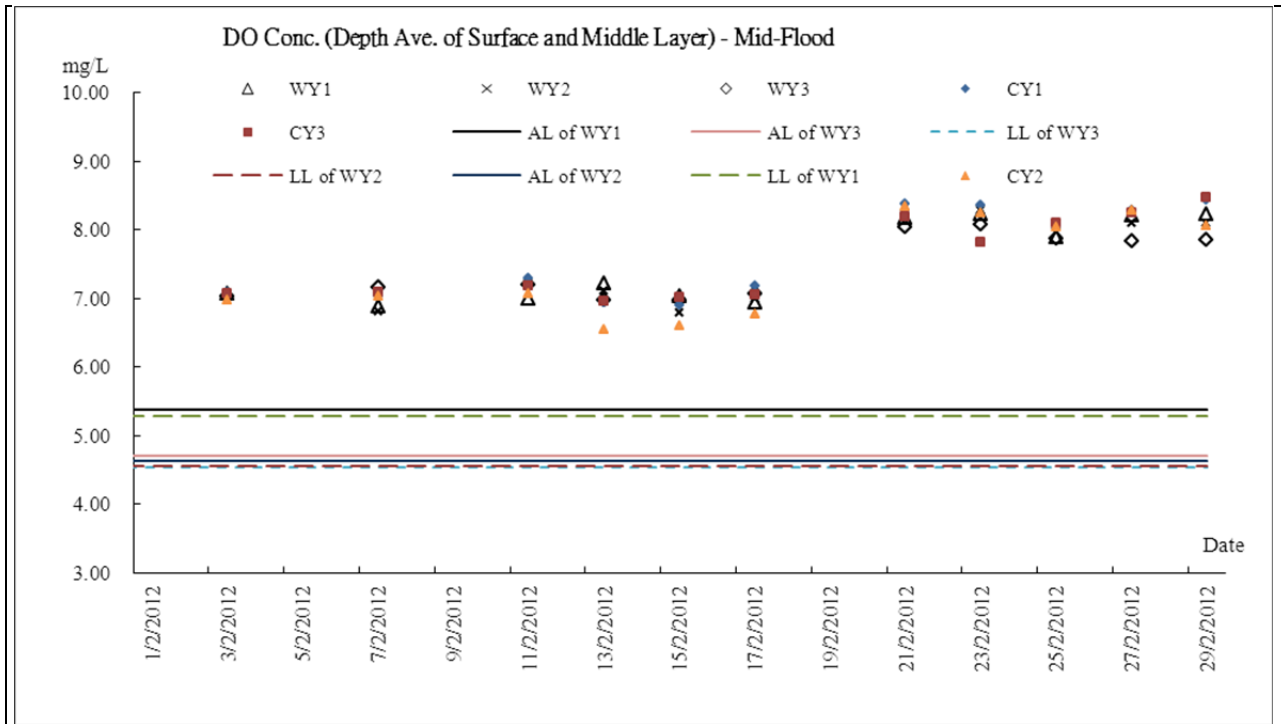
**Marine Water Quality Monitoring - Mid-Ebb Tide**



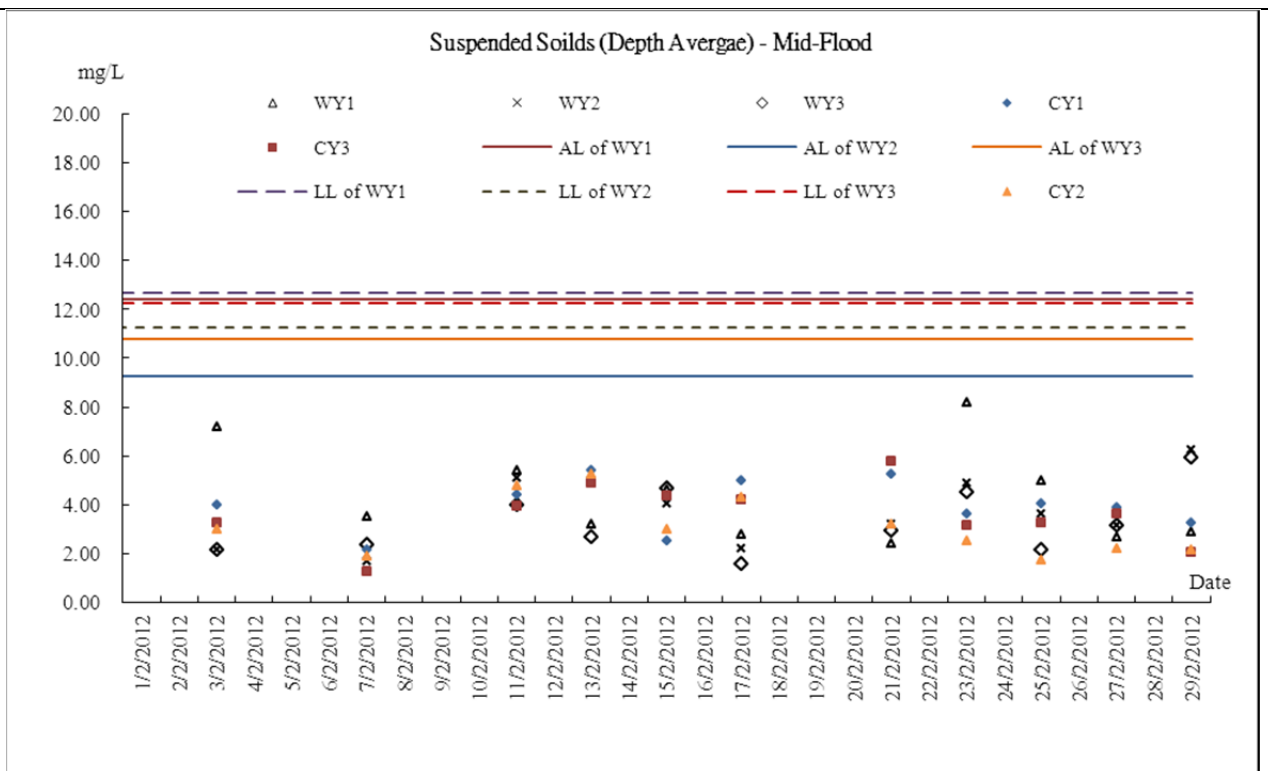
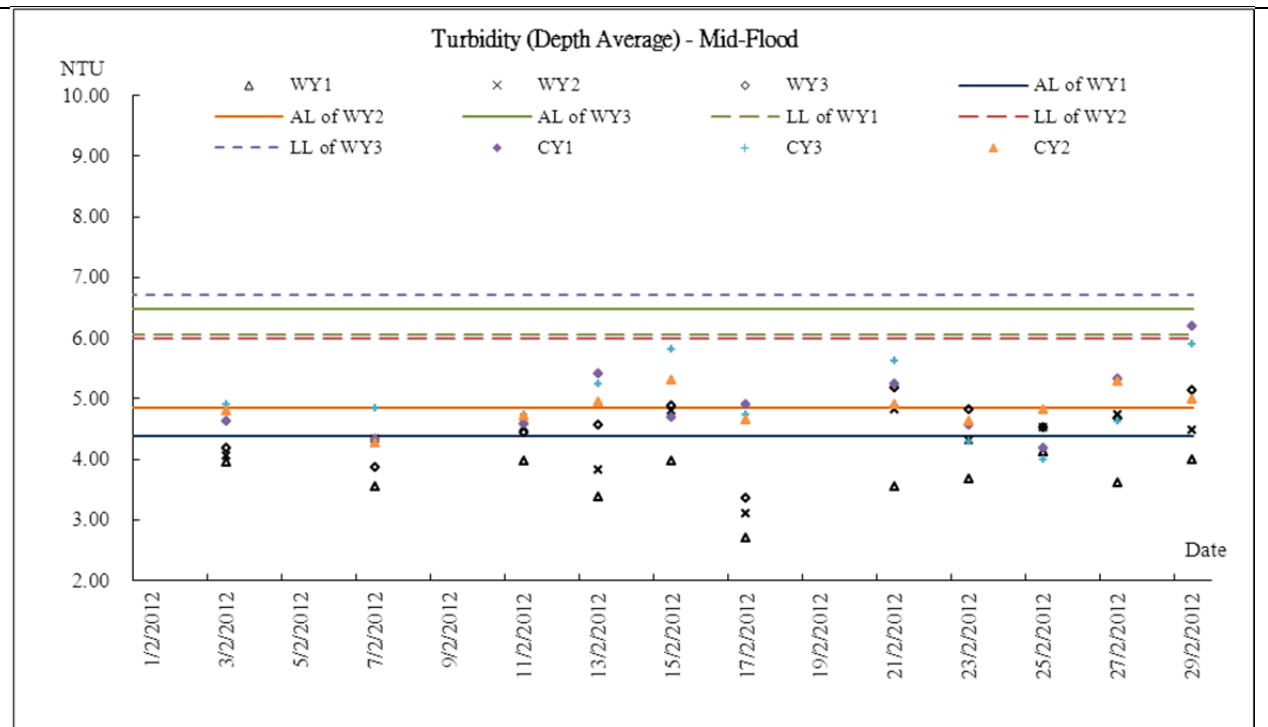
Contract No. DC/2009/13 – Construction of Sewage Treatment Works at  
 Yung Shue Wan and Sok Kwu Wan  
 Sok Kwu Wan – EM&A Monthly Report – February 2012



Marine Water Quality Monitoring - Mid-Flood Tide



Contract No. DC/2009/13 – Construction of Sewage Treatment Works at  
 Yung Shue Wan and Sok Kwu Wan  
 Sok Kwu Wan – EM&A Monthly Report – February 2012



# **Appendix I**

## **Meteorological Information**

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

Date		Weather
1-Feb-12	Wed	Sunny intervals.
2-Feb-12	Thu	Cloudy with a few mist patches
3-Feb-12	Fri	Moderate easterly winds
4-Feb-12	Sat	Mainly cloudy.
5-Feb-12	Sun	Moderate easterly winds
6-Feb-12	Mon	Moderate easterly winds, fresh at times offshore
7-Feb-12	Tue	Mainly cloudy.
8-Feb-12	Wed	Moderate easterly winds
9-Feb-12	Thu	Mainly cloudy.
10-Feb-12	Fri	Cloudy with a few mist patches
11-Feb-12	Sat	Cloudy with one or two rain patches.
12-Feb-12	Sun	Cloudy with a few mist patches
13-Feb-12	Mon	Cloudy with one or two rain patches and coastal fog.
14-Feb-12	Tue	Cloudy with one or two rain patches.
15-Feb-12	Wed	Moderate easterly winds.
16-Feb-12	Thu	Moderate easterly winds
17-Feb-12	Fri	Sunny intervals.
18-Feb-12	Sat	Cloudy with a few mist patches
19-Feb-12	Sun	Sunny intervals.
20-Feb-12	Mon	Moderate easterly winds.
21-Feb-12	Tue	Mainly cloudy with one or two rain patches.
22-Feb-12	Wed	Humid with fog.
23-Feb-12	Thu	Cloudy with a few rain patches
24-Feb-12	Fri	Sunny intervals.
25-Feb-12	Sat	Moderate to fresh northerly winds
26-Feb-12	Sun	Fresh easterly winds
27-Feb-12	Mon	Moderate to fresh northerly winds
28-Feb-12	Tue	Mainly cloudy with one or two rain patches.
29-Feb-12	Wed	Cloudy with a few rain patches at first

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

## Monthly Summary Waste Flow Table for February 2012

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>2011</b>	10.430	33.543	0.160	0.407	0.740	1.059	0.000	32.454	9.690	0.030	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	206.870	46.690
Jan	0.000	3.311	0.000	0.000	0.000	0.000	0.000	3.311	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	22.530	5.090
Feb	0.170	6.271	0.000	0.000	0.000	0.000	0.000	6.271	0.170	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	14.860	5.660
Mar																						
Apr																						
May																						
Jun																						
<b>Sub-total</b>	10.599	43.125	0.160	0.407	0.740	1.059	0.000	42.036	9.860	0.030	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	244.260	57.440
Jul																						
Aug																						
Sep																						
Oct																						
Nov																						
Dec																						
<b>Total</b>	10.599	43.125	0.160	0.407	0.740	1.059	0.000	42.036	9.860	0.030	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	244.260	57.440
	53.724		0.567		1.799		42.036		9.890		0.000		0.000		0.000		0.000		0.000		301.700	

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: \_\_\_\_\_  
 RE's Representative: \_\_\_\_\_  
 Contractor's Representative: \_\_\_\_\_  
 IEC's Representative: \_\_\_\_\_  
 Checklist No. TCS512B-  
Ray Cheung  
Jacky Poon  
Edwin Leung  
Selma Leung  
9:30am

Date: 7-2-2012

Time: \_\_\_\_\_

**PART A:**

**GENERAL INFORMATION**

Environmental Permit No.

Weather:  Sunny  Fine  Cloudy  Rainy  
 Temperature: \_\_\_\_\_ °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 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.14	Is runoff from wheel washing facilities avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.15	Are there toilets provided on site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1.16	Are toilets properly maintained?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1.17	Are the vehicle and plant servicing areas paved and located within roofed areas?	<input type="checkbox"/>	<input checked="" 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input 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 type="checkbox"/>	<input checked="" 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"/>	

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1.23	Is used bentonite recycled where appropriate?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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"/>	
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1.27	Mobile toilets should provide on site and located away the stream course.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1.28	License collector should be employed for handling the sewage of mobile toilet.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" 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"/>	

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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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.11	Are valid Construction Noise Permit(s) posted at site entrances?	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" 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 checked="" 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 type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

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<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 - Appendix M
5.02	Are retained and transplanted trees properly protected?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.03	Are surgery works carried out for the damaged trees?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" 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)

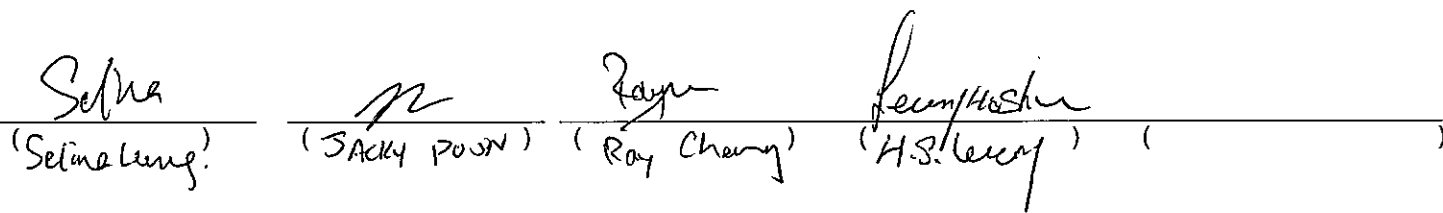
Remarks:

Findings of Site Inspection: ( 7-7-2012 ); Follow up:

No environmental issue was observed during site inspection

The transplanted and retained uncommon tree species trees were found to be labeled, fenced and protected.

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


  
 (Selma Leung)      (SACKY POON)      (Roy Cheung)      (H.S. Leung)      ( )

Project: TCS/00512/09  
Construction of Sewage Treatment Works at  
Yung Shue Wan and Sok Kwu Wan  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 Date: 14-2-2012

Inspected by \_\_\_\_\_  
 ETL/ ET's Representative: Ray Cheung  
 RE's Representative: Joseph Ng  
 Contractor's Representative: Edith Leung  
 IEC's Representative: \_\_\_\_\_  
 Time: 2pm

Environmental Permit No.

**PART A: GENERAL INFORMATION**  
 Weather:  Sunny  Fine  Cloudy  Rainy  
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 Humidity:  High  Moderate  Low  
 Wind:  Strong  Breeze  Light  Calm

EP- 281/2007A

Area Inspected  
 1 Sok Kwu Wan

**PART B: SITE AUDIT**

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1.28	License collector should be employed for handling the sewage of mobile toilet.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1.29	Is ponding /stand water avoided?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Remark 2
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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Remark 1
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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" 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"/>	

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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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	



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<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 - Appendix M
5.02	Are retained and transplanted trees properly protected?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.03	Are surgery works carried out for the damaged trees?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" 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: ( 14-2-2012 ): Follow up:

Portion H

- Dust generation at the slope should be minimized to avoid nuisance to adjacent public road. (Remark 1)
- Stagnant water to be removed or added larvicidal oil to suppress mosquito breeding. (Remark 2)

Grid A-B/1. portion H. Joseph

The transplanted and retained uncommon tree species trees were found to be labeled, fenced and protected.

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

( )      ( Joseph )      ( Ray )      ( H.S. )      ( )

Project: TCS/00512/09  
**Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwu Wan**  
 \_\_\_\_\_  
 \_\_\_\_\_  
 Date: 21-2-2012

Inspected by \_\_\_\_\_  
 ETL/ ET's Representative: Ray Cheung  
 RE's Representative: Inky Poon  
 Contractor's Representative: Edwin Leung  
 IEC's Representative: \_\_\_\_\_  
 Time: 2:30pm

Environmental Permit No.

**PART A: GENERAL INFORMATION**  
 Weather:  Sunny  Fine  Cloudy  Rainy  
 Temperature: \_\_\_\_\_ °C  
 Humidity:  High  Moderate  Low  
 Wind:  Strong  Breeze  Light  Calm

EP- 281/2007A

Area Inspected  
 1 Sok Kwu Wan

**PART B: SITE AUDIT**

Note:	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 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.14 Is runoff from wheel washing facilities avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.15 Are there toilets provided on site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1.16 Are toilets properly maintained?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1.17 Are the vehicle and plant servicing areas paved and located within roofed areas?	<input type="checkbox"/>	<input checked="" 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input 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 type="checkbox"/>	<input checked="" 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"/>	

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1.23	Is used bentonite recycled where appropriate?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" 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"/>	
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<b>Section 2: Air Quality</b>							
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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"/>	
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<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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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
<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 - Appendix M
5.02	Are retained and transplanted trees properly protected?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.03	Are surgery works carried out for the damaged trees?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" 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: (21-2-2017): Follow up:

Dust generation was still observed,  
 water spraying device was recommended  
 along the slope to minimize the  
 nuisance to public.  
 (Portion H)

The transplanted and retained uncommon tree species trees were found to be labeled, fenced and protected.

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

( )      ( JACKEY POON )      ( Ray Chan )      ( M.S. LEE )      ( )

Project: TCS/00512/09  
**Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwu Wan**  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 Date: 28-2-2012

Inspected by \_\_\_\_\_  
 ETL/ ET's Representative: Ray Cheung  
 RE's Representative: Joseph Ng  
 Contractor's Representative: Edwin Leung  
 IEC's Representative: \_\_\_\_\_  
 Time: 2pm

Environmental Permit No.

**PART A: GENERAL INFORMATION**

Weather:  Sunny  Fine  Cloudy  Rainy

Temperature: \_\_\_\_\_ °C

Humidity:  High  Moderate  Low

Wind:  Strong  Breeze  Light  Calm

EP- 281/2007A

Area Inspected  
 1 Sok Kwu Wan

**PART B: SITE AUDIT**

Note:	Not Obs.	Yes	No	Follow Up	N/A	Photo/Remarks
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**Section 1: Water Quality**

Note:	Not Obs.	Yes	No	Follow Up	N/A	Photo/Remarks
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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.14 Is runoff from wheel washing facilities avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.15 Are there toilets provided on site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1.16 Are toilets properly maintained?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1.17 Are the vehicle and plant servicing areas paved and located within roofed areas?	<input type="checkbox"/>	<input checked="" 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input 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 type="checkbox"/>	<input checked="" 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"/>	

<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
1.23 Is used bentonite recycled where appropriate?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1.25 No excavation is undertaken in the settlement area.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1.26 Concreting wastes water should be neutralized below the pH Action Levels before discharge.	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1.28 License collector should be employed for handling the sewage of mobile toilet.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.11	Are valid Construction Noise Permit(s) posted at site entrances?	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 receptacies 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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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
<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 - Appendix M
5.02	Are retained and transplanted trees properly protected?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
5.03	Are surgery works carried out for the damaged trees?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" 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: (28-2-2012): Follow up:

No environmental issue was found during site inspection.

The transplanted and retained uncommon tree species trees were found to be labeled, fenced and protected.

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

Joseph

Ray

(Joseph K. Rowle)

(Ray Cheney)

**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		√		

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\*\* 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

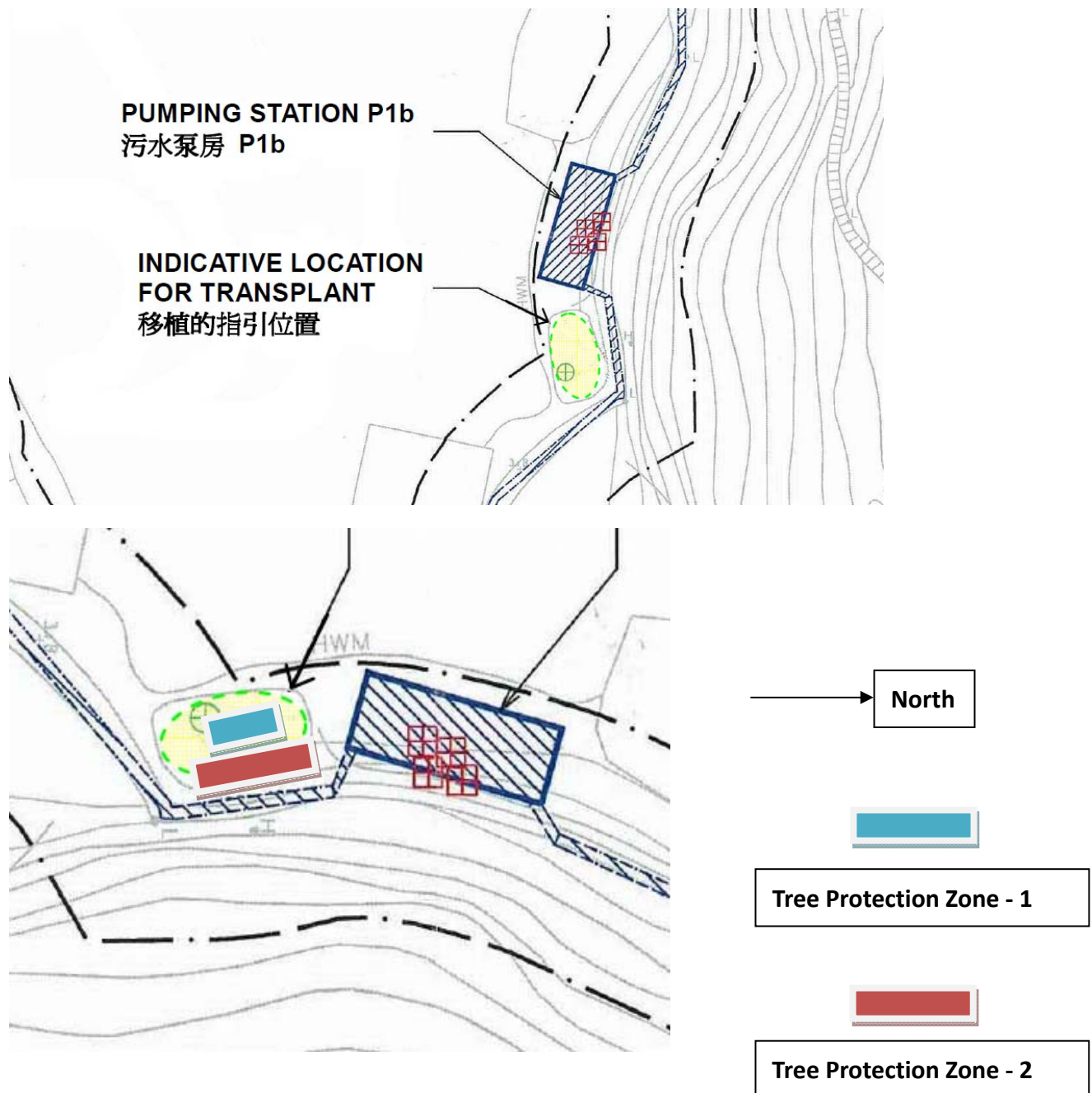
**Tree Inspection Report for *Celtis timorensis***

**Inspection Date : 15-02-2012**



## 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*, which were additionally planted as the compensation of previously transplanted *Celtis timorensis* CT7, CT8, CT9 & CT10.

## 2. Summary of Inspection

Date of Inspection	15 February 2012, around 14:30
Location	A soil ground adjacent to the Pumping Station P1b Chung Mei, at Sok Kwu Wan, Lamma Island.
Weather	Cloudy, the vegetations are located under the shade of existing tall trees.
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 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
October, 2011	10 and 24 October 2011
November, 2011	8 November 2011
December, 2011	14 and 30 December 2011
January 2012	31 January 2012
February 2012	15 February 2012

## 4. Summary of Inspection Result


Tree No	Speciation	Health Status
CT_1A	<i>Celtis timorensis</i>	Very Poor
CT_2A	<i>Celtis timorensis</i>	Very Poor
CT_3A	<i>Celtis timorensis</i>	Very Poor
CT_4A	<i>Celtis timorensis</i>	Very Poor
CT_5A	<i>Celtis timorensis</i>	Good
CT_6A	<i>Celtis timorensis</i>	Good
CT_7A	<i>Celtis timorensis</i>	Very 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:**

**Tree ID: CT\_1A**

	<p><b>Current Status: Very Poor</b></p> <p><b>Justification: Leaves were dry. The bark was also dry. No significant improvement in health. The plant was very weak.</b></p>
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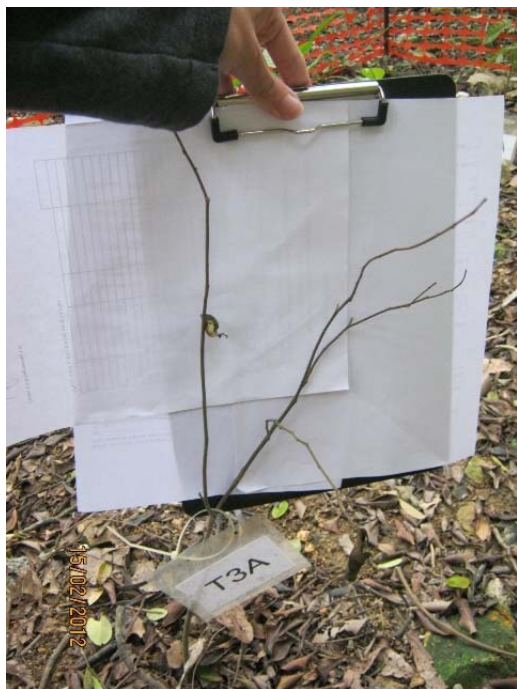
**Tree ID:CT\_2A**



**Current Status: Very Poor**

**Justification: Leaves were dry. The bark was also dry. No significant improvement in health. The plant was very weak.**

**Tree ID: CT\_3A**



**Current Status: Very Poor**

**Justification: Leaves were dry. The bark was also dry. No significant improvement in health. The plant was very weak.**

**Tree ID: CT\_4A**



**Current Status: Very Poor**

**Justification: Leaves were dry. The bark was also dry. No significant improvement in health. The plant was weak.**

**Tree ID: CT\_5A**



**Current Status: Good**

**Justification: Green leaves were found. Significant improvement in health. The plant was healthy. Some leaves were damaged by insect.**

**Tree ID: CT\_6A**



**Current Status: Good**

**Justification: Green leaves were found. Significant improvement in health. The plant was healthy.**

**Tree ID: CT\_7A**



**Current Status: Very Poor**

**Justification: Leaves were dry. The bark was also dry. No significant improvement in health. The plant was weak.**

### **Overall Condition**

In the Tree Protection Zone 2, the condition of CT\_1A-7A was generally poor. The health of CT5A and CT6A were found satisfactory. Regular watering and weeding will be carried out during dry weather. They may better recover under this warm and rainy weather. Some newly grown green leaves were found eaten by insects. 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.

Considering the condition of CT1A to CT4A, CT\_7A were in very poor condition, compensatory of additional *Celtis timorensis* is proposed and will be carried out in the coming warm weather season for better growing.



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

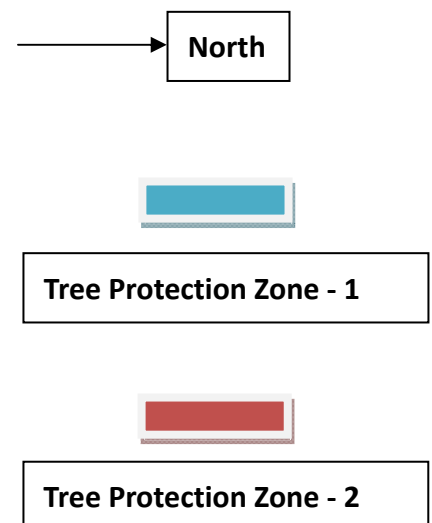
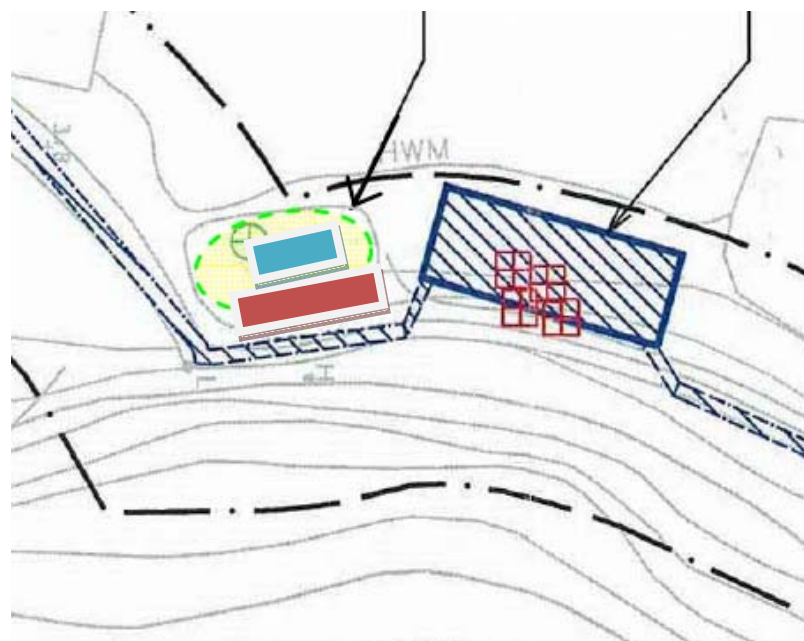
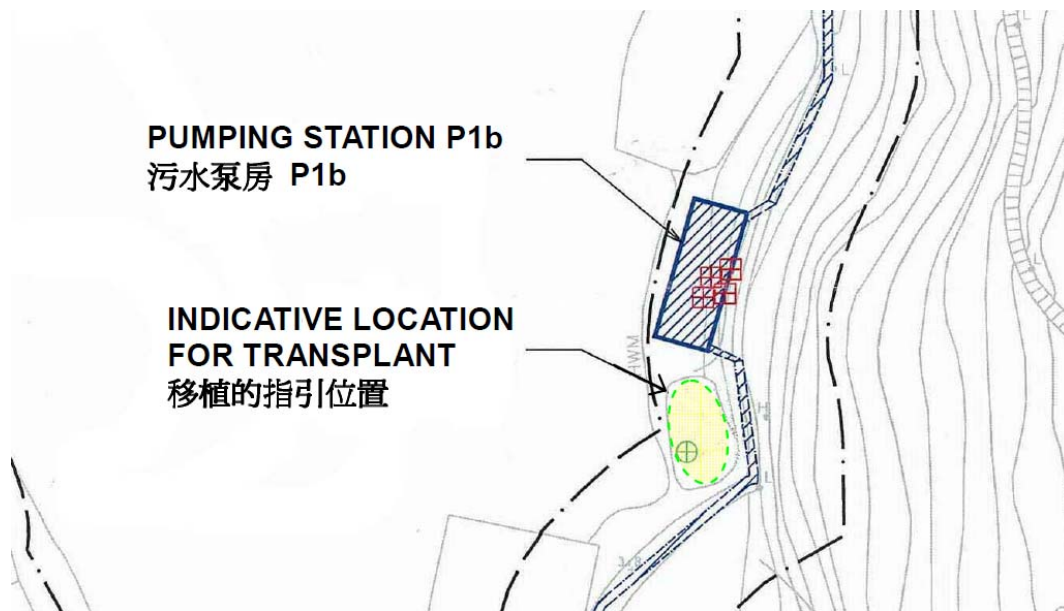
**Tree Inspection Report for *Celtis timorensis***

**Inspection Date : 29-02-2012**



## 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*, which were additionally planted as the compensation of previously transplanted *Celtis timorensis* CT7, CT8, CT9 & CT10.

## 2. Summary of Inspection

Date of Inspection	29 February 2012, around 14:30
Location	A soil ground adjacent to the Pumping Station P1b Chung Mei, at Sok Kwu Wan, Lamma Island.
Weather	Cloudy, the vegetations are located under the shade of existing tall trees.
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 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
October, 2011	10 and 24 October 2011
November, 2011	8 November 2011
December, 2011	14 and 30 December 2011
January 2012	31 January 2012
February 2012	15 and 29 February 2012

## 4. Summary of Inspection Result


Tree No	Speciation	Health Status
CT_1A	<i>Celtis timorensis</i>	Very Poor
CT_2A	<i>Celtis timorensis</i>	Very Poor
CT_3A	<i>Celtis timorensis</i>	Very Poor
CT_4A	<i>Celtis timorensis</i>	Very Poor
CT_5A	<i>Celtis timorensis</i>	Good
CT_6A	<i>Celtis timorensis</i>	Good
CT_7A	<i>Celtis timorensis</i>	Very 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:**

**Tree ID: CT\_1A**

	<p><b>Current Status: Very Poor</b></p> <p><b>Justification: Leaves were dry. The bark was also dry. No significant improvement in health. The plant was very weak.</b></p>
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**Tree ID:CT\_2A**



**Current Status: Very Poor**

**Justification: Leaves were dry. The bark was also dry. No significant improvement in health. The plant was very weak.**

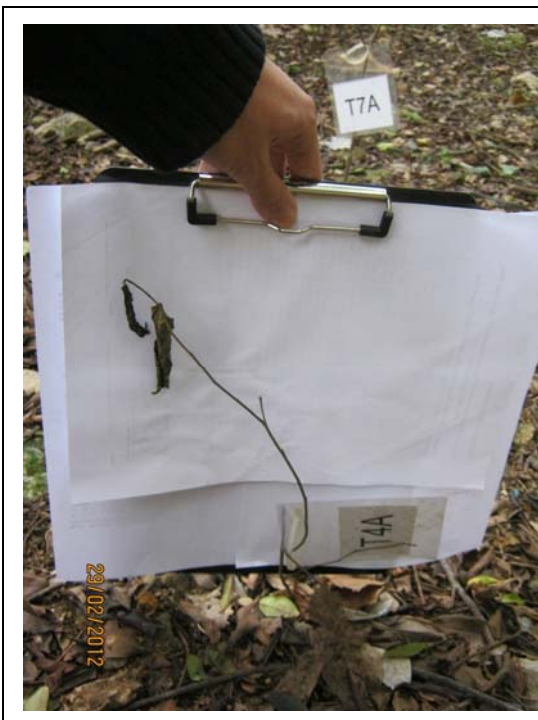
**Tree ID: CT\_3A**



**Current Status: Very Poor**

**Justification: Leaves were dry. The bark was also dry. No significant improvement in health. The plant was very weak.**

**Tree ID: CT\_4A**



**Current Status: Very Poor**

**Justification: Leaves were dry. The bark was also dry. No significant improvement in health. The plant was weak.**

**Tree ID: CT\_5A**



**Current Status: Good**

**Justification: Green leaves were found. Significant improvement in health. The plant was healthy.**

**Tree ID: CT\_6A**



**Current Status: Good**

**Justification: Green leaves were found. Significant improvement in health. The plant was healthy.**

**Tree ID: CT\_7A**



**Current Status: Very Poor**

**Justification: Leaves were dry. The bark was also dry. No significant improvement in health. The plant was weak.**

### **Overall Condition**

In the Tree Protection Zone 2, the condition of CT\_1A-7A was generally poor. The health of CT5A and CT6A were found satisfactory. Regular watering and weeding will be carried out during dry weather. They may better recover under this warm and rainy weather. Some newly grown green leaves were found eaten by insects. 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.

Considering the condition of CT1A to CT4A, CT\_7A were in very poor condition, compensatory of additional *Celtis timorensis* is proposed and will be carried out in the coming warm weather season for better growing.