



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.12) – JULY 2011**

PREPARED FOR
LEADER CIVIL ENGINEERING CORPORATION LIMITED

Quality Index

Date	Reference No.	Prepared By	Approved By
10 August 2011	TCS00512/09/600/R0300v2		
		Nicola Hon Environmental Consultant	T.W. Tam Environmental Team Leader

Version	Date	Description
1	8 August 2011	First Submission
2	10 August 2011	Amended against IEC's comments on 10 August 2011

Scott Wilson CDM Joint Venture

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

Our reference: 05117/6/16/379766

Date: 11 August 2011

Attention: Mr. C K Au

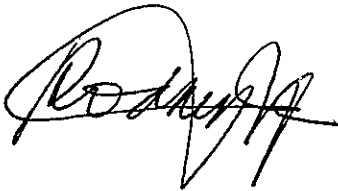
BY FAX ONLY

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. 12 (Jul 2011)

We refer to the Monthly EM&A Monitoring Report No. 12 for July 2011 received under cover of the email from the Environmental Team, Action-United Environmental Services and Consulting (AUES), dated 11 August 2011. We do not have further comment and have verified the captioned report.

Yours faithfully
SCOTT WILSON CDM JOINT VENTURE



Rodney Ip

ICWR/STKW/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 12th monthly EM&A Report for Sok Kwu Wan (hereinafter ‘this Report’) for the designated works under Environmental Permit No.EP-281/2007/A, covering a period from **1 to 31 July 2011** (hereinafter ‘the Reporting Period’) during the construction of relevant land works commencement on 27 July 2010.

ENVIRONMENTAL MONITORING AND AUDIT ACTIVITIES

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

Issues	Environmental Monitoring Parameters / Inspection	Occasions
Air Quality	1-hour TSP	54
	24-hour TSP	14
Construction Noise	Leq (30min) Daytime	24
Water Quality	Marine Water Sampling	4
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 Month.

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 Month. 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 _{30min} Daytime	0	0	0	--	--
Water Quality	DO	0	0	0	--	--
	Turbidity	0	0	0	--	--
	SS	0	0	0	--	--

Note: NOE – Notification of Exceedance

ENVIRONMENTAL COMPLAINT

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

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

NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

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

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

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

REPORTING CHANGE

ES.07. There is no reporting change in this reporting month.

SITE INSPECTION BY EXTERNAL PARTIES

ES.08. No site inspection was undertaken by external parties i.e. EPD or AFCD within the Reporting Period.

FUTURE KEY ISSUES

ES.09. During wet season, 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.10. 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 Kwn 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 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 stead EP-281/2007 is EP for Sok Kwu Wan relevant Works.
- 1.02 The Project involves construction of sewage treatment works at Sok Kwn Wan and Yung She Wan with a capacity of 1,430m³/day and 2,850m³/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 lying 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 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 program. 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 spilt 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 Manuals 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 and the works are ongoing.
- 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, so 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 **12th** monthly EM&A report – Sok Kwu Wan Portion Area presenting the monitoring results and inspection findings for the reporting period from **1 to 31 July 2011**.

REPORT STRUCTURE

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

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

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 programs are enclosed in [Appendix C](#) and the major construction activities undertaken in this Reporting Month are listed below:-
- Construction for pumping station no.1 & 2
 - Construction of the rising main
 - Rock slope cutting works

SUMMARY OF ENVIRONMENTAL SUBMISSIONS

- 2.03 Summary of the relevant permits, licences, and/or notifications on environmental protection for this Project in this Reporting Month 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)	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-RS044-11 Valid from: 7 Feb 2011 Until: 6 Aug 2011

- 2.04 The “Baseline/Impact Monitoring Methodology (TCS00512/09/600/R0010Ver.4)” was set out in accordance with the Sok Kwu Wan Environmental Monitoring and Audit Manual. It was approved by the ER and agreed with the Independent Environmental Checker (IEC) and 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 issued by the ETL and verified by the IEC on 12 July 2010. The report was also submitted to EPD on 12 July 2010.
- 2.06 Baseline Water Quality Monitoring Report - Volume 2 for Sok Kwu Wan (TCS00512/09/600/R0182v5) was revised against AFCD comments and re-submitted to EPD on 7 July 2011.

3 SUMMARY OF BASELINE MONITORING REQUIREMENTS

ENVIRONMENTAL ASPECT

- 3.01 The EM&A baseline monitoring program 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 program are presented in the following sub-sections.
- 3.03 A summary of the Air, Noise and Marine Water monitoring parameters is presented in **Table 3-1**:

Table 3-1 Summary of the Air and Noise monitoring parameters of EM&A Requirements

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

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* stipulations, 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-ordnance	
		Easting	Northing
W1	Secondary recreation contact subzone at Mo Tat Wan	832 968	807 732
W2	Fish culture zone at Picnic Bay	832 607	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: Leq (30min) & Leq (5min), L10 and L90.

Leq (15min) & Leq (5min), L10 and L90 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⁻¹ 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 arrange 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 SS 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 Dissolved Oxygen 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 program in the Reporting Month 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 program.
- 3.27 The monitoring data recorded in the equipment e.g. 1-hour TSP meter, noise 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

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 Leq(30min) during normal hours from 0700 to 1900 hours on normal weekdays, reduced to 70 dB(A) of Leq(30min) for schools and 65 dB(A) during school examination periods

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

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 the Contractor, the construction of relevant land works at Sok Kwu Wan was commenced on 27 July 2010, therefore, the impact EM&A program was started as compliance with the contract Particular Specification, Sok Kwu Wan the EM&A Manual, and the EP. The air quality monitoring results shared with Contract DC/2007/18 are presented in the following sub-sections.

Results of Air Quality Monitoring

4.02 In this reporting period, **54 and 14** monitoring events were performed for 1-hour TSP and 24-hour TSP monitoring respectively at the designated locations AM1, AM2 and AM3. The results for 24-hour and 1-hour TSP at AM1, AM2 and AM3 are summarized in *Tables 4-1, 4-2 and 4-3* respectively. The 24-hour TSP data are shown in *Appendix G*. The graphical plots of 24-hour and 1-hour TSP are shown in *Appendix H*.

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

Date	24-hour TSP ($\mu\text{g}/\text{m}^3$)	1-hour TSP ($\mu\text{g}/\text{m}^3$)				
		Date	Start Time	1 st hour measured	2 nd hour measured	3 rd hour measured
4-Jul-11	37	2-Jul-11	15:06	103	111	118
9-Jul-11	25	7-Jul-11	14:25	77	87	89
15-Jul-11	13	13-Jul-11	13:00	68	67	70
21-Jul-11	34	19-Jul-11	11:52	59	61	58
27-Jul-11	35	25-Jul-11	11:17	48	53	56
		29-Jul-11	12:42	61	64	68
Average (Range)	29 (13 – 37)	Average (Range)		73 (48 – 118)		

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 st hour measured	2 nd hour measured	3 rd hour measured
4-Jul-11	44	2-Jul-11	15:10	88	112	117
9-Jul-11	*	7-Jul-11	14:29	86	92	84
15-Jul-11	18	13-Jul-11	13:06	82	71	73
21-Jul-11	15	19-Jul-11	11:56	62	56	54
27-Jul-11	28	25-Jul-11	11:26	52	58	54
		29-Jul-11	12:51	56	60	59
Average (Range)	26 (15 – 44)	Average (Range)		73 (52 – 117)		

*Sampling was unsuccessful due to short circuit of HVS, details information could be referred to Section 4.04.

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 st hour measured	2 nd hour measured	3 rd hour measured
4-Jul-11	20	2-Jul-11	15:20	122	136	117
9-Jul-11	54	7-Jul-11	14:44	72	75	81
15-Jul-11	29	13-Jul-11	13:13	89	88	74
21-Jul-11	59	19-Jul-11	12:07	61	54	59
27-Jul-11	46	25-Jul-11	11:35	54	59	61
		29-Jul-11	12:59	62	58	64
Average (Range)	42 (20 – 59)	Average (Range)		77 (54 – 136)		

4.03 As shown in *Tables 4-1, 4-2 and 4-3*, 24-hour and 1-hour TSP results fluctuated well below the

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- 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 Short circuit of High Volume Sampler (HVS) at Location AM2 was occurred on 9 July 2011. As investigated by the Contactor and ET, the short circuit was likely caused by seepage of rains which led to malfunction of the HVS. The monitoring team has been repaired the failure problem on 12 July 2011 and monitoring work was continued as schedule.
- 4.05 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 extracted from Contract DC/2007/18 are presented in the following sub-sections.

Results of Construction Noise Monitoring

5.02 In this reporting period, 6 construction noise monitoring events were undertaken at designated location NM1, NM2, RNM3 and NM4. The results for Leq_{30min} 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 st Leq5	2 nd Leq5	3 rd Leq5	4 th Leq5	5 th Leq5	6 th Leq5	Leq30
2-Jul-11	15:00	15:30	52.4	54.4	53.3	51.2	55.6	54.1	53.7
7-Jul-11	14:30	15:00	47.9	50.6	47.0	52.0	48.3	49.7	49.6
13-Jul-11	13:20	13:50	50.4	51.1	48.6	53.5	49.8	52.2	51.2
19-Jul-11	11:41	12:11	52.6	51.8	53.2	50.4	52.3	51.8	52.1
25-Jul-11	11:09	11:39	51.6	53.9	51.4	55.6	56.7	54.1	54.3
29-Jul-11	10:36	11:06	50.7	49.6	52.5	53.6	49.1	54.2	52.0
Limit Level in dB(A)									75

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

Date	Start Time	End time	1 st Leq5	2 nd Leq5	3 rd Leq5	4 th Leq5	5 th Leq5	6 th Leq5	Leq30
2-Jul-11	15:40	16:10	63.5	62.6	62.4	64.1	65.8	66.4	64.4
7-Jul-11	15:06	15:36	68.7	63.1	62.3	62.3	62.8	68.7	65.7
13-Jul-11	14:00	14:30	58.1	59.5	59.4	60.8	62.2	61.3	60.4
19-Jul-11	12:22	12:52	57.9	60.1	55.3	56.2	57.9	58.7	58.0
25-Jul-11	11:47	12:17	61.2	59.8	61.7	58.6	60.2	57.7	60.1
29-Jul-11	11:17	11:47	57.9	61.6	60.3	58.0	57.8	63.6	60.5
Limit Level in dB(A)									75

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

Date	Start Time	End time	1 st Leq5	2 nd Leq5	3 rd Leq5	4 th Leq5	5 th Leq5	6 th Leq5	Leq30	Corrected* Leq30
2-Jul-11	16:20	16:50	61.4	60.8	60.9	63.2	63.6	64.2	62.6	65.6
7-Jul-11	15:38	16:08	64.0	64.0	63.7	60.4	61.4	60.6	62.6	65.6
13-Jul-11	14:35	15:05	60.1	61.2	61.4	59.3	62.2	61.8	61.1	64.1
19-Jul-11	1:02	1:32	57.8	56.2	57.3	55.9	57.7	59.2	57.5	60.5
25-Jul-11	12:39	13:09	55.6	58.3	57.4	60.1	57.9	57.2	58.0	61.0
29-Jul-11	11:54	12:24	53.6	57.2	56.1	60.3	59.1	61.3	58.6	61.6
Limit Level in dB(A)									75	

* 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 st Leq5	2 nd Leq5	3 rd Leq5	4 th Leq5	5 th Leq5	6 th Leq5	Leq30
2-Jul-11	17:00	17:30	50.6	52.4	54.1	51.7	52.0	54.5	52.8
7-Jul-11	16:14	16:44	52.8	50.9	51.1	54.9	53.1	54.0	53.0
13-Jul-11	15:15	15:45	52.1	53.8	51.2	49.1	49.4	53.4	51.9
19-Jul-11	1:46	2:16	56.6	55.7	59.1	56.2	55.1	57.9	57.0
25-Jul-11	13:18	13:48	59.5	60.7	62.6	59.0	62.7	60.8	61.1
29-Jul-11	12:35	13:05	61.2	67.4	62.8	61.8	66.2	62.4	64.3
Limit Level in dB(A)									75

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

6 IMPACT MONITORING RESULTS – WATER QUALITY

- 6.01 The construction of marine outfall works was commenced on 19 July 2011 and therefore marine water quality monitoring is required in this reporting period. In this reporting period, 4 events of water quality monitoring were carried out at the designated locations. The monitoring results including in-situ measurements and laboratory testing results are presented in [Appendix G](#). The graphical plots are shown in [Appendix H](#).
- 6.02 During the Reporting Period, field measurements of both control and impact stations showed that marine water of the depth average of the salinity concentration was within **26.85 to 33.97** ppt, and pH value was within **7.84 to 8.78**.
- 6.03 Monitoring results of 3 key parameters: dissolved oxygen (DO), turbidity and suspended solids in this Reporting Period, are summarized in [Tables 6-1, 6-2, 6-3 and 6-4](#). A summary of exceedances for the three parameters: dissolved oxygen (DO), turbidity and suspended solids are shown in [Table 6-5](#).

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

Sampling date	DO conc. of Depth Ave. of Surf. and Mid Layer (mg/L)						DO conc. of Depth Ave. of Bottom Layer (mg/L)					
	WY1	WY2	WY3	CY1	CY2	CY3	WY1	WY2	WY3	CY1	CY2	CY3
22-Jul-11	6.19	6.25	4.85	6.94	5.90	7.81	NA	3.71	3.73	3.24	3.78	4.53
26-Jul-11	7.53	6.72	6.69	5.65	6.34	6.64	NA	3.63	4.14	3.28	3.54	4.22
28-Jul-11	6.53	5.90	5.59	6.14	5.88	5.92	NA	3.72	3.81	4.46	4.17	3.72
30-Jul-11	6.95	5.89	5.76	5.35	5.64	6.14	NA	3.72	3.46	3.47	3.79	3.49

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

Sampling date	Turbidity Depth Ave. (NTU)						SS Depth Ave. (mg/L)					
	WY1	WY2	WY3	CY1	CY2	CY3	WY1	WY2	WY3	CY1	CY2	CY3
22-Jul-11	4.10	4.08	5.55	6.03	6.70	5.67	4.60	3.97	4.53	5.00	5.00	4.67
26-Jul-11	3.70	4.50	6.27	5.03	5.88	5.77	2.80	3.40	4.30	4.03	3.80	2.80
28-Jul-11	4.15	4.20	4.30	5.17	4.35	5.10	4.70	1.97	1.93	1.95	1.63	2.97
30-Jul-11	3.80	4.60	4.71	5.13	6.12	6.75	7.30	6.03	4.80	5.97	2.30	2.93

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

Sampling date	DO conc. of Depth Ave. of Surf. and Mid Layer (mg/L)						DO conc. of Depth Ave. of Bottom Layer (mg/L)					
	WY1	WY2	WY3	CY1	CY2	CY3	WY1	WY2	WY3	CY1	CY2	CY3
22-Jul-11	6.62	6.79	5.70	6.45	6.80	5.53	NA	4.01	4.46	3.62	4.27	3.70
26-Jul-11	7.41	6.51	6.70	6.62	7.19	5.97	NA	4.28	3.76	3.88	3.46	3.20
28-Jul-11	6.22	6.07	6.02	5.58	5.43	5.83	NA	3.74	4.04	3.30	3.34	3.95
30-Jul-11	6.86	5.94	5.95	6.05	5.89	5.83	NA	3.70	3.46	3.39	3.78	3.37

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

Sampling date	Turbidity Depth Ave. (NTU)						SS Depth Ave. (mg/L)					
	WY1	WY2	WY3	CY1	CY2	CY3	WY1	WY2	WY3	CY1	CY2	CY3
22-Jul-11	3.80	4.73	5.95	5.65	5.48	6.42	4.10	5.20	2.60	4.07	4.00	4.40
26-Jul-11	2.65	4.50	5.82	6.33	6.20	6.37	4.20	4.13	3.60	2.93	4.07	3.67
28-Jul-11	3.35	4.37	3.48	3.97	4.55	5.08	3.80	4.33	2.40	2.70	1.80	2.00
30-Jul-11	4.10	4.68	4.53	5.16	5.55	8.24	3.80	4.53	3.47	4.97	2.30	4.20

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
Mid-Ebb										
WY1	0	0	0	0	0	0	0	0	0	0
WY2	0	0	0	0	0	0	0	0	0	0
WY3	0	0	0	0	0	0	0	0	0	0
Mid-Flood										
WY1	0	0	0	0	0	0	0	0	0	0
WY2	0	0	0	0	0	0	0	0	0	0
WY3	0	0	0	0	0	0	0	0	0	0
No of Exceedance	0	0	0	0	0	0	0	0	0	0

6.04 For marine water monitoring, no exceedance of Action/Limit level was recorded in this reporting month. 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 **14 and 25 July 2011**. As a contingency measure in case that CT7 to CT10 can no longer be recovered, additional 7 no. of *Celtis Timorensis* were planted adjacent to the under-monitoring *Celtis Timorensis* CT7 to CT10 on 30 April 2011. The tree inspection report is presented in **Appendix M**.

8 WASTE MANAGEMENT

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

Records of Waste Quantities

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

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

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

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

Type of Waste	Quantity	Disposal Location
C&D Materials (Inert) ('000m ³)	0.004	Sok Kwu Wan Transfer Facility
Reused in the Contract (Inert) ('000m ³)	0	-
Reused in other Projects (Inert) ('000m ³)	1.077	-
Disposal as Public Fill (Inert) ('000m ³)	0	Sok Kwu Wan Transfer Facility

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

Type of Waste	Quantity	Disposal Location
Metal (kg)	0	-
Paper / Cardboard Packing (kg)	0	-
Plastic (kg)	0	-
Chemical Wastes (kg)	0	-
General Refuses (tonne)	0.51	Sok Kwu Wan Transfer Facility

8.04 There was no site effluent discharged but the estimated volume of surface runoff was less than 50m³ 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 **5, 12, 19 and 27 July 2011** and a joint-site visit by IEC, RE, Leader and ET was carried out on **19 July 2011**.
- 9.02 The findings/ deficiencies that observed during the weekly site inspection are listed in **Table 9-1** and the relevant checklists are attached in **Appendix K**.

Table 9-1 Site Observations

Date	Findings / Deficiencies	Follow-Up Status
5 July 2011	<ul style="list-style-type: none">No environmental issue was observed during the site inspection.	N.A
12 July 2011	<ul style="list-style-type: none">No environmental issue was observed during the site inspection.	N.A
19 July 2011	<ul style="list-style-type: none">Tarpaulin sheet should be put back to sea to restore de-silting functioning.The water tank should be covered to avoid mosquito breeding.	<ul style="list-style-type: none">Tarpaulin sheet has been deployed into the sea on 27 July 2011The tank has been covered on 27 July 2011.
27 July 2011	<ul style="list-style-type: none">No environmental issue was observed during the site inspection.	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 – 30 June 2011	0	0	NA
1 – 31 July 2011	0	0	NA

Table 10-2 Statistical Summary of Environmental Summons

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

Table 10-3 Statistical Summary of Environmental Prosecution

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

11 IMPLEMENTATION STATUS OF MITIGATION MEASURES

11.01 The environmental mitigation measures that recommended in the Sok Kwu Wan Environmental Monitoring and Audit Manual 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 program.
 - 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 55m³/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 Month are summarized in [Table 11-1](#).

Table 11-1 Environmental Mitigation Measures

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

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

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

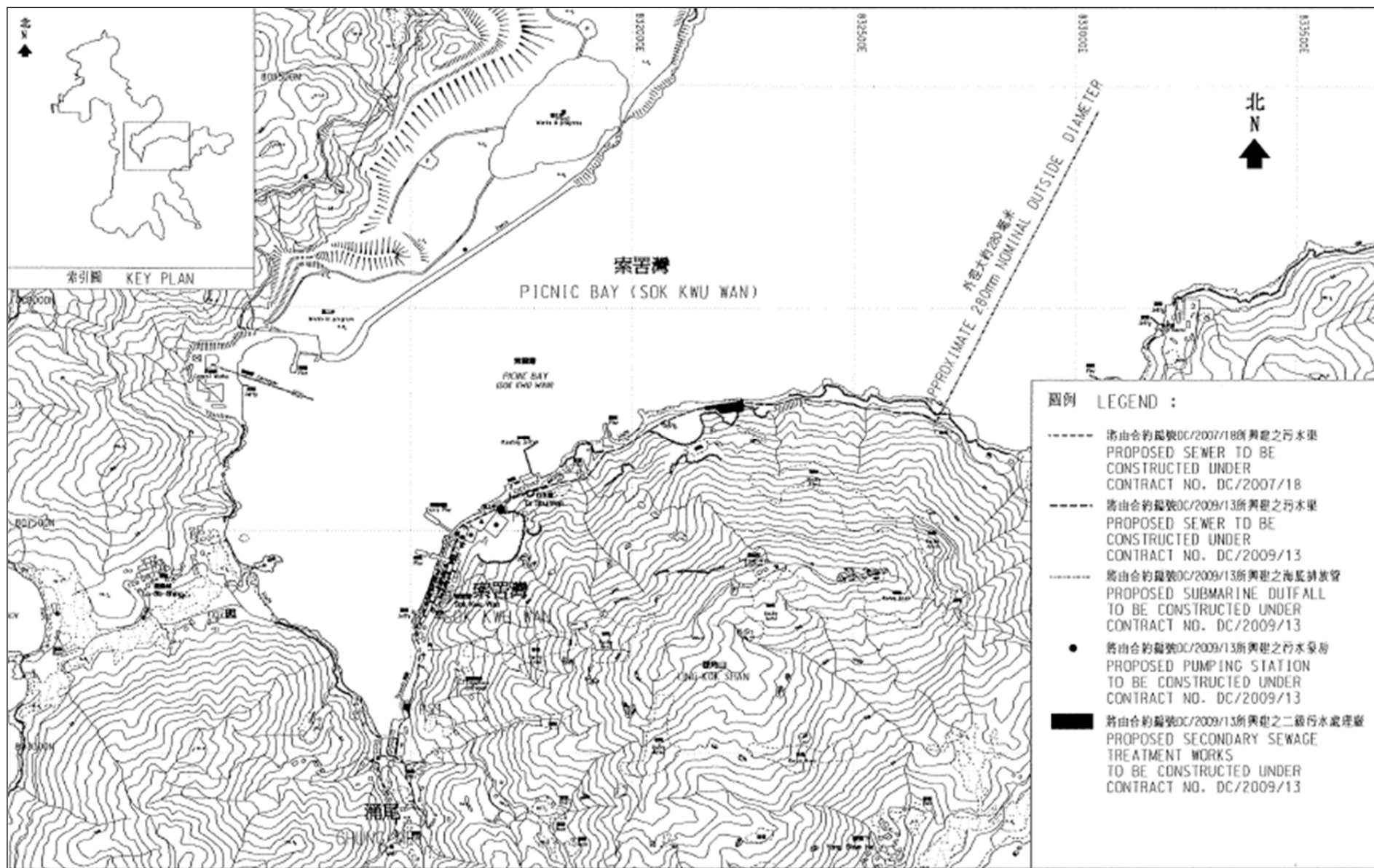
- 13.01 This is the **12th** Monthly EM&A Report covering the construction period from **1 to 31 July 2011** (the Reporting Period).
- 13.02 No 1-hour TSP or 24-hr TSP monitoring results was found to be triggered the Action or Limit Level in this Reporting Period.
- 13.03 No noise complaint (an Action Level exceedance) was received and no construction noise measurement results that exceeded the Limit Level were recorded in this reporting month.
- 13.04 As informed by the Contractor, the marine work of outfall construction has been commenced on 19 July 2011, therefore, water quality was undertaken in this Reporting Month. The monitoring result demonstrated no exceedance of Action or Limit Level in this Reporting Period
- 13.05 No documented complaint, notification of summons or successful prosecution was received.
- 13.06 In this reporting period, weekly site inspection by ET was carried out on **5, 12, 19 and 27 July 2011** and a joint-site visit by IEC, RE, Leader and ET was carried out on **19 July 2011**. All the observation has been rectified during the next week site inspection. The environmental performance of the Project was therefore considered as satisfactory.

RECOMMENDATIONS

- 13.07 During wet season, 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.
- 13.08 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. AU Chi Kwong	-	-
SCJV	Engineer's Representative	Mr. Neil Wong	2982 0240	2982 4129
SCJV	Resident Engineer	Mr. Alfred Cheung	2982 0240	2982 4129
Scott Wilson	Independent Environmental Checker	Mr. Rodney Ip	2410 3750	2428 9922
Leader	Project Manager	Mr. Vincent Chan	2982 1750	2982 1163
Leader	Site Agent	Mr. Stephen Leung	2982 1750	2982 1163
Leader	Environmental Officer	Mr. K.Y. So	2982 8652	2982 8650
Leader	Section Engineer	Mr. Burgess Yip	2982 1750	2982 1163
Leader	Safety Officer	Mr. Edwin Leung	2982 1750	2982 1163
AUES	Environmental Team Leader	Mr. T. W. Tam	2959 6059	2959 6079
AUES	Environmental Consultant	Ms. Nicola Hon	2959 6059	2959 6079
AUES	Assistance Environmental Consultant	Mr. Ray Cheung	2959 6059	2959 6079
AUES	Team Supervisor	Mr. Ben Tam	2959 6059	2959 6079

Legend:

DSD (Employer) – Drainage Services Department

CDM (Engineer) – Scott Wilson CDM Joint Venture

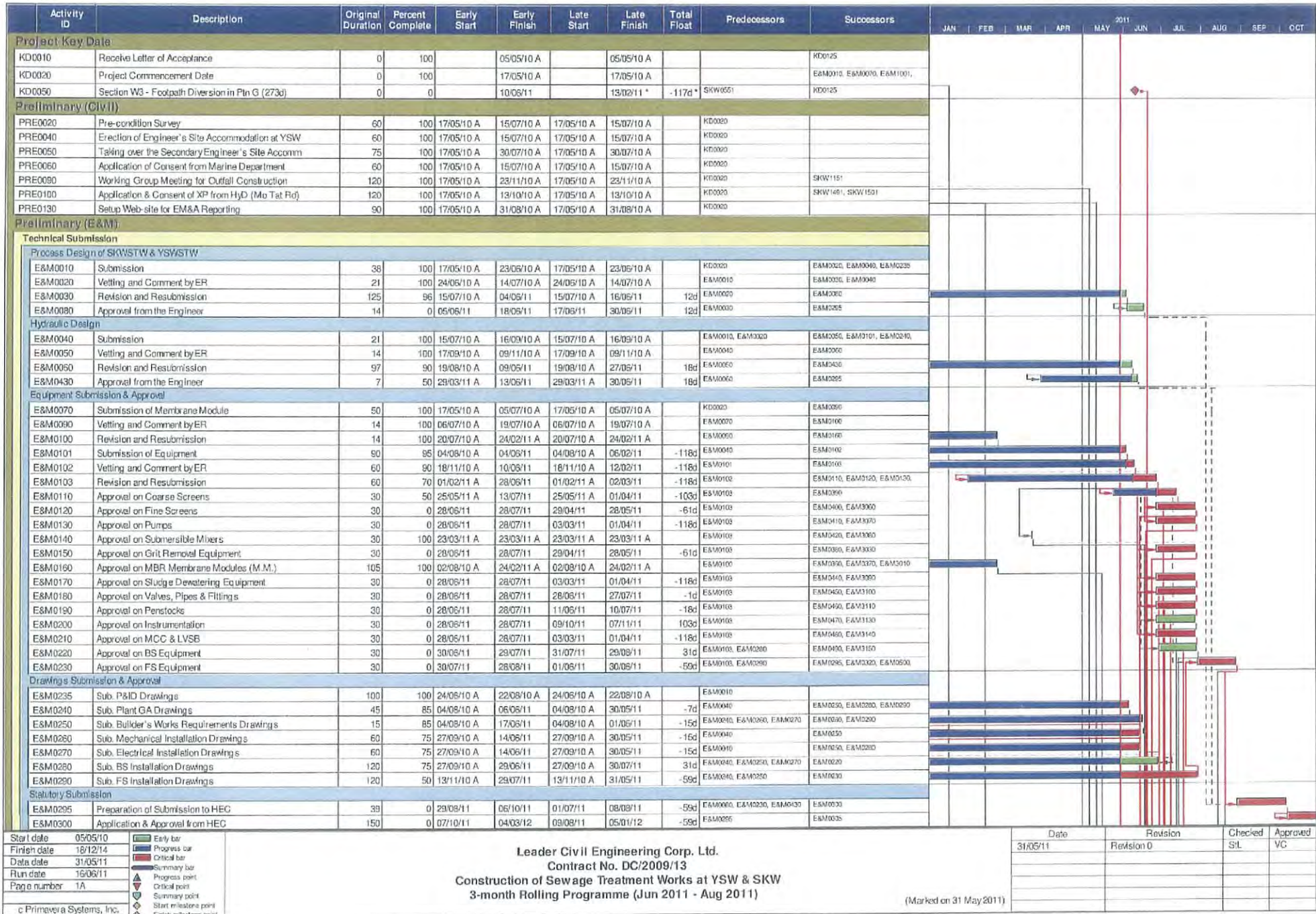
Leader (Main Contractor) – Leader Civil Engineering Corporation Limited

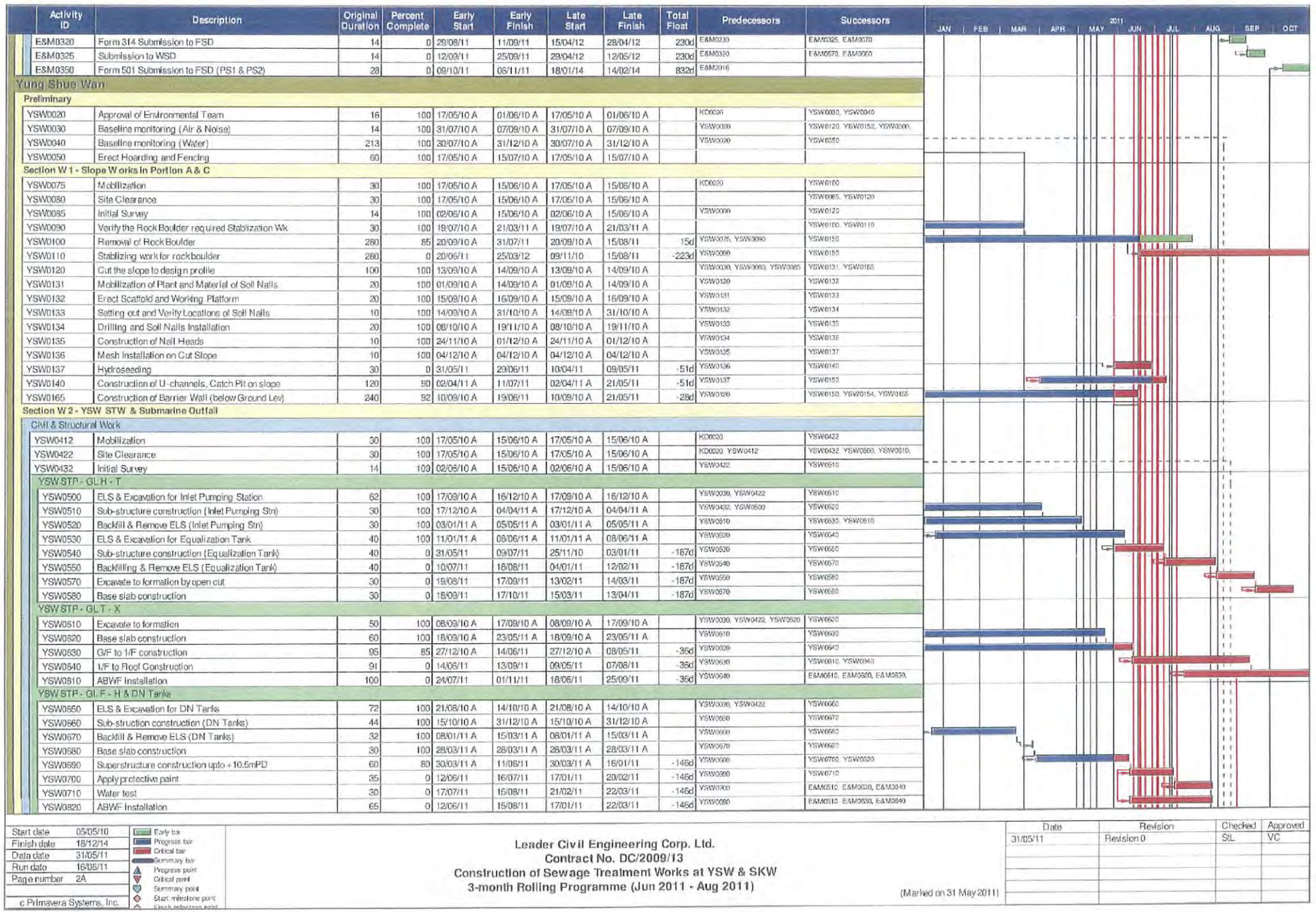
Scott Wilson (IEC) – Scott Wilson Limited

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

Appendix C

A Master and Three Months Rolling Construction Programs





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

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

(Marked on 31 May 2011)

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

Activity ID	Description	Original Duration	Percent Complete	Early Start	Early Finish	Late Start	Late Finish	Total Float	Predecessors	Successors	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	
Fire Hose Reel / Sprinkler Pump Rm																					
YSW0340	ELS & excavate to formation (+0 MPD approx)	30	0	13/09/11	13/10/11	01/09/11	30/09/11	-12d	YSW0300, YSW0322, YSW0340	YSW0350											
Road, Drain, Cable Draw Pits & Ducting																					
YSW0152	Temporary Diversion of Drainage	92	100	02/12/10 A	09/05/11 A	02/12/10 A	09/05/11 A		YSW0090	YSW0163, YSW0154											
YSW0153	Removal of Ex-U-Channel where clash with B.Wall	50	100	20/11/10 A	20/04/11 A	20/11/10 A	20/04/11 A		YSW0152	YSW0154											
YSW0154	Construction of Subsoil Drain	90	0	19/06/11	17/09/11	08/10/11	05/01/12	11d	YSW0152, YSW0153, YSW0155	YSW0155											
Submarine Outfall																					
YSW0180	Coordination of HEC	53	100	17/05/10 A	08/07/10 A	17/05/10 A	08/07/10 A			YSW0350											
YSW0200	Submission and Approval of Ecologist	60	100	17/05/10 A	15/07/10 A	17/05/10 A	15/07/10 A			YSW0310											
YSW0210	Ecology Survey	90	100	16/07/10 A	11/02/11 A	16/07/10 A	11/02/11 A		YSW0300	YSW0350											
YSW0220	Submission and Approval of In. I Hydro Survey	90	100	17/05/10 A	27/08/10 A	17/05/10 A	27/08/10 A			YSW0230											
YSW0230	Hydrographical Survey (YSW)	45	100	31/08/10 A	31/01/11 A	31/08/10 A	31/01/11 A		YSW0320	YSW0350											
YSW0240	Material Submission, Approval of HDPE pipe	93	100	17/05/10 A	31/03/11 A	17/05/10 A	31/03/11 A			YSW0250											
YSW0250	Submit and Approval of Method Statement for HDD	120	100	24/09/10 A	25/03/11 A	24/09/10 A	25/03/11 A		YSW0240	YSW0260, YSW0270, YSW0340											
YSW0260	Submission of HDD Method Statement to HEC	14	100	26/01/11 A	24/03/11 A	26/01/11 A	24/03/11 A		YSW0250	YSW0320, YSW0340											
YSW0270	Additional G.I. Boreholes (YSW)	62	100	05/11/10 A	19/01/11 A	05/11/10 A	19/01/11 A		YSW0250	YSW0280, YSW0320											
YSW0280	Submission of propose alignment to the Eng	14	100	02/02/11 A	04/03/11 A	02/02/11 A	04/03/11 A		YSW0270	YSW0290, YSW0310, YSW0340											
YSW0290	Submission of Marine Notice	60	100	31/01/11 A	29/03/11 A	31/01/11 A	29/03/11 A		YSW0280	YSW0350											
YSW0310	Construction of Entry Pit and Preparation Work	39	100	15/03/11 A	31/03/11 A	15/03/11 A	31/03/11 A		YSW0290	YSW0320, YSW0330											
YSW0320	Prepare of HDD Drill Rig Set-up (YSW)	39	100	02/04/11 A	28/04/11 A	02/04/11 A	28/04/11 A		YSW0310, YSW0320, YSW0310	YSW0330, YSW0350											
YSW0330	Establishment of HDD plant & equipment	14	100	09/04/11 A	14/04/11 A	09/04/11 A	14/04/11 A		YSW0310, YSW0320	YSW0340											
YSW0340	Setting up at drillhole location	7	100	19/04/11 A	28/04/11 A	19/04/11 A	28/04/11 A		YSW0330, YSW0350, YSW0290	YSW0350											
YSW0350	Drill pilot hole and reaming hole - NS400 - 530m	123	33	29/04/11 A	21/09/11	29/04/11 A	16/05/11	-65d	YSW0340, YSW0310, YSW0320	YSW0360											
E&M Works - YSW-STP																					
E&M0360	Delivery of MBR Memb. Mod. (MBR Tk4)	150	0	31/05/11	27/10/11	24/10/10	22/03/11	-219d	E&M0160	E&M0510											
E&M0370	Delivery of MBR Membrane Modules - 2nd Shipment	150	0	31/05/11	27/10/11	29/09/11	25/02/12	121d	E&M0160	E&M0320											
E&M0380	Delivery of Grit Removal Equipment	180	0	28/07/11	24/01/12	29/05/11	24/11/11	-61d	E&M0150	E&M0530											
E&M0390	Delivery of Coarse Screens	162	0	13/07/11	22/12/11	02/04/11	10/09/11	-103d	E&M0110	E&M0540											
E&M0400	Delivery of Fine Screens	180	0	28/07/11	24/01/12	29/05/11	24/11/11	-61d	E&M0120	E&M0550											
E&M0410	Delivery of Pumps	162	0	28/07/11	06/01/12	02/04/11	10/09/11	-118d	E&M0130	E&M0560											
E&M0420	Delivery of Submersible Mixers	162	0	28/08/11	07/12/11	01/07/11	09/12/11	3d	E&M0140	E&M0570											
E&M0440	Delivery of Sludge Dewatering Equipment	180	0	28/07/11	24/01/12	02/04/11	28/09/11	-118d	E&M0170	E&M0580											
E&M0450	Delivery of Valves, Pipes & Fittings	180	0	28/07/11	24/01/12	28/07/11	23/01/12	-1d	E&M0180	E&M0590, E&M0600											
E&M0460	Delivery of Penstocks	160	0	28/07/11	24/01/12	11/07/11	05/01/12	-18d	E&M0190	E&M0630											
E&M0470	Delivery of Instruments	180	0	28/07/11	24/01/12	08/11/11	05/05/12	103d	E&M0210	E&M0610											
E&M0480	Delivery of MCC LV/SB	177	0	28/07/11	21/01/12	02/04/11	25/09/11	-118d	E&M0210	E&M0620											
E&M0490	Delivery of BS Equipment	180	0	30/07/11	25/01/12	30/08/11	25/02/12	31d	E&M0220	E&M0650											
E&M0500	Delivery FS Equipment	180	0	29/08/11	24/02/12	27/09/11	24/03/12	29d	E&M0230	E&M0630, E&M0640											
Sok Kwu Wan																					
Preliminary																					
SKW0250	Approval of Environmental Team	16	100	17/05/10 A	01/06/10 A	17/05/10 A	01/06/10 A		SKW020	SKW0250											
SKW0260	Baseline monitoring (Air & Noise)	14	100	02/06/10 A	15/06/10 A	02/06/10 A	15/06/10 A		SKW0250	SKW0242, SKW0282, SKW0261											
Section W3 - Footpath Diversion in Portion G																					
Civil & Geotechnical Works																					
SKW0240	Site Clearance	21	100	17/05/10 A	05/06/10 A	17/05/10 A	05/06/10 A			SKW0241											
SKW0241	Initial Survey	9	100	07/06/10 A	15/06/10 A	07/06/10 A	15/06/10 A			SKW0242											
SKW0242	Excavation to formation for Bay 1 to 5	57	100	16/06/10 A	11/08/10 A	16/06/10 A	11/08/10 A		SKW0241, SKW0260	SKW0251											
SKW0251	Drill & Install Dowel Bar for Bay 0 & 4	21	100	02/08/10 A	01/09/10 A	02/08/10 A	01/09/10 A		SKW0242	SKW0260											
SKW0301	Erect Formwork, mesh & weephole for Bay 0 & 2	14	100	02/09/10 A	15/09/10 A	02/09/10 A	15/09/10 A		SKW0251	SKW0311											
SKW0311	Concreting for Bay 0 & 2	14	100	16/09/10 A	29/09/10 A	16/09/10 A	29/09/10 A		SKW0301	SKW0321											
SKW0321	Drilling & Install Dowel Bar for Bay 4 & 6	7	100	20/09/10 A	05/10/10 A	20/09/10 A	05/10/10 A		SKW0311	SKW0331											
SKW0331	Erect Formwork, mesh & weephole for Bay 4 & 6	7	100	07/10/10 A	13/10/10 A	07/10/10 A	13/10/10 A		SKW0321	SKW0341											
SKW0341	Concreting for Bay 4 & 6	7	100	14/10/10 A	20/10/10 A	14/10/10 A	20/10/10 A		SKW0331	SKW0351											
SKW0351	Excavation to formation for Bay 7 to 9	21	100	21/10/10 A	10/11/10 A	21/10/10 A	10/11/10 A		SKW0341	SKW0361											
SKW0361	Erect Formwork, mesh weephole for Bay 1, 3 & 5	6	100	11/11/10 A	18/11/10 A	11/11/10 A	16/11/10 A		SKW0351	SKW0371											

Start date	05/05/10		Early bar
Finish date	18/12/14		Progress bar
Date date	31/05/11		Critical bar
Run date	16/06/11		Summary bar
Page number	3A		Progress point
			Critical point
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			Start milestone point
			End milestone point
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Leader Civil Engineering Corp. Ltd.
Contract No. DC/2009/13
Construction of Sewage Treatment Works at YSW & SKW
3-month Rolling Programme (Jun 2011 - Aug 2011)

(Marked on 31 May 2011)

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

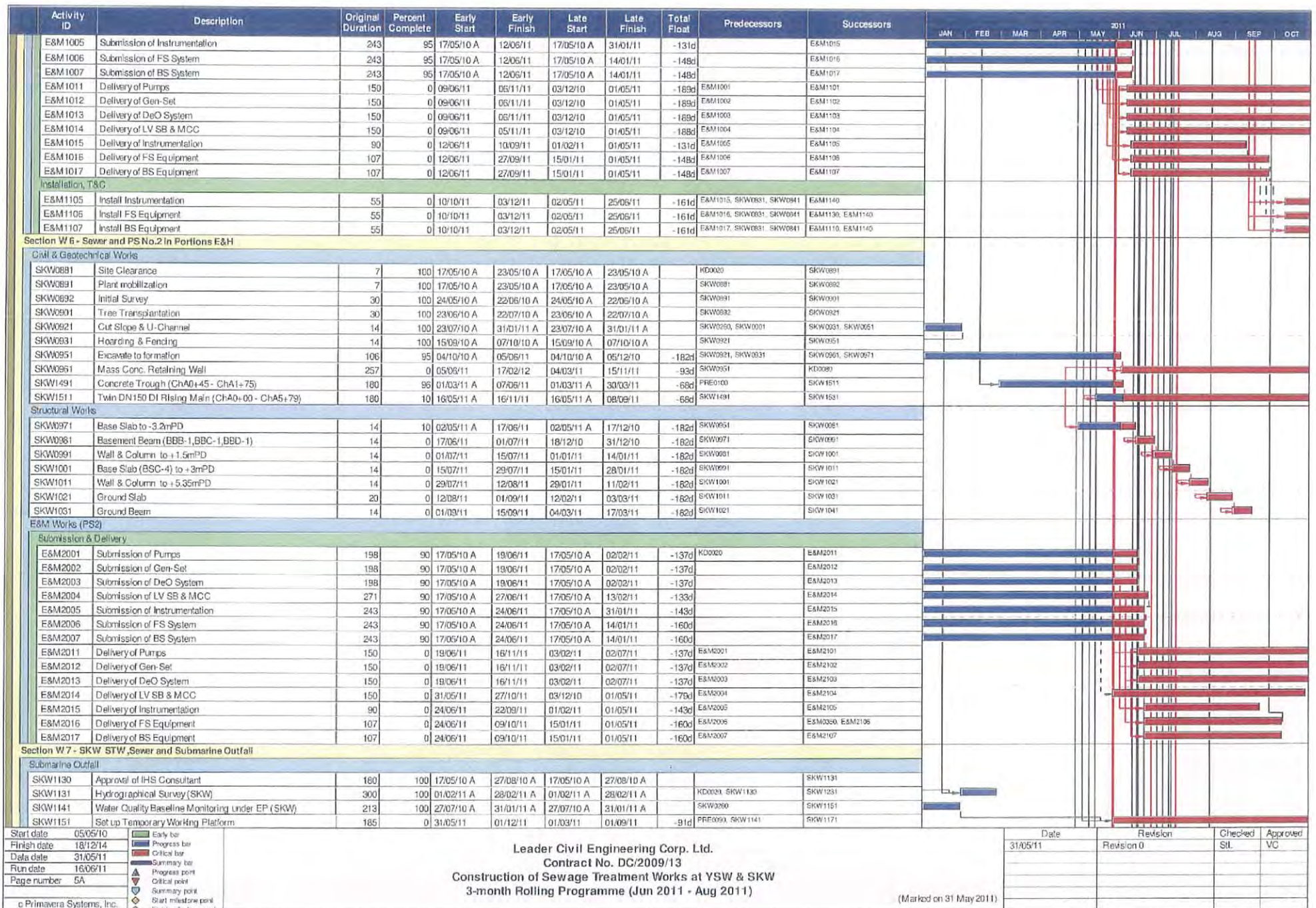
Activity ID	Description	Original Duration	Percent Complete	Early Start	Early Finish	Late Start	Late Finish	Total Float	Predecessors	Successors	JAN	FEB	MAR	APR	MAY	2011 JUN	JUL	AUG	SEP	OCT		
SKW0371	Concreting for Bay 1, 3 & 5	7	100	17/11/10 A	23/11/10 A	17/11/10 A	23/11/10 A		SKW0361	SKW0381												
SKW0381	Replace of soft spot by rock fill for Bay 7 to 9	7	100	24/11/10 A	30/11/10 A	24/11/10 A	30/11/10 A		SKW0371	SKW0391												
SKW0391	Erect formwork, mesh & weephole for Bay 7 to 9	3	100	01/12/10 A	03/12/10 A	01/12/10 A	03/12/10 A		SKW0381	SKW0401												
SKW0401	Concreting for Bay 7 to 9	7	100	04/12/10 A	24/12/10 A	04/12/10 A	24/12/10 A		SKW0391	SKW0461												
SKW0461	Excavation for no fine concrete Bay (1-9)	7	100	25/12/10 A	31/12/10 A	25/12/10 A	31/12/10 A		SKW0401	SKW0471												
SKW0471	Concreting for no-fine concrete	7	100	01/02/11 A	07/02/11 A	01/02/11 A	07/02/11 A		SKW0461	SKW0481												
SKW0481	Installation of Wall tie & stone facing	14	100	08/02/11 A	21/02/11 A	08/02/11 A	21/02/11 A		SKW0471	SKW0491												
SKW0491	Construction of Gabion Wall	7	100	08/02/11 A	14/02/11 A	08/02/11 A	14/02/11 A		SKW0481	SKW0501												
SKW0501	Place Geotextile	3	100	08/01/11 A	28/02/11 A	08/01/11 A	28/02/11 A		SKW0491	SKW0511												
SKW0511	Backfill behind the retaining wall to approx. +4	7	100	11/01/11 A	28/02/11 A	11/01/11 A	28/02/11 A		SKW0501	SKW0521												
SKW0521	Watermain Laying and Diversion	14	100	01/04/11 A	10/05/11 A	01/04/11 A	10/05/11 A		SKW0511	SKW0531												
SKW0531	Concreting for Pavement	7	60	11/05/11 A	02/06/11	11/05/11 A	05/02/11	-117d	SKW0521	SKW0541												
SKW0541	Installation of Flower Pot	7	0	02/06/11	09/06/11	06/02/11	12/02/11	-117d	SKW0531	SKW0551												
SKW0551	Permanent Footpath Diversion	1	0	09/06/11	10/06/11	13/02/11	13/02/11	-117d	SKW0541	KD0050, SKW1251, SKW1311												
Section W4 - Slope Works in Portions H & I																						
Geotechnical Works																						
SKW0588	Construct scaffolding access	30	100	15/06/10 A	14/07/10 A	15/06/10 A	14/07/10 A		KD0020	SKW0620												
SKW0590	Site Clearance for Slope	100	100	15/07/10 A	22/10/10 A	15/07/10 A	22/10/10 A		SKW0588	SKW0591												
SKW0591	Initial Survey for Slope	28	100	21/09/10 A	18/10/10 A	21/09/10 A	18/10/10 A		SKW0590	SKW0622												
SKW0592	Temporary Rockfall fence at ex. Footpath	43	100	19/10/10 A	06/01/11 A	19/10/10 A	06/01/11 A		SKW0590, SKW0591	SKW0631												
SKW05931	Construction of Haul Road (To +21mPD)	50	100	28/11/10 A	31/05/11	28/11/10 A	31/05/11		SKW0592	SKW0632												
SKW05932	Construction of Haul Road (To +42mPD)	60	100	15/12/10 A	31/01/11 A	15/12/10 A	31/01/11 A		SKW05931	SKW0633												
SKW05933	Excavation of Rock Berm (+50mPD to +42.5mPD)	30	100	01/03/11 A	03/05/11 A	01/03/11 A	03/05/11 A		SKW05932	SKW0634												
SKW05934	Excavation of Rock Berm (+42.5mPD to +35mPD)	30	100	04/05/11 A	31/05/11 A	04/05/11 A	31/05/11 A		SKW05933	SKW0635												
SKW05935	Excavation of Rock Berm (+35mPD to +27.5mPD)	30	0	31/05/11	29/06/11	20/02/11	21/03/11	-100d	SKW05934	SKW0636												
SKW05936	Excavation of Rock Berm (+27.5mPD to +20mPD)	30	0	30/06/11	29/07/11	22/03/11	23/04/11	-100d	SKW05935	SKW0637												
SKW05937	Excavation of Rock Berm (+20mPD to +12.5mPD)	30	0	30/07/11	28/08/11	21/04/11	20/05/11	-100d	SKW05936	SKW0638												
SKW0594	Road & Drains Works	248	0	31/05/11	02/02/12	11/12/10	15/08/11	-171d	SKW0638	KD0050												
SKW0595	Rock Meshing & Rockfall Fence	290	0	31/05/11	14/02/12	29/11/10	15/08/11	-183d	SKW0635	KD0050												
Section W5 - P.S. No. 1 in Portion D																						
Civil & Geotechnical Works																						
SKW0651	Site Clearance	7	100	17/05/10 A	23/05/10 A	17/05/10 A	23/05/10 A		KD0020	SKW0652												
SKW0652	Initial Survey	7	100	24/05/10 A	30/05/10 A	24/05/10 A	30/05/10 A		SKW0651	SKW0661, SKW0681												
SKW0661	Transplantation for uncommon vegetation	80	100	31/05/10 A	29/06/10 A	31/05/10 A	29/06/10 A		SKW0652	SKW0681												
SKW0681	Excavate to lower the working platform to +3mPD	49	100	30/06/10 A	17/08/10 A	30/06/10 A	17/08/10 A		SKW0661, SKW0682, SKW0681	SKW0691												
SKW0691	ELS to +2.2mPD	40	100	18/08/10 A	28/09/10 A	18/08/10 A	28/09/10 A		SKW0681	SKW0721												
SKW0721	Excavate to form mason	92	100	17/09/10 A	31/03/11 A	17/09/10 A	31/03/11 A		SKW0691	SKW0741												
Structural Works																						
SKW0741	Base Slab (BSD2 & BSD3)	15	20	20/04/11 A	11/06/11	20/04/11 A	01/01/11	-161d	SKW0721	SKW0751												
SKW0751	Wall & Column (CA1-3, CB1-3, CC1-3, CD1-2) Approx.	14	0	11/06/11	24/06/11	01/01/11	14/01/11	-161d	SKW0741	SKW0761												
SKW0761	Base Slab (BSD1) to +3.98	14	0	24/06/11	07/07/11	14/01/11	27/01/11	-161d	SKW0751	SKW0771												
SKW0771	Wall & Column (CA1-3, CB1-3, CC1-3, CD1-2) to +5.3	14	0	07/07/11	20/07/11	27/01/11	09/02/11	-161d	SKW0761	SKW0781												
SKW0781	Base Slab (GSB1-3, GSC1-5, GSD1-2)	14	0	20/07/11	02/08/11	09/02/11	22/02/11	-161d	SKW0771	SKW0791												
SKW0791	Base Slab (GSE1 & GSF1)	14	0	02/08/11	15/08/11	22/02/11	07/03/11	-161d	SKW0781	SKW0811												
SKW0801	Wall & Column (CE1-3, CF1-3)	14	0	15/08/11	28/08/11	07/03/11	20/03/11	-161d	SKW0791	SKW0821												
SKW0811	Ground Beam (GB1-1,2, GB2-1,2, GB3-1, GBA-1, GBB1-4)	14	0	29/08/11	11/09/11	21/03/11	03/04/11	-161d	SKW0801	SKW0831												
SKW0821	Wall & Column (CA1-3, CB1-3, CC1-3, CD1-2) to +10.	14	0	12/09/11	25/09/11	04/04/11	17/04/11	-161d	SKW0811	SKW0831												
SKW0831	Roof Beams & Parapet	14	0	25/09/11	09/10/11	18/04/11	01/05/11	-161d	SKW0821	ESM1101, ESM1102, ESM1103, ESM1104, ESM1105, ESM1106, ESM1107, ESM1108, ESM1109, ESM1110, ESM1111, ESM1112, ESM1113, ESM1114, ESM1115, ESM1116, ESM1117, ESM1118, ESM1119, ESM1120, ESM1121, ESM1122, ESM1123, ESM1124, ESM1125, ESM1126, ESM1127, ESM1128, ESM1129, ESM1130, ESM1131, ESM1132, ESM1133, ESM1134, ESM1135, ESM1136, ESM1137, ESM1138, ESM1139, ESM1140, ESM1141, ESM1142, ESM1143, ESM1144, ESM1145, ESM1146, ESM1147, ESM1148, ESM1149, ESM1150, ESM1151, ESM1152, ESM1153, ESM1154, ESM1155, ESM1156, ESM1157, ESM1158, ESM1159, ESM1160, ESM1161, ESM1162, ESM1163, ESM1164, ESM1165, ESM1166, ESM1167, ESM1168, ESM1169, ESM1170, ESM1171, ESM1172, ESM1173, ESM1174, ESM1175, ESM1176, ESM1177, ESM1178, ESM1179, ESM1180, ESM1181, ESM1182, ESM1183, ESM1184, ESM1185, ESM1186, ESM1187, ESM1188, ESM1189, ESM1190, ESM1191, ESM1192, ESM1193, ESM1194, ESM1195, ESM1196, ESM1197, ESM1198, ESM1199, ESM1200	SKW0831											
SKW0841	ABWF Installation	45	0	26/09/11	09/11/11	18/04/11	01/06/11	-161d	SKW0831	ESM1101, ESM1102, ESM1103, ESM1104, ESM1105, ESM1106, ESM1107, ESM1108, ESM1109, ESM1110, ESM1111, ESM1112, ESM1113, ESM1114, ESM1115, ESM1116, ESM1117, ESM1118, ESM1119, ESM1120, ESM1121, ESM1122, ESM1123, ESM1124, ESM1125, ESM1126, ESM1127, ESM1128, ESM1129, ESM1130, ESM1131, ESM1132, ESM1133, ESM1134, ESM1135, ESM1136, ESM1137, ESM1138, ESM1139, ESM1140, ESM1141, ESM1142, ESM1143, ESM1144, ESM1145, ESM1146, ESM1147, ESM1148, ESM1149, ESM1150, ESM1151, ESM1152, ESM1153, ESM1154, ESM1155, ESM1156, ESM1157, ESM1158, ESM1159, ESM1160, ESM1161, ESM1162, ESM1163, ESM1164, ESM1165, ESM1166, ESM1167, ESM1168, ESM1169, ESM1170, ESM1171, ESM1172, ESM1173, ESM1174, ESM1175, ESM1176, ESM1177, ESM1178, ESM1179, ESM1180, ESM1181, ESM1182, ESM1183, ESM1184, ESM1185, ESM1186, ESM1187, ESM1188, ESM1189, ESM1190, ESM1191, ESM1192, ESM1193, ESM1194, ESM1195, ESM1196, ESM1197, ESM1198, ESM1199, ESM1200	SKW0841											
SKW0861	300mm U-channel & 675mm Step Channel	169	0	10/10/11	25/03/12	01/06/11	15/11/11	-131d	SKW0831, SKW0841	KD0070												
E&M Works (PS1)																						
Submission & Delivery																						
E&M1001	Submission of Pumps	198	95	17/05/10 A	09/05/11	17/05/10 A	02/12/10	-189d	KD0020	ESM1011												
E&M1002	Submission of Gen-Set	198	95	17/05/10 A	09/05/11	17/05/10 A	02/12/10	-189d		ESM1012												
E&M1003	Submission of DeO System	198	95	17/05/10 A	09/05/11	17/05/10 A	02/12/10	-189d		ESM1013												
E&M1004	Submission of LV SB & MCC	180	95	17/05/10 A	09/05/11	17/05/10 A	02/12/10	-189d		ESM1014												

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Leader Civil Engineering Corp. Ltd.
 Contract No. DC/2009/13
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 3-month Rolling Programme (Jun 2011 - Aug 2011)

(Marked on 31 May 2011)

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



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

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Leader Civil Engineering Corp. Ltd.
 Contract No. DC/2009/13
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 3-month Rolling Programme (Jun 2011 - Aug 2011)

(Marked on 31 May 2011)

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

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

Start date	05/05/10		Early bar
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Leader Civil Engineering Corp. Ltd.
 Contract No. DC/2009/13
 Construction of Sewage Treatment Works at YSW & SKW
 3-month Rolling Programme (Jun 2011 - Aug 2011)

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

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

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

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

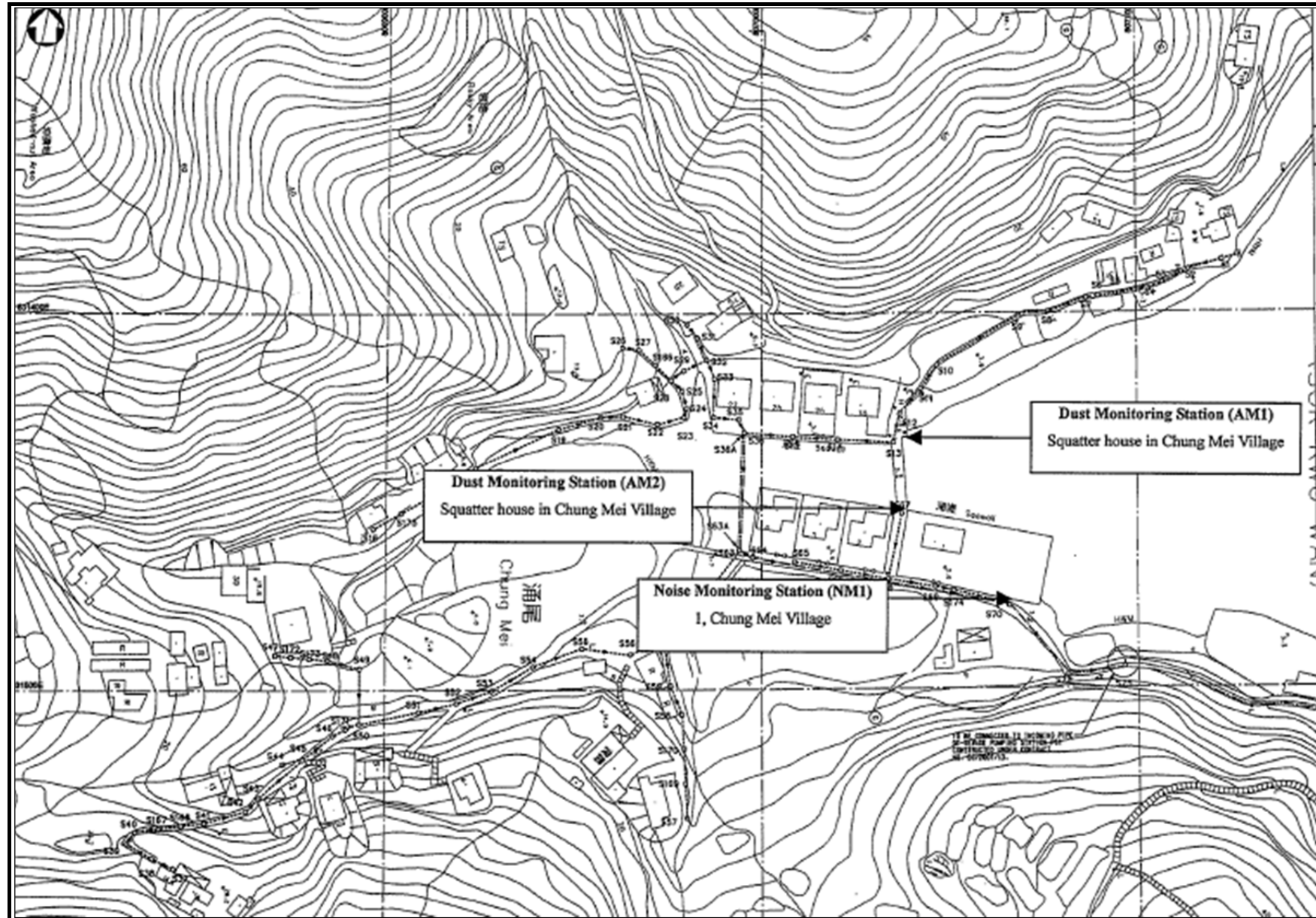
Leader Civil Engineering Corp. Ltd.
 Contract No. DC/2009/13
 Construction of Sewage Treatment Works at YSW & SKW
 3-month Rolling Programme (Jun 2011 - Aug 2011)

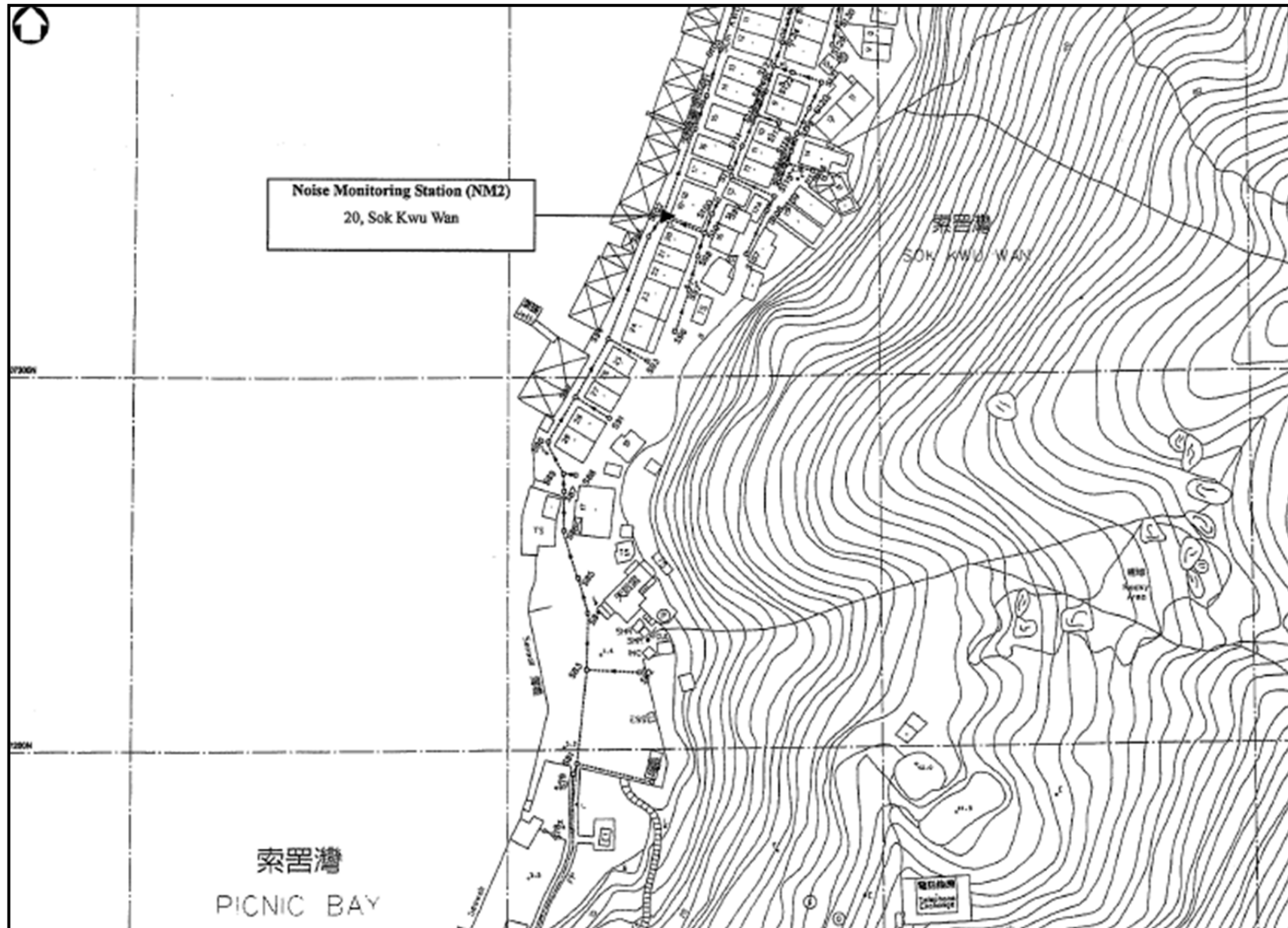
Outline (P1 fr) (Marked on 31 May 2011)

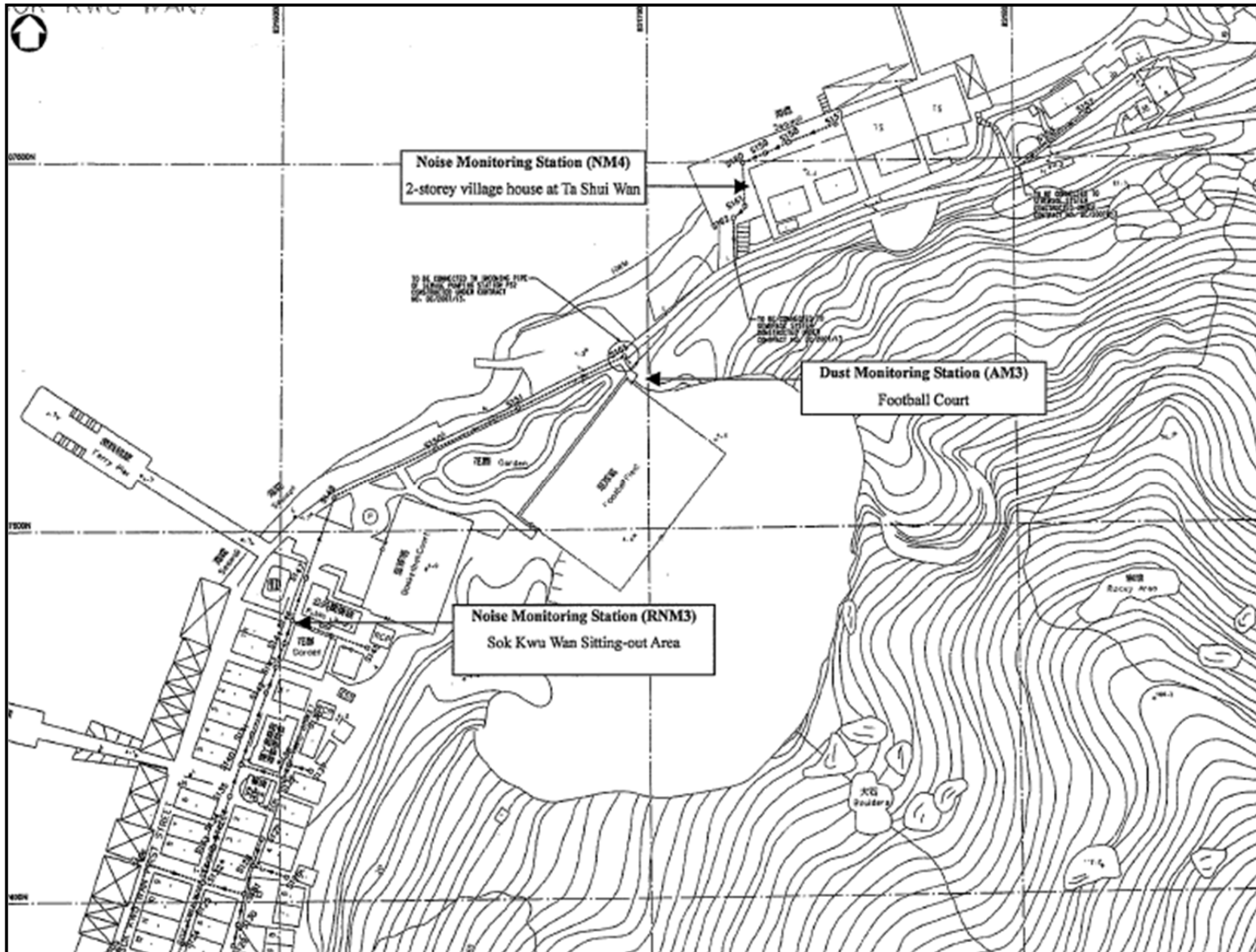
Date	Revision	Checked	Approved
31/05/11	Revision 0	SIL	VC

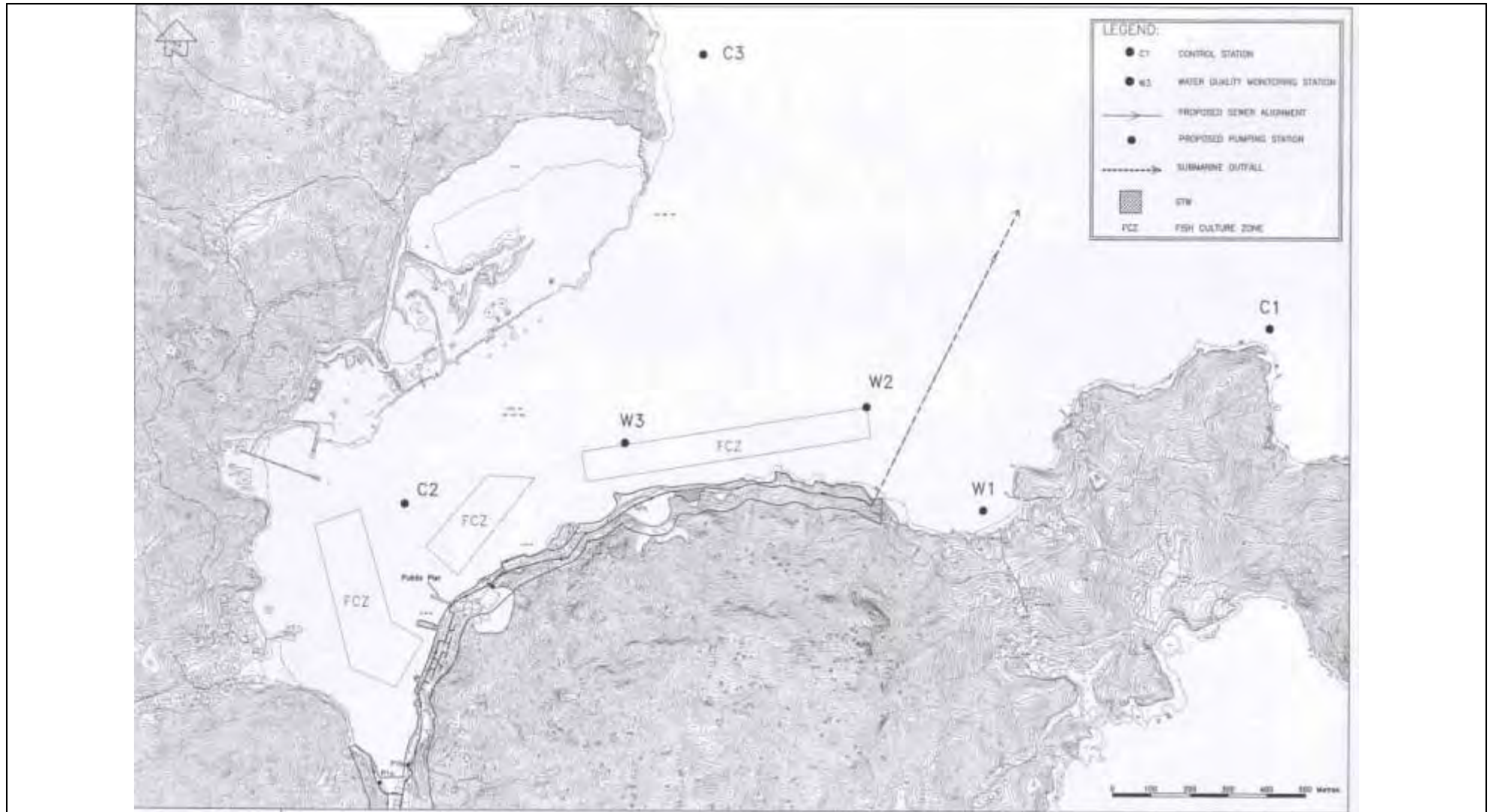
Appendix D

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









Appendix E

Monitoring Equipments Calibration Certificate



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

AIR POLLUTION MONITORING EQUIPMENT

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

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

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

DATA TABULATION

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

CALCULATIONS

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

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

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

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

For subsequent flow rate calculations:

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

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

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

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

CONDITIONS

Sea Level Pressure (hPa)	1007.6	Corrected Pressure (mm Hg)	755.7
Temperature (°C)	27.5	Temperature (K)	301

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	1.495	58	57.35	Slope = 33.7386 Intercept = 7.0266 Corr. coeff. = 0.9999
13	4	4	8	1.339	53	52.41	
10	2.9	2.9	5.8	1.142	46	45.49	
7	1.7	1.7	3.4	0.877	37	36.59	
5	0.9	0.9	1.8	0.641	29	28.68	

Calculations :

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

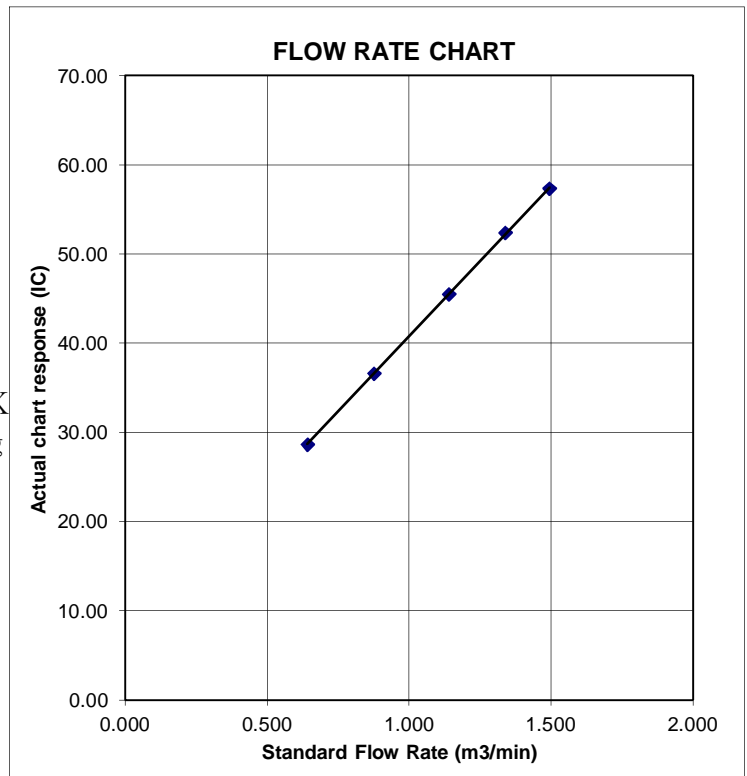
$$IC = I[\text{Sqrt}(Pa/Pstd)(Tstd/Ta)]$$

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

For subsequent calculation of sampler flow:

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

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



TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

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

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

CONDITIONS

Sea Level Pressure (hPa)	1007.6	Corrected Pressure (mm Hg)	755.7
Temperature (°C)	27.5	Temperature (K)	301

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	1.623	58	57.35	Slope = 27.8638 Intercept = 12.0521 Corr. coeff. = 0.9997
13	4.3	4.3	8.6	1.388	51	50.43	
10	3	3	6	1.161	45	44.50	
7	1.8	1.8	3.6	0.902	38	37.58	
5	0.9	0.9	1.8	0.641	30	29.67	

Calculations :

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

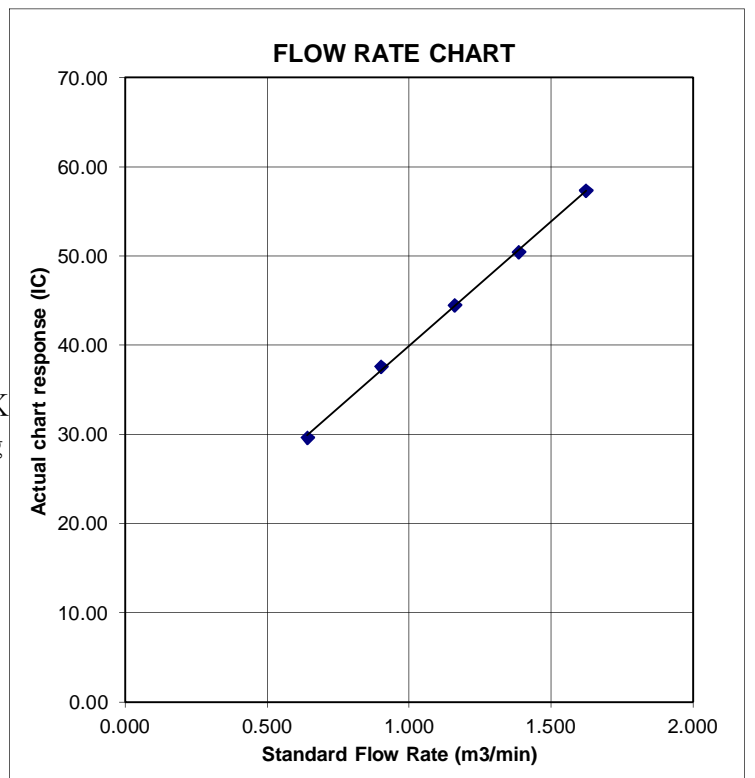
$$IC = I[\text{Sqrt}(Pa/Pstd)(Tstd/Ta)]$$

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

For subsequent calculation of sampler flow:

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

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



TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Football court
 Location ID : AM3

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

CONDITIONS

Sea Level Pressure (hPa)	1007.6	Corrected Pressure (mm Hg)	755.7
Temperature (°C)	27.5	Temperature (K)	301

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	5.3	5.3	10.6	1.539	51	50.43	Slope = 24.3244 Intercept = 12.7538 Corr. coeff. = 0.9998
13	4.1	4.1	8.2	1.355	46	45.49	
10	2.9	2.9	5.8	1.142	41	40.54	
7	1.5	1.5	3	0.825	33	32.63	
5	0.6	0.6	1.2	0.526	26	25.71	

Calculations :

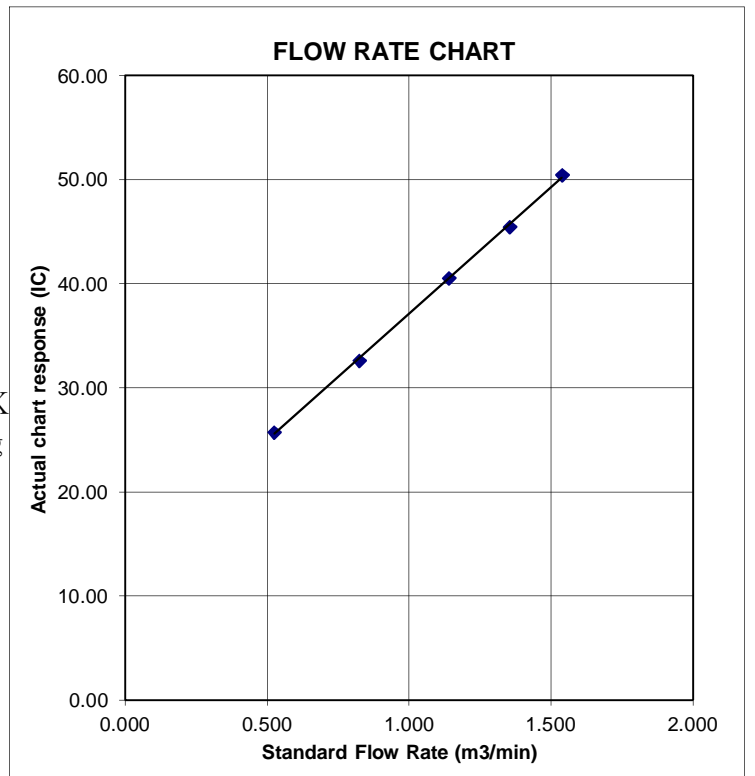
$Qstd = 1/m[\text{Sqrt}(H2O(Pa/Pstd)(Tstd/Ta))-b]$
 $IC = I[\text{Sqrt}(Pa/Pstd)(Tstd/Ta)]$

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

For subsequent calculation of sampler flow:

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

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





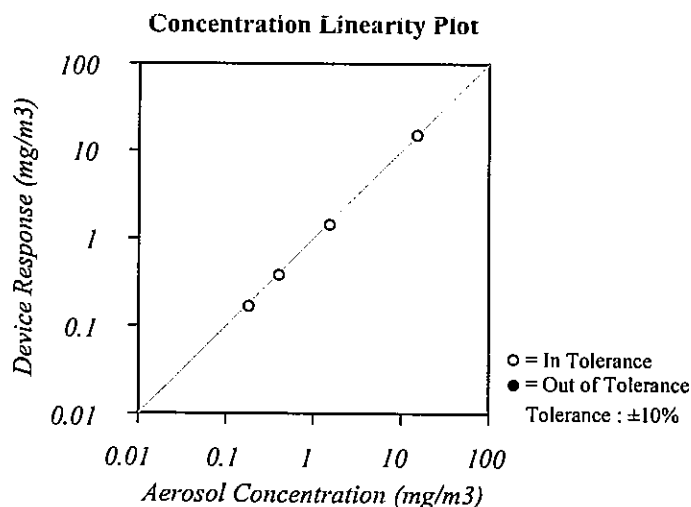
CERTIFICATE OF CALIBRATION AND TESTING

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

Environment Condition			Model	AM510
Temperature	74.8 (23.8)	°F (°C)	Serial Number	11008017
Relative Humidity	38	%RH		
Barometric Pressure	28.96 (980.7)	inHg (hPa)		

As Left
 As Found

In Tolerance
 Out of Tolerance



System ID: DT1101-01

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

Measurement Variable	System ID	Last Cal.	Cal. Due	Measurement Variable	System ID	Last Cal.	Cal. Due
Photometer	E003433	05-17-10	11-17-10	Flow and temperature	E003434	04-21-10	04-21-11
DC Voltage(Keithley)	E002859	01-05-10	01-05-11	Microbalance	E003403	01-07-10	01-07-11
Barometric Pressure	E003733	12-26-09	12-26-10	Temperature	E002873	02-23-10	02-23-11
Humidity	E002873	02-23-10	02-23-11	Pressure	E003440	08-26-09	08-26-10

Soua H.
 Calibrated

Final Function
 Check

August 6, 2010
 Date

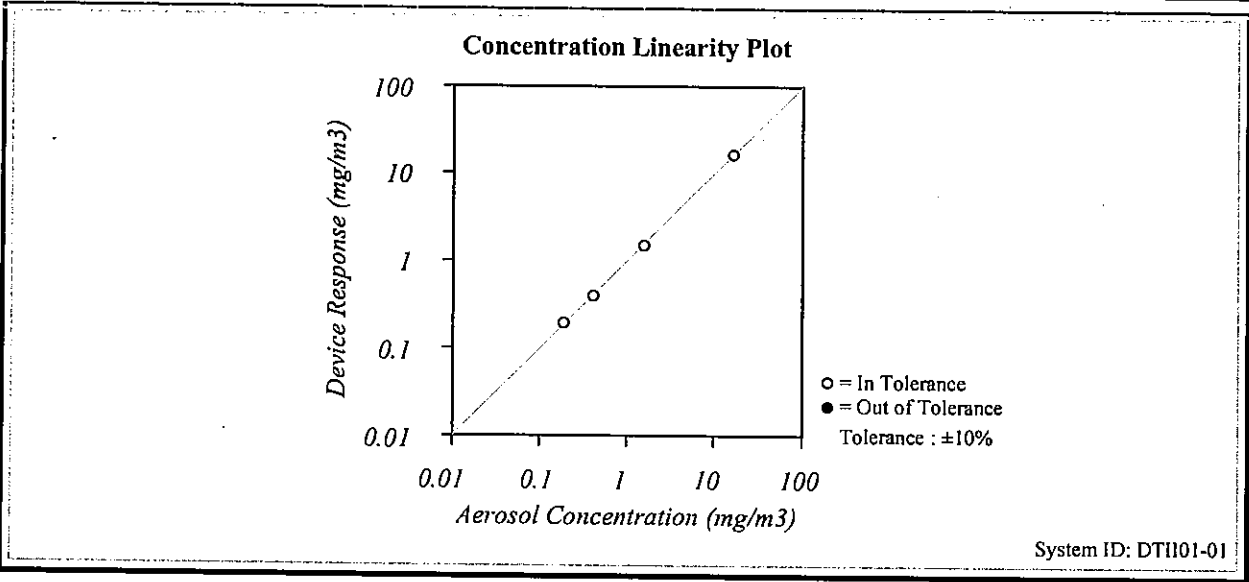


CERTIFICATE OF CALIBRATION AND TESTING

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

Environment Condition			Model	AM510
Temperature	73.2 (22.9)	°F (°C)	Serial Number	11008060
Relative Humidity	38	%RH		
Barometric Pressure	29.08 (984.8)	inHg (hPa)		

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



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

Measurement Variable	System ID	Last Cal.	Cal. Due	Measurement Variable	System ID	Last Cal.	Cal. Due
Photometer	E003433	05-17-10	11-17-10	Flow and temperature	E003434	04-21-10	04-21-11
DC Voltage(Keithley)	E002859	01-05-10	01-05-11	Microbalance	E003403	01-07-10	01-07-11
Barometric Pressure	E003733	12-26-09	12-26-10	Temperature	E002873	02-23-10	02-23-11
Humidity	E002873	02-23-10	02-23-11	Pressure	E003440	08-26-09	08-26-10


 Final Function Check
August 17, 2010
Calibrated
Date

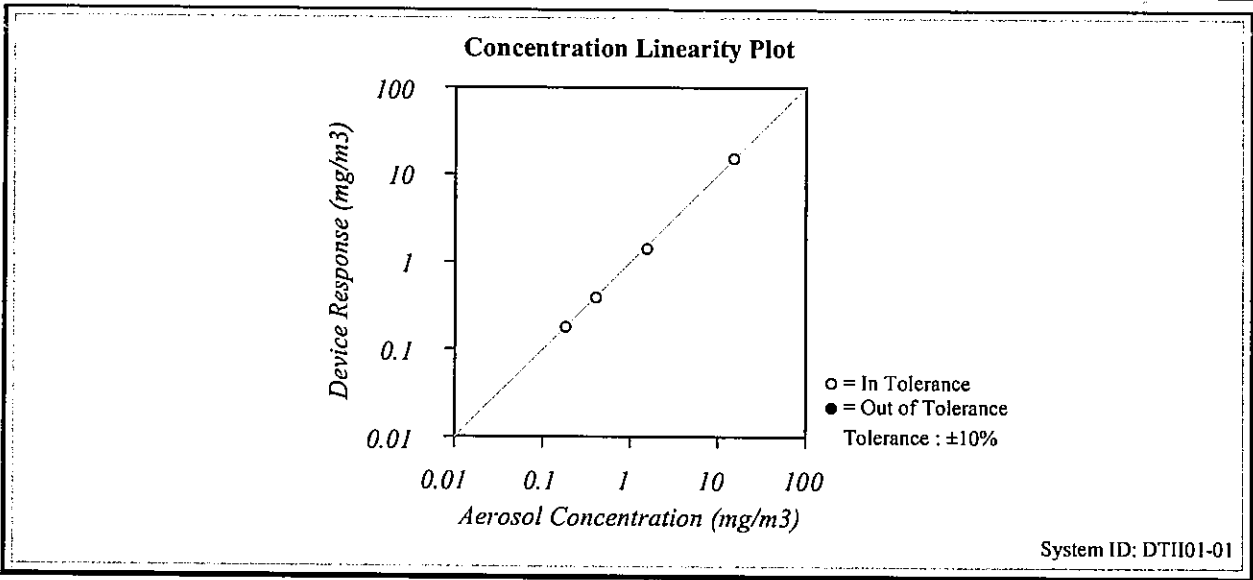


CERTIFICATE OF CALIBRATION AND TESTING

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

Environment Condition			Model	AM510
Temperature	74.8 (23.8)	°F (°C)		
Relative Humidity	38	%RH		
Barometric Pressure	28.96 (980.7)	inHg (hPa)		
			Serial Number	11008018

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



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

Measurement Variable	System ID	Last Cal.	Cal. Due	Measurement Variable	System ID	Last Cal.	Cal. Due
Photometer	E003433	05-17-10	11-17-10	Flow and temperature	E003434	04-21-10	04-21-11
DC Voltage(Keithley)	E002859	01-05-10	01-05-11	Microbalance	E003403	01-07-10	01-07-11
Barometric Pressure	E003733	12-26-09	12-26-10	Temperature	E002873	02-23-10	02-23-11
Humidity	E002873	02-23-10	02-23-11	Pressure	E003440	08-26-09	08-26-10

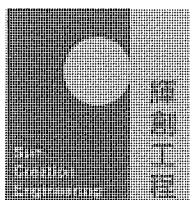
Soua H.

Calibrated

Final Function Check

August 6, 2010

Date



輝創工程有限公司

Sun Creation Engineering Limited Calibration and Testing Laboratory

Certificate No. : C112202

Certificate of Calibration

This is to certify that the equipment

Description : Integrating Sound Level Meter (EQ010)

Manufacturer : Bruel & Kjaer

Model No. : 2238

Serial No. : 2285721

*has been calibrated for the specific items and ranges.
The results are shown in the Calibration Report No. C112202.*

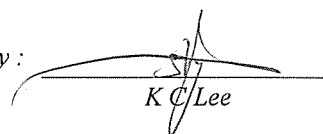
The equipment is supplied by

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

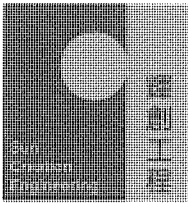
c/o 4/F, Tsing Shan Wan Exchange Building, I Hing On Lane, Tuen Mun, New Territories, Hong Kong

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. : 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

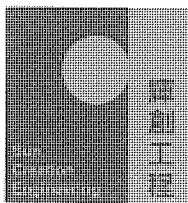
Date : 19 April 2011

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

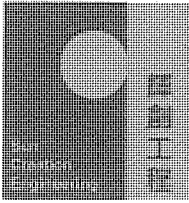
UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
50 - 130	L _{AFP}	A	F	94.00	1	94.0	± 0.7

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 _{AFP}	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 _{AFP}	A	F	94.00	1	94.0	Ref.
	L _{ASP}		S			94.0	± 0.1
	L _{AIP}		I			94.1	± 0.1

6.2.2 Tone Burst Signal (2 kHz)

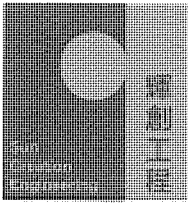
UUT Setting				Applied Value		UUT Reading (dB)	IEC 60651 Type 1 Spec. (dB)
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Burst Duration		
30 - 110	L _{AFP}	A	F	106.0	Continuous	106.0	Ref.
	L _{AFMax}				200 ms	105.0	-1.0 ± 1.0
	L _{ASP}	S	Continuous		106.0	Ref.	
	L _{ASMax}		500 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 _{AFP}	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 _{CFP}	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 _{Aeq}	A	10 sec.	4	1	1/10	110.0	100	99.9	± 0.5	
								1/10 ²	90	89.6	± 0.5
								1/10 ³	80	79.3	± 1.0
								1/10 ⁴	70	69.9	± 1.0
			60 sec.								
			5 min.								

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

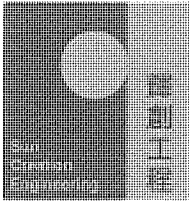
- Uncertainties of Applied Value :
 - 94 dB : 31.5 Hz - 125 Hz : ± 0.40 dB
 - 250 Hz - 500 Hz : ± 0.30 dB
 - 1 kHz : ± 0.20 dB
 - 2 kHz : ± 0.40 dB
 - 4 kHz : ± 0.50 dB
 - 8 kHz : ± 0.70 dB
 - 12.5 kHz : ± 1.20 dB
 - 104 dB : 1 kHz : ± 0.10 dB (Ref. 94 dB)
 - 114 dB : 1 kHz : ± 0.10 dB (Ref. 94 dB)
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

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

Note :

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

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



輝創工程有限公司

Sun Creation Engineering Limited Calibration and Testing Laboratory

Certificate No. : C112201

Certificate of Calibration

This is to certify that the equipment

Description : Acoustical Calibrator (EQ082)

Manufacturer : Bruel & Kjaer

Model No. : 4231

Serial No. : 2713428

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

The equipment is supplied by

Co. Name : Action-United Environmental Services and Consulting

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

Date of Issue : 19 April 2011

Certified by :

K C Lee

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

Calibration and Testing Laboratory of Sun Creation Engineering Limited

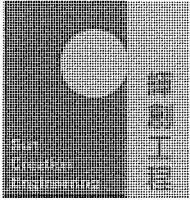
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong

Tel: 2927 2606

Fax: 2744 8986

E-mail: callab@suncreation.com

Website: www.suncreation.com



輝創工程有限公司

Sun Creation Engineering Limited Calibration and Testing Laboratory

Report No. : C112201

Calibration Report

ITEM TESTED

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

TEST CONDITIONS

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

TEST SPECIFICATIONS

Calibration check

DATE OF TEST : 18 April 2011

JOB NO. : IC11-0947

TEST RESULTS

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

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

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

Tested by :


L L Cheung

Date : 19 April 2011

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

Calibration and Testing Laboratory of Sun Creation Engineering Limited

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

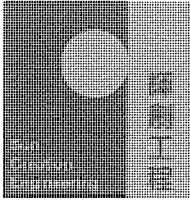
Tel: 2927 2606

Fax: 2744 8986

E-mail: callab@suncreation.com

Website: www.suncreation.com

Page 1 of 2



Calibration Report

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

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

4. Test procedure : MA100N.

5. Results :

- 5.1 Sound Level Accuracy

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

- 5.2 Frequency Accuracy

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

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

Note :

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



ALS Technichem (HK) Pty Ltd

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

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

WORK ORDER: HK1110511
LABORATORY: HONG KONG
DATE RECEIVED: 09/05/2011
DATE OF ISSUE: 13/05/2011

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 / 02K0788AA
Equipment No.: --
Date of Calibration: 11 May, 2011

NOTES

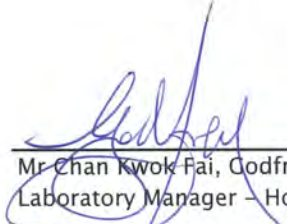
This is the Final Report and supersedes any preliminary report with this batch number.
Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

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


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

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Page 1 of 3

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

Work Order: HK1110511
Date of Issue: 13/05/2011
Client: ACTION UNITED ENVIRO SERVICES



Description: YSI Sonde
Brand Name: YSI
Model No.: YSI 6820 / 650MDS
Serial No.: 02J0912 / 02K0788AA
Equipment No.: --
Date of Calibration: 11 May, 2011

Date of next Calibration: 11 August, 2011

Parameters:

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

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
4.18	4.13	-0.05
5.70	5.74	0.04
8.36	8.43	0.07
Tolerance Limit (±mg/L)		0.20

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

Expected Reading (pH Unit)	Displayed Reading (pH Unit)	Tolerance (pH unit)
4.00	4.09	0.09
7.00	6.85	-0.15
10.00	10.11	0.11
Tolerance Limit (±unit)		0.20

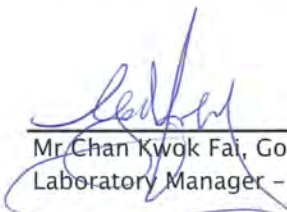
Salinity Method Ref: APHA (21st edition), 2520B

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)
0.0	0.00	--
10.0	10.19	1.9
20.0	20.81	4.0
30.0	31.09	3.6
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)
10.5	12.0	1.5
25.5	25.3	-0.2
46.0	44.2	-1.8
Tolerance Limit (°C)		2.0


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

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

Work Order: HK1110511
Date of Issue: 13/05/2011
Client: ACTION UNITED ENVIRO SERVICES



Description: YSI Sonde
Brand Name: YSI
Model No.: YSI 6820 / 650MDS
Serial No.: 02J0912 / 02K0788AA
Equipment No.: --
Date of Calibration: 11 May, 2011

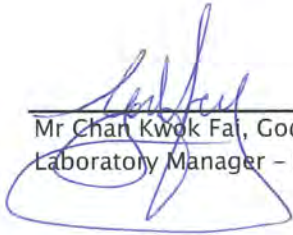
Date of next Calibration: 11 August, 2011

Parameters:

Turbidity

Method Ref: APHA 21st Ed. 2130B

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)
0	0.0	--
4	3.8	-5.0
10	10.5	5.0
20	21.4	7.0
50	47.7	-4.6
100	96.4	-3.6
	Tolerance Limit ($\pm\%$)	10.0


Mr Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong



Hong Kong Accreditation Service
香港認可處

Certificate of Accreditation
認可證書

This is to certify that
特此證明

ALS TECHNICHEM (HK) PTY LIMITED

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

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

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

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

Environmental Testing
環境測試

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

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

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

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

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

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



Appendix F

Event/Action Plan

Air Quality

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

Construction Noise

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

Water Quality

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

Appendix G

Monitoring Data Sheet

24-hour TSP Monitoring Results - AM1

Date of Calibration: 30-Jun-11 Slope = 33.7386
 Next Calibration Date: 30-Aug-11 Intercept = 7.0266

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 ³)
		INITIAL	FINAL	ACTUAL (min)	MIN	MAX	AVG		AVG PRESS (hPa)	FLOW RATE (m3/min)	AIR VOLUME (std m3)				
4-Jul-11	23921	10715.35	10739.04	1421.40	28	31	29.5	29.7	1009.1	0.66	935	2.9622	2.9968	0.0346	37
9-Jul-11	23891	10739.04	10763.55	1470.60	30	34	32.0	29.8	1003.6	0.73	1071	2.7656	2.7919	0.0263	25
15-Jul-11	23944	10763.55	10787.46	1434.60	30	35	32.5	26.5	1002.2	0.75	1072	2.9688	2.9824	0.0136	13
21-Jul-11	23928	10787.46	10811.28	1429.20	29	34	31.5	28.6	1004.6	0.72	1023	2.9975	3.0325	0.0350	34
27-Jul-11	23972	10811.28	10834.75	1408.20	30	33	31.5	30.2	1007.1	0.71	1006	2.9952	3.0305	0.0353	35

24-hour TSP Monitoring Results - AM2

Date of Calibration: 30-Jun-11 Slope = 27.8638
 Next Calibration Date: 30-Aug-11 Intercept = 12.0521

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 ³)
		INITIAL	FINAL	ACTUAL (min)	MIN	MAX	AVG		AVG PRESS (hPa)	FLOW RATE (m3/min)	AIR VOLUME (std m3)				
4-Jul-11	23923	9246.5	9271.48	1498.80	28	31	29.5	29.7	1009.1	0.62	923	2.9725	3.0133	0.0408	44
9-Jul-11	power failure														
15-Jul-11	23943	9271.48	9295.28	1428.00	32	34	33.0	26.5	1002.2	0.74	1060	2.9855	3.0048	0.0193	18
21-Jul-11	23926	9295.28	9319.88	1476.00	28	32	30.0	28.6	1004.6	0.63	934	2.9921	3.0064	0.0143	15
27-Jul-11	23922	9319.58	9343.78	1452.00	30	33	31.5	30.2	1007.1	0.68	994	2.9875	3.0155	0.0280	28

24-hour TSP Monitoring Results - AM3

Date of Calibration: 30-Jun-11 Slope = 24.3244
 Next Calibration Date: 30-Aug-11 Intercept = 12.7538

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 ³)
		INITIAL	FINAL	ACTUAL (min)	MIN	MAX	AVG		AVG PRESS (hPa)	FLOW RATE (m3/min)	AIR VOLUME (std m3)				
4-Jul-11	23893	4781.23	4805.55	1459.20	29	33	31.0	29.7	1009.1	0.74	1076	2.7437	2.7657	0.0220	20
9-Jul-11	23927	4805.55	4829.11	1413.60	30	34	32.0	29.8	1003.6	0.77	1095	2.9789	3.0376	0.0587	54
15-Jul-11	23945	4829.11	4853.05	1436.40	30	35	32.5	26.5	1002.2	0.80	1151	2.9667	2.9999	0.0332	29
21-Jul-11	23908	4853.05	4876.48	1405.80	31	34	32.5	28.6	1004.6	0.80	1122	3.0314	3.0971	0.0657	59
27-Jul-11	23906	4876.48	4900.38	1434.00	31	35	33.0	30.2	1007.1	0.82	1171	3.0287	3.0823	0.0536	46

Contract No. DC/2009/13

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



Sok Kwu Wan

Date 22-Jul-11

Date / Time	Location	Tide*	Co-ordinates		Water Depth m	Sampling Depth m	Temp °C	DO Conc mg/L	DO Saturation %	Turbidity NTU	Salinity ppt	pH unit	SS mg/l
			East	North									
07/22/11 16:24:26	W1	ME	832948	807745	2.1	1.073	25.69	5.71	82.4	4.1	28.71	8.20	4.6
07/22/11 16:24:33						1.015	25.71	6.66	87.3	4.1	28.73	8.18	
07/22/11 16:10:33	W2	ME	832615	807976	13.2	1.070	25.61	8.27	126.1	3.5	28.60	8.20	3.6
07/22/11 16:10:39						1.062	25.45	8.87	127.3	3.4	28.67	8.20	
07/22/11 16:11:13						6.430	24.17	3.72	52.5	4.5	30.01	8.18	4.6
07/22/11 16:11:21						6.620	24.18	4.14	58.4	4.3	29.91	8.18	
07/22/11 16:11:51						12.083	23.19	3.53	49.53	4.5	31.13	8.12	3.7
07/22/11 16:11:57						12.228	23.18	3.88	52.11	4.3	31.44	8.10	
07/22/11 15:58:27	W3	ME	832040	807912	12.4	1.076	26.19	5.59	78.2	5.0	28.31	8.19	4.2
07/22/11 15:58:35						1.030	25.99	6.86	96.2	5.1	28.46	8.19	
07/22/11 15:59:10						6.175	23.78	3.23	45.6	5.3	30.89	8.13	1.3
07/22/11 15:59:18						6.250	23.77	3.72	48.3	5.5	30.41	8.14	
07/22/11 15:59:46						11.209	22.85	3.92	55.0	6.1	32.15	8.07	8.1
07/22/11 15:59:54						11.244	22.87	3.54	49.6	6.3	31.68	8.08	
07/22/11 16:35:34	C1	ME	833721	808163	13	0.994	25.18	7.59	108.5	5.3	28.82	8.24	3.9
07/22/11 16:35:43						0.836	25.21	7.73	110.6	5.3	28.85	8.22	
07/22/11 16:37:11						6.522	24.41	6.28	87.9	5.5	29.85	8.15	4.7
07/22/11 16:37:16						6.439	24.19	6.17	86.6	6.8	30.31	8.15	
07/22/11 16:37:47						12.087	23.16	3.36	47.8	6.6	31.31	8.09	6.4
07/22/11 16:38:04						11.998	23.17	3.11	44.2	6.7	31.72	8.11	
07/22/11 15:46:36	C2	ME	831449	807732	10.8	1.019	26.07	7.34	106.2	6.0	28.43	8.22	3.9
07/22/11 15:46:41						0.938	26.08	7.77	109.9	5.1	28.06	8.21	
07/22/11 15:47:35						5.943	23.98	3.95	57.2	5.5	30.18	8.11	4.7
07/22/11 15:47:42						6.054	23.87	4.52	65.4	5.6	30.39	8.11	
07/22/11 15:48:28						9.908	23.47	3.96	52.6	8.6	31.05	8.07	6.4
07/22/11 15:48:34						9.850	23.51	3.59	48.6	9.4	24.46	8.06	
07/22/11 16:56:25	C3	ME	832218	808879	10.4	1.010	25.88	8.52	121.5	5.2	28.17	8.25	9.8
07/22/11 16:56:30						1.078	25.84	8.13	117.3	4.4	28.36	8.25	
07/22/11 16:57:51						5.195	24.70	7.62	108.3	5.5	29.21	8.16	1.9
07/22/11 16:57:59						5.292	24.69	6.97	99.0	5.4	29.24	8.16	
07/22/11 16:58:21						9.671	23.18	4.66	65.5	6.7	31.80	8.12	2.3
07/22/11 16:58:33						9.550	23.17	4.41	62.0	6.8	31.81	8.12	
07/22/11 10:12:47	W1	MF	832955	807713	2.1	1.032	25.54	6.63	94.9	4.0	27.71	7.95	4.1
07/22/11 10:12:58						1.032	25.52	6.61	94.6	3.6	27.92	7.94	
07/22/11 10:51:08	W2	MF	832626	807974	12.3	1.082	25.11	8.36	118.7	3.8	28.14	8.00	6.6
07/22/11 10:51:20						1.113	25.02	8.27	117.2	3.9	28.26	8.01	
07/22/11 10:51:53						6.216	24.65	5.62	80.7	4.8	21.13	7.99	3.3
07/22/11 10:53:01						6.174	24.64	4.92	70.5	4.8	22.44	8.01	
07/22/11 10:54:05						11.399	22.50	3.54	48.0	5.2	32.21	7.99	5.7
07/22/11 10:54:28						11.379	22.48	4.48	61.2	5.9	32.27	7.99	
07/22/11 11:22:18	W3	MF	832055	807902	12.3	1.011	25.39	5.77	82.4	5.0	27.88	8.06	2
07/22/11 11:22:26						1.041	25.40	5.34	76.3	5.2	28.15	8.07	
07/22/11 11:22:42						6.153	25.05	6.60	92.1	5.3	29.05	8.07	2.8
07/22/11 11:22:55						6.155	24.97	5.10	71.1	5.6	29.52	8.07	
07/22/11 11:23:17						11.359	22.64	4.89	68.1	7.5	32.43	8.07	3
07/22/11 11:23:32						11.318	22.61	4.03	56.1	7.1	32.28	8.06	
07/22/11 10:26:43	C1	MF	832724	808170	12.5	1.054	25.34	8.77	107.8	5.4	27.36	7.83	4
07/22/11 10:26:50						0.957	25.49	8.20	105.9	5.2	27.85	7.82	
07/22/11 10:27:16						6.320	24.01	4.49	64.2	5.4	30.92	7.86	4.2
07/22/11 10:27:27						6.352	24.01	4.33	62.0	5.4	30.95	7.87	
07/22/11 10:27:51						11.572	22.92	3.90	54.7	6.4	32.26	7.83	4
07/22/11 10:28:20						11.468	22.88	3.34	46.7	6.1	32.20	7.83	
07/22/11 11:34:51	C2	MF	831471	807731	10.2	0.971	25.51	7.85	112.2	5.1	28.53	8.10	6
07/22/11 11:35:06						0.998	25.49	7.82	111.1	6.5	28.29	8.10	
07/22/11 11:35:50						4.972	25.02	6.26	89.3	5.4	28.85	8.11	2.3
07/22/11 11:35:57						5.053	25.02	5.27	75.3	5.2	29.19	8.11	
07/22/11 11:36:34						9.161	23.48	4.27	60.2	5.1	31.37	8.06	3.7
07/22/11 11:37:22						9.117	23.27	4.27	60.1	5.6	31.60	8.05	
07/22/11 11:03:54	C3	MF	832201	808884	11.9	1.040	25.43	6.48	91.9	5.1	28.14	8.05	3.8
07/22/11 11:04:02						1.031	25.61	5.98	84.8	5.1	27.94	8.04	
07/22/11 11:05:14						6.078	24.40	5.10	72.6	5.6	29.94	8.05	3.7
07/22/11 11:05:30						6.071	24.39	4.55	62.5	5.9	30.21	8.04	
07/22/11 11:06:02						10.940	23.33	3.58	50.4	8.7	31.61	8.03	5.7
07/22/11 11:06:27						10.929	23.28	3.81	54.0	8.1	31.90	8.03	

MF- Mid Flood Tide

ME- Mid Ebb tide

Contract No. DC/2009/13

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



Sok Kwu Wan

Date 26-Jul-11

Date / Time	Location	Tide*	Co-ordinates		Water Depth m	Sampling Depth m	Temp °C	DO Conc mg/L	DO Saturation %	Turbidity NTU	Salinity ppt	pH unit	SS mg/l
			East	North									
07/26/11 11:22:34	W1	ME	832940	807721	2	1.009	27.38	7.28	112.1	3.6	26.87	8.45	2.8
07/26/11 11:22:42						0.936	27.50	7.78	114.5	3.8	26.82	8.45	
07/26/11 11:07:43	W2	ME	832633	807969	12.2	0.988	27.47	7.41	105.0	3.2	20.38	8.47	1.9
07/26/11 11:07:54						1.049	27.53	7.03	59.1	3.2	26.64	8.47	
07/26/11 11:08:46						6.018	25.89	5.93	85.6	4.5	28.41	8.23	3.3
07/26/11 11:09:08						6.092	25.95	6.50	93.9	4.5	28.35	8.26	
07/26/11 11:09:37						11.198	22.25	3.62	50.4	5.8	32.69	7.89	5
07/26/11 11:09:49						11.186	22.25	3.63	50.4	5.8	32.52	7.86	
07/26/11 10:27:54	W3	ME	832066	807912	12.1	0.931	27.25	8.29	162.0	5.4	26.88	8.44	5.7
07/26/11 10:28:08						0.919	27.21	7.86	115.4	5.5	27.20	8.43	
07/26/11 10:29:40						5.903	26.54	5.74	83.6	6.2	28.11	8.28	3.6
07/26/11 10:29:47						5.959	26.57	4.87	71.0	6.4	28.08	8.31	
07/26/11 10:30:27						10.988	22.41	4.01	55.7	7.1	32.22	7.88	3.6
07/26/11 10:30:35						11.037	22.42	4.28	43.3	7.0	32.21	7.88	
07/26/11 11:53:51	C1	ME	833711	808194	13.1	0.998	27.60	7.59	112.0	3.9	27.05	8.33	4.7
07/26/11 11:54:07						1.068	27.47	7.01	206.4	5.3	26.99	8.28	
07/26/11 11:55:43						6.698	24.14	4.02	56.2	5.4	27.81	7.73	4.8
07/26/11 11:56:48						6.701	24.87	3.98	56.9	5.0	29.75	7.81	
07/26/11 11:58:14						12.173	23.37	3.29	41.1	5.2	31.90	7.66	2.6
07/26/11 11:58:28						12.252	23.38	3.28	46.2	5.4	31.52	7.67	
07/26/11 10:12:01	C2	ME	831477	807729	10.7	1.079	27.23	7.57	178.0	4.7	27.52	8.30	4.9
07/26/11 10:12:08						1.079	27.25	7.48	175.9	4.9	27.50	8.30	
07/26/11 10:12:42						6.181	26.50	5.36	156.3	4.8	28.49	8.19	4.7
07/26/11 10:12:53						6.231	26.51	4.96	144.8	4.7	28.30	8.19	
07/26/11 10:13:59						9.765	23.69	3.24	24.3	8.0	31.22	7.79	1.8
07/26/11 10:14:19						9.751	24.20	3.83	48.6	8.2	31.20	7.81	
07/26/11 11:33:06	C3	ME	832233	808876	10.4	1.079	27.32	8.95	131.4	3.5	27.03	8.45	2
07/26/11 11:33:16						0.995	27.32	9.09	152.4	3.5	26.91	8.44	
07/26/11 11:33:52						6.540	24.39	4.14	59.0	5.9	30.53	8.13	3.7
07/26/11 11:34:09						6.528	24.33	4.35	61.8	6.0	30.38	8.09	
07/26/11 11:34:57						12.013	23.70	4.29	60.6	8.1	31.21	8.00	2.7
07/26/11 11:35:09						11.936	23.65	4.15	58.6	7.6	31.22	7.99	
07/26/11 15:50:44	W1	MF	832981	807718	2	0.936	27.21	7.36	96.3	2.5	27.87	8.56	4.2
07/26/11 15:51:05						0.940	27.12	7.46	134.7	2.8	27.46	8.57	
07/26/11 15:22:17	W2	MF	832633	807981	12.3	1.087	27.90	7.44	88.5	4.1	27.48	8.57	3.5
07/26/11 15:22:38						1.066	27.91	7.62	100.7	4.1	27.49	8.57	
07/26/11 15:24:03						6.248	23.79	5.42	76.6	4.2	31.13	8.15	6.9
07/26/11 15:24:20						6.282	23.79	5.56	78.6	4.5	30.96	8.15	
07/26/11 15:25:03						11.299	22.09	4.07	56.5	5.0	32.82	8.02	2
07/26/11 15:25:21						11.270	22.09	4.50	62.2	5.1	32.39	8.01	
07/26/11 15:05:53	W3	MF	832049	807875	11.8	0.969	27.61	8.64	145.3	5.1	26.61	8.53	4.3
07/26/11 15:06:00						0.956	27.64	8.06	136.4	4.9	27.50	8.52	
07/26/11 15:07:12						6.008	23.74	5.18	73.4	5.5	31.48	8.09	3.7
07/26/11 15:07:20						6.090	23.73	4.92	69.6	5.5	31.48	8.09	
07/26/11 15:07:44						10.815	22.69	3.85	61.4	7.1	32.46	7.99	2.8
07/26/11 15:08:05						10.915	22.45	3.66	51.1	6.8	32.74	7.96	
07/26/11 16:40:10	C1	MF	833711	808155	13.1	1.024	27.99	7.72	114.7	4.9	27.18	8.57	2.3
07/26/11 16:40:26						0.957	28.00	7.30	108.2	4.8	26.83	8.57	
07/26/11 16:42:01						6.571	24.33	5.90	83.9	6.9	30.48	8.20	5.2
07/26/11 16:42:14						6.515	24.35	5.57	79.2	5.8	30.49	8.20	
07/26/11 16:42:57						12.065	22.54	3.77	52.5	8.1	32.46	8.01	1.3
07/26/11 16:43:28						12.004	22.93	4.00	56.0	7.5	31.95	8.03	
07/26/11 14:52:03	C2	MF	831479	807758	10.1	1.009	27.77	8.79	192.2	4.9	28.55	8.50	3.8
07/26/11 14:52:12						1.024	27.70	8.99	195.8	4.8	29.10	8.50	
07/26/11 14:53:21						5.086	24.04	5.30	75.3	5.1	31.02	8.01	5
07/26/11 14:53:29						5.062	24.13	5.67	80.5	5.4	30.81	8.02	
07/26/11 14:54:01						8.992	23.01	3.51	56.2	8.7	32.00	7.88	3.4
07/26/11 14:54:12						8.995	22.91	3.42	34.9	8.3	32.34	7.89	
07/26/11 16:08:53	C3	MF	832241	808884	13.1	1.048	28.35	7.04	83.9	5.6	26.71	8.56	3.7
07/26/11 16:09:08						1.026	28.33	7.62	130.0	5.0	26.90	8.57	
07/26/11 16:17:47						6.540	23.85	4.64	87.5	5.4	31.06	8.17	4.3
07/26/11 16:17:58						6.585	23.90	4.57	74.0	5.6	31.13	8.19	
07/26/11 16:18:58						11.950	22.17	3.16	58.5	7.9	32.80	8.05	3
07/26/11 16:19:09						12.099	22.17	3.23	59.8	8.7	32.53	8.04	

MF- Mid Flood Tide

ME- Mid Ebb tide

Contract No. DC/2009/13

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



Sok Kwu Wan

Date 28-Jul-11

Date / Time	Location	Tide*	Co-ordinates		Water Depth m	Sampling Depth m	Temp °C	DO Conc mg/L	DO Saturation %	Turbidity NTU	Salinity ppt	pH unit	SS mg/l
			East	North									
07/28/11 11:06:47	W1	ME	832956	807739	2.2	1.101	26.70	6.47	102.6	4.2	29.88	8.55	4.7
07/28/11 11:06:50						1.112	26.69	6.59	69.1	4.1	29.85	8.55	
07/28/11 10:49:45	W2	ME	832602	807993	11.2	1.145	26.52	7.16	107.0	3.1	28.55	8.57	2.6
07/28/11 10:49:58						1.135	26.49	7.13	105.7	3.0	28.69	8.57	
07/28/11 10:50:19						5.707	24.88	4.66	69.6	4.5	30.68	8.60	1.2
07/28/11 10:50:26						5.708	24.78	4.65	69.6	4.5	30.68	8.60	
07/28/11 10:50:55						10.544	23.55	3.75	56.4	5.1	31.84	8.60	2.1
07/28/11 10:51:02						10.338	23.64	3.69	55.4	5.0	31.82	8.60	
07/28/11 10:37:55	W3	ME	832036	807911	10.8	0.857	27.69	6.49	98.0	3.6	28.26	8.73	1.4
07/28/11 10:38:06						0.986	27.53	6.33	95.4	3.6	28.20	8.71	
07/28/11 10:38:57						4.957	24.45	4.83	73.3	4.1	30.51	8.58	2.6
07/28/11 10:39:08						4.951	24.45	4.70	71.4	4.0	30.60	8.56	
07/28/11 10:39:49						9.844	23.47	3.83	58.2	5.0	32.80	8.48	1.8
07/28/11 10:39:56						9.860	23.37	3.78	57.4	5.5	32.80	8.47	
07/28/11 11:17:09	C1	ME	833722	808183	11.8	1.137	27.83	6.60	100.0	5.1	29.11	8.29	<0.5
07/28/11 11:17:19						1.195	27.97	7.01	106.4	4.2	29.26	8.22	
07/28/11 11:19:10						5.855	25.28	5.78	88.2	4.2	30.01	8.21	1.4
07/28/11 11:19:18						5.654	25.43	5.18	79.3	4.4	30.10	8.22	
07/28/11 11:20:55						10.820	23.36	4.84	73.0	6.6	31.62	8.20	2.5
07/28/11 11:21:04						10.829	23.35	4.08	61.4	6.5	31.63	8.20	
07/28/11 10:28:47	C2	ME	831457	807756	10.3	1.072	26.94	7.06	105.4	3.8	29.36	8.32	0.5
07/28/11 10:28:53						1.087	26.92	7.28	108.6	3.8	29.32	8.38	
07/28/11 10:29:43						5.756	25.19	4.62	69.7	3.8	30.31	8.48	0.8
07/28/11 10:29:58						5.485	25.29	4.58	69.0	4.1	30.22	8.49	
07/28/11 10:30:45						9.206	23.42	4.27	64.8	5.3	32.62	8.53	3.6
07/28/11 10:30:56						9.207	23.42	4.07	61.7	5.3	32.62	8.53	
07/28/11 11:39:11	C3	ME	832230	808850	9.9	1.097	27.04	7.01	105.6	4.0	29.35	8.59	4
07/28/11 11:39:19						1.087	27.04	6.96	104.8	4.0	29.35	8.69	
07/28/11 11:40:32						4.958	26.16	4.91	74.2	3.7	30.83	8.68	2.9
07/28/11 11:40:41						4.948	26.15	4.82	72.9	3.6	30.81	8.69	
07/28/11 11:41:34						8.847	25.15	3.78	57.2	8.2	33.10	8.64	2
07/28/11 11:41:39						8.705	25.14	3.65	55.4	7.1	33.09	8.64	
07/28/11 17:20:18	W1	MF	832974	807713	2.1	1.123	27.05	6.21	93.6	3.5	29.40	8.78	3.8
07/28/11 17:20:22						1.135	27.06	6.22	93.7	3.2	29.40	8.77	
07/28/11 17:06:10	W2	MF	832611	807970	11.3	1.058	27.05	7.03	105.9	3.6	28.30	8.79	4.1
07/28/11 17:06:15						1.071	27.05	6.93	104.4	3.8	28.40	8.78	
07/28/11 17:06:42						5.633	25.24	5.18	78.2	4.5	30.44	8.78	5.4
07/28/11 17:06:50						5.620	25.20	5.16	77.9	4.7	30.44	8.78	
07/28/11 17:07:14						10.039	23.71	3.83	57.7	4.8	31.58	8.66	3.5
07/28/11 17:07:19						10.153	23.62	3.65	55.1	4.8	31.96	8.66	
07/28/11 16:57:16	W3	MF	832033	807890	9.6	1.051	27.54	7.92	120.0	3.4	28.29	8.27	2
07/28/11 16:57:23						1.034	27.55	7.82	118.6	3.4	28.24	8.67	
07/28/11 16:58:08						4.868	26.09	4.38	59.8	3.7	30.46	8.68	2.7
07/28/11 16:58:12						4.874	26.08	3.97	59.9	3.7	30.44	8.69	
07/28/11 16:58:32						8.306	24.15	3.84	58.0	3.5	32.80	8.67	2.5
07/28/11 16:58:40						8.616	24.15	4.24	64.2	3.2	32.75	8.65	
07/28/11 17:29:22	C1	MF	832717	808182	12.2	1.114	27.89	7.11	107.2	3.4	29.49	8.62	2
07/28/11 17:29:28						1.118	27.87	6.82	102.6	3.4	49.27	8.62	
07/28/11 17:29:58						6.153	24.70	4.36	65.7	4.5	30.99	8.68	3.5
07/28/11 17:30:05						6.186	24.70	4.03	60.8	4.6	30.75	8.67	
07/28/11 17:30:36						11.268	22.74	3.37	49.2	3.8	31.66	8.67	2.6
07/28/11 17:30:41						11.159	22.85	3.24	48.9	4.1	31.65	8.67	
07/28/11 16:50:18	C2	MF	831452	807759	10.6	1.029	27.52	6.39	96.9	4.4	29.19	8.24	0.5
07/28/11 16:50:22						1.040	27.52	6.38	96.6	4.2	29.20	8.44	
07/28/11 16:50:48						5.236	25.60	4.50	68.4	4.6	30.00	8.57	2.6
07/28/11 16:50:55						5.275	25.30	4.45	67.5	4.5	30.20	8.58	
07/28/11 16:51:10						9.676	24.67	3.35	51.0	4.6	32.42	8.58	1
07/28/11 16:51:13						9.517	24.67	3.33	50.7	5.0	32.43	8.58	
07/28/11 17:42:44	C3	MF	832214	808854	11.4	1.076	27.27	6.97	105.2	3.5	29.12	8.54	1.9
07/28/11 17:42:50						1.081	27.27	6.85	103.4	5.6	29.12	8.55	
07/28/11 17:43:10						5.784	25.25	4.78	72.0	4.4	30.06	8.54	2
07/28/11 17:43:17						5.764	25.28	4.72	71.2	4.4	30.07	8.54	
07/28/11 17:44:18						10.438	24.10	3.96	59.6	6.3	31.96	8.57	2.1
07/28/11 17:44:21						10.425	24.10	3.93	59.1	6.3	31.96	8.57	

MF- Mid Flood Tide
ME- Mid Ebb tide

Contract No. DC/2009/13

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



Sok Kwu Wan

Date 30-Jul-11

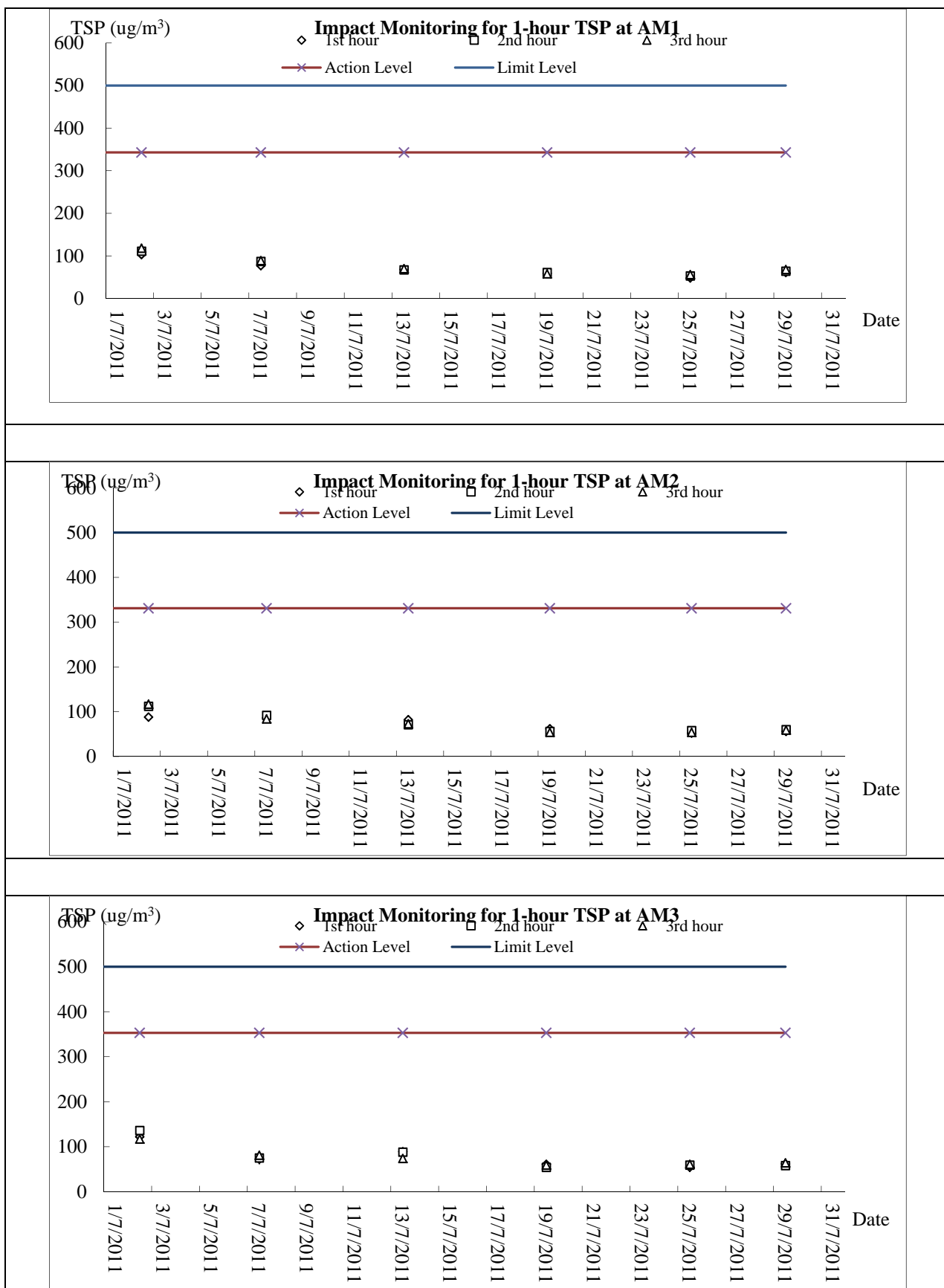
Date / Time	Location	Tide*	Co-ordinates		Water Depth m	Sampling Depth m	Temp °C	DO Conc mg/L	DO Saturation %	Turbidity NTU	Salinity ppt	pH unit	SS mg/l
			East	North									
7/30/2011 11:50:47	W1	ME	832979	807744	2.4	1.202	26.10	7.06	99.6	3.6	29.51	8.72	7.3
7/30/2011 11:50:50						1.220	26.30	6.83	100.3	4.0	29.98	8.68	
7/30/2011 11:35:35	W2	ME	832596	807991	12.3	0.958	26.60	6.84	101.2	3.0	30.75	8.59	4.6
7/30/2011 11:35:40						0.988	26.50	6.93	102.5	2.8	30.75	8.58	
7/30/2011 11:35:54						6.155	26.40	4.93	72.7	5.2	30.80	8.61	6.6
7/30/2011 11:36:05						6.220	26.30	4.87	71.8	5.0	30.85	8.64	
7/30/2011 11:36:15						11.300	25.40	3.68	53.7	5.8	31.46	8.44	
7/30/2011 11:36:20	11.260	24.80	3.76	54.4	5.8	31.92	8.46	6.9					
7/30/2011 11:25:37	W3	ME	832027	807897	12.2	1.033	26.10	6.41	94.5	3.5	31.49	8.50	2.4
7/30/2011 11:25:40						1.021	26.00	6.41	94.1	3.7	31.11	8.50	
7/30/2011 11:25:50						6.100	25.90	5.14	75.5	4.9	31.46	8.48	7.4
7/30/2011 11:25:53						6.113	25.90	5.07	74.6	4.8	31.51	8.51	
7/30/2011 11:26:03						11.166	25.50	3.65	53.4	5.7	31.74	8.57	
7/30/2011 11:26:06	11.211	24.50	3.27	47.2	5.7	32.40	8.44	4.6					
7/30/2011 12:15:51	C1	ME	833695	808168	13.1	1.015	26.10	6.41	94.1	5.0	30.70	8.68	10.4
7/30/2011 12:16:00						1.030	26.10	6.39	93.8	5.0	30.54	8.62	
7/30/2011 12:16:25						12.560	25.40	4.18	60.8	4.9	31.27	8.53	5.4
7/30/2011 12:16:31						12.546	25.30	4.41	64.1	4.8	31.26	8.50	
7/30/2011 12:17:08						12.095	24.10	3.38	48.4	5.5	32.35	8.30	
7/30/2011 12:17:13	12.110	24.10	3.56	51.0	5.6	32.34	8.30	2.1					
7/30/2011 11:18:49	C2	ME	831457	807761	10.6	1.056	25.50	6.76	98.5	5.1	31.15	8.30	2.9
7/30/2011 11:18:54						1.011	25.50	6.72	97.9	5.2	31.15	8.37	
7/30/2011 11:19:00						10.330	25.50	4.50	65.5	6.5	31.17	8.39	1.8
7/30/2011 11:19:04						10.450	25.50	4.57	66.5	6.6	31.16	8.40	
7/30/2011 11:19:19						9.622	24.40	3.81	54.8	6.8	32.30	8.41	
7/30/2011 11:19:22	9.500	24.30	3.77	54.1	6.5	32.40	8.36	2.2					
7/30/2011 12:37:59	C3	ME	832218	808866	13.3	1.045	27.70	7.50	96.8	4.7	27.20	8.64	1.9
7/30/2011 12:38:04						1.055	26.70	7.21	104.8	4.7	27.01	8.59	
7/30/2011 12:38:19						6.650	26.20	4.99	73.5	4.5	30.95	8.52	2.4
7/30/2011 12:38:23						6.600	26.20	4.87	71.7	4.5	30.98	8.53	
7/30/2011 12:38:34						12.300	25.80	3.29	48.2	11.1	31.29	8.48	
7/30/2011 12:38:38	12.290	25.70	3.70	54.1	11.0	31.41	8.50	4.5					
7/30/2011 18:34:36	W1	MF	832977	807744	2.6	1.300	26.30	6.86	101.2	4.2	30.93	8.54	3.8
7/30/2011 18:34:40						1.300	26.30	6.86	101.2	4.0	30.93	8.54	
7/30/2011 18:21:19	W2	MF	832597	807995	12.4	0.950	26.20	6.78	95.7	4.0	30.34	8.59	2.6
7/30/2011 18:21:24						0.995	26.20	6.59	96.8	4.2	30.39	8.56	
7/30/2011 18:21:35						6.205	26.10	5.29	77.7	4.8	30.98	8.62	5.5
7/30/2011 18:21:39						6.200	25.90	5.11	75.0	4.8	31.07	8.55	
7/30/2011 18:21:49						11.400	25.90	3.68	53.9	5.1	31.09	8.53	
7/30/2011 18:21:53	11.450	26.00	3.73	54.7	5.2	31.04	8.52	5.5					
7/30/2011 18:13:50	W3	MF	832062	807899	12	1.020	27.40	7.47	95.9	3.4	26.88	8.40	2
7/30/2011 18:13:54						1.000	26.70	6.94	100.6	3.4	26.67	8.53	
7/30/2011 18:14:02						6.055	26.10	4.77	70.3	5.0	31.16	8.52	1.9
7/30/2011 18:14:05						6.030	26.00	4.61	67.8	5.0	31.36	8.50	
7/30/2011 18:14:18						11.005	25.30	3.43	49.9	5.2	31.82	8.52	
7/30/2011 18:14:21	11.060	24.40	3.50	50.2	5.2	32.44	8.47	6.5					
7/30/2011 18:41:25	C1	MF	833689	808176	13	1.075	26.60	7.06	102.4	5.1	26.92	8.57	6.2
7/30/2011 18:41:29						1.050	26.70	7.17	105.7	5.1	26.67	8.56	
7/30/2011 18:41:41						12.500	26.40	5.02	74.1	4.6	30.73	8.68	5.2
7/30/2011 18:41:45						12.550	26.30	4.96	73.0	4.6	30.78	8.62	
7/30/2011 18:42:07						12.000	25.50	3.46	50.5	5.8	31.29	8.55	
7/30/2011 18:42:12	12.035	25.40	3.31	48.2	5.8	31.32	8.48	3.5					
7/30/2011 18:03:25	C2	MF	831477	807736	10.4	1.035	25.80	6.79	99.2	4.3	29.86	8.61	3.4
7/30/2011 18:03:31						1.022	25.70	6.63	96.8	4.2	29.96	8.57	
7/30/2011 18:03:46						5.225	25.80	5.07	74.3	4.6	31.32	8.54	0.6
7/30/2011 18:03:53						5.205	26.00	5.08	74.7	4.6	31.38	8.52	
7/30/2011 18:03:59						9.450	26.00	3.78	55.6	7.7	31.38	8.77	
7/30/2011 18:04:04	9.444	26.00	3.77	55.6	7.8	31.40	8.50	2.9					
7/30/2011 18:57:33	C3	MF	832211	808877	13.5	1.065	26.50	6.89	101.0	5.6	29.34	8.51	4.2
7/30/2011 18:57:46						1.044	26.40	6.90	102.0	5.6	31.00	8.51	
7/30/2011 18:57:56						6.880	26.40	4.85	71.6	8.7	30.93	8.67	3.7
7/30/2011 18:58:01						6.755	25.90	4.67	68.5	9.0	31.25	8.58	
7/30/2011 18:58:12						12.035	25.40	3.49	50.9	10.0	31.64	8.54	
7/30/2011 18:58:16	12.012	25.20	3.25	47.3	10.5	31.75	8.49	4.7					

MF- Mid Flood Tide
ME- Mid Ebb tide

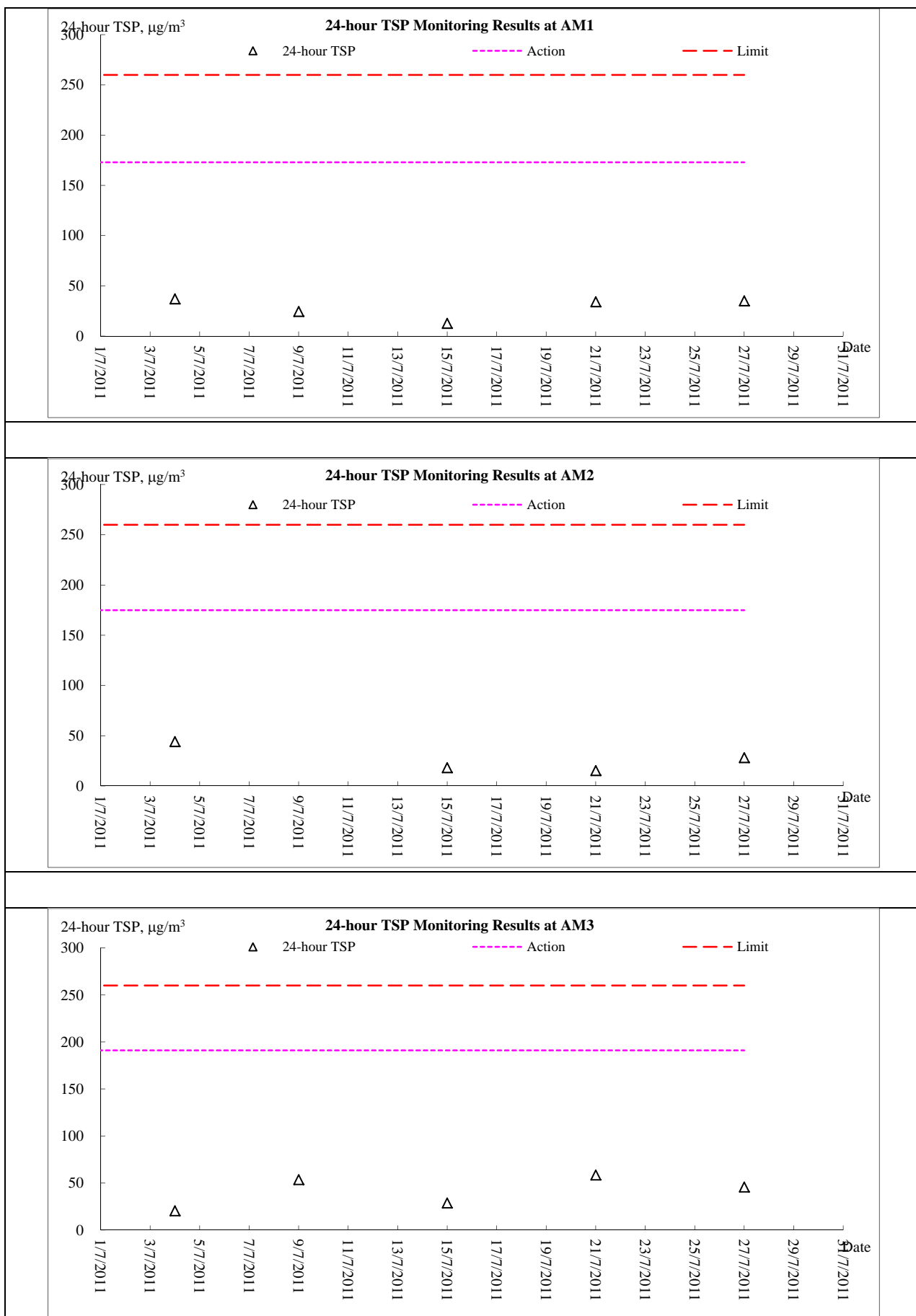
Appendix H

Graphical Plots of Monitoring Results

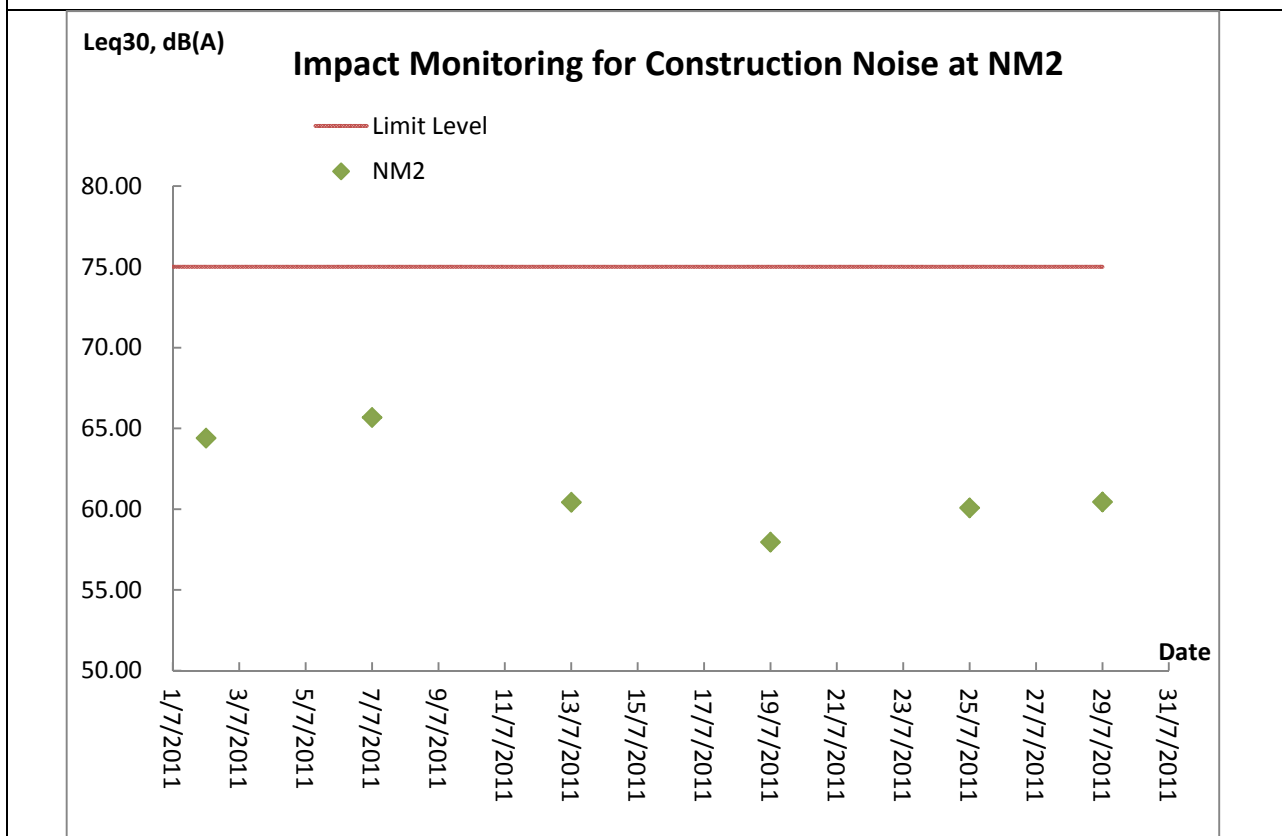
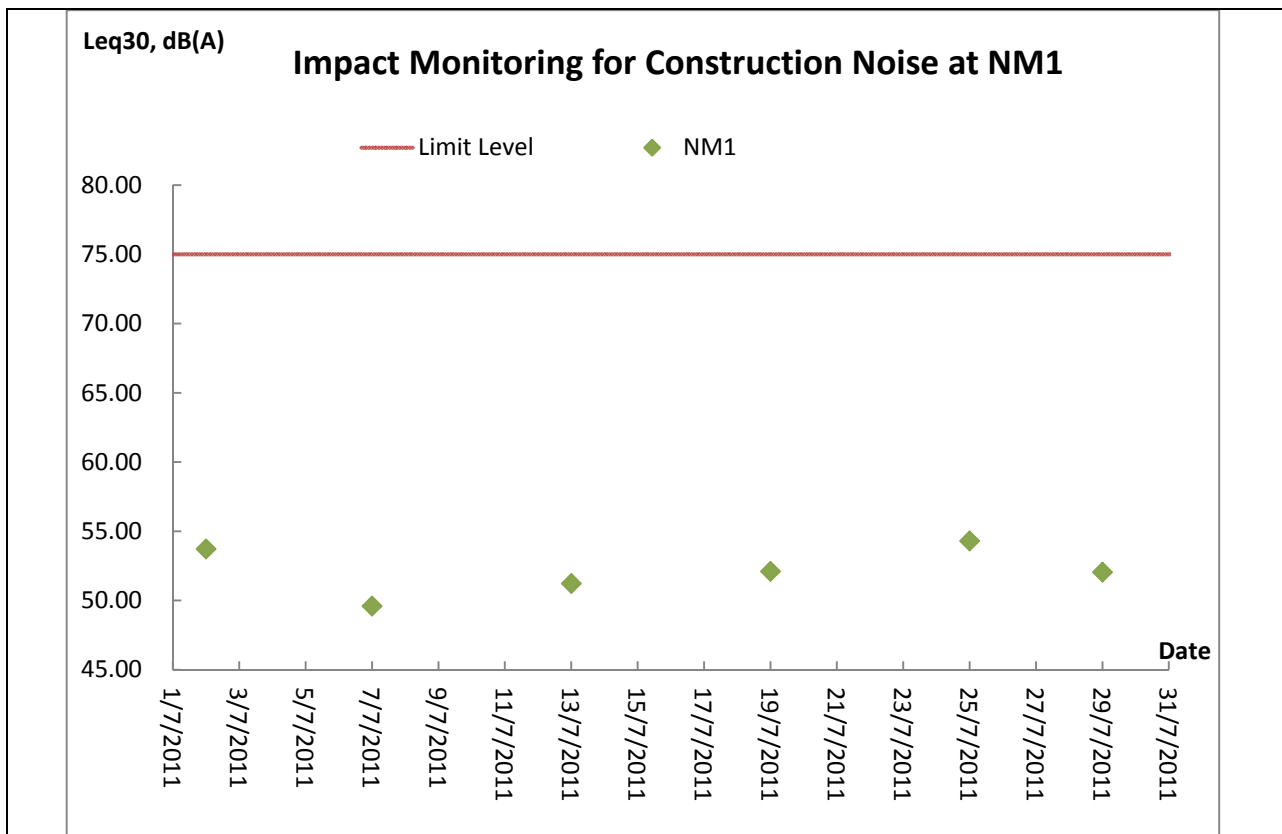
Air Quality Monitoring – 1 hour TSP Monitoring

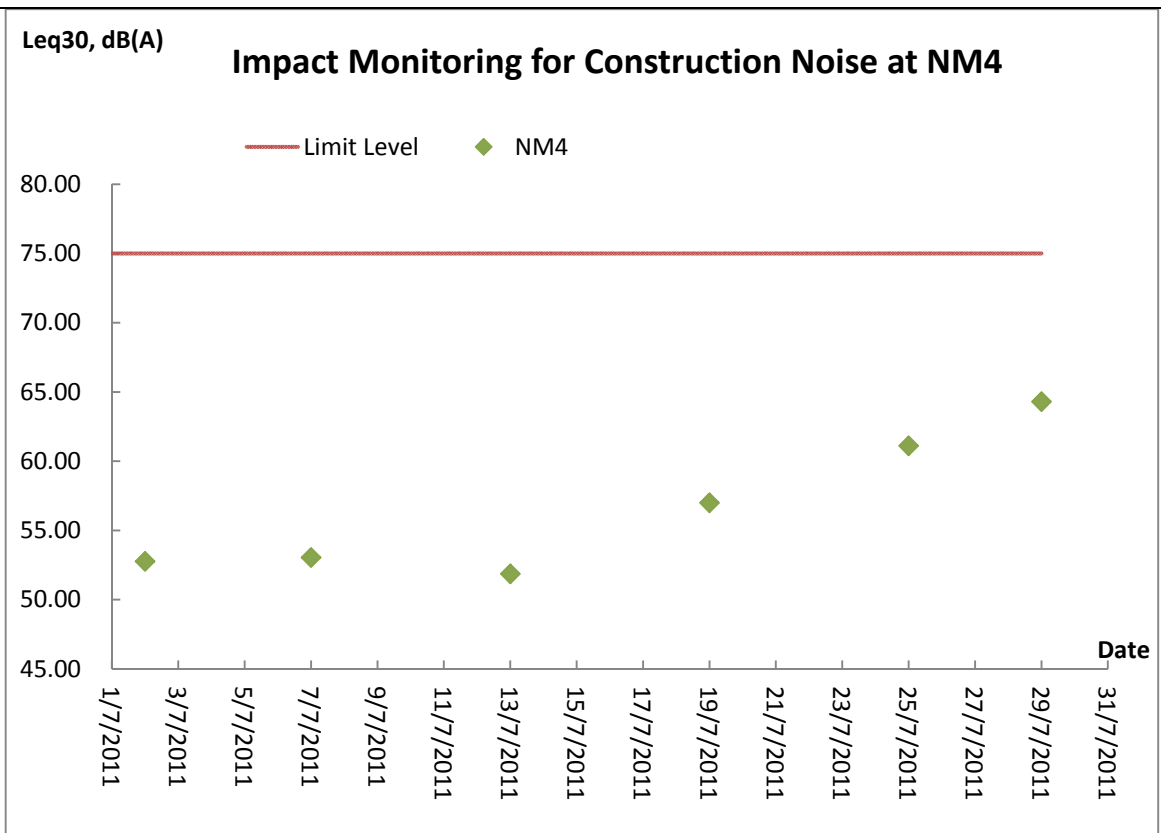
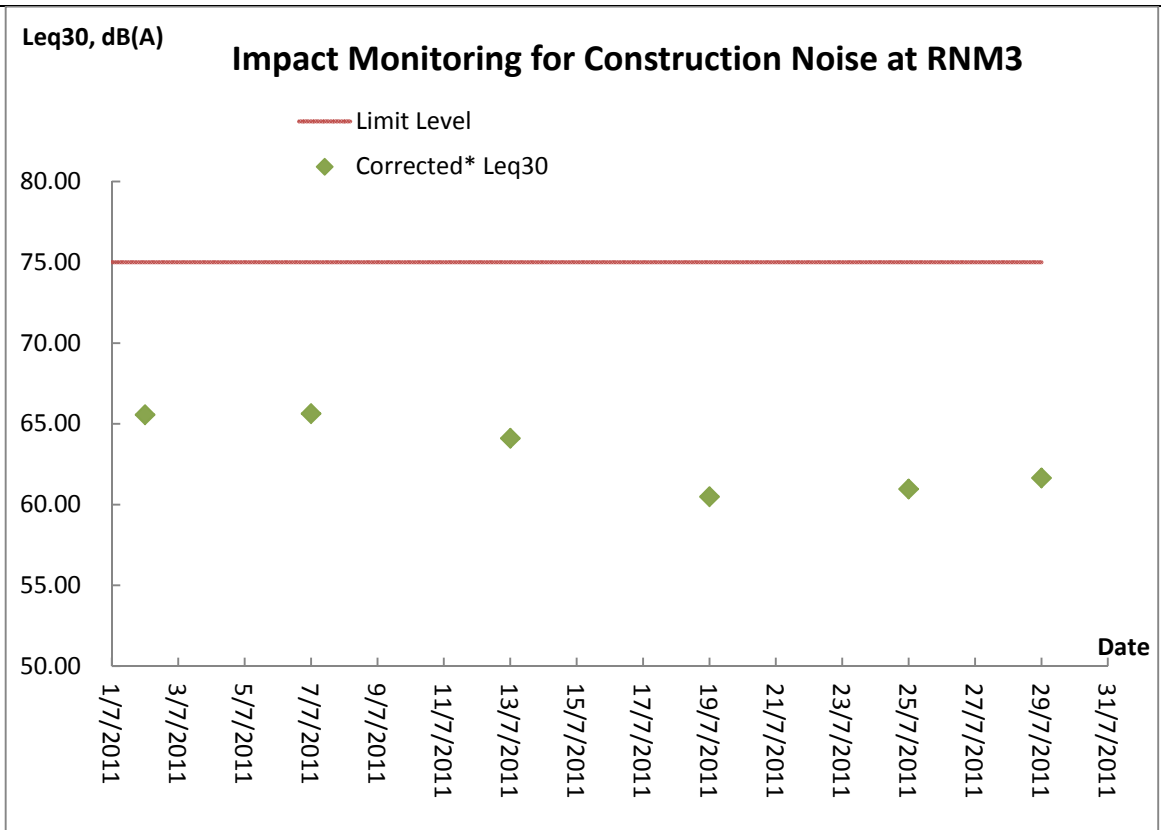


Air Quality Monitoring – 24 hour TSP Monitoring

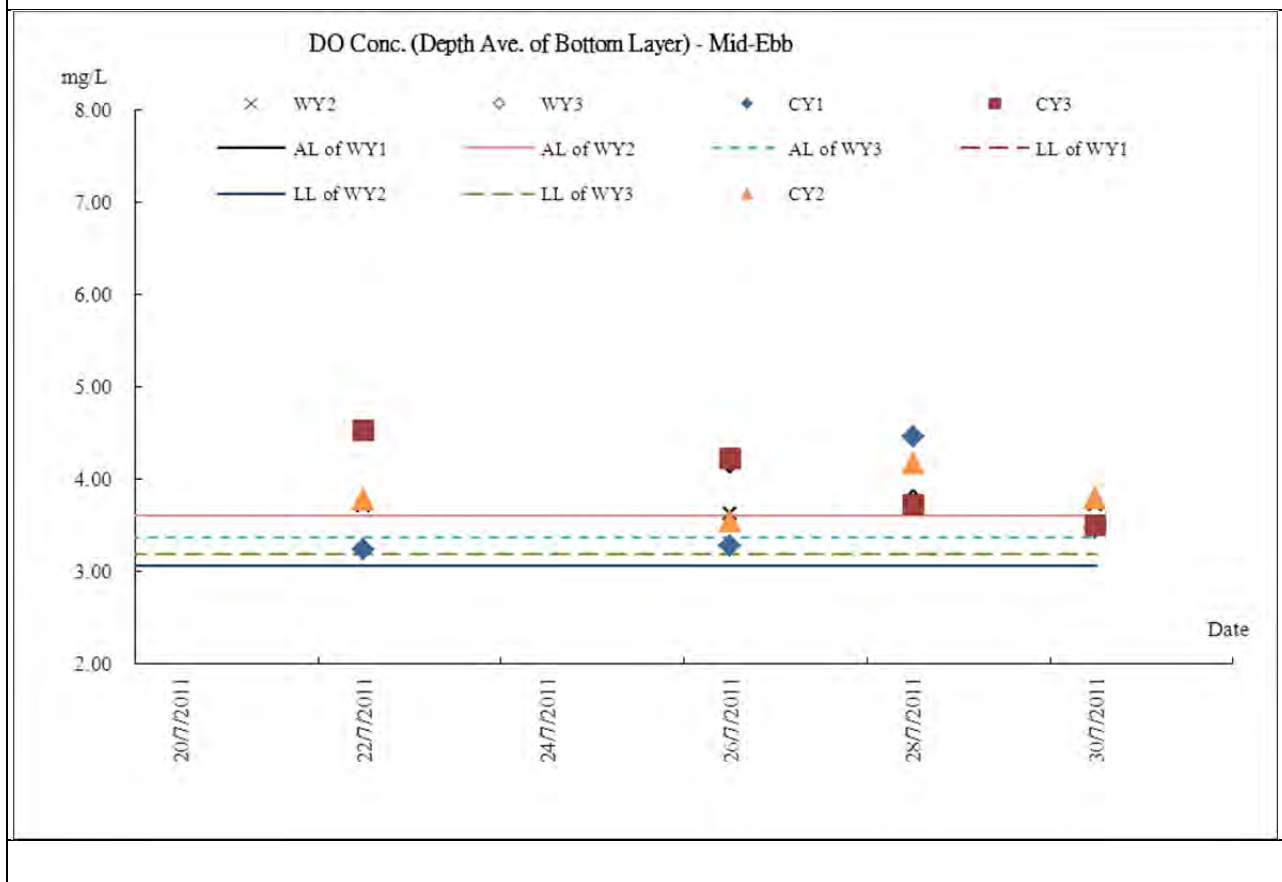
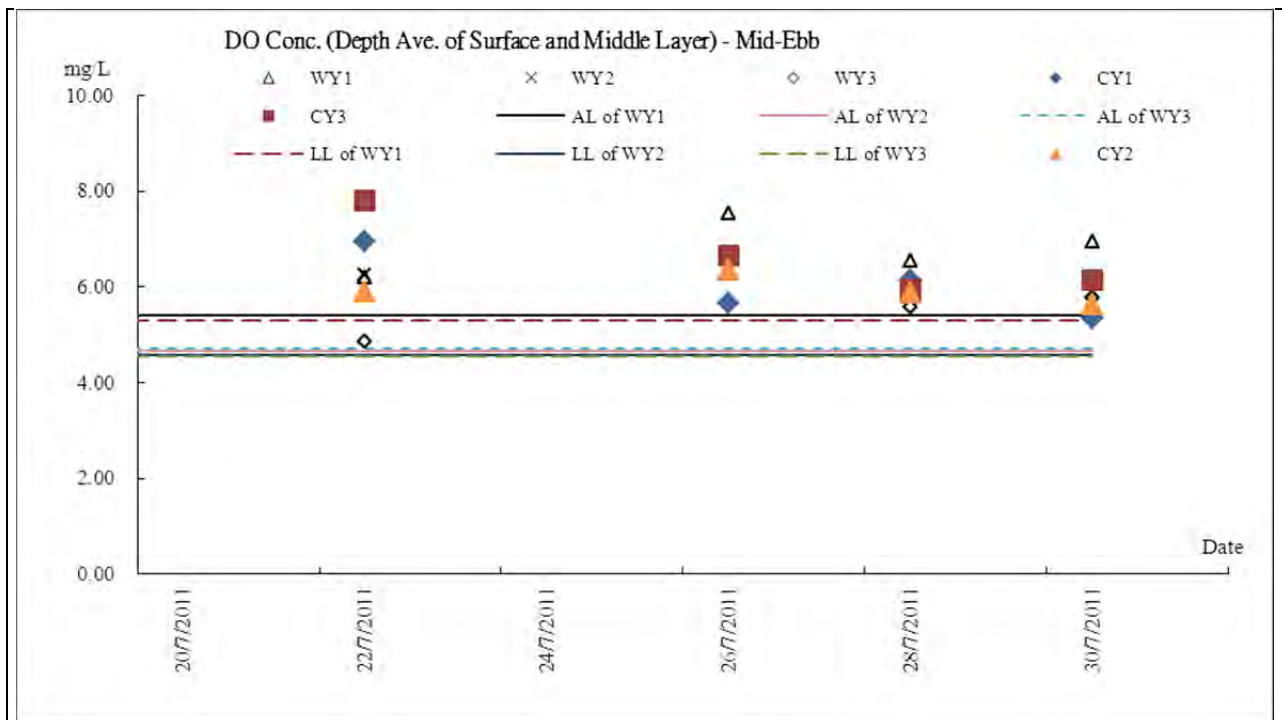


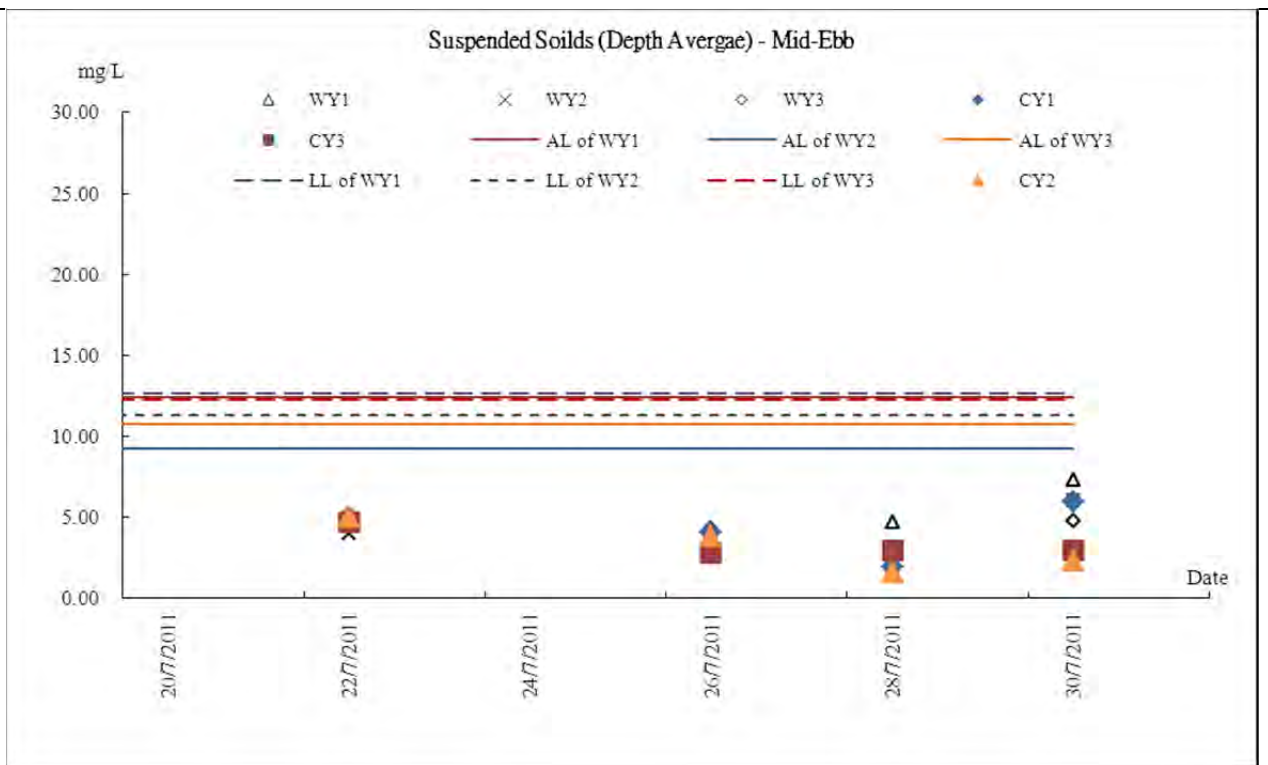
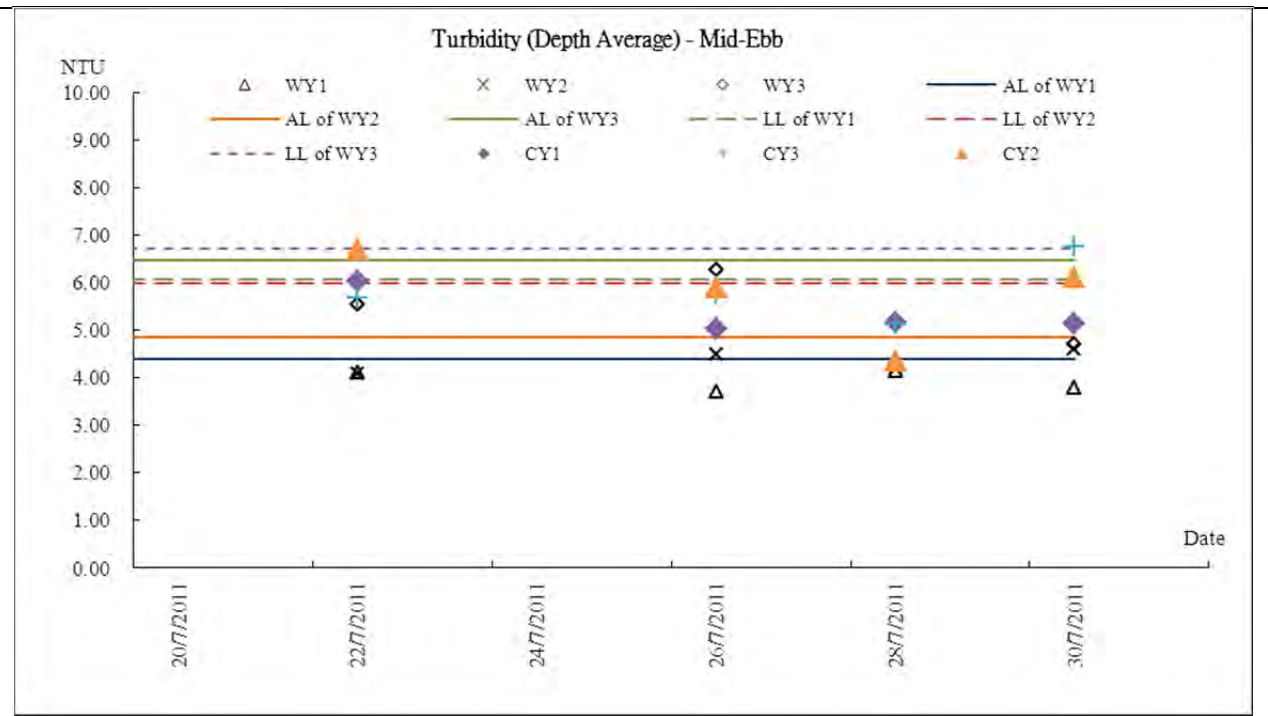
Construction Noise Monitoring



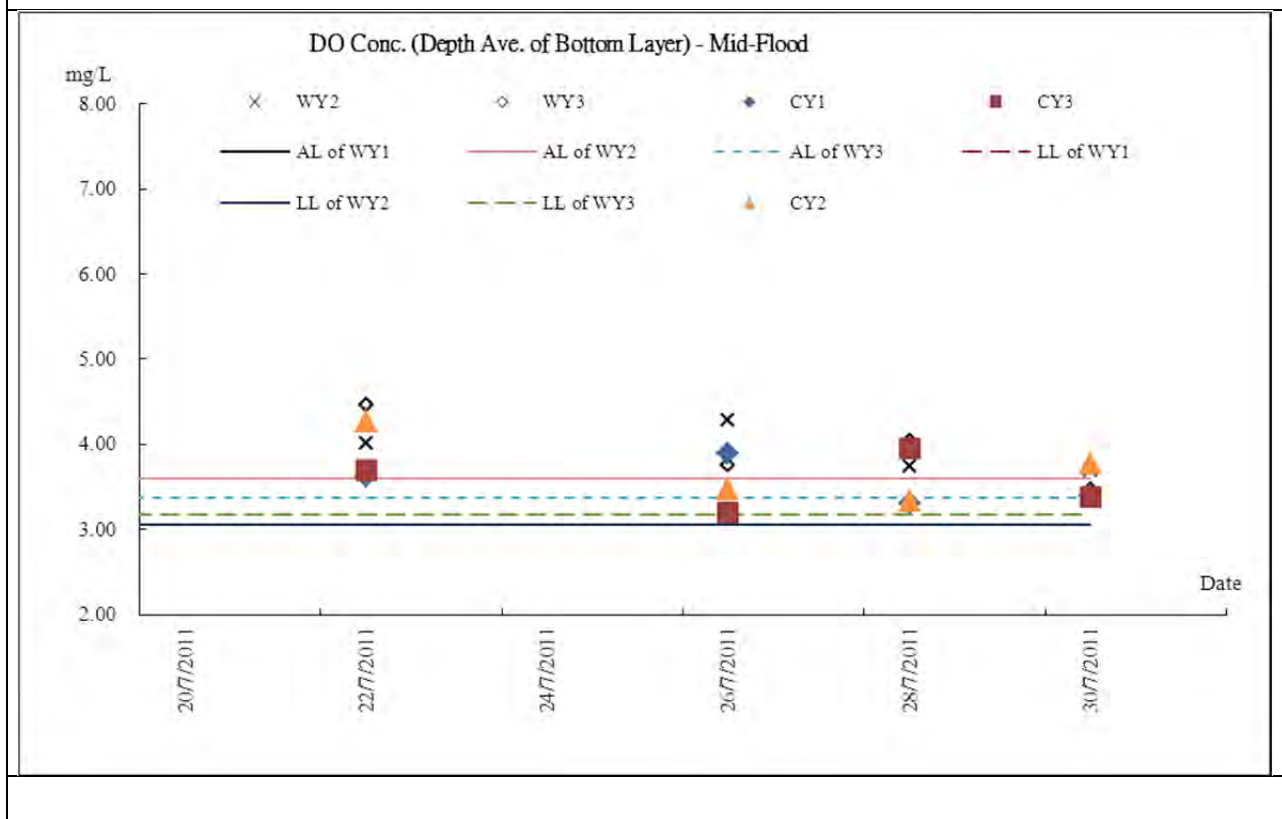
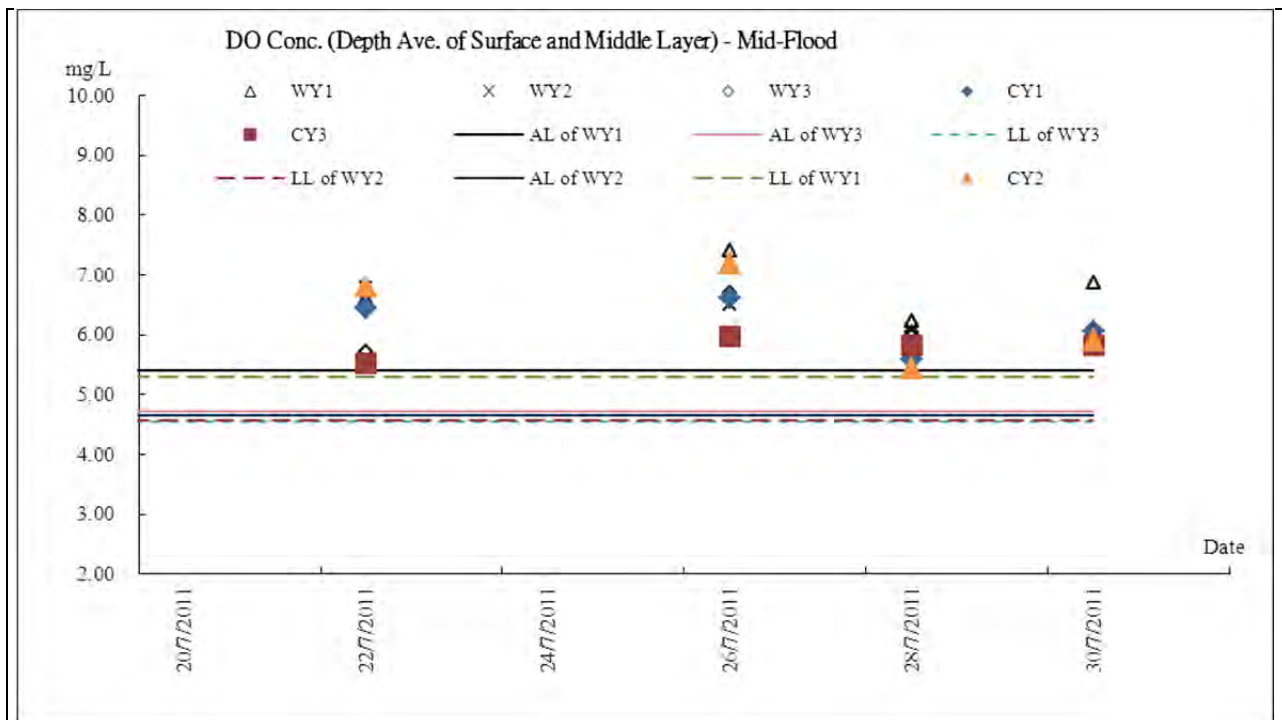


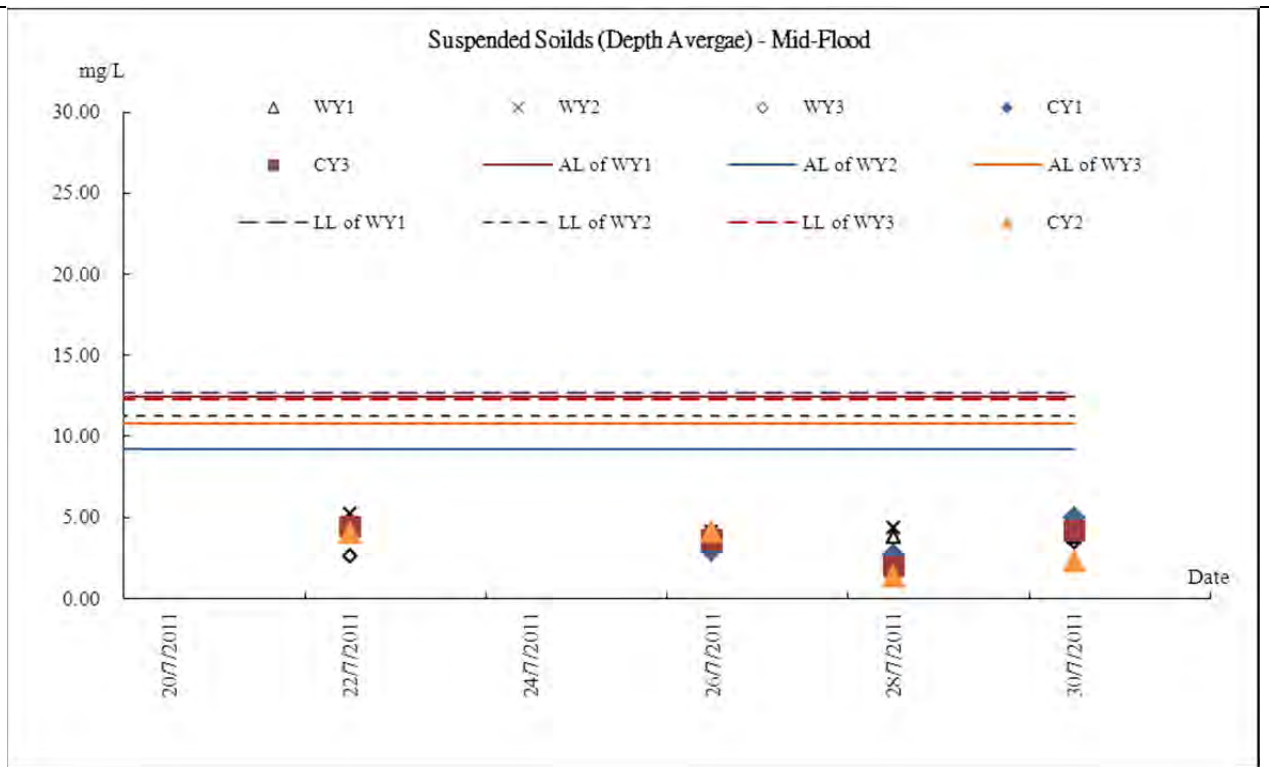
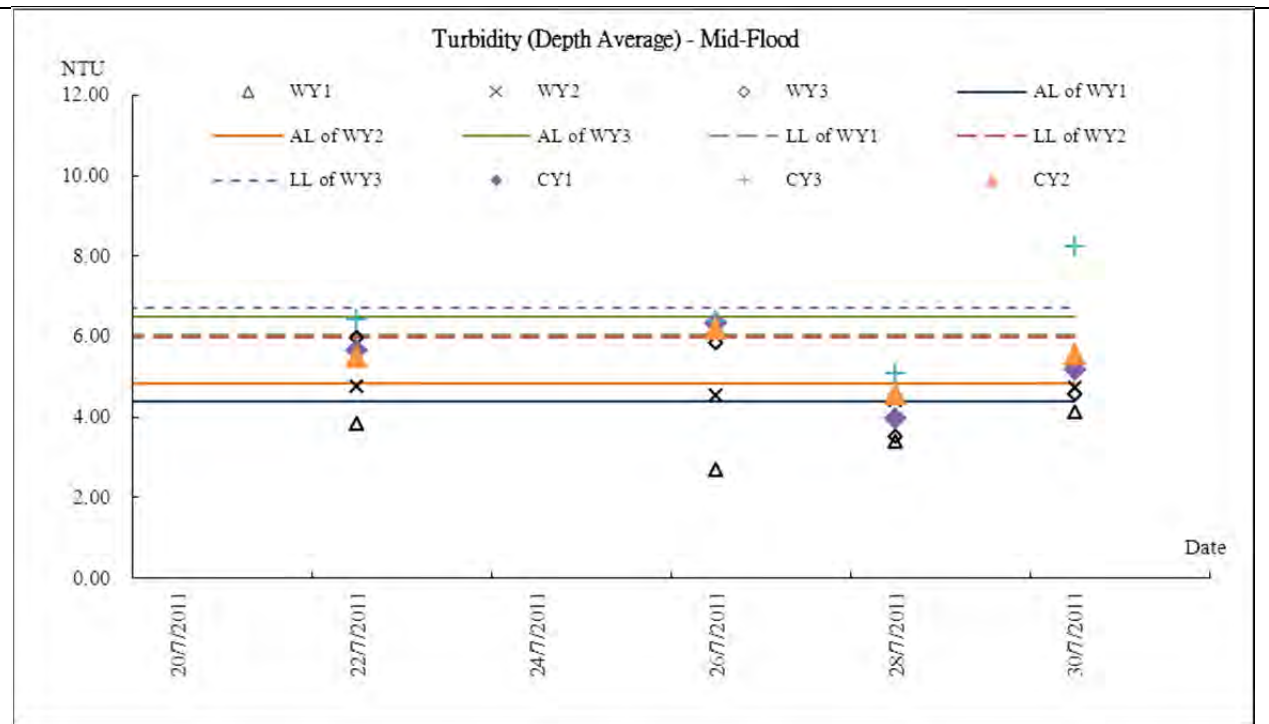
Marine Water Quality Monitoring - Mid-Ebb Tide





Marine Water Quality Monitoring - Mid-Flood Tide





Appendix I

Meteorological Information

Meteorological Data Extracted from HKO during the Reporting Period

Date		Weather
1-Jul-11	Fri	Fine and very hot.
2-Jul-11	Sat	Moderate southwesterly winds.
3-Jul-11	Sun	Fine and very hot.
4-Jul-11	Mon	Moderate southwesterly winds.
5-Jul-11	Tue	Mainly cloudy with showers.
6-Jul-11	Wed	Moderate easterly winds
7-Jul-11	Thu	Mainly cloudy with showers.
8-Jul-11	Fri	Light to moderate southwesterly winds.
9-Jul-11	Sat	Moderate southwesterly winds, occasionally fresh.
10-Jul-11	Sun	Mainly cloudy with showers.
11-Jul-11	Mon	Mainly cloudy with showers
12-Jul-11	Tue	Light to moderate southerly winds.
13-Jul-11	Wed	Sunny intervals during the day.
14-Jul-11	Thu	Moderate easterly winds
15-Jul-11	Fri	Cloudy with occasional rain.
16-Jul-11	Sat	Cloudy with occasional rain and squally thunderstorms.
17-Jul-11	Sun	Moderate westerly winds
18-Jul-11	Mon	Cloudy with showers and a few squally thunderstorms
19-Jul-11	Tue	Mainly cloudy with occasional rain .
20-Jul-11	Wed	Mainly cloudy with showers.
21-Jul-11	Thu	Sunny intervals during the day.
22-Jul-11	Fri	Mainly fine and very hot.
23-Jul-11	Sat	Mainly cloudy with showers
24-Jul-11	Sun	Moderate westerly winds
25-Jul-11	Mon	Light to moderate southerly winds.
26-Jul-11	Tue	Mainly fine and very hot.
27-Jul-11	Wed	Moderate westerly winds
28-Jul-11	Thu	Cloudy with squally showers and thunderstorms.
29-Jul-11	Fri	Cloudy with squally showers and a few thunderstorms
30-Jul-11	Sat	Fine and hot. Light winds.
31-Jul-11	Sun	Hot with sunny periods

Appendix J

Monthly Summary Waste Flow Table

Monthly Summary Waste Flow Table for July 2011

Month	Actual Quantities of Inert C&D Materials Generated Monthly												Actual Quantities of C&D Wastes Generated Monthly										
	Total Quantity Generated (a) = (c)+(d)+(e)		Hard Rock and Large Broken Concrete (b)		Reused in the Contract (c)		Reused in other Projects (d)		Disposed as Public Fill (e)		Imported Fill (f)		Metals		Paper/ cardboard packaging		Plastics		Chemical Waste		Others, e.g. rubbish		
	(in '000m ³)		(in '000m ³)		(in '000m ³)		(in '000m ³)		(in '000m ³)		(in '000m ³)		(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	
2010	4.522	0.030	0.068	0.104	0.488	0.000	0.000	0.000	0.000	4.033	0.030	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	18.460
Jan	0.985	3.045	0.003	0.013	0.120	0.419	0.000	2.626	0.865	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.240
Feb	0.377	0.000	0.000	0.043	0.000	0.000	0.000	0.000	0.377	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.350
Mar	0.758	1.175	0.002	0.106	0.006	0.000	0.000	1.175	0.752	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.360
Apr	1.135	1.339	0.017	0.025	0.112	0.180	0.000	1.159	1.023	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.830	5.160
May	0.614	1.362	0.030	0.036	0.014	0.400	0.000	0.962	0.600	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.150	0.860
Jun	0.505	1.014	0.000	0.022	0.000	0.060	0.000	0.954	0.505	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	9.610	1.510
Sub-total	8.8954	7.9653	0.1184	0.3497	0.7397	1.0590	0.0000	6.8760	8.1558	0.0303	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	15.5900	28.9400
Jul	0.824	1.077	0.000	0.004	0.000	0.000	0.000	1.077	0.824	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.000	0.510
Aug																							
Sep																							
Oct																							
Nov																							
Dec																							
Total	9.7194	9.0423	0.1184	0.3540	0.740	1.059	0.000	7.953	8.9798	0.0303	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20.59	29.45
	18.762		0.472		1.799		7.953		9.010		0.000		0.000		0.000		0.000		0.000		50.04		

Remark: Assume 1.0 m³ vehicle dump load = 1.6 tonnes C&D materials

YSW: Yung Shue Wan

SKW: Sok Kwu Wan

Appendix K

Weekly Site Inspection Checklist

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

Inspected by _____
 ETL/ ET's Representative: Ray Cheung
 RE's Representative: Joseph Ng
 Contractor's Representative: Edwin Leung
 IEC's Representative: _____
 Date: 5 July 2011 Time: 14:00

PART A:

GENERAL INFORMATION

Environmental Permit No.

Weather: Sunny Fine Cloudy Rainy
 Temperature: 29.7 °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.: 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
Section 1: Water Quality							
1.01	Is an effluent discharge license obtained for the Project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.02	Is the effluent discharged in accordance with the discharge licence?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.03	Is the discharge of turbid water avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.04	Are there proper desilting facilities in the drainage systems to reduce SS levels in effluent?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.05	Are there channels, sandbags or bunds to direct surface run-off to sedimentation tanks?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.06	Are there any perimeter channels provided at site boundaries to intercept storm runoff from crossing the site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.07	Is drainage system well maintained?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.08	As excavation proceeds, are temporary access roads protected by crushed stone or gravel?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.09	Are temporary exposed slopes properly covered?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.10	Are earthworks final surfaces well compacted or protected?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.11	Are manholes adequately covered or temporarily sealed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.12	Are there any procedures and equipment for rainstorm protection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.13	Are wheel washing facilities well maintained?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.14	Is runoff from wheel washing facilities avoided?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.15	Are there toilets provided on site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.16	Are toilets properly maintained?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.17	Are the vehicle and plant servicing areas paved and located within roofed areas?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.18	Is the oil leakage or spillage avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.19	Are there any measures to prevent leaked oil from entering the drainage system?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.20	Are there any measures to collect spilt cement and concrete washings during concreting works?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1.21	Are there any oil interceptors/grease traps in the drainage systems for vehicle and plant servicing areas, canteen kitchen, etc?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.22	Are the oil interceptors/grease traps maintained properly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

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

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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 checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.13	Temporary/Moveable noise barrier or site hoarding are provide or erect at the site boundary to minimise the noise impact of the closest NSRs or stationary equipments shield by the noise barrier which cannot visible from NSRs (Level 2 mitigation measure)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.14	Temporary/Moveable noise barrier equal to or more than 3m height with 10kg/m2 are provide for noise mitigation measures (Level 2 mitigation measures).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Section 4: Waste/Chemical Management							
4.01	Waste Management Plan had been submit to Engineer for approval.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.02	Are receptacles available for general refuse collection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.03	Is general refuse sorting or recycling implemented?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.04	Is general refuse disposed of properly and regularly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.05	Is the Contractor registered as a chemical waste producer?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.06	Are the chemical waste containers and storage area properly labelled?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.07	Are the chemical wastes stored in proper storage areas?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.08	Is the chemical container or equipment provided with drip tray?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.09	Is the chemical waste storage area used for storage of chemical waste only?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.10	Are incompatible chemical wastes stored in different areas?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.11	Are the chemical wastes disposed of by licensed collectors?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.12	Are trip tickets for chemical wastes disposal available for inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.13	Are chemical/fuel storage areas bounded?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.14	Are designated areas identified for storage and sorting of construction wastes?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.15	Are construction wastes sorted (inert and non-inert) on site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.16	Are construction wastes reused?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.17	Are construction wastes disposed of properly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.18	Are site hoardings and signboards made of durable materials instead of timber?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.19	Is trip ticket system implemented for the disposal of construction wastes and records available for inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.20	Are appropriate procedures followed if contaminated material exists?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.21	Is relevant license/ permit for disposal of construction waste or excavated materials available for inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.22	Site cleanliness and appropriate waste management training had provided for the site workers.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.23	Contaminated sediments will managed according to WBTC No.12/2000 and EWTB TC(W) No. 34/2002.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

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Section 5: Landscape & Visual							
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 - July 2011 - Appendix M
5.02	Are retained and transplanted trees properly protected?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Refer to tree photos
5.03	Are surgery works carried out for the damaged trees?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.04	Is damage to trees outside site boundary due to construction activities avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.05	Is the night-time lighting controlled to minimize glare to sensitive receivers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Section 6: Others							
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:

Follow up:

Findings of Site Inspection: (5 July 2011)

No environmental issue was observed during the site inspection

Tree Photos:



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**

Ray

(N/A) () (Ray Cheung) () ()

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

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

Date: 12 July 2011

PART A:

GENERAL INFORMATION

Environmental Permit No.

Weather: Sunny Fine Cloudy Rainy
 Temperature: 27.6 °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.: Not Observed; Yes: Compliance; No: Non-Compliance;	Not Obs.	Yes	No	Follow Up	N/A	Photo/Remarks
	Follow Up: Observations requiring follow-Up actions N/A: Not Applicable						

Section 1: Water Quality

		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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.14	Is runoff from wheel washing facilities avoided?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.15	Are there toilets provided on site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.16	Are toilets properly maintained?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.17	Are the vehicle and plant servicing areas paved and located within roofed areas?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.18	Is the oil leakage or spillage avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.19	Are there any measures to prevent leaked oil from entering the drainage system?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.20	Are there any measures to collect spilt cement and concrete washings during concreting works?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1.21	Are there any oil interceptors/grease traps in the drainage systems for vehicle and plant servicing areas, canteen kitchen, etc?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.22	Are the oil interceptors/grease traps maintained properly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

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1.23	Is used bentonite recycled where appropriate?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.24	Designated settlement area for runoff/wheel wash waste is provide and located at the streambed with 1-2m deep, 12m long and around 50m ³ capacities for sedimentation.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.25	No excavation is undertaken in the settlement area.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.26	Concreting wastes water should be neutralized below the pH Action Levels before discharge.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.27	Mobile toilets should provide on site and located away the stream course.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.28	License collector should be employed for handling the sewage of mobile toilet.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.29	Is ponding /stand water avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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2.03	Are the excavated materials sprayed with water during handling?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.04	Are stockpiles of dusty materials sprayed with water, covered or placed in sheltered areas?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.05	Is the exposed earth properly treated within six months after the last construction activities?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.06	Are the access roads sprayed with water to maintain the entire road surface wet or paved?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.07	Is the surface where any drilling, cutting, polishing or breaking operation continuously sprayed with water?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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3.03	Is idle equipment turned off or throttled down?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.04	Are all plant and equipment well maintained and in good condition?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.05	Are noise barriers or enclosures provided at areas where construction activities cause noise impact on sensitive receivers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.06	Are hand held breakers fitted with valid noise emission labels during operation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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4.02	Are receptacles available for general refuse collection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.03	Is general refuse sorting or recycling implemented?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.04	Is general refuse disposed of properly and regularly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.05	Is the Contractor registered as a chemical waste producer?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.06	Are the chemical waste containers and storage area properly labelled?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.07	Are the chemical wastes stored in proper storage areas?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.08	Is the chemical container or equipment provided with drip tray?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.09	Is the chemical waste storage area used for storage of chemical waste only?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.10	Are incompatible chemical wastes stored in different areas?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.11	Are the chemical wastes disposed of by licensed collectors?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.12	Are trip tickets for chemical wastes disposal available for inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.13	Are chemical/fuel storage areas bounded?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.14	Are designated areas identified for storage and sorting of construction wastes?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.15	Are construction wastes sorted (inert and non-inert) on site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.16	Are construction wastes reused?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.17	Are construction wastes disposed of properly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.18	Are site hoardings and signboards made of durable materials instead of timber?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.19	Is trip ticket system implemented for the disposal of construction wastes and records available for inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.20	Are appropriate procedures followed if contaminated material exists?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.21	Is relevant license/ permit for disposal of construction waste or excavated materials available for inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.22	Site cleanliness and appropriate waste management training had provided for the site workers.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.23	Contaminated sediments will managed according to WBTC No.12/2000 and EWTB TC(W) No. 34/2002.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

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
Section 5: Landscape & Visual							
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 - July 2011 - Appendix M
5.02	Are retained and transplanted trees properly protected?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Refer to tree photos
5.03	Are surgery works carried out for the damaged trees?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.04	Is damage to trees outside site boundary due to construction activities avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.05	Is the night-time lighting controlled to minimize glare to sensitive receivers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Section 6: Others							
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:

Follow up:

Findings of Site Inspection: (12 July 2011)

No environmental issue was observed during the site inspection

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

 Date: 19 July 2011

Inspected by _____
 ETL/ ET's Representative: Ray Cheung
 RE's Representative: Joseph Ng
 Contractor's Representative: Edwin Leung
 IEC's Representative: Shanika Chui
 Time: 14:00

PART A:

GENERAL INFORMATION

Environmental Permit No.

Weather: Sunny Fine Cloudy Rainy
 Temperature: 27.4 °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.: Not Observed; Yes: Compliance; No: Non-Compliance;	Not Obs.	Yes	No	Follow Up	N/A	Photo/Remarks
	Follow Up: Observations requiring follow-Up actions N/A: Not Applicable						

Section 1: Water Quality

1.01	Is an effluent discharge license obtained for the Project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.02	Is the effluent discharged in accordance with the discharge licence?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.03	Is the discharge of turbid water avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.04	Are there proper desilting facilities in the drainage systems to reduce SS levels in effluent?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
1.05	Are there channels, sandbags or bunds to direct surface run-off to sedimentation tanks?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.06	Are there any perimeter channels provided at site boundaries to intercept storm runoff from crossing the site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.07	Is drainage system well maintained?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.08	As excavation proceeds, are temporary access roads protected by crushed stone or gravel?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.09	Are temporary exposed slopes properly covered?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.10	Are earthworks final surfaces well compacted or protected?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.11	Are manholes adequately covered or temporarily sealed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.12	Are there any procedures and equipment for rainstorm protection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.13	Are wheel washing facilities well maintained?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.14	Is runoff from wheel washing facilities avoided?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.15	Are there toilets provided on site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.16	Are toilets properly maintained?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.17	Are the vehicle and plant servicing areas paved and located within roofed areas?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.18	Is the oil leakage or spillage avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.19	Are there any measures to prevent leaked oil from entering the drainage system?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.20	Are there any measures to collect spilt cement and concrete washings during concreting works?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1.21	Are there any oil interceptors/grease traps in the drainage systems for vehicle and plant servicing areas, canteen kitchen, etc?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.22	Are the oil interceptors/grease traps maintained properly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

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

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

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
Section 5: Landscape & Visual							
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 - July 2011 - Appendix M
5.02	Are retained and transplanted trees properly protected?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Refer to tree photos
5.03	Are surgery works carried out for the damaged trees?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.04	Is damage to trees outside site boundary due to construction activities avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.05	Is the night-time lighting controlled to minimize glare to sensitive receivers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Section 6: Others							
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: (19 July 2011)



Tarpaulin sheet should be put back to sea to restore de-silting functioning.

Follow up:



Tarpaulin sheet has been deployed into the sea. (Rectified on 27-7-2011)



The water tank should be covered to avoid mosquito breeding.



The tank has been covered. (Rectified on 27-7-2011)

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

Inspected by _____
 ETL/ ET's Representative: Ray Cheung
 RE's Representative: Joseph Ng
 Contractor's Representative: Edwin Leung
 IEC's Representative: _____
 Time: 10:00

Date: 27 July 2011

PART A:

GENERAL INFORMATION

Environmental Permit No.

Weather: Sunny Fine Cloudy Rainy
 Temperature: 30.4 °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.: 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
Section 1: Water Quality							
1.01	Is an effluent discharge license obtained for the Project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.02	Is the effluent discharged in accordance with the discharge licence?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.03	Is the discharge of turbid water avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.04	Are there proper desilting facilities in the drainage systems to reduce SS levels in effluent?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
1.05	Are there channels, sandbags or bunds to direct surface run-off to sedimentation tanks?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.06	Are there any perimeter channels provided at site boundaries to intercept storm runoff from crossing the site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.07	Is drainage system well maintained?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.08	As excavation proceeds, are temporary access roads protected by crushed stone or gravel?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.09	Are temporary exposed slopes properly covered?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.10	Are earthworks final surfaces well compacted or protected?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.11	Are manholes adequately covered or temporarily sealed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.12	Are there any procedures and equipment for rainstorm protection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.13	Are wheel washing facilities well maintained?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.14	Is runoff from wheel washing facilities avoided?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.15	Are there toilets provided on site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.16	Are toilets properly maintained?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.17	Are the vehicle and plant servicing areas paved and located within roofed areas?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.18	Is the oil leakage or spillage avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.19	Are there any measures to prevent leaked oil from entering the drainage system?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.20	Are there any measures to collect spilt cement and concrete washings during concreting works?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1.21	Are there any oil interceptors/grease traps in the drainage systems for vehicle and plant servicing areas, canteen kitchen, etc?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.22	Are the oil interceptors/grease traps maintained properly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

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

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

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Section 5: Landscape & Visual							
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 - July 2011 - Appendix M
5.02	Are retained and transplanted trees properly protected?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Refer to tree photos
5.03	Are surgery works carried out for the damaged trees?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.04	Is damage to trees outside site boundary due to construction activities avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.05	Is the night-time lighting controlled to minimize glare to sensitive receivers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Section 6: Others							
6.01	Are relevant Environmental Permits posted at all vehicle site entrances/exits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

(Sok Kwu Wan)

Remarks:

Findings of Site Inspection: (27 July 2011)

No adverse environmental issues were observed.

Follow up:

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	
Construction Phase								
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"> • Stockpiles of imported material kept on site should be contained within hoardings, dampened and / or covered during dry and windy weather; • Material stockpiled alongside trenches should be covered with tarpaulins whenever works are close to village houses; • Water sprays should be used during the delivery and handling of cement, sands, aggregates and the like. • 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. 	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	
Construction Phase								
4.41-4.43	3.19	<ul style="list-style-type: none"> • Use of quiet PME for the construction of the pumping stations • Use of temporary noise barrier during the construction of Pumping Station P1a 	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"> • Use of quiet PME or method; • Restriction on the number plant (1 item for each type of plant); and • Good Site Practices <ul style="list-style-type: none"> ➤ Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program. ➤ 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 utilized, wherever practicable, in screening noise from on-site construction activities. 	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"> Use of noise screening structures such as acoustic shed and barrier wherever practicable and feasible in areas with sufficient clearance and headroom. 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. 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. 	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

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 ** 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	
Construction Phase								
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"> dredging should be undertaken using closed grab dredgers with a maximum total production rate of 55m³/hr; 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; dredging operation should be undertaken during ebb tide only; 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 should 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 200mm) 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; 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 	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"> the decks of all vessels should be kept tidy and free of oil or other substances that might be accidentally or otherwise washed overboard. 						
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"> 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 minimizing 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 should 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 	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

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** 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"> • 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. 	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	
Construction Phase								
7.14	6.4	<u>Good site practices</u> <ul style="list-style-type: none"> 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 Training (proper waste management and chemical handling procedure) should be provided for site staffs 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. 	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"> 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 	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"> 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. 						
7.18	6.7	<u>General Site Wastes</u> <ul style="list-style-type: none"> A collection area for construction site waste should be provided where waste can be stored prior to removal from site An enclosed and covered area for the collection of the waste is recommended to reduce 'wind blow' of light material 	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"> After use, chemical waste should be handled according to the Code of Practice on the Package, Labelling and Storage of Chemical Wastes Any unused chemicals or those with remaining functional capacity should be recycled 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. 	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"> 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. Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should be undertaken within the designated areas equipped control these discharges 						
7.21-7.22	6.10 – 6.11	<p><u>Construction and Demolition Material</u></p> <ul style="list-style-type: none"> The C&D waste should be separated on-site into three categories: <ul style="list-style-type: none"> ➤ 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; ➤ C&D waste for re-use and / or recycling, the non-inert portion of the C&D material, (e.g. steel and other metals, woods, glass and plastic); ➤ C&D waste which cannot be re-used and / or recycled (e.g. wood, glass and plastic) Where possible, inert material should be re-used on-site Where practicable, steel and other metals should be separated for re-use and/or recycling prior to disposal of C&D material 	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	
Construction Phase								
8.157	7.2	<u>Terrestrial Ecology</u> <ul style="list-style-type: none"> Labeling and fencing of the uncommon tree species Avoidance of use of woodland habitats as Works Area, in particular where trees are located 	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"> Use of closed-grab dredger Deploy silt curtains during dredging. 	Marine works site / during dredging works	Contractor		√		
8.161	7.4	Site runoff <ul style="list-style-type: none"> Construction and maintenance of sand / silt removal facilities Silt curtains Timing of earthworks Coverage of sand / fill piles during storms. Barriers along the landward side of Pumping Station P2 site boundary (to prevent site runoff from entering area with Romer's Tree Frog) 	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	
Construction Phase								
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

Project Name: Construction of Sewage Treatment
works at Yung Shu Wan and Sok Kwu Wan

Contract No. DC/2009/13

Sok Kwu Wan

**Tree Inspection Report for CT7, CT8, CT9, CT10,
CT_1a,CT_2a,CT_3a,CT_4a,CT_5a,CT_6a,CT7_a**

2011-07-14



Project Name: Construction of Sewage Treatment
works at Yung Shu Wan and Sok Kwu Wan

Contract No. DC/2009/13

Sok Kwu Wan

Bi weekly inspection was carried out on **14-07-2011**. Observations and comments are described below and photo records are attached in **Annex A** for reference.

Remark

Additional 7 numbers of *Celtis timorensis*, in label CT1A to CT7A were planted for contingency in case the *Celtis timorensis* CT7, CT8, CT9 and CT10 could not recover. The inspection for CT1A to CT7A is reported as follow.

Group 1 - CT7-10

CT7

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

CT8

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

CT9

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

CT10

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

Group 2 - CT 1A-7A

CT_1A

The condition of this tree was poor. Some healthy leaves were observed on the branches.

CT_2A

The condition of this tree was very poor. Only one leaf was observed on the branch.

CT_3A

The condition of this tree was poor. Some healthy leaves were observed on the branches.

CT_4A

The condition of this tree was poor. Some healthy leaves were observed on the top of the branches.

CT_5A

The condition of this tree was poor. A group of new leaves were growth on one of the branch.

CT_6A

The condition of this tree was poor. New bud and leaves were observed on the branches.

CT_7a

The condition of this tree was very poor. No new leaf was observed on the branch.

Overall

The overall health conditions of CT7-10 in Tree Group 1 were not satisfactory. 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. Keep watering 1-2 times per week.

In Group 2, the condition of CT_1a-7a was in poor condition. Regular watering and weeding should be carried out. Frequent inspection shall be carrying out to remove any insect found on the plant to prevent the bud attacked by leaf-feeding insect.

**Annex A - Photo Records of Tree CT7, CT8, CT9, CT10
CT_1a,CT_2a,CT_3a,CT_4a,CT_5a,CT_6a,CT7_a**



Photo 1 Overall view of CT7



Photo 2 Overall view of CT8



Photo 3 Overall view of CT9



Photo 4 Overall view of CT10



Photo 5 Overall views of the tree protection zone 1



Photo 6 Overall view of CT_1a



Photo 7 Overall view of CT_2a



Photo 8 Overall view of CT_3a



Photo 9 Overall view of CT_4a



Photo 10 Overall view of CT_5a



Photo 11 Overall view of CT_6a



Photo 12 Overall view of CT_7a



Photo 13 Overall view of the Tree Group 2 – in the protection zone

經緯園藝有限公司

Melofield Nursery & Landscape Contractor Ltd

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

Project Name: Construction of Sewage Treatment
works at Yung Shu Wan and Sok Kwu Wan

Contract No. DC/2009/13

Sok Kwu Wan

**Tree Inspection Report for CT7, CT8, CT9, CT10,
CT_1a,CT_2a,CT_3a,CT_4a,CT_5a,CT_6a,CT7_a**

2011-07-25



Project Name: Construction of Sewage Treatment
works at Yung Shu Wan and Sok Kwu Wan

Contract No. DC/2009/13

Sok Kwu Wan

Bi weekly inspection was carried out on **25-07-2011**. Observations and comments are described below and photo records are attached in **Annex A** for reference.

Group 1 - CT7-10

CT7

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

CT8

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

CT9

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

CT10

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

Group 2 - CT 1A-7A

CT_1A

The condition of this tree was poor. Some healthy leaves were observed on the branches.

CT_2A

The condition of this tree was very poor. Only one leaf was observed on the branch.

CT_3A

The condition of this tree was poor. Some healthy leaves were observed on the branches.

CT_4A

The condition of this tree was poor. Some healthy leaves were observed on the top of the branches.

CT_5A

The condition of this tree was poor. A group of new leaves were growth on one of the branch.

CT_6A

The condition of this tree was poor. New bud and leaves were observed on the branches.

CT_7a

The condition of this tree was very poor. No new leaf was observed on the branch.

Overall

The overall health conditions of CT7-10 in Tree Group 1 were not satisfactory. 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. Keep watering 1-2 times per week.

In Group 2, the condition of CT_1a-7a was in poor condition and stable compared with the condition in last inspection (14-7-11). Regular watering and weeding should be carried out. Frequent routine inspection shall be carrying out to remove any insect found on the plant to prevent the bud attacked by leaf-feeding insect.

It is proposed that remedial measure to the CT_1A to CT7A shall be carried out as follows in the next inspection.

- Adding fertilizer 15,9,15,2 to enchant growing of leaf and root.
- Mix the original topsoil with soil conditioner to upgrade the soil condition.

**Annex A - Photo Records of Tree CT7, CT8, CT9, CT10
CT_1a,CT_2a,CT_3a,CT_4a,CT_5a,CT_6a,CT7_a**

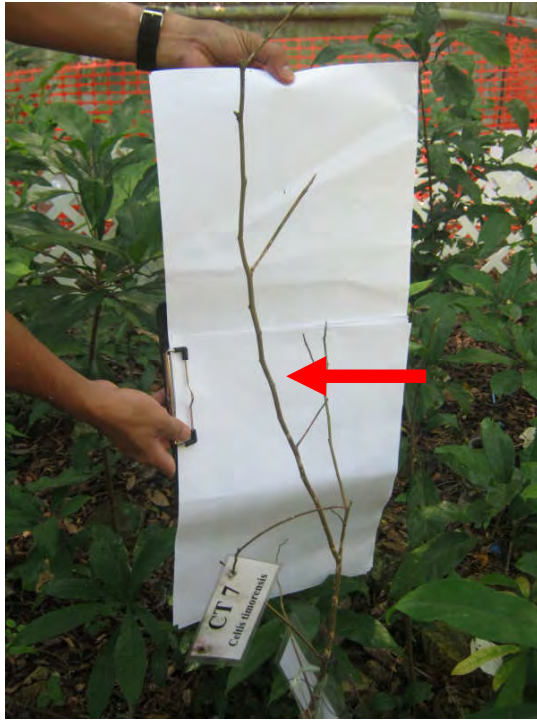


Photo 1 Overall view of CT7

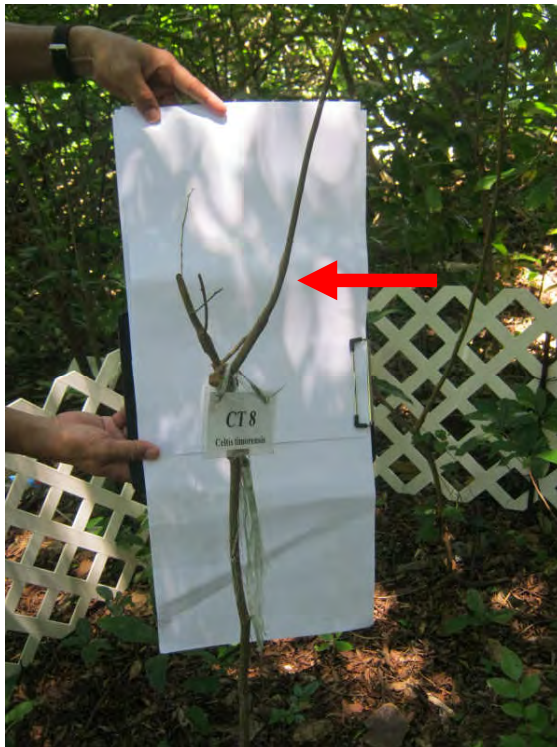


Photo 2 Overall view of CT8



Photo 3 Overall view of CT9

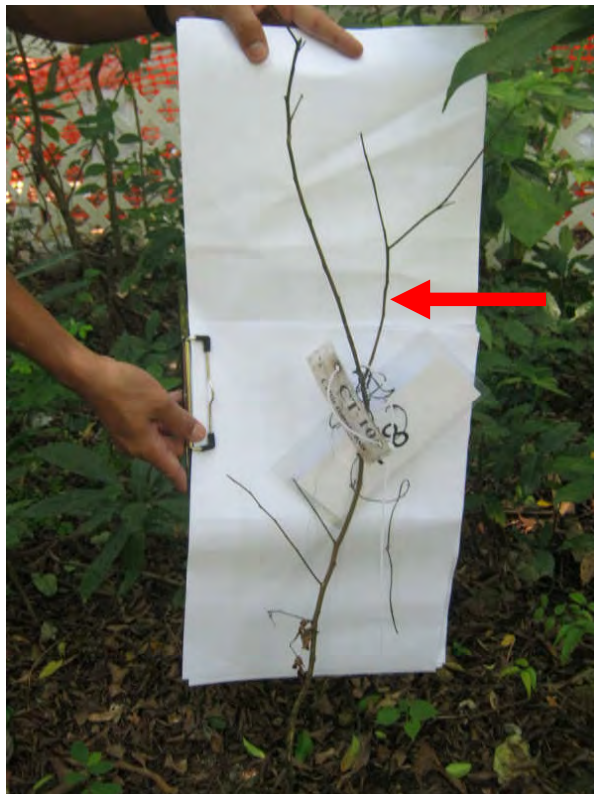


Photo 4 Overall view of CT10



Photo 5 Overall views of the tree protection zone 1



Photo 6 Overall view of CT_1a



Photo 7 Overall view of CT_2a



Photo 8 Overall view of CT_3a

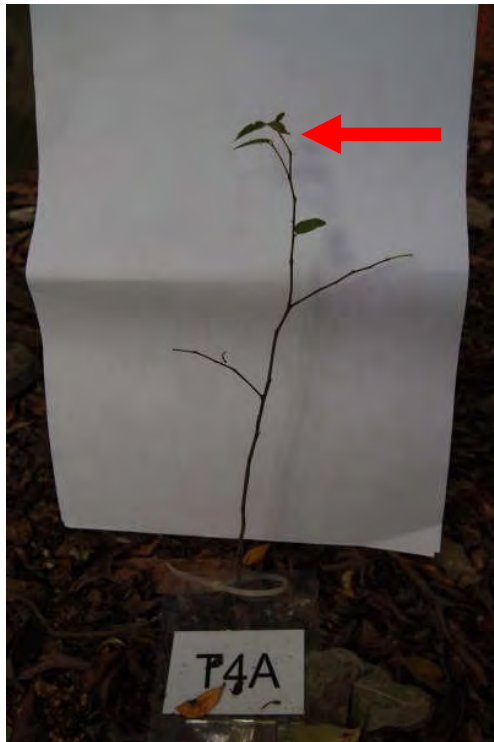


Photo 9 Overall view of CT_4a



Photo 10 Overall view of CT_5a



Photo 11 Overall view of CT_6a

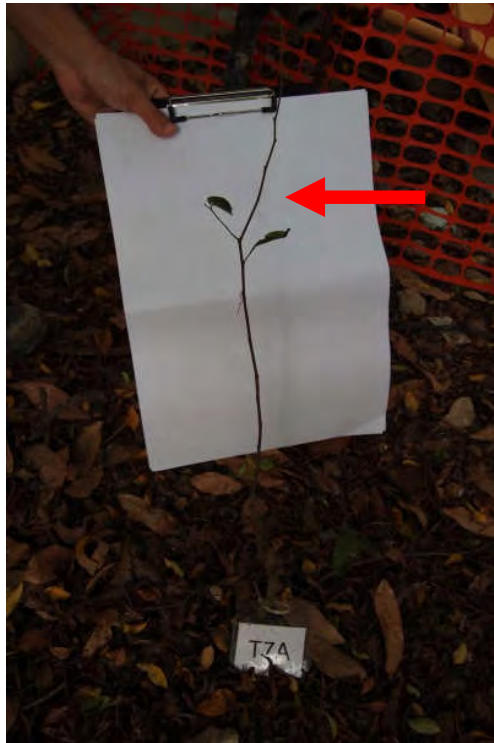


Photo 12 Overall view of CT_7a



Photo 13 Overall view of the Tree Group 2 – in the protection zone