Drainage Service Department

Monthly Environmental Monitoring & Auditing report for

Contract No.DC/2009/22
Drainage Improvement in Shuen Wan, Tai Po – Contract 1

September 2012

Environmental Pioneers & Solutions Limited
Flat A, 19/F, Chaiwan Industrial Building,
20 Lee Chung Street, Chai Wan, Hong Kong
Tel: 2556 9172 Fax: 2856 2010

APPROVAL SHEET

The Contents of this report have been

Certified by:

Signature: _____ Date: 16-OCT-2012

Miss. Goldie Fung
(Environmental Team Leader)

Ecologist (Asia Ecological Consultants Ltd.)

Signature: Michael Leven Date: 24 October 2012

Dr. Michael Leven
(Ecologist)

RLA (Environmental Resources Management)

Signature: _____ Date: 24/10/2012

Miss. Christina Ip
(RLA)

and Verified by:

IEC (ENVIRON Hong Kong Limited)

Signature: _____ Date: 16.Oct.2012

Mr. Tony Cheng
(IEC)

TABLE OF CONTENT

LIST OF APPENDIXES

Appendix O: Approved Proposal of Revision for Action/Limit Level Criteria of Water Quality Monitoring
Appendix P: Site Diary

EXECUTIVE SUMMARY

This is the nineteenth monthly Environmental Monitoring and Audit (EM&A) Report for the drainage improvement works in Shuen Wan, Tai Po under Drainage Services Department Contract No. DC/2009/22 entitled "Drainage Improvement Works in Shuen Wan, Tai Po – Contract 1". This report concludes the impact monitoring for the activities undertaken during the period from 1st of September 2012 to 30th September 2012. The major site activities in this reporting period were mainly internal finishing for the proposed Transformer room & Switchroom, heading tunnel for the proposed DN225 sewer, Excavation for the proposed DN1200 & DN1200 concrete pipe trench, Concreting for the proposed discharge chamber, concreting top slab for Bay 10 and grouting for second layer of grout hole at the proposed DN2800 twin pipes.

The Environmental Team (ET) is responsible for the EM&A works required in the EM&A manual (revision 3). Site inspections were carried out on weekly basis to investigate and audit the equipment and work methodologies with respect to pollution control and environmental mitigation. The weekly inspections records and photos taken were kept.

In general, waste management was satisfactory during the reporting period.

Impact monitoring for construction noise was conducted in the reporting period. No exceedance of A/L level was reported.

Furthermore, impact monitoring for water quality was conducted. Total 11 abnormal incidents of water quality criteria were recorded in this reporting month. It was observed that the river was narrowed for construction of mechanical penstocks; and increases the speed of water current. During the reporting period, no construction works were carried out at the river bed. Proper mitigation measures were implemented by contractor to avoid site water release to the Wai Ha river and no particular observation of defective site activities were found causing water contamination; The exceedance of Turbidity and Total Suspended Solid were believed to be mainly attributed by high water flow rate and for the high level of turbidity and SS, it was also believed to be attributed by adverse weather. The exceedances of DO were believed to be mainly attributed by natural fluctuation. And, since the recorded

levels of DO at control station had also exceeded its baseline action level, the exceedances recorded at W2 were unlikely to be related to the Project.

No exceedance of A/L level was reported for the monitoring of hydrological characteristics in the reporting period.

The ecological monitoring of the Ecological Compensatory Area (ECA) of the project is conducted. Details of the findings are referred to sections 6.2.

Visual and landscape monitoring has been conducted for the project. Details of the observations are referred to sections 7.3.

There was no complaint, notification of any summons and successful prosecutions against the project received during the reporting period.

Site works proposed to be carried out in the upcoming month at Area A, B & C are refer to section 2.2.

It is expected that noise, air and water quality impacts will be resulted from the works. ET has reminded the contractor to provide environmental pollution control measures wherever necessary and to keep a good environmental management at site practice. The recommended mitigation measures proposed for the project as well as implementation status are refer to section 12.3.

The ET will continue to implement the environmental monitoring & audit programme in accordance with the EM&A Manual (revision 3) and Environmental Permit requirement.

1 Introduction

This is the seventeenth monthly Environmental Monitoring and Audit (EM&A) Report for the drainage improvement works in Shuen Wan, Tai Po under Drainage Services Department Contract No. DC/2009/22 entitled "Drainage Improvement Works in Shuen Wan, Tai Po – Contract 1". The site layout plan is shown in Appendix A. The Environmental Team, Environmental Pioneers & Solutions Limited was appointed by Kwan Lee – Kuly Joint Venture to prepare the report. The report is to be submitted to the Contractor, the Engineer and the IEC.

This report presents the results of the environmental monitoring of the project activities conducted within the reporting period from 1st September 2012 to 30th September 2012. This report included the noise monitoring, water quality monitoring, hydrological characteristics monitoring, ecological monitoring, visual and landscape monitoring, and regular site inspections once per week for verification of implementation of the mitigation measures as recommended in the Environmental Permit (EP-303/2008) (EP), EM&A Manual (revision 3) and the Contractor's Environmental Management Plan (EMP).

2 Construction Stage

2.1 Construction activities in the reporting period

Major activities in the reporting period included the followings:

Area A.:
- Internal Finishing for the proposed Transformer room & Switch room.
- Laying of E&M ducting for the proposed screen house and store room.
- Concreting the U-channel at +11.85mPD and stairs.
- Laying of blinding layer for receiving pit.
- Heading tunnel for the proposed DN225 sewer.
- Excavation for the proposed DN1200 & DN1200 concrete pipe trench.
- Heading excavation for the proposed DN225 sewer.
- Concreting for the proposed discharge chamber.
- Road reinstatement of the proposed DN2100 trench (CH70 to CH120)

Area B.:
- Concreting top slab for Bay 10.
- Installation of sheetpiles for the proposed box culvert bay 9, 4 & 1.
- Grouting for second layer of grout hole at the proposed DN2800 twin pipes.
- Backfilling of trench for the proposed Box Culvert.

Area C.:
- In Maintenance period.

2.2 Construction activities for the coming month

Proposed key construction works in the coming month will include:

Area A (Pumping Station)

1. Internal finishing for the proposed transformer room and switch room.
2. Construction of screen house and store room.
3. Construction of flowmeter chamber and DN1200 concrete pipe.
4. Construction of DN2100 Storm relief drains (CH80 to CH120) at Ting Kok Road.

5. Construction of receiving pit for cross road DN2800 twin pipe.
6. Construction of the proposed receiving pit.
7. Construction of the proposed discharge chamber

Area B (Tung Tsz Nursery)

1. Construction of box culvert CH156 to CH214.5 & CH0.0 – CH55
2. Construction of jacking pit for cross road DN2800 twin pipe.

Area C (HCA)

1. In Maintenance Period

2.3 Environmental Status

Appendix A shows the drawing of the project area.

Locations of the monitoring and control stations with environmental sensitive receivers are presented in Section 3.3, 4.3, and 5.3 for noise, water quality, and hydrological characteristics respectively.

3 Noise Monitoring

3.1 Monitoring Parameters and Methodology

The construction noise level was measured in terms of the A-weighted equivalent continuous sound pressure level (L_{eq}). $L_{eq\ (30minutes)}$ was used as the monitoring parameter for the impact monitoring in the time period between 0700 to 1900 hours on normal weekdays. For all other time period, $L_{eq\ (5minutes)}$ was employed for comparison with the Noise Control Ordinance (NCO) criteria.

Noise measurement results obtained from each monitoring location were recorded in the Construction Noise Monitoring Data Sheet (Appendix D) immediately after the measurement. As supplementary information for data auditing, statistical results L_{10} and L_{90} were also be recorded for reference.

In case of non-compliance with the construction noise criteria, more frequent monitoring, as specified in the Action plan in Table 3.5.2, shall be carried out. This additional monitoring shall be carried out until the recorded noise levels are rectified or proved to be irrelevant to the construction activities.

3.2 Monitoring Equipment

The sound level meters and calibrators comply with the International Electrotechnical Commission Publications 651:1979 (Type 1) and 804:1985 (Type 1) specifications as referred to in the Technical Memorandum (TM) to the Noise Control Ordinance was deployed as monitoring equipment for noise measurement.

Noise measurement was not be made in the presence of fog, rain, wind with a steady speed exceeding $5ms^{-1}$ or wind with gust exceeding $10ms^{-1}$. Thus wind speed was checked by the portable wind speed indicator capable of measuring the wind speed in m/s. Table 3.2.1 summarizes the equipment list for noise monitoring

Table 3.2.1 Equipment List for Noise Monitoring

Equipment	Manufacturer & Model No.	Precision Grade	Qty
Integrated sound level meter	Svantek 949	IEC 651 Type 1 IEC 804 Type 1	1
Windscreen	Microtech gefell model W2	N/A	1
Acoustical calibrator	Svantek SV30A	IEC 942 Type 1	1
Wind speed indicator	Kestrel K1000	N/A	1
Remarks: Calibration details of the sound level meter is given in Appendix C for reference			

3.3 Monitoring Locations

According to the Environmental Monitoring and Audit manual, impact noise monitoring for contract 1 was undertaken at two locations during the construction phase of the project. The proposed monitoring locations are summarized in Table 3.3.1. Figure 3.3.1 shows the Noise Monitoring Locations

Noise measurement at each monitoring location was taken at a point 1m from the exterior of the selected premises and at a height of 1.2m above ground with no disturbance to the dweller and least obstructed view.

Table 3.3.1 Noise Monitoring Locations during Construction Phase

Noise Monitoring Station	Location
M1	14, Shuen Wan Chim Uk
AL1	Joint Village Office for Villages in Shuen Wan, Tai Po

In accordance with the requirements in the EM&A manual (revision 3), weekly impact monitoring was conducted. For the time period between 0700 and 1900 hours on normal weekdays, and noise parameter of $L_{eq\ (30minutes)}$ was measured. As if the construction works were carried out during restricted period (i.e. 1900-2300, 2300-0700 of next day and Sundays / general holiday), impact monitoring that comprises 3 consecutive $L_{eq\ (5minutes)}$ would be carried out.

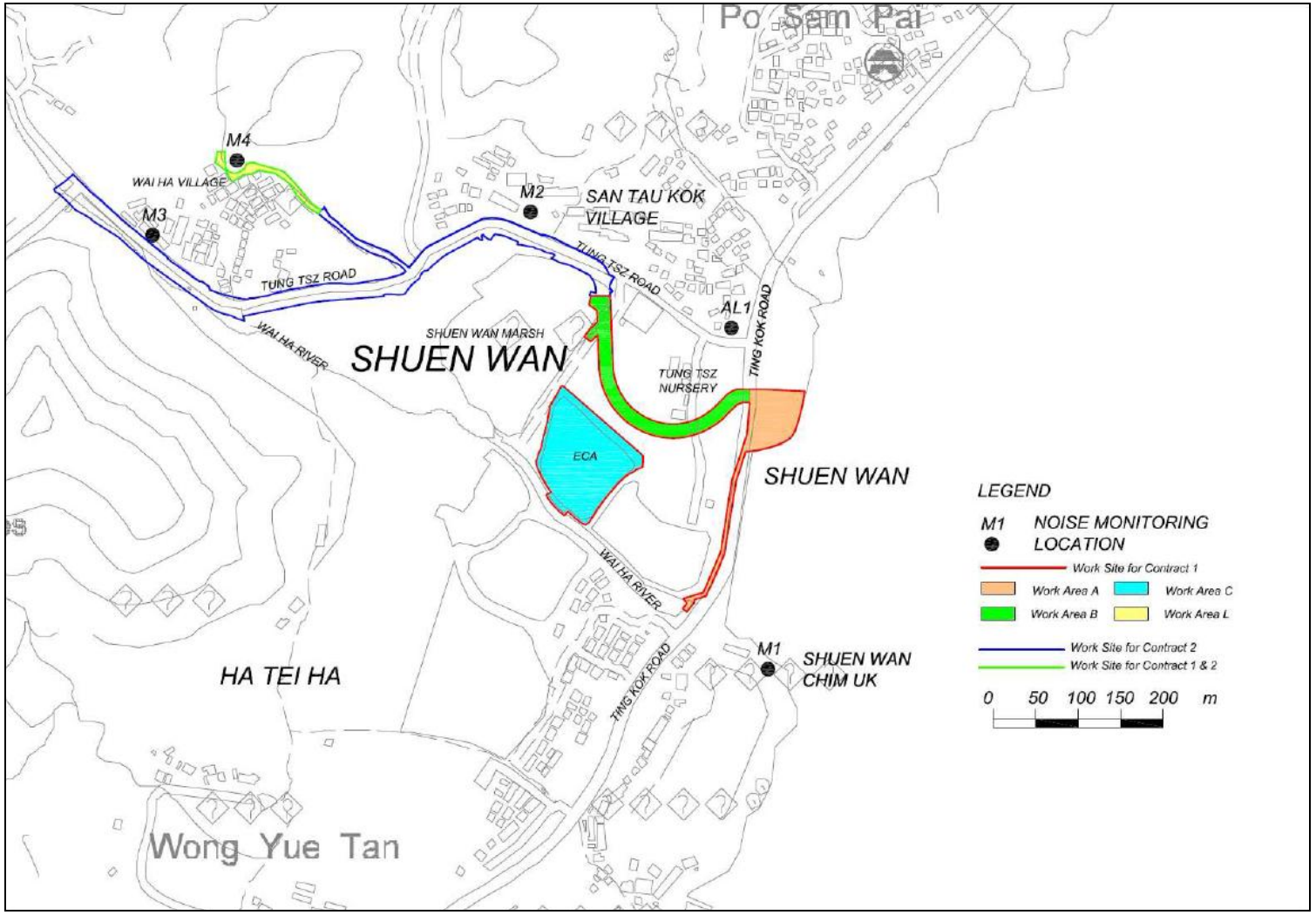


Figure 3.3.1 Impact noise monitoring locations

3.4 Monitoring Results and Interpretation

Relevant details of the noise monitoring results are presented in Table 3.4.1. The results of M1 ranged between 60.1dB (A) and 62.3dB (A), and AL1 ranged between 64.1dB (A) and 68.5dB (A), were within the limit levels and therefore, no exceedance was found.

Table 3.4.1 Noise Monitoring Results for the reporting period

Location	Parameter	Date*	Time	L_{Aeq} dB(A)	Limit dB(A)	Exceedance	Weather
M1	$L_{eq\ 30mins}$	5-Sep-12	10:20	60.1	75	N	Sunny
M1	$L_{eq\ 30mins}$	9-Sep-12	10:30	62.3	75	N	Sunny
M1	$L_{eq\ 30mins}$	19-Sep-12	9:50	60.1	75	N	Sunny
M1	$L_{eq\ 30mins}$	26-Sep-12	10:50	62.3	75	N	Sunny
AL1	$L_{eq\ 30mins}$	5-Sep-12	10:55	64.1	75	N	Sunny
AL1	$L_{eq\ 30mins}$	9-Sep-12	11:05	67.4	75	N	Sunny
AL1	$L_{eq\ 30mins}$	19-Sep-12	10:25	68.5	75	N	Sunny
AL1	$L_{eq\ 30mins}$	26-Sep-12	11:20	66.3	75	N	Sunny

Remarks: Raw datasheet for noise monitoring are attached in Appendix D for reference.

3.5 Action and Limit level for Construction noise

The Action and Limit (A/L) levels for construction noise are defined in Table 3.5.1. Should non-compliance of the criteria occur, action in accordance with the Action Plan in Table 3.5.2 should be carried out.

There was no exceedance recorded in the reporting period.

Table 3.5.1 Action and Limit Levels for Construction noise

Time Period	Action Level	Limit Level
0700 – 1900 hours on normal weekdays	When one documented complaint is received	75dB(A)
Remarks: If works are to be carried out during restricted hours, the conditions stipulated in the construction noise permit issued by the Noise Control Authority have to be followed.		

3.6 Monitoring Schedule for the next reporting period

Noise monitoring schedule is proposed to be carried out on 3rd, 10th , 17th, 24th and 31st of October 2012.

Table 3.5.2 Event / Action Plan for Construction Noise

EVENT	ET Leader	IEC	ER	CONTRACTOR
Action Level	1. Notify IEC and Contractor. 2. Carry out investigation. 3. Report the results of investigation to the IEC, ER and Contractor. 4. Discuss with the Contractor and formulate remedial measures. 5. Increase monitoring frequency to check mitigation effectiveness.	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.	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. Check remedial measures are properly implemented.	1. Submit noise mitigation proposals to IEC. 2. Implement noise mitigation proposals.

Limit Level	1. Notify IEC, ER, EPD and Contractor. 2. Identify source. 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 IEC, ER and EPD the causes and actions taken for the exceedances. 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results. 8. If exceedance stops, cease additional monitoring.	1. Discuss amongst ER, ET, and Contractor on the potential remedial actions. 2. Review Contractor's' remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly. 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of 2. Notify Contractor. 3. Require Contractor 4. Check 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.	1. Take immediate action to avoid f urther exceedance. 2. Submit proposals for remedial actions to IEC 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.

4 Water Monitoring

4.1 Water Quality Monitoring Parameters and methodology

Turbidity in Nephelometric Turbidity Unit (NTU), and Dissolved Oxygen (DO) in mg/L, temperature, and pH measurements were in-situ measurements and suspended solids measurements were performed by a HOKLAS accredited laboratory using recommended reference method APHA 2540D.

4.2 Monitoring Equipment

Turbidity, DO, Salinity, pH and temperature was measured by an instrument complied with the following requirements:

The instrument is a portable as well as weatherproof multimeter complete with cable and uses a DC power source. It is capable of measuring:

- A turbidity between 0-800NTU;
- A dissolved Oxygen level in the range of 0-20mg/L and 0-200% saturation;
- A temperature of 0-50^{o}C;
- Salinity in the range of 0-40ppt;
- pH in the range of 0-14.

The measurements were performed by a portable and weatherproof multi-meter, model TOA-DKK WQC-24. The equipment was calibrated and verified by certified laboratory every 3 months to ensure they perform to the same level of accuracy as stated in the manufacturer's specification. Detailed calibration records of the multi-meter were shown in Appendix C for reference

Suspended solids were determined by the water samples collected from the monitoring locations for further analysis in accredited HOKLAS laboratory. Water samples were contained by polythene bottles, packed in ice (cooled in 4^{o}C without frozen) and delivered to the laboratory for analysis as soon as possible after collection.

4.3 Monitoring Locations

In accordance with the EM&A Manual (revision 3), monitoring stations for contract 1 were established at two locations, which are summarized in Table 4.3.1.

Table 4.3.1 – Water Quality Monitoring Stations

Monitoring Station	**Location**	**Coordinates**
W1	Between the Shuen Wan Marsh and ECA	E:839301 N:836386
W2	Between Tolo Harbour and Proposed Penstock	E:839542 N:836184

As illustrated in Figure 4.3.1, W1 served as the control station while W2 was the monitoring location of water quality.

According to the approved proposal of revision for Action/Limit Level Criteria of Water Quality Monitoring, two reference points (C1 & C2) were added.

Should the water quality parameters monitoring results at the monitoring station W2 exceed the water quality criteria, the water quality monitoring data of two reference points (C1 and C2) will be used as the supplementary information. The monitoring data of C1 should be used for comparison with the monitoring data of W2 that taken at flood tide; and the monitoring data of C2 should be used for comparison with the monitoring data of W2 that taken at ebb tide. The comparison of water quality between W2 and C1 at flood tide and between W2 and C2 at ebb tide is to prove whether influence of water quality is caused by the construction activities. The details of C1 and C2 are presented in **Appendix O**.

In accordance with the EM&A Manual (revision 3), measurements shall be taken at 3 water depths, namely, 1m below water surface, mid-depth and 1m above river bed, except where the water depth less than 6m, the mid-depth station may be omitted. Should the water depth be less than 3m, only the mid-depth station will be monitored.

As the depth of water was less than 3m, water samples were collected at mid-depth of each proposed monitoring stations for measurements and sample collection.

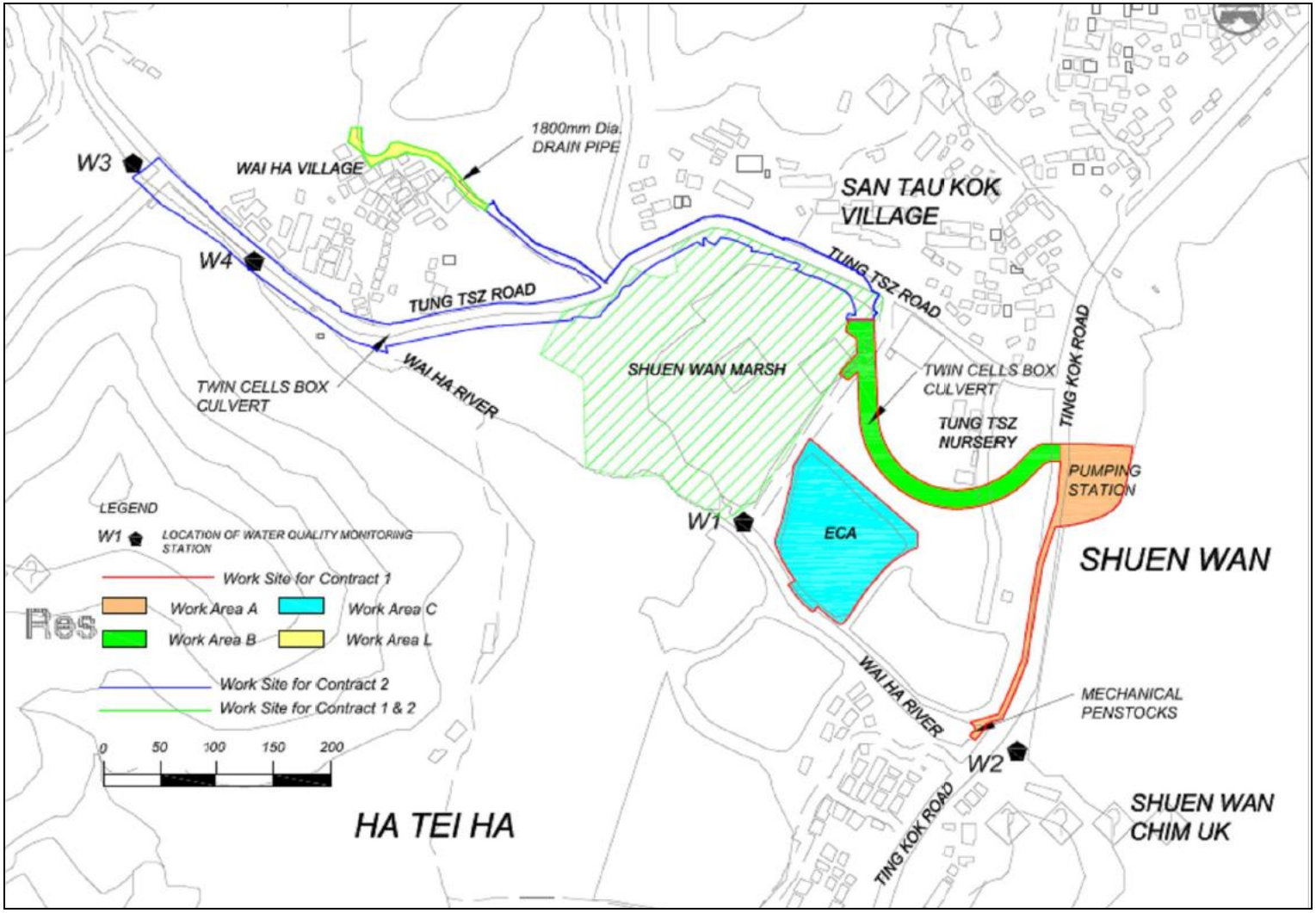


Figure 4.3.1 Water Quality Monitoring Locations

4.4 Monitoring Frequency

Impact water quality monitoring for each monitoring station were performed at mid-flood or mid-ebb tides for 3 days per week during the course of the construction river works.

Monitoring were carried out on 3rd, 5th, 7th, 10th, 12th, 14th, 17th, 19th, 21st, 24th, 26th and 28th of September 2012.

4.5 Monitoring Results and Interpretation

Water quality monitoring was carried out twelve times in this reporting month. Detailed on-site measurements are shown in Appendix E. Table 4.5.1 presents consolidated results throughout the reporting month.

There were 11 abnormal incidents of water quality limits (Dissolved Oxygen, Suspended Solid and Turbidity) were recorded in this reporting month according to the established action and limit levels. ET has arranged site investigations for the abnormal incidents and it was observed that the river was narrowed for construction of mechanical penstocks; and increases the speed of water current. No construction activities were carried out at the river bed during the reporting period. Proper mitigation measures were implemented by contractor to avoid site water release to the Wai Ha river and no particular observation of defective site activities were found causing water contamination; The exceedance of Turbidity and Total Suspended Solid were believed to be mainly attributed by high water flow rate and adverse weather. The exceedances of DO were believed to be mainly attributed by natural fluctuation, since the recorded levels of DO at control station had also exceeded its baseline action level, the exceedances recorded at W2 were unlikely to be related to the Project.

The water condition of Wai Ha River is presented in photo attached in Appendix N**.**

Table 4.5.1 Summary of Water Quality Monitoring Results of this reporting month

	Average of Monitoring Results					
	Temperature (°C)	*Turbidity (NTU)*	*pH*	*Dissolved Oxygen (mg/L)*	*Dissolved Oxygen (%)*	*Suspended Solids (mg/L)*
W1	30.38	13.3	6.81	5.86	81.1	11.83
W2	30.1	11.4	7.38	7.02	89.2	6.58
C1	31.9	11.4	7.41	6.75	86.0	11.0
C2	30.5	23.0	8.03	6.48	89.4	23.8

Table 4.5.2 Interpretations of abnormal incidents recorded in the reporting month

Date	**Tide**	**Parameter**	**Interpretations**
3/9/2012	Ebb	Turbidity	Incident was regarded as high river flow rate since river narrowed was observed.
5/9/2012	Ebb	Turbidity	Incident was regarded as high river flow rate since river narrowed was observed.
7/9/2012	Ebb	Turbidity	Incident was regarded as high river flow rate since river narrowed was observed.
10/9/2012	Ebb	Turbidity	Incident was regarded as high river flow rate since river narrowed was observed.
12/9/2012	Flood	Turbidity	Incident was regarded as high river flow rate since river narrowed was observed.
14/9/2012	Ebb	Turbidity	Incident was regarded as high river flow rate since river narrowed was observed.
17/9/2012	Ebb	Turbidity	Incident was regarded as high river flow rate since river narrowed was observed.
21/9/2012	Ebb	Turbidity	Incident was regarded as high river flow rate since river narrowed was observed.
24/9/2012	Flood	Turbidity	Exceedances were caused by adverse weather
		SS	
26/9/2012	Ebb	Turbidity	Incident was regarded as high river flow rate since river narrowed was observed.
28/9/2012	Ebb	DO	Natural fluctuation

The site activities of September 2012 were shown in **Appendix P**.

4.6 Action and limit level for Water Quality

Based on the criteria stipulated in EM&A manual (revision 3) and baseline water quality monitoring data obtained, the A/L levels are shown in Table 4.6.1, Table 4.6.2. The A/L levels for W1 were ignored since W1 functions as the control station for contract 1. If the water quality monitoring results at any impact stations exceeded the criteria, the actions in accordance with the Event and Action Plan in Table 4.6.3 should be taken.

Table 4.6.1 Action and Limit Levels for Water Quality at All Monitoring Stations

Parameters	**Action**	**Limit**
DO in mg/L	5 percentile of baseline data	4 mg/L or 1 percentile of baseline data
pH	N/A	6.0 – 9.0
SS in mg/L	95 percentile of baseline data or 120% of upstream control station's SS	99 percentile of baseline data or 130% of upstream control station's SS
Turbidity in NTU	95 percentile of baseline data or 120% of upstream control station's Turbidity	99 percentile of baseline data or 130% of upstream control station's Turbidity

Table 4.6.2 Action and Limit Levels for Water Quality at All Monitoring Stations

Parameters	Monitoring Stations (Flood Tide)				Monitoring Stations (Ebb Tide)			
	W1		W2		W1		W2	
	Action Level	Limit Level	Action Level	Limit Level	Action Level	Limit Level	Action Level	Limit Level
DO (mg/L)	8.07	8.07	7.81	7.69	7.12	7.02	6.77	6.31
pH	N/A	6.0-9.0	N/A	6.0-9.0	N/A	6.0-9.0	N/A	6.0-9.0
SS (mg/L)	7.7	8.1	7.7	8.6	10.5	10.9	9.4	9.9
Turbidity (NTU)	4.9	5.3	1.7	1.8	4.2	4.7	3.0	3.5

Remarks:

For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits

For SS and turbidity, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

Table 4.6.3 Event and action Plan for Water Quality

Event	ET Leader	IEC	ER	Contractor
ACTION LEVEL				
Action level being exceeded by one sampling day	1. Repeat in-situ measurements to confirm findings; 2. Identify reasons for non-compliance and source(s) of impact; 3. Inform IEC, Contractor and Engineer; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC, Engineer and Contractor; 6. Ensure mitigation measures are implemented. 7. Repeat measurement on next day of exceedance.	1. Discuss mitigation measures with ET, Engineer and Contractor; 2. Review proposals on mitigation measures submitted by Contractor and advise the Engineer accordingly; 3. Assess effectiveness of implemented mitigation measures.	1. Discuss proposed mitigation measures with IEC, ET and Contractor; 2. Make agreement on mitigation measures to be implemented; 3. Assess effectiveness of implemented mitigation measures.	1. Inform Engineer and confirm in writing notification of the non-compliance; 2. Rectify unacceptable practice; 3. Check all plant and equipment; 4. Consider changes in working methods; 5. Discuss with ET, IEC and Engineer and propose mitigation measures to IEC and Engineer within three working days; 6. Implement agreed mitigation measures.

Action level being exceeded by more than two consecutive sampling days	1. Repeat in-situ measurements to confirm findings; 2. Identify reasons for non-compliance and source(s) of impact; 3. Inform IEC, Contractor and Engineer; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC, Engineer and Contractor; 6. Ensure mitigation measures are implemented. 7. Prepare to increase the monitoring frequency to daily; 8. Repeat measurement on next day of exeedance.	1. Discuss mitigation measures with ET, Engineer and Contractor; 2. Review proposals on mitigation measures submitted by Contractor and advise the Engineer accordingly; 3. Assess effectiveness of implemented mitigation measures.	1. Discuss proposed mitigation measures with IEC, ET and Contractor; 2. Make agreement on mitigation measures to be implemented; 3. Assess effectiveness of implemented mitigation measures.	1. Inform Engineer and confirm in writing notification of the non-compliance; 2. Rectify unacceptable practice; 3. Check all plant and equipment; 4. Consider changes in working methods; 5. Discuss with ET, IEC and Engineer and propose mitigation measures to IEC and Engineer within three working days; 6. Implement agreed mitigation measures.
LIMIT LEVEL				
Limit level being exceeded by one sampling day	1. Repeat in-situ measurements to confirm findings; 2. Identify reasons for non-compliance and source(s) of	1. Discuss mitigation measures with ET, Engineer and Contractor; 2. Review	1. Discuss proposed mitigation measures with IEC, ET and Contractor;	1. Inform Engineer and confirm in writing notification of the non-compliance; 2. Rectify

	impact; 3. Inform EPD, IEC, Contractor and Engineer; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC, Engineer and Contractor; 6. Ensure mitigation measures are implemented; 7. Increase the monitoring frequency to daily until no exceedance of Limit level.	proposals on mitigation measures submitted by Contractor and advise the Engineer accordingly; 3. Assess effectiveness of implemented mitigation measures.	2. Request Contractor to critically review the working methods; 3. Make agreement on mitigation measures to be implemented; 4. Assess effectiveness of implemented mitigation measures.	unacceptable practice; 3. Check all plant and equipment; 4. Consider changes in working methods; 5. Discuss with ET, IEC and Engineer and propose mitigation measures to IEC and Engineer within three working days; 6. Implement agreed mitigation measures.
Limit level being exceeded by more than two consecutive sampling days	1. Repeat in-situ measurements to confirm findings; 2. Identify reasons for non-compliance and source(s) of impact; 3. Inform EPD, IEC, Contractor and Engineer; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC,	1. Discuss mitigation measures with ET, Engineer and Contractor; 2. Review proposals on mitigation measures submitted by Contractor and advise the Engineer accordingly; 3. Assess effectiveness of	1. Discuss proposed mitigation measures with IEC, ET and Contractor; 2. Request Contractor to critically review the working methods; 3. Make agreement on mitigation measures to	1. Inform Engineer and confirm in writing notification of the non-compliance; 2. Rectify unacceptable practice; 3. Check all plant and equipment; 4. Consider changes in working methods; 5. Discuss with ET, IEC and Engineer and propose

	Engineer and Contractor; 6. Ensure mitigation measures are implemented. 7. Increase the monitoring frequency to daily until no exceedance of Limit level for two consecutive days.	implemented mitigation measures.	be implemented; 4. Assess effectiveness of implemented mitigation measures; 5. Consider and if necessary instruct Contractor to slow down or to stop all or part of the construction activities until no exceedance of Limit Level.	mitigation measures to IEC and Engineer within three working days; 6. Implement agreed mitigation measures; 7. As directed by the Engineer, slow down or stop all or part of the construction activities until no exceedance of Limit level.

4.7 Monitoring Schedule for the next reporting period

Water quality monitoring schedule is proposed to be carried out on 3rd, 5th, 8th, 10th, 12th, 15th, 17th, 19th, 22nd, 24th, 26th, 29th and 31st of October 2012.

5 Hydrological Characteristics Monitoring

5.1 Hydrological Characteristics Monitoring Parameters and methodology

Impact monitoring of hydrological characteristics was undertaken to establish hydrological characteristics of sections of Wai Ha River adjacent to Drainage Improvement Works in Shuen Wan, Tai Po.

The hydrological characteristics of sections of Wai Ha River were measured by water flow rate and depth.

5.2 Monitoring Equipment

Monitoring performed by a portable echo-sounder, model Greyline Stingray. The equipment was calibrated and verified by certified laboratory or manufacturer every year to ensure they perform to the same level of accuracy as stated in the manufacturer's specification.

Calibration Certificate of the multi-meter is given in Appendix C.

5.3 Monitoring Locations

In accordance with the EM&A Manual (revision 3), monitoring stations for contract 1 were established at two locations and summarized in Table 5.3.1.

Table 5.3.1 – Water Quality Monitoring Stations

Monitoring Station	**Location**	**Coordinates**
H1	Between the Shuen Wan Marsh and ECA	E:839301 N:836386
H2	Route to Sam Kung Temple	E:839163 N:836433

As illustrated in Figure 5.3.1, H2 served as the control station while H1 was the monitoring location of hydrological characteristics.

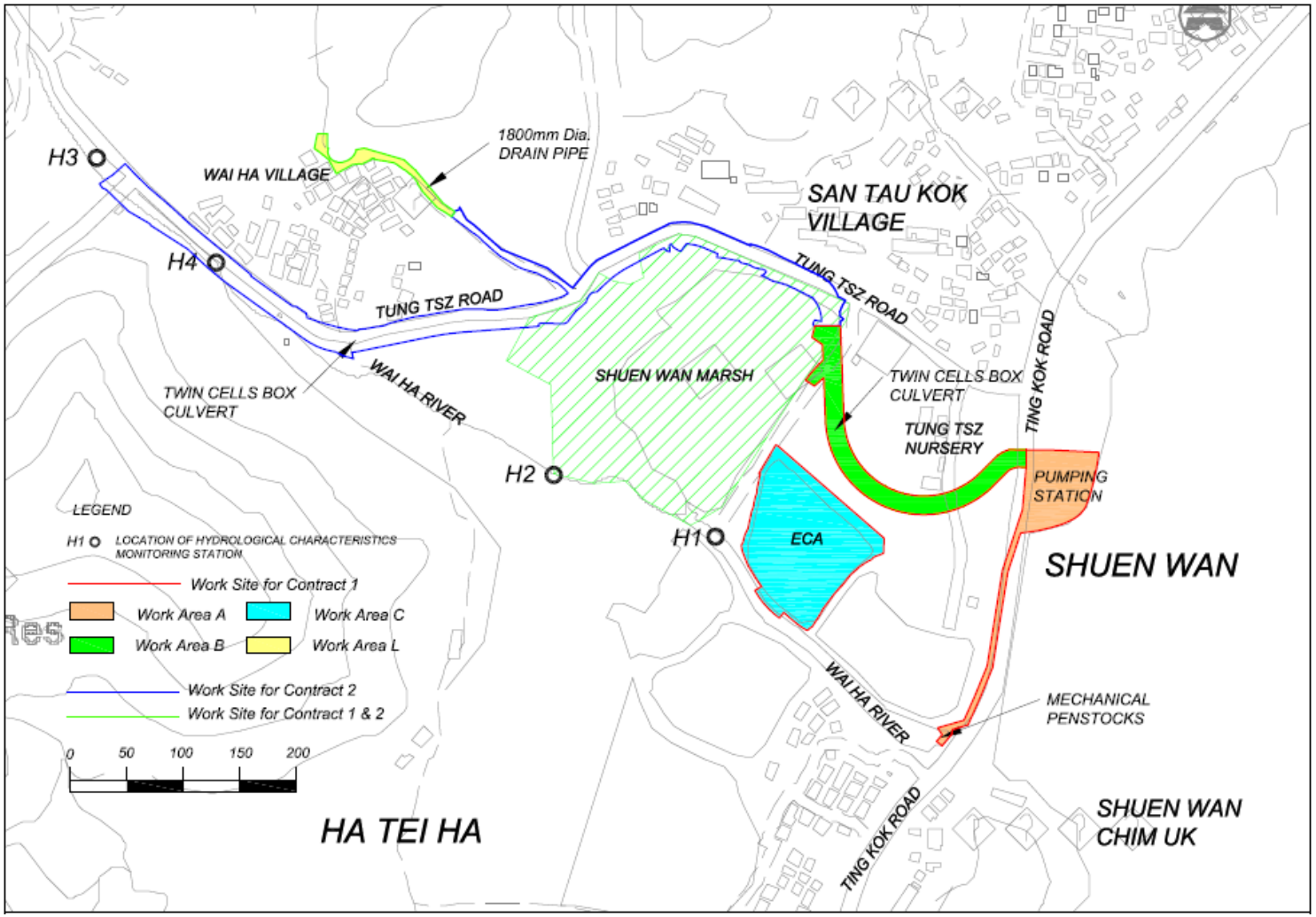


Figure 5.3.1 Hydrological Characteristics Monitoring Locations

5.4 Monitoring Frequency

Hydrological characteristics monitoring for each monitoring station were performed at mid-flood and mid-ebb tides for once per week during the course of the construction river works.

Monitoring was carried out on 7th, 14th, 21st and 28th of September 2012.

5.5 Monitoring Results and Interpretation

Hydrological characteristics monitoring was carried out four times in this reporting period. The monitoring results are summarized in Table 5.5. All results were within the action and limit levels, therefore, no exceedance was found.

Table 5.5 Summary of Water Quality Monitoring Results

	Average of Monitoring Results	
	Water Depth (m)	Water Flow Rate (m^3/s)
H1(Floor)	~0.420	0.075
H1(Ebb)	~0.165	0.113
H2(Floor)	~0.330	0.471
H2(Ebb)	~0.165	0.584

Details of the monitoring data were presented in Appendix F.

5.6 Action and limit level for Hydrological Characteristics

The Action and Limit levels for all monitoring stations are summarized in Table 5.6.1, which would be applied for compliance assessment of hydrological characteristics for this project. If the hydrological characteristics monitoring results at any impact stations exceeded the criteria, the actions in accordance with the Event and Action Plan in Table 5.6.2 should be taken.

Table 5.6.1 Action and Limit Levels for Hydrological Characteristics at All Monitoring Stations

Parameters	**Action**	**Limit**
Water Depth at Mid-flood (m)	0.08	0.06
Water Depth at Mid-ebb (m)	0.08	0.06
Water Flow Rate (m^3/s)	120% of control station's water flow rate on the same day of measurement	140% of control station's water flow rate on the same day of measurement

Table 5.6.2 Event and action Plan for Hydrological Characteristics

Event	**ET Leader**	**IEC**	**ER**	**Contractor**
ACTION LEVEL				
Action level being exceeded by one sampling day	1. Repeat in-situ measurements to confirm findings; 2. Identify reasons for non-compliance and source(s) of impact; 3. Inform IEC, Contractor and Engineer; 4. Check monitoring data, Contractor's working methods and any excavation works or dewatering processes; 5. Discuss mitigation measures with IEC, Engineer and Contractor; 6. Ensure mitigation measures are implemented.	1. Discuss mitigation measures with ET, Engineer and Contractor; 2. Review proposals on mitigation measures submitted by Contractor and advise the Engineer accordingly; 3. Assess effectiveness of implemented mitigation measures.	1. Discuss proposed mitigation measures with IEC, ET and Contractor; 2. Make agreement on mitigation measures to be implemented; 3. Assess effectiveness of implemented mitigation measures.	1. Inform Engineer and confirm in writing notification of the non-compliance; 2. Rectify unacceptable practice; 3. Check working methods and any excavation works or dewatering processes; 4. Consider changes in working methods and plans; 5. Discuss with ET, IEC and

	7. Repeat measurement on next day of exceedance.			Engineer and propose mitigation measures to IEC and Engineer within three working days; 6. Implement agreed mitigation measures.
Action level being exceeded by more than two consecutive sampling days	1. Repeat in-situ measurements to confirm findings; 2. Identify reasons for non-compliance and source(s) of impact; 3. Inform IEC, Contractor and Engineer; 4. Check monitoring data, Contractor's working methods and any excavation works or dewatering processes; 5. Discuss mitigation measures with IEC, Engineer and Contractor; 6. Ensure mitigation measures are implemented. 7. Prepare to increase the monitoring frequency to daily; 8. Repeat measurement	1. Discuss mitigation measures with ET, Engineer and Contractor; 2. Review proposals on mitigation measures submitted by Contractor and advise the Engineer accordingly; 3. Assess effectiveness of implemented mitigation measures.	1. Discuss proposed mitigation measures with IEC, ET and Contractor; 2. Make agreement on mitigation measures to be implemented; 3. Assess effectiveness of implemented mitigation measures.	1. Inform Engineer and confirm in writing notification of the non-compliance; 2. Rectify unacceptable practice; 3. Check working methods and any excavation works or dewatering processes; 4. Consider changes in working methods and plans; 5. Discuss with ET, IEC and Engineer and propose mitigation measures to IEC

	on next day of exeedance.			and Engineer within three working days; 6. Implement agreed mitigation measures.
LIMIT LEVEL				
Limit level being exceeded by one sampling day	1. Repeat in-situ measurements to confirm findings; 2. Identify reasons for non-compliance and source(s) of impact; 3. Inform AFCD, IEC, Contractor and Engineer; 4. Check monitoring data, and Contractor's working methods and any excavation works or dewatering processes; 5. Discuss mitigation measures with IEC, Engineer and Contractor; 6. Ensure mitigation measures are implemented; 7. Increase the monitoring frequency to daily until no exceedance of Limit level.	1. Discuss mitigation measures with ET, Engineer and Contractor; 2. Review proposals on mitigation measures submitted by Contractor and advise the Engineer accordingly; 3. Assess effectiveness of implemented mitigation measures.	1. Discuss proposed mitigation measures with IEC, ET and Contractor; 2. Request Contractor to critically review the working methods; 3. Make agreement on mitigation measures to be implemented; 4. Assess effectiveness of implemented mitigation measures.	1. Inform Engineer and confirm in writing notification of the non-compliance; 2. Rectify unacceptable practice; 3. Check working methods and any excavation works or dewatering processes; 4. Consider changes in working methods and plans; 5. Discuss with ET, IEC and Engineer and propose mitigation measures to IEC and Engineer within three working days; 6. Implement agreed mitigation measures.
Limit level	1. Repeat in-situ	1. Discuss	1. Discuss	1. Inform Engineer

being exceeded by more than two consecutive sampling days	measurements to confirm findings; 2. Identify reasons for non-compliance and source(s) of impact; 3. Inform AFCD, IEC, Contractor and Engineer; 4. Check monitoring data, and Contractor's working methods and any excavation works or dewatering processes; 5. Discuss mitigation measures with IEC, Engineer and Contractor; 6. Ensure mitigation measures are implemented. 7. Increase the monitoring frequency to daily until no exceedance of Limit level for two consecutive days.	mitigation measures with ET, Engineer and Contractor; 2. Review proposals on mitigation measures submitted by Contractor and advise the Engineer accordingly; 3. Assess effectiveness of implemented mitigation measures.	proposed mitigation measures with IEC, ET and Contractor; 2. Request Contractor to critically review the working methods; 3. Make agreement on mitigation measures to be implemented; 4. Assess effectiveness of implemented mitigation measures; 5. Consider and if necessary instruct Contractor to slow down or to stop all or part of the construction activities until no exceedance of Limit Level.	and confirm in writing notification of the non-compliance; 2. Rectify unacceptable practice; 3. Check working methods and any excavation works or dewatering processes; 4. Consider changes in working methods and plans; 5. Discuss with ET, IEC and Engineer and propose mitigation measures to IEC and Engineer within three working days; 6. Implement agreed mitigation measures; 7. As directed by the Engineer, slow down or stop all or part of the construction activities until no exceedance of Limit level.

5.7 Monitoring Schedule for the next reporting period

Hydrological characteristics monitoring schedule is proposed to be carried out on 5th, 12th, 19th and 26th of October 2012.

6 Ecological Monitoring of ECA

6.1 Introduction

The Ecological Monitoring of the Ecological Compensatory Area (ECA) of the Project is conducted to fulfill Clauses 5.2 and 5.4 of EP-303/2008 and the monitoring requirements in accordance with Section 6 of the approved updated EM&A Manual (approved by EPD on 31st May 2012) and the approved updated Habitat Creation Plan (HCP) (approved by EPD on 8th December 2011) of the Project.

This report documents monitoring findings on the site inspections in the ECA undertaken in September 2012.

6.2 Ecological Monitoring of ECA

6.2.1 Scope of Monitoring

A specific ecological monitoring programme and ecological monitoring requirements of the ECA are detailed in Section 7 of the approved Habitat Creation Plan (HCP) and Section 6.18 of the approved updated Environmental Monitoring & Audit (EM&A) Manual of the Project.

During the construction phase of the ECA, monthly monitoring of vegetation health (including the planted, retained and transplanted trees and shrubs, and the proposed planting) and weekly site inspections should be undertaken. Monthly

monitoring of *in situ* water quality will be carried out once the ECA is filled with water from the nearby Wai Ha River.

During the 12-month establishment phase of the ECA, monitoring of habitat types, vegetation cover, intertidal fauna and other fauna (including avifauna, herpetofauna, fish, odonates and butterflies) will be undertaken on a six-monthly basis, while the vegetation health and *in situ* water quality will be monitored monthly. Site inspections will be conducted twice per month.

6.2.2 Monitoring Methodology during the construction phase

Monitoring of vegetation health

Monthly monitoring of the health condition of the retained and transplanted trees and vegetation will be conducted. Following planting of vegetation in the ECA, monitoring of the growth and health conditions of the planted vegetation in the created habitats (i.e. brackish marsh, mangrove, woodland areas of planted trees and shrubs, and wooded areas with retained and (trans)planted trees) within the ECA is to be conducted during the construction and establishment phases. General health and growth status of the retained trees within the ECA are recorded and recommendation of appropriate tree care will be made to the maintenance party.

All planted, retained and transplanted trees and shrubs will be surveyed to update their growth and health status. Any signs of pests and/ or poor growth of

planted, retained and transplanted trees and shrubs will be recorded. Appropriate treatment or removal of pests will be implemented if necessary. Supplemental planting will be arranged if needed.

A fixed transect line will be run through the wetland habitats (including intertidal mudflat, brackish marsh and mangrove) and the general growth and health of the planted vegetation along both sides of the transect will be inspected and evaluated. Any adverse plant health, such as dieback of planted species, will be noted and supplemental planting will be arranged. Any signs of pests which cause adverse health problems to the plants will be identified and recorded.

Monitoring of water quality

Since there will be free movement of brackish river water in and out of the ECA, water quality in the ECA will be largely dependent on water quality in the river. In this open system it is not appropriate to set specific targets for water quality parameters. Nevertheless, baseline data on water quality, in particular seasonal patterns, would potentially be useful long term management of the ECA. Once the ECA is filled with water during the construction phase of the ECA, *in-situ* water quality will be measured once per month during both Construction and Establishment Phases. Parameters, including temperature, pH, salinity, turbidity and dissolved oxygen, will be monitored. Additional measurements of these parameters should also be made by the ecologist in response to unexpected events (e.g. algal blooms or fish die-offs) in order to inform remedial

management measures.

Site inspection

Weekly site inspection will be carried out by the Wetland Specialist to update the status and monitor the progress of the construction of the ECA. Any adverse ecological impact resulting from the construction should be identified and remedial action should be undertaken.

6.2.3 Monitoring Methodology during the establishment phase

Monitoring of vegetation health

Same monitoring methodology as in Section 2.2.

Monitoring of water quality

Same monitoring methodology as in Section 2.2.

Site inspection

Site inspection during the establishment phase of the ECA will be conducted twice per month for monitoring the health and condition of the wetland during the establishment period. Any unsatisfied health and habitat criteria of the wetland will be identified and remedial action should be recommended.

Twice monthly establishment phase monitoring has been commenced in

November 2011.

Monitoring of habitat types and vegetation cover

Monitoring of habitat types and vegetation cover will be conducted twice during the 12 month Establishment Phase of the ECA; specifically at the end of the dry season and the end of the subsequent wet season after completion of the planting work. The monitoring aims to determine the exact extent of the wetland habitats and vegetation cover (i.e. open water, intertidal mudflat, brackish marsh and mangrove) during the establishment period and control any excessive colonization of unwanted vegetation specific habitats.

Monitoring of intertidal fauna

As the ECA largely comprises an intertidal mudflat, monitoring for intertidal fauna will be conducted. Recolonisation will take time: accordingly monitoring will be tentatively conducted in February 2012 and August 2012. As the important aim of monitoring of intertidal fauna in the ECA is to examine the diversity of the colonising community, a qualitative manner by walk-through survey (i.e. walk through the site with species and relative abundance recorded) will be conducted. Core sampling will also be conducted at different levels to record infauna. Three samples at each level (low, middle and high) will be collected during each monitoring event and the monitoring will be conducted at low tide.

Monitoring of other fauna

Monitoring of other faunal groups, including birds, herpetofauna, fish, odonate and butterflies, will be conducted. Monitoring of any aquatic invertebrates will be covered by the intertidal surveys. Since the site will be intertidal, it is considered unsuitable for local amphibian species. Therefore, no nighttime survey for detection of mating calls of amphibians is necessary and only daytime surveys are needed. Monitoring of these faunal groups will be conducted on a walk-through survey basis. The surveyor will walk through the site, recording and counting the fauna observed. Microhabitats for herpetofauna will be actively searched. This monitoring will be conducted twice within the establishment period (once in the dry season (tentatively in February 2012) and once in the wet season (tentatively in August 2012).

Monitoring of wild mammals is not necessary in this case; however, if signs of wild mammals are observed (such as footprints) during any field surveys, these will be recorded.

6.2.4 Monitoring time and weather condition

Site inspection and monitoring of vegetation, fauna groups and water quality should be carried out during day-time with calm weather. Monitoring of birds should commence within one hour of sunrise, when is the peak activity period for birds. Other fauna groups shall be undertaken during the warmer part of the monitoring day.

6.3 Monitoring Results

6.3.1 Description of vegetation monitoring in Ecological Compensatory Area

The vegetation health monitoring during the construction and establishment period required to be conducted on a monthly basis in the Ecological Compensatory Area (ECA). The growth and health of the recorded vegetation was inspected in 26 September 2012 and detail vegetation information was shown in **Appendix L**.

Monitoring of transplanted trees were carried out in 26 September 2012 and continued since the first transplantation **(Appendix L(B))**.

Three specimens of protected species *Pavetta hongkongensis* were transplanted to ECA. Weekly monitoring was carried out since transplantation on 20th December 2011.

All trees surveyed were evaluated according to the following criteria (Webb 1991)

- Trees of good form, moderate to large size and in good health are classified as good;
- Trees of reasonable form, with few or no visible defects or health problems are classified as being fair;

- Trees that are of poor form, badly damaged or clearly suffering from decay die back or the effects of very heavy vine growth are classified as poor.

6.3.2 Description of vegetations and remarks

Vegetation monitoring in the ECA was carried out on site and growth/health conditions were recorded.

A total of 23 plant species were retained or newly re-colonized within ECA in which 6 of them were retained plant species including Terminalia catappa, Cocculus orbiculatus, Mangifera indica, Dimocarpus longan, Michelia x alba and Macaranga tanarius. Some green algae, such as c.f. Ulothrix sp. and Enteromorpha sp.were re-colonized in the water body or attached to the substratum in the ECA. Those algae could attract algae feeding organisms and it also provide mirco-habitat for some marine or brackish water species especially juveniles. Detailed information of the recorded vegetation is given in **Appendix L.** Ecological monitoring report was shown in **Appendix M.**

The general growth/health of the retained or newly re-colonized vegetations was in fair condition.

The trees transplanted from works area under Contract 1 and 2 to ECA, including 13 Bombax ceiba, 2 Melaleuca quinquenervia and 1 Celtis sinensis, were in fair condition since the transplantation in June, except for Celtis

sinensis (**Appendix L B**). However, Melaleuca quinquenervia (T165) & Celtis sinensis (T250) were dead already, so that the removal & replacement of T165 & T250 are recommended.

A total of 370 trees were newly planted for amenity purpose within the ECA since September 2011. The 370 individual trees were randomly planted at different zones, except for zone F, as showed in **Figure 6.3.2.1**.

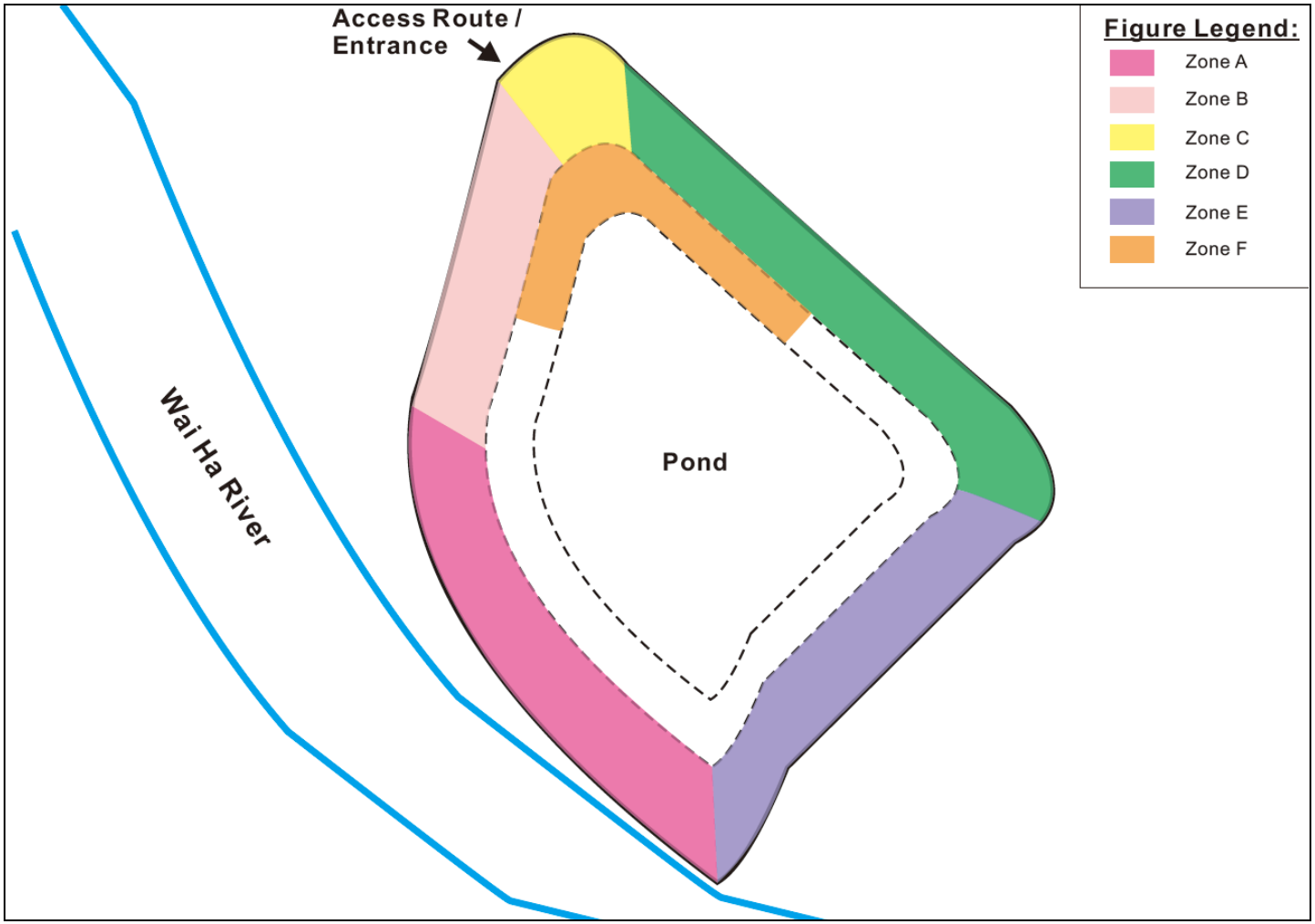


Figure 6.3.2.1 Landscape floor plan of ECA during establishment phase.

The newly planted trees included *Celtis sinensis* (95), *Hibiscus tiliaceus* (114), *Macarango tanarius* (57), *Ficus superb var japonica* (28) and *Viburnum odoratissimum* (76).

Newly planted trees in Zone A, B and C were in fair condition, but some trees were dead, these trees are suggested to be removed or replaced. These are.

Trees suggested to be removed & replaced

- Celtis sinensis: tag no. 198, 210, 222
- Macaranga tanarius: tag no. 331,337, 340, 345
- Hibiscus tiliaceus : tag no. 288, 291, 304, 307, 310

Moreover, Viburnum odoratissimum (tag no 44, 47), Celtis sinensis (tag no 195, 207, 211) & Hibiscus tiliaceus (tag no , 304, 312, 316, 318, 319) were in poor condition in terms of sparse crown, application of fertilizer and continuous monitoring of the health condition is suggested

However, some trees in Zone D and E were in poor condition in terms of sparse crown. These are:

Sparse Crown and yellow leaves

- *Celtis sinensis : tag no. 1, 7, 23, 26, 32, 191, 208*
- *Hibiscus tiliaceus : tag no. 244*
- *Viburnum odoratissimum : tag no. 167*

Those planted tree poor condition were caused during trans-location or plantation, application of fertilizer and continuous monitoring of the health condition is suggested.

Moreover, some trees in Zone D and E were dead, these trees are suggested to be removed & replaced. These are:

Trees suggested to be removed & replaced

- *Celtis sinensis*: tag no. 6, 8, 9, 13, 17, 22, 28, 33, 35, 130, 131, 132
- *Hibiscus tiliaceus*: tag no. 255, 256, 262, 268, 270, 272
- *Macaranga tanarius:* tag no. 158

Mangrove seedlings were planted in Zone F, but most of them were in poor to fair condition. It is expected they may grow better in wet season.

Three specimens of protected species *Pavetta hongkongensis* were transplanted from work area under Contract 2 to ECA at Zone D on 20th December 2011. Monthly monitoring was carried out and their overall conditions are fair so far (**Appendix L(C)**). Representative photographs of the transplanted *P. hongkongenesis* are showed on **Figure 6.3.2.2**.

Figure 6.3.2.2a. Specimens 1 & 2.

Figure 6.3.2.2 b. Specimen 3.

Figure 6.3.2.2. Representative photographs of transplanted *Pavetta hongkongensis* in ECA since the first transplantation in May 2012.

A total of 66 trees, including 6 Celtis Sinensis, 4 Ficus Superba Var. Japonica, 52 Hibiscus Tiliaceus, 3 Macaranga Tanarius and 1 Viburnum Odoratissimum, were removed by contractor from ECA in June 2012, new trees has been transplanted to ECA for replacement in July 2012

After the typhoon on 23 & 24 July, around 10% of trees were found leaning slightly, those trees were then be re-erected by contractors to resume it's tree forms.

Regular watering is recommended to improve the condition of the planted or transplanted plants during non-raining period. Relevant mitigation measures will be proposed when necessary

There is no sign of pest outbreak or dieback took place in the current monitoring.

6.3.3 Summary

In total, 23 species of trees, shrubs, climbers and herbs were retained or naturally colonized in the ECA during initial establishment period. Starting in August 2011, a total of 16 tree and three specimens of protected species Pavetta hongkongensis were transplanted to ECA. Most of them were in fair condition. In addition, 370 trees, including Celtis sinensis, Hibiscus tiliaceus, Macaranga tanarius, Ficus superb var japonica and Viburnum odoratissimum, were newly planted in ECA since September 2011 for amenity purpose. A total of 66 trees were removed in June 2012 and has been replace by new trees in July 2012. However, there are some trees in Zone A-E were dead, these trees are suggested to be removed & replaced, Although there is no sign of pest outbreak , application of fertilizer or mulch, regular watering and close monitoring are still be recommended.

6.3.4 References

Webb, R (ed.) 1991, Tree Planting & Maintenance in Hong Kong, Hong Kong Government, Hong Kong

6.3.5 Monitoring of Water Quality

The point of linkage between the ECA and Wai Ha River at the southern pond bund of the wetland was completed on 30th August 2011. The constructed wetland habitats in the ECA have been filled with the tidal water from Wai Ha River. Monitoring of in situ water quality in the ECA was commenced in September 2011 by the IEC's ecologist. In addition, Ecological water quality monitoring at ECA was conducted on 26/9 with result: Turbidity: 19.5NTU; Temperature: 30.8℃; DO: 5.45mg/L; pH: 5.7.

6.3.6 Site Inspections

Twice monthly establishment phase monitoring has commenced in November 2011. Two site inspections were carried out on 4th and 19th September 2012. Table 1 summarizes the observations and recommendations for each site inspection.

Table 6-1. *Observations and recommendations for each site inspection, September 2012*

Inspection Dates	Observation	Recommendations
4th September 2012	A routine site inspection and a joint site inspection with the Main Contractor to identify the compensatory trees that were in unsatisfactory condition (such as trees with dry leaves). The created wetland and the remaining planted vegetation (including the compensatory trees, shrubs, and mangrove seedlings) have been maintained in good condition (**Photo 1**). Patches of planted wetland herbs (*Bacopa monnieri* and *Cyperus malaccensis*) have colonized successfully in the created marshy area, while some of the newly planted wetland herbs *Commelina diffusa* have spread at the toe of the pond bund. With the naturally established herbs (such as *Alternanthera* spp. and *Lindernia* spp.), wetland herb composition at the marshy area and terrestrial pond bund have been formed progressively. The trees transplanted from Area A to the ECA have been maintained generally in fair to good condition. The three transplanted shrubs of conservation interest, *Pavetta hongkongensis*, were fruiting by the time of	The Contractor should replace the identified compensatory trees that were in unsatisfactory condition as soon as possible, and replace the temporary site hoardings with permanent wire mesh fence prior to the final handover meeting with the relevant government departments in October 2012.

	site visit and have shown satisfactory performance (**Photos 2-3**). The temporary site hoardings at the main entrance of the ECA have not yet replaced with permanent wire mesh fences.	
19th September 2012	This is the second site visit in September 2012 to update the general site and vegetation maintenance and their condition. Replacement of compensatory trees had not yet been undertaken by the Contractor by the time of site visit, but as informed by the Contractor, the trees will be replaced in the week of 24th September 2012. The created wetland and vegetation have remained in similar condition as inspected in the last site visit on 4th September 2012 (**Photo 4**). Wetland birds (Chinese Pond Heron and Little Egret), and terrestrial birds (Spotted Dove and Black-necked Starling) were found in the ECA. The temporary site hoardings at the main entrance of the ECA have still not yet been replaced with permanent wire mesh fences.	The Contractor should replace the identified compensatory trees that were in unsatisfactory condition as soon as possible, and replace the temporary site hoardings with permanent wire mesh fence prior to the formal handover meeting with the relevant government departments in October 2012.

Photo 1. General view of the wetland as inspected on 4th September 2012.

Photo 2. The compensatory trees of the ECA.

Photo 3. Transplanted *Pavetta hongkongensis* PH-01 was fruiting.

Photo 4. Transplanted *Pavetta hongkongensis* PH-03 was in good condition.	**Photo 5.** A Little Egret was observed using the created wetland.
	

Photo 6. General view of the wetland as inspected on 19th September 2012.

6.4 Management Activities

6.4.1 Ecological Issues/ Management Activities

No significant ecological issues were identified from the site inspection by the Wetland Specialist from the site inspections in September 2012.

The ECA has been maintained in satisfactory condition. The planted and replaced compensatory trees, shrubs and mangrove seedlings have showed fair health condition. The Main Contractor should replace the identified compensatory trees, which were of unsatisfactory performance, as soon as possible. The main entrance of the ECA should be reinstated prior to the formal handover in October 2012.

6.5 Implication of the Survey Findings

6.5.1 Implication to the Wetland design of the ECA

No implication to the wetland design from these two site inspections in September

2012.

6.6 Recommendations

The Contractor should continue the regular monitoring, and maintain frequent and adequate watering of all planted, replaced and transplanted terrestrial trees (including the newly planted compensatory trees for the replacement) and shrubs (including the shrubs of conservation interest *Pavetta hongkongensis*) throughout the establishment period of the ECA. The unwanted plant species should be removed to prevent their colonization in the ECA. The Main Contractor should arrange for the landscape contractor to replant the compensatory trees with poor growth performance and reinstate the wire mesh fence at the main entrance of the ECA prior to the formal handover in October 2012.

7 Landscape and Visual

7.1 Introduction

The Landscape and Visual Monitoring of the Project is conducted to fulfill Clauses 5.2 and 5.4 of EP-303/2008 and the monitoring requirements in accordance with Section 7 of the approved updated EM&A Manual (approved by EPD on 31st May 2012) of the Project. A Baseline Review on updating the landscape and visual condition, and the mitigation measures of the Project (including Contracts 1 and 2 of the Project) was undertaken before the commencement of the Project. The review findings were updated in the Baseline Environmental Monitoring Report submitted to the EPD on 14th February 2011.

This monthly monitoring report will detail the scope of landscape and visual monitoring work, monitoring findings and observations, and any recommendations and advice on proper implementation of the landscape mitigation measures in the works areas under Contract 1 of the Project.

7.2 Scope of Monitoring

7.2.1 Monitoring Objectives

Landscape and Visual Monitoring of the Project should be conducted in a bi-weekly basis for checking the design, implementation and maintenance of the landscape and visual mitigation measures throughout the construction phase and in a quarterly basis during operational phase of the Project. Observations of any potential conflicts between the proposed mitigation measures and the project works carried out by the Contractors should be recorded. Recommendation and advice on proper implementation of the landscape mitigation measures should be provided to the Contractor for minimizing any potential impacts on the landscape and visual elements.

7.2.2 Monitoring during Construction Phase

The following landscape and visual mitigation measure should be implemented during the construction phase of the project to minimize the potential impacts:

- Visual Screen – Use of hoardings as visual screens for the construction in the works areas;
- Contaminant/ Sediment Control – Use of temporary barriers, covers and drainage provision around the construction works as contaminant/ sediment control to prevent the contaminants and sediments from entering the sensitive water-based habitats;
- Pollution Control – Implementation of pollution control measures to minimize any adverse environmental impacts to the surrounding habitats;
- Liaison with Nursery – Liaison with the nursery operator as necessary to minimize any adverse impact to the daily operation and plant holding capacity of the nursery;
- Existing Trees within Works Area – Maintenance and protection of the existing trees, especially their crowns, trunks and roots, within work sites; and
- Construction Light – Provision of construction light should be controlled at night to avoid excessive glare to the surrounding villages and to Plover Cove.

7.2.3 Monitoring during Operational Phase

The following landscape and visual mitigation measure should be implemented during the operational phase of the project to minimize the potential impacts:

- Viewing area formation by planting with shrubs, grasses and benches along the area;

- Architectural design of the pump house will help it fit into the existing suburban, natural to semi-natural surroundings;
- Landscape design of pump house by providing sufficient planting around its boundary fence;
- Enhancement planting along Tung Tsz Road with shrubs/ trees of suitable species to help protect the stream and marshes;
- Construction of box culvert should be with at least 1.0m soil depth for enhancement planting;
- Transplanting of existing affected trees to adjacent locations should be carried out;
- Preparation for transplanting is needed to allow sufficient time for root pruning and rootball preparation prior to transplanting; and
- Reinstatement of affected area should be carried out to check that the works areas are properly reinstated.

7.3 Landscape and Visual Monitoring Results

7.3.1 Monitoring Date(s)

This monthly Landscape and Visual Monitoring (September 2012) was conducted to cover only Areas A, B and C of Contract 1 of the Project. The bi-weekly monitoring was conducted on 4th and 19th September 2012.

All photos stated in this section are recorded in **Appendix G**.

The bi-weekly monitoring for Contract 2 was also undertaken on 4th and 19th September 2012. The monitoring findings and recommendation will be submitted in a separate Monthly EM&A Report under Contract DC/2010/02.

7.3.2 Visual Screen

No follow-up action by the Contractor is required as from the *Monthly EM&A Report for August 2012*.

Observation

Construction hoardings have been erected in Area A along the entire site boundary.

Temporary construction hoardings have been erected around Wai Ha River estuary since the commenced work for building an automatic mechanical penstock at the area (**Photo 1**). Since February 2012, temporary construction hoardings have also been erected to surround the works area for constructing a drain pipe along Ting Kok Road (**Photo 2**).

A section of temporary hoarding has been erected from northwest to southwest parts (i.e. Phase I construction works) of Tung Tsz Nursery in Area B (approximately along the works boundary from Trees U42 to U62). Another section of temporary hoarding has been erected from southwest to eastern parts of the Nursery since May 2012 and connected with the Phase I construction works area. An open section with no construction work has been maintained as a major road access inside Tung Tsz Nursery for their daily operations.

A line of chain link fence has been maintained around the boundary of Area C since the onset of its establishment period.

Recommendation

No specific recommendation is required.

7.3.3 Contaminant/ Sediment Control

No follow-up action by the Contractor is required as from the *Monthly EM&A Report for August 2012.*

Observation

Area A

Provision of dust control measure (such as vehicle wheel washing facilities) has been maintained at the exit point of Area A.

Used water for washing vehicle wheel and groundwater from the excavated sites were pumped into the silt/sand removal facilities for filtration before discharging into the manhole adjacent to Area A. No unauthorized discharge of contaminated water/ sewerage was observed during the monitoring.

Area B

Used water and groundwater from the built box culvert and the construction site within the Nursery were collected and drained directly to the sedimentation tank placed adjacent to the fenced Area C. The water was further filtered through the silt/sand removal facilities in the tank before discharging into the manhole adjacent to Area C.

Area C

The establishment phase of the Ecological Compensatory Area (ECA) has commenced and the pond of the ECA is connected with the Wai Ha River directly. No water resulting from normal wetland maintenance practice was pumped out from the ECA.

Recommendation

No specific recommendation is required.

7.3.4 Pollution Control

All used water for washing vehicle wheel and construction works was filtered and drained to the manholes, as following the recommendation stated in *Monthly EM&A Report for August 2012.*

Observation

Area A

Provision of vehicle wheel washing facilities was observed at the exit point of Area A to reduce the contamination to the surrounding habitats in Plover Cove. Used water for washing vehicle wheel and groundwater from the excavated sites were pumped into the silt/sand removal facilities for filtration before discharging into the manhole adjacent to Area A. The drainage pipes were maintained appropriately to discharge the used water to the manhole at Ting Kok Road. No direct discharge of polluted water into the adjacent Wai Ha River was observed from the works area for building the automatic mechanical penstock at Wai Ha River estuary.

Area B

All used water was collected and drained directly to the sedimentation tank placed adjacent to the fenced Area C. This water was further filtered through the silt/sand removal facilities in the tank before discharging into the manhole adjacent to Area C.

Area C

The pond of the ECA was observed to be connected to Wai Ha River directly as following the scheme design of Habitat Compensatory Plan. No direct discharge of turbid water into the adjacent Wai Ha River was observed (**Photo 3**).

Recommendation

No specific recommendation is required for Areas A, B and C. As a reminder, the Contractor should regularly check the condition and locations of the drainage pipes and ensure that all used water should be appropriately filtered and discharged to the manhole/other discharge points agreed by the Engineer and EPD. This is to avoid any potential contamination to the vegetation in Shuen Wan marsh and other vegetated/marinated areas adjacent to the active works area.

7.3.5 Liaison with Nursery

Active construction works within Tung Tsz Nursery has been extended to the east of the nursery in connection with Ting Kok Road since May 2012. All of these active construction works area were demarcated with construction hoardings.

The health condition and stability of the tree *Grevillea robusta* (U58) has been closely monitored on a bi-weekly basis and regular watering of the retained trees and transplanted trees was anticipated. New leaves were observed along the trunk.

The works practice and maintenance of trees within the nursery generally follow the recommendation as stated in *Monthly EM&A Report for August 2012*. Any observed issues related to the liaison with the nursery are highlighted in this section.

Observation

The temporary hoarding has been erected from northwest to southwest parts of Tung Tsz Nursery in Area B since April 2011. Phase 2 construction work (i.e. from the eastern part of the nursery in connection with Ting Kok Road and finally connects with Phase 1 construction area at the southwest part) has commenced and temporary hoardings have been erected since May 2012. The major road access within the Nursery has been maintained to minimize the impact on the nursery's daily operation resulting from the construction works.

Regular monitoring for all transplanted trees within the nursery was conducted on a bi-weekly basis. For tree U58 (*Grevillea robusta*) (**Photo 4**), the broken scaffold branch was still found to be overhung in the canopy (**Photo 5**). New but small leaves were observed along the branches (**Photo 5**) and watersprouts was found along the trunk (**Photo 6**). The physiological condition of U58 has remained fairly poor in September 2012 and close monitoring has to be continued to update its health and structural conditions.

The transplanted tree U61 (*Lysidice rhodostegia*) was still found leaning severely with uplifted bamboo propping (**Photo 7**), and the crack on the planter of U75 (*Dolichandrone cauda-felina*) was still presence (**Photo 8**). There is a concern on the long-term stability on both trees.

No muddy water was found leaking out through the temporary hoarding into the nursery.

Recommendation

The works area and the construction works should be properly managed and implemented without influencing the daily operation of the nursery (i.e. provide enough access road and works area for the nursery operation).

All transplanted trees should be watered regularly (e.g. at least every two days) by the appointed landscape contractor. Meanwhile, the Contractor should prevent forming waterlogged areas or leakage of used water from the active construction works area into

the Nursery. This is to prevent causing any nuisance to the nursery's daily operation.

Regular monitoring and watering of *Grevillea robusta* (U58) are still recommended to be the major treatment to the tree. The appointed landscape contractor and the Contractor should closely monitor the health conditions throughout the establishment period.

The leaning tree *Lysidice rhodostegia* (U61) should be restored to its proper position or guyed appropriately to prevent its further hazard to the targets. The planter of *Dolichandrone cauda-felina* (U75) should be rebuilt to provide better support and protection of its root ball. Both mitigation measures should be carried out by the Nursery Operator or other relevant parties as soon as possible.

7.3.6 Existing Trees within Works Areas

Tree Protection Zones (TPZs) in Areas A and B were demarcated within the construction sites as following the recommendation stated in the *Monthly EM&A Report for August 2012*, no piling of construction materials within or close to the TPZs were observed in Area A (see details in the following section).

Regular watering of the retained trees, transplanted trees and the compensatory planting was anticipated. Maintenance of the existing trees within the works areas generally follows the recommendation as stated in *Monthly EM&A Report for August 2012*, except the observations as highlighted in the following sections.

Observation

Area A

TPZs with temporary storage of construction materials were not observed for trees to be transplanted (E17 to E20) at the southwestern part of Area A (**Photo 9**) during the monitoring in September 2012.

The tree to be transplanted E17 (*Bombax ceiba*) had minor bark tearing on the trunk which was believed to be created by machinery (**Photo 10**).

As observed since July 2012, the tree to be transplanted E16 (*Bombax ceiba*) was relocated to the southern side of Area A next to the site hoarding. A TPZ was set up at the base.

No other significant damages on the crowns, trunks and roots of the remaining trees were observed during the monitoring in September 2012 in Area A.

Area B

As highlighted in the Section "Liaison with Nursery", small watersprouts and new leaves were observed on the trunk and branches of the transplanted tree U58 (*Grevillea robusta*) but its physiological condition has still remained fairly poor after the transplant. One of its scaffold branches was still found overhanging in the canopy.

The transplanted tree U61 (*Lysidice rhodostegia*) was still found leaning severely with its propping uplifted (**Photo 7**), and the crack on the planter of U75 (*Dolichandrone cauda-felina*) was still presence (**Photo 8**). There is a concern on the long-term stability on both trees.

A broken scaffold branch of the tree to be transplanted T102 (*Melaleuca cajuputi* subsp. *cumingiana*) was still found hanging in the canopy (**Photo 11**).

No recovery signs have been observed on the relocated trees U34 **(Photo 12**), U35 **(Photo 13**) and U37 **(Photo 14**).

A42, U74, U72, U70, U69, A43, U62 and an untagged *Terminalia catappa* were inspected closely in September 2012 as construction of that section of the box culvert was about to be finished in the Nursery. They were in fair physiological condition**.**

A small sand pile next to three relocated trees (U76, U77 and U78) was removed in the monitoring in September 2012. However, waterlogging was still found in the areas around the trunk bases of these three trees. Irrigation water from the Nursery could be retained around the trunk bases of these trees, which were planted too deep previously. This would potentially damage the roots of these relocated trees (**Photos 15-17**). The relocated tree

U77 (*Terminalia catappa*) showed poor condition as shown in **Photo 18**.

All of the translocated trees were not guyed and only a few of these trees were protected within orange construction nets established as temporary TPZs.

Broken planters for three trees (U54 and two existing trees with no tag next to U54) were observed at their temporary receptor sites within the active works area to the northwest of the nursery. All of them have been surrounded by the orange construction nets to prevent further damage to the remained planters (**Photos 19-21**).

The remaining trees, including retained and transplanted specimens, within the nursery were maintained generally in fair condition, with no significant damage on tree crowns, trunks and roots observed during the monitoring in September 2012.

Area C

The existing trees were maintained generally in fair health condition, except that a very few planted compensatory trees showing poor health condition (e.g. large amount of dry leaves in the canopy). No significant damage on the crowns, trunks and roots on trees within Area C were observed during the monitoring in September 2012.

The transplanted tree T152 has recovered after the typhoon (**Photo 22**), while the transplanted trees T153 (**Photos 23**) and the untagged transplanted tree (*Bombax ceiba*) (possibly T149) have remained in fair condition. No foliage was observed on T250.

The three transplanted specimens (Tree No.: PH01, PH02 and PH03) of the protected shrub species of conservation interest *Pavetta hongkongensis* have remained in satisfactory condition (**Photos 24-25**).

Recommendations

Area A

Maintenance of proper TPZs with no temporarily stored construction materials, excessive

stockpiled soil and waterlogged condition around the tree trunk flares have been the major tree management issues in Areas A and B. The Contractor should continue notifying the on-site workers not to stockpile soil/construction materials or place construction equipment within and close to the TPZs or lower trunk/trunk flare. Any temporarily stored construction materials/ equipment and excessive water around the trunk flares should be removed or drained immediately. Operators of the construction machines should be aware of the presence of these relocated and retained trees nearby their works.

All retained trees or trees to be transplanted should be watered regularly (e.g. at least every two days) by the landscape contractor. The Contractor should conduct regular inspection on the health condition and protection measures of each existing trees within the Area A. In particular, regular watering should be applied on those recently relocated trees with regard to their poor health condition. For E17 (*Bombax ceiba*), the torn tree bark could be removed cleanly.

Area B

All transplanted trees should be watered regularly (e.g. at least every two days) by the landscape contractor. This is a necessary maintenance practice to improve the survival rates and growth for trees showing poor health condition as a result of the transplantation shock. Regular check of the tree health should be conducted. Proper protective measures such as guying and TPZs are recommended especially for the newly transplanted trees. Waterlogged areas (e.g. around trunk bases of U76, U77 and U78) should be avoided and excessive water around the tree trunk flares should be drained immediately. To prevent accidental drainage of used water into the tree root zone of the relocated trees, the Contractor is recommended to establish sandbags barriers or maintain a proper line of soil barriers between the trees (especially U76, T77 and U78) and the ground of the active construction work.

Regular inspection of the tree health of U58, U34, U35 and U37 should be undertaken to update their health condition and any tree defects. If these trees are found to be dead specimens in the wet season, the Contractor should replace these specimens.

The Contractor has to repair the planters or establish proper TPZs for the tree U54 and the two untagged trees adjacent to U54 as soon as possible. In addition, the Contractor should

ensure that all planters have been properly maintained.

The Contractor is recommended to re-tag the translocated trees and regularly check the condition of the tags. All tree tags on the trees should be managed properly by the Contractor throughout the construction and establishment phases. A good tree tag system is important for the Contractor, subcontractor and the auditor to undertake routine maintenance, monitoring and rapid remedial actions (if any).

The leaning tree *Lysidice rhodostegia* (U61) should be restored to its proper position or guyed appropriately to prevent its further hazard to the targets. The planter of *Dolichandrone cauda-felina* (U75) should be rebuilt to provide better support and protection of its root ball. Both mitigation measures should be carried out by the Nursery Operator or other relevant parties as soon as possible.

Area C

All transplanted trees, planted compensatory trees and the three transplanted individuals of *Pavetta hongkongensis* should be watered regularly (e.g. at least every two days) by the appointed landscape contractor. Regular check of the health conditions of these trees should be conducted. If any of these trees are found to be dead specimens for a prolonged period in the wet season, the Contractor should replace these specimens for compensation. Any broken tree parts from the existing and compensatory trees should be removed.

7.3.7 Construction Lights

No follow-up action on maintenance of construction light is required as from the *Monthly EM&A Report for August 2012.*

Observation

No construction light impact to the surrounding villages and to Plover Cove as all construction activities and construction sites are halted at 1800. No construction light at night is provided by the Contractor.

Recommendation

No specific recommendation is required.

7.4 Audit Schedule

The next bi-weekly Landscape & Visual Monitoring in October 2012 is scheduled to be conducted in the weeks of 1st, 15th and 29th October 2012.

8 Action taken in Event of Exceedance

If the measurements (Noise, Water, Hydrological Characteristics, and Ecology) exceed the action / limit level, exceedance details will be reported and follow-up actions will be taken by relevant parties involved.

During the reporting month there was no exceedance for noise, hydrological characteristics, and ecological measurements recorded; therefore, no actions were taken.

For water quality monitoring, total 11 abnormal incidents of water quality limits (Dissolved Oxygen, Suspended solids and Turbidity) were recorded in this reporting month according to the established level. ET has arranged site investigations for the abnormal incidents and it was observed that the river was narrowed for construction of mechanical penstocks; and increases the speed of water current. No construction activities were carried out at the river bed during the reporting period. Proper mitigation measures were implemented by contractor to avoid site water release to the Wai Ha river and no particular observation of defective site activities were found causing water contamination; The exceedance of Turbidity and Total Suspended Solid were believed to be mainly attributed by high water flow rate and adverse weather. The exceedances of DO were believed to be mainly attributed by natural fluctuation, since the recorded levels of DO at control station had also exceeded its baseline action level, the exceedances recorded at W2 were unlikely to be related to the Project.

The water condition of Wai Ha River is presented in photo attached in **Appendix N**.

9 Construction waste disposal

It is the contractor's responsibility to ensure that all wastes produced during the construction phase for the drainage improvement works are handled, stored and disposed of in accordance with good waste management practices and EPD's regulation and requirement. Waste materials generated during construction activities, such as construction and demolition (C&D) material, chemical wastes and general refuse, are recommended to be audited at regular intervals to ensure that proper storage, transportation and disposal practices are being implemented.

Table 9.1 is a summary of figures of the construction wastes disposal provided by Contractor.

Table 9.1 Summary of Construction Waste Disposal

Month	Actual Quantities of Inert C & D Materials Generated Monthly						Actual Quantities of C & D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/cardboard packaging	Plastics (see note3)	Chemical Waste	Others, e.g. general refuse
	(in'000m3)	(in'000m3)	(in'000m3)	(in'000m3)	(in'000m3)	(in'000m3)	(in'000kg)	(in'000kg)	(in'000kg)	(in'000kg)	(in'000kg)
Year2011	11.758	0.00	9.703	0.665	0.750	0.556	0.00	0.00	0.00	0.00	0.165
Jan-12	0.010	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.005
Feb-12	0.130	0.00	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mar-12	0.125	0.00	0.125	0.00	0.00	0.00	2.37	0.00	0.00	0.00	0.01
Apr-12	0.265	0.00	0.26	0.00	0.005	0.00	0.00	0.00	0.00	0.00	0.01
May-12	0.705	0.00	0.705	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
June-12	1.375	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
July-12	1.870	0.00	1.72	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.02
Aug-12	1.83	0.00	0.895	0.935	0.00	0.00	0.00	0.00	0.00	0.00	0.02
Sep-12	1.635	0.00	1.635	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.035
Total	20.418	0.00	17.402	1.75	0.71	0.556	2.37	0.00	0.00	0.00	0.035

Forecast of Total Quantities of C & D Materials to be Generated from the Contract											
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/cardboard packaging	Plastics (see note3)	Chemical Waste	Others, e.g. general refuse
	(in'000m3)	(in'000m3)	(in'000m3)	(in'000m3)	(in'000m3)	(in'000m3)	(in'000kg)	(in'000kg)	(in'000kg)	(in'000kg)	(in'000kg)
	37.37	8.27	12.09	0.00	25.28	2.1	10	2	0.5	1	1

Notes (1) The Performance targets are given in PS Clause 26.23 (14)

(2) The waste flow table shall also include C & D materials that are specified in the Contract to be imported for used at the sites

(3) Plastics refer to plastics bottles/containers, plastic sheets/foam from packaging materials.

(4) The summary table shall be submitted to the Engineer's Representative monthly together with the Waste Flow Table for review and monitoring in accordance with the PS Clause 25.20A(4)

10 Status of Permits and Licenses obtained

Table 10.1 is the updated status of environmental related permits/ license obtained for the construction activities

Table 10.1 Status of Permits and Licenses Obtained

Description	**License / Permit No.#**	**Date of Issue**	**Site**	**Date of expiry**	**Status**
Environmental Permit	EP-303/2008	2008/2/25	Area A, B & C	not applicable	Valid
Discharge Licence	WT00006448-2010	2010/6/15	Area A, B & C	30/6/2015	Valid
Registration as a Chemical Waste Producer	316597	2010/4/26	Area A, B & C	not applicable	Valid
Waste Disposal	7010348	2010/3/2	Area A, B & C	not applicable	Valid

11 Compliant Log

There was no formal complaint received during the reporting period. Therefore, follow up actions for the environmental complaint is not required.

Table 11.1 Summary of Formal Complaints received

	Noise	Water	Ecology	Others
Year 2011	0	0	0	0
January 2012	0	0	0	0
February 2012	0	0	0	0
March 2012	0	0	0	0
April 2012	0	0	0	0
May 2012	0	0	0	0
June 2012	0	0	0	0
July 2012	0	0	0	0
August 2012	0	0	0	0
September 2012	0	0	0	0
Total	0	0	0	0

12 Site Environmental Audits

12.1 Site Inspection

Site inspections were undertaken weekly to inspect the construction activities in active site areas to ensure that appropriate environmental protection and pollution control mitigation measures are properly implemented.

Within this reporting period, site inspections were conducted on 6th, 13th, 20th and 25th of September 2012. A detailed checklist of each site inspection together with comments and relevant photos have been filed and kept. The findings from inspection were summarized in Table 12.1.

Table 12.1 Summary results of site inspections findings

Date	Findings	Identification	Advice from ET	Action taken	Closing date	Remarks
9 , 16, 23 & 30 Aug 12 6, 13, 20 & 25 Sep 12	Construction materials were observed inside the tree protection zone at Area B.	Observation	Contractor was reminded to remove the construction materials as soon as possible	Outstanding		
23 & 30 Aug 12 6 Sep 12	Drip tray was not provided for the power generator at Area A.	Observation	Contactor was reminded to provide a drip tray to prevent chemical leakage and land contamination.	Power generator was removed by contractor.	13 Sep 12	
30 Aug 12 6, 13, 20 & 25 Sep 12	Damaged tree protection zone was observed at Area A	Observation	Contractor was reminded to replace the tree protection fence immediately.	Outstanding		
13 Sep 12	Haul was dry and dusty at Area A	Observation	Contractor was reminded that routine water spraying should be	Routine water spraying was implemented by contactor	20 Sep 12	

Date	Findings	Identification	Advice from ET	Action taken	Closing date	Remarks
			implemented for dust suppression.			
20 & 25 Sep 12	Stagnant water was observed at Area B.	Observation	Contractor was reminded that stagnant water should be removed regularly to prevent mosquito breeding.	Outstanding		
20 Sep 12	Collapsed tree protection zone was observed at Area A.	Observation	Contractor was reminded to repair the collapsed tree protection zone as soon as possible.	Collapsed tree protection zone was repaired by contractor	25 Sep 12	
25 Sep 12	Construction materials were near the U-channel of Cycle track.	Observation	Contractor was reminded to clean construction materials and keep away from the U-channel to prevent surface run-off.	Outstanding		
25 Sep 12	Mixed construction materials were observed at Area A	Observation	Contractor was reminded that all the C&D wastes should be sorted into different types and stored properly.	Outstanding		

12.2 Compliance with legal and Contractual requirement

There was no non-compliance recorded for the month of September 2012.

12.3 Implementation status and effectiveness of the mitigation measures

Contractor has implemented mitigation measures to address those problems as

advised by ER and ET. Some of the measures taken by the contractor were considered as effective to minimize negative impact to the environment. Ongoing investigation will be carried out to observe performance and effectiveness of those measures. Outstanding environmental items will be inspected in next month.

As there were some ongoing follow up practices, contractor was reminded to regularly review and rectify the discrepancy once found and maintain good site condition. The contractor implemented various environmental mitigation measures as recommended in the Environmental Permit and Final Mitigation Measures Report.

The recommend mitigation measures of EM&A manual (revision 3) are presented in Appendix H (A).

The implemented statues of mitigation measures are presented in Appendix H (B)

13 Future Key issues and recommendations

According to the forecasted site activities, key environmental issued to be considered should at least include:

- Site water control and relevant protective measures.
- Quality of effluent discharge from Area A.
- Control and disposal for construction wastes generated from works.

Tree protective measure for tree planting and transplanting, such as tree protection zone and regular watering.

14 Conclusions

Internal finishing for the proposed Transformer room & Switchroom, heading tunnel for the proposed DN225 sewer, Excavation for the proposed DN1200 & DN1200 concrete pipe trench, Concreting for the proposed discharge chamber, concreting top slab for Bay 10 and grouting for second layer of grout hole at the proposed DN2800 twin pipes were major site activities being carried out within this reporting period.

Regular site meetings and inspection audits led by the seniors for discussing site environmental matters were held among Project Proponent, Contractor and the ET on weekly basis. Also monthly site meeting and inspection audits with the above parties and IEC were carried out on 25th of September 2012.

For noise level monitoring, all results were within the established A/L limits.

For water quality monitoring, total 11 abnormal accidents of water quality limits (Dissolved Oxygen, Suspended solids and Turbidity) were recorded in this reporting month according to the established level. ET has arranged site investigations for the abnormal incidents and it was observed that the river was redirected and narrowed for construction of mechanical penstocks; and increases the speed of water current. No construction activities were carried out at the river bed during the reporting period. Proper mitigation measures was implemented by contractor to avoid site water release to the Wai Ha river and No particular observation of defective site activities were found causing water contamination; The exceedance of Turbidity and Total Suspended Solid were believed to be mainly attributed by high water flow rate and adverse weather. The exceedance of DO were believed to be mainly attributed by natural fluctuation, since the recorded levels of DO at control station had also exceeded its baseline action level, the exceedances recorded at were unlikely to be related to the Project.

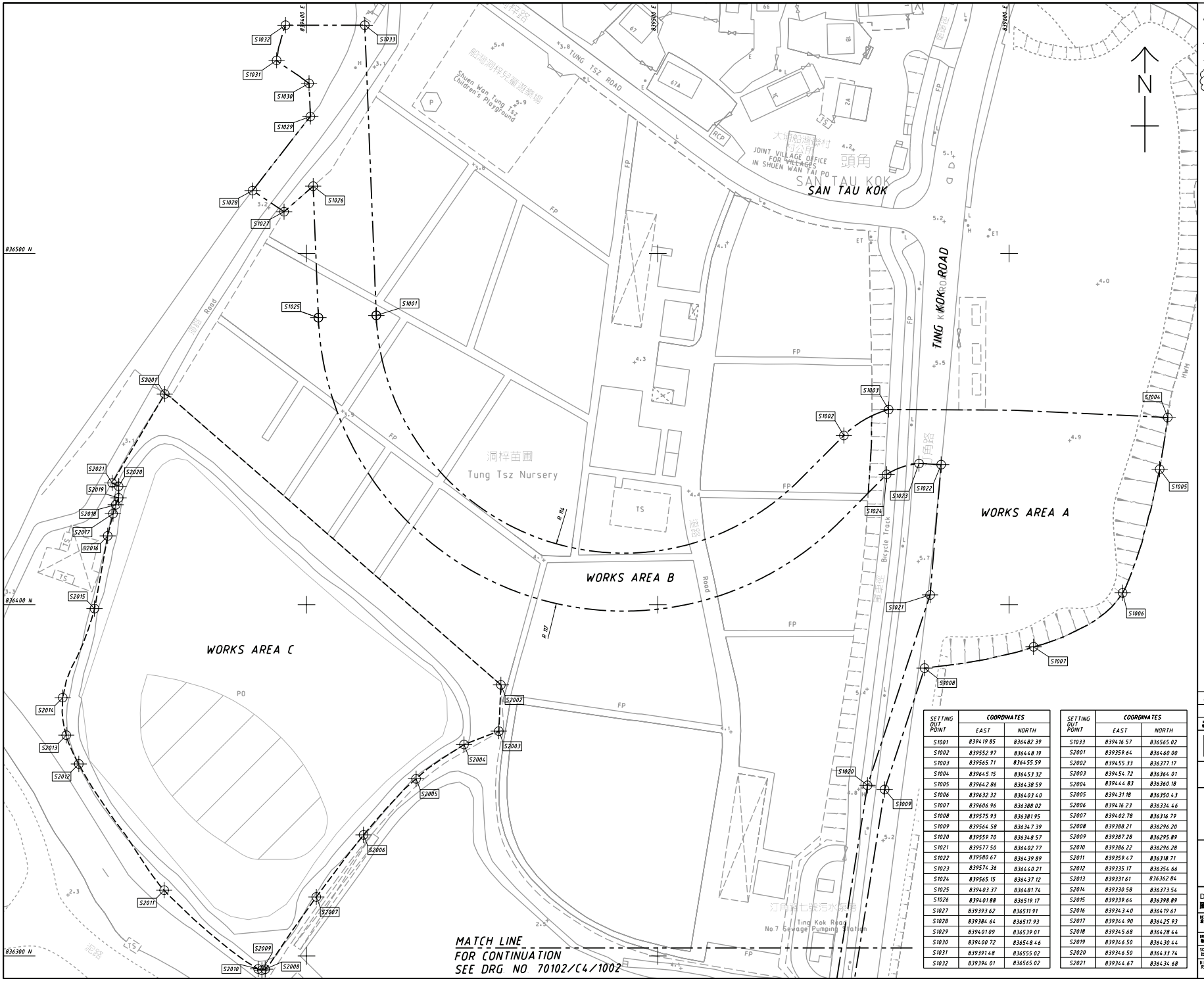
For ecological monitoring survey, all vegetations recorded were in fair condition, with no significance sign of health deterioration for the retained trees. In addition, Ecological water quality monitoring at ECA was conducted on 26/9 with result: Turbidity: 19.5NTU; Temperature: 30.8℃; DO: 5.45mg/L and pH: 5.7.

Also, there were not any notifications of summons recorded during the reporting period. Furthermore, there were not any formal prosecution and complaints recorded.

ET has reminded the contractor to provide environmental pollution control measures wherever necessary, and to keep a good environmental management at site practice.

The ET will continue to implement the environmental monitoring & audit programme in accordance with the EM&A Manual (revision 3) and Environmental Permit requirement.

Appendix A: Site Location



NOTES

1. ALL LEVELS ARE IN METRE ABOVE PRINCIPAL DATUM
2. ALL CO-ORDINATES GIVEN ARE IN METRE AND ARE IN ACCORDANCE WITH HK(1980) COORDINATES SYSTEM
3. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE SPECIFIED
4. THE PUBLIC CLEANING AREA SHALL BE THE AREAS WITHIN 2.5m BEYOND THE LIMIT OF WORKS AREAS EXCLUDING PRIVATE AREAS △A

LEGEND

- LIMIT OF WORKS AREA A
- LIMIT OF WORKS AREA B
- LIMIT OF WORKS AREA C
- S1001 SETTING OUT POINT

SETTING OUT POINT	COORDINATES EAST	NORTH
S1001	839419.85	836482.39
S1002	839552.97	836448.19
S1003	839565.71	836455.59
S1004	839645.15	836453.32
S1005	839642.86	836438.59
S1006	839632.32	836403.40
S1007	839606.96	836388.02
S1008	839575.93	836381.95
S1009	839564.58	836347.39
S1020	839559.70	836348.57
S1021	839577.50	836402.77
S1022	839580.67	836439.89
S1023	839574.36	836440.21
S1024	839565.15	836437.12
S1025	839403.37	836481.74
S1026	839401.88	836519.17
S1027	839393.62	836511.91
S1028	839386.64	836517.93
S1029	839401.09	836539.01
S1030	839400.72	836548.46
S1031	839391.48	836555.02
S1032	839394.01	836565.02

SETTING OUT POINT	COORDINATES EAST	NORTH
S1033	839416.57	836565.02
S2001	839359.64	836440.00
S2002	839455.33	836377.17
S2003	839454.72	836364.01
S2004	839444.83	836360.18
S2005	839431.18	836350.43
S2006	839416.23	836334.46
S2007	839402.78	836316.79
S2008	839388.21	836296.20
S2009	839387.28	836295.89
S2010	839386.22	836296.28
S2011	839359.47	836318.71
S2012	839335.17	836354.66
S2013	839331.61	836362.84
S2014	839330.58	836373.54
S2015	839339.64	836398.89
S2016	839343.40	836419.61
S2017	839344.90	836425.93
S2018	839345.68	836428.44
S2019	839346.50	836430.44
S2020	839346.50	836433.74
S2021	839344.67	836434.68

A	TENDER ADDENDUM NO.2	ECYP	RCYK	10-09
-	TENDER DRAWING	ECYP	RCYK	09-09
REV. 修訂	DESCRIPTION 內容摘要	BY 修訂者	CHECKED 核准	DATE 日期

DRAINAGE SERVICES DEPARTMENT, THE GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION

DRAINAGE IMPROVEMENT WORKS IN SHUEN WAN, TAI PO - CONTRACT 1

SETTING OUT PLAN FOR WORKS AREA A, B AND C

SHEET 1 OF 2

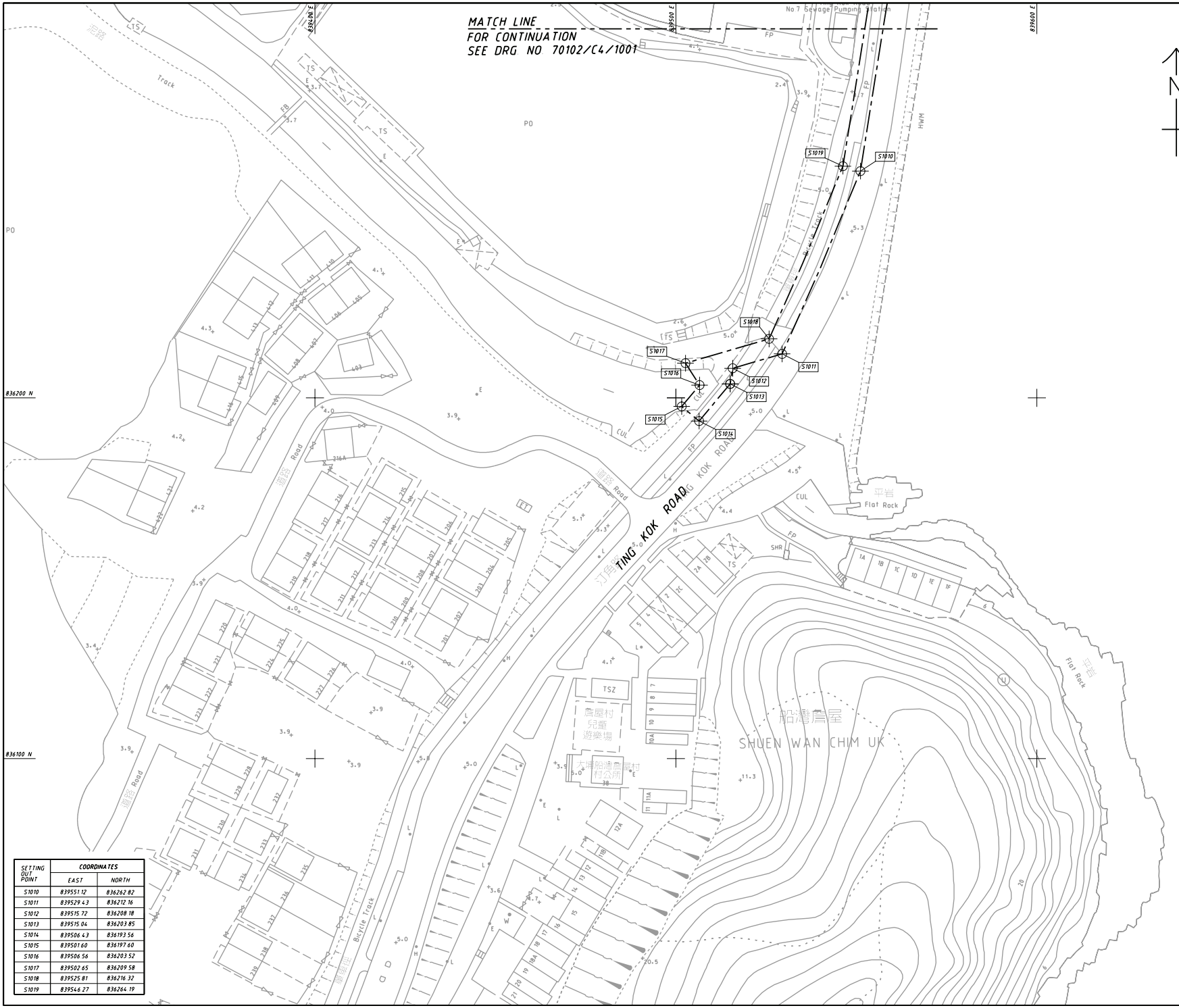
AECOM

DRG.NO. 圖紙編號 70102/C4/1001A

DESIGNED BY 設計	CPWU	CONTRACT NO. 合約編號	DC/2009/22
DRAWN BY 繪圖	LWL	P. DIV.- APPROVED 負責人	DML
SCALE 比例	A1 1 500	STATUS 類別	
DIMENSIONS ARE IN 尺寸單位	METRES	© COPYRIGHT RESERVED 版權所有	

2010-2-5 11:54:09

p:\projects\70102\1000\TENDER ADDENDUM NO 2\1001A.dgn



SETTING OUT POINT	COORDINATES	
	EAST	NORTH
S1010	839551.12	836262.82
S1011	839529.43	836212.16
S1012	839515.72	836208.18
S1013	839515.04	836203.85
S1014	839506.43	836193.56
S1015	839501.60	836197.60
S1016	839506.56	836203.52
S1017	839502.65	836209.58
S1018	839525.81	836216.32
S1019	839546.27	836264.19

NOTE

1. FOR NOTES AND LEGEND SEE DRAWING NO. 70102/C4/1001

NO. 號碼	DESCRIPTION 內容說明	BY 繪製	CHECKED 檢查	DATE 日期
-	TENDER DRAWING	ECY	PRC	YK 09-09

DRAINAGE SERVICES DEPARTMENT, THE GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION

DRAINAGE IMPROVEMENT WORKS IN SHUEN WAN, TAI PO - CONTRACT 1

SETTING OUT PLAN FOR WORKS AREA A, B AND C

SHEET 2 OF 2

AECOM

DRG.NO. 圖紙編號 70102/C4/1002

DESIGNED BY 設計	CPWU	CONTRACT NO. 合約編號	DC/2009/22
DRAWN BY 繪圖	LWL	P. DIV.- APPROVED 負責人	DML
SCALE 比例	A1 1 500	STATUS 類別	
DIMENSIONS ARE IN 尺寸單位	METRES	© COPYRIGHT RESERVED 版權所有	

2010-2-5 13 32 23

p:\projects\70102\1000\TENDER DRAWING\1002.dgn

Appendix B: Key Personal Contact information chart

Post	Name	Contact No.	Contact Fax	e-mail
Project Manager	Mr. W. K. Chan	6821 1136	2674 6688	dc200922jv_pmcwk @yahoo.com.hk
Site Agent	Mr. C. L. Wong	9280 0166	2674 6688	dc200922jv_sa@yaho o.com.hk
Environmental Officer / Sub-agent	Mr. K. M. Ma	9552 1734	2674 6688	dc200922jv_suba@ya hoo.com.hk
Environmental Supervisor	Mr. Anthony Chan	9179 2092	2674 6688	anthony277@hotmail. com
Asia Ecological Consultants Ltd. (Wetland Specialist)	Dr. Mike Leven	2486 2885	2471 8389	mrleven@asiaecol.co m.hk
Environmental Pioneers & Solutions Limited (Environmental Team)	Miss. Goldie Fung	2556 9172	2856 2010	goldiefung@fseng.co m.hk

Appendix C: Calibration Certificates for measuring instruments

Hong Kong Calibration Ltd.
香 港 校 正 有限公司

Calibration Certificate

Certificate No. **21289** Page 1 of 3 Pages

Customer : Environmental Pioneers and Solutions Limited

Address : Flat A, 19/F., Chai Wan Industrial Centre Building, 21 Lee Chung Street, Chai Wan, HK.

Order No. : Q20468 **Date of receipt :** 2-Mar-12

Item Tested

Description : Digital Sound Level Meter
Manufacturer : SVAN
Model : 949 **Serial No.** : 8571

Test Conditions

Date of Test : 5-Mar-12 **Supply Voltage** : --
Ambient Temperature : (23 ± 3)°C **Relative Humidity :** (50 ± 25) %

Test Specifications

Calibration check.
Ref. Document/Procedure: Z01.

Test Results

All results were within the IEC 651 Type 1 & IEC 804 Type 1 specification after adjustment.
The results are shown in the attached page(s).

Main Test equipment used:

Equipment No.	Description	Cert. No.	Traceable to
S017A	Multi-Function Generator	07279	SCL-HKSAR
S024	Sound Level Calibrator	15136	NIM-PRC & SCL-HKSAR

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

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

Calibrated by : P. F. Wong

Approved by : Dorothy Cheuk

Date: 7-Mar-12

This Certificate is issued by:
Hong Kong Calibration Ltd.
Unit 8B, 24/F., Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street,Kwai Chung, NT,Hong Kong.
Tel: 2425 8801 Fax: 2425 8646

Calibration Certificate

Results :

1. SPL Accuracy

UUT Setting				Applied Value (dB)	UUT Reading (dB)	
Level Range	Octave Filter	Weight	Response		Before adjust	After adjust
105 dB	OFF	A	Fast	94.0	*92.0	94.0
			Slow		--	94.0
		C	Fast		--	94.0
130 dB	OFF	A	Fast	94.0	--	94.0
			Slow		--	94.0
		C	Fast		--	94.0
	OFF	A	Fast	114.0	--	114.1
			Slow		--	114.1
		C	Fast		--	114.1

IEC 651 Type 1 Spec. : ± 0.7 dB
Uncertainty : ± 0.1 dB

2. Level Stability : 0.0 dB

IEC 651 Type 1 Spec. : ± 0.3 dB
Uncertainty : ± 0.01 dB

3. Linearity

3.1 Level Linearity

UUT Range (dB)	Applied Value (dB)	UUT Reading (dB)	Variation (dB)	IEC 651 Type 1 Spec. (inside Primary)
130	114.0	114.0	0.0	± 0.7 dB
	104.0	104.0	0.0	
	94.0	94.0 (Ref.)	- -	
105	84.0	84.0	0.0	
	74.0	74.0	0.0	
	64.0	64.0	0.0	
	54.0	54.0	0.0	

Uncertainty : ± 0.1 dB

Calibration Certificate

3.2 Differential level linearity

UUT Range (dB)	Applied Value (dB)	UUT Reading (dB)	Variation (dB)	IEC 651 Type 1 Spec.
130	84.0	84.0	0.0	± 0.4 dB
	94.0	94.0 (Ref.)	0.0	
	95.0	95.0	0.0	± 0.2 dB

Uncertainty : ± 0. 1 dB

4. Frequency Weighting

A weighting

Frequency	Attenuation (dB)	IEC 651 Type 1 Spec.
31.5 Hz	-40.4	- 39.4 dB, ± 1.5 dB
63 Hz	-27.2	- 26.2 dB, ± 1.5 dB
125 Hz	-17.0	- 16.1 dB, ± 1 dB
250 Hz	-9.4	- 8.6 dB, ± 1 dB
500 Hz	-2.6	- 3.2 dB, ± 1 dB
1 kHz	0.0 (Ref)	0 dB, ± 1 dB
2 kHz	+1.8	+ 1.2 dB, ± 1 dB
4 kHz	+1.8	+ 1.0 dB, ± 1 dB
8 kHz	-0.4	- 1.1 dB, + 1.5 dB ~ -3 dB
16 kHz	-6.3	- 6.6 dB, + 3 dB ~ - ∞

Uncertainty : ± 0.1 dB

5. Time Averaging

Applied Burst duty Factor	Applied Leq. Value (dB)	UUT Reading (dB)	IEC 804 Type 1 Spec.
continuous	50.0	- -	--
1/10	50.0	50.2	± 0.5 dB
$1/10^2$	50.0	49.8	
$1/10^3$	50.0	50.1	± 1.0 dB
$1/10^4$	50.0	49.9	

Uncertainty : ± 0.1 dB

Remarks : 1. UUT : Unit-Under-Test
2. The uncertainty claimed is for a confidence probability of not less than 95%.
3. Atmospheric Pressure : 1 001 hPa.
4. *Out of specification.

---------- END ----------

Hong Kong Calibration Ltd.
香 港 校 正 有限公司

Calibration Certificate

Certificate No. **21290** Page 1 of 2 Pages

Customer : Environmental Pioneers and Solutions Limited

Address : Flat A, 19/F., Chai Wan Industrial Centre Building, 21 Lee Chung Street, Chai Wan, HK.

Order No. : Q20468 **Date of receipt :** 2-Mar-12

Item Tested

Description : Sound Level Calibrator

Manufacturer : Svantek

Model : SV30A **Serial No. :** 7908

Test Conditions

Date of Test : 5-Mar-12 **Supply Voltage :** --

Ambient Temperature : (23 ± 3)°C **Relative Humidity :** (50 ± 25) %

Test Specifications

Calibration check.

Ref. Document/Procedure : F21, Z02.

Test Results

All results were within the IEC 942 Class 1 specification.

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

Main Test equipment used:

Equipment No.	Description	Cert. No.	Traceable to
S014	Spectrum Analyzer	13535	NIM-PRC & SCL-HKSAR
S024	Sound Level Calibrator	15136	NIM-PRC & SCL-HKSAR
S041	Universal Counter	15610	SCL-HKSAR
S206	Sound Level Meter	16338	SCL-HKSAR

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

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

Calibrated by : P. F. Wong

Approved by : Dorothy Cheuk

Date: 7-Mar-12

This Certificate is issued by:
Hong Kong Calibration Ltd.
Unit 8B, 24/F., Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street,Kwai Chung, NT,Hong Kong.
Tel: 2425 8801 Fax: 2425 8646

Calibration Certificate

Certificate No. 21290

Results :

1. Level Accuracy

UUT Nominal Value (dB)	Measured Value (dB)	IEC 942 Class 1 Spec.
94	94.10	± 0.3 dB
114	114.18	

Uncertainty : ± 0.1 dB

2. Frequency

UUT Nominal Value	Measured Value	IEC 942 Class 1 Spec.
1 kHz	1.000 kHz	± 2 %

Uncertainty : ± 3.6 x 10^{-6}

3. Level Stability : 0.0 dB
IEC 942 Class 1 Spec. : ± 0.1 dB
Uncertainty : ± 0.01 dB

4. Total Harmonic Distortion : < 0.8 %
IEC 942 Class 1 Spec. : < 3 %
Uncertainty : ± 2.3 % of reading

Remark : 1. UUT : Unit-Under-Test
2. The above measured values are the mean of 3 measurements.
3. The uncertainty claimed is for a confidence probability of not less than 95%.
4. Atmospheric Pressure : 1001 hPa.

---------- END ----------

ALS Technichem (HK) Pty Ltd

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

CONTACT:	MR CHI HANG LAI	**WORK ORDER:**	HK1221859
CLIENT:	ENVIRONMENTAL PIONEERS & SOLUTIONS LTD	**LABORATORY:**	HONG KONG
ADDRESS:	FLAT 19A, CHAI WAN INDUSTRIAL CENTRE BUILDING, 20 LEE CHUNG STREET, CHAI WAN, HONG KONG.	**DATE RECEIVED:**	17/08/2012
		DATE OF ISSUE:	24/08/2012
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 aceptance criteria of ALS will be followed.

Scope of Test:	Conductivity, Dissolved Oxygen, pH, Temperature and Turbidity
Description:	Multi-meter
Brand Name:	TOA-DKK
Model No.:	WQC-24, WMS-24
Serial No.:	682337
Equipment No.:	--
Date of Calibration:	23 August, 2012

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

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

Work Order: HK1221859
Date of Issue: 24/08/2012
Client: ENVIRONMENTAL PIONEERS & SOLUTIONS LTD

Description: Multi-meter
Brand Name: TOA-DKK
Model No.: WQC-24, WMS-24
Serial No.: 682337
Equipment No.: --
Date of Calibration: 23 August, 2012 Date of next Calibration: 23 November, 2012

Parameters:

Conductivity

Method Ref: APHA (21st edition), 2510B

Expected Reading (uS/cm)	Displayed Reading (uS/cm)	Tolerance (%)
142.6	138.0	-3.2
6667	6420	-3.7
12890	12200	-5.4
58670	56800	-3.2
	Tolerance Limit (%)	10.0

Dissolved Oxygen

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

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
4.68	4.83	0.15
6.53	6.60	0.07
8.23	8.35	0.12
	Tolerance Limit (±mg/L)	0.20

pH Value

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

Expected Reading (pH Unit)	Displayed Reading (pH Unit)	Tolerance (pH unit)
4.0	3.92	-0.08
7.0	6.95	-0.05
10.0	10.05	0.05
	Tolerance Limit (±unit)	0.20

Temperature

Method Ref: Section 6 of International Accreditation New Zealand Technical Guide No. 3 Second edition March 2008: Working Thermometer Calibration Procedure.

Expected Reading (°C)	Displayed Reading (°C)	Tolerance (°C)
12.5	12.7	0.2
22.0	21.9	-0.1
40.5	40.8	0.3
	Tolerance Limit (°C)	2.0

Mr Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

Work Order: HK1221859
Date of Issue: 24/08/2012
Client: ENVIRONMENTAL PIONEERS & SOLUTIONS LTD

Description: Multi-meter
Brand Name: TOA-DKK
Model No.: WQC-24, WMS-24
Serial No.: 682337
Equipment No.: --
Date of Calibration: 23 August, 2012 Date of next Calibration: 23 November, 2012

Parameters:

Turbidity

Method Ref: APHA (21st edition), 2130B

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)
0	0	--
4	4.2	5.0
40	43.4	8.5
80	86.8	8.5
400	438.0	9.5
800	870.9	8.9
	Tolerance Limit (±%)	10.0

Mr Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

Hong Kong Calibration Ltd.
香港校正有限公司

Calibration Certificate

Certificate No. 17082

Customer : Environmental Pioneers and Solutions Limited

Address : Flat A, 19/F., Chai Wan Industrial Centre Building, 21 Lee Chung Street, Chai Wan, HK.

Order No. : Q12881 **Date of receipt :** 28-Nov-11

Item Tested

Description : Protable Level-Velocity Logger

Manufacturer : Greyline

Model : Stingray **Serial No. :** 45525

Test Conditions

Date of Test : 6-Dec-11 **Supply Voltage :** --

Ambient Temperature : (23 ± 3)°C **Relative Humidity :** (50 ± 25) %

Test Specifications

Calibration check.

Ref. Document/Procedure : V12, T03, M07.

Test Results

All results were within the tolerance(s).

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

Main Test equipment used:

Equipment No.	Description	Cert. No.	Traceable to
S179	Std. Tape	10789	NIM-PRC
S136A	Stop Watch	07481	SCL-HKSAR
S223	Std. Thermometer	13173	NIM-PRC

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

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

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

Calibrated by : Y. K. Wong

Approved by : Dorothy Cheuk

Date: 7-Dec-11

This Certificate is issued by:
Hong Kong Calibration Ltd.
Unit 8B, 24/F., Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street,Kwai Chung, NT,Hong Kong.
Tel: 2425 8801 Fax: 2425 8646

Calibration Certificate

Certificate No. 17082

Results :

1. Flow Rate

Applied Value (Ft/s)	UUT Reading (Ft/s)	Tolerance	Uncertainty
1.67	1.6	± 5 %	± 1 %

2. Level

Applied Value (Ft)	UUT Reading (Ft)	Tolerance	Uncertainty
1.00	1.00	± 5 %	± 0.1 %
1.75	1.75		
3.00	3.00		

3. Temperature

Applied Value (℃)	UUT Reading (℃)	Tolerance	Uncertainty
23.0	24	± 2 ℃	± 0.2 ℃

Remarks : 1. UUT : Unit-Under-Test
2. The uncertainty claimed is for a confidence probability of not less than 95%.
3. Sensor Used : Model : QZ02L-UT-01-PS
S/N : 10D18289

---------- END ----------

Appendix D: Construction Noise Monitoring Data

大成環境科技拓展有限公司
Environmental Pioneers and Solutions Limited

Noise Monitoring Data Sheet

Monitoring Location		M1	AL1
Monitoring Method		Façade	Façade
Date of Monitoring		5/9/2012	5/9/2012
Weather Condition		Sunny	Sunny
Measurement Start Time (hh:mm)		10:20	10:55
Measurement Time Length (mins)		30 mins	
SLM Model & S/N		SVAN 955	
Wind Speed (m/s)		0.2	0.2
Measurement Results	L_{eq} (dB(A))	60.1	64.1
	L_{10} (dB(A))	62.1	66.9
	L_{90} (dB(A))	46.7	49.9
Major Construction Noise Source(s) During Monitoring		The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities
Other Noise Source(s) During Monitoring		– Background Noise – Traffic Noise	– Background Noise – Traffic Noise

	Name	Signature	Date
Perpared by:	Lau Kai Chung	**Lau Kai Chung**	5/9/2012

大成環境科技拓展有限公司
Environmental Pioneers and Solutions Limited

Noise Monitoring Data Sheet

Monitoring Location		M1	AL1
Monitoring Method		Façade	Façade
Date of Monitoring		12/9/2012	12/9/2012
Weather Condition		Sunny	Sunny
Measurement Start Time (hh:mm)		10:30	11:05
Measurement Time Length (mins)		30 mins	
SLM Model & S/N		SVAN 955	
Wind Speed (m/s)		0.2	0.2
Measurement Results	L_{eq} (dB(A))	62.3	67.4
	L_{10} (dB(A))	65.1	68.1
	L_{90} (dB(A))	48.3	52.4
Major Construction Noise Source(s) During Monitoring		The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities
Other Noise Source(s) During Monitoring		– Background Noise – Traffic Noise	– Background Noise – Traffic Noise

	Name	Signature	Date
Perpared by:	Lau Kai Chung	**Lau Kai Chung**	12/9/2012

大成環境科技拓展有限公司
Environmental Pioneers and Solutions Limited

Noise Monitoring Data Sheet

Monitoring Location		M1	AL1
Monitoring Method		Façade	Façade
Date of Monitoring		19/9/2012	19/9/2012
Weather Condition		Sunny	Sunny
Measurement Start Time (hh:mm)		9:50	10:25
Measurement Time Length (mins)		30 mins	
SLM Model & S/N		SVAN 955	
Wind Speed (m/s)		0.4	0.4
Measurement Results	L_{eq} (dB(A))	60.1	68.5
	L_{10} (dB(A))	59.9	69.3
	L_{90} (dB(A))	47.1	50.3
Major Construction Noise Source(s) During Monitoring		The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities
Other Noise Source(s) During Monitoring		– Background Noise – Traffic Noise	– Background Noise – Traffic Noise

	Name	Signature	Date
Perpared by:	Lau Kai Chung	**Lau Kai Chung**	19/9/2012

大成環境科技拓展有限公司
Environmental Pioneers and Solutions Limited

Noise Monitoring Data Sheet

Monitoring Location		M1	AL1
Monitoring Method		Façade	Façade
Date of Monitoring		26/9/2012	26/9/2012
Weather Condition		Sunny	Sunny
Measurement Start Time (hh:mm)		10:50	11:20
Measurement Time Length (mins)		30 mins	
SLM Model & S/N		SVAN 955	
Wind Speed (m/s)		0.6	0.6
Measurement Results	L_{eq} (dB(A))	62.3	66.3
	L_{10} (dB(A))	64.6	68.1
	L_{90} (dB(A))	48.8	49.7
Major Construction Noise Source(s) During Monitoring		The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities	The measured noise level was dominated by the background noise in the immediate vicinity of the monitoring location due to its large distance from the construction activities
Other Noise Source(s) During Monitoring		– Background Noise – Traffic Noise	– Background Noise – Traffic Noise

	Name	Signature	Date
Perpared by:	Lau Kai Chung	**Lau Kai Chung**	26/9/2012

Appendix E: Water Quality Monitoring Data

Remark:

Red highlighting: The value is exceeding limit level.

Yellow highlighting: The value is exceeding action level but within limit level.

Environmental Pioneers and Solutions Limited

Environmental Pioneers & Solutions Limited
Water Quality Monitoring - Summary of On-Site Measurement Results

Date of Sampling : 3/9/2012

Weather : Sunny

Monitoring Location	W1	W2	C2
Time (hhmm)	13:50	15:15	12:15
Tide Mode	Mid-ebb		N/A
Water Depth (m)	<1	<1	<1
pH value	6.70	7.11	8.40
Temperature (^{o}C)	34.6	31.1	33
Turbidity (NTU)	6.5	11.2	2.7
DO (mg/L)	5.00	7.28	4.60
DO Saturation (%)	69%	88%	65.00
Suspended Solids (mg/L)	9.0	5.8	5.0

Remark or Observation :

	Name	Signature	Date
Prepared By :	Lau kai chung	**Lau kai chung**	3/9/2012

Environmental Pioneers & Solutions Limited
Water Quality Monitoring - Summary of On-Site Measurement Results

Date of Sampling : 5/9/2012

Weather : Sunny

Monitoring Location	**W1**	**W2**	**C2**
Time (hhmm)	14:50	16:00	10:20
Tide Mode	Mid-ebb		N/A
Water Depth (m)	<1	<1	<1
pH value	7.30	7.50	8.20
Temperature (^{o}C)	31.5	31	32
Turbidity (NTU)	3.5	9.8	2.1
DO (mg/L)	6.60	6.80	6.40
DO Saturation (%)	92%	88%	94%
Suspended Solids (mg/L)	8.0	7.6	5.0

Remark or Observation :

	Name	**Signature**	**Date**
Prepared By :	Lau kai chung	**Lau kai chung**	5/9/2012

Environmental Pioneers & Solutions Limited
Water Quality Monitoring - Summary of On-Site Measurement Results

Date of Sampling : 7/9/2012

Weather : Sunny

Monitoring Location	**W1**	**W2**	**C2**
Time (hhmm)	15:30	15:20	10:45
Tide Mode	Mid-ebb		N/A
Water Depth (m)	<1	<1	<1
pH value	7.00	7.43	8.20
Temperature (^{o}C)	29	29.5	29.5
Turbidity (NTU)	4.30	8.5	1.70
DO (mg/L)	5.40	6.87	5.20
DO Saturation (%)	70%	87%	69%
Suspended Solids (mg/L)	6.0	9.2	2.0

Remark or Observation :

	Name	**Signature**	**Date**
Prepared By :	Lau kai chung	**Lau kai chung**	7/9/2012

Environmental Pioneers & Solutions Limited
Water Quality Monitoring - Summary of On-Site Measurement Results

Date of Sampling : 10/9/2012

Weather : Sunny

Monitoring Location	**W1**	**W2**	**C2**
Time (hhmm)	9:00	9:20	9:30
Tide Mode	Mid-ebb		N/A
Water Depth (m)	<1	<1	<1
pH value	6.30	7.01	8.00
Temperature (^{o}C)	31.8	32.1	30.0
Turbidity (NTU)	10.2	9.8	3.9
DO (mg/L)	5.90	7.23	7.30
DO Saturation (%)	81%	93%	95%
Suspended Solids (mg/L)	11.0	5.8	26.0

Remark or Observation :

	Name	**Signature**	**Date**
Prepared By :	Lau kai chung	**Lau kai chung**	10/9/2012

Environmental Pioneers & Solutions Limited
Water Quality Monitoring - Summary of On-Site Measurement Results

Date of Sampling : 12/9/2012

Weather : Sunny

Monitoring Location	W1	W2	C1
Time (hhmm)	16:45	10:30	
Tide Mode	Mid-flood		N/A
Water Depth (m)	<1	<1	<1
pH value	7.00	7.38	7.41
Temperature (^{o}C)	31	31.9	31.9
Turbidity (NTU)	4.2	9.8	11.4
DO (mg/L)	4.40	7.15	6.75
DO Saturation (%)	59%	88%	86%
Suspended Solids (mg/L)	8.0	3.6	11.0

Remark or Observation :

	Name	Signature	Date
Prepared By :	Lau kai chung	**Lau kai chung**	12/9/2012

Environmental Pioneers & Solutions Limited
Water Quality Monitoring - Summary of On-Site Measurement Results

Date of Sampling : 14/9/2012

Weather : Sunny

Monitoring Location	**W1**	**W2**	**C2**
Time (hhmm)	10:45	12:10	11:00
Tide Mode	Mid-ebb		N/A
Water Depth (m)	<1	<1	<1
pH value	6.80	7.29	8.40
Temperature (^{o}C)	31.6	29.9	32
Turbidity (NTU)	2.0	12.3	0.9
DO (mg/L)	6.10	7.05	6.70
DO Saturation (%)	83%	90%	90%
Suspended Solids (mg/L)	8.0	4.6	2.0

Remark or Observation :

	Name	**Signature**	**Date**
Prepared By :	Lau kai chung	**Lau kai chung**	14/9/2012

Environmental Pioneers & Solutions Limited
Water Quality Monitoring - Summary of On-Site Measurement Results

Date of Sampling : 17/9/2012

Weather : Sunny

Monitoring Location	**W1**	**W2**	**C2**
Time (hhmm)	13:30	14:30	10:55
Tide Mode	Mid-ebb		N/A
Water Depth (m)	<1	<1	<1
pH value	5.90	7.65	7.90
Temperature (^{o}C)	29.1	30.1	29.7
Turbidity (NTU)	10.9	4.1	2.7
DO (mg/L)	5.90	6.67	7.30
DO Saturation (%)	77%	89%	96%
Suspended Solids (mg/L)	5.0	6.4	2.0

Remark or Observation :

	Name	**Signature**	**Date**
Prepared By :	Lau kai chung	**Lau kai chung**	17/9/2012

Environmental Pioneers & Solutions Limited
Water Quality Monitoring - Summary of On-Site Measurement Results

Date of Sampling : 19/9/2012

Weather : Sunny

Monitoring Location	**W1**	**W2**	**C2**
Time (hhmm)	14:25	15:30	
Tide Mode	Mid-ebb		10:10
Water Depth (m)	<1	<1	<1
pH value	7.50	7.49	8.10
Temperature (^{o}C)	29	28.3	28.8
Turbidity (NTU)	1.8	2.1	1.3
DO (mg/L)	6.10	7.38	7.60
DO Saturation (%)	80%	92%	98%
Suspended Solids (mg/L)	2.0	5.2	2.0

Remark or Observation :

	Name	**Signature**	**Date**
Prepared By :	Lau kai chung	**Lau kai chung**	19/9/2012

Environmental Pioneers & Solutions Limited
Water Quality Monitoring - Summary of On-Site Measurement Results

Date of Sampling : 21/9/2012

Weather : Sunny

Monitoring Location	**W1**	**W2**	**C2**
Time (hhmm)	16:45	16:00	10:00
Tide Mode	Mid-ebb		N/A
Water Depth (m)	<1	<1	<1
pH value	7.30	7.53	7.40
Temperature (^{o}C)	26.8	29	27
Turbidity (NTU)	86.3	3.1	14.9
DO (mg/L)	7.00	7.62	7.80
DO Saturation (%)	87%	97%	101%
Suspended Solids (mg/L)	59.0	3.4	8.0

Remark or Observation :

	Name	**Signature**	**Date**
Prepared By :	Lau kai chung	**Lau kai chung**	21/9/2012

Environmental Pioneers & Solutions Limited
Water Quality Monitoring - Summary of On-Site Measurement Results

Date of Sampling : 24/9/2012

Weather : Rainy

Monitoring Location	W1	W2	C1
Time (hhmm)	9:15	15:30	15:40
Tide Mode	Mid-flood		Mid-flood
Water Depth (m)	<1	<1	<1
pH value	7.60	6.94	7.69
Temperature (^{o}C)	27	28.3	29.7
Turbidity (NTU)	13.8	59.0	26.1
DO (mg/L)	6.30	7.16	7.10
DO Saturation (%)	114%	87%	86%
Suspended Solids (mg/L)	8.0	16.0	23.0

Remark or Observation :

	Name	Signature	Date
Prepared By :	Lau kai chung	**Lau kai chung**	24/9/2012

Environmental Pioneers & Solutions Limited
Water Quality Monitoring - Summary of On-Site Measurement Results

Date of Sampling : 26/9/2012

Weather : Sunny

Monitoring Location	W1	W2	C2
Time (hhmm)	10:00	10:50	10:15
Tide Mode	Mid-ebb		N/A
Water Depth (m)	<1	<1	<1
pH value	5.80	7.39	8.20
Temperature (^{o}C)	31.9	29.8	32
Turbidity (NTU)	10.3	4.8	192.0
DO (mg/L)	6.30	7.04	5.60
DO Saturation (%)	88%	86%	77%
Suspended Solids (mg/L)	8.0	7.0	179.0

Remark or Observation :

	Name	Signature	Date
Prepared By :	Lau kai chung	**Lau kai chung**	26/9/2012

Environmental Pioneers & Solutions Limited
Water Quality Monitoring - Summary of On-Site Measurement Results

Date of Sampling : 28/9/2012

Weather : Sunny

Monitoring Location	W1	W2	C2
Time (hhmm)	11:00	12:20	11:30
Tide Mode	Mid-ebb		
Water Depth (m)	<1	<1	<1
pH value	6.50	7.84	7.70
Temperature (^{o}C)	31.3	29.6	31
Turbidity (NTU)	5.5	1.8	7.9
DO (mg/L)	5.30	5.95	6.30
DO Saturation (%)	73%	85%	86%
Suspended Solids (mg/L)	10.0	4.4	7.0

Remark or Observation :

	Name	Signature	Date
Prepared By :	Lau kai chung	**Lau kai chung**	28/9/2012

Appendix F: Hydrological Characteristics Monitoring Data

Location	Position	Tide	Date**	Time	Weather	Water Depth (m)*	Water Flow (m/s)	Water Flow (m^3/s)
H1	Mid	Flood	7-Sep-2012	11:30	Sunny	0.24	0.12	0.150
H1	Mid	Flood	14-Sep-2012		Sunny			0.000
H1	Mid	Flood	21-Sep-2012	11:00	Sunny	0.6	0.12	0.150
H1	Mid	Flood	28-Sep-2012		Sunny			0.000
H2	Mid	Flood	7-Sep-2012	11:00	Sunny	0.3	0.12	0.754
H2	Mid	Flood	14-Sep-2012		Sunny			0.000
H2	Mid	Flood	21-Sep-2012	10:30	Sunny	0.36	0.18	1.130
H2	Mid	Flood	28-Sep-2012		Sunny			0.000
H1	Mid	Ebb	7-Sep-2012	15:15	Sunny	0.12	0.12	0.150
H1	Mid	Ebb	14-Sep-2012	12:35	Sunny	0.12	0.12	0.150
H1	Mid	Ebb	21-Sep-2012	15:50	Sunny	0.18	0.06	0.075
H1	Mid	Ebb	28-Sep-2012	12:10	Sunny	0.24	0.06	0.075
H2	Mid	Ebb	7-Sep-2012	15:00	Sunny	0.18	0.06	0.075
H2	Mid	Ebb	14-Sep-2012	12:50	Sunny	0.12	0.12	0.754
H2	Mid	Ebb	21-Sep-2012	15:30	Sunny	0.12	0.12	0.754
H2	Mid	Ebb	28-Sep-2012	12:00	Sunny	0.24	0.12	0.754

* : Since the water levels were too low for the depth detector to determine, a tape measure was used for estimation.

**: Only one mid-tide is within working hours on 14, 28 Sep 2012.

Appendix G: Landscape and Visual Monitoring Photos

	
Photo 1 – **Temporary hoardings have been established to surround the works area at Wai Ha River estuary.**	Photo 2 – **Temporary hoardings have been established to active works area along Ting Kok Road.**
	
Photo 3 – **No discharge of muddy water of observed in Area C.**	Photo 4 – **Overall view of the transplanted tree U58 *Grevillea robusta*.**
	
Photo 5 – **A broken scaffold branch (indicated) has overhung in the canopy of U58, while new and small leaves were observed in the canopy.**	Photo 6 – **Watersprouts were observed along the trunk of the transplanted tree U58 *Grevillea robusta*.**

	
Photo 7 – **Severe leaning tree trunk of the transplanted tree U61 was observed in Area B.**	Photo 8 – **Crack on the planter of U75 became more obvious in Area B.**
	
Photo 9 – **No temporary storage of construction materials were observed within the TPZs in Area A.**	Photo 10 – **Minor bark tearing was found on the trunk of E17 (Bombax ceiba) which was believed to be created by machinery.**
	
Photo 11 – **A broken scaffold branch was observed on the tree to be transplanted (T102) in Area B.**	Photo 12 – **Declining health condition of U34 in Area B.**

	
Photo 13 – **Declining health condition of U35 in Area B.**	Photo 14 – **Declining health condition of U37 in Area B.**
	
Photo 15 – **Waterlogged area was observed at the base of the relocated tree U76 in Area B.**	Photo 16 – **General condition of the base of the relocated tree U77 in Area B.**
	
Photo 17 – **Soil was piled close to the base of the relocated tree U78 in Area B.**	Photo 18 – **Poor health condition was observed in the canopy of the relocated tree U77 in Area B. Only a few green leaves were still observed in the tree canopy.**

	
Photo 19 – **The untagged tree at the south of U54 has been surrounded by the orange construction nets to prevent further damage to the tree trunk.**	Photo 20 –**U54 has been surrounded by the orange construction nets to prevent further damage to the tree trunk.**
	
Photo 21 – **The untagged tree at the north of U54 has been surrounded by the orange construction nets to prevent further damage to the tree trunk.**	Photo 22 – **General view of the transplanted tree T152 in Area C.**
	
Photo 23 – **General view of the transplanted tree T153 in Area C.**	Photo 24 – **The protected shrubs *Pavetta hongkongensis* (PH01 and PH02) showed satisfactory condition in Area C.**

	
Photo 25 – The protected shrubs Pavetta hongkongensis (PH03) showed satisfactory condition in Area C.	

Appendix H:

A)

The recommended mitigation measures of EM&A manual (revision 3)

B)

Implementation status of environmental protection and mitigation measures

A) The recommended mitigation measures of EM&A manual (revision 3)

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
A		***Noise Impact***					
S 3.30	2.18	Good Site Practice: ▪ Only well-maintained plant shall be operated on-site and plant shall be serviced regularly during the construction program ▪ Silencers or mufflers on construction equipment shall be utilized and shall be properly maintained during the construction program ▪ Mobile plant, if any, shall be sited as far from NSRs as possible ▪ Machines and plant (such as	To minimize construction noise impacts	Contractor	Works areas	Construction phase	EIAO-TM NCO

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
		trucks) that may be in intermittent use shall be shut down between work periods or shall be throttled down to a minimum ▪ Plant known to emit noise strongly in one direction shall, wherever possible, be orientated so that the noise is directed away from the nearby NSRs ▪ Material stockpiles and other structures shall be effectively utilized, wherever practicable, in screening noise from on-site construction activities.					
S 3.31 - 3.32	2.19	Use of quieter PME	To minimize construction noise impacts	Contractor	Works areas	Construction phase	EIAO-TM NCO
S 3.33 – 3.34	2.20-2. 21	Use of temporary noise barrier	To minimize construction noise impacts	Contractor	Works areas as shown in Figure	Construction phase	EIAO-TM NCO

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
3.36-3.38	2.23-2.24				3.5		
S 3.35 and Table 3.6	2.22	Use of alternative quieter construction method (the Low Impact Method)	To minimize construction noise impacts	Contractor	Part of the works area for pipe laying in Wai Ha (refer to Figure 3.5)	Construction phase	EIAO-TM NCO
3.36 -3.38	2.23-2.24	Use of noise enclosure	To minimize construction noise impacts	Contractor	Part of the works area for pipe laying in Wai Ha (refer to Figure 3.5)	Construction phase	EIAO-TM NCO
B		***Air Quality Impact***					
S4.16	3.5	Implementation of mitigation measures stipulated in the Air Pollution Control (Construction Dust) Regulation and good site practices including but not limited to the following:	To minimize construction dust impacts	Contractor	Construction Sites	Construction Phase	EIAO-TM

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
		▪ Use of regular watering to reduce dust emissions from exposed site surfaces and unpaved road, with complete coverage, particularly during dry weather; ▪ Use of frequent watering for particularly dusty static construction areas and areas close to ASRs; ▪ Tarpaulin covering of all dusty vehicle loads transported to, from and between site location; ▪ Establishment and use of vehicle wheel and body washing facilities at the exit points of the site; ▪ Routing of vehicles and					

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
		positioning of construction plant should be at the maximum possible distance from ASRs. ▪ Stockpiled excavated materials should be covered with tarpaulin, and should be removed off-site within 24 hours to avoid any odour nuisance arising.					
C		***Water Quality Impact***					
S5.29	4.5	Construction Site Run-off and Drainage: ▪ Before commencing any site formation work, all sewer and drainage connections shall be sealed to prevent debris, soil, sand etc. from entering public	To minimize water quality impacts	Contractor	Works sites	Construction phase	ProPECC PN 1/94 Construction Site Drainage

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
		sewers/drains. ▪ Temporary ditches shall be provided to facilitate run-off discharge into appropriate watercourses, via a silt retention pond. No site run-off shall enter the fishponds at Shuen Wan. ▪ Sand/silt removal facilities such as sand traps, silt traps and sediment basins shall be provided to remove sand/silt particles from runoff to meet the requirements of the Technical Memorandum standard under the Water Pollution Control Ordinance. The design of silt removal facilities shall be based on the guidelines provided in ProPECC PN 1/94. All drainage					

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
		facilities and erosion and sediment control structures shall be inspected monthly and maintained to ensure proper and efficient operation at all times and particularly during rainstorms. ▪ Water pumped out from excavated pits shall be discharged into silt removal facilities. ▪ During rainstorms, exposed slope/soil surfaces shall be covered by a tarpaulin or other means. Other measures that need to be implemented before, during, and after rainstorms as summarized in ProPECC PN 1/94 shall be followed.					

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
		▪ Exposed soil areas shall be minimized to reduce potential for increased siltation and contamination of runoff. ▪ Earthwork final surfaces shall be well compacted and subsequent permanent work or surface protection shall be immediately performed to reduce the potential of soil erosion. ▪ Open stockpiles of construction materials or construction wastes on-site shall be covered with tarpaulin or similar fabric during rainstorms.					
S5.30	4.7	Further precautionary measures during rainy season:	To minimize water quality impacts to the designated Conservation Area	Contractor	Works areas near the Conservation Area	Rainy seasons during construction	EIAO-TM Water Pollution Control Ordinance

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
		▪ For the construction of the box culvert next to the existing channel of the Wai Ha River, sand bags should be deployed around the boundary of the works trench to prevent muddy water ingress into the adjacent CA or Wai Ha River. Sand bags should also be used to surround the excavated trench. Generally, the sand bags will be placed up to a height of 300mm to provide adequate allowance for the built-up water level during rainstorm event. With sand bags in place, surface runoff will be intercepted and flow to Wai Ha River or collected by the existing drainage system as usual. ▪ For the construction of the box				phase	(WPCO)

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
		culvert in the extreme northeast corner of Shuen Wan Marsh Conservation Area sand bags should be deployed along the limit of the works area to prevent muddy water ingress into the CA. Sand bags should be placed to a height of at least 300mm from ground level and +2.5 mPD (whichever is greater) to provide adequate allowance for the built-up water level during rainstorm events. Unpolluted surface runoff within the works area should then be collected and directed into the existing drainage system. ▪ Sheet-piles, which would be installed around the works trench near the Conservation Area, would					

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
		be extended above ground level for about 2m to serve as hoardings to isolate the works site. ▪ Tarpulin sheets would be used to cover the excavation areas during heavy rainstorms. This would prevent the ingress of rainwater into the trench minimising the risk of muddy water getting into Wai Ha River and the adjacent Conservation Area. ▪ Any concrete washing water would be contained inside the works site surrounded by the extended sheet piles. A pump sump at the bottom of the trench would be provided to pump any excess water during concrete washing.					

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
		▪ Stockpiling the excavated materials adjacent to the Conservation Area would not be allowed. The excavated materials would be either removed off site immediately after excavation, or stockpile at location(s) away from the Conservation Area. The stockpile locations shall be approved by the site engineer.					
S5.31-S 5.32	4.8-4.9	General Construction Activities: ▪ Debris and refuse generated on-site should be collected, handled and disposed of properly to avoid entering the Wa Ha River and fish ponds at Shuen Wan. Stockpiles of cement and other construction materials should be kept covered	To minimize water quality impacts	Contractor	Works sites	Construction phase	EIAO-TM WPCO

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
		when not being used. ▪ Oils and fuels should only be used and stored in designated areas which have pollution prevention facilities. To prevent spillage of fuels and solvents to nearby water bodies, 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. The bund should be drained of rainwater after a rain event.					
S5.33	4.10	Sewage from Construction workforce: ▪ Temporary sanitary facilities, such as portable chemical toilets, should be employed on-site. A	To minimize water quality impacts	Contractor	Works sites	Construction phase	EIAO-TM WPCO

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
		licensed contractor would be responsible for appropriate disposal and maintenance of these facilities.					
S5.34	4.11	River Channel Excavation Works: ▪ The excavation works within the upstream end of the existing river channel of the Wai Ha River for the construction of the proposed box culvert shall be carried out in dry condition. Containment measures such as bunds and barriers shall be used within the affected length of the river channel and the excavation works restricted to within an enclosed dry section of the channel. The excavation works within Wai Ha River shall be restricted to the period from October	To minimize water quality impacts	Contractor	Works sites	Construction phase	EIAO-TM WPCO

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
		to April.					
D		***Waste Management Implications***					
S6.20 – 6.22	5.5	Good site practices: ▪ Nomination of approved personnel, such as a site manager, to be responsible for good site practices and making arrangements for collection of all wastes generated at the site and effective disposal to an appropriate facility. ▪ Training of site personnel in proper waste management and chemical waste handling procedures. ▪ Provision of sufficient waste disposal points and regular	To reduce waste management impacts	Contractor	Works sites	Construction phase	ETWB TCW No.19/2005 ETWB TCW No.31/2004

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
		collection for disposal. ▪ Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers. ▪ Separation of chemical waste for special handling and appropriate treatment at the Chemical Waste Treatment Facility. ▪ Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors. ▪ A Waste Management Plan					

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
		should be prepared and submitted to the Engineer for approval. One may make reference to ETWB TCW No. 15/2003 for details. ▪ A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be proposed.					
S6.23-6.24	5.7	Waste reduction measures: ▪ 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	To achieve waste reduction	Contractor	Works sites	Construction phase	EIAO-TM

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
		shall be provided to segregate this waste from other general refuse generated by the work force. ▪ Any unused chemicals or those with remaining functional capacity shall be recycled. ▪ Maximising the use of reusable steel formwork to reduce the amount of C&D material. ▪ Proper storage and site practices to minimise the potential for damage or contamination of construction materials. ▪ Plan and stock construction materials carefully to minimise amount of waste generated and					

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
		avoid unnecessary generation of waste.					
S6.25-6.26		Construction & Demolition (C&D) Material: ▪ Excavated material with suitable characteristics/size should be reused on-site as fill material as far as practicable, such as for backfilling of the box culvert and drainage pipe works. ▪ Suitable areas should be designated within the works site boundaries for temporary stockpiling of C&D material. ▪ Within stockpile areas, the following measures should be taken to control potential environmental	To minimize off-site disposal of C&D material To minimize environmental impacts during the handling of C&D material	Contractor	Works sites	Construction phase	EIAO-TM

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
		impacts or nuisance: - covering material during heavy rainfall; - locating stockpiles to minimize potential visual impacts; and - minimizing land intake of stockpile areas as far as possible. ▪ When disposing C&D material at a public filling area, the material shall only consist of soil, rock, concrete, brick, cement plaster/mortar, inert building debris, aggregates and asphalt. The material shall be free from marine mud, household refuse, plastic, metals, industrial and chemical waste, animal and vegetable matter, and other material considered to be					

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
		unsuitable by the Filling Supervisor.					
S6.27		Chemical waste: ▪ Contractor should register with the EPD as a Chemical Waste Producer and to follow the guidelines stated in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. ▪ Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately. ▪ Appropriate labels should be securely attached on each chemical waste container indicating the	To minimize environmental impacts during the handling, transportation and disposal of chemical waste	Contractor	Works sites	Construction phase	EIAO-TM Waste Disposal (Chemical Waste) (General) Regulation

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
		corresponding chemical characteristics of the chemical waste, such as explosives, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc. ▪ The Contractor should use a licensed collector to transport and dispose of the chemical wastes generated at the Chemical Waste Treatment Centre at Tsing Yi, or other licenced facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.					
S6.28		General refuse: ▪ It should be stored in enclosed bins or compaction units separate from C&D material. ▪ A reputable waste collector	To minimize environmental impacts during the handling and transportation of general refuse	Contractor	Works sites	Construction phase	EIAO-TM

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
		should be employed by the contractor to remove general refuse from the site, separately from C&D material. ▪ An enclosed and covered area is preferred to reduce the occurrence of 'wind blown' light material.					
E		***Ecological Impact***					
S. 7.95	6.6	▪ Sheet-pilings, which will be installed around the trench of excavation, should be extended above ground level for ~2m to act as hoarding to isolate the works site. ▪ The trenching works for the construction of the proposed box culvert should be carried out in phases, with a trench length of not	To minimize the impacts on the stream and natural river bank	Contractor	Whole site	Construction Phase	EIAO-TM

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
		more than 120m in each phase. The trench should be backfilled and compacted with suitable materials upon completion of each phase of the construction works.					
S7.117	6.6	▪ The construction of intercept point of twin cell box culvert at the upstream of Wai Ha River should be confined to only one side of the river bank. ▪ To restore and enhance the ecological value of the stream, the affected river bank should be reinstated to its original condition or lined with rock-filled gabion. ▪ Planting pits should be provided in the gabion bank to allow the re-establishment of riparian vegetation.	To minimize the impacts on the stream and natural river bank	Contractor	Whole site	Construction Phase	EIAO-TM

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
		▪ The existing natural riverbed and substrates should be retained and the natural pool-riffle sequence should be re-created in the new channel bed.					
S 7.118	6.7	▪ All works carried out within the the river channel of Wai Ha River should be carried out from October to April, with construction carried out by land-based plant. ▪ Works within river/stream channels should be restricted to an enclosed dry section of the river, with containment measures such as bunds and barriers used within the river to minimize the impacts upon the downstream water body.	To minimise sedimentation/ water quality impacts	Contractor	Whole Site	Construction Phase	EIAO-TM

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
		▪ Site runoff should be directed towards regularly cleaned and maintained silt traps and oil/grease separators to minimize the risk of sedimentation and pollution of river water. ▪ The silt and oil/grease separators should be appropriately designed for the local drainage and ground conditions. ▪ To minimize leakage and loss of sediments during excavation in narrow channels, tightly sealed closed grab excavators should be deployed where material to be handled is wet.					
S 7.119	6.8	▪ The construction of the proposed box-culvert would have the potential to directly impact a few	To protect plant species of conservation interest	Contractor/ qualified botanist/horticu	Whole site	Construction Phase	EIAO-TM

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
		individual of a plant species of conservation interest (Hong Kong Pavetta, *Pavetta hongkongensis*). The affected individuals should be transplanted to a suitable nearby habitats prior to the construction phase. ▪ A detailed vegetation survey of the affected species of conservation interest should be conducted by a suitably qualified botanist/ecologist to identify the affected individuals in order to provide details for transplantation scheme. ▪ Transplantation should be supervised by a suitably qualified botanist/horticulturalist. A detailed transplantation methodology should be formulated during the detailed design stage of this Project.		lturalist			

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
S 7.120	6.9	▪ Noise mitigation measures such as the use of quieter construction plant and temporary noise barriers should be implemented to minimize disturbance to habitats adjacent to the works areas. ▪ Temporary noise barriers should be used during the construction of the box-culvert along Tung Tsz Road, the floodwater pumping station, the mechanical gate, and drainage pipe to minimize potential construction phase disturbance to ardeids and avifauna foraging in marsh habitat. ▪ Noise generating construction works near the Shuen Wan Egretry SSSI should be avoided as far as practicable during the breeding season (March to June) of the	To minimise disturbance impacts.	Contractor	Whole site	Construction Phase	EIAO-TM

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
		ardeids. ▪ Works near the SSSI (i.e. installation of mechanical gate) should be restricted to be executed outside the breeding season by provision of special conditions in the contract document. ▪ Hoardings with minimum height of 2m should be set up along the south side of the proposed box culvert works area adjacent to the marsh, extending at least 20m at both ends, throughout the construction period.					
S 7.121	6.10	▪ Placement of equipment or stockpile in designated works areas and access routes selected on existing disturbed land to minimise disturbance to natural or	To minimise disturbance to habitats.	Contractor	Whole site	Construction Phase	EIAO-TM

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
		moderate-high ecological value habitats.					
S 7.121	6.10	▪ Construction activities should be restricted to work areas that would be clearly demarcated. The work areas should be reinstated after completion of the works.	To minimise disturbance to natural habitats outside works area.	Contractor	Whole site	Construction Phase	EIAO-TM
S 7.121	6.10	▪ Waste skips should be provided to collect general refuse and construction wastes. The wastes would be disposed of timely and properly off-site.	To minimise disturbance to habitats.	Contractor	Whole site	Construction Phase	EIAO-TM
S 7.121	6.10	▪ General drainage arrangements should include sediment and oil traps to collect and control construction site run-off.	To minimise sedimentation/ water quality impacts	Contractor	Whole site	Construction Phase	EIAO-TM
S 7.121	6.10	▪ Open burning on works sites is illegal, and should be strictly prohibited.	To prevent accidental hill-fires.	Contractor	Whole site	Construction Phase	EIAO-TM

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
S 7.122	6.11	▪ De-silting should be limited to the dry season.	To minimise sedimentation/ water quality impacts	Maintenance parties of the channel	Whole site	Operation Phase	EIAO-TM
S 7.122	6.11	▪ Waste material produced during de-silting should be disposed of in a timely and appropriate manner.	To minimise sedimentation/ water quality impacts	Maintenance parties of the channel	Whole site	Operation Phase	EIAO-TM
S 7.123	6.12	▪ Planting of trees should be provided within the project area to compensate for the unavoidable loss of approximately 0.08ha secondary woodland habitat due to the Project. ▪ Planting of trees and other vegetation within project area along the banks of Wai Ha River and Tung Tsz Road should be carried out to provide compensation for unavoidable tree-felling and loss of riparian vegetation resulting from the	To compensate the loss of vegetation	Contractor	Whole site	Construction Phase	EIAO-TM

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
		Project. ▪ The compensatory planting should make use of native plant species with flowers/fruits attractive to wildlife.					
S 7.124	6.13	▪ Compensation would be required for the loss of a small area of marsh habitat (about 0.30ha) within the CA resulting from the construction of the box-culvert. ▪ An existing low ecological value recreational fishpond on government land adjacent to the marsh would be used as a proposed area (about 0.8ha) for the compensation for the marsh as well as secondary woodland habitats loss (0.08ha). ▪ The pond should be enhanced by removing boardwalks around the	To compensate the loss of marsh habitat and enhance the quality compensatory habitat	Contractor / qualified ecologist	The recreational fish pond located to the southwest of the existing Tung Tsz Nursery	Construction Phase	EIAO-TM

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
		existing pond, and restoring vegetation along the pond bunds, and it would be re-profiled to provide areas of shallow water (approximately 15-50cm deep), creating a suitable foraging habitat for avifauna, particularly ardeids and other waders. ▪ Screen planting of shrubs and trees along the south-eastern bund of the pond should be implemented to minimise disturbance to avifauna and other wildlife from the adjacent recreational fishpond. The enhanced pond is expected to provide a moderate-high ecological value wetland habitat.					

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concern to Address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?
F		***Landscape and Visual***					
Table 8.4	7.6	Visual screen, contaminant/ liaison with nursery, protection of existing trees with works area and construction light are used or practiced to mitigate the impacts during construction phase.	To mitigate the landscape	Contractor	Whole site	Construction	EIAO-TM
Table 8.4	7.7	Viewing area formation, architectural design for pump house, landscape design for pump house, enhancement planting along Tung Tsz Road, sufficient soil depth for enhancement planting, transplanting of trees to adjacent locations, preparation for transplanting and reinstatement of affected area are practiced to mitigate the impacts during operational phase.	To mitigate the landscape and visual impacts during the operational phase.	Contractor	Whole site	Detail Design / Operational Phase	EIAO-TM

Appendix H:

A)

The recommend mitigation measures of EM&A manual (revision 3)

B)

Implementation status of environmental protection and mitigation measures

B) Implementation status of environmental protection and mitigation

EM&A Ref.	Recommended Mitgation Measures	Objectives of the Recommended Measure & main concern to Address	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?	Implementation status
2.18	Use well maintained construction plant	To minimize construction noise impact	Works areas	Construction phase	EIAO-TM NCO	Implemented
	Shut down plants between work periods					Implemented
	Install silencers on construction equipment					Implemented
	Locate mobile plant far away from NSRs					Implemented
	Quiet plants should be used					Implemented
2.19	Use of quieter PME					Not applicable
2.20 - 2.21	Use of temporary noise barrier		Pipe laying in Wai Ha			Not applicable
2.22	Use of alternative quieter construction method		Part of the Works Pipe laying in Wai Ha			Not applicable
2.23 – 2.24	Use of noise enclosure		Pipe laying in Wai Ha			Not applicable

EM&A Ref.	Recommended Mitgation Measures	Objectives of the Recommended Measure & main concern to Address	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?	Implementation status
3.5	Implement regular watering and vehicle washing facilities	To minimize construction dust impact	Construction Site	Construction phase	EIAO-TM	Outstandinng
	Cover excavated or stockpile of dusty material by impervious sheeting or sprayed with water					Implemented
	Use tarpaulin to cover dusty materials on vehicles					Implemented
4.5	Provide silt trap and oil interceptor to remove the oil, lubricants, grease, silt, grit and debris from the wastewater before pumped to the public storm water drainage system	To minimize water quality impact	Construction Site	Construction phase	EIAO-TM WPCO	Implemented
4.5	During rainstorms, exposed slope/soil surfaces shall be covered by a tarpaulin or other means. Others measures that need to be implemented before, during, and after rainstorms as summarized in ProPECC PN 1/94 shall be followed					Not applicable

EM&A Ref.	Recommended Mitgation Measures	Objectives of the Recommended Measure & main concern to Address	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?	Implementation status
4.10	Provide site toilet facilities	To minimize water quality impact	Construction Site	Construction phase	EIAO-TM WPCO	Implemented
4.7	Further precautionary measures during rainy season: For the construction of the box culvert next to the existing channel of the Wai Ha River, sand bags should be deployed around the boundary of the works trench to prevent muddy water ingress into the adjacent CA or Wai Ha River. Sand bags should also be used to surround the excavated trench. Generally, the sand bags will be placed up to a height of 300mm to provide adequate allowance for the built-up water level during rainstorm event. With sand bags in place, surface runoff will be intercepted and flow to Wai Ha River or collected by the existing drainage system as usual. For the construction of the box culvert in the extreme northeast corner of Shuen Wan Marsh Conservation Area sand bags should be deployed along the limit of the works area to prevent muddy water ingress into the CA. Sand bags should be placed to a height of at least 300mm from round level and +2.5 mPD (whichever is greater) to provide adequate allowance	To minimize water quality impact to the designated Conservation Area	Works areas near the Conservation Area	Rainy seasons during construction	EIAO-TM WPCO	Not applicable

EM&A Ref.	Recommended Mitgation Measures	Objectives of the Recommended Measure & main concern to Address	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?	Implementation status
	for the built-up water level during rainstorm events. Unpolluted surface runoff within the works area should then be collected and directed into the existing drainage system. Sheet-piles, which would be installed around the works trench near the Conservation Area, would be extended above ground level for about 2m to serve as hoardings to isolate the works site. Tarpulin sheets would be used to cover the excavation areas during heavy rainstorms. This would prevent the ingress of rainwater into the trench minimising the risk of muddy water getting into Wai Ha River and the adjacent Conservation Area. Any concrete washing water would be contained inside the works site surrounded by the extended sheet piles. A pump sump at the bottom of the trench would be provided to pump any excess water during concrete					
5.9	Reuse excavated material as much as possible	To achieve waste reduction	Works areas	Construction phase	EIAO-TM	Implemented
5.7	Any unused chemicals or those with remaining functional capacity shall be recycled.					Not applicable
	Recycle scrap metals or abandoned equipment					Implemented

EM&A Ref.	Recommended Mitgation Measures	Objectives of the Recommended Measure & main concern to Address	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?	Implementation status
5.5	A recording system for the amount of wastes generated, recycled and disposed should be proposed	To reduce waste management impacts	Works areas	Construction phase	ETWB TCW No. 19/2005 ETWB TCW NO. 31/2004	Implemented
5.9	Adopt a trip ticket system for the disposal of C&D materials					Implemented
5.11	All general refuse should be segregated and stored in enclosed bins or compaction units					Implemented
5.10	Contractor should be a required to register with the EPD as a Chemical Waste Producer and to follow the guidelines states in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.	To minimize the environmental impacts associated with the handling, transportation and disposal of chemical waste.	Work site	Construction phase	EIAO-TM Waste Disposal (Chemical Waste)(General) Regulation	Implemented
	Good quality containers compatible with the chemical wastes should be used, and Incompatible chemicals should be stored separately. Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosives, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc.					Not applicable

EM&A Ref.	Recommended Mitgation Measures	Objectives of the Recommended Measure & main concern to Address	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?	Implementation status
5.5	A recording system for the amount of wastes generated, recycled and disposed should be proposed	To reduce waste management impacts	Works areas	Construction phase	ETWB TCW No. 19/2005 ETWB TCW NO. 31/2004	Implemented
6.6	Sheet-pilings, which will be installed around the trench of excavation, should be extended above ground level for ~2m to act as hoarding to isolate the works site. The trenching works for the construction of the proposed box culvert should be carried out in phases, with a trench length of not more than 120m in each phase. The trench should be backfilled and compacted with suitable materials upon completion of each phase of the construction works.	To minimize the impacts on the steam and natural river bank.	Whole site	Construction phase	EIAO-TM	Implemented
6.6	The construction of intercept oint of twin cell box culvert at the upstream of Wai Ha River should be confined to only one side of the river bank. To restore and enhance the ecological value of the stream, the affected river bank should be reinstated to its original condition or lined with rock-filled gabion. Planting pits should be provided in the gabion bank to allow the re-establishment of riparian vegetation.	To minimize the impacts on the steam and natural river bank.	Whole site	Construction phase	EIAO-TM	No applicable

EM&A Ref.	Recommended Mitgation Measures	Objectives of the Recommended Measure & main concern to Address	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?	Implementation status
	The existing natural riverbed and substrates should be retained and the natural pool-riffle sequence should be re-created in the new channel bed.					
6.7	All works carried out within the the river channel of Wai Ha River should be carried out from October to April, with construction carried out by land-based plant. Works within river/stream channels should be restricted to an enclosed dry section of the river, with containment measures such as bunds and barriers used within the river to minimize the impacts upon the downstream water body. Site runoff should be directed towards regularly cleaned and maintained silt traps and oil/grease separators to minimize the risk of sedimentation and pollution of river water. The silt and oil/grease separators should be appropriately designed for the local drainage and ground conditions. To minimize leakage and loss of sediments during excavation in narrow channels, tightly sealed closed grab excavators should be deployed where material to be handled is wet.	To minimize sedimentation/ water quality impacts	Whole site	Construction phase	EIAO-TM	No applicable

EM&A Ref.	Recommended Mitgation Measures	Objectives of the Recommended Measure & main concern to Address	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?	Implementation status
6.8	The construction of the proposed box-culvert would have the potential to directly impact a few individual of a plant species of conservation interest (Hong Kong Pavetta, Pavetta hongkongensis). The affected individuals should be transplanted to a suitable nearby habitats prior to the construction phase. A detailed vegetation survey of the affected species of conservation interest should be conducted by a suitably qualified botanist/ecologist to identify the affected individuals in order to provide details for transplantation scheme. Transplantation should be supervised by a suitably qualified botanist/horticulturalist. A detailed transplantation methodology should be formulated during the detailed design stage of this Project.	To protect plant species of conservation interest	Whole site	Construction phase	EIAO-TM	No applicable
6.9	Placement of equipment or stockpile in designated works areas and access routes selected on existing disturbed land to minimize disturbance to natural or moderate-high ecological value habitats.	To minimise disturbance to habitats.	Whole site	Construction phase	EIAO-TM	No applicable
6.13	General drainage arrangements should include sediment and oil traps to collect and control construction site run-off.	To minimise sedimentation/ water quality impacts	Whole site	Construction phase	EIAO-TM	Implemented

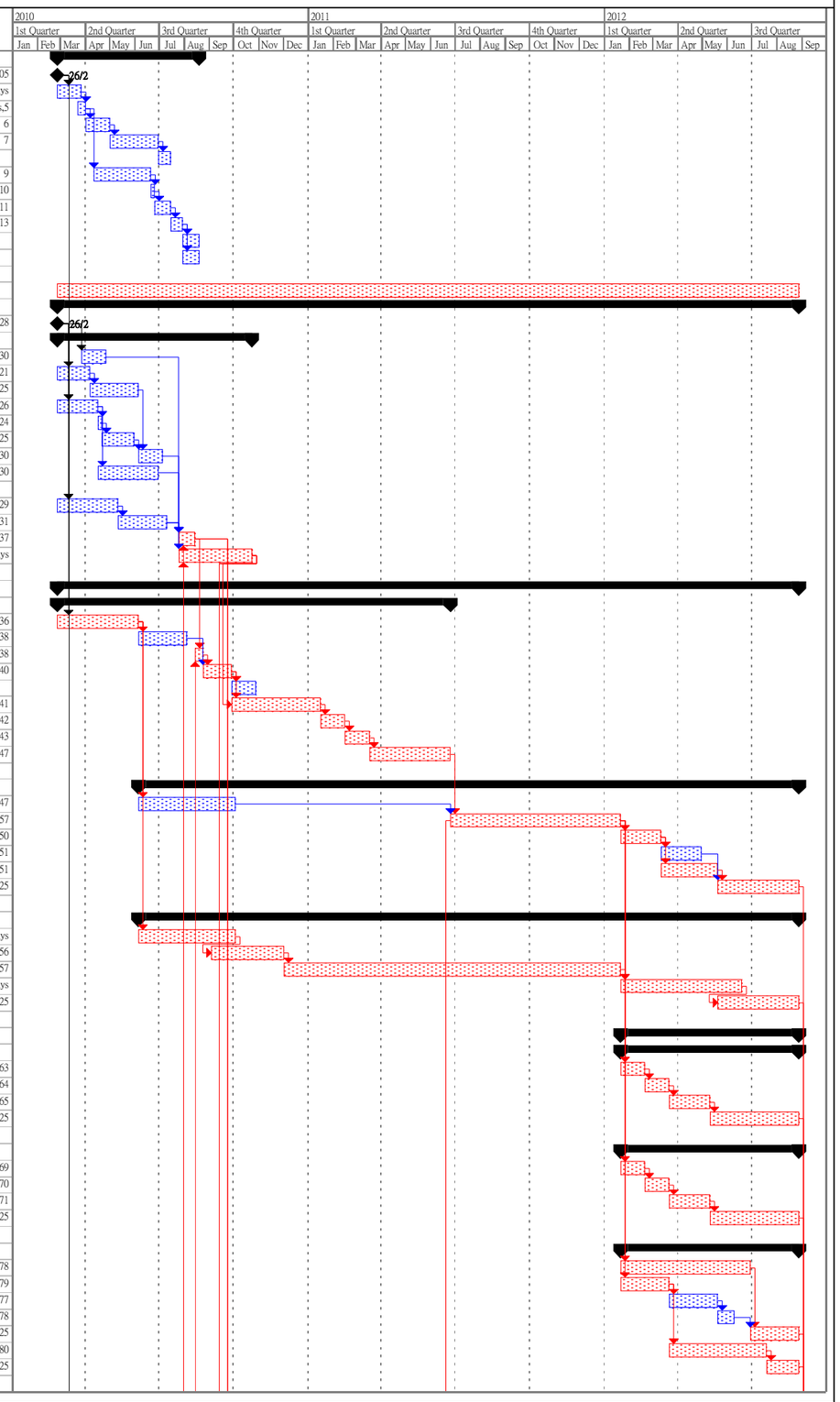
EM&A Ref.	Recommended Mitgation Measures	Objectives of the Recommended Measure & main concern to Address	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve?	Implementation status
6.13	Construction activities should be restricted to work areas that would be clearly demarcated. The work areas should be reinstated after completion of the works.	To minimise disturbance to natural habitats outside works area.	Whole site	Construction phase	EIAO-TM	Implemented
6.13	Placement of equipment or stockpile in designated works areas and access routes selected on existing disturbed land to minimize disturbance to natural or moderate-high ecological value habitats.	To minimise disturbance to natural habitats	Whole site	Construction phase	EIAO-TM	Implemented
7.6	Visual screen, contaminant/ liaison with nursery, protection of existing trees with works area and construction light are used or practiced to mitigate the impacts during construction phase	To mitigate the landscape and visual impacts during the Construction phase	Whole site	Construction phase	EIAO-TM	Implemented
7.7	Viewing area formation , architectural design for pump house, landscape design for pump hose, enhancement planting along Tung Tsz Road, sufficient soil depth for enhancement planting, transplanting of trees to adjacent locations preparation for transplanting and reinstatement of affected area are practiced to mitigate the impacts during operational phase.	To mitigate the landscape and visual impacts during the operational phase	Whole site	Detail Design / Operational Phase	EIAO-TM	Not Applicable

Appendix I: Construction programme

Contract No.: DC/2009/22
Contract Title: Drainage Improvement Works in Shuen Wan, Tai Po - Contract 1

Master Programme (Rev. 6)

ID	ID no. in Rev. 5	ID no. in Rev. 4	ID no. in Rev. 3	ID no. in Rev. 2	Task Name	Duration	Start	Finish	Predecessors	Successors
1	**1**	**1**	**1**	1	**Preliminary Works (Area I - Pak Shek Kok)**	**175 days**	**Fri 26/2/10**	**Thu 19/8/10**		
2	2	2	2	2	Commencement of Works	0 days	Fri 26/2/10	Fri 26/2/10		3,83,88,105
3	3	3	3	3	Design & Construction of Site Hoarding	30 days	Fri 26/2/10	Sat 27/3/10	2	4FS-5 days
4	4	4	4	4	Site Clearance	10 days	Tue 23/3/10	Thu 1/4/10	3FS-5 days	8FS+10 days,5
5	5	5	5	5	Design of Engineer's Site Office	30 days	Fri 2/4/10	Sat 1/5/10	4	6
6	6	6	6	6	Construction of Engineer's Site Office	60 days	Sun 2/5/10	Wed 30/6/10	5	7
7	7	7	7	7	Engineer's Site Office - Setup the Internal Finishing / Furniture/ Equipment	15 days	Thu 1/7/10	Thu 15/7/10	6	
8	8	8	8	8	Construction of Contractor's Accommodation	70 days	Mon 12/4/10	Sun 20/6/10	4FS+10 days	9
9	9	9	9	9	Installation of Sewerage Storage Tank	5 days	Mon 21/6/10	Fri 25/6/10	8	10
10	10	10	10	10	Contractor Accommodation - Setup the Internal Finishing / Furniture / Equipment	20 days	Sat 26/6/10	Thu 15/7/10	9	11
11	11	11	11	11	Establishment of Vehicular Gate, Storage Area	15 days	Fri 16/7/10	Fri 30/7/10	10	12,13
12	12	12	12	12	Establishment of Welfare Facilities for Workers	20 days	Sat 31/7/10	Thu 19/8/10	11	
13	13	13	13		Temporary Drainage System	20 days	Sat 31/7/10	Thu 19/8/10	11	
14										
15	15	15	15	15	**Time for Completion of Section I**	915 days	Fri 26/2/10	Tue 28/8/12		
16	**16**	**16**	**16**	16	**Section I (Area A,B - Shuen Wan)**	**915 days**	**Fri 26/2/10**	**Tue 28/8/12**		
17	17	17	17	17	Commencement of Works	0 days	Fri 26/2/10	Fri 26/2/10		19FS+30 days,35,111,22,20,28
18	**18**	**18**	**18**	18	**Preliminary Works**	**240 days**	**Fri 26/2/10**	**Sat 23/10/10**		
19	19	19	19	19	Seek clarification regarding Environmental Permit	30 days	Sun 28/3/10	Mon 26/4/10	17FS+30 days	30
20	20	20	20	20	Design of TTA Scheme for Site Access	40 days	Fri 26/2/10	Tue 6/4/10	17	21
21	21	21	21	21	Submission of TTA to TMLG for Approval	60 days	Wed 7/4/10	Sat 5/6/10	20	25
22	22	22	22	22	Site Clearance	50 days	Fri 26/2/10	Fri 16/4/10	17	23,26
23	23	23	23	23	Project Signboard	5 days	Sat 17/4/10	Wed 21/4/10	22	24
24	24	24	24	24	Hoarding Erection	40 days	Thu 22/4/10	Mon 31/5/10	23	25
25	25	25	25	25	Establish Site Access	30 days	Sun 6/6/10	Mon 5/7/10	24,21	30
26	26	26	26	26	Ground Investigation	75 days	Sat 17/4/10	Wed 30/6/10	22	30
27										
28	28	28	28	28	Tree Survey	75 days	Fri 26/2/10	Tue 11/5/10	17	29
29	29	29	29	29	Submission of Tree Survey Record	60 days	Wed 12/5/10	Sat 10/7/10	28	30,31
30	30	30	30	30	Tree Felling	20 days	Mon 26/7/10	Sat 14/8/10	29,139,25,26,19	94,99,37
31	31	31	31	31	Tree Transplanting	90 days	Mon 26/7/10	Sat 23/10/10	29,139	94FS-30 days,99FS-30 days,40FS-30 days
32										
33	**33**	**33**	**33**	33	**Pumping Station**	**915 days**	**Fri 26/2/10**	**Tue 28/8/12**		
34	**34**	**34**	**34**	34	**Piling Works**	**485 days**	**Fri 26/2/10**	**Sat 25/6/11**		
35	35	35	35	35	Submission of Method Statement	100 days	Fri 26/2/10	Sat 5/6/10	17	46,54,36
36	36	36	36		Material Ordering & Delivery to Site	60 days	Sun 6/6/10	Wed 4/8/10	35	38
37	37	37	37	36	Ground Preparation for Piling	10 days	Sun 15/8/10	Tue 24/8/10	139,30	38
38	38	38	38	37	Preliminary Pile	35 days	Wed 25/8/10	Tue 28/9/10	37,36	39,40
39	39	39	39	39	Loading Test	30 days	Wed 29/9/10	Thu 28/10/10	38	
40	40	40	40	38	Working Piles	110 days	Wed 29/9/10	Sun 16/1/11	38,31FS-30 days	41
41	41	41			Loading Test for working piles	30 days	Mon 17/1/11	Tue 15/2/11	40	42
42	42	42	41	40	Sheetpiling	30 days	Wed 16/2/11	Thu 17/3/11	41	43
43	43	43	42	41	Excavation to Pile Cut Off Level / Shoring	100 days	Fri 18/3/11	Sat 25/6/11	42	47
44										
45	**45**	**45**	**44**	43	**Main Structure of Pumping Station**	**815 days**	**Sun 6/6/10**	**Tue 28/8/12**		
46	46	46	45	44	Temporary Works Submission	120 days	Sun 6/6/10	Sun 3/10/10	35	47
47	47	47	46	45	Reinforced Concrete Works	210 days	Sun 26/6/11	Sat 21/1/12	46,43	118SS+80 days,75,48,68,62,74,57
48	48	48	47	46	Roofing	50 days	Sun 22/1/12	Sun 11/3/12	47	49,50
49	49	49	48	47	Manmade Slope	50 days	Mon 12/3/12	Mon 30/4/12	48	51
50	50	50	49	48	Internal Finishing Works	70 days	Mon 12/3/12	Sun 20/5/12	48	51
51	51	51	50	49	External Finishing Works	100 days	Mon 21/5/12	Tue 28/8/12	50,49	125
52										
53	**53**	**53**	**52**	51	**E & M**	**815 days**	**Sun 6/6/10**	**Tue 28/8/12**		
54	54	54	53	52	Submission of E & M Design	120 days	Sun 6/6/10	Sun 3/10/10	35	55FS-30 days
55	55	55	54	53	Approval of E & M Design	90 days	Sat 4/9/10	Thu 2/12/10	54FS-30 days	56
56	56	56	55	54	Fabrication & Delivery of Plant & Material	415 days	Fri 3/12/10	Sat 21/1/12	55	57
57	57	57	56	55	Plumbing & E&M works	150 days	Sun 22/1/12	Tue 19/6/12	56,47	58FS-30 days
58	58	58	57	56	Final Testing Works	100 days	Mon 21/5/12	Tue 28/8/12	57FS-30 days	125
59										
60	**60**	**60**	**59**	58	**External Structure**	**220 days**	**Sun 22/1/12**	**Tue 28/8/12**		
61	**61**	**61**	**60**	59	**Pumping Station to Outfall Structure**	**220 days**	**Sun 22/1/12**	**Tue 28/8/12**		
62	62	62	61	60	Installation of Cofferdam & Site Hoarding Phase 2	30 days	Sun 22/1/12	Mon 20/2/12	47	63
63	63	63	62	61	Excavation	30 days	Tue 21/2/12	Wed 21/3/12	62	64
64	64	64	63	62	Constrcution of 2nos. of 1500mm dia. Drainage Pipes	50 days	Thu 22/3/12	Thu 10/5/12	63	65
65	65	65	64	63	2 nos. of Outfall Structures	110 days	Fri 11/5/12	Tue 28/8/12	64	125
66										
67	**67**	**67**	**66**	65	**Tide Level Monitoring Chamber**	**220 days**	**Sun 22/1/12**	**Tue 28/8/12**		
68	68	68	67	66	Installation of Cofferdam & Site Hoarding Phase 2	30 days	Sun 22/1/12	Mon 20/2/12	47	69
69	69	69	68	67	Excavation	30 days	Tue 21/2/12	Wed 21/3/12	68	70
70	70	70	69	68	Construction of Pipe & Tide Level Monitoring Chambers	50 days	Thu 22/3/12	Thu 10/5/12	69	71
71	71	71	70	69	Outfall Structure	110 days	Fri 11/5/12	Tue 28/8/12	70	125
72										
73	**73**	**73**	**72**	71	**External Misc. Works**	**220 days**	**Sun 22/1/12**	**Tue 28/8/12**		
74	74	74	73	72	Boundary Wall & Fencing	160 days	Sun 22/1/12	Fri 29/6/12	47	78
75	75	75	74	73	3nos. of Flow Measurement chambers and Pipes	60 days	Sun 22/1/12	Wed 21/3/12	47	76,79
76	76	76	75	74	Surface Drainage System & Catchpits	60 days	Thu 22/3/12	Sun 20/5/12	75	77
77	77	77	76	76	Concrete Pavement	20 days	Mon 21/5/12	Sat 9/6/12	76	78
78	78	78	77	77	Landscaping Works	60 days	Sat 30/6/12	Tue 28/8/12	77,74	125
79	79	79	78		225mm dia. Sewer Across Ting Kok Road and Connection to Existing Manholes	120 days	Thu 22/3/12	Thu 19/7/12	75	80
80	80	80			Sewer Manhole SM1	40 days	Fri 20/7/12	Tue 28/8/12	79	125
81										



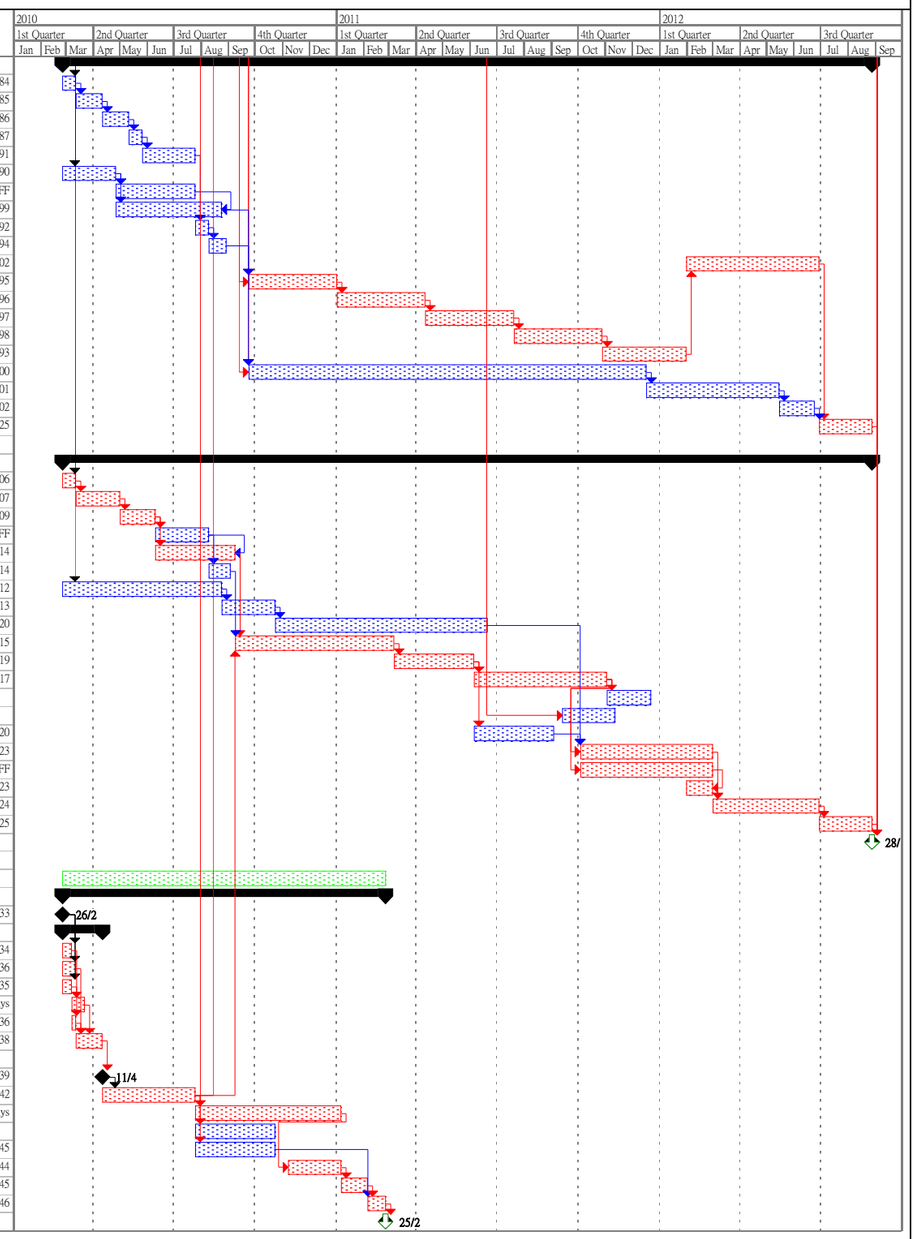
Master Programme - Rev. 6
Data Date: 2010-2-26

Task | Progress | Summary | Rolled Up Critical Task | Rolled Up Progress | External Tasks | Group By Summary
Critical Task | Milestone | Rolled Up Task | Rolled Up Milestone | Split | Project Summary | Deadline

Contract No.: DC/2009/22
Contract Title: Drainage Improvement Works in Shuen Wan, Tai Po - Contract 1

Master Programme (Rev. 6)

ID	ID no. in Rev. 5	ID no. in Rev. 4	ID no. in Rev. 3	ID no. in Rev. 2	Task Name	Duration	Start	Finish	Predecessors	Successors
82	**82**	**82**	**80**	79	**Twin Cell Box Culvert**	**915 days**	**Fri 26/2/10**	**Tue 28/8/12**		
83	83	83	81	80	Liaison with LCSD	15 days	Fri 26/2/10	Fri 12/3/10	2	84
84	84	84	82	81	Determination of Box Culvert Alignment	30 days	Sat 13/3/10	Sun 11/4/10	83	85
85	85	85	83	82	Record Survey	30 days	Mon 12/4/10	Tue 11/5/10	84	86
86	86	86	84	83	Condition Survey of Existing Structure	15 days	Wed 12/5/10	Wed 26/5/10	85	87
87	87	87	85	84	Submission of Method Statement to LCSD	60 days	Thu 27/5/10	Sun 25/7/10	86	91
88	88	88	86	85	Design of Temporary Traffic Arrangement	60 days	Fri 26/2/10	Mon 26/4/10	2	89,90
89	89	89	87	86	Submission of TTA to TMLG for Approval	90 days	Tue 27/4/10	Sun 25/7/10	88	90FF
90	90	90	88	87	Excavation Permit	120 days	Tue 27/4/10	Tue 24/8/10	88,89FF	99
91	91	91	89	88	Temporary Removal of Structure and Facilities / Reprovision	15 days	Mon 26/7/10	Mon 9/8/10	87	92
92	92	92			Provision of Temporary Irrigation Pipes	20 days	Tue 10/8/10	Sun 29/8/10	91	94
93	93	93	91	89	Box Culvert at Chainage 0 - 25	150 days	Wed 1/2/12	Fri 29/6/12	98	102
94	94	94	92	90	Box Culvert at Chainage 25 - 75	100 days	Fri 24/9/10	Sat 1/1/11	31FS-30 days,30,92	95
95	95	95	93	91	Box Culvert at Chainage 75 - 125	100 days	Sun 2/1/11	Mon 11/4/11	94	96
96	96	96	94	92	Box Culvert at Chainage 125 - 175	100 days	Tue 12/4/11	Wed 20/7/11	95	97
97	97	97	95	93	Box Culvert at Chainage 175 - 225	100 days	Thu 21/7/11	Fri 28/10/11	96	98
98	98	98	96	94	Box Culvert at Chainage 225 - 275	95 days	Sat 29/10/11	Tue 31/1/12	97	93
99	99	99	97	95	Box Culvert at Chainae 275 - 300	450 days	Fri 24/9/10	Sat 17/12/11	90,31FS-30 days,30	100
100	100	100	98	96	Box Culvert at Chainage 300 - 350 (Including Outfall & Desilting Chamber)	150 days	Sun 18/12/11	Tue 15/5/12	99	101
101	101	101	99		1200mm dia. Drainage Pipe	40 days	Wed 16/5/12	Sun 24/6/12	100	102
102	102	102	100	97	Reinstallation and Reinstatement of Existing Structure, Facilities and Trees	60 days	Sat 30/6/12	Tue 28/8/12	93,101	125
103										
104	**104**	**104**	**102**	99	**Dia. 2100mm Drainage Pipe**	**915 days**	**Fri 26/2/10**	**Tue 28/8/12**		
105	105	105	103	100	Record Survey	15 days	Fri 26/2/10	Fri 12/3/10	2	106
106	106	106	104	101	Site Investigation (Trial Pit)	50 days	Sat 13/3/10	Sat 1/5/10	105	107
107	107	107	105	102	Design of Temporary Traffic Arrangement	40 days	Sun 2/5/10	Thu 10/6/10	106	108,109
108	108	108	106	103	Submission of TTA to TMLG for Approval	60 days	Fri 11/6/10	Mon 9/8/10	107	110,109FF
109	109	109	107	104	Excavation Permit	90 days	Fri 11/6/10	Wed 8/9/10	107,108FF	114
110	110	110	108		Liaison with HyD / LCSD for Planter Removal	25 days	Tue 10/8/10	Fri 3/9/10	108	114
111	111	111	109	105	E&M Design of Penstocks	180 days	Fri 26/2/10	Tue 24/8/10	17	112
112	112	112	110	106	Submission for Approval	60 days	Wed 25/8/10	Sat 23/10/10	111	113
113	113	113	111	107	Fabrication & Delivery of Penstocks	240 days	Sun 24/10/10	Mon 20/6/11	112	120
114	114	114	112	108	MH 04 to MH 05	180 days	Thu 9/9/10	Mon 7/3/11	109,139,110	115
115	115	115	113	109	MH 03 to MH 04	90 days	Tue 8/3/11	Sun 5/6/11	114	116,119
116	116	116	114	110	Intake to MH 03	150 days	Mon 6/6/11	Wed 2/11/11	115	120FS-30 days,121FS-30 days,117
117	117	117	115	115	Reinstatement of Existing Planter	50 days	Thu 3/11/11	Thu 22/12/11	116	
118	118	118	116	111	MH 05 to MH 06	60 days	Wed 14/9/11	Sat 12/11/11	47SS+80 days	
119	119	119			Temporary Drainage Management Plan	90 days	Mon 6/6/11	Sat 3/9/11	115	120
120	120	120	118	112	Intake (As required in Dry Season)	150 days	Tue 4/10/11	Thu 1/3/12	116FS-30 days,113,119	123
121	121	121	119	113	Modification of Existing Outlet Structure of Wai Ha River	150 days	Tue 4/10/11	Thu 1/3/12	116FS-30 days	122FF
122	122	122	120	114	Installation of 4 nos of Mechanical Penstocks	30 days	Wed 1/2/12	Thu 1/3/12	121FF	123
123	123	123	121		E & M Works	120 days	Fri 2/3/12	Fri 29/6/12	122,120	124
124	124	124	122		Misc. Works & Reinstatement	60 days	Sat 30/6/12	Tue 28/8/12	123	125
125	125	125	123	116	**Completion of Section I**	0 days	Tue 28/8/12	Tue 28/8/12	78,124,102,51,58,65,71,80	
126										
127	127	127	125	118	**Time for Completion of Section II**	365 days	Fri 26/2/10	Fri 25/2/11		
128	**128**	**128**	**126**	119	**Section II (Area C - Ecological Compensation Area at Shuen Wan)**	**365 days**	**Fri 26/2/10**	**Fri 25/2/11**		
129	129	129	127	120	Commencement of Works	0 days	Fri 26/2/10	Fri 26/2/10		131,132,133
130	**130**	**130**	**128**	121	**Preliminary Works**	**45 days**	**Fri 26/2/10**	**Sun 11/4/10**		
131	131	131	129	122	Site Clearance	10 days	Fri 26/2/10	Sun 7/3/10	129	134
132	132	132	130	123	Hoarding Erection	15 days	Fri 26/2/10	Fri 12/3/10	129	136
133	133	133	131	124	Pumping Water out of Pond	10 days	Fri 26/2/10	Sun 7/3/10	129	135
134	134	134	132	125	Check actual Tidal against Predicted Tidal Level	15 days	Mon 8/3/10	Mon 22/3/10	131	136FS-10 days
135	135	135	133	126	Survey Existing Pond Bed	5 days	Mon 8/3/10	Fri 12/3/10	133	136
136	136	136	134	127	Design of of Ecological Compensation Area	30 days	Sat 13/3/10	Sun 11/4/10	135,134FS-10 days,132	138
137										
138	138	138	136	129	Submission of Design of Ecological Compensation Area to EPD for Approval	0 days	Sun 11/4/10	Sun 11/4/10	136	139
139	139	139	137	130	Refer to Permit Requirement plus 15 weeks for Approval and Commencement of Works	105 days	Mon 12/4/10	Sun 25/7/10	138	140,114,30,31,37,141,142
140	140	140	138	131	Fill of Pond to Designed Level	165 days	Mon 26/7/10	Thu 6/1/11	139	143FS-60 days
141	141	141	139	132	Transplanting	90 days	Mon 26/7/10	Sat 23/10/10	139	
142	142	142			Temporary Drainage Management Plan	90 days	Mon 26/7/10	Sat 23/10/10	139	145
143	143	143	141	133	Planting Works at Upper Level	60 days	Mon 8/11/10	Thu 6/1/11	140FS-60 days	144
144	144	144	142	134	Planting Works at Lower Level	30 days	Fri 7/1/11	Sat 5/2/11	143	145
145	145	145	143	135	Setting up Water Circulation System	20 days	Sun 6/2/11	Fri 25/2/11	144,142	146
146	146	146	144	136	**Completion of Section II**	0 days	Fri 25/2/11	Fri 25/2/11	145	



Master Programme - Rev. 6
Data Date: 2010-2-26

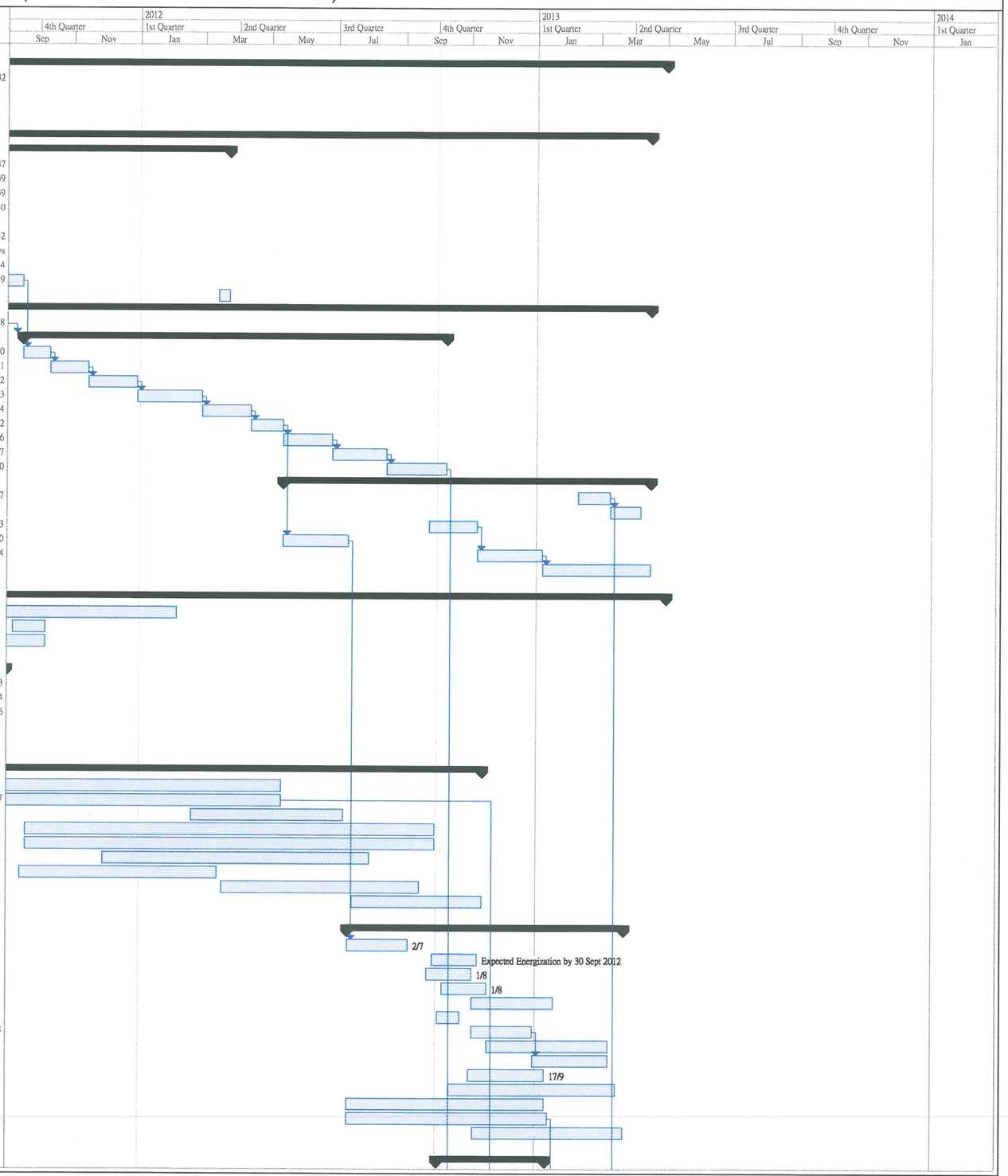
Task | Progress | Summary | Rolled Up Critical Task | Rolled Up Progress | External Tasks | Group By Summary
Critical Task | Milestone | Rolled Up Task | Rolled Up Milestone | Split | Project Summary | Deadline

Appendix J: Three month rolling programme

Contract No.: DC/2009/22
Contract Title: Drainage Improvement Works in Shuen Wan, Tai Po - Contract 1

3 Months Rolling Programme (October 2012 to December 2012)

ID	Task Name	Duration	Start	Finish	Predecessors	Successors
1	**Preliminary Works (Area I - Pak Shek Kok)**	**175 days**	**Fri 26/2/10**	**Thu 19/8/10**		
14	**Section I (Area A,B - Shuen Wan)**	**1160 days**	**Fri 26/2/10**	**Tue 30/4/13**		
15	Commencement of Works	0 days	Fri 26/2/10	Fri 26/2/10		+30 days,36,213,20,18,26,32
16	**Preliminary Works**	**465 days**	**Fri 26/2/10**	**Sun 5/6/11**		
25						
33						
34	**Pumping Station**	**1146 days**	**Fri 26/2/10**	**Tue 16/4/13**		
35	**Piling Works**	**757 days**	**Fri 26/2/10**	**Fri 23/3/12**		
36	Submission of Method Statement	100 days	Fri 26/2/10	Sat 5/6/10	15	47,37
37	Material Ordering & Delivery to Site	60 days	Sun 6/6/10	Wed 4/8/10	36	39
38	Ground Preparation for Piling	10 days	Sat 5/3/11	Mon 14/3/11	30FF-13 days	39
39	Preliminary Pile	35 days	Tue 15/3/11	Mon 18/4/11	38,37	40
40	Loading Test	30 days	Tue 19/4/11	Wed 18/5/11	39	
41	Working Piles	30 days	Tue 15/3/11	Wed 13/4/11		42
42	Loading Test for working piles	25 days	Thu 14/4/11	Sun 8/5/11	41	43,200,201FS+90 days
43	Sheetpiling	30 days	Mon 9/5/11	Tue 7/6/11	42	44
44	Excavation to Pile Cut Off Level / Shoring	100 days	Wed 8/6/11	Thu 15/9/11	43	49
45	Proof Drill	10 days	Wed 14/3/12	Fri 23/3/12		
46	**Main Structure of Pumping Station**	**1046 days**	**Sun 6/6/10**	**Tue 16/4/13**		
47	Temporary Works Submission	120 days	Sun 6/6/10	Sun 3/10/10	36	48
48	**Reinforced Concrete Works**	**390 days**	**Fri 16/9/11**	**Tue 9/10/12**	**47**	
49	Construction of Ground Beam	25 days	Fri 16/9/11	Mon 10/10/11	44	50
50	Construction of Base Slab at -3.0 mPD	35 days	Tue 11/10/11	Mon 14/11/11	49	51
51	Construction of Wall Stem	45 days	Tue 15/11/11	Thu 29/12/11	50	52
52	Construction of Ground Floor Slab at +5.15 mPD (Screen House & Wet Well)	60 days	Fri 30/12/11	Mon 27/2/12	51	53
53	Construction of Base Slab for Transformer Room, Switch Room	45 days	Tue 28/2/12	Thu 12/4/12	52	54
54	Superstructure for Transformer Room, Switch Room	30 days	Fri 13/4/12	Sat 12/5/12	53	55,62
55	Construction for Store Room/Toilet	45 days	Sun 13/5/12	Tue 26/6/12	54	56
56	Construction for Screen House	50 days	Wed 27/6/12	Wed 15/8/12	55	57
57	Construction of Valve Chamber and Discharge Chamber	55 days	Thu 16/8/12	Tue 9/10/12	56	148,150
58	**Other Works**	**339 days**	**Sun 13/5/12**	**Tue 16/4/13**		
59	Manmade Slope	30 days	Sat 9/2/13	Sun 10/3/13		60,147
60	Roofing	28 days	Mon 11/3/13	Sun 7/4/13	59	
61	Internal Finishing Works for Screen House	45 days	Mon 24/9/12	Wed 7/11/12		63
62	Internal Finishing Works for Transformer Room and Switch Room	60 days	Sun 13/5/12	Wed 11/7/12	54	90
63	Internal Finishing Works for Store Room	60 days	Thu 8/11/12	Sun 6/1/13	61	64
64	External Finishing Works	100 days	Mon 7/1/13	Tue 16/4/13	63	
65						
66	**E&M Works**	**1066 days**	**Mon 31/5/10**	**Tue 30/4/13**		
67	Equipment Submission & Approval	615 days	Mon 31/5/10	Sat 4/2/12		
68	Civil Requirement for Penstocks, Stoplog of Wai Ha River	30 days	Wed 7/9/11	Thu 6/10/11		
69	Civil Requirement for Stormwater Pumping Station	123 days	Mon 6/6/11	Thu 6/10/11		
70						
71	**Pump Sump Model Test**	**452 days**	**Sun 6/6/10**	**Wed 31/8/11**		
72	Methodology Preparation, Submission & Approval	157 days	Sun 6/6/10	Tue 9/11/10		73
73	Preparation & Construction of Sump Model	40 days	Wed 10/11/10	Sun 19/12/10	72	74
74	Model Test for Various Scenarios	245 days	Mon 20/12/10	Sun 21/8/11	73	76
75	Modification Works of Physical Model	140 days	Mon 21/3/11	Sun 7/8/11		
76	Preparation & Submission of Model Test Report	10 days	Mon 22/8/11	Wed 31/8/11	74	
77						
78	**Fabrication & Delivery of Major Equipment to Site**	**528 days**	**Sat 4/6/11**	**Mon 12/11/12**		
79	Motorized Penstocks	343 days	Sat 4/6/11	Fri 11/5/12		
80	Stoplogs	343 days	Sat 4/6/11	Fri 11/5/12		107
81	Motorized Bar Screens	140 days	Sun 19/2/12	Sat 7/7/12		
82	Stormwater Pumps	377 days	Mon 19/9/11	Sat 29/9/12		
83	Low Water Pumps	377 days	Mon 19/9/11	Sat 29/9/12		
84	Pipeworks	246 days	Tue 29/11/11	Tue 31/7/12		
85	Valves	182 days	Wed 14/9/11	Tue 13/3/12		
86	L.V. Switchboard	182 days	Sun 18/3/12	Sat 15/9/12		
87	Cables & Elect Accessories	120 days	Mon 16/7/12	Mon 12/11/12		
88						
89	**Stormwater Pumping Station**	**255 days**	**Thu 12/7/12**	**Sat 23/3/13**		
90	Installation of B.S. in CLP Transformer Room	56 days	Thu 12/7/12	Wed 5/9/12	62	
91	Electrical Work by CLP in Transformer Room	42 days	Fri 28/9/12	Thu 8/11/12		
92	Installation of EOT Cranes EOT-1 in Screen House;	42 days	Sun 23/9/12	Sat 3/11/12		
93	Installation of EOT Cranes EOT-2 in Pump Hall;	42 days	Sun 7/10/12	Sat 17/11/12		
94	Installation of Motorized Penstocks SG01 to SG05.	75 days	Sun 4/11/12	Thu 17/1/13		
95	Installaton of Stoplogs SL01 to SL03;	21 days	Wed 3/10/12	Tue 23/10/12		
96	Installation of Motorized Bar Screens BS01 & BS02;	56 days	Sun 4/11/12	Sat 29/12/12		98
97	Installation of Stormwater Pumps & Pipework	112 days	Sun 18/11/12	Sat 9/3/13		
98	Installation of Low Water Pumps & Pipework	70 days	Sun 30/12/12	Sat 9/3/13	96	
99	Installation of L.V. Switchboard	70 days	Thu 1/11/12	Wed 9/1/13		
100	Installation of Cabling & Accessories	154 days	Sun 14/10/12	Sat 16/3/13		
101	Installation of Building Services Equipment	182 days	Thu 12/7/12	Wed 9/1/13		
102	Installation of Fire Services System	185 days	Thu 12/7/12	Sat 12/1/13		122
103	Installation of MACS & PLC	139 days	Mon 5/11/12	Sat 23/3/13		
104						
105	**Wai Ha River Outlet**	**100 days**	**Wed 3/10/12**	**Thu 10/1/13**		



Master Programme II (-)
Data Date: 2011-3-8

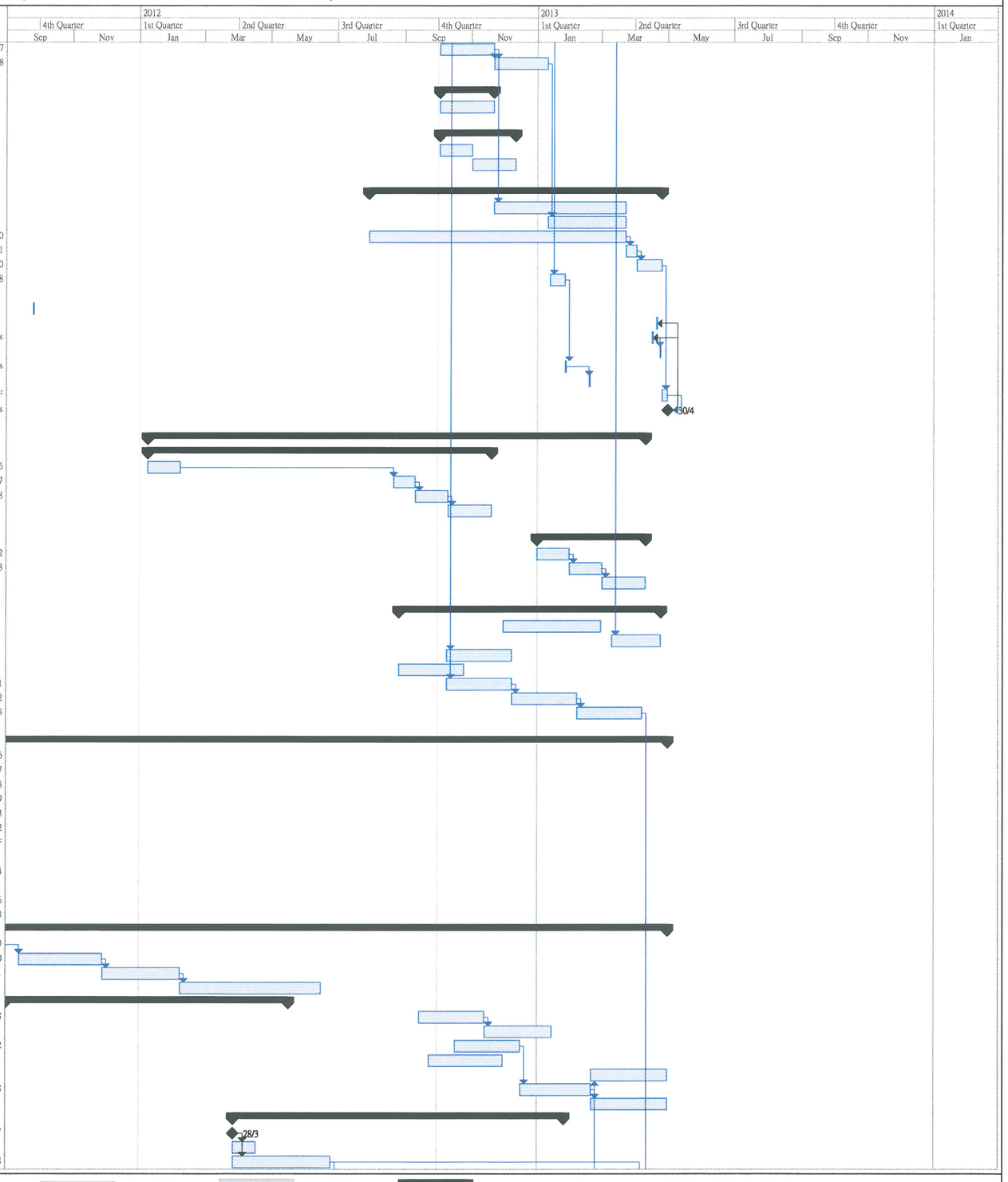
Task | Progress | Summary | Rolled Up Critical Task | Rolled Up Progress | External Tasks | Group By Summary
Critical Task | Milestone | Rolled Up Task | Rolled Up Milestone | Split | Project Summary | Deadline

Based on Master Programme II

Contract No.: DC/2009/22
Contract Title: Drainage Improvement Works in Shuen Wan, Tai Po - Contract 1

3 Months Rolling Programme (October 2012 to December 2012)

ID	Task Name	Duration	Start	Finish	Predecessors	Successors
106	Installation of Motorized Penstock, SG07A, SG07B, SG07C, SG07D	50 days	Wed 3/10/12	Wed 21/11/12		107,117
107	Installation of Stoplogs, SL06A, SL06B, SL06C & SL06D	50 days	Thu 22/11/12	Thu 10/1/13	80,106	118
108						
109	**Drain Intake at Ting Kok Road**	**50 days**	**Wed 3/10/12**	**Wed 21/11/12**		
110	Installation of Stoplogs, SL07A, SL07B, SL07C & SL07D	50 days	Wed 3/10/12	Wed 21/11/12		
111						
112	**Box Culvert**	**70 days**	**Wed 3/10/12**	**Tue 11/12/12**		
113	Installation of Manual Penstock, SG06	30 days	Wed 3/10/12	Thu 1/11/12		
114	Installation of Stoplogs, SL05A & SL05B	40 days	Fri 2/11/12	Tue 11/12/12		
115						
116	**Testing & Commissioning**	**270 days**	**Mon 30/7/12**	**Thu 25/4/13**		
117	Leakage Test of Penstocks	122 days	Thu 22/11/12	Sat 23/3/13	106	
118	Leakage Test of Stoplogs	72 days	Fri 11/1/13	Sat 23/3/13	107	
119	Functional Test of Equipment/System	237 days	Mon 30/7/12	Sat 23/3/13		120
120	Wet Commissioning Test of Pumps	10 days	Sun 24/3/13	Tue 2/4/13	119	121
121	System Commissioning	23 days	Wed 3/4/13	Thu 25/4/13	120	130
122	Functional Test of FSI	14 days	Sun 13/1/13	Sat 26/1/13	102	128
123						
124	Submission of Draft O&M Manual	1 day	Mon 26/9/11	Mon 26/9/11		
125	Submission of Final Draft O&M Manual	1 day	Sun 21/4/13	Sun 21/4/13	131FF-9 days	
126	1st Session of Training	1 day	Wed 17/4/13	Wed 17/4/13	131FF-13 days	127FS+6 days
127	2nd Session of Training	1 day	Wed 24/4/13	Wed 24/4/13	126FS+6 days	
128	Submission of FSD 501 for completion	1 day	Sun 27/1/13	Sun 27/1/13	122	129FS+21 days
129	FSI Inspection	1 day	Mon 18/2/13	Mon 18/2/13	128FS+21 days	
130	Plant Handover to Client	5 days	Fri 26/4/13	Tue 30/4/13	121	131FF
131	Anticipated Completion Date	0 days	Tue 30/4/13	Tue 30/4/13	130FF	125FF-9 days,126FF-13 days
132						
133	**External Structure**	**458 days**	**Mon 9/1/12**	**Wed 10/4/13**		
134	**Pumping Station to Outfall Structure**	**316 days**	**Mon 9/1/12**	**Mon 19/11/12**		
135	Construction of 2 nos. of 1500mm dia. Drainage Pipes	30 days	Mon 9/1/12	Tue 7/2/12		136
136	Set up the Temporary Shoring	20 days	Wed 22/8/12	Mon 10/9/12	135	137
137	Excavation	30 days	Tue 11/9/12	Wed 10/10/12	136	138
138	Construction of 2nos. Of Outfall Structures	40 days	Thu 11/10/12	Mon 19/11/12	137	
139						
140	**Tide Level Monitoring Chamber**	**100 days**	**Tue 1/1/13**	**Wed 10/4/13**		
141	Excavation	30 days	Tue 1/1/13	Wed 30/1/13		142
142	Construction of Pipe & Tide Level Monitoring Chambers	30 days	Thu 31/1/13	Fri 1/3/13	141	143
143	Outfall Structure	40 days	Sat 2/3/13	Wed 10/4/13	142	
144						
145	**External Misc. Works**	**241 days**	**Mon 27/8/12**	**Wed 24/4/13**		
146	Plumbing Works	90 days	Sat 1/12/12	Thu 28/2/13		
147	Boundary Wall & Fencing	45 days	Mon 11/3/13	Wed 24/4/13	59	
148	3nos. of Flow Measurement chambers and Pipes	60 days	Wed 10/10/12	Sat 8/12/12	57	
149	Sewer Manhole SM1	60 days	Mon 27/8/12	Thu 25/10/12		
150	Surface Drainage System & Catchpits	60 days	Wed 10/10/12	Sat 8/12/12	57	151
151	Concrete Pavement	60 days	Sun 9/12/12	Wed 6/2/13	150	152
152	Landscaping Works	60 days	Thu 7/2/13	Sun 7/4/13	151	308
153						
154	**Box Culvert**	**1160 days**	**Fri 26/2/10**	**Tue 30/4/13**		
155	Liaison with LCSD	15 days	Fri 26/2/10	Fri 12/3/10	2	156
156	Determination of Box Culvert Alignment	30 days	Sat 13/3/10	Sun 11/4/10	155	157
157	Record Survey	30 days	Mon 12/4/10	Tue 11/5/10	156	158
158	Condition Survey of Existing Structure	15 days	Wed 12/5/10	Wed 26/5/10	157	159
159	Submission of Method Statement to LCSD	60 days	Thu 27/5/10	Sun 25/7/10	158	163
160	Design of Temporary Traffic Arrangement	60 days	Fri 26/2/10	Mon 26/4/10	2	161,162
161	Submission of TTA to TMLG for Approval	90 days	Tue 27/4/10	Sun 25/7/10	160	162FF
162	Excavation Permit	120 days	Tue 27/4/10	Tue 24/8/10	160,161FF	
163	Temporary Removal of Structure and Facilities / Reprovision	15 days	Mon 26/7/10	Mon 9/8/10	159	164
164	Provision of Temporary Irrigation Pipes	20 days	Tue 10/8/10	Sun 29/8/10	163	
165	V.O. issued - Change of Box Culvert	0 days	Fri 4/3/11	Fri 4/3/11		166
166	Preparation and Hoarding Erection	99 days	Fri 4/3/11	Fri 10/6/11	165	168
167	**Single Cell Box Culvert**	**723 days**	**Mon 9/5/11**	**Tue 30/4/13**		
168	Box Culvert at Chainage 115 - 128 (completed)	76 days	Sat 11/6/11	Thu 25/8/11	166	169
169	Box Culvert at Chainage 100 - 115 (completed)	76 days	Wed 14/9/11	Mon 28/11/11	168	170
170	Box Culvert at Chainage 85 - 100 (completed)	71 days	Tue 29/11/11	Tue 7/2/12	169	171
171	Box Culvert at Chainage 55 - 85 (completed)	130 days	Wed 8/2/12	Sat 16/6/12	170	
172	**Box Culvert at Chainage 156 - 214**	**260 days**	**Thu 1/9/11**	**Thu 17/5/12**		
177	Box Culvert at Chainage 0 to 12.5	60 days	Sat 15/9/12	Tue 13/11/12		178
178	Box Culvert at Chainage 12.5 to 25.3	62 days	Wed 14/11/12	Mon 14/1/13	177	
179	Box Culvert at Chainage 25.3 to 55	60 days	Thu 18/10/12	Sun 16/12/12		182
180	Box Culvert at Chainage 141.5 to 156	68 days	Mon 24/9/12	Fri 30/11/12		
181	Box Culvert at Chainage 214 to 228	70 days	Wed 20/2/13	Tue 30/4/13	182	
182	Box Culvert at Chainage 228 to 250	65 days	Mon 17/12/12	Tue 19/2/13	179	181,183,198
183	Box Culvert at Chainage 250 - 274	70 days	Wed 20/2/13	Tue 30/4/13	182	
184	**Pipes Laying by Trenchless Method from Chainage 285 to 305**	**304 days**	**Wed 28/3/12**	**Fri 25/1/13**		
185	Confirmation of Pipe Jacking Works	0 days	Wed 28/3/12	Wed 28/3/12		186,187
186	Material & Method Statement Submission/Approval	21 days	Wed 28/3/12	Tue 17/4/12	185	
187	Preparation Works for Jack Pipe Production	90 days	Wed 28/3/12	Mon 25/6/12	185	204,188



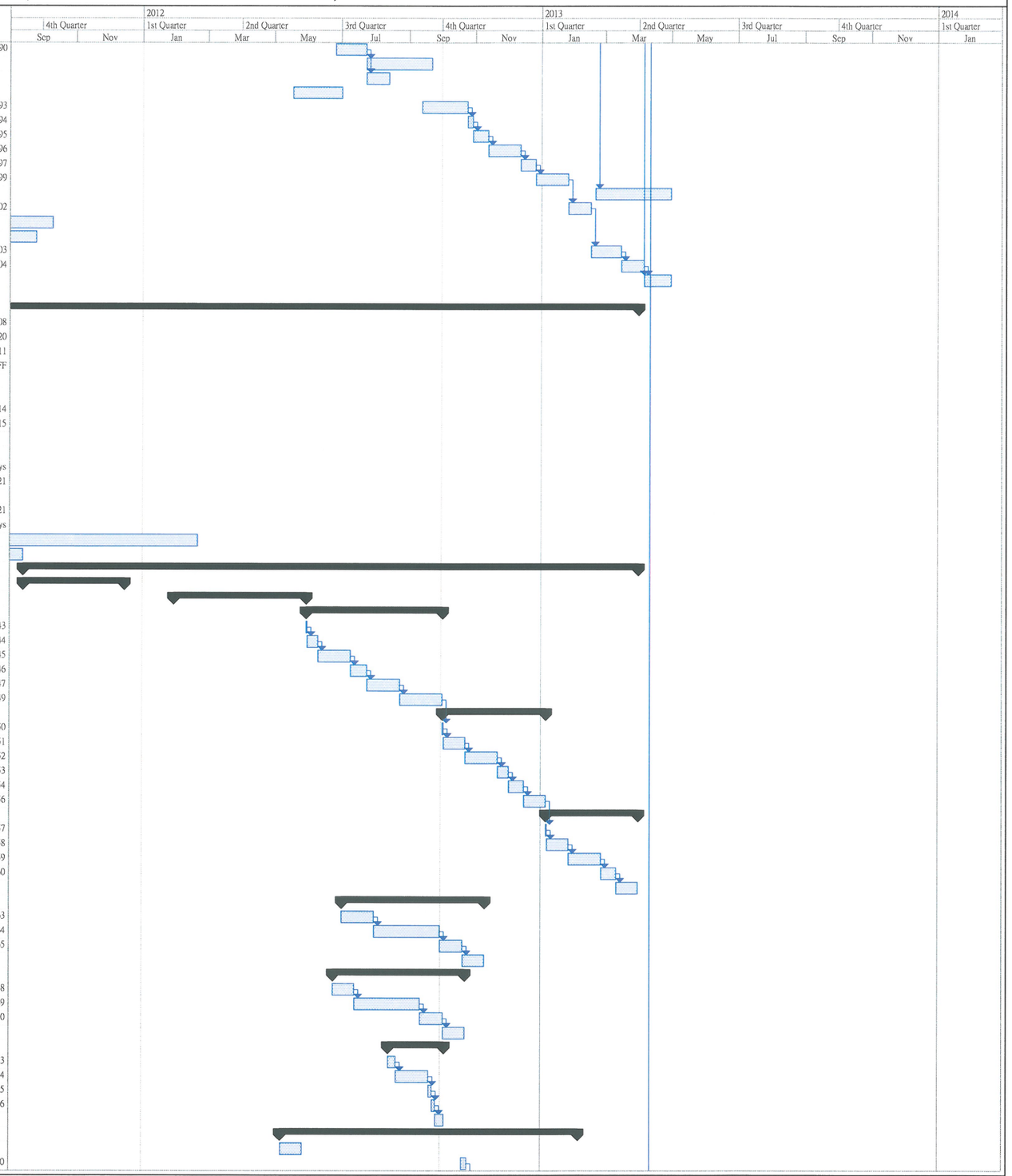
Master Programme II (-)
Data Date: 2011-3-8

Task | Progress | Summary | Rolled Up Critical Task | Rolled Up Progress | External Tasks | Group By Summary
Critical Task | Milestone | Rolled Up Task | Rolled Up Milestone | Split | Project Summary | Deadline

Contract No.: DC/2009/22
Contract Title: Drainage Improvement Works in Shuen Wan, Tai Po - Contract 1

3 Months Rolling Programme (October 2012 to December 2012)

ID	Task Name	Duration	Start	Finish	Predecessors	Successors
188	Pipe Production	28 days	Tue 26/6/12	Mon 23/7/12	187	189,190
189	Pipe Delivery	60 days	Tue 24/7/12	Fri 21/9/12	188	
190	Joint Test	21 days	Tue 24/7/12	Mon 13/8/12	188	
191	Construction of Jacking Pit	45 days	Fri 18/5/12	Sun 1/7/12	173	
192	Grouting Works	42 days	Thu 13/9/12	Wed 24/10/12		193
193	Thrust Wall	5 days	Thu 25/10/12	Mon 29/10/12	192	194
194	Pipe Jacking Establishment for 1st Pipeline	14 days	Tue 30/10/12	Mon 12/11/12	193	195
195	Pipe Instation (1st Pipeline)	30 days	Tue 13/11/12	Wed 12/12/12	194	196
196	Pipe Jacking Establishment for 2nd Pipeline	14 days	Thu 13/12/12	Wed 26/12/12	195	197
197	Pipe Instation (2nd Pipeline)	30 days	Thu 27/12/12	Fri 25/1/13	196	199
198	Box Culvert at Chainage 274 to 285	70 days	Wed 20/2/13	Tue 30/4/13	182	
199	Box Culvert at Chainage 305 to 310	21 days	Sat 26/1/13	Fri 15/2/13	197	202
200	Box Culvert at Chainage 310 to330	155 days	Mon 9/5/11	Mon 10/10/11	42	
201	Box Culvert at Chainage 330 to343	50 days	Sun 7/8/11	Sun 25/9/11	42FS+90 days	
202	Box Culvert at Chainage 343 to 356	28 days	Sat 16/2/13	Fri 15/3/13	199	203
203	Outfall Structure	21 days	Sat 16/3/13	Fri 5/4/13	202	204
204	Reinstatement of Planters	25 days	Sat 6/4/13	Tue 30/4/13	203,187	
205						
206	**Dia. 2100mm Drainage Pipe**	**1130 days**	**Fri 26/2/10**	**Sun 31/3/13**		
207	Record Survey	15 days	Fri 26/2/10	Fri 12/3/10	2	208
208	Site Investigation (Trial Pit)	50 days	Sat 13/3/10	Sat 1/5/10	207	209,220
209	Design of Temporary Traffic Arrangement	40 days	Sun 2/5/10	Thu 10/6/10	208	210,211
210	Submission of TTA to TMLG for Approval	60 days	Fri 11/6/10	Mon 9/8/10	209	212,211FF
211	Excavation Permit	90 days	Fri 11/6/10	Wed 8/9/10	209,210FF	
212	Liaison with HyD / LCSD for Planter Removal	25 days	Tue 10/8/10	Fri 3/9/10	210	
213	E&M Design of Penstocks	180 days	Fri 26/2/10	Tue 24/8/10	15	214
214	Submission for Approval	60 days	Wed 25/8/10	Sat 23/10/10	213	215
215	Fabrication & Delivery of Penstocks	240 days	Sun 24/10/10	Mon 20/6/11	214	
216						
217	V.O for Trial Pits	0 days	Fri 9/4/10	Fri 9/4/10		218FS+80 days
218	Trial Pit Excavations	30 days	Mon 28/6/10	Tue 27/7/10	217FS+80 days	221
219						
220	Liaison with CLP, PCCW	90 days	Sun 2/5/10	Fri 30/7/10	208	221
221	CLP's Cables Diversion Works	326 days	Sat 31/7/10	Tue 21/6/11	220,218	222FS-170 days
222	PCCW 's Cables Diversion Works	414 days	Mon 3/1/11	Mon 20/2/12	221FS-170 days	
223	Excavation Permit	13 days	Thu 1/9/11	Tue 13/9/11		
224	**Construction of 2100mm Pipe & Existing Stormwater Drain along Ting Kok Road**	**565 days**	**Wed 14/9/11**	**Sun 31/3/13**		
225	**1st Section (20m from CH160 to CH180)**	**93 days**	**Wed 14/9/11**	**Thu 15/12/11**		
233	**2nd Section (40m from CH120 to CH160)**	**122 days**	**Mon 30/1/12**	**Wed 30/5/12**	**232**	
241	**3rd Section (50m from CH70 to CH120)**	**125 days**	**Thu 31/5/12**	**Tue 2/10/12**		
242	TTA Implementation	1 day	Thu 31/5/12	Thu 31/5/12	240	243
243	Sheetpile driving	10 days	Fri 1/6/12	Sun 10/6/12	242	244
244	Excavation & Temporary Diversion of Existing Storm Drain	30 days	Mon 11/6/12	Tue 10/7/12	243	245
245	Concrete Pipe Installation	15 days	Wed 11/7/12	Wed 25/7/12	244	246
246	Reconstructed Existing Storm Drains and Manhole Construction	30 days	Thu 26/7/12	Fri 24/8/12	245	247
247	Backfill, Gully Constrcution and Reinstatement	39 days	Sat 25/8/12	Tue 2/10/12	246	249
248	**4th Section (50m from CH20 to CH70)**	**95 days**	**Wed 3/10/12**	**Sat 5/1/13**		
249	TTA Implementation	1 day	Wed 3/10/12	Wed 3/10/12	247	250
250	Sheetpile driving	20 days	Thu 4/10/12	Tue 23/10/12	249	251
251	Excavation & Temporary Diversion of Existing Storm Drain	30 days	Wed 24/10/12	Thu 22/11/12	250	252
252	Concrete Pipe Installation	10 days	Fri 23/11/12	Sun 2/12/12	251	253
253	Reconstructed Existing Storm Drains and Manhole Construction	14 days	Mon 3/12/12	Sun 16/12/12	252	254
254	Backfill, Gully Constrcution and Reinstatement	20 days	Mon 17/12/12	Sat 5/1/13	253	256
255	**5th Section (40m from CH180 to CH220)**	**85 days**	**Sun 6/1/13**	**Sun 31/3/13**		
256	TTA Implementation	1 day	Sun 6/1/13	Sun 6/1/13	254	257
257	Sheetpile driving	20 days	Mon 7/1/13	Sat 26/1/13	256	258
258	Excavation & Temporary Diversion of Existing Storm Drain	30 days	Sun 27/1/13	Mon 25/2/13	257	259
259	Concrete Pipe Installation and Manhole Construction	14 days	Tue 26/2/13	Mon 11/3/13	258	260
260	Backfill, Gully Constrcution and Reinstatement	20 days	Tue 12/3/13	Sun 31/3/13	259	
261	**6th Section (20m from CH220 to CH240)**	**131 days**	**Tue 3/7/12**	**Sat 10/11/12**		
262	Sheetpile driving	30 days	Tue 3/7/12	Wed 1/8/12		263
263	Excavation & Temporary Diversion of Existing Storm Drain	60 days	Thu 2/8/12	Sun 30/9/12	262	264
264	Concrete Pipe Installation and Manhole Construction	21 days	Mon 1/10/12	Sun 21/10/12	263	265
265	Backfill, Gully Constrcution and Reinstatement	20 days	Mon 22/10/12	Sat 10/11/12	264	
266	**DN1200 (from MH06 to Box Culvert)**	**121 days**	**Mon 25/6/12**	**Tue 23/10/12**		
267	Sheetpile driving	20 days	Mon 25/6/12	Sat 14/7/12		268
268	Excavation & Temporary Diversion of Existing Storm Drain	60 days	Sun 15/7/12	Wed 12/9/12	267	269
269	Concrete Pipe Installation	21 days	Thu 13/9/12	Wed 3/10/12	268	270
270	Backfill and Reinstatement	20 days	Thu 4/10/12	Tue 23/10/12	269	
271	**DN225 Sewer Pipe across Ting Kok Road**	**51 days**	**Wed 15/8/12**	**Thu 4/10/12**		
272	Preparation for Heading Works	7 days	Wed 15/8/12	Tue 21/8/12		273
273	Excavation for Heading Works	30 days	Wed 22/8/12	Thu 20/9/12	272	274
274	Clay Pipe Installation	3 days	Fri 21/9/12	Sun 23/9/12	273	275
275	Laying CLP Cable Ducts	3 days	Mon 24/9/12	Wed 26/9/12	274	276
276	Backfill and Reinstatement	8 days	Thu 27/9/12	Thu 4/10/12	275	
277	**Construction of DN1800 Pipes by Trenchless Method**	**273 days**	**Tue 8/5/12**	**Mon 4/2/13**		
278	Trial Trench	20 days	Tue 8/5/12	Sun 27/5/12		
279	Sheetpile Driving	5 days	Sun 21/10/12	Thu 25/10/12		280



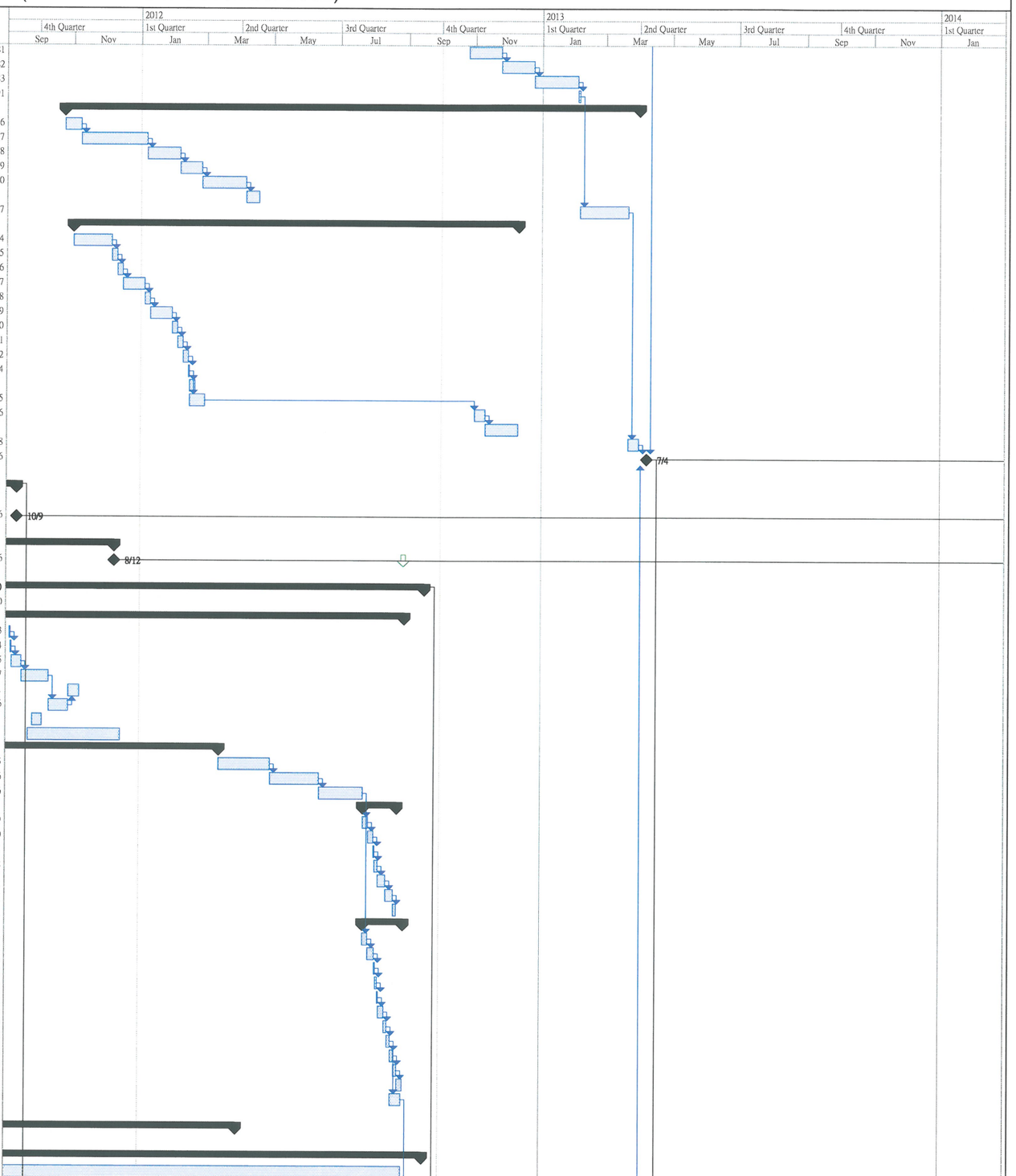
Master Programme II (-)
Data Date: 2011-3-8

Task | Progress | Summary | Rolled Up Critical Task | Rolled Up Progress | External Tasks | Group By Summary
Critical Task | Milestone | Rolled Up Task | Rolled Up Milestone | Split | Project Summary | Deadline

Contract No.: DC/2009/22
Contract Title: Drainage Improvement Works in Shuen Wan, Tai Po - Contract 1

3 Months Rolling Programme (October 2012 to December 2012)

ID	Task Name	Duration	Start	Finish	Predecessors	Successors
280	Excavation and Launching Pit Construction	30 days	Fri 26/10/12	Sat 24/11/12	279	281
281	Pre-Grouting	30 days	Sun 25/11/12	Mon 24/12/12	280	282
282	Concrete Pipe Laying	40 days	Tue 25/12/12	Sat 2/2/13	281	283
283	Grouting	2 days	Sun 3/2/13	Mon 4/2/13	282	291
284	**Intake (As required in Dry Season) - Section 1**	**525 days**	**Mon 24/10/11**	**Sun 31/3/13**		
285	Hoarding Erection	15 days	Mon 24/10/11	Mon 7/11/11		286
286	Implement TDMP	60 days	Tue 8/11/11	Fri 6/1/12	285	287
287	Surround by concrete mass and backfill the works area	30 days	Sat 7/1/12	Sun 5/2/12	286	288
288	Shoring Installation and Excavation	20 days	Mon 6/2/12	Sat 25/2/12	287	289
289	Construction of Intake	40 days	Sun 26/2/12	Thu 5/4/12	288	290
290	Reinstatement	12 days	Fri 6/4/12	Tue 17/4/12	289	
291	Intake - Section 2	45 days	Tue 5/2/13	Thu 21/3/13	283	307
292	**Modification of Existing Outlet Structure of Wai Ha River**	**406 days**	**Tue 1/11/11**	**Mon 10/12/12**		
293	Implement TDMP (1st stage)	35 days	Tue 1/11/11	Mon 5/12/11		294
294	Demolish Existing Bar Screen	5 days	Tue 6/12/11	Sat 10/12/11	293	295
295	Drilling for Connection	5 days	Sun 11/12/11	Thu 15/12/11	294	296
296	Steel Fixing and Formwork	20 days	Fri 16/12/11	Wed 4/1/12	295	297
297	Concreting	5 days	Thu 5/1/12	Mon 9/1/12	296	298
298	Implement TDMP (2nd stage)	20 days	Tue 10/1/12	Sun 29/1/12	297	299
299	Demolish Existing Bar Screen	5 days	Mon 30/1/12	Fri 3/2/12	298	300
300	Drilling for Connection	5 days	Sat 4/2/12	Wed 8/2/12	299	301
301	Steel Fixing and Formwork	5 days	Thu 9/2/12	Mon 13/2/12	300	302
302	Concreting	1 day	Tue 14/2/12	Tue 14/2/12	301	303,304
303	Provide Temporary Bar Screen	5 days	Wed 15/2/12	Sun 19/2/12	302	
304	Installation of 3 nos of Mechanical Penstocks and Stoplog	14 days	Wed 15/2/12	Tue 28/2/12	302	305
305	Implement TDMP (3rd stage)	10 days	Thu 1/11/12	Sat 10/11/12	304	306
306	Installation of 1 nos of Mechanical Penstocks and Stoplog	30 days	Sun 11/11/12	Mon 10/12/12	305	
307	Misc. Works & Reinstatement	10 days	Fri 22/3/13	Sun 31/3/13	291	308
308	**Completion of Section I**	0 days	Sun 7/4/13	Sun 7/4/13	307,527,152	507,526
309						
310	**Section II (Area C - Ecological Compensation Area at Shuen Wan)**	**562 days**	**Fri 26/2/10**	**Sat 10/9/11**		514,512,513,515
320						
329	**Completion of Section II**	0 days	Sat 10/9/11	Sat 10/9/11	328	526
330						
331	**Section III (Area D - To Lo Wan Shan)**	**651 days**	**Fri 26/2/10**	**Thu 8/12/11**		
387	**Completion of Section III**	0 days	Thu 8/12/11	Thu 8/12/11	386	526
388						
389	**Section IV (Area E, F, G - Siu Lek Yuen)**	**934 days**	**Fri 26/2/10**	**Sun 16/9/12**		**520**
390	Commencement of Works	0 days	Fri 26/2/10	Fri 26/2/10		440
391	**Area E- Siu Lek Yuen Road Playground**	**916 days**	**Fri 26/2/10**	**Wed 29/8/12**		
392	Implement TTA for Site Access	1 day	Mon 5/9/11	Mon 5/9/11		393
393	Erection of Gate	1 day	Tue 6/9/11	Tue 6/9/11	392	394
394	Transplant 61 Nos. Of Chrysalidocarpus	9 days	Wed 7/9/11	Thu 15/9/11	393	395
395	Formation of temporary pedestrian walkway	25 days	Fri 16/9/11	Mon 10/10/11	394	397
396	Construction of Ramp	10 days	Sat 29/10/11	Mon 7/11/11	397	401
397	Erection of hoarding with lighting	18 days	Tue 11/10/11	Fri 28/10/11	395	396
398	Transplant 3 Nos. of small trees to temporary nursery(<95mm in trunk dia.)	9 days	Mon 26/9/11	Tue 4/10/11		
399	Transplant of 6 Nos. of trees to temporary nursery (>95mm in trunk dia.)	84 days	Thu 22/9/11	Wed 14/12/11		
400	**(Stage 1A)- Pipeline 1606.1 (5m) and outfall structure**	**747 days**	**Fri 26/2/10**	**Tue 13/3/12**		
414	(Stage 1B)- pipeline 1606.1 (2m), manhole (J)	47 days	Wed 14/3/12	Sun 29/4/12	413	415
415	(Stage 2)- Pipeline 1605.1 (6m) and manhole (Type J)	45 days	Mon 30/4/12	Wed 13/6/12	414	416
416	(Stage 3)- pipeline 1603.1 (19m)	40 days	Thu 14/6/12	Mon 23/7/12	415	418,426
417	**(Stage 4)- pipeline 1604.1 (13m) and manhole (Type J)**	**31 days**	**Tue 24/7/12**	**Thu 23/8/12**		
418	Excavation	5 days	Tue 24/7/12	Sat 28/7/12	416	419
419	Install temporary trench shoring for pipeline (1604.1)	5 days	Sun 29/7/12	Thu 2/8/12	418	420
420	Blinding	1 day	Fri 3/8/12	Fri 3/8/12	419	421
421	Pipe Laying (1604.1)	3 days	Sat 4/8/12	Mon 6/8/12	420	422
422	Stage 1 downstream concreting for manhole(Base Slab)	7 days	Tue 7/8/12	Mon 13/8/12	421	423
423	Stage 2 downstream concreting for manhole (Wall and Roof)	7 days	Tue 14/8/12	Mon 20/8/12	422	424
424	Backfill	3 days	Tue 21/8/12	Thu 23/8/12	423	
425	**(Stage 4)- pipeline 1603.1 (4m), 1602.1, 1602.2, 1602.3 and manhole (Type J)**	**37 days**	**Tue 24/7/12**	**Wed 29/8/12**		
426	Excavation	5 days	Tue 24/7/12	Sat 28/7/12	416	427
427	Install temporary trench shoring	6 days	Sun 29/7/12	Fri 3/8/12	426	428
428	Blinding	1 day	Sat 4/8/12	Sat 4/8/12	427	429
429	Pipe Laying	2 days	Sun 5/8/12	Mon 6/8/12	428	430
430	Break existing 300mm. Drainage pipe and divert water to downsstream	1 day	Tue 7/8/12	Tue 7/8/12	429	431
431	Stage 1 concreting for manhole(formwork erection, formwork dismantle)	5 days	Wed 8/8/12	Sun 12/8/12	430	432
432	Stage 2 concreting for manhole (formwork erection, steel fixing, formwork dismantle)	3 days	Mon 13/8/12	Wed 15/8/12	431	433
433	Make good connection with existing drainage	3 days	Thu 16/8/12	Sat 18/8/12	432	434,437
434	Laying of type A and B materials for 900mm dia. Pipe	3 days	Sun 19/8/12	Tue 21/8/12	433	435
435	Backfilling of soil	3 days	Wed 22/8/12	Fri 24/8/12	434	436
436	Remove sheetpiles	5 days	Sat 25/8/12	Wed 29/8/12	435	
437	Reinstatement	10 days	Sun 19/8/12	Tue 28/8/12	433	458
438						
439	**Area F - Lek Yuen Street Rest Garden & Sha Tin Rural Committee Road**	**764 days**	**Fri 26/2/10**	**Fri 30/3/12**		
455						
456	**Area G - Ngan Shing Streeet**	**934 days**	**Fri 26/2/10**	**Sun 16/9/12**		
457	Maintain Existing Drains and Manholes	915 days	Fri 26/2/10	Tue 28/8/12		



Master Programme II (-)
Data Date: 2011-3-8

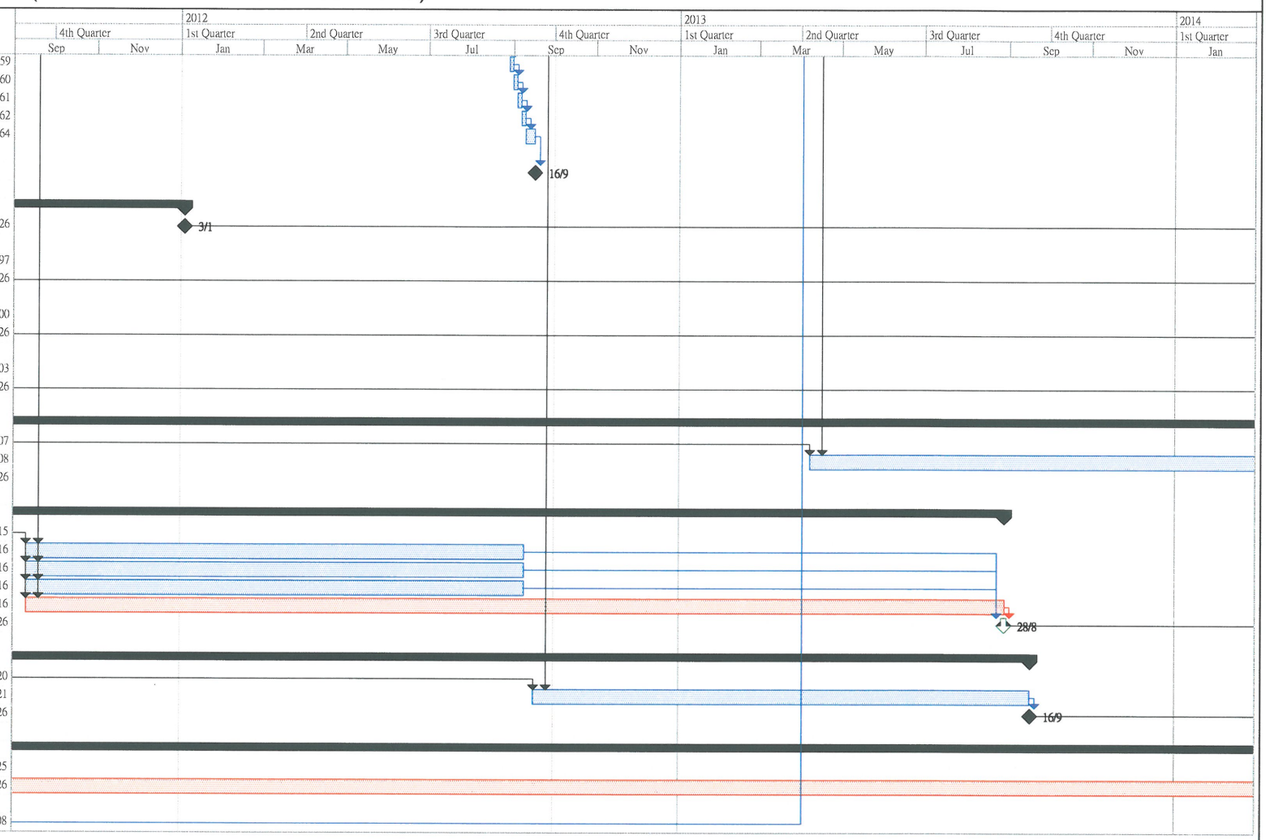
Task | Progress | Summary | Rolled Up Critical Task | Rolled Up Progress | External Tasks | Group By Summary
Critical Task | Milestone | Rolled Up Task | Rolled Up Milestone | Split | Project Summary | Deadline

Based on Master Programme II

Contract No.: DC/2009/22
Contract Title: Drainage Improvement Works in Shuen Wan, Tai Po - Contract 1

3 Months Rolling Programme (October 2012 to December 2012)

ID	Task Name	Duration	Start	Finish	Predecessors	Successors
458	Implementation of TTA (Stage 1) for Remove of Temporary Plug	3 days	Wed 29/8/12	Fri 31/8/12	437	459
459	Implementation of TTA (Stage 2) for Remove of Temporary Plug	3 days	Sat 1/9/12	Mon 3/9/12	458	460
460	Implementation of TTA (Stage 3) for Remove of Temporary Plug	3 days	Tue 4/9/12	Thu 6/9/12	459	461
461	Implementation of TTA (Stage 4) for Remove of Temporary Plug	3 days	Fri 7/9/12	Sun 9/9/12	460	462
462	Fill up of Existing 750mm dia. drainage pipes	7 days	Mon 10/9/12	Sun 16/9/12	461	464
463						
464	**Completion of Section IV**	0 days	Sun 16/9/12	Sun 16/9/12	462	
465						
466	**Section V (Area H - Sai Sha Road)**	**677 days**	**Fri 26/2/10**	**Tue 3/1/12**		
494	**Completion of Section V**	0 days	Tue 3/1/12	Tue 3/1/12	493	526
495						
496	Section VI (Area J - Pak Shing Street)	0 days	Fri 26/2/10	Fri 26/2/10		497
497	**Completion of Section VI**	0 days	Thu 28/4/11	Thu 28/4/11	496	526
498						
499	Section VII (Area K - Ting Kok Road near Chung Nga Road)	0 days	Fri 26/2/10	Fri 26/2/10		500
500	**Completion of Section VII**	0 days	Thu 30/12/10	Thu 30/12/10	499	526
501						
502	Section VIII (Area L - Wai Ha Village)	0 days	Fri 26/2/10	Fri 26/2/10		503
503	**Completion of Section VIII**	0 days	Fri 29/4/11	Fri 29/4/11	502	526
504						
505	**Section IX (Area A, B, - Shuen Wan)**	**1502 days**	**Fri 26/2/10**	**Mon 7/4/14**		
506	Commencement of Works	0 days	Fri 26/2/10	Fri 26/2/10		507
507	Landscape Establishment Works in Area A & B	365 days	Mon 8/4/13	Mon 7/4/14	506,308	508
508	**Completion of Section IX**	0 days	Mon 7/4/14	Mon 7/4/14	507	526
509						
510	**Section X (Area C - Ecological Compensation Area at Shuen Wan)**	**1280 days**	**Fri 26/2/10**	**Wed 28/8/13**		
511	Commencement of Works	0 days	Fri 26/2/10	Fri 26/2/10		512,513,514,515
512	Monitoring of Water Level	365 days	Sun 11/9/11	Sun 9/9/12	310,511	516
513	Monitoring of Water Quality	365 days	Sun 11/9/11	Sun 9/9/12	310,511	516
514	Landscape Establishment Works in Area C	365 days	Sun 11/9/11	Sun 9/9/12	310,511	516
515	Maintenance of Ecological Compensation Area	718 days	Sun 11/9/11	Wed 28/8/13	310,511	516
516	**Completion of Section X**	0 days	Wed 28/8/13	Wed 28/8/13	514,512,513,515	526
517						
518	**Section XI**	**1299 days**	**Fri 26/2/10**	**Mon 16/9/13**		
519	Commencement of Works	0 days	Fri 26/2/10	Fri 26/2/10		520
520	Landscape Establishment works in Area E, F, G	365 days	Mon 17/9/12	Mon 16/9/13	389,519	521
521	**Completion of Section XI**	0 days	Mon 16/9/13	Mon 16/9/13	520	526
522						
523	**Section XII**	**1717 days**	**Fri 26/2/10**	**Sat 8/11/14**		
524	Commencement of Works	0 days	Fri 26/2/10	Fri 26/2/10		525
525	Preservation and Protection of Existing Trees within the Site and all remaining of the Works	1717 days	Fri 26/2/10	Sat 8/11/14	524	526
526	**Completion of Section XII**	0 days	Sat 8/11/14	Sat 8/11/14	8,503,500,497,494,387,329,308	
527		1 day?	Fri 26/2/10	Fri 26/2/10		308

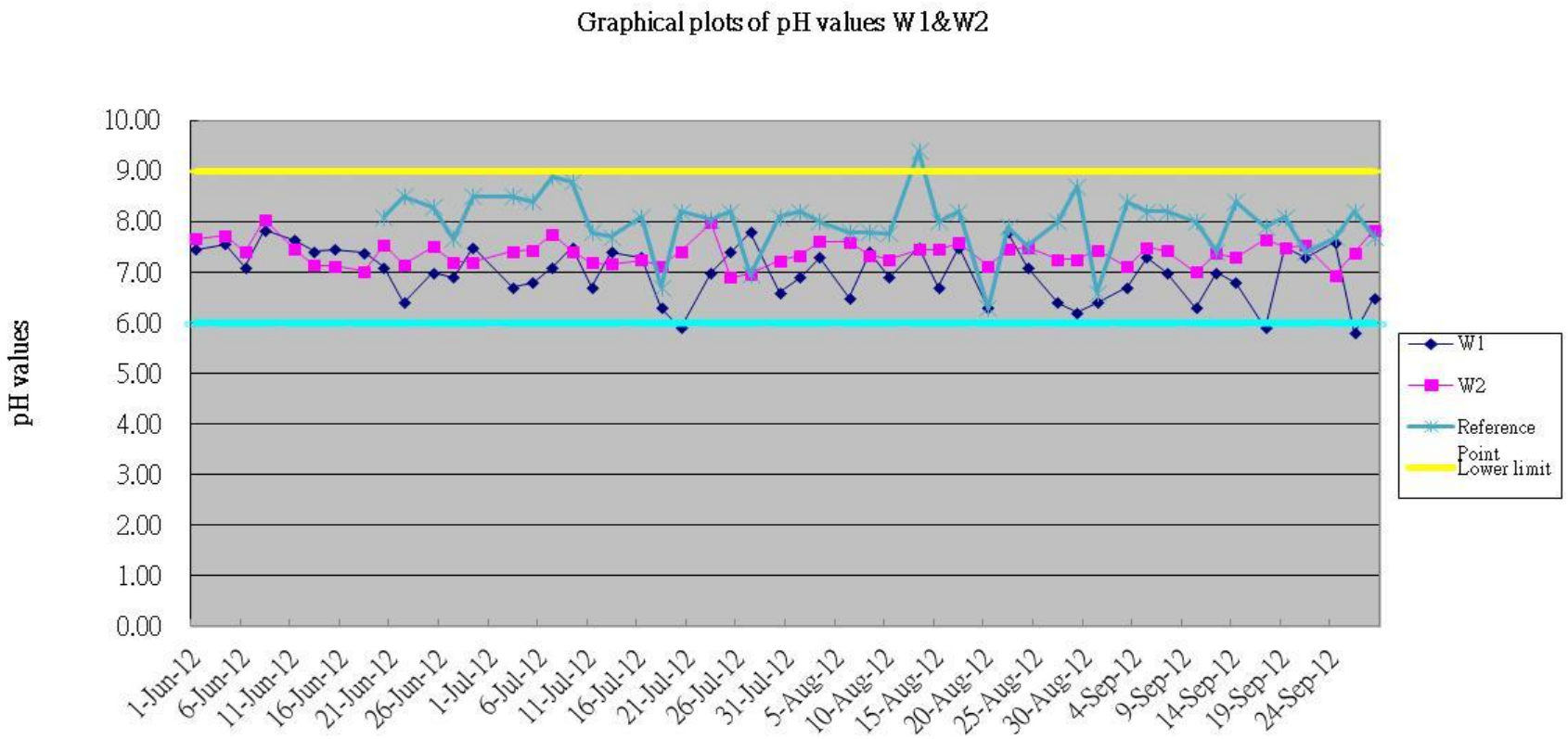


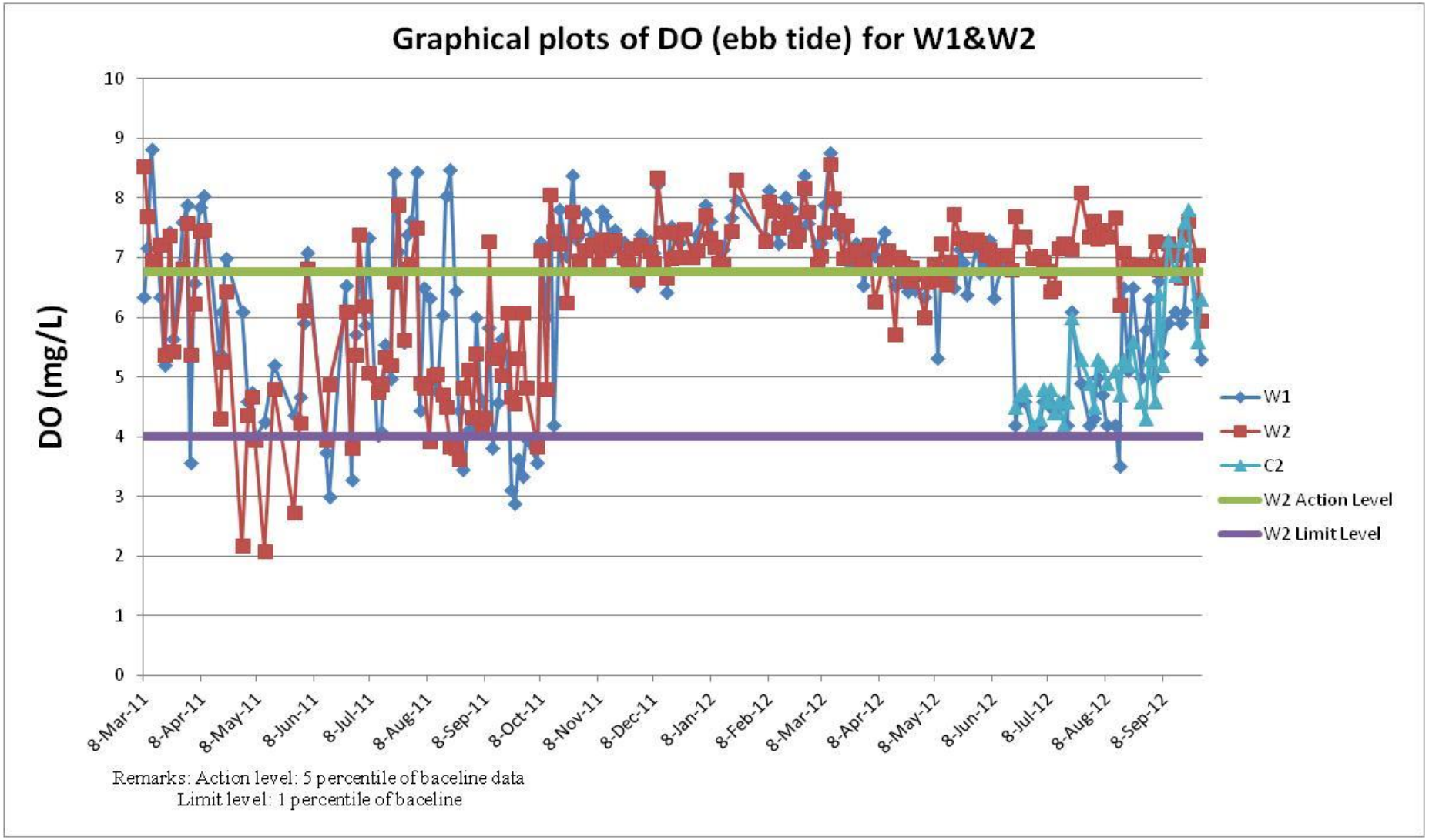
Master Programme II (-)
Data Date: 2011-3-8

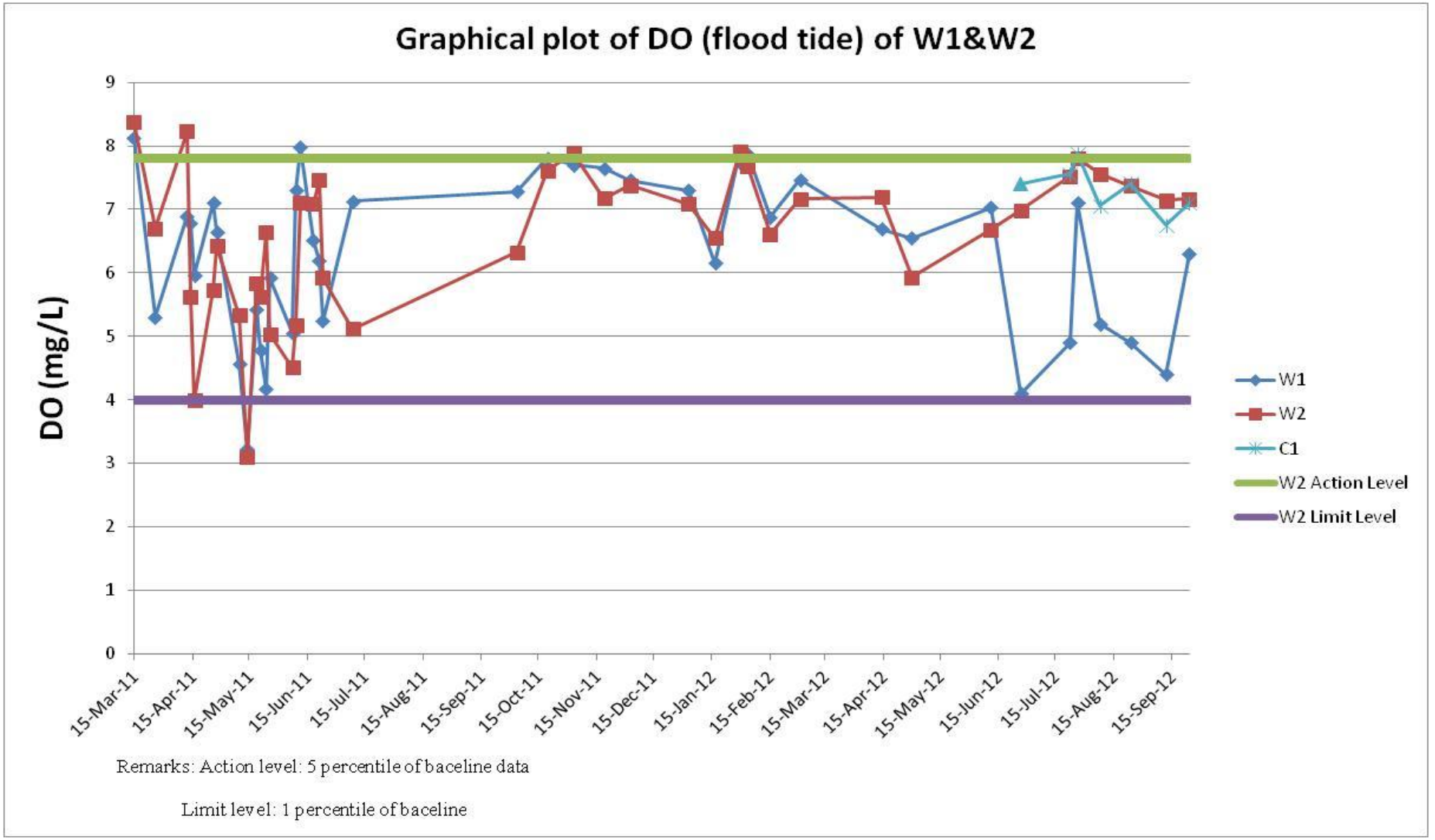
Task | Progress | Summary | Rolled Up Critical Task | Rolled Up Progress | External Tasks | Group By Summary
Critical Task | Milestone | Rolled Up Task | Rolled Up Milestone | Split | Project Summary | Deadline

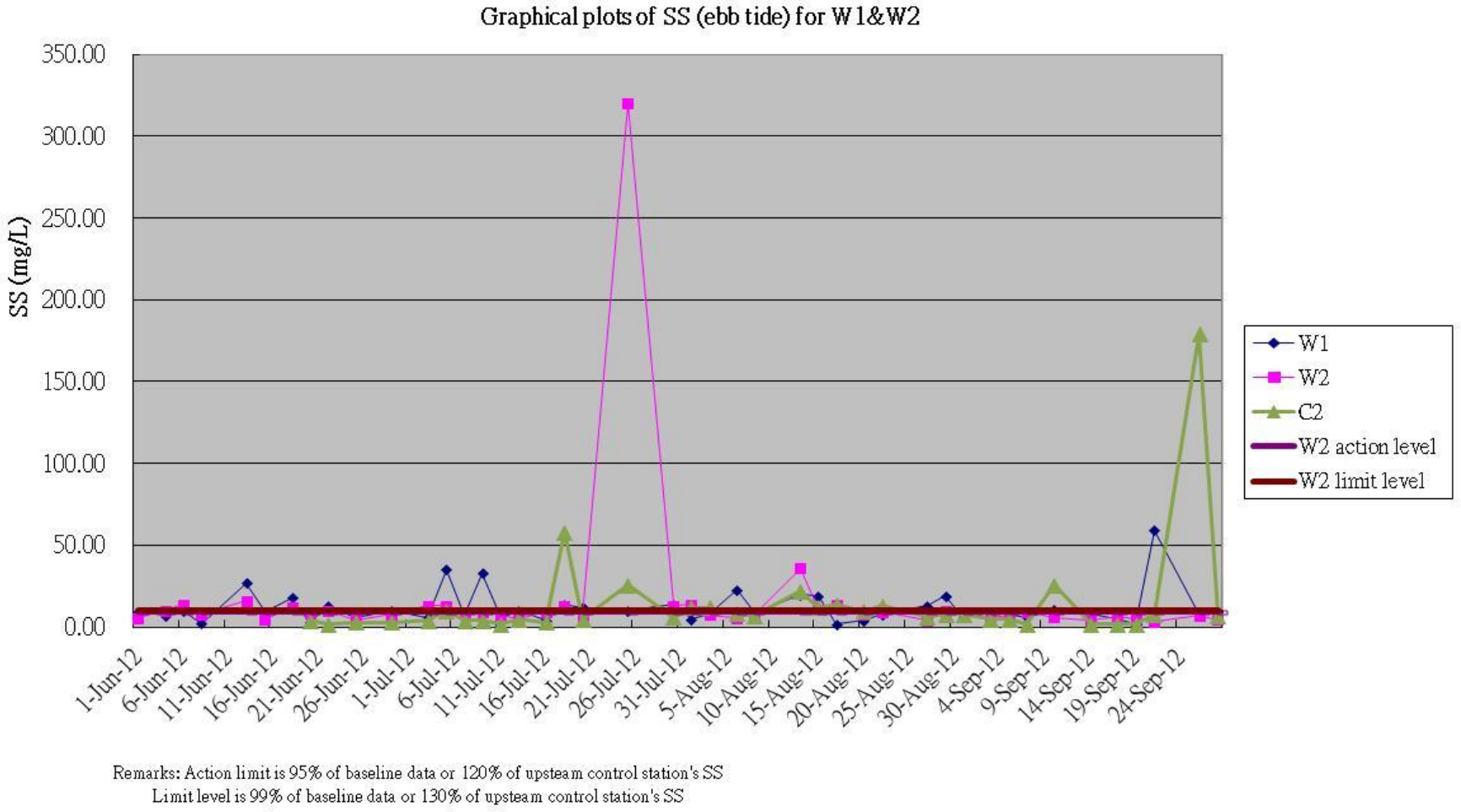
Based on Master Programme II

Appendix K. Graphical plots of trends of monitored parameter


Graphical plots of pH values W1&W2
pH values
10.00
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
1-Jun-12
6-Jun-12
11-Jun-12
16-Jun-12
21-Jun-12
26-Jun-12
1-Jul-12
6-Jul-12
11-Jul-12
16-Jul-12
21-Jul-12
26-Jul-12
31-Jul-12
5-Aug-12
10-Aug-12
15-Aug-12
20-Aug-12
25-Aug-12
30-Aug-12
4-Sep-12
9-Sep-12
14-Sep-12
19-Sep-12
24-Sep-12
W1
W2
Reference Point
Lower limit

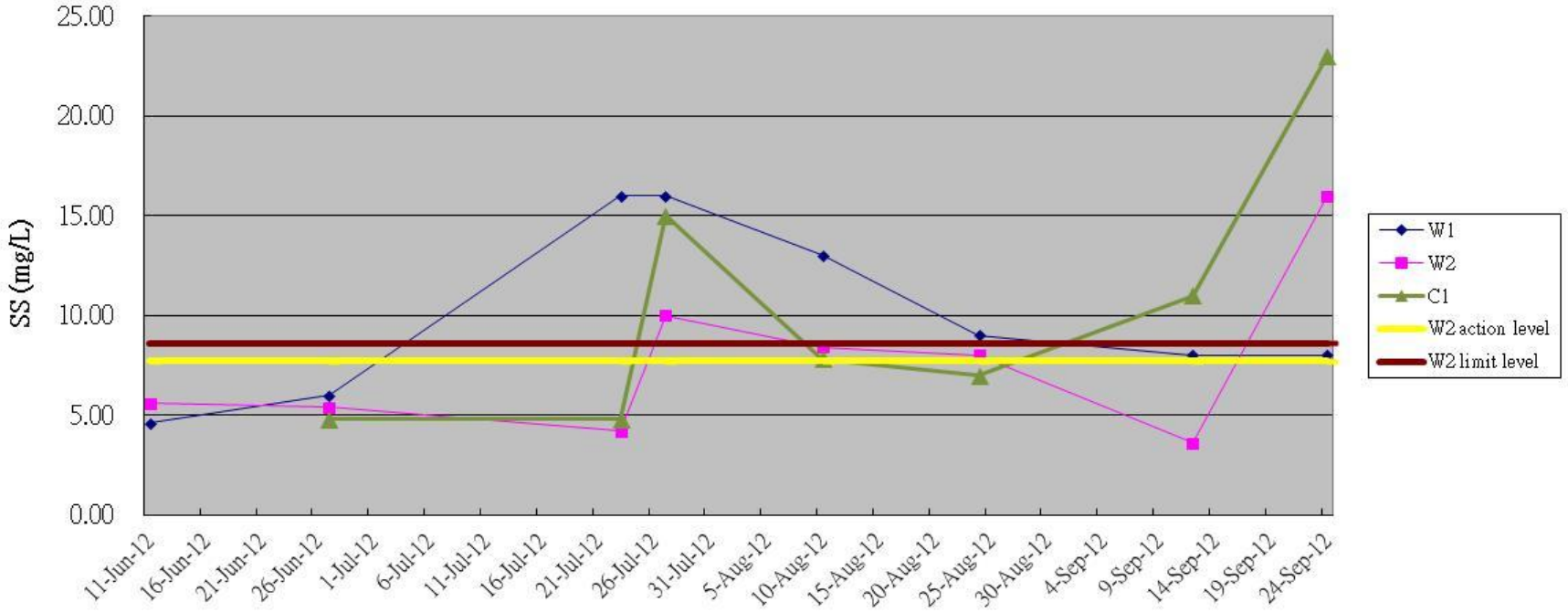

Graphical plots of DO (ebb tide) for W1&W2
DO (mg/L)
10
9
8
7
6
5
4
3
2
1
0
8-Mar-11
8-Apr-11
8-May-11
8-Jun-11
8-Jul-11
8-Aug-11
8-Sep-11
8-Oct-11
8-Nov-11
8-Dec-11
8-Jan-12
8-Feb-12
8-Mar-12
8-Apr-12
8-May-12
8-Jun-12
8-Jul-12
8-Aug-12
8-Sep-12
W1
W2
C2
W2 Action Level
W2 Limit Level
Remarks: Action level: 5 percentile of baceline data
Limit level: 1 percentile of baceline


Graphical plot of DO (flood tide) of W1&W2
DO (mg/L)
9
8
7
6
5
4
3
2
1
0
15-Mar-11
15-Apr-11
15-May-11
15-Jun-11
15-Jul-11
15-Aug-11
15-Sep-11
15-Oct-11
15-Nov-11
15-Dec-11
15-Jan-12
15-Feb-12
15-Mar-12
15-Apr-12
15-May-12
15-Jun-12
15-Jul-12
15-Aug-12
15-Sep-12
W1
W2
C1
W2 Action Level
W2 Limit Level
Remarks: Action level: 5 percentile of baceline data
Limit level: 1 percentile of baceline

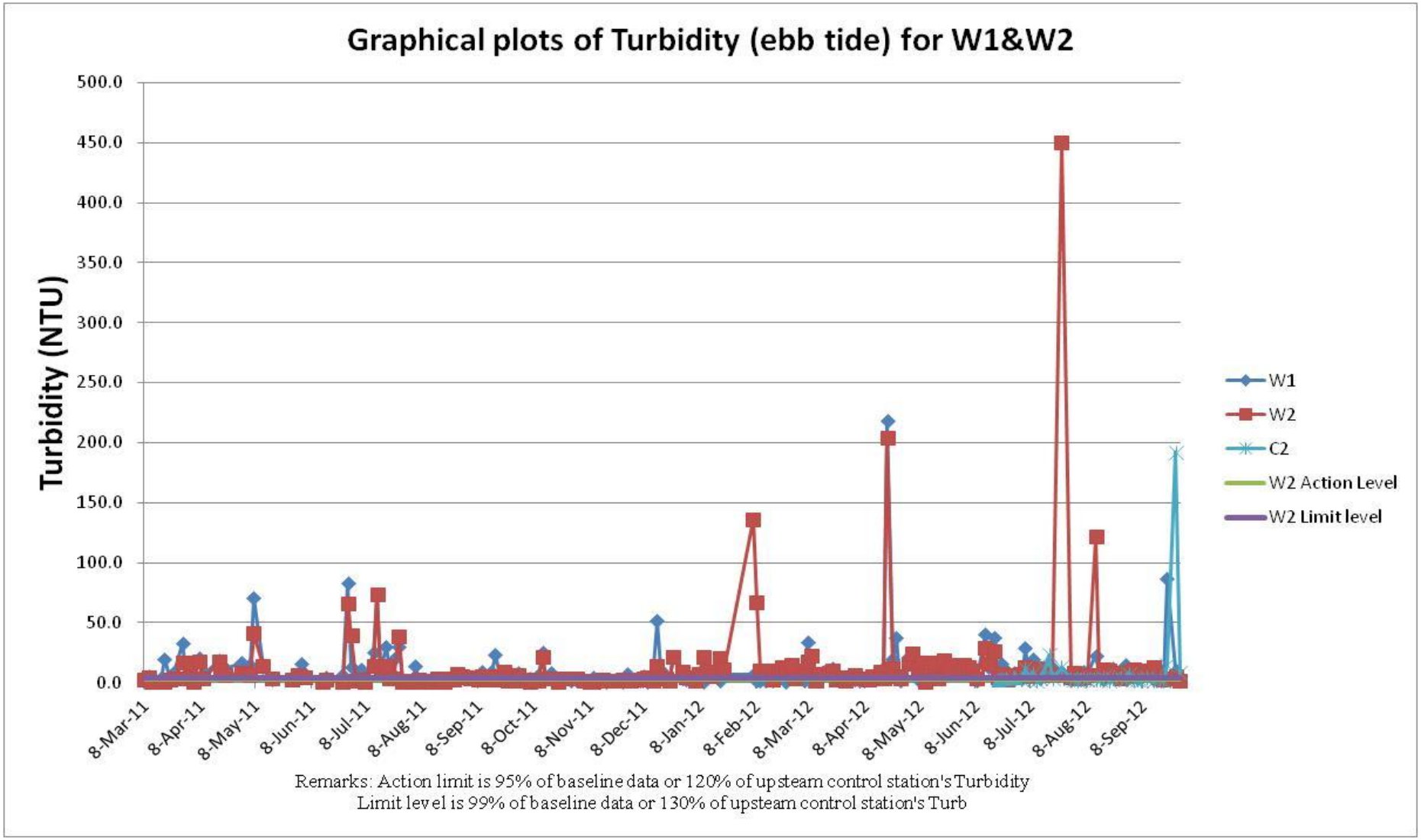


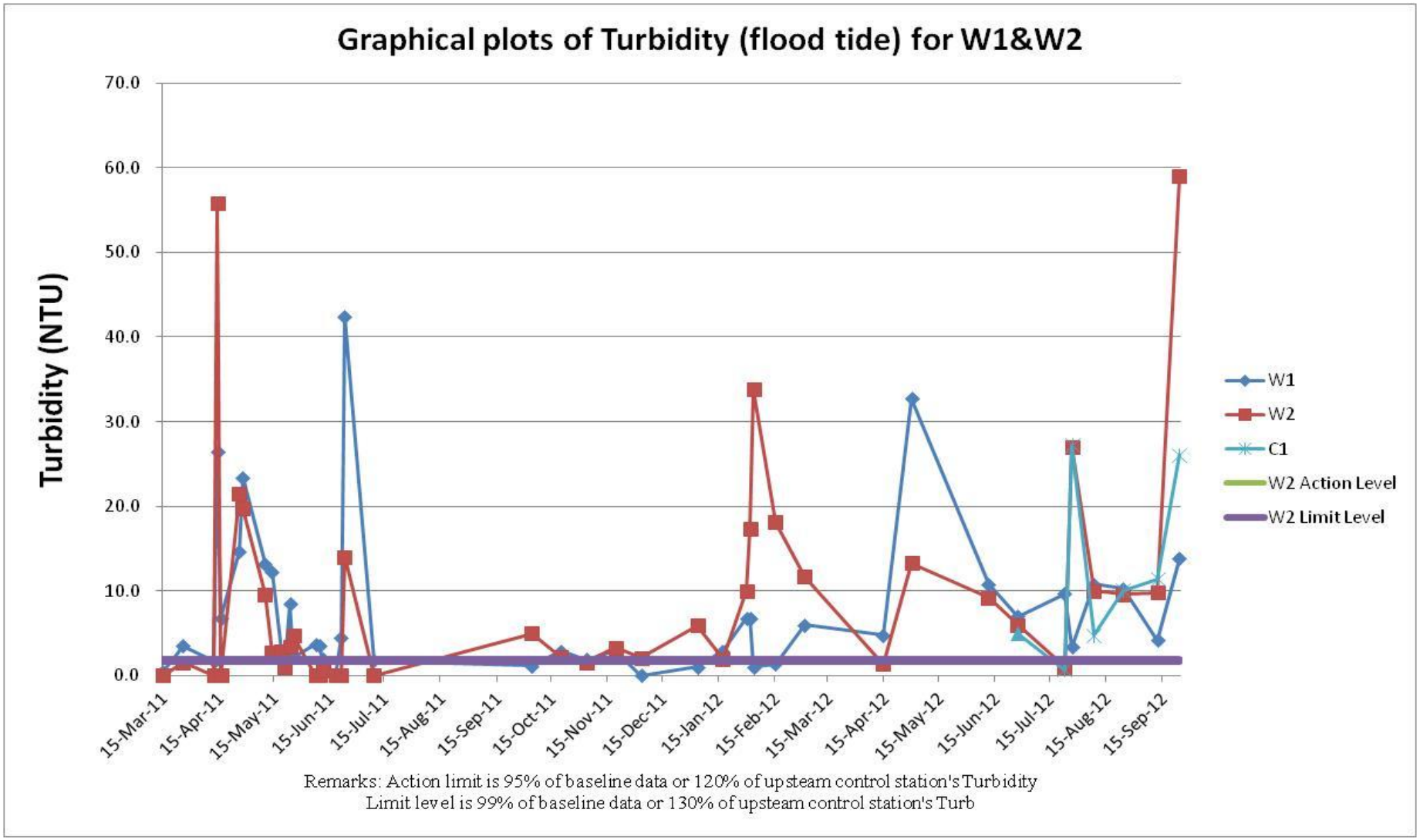
Remarks: Action limit is 95% of baseline data or 120% of upsteam control station's SS
Limit level is 99% of baseline data or 130% of upsteam control station's SS

Graphical plots of SS (flood tide) for W1&W2

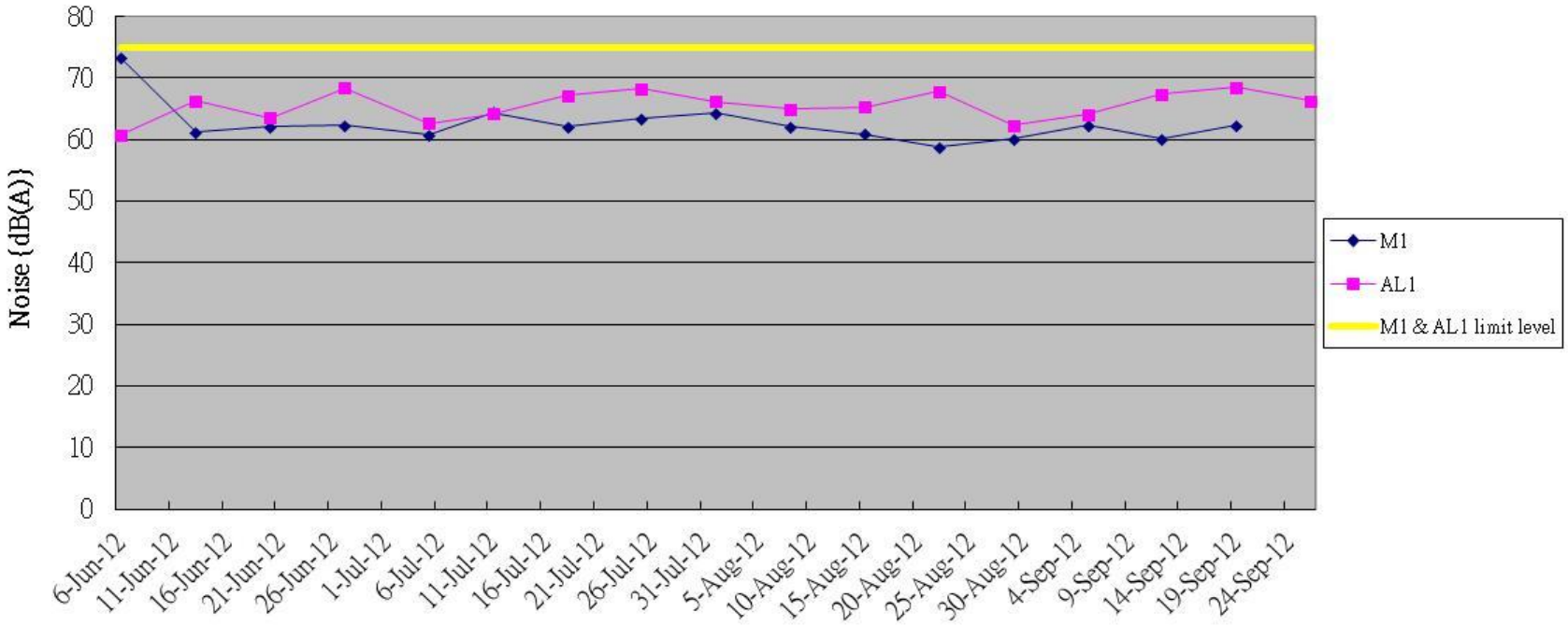


Remarks: Action limit is 95% of baseline data or 120% of upsteam control station's SS
Limit level is 99% of baseline data or 130% of upsteam control station's SS


Graphical plots of Turbidity (ebb tide) for W1&W2
Turbidity (NTU)
500.0
450.0
400.0
350.0
300.0
250.0
200.0
150.0
100.0
50.0
0.0
8-Mar-11
8-Apr-11
8-May-11
8-Jun-11
8-Jul-11
8-Aug-11
8-Sep-11
8-Oct-11
8-Nov-11
8-Dec-11
8-Jan-12
8-Feb-12
8-Mar-12
8-Apr-12
8-May-12
8-Jun-12
8-Jul-12
8-Aug-12
8-Sep-12
W1
W2
C2
W2 Action Level
W2 Limit level
Remarks: Action limit is 95% of baseline data or 120% of upsteam control station's Turbidity
Limit level is 99% of baseline data or 130% of upsteam control station's Turb

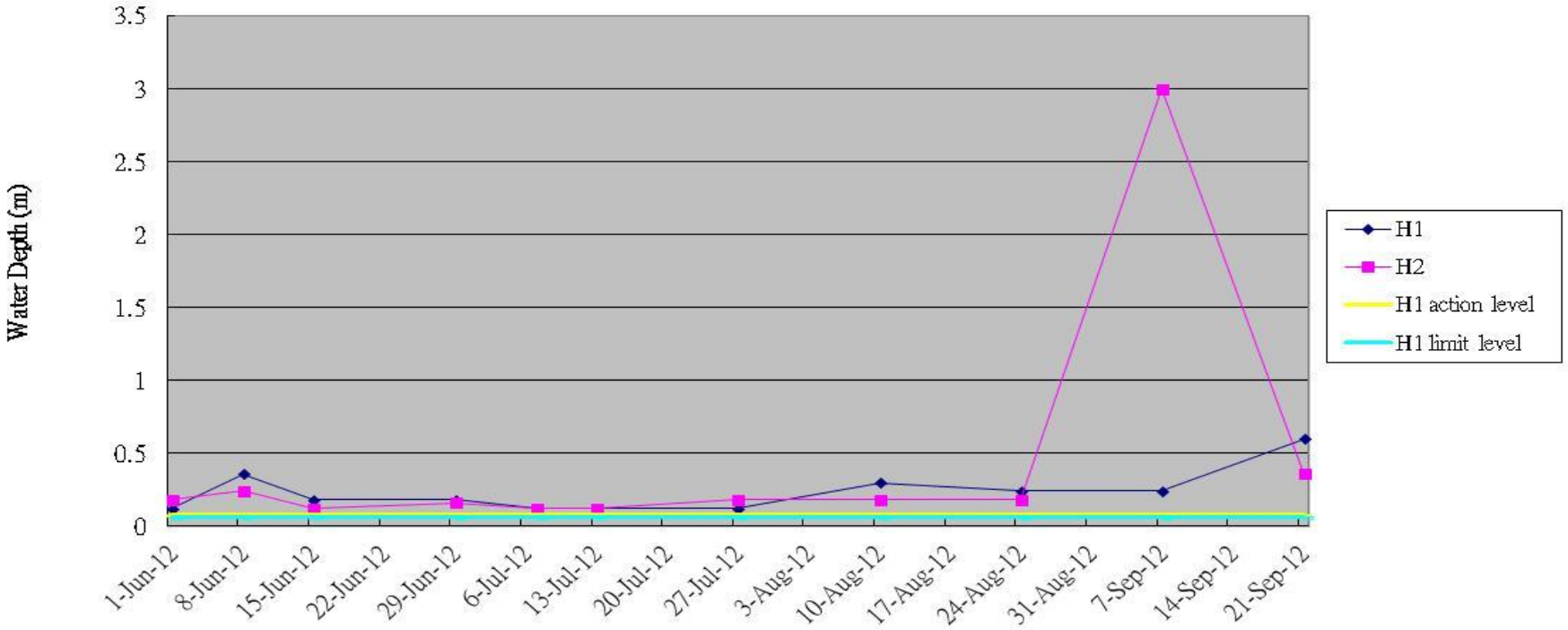

Graphical plots of Turbidity (flood tide) for W1&W2
Turbidity (NTU)
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
15-Mar-11
15-Apr-11
15-May-11
15-Jun-11
15-Jul-11
15-Aug-11
15-Sep-11
15-Oct-11
15-Nov-11
15-Dec-11
15-Jan-12
15-Feb-12
15-Mar-12
15-Apr-12
15-May-12
15-Jun-12
15-Jul-12
15-Aug-12
15-Sep-12
W1
W2
C1
W2 Action Level
W2 Limit Level
Remarks: Action limit is 95% of baseline data or 120% of upsteam control station's Turbidity
Limit level is 99% of baseline data or 130% of upsteam control station's Turb

Graphical plots of Noise for M1 & AL1



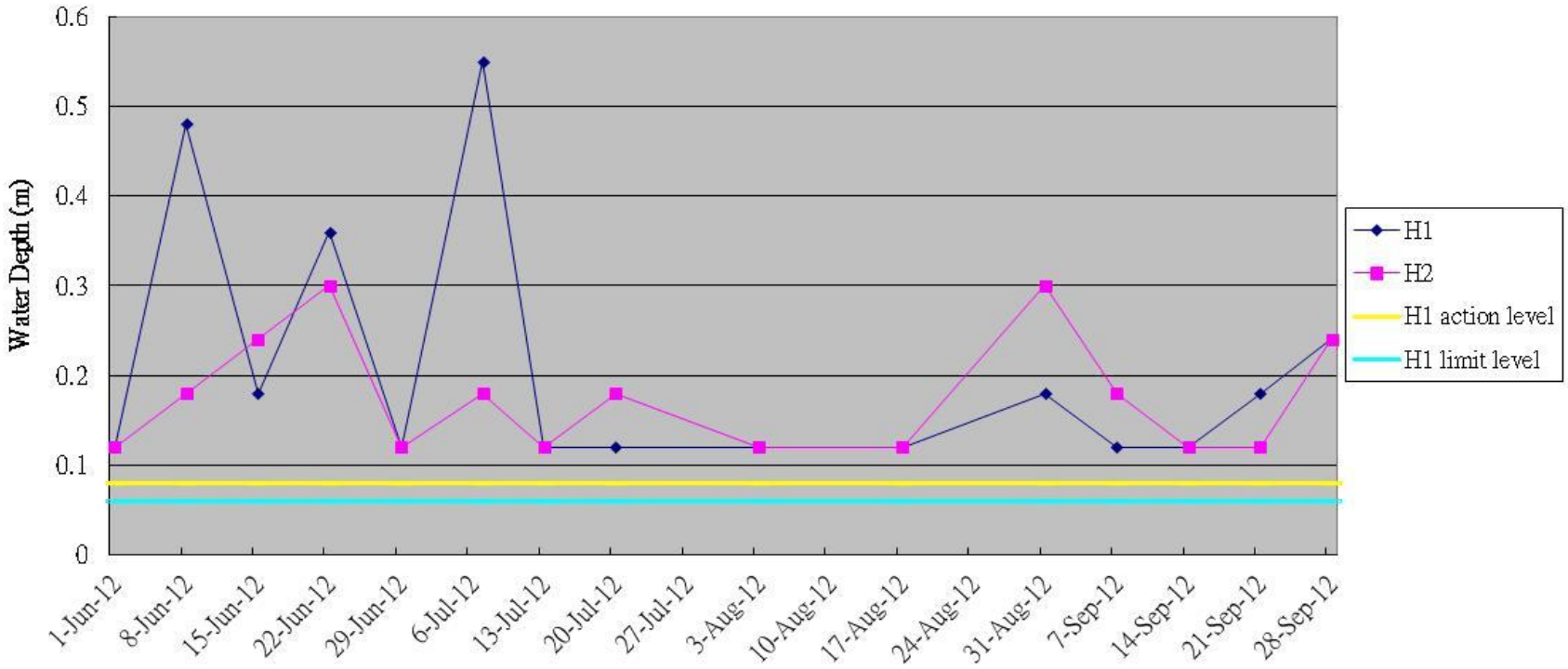
Remarks: Action limit is when one documented complaint is received

Graphical plots of Hydrological Monitoring(water depth at flood tide) for H1 & H2



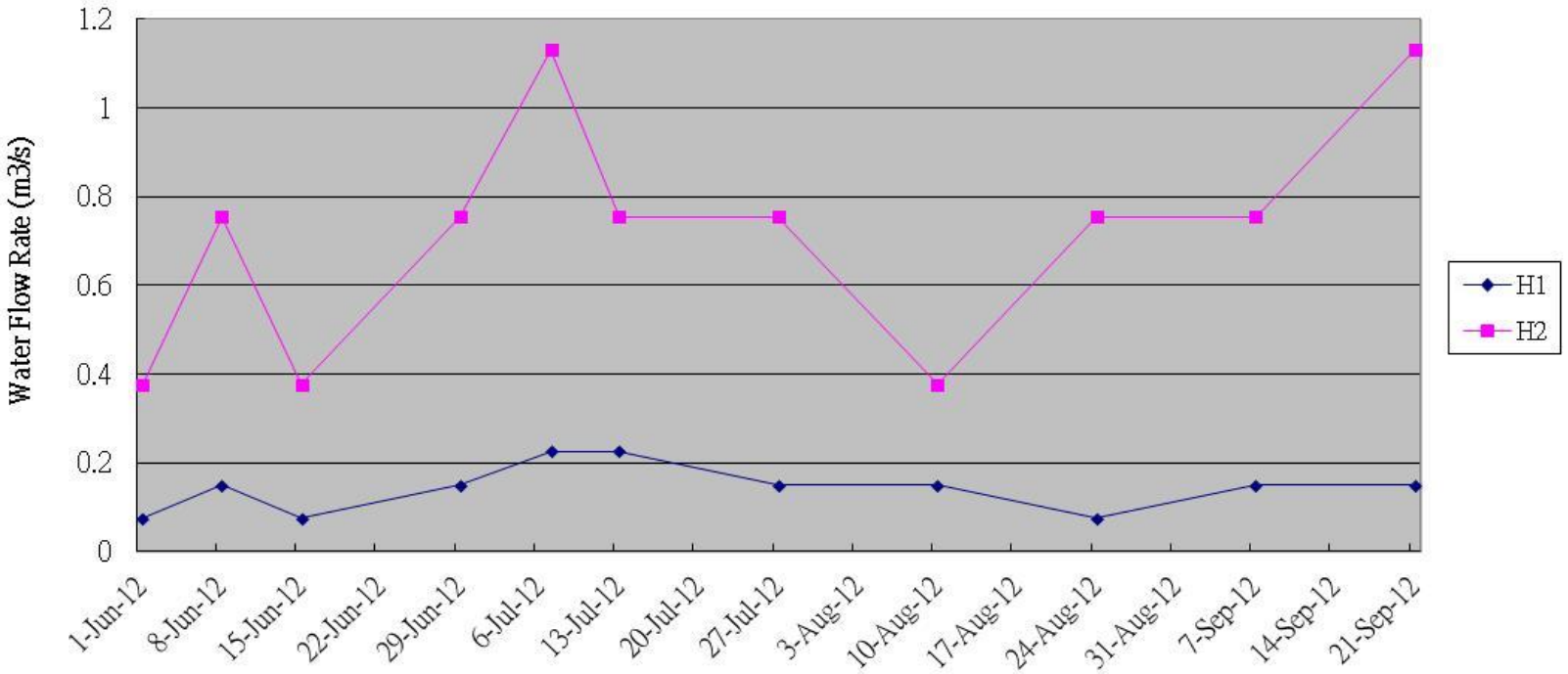
Remarks: Action level: 80% of baseline water depth.
Limit level: 60% of baseline water depth.

Graphical plots of Hydrological Monitoring (water depth at ebb tide) for H1 & H2



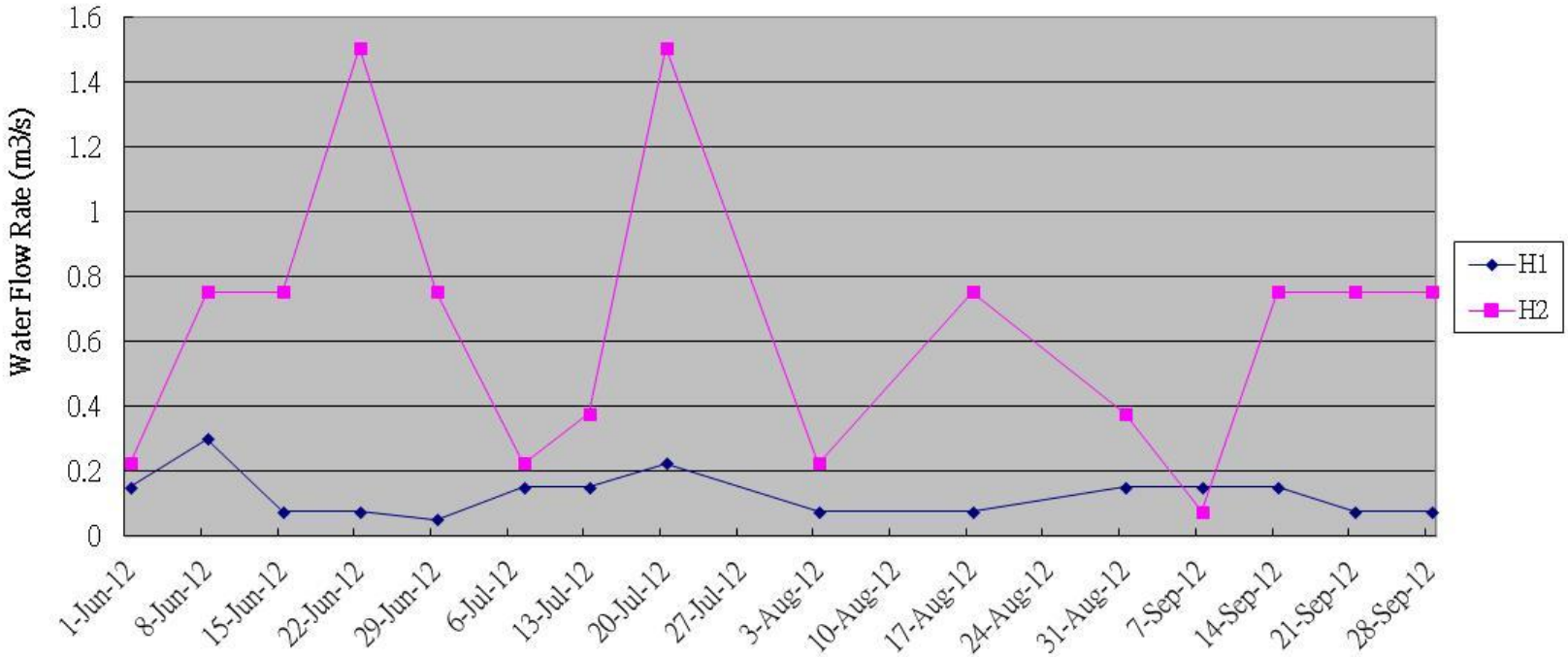
Remarks: Action level: 80% of baseline water depth.
Limit level: 60% of baseline water depth.

Graphical plots of Hydrological Monitoring (water flow rate at flood tide) for H1 & H2



Remarks: Action level: 120% of control station's water flow rate on the same day of measurement.
Limit level: 140% of control station's water flow rate on the same day of measurement.

Graphical plots of Hydrological Monitoring (water flow rate at ebb tide) for H1 & H2



Remarks: Action level: 120% of control station's water flow rate on the same day of measurement.
Limit level: 140% of control station's water flow rate on the same day of measurement.

Appendix L.

A). List of recorded vegetation and relative abundance in the Ecological Compensatory Area (ECA) during construction phase in Sep 2012.

B). List of transplanted trees in the Ecological Compensatory Area (ECA) during construction phase in Sep 2012.

C). Condition of transplanted species Pavetta hongkongensis in ECA since 20th Dec 2011

Appendix L (A). List of recorded vegetations and relative abundance in the ECA during establishment phase in Sep 2012.

Species	***Status in Hong Kong**	**Growth form**	**[1]Status in ECA**	**[2]Relative abundance**	**Condition**
Bidens bipinnata	E	Herbs	S	+	Fair
Panicum maximum	E	Herbs	S	+	Fair
Celtis sinensis	N	Trees	S	+	Fair
Terminalia catappa	E	Trees	R	+	Fair
Cocculus orbiculatus	N	Climbers	R	+	Fair
Mangifera indica	E	Trees	R	+	Fair
Dimocarpus longan	E	Trees	R	+	Fair
Michelia x alba	E	Trees	R	+	Fair
Oxalis corniculata	N	Herbs	S	+	Fair
Stephania longa	N	Climbers	S	+	Fair
Leucaena leucocephala	E	Shrubs	S	+	Fair
Amaranthus viridis	N	Herbs	S	+	Fair
Solanum nigrum	N	Herbs	S	+	Fair
Paspalum dialatum	E	Perennial Herb	S	+	Fair
Mikania micrantha	E	Climbing Herb	S	+	Fair
Macaranga tanarius	N	Tree	R	+	Fair
Cassia surattensis	E	Shrub or Small Tree	S	+	Fair
Conyza sumatrensis	E	Herb	S	+	Fair

Sansevieria trifasciata Prain	E	Perennial Herb	S	+	Fair
Alocasia odora	N	Perennial Herb	S	+	Fair
Livistona chinensis	E	Tree Palm	S	+	Fair
c.f. Ulothrix sp.	**N**	Algae	S	+	Fair
Enteromorpha sp.	**N**	Algae	S	+	Fair
Total number of species	**23**				

Key:

*Status in Hong Kong

E = Exotic

N = Native

[1]Status in ECA:

R = retained

S = naturally colonized

[2]Relative abundance:

+ = Present

++ = Common

+++ = Abundant

Appendix L (B). List of trees transplanted from Work Areas of Contract 1 & 2 to ECA during establishment phase in Sep 2012.

Tree No.	Species Name	*Status in Hong Kong	Growth form	Date of transplantation	Condition	Remarks
T150	*Bombax ceiba*	E	Tree	22/6/2011	Fair	
T151	*Bombax ceiba*	E	Tree	22/6/2011	Fair	
T152	*Bombax ceiba*	E	Tree	22/6/2011	Fair	
T153	*Bombax ceiba*	E	Tree	22/6/2011	Fair	
T154	*Bombax ceiba*	E	Tree	14/6/2011	Fair	
T155	*Bombax ceiba*	E	Tree	14/6/2011	Fair	
T156	*Bombax ceiba*	E	Tree	14/6/2011	Fair	
T157	*Bombax ceiba*	E	Tree	14/6/2011	Fair	
T158	*Bombax ceiba*	E	Tree	14/6/2011	Fair	
T159	*Bombax ceiba*	E	Tree	14/6/2011	Fair	
T160	*Bombax ceiba*	E	Tree	14/6/2011	Fair	
T161	*Bombax ceiba*	E	Tree	14/6/2011	Fair	
T162	*Bombax ceiba*	E	Tree	14/6/2011	Fair	
T250	*Celtis sinensis*	N	Tree	22/6/2011	Dead	Dead
T165	*Melaleuca quinquenervia*	E	Tree	22/6/2011	Dead	Dead
T168	*Melaleuca quinquenervia*	E	Tree	Nov 2011	Fair	

Appendix L (C). Condition of transplanted species *Pavetta hongkongensis* in ECA since 20th Dec 2011.

Specimen No.	Species Name	Growth Form	Height (m)	Date of transplantation	Condition	Remarks
PH01	*Pavetta hongkongensis*	Tree / Shrub	2.2	20th Dec 2011	Fair	
PH02	*Pavetta hongkongensis*	Tree / Shrub	2	20th Dec 2011	Fair	
PH03	*Pavetta hongkongensis*	Tree / Shrub	1.5	20th Dec 2011	Fair	

Date of weekly monitoring: 4 Jan, 13 Jan, 17 Jan, 28 Jan, 3 Feb, 6 Feb, 15 Feb, 22 Feb, 1 Mar, 6 Mar, 12 Mar, 18 Mar, 29 Mar, 27 Apr, 31 May, 26 Jun, 31 July, 30 Aug, 26 Sep 2012.

Appendix M: Ecological monitoring report

Agreement No. DP/01/2010
Drainage Improvement Works in Shatin and Tai Po: Ecological Monitoring in area under Contract 1 (Report 10a for Sept 2012)

Prepared for:

Drainage Services Department

Prepared by:
ENVIRON Hong Kong Limited

Date:
Oct 2012

Reference Number:
R2773_V1.0

Agreement No. DP/01/2010
Drainage Improvement Works in Shatin and Tai Po: Ecological Monitoring in area under Contract 1 (Report 10a for Sept 2012)

Prepared for:

Drainage Services Department

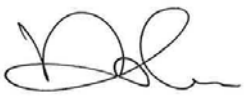
Prepared by:
ENVIRON Hong Kong Limited

Date:
Oct 2011

Reference Number:
R2773_V1.0

Agreement No. DP/01/2010 Drainage Improvement Works in Shatin and Tai Po: Ecological Monitoring in area under Contract 1 (Report 10a for Sept 2012)

Prepared by:



Max Lee
Assistant Environmental Consultant

Approved by:

Tony Cheng
Project Manager

ENVIRON Hong Kong Limited
Room 2310, China Resources Building
26 Harbour Road, Wan Chai, Hong Kong
Tel: (852) 3743 0788
Fax: (852) 3548 6988
Email: hkinfo@environcorp.com

Q:\Projects\DSDSHUWNEM00\Report\Bi-Monthly Construction Phase Ecological Monitoring Report\201209\10a

Contents

Page

List of Tables

List of Figures

1. Introduction

1.1. Project description

The Drainage Improvement Works in Shuen Wan was undertaken to minimize the potential flooding impacts in Sha Tin and Tai Po area. Although the Ecological Impact Assessment in the EIA Report identified that ecological impacts resulting from the proposed drainage improvement works at Shuen Wan were anticipated to be very minor in scale, ecological mitigation and ecological monitoring were recommended in the EM&A Manual (http://env-shuenwan.com/pdf/review_note_em&a_rev.3.pdf) as stipulated under Environment Permit No. EP-303/2008.

1.2. Scope of ecological impact monitoring was described in the Particular Specifications and EM & A Manual of the projects. In brief, the monitoring tasks include regular check on the retained and transplanted trees and shrubs, monitoring on fauna groups and aquatic fauna within the works area and any ecologically sensitive area within 100 m of the works boundary.

1.3. China-Hong Kong Ecology Consultants Co. was commissioned by ENVIRON Hong Kong Limited to perform the ecological impact monitoring survey for areas under Contract 1 starting from March 2011.

1.4. The outline of this ecological monitoring report was as follow:

- Highlights of this report
- Summary of construction activities for the month
- Monitoring methodology
- Monitoring data
- Remedial measures adopted to the adverse condition
- Record of complains and remedial measures
- Review of monitoring results
- Forecast of works programme and monitoring requirements
- Comments and brief summary

1.5. This is the report No. 10 ecological monitoring conducted on 26th September 2012 within the works boundary under Contract 1 and area within 100 m from the works boundary.

2. Highlights of this report

- Field survey was conducted on 26th September 2012
- Construction activities of Contract 1 was continued since March 2011
- Lower number of species was observed within the works area under Contract 1, in particular stream ecological monitoring point 2 (SEMP 2) due to recent river diversion for Ecological Compensatory Area (ECA) construction.
- Habitats in the 100 m buffer area retain its natural condition.

3. Summary of construction activities for the month

Major construction activities carried out in Contract 1 by the contractor during the present monitoring period (September 2012) includes:

Area A (Pumping Station)

- Construction of superstructure of pumping station
- Construction of 2100 mm dia. Drainage pipe along Ting Kok Road
- Construction of 2100 mm dia. Drainage pipe near pumping station

Area B (Tung Tsz Nursery)

- Construction of box culvert in Tung Tsz Nursery
- Ground treatment works for Pipe Jacking

Area C (ECA)

- In Maintenance Period

4. Monitoring Methodology

4.1 Ecological monitoring methods were generally followed those described in the baseline ecological surveys (DC/2009/22). However, sampling area maybe reduced because of habitat change, for instance, deforestation and channel modification due to drainage works, where sampling was not applicable. Survey data and evaluation are detailed in the following sections.

4.2 Vegetation survey

Vegetation survey was performed along the designated transects (**Figure 1**) for ecological monitoring as described in the project specifications to monitor the vegetation health which could be adversely influenced by any bad site practice. Qualitative data of plants within the works boundary and wetland vegetation in the 100 m buffer area of Contract 1 adjacent to construction site and wetland was recorded. Riparian vegetation including aquatic and emergent at 4 stream ecological monitoring points (hereinafter referred to as "SEMP") under Contract 1 (i.e. SEPM 1 &2; **Figure 2 & 3**) along the affected stream channel and riparian habitat was recorded in terms of species, relative abundance and average heights. Any signs of damages and adverse health problems directly caused the works were recorded and reported. Nomenclature and protection status of the species followed those documented in the AFCD website (www.hkbiodiversity.net) and Hong Kong Herbarium (2004).

4.3 Avifauna

Bird survey was conducted by following the proposed transects which cover the major ecologically sensitive areas of the Project (**Figure 1**). All bird species were recorded with special attention paid on the species of conservation importance and wetland-

dependent species. List of bird species recorded and the relative abundance was provided.

4.4 Herpetofauna

Hepetofauna survey was conducted via direct observation and active searching along the survey transects with a focus in the work areas (**Figure 1**). All reptiles and amphibians encountered or heard were recorded. Nomenclature and conservation status of herpetofauna species follows AFCD website (www.hkbiodiversity.net).

4.5 Butterflies and Odonata

Odonates and butterfly survey of different habitats within the Study Area was conducted along the proposed transect (**Figure 1**). All butterflies and odonata were identified and relative abundance was recorded. Nomenclauture and status of conservation of butterflies follows Lo & Hui (2005) while that of odonata follows AFCD websites (www.hkbiodiversity.net).

4.6 Mammals

As the monitoring site was situated near traffics, plant nursery and residential buildings, mammals were unlikely inhabited at the site except rodents, domestic dogs and cats. Detailed mammal monitoring was not conducted. However, any sighting, tracks and signs of mammals encountered during survey of other faunal groups was recorded. Bat was surveyed by search for potential colony habitat, such as palm trees, which are often used by fruit bats as nesting sites.

4.7 Aquatic fauna

Monitoring of aquatic fauna was carried out mainly by bank-side observation, sometimes with the aid of binoculars, at two stream ecological monitoring points under Contract 1 (i.e. SEMP 1 & 2). These points are selected for covering representative sections of Wai Ha River and are shown in **Figure 1**. Netting and fish traps were also deployed at these points to collect supplementary data. Aquatic fauna seen/collected was identified *in situ* to the lowest possible taxon and relative abundance was presented.

5. Monitoring data

5.1 Vegetation survey

The habitats identified in area under Contract 1 are marine, recreational fish pond, river course, wooded area, mangrove, marsh and developed area (including village). Vegetation were found in wooded area, mangrove, marsh, develop area and river bank. During the current monitoring period, some riparian climbers (*Cocculus orbiculatus*) at SEMP 2 was removed due to direct conflict with the construction of ECA. The riparian vegetations were dominated by *Leucaena leucocephala* and *Plantago major* with average coverage ranged from 15% to 40% (**Table 1**). A list of plant species recorded

from different habitats within the assessment area under Contract 1 is presented on **Table 2**. A total of 130 species were recorded within the assessment boundary of Contract 1 in which 121 species were recorded within the buffer area, while 52 species recorded within the work areas under Contract 1. No protected species were recorded.

5.2 Avifauna

A total of 18 bird species were recorded in the current survey under Contract 1(**Table 3**). In the work area under Contract 1, 6 bird species were recorded in which one wetland dependent species *Ardeola bacchus* is recognized as being regional conservation conern. A total of 18 bird species were recorded in the 100m buffer area in which three species, *Ardeola bacchus, Corvus torquatus* and *Nycticorax nycticorax*, are recognized as being regional or local conservation concern. (Viney et al., 2005).

5.3 Herpetofauna

No reptile was recorded within the assessment area. Mating call of Gunter's Frog, was heard from the water of pools, ditches and river bank within the 100m buffer zone. Common Toad was found on both work area and buffer zone of the site. The species recorded belongs to common species in Hong Kong. (**Table 4**)

5.4 Butterflies

A total of 10 butterfly species were recorded during surveys (**Table 5**). However, none of the species are of the conservation concern..

5.5 Odonata

3 odonata species were recorded during the surveys (**Table 6**). The species Wandering glider (*Pantala flavescens*) was found within the work boundaries under Contract 2 & along the river bank in the 100m buffer area, while the species Common Flangetail (*Ictinogomphus pertinax*) & Yellow Featherlegs (*Copera marginipes*) were only found along the river bank in the 100m buffer area.

5.6 Mammal

No mammals or trace of mammals was observed within the assessment area.

5.7 Aquatic fauna

Under Contract 1 (i.e. SEMP 1 & 2), a total of 9 fish species, 2 crustaceans, 1 bivalve and 1 snail were recorded and most of them were residing in brackish environments (**Table 7**). Some river works were carried out in SEMP 1 as showed in **Figure 2**. Overall, no protected or rare species were recorded.

6. Remedial measures adopted to the adverse condition

There was no non-compliance event recorded within this reporting month.

7. Record of complains and remedial measures

There was no complaint in relation to environmental issue recorded in this reporting month.

8. Review of the monitoring results

During the present survey period, construction activities were carried out at works area under Contract 1, while 100 m buffer area remains natural. Much of the construction activities are carried out at Tung Tsz Nursery and pumping station under Contract 1. In general, lower numbers of species were recorded within the works area under Contract 1 than that of 100 m buffer area because of the associated constructions and urbanized in nature. It is noted that the diversity of aquatic fauna in SEMP 2 under Contract 1 is relatively lower because of the recent river works at SEMP 1 where has been regarded as the corridor for aquatic fauna to move between Wai Ha River and the marine area outside the assessment area. However, most of the construction activities are restricted in the developed area with low ecological significance. As mitigation measures recommended in the EM&A Manual were properly implemented during the current survey, and hence the residual environmental impacts would be minimized.

9. Forecast of works programme and monitoring requirements

The tentative construction activities undertaken by the contractor in the coming months are as follows:

Area A (Pumping Station)

- External finishing works for main structure of pumping station
- Final testing works of E&M
- External Misc. Works & Landscaping Works

Area B (Tung Tsz Nursery)

- Excavation for the construction of box culvert in Tung Tsz Nursery
- Reinstallation and Reinstatement of Existing Structure, Facilities and Trees.

Area C (ECA)

- In Maintenance Period

The monitoring programme described in EM&A will strictly follow to verify compliance of environmental requirements and the proper implementation of all necessary mitigation measures.

10. Comments and summary

The bi-monthly ecological impact monitoring under Contracts 1 (excluding the ECA) was conducted in September 2012 and relevant flora and fauna data were collected according to project specification and EM & A Manual. As indicated by the low diversity and abundance of species recorded within the work areas, habitats within the work boundary under Contracts 1 offer few ecological opportunities for inhabitation of fauna and flora. Given that the construction activities are restricted in the developed area with proper mitigation measures being implemented, disturbances associated with the current construction activities are largely affecting area with low ecological significance. On the other hand, the natural habitats in the 100 m buffer area are retained at acceptable condition, and hence the 100 m buffer area has not been significantly affected by the construction works.

11. References

Lo PYF & Hui WL (2005). *Hong Kong Butterflies* (2nd Edition). Friends of Country Parks. Hong Kong.

Wilson KDP (2003). *Field Guide to the Dragonflies of Hong Kong*. Agriculture, Fisheries and Conservation Department. Hong Kong.

Viney C, Philips K, Lam CY (2005). *The Birds of Hong Kong and South China* (8th Edition). Hong Kong Government Information Service. Hong Kong.

Hong Kong Herbarium (2004*). Check List of Hong Kong Plants*. Agriculture, Fisheries and Conservation Department. Hong Kong.

AFCD, Hong Kong Biodiversity Website:
http://www.afcd.gov.hk/english/conservation/hkbiodiversity/database/search.asp

Lee VLF, La, SKS, Ng FKY, Chan TKT, Young MLC (2004). *Field Guide to the freshwater fish of Hong Kong*. Agriculture, Fisheries and Conservation Department. Hong Kong.

Shek CT (2006) A *Field Guide to the Terrestrial Mammals*. Agriculture, Fisheries and Conservation Department. Hong Kong.

Fellowes, J.R., Lau, M.W.N., Dudgeon, D., Reels, G., Ades, G.W.J., Carey, G.J., Chan, B.P.L., Kendrick, R.C., Lee, K.S., Leven, M.R., Wilson, K.D.P. & Yu, Y.T. (2002). Wild animals to watch: Terrestrial and freshwater fauna of conservation concern in Hong Kong. *Memoirs of the Hong Kong Natural History Society* 25: 123-159.

Karsen SJ, Lau MWN, Bogadek A (1986) *Hong Kong Amphibians and Reptiles*. The Urban Council Hong Kong. Hong Kong.

Figure

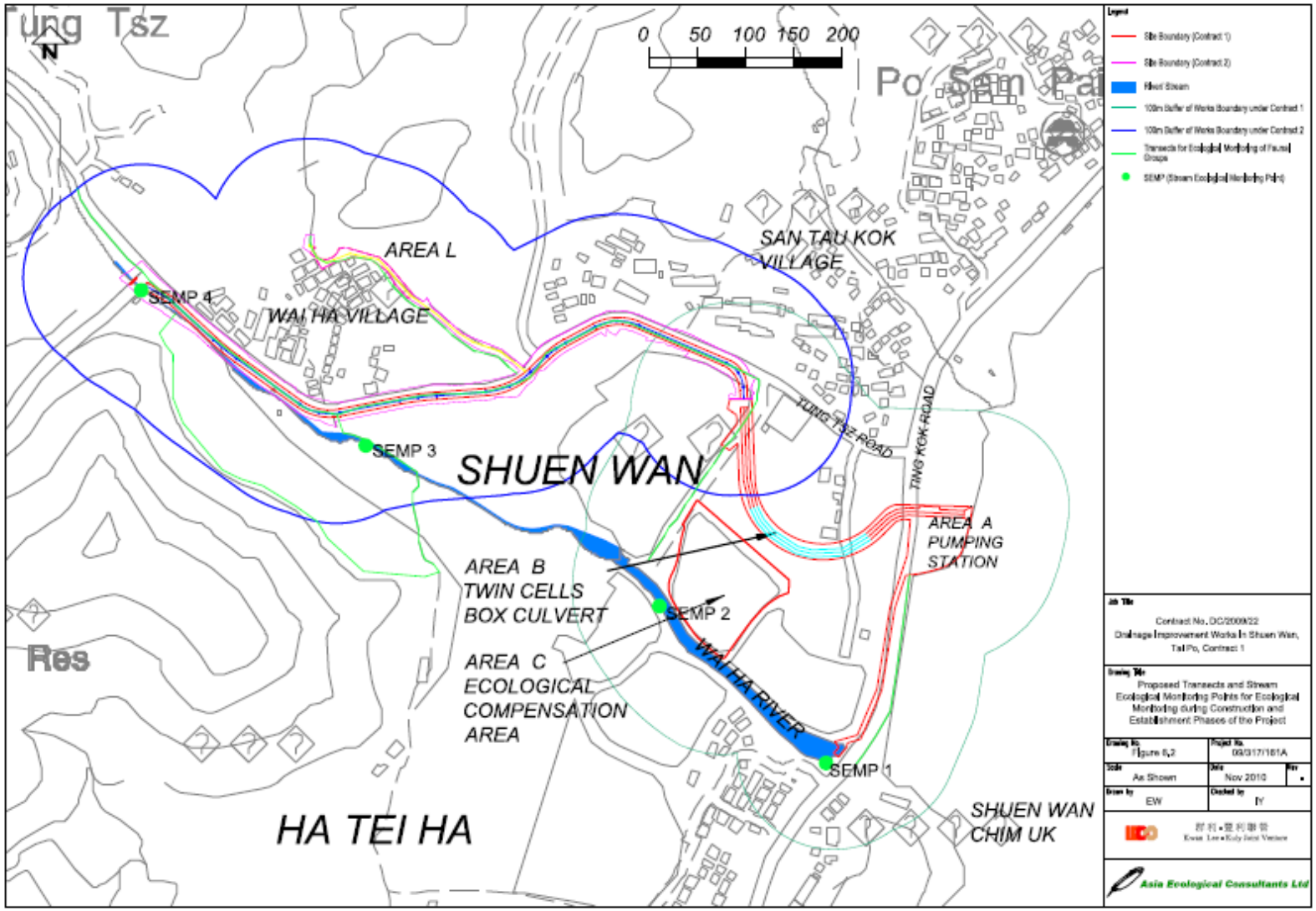


Figure: 1

Title: Map showing the ecological monitoring transect and the boundary of assessment area.

ENVIRON

Drawn by: IT

Checked by: ML

Project: Agreement No. DP/01/2010 Drainage Improvement Works in Shatin and Tai Po: Ecological Monitoring in area under Contract 1 (Sept 2012, Report 10a)

Rev.: 1.0

Date: Sept 2012

Figure: 2	ENVIRON
Title: SEMP 1, the first sampling point of Wai Ha River under Contract 1.	Drawn by: IT
	Checked by: ML
Project: Agreement No. DP/01/2010 Drainage Improvement Works in Shatin and Tai Po: Ecological Monitoring in area under Contract 1 (Sept 2012, Report 10a)	Rev.: 1.0
	Date: Sept 2012

Figure: 3	ENVIRON
Title: SEMP 2, the second sampling point along Wai Ha River under Contract 1.	Drawn by: IT
	Checked by: ML
Project: Agreement No. DP/01/2010 Drainage Improvement Works in Shatin and Tai Po: Ecological Monitoring in area under Contract 1 (Sept 2012, Report 10a)	Rev.: 1.0
	Date: Sept 2012

Table

Table 1. List of riparian vegetation and coverage (%) recorded from two stream sampling points under Contract 1 (i.e. SEMP 1, 2).

			Sampling point	**SEMP 1**		**SEMP 2**	
Species	**Family**	**Growth form**	**Status in Hong Kong**	**Height (cm)**	**%**	**Height (cm)**	**%**
Albizia lebbeck	MIMOSACEAE	Tree	E			400	10
Amaranthus viridis	AMARANTHACEAE	Herb	N	30	1		
Arundinella nepalensis	POACEAE	Perennial Herb	N			150	2
Bidens alba	ASTERACEAE	Herb	E	30	10		
Celtis sinensis	ULMACEAE	Tree	N			500	10
Digitaria ciliaris	POACEAE	Herb	N	20	1		
Eclipta prostrata	ASTERACEAE	Perennial herb	N	30	1		
Ficus virens	MORACEAE	Tree	N	100	1		
Kandelia obovata	RHIZOPHORACEAE	Shrub or Small Tree	N			150	4
Leucaena leucocephala	MIMOSACEAE	Small Tree	E			600	40
Macaranga tanarius	EUPHORBIACEAE	Tree	N			100	1
Mikania micrantha	ASTERACEAE	Climbing Herb	E	10	1		
Pennisetum alopecuroides	POACEAE	Perennial Herb	N	250	10		
Plantago major	PLANTAGINACEAE	Perennial herb	N	30	15		
Bare	n/a	n/a	n/a	n/a	60	n/a	33

*Key:
E = Exotic
N = Native
n/a = not available

Table 2. List of vegetation recorded from works area under Contracts 1 and 100 m buffer area in the impact monitoring survey conducted in July 2012. Vegetation species presents in the identified location was indicated by "V".

Habitat	Species name	Family	Growth form	*Status in Hong Kong	Work Area under Contract 1	100 m buffer area under Contract 1
Stream	*Chrysalidocarpus lutescens*	ARECACEAE	Shrub Palm	E		V
	Melia azedarach	MELIACEAE	Tree	E		V
	Murraya paniculata	RUTACEAE	Small Tree	E		V
	Lantana camara	VERBENACEAE	Shrub	E		V
	Ficus hispida	MORACEAE	Tree	N		V
	Ficus virens	MORACEAE	Tree	N		V
	Chrysopogon aciculatus	POACEAE	Perennial Herb	N		V
	Microstegium ciliatum	POACEAE	Perennial Procumbent Herb	N		V
	Mucuna birdwoodiana	FABACEAE (PAPILIONACEAE)	Climber: Vine	N		V
	Pistia stratiotes	ARACEAE	Floating Aquatic Herb	N		V
	Cyperus flabelliformis	CYPERACEAE	Herb	E		V
	Acanthopanax gracilistylus	ARALIACEAE	Shrub	E		V
	Ficus triangularis	MORACEAE	Tree	E		V
	Spirodela polyrrhiza	LEMNACEAE	Floating Small Herb	N		V
	Glochidion zeylanicum	EUPHORBIACEAE	Shrub or Small Tree	N		V
	Sterculia lanceolata	STERCULIACEAE	Semi-deciduous Tree	N		V

Habitat	Species name	Family	Growth form	*Status in Hong Kong	Work Area under Contract 1	100 m buffer area under Contract 1
	Albizia lebbeck	MIMOSACEAE	Tree	E		V
	Arundinella nepalensis	POACEAE	Perennial Herb	N		V
	Bidens alba	ASTERACEAE	Herb	E		V
	Clerodendrum inerme	VERBENACEAE	Shrub	N		V
	Coculus orbiculatus	MENISPERMACEAE	Climber: Vine	N		V
	Hibiscus tiliaceus	MALVACEAE	Tree or Shrub	N		V
	Leucaena leucocephala	MIMOSACEAE	Small Tree	E		V
	Manilkara zapota	SAPOTACEAE	Tree	E		V
	Sapium discolor	EUPHORBIACEAE	Tree	N		V
Developed area	*Pericampylus glaucus*	MENISPERMACEAE	Woody Vine	N		V
	Ficus variegata var. chlorocarpa	MORACEAE	Tree or Shrub	N	V	V
	Citrus reticulata Blanco	RUTACEAE	Small Tree	E		V
	Salvia japonica	LAMIACEAE (LABIATAE)	Herb	N		V
	Morus alba	MORACEAE	Tree or Shrub	N		V
	Emilia sonchifolia	ASTERACEAE	Herb	N		V
	Clausena lansium	RUTACEAE	Small Tree	E		V
	Pyrostegia venusta	BIGNONIACEAE	Climber: Vine	E		V
	Psidium guajava	MYRTACEAE	Tree	E		V
	Catharanthus roseus	APOCYNACEAE	Subshrub	N		V
	Archontophoenix alexandrae	ARECACEAE	Tree Palm	E		V
	Desmodium heterocarpon	FABACEAE (PAPILIONACEAE)	Shrub	N		V
	Rhinacanthus nasutus	ACANTHACEAE	Herb	E		V
	Acacia confusa	MIMOSACEAE	Tree	E	V	V
	Artocarpus macrocarpon	MORACEAE	Tree	E	V	V

Habitat	Species name	Family	Growth form	*Status in Hong Kong	Work Area under Contract 1	100 m buffer area under Contract 1
	Averrhoa carambola	OXALIDACEAE	Small Tree	E	V	V
	Bauhinia blakeana	CAESALPINIACEAE	Tree or Shrub	N	V	V
	Bauhinia variegata	CAESALPINIACEAE	Tree	E	V	V
	Bridelia tomentosa	EUPHORBIACEAE	Shrub or Small Tree	N	V	V
	Calliandra haematocephala	MIMOSACEAE	Shrub	E	V	V
	Caryota ochlandra	ARECACEAE	Tree palm	E	V	V
	Cassia spectabilis	CAESALPINIACEAE	Small Tree	E	V	V
	Casuarina equisetifolia	CASUARINACEAE	Tree	E	V	V
	Citrus grandis	CASUARINACEAE	Tree	E	V	V
	Cordyline fruticosa	AGAVACEAE	Shrub	E	V	V
	Cynodon dactylon	POACEAE	Perennial Herb	N	V	V
	Dracaena draco	AGAVACEAE	Tree	E	V	V
	Elaeocapus haminanensis	ELAEOCARPACEAE	Small Tree	E	V	V
	Eleusine indica	POACEAE	Herb	N	V	V
	Eriobotrya japonica	ROSACEAE	Small Tree	E	V	V
	Ficus benjamina	MORACEAE	Tree	E	V	V
	Ficus elastica	MORACEAE	Tree	E	V	V
	Ficus simplicissima	MORACEAE	Shrub	N	V	V
	Hibiscus rosa-sinensis	MALVACEAE	Shrub	E	V	V
	Lantana camara	VERBENACEAE	Shrub	E	V	V
	Litchi chinensis	SAPINDACEAE	Tree	E	V	V
	Lumnitzera racemosa	COMBRETACEAE	Shrub or Small Tree	N	V	V
	Lygodium japonicum	LYGODIACEAE	Climbing Herb	N	V	V
	Melaleuca quinquenervia	MYRTACEAE	Tree	E	V	V
	Oxalis corniculata	OXALIDACEAE	Perennial Herb	N	V	V

Habitat	Species name	Family	Growth form	*Status in Hong Kong	Work Area under Contract 1	100 m buffer area under Contract 1
	Phoenix roebelenii	ARECACEAE	Small Tree Palm	E	V	V
	Polygonum hydropiper	POLYGONACEAE	Herb	N	V	V
	Psychotria serpens	RUBIACEAE	Climber: Vine	N	V	
	Pterocypsela indica	ASTERACEAE	Herb	N	V	V
	Rhapis excelsa	ARECACEAE	Shrub Palm	N	V	V
	Sansevieria trifasciata	AGAVACEAE	Perennial Herb	E	V	V
	Schefflera actinophylla	ARALIACEAE	Climbing Shrub	E	V	V
	Schefflera heptaphylla	ARALIACEAE	Tree	N	V	V
	Sesbania cannabina	FABACEAE	Herb	E	V	V
	Terminalia catappa	COMBRETACEAE	Large Tree	E	V	V
	Thuja orientalis	CUPRESSACEAE	Tree	E	V	V
	Tradescantia spathacea	COMMELINACEAE	Herb	E	V	V
	Youngia japonica	ASTERACEAE	Herb	N	V	V
	Acanthus ilicifolius	ACANTHACEAE	Shrub	N		V
	Acrostichum aureum	ACROSTICHACEAE	Herb	N		V
	Aegiceras corniculatum	MYRSINACEAE	Shrub	N		V
	Alocasia odora	ARACEAE	Perennial Herb	N		V
	Avicennia marina	VERBENACEAE	Shrub	N		V
	Digitaria ciliaris	POACEAE	Herb	N		V
	Panicum repens L.	POACEAE	Perennial Herb	N		V
	Pennisetum alopecuroides	POACEAE	Perennial Herb	N		V
	Phragmites anstralis	POACEAE	Perennial Herb	N		V
	Plantago major	PLANTAGINACEAE	Perennial herb	N		V
	Solanum nigrum	SOLANACEAE	Herb	N		V
	Bombax ceiba	BOMBACACEAE	Tree	E	V	
	Bidens alba	ASTERACEAE	Herb	E	V	
	Panicum maximum	GRAMINEAE	Herb	E	V	

Habitat	Species name	Family	Growth form	*Status in Hong Kong	Work Area under Contract 1	100 m buffer area under Contract 1
	Microstegium ciliatum	POACEAE	Perennial Procumbent Herb	N	V	
	Leucaena leucocephala	MIMOSACEAE	Small Tree	E	V	
Plantation	*Bischofia javanica*	EUPHORBIACEAE	Tree	N		V
	Scolopia chinensis	FLACOURTIACEAE	Tree or Large Shrub	N		V
	Piper hancei	PIPERACEAE	Climber: Vine	N		V
	Dimocarpus longan	SAPINDACEAE	Tree	E		V
	Paederia scandens	RUBIACEAE	Climber: Vine	N		V
	Cleistocalyx operculatus	MYRTACEAE	Tree	N		V
	Antidesma bunius	EUPHORBIACEAE	Tree	N		V
	Litsea monopetala	LAURACEAE	Small Tree	N		V
	Microcos paniculata	TILIACEAE	Shrub or Small Tree	N		V
	Maesa perlarius	MYRSINACEAE	Shrub	N		V
	Boehmeria nivea (L.) Gaudich.	URTICACEAE	Subshrub or shrub	E		V
	Mallotus apelta	EUPHORBIACEAE	Shrub or Small Tree	N		V
	Sapindus saponaria	SAPINDACEAE	Tree	N		V
	Aporusa dioica	EUPHORBIACEAE	Tree	N		V
	Wedelia chinensis	ASTERACEAE	Perennial Herb	N		V
	Carica papaya	CARICACEAE	Tree	E		V
	Rubus reflexus	ROSACEAE	Climbing Shrub	N		V
	Brassica rapa	BRASSICACEAE (CRUCIFERAE)	Biennial Herb	E		V

Habitat	Species name	Family	Growth form	*Status in Hong Kong	Work Area under Contract 1	100 m buffer area under Contract 1
	Mucuna championii Benth.	FABACEAE	Climbing Vine	N		V
	Pinus massoniana	PINACEAE	Tree	N		V
Ting Kok Nursery Community Garden	*Bauhinia purpurea*	CAESALPINIACEAE	Tree	E	V	
	Callistemon viminalis	MYRTACEAE	Tree	E	V	
	Dillenia indica	DILLENIACEAE	Tree	E	V	
	Lonicera japonica	CAPRIFOLIACEAE	Climber: Vine	N	V	
	Tabebuia chrysantha	BIGNONIACEAE	Small Tree	E	V	
	Wisteria sinensis	FABACEAE	Climber: Vine	E	V	
Wooded area	*Celtis sinensis*	ULMACEAE	Tree	N		V
	Ligustrum sinensis	OLEACEAE	Tree or Shrub	N		V
	Macaranga tanarius	EUPHORBIACEAE	Tree	N		V
	Pandanus tectorius	PANDANACEAE	Shrub or Small Tree	N		V
	Excoecaria agallocha	EUPHORBIACEAE	Tree	N		V
	Kandelia obovata	RHIZOPHORACEAE	Shrub or Small Tree	N		V
	Thespesia populnea	MALVACEAE	Tree or Shrub	N		V
	Zoysia sinica	POACEAE	Perennial Herb	N		V
Marsh	*Acanthus ilicifolius*	ACANTHACEAE	Shrub	N		V
	Acrostichum aureum	ACROSTICHACEAE	Herb	N		V
	Aegiceras corniculatum	MYRSINACEAE	Shrub	N		V
	Alocasia odora	ARACEAE	Perennial Herb	N		V
	Avicennia marina	VERBENACEAE	Shrub	N		V
	Digitaria ciliaris	POACEAE	Herb	N		V
	Ficus hispida	MORACEAE	Tree	N		V

Habitat	Species name	Family	Growth form	*Status in Hong Kong	Work Area under Contract 1	100 m buffer area under Contract 1
	Hibiscus tiliaceus	MALVACEAE	Tree or Shrub	N		V
	Ipomea cairica	CONVOLVULACEAE	Climber: Twining Herb	E		V
	Kandelia obovata	RHIZOPHORACEAE	Shrub or Small Tree	N		V
	Macaranga tanarius	EUPHORBIACEAE	Tree	N		V
	Mikania micrantha	ASTERACEAE	Climbing Herb	E		V
	Panicum repens L.	POACEAE	Perennial Herb	N		V
	Pennisetum alopecuroides	POACEAE	Perennial Herb	N		V
	Phragmites anstralis	POACEAE	Perennial Herb	N		V
	Plantago major	PLANTAGINACEAE	Perennial herb	N		V
	Polygonum lapathifolium	POLYGONACEAE	Herb	N		V
	Pueraria lobata	FABACEAE	Climber: Vine	N		V
	Schefflera heptaphylla	ARALIACEAE	Tree	N		V
	Solanum nigrum	SOLANACEAE	Herb	N		V
	Solanum torvum	SOLANACEAE	Shrub	E		V

***Key:**
E = Exotic
N = Native

Table 3. List of avifauna species and maximum counts recorded from the impact monitoring survey in July 2012 at work area under Contracts 1 and 100 m buffer area.

Species	**Common name**	**Habitat**	**Conservation status in Hong Kong**	**Work area: Contract 2**	**100m buffer area**
Acridotheres cristatellus	Crested Myna			2	3
Ardea cinerea	Grey Heron	W			1
Ardeola bacchus	Chinese Pond Heron	W	RC		1
Casmerodius alba	Great Egret	W			1
Copsychus saularis	Oriental Magpie Robin			1	2
Egretta garzetta	Little Egret	W			2
Garrulax perspicillatus	Masked Laughing thrush				2
Motacilla alba	White Wagtail				1
Orthotomus sutorius	Common Tailorbird				1
Passer montanus	Eurasian Tree Sparrow			2	5
Prinia flaviventris	Yellow-bellied Prinia				1
Pycnonotus jocosus	Red-whiskered Bulbul				2
Pycnonotus sinensis	Chinese Bulbul				1
Streptopelia chinensis	Spotted Dove			2	2
Sturnus nigricollis	Black-collared Starling				2
Total number of species:				**4**	**15**

*** Key:**

W = Wetland dependent spices ; RC = Regional Concern

Table 4. List of herpetofauna and maximum counts recorded from the impact monitoring survey in July 2012 at work area under Contracts 1 and 100 m buffer area..

Species	**Common name**	**Conservation status in Hong Kong**	**Work area: Contract 1**	**100m Buffer area of Contract 1**
Rana guentheri	Gunther's Frog	Common		1@
Kaloula pulchra pulchra	Asiatic Painted Frog	Common		2@
Fejervarya limnocharis	Paddy Frog	Common		1@
Polypedates megacephalus	Brown Tree Frog	Common		2*
Bufo melanostictus	Common Toad	Common	1	1

Key:
@-Calling heard,
*-Egg founded

Table 5. Relative abundance of butterfly species recorded under Contracts 1 in impact monitoring survey during July 2012.

Species	**Common name**	**Conservation status in Hong Kong**	**Work area: Contract 1**	**100m Buffer area of Contract 1**
Abisara echerius	Plum judy	Very Common		+
Eurema hecabe	Common Grass Yellow	Very Common	+	++
Mycalesis mineus	Dark-brand Bush Brown	Very Common	+	++
Papilio bianor	Chinese Peacock	Common		+
Papilio memnon agenor	Great Mormon	Very Common		+
Papilio polytes	Common mormon	Very Common	+	+
Papilio protenor	Spangle	Very Common		+
Parantica aglea	Glassy Tiger	Common		+
Pieris canidia canidia	Indian Cabbage White	Very Common		+
Ypthima baldus	Common Five-ring	Very Common		+
Zizeeria maha	Pale Grass Blue	Very Common		+

Key:

+ : Species exists in the survey area

++ : Species common in the survey area

+++ : Species abundant in the survey area

Table 6. Relative abundance of odonata species recorded under Contracts 1 in impact monitoring survey during July 2012.

Species	**Common name**	**Conservation status in Hong Kong**	**Work area: Contract 1**	**100m Buffer area of Contract 1**
Pantala flavescens	Wandering Glider	Common	+	+
Ictinogomphus pertinax	Common Flangetail	Common		+

Key:

+ : Species exists in the survey area

++ : Species common in the survey area

+++ : Species abundant in the survey area

Table 7. Relative abundance of aquatic species recorded in Wai Ha River within the 100 m buffer of works boundary under Contracts 1 in the impact monitoring survey during July 2012.

Species	**Common name**	**[1]Life-cycle characteristics**	**[2]Origin**	**SEMP 1**	**SEMP 2**
Ambassis gymnocephalus	Glassperch	M	N	+	
Cyprinus carpio	Common Carp	F	I		+
Gerres macracanthus	Longspine Silverbiddy	M	N	+	
Mugil cephalus	Flatehead Grey Mullet	M	N	+	
Opsariichthys evolans	Minnow	F	N	+	
Oreochromis mossambicus	Mozambique Tilapa	F	I	++	+
Oreochromis niloticus	Nile Tilapa	F	I	++	+
Poecilia reticulata	Guppy	F	I		+
Tilapia zillii	Redbelly Tilapa	F	I	+	
Sesarma (Perisesarma) bidens	Sesarmine crab	M	N		+
Uca arcuata	Fiddler Crab	M	N		+
Saccostrea cucullata	Rock Oyster	M	N	++	+
Cerithidea cingulata	Mud snail	M	N	+	
Total number of species:	**13**			**9**	**7**

Key:

Relative abundance:
+ : Species exists in the survey area
++ : Species common in the survey area
+++ : Species abundant in the survey area

[1] Life-cycle characteristics:
M = Marine vagrant
F = Freshwater species

[2]Origin:
N = Native
I = Introduced; / = not available

Appendix N. Photo of Wai Ha River in September 2012

	
Photo 1. Wai Ha River at W2	**Photo 2**. Wai Ha River at W2
	
Photo 3. Wai Ha River at W2	**Photo 4**. Wai Ha River at W2
	
Photo5. Wai Ha River at W2	**Photo6.** Wai Ha River at W2

	
Photo7. Wai Ha River at W2	**Photo8.** Wai Ha River at W2

Appendix O

Approved Proposal of Revision for Action/Limit Level Criteria of Water Quality Monitoring

本署檔號 OUR REF: (2) in Ax (1) to EP2/G/I/117 Pt.4
來函檔號 YOUR REF:
電 話 TEL. NO.: 2835 1581
圖文傳真 FAX NO.: 2802 4511
電子郵件 E-MAIL:
網 址 HOMEPAGE: http://www.epd.gov.hk

Environmental Protection Department
Branch Office
28th Floor, Southorn Centre,
130 Hennessy Road,
Wan Chai, Hong Kong.

環境保護署分處
香港灣仔
軒尼詩道
一百三十號
修頓中心廿八樓

By Post & Fax : 2827 8700

31 May 2012

Drainage Projects Division,
Drainage Services Department,
40/F, 44/F & 45/F, Revenue Tower,
5 Gloucester Road, Wan Chai, Hong Kong
(Attn: Mr. SO Chi Ho)

Dear Mr. So,

Drainage Improvement Works in Sha Tin and Tai Po
Environmental Permit No. EP-303/2008
Revised Water Quality Monitoring

I refer to the letter from Environmental Pioneers & Solution Ltd (ET Leader) of 17 May 2012 proposing changes to water quality monitoring under the EM&A Programme for the captioned project.

Based on the justifications provided and pursuant to Condition 5.1 of the Environmental Permit No. EP-303/2008, I hereby approve the proposed changes to water quality monitoring.

Yours faithfully,

(Maurice YEUNG)
Principal Environmental Protection Officer
for Director of Environmental Protection

c.c.
Internal (w/encl. proposal enclosed in the letter from Environmental Pioneers & Solutions Ltd. of 17.5.2012)
S(RN)1
EIAO Register Office

EP-303/2008

Enquiry of Revision for Action/Limit Level Criteria of Water Quality Monitoring

	Prepared By:	Verified By:	Submitted By:
Parties:	Environmental Team Leader (Environmental Pioneers & Solutions Limited)	IEC (Environ Hong Kong Limited)	Contractor (Kwan Lee – Kuly Joint Venture)
Name:	Ms. Goldie Fung	Mr. Tony Cheng	Mr. C.L. Wong
Signature:			
Date:	16-5-2012	16 May 2012	16/5/2012

Rev. 6

Submitted by: 16-May-2012

CONTENTS

1. Introduction

Environmental Pioneers and Solutions Limited (EPSL) has been appointed to work as the Environmental Team (ET) for the Contract No. DC/2009/22 Drainage Improvement Works in Shuen Wan, Tai Po (Contract no. 1) to implement the Environmental Monitoring and Audit (EM&A) programme.

The scope of the Project includes the following works:-

(1) Construction of a 1000m long, 3m x 2.5m twin-cell box culvert along Tung Tsz Road;
(2) Replacement of existing gates by automatic mechanical gates at the mouth of Wai Ha River;
(3) Construction of a 280m long, 1200 dia. Drainage pipe near Wai Ha Village;
(4) Construction of a 260m long, 2100 dia. Flood relief drain along Ting Kok Road; and
(5) Construction of a floodwater pumping station at Shuen Wan.

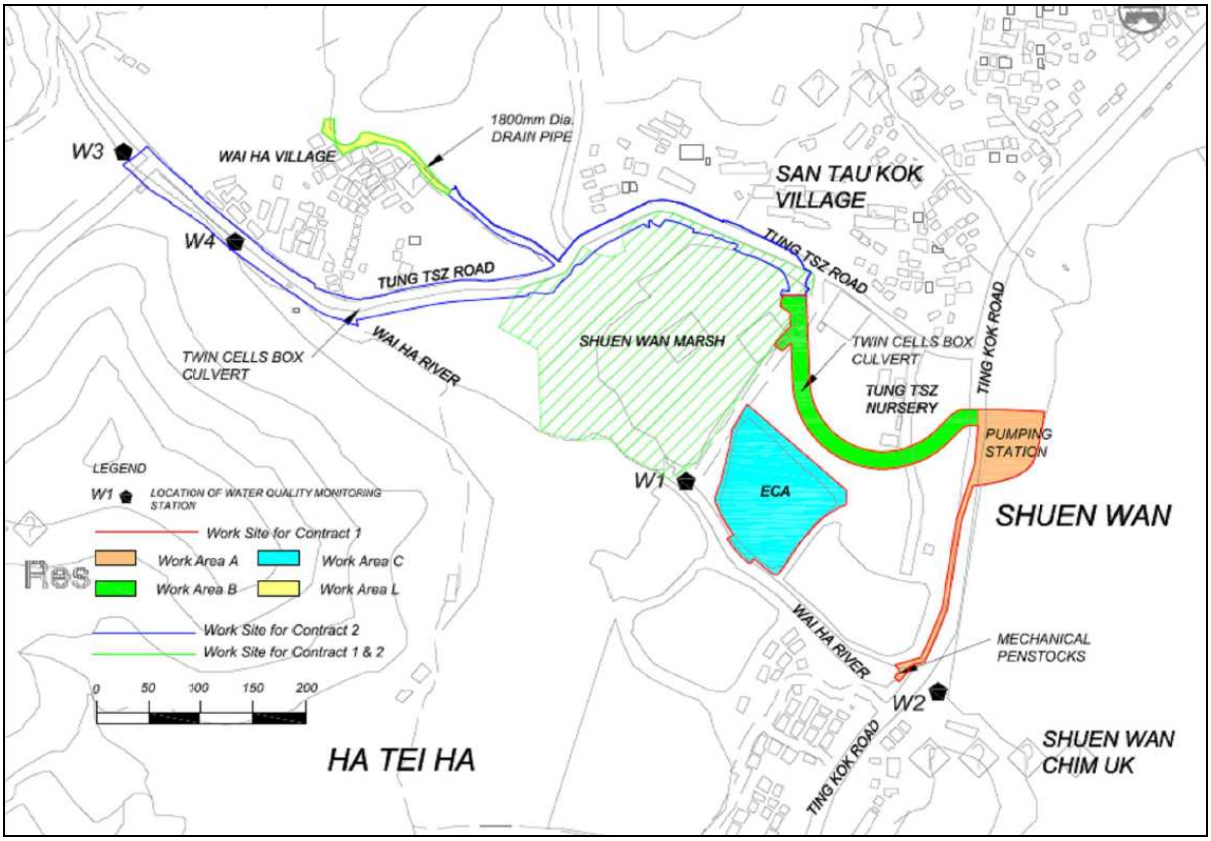
The construction period of the project was commenced on February 26th, 2010 and anticipated to complete in August 2013.

2. Water Quality Monitoring

2.1 Monitoring Locations

There are two separate contracts covered by the Environmental Permit EP-303/2008, including contract no. DC/2009/22 (contract no. 1) and contract no. DC/2010/02 (contract no. 2). There are totally 4 monitoring stations (W1, W2 and W4 for impact monitoring station and W3 for control station) selected for the water quality monitoring. With reference to the Clause 4.25 of EM&A Manual (Rev. 3), the water samples are collected at mid-depth of each proposed monitoring stations for measuring due to the water depth is less than 3m. The Location Plan is shown in Figure 2.1 for reference.

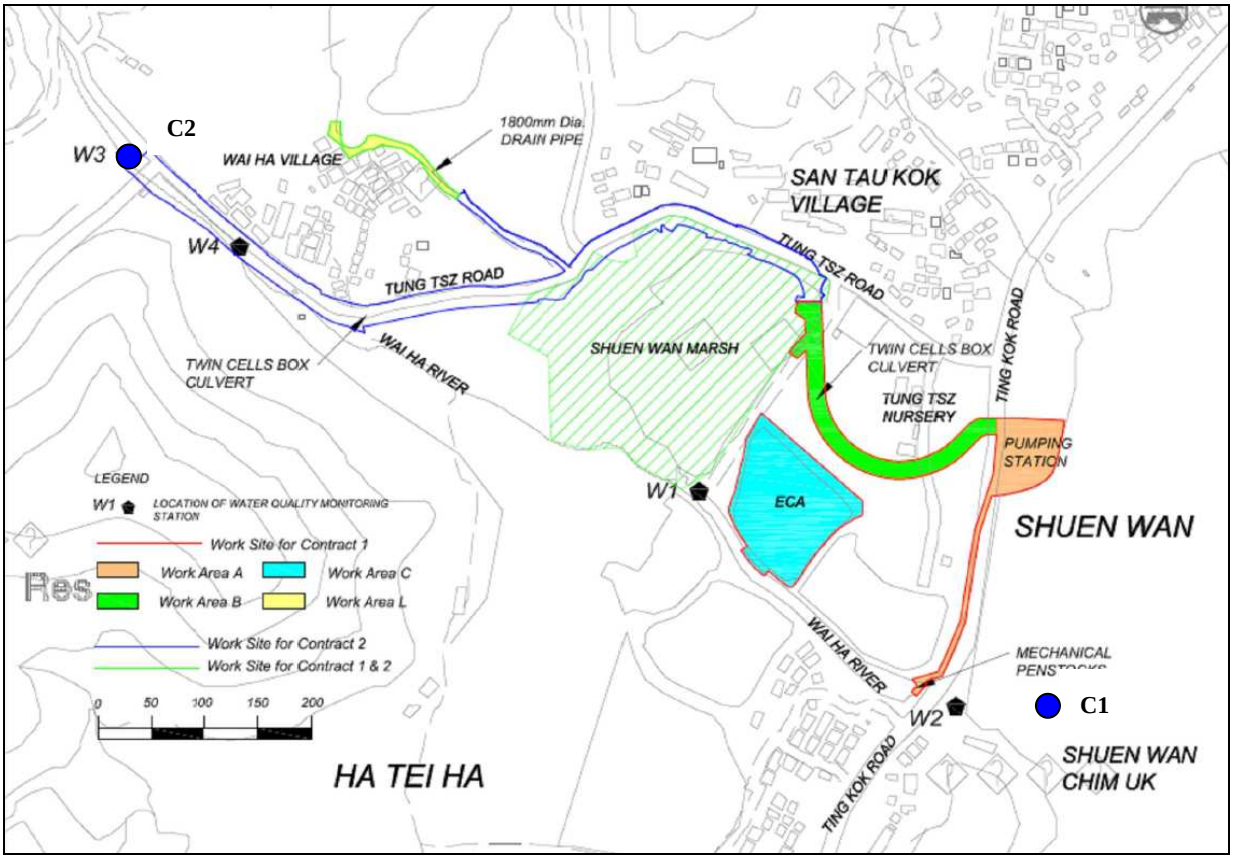
Figure 2.1 Water Quality Monitoring Locations



2.2 Reference Points for Contract No. 1

The construction activities of contract no. 1 were commenced on 9 March 2011 and anticipated to be completed in February 2013 and those of contract no. 2 were commenced on 29 April 2011 and anticipated to be completed on 27 October 2013. According to the current site situation of the project, there are construction activities carrying out for contract no. 1 and no. 2. The water quality of control station W1 may be affected by the construction activities of contract no. 2. Under this circumstance, 2 additional reference points (C1 and C2) are proposed for the water quality monitoring of contract no. 1. The water quality of both C1 and C2 will not be affected by any construction activities of this project. The location of C1 and C2 can refer to the Fig. 2.2. Reference point C1 is located at 20m apart from the estuary of Wai Ha River. The water quality of C1 will not be affected by the construction activities at flood tide and is free from contamination. The water quality parameter of C1; W1 and W2 are listed in Appendix A for reference. Reference point C2 is the same monitoring location of W3 which is approximate 70m apart from the site boundary and will not be affected by the construction activities.

Figure 2.2 Reference Points C1 and C2 Locations



The monitoring parameters of C1 and C2 are same as those of W1, and the monitoring data of C1 and C2 will be reported as the supplementary information. When the water quality of W2 exceed the Action/Limit levels criteria, the monitoring data of C1 will be used for comparison when the monitoring of W2 is taken at flood tide; and the monitoring data of C2 will be used for comparison when the monitoring of W2 is taken at ebb tide. The comparison of water quality between W2 and C1 at flood tide and between W2 and C2 at ebb tide can help to prove whether influence of water quality is caused by the construction activities. The water quality monitoring of W1 will continuously be carried out and the collected data will be submitted for reference as well.

2.3 Data Analysis

With reference to the Location Plan shown in Figure 2.1, control station W3 is at the upstream location of the Wai Ha River for this project. According to the location, the water quality of W3 can be considered to be not affected by any construction activities of the project. Besides, the level of W3 should be +5.08mPD and its water quality can be considered to be not undergone any tidal influence. Based on these criteria, the Dissolved Oxygen (DO) of control station W3 were used for the analysis in the following sections. In order to indicate the current situation of DO level of the river, the DO level of W3 measured from August 2011 to January 2012 were selected to compare with baseline data.

a. Baseline Monitoring Data

The baseline data of DO of W3 are shown in Appendix B. The baseline monitoring data were collected before the commencement of any construction activities in dry season from 7th January, 2011 to 2nd February 2011. According to the submitted Baseline Environmental Monitoring Report, the Action/Limit level for monitoring station W3 are indicated in Table 2.1.

Table 2.1 Action and Limit Levels for Water Quality at Monitoring Stations W3

Parameters	Monitoring Stations (Flood Tide)		Monitoring Stations (Ebb Tide)	
	Action Level	Limit Level	Action Level	Limit Level
DO (mg/L)	8.66	8.00	8.71	8.61

b. Impact Monitoring Data

Water quality monitoring (WQM) for control station W3 was carried out 13 times in August 2011; 14 times in September 2011; 12 times in October 2011; 13 times in November 2011; 13 times in December 2011; 12 times in January 2012. The collected DO data of W3 in these 77 times monitoring are shown in Appendix C. Average DO monitoring result of each month at W3 are summarized in Table 2.2.

Table 2.2 Water quality monitoring results of Dissolved Oxygen at W3

Month	Average Dissolved Oxygen (DO) in mg/L (Range)
August 2011	6.44 (7.31 – 4.44)
September 2011	6.08 (7.32 – 4.49)
October 2011	5.91 (6.86 – 5.09)
November 2011	5.79 (6.72 – 4.62)
December 2011	6.50 (7.91 – 5.09)
January 2012	7.14 (8.89 – 5.10)

By comparing the WQM results from August 2011 to January 2012 and Action/Limit level (Ebb Tide) of W3 in Table 2.1, it is observed that only one WQM result has not exceeded the Action/Limit level and all other WQM results have exceeded the Limit Level. The result is highlighted in Appendix D for reference. As mentioned before, the water quality of W3 will not be affected by any construction activities of the project, so that the cause of exceedance may due to the natural fluctuation such as temperature and seasonal change.

c. Variation between Dry and Wet Seasons

As the cause of exceedance may due to the seasonal change, the variation between dry and wet season is calculated as below for the compensation of seasonal change. As the water quality in the Wai Ha River (also referred to as Tung Tze Stream) is monitored under the Environmental Protection Department (EPD) routine river water quality monitoring programme. Ten years (Year 2001 to 2010) of river water quality data at station TR6 Tung Tze Stream are extracted from EPD database for the calculation of DO variation between Dry and Wet seasons. TR6 is located near the estuary of Tung

Tze Stream and the location can refer to the map in Appendix E. The raw data are listed in Appendix F for reference. After analyzed the distribution of the ten years data (refer to Appendix G), median of DO for dry and wet seasons are used to calculated the DO variation to eliminate the effect of the lowest and the highest values. The DO variation between Dry and Wet seasons variation is calculated by equation (eqt. 2-1).

$$\text{Variation} = (\text{Dry Season}_{median} - \text{Wet Season}_{median}) / \text{Dry Season}_{median} \quad \text{(eqt. 2-1)}$$

According to the condition 3.7 of the Environmental Permit EP-303/2008, dry season should be defined from October to April; and the wet season should be defined from May to September. The data from October to April are used for the calculation of Dry Season; the data from April to October are used for the calculation of Wet Season. Total 6 sets of result for 3 different time period are calculated for comparison. Both median and mean of the DO have been calculated for time periods including 1) Recent year - Year 2010; 2) Four years data – from Year 2007 to 2010; and 3) Ten years data – from Year 2001 to 2010. The results can refer to Table 2.3.

Table 2.3 DO variation between dry and wet season from 2007 to 2010 at station TR6, Tung Tze Stream

Collected Data	DO(mg/l)	Wet season	Dry season	Variation
Year 2010	Median	6.50	6.50	0%
Year 2007-2010	Median	5.65	6.55	**13.74%**
Year 2001-2010	Median	5.80	6.40	9.37%
Year 2010	Mean	6.16	6.36	3.14%
Year 2007-2010	Mean	5.81	6.28	7.48%
Year 2001-2010	Mean	5.85	6.38	8.31%

From the results in Table 2.3, the highest variation value 13.74% is used to enhance the effect of applying the variation. By applying the variation (13.74%) to the baseline data, a new set of Action/Limit level is calculated by equation (eqt. 2-2) and the result are shown in Table 2.4.

$$\text{Revised Level} = \text{Original Level} \times (1-13.74\%) \quad \text{(eqt. 2-2)}$$

Table 2.4 New set of Action/Limit Level, using the calculated variation (13.74%)

Parameters		Monitoring Stations (Flood Tide)		Monitoring Stations (Ebb Tide)	
		Action Level	**Limit Level**	**Action Level**	**Limit Level**
Original Level	DO (mg/L)	8.66	8.00	8.71	8.61
Revised level	**DO (mg/L)**	**7.47**	**6.90**	**7.51**	**7.43**

With reference to the new set of Action/Limit level in Table 2.4, the higher DO level (Ebb tide) were used to compare with the WQM results from August 2011 to January 2012, it is observed that there were only five times of WQM results have not exceeded the Action/Limit level and all other 72 times of WQM results have exceeded the Limit Level. The result is highlighted in Appendix H for reference. Since W3 functions as the control station of this project, its water quality should not be affected by the construction works of this project. From the comparison results with the original and revised Action/Limit level, it was observed that both sets of Action/Limit level cannot reflect the actual river condition.

3. Conclusion

After the consideration of seasonal change which may affect the DO of W3 in section 2.3, the DO of W3 will also exceed the Limit level in almost all the measurement day in both dry and wet seasons. After the consideration of seasonal change and applied the DO variation between wet and dry season to amend the Action/Limit level, the DO of W3 will also exceed the Limit level in both dry and wet seasons. Both the original and revised Action/Limit level could not reflect the actual condition of Wai Ha River. The Action/Limit level criteria should be revised so as to reflect the actual condition of Wai Ha River and to monitor the water quality.

With reference to other EM&A projects of river work in Hong Kong (refer to Appendix I), the limit level for DO is 4 mg/L and without the comparison of the percentile of baseline data. Suggest that the Action Level criteria remain unchanged which is DO exceedance occur when impact monitoring data is lower than 5

percentile of baseline data; and the Limit Level criteria should be revised to DO exceedance occur when impact monitoring data is lower than 4 mg/L.

Parameter	Original Limit Level	**Revised Limit Level**
DO in mg/L	4 mg/L or 1%-ile of baseline data	**4 mg/L**

Appendix A

EP-303/2008
Water Quality Baseline Monitoring of Reference Point C1 - Flood

Position	Tide	Weather	Date	Time	Location	pH value	Salinity (ppt)	Temperature (^{o}C)	Turbidity (NTU)	DO (mg/L)
Mid	Flood	Cloudy	2/3/2012	8:45	C1	8.5	28.1	18	0.1	9.21
				8:57	W2	7.16	4	18.1	11.7	7.16
				9:23	W1	7.12	0.1	19.3	6	7.47
Mid	Flood	Cloudy	5/3/2012	15:35	C1	8.59	28.3	20.8	0.1	9.5
				15:18	W2	7.14	6.6	21	7.2	6.97
				15:00	W1	7.1	0.4	21.4	3.4	6.91
Mid	Flood	Cloudy	7/3/2012	16:45	C1	8.51	29	20.5	0.1	9.32
				16:30	W2	7.78	16.4	20.8	14.4	7.51
				16:00	W1	7.3	3.8	20.4	27.3	7.39
Mid	Flood	Rainy	12/3/2012	9:40	C1	8.55	28.2	16.7	0.1	9.53
				9:55	W2	8.18	26.3	16.9	1.2	7.86
				10:25	W1	7.94	21.5	16.9	5.3	8.27

Appendix B

EP-303/2008
Water Quality Baseline Monitoring of Control Point W3 - Flood

Location	Position	Tide	Date	Time	Weather	DO (mg/L)		Average	DO (%)		Average
						Data 1	Data 2		Data 1	Data 2	
W3	Mid	Flood	7/1/2011	9:20	Cloudy	9.55	9.46	9.51	88	89	89
W3	Mid	Flood	10/1/2011	12:00	Cloudy	10.12	10.13	10.13	113	110	112
W3	Mid	Flood	12/1/2011	12:50	Cloudy	7.83	7.86	7.85	95	96	96
W3	Mid	Flood	14/1/2011	13:00	Cloudy	9.67	9.52	9.60	98	96	97
W3	Mid	Flood	17/1/2011	15:40	Cloudy	9.92	9.81	9.87	105	104	105
W3	Mid	Flood	19/1/2011	17:45	Sunny	9.25	9.41	9.33	98	101	100
W3	Mid	Flood	21/1/2011	7:40	Sunny	10.86	10.52	10.69	103	104	104
W3	Mid	Flood	24/1/2011	9:15	Cloudy	9.56	9.71	9.64	101	106	104
W3	Mid	Flood	26/1/2011	11:00	Sunny	11.10	10.69	10.90	111	108	110
W3	Mid	Flood	28/1/2011	13:05	Sunny	10.21	9.89	10.05	103	99	101
W3	Mid	Flood	31/1/2011	16:10	Sunny	10.54	10.72	10.63	116	112	114
W3	Mid	Flood	2/2/2011	7:00	Cloudy	10.78	10.66	10.72	109	103	106
5 percentile	DO Action					8.07		8.66			
1 percentile	DO Limit					7.84		8.00			

Appendix B

EP-303/2008
Water Quality Baseline Monitoring of Control Point W3 - Ebb

Location	Position	Tide	Date	Time	Weather	DO (mg/L)		Average	DO (%)		Average
						Data 1	Data 2		Data 1	Data 2	
W3	Mid	Ebb	7/1/2011	14:10	Cloudy	8.91	9.00	8.96	97	99	98
W3	Mid	Ebb	10/1/2011	17:10	Cloudy	9.00	8.85	8.93	94	91	93
W3	Mid	Ebb	12/1/2011	18:40	Cloudy	9.84	9.61	9.73	96	95	96
W3	Mid	Ebb	14/1/2011	7:50	Cloudy	9.98	9.77	9.88	101	95	98
W3	Mid	Ebb	17/1/2011	10:30	Cloudy	10.92	10.63	10.78	104	104	104
W3	Mid	Ebb	19/1/2011	11:25	Sunny	8.77	8.41	8.59	96	97	97
W3	Mid	Ebb	21/1/2011	13:10	Sunny	10.08	9.97	10.03	106	101	104
W3	Mid	Ebb	24/1/2011	15:30	Cloudy	8.93	8.67	8.80	96	94	95
W3	Mid	Ebb	26/1/2011	17:35	Sunny	10.71	10.24	10.48	109	103	106
W3	Mid	Ebb	28/1/2011	7:50	Sunny	9.58	9.55	9.57	97	84	91
W3	Mid	Ebb	31/1/2011	10:45	Sunny	11.33	10.76	11.05	113	106	110
W3	Mid	Ebb	2/2/2011	12:15	Cloudy	9.96	9.59	9.78	102	96	99
5 percentile	DO Action					8.69		8.71			
1 percentile	DO Limit					8.47		8.61			

Appendix C – W3 Monitoring data of dissolved oxygen from August 2011 to January 2012

Monitoring Date	DO mg/L	Monitoring Date	DO mg/L	Monitoring Date	DO mg/L
1-Aug-2011	6.93	30-Sep-2011	5.52	1-Dec-2011	5.68
3-Aug-2011	7.31	4-Oct-2011	5.09	3-Dec-2011	5.09
6-Aug-2011	6.89	6-Oct-2011	5.12	6-Dec-2011	6.17
8-Aug-2011	7.26	8-Oct-2011	5.89	8-Dec-2011	5.59
11-Aug-2011	6.01	11-Oct-2011	6.09	10-Dec-2011	6.58
13-Aug-2011	6.76	13-Oct-2011	6.53	13-Dec-2011	6.44
15-Aug-2011	7.03	15-Oct-2011	5.19	15-Dec-2011	7.15
17-Aug-2011	6.40	18-Oct-2011	5.21	17-Dec-2011	6.60
19-Aug-2011	6.74	20-Oct-2011	6.04	20-Dec-2011	6.68
23-Aug-2011	6.21	22-Oct-2011	6.86	22-Dec-2011	7.14
25-Aug-2011	5.07	25-Oct-2011	6.58	24-Dec-2011	7.91
27-Aug-2011	4.44	27-Oct-2011	6.39	29-Dec-2011	6.90
30-Aug-2011	6.71	29-Oct-2011	5.92	31-Dec-2011	6.63
1-Sep-2011	7.18	1-Nov-2011	5.66	3-Jan-2012	6.22
3-Sep-2011	7.32	3-Nov-2011	6.64	5-Jan-2012	6.90
6-Sep-2011	5.86	5-Nov-2011	6.58	7-Jan-2012	5.10
8-Sep-2011	5.66	8-Nov-2011	5.47	10-Jan-2012	7.10
10-Sep-2011	6.88	10-Nov-2011	6.72	12-Jan-2012	7.25
12-Sep-2011	6.44	12-Nov-2011	6.53	14-Jan-2012	6.90
15-Sep-2011	6.09	15-Nov-2011	6.51	17-Jan-2012	7.60
17-Sep-2011	5.73	17-Nov-2011	4.74	19-Jan-2012	6.50
20-Sep-2011	6.26	19-Nov-2011	4.62	21-Jan-2012	8.41
22-Sep-2011	4.49	22-Nov-2011	5.09	26-Jan-2012	8.89
24-Sep-2011	6.43	24-Nov-2011	5.70	28-Jan-2012	7.62
26-Sep-2011	5.36	26-Nov-2011	5.69	31-Jan-2012	7.18
28-Sep-2011	5.91	29-Nov-2011	5.38		

Appendix D - Exceedance records from August 2011 to January 2012 for Existing Criteria

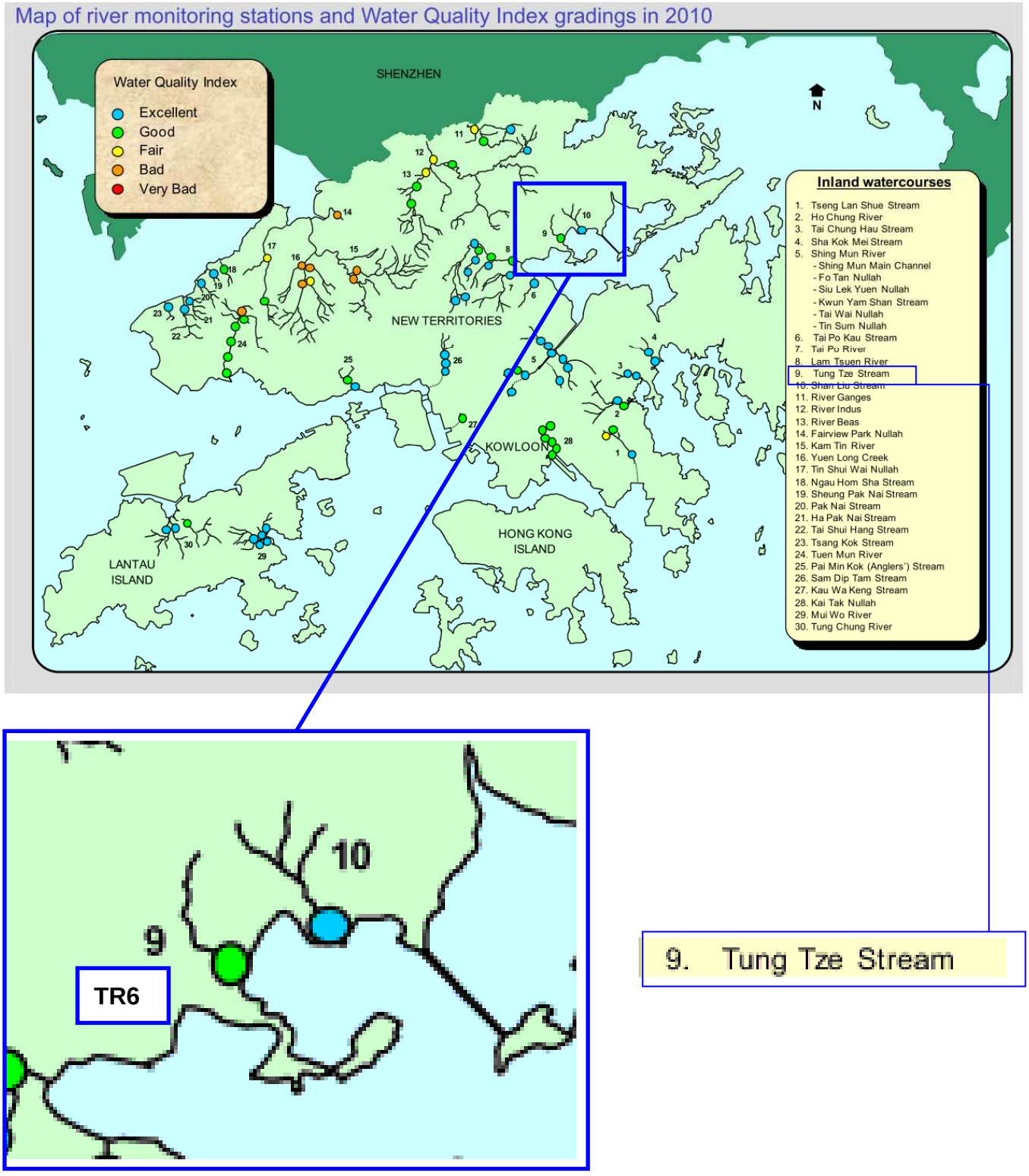
Monitoring Date	DO mg/L	Monitoring Date	DO mg/L	Monitoring Date	DO mg/L
1-Aug-2011	6.93	30-Sep-2011	5.52	1-Dec-2011	5.68
3-Aug-2011	7.31	4-Oct-2011	5.09	3-Dec-2011	5.09
6-Aug-2011	6.89	6-Oct-2011	5.12	6-Dec-2011	6.17
8-Aug-2011	7.26	8-Oct-2011	5.89	8-Dec-2011	5.59
11-Aug-2011	6.01	11-Oct-2011	6.09	10-Dec-2011	6.58
13-Aug-2011	6.76	13-Oct-2011	6.53	13-Dec-2011	6.44
15-Aug-2011	7.03	15-Oct-2011	5.19	15-Dec-2011	7.15
17-Aug-2011	6.40	18-Oct-2011	5.21	17-Dec-2011	6.60
19-Aug-2011	6.74	20-Oct-2011	6.04	20-Dec-2011	6.68
23-Aug-2011	6.21	22-Oct-2011	6.86	22-Dec-2011	7.14
25-Aug-2011	5.07	25-Oct-2011	6.58	24-Dec-2011	7.91
27-Aug-2011	4.44	27-Oct-2011	6.39	29-Dec-2011	6.90
30-Aug-2011	6.71	29-Oct-2011	5.92	31-Dec-2011	6.63
1-Sep-2011	7.18	1-Nov-2011	5.66	3-Jan-2012	6.22
3-Sep-2011	7.32	3-Nov-2011	6.64	5-Jan-2012	6.90
6-Sep-2011	5.86	5-Nov-2011	6.58	7-Jan-2012	5.10
8-Sep-2011	5.66	8-Nov-2011	5.47	10-Jan-2012	7.10
10-Sep-2011	6.88	10-Nov-2011	6.72	12-Jan-2012	7.25
12-Sep-2011	6.44	12-Nov-2011	6.53	14-Jan-2012	6.90
15-Sep-2011	6.09	15-Nov-2011	6.51	17-Jan-2012	7.60
17-Sep-2011	5.73	17-Nov-2011	4.74	19-Jan-2012	6.50
20-Sep-2011	6.26	19-Nov-2011	4.62	21-Jan-2012	8.41
22-Sep-2011	4.49	22-Nov-2011	5.09	26-Jan-2012	8.89
24-Sep-2011	6.43	24-Nov-2011	5.70	28-Jan-2012	7.62
26-Sep-2011	5.36	26-Nov-2011	5.69	31-Jan-2012	7.18
28-Sep-2011	5.91	29-Nov-2011	5.38		

Remarks:

Red highlight: The value is exceeded Limit Level (**<8.61**)

Yellow highlight: The value is exceeded Action Level (**<8.71**)

Appendix E – Location of TR6 at Tung Tze Stream



9. Tung Tze Stream

Appendix F

EP-303/2008
Dissolved Oxygen Level at Tung Tze Stream
Dry Season

				DO (mg/l)
Tolo Harbour And Channel	Tung Tze Stream	TR6	3/1/2001	8.1
Tolo Harbour And Channel	Tung Tze Stream	TR6	12/2/2001	10.2
Tolo Harbour And Channel	Tung Tze Stream	TR6	16/3/2001	5
Tolo Harbour And Channel	Tung Tze Stream	TR6	19/4/2001	6.6
Tolo Harbour And Channel	Tung Tze Stream	TR6	12/10/2001	6.1
Tolo Harbour And Channel	Tung Tze Stream	TR6	16/11/2001	7.2
Tolo Harbour And Channel	Tung Tze Stream	TR6	17/12/2001	6.2
Tolo Harbour And Channel	Tung Tze Stream	TR6	18/1/2002	6.2
Tolo Harbour And Channel	Tung Tze Stream	TR6	20/2/2002	7.3
Tolo Harbour And Channel	Tung Tze Stream	TR6	18/3/2002	6.6
Tolo Harbour And Channel	Tung Tze Stream	TR6	18/4/2002	6.8
Tolo Harbour And Channel	Tung Tze Stream	TR6	3/10/2002	4.9
Tolo Harbour And Channel	Tung Tze Stream	TR6	4/11/2002	6.9
Tolo Harbour And Channel	Tung Tze Stream	TR6	5/12/2002	5.4
Tolo Harbour And Channel	Tung Tze Stream	TR6	3/1/2003	7.3
Tolo Harbour And Channel	Tung Tze Stream	TR6	7/2/2003	7.4
Tolo Harbour And Channel	Tung Tze Stream	TR6	6/3/2003	6.4
Tolo Harbour And Channel	Tung Tze Stream	TR6	10/4/2003	7.1
Tolo Harbour And Channel	Tung Tze Stream	TR6	8/10/2003	4.8
Tolo Harbour And Channel	Tung Tze Stream	TR6	6/11/2003	5.9
Tolo Harbour And Channel	Tung Tze Stream	TR6	4/12/2003	7.5
Tolo Harbour And Channel	Tung Tze Stream	TR6	9/1/2004	6.1
Tolo Harbour And Channel	Tung Tze Stream	TR6	4/2/2004	8.3
Tolo Harbour And Channel	Tung Tze Stream	TR6	3/3/2004	6
Tolo Harbour And Channel	Tung Tze Stream	TR6	2/4/2004	7.2
Tolo Harbour And Channel	Tung Tze Stream	TR6	8/10/2004	4.9
Tolo Harbour And Channel	Tung Tze Stream	TR6	4/11/2004	5.9
Tolo Harbour And Channel	Tung Tze Stream	TR6	2/12/2004	5.1
Tolo Harbour And Channel	Tung Tze Stream	TR6	7/1/2005	7.8
Tolo Harbour And Channel	Tung Tze Stream	TR6	1/2/2005	5.2
Tolo Harbour And Channel	Tung Tze Stream	TR6	4/3/2005	8.2
Tolo Harbour And Channel	Tung Tze Stream	TR6	8/4/2005	5.1
Tolo Harbour And Channel	Tung Tze Stream	TR6	7/10/2005	5.4
Tolo Harbour And Channel	Tung Tze Stream	TR6	3/11/2005	5.7
Tolo Harbour And Channel	Tung Tze Stream	TR6	5/12/2005	5.1
Tolo Harbour And Channel	Tung Tze Stream	TR6	5/1/2006	5.3
Tolo Harbour And Channel	Tung Tze Stream	TR6	3/2/2006	6
Tolo Harbour And Channel	Tung Tze Stream	TR6	8/3/2006	5.5
Tolo Harbour And Channel	Tung Tze Stream	TR6	3/4/2006	8.4
Tolo Harbour And Channel	Tung Tze Stream	TR6	5/10/2006	6.6
Tolo Harbour And Channel	Tung Tze Stream	TR6	3/11/2006	5.5
Tolo Harbour And Channel	Tung Tze Stream	TR6	5/12/2006	7.4

Appendix F

EP-303/2008
Dissolved Oxygen Level at Tung Tze Stream
Dry Season

				DO (mg/l)
Tolo Harbour And Channel	Tung Tze Stream	TR6	5/1/2007	5.9
Tolo Harbour And Channel	Tung Tze Stream	TR6	2/2/2007	7.3
Tolo Harbour And Channel	Tung Tze Stream	TR6	2/3/2007	5.2
Tolo Harbour And Channel	Tung Tze Stream	TR6	13/4/2007	5.3
Tolo Harbour And Channel	Tung Tze Stream	TR7	4/10/2007	5.5
Tolo Harbour And Channel	Tung Tze Stream	TR6	2/11/2007	5
Tolo Harbour And Channel	Tung Tze Stream	TR6	4/12/2007	7.3
Tolo Harbour And Channel	Tung Tze Stream	TR6	7/1/2008	6.7
Tolo Harbour And Channel	Tung Tze Stream	TR6	13/2/2008	6.9
Tolo Harbour And Channel	Tung Tze Stream	TR6	6/3/2008	6.1
Tolo Harbour And Channel	Tung Tze Stream	TR6	10/4/2008	6.6
Tolo Harbour And Channel	Tung Tze Stream	TR6	20/10/2008	5.6
Tolo Harbour And Channel	Tung Tze Stream	TR6	13/11/2008	6.3
Tolo Harbour And Channel	Tung Tze Stream	TR6	2/12/2008	7
Tolo Harbour And Channel	Tung Tze Stream	TR6	7/1/2009	7.3
Tolo Harbour And Channel	Tung Tze Stream	TR6	6/2/2009	6.9
Tolo Harbour And Channel	Tung Tze Stream	TR6	5/3/2009	6.7
Tolo Harbour And Channel	Tung Tze Stream	TR6	20/4/2009	5.2
Tolo Harbour And Channel	Tung Tze Stream	TR6	16/10/2009	4.7
Tolo Harbour And Channel	Tung Tze Stream	TR6	16/11/2009	6.9
Tolo Harbour And Channel	Tung Tze Stream	TR6	16/12/2009	7
Tolo Harbour And Channel	Tung Tze Stream	TR6	6/1/2010	6.6
Tolo Harbour And Channel	Tung Tze Stream	TR6	18/2/2010	7.4
Tolo Harbour And Channel	Tung Tze Stream	TR6	3/3/2010	5.4
Tolo Harbour And Channel	Tung Tze Stream	TR6	8/4/2010	6.5
Tolo Harbour And Channel	Tung Tze Stream	TR6	20/10/2010	6.4
Tolo Harbour And Channel	Tung Tze Stream	TR6	17/11/2010	6.6
Tolo Harbour And Channel	Tung Tze Stream	TR6	15/12/2010	5.6

Appendix F

EP-303/2008
Dissolved Oxygen Level at Tung Tze Stream
Wet Season

				DO (mg/l)
Tolo Harbour And Channel	Tung Tze Stream	TR6	24/5/2001	6.1
Tolo Harbour And Channel	Tung Tze Stream	TR6	15/6/2001	5.7
Tolo Harbour And Channel	Tung Tze Stream	TR6	11/7/2001	7.9
Tolo Harbour And Channel	Tung Tze Stream	TR6	3/8/2001	6.6
Tolo Harbour And Channel	Tung Tze Stream	TR6	19/9/2001	5.2
Tolo Harbour And Channel	Tung Tze Stream	TR6	22/5/2002	4.1
Tolo Harbour And Channel	Tung Tze Stream	TR6	7/6/2002	5
Tolo Harbour And Channel	Tung Tze Stream	TR6	4/7/2002	5.4
Tolo Harbour And Channel	Tung Tze Stream	TR6	2/8/2002	5.7
Tolo Harbour And Channel	Tung Tze Stream	TR6	4/9/2002	5.8
Tolo Harbour And Channel	Tung Tze Stream	TR6	14/5/2003	5.7
Tolo Harbour And Channel	Tung Tze Stream	TR6	9/6/2003	4.9
Tolo Harbour And Channel	Tung Tze Stream	TR6	11/7/2003	6.2
Tolo Harbour And Channel	Tung Tze Stream	TR6	8/8/2003	5.8
Tolo Harbour And Channel	Tung Tze Stream	TR6	5/9/2003	5.6
Tolo Harbour And Channel	Tung Tze Stream	TR6	7/5/2004	6.5
Tolo Harbour And Channel	Tung Tze Stream	TR6	4/6/2004	5.8
Tolo Harbour And Channel	Tung Tze Stream	TR6	7/7/2004	5.2
Tolo Harbour And Channel	Tung Tze Stream	TR6	9/8/2004	6.5
Tolo Harbour And Channel	Tung Tze Stream	TR6	2/9/2004	6.7
Tolo Harbour And Channel	Tung Tze Stream	TR6	6/5/2005	6
Tolo Harbour And Channel	Tung Tze Stream	TR6	3/6/2005	5.8
Tolo Harbour And Channel	Tung Tze Stream	TR6	8/7/2005	6.4
Tolo Harbour And Channel	Tung Tze Stream	TR6	3/8/2005	5.5
Tolo Harbour And Channel	Tung Tze Stream	TR6	2/9/2005	6.5
Tolo Harbour And Channel	Tung Tze Stream	TR6	11/5/2006	5.2
Tolo Harbour And Channel	Tung Tze Stream	TR6	16/6/2006	7
Tolo Harbour And Channel	Tung Tze Stream	TR6	5/7/2006	5.6
Tolo Harbour And Channel	Tung Tze Stream	TR6	2/8/2006	6.7
Tolo Harbour And Channel	Tung Tze Stream	TR6	6/9/2006	5

Appendix F

EP-303/2008
Dissolved Oxygen Level at Tung Tze Stream
Wet Season

				DO (mg/l)
Tolo Harbour And Channel	Tung Tze Stream	TR6	3/5/2007	6.3
Tolo Harbour And Channel	Tung Tze Stream	TR6	1/6/2007	5.1
Tolo Harbour And Channel	Tung Tze Stream	TR6	5/7/2007	7.3
Tolo Harbour And Channel	Tung Tze Stream	TR6	2/8/2007	6.9
Tolo Harbour And Channel	Tung Tze Stream	TR6	10/9/2007	6.1
Tolo Harbour And Channel	Tung Tze Stream	TR6	16/5/2008	5.5
Tolo Harbour And Channel	Tung Tze Stream	TR6	18/6/2008	5.4
Tolo Harbour And Channel	Tung Tze Stream	TR6	18/7/2008	5.5
Tolo Harbour And Channel	Tung Tze Stream	TR6	25/8/2008	6.1
Tolo Harbour And Channel	Tung Tze Stream	TR6	18/9/2008	4.1
Tolo Harbour And Channel	Tung Tze Stream	TR6	7/5/2009	6
Tolo Harbour And Channel	Tung Tze Stream	TR6	3/6/2009	5.4
Tolo Harbour And Channel	Tung Tze Stream	TR6	17/7/2009	5.5
Tolo Harbour And Channel	Tung Tze Stream	TR6	7/8/2009	4.9
Tolo Harbour And Channel	Tung Tze Stream	TR6	17/9/2009	5.3
Tolo Harbour And Channel	Tung Tze Stream	TR6	27/5/2010	5.8
Tolo Harbour And Channel	Tung Tze Stream	TR6	30/6/2010	6.8
Tolo Harbour And Channel	Tung Tze Stream	TR6	19/7/2010	5
Tolo Harbour And Channel	Tung Tze Stream	TR6	13/8/2010	6.7
Tolo Harbour And Channel	Tung Tze Stream	TR6	9/9/2010	6.5

Appendix G

EP-303/2008
Dissolved Oxygen Level at Tung Tze Stream
Median of Dry Season

Date	DO(mg/l)
3/1/2001	8.1
12/2/2001	10.2
16/3/2001	5
19/4/2001	6.6
12/10/2001	6.1
16/11/2001	7.2
17/12/2001	6.2
18/1/2002	6.2
20/2/2002	7.3
18/3/2002	6.6
18/4/2002	6.8
3/10/2002	4.9
4/11/2002	6.9
5/12/2002	5.4
3/1/2003	7.3
7/2/2003	7.4
6/3/2003	6.4
10/4/2003	7.1
8/10/2003	4.8
6/11/2003	5.9
4/12/2003	7.5
9/1/2004	6.1
4/2/2004	8.3
3/3/2004	6
2/4/2004	7.2
8/10/2004	4.9
4/11/2004	5.9
2/12/2004	5.1
7/1/2005	7.8
1/2/2005	5.2
4/3/2005	8.2
8/4/2005	5.1
7/10/2005	5.4
3/11/2005	5.7
5/12/2005	5.1

For 2001 to 2010	
Minimum	4.7
Median	**6.40**
Maximum	10.2
Mean	6.38

Appendix G

EP-303/2008
Dissolved Oxygen Level at Tung Tze Stream
Median of Dry Season

Date	DO(mg/l)
5/1/2006	5.3
3/2/2006	6
8/3/2006	5.5
3/4/2006	8.4
5/10/2006	6.6
3/11/2006	5.5
5/12/2006	7.4
5/1/2007	5.9
2/2/2007	7.3
2/3/2007	5.2
13/4/2007	5.3
4/10/2007	5.5
2/11/2007	5
4/12/2007	7.3
7/1/2008	6.7
13/2/2008	6.9
6/3/2008	6.1
10/4/2008	6.6
20/10/2008	5.6
13/11/2008	6.3
2/12/2008	7
7/1/2009	7.3
6/2/2009	6.9
5/3/2009	6.7
20/4/2009	5.2
16/10/2009	4.7
16/11/2009	6.9
16/12/2009	7
6/1/2010	6.6
18/2/2010	7.4
3/3/2010	5.4
8/4/2010	6.5
20/10/2010	6.4
17/11/2010	6.6
15/12/2010	5.6

For 2007 to 2010	
Minimum	4.7
Median	**6.55**
Maximum	7.4
Mean	6.28

For 2010	
Minimum	5.4
Median	**6.50**
Maximum	7.4
Mean	6.36

Appendix G

EP-303/2008
Dissolved Oxygen Level at Tung Tze Stream
Median of Wet Season

Date	DO(mg/l)
24/5/2001	6.1
15/6/2001	5.7
11/7/2001	7.9
3/8/2001	6.6
19/9/2001	5.2
22/5/2002	4.1
7/6/2002	5
4/7/2002	5.4
2/8/2002	5.7
4/9/2002	5.8
14/5/2003	5.7
9/6/2003	4.9
11/7/2003	6.2
8/8/2003	5.8
5/9/2003	5.6
7/5/2004	6.5
4/6/2004	5.8
7/7/2004	5.2
9/8/2004	6.5
2/9/2004	6.7
6/5/2005	6
3/6/2005	5.8
8/7/2005	6.4
3/8/2005	5.5
2/9/2005	6.5
11/5/2006	5.2
16/6/2006	7
5/7/2006	5.6
2/8/2006	6.7
6/9/2006	5
3/5/2007	6.3
1/6/2007	5.1
5/7/2007	7.3
2/8/2007	6.9
10/9/2007	6.1
16/5/2008	5.5
18/6/2008	5.4
18/7/2008	5.5
25/8/2008	6.1
18/9/2008	4.1

For 2001 to 2010	
Minimum	4.1
Median	**5.80**
Maximum	7.9
Mean	5.85

For 2007 to 2010	
Minimum	4.1
Median	**5.65**
Maximum	7.3
Mean	5.81

Appendix G

EP-303/2008
Dissolved Oxygen Level at Tung Tze Stream
Median of Wet Season

Date	DO(mg/l)
7/5/2009	6
3/6/2009	5.4
17/7/2009	5.5
7/8/2009	4.9
17/9/2009	5.3
27/5/2010	5.8
30/6/2010	6.8
19/7/2010	5
13/8/2010	6.7
9/9/2010	6.5

For 2010	
Minimum	5.0
Median	**6.50**
Maximum	6.8
Mean	6.16

Appendix H – W3 Monitoring data of dissolved oxygen from August 2011 to January 2012 with applying 13.74% variation

Monitoring Date	DO mg/L	Monitoring Date	DO mg/L	Monitoring Date	DO mg/L		
1-Aug-2011	6.93	30-Sep-2011	5.52	1-Dec-2011	5.68		
3-Aug-2011	7.31	4-Oct-2011	5.09	3-Dec-2011	5.09		
6-Aug-2011	6.89	6-Oct-2011	5.12	6-Dec-2011	6.17		
8-Aug-2011	7.26	8-Oct-2011	5.89	8-Dec-2011	5.59		
11-Aug-2011	6.01	11-Oct-2011	6.09	10-Dec-2011	6.58		
13-Aug-2011	6.76	13-Oct-2011	6.53	13-Dec-2011	6.44		
15-Aug-2011	7.03	15-Oct-2011	5.19	15-Dec-2011	7.15		
17-Aug-2011	6.40	18-Oct-2011	5.21	17-Dec-2011	6.60		
19-Aug-2011	6.74	20-Oct-2011	6.04	20-Dec-2011	6.68		
23-Aug-2011	6.21	22-Oct-2011	6.86	22-Dec-2011	7.14		
25-Aug-2011	5.07	25-Oct-2011	6.58	24-Dec-2011	7.91		
27-Aug-2011	4.44	27-Oct-2011	6.39	29-Dec-2011	6.90		
30-Aug-2011	6.71	29-Oct-2011	5.92	31-Dec-2011	6.63		
1-Sep-2011	7.18	1-Nov-2011	5.66	3-Jan-2012	6.22		
3-Sep-2011	7.32	3-Nov-2011	6.64	5-Jan-2012	6.90		
6-Sep-2011	5.86	5-Nov-2011	6.58	7-Jan-2012	5.10		
8-Sep-2011	5.66	8-Nov-2011	5.47	10-Jan-2012	7.10		
10-Sep-2011	6.88	10-Nov-2011	6.72	12-Jan-2012	7.25		
12-Sep-2011	6.44	12-Nov-2011	6.53	14-Jan-2012	6.90		
15-Sep-2011	6.09	15-Nov-2011	6.51	17-Jan-2012	7.60		
17-Sep-2011	5.73	17-Nov-2011	4.74	19-Jan-2012	6.50		
20-Sep-2011	6.26	19-Nov-2011	4.62	21-Jan-2012	8.41		
22-Sep-2011	4.49	22-Nov-2011	5.09	26-Jan-2012	8.89		
24-Sep-2011	6.43	24-Nov-2011	5.70	28-Jan-2012	7.62		
26-Sep-2011	5.36	26-Nov-2011	5.69	31-Jan-2012	7.18		
28-Sep-2011	5.91	29-Nov-2011	5.38				

Remarks:

Red highlight: The value is exceeded Limit Level (**<7.43**)

Yellow highlight: The value is exceeded Action Level (**<7.51**)

Appendix I

EP-303/2008
Enquiry of Revision for Action/Limit Level Criteria of Water Quality Monitoring

Reference Cases

Case	Environmental Permit No.	Propject Title	EM&A Manual	EIA Report	Limit Level for Water Quality - DO
1.	EP-434/2012	Drainage Improvements in Southern Lantau	Section 4.8.1, Table 4.1		4mg/L
2.	EP-429/2012	Development of the Integrated Waste Management Facilities Phase 1	Section 4a.7.12, Table 4a.4		4mg/L
3.	EP-413/2011	Integration of Siu Ho Wan and Silver Mine Bay Water Treatment Works	Section 4.7.8, Table 4.2		4mg/L
4.	EP-334/2009	Sludge Treatment Facilities	Section 5.8.1.1, Table 5.3		4mg/L
5.	EP-224/2005	Proposed Extension of Public Golf Course at Kau Sai Chau, Sai Kung	Section 3.9.1, Table 3.8		4mg/L
6.	EP-217/2005	Drainage Improvements in Sai Kung		Section 4.7.3, Table 4.2	4mg/L
7.	EP-190/2004	Improvements to San Tin Interchange	Section 4.25, Table 4.1		4mg/L

Appendix P Site Diary

AECOM ASIA COMPANY LTD.

ENGINEER'S SITE DIARY

Client Department: Drainage Services Department

Contract Title: Drainage Improvement Works in Shuen Wan, Tai Po - Contract 1

Contractor: KWAN LEE - KULY JOINT VENTURE

Weather:

AM	PM	Rainfall (mm)
Fine	Fine	ST 0, TP 0

(Hong Kong Observatory's record)

Typhoon / Warning Signal: Nil

Contract No.: DC/2009/22 Date: 14/09/2012

Day: Friday

Instructions to Contractor
(Record verbal instructions given)

-

Comments by Engineer's / Contractor's Representative

Utilities
(Record location & nature of works)

Progress
(Mention briefly any matter delaying or obstructing progress)

Visitor
(Record names of visitors and time of visit)

Accidents
(Describe any occurance of accident)

Remarks

Area A - Backhoe EX08 off site

Contractor's Site Staff	No.
Assistant Surveyor	1
Chainman	3
Community Liaison Officer	1
CEG	1
Contract Manager	1
Engineer	1
Environmental Officer	1
Foreman/Assistant Foreman	2
General Foreman	1
Labour Officer	1
Land Surveyor	1
Project Director	1
Project Manager	2
Project Quantity Surveyor	1
Quantity Surveyor Manager	1
Safety Officer	1
Site Agent	1
Surveyor	1
Total	22

Assistance to Engineer	No.
Amah	1
Coordinate Engineer	1
Drafting Assistant	1
Driver	2
Field Assistant	3
Office Assistant	
Watchman	1
Total	9

Labour	Code	No.
Asphalter (Other Construction)	C301	
Asphalter (Roadworks)	C302	
Bamboo Scaffolder	C303	
Bar Bender & Fixer	C304	4
Bricklayer	C305	
Carpenter (Fender)	C306	
Carpenter (Formwork)	C307	3
Concrete Repairer	C308	
Concretor	C309	
Construction Plant Mechanic	C310	
Curtain Wall Installer	C311	
Demolition Worker	C312	
Diver	C313	
Drainlayer	C314	
Electrician (Main Contractor's)	C315	
Floor Layer	C316	
Gas Plumber	C317	
General Welder	C318	1
Glazier	C319	
Ground Investigation Operator/Driller/Borer	C320	
Grouting Worker	C321	
Joiner	C322	
Leveller	C323	
Marble Worker	C324	
Marine Construction Plant Operator	C325	
Mason	C326	
Metal Scaffolder	C327	
Metal Worker	C328	
Painter & Decorator	C329	
Piling Operative	C330	
Pipelayer	C331	
Plant and Equipment Operator (Builder's Lift and Other Machinery)	C332	
Plant & Equipment Operator (Earthmoving Machinery)	C333	4
Plant and Equipment Operator (Hoist and Crane)	C334	2
Plant and Equipment Operator (Piling)	C335	
Plant and Equipment Operator (Tunnelling)	C336	
Plasterer	C337	
Plumber	C338	
Pneumatic Driller	C339	
Prestressing Operative	C340	
Rigger/Metal Formwork Erector	C341	
Shotcretor	C342	
Shotfirer	C343	
Slope Maintenance Worker	C344	
Structural Steel Erector	C345	
Structural Steel Welder	C346	
Tiler	C347	
Trackworker	C348	
Truck Driver / Coxswain / Barge Engineer / Working Ganger*	C349	
Window Frame Installer	C350	
(To be continued)		

Labour	Code	No.
Chainman	C401	
Concreting Labourer	C402	
Diver's Linesman / Dredger Crew / Barge Crew	C403	
Excavator	C404	
Heavy Load Labourer	C405	
Labourer (male / female) / Lorry checker / Watchman/Office attendan	C406	25
Sewerman	C407	
Automation Equipment Mechanic	E301	
Building Services Mechanic	E302	
Cable Jointer (Power)	E303	
Carpenter	E304	
Electrician/Electrical Fitter	E305	
Fire Services Mechanic	E306	
Instrument Mechanic	E307	
Lift Electrician	E308	
Lift Mechanic	E309	
Mechanical Fitter	E310	
Overhead Linesman	E311	
Painter	E312	
Plumber and Pipe Fitter	E313	
Refrigeration/AC/Ventilation Mechanic	E314	
Sheet Metal Worker	E315	
Sign Fabricator	E316	
Sign Installer	E317	
Thermal Insulation Craftsman	E318	
Welder	E319	
Labourer	E401	
Semi-skilled Worker	E402	
Technician	T	
Total Labour		39

Plant		
Type	No. Working	No. Idle
Air Compressor	1	
Backhoe	4	2
Backhoe with Vibrating Hammer	1	
Blower	4	
Crawler Drill	1	
Electric Breaker	2	
Generator	2	
Grout Machine		1
Mini Backhoe		1
Oxy-Acetylene	4	1
Saw Cut Machine	1	
Steel Bending Machine	2	
Vibrating Prob	1	
Water Pump 50mm	8	
Water Pump 75mm	6	
Welding Set	3	1
Total	40	6

* Working ganger is equivalent to ordinary worker in the trade in which he is employed or, if the trade is not listed, truck driver (refer to GS Table 1.1)

Day's record and instructions checked and agreed

Signed:
Engineer's Representative
Name/Post: Stephen Poon / RE
Date: 17.9.12

Signed:
Contractor's Representative
Wong Ching Lung / Site Agent
Date: 17/9/2012

Signed:
IOW
Tso Sai Kuen / Inspector of Works
Date: 17-9-2012

Original - ER's File

Duplicate - Contractor

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 14/09/2012

Day: Friday

Time	Location	Activity	Labour			Plant						Material Delivered	
			Trade	Code	No.	Type	Working		Idling			Description	Quantity
							No.	ID	No.	ID	Code		
	Area A - DN1800 Stormwater Drain	No activity as per KLKJV arrangement											
08:00 - 18:00	Area A - Pump Station	Excavating for heading tunnel of Ø225 sewer pipe between MS1 & FMH1023921at Ch.11.0~11.4 and installing shoring frames Cutting & bending reinforcement bars for discharge chamber at bending yard Fixing tie bolts and walings for wall formwork & rebar fixing for top slab of discharge chamber Excavating for Ø2100 & Ø1200 pipe trench between manhole MH05~ receiving pit and fabricating second layer I-beam walings & struts Saw cutting and breaking up of floor screed at transformer room	Bar Bender & Fixer	C304	4	Backhoe	1	EX50					
			Carpenter (Formwork)	C307	2	Blower	2						
			General Welder	C318	1	Electric Breaker	2						
			Labourer (female)	C406	1	Oxy-Acetylene	1						
			Labourer (male)	C406	6	Saw Cut Machine	1						
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Steel Bending Machine	2						
						Water Pump 50mm	2						
						Water Pump 75mm	1						
						Welding Set	1						
08:00 - 18:00	Area A - Pump Station - Box Culvert (Receiving Pit)	Excavating to -1.7 mPD	Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Backhoe	1	EX36					
07:00 - 18:00 18:00 - 20:00	Area A - Ting Kok Road	Manual control of "stop/go" sign for traffic flow regulation (3 F/Lab.) Manual control of temporary traffic light for traffic flow regulation (1F/Lab.)	Labourer (female)	C406	3								
08:00 - 18:00	Area A - Ting Kok Road (CH70-125)	Stripping off formwork from manhole MH03 Extracting sheetpiles from shoring of Ø2100 pipe trench at Ch.92~100 Excavating for Ø375 pipe trench between SMH02 & SMH03	Labourer (female)	C406	2	Backhoe	1	EX42					
			Labourer (male)	C406	3	Backhoe			1	EX54	h		
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Backhoe with Vibrating Hammer	1	EX40					
			Plant and Equipment Operator (Hoist and Crane)	C334	1	Oxy-Acetylene	1						
						Water Pump 50mm	2						
	Area B - Tung Tsz Nursery (CH00-CH40)	No activity as per KLKJV arrangement											
08:00 - 18:00	Area B - Tung Tsz Nursery (CH130-CH280)	Bay 10 - Dismantling upper layer of I-beam walings and struts from shoring Bay 10~13 - Backfilling for box culvert trench	Labourer (male)	C406	3	Backhoe	1	EX11					
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Generator	1						

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: *Engineer's Representative*

Name/Post: Stephen Poon / RE

Date: 17.9.12

Signed: *Contractor's Representative*

Wong Ching Lung / Site Agent

Date: 17/9/2012

Signed: *IOW*

Tso Sai Kuen / Inspector of Works

Date: 17-9-2012

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 14/09/2012

Day: Friday

Time	Location	Activity	Labour			Plant						Material Delivered	
						Type	Working		Idling			Description	Quantity
			Trade	Code	No.		No.	ID	No.	ID	Code		
						Oxy-Acetylene	1						
						Water Pump 50mm	1						
						Water Pump 75mm	2						
						Welding Set	1						
	Area B - Tung Tsz Nursery (CH40-CH130)	No activity as per KLKJV arrangement				Water Pump 50mm	1						
						Water Pump 75mm	1						
08:00 - 18:00	Area B - Tung Tsz Nursery (Jacking Pit)	Drilling 2 nos. grout holes (2-7 & 2-8) and inserting grout tube	Labourer (male)	C406	4	Air Compressor	1	AC05					
			Plant and Equipment Operator (Hoist and Crane)	C334	1	Crawler Drill	1	DR05					
						Grout Machine			1		h		
						Mini Backhoe			1	EX53	h		
						Oxy-Acetylene	1						
						Water Pump 50mm	1						
						Water Pump 75mm	1						
						Welding Set	1						
08:00 - 18:00	Area E - Siu Lek Yuen Rd.Playground	Manhole S6 - Re-bar fixing and concreting for wall stems and top slab	Carpenter (Formwork)	C307	1	Backhoe			1	EX21	h		
			Labourer (male)	C406	3	Blower	2						
						Generator	1						
						Oxy-Acetylene			1		h		
						Vibrating Prob	1						
						Water Pump 50mm	1						
						Water Pump 75mm	1						
						Welding Set			1		h		
	Area G - Ngan Shing St.	No activity as per KLKJV arrangement											
	Area I - Contractor Office	No activity as per KLKJV arrangement											

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: *Engineer's Representative*

Name/Post: Stephen Poon / RE

Date: 17.9.12

Signed: *Contractor's Representative*

Wong Ching Lung / Site Agent

Date: 17/9/2012

Signed: *IOW*

Tso Sai Kuen / Inspector of Works

Date: 17-9-2012

AECOM ASIA COMPANY LTD.

ENGINEER'S SITE DIARY

Client Department: Drainage Services Department

Contract Title: Drainage Improvement Works in Shuen Wan, Tai Po - Contract 1

Contractor: KWAN LEE - KULY JOINT VENTURE

Weather:

AM	PM	Rainfall (mm)
Fine	Shower	ST 5, TP 0

(Hong Kong Observatory's record)

Typhoon / Warning Signal:

Very Hot Weather Warning - 00:00~15:00
Thunderstorm Warning - 12:30~15:30

Contract No.: DC/2009/22 Date: 13/09/2012

Day: Thursday

Instructions to Contractor
(Record verbal instructions given)

Comments by Engineer's / Contractor's Representative

Utilities
(Record location & nature of works)

Progress
(Mention briefly any matter delaying or obstructing progress)

Visitor
(Record names of visitors and time of visit)

Accidents
(Describe any occurance of accident)

Remarks

Weekly Safety and Environmental Coordination Meeting #130 was held at 11:30 A.M.
Area A - Backhoe on site at noon
Mr. Choi of Kam Shing (Representative of CLP) preform the Schmidt Hammer Test to plinths at Transformer Room at 12:30 hr.

Contractor's Site Staff	No.
Assistant Surveyor	1
Chainman	3
Community Liaison Officer	1
CEG	1
Contract Manager	1
Engineer	1
Environmental Officer	1
Foreman/Assistant Foreman	2
General Foreman	1
Labour Officer	1
Land Surveyor	1
Project Director	1
Project Manager	2
Project Quantity Surveyor	1
Quantity Surveyor Manager	1
Safety Officer	1
Site Agent	1
Surveyor	1
Total	22

Assistance to Engineer	No.
Amah	1
Coordinate Engineer	1
Drafting Assistant	1
Driver	2
Field Assistant	3
Office Assistant	
Watchman	1
Total	9

Labour	Code	No.
Asphalter (Other Construction)	C301	
Asphalter (Roadworks)	C302	
Bamboo Scaffolder	C303	
Bar Bender & Fixer	C304	
Bricklayer	C305	
Carpenter (Fender)	C306	
Carpenter (Formwork)	C307	4
Concrete Repairer	C308	
Concretor	C309	
Construction Plant Mechanic	C310	
Curtain Wall Installer	C311	
Demolition Worker	C312	
Diver	C313	
Drainlayer	C314	
Electrician (Main Contractor's)	C315	
Floor Layer	C316	
Gas Plumber	C317	
General Welder	C318	1
Glazier	C319	
Ground Investigation Operator/Driller/Borer	C320	
Grouting Worker	C321	
Joiner	C322	
Leveller	C323	
Marble Worker	C324	
Marine Construction Plant Operator	C325	
Mason	C326	
Metal Scaffolder	C327	
Metal Worker	C328	
Painter & Decorator	C329	
Piling Operative	C330	
Pipelayer	C331	1
Plant and Equipment Operator (Builder's Lift and Other Machinery)	C332	
Plant & Equipment Operator (Earthmoving Machinery)	C333	5
Plant and Equipment Operator (Hoist and Crane)	C334	3
Plant and Equipment Operator (Piling)	C335	
Plant and Equipment Operator (Tunnelling)	C336	
Plasterer	C337	
Plumber	C338	
Pneumatic Driller	C339	
Prestressing Operative	C340	
Rigger/Metal Formwork Erector	C341	
Shotcretor	C342	
Shotfirer	C343	
Slope Maintenance Worker	C344	
Structural Steel Erector	C345	
Structural Steel Welder	C346	
Tiler	C347	
Trackworker	C348	
Truck Driver / Coxswain / Barge Engineer / Working Ganger*	C349	2
Window Frame Installer	C350	
(To be continued)		

Labour	Code	No.
Chainman	C401	
Concreting Labourer	C402	
Diver's Linesman / Dredger Crew / Barge Crew	C403	
Excavator	C404	
Heavy Load Labourer	C405	
Labourer (male / female) / Lorry checker / Watchman/Office attendan	C406	24
Sewerman	C407	
Automation Equipment Mechanic	E301	
Building Services Mechanic	E302	
Cable Jointer (Power)	E303	
Carpenter	E304	
Electrician/Electrical Fitter	E305	1
Fire Services Mechanic	E306	
Instrument Mechanic	E307	
Lift Electrician	E308	
Lift Mechanic	E309	
Mechanical Fitter	E310	
Overhead Linesman	E311	
Painter	E312	
Plumber and Pipe Fitter	E313	
Refrigeration/AC/Ventilation Mechanic	E314	
Sheet Metal Worker	E315	
Sign Fabricator	E316	
Sign Installer	E317	
Thermal Insulation Craftsman	E318	
Welder	E319	
Labourer	E401	
Semi-skilled Worker	E402	
Technician	T	
Total Labour		41

Plant		
Type	No. Working	No. Idle
Air Compressor	1	
Backhoe	5	2
Backhoe with Vibrating Hammer	1	
Blower	4	
Crawler Drill	1	
Dump Truck	2	
Generator	2	
Grab Lorry	1	
Grout Machine		1
Mini Backhoe		1
Oxy-Acetylene	4	1
Water Pump 50mm	8	
Water Pump 75mm	6	
Welding Set	3	1
Total	38	6

* Working ganger is equivalent to ordinary worker in the trade in which he is employed or, if the trade is not listed, truck driver (refer to GS Table 1.1)

Day's record and instructions checked and agreed

Signed:
Engineer's Representative
Name/Post: Stephen Poon / RE
Date: 14.9.12

Signed:
Contractor's Representative
Wong Ching Lung / Site Agent
Date: 14/9/2012

Signed:
IOW
Tso Sai Kuen / Inspector of Works
Date: 14/9/2012

Original - ER's File

Duplicate - Contractor

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 13/09/2012

Day: Thursday

Time	Location	Activity	Labour			Plant						Material Delivered	
						Type	Working		Idling			Description	Quantity
			Trade	Code	No.		No.	ID	No.	ID	Code		
	Area A - DN1800 Stormwater Drain	No activity as per KLKJV arrangement											
08:00 - 18:00	Area A - Pump Station	Excavating for heading tunnel of Ø225 sewer pipe between MS1 & FMH1023921 at Ch.10.7~11.0 and installing shoring frames Formwork shuttering for box out of stoplogs (SL-01~03) & access openigns at top slab of discharge chamber Excavating for Ø2100 & Ø1200 pipe trench between manhole MH05~ receiving Pit and fabricating second layer I-beam waling and struts Installing earthing to steel door at transformer room General housekeeping & cleaning up sediments from wheel washing bay Disposal of construction bebris to WENT (2 Truckloads)	Carpenter (Formwork)	C307	2	Backhoe	1	EX50					
			Electrician/Electrical Fitter	E305	1	Blower	2						
			General Welder	C318	1	Grab Lorry	1						
			Labourer (female)	C406	2	Oxy-Acetylene	1						
			Labourer (male)	C406	6	Water Pump 50mm	2						
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Water Pump 75mm	1						
			Plant and Equipment Operator (Hoist and Crane)	C334	1	Welding Set	1						
08:00 - 18:00	Area A - Pump Station - Box Culvert (Receiving Pit)	Excavating to -1.7 mPD & cart away excavated material to Area B (9 Truckloads)	Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Backhoe	1	EX36					
			Truck Driver	C349	2	Dump Truck	2						
07:00 - 18:00 18:00 - 20:00	Area A - Ting Kok Road	Manual control of 'stop & go' sign for traffic flow regulation (3 F/Lab.) Manual control of temporary traffic light for traffic flow regulation (1F/Lab.)	Labourer (female)	C406	3								
08:00 - 18:00	Area A - Ting Kok Road (CH70-125)	Stripping off formwork from manhole MH03 Extracting sheetpiles from shoring of Ø2100 pipe trench at Ch.100~114 along footpath side Backfilling sand material to Ø2100 pipe trench at Ch. 78~90 and compacting	Labourer (female)	C406	1	Backhoe	1	EX42					
			Labourer (male)	C406	3	Backhoe			1	EX54	h		
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Backhoe with Vibrating Hammer	1	EX40					
			Plant and Equipment Operator (Hoist and Crane)	C334	1	Oxy-Acetylene	1						
						Water Pump 50mm	2						
	Area B - Tung Tsz Nursery (CH00-CH40)	No activity as per KLKJV arrangement											
08:00 - 18:00	Area B - Tung Tsz Nursery (CH130-CH280)	Bay 11 - Dismantling upper layer of I-beam walings and struts from shoring Bay 10 - Backfilling to box culvert trench	Labourer (male)	C406	3	Backhoe	1	EX08					
			Plant & Equipment Operator (Earthmoving Machinery)	C333	2	Backhoe	1	EX11					

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: *Engineer's Representative*

Name/Post: Stephen Poon / RE

Date: 14.9.12

Signed: *Contractor's Representative*

Wong Ching Lung / Site Agent

Date: 14/9/2012

Signed: *IOW*

Tso Sai Kuen / Inspector of Works

Date: 14/9/2012

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 13/09/2012

Day: Thursday

Time	Location	Activity	Labour			Plant						Material Delivered	
			Trade	Code	No.	Type	Working No.	Working ID	Idling No.	Idling ID	Idling Code	Description	Quantity
						Generator	1						
						Oxy-Acetylene	1						
						Water Pump 50mm	1						
						Water Pump 75mm	2						
						Welding Set	1						
08:00 - 18:00	Area B - Tung Tsz Nursery (CH40-CH130)	General housekeeping & cleaning up sediments from wheel washing bay	Labourer (male)	C406	1	Water Pump 50mm	1						
						Water Pump 75mm	1						
08 18:00	Area B - Tung Tsz Nursery (Jacking Pit)	Drilling 3 nos. grout hole (2-1, 2-2 & 2-3) and inserting grout tube	Labourer (male)	C406	3	Air Compressor	1	AC05					
			Plant and Equipment Operator (Hoist and Crane)	C334	1	Crawler Drill	1	DR05					
						Grout Machine			1		h		
						Mini Backhoe			1	EX53	h		
						Oxy-Acetylene	1						
						Water Pump 50mm	1						
						Water Pump 75mm	1						
						Welding Set	1						
08:00 - 18:00	Area E - Siu Lek Yuen Rd.Playground	PL 1602.2 &.3 - Laying 450Ø PC cut length pipes (PL1602.2 -0.42m) & PL1602.3-0.65m) PL 1602.1 - Making good wall face of Ø1650 pipe entry of existing manhole Manhole S6 - Formwork shuttering for top slab	Carpenter (Formwork)	C307	2	Backhoe			1	EX21	h		
			Labourer (male)	C406	2	Blower	2						
			Pipelayer	C331	1	Generator	1						
						Oxy-Acetylene			1		h		
						Water Pump 50mm	1						
						Water Pump 75mm	1						
						Welding Set			1		h		
	Area G - Ngan Shing St.	No activity as per KLKJV arrangement											
	Area H - Contractor Office	No activity as per KLKJV arrangement											

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: *Engineer's Representative*

Name/Post: Stephen Poon / RE

Date: 14.9.12

Signed: *Contractor's Representative*

Wong Ching Lung / Site Agent

Date: 14/9/2012

Signed: *IOW*

Tso Sai Kuen / Inspector of Works

Date: 14/9/2012

AECOM ASIA COMPANY LTD.

ENGINEER'S SITE DIARY

Client Department: Drainage Services Department

Contract Title: Drainage Improvement Works in Shuen Wan, Tai Po - Contract 1

Contractor: KWAN LEE - KULY JOINT VENTURE

Weather:

AM	PM	Rainfall (mm)
Shower	Fine	ST 0, TP 2

(Hong Kong Observatory's record)

Typhoon / Warning Signal:

Very Hot Weather Warning - 00:00~24:00
Thunderstorm Warning - 15:00~16:00

Contract No.: DC/2009/22 Date: 12/09/2012

Day: Wednesday

Instructions to Contractor
(Record verbal instructions given)

Comments by Engineer's / Contractor's Representative

Utilities
(Record location & nature of works)

Progress
(Mention briefly any matter delaying or obstructing progress)

Visitor
(Record names of visitors and time of visit)

Accidents
(Describe any occurance of accident)

Remarks

Contractor's Site Staff	No.
Assistant Surveyor	1
Chainman	3
Community Liaison Officer	1
CEG	1
Contract Manager	1
Engineer	1
Environmental Officer	1
Foreman/Assistant Foreman	2
General Foreman	1
Labour Officer	1
Land Surveyor	1
Project Director	1
Project Manager	2
Project Quantity Surveyor	1
Quantity Surveyor Manager	1
Safety Officer	1
Site Agent	1
Surveyor	1
Total	22

Assistance to Engineer	No.
Amah	1
Coordinate Engineer	1
Drafting Assistant	1
Driver	2
Field Assistant	3
Office Assistant	
Watchman	1
Total	9

Labour	Code	No.
Asphalter (Other Construction)	C301	
Asphalter (Roadworks)	C302	
Bamboo Scaffolder	C303	
Bar Bender & Fixer	C304	
Bricklayer	C305	
Carpenter (Fender)	C306	
Carpenter (Formwork)	C307	4
Concrete Repairer	C308	
Concretor	C309	
Construction Plant Mechanic	C310	
Curtain Wall Installer	C311	
Demolition Worker	C312	
Diver	C313	
Drainlayer	C314	
Electrician (Main Contractor's)	C315	
Floor Layer	C316	
Gas Plumber	C317	
General Welder	C318	1
Glazier	C319	
Ground Investigation Operator/Driller/Borer	C320	
Grouting Worker	C321	
Joiner	C322	
Leveller	C323	
Marble Worker	C324	
Marine Construction Plant Operator	C325	
Mason	C326	
Metal Scaffolder	C327	
Metal Worker	C328	
Painter & Decorator	C329	
Piling Operative	C330	
Pipelayer	C331	
Plant and Equipment Operator (Builder's Lift and Other Machinery)	C332	
Plant & Equipment Operator (Earthmoving Machinery)	C333	5
Plant and Equipment Operator (Hoist and Crane)	C334	3
Plant and Equipment Operator (Piling)	C335	
Plant and Equipment Operator (Tunnelling)	C336	
Plasterer	C337	
Plumber	C338	
Pneumatic Driller	C339	
Prestressing Operative	C340	
Rigger/Metal Formwork Erector	C341	
Shotcretor	C342	
Shotfirer	C343	
Slope Maintenance Worker	C344	
Structural Steel Erector	C345	
Structural Steel Welder	C346	
Tiler	C347	
Trackworker	C348	
Truck Driver / Coxswain / Barge Engineer / Working Ganger*	C349	2
Window Frame Installer	C350	
(To be continued)		

Labour	Code	No.
Chainman	C401	
Concreting Labourer	C402	
Diver's Linesman / Dredger Crew / Barge Crew	C403	
Excavator	C404	
Heavy Load Labourer	C405	
Labourer (male / female) / Lorry checker / Watchman/Office attendan	C406	22
Sewennan	C407	
Automation Equipment Mechanic	E301	
Building Services Mechanic	E302	
Cable Jointer (Power)	E303	
Carpenter	E304	
Electrician/Electrical Fitter	E305	
Fire Services Mechanic	E306	
Instrument Mechanic	E307	
Lift Electrician	E308	
Lift Mechanic	E309	
Mechanical Fitter	E310	
Overhead Linesman	E311	
Painter	E312	
Plumber and Pipe Fitter	E313	
Refrigeration/AC/Ventilation Mechanic	E314	
Sheet Metal Worker	E315	
Sign Fabricator	E316	
Sign Installer	E317	
Thermal Insulation Craftsman	E318	
Welder	E319	
Labourer	E401	
Semi-skilled Worker	E402	
Technician	T	
Total Labour		37

Plant		
Type	No. Working	No. Idle
Air Compressor	1	
Backhoe	5	1
Backhoe with Vibrating Hammer	1	
Blower	4	
Crawler Drill	1	
Dump Truck	2	
Generator	2	
Grab Lorry	1	
Grout Machine		1
Mini Backhoe		1
Oxy-Acetylene	4	1
Water Pump 50mm	8	
Water Pump 75mm	6	
Welding Set	3	
Total	38	4

* Working ganger is equivalent to ordinary worker in the trade in which he is employed or, if the trade is not listed, truck driver (refer to GS Table 1 1)

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed:
Engineer's Representative

Name/Post: Stephen Poon / RE

Date: 13.9.12

Signed:
Contractor's Representative

Wong Ching Lung / Site Agent

Date: 13/9/2012

Signed:
IOW

Tso Sai Kuen / Inspector of Works

Date: 13/9/2012

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 12/09/2012

Day: Wednesday

Time	Location	Activity	Labour			Plant						Material Delivered	
						Type	Working		Idling			Description	Quantity
			Trade	Code	No.		No.	ID	No.	ID	Code		
	Area A - DN1800 Stormwater Drain	No activity as per KLKJV arrangement											
08:00 - 18:00	Area A - Pump Station	Excavating for heading tunnel of Ø225 sewer pipe between MS1 & FMH1023921at Ch.10.5~10.7 and installing shoring frames Shuttering soffit of top slab for discharge chamber Excavating for Ø2100 pipe trench between manhole MH05 & MH06 and fabricating top layer I-beam walings and struts Cart away 3 truckloads of excavted materials to Area B General housekeeping & cleaning up sediments from wheel washing bay	Carpenter (Formwork)	C307	2	Backhoe	1	EX50					
			General Welder	C318	1	Blower	2						
			Labourer (female)	C406	2	Oxy-Acetylene	1						
			Labourer (male)	C406	5	Water Pump 50mm	2						
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Water Pump 75mm	1						
						Welding Set	1						
08:00 - 18:00	Area A - Pump Station - Box Culvert (Receiving Pit)	Excavating for receiving pit to -1.7 mPD and cart away excavated material to Area B (9 Truckloads)	Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Backhoe	1	EX36					
			Truck Driver	C349	2	Dump Truck	2						
07:00 - 18:00 18:00 - 20:00	Area A - Ting Kok Road	Manual control of "stop/go" sign for traffic flow regulation (3 F/Lab.) Manual control of temporary traffic light for traffic flow regulation (1F/Lab.)	Labourer (female)	C406	3								
08:00 - 18:00	Area A - Ting Kok Road (CH70-125)	Stripping off formwork from manhole MH03 Extracting sheetpiles from shoring of Ø2100 pipe trench at Ch.100~125 along carriageway Backfilling for Ø2100 pipe trench at Ch. 78~90	Labourer (male)	C406	4	Backhoe	1	EX42					
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Backhoe with Vibrating Hammer	1	EX40					
			Plant and Equipment Operator (Hoist and Crane)	C334	1	Oxy-Acetylene	1						
						Water Pump 50mm	2						
	Area B - Tung Tsz Nursery (CH00-CH40)	No activity as per KLKJV arrangement											
08:00 - 18:00	Area B - Tung Tsz Nursery (CH130-CH280)	Bay 12 - Dismantling upper layer of I-beam walings and struts from shoring Bay 10~11 - Backfilling to box culvert trench	Labourer (female)	C406	1	Backhoe	1	EX08					
			Labourer (male)	C406	1	Backhoe	1	EX11					
			Plant & Equipment Operator (Earthmoving Machinery)	C333	2	Generator	1						
						Oxy-Acetylene	1						
						Water Pump 50mm	1						

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: ***Engineer's Representative***

Name/Post: Stephen Poon / RE

Date: 13.9.12

Signed: ***Contractor's Representative***

Wong Ching Lung / Site Agent

Date: 13/9/2012

Signed: ***IOW***

Tso Sai Kuen / Inspector of Works

Date: 13/9/2012

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 12/09/2012

Day: Wednesday

Time	Location	Activity	Labour			Plant						Material Delivered	
						Type	Working		Idling			Description	Quantity
			Trade	Code	No.		No.	ID	No.	ID	Code		
						Water Pump 75mm	2						
						Welding Set	1						
08:00 - 18:00	Area B - Tung Tsz Nursery (CH40-CH130)	General housekeeping & cleaning up sediments from wheel washing bay Disposal of construction debris to WENT (1 Truck load)	Labourer (male)	C406	1	Grab Lorry	1						
			Plant and Equipment Operator (Hoist and Crane)	C334	1	Water Pump 50mm	1						
						Water Pump 75mm	1						
08:00 - 18:00	Area B - Tung Tsz Nursery (Jacking Pit)	Drilling 2 nos. grout holes (2-5 & 2-6) and inserting grout tube	Labourer (male)	C406	2	Air Compressor	1	AC05					
			Plant and Equipment Operator (Hoist and Crane)	C334	1	Crawler Drill	1	DR05					
						Grout Machine			1		h		
						Mini Backhoe			1	EX53	h		
						Oxy-Acetylene	1						
						Water Pump 50mm	1						
						Water Pump 75mm	1						
						Welding Set	1						
08:00 - 18:00	Area E - Siu Lek Yuen Rd.Playground	Manhole S6 - Formwork shuttering for wall stems PL 1602.1 - Cement grouting to fill up the cavity between heading tunnel and Ø1650 drain pipe	Carpenter (Formwork)	C307	2	Backhoe			1	EX21	h		
			Labourer (male)	C406	3	Blower	2						
						Generator	1						
						Oxy-Acetylene			1		h		
						Water Pump 50mm	1						
						Water Pump 75mm	1						
	Area G - Ngan Shing St.	No activity as per KLKJV arrangement											
	Area I - Contractor Office	No activity as per kLKJV arrangement											

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: *Engineer's Representative*

Name/Post: Stephen Poon / RE

Date: 13.9.12

Signed: *Contractor's Representative*

Wong Ching Lung / Site Agent

Date: 13/9/2012

Signed: *IOW*

Tso Sai Kuen / Inspector of Works

Date: 13/9/2012

AECOM ASIA COMPANY LTD.

ENGINEER'S SITE DIARY

Client Department: Drainage Services Department

Contract Title: Drainage Improvement Works in Shuen Wan, Tai Po - Contract 1

Contractor: KWAN LEE - KULY JOINT VENTURE

Weather:

AM	PM	Rainfall (mm)
Fine	Fine	ST 0, TP 0

(Hong Kong Observatory's record)

Typhoon / Warning Signal:

Very Hot Weather Warning - 10:45~24:00

Contract No.: DC/2009/22 Date: 11/09/2012

Day: Tuesday

Instructions to Contractor
(Record verbal instructions given)

Comments by Engineer's / Contractor's Representative

Utilities
(Record location & nature of works)

Progress
(Mention briefly any matter delaying or obstructing progress)

Visitor
(Record names of visitors and time of visit)

Accidents
(Describe any occurance of accident)

Remarks

Pre-handover inspection of Transformer Room was held at 10:30 A.M. amongst Mr. Choi of Kam Shing (represebtative of CLP), Mr. Jeff Chan of KLKJV and Mr. Poon of AECOM

Weekly Safety and Environmental Coordaination Meeting #130 was held at 11:30 A.M.

Contractor's Site Staff	No.
Assistant Surveyor	1
Chainman	3
Community Liaison Officer	1
CEG	1
Contract Manager	1
Engineer	1
Environmental Officer	1
Foreman/Assistant Foreman	2
General Foreman	1
Labour Officer	1
Land Surveyor	1
Project Director	1
Project Manager	2
Project Quantity Surveyor	1
Quantity Surveyor Manager	1
Safety Officer	1
Site Agent	1
Surveyor	1
Total	22

Assistance to Engineer	No.
Amah	1
Coordinate Engineer	1
Drafting Assistant	1
Driver	2
Field Assistant	3
Office Assistant	
Watchman	1
Total	9

Labour	Code	No.
Asphalter (Other Construction)	C301	
Asphalter (Roadworks)	C302	
Bamboo Scaffolder	C303	
Bar Bender & Fixer	C304	
Bricklayer	C305	
Carpenter (Fender)	C306	
Carpenter (Formwork)	C307	4
Concrete Repairer	C308	
Concretor	C309	
Construction Plant Mechanic	C310	
Curtain Wall Installer	C311	
Demolition Worker	C312	
Diver	C313	
Drainlayer	C314	
Electrician (Main Contractor's)	C315	
Floor Layer	C316	
Gas Plumber	C317	
General Welder	C318	1
Glazier	C319	
Ground Investigation Operator/Driller/Borer	C320	
Grouting Worker	C321	
Joiner	C322	
Leveller	C323	
Marble Worker	C324	
Marine Construction Plant Operator	C325	
Mason	C326	
Metal Scaffolder	C327	
Metal Worker	C328	
Painter & Decorator	C329	
Piling Operative	C330	
Pipelayer	C331	
Plant and Equipment Operator (Builder's Lift and Other Machinery)	C332	
Plant & Equipment Operator (Earthmoving Machinery)	C333	4
Plant and Equipment Operator (Hoist and Crane)	C334	2
Plant and Equipment Operator (Piling)	C335	
Plant and Equipment Operator (Tunnelling)	C336	
Plasterer	C337	
Plumber	C338	
Pneumatic Driller	C339	
Prestressing Operative	C340	
Rigger/Metal Formwork Erector	C341	
Shotcretor	C342	
Shotfirer	C343	
Slope Maintenance Worker	C344	
Structural Steel Erector	C345	
Structural Steel Welder	C346	
Tiler	C347	
Trackworker	C348	
Truck Driver / Coxswain / Barge Engineer / Working Ganger*	C349	2
Window Frame Installer	C350	
(To be continued)		

Labour	Code	No.
Chainman	C401	
Concreting Labourer	C402	
Diver's Linesman / Dredger Crew / Barge Crew	C403	
Excavator	C404	
Heavy Load Labourer	C405	
Labourer (male / female) / Lorry checker / Watchman/Office attendan	C406	26
Sewerman	C407	
Automation Equipment Mechanic	E301	
Building Services Mechanic	E302	
Cable Jointer (Power)	E303	
Carpenter	E304	
Electrician/Electrical Fitter	E305	1
Fire Services Mechanic	E306	
Instrument Mechanic	E307	
Lift Electrician	E308	
Lift Mechanic	E309	
Mechanical Fitter	E310	
Overhead Linesman	E311	
Painter	E312	
Plumber and Pipe Fitter	E313	
Refrigeration/AC/Ventilation Mechanic	E314	
Sheet Metal Worker	E315	
Sign Fabricator	E316	
Sign Installer	E317	
Thermal Insulation Craftsman	E318	
Welder	E319	
Labourer	E401	
Semi-skilled Worker	E402	
Technician	T	
Total Labour		40

Plant		
Type	No. Working	No. Idle
Air Compressor	1	
Backhoe	4	2
Backhoe with Vibrating Hammer	1	
Blower	4	
Crawler Drill	1	
Dump Truck	2	
Generator	2	
Grout Machine	1	
Mini Backhoe		1
Oxy-Acetylene	4	1
Water Pump 50mm	8	
Water Pump 75mm	6	
Welding Set	3	1
Total	37	5

* Working ganger is equivalent to ordinary worker in the trade in which he is employed or. if the trade is not listed. truck driver (refer to GS Table 1.1)

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed:
Engineer's Representative

Name/Post: Stephen Poon / RE

Date: 12.9.12

Signed:
Contractor's Representative

Wong Ching Lung / Site Agent

Date: 12/9/2012

Signed:
IOW

Tso Sai Kuen / Inspector of Works

Date: 12-9-2012

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 11/09/2012

Day: Tuesday

Time	Location	Activity	Labour			Plant						Material Delivered	
						Type	Working		Idling			Description	Quantity
			Trade	Code	No.		No.	ID	No.	ID	Code		
	Area A - DN1800 Stormwater Drain	No activity as per KLKJV arrangement											
08:00 - 18:00	Area A - Pump Station	Excavating for heading tunnel of Ø225 sewer pipe between MS1 & FMH1023921 at Ch.10.0~10.5 and installing shoring frames Erecting falsework, shuttering for soffit of top slab for discharge chamber & installing Ø150 uPVC downpipe Formwork shuttering for U-channel at manmade slope Excavating for Ø2100 pipe trench between manhole MH05 & MH06 and fabricating top layer of I-beam walings and struts Fixing cable trays on walls & installing earthing to connect metal fixtures at transformer room General housekeeping & cleaning up sediments from wheel washing bay	Carpenter (Formwork)	C307	2	Backhoe	1	EX50					
			Electrician/Electrical Fitter	E305	1	Blower	2						
			General Welder	C318	1	Oxy-Acetylene	1						
			Labourer (female)	C406	2	Water Pump 50mm	2						
			Labourer (male)	C406	8	Water Pump 75mm	1						
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Welding Set	1						
08:00 - 18:00	Area A - Pump Station - Box Culvert (Receiving Pit)	Excavating for receiving pit to -1.7 mPD and cart away excavated material to Area B (20 Truckloads)	Labourer (male)	C406	1	Backhoe	1	EX36					
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Dump Truck	2						
			Truck Driver	C349	2								
07:00 - 18:00 18:00 - 20:00	Area A - Ting Kok Road	Manual control of "stop/go" sign for traffic flow regulation (3 F/Lab.) Manual control of temporary traffic light for traffic flow regulation (1 F/Lab.)	Labourer (female)	C406	3								
08:00 - 18:00	Area A - Ting Kok Road (CH70-125)	Stripping off formwork for manhole MH03 Extracting sheetpiles from shoring of Ø2100 pipe trench at Ch.110~125 along carriageway	Labourer (male)	C406	3	Backhoe			1	EX42	h		
			Plant and Equipment Operator (Hoist and Crane)	C334	1	Backhoe with Vibrating Hammer	1	EX40					
						Oxy-Acetylene	1						
						Water Pump 50mm	2						
	Area B - Tung Tsz Nursery (CH00-CH40)	No activity as per KLKJV arrangement											
08:00 - 18:00	Area B - Tung Tsz Nursery (CH130-CH280)	Bay 13 - Dismantling upper layer I-beam walings and struts from shoring Bay 11 - Backfilling to box culvert trench	Labourer (female)	C406	1	Backhoe	1	EX08					
			Labourer (male)	C406	1	Backhoe	1	EX11					
			Plant & Equipment Operator (Earthmoving Machinery)	C333	2	Generator	1						
						Oxy-Acetylene	1						

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: *Engineer's Representative*

Name/Post: Stephen Poon / RE

Date: 12.9.12

Signed: *Contractor's Representative*

Wong Ching Lung / Site Agent

Date: 12/9/2012

Signed: *IOW*

Tso Sai Kuen / Inspector of Works

Date: 12-9-2012

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 11/09/2012

Day: Tuesday

Time	Location	Activity	Labour			Plant						Material Delivered	
						Type	Working		Idling			Description	Quantity
			Trade	Code	No.		No.	ID	No.	ID	Code		
						Water Pump 50mm	1						
						Water Pump 75mm	2						
						Welding Set	1						
08:00 - 18:00	Area B - Tung Tsz Nursery (CH40-CH130)	General housekeeping & cleaning up sediments from wheel washing bay	Labourer (male)	C406	1	Water Pump 50mm	1						
						Water Pump 75mm	1						
08:00 - 18:00	Area B - Tung Tsz Nursery (Jacking Pit)	Drilling 1 no. hole (2-4) at layer 2 and inserting grout tube Cement grouting to 1 no. drill hole (2-4) at layer 2	Labourer (male)	C406	3	Air Compressor	1	AC05					
			Plant and Equipment Operator (Hoist and Crane)	C334	1	Crawler Drill	1	DR05					
						Grout Machine	1						
						Mini Backhoe			1	EX53	h		
						Oxy-Acetylene	1						
						Water Pump 50mm	1						
						Water Pump 75mm	1						
						Welding Set	1						
08:00 - 18:00	Area E - Siu Lek Yuen Rd.Playground	Manhole S6 - Rendering for benching and shuttering for wall stem PL 1602.1 - Preparation works for cement grouting the cavity between heading tunnel and drain pipe1650Ø	Carpenter (Formwork)	C307	2	Backhoe			1	EX21	h		
			Labourer (male)	C406	3	Blower	2						
						Generator	1						
						Oxy-Acetylene			1		h		
						Water Pump 50mm	1						
						Water Pump 75mm	1						
						Welding Set			1		h		
	Area G - Ngan Shing St.	No activity as per KLKJV arrangement											
	Area I - Contractor Office	No activity as per KLKJV arrangement											

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: *Engineer's Representative*

Name/Post: Stephen Poon / RE

Date: 12.9.12

Signed: *Contractor's Representative*

Wong Ching Lung / Site Agent

Date: 12/9/2012

Signed: *IOW*

Tso Sai Kuen / Inspector of Works

Date: 12-9-2012

AECOM ASIA COMPANY LTD.

ENGINEER'S SITE DIARY

Client Department: Drainage Services Department

Contract Title: Drainage Improvement Works in Shuen Wan, Tai Po - Contract 1

Contractor: KWAN LEE - KULY JOINT VENTURE

Weather:

AM	PM	Rainfall (mm)
Fine	Fine	ST 0, TP 0

(Hong Kong Observatory's record)

Typhoon / Warning Signal:

Very Hot Weather Warning - 07:45~18:15

Contract No.: DC/2009/22 Date: 10/09/2012

Day: Monday

Instructions to Contractor
(Record verbal instructions given)

Comments by Engineer's / Contractor's Representative

Utilities
(Record location & nature of works)

Progress
(Mention briefly any matter delaying or obstructing progress)

Visitor
(Record names of visitors and time of visit)

Accidents
(Describe any occurance of accident)

Remarks

Contractor's Site Staff	No.
Assistant Surveyor	1
Chainman	3
Community Liaison Officer	1
CEG	1
Contract Manager	1
Engineer	1
Environmental Officer	1
Foreman/Assistant Foreman	2
General Foreman	1
Labour Officer	1
Land Surveyor	1
Project Director	1
Project Manager	2
Project Quantity Surveyor	1
Quantity Surveyor Manager	1
Safety Officer	1
Site Agent	1
Surveyor	1
Total	22

Assistance to Engineer	No.
Amah	1
Coordinate Engineer	1
Drafting Assistant	1
Driver	2
Field Assistant	3
Office Assistant	
Watchman	1
Total	9

Labour	Code	No.
Asphalter (Other Construction)	C301	
Asphalter (Roadworks)	C302	
Bamboo Scaffolder	C303	
Bar Bender & Fixer	C304	
Bricklayer	C305	
Carpenter (Fender)	C306	
Carpenter (Formwork)	C307	4
Concrete Repairer	C308	
Concretor	C309	
Construction Plant Mechanic	C310	
Curtain Wall Installer	C311	
Demolition Worker	C312	
Diver	C313	
Drainlayer	C314	
Electrician (Main Contractor's)	C315	
Floor Layer	C316	
Gas Plumber	C317	
General Welder	C318	1
Glazier	C319	
Ground Investigation Operator/Driller/Borer	C320	
Grouting Worker	C321	
Joiner	C322	
Leveller	C323	
Marble Worker	C324	
Marine Construction Plant Operator	C325	
Mason	C326	
Metal Scaffolder	C327	
Metal Worker	C328	
Painter & Decorator	C329	
Piling Operative	C330	
Pipelayer	C331	
Plant and Equipment Operator (Builder's Lift and Other Machinery)	C332	
Plant & Equipment Operator (Earthmoving Machinery)	C333	4
Plant and Equipment Operator (Hoist and Crane)	C334	2
Plant and Equipment Operator (Piling)	C335	
Plant and Equipment Operator (Tunnelling)	C336	
Plasterer	C337	1
Plumber	C338	
Pneumatic Driller	C339	
Prestressing Operative	C340	
Rigger/Metal Formwork Erector	C341	
Shotcretor	C342	
Shotfirer	C343	
Slope Maintenance Worker	C344	
Structural Steel Erector	C345	
Structural Steel Welder	C346	
Tiler	C347	
Trackworker	C348	
Truck Driver / Coxswain / Barge Engineer / Working Ganger*	C349	2
Window Frame Installer	C350	
(To be continued)		

Labour	Code	No.
Chainman	C401	
Concreting Labourer	C402	
Diver's Linesman / Dredger Crew / Barge Crew	C403	
Excavator	C404	
Heavy Load Labourer	C405	
Labourer (male / female) / Lorry checker / Watchman/Office attendan	C406	27
Sewerman	C407	
Automation Equipment Mechanic	E301	
Building Services Mechanic	E302	
Cable Jointer (Power)	E303	
Carpenter	E304	1
Electrician/Electrical Fitter	E305	1
Fire Services Mechanic	E306	
Instrument Mechanic	E307	
Lift Electrician	E308	
Lift Mechanic	E309	
Mechanical Fitter	E310	
Overhead Linesman	E311	
Painter	E312	
Plumber and Pipe Fitter	E313	
Refrigeration/AC/Ventilation Mechanic	E314	
Sheet Metal Worker	E315	
Sign Fabricator	E316	
Sign Installer	E317	
Thermal Insulation Craftsman	E318	
Welder	E319	
Labourer	E401	
Semi-skilled Worker	E402	
Technician	T	
Total Labour		43

Plant		
Type	No. Working	No. Idle
Air Compressor	1	
Backhoe	4	2
Backhoe with Vibrating Hammer	1	
Blower	4	
Crawler Drill	1	
Dump Truck	2	
Generator	2	
Grout Machine		1
Mini Backhoe		1
Oxy-Acetylene	4	1
Vibrating Prob	2	
Water Pump 50mm	8	
Water Pump 75mm	6	
Welding Set	3	
Total	38	5

* Working ganger is equivalent to ordinary worker in the trade in which he is employed or, if the trade is not listed, truck driver (refer to GS Table 1.1)

Day's record and instructions checked and agreed

Signed:
Engineer's Representative
Name/Post: Stephen Poon / RE
Date: 11.9.12

Signed:
Contractor's Representative
Wong Ching Lung / Site Agent
Date: 11/9/2012

Signed:
IOW
Tso Sai Kuen / Inspector of Works
Date: 11-9-2012

Original - ER's File

Duplicate - Contractor

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 10/09/2012

Day: Monday

Time	Location	Activity	Labour			Plant						Material Delivered	
						Type	Working		Idling			Description	Quantity
			Trade	Code	No.		No.	ID	No.	ID	Code		
	Area A - DN1800 Stormwater Drain	No activity as per KLKJV arrangement											
08:00 - 18:00	Area A - Pump Station	Excavating for heading tunnel of Ø225 sewer pipe between MS1 & FMH1023921 at Ch.9.4~10.0 and installing shoring frames Formwork shuttering for wall W12 at discharge chamber Fabricating upper layer of I-beams walings for shoring of Ø2100 pipe trench between manhole MH05 & MH06 Laying cable trays on walls & installing earthing to connect the metal fixtures at transformer room General cleaning and forming level studs for floor screeds at switchroom General housekeeping & cleaning up sediments from wheel washing bay	Carpenter (Formwork)	C307	2	Backhoe	1	EX50					
			Electrician/Electrical Fitter	E305	1	Blower	2						
			General Welder	C318	1	Oxy-Acetylene	1						
			Labourer (female)	C406	3	Water Pump 50mm	2						
			Labourer (male)	C406	9	Water Pump 75mm	1						
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Welding Set	1						
			Plasterer	C337	1								
08:00 - 18:00	Area A - Pump Station - Box Culvert (Receiving Pit)	Excavating for receiving pit to -1.7 mPD & cart away excavated material to Area B (6 Truckloads)	Labourer (male)	C406	1	Backhoe	1	EX36					
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Dump Truck	2						
			Truck Driver	C349	2								
07:00 - 18:00 18:00 - 20:00	Area A - Ting Kok Road	Manual control of "stop/go" sign for traffic flow regulation (3 F/Lab.) Manual control of temporary traffic light for traffic flow regulation (1 L/Lab.)	Labourer (female)	C406	3								
08:00 - 18:00	Area A - Ting Kok Road (CH70-125)	Formwork shuttering and concreting to access shaft of manhole MH03 Extracting sheetpiles from shoring of Ø2100 pipe trench at Ch.120~125 along footpath	Carpenter	E304	1	Backhoe			1	EX42	h		
			Labourer (male)	C406	2	Backhoe with Vibrating Hammer	1	EX40					
			Plant and Equipment Operator (Hoist and Crane)	C334	1	Oxy-Acetylene	1						
						Vibrating Prob	1						
						Water Pump 50mm	2						
	Area B - Tung Tsz Nursery (CH00-CH40)	No activity as per KLKJV arrangement											
08:00 - 18:00	Area B - Tung Tsz Nursery (CH130-CH280)	Bay 10 - Fabricating struts to stop end sheetpile shoring at junction with bay 9 to facilitate backfill works Bay 11 - Backfilling to box culvert trench	Labourer (female)	C406	1	Backhoe	1	EX08					
			Labourer (male)	C406	1	Backhoe	1	EX11					

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: *Engineer's Representative*

Name/Post: Stephen Poon / RE

Date: 11.9.12

Signed: *Contractor's Representative*

Wong Ching Lung / Site Agent

Date: 11/9/2012

Signed: *IOW*

Tso Sai Kuen / Inspector of Works

Date: 11-9-2012

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 10/09/2012

Day: Monday

Time	Location	Activity	Labour			Plant						Material Delivered	
						Type	Working		Idling			Description	Quantity
			Trade	Code	No.		No.	ID	No.	ID	Code		
			Plant & Equipment Operator (Earthmoving Machinery)	C333	2	Generator	1						
						Oxy-Acetylene	1						
						Water Pump 50mm	1						
						Water Pump 75mm	2						
						Welding Set	1						
08:00 - 18:00	Area B - Tung Tsz Nursery (CH40-CH130)	General housekeeping & cleaning up sediments from wheel washing bay	Labourer (male)	C406	1	Water Pump 50mm	1						
						Water Pump 75mm	1						
08 18:00	Area B - Tung Tsz Nursery (Jacking Pit)	Drilling 2 nos. holes (1-2 & 1-3) at layer 1 and inserting grout tube	Labourer (male)	C406	3	Air Compressor	1	AC05					
			Plant and Equipment Operator (Hoist and Crane)	C334	1	Crawler Drill	1	DR05					
						Grout Machine			1		h		
						Mini Backhoe			1	EX53	h		
						Oxy-Acetylene	1						
						Water Pump 50mm	1						
						Water Pump 75mm	1						
						Welding Set	1						
08:00 - 18:00	Area E - Siu Lek Yuen Rd.Playground	PL 1602.1 - Formwork shuttering and concreting to seal up Ø1650 pipe entry at existing manhole wall Manhole S6 - Concreting to benching	Carpenter (Formwork)	C307	2	Backhoe			1	EX21	h		
			Labourer (male)	C406	3	Blower	2						
						Generator	1						
						Oxy-Acetylene			1		h		
						Vibrating Prob	1						
						Water Pump 50mm	1						
						Water Pump 75mm	1						
	Area G - Ngan Shing St.	No activity as per KLKJV arrangement											
	Area I - Contractor Office	No activity as per KLKJV arrangement											

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: *Engineer's Representative*

Name/Post: Stephen Poon / RE

Date: 11.9.12

Signed: *Contractor's Representative*

Wong Ching Lung / Site Agent

Date: 11/9/2012

Signed: *IOW*

Tso Sai Kuen / Inspector of Works

Date: 11-9-2012

AECOM ASIA COMPANY LTD.

ENGINEER'S SITE DIARY

Client Department: Drainage Services Department

Contract Title: Drainage Improvement Works in Shuen Wan, Tai Po - Contract 1

Contractor: KWAN LEE - KULY JOINT VENTURE

Weather:

AM	PM	Rainfall (mm)
Fine	Fine	ST 0, TP 0

(Hong Kong Observatory's record)

Typhoon / Warning Signal:

Thunderstorm Warning - 12:50~14:00

Contract No.: DC/2009/22 Date: 09/09/2012

Day: Sunday

Instructions to Contractor

(Record verbal instructions given)

Comments by Engineer's / Contractor's Representative

Utilities

(Record location & nature of works)

Progress

(Mention briefly any matter delaying or obstructing progress)

Visitor

(Record names of visitors and time of visit)

Accidents

(Describe any occurance of accident)

Remarks

Contractor's Site Staff	No.
Total	

Assistance to Engineer	No.
Driver	1
Watchman	1
Total	2

Labour	Code	No.
Asphalter (Other Construction)	C301	
Asphalter (Roadworks)	C302	
Bamboo Scaffolder	C303	
Bar Bender & Fixer	C304	
Bricklayer	C305	
Carpenter (Fender)	C306	
Carpenter (Formwork)	C307	
Concrete Repairer	C308	
Concretor	C309	
Construction Plant Mechanic	C310	
Curtain Wall Installer	C311	
Demolition Worker	C312	
Diver	C313	
Drainlayer	C314	
Electrician (Main Contractor's)	C315	
Floor Layer	C316	
Gas Plumber	C317	
General Welder	C318	
Glazier	C319	
Ground Investigation Operator/Driller/Borer	C320	
Grouting Worker	C321	
Joiner	C322	
Leveller	C323	
Marble Worker	C324	
Marine Construction Plant Operator	C325	
Mason	C326	
Metal Scaffolder	C327	
Metal Worker	C328	
Painter & Decorator	C329	
Piling Operative	C330	
Pipelayer	C331	
Plant and Equipment Operator (Builder's Lift and Other Machinery)	C332	
Plant & Equipment Operator (Earthmoving Machinery)	C333	
Plant and Equipment Operator (Hoist and Crane)	C334	
Plant and Equipment Operator (Piling)	C335	
Plant and Equipment Operator (Tunnelling)	C336	
Plasterer	C337	
Plumber	C338	
Pneumatic Driller	C339	
Prestressing Operative	C340	
Rigger/Metal Formwork Erector	C341	
Shotcretor	C342	
Shotfirer	C343	
Slope Maintenance Worker	C344	
Structural Steel Erector	C345	
Structural Steel Welder	C346	
Tiler	C347	
Trackworker	C348	
Truck Driver / Coxswain / Barge Engineer / Working Ganger*	C349	
Window Frame Installer	C350	
(To be continued)		

Labour	Code	No.
Chainman	C401	
Concreting Labourer	C402	
Diver's Linesman / Dredger Crew / Barge Crew	C403	
Excavator	C404	
Heavy Load Labourer	C405	
Labourer (male / female) / Lorry checker / Watchman/Office attendan	C406	4
Sewerman	C407	
Automation Equipment Mechanic	E301	
Building Services Mechanic	E302	
Cable Jointer (Power)	E303	
Carpenter	E304	
Electrician/Electrical Fitter	E305	
Fire Services Mechanic	E306	
Instrument Mechanic	E307	
Lift Electrician	E308	
Lift Mechanic	E309	
Mechanical Fitter	E310	
Overhead Linesman	E311	
Painter	E312	
Plumber and Pipe Fitter	E313	
Refrigeration/AC/Ventilation Mechanic	E314	
Sheet Metal Worker	E315	
Sign Fabricator	E316	
Sign Installer	E317	
Thermal Insulation Craftsman	E318	
Welder	E319	
Labourer	E401	
Semi-skilled Worker	E402	
Technician	T	
Total Labour		4

Plant		
Type	No. Working	No. Idle
Air Compressor		1
Backhoe		7
Crawler Drill		1
Generator		1
Mini Backhoe		1
Steel Bending Machine		3
Water Pump 50mm	4	1
Water Pump 75mm	1	1
Total	5	16

* Working ganger is equivalent to ordinary worker in the trade in which he is employed or, if the trade is not listed, truck driver (refer to GS Table 1.1)

Day's record and instructions checked and agreed

Signed: *Engineer's Representative*

Name/Post: Stephen Poon / RE

Date: 10.9.12

Signed: *Contractor's Representative*

Wong Ching Lung / Site Agent

Date: 10/9/2012

Signed: *IOW*

Tso Sai Kuen / Inspector of Works

Date: 10-9-2012

Original - ER's File

Duplicate - Contractor

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 09/09/2012

Day: Sunday

Time	Location	Activity	Labour			Plant						Material Delivered	
						Type	Working		Idling			Description	Quantity
			Trade	Code	No.		No.	ID	No.	ID	Code		
	Area A - DN1800 Stormwater Drain	No activity as per KLKJV arrangement											
	Area A - Pump Station	No activity as per KLKJV arrangement				Backhoe			1	EX50	i		
						Steel Bending Machine			3		i		
						Water Pump 50mm	2						
						Water Pump 75mm	1						
	Area A - Pump Station - Box Culvert	No activity as per KLKJV arrangement				Backhoe			1	EX36	i		
07 18:00 18:00 - 20:00	Area A - Ting Kok Road	Manual control of "stop/go" sign for traffic flow regulation (3 F/Lab.) Manual control of temporary traffic light for traffic flow regulation (1 M/Lab. from Area I)	Labourer (female)	C406	3	Backhoe			1	EX40	i		
						Backhoe			1	EX42	I		
	Area A - Ting Kok Road (Intake Structure)	No activity as per KLKJV arrangement				Water Pump 50mm	1						
	Area B - Tung Tsz Nursery (CH130-CH280)	No activity as per KLKJV arrangement				Backhoe			1	EX08	i		
						Backhoe			1	EX11	i		
	Area B - Tung Tsz Nursery (CH40-CH130)	No activity as per KLKJV arrangement				Water Pump 50mm			1		i		
						Water Pump 75mm			1		i		
	Area B - Tung Tsz Nursery (Jacking Pit)	No activity as per KLKJV arrangement				Air Compressor			1	AC05	i		
						Crawler Drill			1	DR05	i		
						Mini Backhoe			1	EX53	i		
						Water Pump 50mm	1						
	Area C - Shallow Marshy Area	No activity as per KLKJV arrangement											
	Area E - Siu Lek Yuen Rd.Playground	No activity as per KLKJV arrangement				Backhoe			1	EX21	i		
						Generator			1		i		
	Area G - Ngan Shing St.	No activity as per KLKJV arrangement											

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: *Engineer's Representative*

Name/Post: Stephen Poon / RE

Date: 10.9.12

Signed: *Contractor's Representative*

Wong Ching Lung / Site Agent

Date: 10/9/2012

Signed: *IOW*

Tso Sai Kuen / Inspector of Works

Date: 10-9-2012

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 09/09/2012

Day: Sunday

Time	Location	Activity	Labour			Plant						Material Delivered	
						Type	Working		Idling			Description	Quantity
			Trade	Code	No.		No.	ID	No.	ID	Code		
08:00 - 18:00	Area 1 - Contractor Office	Office cleaning and site patrol	Labourer (male)	C406	1								

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: *Engineer's Representative*

Name/Post: Stephen Poon / RE

Date: 10.9.12

Signed: *Contractor's Representative*

Wong Ching Lung / Site Agent

Date: 10/9/2012

Signed: *IOW*

Tso Sai Kuen / Inspector of Works

Date: 10-9-2012

AECOM ASIA COMPANY LTD.

ENGINEER'S SITE DIARY

Client Department: Drainage Services Department

Contract Title: Drainage Improvement Works in Shuen Wan, Tai Po - Contract 1

Contractor: KWAN LEE - KULY JOINT VENTURE

Weather:

AM	PM	Rainfall (mm)
Fine	Shower	ST 2, TP 0

(Hong Kong Observatory's record)

Typhoon / Warning Signal:

Thunderstorm Warning - 12:35~15:45

Contract No.: DC/2009/22 Date: 08/09/2012

Day: Saturday

Instructions to Contractor
(Record verbal instructions given)

Comments by Engineer's / Contractor's Representative

Utilities
(Record location & nature of works)

Progress
(Mention briefly any matter delaying or obstructing progress)

Visitor
(Record names of visitors and time of visit)

Accidents
(Describe any occurance of accident)

Remarks

Contractor's Site Staff	No.
Assistant Surveyor	1
Chainman	3
Community I iaison Officer	1
CEG	1
Contract Manager	1
Engineer	1
Environmental Officer	1
Foreman/Assistant Foreman	2
General Foreman	1
Labour Officer	1
Land Surveyor	1
Project Director	1
Project Manager	2
Project Quantity Surveyor	1
Quantity Surveyor Manager	1
Safety Officer	1
Site Agent	1
Surveyor	1
Total	22

Assistance to Engineer	No.
Amah	1
Coordinate Engineer	
Drafting Assistant	1
Driver	2
Field Assistant	3
Office Assistant	1
Watchman	1
Total	9

Labour	Code	No.
Asphalter (Other Construction)	C301	
Asphalter (Roadworks)	C302	
Bamboo Scaffolder	C303	
Bar Bender & Fixer	C304	2
Bricklayer	C305	
Carpenter (Fender)	C306	
Carpenter (Formwork)	C307	2
Concrete Repairer	C308	
Concretor	C309	
Construction Plant Mechanic	C310	
Curtain Wall Installer	C311	
Demolition Worker	C312	
Diver	C313	
Drainlayer	C314	
Electrician (Main Contractor's)	C315	
Floor Layer	C316	
Gas Plumber	C317	
General Welder	C318	1
Glazier	C319	
Ground Investigation Operator/Driller/Borer	C320	
Grouting Worker	C321	
Joiner	C322	
Leveller	C323	
Marble Worker	C324	
Marine Construction Plant Operator	C325	
Mason	C326	
Metal Scaffolder	C327	
Metal Worker	C328	1
Painter & Decorator	C329	
Piling Operative	C330	
Pipelayer	C331	
Plant and Equipment Operator (Builder's Lift and Other Machinery)	C332	
Plant & Equipment Operator (Earthmoving Machinery)	C333	5
Plant and Equipment Operator (Hoist and Crane)	C334	
Plant and Equipment Operator (Piling)	C335	
Plant and Equipment Operator (Tunnelling)	C336	
Plasterer	C337	
Plumber	C338	
Pneumatic Driller	C339	
Prestressing Operative	C340	
Rigger/Metal Formwork Erector	C341	
Shotcretor	C342	
Shotfirer	C343	
Slope Maintenance Worker	C344	
Structural Steel Erector	C345	
Structural Steel Welder	C346	
Tiler	C347	
Trackworker	C348	
Truck Driver / Coxswain / Barge Engineer / Working Ganger*	C349	5
Window Frame Installer	C350	
(To be continued)		

Labour	Code	No.
Chainman	C401	
Concreting Labourer	C402	
Diver's Linesman / Dredger Crew / Barge Crew	C403	
Excavator	C404	
Heavy Load Labourer	C405	
Labourer (male / female) / Lorry checker / Watchman/Office attendan	C406	27
Sewerman	C407	
Automation Equipment Mechanic	E301	
Building Services Mechanic	E302	
Cable Jointer (Power)	E303	
Carpenter	E304	1
Electrician/Electrical Fitter	E305	
Fire Services Mechanic	E306	
Instrument Mechanic	E307	
Lift Electrician	E308	
Lift Mechanic	E309	
Mechanical Fitter	E310	
Overhead Linesman	E311	
Painter	E312	
Plumber and Pipe Fitter	E313	
Refrigeration/AC/Ventilation Mechanic	E314	
Sheet Metal Worker	E315	
Sign Fabricator	E316	
Sign Installer	E317	
Thermal Insulation Craftsman	E318	
Welder	E319	
Labourer	E401	
Semi-skilled Worker	E402	
Technician	T	
Total Labour		44

Plant		
Type	No. Working	No. Idle
Air Compressor	1	
Backhoe	5	1
Backhoe with Vibrating Hammer		1
Blower	4	
Crawler Drill		1
Dump Truck	5	
Generator	2	
Grout Machine	1	
Mini Backhoe		1
Oxy-Acetylene	5	1
Water Pump 50mm	8	
Water Pump 75mm	6	
Welding Set	4	
Total	41	5

* Working ganger is equivalent to ordinary worker in the trade in which he is employed or, if the trade is not listed, truck driver (refer to GS Table 1.1)

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: *Engineer's Representative*

Name/Post: Stephen Poon / RE

Date: 10.9.12

Signed: *Contractor's Representative*

Wong Ching Lung / Site Agent

Date: 10/9/2012

Signed: *IOW*

Tso Sai Kuen / Inspector of Works

Date: 10-9-2012

AECOM ASIA COMPANY LTD.

Idling Code:
a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 08/09/2012

Day: Saturday

Time	Location	Activity	Labour			Plant						Material Delivered	
						Type	Working		Idling			Description	Quantity
			Trade	Code	No.		No.	ID	No.	ID	Code		
	Area A - DN1800 Stormwater Drain	No activity as per KLKJV arrangement											
08:00 - 18:00	Area A - Pump Station	Excavating for heading tunnel of Ø225 sewer pipe between MS1 & FMH1023921 at Ch.9.1~9.4 and installing shoring frames Formwork shuttering for wall W12 of discharge chamber Fixing cable trays on walls at transformer room Excavating for Ø2100 pipe trench between manhole MH05 & MH06 to 2nd layer of walings and cart away 14 truckloads of excavated materials to Contract 2's stockpile area at Tai Wah St. General housekeeping	Carpenter (Formwork)	C307	2	Backhoe	1	EX50					
			Labourer (female)	C406	2	Blower	2						
			Labourer (male)	C406	6	Oxy-Acetylene	1						
			Metal Worker	C328	1	Water Pump 50mm	2						
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Water Pump 75mm	1						
						Welding Set	1						
08:00 - 18:00	Area A - Pump Station - Box Culvert (Receiving Pit)	Fabricating second layer of I-beams walings & struts	General Welder	C318	1	Backhoe	1	EX36					
			Labourer (male)	C406	1	Oxy-Acetylene	1						
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Welding Set	1						
07:00 - 18:00 18:00 - 20:00	Area A - Ting Kok Road	Manual control of "stop/go" sign for traffic flow regulation (3 F/Lab.) Manual control of temporary traffic light for traffic flow regulation (1 F/Lab.)	Labourer (female)	C406	3								
08:00 - 18:00	Area A - Ting Kok Road (CH70-125)	Backfilling sand to Ø2100 pipe trench at Ch. 78~90 and compacting Formwork shuttering and rebar fixing for access shaft of manhole MH03	Bar Bender & Fixer	C304	2	Backhoe	1	EX42					
			Carpenter	E304	1	Backhoe with Vibrating Hammer			1	EX40	h		
			Labourer (male)	C406	2	Oxy-Acetylene	1						
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Water Pump 50mm	2						
	Area B - Tung Tsz Nursery (CH00-CH40)	No activity as per KLKJV arrangement											
08:00 - 18:00	Area B - Tung Tsz Nursery (CH130-CH280)	Bay 10 - Fabricating sheetpile stop end shoring at bay 9 junction to facilitate backfill works Bay 12 ~ 13 - Delivery of 50 truckloads of sand from Contract 2's stockpile area at Tai Wah St. and backfilling between sheetpile shoring and box culvert	Labourer (female)	C406	1	Backhoe	1	EX08					
			Labourer (male)	C406	1	Backhoe	1	EX11					
			Plant & Equipment Operator (Earthmoving Machinery)	C333	2	Dump Truck	5						
			Truck Driver	C349	5	Generator	1						

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: ***Engineer's Representative***

Name/Post: Stephen Poon / RE

Date: 10.9.12

Signed: ***Contractor's Representative***

Wong Ching Lung / Site Agent

Date: 10/9/2012

Signed: ***IOW***

Tso Sai Kuen / Inspector of Works

Date: 10-9-2012

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 08/09/2012

Day: Saturday

Time	Location	Activity	Labour			Plant						Material Delivered	
			Trade	Code	No.	Type	Working		Idling			Description	Quantity
							No.	ID	No.	ID	Code		
						Oxy-Acetylene	1						
						Water Pump 50mm	1						
						Water Pump 75mm	2						
						Welding Set	1						
08:00 - 18:00	Area B - Tung Tsz Nursery (CH40-CH130)	General housekeeping & cleaning up sediments from wheel washing bay	Labourer (male)	C406	1	Water Pump 50mm	1						
						Water Pump 75mm	1						
08:00 - 18:00	Area B - Tung Tsz Nursery (Jacking Pit)	Cement grouting to 4 nos. holes (1-5, 1-6, 1-7 & 1-8) at layer 1 General housekeeping	Labourer (male)	C406	6	Air Compressor	1	AC05					
						Crawler Drill			1	DR05	h		
						Grout Machine	1						
						Mini Backhoe			1	EX53	h		
						Oxy-Acetylene	1						
						Water Pump 50mm	1						
						Water Pump 75mm	1						
						Welding Set	1						
08:00 -18:00	Area E - Siu Lek Yuen Rd.Playground	PL 1602.1 - Shuttering for plug end walls to seal up downstrem opening of heading tunnel for grouting	Labourer (male)	C406	4	Backhoe			1	EX21	h		
						Blower	2						
						Generator	1						
						Oxy-Acetylene			1		h		
						Water Pump 50mm	1						
						Water Pump 75mm	1						
	Area G - Ngan Shing St.	No activity as per KLKJV arrangement											
	Area I - Contractor Office	No activity as per KLKJV arrangement											

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: *Engineer's Representative*

Name/Post: Stephen Poon / RE

Date: 10.9.12

Signed: *Contractor's Representative*

Wong Ching Lung / Site Agent

Date: 10/9/2012

Signed: *IOW*

Tso Sai Kuen / Inspector of Works

Date: 10-9-2012

AECOM ASIA COMPANY LTD.

ENGINEER'S SITE DIARY

Client Department: Drainage Services Department

Contract Title: Drainage Improvement Works in Shuen Wan, Tai Po - Contract 1

Contractor: KWAN LEE - KULY JOINT VENTURE

Weather:

AM	PM	Rainfall (mm)
Shower	Fine	ST 10, TP 5

(Hong Kong Observatory's record)

Typhoon / Warning Signal:

Thunderstorm Warning - 09:35~11:00

Contract No.: DC/2009/22 Date: 07/09/2012

Day: Friday

Instructions to Contractor
(Record verbal instructions given)

Comments by Engineer's / Contractor's Representative

Utilities
(Record location & nature of works)

Progress
(Mention briefly any matter delaying or obstructing progress)

Visitor
(Record names of visitors and time of visit)

Accidents
(Describe any occurance of accident)

Remarks

Site Meeting amongst Ms. Lau of LCSD, Mr. Ricky Yeung of KLKJV and Mr. YF Fu of AECOM at 10:30 A.M. for handover inspection of area F

Contractor's Site Staff	No.
Assistant Surveyor	1
Chainman	3
Community Liaison Officer	1
CEG	1
Contract Manager	1
Engineer	1
Environmental Officer	1
Foreman/Assistant Foreman	2
General Foreman	1
Labour Officer	1
Land Surveyor	1
Project Director	1
Project Manager	2
Project Quantity Surveyor	1
Quantity Surveyor Manager	1
Safety Officer	1
Site Agent	1
Surveyor	1
Total	22

Assistance to Engineer	No.
Amah	1
Coordinate Engineer	
Drafting Assistant	1
Driver	2
Field Assistant	3
Office Assistant	1
Watchman	1
Total	9

Labour	Code	No.
Asphalter (Other Construction)	C301	
Asphalter (Roadworks)	C302	
Bamboo Scaffolder	C303	
Bar Bender & Fixer	C304	
Bricklayer	C305	
Carpenter (Fender)	C306	
Carpenter (Formwork)	C307	1
Concrete Repairer	C308	
Concretor	C309	
Construction Plant Mechanic	C310	
Curtain Wall Installer	C311	
Demolition Worker	C312	
Diver	C313	
Drainlayer	C314	1
Electrician (Main Contractor's)	C315	
Floor Layer	C316	
Gas Plumber	C317	
General Welder	C318	1
Glazier	C319	
Ground Investigation Operator/Driller/Borer	C320	
Grouting Worker	C321	
Joiner	C322	
Leveller	C323	
Marble Worker	C324	
Marine Construction Plant Operator	C325	
Mason	C326	
Metal Scaffolder	C327	
Metal Worker	C328	1
Painter & Decorator	C329	
Piling Operative	C330	
Pipelayer	C331	
Plant and Equipment Operator (Builder's Lift and Other Machinery)	C332	
Plant & Equipment Operator (Earthmoving Machinery)	C333	4
Plant and Equipment Operator (Hoist and Crane)	C334	3
Plant and Equipment Operator (Piling)	C335	
Plant and Equipment Operator (Tunnelling)	C336	
Plasterer	C337	
Plumber	C338	
Pneumatic Driller	C339	
Prestressing Operative	C340	
Rigger/Metal Formwork Erector	C341	
Shotcretor	C342	
Shotfirer	C343	
Slope Maintenance Worker	C344	
Structural Steel Erector	C345	
Structural Steel Welder	C346	
Tiler	C347	
Trackworker	C348	
Truck Driver / Coxswain / Barge Engineer / Working Ganger*	C349	
Window Frame Installer	C350	

(To be continued)

Labour	Code	No.
Chainman	C401	
Concreting Labourer	C402	
Diver's Linesman / Dredger Crew / Barge Crew	C403	
Excavator	C404	
Heavy Load Labourer	C405	
Labourer (male / female) / Lorry checker / Watchman/Office attendan	C406	31
Sewerman	C407	
Automation Equipment Mechanic	E301	
Building Services Mechanic	E302	
Cable Jointer (Power)	E303	
Carpenter	E304	1
Electrician/Electrical Fitter	E305	
Fire Services Mechanic	E306	
Instrument Mechanic	E307	
Lift Electrician	E308	
Lift Mechanic	E309	
Mechanical Fitter	E310	
Overhead Linesman	E311	
Painter	E312	
Plumber and Pipe Fitter	E313	
Refrigeration/AC'/Ventilation Mechanic	E314	
Sheet Metal Worker	E315	
Sign Fabricator	E316	
Sign Installer	E317	
Thermal Insulation Craftsman	E318	
Welder	E319	
Labourer	E401	
Semi-skilled Worker	E402	
Technician	T	
Total Labour		43

Plant		
Type	No. Working	No. Idle
Air Compressor	1	
Backhoe	4	2
Backhoe with Vibrating Hammer	1	
Blower	4	
Crawler Drill	1	
Generator	2	
Grout Machine	1	
Mini Backhoe		1
Mobile Crane	1	
Oxy-Acetylene	5	1
Water Pump 50mm	8	
Water Pump 75mm	6	
Welding Set	3	
Total	37	4

* Working ganger is equivalent to ordinary worker in the trade in which he is employed or, if the trade is not listed, truck driver (refer to GS Table 1.1)

Day's record and instructions checked and agreed

Signed: *Engineer's Representative*

Name/Post: Stephen Poon / RE

Date: 10.9.12

Signed: *Contractor's Representative*

Wong Ching Lung / Site Agent

Date: 10/9/2012

Signed: *IOW*

Tso Sai Kuen / Inspector of Works

Date: 10-9-2012

Original - ER's File

Duplicate - Contractor

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 07/09/2012

Day: Friday

Time	Location	Activity	Labour			Plant						Material Delivered	
						Type	Working		Idling			Description	Quantity
			Trade	Code	No.		No.	ID	No.	ID	Code		
	Area A - DN1800 Stormwater Drain	No activity as per KLKJV arrangement											
08:00 - 18:00	Area A - Pump Station	Excavating for heading tunnel of Ø225 sewer pipe between MS1 & FMH1023921at Ch.8.8~9.1 and installing shoring frames Formwork shuttering for wall W12 at discharge chamber Fixing GMS hangers for air trunk of exhaust fans at transformer room and painting General housekeeping & cleaning up sediments from wheel washing bay	Carpenter (Formwork)	C307	1	Backhoe			1	EX50	h		
			Labourer (female)	C406	2	Blower	2						
			Labourer (male)	C406	6	Oxy-Acetylene	1						
			Metal Worker	C328	1	Water Pump 50mm	2						
						Water Pump 75mm	1						
						Welding Set	1						
08:00 - 18:00	Area A - Pump Station - Box Culvert (Receiving Pit)	Fabricating second layer of I-beams walings & struts	General Welder	C318	1	Backhoe	1	EX36					
			Labourer (male)	C406	1	Oxy-Acetylene	1						
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Welding Set	1						
07:00 - 18:00 18:00 - 20:00	Area A - Ting Kok Road	Manual control of "stop/go" sign for traffic flow regulation (3 F/Lab.) Manual control of temporary traffic light for traffic flow regulation (1 F/Lab.)	Labourer (female)	C406	3								
08:00 - 18:00	Area A - Ting Kok Road (CH70-125)	Backfilling with sand to Ø2100 pipe trench at Ch. 78~90 and compacting Formwork shuttering for axccess shaft of manhole MH03 Extracting sheetpiles from shoring of Ø2100 pipe trench at Ch.114~120 along footpath	Carpenter	E304	1	Backhoe	1	EX42					
			Labourer (male)	C406	2	Backhoe with Vibrating Hammer	1	EX40					
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Oxy-Acetylene	1						
			Plant and Equipment Operator (Hoist and Crane)	C334	1	Water Pump 50mm	2						
	Area B - Tung Tsz Nursery (CH00-CH40)	No activity as per KLKJV arrangement											
08:00 - 18:00	Area B - Tung Tsz Nursery (CH130-CH280)	Bay 10 - Stripping off soffit formwork from top slab and dismantling falsework Bay 12 - Delivery of 33 truckloads of sand from Contract 2's stockpile area at Tai Wah St. and backfilling the gap between box culvert and trench shoring	Labourer (female)	C406	1	Backhoe	1	EX08					
			Labourer (male)	C406	7	Backhoe	1	EX11					
			Plant & Equipment Operator (Earthmoving Machinery)	C333	2	Generator	1						
						Oxy-Acetylene	1						
						Water Pump 50mm	1						

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: *Engineer's Representative*

Name/Post: Stephen Poon / RE

Date: 10.9.12

Signed: *Contractor's Representative*

Wong Ching Lung / Site Agent

Date: 10/9/2012

Signed: *IOW*

Tso Sai Kuen / Inspector of Works

Date: 10-9-2012

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 07/09/2012

Day: Friday

Time	Location	Activity	Labour			Plant						Material Delivered	
						Type	Working		Idling			Description	Quantity
			Trade	Code	No.		No.	ID	No.	ID	Code		
						Water Pump 75mm	2						
						Welding Set	1						
	Area B - Tung Tsz Nursery (CH40-CH130)	No activity as per KLKJV arrangement				Water Pump 50mm	1						
						Water Pump 75mm	1						
08:00 - 18:00	Area B - Tung Tsz Nursery (Jacking Pit)	Drilling 2 nos. holes (1-5 & 1-8) at layer 1 and inserting grout tube Cement grouting to 1 no. grout hole at Layer 1 (1-4)	Labourer (male)	C406	5	Air Compressor	1	AC05					
			Plant and Equipment Operator (Hoist and Crane)	C334	1	Crawler Drill	1	DR05					
						Grout Machine	1						
						Mini Backhoe			1	EX53	h		
						Oxy-Acetylene	1						
						Water Pump 50mm	1						
						Water Pump 75mm	1						
08:00 - 18:00	Area E - Siu Lek Yuen Rd.Playground	PL 1602.1 - Laying 1650Ø PC pipes at Ch.0~7.2	Drainlayer	C314	1	Backhoe			1	EX21	h		
			Labourer (male)	C406	4	Blower	2						
			Plant and Equipment Operator (Hoist and Crane)	C334	1	Generator	1						
						Mobile Crane	1						
						Oxy-Acetylene			1		h		
						Water Pump 50mm	1						
						Water Pump 75mm	1						
	Area F - Lek Yuen Street Rest Garden	No activity as per KLKJV arrangement											
	Area G - Ngan Shing St.	No activity as per KLKJV arrangement											
	Area I - Contractor Office	No activity as per KLKJV arrangement											

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: *Engineer's Representative*

Name/Post: Stephen Poon / RE

Date: 10.9.12

Signed: *Contractor's Representative*

Wong Ching Lung / Site Agent

Date: 10/9/2012

Signed: *IOW*

Tso Sai Kuen / Inspector of Works

Date: 10-9-2012

AECOM ASIA COMPANY LTD.

ENGINEER'S SITE DIARY

Client Department: Drainage Services Department

Contract Title: Drainage Improvement Works in Shuen Wan, Tai Po - Contract 1

Contractor: KWAN LEE - KULY JOINT VENTURE

Weather:

AM	PM	Rainfall (mm)
Fine	Cloudy	ST 0.5, TP 0.5

(Hong Kong Observatory's record)

Typhoon / Warning Signal:

Thunderstorm Warning - 03:50~05:30 & 18:05~20:00

Contract No.: DC/2009/22 Date: 06/09/2012

Day: Thursday

Instructions to Contractor
(Record verbal instructions given)

Comments by Engineer's / Contractor's Representative

Utilities
(Record location & nature of works)

Progress
(Mention briefly any matter delaying or obstructing progress)

Visitor
(Record names of visitors and time of visit)

Accidents
(Describe any occurance of accident)

Remarks

Area A - Backhoe EX40 & EX42 on site
Area B - Backhoe EX11 & EX53 on site
Weekly Safety and Environmental Coordination Meeting #129 was held at 11:00 Hr.

Contractor's Site Staff	No.
Assistant Surveyor	1
Chainman	3
Community Liaison Officer	1
CEG	1
Contract Manager	1
Engineer	1
Environmental Officer	1
Foreman/Assistant Foreman	2
General Foreman	1
Labour Officer	1
Land Surveyor	1
Project Director	1
Project Manager	2
Project Quantity Surveyor	1
Quantity Surveyor Manager	1
Safety Officer	1
Site Agent	1
Surveyor	1
Total	22

Assistance to Engineer	No.
Amah	1
Coordinate Engineer	
Drafting Assistant	1
Driver	2
Field Assistant	3
Office Assistant	1
Watchman	1
Total	9

Labour	Code	No.
Asphalter (Other Construction)	C301	
Asphalter (Roadworks)	C302	
Bamboo Scaffolder	C303	
Bar Bender & Fixer	C304	4
Bricklayer	C305	
Carpenter (Fender)	C306	
Carpenter (Formwork)	C307	2
Concrete Repairer	C308	
Concretor	C309	
Construction Plant Mechanic	C310	
Curtain Wall Installer	C311	
Demolition Worker	C312	
Diver	C313	
Drainlayer	C314	
Electrician (Main Contractor's)	C315	
Floor Layer	C316	
Gas Plumber	C317	
General Welder	C318	2
Glazier	C319	
Ground Investigation Operator/Driller/Borer	C320	
Grouting Worker	C321	
Joiner	C322	
Leveller	C323	
Marble Worker	C324	
Marine Construction Plant Operator	C325	
Mason	C326	
Metal Scaffolder	C327	
Metal Worker	C328	1
Painter & Decorator	C329	
Piling Operative	C330	
Pipelayer	C331	
Plant and Equipment Operator (Builder's Lift and Other Machinery)	C332	
Plant & Equipment Operator (Earthmoving Machinery)	C333	4
Plant and Equipment Operator (Hoist and Crane)	C334	2
Plant and Equipment Operator (Piling)	C335	
Plant and Equipment Operator (Tunnelling)	C336	
Plasterer	C337	
Plumber	C338	
Pneumatic Driller	C339	
Prestressing Operative	C340	
Rigger/Metal Formwork Erector	C341	
Shotcretor	C342	
Shotfirer	C343	
Slope Maintenance Worker	C344	
Structural Steel Erector	C345	
Structural Steel Welder	C346	
Tiler	C347	
Trackworker	C348	
Truck Driver / Coxswain / Barge Engineer / Working Ganger*	C349	1
Window Frame Installer	C350	
(To be continued)		

Labour	Code	No.
Chainman	C401	
Concreting Labourer	C402	
Diver's Linesman / Dredger Crew / Barge Crew	C403	
Excavator	C404	
Heavy Load Labourer	C405	
Labourer (male / female) / Lorry checker / Watchman/Office attendan	C406	28
Sewerman	C407	
Automation Equipment Mechanic	E301	
Building Services Mechanic	E302	
Cable Jointer (Power)	E303	
Carpenter	E304	
Electrician/Electrical Fitter	E305	
Fire Services Mechanic	E306	
Instrument Mechanic	E307	
Lift Electrician	E308	
Lift Mechanic	E309	
Mechanical Fitter	E310	
Overhead Linesman	E311	
Painter	E312	
Plumber and Pipe Fitter	E313	
Refrigeration/AC/Ventilation Mechanic	E314	
Sheet Metal Worker	E315	
Sign Fabricator	E316	
Sign Installer	E317	
Thermal Insulation Craftsman	E318	
Welder	E319	
Labourer	E401	
Semi-skilled Worker	E402	
Technician	T	
Total Labour		44

Plant		
Type	No. Working	No. Idle
Air Compressor	1	
Backhoe	4	2
Backhoe with Vibrating Hammer	1	
Blower	4	
Crawler Drill	1	
Cutting Machine	1	
Dump Truck	1	
Generator	2	
Grout Machine	1	
Mini Backhoe		1
Oxy-Acetylene	4	2
Steel Bending Machine	2	
Vibrating Prob	1	
Water Pump 50mm	8	
Water Pump 75mm	6	
Welding Set	4	1
Total	41	6

* Working ganger is equivalent to ordinary worker in the trade in which he is employed or, if the trade is not listed, truck driver (refer to GS Table 1.1)

Day's record and instructions checked and agreed

Signed: *Engineer's Representative*

Name/Post: Stephen Poon / RE

Date: 10.9.12

Signed: *Contractor's Representative*

Wong Ching Lung / Site Agent

Date: 10/9/2012

Signed: *IOW*

Tso Sai Kuen / Inspector of Works

Date: 10-9-2012

Original - ER's File

Duplicate - Contractor

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 06/09/2012

Day: Thursday

Time	Location	Activity	Labour			Plant						Material Delivered	
						Type	Working		Idling			Description	Quantity
			Trade	Code	No.		No.	ID	No.	ID	Code		
	Area A - DN1800 Stormwater Drain	No activity as per KLKJV arrangement											
08:00 - 18:00	Area A - Pump Station	Excavating for heading tunnel of Ø225 sewer pipe between MS1 & FMH1023921at Ch.8.6~8.8 and installing shoring frames Formwork shuttering for wall W12 at discharge chamber Cutting cheque plate for cable trench covers at transformer room and painting Installing hangers for air trunk of exhaust fans at transformer room General housekeeping & cleaning up sediments from wheel washing bay	Carpenter (Formwork)	C307	1	Backhoe			1	EX50	h		
			Labourer (female)	C406	2	Blower	2						
			Labourer (male)	C406	7	Oxy-Acetylene	1						
			Metal Worker	C328	1	Water Pump 50mm	2						
						Water Pump 75mm	1						
						Welding Set	1						
08:00 - 18:00	Area A - Pump Station - Box Culvert (Receiving Pit)	Fabricating second layer I-beams walings & struts	General Welder	C318	1	Backhoe	1	EX36					
			Labourer (male)	C406	1	Oxy-Acetylene	1						
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Welding Set	1						
07:00 - 18:00 18:00 - 20:00	Area A - Ting Kok Road	Manual control of "stop/go" sign for traffic flow regulation (3 F/Lab.) Manual control of temporary traffic light for traffic flow regulation (1 F/Lab.)	Labourer (female)	C406	3								
08:00 - 18:00	Area A - Ting Kok Road (CH70-125)	Backfilling sand material to Ø2100 pipe trench at Ch. 78~90 and compacting Cutting & bending reinforcement bars for manhole MH03 at bending yard Formwork shuttering and rebar fixing for top slab of manhole MH03 and then concreting for upper walls & top slab Extracting sheetpiles from Ø2100 pipe trench shoring at Ch.106~114 along footpath	Bar Bender & Fixer	C304	4	Backhoe	1	EX42					
			Carpenter (Formwork)	C307	1	Backhoe with Vibrating Hammer	1	EX40					
			Labourer (female)	C406	1	Oxy-Acetylene			1		h		
			Labourer (male)	C406	3	Steel Bending Machine	2						
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Vibrating Prob	1						
			Plant and Equipment Operator (Hoist and Crane)	C334	1	Water Pump 50mm	2						
	Area B - Tung Tsz Nursery (CH00-CH40)	No activity as per KLKJV arrangement											

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: ***Engineer's Representative***

Name/Post: Stephen Poon / RE

Date: 10.9.12

Signed: ***Contractor's Representative***

Wong Ching Lung / Site Agent

Date: 10/9/2012

Signed: ***IOW***

Tso Sai Kuen / Inspector of Works

Date: 10-9-2012

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 06/09/2012

Day: Thursday

Time	Location	Activity	Labour			Plant						Material Delivered	
						Type	Working		Idling			Description	Quantity
			Trade	Code	No.		No.	ID	No.	ID	Code		
08:00 - 18:00	Area B - Tung Tsz Nursery (CH130-CH280)	Bay 10 - Stripping off wall formwork Bay 12 - Backfilling the box culvert trench with soil from stockpile near jacking pit Bay 13 - Stripping off formwork from access shaft and fabricating sheetpile stop end shoring to facilitate backfilling work	General Welder	C318	1	Backhoe	1	EX11					
			Labourer (male)	C406	3	Dump Truck	1						
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Generator	1						
			Truck Driver	C349	1	Oxy-Acetylene	1						
						Water Pump 50mm	1						
						Water Pump 75mm	2						
						Welding Set	1						
08:00 - 18:00	Area B - Tung Tsz Nursery (CH40-CH130)	General housekeeping & cleaning up sediments from wheel washing bay	Labourer (male)	C406	1	Water Pump 50mm	1						
						Water Pump 75mm	1						
08:00 - 18:00	Area B - Tung Tsz Nursery (Jacking Pit)	Drilling 1 nos. grout hole (1-7) and inserting grout tube Cement grouting to hole (1-1)	Labourer (male)	C406	4	Air Compressor	1	AC05					
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Backhoe	1	EX08					
			Plant and Equipment Operator (Hoist and Crane)	C334	1	Crawler Drill	1	DR05					
						Grout Machine	1						
						Mini Backhoe			1	EX53	h		
						Oxy-Acetylene	1						
						Water Pump 50mm	1						
						Water Pump 75mm	1						
						Welding Set	1						
08:00 - 18:00	Area E - Siu Lek Yuen Rd.Playground	PL 1602.1 - Preparation works for laying 1650Ø PC pipe Cutting 1650Ø PC end pipe at contract 2's stockpile area at Tai Wah St.	Labourer (male)	C406	3	Backhoe			1	EX21	h		
						Blower	2						
						Cutting Machine	1						
						Generator	1						
						Oxy-Acetylene			1		h		
						Water Pump 50mm	1						
						Water Pump 75mm	1						
						Welding Set			1		h		
	Area F - Lek Yuen Street Rest Garden	No activity as per KLKJV arrangement											

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: *Engineer's Representative*

Name/Post: Stephen Poon / RE

Date: 10.9.12

Signed: *Contractor's Representative*

Wong Ching Lung / Site Agent

Date: 10/9/2012

Signed: *IOW*

Tso Sai Kuen / Inspector of Works

Date: 10-9-2012

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 06/09/2012

Day: Thursday

Time	Location	Activity	Labour			Plant						Material Delivered	
						Type	Working		Idling			Description	Quantity
			Trade	Code	No.		No.	ID	No.	ID	Code		
	Area G - Ngan Shing St.	No activity as per KLKJV arrangement											
	Area I - Contractor Office	No activity as per KLKJV arrangement											

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: *Engineer's Representative*

Name/Post: Stephen Poon / RE

Date: 10.9.12

Signed: *Contractor's Representative*

Wong Ching Lung / Site Agent

Date: 10/9/2012

Signed: *IOW*

Tso Sai Kuen / Inspector of Works

Date: 10-9-2012

AECOM ASIA COMPANY LTD.

ENGINEER'S SITE DIARY

Client Department: Drainage Services Department

Contract Title: Drainage Improvement Works in Shuen Wan, Tai Po - Contract 1

Contractor: KWAN LEE - KULY JOINT VENTURE

Weather:

AM	PM	Rainfall (mm)
Cloudy	Fine	ST 0.5, TP 0

(Hong Kong Observatory's record)

Typhoon / Warning Signal: Nil

Contract No.: DC/2009/22 Date: 05/09/2012

Day: Wednesday

Instructions to Contractor
(Record verbal instructions given)

Comments by Engineer's / Contractor's Representative

Utilities
(Record location & nature of works)

Progress
(Mention briefly any matter delaying or obstructing progress)

Visitor
(Record names of visitors and time of visit)

Accidents
(Describe any occurance of accident)

Remarks

Area A - Backhoe EX17 off site at night
Meeting was held at 15:30 hr amongst Ms. Leung of CLP, Mr. So of DSD, Mr. Dragon Wong of KLKJV and Mr. Poon of AECOM concerning the power supply to Pump Station and hand over procedures of Transformer Room

Contractor's Site Staff	No.
Assistant Surveyor	1
Chainman	3
Community Liaison Officer	1
CEG	1
Contract Manager	1
Engineer	1
Environmental Officer	1
Foreman/Assistant Foreman	2
General Foreman	1
Labour Officer	1
Land Surveyor	1
Project Director	1
Project Manager	2
Project Quantity Surveyor	1
Quantity Surveyor Manager	1
Safety Officer	1
Site Agent	1
Surveyor	1
Total	22

Assistance to Engineer	No.
Amah	1
Coordinate Engineer	
Drafting Assistant	1
Driver	2
Field Assistant	3
Office Assistant	1
Watchman	1
Total	9

Labour	Code	No.
Asphalter (Other Construction)	C301	
Asphalter (Roadworks)	C302	
Bamboo Scaffolder	C303	
Bar Bender & Fixer	C304	
Bricklayer	C305	
Carpenter (Fender)	C306	
Carpenter (Formwork)	C307	1
Concrete Repairer	C308	
Concretor	C309	
Construction Plant Mechanic	C310	
Curtain Wall Installer	C311	
Demolition Worker	C312	
Diver	C313	
Drainlayer	C314	
Electrician (Main Contractor's)	C315	
Floor Layer	C316	
Gas Plumber	C317	
General Welder	C318	1
Glazier	C319	
Ground Investigation Operator/Driller/Borer	C320	
Grouting Worker	C321	
Joiner	C322	
Leveller	C323	
Marble Worker	C324	2
Marine Construction Plant Operator	C325	
Mason	C326	
Metal Scaffolder	C327	
Metal Worker	C328	
Painter & Decorator	C329	
Piling Operative	C330	
Pipelayer	C331	
Plant and Equipment Operator (Builder's Lift and Other Machinery)	C332	
Plant & Equipment Operator (Earthmoving Machinery)	C333	4
Plant and Equipment Operator (Hoist and Crane)	C334	1
Plant and Equipment Operator (Piling)	C335	
Plant and Equipment Operator (Tunnelling)	C336	
Plasterer	C337	
Plumber	C338	
Pneumatic Driller	C339	
Prestressing Operative	C340	
Rigger/Metal Formwork Erector	C341	
Shotcretor	C342	
Shotfirer	C343	
Slope Maintenance Worker	C344	
Structural Steel Erector	C345	
Structural Steel Welder	C346	
Tiler	C347	
Trackworker	C348	
Truck Driver / Coxswain / Barge Engineer / Working Ganger*	C349	2
Window Frame Installer	C350	
(To be continued)		

Labour	Code	No.
Chainman	C401	
Concreting Labourer	C402	
Diver's Linesman / Dredger Crew / Barge Crew	C403	
Excavator	C404	
Heavy Load Labourer	C405	
Labourer (male / female) / Lorry checker / Watchman/Office attendan	C406	25
Sewerman	C407	
Automation Equipment Mechanic	E301	
Building Services Mechanic	E302	
Cable Jointer (Power)	E303	
Carpenter	E304	1
Electrician/Electrical Fitter	E305	
Fire Services Mechanic	E306	
Instrument Mechanic	E307	
Lift Electrician	E308	
Lift Mechanic	E309	
Mechanical Fitter	E310	
Overhead Linesman	E311	
Painter	E312	
Plumber and Pipe Fitter	E313	
Refrigeration/AC/Ventilation Mechanic	E314	
Sheet Metal Worker	E315	
Sign Fabricator	E316	
Sign Installer	E317	
Thermal Insulation Craftsman	E318	
Welder	E319	
Labourer	E401	
Semi-skilled Worker	E402	
Technician	T	
Total Labour		37

Plant		
Type	No. Working	No. Idle
Air Compressor	1	
Backhoe	4	1
Blower	2	
Crawler Drill	1	
Dump Truck	2	
Generator	2	
Grout Machine		1
Oxy-Acetylene	4	2
Vibrating Prob	1	
Water Pump 50mm	8	
Water Pump 75mm	6	
Welding Set	5	
Total	36	4

* Working ganger is equivalent to ordinary worker in the trade in which he is employed or, if the trade is not listed, truck driver (refer to GS Table 1.1)

Day's record and instructions checked and agreed

Signed: *Engineer's Representative*

Name/Post: Stephen Poon / RE

Date: 6.9.12

Signed: *Contractor's Representative*

Wong Ching Lung / Site Agent

Date: 6/9/2012

Signed: *IOW*

Tso Sai Kuen / Inspector of Works

Date: 6-9-2012

Original - ER's File

Duplicate - Contractor

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 05/09/2012

Day: Wednesday

Time	Location	Activity	Labour			Plant						Material Delivered	
						Type	Working		Idling			Description	Quantity
			Trade	Code	No.		No.	ID	No.	ID	Code		
	Area A - DN1800 Stormwater Drain	No activity as per KLKJV arrangement											
08:00 - 18:00	Area A - Pump Station	Excavating for heading tunnel of Ø225 sewer pipe between MS1 & FMH1023921at Ch.8.4~8.6 and installing shoring frames Excavating for Ø2100 pipe trench between manhole MH05 & MH06 to second layer of walings and cart away 8 truckloads of excavated materials to Contract 2's stockpile area at Tai Wah St. Formwork shuttering for U-channel on manmade slope Installing cat ladders, painting to cheque plate trench covers and angle frames at transformer room Installing GMS hangers for air trunk at transformer room	Carpenter (Formwork)	C307	1	Backhoe	1	EX50					
			Labourer (male)	C406	7	Blower	2						
			Marble Worker	C324	2	Dump Truck	2						
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Oxy-Acetylene	1						
			Truck Driver	C349	2	Water Pump 50mm	2						
						Water Pump 75mm	1						
						Welding Set	1						
08:00 - 18:00	Area A - Pump Station - Box Culvert (Receiving Pit)	Fabricating second layer of I-beams walings & struts	General Welder	C318	1	Backhoe	1	EX36					
			Labourer (male)	C406	1	Oxy-Acetylene	1						
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Welding Set	1						
07:00 - 18:00 18:00 - 20:00	Area A - Ting Kok Road	Manual control of "stop/go" sign for traffic flow regulation (3 F/Lab.) Manual control of temporary traffic light for traffic flow regulation (1 F/Lab.)	Labourer (female)	C406	2								
08:00 - 18:00	Area A - Ting Kok Road (CH70-125)	Backfilling to Ø2100 pipe trench at Ch. 78~125 and compacting Formwork shuttering for upper walls and top slab of manhole MH03	Carpenter	E304	1	Backhoe	1	EX17					
			Labourer (male)	C406	3	Oxy-Acetylene			1		h		
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Water Pump 50mm	2						
	Area B - Tung Tsz Nursery (CH00-CH40)	No activity as per KLKJV arrangement											
08:00 - 18:00	Area B - Tung Tsz Nursery (CH130-CH280)	Bay 10 - Concreting for walls & top slab Bay 13 - Concreting for access shaft of box culvert (Total : 83.1 cu.m)	Labourer (female)	C406	1	Backhoe	1	EX08					
			Labourer (male)	C406	4	Generator	1						
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Oxy-Acetylene	1						
						Vibrating Prob	1						
						Water Pump 50mm	1						
						Water Pump 75mm	2						

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: *Engineer's Representative*

Name/Post: Stephen Poon / RE

Date: 6.9.12

Signed: *Contractor's Representative*

Wong Ching Lung / Site Agent

Date: 6/9/2012

Signed: *IOW*

Tso Sai Kuen / Inspector of Works

Date: 6-9-2012

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 05/09/2012

Day: Wednesday

Time	Location	Activity	Labour			Plant						Material Delivered	
			Trade	Code	No.	Type	Working		Idling			Description	Quantity
							No.	ID	No.	ID	Code		
						Welding Set	1						
08:00 - 18:00	Area B - Tung Tsz Nursery (CH40-CH130)	General housekeeping & cleaning up sediments from wheel washing bay	Labourer (male)	C406	1	Water Pump 50mm	1						
						Water Pump 75mm	1						
08:00 - 18:00	Area B - Tung Tsz Nursery (Jacking Pit)	Drilling 2 nos. grout holes (1-4 & 1-6) and inserting grout tubes	Labourer (male)	C406	4	Air Compressor	1	AC05					
			Plant and Equipment Operator (Hoist and Crane)	C334	1	Crawler Drill	1	DR05					
						Grout Machine			1		h		
						Oxy-Acetylene	1						
						Water Pump 50mm	1						
						Water Pump 75mm	1						
						Welding Set	1						
08:00 - 18:00	Area E - Siu Lek Yuen Rd.Playground	PL 1602.1 - Preparing 1650Ø cut length end pipe at contract 2's stockpile area at Tai Wah St.	Labourer (male)	C406	2	Backhoe			1	EX21	h		
						Generator	1						
						Oxy-Acetylene			1		h		
						Water Pump 50mm	1						
						Water Pump 75mm	1						
						Welding Set	1						
	Area F - Lek Yuen Street Rest Garden	No activity as per KLKJV arrangement											
	Area G - Ngan Shing St.	No activity as per KLKJV arrangement											
	Area I - Contractor Office	No activity as per KLKJV arrangement											

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: *Engineer's Representative*

Name/Post: Stephen Poon / RE

Date: 6.9.12

Signed: *Contractor's Representative*

Wong Ching Lung / Site Agent

Date: 6/9/2012

Signed: *IOW*

Tso Sai Kuen / Inspector of Works

Date: 6-9-2012

AECOM ASIA COMPANY LTD.

ENGINEER'S SITE DIARY

Client Department: Drainage Services Department

Contract Title: Drainage Improvement Works in Shuen Wan, Tai Po - Contract 1

Contractor: KWAN LEE - KULY JOINT VENTURE

Weather:

AM	PM	Rainfall (mm)
Cloudy	Cloudy	ST 5, TP 20

(Hong Kong Observatory's record)

Typhoon / Warning Signal:

Thunderstorm Warning - 00:00~01:00

Contract No.: DC/2009/22 Date: 04/09/2012

Day: Tuesday

Instructions to Contractor
(Record verbal instructions given)

Comments by Engineer's / Contractor's Representative

Utilities
(Record location & nature of works)

Progress
(Mention briefly any matter delaying or obstructing progress)

Visitor
(Record names of visitors and time of visit)

Accidents
(Describe any occurance of accident)

Remarks

Contractor's Site Staff	No.
Assistant Surveyor	1
Chainman	3
Community Liaison Officer	1
CEG	1
Contract Manager	1
Engineer	1
Environmental Officer	1
Foreman/Assistant Foreman	2
General Foreman	1
Labour Officer	1
Land Surveyor	1
Project Director	1
Project Manager	2
Project Quantity Surveyor	1
Quantity Surveyor Manager	1
Safety Officer	1
Site Agent	1
Surveyor	1
Total	22

Assistance to Engineer	No.
Amah	1
Coordinate Engineer	
Drafting Assistant	1
Driver	2
Field Assistant	3
Office Assistant	1
Watchman	1
Total	9

Labour	Code	No.
Asphalter (Other Construction)	C301	
Asphalter (Roadworks)	C302	
Bamboo Scaffolder	C303	
Bar Bender & Fixer	C304	2
Bricklayer	C305	
Carpenter (Fender)	C306	
Carpenter (Formwork)	C307	4
Concrete Repairer	C308	
Concretor	C309	
Construction Plant Mechanic	C310	
Curtain Wall Installer	C311	
Demolition Worker	C312	
Diver	C313	
Drainlayer	C314	
Electrician (Main Contractor's)	C315	
Floor Layer	C316	
Gas Plumber	C317	
General Welder	C318	1
Glazier	C319	
Ground Investigation Operator/Driller/Borer	C320	
Grouting Worker	C321	
Joiner	C322	
Leveller	C323	
Marble Worker	C324	
Marine Construction Plant Operator	C325	
Mason	C326	
Metal Scaffolder	C327	
Metal Worker	C328	1
Painter & Decorator	C329	
Piling Operative	C330	
Pipelayer	C331	1
Plant and Equipment Operator (Builder's Lift and Other Machinery)	C332	
Plant & Equipment Operator (Earthmoving Machinery)	C333	4
Plant and Equipment Operator (Hoist and Crane)	C334	1
Plant and Equipment Operator (Piling)	C335	
Plant and Equipment Operator (Tunnelling)	C336	
Plasterer	C337	
Plumber	C338	
Pneumatic Driller	C339	
Prestressing Operative	C340	
Rigger/Metal Formwork Erector	C341	
Shotcretor	C342	
Shotfirer	C343	
Slope Maintenance Worker	C344	
Structural Steel Erector	C345	
Structural Steel Welder	C346	
Tiler	C347	
Trackworker	C348	
Truck Driver / Coxswain / Barge Engineer / Working Ganger*	C349	4
Window Frame Installer	C350	
(To be continued)		

Labour	Code	No.
Chainman	C401	
Concreting Labourer	C402	
Diver's Linesman / Dredger Crew / Barge Crew	C403	
Excavator	C404	
Heavy Load Labourer	C405	
Labourer (male / female) / Lorry checker / Watchman/Office attendan	C406	26
Sewerman	C407	
Automation Equipment Mechanic	E301	
Building Services Mechanic	E302	
Cable Jointer (Power)	E303	
Carpenter	E304	
Electrician/Electrical Fitter	E305	
Fire Services Mechanic	E306	
Instrument Mechanic	E307	
Lift Electrician	E308	
Lift Mechanic	E309	
Mechanical Fitter	E310	
Overhead Linesman	E311	
Painter	E312	
Plumber and Pipe Fitter	E313	
Refrigeration/AC/Ventilation Mechanic	E314	
Sheet Metal Worker	E315	
Sign Fabricator	E316	
Sign Installer	E317	
Thermal Insulation Craftsman	E318	
Welder	E319	
Labourer	E401	
Semi-skilled Worker	E402	
Technician	T	
Total Labour		44

Plant		
Type	No. Working	No. Idle
Air Compressor	1	
Backhoe	4	1
Blower	2	
Crawler Drill	1	
Dump Truck	4	
Electric Breaker	1	
Generator	2	
Grout Machine		1
Oxy-Acetylene	3	3
Water Pump 50mm	8	
Water Pump 75mm	6	
Welding Set	4	
Total	36	5

* Working ganger is equivalent to ordinary worker in the trade in which he is employed or, if the trade is not listed, truck driver (refer to GS Table 1.1)

Day's record and instructions checked and agreed

Signed:
Engineer's Representative
Name/Post: Stephen Poon / RE
Date: 5.9.12

Signed:
Contractor's Representative
Wong Ching Lung / Site Agent
Date: 5/9/2012

Signed:
IOW
Tso Sai Kuen / Inspector of Works
Date: 5-9-2012

Original - ER's File

Duplicate - Contractor

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 04/09/2012

Day: Tuesday

Time	Location	Activity	Labour			Plant						Material Delivered	
						Type	Working		Idling			Description	Quantity
			Trade	Code	No.		No.	ID	No.	ID	Code		
	Area A - DN1800 Stormwater Drain	No activity as per KLKJV arrangement											
08:00 - 18:00	Area A - Pump Station	Excavating for heading tunnel of Ø225 sewer pipe between MS1 & FMH1023921at Ch. 8.0~8.4 and installing shoring frames Adjusting levels and alignment of 2 nos.Ø450 & 4 nos.Ø900 double flange pipe with puddle at wall between discharge chamber & valve chamber Excavating for Ø2100 pipe trench between manhole MH05 & MH06 and fabricating top layer I-beam walings & struts Installing push bar for stainless steel door (D2) and fixing detachable rat guard for louvres (L2) at transformer room Painting for chequer plate trench covers at transformer room General housekeeping	General Welder	C318	0.5	Backhoe	1	EX50					
			Labourer (female)	C406	2	Blower	2						
			Labourer (male)	C406	6	Oxy-Acetylene	1						
			Metal Worker	C328	1	Water Pump 50mm	2						
			Pipelayer	C331	1	Water Pump 75mm	1						
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Welding Set	2						
08:00 - 18:00	Area A - Pump Station - Box Culvert (Receiving Pit)	Excavating for receiving pit to 0.3 mPD & cart away excavated material to Contract 2's stockpile area at Tai Wah St. (16 Truckloads)	General Welder	C318	0.5	Backhoe	1	EX36					
			Labourer (male)	C406	1	Dump Truck	2						
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Oxy-Acetylene	1						
			Truck Driver	C349	2	Welding Set	1						
07:00 - 18:00 18:00 - 20:00	Area A - Ting Kok Road	Manual control of "stop/go" sign for traffic flow regulation (3 F/Lab.) Manual control of temporary traffic light for traffic flow regulation (1 F/Lab.)	Labourer (female)	C406	3								
08:00 - 18:00	Area A - Ting Kok Road (CH70-125)	Delivery of sand material from Contract 2's stockpile area at Tai Wah St. (8 truckloads) and backfilling to Ø2100 pipe trench at Ch.78~125 Formwork shuttering for upper walls and top slab of manhole MH03 Dismantling upper layer I-beam walings and struts from shoring of Ø2100 pipe trench at Ch. 80~90	Carpenter (Formwork)	C307	2	Backhoe	1	EX17					
			Labourer (female)	C406	1	Dump Truck	2						
			Labourer (male)	C406	4	Oxy-Acetylene	1						
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Water Pump 50mm	2						
			Truck Driver	C349	2								
	Area B - Tung Tsz Nursery (CH00-CH40)	No activity as per KLKJV arrangement											

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: *Engineer's Representative*

Name/Post: Stephen Poon / RE

Date: 5.9.12

Signed: *Contractor's Representative*

Wong Ching Lung / Site Agent

Date: 5/9/2012

Signed: *IOW*

Tso Sai Kuen / Inspector of Works

Date: 5-9-2012

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 04/09/2012

Day: Tuesday

Time	Location	Activity	Labour			Plant						Material Delivered	
						Type	Working		Idling			Description	Quantity
			Trade	Code	No.		No.	ID	No.	ID	Code		
08:00 - 18:00	Area B - Tung Tsz Nursery (CH130-CH280)	Bay 10 - Formwork shuttering for walls and top slab Bay 13 - Rebar fixing and formwork shuttering for access shaft	Bar Bender & Fixer	C304	2	Backhoe	1	EX08					
			Carpenter (Formwork)	C307	2	Generator	1						
			Labourer (male)	C406	1	Oxy-Acetylene			1				
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Water Pump 50mm	1						
						Water Pump 75mm	2						
08:00 - 18:00	Area B - Tung Tsz Nursery (CH40-CH130)	General housekeeping & cleaning up sediments from wheel washing bay	Labourer (male)	C406	1	Water Pump 50mm	1						
						Water Pump 75mm	1						
08. - 18:00	Area B - Tung Tsz Nursery (Jacking Pit)	Drilling holes at Layer 1and inserting grout tubes	Labourer (male)	C406	3	Air Compressor	1	AC05					
			Plant and Equipment Operator (Hoist and Crane)	C334	1	Crawler Drill	1	DR05					
						Grout Machine			1		h		
						Oxy-Acetylene			1				
						Water Pump 50mm	1						
						Water Pump 75mm	1						
08:00 - 18:00	Area E - Siu Lek Yuen Rd.Playground	PL 1602.1 - Installation of guide rail and laying blinding concrete inside heading tunnel	Labourer (male)	C406	4	Backhoe			1	EX21	h		
						Electric Breaker	1						
						Generator	1						
						Oxy-Acetylene			1		h		
						Water Pump 50mm	1						
						Water Pump 75mm	1						
						Welding Set	1						
	Area F - Lek Yuen Street Rest Garden	No activity as per KLKJV arrangement											
	Area G - Ngan Shing St.	No activity as per KLKJV arrangement											
	Area I - Contractor Office	No activity as per KLKJV arrangement											

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: *Engineer's Representative*

Name/Post: Stephen Poon / RE

Date: 5.9.12

Signed: *Contractor's Representative*

Wong Ching Lung / Site Agent

Date: 5/9/2012

Signed: *IOW*

Tso Sai Kuen / Inspector of Works

Date: 5-9-2012

AECOM ASIA COMPANY LTD.

ENGINEER'S SITE DIARY

Client Department: Drainage Services Department

Contract Title: Drainage Improvement Works in Shuen Wan, Tai Po - Contract 1

Contractor: KWAN LEE - KULY JOINT VENTURE

Weather:

AM	PM	Rainfall (mm)
Fine	Fine	St 0, TP 0

(Hong Kong Observatory's record)

Typhoon / Warning Signal:

Thunderstorm Warning - 23:50~24:00

Contract No.: DC/2009/22 Date: 03/09/2012

Day: Monday

Instructions to Contractor
(Record verbal instructions given)

Comments by Engineer's / Contractor's Representative

Utilities
(Record location & nature of works)

Progress
(Mention briefly any matter delaying or obstructing progress)

Visitor
(Record names of visitors and time of visit)

Accidents
(Describe any occurance of accident)

Remarks

Contractor's Site Staff	No.
Assistant Surveyor	1
Chainman	3
Community Liaison Officer	1
CEG	1
Contract Manager	1
Engineer	1
Environmental Officer	1
Foreman/Assistant Foreman	2
General Foreman	1
Labour Officer	1
Land Surveyor	1
Project Director	1
Project Manager	2
Project Quantity Surveyor	1
Quantity Surveyor Manager	1
Safety Officer	1
Site Agent	1
Surveyor	1
Total	22

Assistance to Engineer	No.
Amah	1
Coordinate Engineer	
Drafting Assistant	1
Driver	2
Field Assistant	3
Office Assistant	1
Watchman	1
Total	9

Labour	Code	No.
Asphalter (Other Construction)	C301	
Asphalter (Roadworks)	C302	
Bamboo Scaffolder	C303	
Bar Bender & Fixer	C304	3
Bricklayer	C305	
Carpenter (Fender)	C306	
Carpenter (Formwork)	C307	2
Concrete Repairer	C308	
Concretor	C309	
Construction Plant Mechanic	C310	
Curtain Wall Installer	C311	
Demolition Worker	C312	
Diver	C313	
Drainlayer	C314	
Electrician (Main Contractor's)	C315	
Floor Layer	C316	
Gas Plumber	C317	
General Welder	C318	2
Glazier	C319	
Ground Investigation Operator/Driller/Borer	C320	
Grouting Worker	C321	
Joiner	C322	
Leveller	C323	
Marble Worker	C324	
Marine Construction Plant Operator	C325	
Mason	C326	
Metal Scaffolder	C327	
Metal Worker	C328	1
Painter & Decorator	C329	
Piling Operative	C330	
Pipelayer	C331	
Plant and Equipment Operator (Builder's Lift and Other Machinery)	C332	
Plant & Equipment Operator (Earthmoving Machinery)	C333	4
Plant and Equipment Operator (Hoist and Crane)	C334	1
Plant and Equipment Operator (Piling)	C335	
Plant and Equipment Operator (Tunnelling)	C336	
Plasterer	C337	
Plumber	C338	
Pneumatic Driller	C339	
Prestressing Operative	C340	
Rigger/Metal Formwork Erector	C341	
Shotcretor	C342	
Shotfirer	C343	
Slope Maintenance Worker	C344	
Structural Steel Erector	C345	
Structural Steel Welder	C346	
Tiler	C347	
Trackworker	C348	
Truck Driver / Coxswain / Barge Engineer / Working Ganger*	C349	1
Window Frame Installer	C350	
(To be continued)		

Labour	Code	No.
Chainman	C401	
Concreting Labourer	C402	
Diver's Linesman / Dredger Crew / Barge Crew	C403	
Excavator	C404	
Heavy Load Labourer	C405	
Labourer (male / female) / Lorry checker / Watchman/ Office attendan	C406	30
Sewerman	C407	
Automation Equipment Mechanic	E301	
Building Services Mechanic	E302	
Cable Jointer (Power)	E303	
Carpenter	E304	
Electrician/Electrical Fitter	E305	
Fire Services Mechanic	E306	
Instrument Mechanic	E307	
Lift Electrician	E308	
Lift Mechanic	E309	
Mechanical Fitter	E310	
Overhead Linesman	E311	
Painter	E312	
Plumber and Pipe Fitter	E313	1
Refrigeration/AC/Ventilation Mechanic	E314	
Sheet Metal Worker	E315	
Sign Fabricator	E316	
Sign Installer	E317	
Thermal Insulation Craftsman	E318	
Welder	E319	
Labourer	E401	
Semi-skilled Worker	E402	
Technician	T	
Total Labour		45

Plant		
Type	No. Working	No. Idle
Air Compressor	1	
Backhoe	4	1
Blower	2	
Crawler Drill	1	
Dump Truck	1	
Electric Breaker	1	
Generator	2	
Grout Machine		1
Oxy-Acetylene	5	1
Water Pump 50mm	8	
Water Pump 75mm	6	
Welding Set	6	
Total	37	3

* Working ganger is equivalent to ordinary worker in the trade in which he is employed or, if the trade is not listed, truck driver (refer to GS Table 1.1)

Day's record and instructions checked and agreed

Signed: *Engineer's Representative*

Name/Post: Stephen Poon / RE

Date: 3.9.12

Signed: *Contractor's Representative*

Wong Ching Lung / Site Agent

Date: 4/9/2012

Signed: *IOW*

Tso Sai Kuen / Inspector of Works

Date: 4/9/2012

Original - ER's File

Duplicate - Contractor

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 03/09/2012

Day: Monday

Time	Location	Activity	Labour			Plant						Material Delivered	
						Type	Working		Idling			Description	Quantity
			Trade	Code	No.		No.	ID	No.	ID	Code		
	Area A - DN1800 Stormwater Drain	No activity as per KLKJV arrangement											
08:00 - 18:00	Area A - Pump Station	Excavating for heading tunnel of Ø225 sewer pipe between MS1 & FMH1023921at Ch.7.4~8.0 Dismantling tubular working platform outside store room Fabricating upper layer I-beam struts for Ø2100 pipe trench between manhole MH05 & MH06 General cleaning at roof and manade slope Installing push bar for stainless steel door (D1) and painting for chequer plate trench covers at transformer room Installing 2 nos. Ø450 & 4 nos .Ø900double flange pipes with puddle at wall between discharge chamber & valve chamber	General Welder	C318	0.5	Backhoe	1	EX50					
			Labourer (female)	C406	2	Blower	2						
			Labourer (male)	C406	9	Oxy-Acetylene	1						
			Metal Worker	C328	1	Water Pump 50mm	2						
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Water Pump 75mm	1						
			Plumber and Pipe Fitter	E313	1	Welding Set	2						
08:00 - 18:00	Area A - Pump Station - Box Culvert (Receiving Pit)	Excavating for receiving pit and fabricating lower layer I-beam walings and struts for shoring	General Welder	C318	0.5	Backhoe	1	EX36					
			Labourer (male)	C406	2	Oxy-Acetylene	1						
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Welding Set	1						
07:00 - 18:00 18:00 - 20:00	Area A - Ting Kok Road	Manual control of "stop/go" sign for traffic flow regulation (3 F/Lab.) Manual control of temporary traffic light for traffic flow regulation. (1 F/Lab)	Labourer (female)	C406	3								
08:00 - 18:00	Area A - Ting Kok Road (CH70-125)	Delivery of sand material from Contract 2's stockpile area at Tai Wah St. (15 truckloads) and backfilling to Ø2100 pipe trench at Ch. 78~125 Rebar fixing for upper walls of manhole MH03 Dismantling upper layer of I-beam walings and struts from shoring of Ø2100 pipe trench at Ch. 85~100	Bar Bender & Fixer	C304	3	Backhoe	1	EX17					
			Labourer (female)	C406	1	Dump Truck	1						
			Labourer (male)	C406	3	Oxy-Acetylene	1						
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Water Pump 50mm	2						
			Truck Driver	C349	1								
	Area B - Tung Tsz Nursery (CH00-CH40)	No activity as per KLKJV arrangement											
08:00 - 18:00	Area B - Tung Tsz Nursery (CH130-CH280)	Bay 10 - Formwork shuttering for walls and top slab Bay 13 - Erecting sheetpile stop end shoring to facilitate backfilling works	Carpenter (Formwork)	C307	2	Backhoe	1	EX08					
			General Welder	C318	1	Generator	1						
			Labourer (male)	C406	2	Oxy-Acetylene	1						

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: *Engineer's Representative*

Name/Post: Stephen Poon / RE

Date: 4.9.12

Signed: *Contractor's Representative*

Wong Ching Lung / Site Agent

Date: 4/9/2012

Signed: *IOW*

Tso Sai Kuen / Inspector of Works

Date: 4/9/2012

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 03/09/2012

Day: Monday

Time	Location	Activity	Labour			Plant						Material Delivered	
						Type	Working		Idling			Description	Quantity
			Trade	Code	No.		No.	ID	No.	ID	Code		
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Water Pump 50mm	1						
						Water Pump 75mm	2						
						Welding Set	1						
08:00 - 18:00	Area B - Tung Tsz Nursery (CH40-CH130)	General housekeeping & cleaning up sediments from wheel washing bay	Labourer (male)	C406	1	Water Pump 50mm	1						
						Water Pump 75mm	1						
08:00 - 18:00	Area B - Tung Tsz Nursery (Jacking Pit)	Dewatering from jacking pit and general housekeeping	Labourer (male)	C406	3	Air Compressor	1	AC05					
			Plant and Equipment Operator (Hoist and Crane)	C334	1	Crawler Drill	1	DR05					
						Grout Machine			1		h		
						Oxy-Acetylene	1						
						Water Pump 50mm	1						
						Water Pump 75mm	1						
						Welding Set	1						
08:00 - 18:00	Area E - Siu Lek Yuen Rd.Playground	PL 1602.1 - Breaking up brick wall of exsiting manhole inside heading tunnel Excavating to formation level of 1650Ø pipe trench Cart away excavated material to Aara A (1 truckload)	Labourer (male)	C406	4	Backhoe			1	EX21	h		
						Electric Breaker	1						
						Generator	1						
						Oxy-Acetylene			1		h		
						Water Pump 50mm	1						
						Water Pump 75mm	1						
						Welding Set	1						
	Area F - Lek Yuen Street Rest Garden	No activity as per KLKJV arrangement											
	Area G - Ngan Shing St.	No activity as per KLKJV arrangement											
	Area I - Contractor Office	No activity as per KLKJV arrangement											

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: *Engineer's Representative*

Name/Post: Stephen Poon / RE

Date: 4.9.12

Signed: *Contractor's Representative*

Wong Ching Lung / Site Agent

Date: 4/9/2012

Signed: *IOW*

Tso Sai Kuen / Inspector of Works

Date: 4/9/2012

AECOM ASIA COMPANY LTD.

ENGINEER'S SITE DIARY

Client Department: Drainage Services Department

Contract Title: Drainage Improvement Works in Shuen Wan, Tai Po - Contract 1

Contractor: KWAN LEE - KULY JOINT VENTURE

Weather:

AM	PM	Rainfall (mm)
Fine	Fine	ST 5, TP 10

(Hong Kong Observatory's record)

Typhoon / Warning Signal:

Thunderstorm Warning - 05:20~06:30

Contract No.: DC/2009/22 Date: 02/09/2012

Day: Sunday

Instructions to Contractor
(Record verbal instructions given)

Comments by Engineer's / Contractor's Representative

Utilities
(Record location & nature of works)

Progress
(Mention briefly any matter delaying or obstructing progress)

Visitor
(Record names of visitors and time of visit)

Accidents
(Describe any occurance of accident)

Remarks

Contractor's Site Staff	No.
Total	

Assistance to Engineer	No.
Driver	1
Watchman	1
Total	2

Labour	Code	No.
Asphalter (Other Construction)	C301	
Asphalter (Roadworks)	C302	
Bamboo Scaffolder	C303	
Bar Bender & Fixer	C304	
Bricklayer	C305	
Carpenter (Fender)	C306	
Carpenter (Fornwork)	C307	
Concrete Repairer	C308	
Concretor	C309	
Construction Plant Mechanic	C310	
Curtain Wall Installer	C311	
Demolition Worker	C312	
Diver	C313	
Drainlayer	C314	
Electrician (Main Contractor's)	C315	
Floor Layer	C316	
Gas Plumber	C317	
General Welder	C318	
Glazier	C319	
Ground Investigation Operator/Driller/Borer	C320	
Grouting Worker	C321	
Joiner	C322	
Leveller	C323	
Marble Worker	C324	
Marine Construction Plant Operator	C325	
Mason	C326	
Metal Scaffolder	C327	
Metal Worker	C328	
Painter & Decorator	C329	
Piling Operative	C330	
Pipelayer	C331	
Plant and Equipment Operator (Builder's Lift and Other Machinery)	C332	
Plant & Equipment Operator (Earthmoving Machinery)	C333	
Plant and Equipment Operator (Hoist and Crane)	C334	
Plant and Equipment Operator (Piling)	C335	
Plant and Equipment Operator (Tunnelling)	C336	
Plasterer	C337	
Plumber	C338	
Pneumatic Driller	C339	
Prestressing Operative	C340	
Rigger/Metal Formwork Erector	C341	
Shotcretor	C342	
Shotfirer	C343	
Slope Maintenance Worker	C344	
Structural Steel Erector	C345	
Structural Steel Welder	C346	
Tiler	C347	
Trackworker	C348	
Truck Driver / Coxswain / Barge Engineer / Working Ganger*	C349	
Window Frame Installer	C350	
(To be continued)		

Labour	Code	No.
Chainman	C401	
Concreting Labourer	C402	
Diver's Linesman / Dredger Crew / Barge Crew	C403	
Excavator	C404	
Heavy Load Labourer	C405	
Labourer (male / female) / Lorry checker / Watchman/Office attendan	C406	6
Sewerman	C407	
Automation Equipment Mechanic	E301	
Building Services Mechanic	E302	
Cable Jointer (Power)	E303	
Carpenter	E304	
Electrician/Electrical Fitter	E305	
Fire Services Mechanic	E306	
Instrument Mechanic	E307	
Lift Electrician	E308	
Lift Mechanic	E309	
Mechanical Fitter	E310	
Overhead Linesman	E311	
Painter	E312	
Plumber and Pipe Fitter	E313	
Refrigeration/AC/Ventilation Mechanic	E314	
Sheet Metal Worker	E315	
Sign Fabricator	E316	
Sign Installer	E317	
Thermal Insulation Craftsman	E318	
Welder	E319	
Labourer	E401	
Semi-skilled Worker	E402	
Technician	T	
Total Labour		6

Plant		
Type	No. Working	No. Idle
Air Compressor		1
Backhoe		5
Crawler Drill		1
Generator		1
Steel Bending Machine		3
Water Pump 50mm	4	1
Water Pump 75mm	1	1
Total	5	13

* Working ganger is equivalent to ordinary worker in the trade in which he is employed or, if the trade is not listed, truck driver (refer to GS Table 1.1)

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: *Engineer's Representative*

Name/Post: Stephen Poon / RE

Date: 3.9.12

Signed: *Contractor's Representative*

Wong Ching Lung / Site Agent

Date: 3/9/2012

Signed: *IOW*

Tso Sai Kuen / Inspector of Works

Date: 3-9-2012

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 02/09/2012

Day: Sunday

Time	Location	Activity	Labour			Plant						Material Delivered	
						Type	Working		Idling			Description	Quantity
			Trade	Code	No.		No.	ID	No.	ID	Code		
	Area A - DN1800 Stormwater Drain	No activity as per KLKJV arrangement											
08:00 - 18:00	Area A - Pump Station	Stripping off soffit formwork from roof of store room and general cleaning	Labourer (male)	C406	2	Backhoe			1	EX36	I		
						Backhoe			1	EX50	i		
						Steel Bending Machine			3		i		
						Water Pump 50mm	2						
						Water Pump 75mm	1						
07:00 - 18:00 18: 20:00	Area A - Ting Kok Road	Manual control of "stop/go" sign for traffic flow regulation (3 F/Lab.) Manual control of temporary traffic light for traffic flow regulation (1 M/Lab. from area I)	Labourer (female)	C406	3	Backhoe			1	EX17			
	Area A - Ting Kok Road (Intake Structure)	No activity as per KLKJV arrangement				Water Pump 50mm	1						
	Area B - Tung Tsz Nursery (CH130-CH280)	No activity as per KLKJV arrangement				Backhoe			1	EX08	i		
	Area B - Tung Tsz Nursery (CH40-CH130)	No activity as per KLKJV arrangement				Water Pump 50mm			1		i		
						Water Pump 75mm			1		i		
	Area B - Tung Tsz Nursery (Jacking Pit)	No activity as per KLKJV arrangement				Air Compressor			1	AC05	i		
						Crawler Drill			1	DR05	I		
						Water Pump 50mm	1						
	Area C - Shallow Marshy Area	No activity as per KLKJV arrangement											
	Area E - Siu Lek Yuen Rd.Playground	No activity as per KLKJV arrangement				Backhoe			1	EX21	i		
						Generator			1		i		
	Area F - Lek Yuen Street Rest Garden	No activity as per KLKJV arrangement											
	Area G - Ngan Shing St.	No activity as per KLKJV arrangement											

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: *Engineer's Representative*

Name/Post: Stephen Poon / RE

Date: 3.9.12

Signed: *Contractor's Representative*

Wong Ching Lung / Site Agent

Date: 3/9/2012

Signed: *IOW*

Tso Sai Kuen / Inspector of Works

Date: 3-9-2012

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 02/09/2012

Day: Sunday

Time	Location	Activity	Labour			Plant						Material Delivered	
						Type	Working		Idling			Description	Quantity
			Trade	Code	No.		No.	ID	No.	ID	Code		
08:00 - 18:00	Area 1 - Contractor Office	Office cleaning	Labourer (male)	C406	1								

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: *Engineer's Representative*

Name/Post: Stephen Poon / RE

Date: 3.9.12

Signed: *Contractor's Representative*

Wong Ching Lung / Site Agent

Date: 3/9/2012

Signed: *IOW*

Tso Sai Kuen / Inspector of Works

Date: 3-9-2012

AECOM ASIA COMPANY LTD.

ENGINEER'S SITE DIARY

Client Department: Drainage Services Department

Contract Title: Drainage Improvement Works in Shuen Wan, Tai Po - Contract 1

Contractor: KWAN LEE - KULY JOINT VENTURE

Weather:

AM	PM	Rainfall (mm)
Shower	Cloudy	ST 5, TP 2

(Hong Kong Observatory's record)

Typhoon / Warning Signal:

Thunderstorm Warning - 01:05~03:00 & 15:05~16:45

Contract No.: DC/2009/22 Date: 01/09/2012

Day: Saturday

Instructions to Contractor
(Record verbal instructions given)

Comments by Engineer's / Contractor's Representative

Utilities
(Record location & nature of works)

Progress
(Mention briefly any matter delaying or obstructing progress)

Visitor
(Record names of visitors and time of visit)

Accidents
(Describe any occurance of accident)

Remarks

Contractor's Site Staff	No.
Assistant Surveyor	1
Chainman	3
Community Liaison Officer	1
CEG	1
Contract Manager	1
Engineer	1
Environmental Officer	1
Foreman/Assistant Foreman	2
General Foreman	1
Labour Officer	1
Land Surveyor	1
Project Director	1
Project Manager	2
Project Quantity Surveyor	1
Quantity Surveyor Manager	1
Safety Officer	1
Site Agent	1
Surveyor	1
Total	22

Assistance to Engineer	No.
Amah	1
Coordinate Engineer	
Drafting Assistant	1
Driver	2
Field Assistant	3
Office Assistant	1
Watchman	1
Total	9

Labour	Code	No.
Asphalter (Other Construction)	C301	
Asphalter (Roadworks)	C302	
Bamboo Scaffolder	C303	
Bar Bender & Fixer	C304	4
Bricklayer	C305	
Carpenter (Fender)	C306	
Carpenter (Formwork)	C307	4
Concrete Repairer	C308	
Concretor	C309	
Construction Plant Mechanic	C310	
Curtain Wall Installer	C311	
Demolition Worker	C312	
Diver	C313	
Drainlayer	C314	
Electrician (Main Contractor's)	C315	
Floor Layer	C316	
Gas Plumber	C317	
General Welder	C318	2
Glazier	C319	
Ground Investigation Operator/Driller/Borer	C320	
Grouting Worker	C321	
Joiner	C322	
Leveller	C323	
Marble Worker	C324	
Marine Construction Plant Operator	C325	
Mason	C326	
Metal Scaffolder	C327	
Metal Worker	C328	2
Painter & Decorator	C329	
Piling Operative	C330	
Pipelayer	C331	1
Plant and Equipment Operator (Builder's Lift and Other Machinery)	C332	
Plant & Equipment Operator (Earthmoving Machinery)	C333	4
Plant and Equipment Operator (Hoist and Crane)	C334	2
Plant and Equipment Operator (Piling)	C335	
Plant and Equipment Operator (Tunnelling)	C336	
Plasterer	C337	
Plumber	C338	
Pneumatic Driller	C339	
Prestressing Operative	C340	
Rigger/Metal Formwork Erector	C341	
Shotcretor	C342	
Shotfirer	C343	
Slope Maintenance Worker	C344	
Structural Steel Erector	C345	
Structural Steel Welder	C346	
Tiler	C347	
Trackworker	C348	
Truck Driver / Coxswain / Barge Engineer / Working Ganger*	C349	2
Window Frame Installer	C350	
(To be continued)		

Labour	Code	No.
Chainman	C401	
Concreting Labourer	C402	
Diver's Linesman / Dredger Crew / Barge Crew	C403	
Excavator	C404	
Heavy Load Labourer	C405	
Labourer (male / female) / Lorry checker / Watchman/Office attendan	C406	26
Sewerman	C407	
Automation Equipment Mechanic	E301	
Building Services Mechanic	E302	
Cable Jointer (Power)	E303	
Carpenter	E304	
Electrician/Electrical Fitter	E305	
Fire Services Mechanic	E306	
Instrument Mechanic	E307	
Lift Electrician	E308	
Lift Mechanic	E309	
Mechanical Fitter	E310	
Overhead Linesman	E311	
Painter	E312	
Plumber and Pipe Fitter	E313	
Refrigeration/AC/Ventilation Mechanic	E314	
Sheet Metal Worker	E315	
Sign Fabricator	E316	
Sign Installer	E317	
Thermal Insulation Craftsman	E318	
Welder	E319	
Labourer	E401	
Semi-skilled Worker	E402	
Technician	T	
Total Labour		47

Plant		
Type	No. Working	No. Idle
Air Compressor	1	
Backhoe	5	
Blower	2	
Crawler Drill	1	
Dump Truck	2	
Electric Breaker	1	
Generator	2	
Grout Machine		1
Oxy-Acetylene	3	2
Water Pump 50mm	8	
Water Pump 75mm	6	
Welding Set	4	
Total	35	3

* Working ganger is equivalent to ordinary worker in the trade in which he is employed or, if the trade is not listed, truck driver (refer to GS Table 1.1)

Day's record and instructions checked and agreed

Signed:
Engineer's Representative
Name/Post: Stephen Poon / RE
Date: 3.9.12

Signed:
Contractor's Representative
Wong Ching Lung / Site Agent
Date: 3/9/2012

Signed:
IOW
Tso Sai Kuen / Inspector of Works
Date: 3-9-2012

Original - ER's File

Duplicate - Contractor

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 01/09/2012

Day: Saturday

Time	Location	Activity	Labour			Plant						Material Delivered	
			Trade	Code	No.	Type	Working		Idling			Description	Quantity
							No.	ID	No.	ID	Code		
	Area A - DN1800 Stormwater Drain	No activity as per KLKJV arrangement											
08:00 - 18:00	Area A - Pump Station	Excavating for heading tunnel of Ø225 sewer pipe between MS1 & FMH1023921at Ch.6.7~7.4 and installing shoring frames Stripping off soffits formwork from roof of store room and dismantling the falsework Fabricating upper layer I-beam struts for shoring of Ø2100 pipe trench between manhole MH05~06 General cleaning at roof and manade slope Installing stainless steel doors (D4 & D9) at switchroom Painting for chequer plate trench covers at transformer room Installing 2 nos. Ø450 & 4 nos. Ø900 double flange pipe with puddle at wall between discharge chamber & valve chamber	General Welder	C318	1	Backhoe	1	EX50					
			Labourer (female)	C406	2	Blower	2						
			Labourer (male)	C406	8	Oxy-Acetylene	1						
			Metal Worker	C328	2	Water Pump 50mm	2						
			Pipelayer	C331	1	Water Pump 75mm	1						
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Welding Set	2						
08:00 - 18:00	Area A - Pump Station - Box Culvert (Receiving Pit)	Excavating for receiving pit to 3.0 mPD & cart away excavated materials to Contract 2's stockpile area at Tai Wah Street. (16 Truckloads)	Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Backhoe	1	EX36					
			Truck Driver	C349	2	Dump Truck	2						
07:00 - 18:00 18:00 - 20:00	Area A - Ting Kok Road	Manual control of "stop/go" sign for traffic flow regulation (3 F/Lab.) Manual control of temporary traffic light for traffic flow requlation (1 F/lab.)	Labourer (female)	C406	3								
08:00 - 18:00	Area A - Ting Kok Road (CH70-125)	Backfilling sand material to Ø2100 pipe trench at Ch.78~125 and compacting Formwork shuttering for walls of manhole MH03 Dismantling upper layer of I-beam walings and struts from shoring of Ø2100 pipe trench at Ch. 90~100	Carpenter (Formwork)	C307	2	Backhoe	1	EX17					
			General Welder	C318	1	Oxy-Acetylene	1						
			Labourer (female)	C406	1	Water Pump 50mm	2						
			Labourer (male)	C406	2								
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1								
	Area B - Tung Tsz Nursery (CH00-CH40)	No activity as per KLKJV arrangement											
08:00 - 18:00	Area B - Tung Tsz Nursery (CH130-CH280)	Bay 13 - Formwork shuttering for access shaft Bay 12 - Stripping off soffit formwork and dismantling the falsework Bay 11~12 - Patching up tie bolt holes at external face of wall prior to backfilling Bay 10 - Rebar fixing for walls and top slab	Bar Bender & Fixer	C304	4	Backhoe	1	EX08					
			Carpenter (Formwork)	C307	2	Generator	1						

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: *Engineer's Representative*

Name/Post: Stephen Poon / RE

Date: 3.9.12

Signed: *Contractor's Representative*

Wong Ching Lung / Site Agent

Date: 3/9/2012

Signed: *IOW*

Tso Sai Kuen / Inspector of Works

Date: 3-9-2012

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 01/09/2012

Day: Saturday

Time	Location	Activity	Labour			Plant						Material Delivered	
			Trade	Code	No.	Type	Working		Idling			Description	Quantity
							No.	ID	No.	ID	Code		
			Labourer (male)	C406	3	Oxy-Acetylene			1		h		
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Water Pump 50mm	1						
						Water Pump 75mm	2						
08:00 - 18:00	Area B - Tung Tsz Nursery (CH40-CH130)	General housekeeping & cleaning up sediments from wheel washing bay	Labourer (male)	C406	1	Water Pump 50mm	1						
						Water Pump 75mm	1						
08:00 - 12:00	Area B - Tung Tsz Nursery (Jacking Pit)	Set up crawler drill and preparation works for grouting	Labourer (male)	C406	2	Air Compressor	1	AC05					
			Plant and Equipment Operator (Hoist and Crane)	C334	1	Crawler Drill	1	DR05					
						Grout Machine			1		h		
						Oxy-Acetylene	1						
						Water Pump 50mm	1						
						Water Pump 75mm	1						
						Welding Set	1						
08:00 - 18:00	Area E - Siu Lek Yuen Rd.Playground	PL 1602.1 - Excavating for heading tunnel at Ch.~5.0 and installation of shoring frames Breaking up brick wall of exsiting manhole for build in Ø1650 pipe PL 1604.1 - Driving sheet piles and fabricating top layer I-beam walings and struts for trench shoring	Labourer (male)	C406	4	Backhoe	1	EX21					
			Plant and Equipment Operator (Hoist and Crane)	C334	1	Electric Breaker	1						
						Generator	1						
						Oxy-Acetylene			1		h		
						Water Pump 50mm	1						
						Water Pump 75mm	1						
						Welding Set	1						
	Area F - Lek Yuen Street Rest Garden	No activity as per KLKJV arrangement											
	Area G - Ngan Shing St.	No activity as per KLKJV arrangement											
	Area I - Contractor Office	No activity as per KLKJV arrangement											

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: *Engineer's Representative*

Name/Post: Stephen Poon / RE

Date: 3.9.12

Signed: *Contractor's Representative*

Wong Ching Lung / Site Agent

Date: 3/9/2012

Signed: *IOW*

Tso Sai Kuen / Inspector of Works

Date: 3-9-2012

AECOM ASIA COMPANY LTD.

ENGINEER'S SITE DIARY

Client Department: Drainage Services Department

Contract Title: Drainage Improvement Works in Shuen Wan, Tai Po - Contract 1

Contractor: KWAN LEE - KULY JOINT VENTURE

Weather:

AM	PM	Rainfall (mm)
Fine	Fine	ST 0, TP 0

(Hong Kong Observatory's record)

Typhoon / Warning Signal: Nil

Contract No.: DC/2009/22 Date: 14/09/2012

Day: Friday

Instructions to Contractor
(Record verbal instructions given)

Comments by Engineer's / Contractor's Representative

Utilities
(Record location & nature of works)

Progress
(Mention briefly any matter delaying or obstructing progress)

Visitor
(Record names of visitors and time of visit)

Accidents
(Describe any occurance of accident)

Remarks

Area A - Backhoe EX08 off site

Contractor's Site Staff	No.
Assistant Surveyor	1
Chainman	3
Community Liaison Officer	1
CEG	1
Contract Manager	1
Engineer	1
Environmental Officer	1
Foreman/Assistant Foreman	2
General Foreman	1
Labour Officer	1
Land Surveyor	1
Project Director	1
Project Manager	2
Project Quantity Surveyor	1
Quantity Surveyor Manager	1
Safety Officer	1
Site Agent	1
Surveyor	1
Total	22

Assistance to Engineer	No.
Amah	1
Coordinate Engineer	1
Drafting Assistant	1
Driver	2
Field Assistant	3
Office Assistant	
Watchman	1
Total	9

Labour	Code	No.
Asphalter (Other Construction)	C301	
Asphalter (Roadworks)	C302	
Bamboo Scaffolder	C303	
Bar Bender & Fixer	C304	4
Bricklayer	C305	
Carpenter (Fender)	C306	
Carpenter (Formwork)	C307	3
Concrete Repairer	C308	
Concretor	C309	
Construction Plant Mechanic	C310	
Curtain Wall Installer	C311	
Demolition Worker	C312	
Diver	C313	
Drainlayer	C314	
Electrician (Main Contractor's)	C315	
Floor Layer	C316	
Gas Plumber	C317	
General Welder	C318	1
Glazier	C319	
Ground Investigation Operator/Driller/Borer	C320	
Grouting Worker	C321	
Joiner	C322	
Leveller	C323	
Marble Worker	C324	
Marine Construction Plant Operator	C325	
Mason	C326	
Metal Scaffolder	C327	
Metal Worker	C328	
Painter & Decorator	C329	
Piling Operative	C330	
Pipelayer	C331	
Plant and Equipment Operator (Builder's Lift and Other Machinery)	C332	
Plant & Equipment Operator (Earthmoving Machinery)	C333	4
Plant and Equipment Operator (Hoist and Crane)	C334	2
Plant and Equipment Operator (Piling)	C335	
Plant and Equipment Operator (Tunnelling)	C336	
Plasterer	C337	
Plumber	C338	
Pneumatic Driller	C339	
Prestressing Operative	C340	
Rigger/Metal Formwork Erector	C341	
Shotcretor	C342	
Shotfirer	C343	
Slope Maintenance Worker	C344	
Structural Steel Erector	C345	
Structural Steel Welder	C346	
Tiler	C347	
Trackworker	C348	
Truck Driver / Coxswain / Barge Engineer / Working Ganger*	C349	
Window Frame Installer	C350	
(To be continued)		

Labour	Code	No.
Chainman	C401	
Concreting Labourer	C402	
Diver's Linesman / Dredger Crew / Barge Crew	C403	
Excavator	C404	
Heavy Load Labourer	C405	
Labourer (male / female) / Lorry checker / Watchman/Office attendan	C406	25
Sewerman	C407	
Automation Equipment Mechanic	E301	
Building Services Mechanic	E302	
Cable Jointer (Power)	E303	
Carpenter	E304	
Electrician/Electrical Fitter	E305	
Fire Services Mechanic	E306	
Instrument Mechanic	E307	
Lift Electrician	E308	
Lift Mechanic	E309	
Mechanical Fitter	E310	
Overhead Linesman	E311	
Painter	E312	
Plumber and Pipe Fitter	E313	
Refrigeration/AC/Ventilation Mechanic	E314	
Sheet Metal Worker	E315	
Sign Fabricator	E316	
Sign Installer	E317	
Thermal Insulation Craftsman	E318	
Welder	E319	
Labourer	E401	
Semi-skilled Worker	E402	
Technician	T	
Total Labour		39

Plant		
Type	**No. Working**	**No. Idle**
Air Compressor	1	
Backhoe	4	2
Backhoe with Vibrating Hammer	1	
Blower	4	
Crawler Drill	1	
Electric Breaker	2	
Generator	2	
Grout Machine		1
Mini Backhoe		1
Oxy-Acetylene	4	1
Saw Cut Machine	1	
Steel Bending Machine	2	
Vibrating Prob	1	
Water Pump 50mm	8	
Water Pump 75mm	6	
Welding Set	3	1
Total	40	6

* Working ganger is equivalent to ordinary worker in the trade in which he is employed or, if the trade is not listed, truck driver (refer to GS Table 1.1)

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed:
Engineer's Representative
Name/Post: Stephen Poon / RE
Date: 17.9.12

Signed:
Contractor's Representative
Wong Ching Lung / Site Agent
Date: 17/9/2012

Signed:
IOW
Tso Sai Kuen / Inspector of Works
Date: 17-9-2012

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 14/09/2012

Day: Friday

Time	Location	Activity	Labour			Plant						Material Delivered	
						Type	Working		Idling			Description	Quantity
			Trade	Code	No.		No.	ID	No.	ID	Code		
	Area A - DN1800 Stormwater Drain	No activity as per KLKJV arrangement											
08:00 - 18:00	Area A - Pump Station	Excavating for heading tunnel of Ø225 sewer pipe between MS1 & FMH1023921at Ch.11.0~11.4 and installing shoring frames Cutting & bending reinforcement bars for discharge chamber at bending yard Fixing tie bolts and walings for wall formwork & rebar fixing for top slab of discharge chamber Excavating for Ø2100 & Ø1200 pipe trench between manhole MH05~ receiving pit and fabricating second layer I-beam walings & struts Saw cutting and breaking up of floor screed at transformer room	Bar Bender & Fixer	C304	4	Backhoe	1	EX50					
			Carpenter (Formwork)	C307	2	Blower	2						
			General Welder	C318	1	Electric Breaker	2						
			Labourer (female)	C406	1	Oxy-Acetylene	1						
			Labourer (male)	C406	6	Saw Cut Machine	1						
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Steel Bending Machine	2						
						Water Pump 50mm	2						
						Water Pump 75mm	1						
						Welding Set	1						
08:00 - 18:00	Area A - Pump Station - Box Culvert (Receiving Pit)	Excavating to -1.7 mPD	Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Backhoe	1	EX36					
07:00 - 18:00 18:00 - 20:00	Area A - Ting Kok Road	Manual control of "stop/go" sign for traffic flow regulation (3 F/Lab.) Manual control of temporary traffic light for traffic flow regulation (1F/Lab.)	Labourer (female)	C406	3								
08:00 - 18:00	Area A - Ting Kok Road (CH70-125)	Stripping off formwork from manhole MH03 Extracting sheetpiles from shoring of Ø2100 pipe trench at Ch.92~100 Excavating for Ø375 pipe trench between SMH02 & SMH03	Labourer (female)	C406	2	Backhoe	1	EX42					
			Labourer (male)	C406	3	Backhoe			1	EX54	h		
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Backhoe with Vibrating Hammer	1	EX40					
			Plant and Equipment Operator (Hoist and Crane)	C334	1	Oxy-Acetylene	1						
						Water Pump 50mm	2						
	Area B - Tung Tsz Nursery (CH00-CH40)	No activity as per KLKJV arrangement											
08:00 - 18:00	Area B - Tung Tsz Nursery (CH130-CH280)	Bay 10 - Dismantling upper layer of I-beam walings and struts from shoring Bay 10~13 - Backfilling for box culvert trench	Labourer (male)	C406	3	Backhoe	1	EX11					
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Generator	1						

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: *Engineer's Representative*

Name/Post: Stephen Poon / RE

Date: 17.9.12

Signed: *Contractor's Representative*

Wong Ching Lung / Site Agent

Date: 17/9/2012

Signed: *IOW*

Tso Sai Kuen / Inspector of Works

Date: 17-9-2012

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 14/09/2012

Day: Friday

Time	Location	Activity	Labour			Plant						Material Delivered	
						Type	Working		Idling			Description	Quantity
			Trade	Code	No.		No.	ID	No.	ID	Code		
						Oxy-Acetylene	1						
						Water Pump 50mm	1						
						Water Pump 75mm	2						
						Welding Set	1						
	Area B - Tung Tsz Nursery (CH40-CH130)	No activity as per KLKJV arrangement				Water Pump 50mm	1						
						Water Pump 75mm	1						
08:00 - 18:00	Area B - Tung Tsz Nursery (Jacking Pit)	Drilling 2 nos. grout holes (2-7 & 2-8) and inserting grout tube	Labourer (male)	C406	4	Air Compressor	1	AC05					
			Plant and Equipment Operator (Hoist and Crane)	C334	1	Crawler Drill	1	DR05					
						Grout Machine			1		h		
						Mini Backhoe			1	EX53	h		
						Oxy-Acetylene	1						
						Water Pump 50mm	1						
						Water Pump 75mm	1						
						Welding Set	1						
08:00 - 18:00	Area E - Siu Lek Yuen Rd.Playground	Manhole S6 - Re-bar fixing and concreting for wall stems and top slab	Carpenter (Formwork)	C307	1	Backhoe			1	EX21	h		
			Labourer (male)	C406	3	Blower	2						
						Generator	1						
						Oxy-Acetylene			1		h		
						Vibrating Prob	1						
						Water Pump 50mm	1						
						Water Pump 75mm	1						
						Welding Set			1		h		
	Area G - Ngan Shing St.	No activity as per KLKJV arrangement											
	Area I - Contractor Office	No activity as per KLKJV arrangement											

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: ***Engineer's Representative***

Name/Post: Stephen Poon / RE

Date: 17.9.12

Signed: ***Contractor's Representative***

Wong Ching Lung / Site Agent

Date: 17/9/2012

Signed: ***IOW***

Tso Sai Kuen / Inspector of Works

Date: 17-9-2012

AECOM ASIA COMPANY LTD.

ENGINEER'S SITE DIARY

Client Department: Drainage Services Department

Contract Title: Drainage Improvement Works in Shuen Wan, Tai Po - Contract 1

Contractor: KWAN LEE - KULY JOINT VENTURE

Weather:

AM	PM	Rainfall (mm)
Fine	Shower	ST 5, TP 0

(Hong Kong Observatory's record)

Typhoon / Warning Signal:

Very Hot Weather Warning - 00:00~15:00
Thunderstorm Warning - 12:30~15:30

Contract No.: DC/2009/22 Date: 13/09/2012

Day: Thursday

Instructions to Contractor
(Record verbal instructions given)

Comments by Engineer's / Contractor's Representative

Utilities
(Record location & nature of works)

Progress
(Mention briefly any matter delaying or obstructing progress)

Visitor
(Record names of visitors and time of visit)

Accidents
(Describe any occurance of accident)

Remarks

Weekly Safety and Environmental Coordination Meeting #130 was held at 11:30 A.M.
Area A - Backhoe on site at noon
Mr. Choi of Kam Shing (Representative of CLP) preform the Schmidt Hammer Test to plinths at Transformer Room at 12:30 hr.

Contractor's Site Staff	No.
Assistant Surveyor	1
Chainman	3
Community Liaison Officer	1
CEG	1
Contract Manager	1
Engineer	1
Environmental Officer	1
Foreman/Assistant Foreman	2
General Foreman	1
Labour Officer	1
Land Surveyor	1
Project Director	1
Project Manager	2
Project Quantity Surveyor	1
Quantity Surveyor Manager	1
Safety Officer	1
Site Agent	1
Surveyor	1
Total	22

Assistance to Engineer	No.
Amah	1
Coordinate Engineer	1
Drafting Assistant	1
Driver	2
Field Assistant	3
Office Assistant	
Watchman	1
Total	9

Labour	Code	No.
Asphalter (Other Construction)	C301	
Asphalter (Roadworks)	C302	
Bamboo Scaffolder	C303	
Bar Bender & Fixer	C304	
Bricklayer	C305	
Carpenter (Fender)	C306	
Carpenter (Formwork)	C307	4
Concrete Repairer	C308	
Concretor	C309	
Construction Plant Mechanic	C310	
Curtain Wall Installer	C311	
Demolition Worker	C312	
Diver	C313	
Drainlayer	C314	
Electrician (Main Contractor's)	C315	
Floor Layer	C316	
Gas Plumber	C317	
General Welder	C318	1
Glazier	C319	
Ground Investigation Operator/Driller/Borer	C320	
Grouting Worker	C321	
Joiner	C322	
Leveller	C323	
Marble Worker	C324	
Marine Construction Plant Operator	C325	
Mason	C326	
Metal Scaffolder	C327	
Metal Worker	C328	
Painter & Decorator	C329	
Piling Operative	C330	
Pipelayer	C331	1
Plant and Equipment Operator (Builder's Lift and Other Machinery)	C332	
Plant & Equipment Operator (Earthmoving Machinery)	C333	5
Plant and Equipment Operator (Hoist and Crane)	C334	3
Plant and Equipment Operator (Piling)	C335	
Plant and Equipment Operator (Tunnelling)	C336	
Plasterer	C337	
Plumber	C338	
Pneumatic Driller	C339	
Prestressing Operative	C340	
Rigger/Metal Formwork Erector	C341	
Shotcretor	C342	
Shotfirer	C343	
Slope Maintenance Worker	C344	
Structural Steel Erector	C345	
Structural Steel Welder	C346	
Tiler	C347	
Trackworker	C348	
Truck Driver / Coxswain / Barge Engineer / Working Ganger*	C349	2
Window Frame Installer	C350	
(To be continued)		

Labour	Code	No.
Chainman	C401	
Concreting Labourer	C402	
Diver's Linesman / Dredger Crew / Barge Crew	C403	
Excavator	C404	
Heavy Load Labourer	C405	
Labourer (male / female) / Lorry checker / Watchman/Office attendan	C406	24
Sewerman	C407	
Automation Equipment Mechanic	E301	
Building Services Mechanic	E302	
Cable Jointer (Power)	E303	
Carpenter	E304	
Electrician/Electrical Fitter	E305	1
Fire Services Mechanic	E306	
Instrument Mechanic	E307	
Lift Electrician	E308	
Lift Mechanic	E309	
Mechanical Fitter	E310	
Overhead Linesman	E311	
Painter	E312	
Plumber and Pipe Fitter	E313	
Refrigeration/AC/Ventilation Mechanic	E314	
Sheet Metal Worker	E315	
Sign Fabricator	E316	
Sign Installer	E317	
Thermal Insulation Craftsman	E318	
Welder	E319	
Labourer	E401	
Semi-skilled Worker	E402	
Technician	T	
Total Labour		41

Plant		
Type	No. Working	No. Idle
Air Compressor	1	
Backhoe	5	2
Backhoe with Vibrating Hammer	1	
Blower	4	
Crawler Drill	1	
Dump Truck	2	
Generator	2	
Grab Lorry	1	
Grout Machine		1
Mini Backhoe		1
Oxy-Acetylene	4	1
Water Pump 50mm	8	
Water Pump 75mm	6	
Welding Set	3	1
Total	38	6

* Working ganger is equivalent to ordinary worker in the trade in which he is employed or, if the trade is not listed, truck driver (refer to GS Table 1.1)

Day's record and instructions checked and agreed

Signed:
Engineer's Representative
Name/Post: Stephen Poon / RE
Date: 14.9.12

Signed:
Contractor's Representative
Wong Ching Lung / Site Agent
Date: 14/9/2012

Signed:
IOW
Tso Sai Kuen / Inspector of Works
Date: 14/9/2012

Original - ER's File

Duplicate - Contractor

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 13/09/2012

Day: Thursday

Time	Location	Activity	Labour			Plant						Material Delivered	
						Type	Working		Idling			Description	Quantity
			Trade	Code	No.		No.	ID	No.	ID	Code		
	Area A - DN1800 Stormwater Drain	No activity as per KLKJV arrangement											
08:00 - 18:00	Area A - Pump Station	Excavating for heading tunnel of Ø225 sewer pipe between MS1 & FMH1023921 at Ch.10.7~11.0 and installing shoring frames Formwork shuttering for box out of stoplogs (SL-01~03) & access openigns at top slab of discharge chamber Excavating for Ø2100 & Ø1200 pipe trench between manhole MH05~ receiving Pit and fabricating second layer I-beam waling and struts Installing earthing to steel door at transformer room General housekeeping & cleaning up sediments from wheel washing bay Disposal of construction bebris to WENT (2 Truckloads)	Carpenter (Formwork)	C307	2	Backhoe	1	EX50					
			Electrician/Electrical Fitter	E305	1	Blower	2						
			General Welder	C318	1	Grab Lorry	1						
			Labourer (female)	C406	2	Oxy-Acetylene	1						
			Labourer (male)	C406	6	Water Pump 50mm	2						
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Water Pump 75mm	1						
			Plant and Equipment Operator (Hoist and Crane)	C334	1	Welding Set	1						
08:00 - 18:00	Area A - Pump Station - Box Culvert (Receiving Pit)	Excavating to -1.7 mPD & cart away excavated material to Area B (9 Truckloads)	Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Backhoe	1	EX36					
			Truck Driver	C349	2	Dump Truck	2						
07:00 - 18:00 18:00 - 20:00	Area A - Ting Kok Road	Manual control of 'stop & go' sign for traffic flow regulation (3 F/Lab.) Manual control of temporary traffic light for traffic flow regulation (1F/Lab.)	Labourer (female)	C406	3								
08:00 - 18:00	Area A - Ting Kok Road (CH70-125)	Stripping off formwork from manhole MH03 Extracting sheetpiles from shoring of Ø2100 pipe trench at Ch.100~114 along footpath side Backfilling sand material to Ø2100 pipe trench at Ch. 78~90 and compacting	Labourer (female)	C406	1	Backhoe	1	EX42					
			Labourer (male)	C406	3	Backhoe			1	EX54	h		
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Backhoe with Vibrating Hammer	1	EX40					
			Plant and Equipment Operator (Hoist and Crane)	C334	1	Oxy-Acetylene	1						
						Water Pump 50mm	2						
	Area B - Tung Tsz Nursery (CH00-CH40)	No activity as per KLKJV arrangement											
08:00 - 18:00	Area B - Tung Tsz Nursery (CH130-CH280)	Bay 11 - Dismantling upper layer of I-beam walings and struts from shoring Bay 10 - Backfilling to box culvert trench	Labourer (male)	C406	3	Backhoe	1	EX08					
			Plant & Equipment Operator (Earthmoving Machinery)	C333	2	Backhoe	1	EX11					

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: *Engineer's Representative*

Name/Post: Stephen Poon / RE

Date: 14.9.12

Signed: *Contractor's Representative*

Wong Ching Lung / Site Agent

Date: 14/9/2012

Signed: *IOW*

Tso Sai Kuen / Inspector of Works

Date: 14/9/2012

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 13/09/2012

Day: Thursday

Time	Location	Activity	Labour			Plant						Material Delivered	
						Type	Working		Idling			Description	Quantity
			Trade	Code	No.		No.	ID	No.	ID	Code		
						Generator	1						
						Oxy-Acetylene	1						
						Water Pump 50mm	1						
						Water Pump 75mm	2						
						Welding Set	1						
08:00 - 18:00	Area B - Tung Tsz Nursery (CH40-CH130)	General housekeeping & cleaning up sediments from wheel washing bay	Labourer (male)	C406	1	Water Pump 50mm	1						
						Water Pump 75mm	1						
08 18:00	Area B - Tung Tsz Nursery (Jacking Pit)	Drilling 3 nos. grout hole (2-1, 2-2 & 2-3) and inserting grout tube	Labourer (male)	C406	3	Air Compressor	1	AC05					
			Plant and Equipment Operator (Hoist and Crane)	C334	1	Crawler Drill	1	DR05					
						Grout Machine			1		h		
						Mini Backhoe			1	EX53	h		
						Oxy-Acetylene	1						
						Water Pump 50mm	1						
						Water Pump 75mm	1						
						Welding Set	1						
						Water Pump 75mm	1						
						Welding Set	1						
08:00 - 18:00	Area E - Siu Lek Yuen Rd.Playground	PL 1602.2 &.3 - Laying 450Ø PC cut length pipes (PL1602.2 -0.42m) & PL1602.3-0.65m) PL 1602.1 - Making good wall face of Ø1650 pipe entry of existing manhole Manhole S6 - Formwork shuttering for top slab	Carpenter (Formwork)	C307	2	Backhoe			1	EX21	h		
			Labourer (male)	C406	2	Blower	2						
			Pipelayer	C331	1	Generator	1						
						Oxy-Acetylene			1		h		
						Water Pump 50mm	1						
						Water Pump 75mm	1						
						Welding Set			1		h		
	Area G - Ngan Shing St.	No activity as per KLKJV arrangement											
	Area H - Contractor Office	No activity as per KLKJV arrangement											

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: ***Engineer's Representative***

Name/Post: Stephen Poon / RE

Date: 14.9.12

Signed: ***Contractor's Representative***

Wong Ching Lung / Site Agent

Date: 14/9/2012

Signed: ***IOW***

Tso Sai Kuen / Inspector of Works

Date: 14/9/2012

AECOM ASIA COMPANY LTD.

ENGINEER'S SITE DIARY

Client Department: Drainage Services Department

Contract Title: Drainage Improvement Works in Shuen Wan, Tai Po - Contract 1

Contractor: KWAN LEE - KULY JOINT VENTURE

Weather:

AM	PM	Rainfall (mm)
Shower	Fine	ST 0, TP 2

(Hong Kong Observatory's record)

Typhoon / Warning Signal:

Very Hot Weather Warning - 00:00~24:00
Thunderstorm Warning - 15:00~16:00

Contract No.: DC/2009/22 Date: 12/09/2012

Day: Wednesday

Instructions to Contractor
(Record verbal instructions given)

Comments by Engineer's / Contractor's Representative

Utilities
(Record location & nature of works)

Progress
(Mention briefly any matter delaying or obstructing progress)

Visitor
(Record names of visitors and time of visit)

Accidents
(Describe any occurance of accident)

Remarks

Contractor's Site Staff	No.
Assistant Surveyor	1
Chainman	3
Community Liaison Officer	1
CEG	1
Contract Manager	1
Engineer	1
Environmental Officer	1
Foreman/Assistant Foreman	2
General Foreman	1
Labour Officer	1
Land Surveyor	1
Project Director	1
Project Manager	2
Project Quantity Surveyor	1
Quantity Surveyor Manager	1
Safety Officer	1
Site Agent	1
Surveyor	1
Total	22

Assistance to Engineer	No.
Amah	1
Coordinate Engineer	1
Drafting Assistant	1
Driver	2
Field Assistant	3
Office Assistant	
Watchman	1
Total	9

Labour	Code	No.
Asphalter (Other Construction)	C301	
Asphalter (Roadworks)	C302	
Bamboo Scaffolder	C303	
Bar Bender & Fixer	C304	
Bricklayer	C305	
Carpenter (Fender)	C306	
Carpenter (Formwork)	C307	4
Concrete Repairer	C308	
Concretor	C309	
Construction Plant Mechanic	C310	
Curtain Wall Installer	C311	
Demolition Worker	C312	
Diver	C313	
Drainlayer	C314	
Electrician (Main Contractor's)	C315	
Floor Layer	C316	
Gas Plumber	C317	
General Welder	C318	1
Glazier	C319	
Ground Investigation Operator/Driller/Borer	C320	
Grouting Worker	C321	
Joiner	C322	
Leveller	C323	
Marble Worker	C324	
Marine Construction Plant Operator	C325	
Mason	C326	
Metal Scaffolder	C327	
Metal Worker	C328	
Painter & Decorator	C329	
Piling Operative	C330	
Pipelayer	C331	
Plant and Equipment Operator (Builder's Lift and Other Machinery)	C332	
Plant & Equipment Operator (Earthmoving Machinery)	C333	5
Plant and Equipment Operator (Hoist and Crane)	C334	3
Plant and Equipment Operator (Piling)	C335	
Plant and Equipment Operator (Tunnelling)	C336	
Plasterer	C337	
Plumber	C338	
Pneumatic Driller	C339	
Prestressing Operative	C340	
Rigger/Metal Formwork Erector	C341	
Shotcretor	C342	
Shotfirer	C343	
Slope Maintenance Worker	C344	
Structural Steel Erector	C345	
Structural Steel Welder	C346	
Tiler	C347	
Trackworker	C348	
Truck Driver / Coxswain / Barge Engineer / Working Ganger*	C349	2
Window Frame Installer	C350	
(To be continued)		

Labour	Code	No.
Chainman	C401	
Concreting Labourer	C402	
Diver's Linesman / Dredger Crew / Barge Crew	C403	
Excavator	C404	
Heavy Load Labourer	C405	
Labourer (male / female) / Lorry checker / Watchman/Office attendan	C406	22
Sewerman	C407	
Automation Equipment Mechanic	E301	
Building Services Mechanic	E302	
Cable Jointer (Power)	E303	
Carpenter	E304	
Electrician/Electrical Fitter	E305	
Fire Services Mechanic	E306	
Instrument Mechanic	E307	
Lift Electrician	E308	
Lift Mechanic	E309	
Mechanical Fitter	E310	
Overhead Linesman	E311	
Painter	E312	
Plumber and Pipe Fitter	E313	
Refrigeration/AC/Ventilation Mechanic	E314	
Sheet Metal Worker	E315	
Sign Fabricator	E316	
Sign Installer	E317	
Thermal Insulation Craftsman	E318	
Welder	E319	
Labourer	E401	
Semi-skilled Worker	E402	
Technician	T	
Total Labour		37

Plant		
Type	No. Working	No. Idle
Air Compressor	1	
Backhoe	5	1
Backhoe with Vibrating Hammer	1	
Blower	4	
Crawler Drill	1	
Dump Truck	2	
Generator	2	
Grab Lorry	1	
Grout Machine		1
Mini Backhoe		1
Oxy-Acetylene	4	1
Water Pump 50mm	8	
Water Pump 75mm	6	
Welding Set	3	
Total	38	4

* Working ganger is equivalent to ordinary worker in the trade in which he is employed or, if the trade is not listed, truck driver (refer to GS Table 1.1)

Day's record and instructions checked and agreed

Signed:
Engineer's Representative
Name/Post: Stephen Poon / RE
Date: 13.9.12

Signed:
Contractor's Representative
Wong Ching Lung / Site Agent
Date: 13/9/2012

Signed:
IOW
Tso Sai Kuen / Inspector of Works
Date: 13/9/2012

Original - ER's File

Duplicate - Contractor

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 12/09/2012

Day: Wednesday

Time	Location	Activity	Labour			Plant						Material Delivered	
						Type	Working		Idling			Description	Quantity
			Trade	Code	No.		No.	ID	No.	ID	Code		
	Area A - DN1800 Stormwater Drain	No activity as per KLKJV arrangement											
08:00 - 18:00	Area A - Pump Station	Excavating for heading tunnel of Ø225 sewer pipe between MS1 & FMH1023921at Ch.10.5~10.7 and installing shoring frames Shuttering soffit of top slab for discharge chamber Excavating for Ø2100 pipe trench between manhole MH05 & MH06 and fabricating top layer I-beam walings and struts Cart away 3 truckloads of excavted materials to Area B General housekeeping & cleaning up sediments from wheel washing bay	Carpenter (Formwork)	C307	2	Backhoe	1	EX50					
			General Welder	C318	1	Blower	2						
			Labourer (female)	C406	2	Oxy-Acetylene	1						
			Labourer (male)	C406	5	Water Pump 50mm	2						
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Water Pump 75mm	1						
						Welding Set	1						
08:00 - 18:00	Area A - Pump Station - Box Culvert (Receiving Pit)	Excavating for receiving pit to -1.7 mPD and cart away excavated material to Area B (9 Truckloads)	Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Backhoe	1	EX36					
			Truck Driver	C349	2	Dump Truck	2						
07:00 - 18:00 18:00 - 20:00	Area A - Ting Kok Road	Manual control of "stop/go" sign for traffic flow regulation (3 F/Lab.) Manual control of temporary traffic light for traffic flow regulation (1F/Lab.)	Labourer (female)	C406	3								
08:00 - 18:00	Area A - Ting Kok Road (CH70-125)	Stripping off formwork from manhole MH03 Extracting sheetpiles from shoring of Ø2100 pipe trench at Ch.100~125 along carriageway Backfilling for Ø2100 pipe trench at Ch. 78~90	Labourer (male)	C406	4	Backhoe	1	EX42					
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Backhoe with Vibrating Hammer	1	EX40					
			Plant and Equipment Operator (Hoist and Crane)	C334	1	Oxy-Acetylene	1						
						Water Pump 50mm	2						
	Area B - Tung Tsz Nursery (CH00-CH40)	No activity as per KLKJV arrangement											
08:00 - 18:00	Area B - Tung Tsz Nursery (CH130-CH280)	Bay 12 - Dismantling upper layer of I-beam walings and struts from shoring Bay 10~11 - Backfilling to box culvert trench	Labourer (female)	C406	1	Backhoe	1	EX08					
			Labourer (male)	C406	1	Backhoe	1	EX11					
			Plant & Equipment Operator (Earthmoving Machinery)	C333	2	Generator	1						
						Oxy-Acetylene	1						
						Water Pump 50mm	1						

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: ***Engineer's Representative***

Name/Post: Stephen Poon / RE

Date: 13.9.12

Signed: ***Contractor's Representative***

Wong Ching Lung / Site Agent

Date: 13/9/2012

Signed: ***IOW***

Tso Sai Kuen / Inspector of Works

Date: 13/9/2012

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 12/09/2012

Day: Wednesday

Time	Location	Activity	Labour			Plant						Material Delivered	
						Type	Working		Idling			Description	Quantity
			Trade	Code	No.		No.	ID	No.	ID	Code		
						Water Pump 75mm	2						
						Welding Set	1						
08:00 - 18:00	Area B - Tung Tsz Nursery (CH40-CH130)	General housekeeping & cleaning up sediments from wheel washing bay Disposal of construction debris to WENT (1 Truck load)	Labourer (male)	C406	1	Grab Lorry	1						
			Plant and Equipment Operator (Hoist and Crane)	C334	1	Water Pump 50mm	1						
						Water Pump 75mm	1						
08:00 - 18:00	Area B - Tung Tsz Nursery (Jacking Pit)	Drilling 2 nos. grout holes (2-5 & 2-6) and inserting grout tube	Labourer (male)	C406	2	Air Compressor	1	AC05					
			Plant and Equipment Operator (Hoist and Crane)	C334	1	Crawler Drill	1	DR05					
						Grout Machine			1		h		
						Mini Backhoe			1	EX53	h		
						Oxy-Acetylene	1						
						Water Pump 50mm	1						
						Water Pump 75mm	1						
						Welding Set	1						
08:00 - 18:00	Area E - Siu Lek Yuen Rd.Playground	Manhole S6 - Formwork shuttering for wall stems PL 1602.1 - Cement grouting to fill up the cavity between heading tunnel and Ø1650 drain pipe	Carpenter (Formwork)	C307	2	Backhoe			1	EX21	h		
			Labourer (male)	C406	3	Blower	2						
						Generator	1						
						Oxy-Acetylene			1		h		
						Water Pump 50mm	1						
						Water Pump 75mm	1						
	Area G - Ngan Shing St.	No activity as per KLKJV arrangement											
	Area I - Contractor Office	No activity as per kLKJV arrangement											

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: *Engineer's Representative*

Name/Post: Stephen Poon / RE

Date: 13.9.12

Signed: *Contractor's Representative*

Wong Ching Lung / Site Agent

Date: 13/9/2012

Signed: *IOW*

Tso Sai Kuen / Inspector of Works

Date: 13/9/2012

AECOM ASIA COMPANY LTD.

ENGINEER'S SITE DIARY

Client Department: Drainage Services Department

Contract Title: Drainage Improvement Works in Shuen Wan, Tai Po - Contract 1

Contractor: KWAN LEE - KULY JOINT VENTURE

Weather:

AM	PM	Rainfall (mm)
Fine	Fine	ST 0, TP 0

(Hong Kong Observatory's record)

Typhoon / Warning Signal:

Very Hot Weather Warning - 10:45~24:00

Contract No.: DC/2009/22 Date: 11/09/2012

Day: Tuesday

Instructions to Contractor
(Record verbal instructions given)

Comments by Engineer's / Contractor's Representative

Utilities
(Record location & nature of works)

Progress
(Mention briefly any matter delaying or obstructing progress)

Visitor
(Record names of visitors and time of visit)

Accidents
(Describe any occurance of accident)

Remarks

Pre-handover inspection of Transformer Room was held at 10:30 A.M. amongst Mr. Choi of Kam Shing (represebtative of CLP), Mr. Jeff Chan of KLKJV and Mr. Poon of AECOM

Weekly Safety and Environmental Coordaination Meeting #130 was held at 11:30 A.M.

Contractor's Site Staff	No.
Assistant Surveyor	1
Chainman	3
Community Liaison Officer	1
CEG	1
Contract Manager	1
Engineer	1
Environmental Officer	1
Foreman/Assistant Foreman	2
General Foreman	1
Labour Officer	1
Land Surveyor	1
Project Director	1
Project Manager	2
Project Quantity Surveyor	1
Quantity Surveyor Manager	1
Safety Officer	1
Site Agent	1
Surveyor	1
Total	22

Assistance to Engineer	No.
Amah	1
Coordinate Engineer	1
Drafting Assistant	1
Driver	2
Field Assistant	3
Office Assistant	
Watchman	1
Total	9

Labour	Code	No.
Asphalter (Other Construction)	C301	
Asphalter (Roadworks)	C302	
Bamboo Scaffolder	C303	
Bar Bender & Fixer	C304	
Bricklayer	C305	
Carpenter (Fender)	C306	
Carpenter (Formwork)	C307	4
Concrete Repairer	C308	
Concretor	C309	
Construction Plant Mechanic	C310	
Curtain Wall Installer	C311	
Demolition Worker	C312	
Diver	C313	
Drainlayer	C314	
Electrician (Main Contractor's)	C315	
Floor Layer	C316	
Gas Plumber	C317	
General Welder	C318	1
Glazier	C319	
Ground Investigation Operator/Driller/Borer	C320	
Grouting Worker	C321	
Joiner	C322	
Leveller	C323	
Marble Worker	C324	
Marine Construction Plant Operator	C325	
Mason	C326	
Metal Scaffolder	C327	
Metal Worker	C328	
Painter & Decorator	C329	
Piling Operative	C330	
Pipelayer	C331	
Plant and Equipment Operator (Builder's Lift and Other Machinery)	C332	
Plant & Equipment Operator (Earthmoving Machinery)	C333	4
Plant and Equipment Operator (Hoist and Crane)	C334	2
Plant and Equipment Operator (Piling)	C335	
Plant and Equipment Operator (Tunnelling)	C336	
Plasterer	C337	
Plumber	C338	
Pneumatic Driller	C339	
Prestressing Operative	C340	
Rigger/Metal Formwork Erector	C341	
Shotcretor	C342	
Shotfirer	C343	
Slope Maintenance Worker	C344	
Structural Steel Erector	C345	
Structural Steel Welder	C346	
Tiler	C347	
Trackworker	C348	
Truck Driver / Coxswain / Barge Engineer / Working Ganger*	C349	2
Window Frame Installer	C350	
(To be continued)		

Labour	Code	No.
Chainman	C401	
Concreting Labourer	C402	
Diver's Linesman / Dredger Crew / Barge Crew	C403	
Excavator	C404	
Heavy Load Labourer	C405	
Labourer (male / female) / Lorry checker / Watchman/Office attendan	C406	26
Sewerman	C407	
Automation Equipment Mechanic	E301	
Building Services Mechanic	E302	
Cable Jointer (Power)	E303	
Carpenter	E304	
Electrician/Electrical Fitter	E305	1
Fire Services Mechanic	E306	
Instrument Mechanic	E307	
Lift Electrician	E308	
Lift Mechanic	E309	
Mechanical Fitter	E310	
Overhead Linesman	E311	
Painter	E312	
Plumber and Pipe Fitter	E313	
Refrigeration/AC/Ventilation Mechanic	E314	
Sheet Metal Worker	E315	
Sign Fabricator	E316	
Sign Installer	E317	
Thermal Insulation Craftsman	E318	
Welder	E319	
Labourer	E401	
Semi-skilled Worker	E402	
Technician	T	
Total Labour		40

Plant		
Type	**No. Working**	**No. Idle**
Air Compressor	1	
Backhoe	4	2
Backhoe with Vibrating Hammer	1	
Blower	4	
Crawler Drill	1	
Dump Truck	2	
Generator	2	
Grout Machine	1	
Mini Backhoe		1
Oxy-Acetylene	4	1
Water Pump 50mm	8	
Water Pump 75mm	6	
Welding Set	3	1
Total	37	5

* Working ganger is equivalent to ordinary worker in the trade in which he is employed or, if the trade is not listed, truck driver (refer to GS Table 1.1)

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed:

Engineer's Representative

Name/Post: Stephen Poon / RE

Date: 12.9.12

Signed:

Contractor's Representative

Wong Ching Lung / Site Agent

Date: 12/9/2012

Signed:

IOW

Tso Sai Kuen / Inspector of Works

Date: 12-9-2012

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 11/09/2012

Day: Tuesday

Time	Location	Activity	Labour			Plant						Material Delivered	
						Type	Working		Idling			Description	Quantity
			Trade	Code	No.		No.	ID	No.	ID	Code		
	Area A - DN1800 Stormwater Drain	No activity as per KLKJV arrangement											
08:00 - 18:00	Area A - Pump Station	Excavating for heading tunnel of Ø225 sewer pipe between MS1 & FMH1023921 at Ch.10.0~10.5 and installing shoring frames Erecting falsework, shuttering for soffit of top slab for discharge chamber & installing Ø150 uPVC downpipe Formwork shuttering for U-channel at manmade slope Excavating for Ø2100 pipe trench between manhole MH05 & MH06 and fabricating top layer of I-beam walings and struts Fixing cable trays on walls & installing earthing to connect metal fixtures at transformer room General housekeeping & cleaning up sediments from wheel washing bay	Carpenter (Formwork)	C307	2	Backhoe	1	EX50					
			Electrician/Electrical Fitter	E305	1	Blower	2						
			General Welder	C318	1	Oxy-Acetylene	1						
			Labourer (female)	C406	2	Water Pump 50mm	2						
			Labourer (male)	C406	8	Water Pump 75mm	1						
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Welding Set	1						
08:00 - 18:00	Area A - Pump Station - Box Culvert (Receiving Pit)	Excavating for receiving pit to -1.7 mPD and cart away excavated material to Area B (20 Truckloads)	Labourer (male)	C406	1	Backhoe	1	EX36					
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Dump Truck	2						
			Truck Driver	C349	2								
07:00 - 18:00 18:00 - 20:00	Area A - Ting Kok Road	Manual control of "stop/go" sign for traffic flow regulation (3 F/Lab.) Manual control of temporary traffic light for traffic flow regulation (1 F/Lab.)	Labourer (female)	C406	3								
08:00 - 18:00	Area A - Ting Kok Road (CH70-125)	Stripping off formwork for manhole MH03 Extracting sheetpiles from shoring of Ø2100 pipe trench at Ch.110~125 along carriageway	Labourer (male)	C406	3	Backhoe			1	EX42	h		
			Plant and Equipment Operator (Hoist and Crane)	C334	1	Backhoe with Vibrating Hammer	1	EX40					
						Oxy-Acetylene	1						
						Water Pump 50mm	2						
	Area B - Tung Tsz Nursery (CH00-CH40)	No activity as per KLKJV arrangement											
08:00 - 18:00	Area B - Tung Tsz Nursery (CH130-CH280)	Bay 13 - Dismantling upper layer I-beam walings and struts from shoring Bay 11 - Backfilling to box culvert trench	Labourer (female)	C406	1	Backhoe	1	EX08					
			Labourer (male)	C406	1	Backhoe	1	EX11					
			Plant & Equipment Operator (Earthmoving Machinery)	C333	2	Generator	1						
						Oxy-Acetylene	1						

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: *Engineer's Representative*

Name/Post: Stephen Poon / RE

Date: 12.9.12

Signed: *Contractor's Representative*

Wong Ching Lung / Site Agent

Date: 12/9/2012

Signed: *IOW*

Tso Sai Kuen / Inspector of Works

Date: 12-9-2012

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 11/09/2012

Day: Tuesday

Time	Location	Activity	Labour			Plant						Material Delivered	
						Type	Working		Idling			Description	Quantity
			Trade	Code	No.		No.	ID	No.	ID	Code		
						Water Pump 50mm	1						
						Water Pump 75mm	2						
						Welding Set	1						
08:00 - 18:00	Area B - Tung Tsz Nursery (CH40-CH130)	General housekeeping & cleaning up sediments from wheel washing bay	Labourer (male)	C406	1	Water Pump 50mm	1						
						Water Pump 75mm	1						
08:00 - 18:00	Area B - Tung Tsz Nursery (Jacking Pit)	Drilling 1 no. hole (2-4) at layer 2 and inserting grout tube Cement grouting to 1 no. drill hole (2-4) at layer 2	Labourer (male)	C406	3	Air Compressor	1	AC05					
			Plant and Equipment Operator (Hoist and Crane)	C334	1	Crawler Drill	1	DR05					
						Grout Machine	1						
						Mini Backhoe			1	EX53	h		
						Oxy-Acetylene	1						
						Water Pump 50mm	1						
						Water Pump 75mm	1						
						Welding Set	1						
08:00 - 18:00	Area E - Siu Lek Yuen Rd.Playground	Manhole S6 - Rendering for benching and shuttering for wall stem PL 1602.1 - Preparation works for cement grouting the cavity between heading tunnel and drain pipe1650Ø	Carpenter (Formwork)	C307	2	Backhoe			1	EX21	h		
			Labourer (male)	C406	3	Blower	2						
						Generator	1						
						Oxy-Acetylene			1		h		
						Water Pump 50mm	1						
						Water Pump 75mm	1						
						Welding Set			1		h		
	Area G - Ngan Shing St.	No activity as per KLKJV arrangement											
	Area I - Contractor Office	No activity as per KLKJV arrangement											

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: *Engineer's Representative*

Name/Post: Stephen Poon / RE

Date: 10.9.12

Signed: *Contractor's Representative*

Wong Ching Lung / Site Agent

Date: 12/9/2012

Signed: *IOW*

Tso Sai Kuen / Inspector of Works

Date: 12-9-2012

AECOM ASIA COMPANY LTD.

ENGINEER'S SITE DIARY

Client Department: Drainage Services Department

Contract Title: Drainage Improvement Works in Shuen Wan, Tai Po - Contract 1

Contractor: KWAN LEE - KULY JOINT VENTURE

Weather:

AM	PM	Rainfall (mm)
Fine	Fine	ST 0, TP 0

(Hong Kong Observatory's record)

Typhoon / Warning Signal:

Very Hot Weather Warning - 07:45~18:15

Contract No.: DC/2009/22 Date: 10/09/2012

Day: Monday

Instructions to Contractor
(Record verbal instructions given)

Comments by Engineer's / Contractor's Representative

Utilities
(Record location & nature of works)

Progress
(Mention briefly any matter delaying or obstructing progress)

Visitor
(Record names of visitors and time of visit)

Accidents
(Describe any occurance of accident)

Remarks

Contractor's Site Staff	No.
Assistant Surveyor	1
Chainman	3
Community Liaison Officer	1
CEG	1
Contract Manager	1
Engineer	1
Environmental Officer	1
Foreman/Assistant Foreman	2
General Foreman	1
Labour Officer	1
Land Surveyor	1
Project Director	1
Project Manager	2
Project Quantity Surveyor	1
Quantity Surveyor Manager	1
Safety Officer	1
Site Agent	1
Surveyor	1
Total	22

Assistance to Engineer	No.
Amah	1
Coordinate Engineer	1
Drafting Assistant	1
Driver	2
Field Assistant	3
Office Assistant	
Watchman	1
Total	9

Labour	Code	No.
Asphalter (Other Construction)	C301	
Asphalter (Roadworks)	C302	
Bamboo Scaffolder	C303	
Bar Bender & Fixer	C304	
Bricklayer	C305	
Carpenter (Fender)	C306	
Carpenter (Formwork)	C307	4
Concrete Repairer	C308	
Concretor	C309	
Construction Plant Mechanic	C310	
Curtain Wall Installer	C311	
Demolition Worker	C312	
Diver	C313	
Drainlayer	C314	
Electrician (Main Contractor's)	C315	
Floor Layer	C316	
Gas Plumber	C317	
General Welder	C318	1
Glazier	C319	
Ground Investigation Operator/Driller/Borer	C320	
Grouting Worker	C321	
Joiner	C322	
Leveller	C323	
Marble Worker	C324	
Marine Construction Plant Operator	C325	
Mason	C326	
Metal Scaffolder	C327	
Metal Worker	C328	
Painter & Decorator	C329	
Piling Operative	C330	
Pipelayer	C331	
Plant and Equipment Operator (Builder's Lift and Other Machinery)	C332	
Plant & Equipment Operator (Earthmoving Machinery)	C333	4
Plant and Equipment Operator (Hoist and Crane)	C334	2
Plant and Equipment Operator (Piling)	C335	
Plant and Equipment Operator (Tunnelling)	C336	
Plasterer	C337	1
Plumber	C338	
Pneumatic Driller	C339	
Prestressing Operative	C340	
Rigger/Metal Formwork Erector	C341	
Shotcretor	C342	
Shotfirer	C343	
Slope Maintenance Worker	C344	
Structural Steel Erector	C345	
Structural Steel Welder	C346	
Tiler	C347	
Trackworker	C348	
Truck Driver / Coxswain / Barge Engineer / Working Ganger*	C349	2
Window Frame Installer	C350	
(To be continued)		

Labour	Code	No.
Chainman	C401	
Concreting Labourer	C402	
Diver's Linesman / Dredger Crew / Barge Crew	C403	
Excavator	C404	
Heavy Load Labourer	C405	
Labourer (male / female) / Lorry checker / Watchman/Office attendan	C406	27
Sewerman	C407	
Automation Equipment Mechanic	E301	
Building Services Mechanic	E302	
Cable Jointer (Power)	E303	
Carpenter	E304	1
Electrician/Electrical Fitter	E305	1
Fire Services Mechanic	E306	
Instrument Mechanic	E307	
Lift Electrician	E308	
Lift Mechanic	E309	
Mechanical Fitter	E310	
Overhead Linesman	E311	
Painter	E312	
Plumber and Pipe Fitter	E313	
Refrigeration/AC/Ventilation Mechanic	E314	
Sheet Metal Worker	E315	
Sign Fabricator	E316	
Sign Installer	E317	
Thermal Insulation Craftsman	E318	
Welder	E319	
Labourer	E401	
Semi-skilled Worker	E402	
Technician	T	
Total Labour		43

Plant		
Type	No. Working	No. Idle
Air Compressor	1	
Backhoe	4	2
Backhoe with Vibrating Hammer	1	
Blower	4	
Crawler Drill	1	
Dump Truck	2	
Generator	2	
Grout Machine		1
Mini Backhoe		1
Oxy-Acetylene	4	1
Vibrating Prob	2	
Water Pump 50mm	8	
Water Pump 75mm	6	
Welding Set	3	
Total	38	5

* Working ganger is equivalent to ordinary worker in the trade in which he is employed or, if the trade is not listed, truck driver (refer to GS Table 1.1)

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed:
Engineer's Representative
Name/Post: Stephen Poon / RE
Date: 11.9.12

Signed:
Contractor's Representative
Wong Ching Lung / Site Agent
Date: 11/9/2012

Signed:
IOW
Tso Sai Kuen / Inspector of Works
Date: 11-9-2012

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 10/09/2012

Day: Monday

Time	Location	Activity	Labour			Plant						Material Delivered	
						Type	Working		Idling			Description	Quantity
			Trade	Code	No.		No.	ID	No.	ID	Code		
	Area A - DN1800 Stormwater Drain	No activity as per KLKJV arrangement											
08:00 - 18:00	Area A - Pump Station	Excavating for heading tunnel of Ø225 sewer pipe between MS1 & FMH1023921 at Ch.9.4~10.0 and installing shoring frames Formwork shuttering for wall W12 at discharge chamber Fabricating upper layer of I-beams walings for shoring of Ø2100 pipe trench between manhole MH05 & MH06 Laying cable trays on walls & installing earthing to connect the metal fixtures at transformer room General cleaning and forming level studs for floor screeds at switchroom General housekeeping & cleaning up sediments from wheel washing bay	Carpenter (Formwork)	C307	2	Backhoe	1	EX50					
			Electrician/Electrical Fitter	E305	1	Blower	2						
			General Welder	C318	1	Oxy-Acetylene	1						
			Labourer (female)	C406	3	Water Pump 50mm	2						
			Labourer (male)	C406	9	Water Pump 75mm	1						
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Welding Set	1						
			Plasterer	C337	1								
08:00 - 18:00	Area A - Pump Station - Box Culvert (Receiving Pit)	Excavating for receiving pit to -1.7 mPD & cart away excavated material to Area B (6 Truckloads)	Labourer (male)	C406	1	Backhoe	1	EX36					
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Dump Truck	2						
			Truck Driver	C349	2								
07:00 - 18:00 18:00 - 20:00	Area A - Ting Kok Road	Manual control of "stop/go" sign for traffic flow regulation (3 F/Lab.) Manual control of temporary traffic light for traffic flow regulation (1 L/Lab.)	Labourer (female)	C406	3								
08:00 - 18:00	Area A - Ting Kok Road (CH70-125)	Formwork shuttering and concreting to access shaft of manhole MH03 Extracting sheetpiles from shoring of Ø2100 pipe trench at Ch.120~125 along footpath	Carpenter	E304	1	Backhoe			1	EX42	h		
			Labourer (male)	C406	2	Backhoe with Vibrating Hammer	1	EX40					
			Plant and Equipment Operator (Hoist and Crane)	C334	1	Oxy-Acetylene	1						
						Vibrating Prob	1						
						Water Pump 50mm	2						
	Area B - Tung Tsz Nursery (CH00-CH40)	No activity as per KLKJV arrangement											
08:00 - 18:00	Area B - Tung Tsz Nursery (CH130-CH280)	Bay 10 - Fabricating struts to stop end sheetpile shoring at junction with bay 9 to facilitate backfill works Bay 11 - Backfilling to box culvert trench	Labourer (female)	C406	1	Backhoe	1	EX08					
			Labourer (male)	C406	1	Backhoe	1	EX11					

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: ***Engineer's Representative***

Name/Post: Stephen Poon / RE

Date: 11.9.12

Signed: ***Contractor's Representative***

Wong Ching Lung / Site Agent

Date: 11/9/2012

Signed: ***IOW***

Tso Sai Kuen / Inspector of Works

Date: 11-9-2012

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 10/09/2012

Day: Monday

Time	Location	Activity	Labour			Plant						Material Delivered	
						Type	Working		Idling			Description	Quantity
			Trade	Code	No.		No.	ID	No.	ID	Code		
			Plant & Equipment Operator (Earthmoving Machinery)	C333	2	Generator	1						
						Oxy-Acetylene	1						
						Water Pump 50mm	1						
						Water Pump 75mm	2						
						Welding Set	1						
08:00 - 18:00	Area B - Tung Tsz Nursery (CH40-CH130)	General housekeeping & cleaning up sediments from wheel washing bay	Labourer (male)	C406	1	Water Pump 50mm	1						
						Water Pump 75mm	1						
08 18:00	Area B - Tung Tsz Nursery (Jacking Pit)	Drilling 2 nos. holes (1-2 & 1-3) at layer 1 and inserting grout tube	Labourer (male)	C406	3	Air Compressor	1	AC05					
			Plant and Equipment Operator (Hoist and Crane)	C334	1	Crawler Drill	1	DR05					
						Grout Machine			1		h		
						Mini Backhoe			1	EX53	h		
						Oxy-Acetylene	1						
						Water Pump 50mm	1						
						Water Pump 75mm	1						
						Welding Set	1						
08:00 - 18:00	Area E - Siu Lek Yuen Rd.Playground	PL 1602.1 - Formwork shuttering and concreting to seal up Ø1650 pipe entry at existing manhole wall Manhole S6 - Concreting to benching	Carpenter (Formwork)	C307	2	Backhoe			1	EX21	h		
			Labourer (male)	C406	3	Blower	2						
						Generator	1						
						Oxy-Acetylene			1		h		
						Vibrating Prob	1						
						Water Pump 50mm	1						
						Water Pump 75mm	1						
	Area G - Ngan Shing St.	No activity as per KLKJV arrangement											
	Area I - Contractor Office	No activity as per KLKJV arrangement											

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: ***Engineer's Representative***

Name/Post: Stephen Poon / RE

Date: 11.9.12

Signed: ***Contractor's Representative***

Wong Ching Lung / Site Agent

Date: 11/9/2012

Signed: ***IOW***

Tso Sai Kuen / Inspector of Works

Date: 11-9-2012

AECOM ASIA COMPANY LTD.

ENGINEER'S SITE DIARY

Client Department: Drainage Services Department

Contract Title: Drainage Improvement Works in Shuen Wan, Tai Po - Contract 1

Contractor: KWAN LEE - KULY JOINT VENTURE

Weather:

AM	PM	Rainfall (mm)
Fine	Fine	ST 0, TP 0

(Hong Kong Observatory's record)

Typhoon / Warning Signal:

Thunderstorm Warning - 12:50~14:00

Contract No.: DC/2009/22 Date: 09/09/2012

Day: Sunday

Instructions to Contractor
(Record verbal instructions given)

Comments by Engineer's / Contractor's Representative

Utilities
(Record location & nature of works)

Progress
(Mention briefly any matter delaying or obstructing progress)

Visitor
(Record names of visitors and time of visit)

Accidents
(Describe any occurance of accident)

Remarks

Contractor's Site Staff	No.
Total	

Assistance to Engineer	No.
Driver	1
Watchman	1
Total	2

Labour	Code	No.
Asphalter (Other Construction)	C301	
Asphalter (Roadworks)	C302	
Bamboo Scaffolder	C303	
Bar Bender & Fixer	C304	
Bricklayer	C305	
Carpenter (Fender)	C306	
Carpenter (Formwork)	C307	
Concrete Repairer	C308	
Concretor	C309	
Construction Plant Mechanic	C310	
Curtain Wall Installer	C311	
Demolition Worker	C312	
Diver	C313	
Drainlayer	C314	
Electrician (Main Contractor's)	C315	
Floor Layer	C316	
Gas Plumber	C317	
General Welder	C318	
Glazier	C319	
Ground Investigation Operator/Driller/Borer	C320	
Grouting Worker	C321	
Joiner	C322	
Leveller	C323	
Marble Worker	C324	
Marine Construction Plant Operator	C325	
Mason	C326	
Metal Scaffolder	C327	
Metal Worker	C328	
Painter & Decorator	C329	
Piling Operative	C330	
Pipelayer	C331	
Plant and Equipment Operator (Builder's Lift and Other Machinery)	C332	
Plant & Equipment Operator (Earthmoving Machinery)	C333	
Plant and Equipment Operator (Hoist and Crane)	C334	
Plant and Equipment Operator (Piling)	C335	
Plant and Equipment Operator (Tunnelling)	C336	
Plasterer	C337	
Plumber	C338	
Pneumatic Driller	C339	
Prestressing Operative	C340	
Rigger/Metal Formwork Erector	C341	
Shotcretor	C342	
Shotfirer	C343	
Slope Maintenance Worker	C344	
Structural Steel Erector	C345	
Structural Steel Welder	C346	
Tiler	C347	
Trackworker	C348	
Truck Driver / Coxswain / Barge Engineer / Working Ganger*	C349	
Window Frame Installer	C350	
(To be continued)		

Labour	Code	No.
Chainman	C401	
Concreting Labourer	C402	
Diver's Linesman / Dredger Crew / Barge Crew	C403	
Excavator	C404	
Heavy Load Labourer	C405	
Labourer (male / female) / Lorry checker / Watchman/Office attendan	C406	4
Sewerman	C407	
Automation Equipment Mechanic	E301	
Building Services Mechanic	E302	
Cable Jointer (Power)	E303	
Carpenter	E304	
Electrician/Electrical Fitter	E305	
Fire Services Mechanic	E306	
Instrument Mechanic	E307	
Lift Electrician	E308	
Lift Mechanic	E309	
Mechanical Fitter	E310	
Overhead Linesman	E311	
Painter	E312	
Plumber and Pipe Fitter	E313	
Refrigeration/AC/Ventilation Mechanic	E314	
Sheet Metal Worker	E315	
Sign Fabricator	E316	
Sign Installer	E317	
Thermal Insulation Craftsman	E318	
Welder	E319	
Labourer	E401	
Semi-skilled Worker	E402	
Technician	T	
Total Labour		4

Plant		
Type	No. Working	No. Idle
Air Compressor		1
Backhoe		7
Crawler Drill		1
Generator		1
Mini Backhoe		1
Steel Bending Machine		3
Water Pump 50mm	4	1
Water Pump 75mm	1	1
Total	5	16

* Working ganger is equivalent to ordinary worker in the trade in which he is employed or, if the trade is not listed, truck driver (refer to GS Table 1.1)

Day's record and instructions checked and agreed

Signed: ***Engineer's Representative***

Name/Post: Stephen Poon / RE

Date: 10.9.12

Signed: ***Contractor's Representative***

Wong Ching Lung / Site Agent

Date: 10/9/2012

Signed: ***IOW***

Tso Sai Kuen / Inspector of Works

Date: 10-9-2012

Original - ER's File

Duplicate - Contractor

AECOM ASIA COMPANY LTD.

Idling Code:
a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 09/09/2012

Day: Sunday

Time	Location	Activity	Labour			Plant						Material Delivered	
						Type	Working		Idling			Description	Quantity
			Trade	Code	No.		No.	ID	No.	ID	Code		
	Area A - DN1800 Stormwater Drain	No activity as per KLKJV arrangement											
	Area A - Pump Station	No activity as per KLKJV arrangement				Backhoe			1	EX50	i		
						Steel Bending Machine			3		i		
						Water Pump 50mm	2						
						Water Pump 75mm	1						
	Area A - Pump Station - Box Culvert	No activity as per KLKJV arrangement				Backhoe			1	EX36	i		
07 18:00 18:00 - 20:00	Area A - Ting Kok Road	Manual control of "stop/go" sign for traffic flow regulation (3 F/Lab.) Manual control of temporary traffic light for traffic flow regulation (1 M/Lab. from Area I)	Labourer (female)	C406	3	Backhoe			1	EX40	i		
						Backhoe			1	EX42	I		
	Area A - Ting Kok Road (Intake Structure)	No activity as per KLKJV arrangement				Water Pump 50mm	1						
	Area B - Tung Tsz Nursery (CH130-CH280)	No activity as per KLKJV arrangement				Backhoe			1	EX08	i		
						Backhoe			1	EX11	i		
	Area B - Tung Tsz Nursery (CH40-CH130)	No activity as per KLKJV arrangement				Water Pump 50mm			1		i		
						Water Pump 75mm			1		i		
	Area B - Tung Tsz Nursery (Jacking Pit)	No activity as per KLKJV arrangement				Air Compressor			1	AC05	i		
						Crawler Drill			1	DR05	i		
						Mini Backhoe			1	EX53	i		
						Water Pump 50mm	1						
	Area C - Shallow Marshy Area	No activity as per KLKJV arrangement											
	Area E - Siu Lek Yuen Rd.Playground	No activity as per KLKJV arrangement				Backhoe			1	EX21	i		
						Generator			1		i		
	Area G - Ngan Shing St.	No activity as per KLKJV arrangement											

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: ***Engineer's Representative***

Name/Post: Stephen Poon / RE

Date: 10.9.12

Signed: ***Contractor's Representative***

Wong Ching Lung / Site Agent

Date: 10/9/2012

Signed: ***IOW***

Tso Sai Kuen / Inspector of Works

Date: 10-9-2012

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 09/09/2012

Day: Sunday

Time	Location	Activity	Labour			Plant						Material Delivered	
						Type	Working		Idling			Description	Quantity
			Trade	Code	No.		No.	ID	No.	ID	Code		
08:00 - 18:00	Area I - Contractor Office	Office cleaning and site patrol	Labourer (male)	C406	1								

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: ***Engineer's Representative***

Name/Post: Stephen Poon / RE

Date: 10.9.12

Signed: ***Contractor's Representative***

Wong Ching Lung / Site Agent

Date: 10/9/2012

Signed: ***IOW***

Tso Sai Kuen / Inspector of Works

Date: 10-9-2012

AECOM ASIA COMPANY LTD.

ENGINEER'S SITE DIARY

Client Department: Drainage Services Department

Contract Title: Drainage Improvement Works in Shuen Wan, Tai Po - Contract 1

Contractor: KWAN LEE - KULY JOINT VENTURE

Weather:

AM	PM	Rainfall (mm)
Fine	Shower	ST 2, TP 0

(Hong Kong Observatory's record)

Typhoon / Warning Signal:

Thunderstorm Warning - 12:35~15:45

Contract No.: DC/2009/22 Date: 08/09/2012

Day: Saturday

Instructions to Contractor
(Record verbal instructions given)

Comments by Engineer's / Contractor's Representative

Utilities
(Record location & nature of works)

Progress
(Mention briefly any matter delaying or obstructing progress)

Visitor
(Record names of visitors and time of visit)

Accidents
(Describe any occurance of accident)

Remarks

Contractor's Site Staff	No.
Assistant Surveyor	1
Chainman	3
Community Liaison Officer	1
CEG	1
Contract Manager	1
Engineer	1
Environmental Officer	1
Foreman/Assistant Foreman	2
General Foreman	1
Labour Officer	1
Land Surveyor	1
Project Director	1
Project Manager	2
Project Quantity Surveyor	1
Quantity Surveyor Manager	1
Safety Officer	1
Site Agent	1
Surveyor	1
Total	22

Assistance to Engineer	No.
Amah	1
Coordinate Engineer	
Drafting Assistant	1
Driver	2
Field Assistant	3
Office Assistant	1
Watchman	1
Total	9

Labour	Code	No.
Asphalter (Other Construction)	C301	
Asphalter (Roadworks)	C302	
Bamboo Scaffolder	C303	
Bar Bender & Fixer	C304	2
Bricklayer	C305	
Carpenter (Fender)	C306	
Carpenter (Formwork)	C307	2
Concrete Repairer	C308	
Concretor	C309	
Construction Plant Mechanic	C310	
Curtain Wall Installer	C311	
Demolition Worker	C312	
Diver	C313	
Drainlayer	C314	
Electrician (Main Contractor's)	C315	
Floor Layer	C316	
Gas Plumber	C317	
General Welder	C318	1
Glazier	C319	
Ground Investigation Operator/Driller/Borer	C320	
Grouting Worker	C321	
Joiner	C322	
Leveller	C323	
Marble Worker	C324	
Marine Construction Plant Operator	C325	
Mason	C326	
Metal Scaffolder	C327	
Metal Worker	C328	1
Painter & Decorator	C329	
Piling Operative	C330	
Pipelayer	C331	
Plant and Equipment Operator (Builder's Lift and Other Machinery)	C332	
Plant & Equipment Operator (Earthmoving Machinery)	C333	5
Plant and Equipment Operator (Hoist and Crane)	C334	
Plant and Equipment Operator (Piling)	C335	
Plant and Equipment Operator (Tunnelling)	C336	
Plasterer	C337	
Plumber	C338	
Pneumatic Driller	C339	
Prestressing Operative	C340	
Rigger/Metal Formwork Erector	C341	
Shotcretor	C342	
Shotfirer	C343	
Slope Maintenance Worker	C344	
Structural Steel Erector	C345	
Structural Steel Welder	C346	
Tiler	C347	
Trackworker	C348	
Truck Driver / Coxswain / Barge Engineer / Working Ganger*	C349	5
Window Frame Installer	C350	
(To be continued)		

Labour	Code	No.
Chainman	C401	
Concreting Labourer	C402	
Diver's Linesman / Dredger Crew / Barge Crew	C403	
Excavator	C404	
Heavy Load Labourer	C405	
Labourer (male / female) / Lorry checker / Watchman/Office attendan	C406	27
Sewerman	C407	
Automation Equipment Mechanic	E301	
Building Services Mechanic	E302	
Cable Jointer (Power)	E303	
Carpenter	E304	1
Electrician/Electrical Fitter	E305	
Fire Services Mechanic	E306	
Instrument Mechanic	E307	
Lift Electrician	E308	
Lift Mechanic	E309	
Mechanical Fitter	E310	
Overhead Linesman	E311	
Painter	E312	
Plumber and Pipe Fitter	E313	
Refrigeration/AC/Ventilation Mechanic	E314	
Sheet Metal Worker	E315	
Sign Fabricator	E316	
Sign Installer	E317	
Thermal Insulation Craftsman	E318	
Welder	E319	
Labourer	E401	
Semi-skilled Worker	E402	
Technician	T	
Total Labour		44

Plant		
Type	No. Working	No. Idle
Air Compressor	1	
Backhoe	5	1
Backhoe with Vibrating Hammer		1
Blower	4	
Crawler Drill		1
Dump Truck	5	
Generator	2	
Grout Machine	1	
Mini Backhoe		1
Oxy-Acetylene	5	1
Water Pump 50mm	8	
Water Pump 75mm	6	
Welding Set	4	
Total	41	5

* Working ganger is equivalent to ordinary worker in the trade in which he is employed or, if the trade is not listed, truck driver (refer to GS Table 1.1)

Day's record and instructions checked and agreed

Signed:
Engineer's Representative
Name/Post: Stephen Poon / RE
Date: 10.9.12

Signed:
Contractor's Representative
Wong Ching Lung / Site Agent
Date: 10/9/2012

Signed:
IOW
Tso Sai Kuen / Inspector of Works
Date: 10-9-2012

Original - ER's File

Duplicate - Contractor

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 08/09/2012

Day: Saturday

Time	Location	Activity	Labour			Plant						Material Delivered	
						Type	Working		Idling			Description	Quantity
			Trade	Code	No.		No.	ID	No.	ID	Code		
	Area A - DN1800 Stormwater Drain	No activity as per KLKJV arrangement											
08:00 - 18:00	Area A - Pump Station	Excavating for heading tunnel of Ø225 sewer pipe between MS1 & FMH1023921 at Ch.9.1~9.4 and installing shoring frames Formwork shuttering for wall W12 of discharge chamber Fixing cable trays on walls at transformer room Excavating for Ø2100 pipe trench between manhole MH05 & MH06 to 2nd layer of walings and cart away 14 truckloads of excavated materials to Contract 2's stockpile area at Tai Wah St. General housekeeping	Carpenter (Formwork)	C307	2	Backhoe	1	EX50					
			Labourer (female)	C406	2	Blower	2						
			Labourer (male)	C406	6	Oxy-Acetylene	1						
			Metal Worker	C328	1	Water Pump 50mm	2						
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Water Pump 75mm	1						
						Welding Set	1						
08:00 - 18:00	Area A - Pump Station - Box Culvert (Receiving Pit)	Fabricating second layer of I-beams walings & struts	General Welder	C318	1	Backhoe	1	EX36					
			Labourer (male)	C406	1	Oxy-Acetylene	1						
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Welding Set	1						
07:00 - 18:00 18:00 - 20:00	Area A - Ting Kok Road	Manual control of "stop/go" sign for traffic flow regulation (3 F/Lab.) Manual control of temporary traffic light for traffic flow regulation (1 F/Lab.)	Labourer (female)	C406	3								
08:00 - 18:00	Area A - Ting Kok Road (CH70-125)	Backfilling sand to Ø2100 pipe trench at Ch. 78~90 and compacting Formwork shuttering and rebar fixing for access shaft of manhole MH03	Bar Bender & Fixer	C304	2	Backhoe	1	EX42					
			Carpenter	E304	1	Backhoe with Vibrating Hammer			1	EX40	h		
			Labourer (male)	C406	2	Oxy-Acetylene	1						
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Water Pump 50mm	2						
	Area B - Tung Tsz Nursery (CH00-CH40)	No activity as per KLKJV arrangement											
08:00 - 18:00	Area B - Tung Tsz Nursery (CH130-CH280)	Bay 10 - Fabricating sheetpile stop end shoring at bay 9 junction to facilitate backfill works Bay 12 ~ 13 - Delivery of 50 truckloads of sand from Contract 2's stockpile area at Tai Wah St. and backfilling between sheetpile shoring and box culvert	Labourer (female)	C406	1	Backhoe	1	EX08					
			Labourer (male)	C406	1	Backhoe	1	EX11					
			Plant & Equipment Operator (Earthmoving Machinery)	C333	2	Dump Truck	5						
			Truck Driver	C349	5	Generator	1						

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: *Engineer's Representative*

Name/Post: Stephen Poon / RE

Date: 10.9.12

Signed: *Contractor's Representative*

Wong Ching Lung / Site Agent

Date: 10/9/2012

Signed: *IOW*

Tso Sai Kuen / Inspector of Works

Date: 10-9-2012

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 08/09/2012

Day: Saturday

Time	Location	Activity	Labour			Plant						Material Delivered	
						Type	Working		Idling			Description	Quantity
			Trade	Code	No.		No.	ID	No.	ID	Code		
						Oxy-Acetylene	1						
						Water Pump 50mm	1						
						Water Pump 75mm	2						
						Welding Set	1						
08:00 - 18:00	Area B - Tung Tsz Nursery (CH40-CH130)	General housekeeping & cleaning up sediments from wheel washing bay	Labourer (male)	C406	1	Water Pump 50mm	1						
						Water Pump 75mm	1						
08:00 - 18:00	Area B - Tung Tsz Nursery (Jacking Pit)	Cement grouting to 4 nos. holes (1-5, 1-6, 1-7 & 1-8) at layer 1 General housekeeping	Labourer (male)	C406	6	Air Compressor	1	AC05					
						Crawler Drill			1	DR05	h		
						Grout Machine	1						
						Mini Backhoe			1	EX53	h		
						Oxy-Acetylene	1						
						Water Pump 50mm	1						
						Water Pump 75mm	1						
						Welding Set	1						
08:00 -18:00	Area E - Siu Lek Yuen Rd.Playground	PL 1602.1 - Shuttering for plug end walls to seal up downstrem opening of heading tunnel for grouting	Labourer (male)	C406	4	Backhoe			1	EX21	h		
						Blower	2						
						Generator	1						
						Oxy-Acetylene			1		h		
						Water Pump 50mm	1						
						Water Pump 75mm	1						
	Area G - Ngan Shing St.	No activity as per KLKJV arrangement											
	Area I - Contractor Office	No activity as per KLKJV arrangement											

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: *Engineer's Representative*

Name/Post: Stephen Poon / RE

Date: 10.9.12

Signed: *Contractor's Representative*

Wong Ching Lung / Site Agent

Date: 10/9/2012

Signed: *IOW*

Tso Sai Kuen / Inspector of Works

Date: 10-9-2012

AECOM ASIA COMPANY LTD.
ENGINEER'S SITE DIARY

Client Department: Drainage Services Department

Contract Title: Drainage Improvement Works in Shuen Wan, Tai Po - Contract 1

Contractor: KWAN LEE - KULY JOINT VENTURE

Weather:

AM	PM	Rainfall (mm)
Shower	Fine	ST 10, TP 5

(Hong Kong Observatory's record)

Typhoon / Warning Signal:

Thunderstorm Warning - 09:35~11:00

Contract No.: DC/2009/22 Date: 07/09/2012

Day: Friday

Instructions to Contractor
(Record verbal instructions given)

Comments by Engineer's / Contractor's Representative

Utilities
(Record location & nature of works)

Progress
(Mention briefly any matter delaying or obstructing progress)

Visitor
(Record names of visitors and time of visit)

Accidents
(Describe any occurance of accident)

Remarks

Site Meeting amongst Ms. Lau of LCSD, Mr. Ricky Yeung of KLKJV and Mr. YF Fu of AECOM at 10:30 A.M. for handover inspection of area F

Contractor's Site Staff	No.
Assistant Surveyor	1
Chainman	3
Community Liaison Officer	1
CEG	1
Contract Manager	1
Engineer	1
Environmental Officer	1
Foreman/Assistant Foreman	2
General Foreman	1
Labour Officer	1
Land Surveyor	1
Project Director	1
Project Manager	2
Project Quantity Surveyor	1
Quantity Surveyor Manager	1
Safety Officer	1
Site Agent	1
Surveyor	1
Total	22

Assistance to Engineer	No.
Amah	1
Coordinate Engineer	
Drafting Assistant	1
Driver	2
Field Assistant	3
Office Assistant	1
Watchman	1
Total	9

Labour	Code	No.
Asphalter (Other Construction)	C301	
Asphalter (Roadworks)	C302	
Bamboo Scaffolder	C303	
Bar Bender & Fixer	C304	
Bricklayer	C305	
Carpenter (Fender)	C306	
Carpenter (Formwork)	C307	1
Concrete Repairer	C308	
Concretor	C309	
Construction Plant Mechanic	C310	
Curtain Wall Installer	C311	
Demolition Worker	C312	
Diver	C313	
Drainlayer	C314	1
Electrician (Main Contractor's)	C315	
Floor Layer	C316	
Gas Plumber	C317	
General Welder	C318	1
Glazier	C319	
Ground Investigation Operator/Driller/Borer	C320	
Grouting Worker	C321	
Joiner	C322	
Leveller	C323	
Marble Worker	C324	
Marine Construction Plant Operator	C325	
Mason	C326	
Metal Scaffolder	C327	
Metal Worker	C328	1
Painter & Decorator	C329	
Piling Operative	C330	
Pipelayer	C331	
Plant and Equipment Operator (Builder's Lift and Other Machinery)	C332	
Plant & Equipment Operator (Earthmoving Machinery)	C333	4
Plant and Equipment Operator (Hoist and Crane)	C334	3
Plant and Equipment Operator (Piling)	C335	
Plant and Equipment Operator (Tunnelling)	C336	
Plasterer	C337	
Plumber	C338	
Pneumatic Driller	C339	
Prestressing Operative	C340	
Rigger/Metal Formwork Erector	C341	
Shotcretor	C342	
Shotfirer	C343	
Slope Maintenance Worker	C344	
Structural Steel Erector	C345	
Structural Steel Welder	C346	
Tiler	C347	
Trackworker	C348	
Truck Driver / Coxswain / Barge Engineer / Working Ganger*	C349	
Window Frame Installer	C350	

(To be continued)

Labour	Code	No.
Chainman	C401	
Concreting Labourer	C402	
Diver's Linesman / Dredger Crew / Barge Crew	C403	
Excavator	C404	
Heavy Load Labourer	C405	
Labourer (male / female) / Lorry checker / Watchman Office attendan	C406	31
Sewerman	C407	
Automation Equipment Mechanic	E301	
Building Services Mechanic	E302	
Cable Jointer (Power)	E303	
Carpenter	E304	1
Electrician/Electrical Fitter	E305	
Fire Services Mechanic	E306	
Instrument Mechanic	E307	
Lift Electrician	E308	
Lift Mechanic	E309	
Mechanical Fitter	E310	
Overhead Linesman	E311	
Painter	E312	
Plumber and Pipe Fitter	E313	
Refrigeration/AC/Ventilation Mechanic	E314	
Sheet Metal Worker	E315	
Sign Fabricator	E316	
Sign Installer	E317	
Thermal Insulation Craftsman	E318	
Welder	E319	
Labourer	E401	
Semi-skilled Worker	E402	
Technician	T	
Total Labour		43

Plant		
Type	No. Working	No. Idle
Air Compressor	1	
Backhoe	4	2
Backhoe with Vibrating Hammer	1	
Blower	4	
Crawler Drill	1	
Generator	2	
Grout Machine	1	
Mini Backhoe		1
Mobile Crane	1	
Oxy-Acetylene	5	1
Water Pump 50mm	8	
Water Pump 75mm	6	
Welding Set	3	
Total	37	4

* Working ganger is equivalent to ordinary worker in the trade in which he is employed or, if the trade is not listed, truck driver (refer to GS Table 1.1)

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed:

Engineer's Representative

Name/Post: Stephen Poon / RE

Date: 10.9.12

Signed:

Contractor's Representative

Wong Ching Lung / Site Agent

Date: 10/9/2012

Signed:

IOW

Tso Sai Kuen / Inspector of Works

Date: 10-9-2012

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 07/09/2012

Day: Friday

Time	Location	Activity	Labour			Plant						Material Delivered	
						Type	Working		Idling			Description	Quantity
			Trade	Code	No.		No.	ID	No.	ID	Code		
	Area A - DN1800 Stormwater Drain	No activity as per KLKJV arrangement											
08:00 - 18:00	Area A - Pump Station	Excavating for heading tunnel of Ø225 sewer pipe between MS1 & FMH1023921at Ch.8.8~9.1 and installing shoring frames Formwork shuttering for wall W12 at discharge chamber Fixing GMS hangers for air trunk of exhaust fans at transformer room and painting General housekeeping & cleaning up sediments from wheel washing bay	Carpenter (Formwork)	C307	1	Backhoe			1	EX50	h		
			Labourer (female)	C406	2	Blower	2						
			Labourer (male)	C406	6	Oxy-Acetylene	1						
			Metal Worker	C328	1	Water Pump 50mm	2						
						Water Pump 75mm	1						
						Welding Set	1						
08:00 - 18:00	Area A - Pump Station - Box Culvert (Receiving Pit)	Fabricating second layer of I-beams walings & struts	General Welder	C318	1	Backhoe	1	EX36					
			Labourer (male)	C406	1	Oxy-Acetylene	1						
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Welding Set	1						
07:00 - 18:00 18:00 - 20:00	Area A - Ting Kok Road	Manual control of "stop/go" sign for traffic flow regulation (3 F/Lab.) Manual control of temporary traffic light for traffic flow regulation (1 F/Lab.)	Labourer (female)	C406	3								
08:00 - 18:00	Area A - Ting Kok Road (CH70-125)	Backfilling with sand to Ø2100 pipe trench at Ch. 78~90 and compacting Formwork shuttering for axccess shaft of manhole MH03 Extracting sheetpiles from shoring of Ø2100 pipe trench at Ch.114~120 along footpath	Carpenter	E304	1	Backhoe	1	EX42					
			Labourer (male)	C406	2	Backhoe with Vibrating Hammer	1	EX40					
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Oxy-Acetylene	1						
			Plant and Equipment Operator (Hoist and Crane)	C334	1	Water Pump 50mm	2						
	Area B - Tung Tsz Nursery (CH00-CH40)	No activity as per KLKJV arrangement											
08:00 - 18:00	Area B - Tung Tsz Nursery (CH130-CH280)	Bay 10 - Stripping off soffit formwork from top slab and dismantling falsework Bay 12 - Delivery of 33 truckloads of sand from Contract 2's stockpile area at Tai Wah St. and backfilling the gap between box culvert and trench shoring	Labourer (female)	C406	1	Backhoe	1	EX08					
			Labourer (male)	C406	7	Backhoe	1	EX11					
			Plant & Equipment Operator (Earthmoving Machinery)	C333	2	Generator	1						
						Oxy-Acetylene	1						
						Water Pump 50mm	1						

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: *Engineer's Representative*

Name/Post: Stephen Poon / RE

Date: 10.9.12

Signed: *Contractor's Representative*

Wong Ching Lung / Site Agent

Date: 10/9/2012

Signed: *IOW*

Tso Sai Kuen / Inspector of Works

Date: 10-9-2012

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 07/09/2012

Day: Friday

Time	Location	Activity	Labour			Plant						Material Delivered	
						Type	Working		Idling			Description	Quantity
			Trade	Code	No.		No.	ID	No.	ID	Code		
						Water Pump 75mm	2						
						Welding Set	1						
	Area B - Tung Tsz Nursery (CH40-CH130)	No activity as per KLKJV arrangement				Water Pump 50mm	1						
						Water Pump 75mm	1						
08:00 - 18:00	Area B - Tung Tsz Nursery (Jacking Pit)	Drilling 2 nos. holes (1-5 & 1-8) at layer 1 and inserting grout tube Cement grouting to 1 no. grout hole at Layer 1 (1-4)	Labourer (male)	C406	5	Air Compressor	1	AC05					
			Plant and Equipment Operator (Hoist and Crane)	C334	1	Crawler Drill	1	DR05					
						Grout Machine	1						
						Mini Backhoe			1	EX53	h		
						Oxy-Acetylene	1						
						Water Pump 50mm	1						
						Water Pump 75mm	1						
08:00 - 18:00	Area E - Siu Lek Yuen Rd.Playground	PL 1602.1 - Laying 1650Ø PC pipes at Ch.0~7.2	Drainlayer	C314	1	Backhoe			1	EX21	h		
			Labourer (male)	C406	4	Blower	2						
			Plant and Equipment Operator (Hoist and Crane)	C334	1	Generator	1						
						Mobile Crane	1						
						Oxy-Acetylene			1		h		
						Water Pump 50mm	1						
						Water Pump 75mm	1						
	Area F - Lek Yuen Street Rest Garden	No activity as per KLKJV arrangement											
	Area G - Ngan Shing St.	No activity as per KLKJV arrangement											
	Area I - Contractor Office	No activity as per KLKJV arrangement											

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: *Engineer's Representative*

Name/Post: Stephen Poon / RE

Date: 10.9.12

Signed: *Contractor's Representative*

Wong Ching Lung / Site Agent

Date: 10/9/2012

Signed: *IOW*

Tso Sai Kuen / Inspector of Works

Date: 10-9-2012

AECOM ASIA COMPANY LTD.

ENGINEER'S SITE DIARY

Client Department: Drainage Services Department

Contract Title: Drainage Improvement Works in Shuen Wan, Tai Po - Contract 1

Contractor: KWAN LEE - KULY JOINT VENTURE

Weather:

AM	PM	Rainfall (mm)
Fine	Cloudy	ST 0.5, TP 0.5

(Hong Kong Observatory's record)

Typhoon / Warning Signal:

Thunderstorm Warning - 03:50~05:30 & 18:05~20:00

Contract No.: DC/2009/22 Date: 06/09/2012

Day: Thursday

Instructions to Contractor
(Record verbal instructions given)

Comments by Engineer's / Contractor's Representative

Utilities
(Record location & nature of works)

Progress
(Mention briefly any matter delaying or obstructing progress)

Visitor
(Record names of visitors and time of visit)

Accidents
(Describe any occurance of accident)

Remarks

Area A - Backhoe EX40 & EX42 on site
Area B - Backhoe EX11 & EX53 on site
Weekly Safety and Environmental Coordination Meeting #129 was held at 11:00 Hr.

Contractor's Site Staff	No.
Assistant Surveyor	1
Chainman	3
Community Liaison Officer	1
CEG	1
Contract Manager	1
Engineer	1
Environmental Officer	1
Foreman/Assistant Foreman	2
General Foreman	1
Labour Officer	1
Land Surveyor	1
Project Director	1
Project Manager	2
Project Quantity Surveyor	1
Quantity Surveyor Manager	1
Safety Officer	1
Site Agent	1
Surveyor	1
Total	22

Assistance to Engineer	No.
Amah	1
Coordinate Engineer	
Drafting Assistant	1
Driver	2
Field Assistant	3
Office Assistant	1
Watchman	1
Total	9

Labour	Code	No.
Asphalter (Other Construction)	C301	
Asphalter (Roadworks)	C302	
Bamboo Scaffolder	C303	
Bar Bender & Fixer	C304	4
Bricklayer	C305	
Carpenter (Fender)	C306	
Carpenter (Formwork)	C307	2
Concrete Repairer	C308	
Concretor	C309	
Construction Plant Mechanic	C310	
Curtain Wall Installer	C311	
Demolition Worker	C312	
Diver	C313	
Drainlayer	C314	
Electrician (Main Contractor's)	C315	
Floor Layer	C316	
Gas Plumber	C317	
General Welder	C318	2
Glazier	C319	
Ground Investigation Operator/Driller/Borer	C320	
Grouting Worker	C321	
Joiner	C322	
Leveller	C323	
Marble Worker	C324	
Marine Construction Plant Operator	C325	
Mason	C326	
Metal Scaffolder	C327	
Metal Worker	C328	1
Painter & Decorator	C329	
Piling Operative	C330	
Pipelayer	C331	
Plant and Equipment Operator (Builder's Lift and Other Machinery)	C332	
Plant & Equipment Operator (Earthmoving Machinery)	C333	4
Plant and Equipment Operator (Hoist and Crane)	C334	2
Plant and Equipment Operator (Piling)	C335	
Plant and Equipment Operator (Tunnelling)	C336	
Plasterer	C337	
Plumber	C338	
Pneumatic Driller	C339	
Prestressing Operative	C340	
Rigger/Metal Formwork Erector	C341	
Shotcretor	C342	
Shotfirer	C343	
Slope Maintenance Worker	C344	
Structural Steel Erector	C345	
Structural Steel Welder	C346	
Tiler	C347	
Trackworker	C348	
Truck Driver / Coxswain / Barge Engineer / Working Ganger*	C349	1
Window Frame Installer	C350	

(To be continued)

Labour	Code	No.
Chainman	C401	
Concreting Labourer	C402	
Diver's Linesman / Dredger Crew / Barge Crew	C403	
Excavator	C404	
Heavy Load Labourer	C405	
Labourer (male / female) / Lorry checker / Watchman/Office attendan	C406	28
Sewerman	C407	
Automation Equipment Mechanic	E301	
Building Services Mechanic	E302	
Cable Jointer (Power)	E303	
Carpenter	E304	
Electrician/Electrical Fitter	E305	
Fire Services Mechanic	E306	
Instrument Mechanic	E307	
Lift Electrician	E308	
Lift Mechanic	E309	
Mechanical Fitter	E310	
Overhead Linesman	E311	
Painter	E312	
Plumber and Pipe Fitter	E313	
Refrigeration/AC/Ventilation Mechanic	E314	
Sheet Metal Worker	E315	
Sign Fabricator	E316	
Sign Installer	E317	
Thermal Insulation Craftsman	E318	
Welder	E319	
Labourer	E401	
Semi-skilled Worker	E402	
Technician	T	
Total Labour		44

Plant		
Type	**No. Working**	**No. Idle**
Air Compressor	1	
Backhoe	4	2
Backhoe with Vibrating Hammer	1	
Blower	4	
Crawler Drill	1	
Cutting Machine	1	
Dump Truck	1	
Generator	2	
Grout Machine	1	
Mini Backhoe		1
Oxy-Acetylene	4	2
Steel Bending Machine	2	
Vibrating Prob	1	
Water Pump 50mm	8	
Water Pump 75mm	6	
Welding Set	4	1
Total	41	6

* Working ganger is equivalent to ordinary worker in the trade in which he is employed or, if the trade is not listed, truck driver (refer to GS Table 1.1)

Day's record and instructions checked and agreed

Signed: *Engineer's Representative*

Name/Post: Stephen Poon / RE

Date: 10.9.12

Signed: *Contractor's Representative*

Wong Ching Lung / Site Agent

Date: 10/9/2012

Signed: *IOW*

Tso Sai Kuen / Inspector of Works

Date: 10-9-2012

Original - ER's File

Duplicate - Contractor

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 06/09/2012

Day: Thursday

Time	Location	Activity	Labour			Plant						Material Delivered	
			Trade	Code	No.	Type	Working No.	Working ID	Idling No.	Idling ID	Idling Code	Description	Quantity
	Area A - DN1800 Stormwater Drain	No activity as per KLKJV arrangement											
08:00 - 18:00	Area A - Pump Station	Excavating for heading tunnel of Ø225 sewer pipe between MS1 & FMH1023921at Ch.8.6~8.8 and installing shoring frames Formwork shuttering for wall W12 at discharge chamber Cutting cheque plate for cable trench covers at transformer room and painting Installing hangers for air trunk of exhaust fans at transformer room General housekeeping & cleaning up sediments from wheel washing bay	Carpenter (Formwork)	C307	1	Backhoe			1	EX50	h		
			Labourer (female)	C406	2	Blower	2						
			Labourer (male)	C406	7	Oxy-Acetylene	1						
			Metal Worker	C328	1	Water Pump 50mm	2						
						Water Pump 75mm	1						
						Welding Set	1						
08:00 - 18:00	Area A - Pump Station - Box Culvert (Receiving Pit)	Fabricating second layer I-beams walings & struts	General Welder	C318	1	Backhoe	1	EX36					
			Labourer (male)	C406	1	Oxy-Acetylene	1						
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Welding Set	1						
07:00 - 18:00 18:00 - 20:00	Area A - Ting Kok Road	Manual control of "stop/go" sign for traffic flow regulation (3 F/Lab.) Manual control of temporary traffic light for traffic flow regulation (1 F/Lab.)	Labourer (female)	C406	3								
08:00 - 18:00	Area A - Ting Kok Road (CH70-125)	Backfilling sand material to Ø2100 pipe trench at Ch. 78~90 and compacting Cutting & bending reinforcement bars for manhole MH03 at bending yard Formwork shuttering and rebar fixing for top slab of manhole MH03 and then concreting for upper walls & top slab Extracting sheetpiles from Ø2100 pipe trench shoring at Ch.106~114 along footpath	Bar Bender & Fixer	C304	4	Backhoe	1	EX42					
			Carpenter (Formwork)	C307	1	Backhoe with Vibrating Hammer	1	EX40					
			Labourer (female)	C406	1	Oxy-Acetylene			1		h		
			Labourer (male)	C406	3	Steel Bending Machine	2						
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Vibrating Prob	1						
			Plant and Equipment Operator (Hoist and Crane)	C334	1	Water Pump 50mm	2						
	Area B - Tung Tsz Nursery (CH00-CH40)	No activity as per KLKJV arrangement											

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: ***Engineer's Representative***

Name/Post: Stephen Poon / RE

Date: 10.9.12

Signed: ***Contractor's Representative***

Wong Ching Lung / Site Agent

Date: 10/9/2012

Signed: ***IOW***

Tso Sai Kuen / Inspector of Works

Date: 10-9-2012

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 06/09/2012

Day: Thursday

Time	Location	Activity	Labour			Plant						Material Delivered	
			Trade	Code	No.	Type	Working		Idling			Description	Quantity
							No.	ID	No.	ID	Code		
08:00 - 18:00	Area B - Tung Tsz Nursery (CH130-CH280)	Bay 10 - Stripping off wall formwork Bay 12 - Backfilling the box culvert trench with soil from stockpile near jacking pit Bay 13 - Stripping off formwork from access shaft and fabricating sheetpile stop end shoring to facilitate backfilling work	General Welder	C318	1	Backhoe	1	EX11					
			Labourer (male)	C406	3	Dump Truck	1						
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Generator	1						
			Truck Driver	C349	1	Oxy-Acetylene	1						
						Water Pump 50mm	1						
						Water Pump 75mm	2						
						Welding Set	1						
08:00 - 18:00	Area B - Tung Tsz Nursery (CH40-CH130)	General housekeeping & cleaning up sediments from wheel washing bay	Labourer (male)	C406	1	Water Pump 50mm	1						
						Water Pump 75mm	1						
08:00 - 18:00	Area B - Tung Tsz Nursery (Jacking Pit)	Drilling 1 nos. grout hole (1-7) and inserting grout tube Cement grouting to hole (1-1)	Labourer (male)	C406	4	Air Compressor	1	AC05					
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Backhoe	1	EX08					
			Plant and Equipment Operator (Hoist and Crane)	C334	1	Crawler Drill	1	DR05					
						Grout Machine	1						
						Mini Backhoe			1	EX53	h		
						Oxy-Acetylene	1						
						Water Pump 50mm	1						
						Water Pump 75mm	1						
						Welding Set	1						
08:00 - 18:00	Area E - Siu Lek Yuen Rd.Playground	PL 1602.1 - Preparation works for laying 1650Ø PC pipe Cutting 1650Ø PC end pipe at contract 2's stockpile area at Tai Wah St.	Labourer (male)	C406	3	Backhoe			1	EX21	h		
						Blower	2						
						Cutting Machine	1						
						Generator	1						
						Oxy-Acetylene			1		h		
						Water Pump 50mm	1						
						Water Pump 75mm	1						
						Welding Set			1		h		
	Area F - Lek Yuen Street Rest Garden	No activity as per KLKJV arrangement											

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: *Engineer's Representative*

Name/Post: Stephen Poon / RE

Date: 10.9.12

Signed: *Contractor's Representative*

Wong Ching Lung / Site Agent

Date: 10/9/2012

Signed: *IOW*

Tso Sai Kuen / Inspector of Works

Date: 10-9-2012

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 06/09/2012

Day: Thursday

Time	Location	Activity	Labour			Plant						Material Delivered	
						Type	Working		Idling			Description	Quantity
			Trade	Code	No.		No.	ID	No.	ID	Code		
	Area G - Ngan Shing St.	No activity as per KLKJV arrangement											
	Area I - Contractor Office	No activity as per KLKJV arrangement											

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: ..... *Engineer's Representative*

Name/Post: Stephen Poon / RE

Date: 10.9.12

Signed: ..... *Contractor's Representative*

Wong Ching Lung / Site Agent

Date: 10/9/2012

Signed: ..... *IOW*

Tso Sai Kuen / Inspector of Works

Date: 10-9-2012

AECOM ASIA COMPANY LTD.

ENGINEER'S SITE DIARY

Client Department: Drainage Services Department

Contract Title: Drainage Improvement Works in Shuen Wan, Tai Po - Contract 1

Contractor: KWAN LEE - KULY JOINT VENTURE

Weather:

AM	PM	Rainfall (mm)
Cloudy	Fine	ST 0.5, TP 0

(Hong Kong Observatory's record)

Typhoon / Warning Signal: Nil

Contract No.: DC/2009/22 Date: 05/09/2012

Day: Wednesday

Instructions to Contractor
(Record verbal instructions given)

Comments by Engineer's / Contractor's Representative

Utilities
(Record location & nature of works)

Progress
(Mention briefly any matter delaying or obstructing progress)

Visitor
(Record names of visitors and time of visit)

Accidents
(Describe any occurance of accident)

Remarks

Area A - Backhoe EX17 off site at night
Meeting was held at 15:30 hr amongst Ms. Leung of CLP, Mr. So of DSD, Mr. Dragon Wong of KLKJV and Mr. Poon of AECOM concerning the power supply to Pump Station and hand over procedures of Transformer Room

Contractor's Site Staff	No.
Assistant Surveyor	1
Chainman	3
Community Liaison Officer	1
CEG	1
Contract Manager	1
Engineer	1
Environmental Officer	1
Foreman/Assistant Foreman	2
General Foreman	1
Labour Officer	1
Land Surveyor	1
Project Director	1
Project Manager	2
Project Quantity Surveyor	1
Quantity Surveyor Manager	1
Safety Officer	1
Site Agent	1
Surveyor	1
Total	22

Assistance to Engineer	No.
Amah	1
Coordinate Engineer	
Drafting Assistant	1
Driver	2
Field Assistant	3
Office Assistant	1
Watchman	1
Total	9

Labour	Code	No.
Asphalter (Other Construction)	C301	
Asphalter (Roadworks)	C302	
Bamboo Scaffolder	C303	
Bar Bender & Fixer	C304	
Bricklayer	C305	
Carpenter (Fender)	C306	
Carpenter (Formwork)	C307	1
Concrete Repairer	C308	
Concretor	C309	
Construction Plant Mechanic	C310	
Curtain Wall Installer	C311	
Demolition Worker	C312	
Diver	C313	
Drainlayer	C314	
Electrician (Main Contractor's)	C315	
Floor Layer	C316	
Gas Plumber	C317	
General Welder	C318	1
Glazier	C319	
Ground Investigation Operator/Driller/Borer	C320	
Grouting Worker	C321	
Joiner	C322	
Leveller	C323	
Marble Worker	C324	2
Marine Construction Plant Operator	C325	
Mason	C326	
Metal Scaffolder	C327	
Metal Worker	C328	
Painter & Decorator	C329	
Piling Operative	C330	
Pipelayer	C331	
Plant and Equipment Operator (Builder's Lift and Other Machinery)	C332	
Plant & Equipment Operator (Earthmoving Machinery)	C333	4
Plant and Equipment Operator (Hoist and Crane)	C334	1
Plant and Equipment Operator (Piling)	C335	
Plant and Equipment Operator (Tunnelling)	C336	
Plasterer	C337	
Plumber	C338	
Pneumatic Driller	C339	
Prestressing Operative	C340	
Rigger/Metal Formwork Erector	C341	
Shotcretor	C342	
Shotfirer	C343	
Slope Maintenance Worker	C344	
Structural Steel Erector	C345	
Structural Steel Welder	C346	
Tiler	C347	
Trackworker	C348	
Truck Driver / Coxswain / Barge Engineer / Working Ganger*	C349	2
Window Frame Installer	C350	
(To be continued)		

Labour	Code	No.
Chainman	C401	
Concreting Labourer	C402	
Diver's Linesman / Dredger Crew / Barge Crew	C403	
Excavator	C404	
Heavy Load Labourer	C405	
Labourer (male / female) / Lorry checker / Watchman/Office attendan	C406	25
Sewerman	C407	
Automation Equipment Mechanic	E301	
Building Services Mechanic	E302	
Cable Jointer (Power)	E303	
Carpenter	E304	1
Electrician/Electrical Fitter	E305	
Fire Services Mechanic	E306	
Instrument Mechanic	E307	
Lift Electrician	E308	
Lift Mechanic	E309	
Mechanical Fitter	E310	
Overhead Linesman	E311	
Painter	E312	
Plumber and Pipe Fitter	E313	
Refrigeration/AC/Ventilation Mechanic	E314	
Sheet Metal Worker	E315	
Sign Fabricator	E316	
Sign Installer	E317	
Thermal Insulation Craftsman	E318	
Welder	E319	
Labourer	E401	
Semi-skilled Worker	E402	
Technician	T	
Total Labour		37

Plant		
Type	No. Working	No. Idle
Air Compressor	1	
Backhoe	4	1
Blower	2	
Crawler Drill	1	
Dump Truck	2	
Generator	2	
Grout Machine		1
Oxy-Acetylene	4	2
Vibrating Prob	1	
Water Pump 50mm	8	
Water Pump 75mm	6	
Welding Set	5	
Total	36	4

* Working ganger is equivalent to ordinary worker in the trade in which he is employed or, if the trade is not listed, truck driver (refer to GS Table 1.1)

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: *Engineer's Representative*

Name/Post: Stephen Poon / RE

Date: 6.9.12

Signed: *Contractor's Representative*

Wong Ching Lung / Site Agent

Date: 6/9/2012

Signed: *IOW*

Tso Sai Kuen / Inspector of Works

Date: 6-9-2012

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 05/09/2012

Day: Wednesday

Time	Location	Activity	Labour			Plant						Material Delivered	
			Trade	Code	No.	Type	Working		Idling			Description	Quantity
							No.	ID	No.	ID	Code		
	Area A - DN1800 Stormwater Drain	No activity as per KLKJV arrangement											
08:00 - 18:00	Area A - Pump Station	Excavating for heading tunnel of Ø225 sewer pipe between MS1 & FMH1023921at Ch.8.4~8.6 and installing shoring frames Excavating for Ø2100 pipe trench between manhole MH05 & MH06 to second layer of walings and cart away 8 truckloads of excavated materials to Contract 2's stockpile area at Tai Wah St. Formwork shuttering for U-channel on manmade slope Installing cat ladders, painting to cheque plate trench covers and angle frames at transformer room Installing GMS hangers for air trunk at transformer room	Carpenter (Formwork)	C307	1	Backhoe	1	EX50					
			Labourer (male)	C406	7	Blower	2						
			Marble Worker	C324	2	Dump Truck	2						
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Oxy-Acetylene	1						
			Truck Driver	C349	2	Water Pump 50mm	2						
						Water Pump 75mm	1						
						Welding Set	1						
08:00 - 18:00	Area A - Pump Station - Box Culvert (Receiving Pit)	Fabricating second layer of I-beams walings & struts	General Welder	C318	1	Backhoe	1	EX36					
			Labourer (male)	C406	1	Oxy-Acetylene	1						
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Welding Set	1						
07:00 - 18:00 18:00 - 20:00	Area A - Ting Kok Road	Manual control of "stop/go" sign for traffic flow regulation (3 F/Lab.) Manual control of temporary traffic light for traffic flow regulation (1 F/Lab.)	Labourer (female)	C406	2								
08:00 - 18:00	Area A - Ting Kok Road (CH70-125)	Backfilling to Ø2100 pipe trench at Ch. 78~125 and compacting Formwork shuttering for upper walls and top slab of manhole MH03	Carpenter	E304	1	Backhoe	1	EX17					
			Labourer (male)	C406	3	Oxy-Acetylene			1		h		
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Water Pump 50mm	2						
	Area B - Tung Tsz Nursery (CH00-CH40)	No activity as per KLKJV arrangement											
08:00 - 18:00	Area B - Tung Tsz Nursery (CH130-CH280)	Bay 10 - Concreting for walls & top slab Bay 13 - Concreting for access shaft of box culvert (Total : 83.1 cu.m)	Labourer (female)	C406	1	Backhoe	1	EX08					
			Labourer (male)	C406	4	Generator	1						
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Oxy-Acetylene	1						
						Vibrating Prob	1						
						Water Pump 50mm	1						
						Water Pump 75mm	2						

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: *Engineer's Representative*

Name/Post: Stephen Poon / RE

Date: 6.9.12

Signed: *Contractor's Representative*

Wong Ching Lung / Site Agent

Date: 6/9/2012

Signed: *IOW*

Tso Sai Kuen / Inspector of Works

Date: 6-9-2012

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 05/09/2012

Day: Wednesday

Time	Location	Activity	Labour			Plant						Material Delivered	
						Type	Working		Idling			Description	Quantity
			Trade	Code	No.		No.	ID	No.	ID	Code		
						Welding Set	1						
08:00 - 18:00	Area B - Tung Tsz Nursery (CH40-CH130)	General housekeeping & cleaning up sediments from wheel washing bay	Labourer (male)	C406	1	Water Pump 50mm	1						
						Water Pump 75mm	1						
08:00 - 18:00	Area B - Tung Tsz Nursery (Jacking Pit)	Drilling 2 nos. grout holes (1-4 & 1-6) and inserting grout tubes	Labourer (male)	C406	4	Air Compressor	1	AC05					
			Plant and Equipment Operator (Hoist and Crane)	C334	1	Crawler Drill	1	DR05					
						Grout Machine			1		h		
						Oxy-Acetylene	1						
						Water Pump 50mm	1						
						Water Pump 75mm	1						
						Welding Set	1						
08:00 - 18:00	Area E - Siu Lek Yuen Rd.Playground	PL 1602.1 - Preparing 1650Ø cut length end pipe at contract 2's stockpile area at Tai Wah St.	Labourer (male)	C406	2	Backhoe			1	EX21	h		
						Generator	1						
						Oxy-Acetylene			1		h		
						Water Pump 50mm	1						
						Water Pump 75mm	1						
						Welding Set	1						
	Area F - Lek Yuen Street Rest Garden	No activity as per KLKJV arrangement											
	Area G - Ngan Shing St.	No activity as per KLKJV arrangement											
	Area I - Contractor Office	No activity as per KLKJV arrangement											

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: *Engineer's Representative*

Name/Post: Stephen Poon / RE

Date: 6.9.12

Signed: *Contractor's Representative*

Wong Ching Lung / Site Agent

Date: 6/9/2012

Signed: *IOW*

Tso Sai Kuen / Inspector of Works

Date: 6-9-2012

AECOM ASIA COMPANY LTD.

ENGINEER'S SITE DIARY

Client Department: Drainage Services Department

Contract Title: Drainage Improvement Works in Shuen Wan, Tai Po - Contract 1

Contractor: KWAN LEE - KULY JOINT VENTURE

Weather:

AM	PM	Rainfall (mm)
Cloudy	Cloudy	ST 5, TP 20

(Hong Kong Observatory's record)

Typhoon / Warning Signal:

Thunderstorm Warning - 00:00~01:00

Contract No.: DC/2009/22 Date: 04/09/2012

Day: Tuesday

Instructions to Contractor
(Record verbal instructions given)

Comments by Engineer's / Contractor's Representative

Utilities
(Record location & nature of works)

Progress
(Mention briefly any matter delaying or obstructing progress)

Visitor
(Record names of visitors and time of visit)

Accidents
(Describe any occurance of accident)

Remarks

Contractor's Site Staff	No.
Assistant Surveyor	1
Chainman	3
Community Liaison Officer	1
CEG	1
Contract Manager	1
Engineer	1
Environmental Officer	1
Foreman/Assistant Foreman	2
General Foreman	1
Labour Officer	1
Land Surveyor	1
Project Director	1
Project Manager	2
Project Quantity Surveyor	1
Quantity Surveyor Manager	1
Safety Officer	1
Site Agent	1
Surveyor	1
Total	22

Assistance to Engineer	No.
Amah	1
Coordinate Engineer	
Drafting Assistant	1
Driver	2
Field Assistant	3
Office Assistant	1
Watchman	1
Total	9

Labour	Code	No.
Asphalter (Other Construction)	C301	
Asphalter (Roadworks)	C302	
Bamboo Scaffolder	C303	
Bar Bender & Fixer	C304	2
Bricklayer	C305	
Carpenter (Fender)	C306	
Carpenter (Formwork)	C307	4
Concrete Repairer	C308	
Concretor	C309	
Construction Plant Mechanic	C310	
Curtain Wall Installer	C311	
Demolition Worker	C312	
Diver	C313	
Drainlayer	C314	
Electrician (Main Contractor's)	C315	
Floor Layer	C316	
Gas Plumber	C317	
General Welder	C318	1
Glazier	C319	
Ground Investigation Operator/Driller/Borer	C320	
Grouting Worker	C321	
Joiner	C322	
Leveller	C323	
Marble Worker	C324	
Marine Construction Plant Operator	C325	
Mason	C326	
Metal Scaffolder	C327	
Metal Worker	C328	1
Painter & Decorator	C329	
Piling Operative	C330	
Pipelayer	C331	1
Plant and Equipment Operator (Builder's Lift and Other Machinery)	C332	
Plant & Equipment Operator (Earthmoving Machinery)	C333	4
Plant and Equipment Operator (Hoist and Crane)	C334	1
Plant and Equipment Operator (Piling)	C335	
Plant and Equipment Operator (Tunnelling)	C336	
Plasterer	C337	
Plumber	C338	
Pneumatic Driller	C339	
Prestressing Operative	C340	
Rigger/Metal Formwork Erector	C341	
Shotcretor	C342	
Shotfirer	C343	
Slope Maintenance Worker	C344	
Structural Steel Erector	C345	
Structural Steel Welder	C346	
Tiler	C347	
Trackworker	C348	
Truck Driver / Coxswain / Barge Engineer / Working Ganger*	C349	4
Window Frame Installer	C350	
(To be continued)		

Labour	Code	No.
Chainman	C401	
Concreting Labourer	C402	
Diver's Linesman / Dredger Crew / Barge Crew	C403	
Excavator	C404	
Heavy Load Labourer	C405	
Labourer (male / female) / Lorry checker / Watchman/Office attendan	C406	26
Sewerman	C407	
Automation Equipment Mechanic	E301	
Building Services Mechanic	E302	
Cable Jointer (Power)	E303	
Carpenter	E304	
Electrician/Electrical Fitter	E305	
Fire Services Mechanic	E306	
Instrument Mechanic	E307	
Lift Electrician	E308	
Lift Mechanic	E309	
Mechanical Fitter	E310	
Overhead Linesman	E311	
Painter	E312	
Plumber and Pipe Fitter	E313	
Refrigeration/AC/Ventilation Mechanic	E314	
Sheet Metal Worker	E315	
Sign Fabricator	E316	
Sign Installer	E317	
Thermal Insulation Craftsman	E318	
Welder	E319	
Labourer	E401	
Semi-skilled Worker	E402	
Technician	T	
Total Labour		44

Plant		
Type	No. Working	No. Idle
Air Compressor	1	
Backhoe	4	1
Blower	2	
Crawler Drill	1	
Dump Truck	4	
Electric Breaker	1	
Generator	2	
Grout Machine		1
Oxy-Acetylene	3	3
Water Pump 50mm	8	
Water Pump 75mm	6	
Welding Set	4	
Total	36	5

* Working ganger is equivalent to ordinary worker in the trade in which he is employed or, if the trade is not listed, truck driver (refer to GS Table 1.1)

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed:

Engineer's Representative

Name/Post: Stephen Poon / RE

Date: 5.9.12

Signed:

Contractor's Representative

Wong Ching Lung / Site Agent

Date: 5/9/2012

Signed:

IOW

Tso Sai Kuen / Inspector of Works

Date: 5-9-2012

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 04/09/2012

Day: Tuesday

Time	Location	Activity	Labour			Plant						Material Delivered	
						Type	Working		Idling			Description	Quantity
			Trade	Code	No.		No.	ID	No.	ID	Code		
	Area A - DN1800 Stormwater Drain	No activity as per KLKJV arrangement											
08:00 - 18:00	Area A - Pump Station	Excavating for heading tunnel of Ø225 sewer pipe between MS1 & FMH1023921at Ch. 8.0~8.4 and installing shoring frames Adjusting levels and alignment of 2 nos.Ø450 & 4 nos.Ø900 double flange pipe with puddle at wall between discharge chamber & valve chamber Excavating for Ø2100 pipe trench between manhole MH05 & MH06 and fabricating top layer I-beam walings & struts Installing push bar for stainless steel door (D2) and fixing detachable rat guard for louvres (L2) at transformer room Painting for chequer plate trench covers at transformer room General housekeeping	General Welder	C318	0.5	Backhoe	1	EX50					
			Labourer (female)	C406	2	Blower	2						
			Labourer (male)	C406	6	Oxy-Acetylene	1						
			Metal Worker	C328	1	Water Pump 50mm	2						
			Pipelayer	C331	1	Water Pump 75mm	1						
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Welding Set	2						
08:00 - 18:00	Area A - Pump Station - Box Culvert (Receiving Pit)	Excavating for receiving pit to 0.3 mPD & cart away excavated material to Contract 2's stockpile area at Tai Wah St. (16 Truckloads)	General Welder	C318	0.5	Backhoe	1	EX36					
			Labourer (male)	C406	1	Dump Truck	2						
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Oxy-Acetylene	1						
			Truck Driver	C349	2	Welding Set	1						
07:00 - 18:00 18:00 - 20:00	Area A - Ting Kok Road	Manual control of "stop/go" sign for traffic flow regulation (3 F/Lab.) Manual control of temporary traffic light for traffic flow regulation (1 F/Lab.)	Labourer (female)	C406	3								
08:00 - 18:00	Area A - Ting Kok Road (CH70-125)	Delivery of sand material from Contract 2's stockpile area at Tai Wah St. (8 truckloads) and backfilling to Ø2100 pipe trench at Ch.78~125 Formwork shuttering for upper walls and top slab of manhole MH03 Dismantling upper layer I-beam walings and struts from shoring of Ø2100 pipe trench at Ch. 80~90	Carpenter (Formwork)	C307	2	Backhoe	1	EX17					
			Labourer (female)	C406	1	Dump Truck	2						
			Labourer (male)	C406	4	Oxy-Acetylene	1						
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Water Pump 50mm	2						
			Truck Driver	C349	2								
	Area B - Tung Tsz Nursery (CH00-CH40)	No activity as per KLKJV arrangement											

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: ***Engineer's Representative***

Name/Post: Stephen Poon / RE

Date: 5.9.12

Signed: ***Contractor's Representative***

Wong Ching Lung / Site Agent

Date: 5/9/2012

Signed: ***IOW***

Tso Sai Kuen / Inspector of Works

Date: 5-9-2012

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 04/09/2012

Day: Tuesday

Time	Location	Activity	Labour			Plant						Material Delivered	
						Type	Working		Idling			Description	Quantity
			Trade	Code	No.		No.	ID	No.	ID	Code		
08:00 - 18:00	Area B - Tung Tsz Nursery (CH130-CH280)	Bay 10 - Formwork shuttering for walls and top slab Bay 13 - Rebar fixing and formwork shuttering for access shaft	Bar Bender & Fixer	C304	2	Backhoe	1	EX08					
			Carpenter (Formwork)	C307	2	Generator	1						
			Labourer (male)	C406	1	Oxy-Acetylene			1				
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Water Pump 50mm	1						
						Water Pump 75mm	2						
08:00 - 18:00	Area B - Tung Tsz Nursery (CH40-CH130)	General housekeeping & cleaning up sediments from wheel washing bay	Labourer (male)	C406	1	Water Pump 50mm	1						
						Water Pump 75mm	1						
08. - 18:00	Area B - Tung Tsz Nursery (Jacking Pit)	Drilling holes at Layer 1and inserting grout tubes	Labourer (male)	C406	3	Air Compressor	1	AC05					
			Plant and Equipment Operator (Hoist and Crane)	C334	1	Crawler Drill	1	DR05					
						Grout Machine			1		h		
						Oxy-Acetylene			1				
						Water Pump 50mm	1						
						Water Pump 75mm	1						
08:00 - 18:00	Area E - Siu Lek Yuen Rd.Playground	PL 1602.1 - Installation of guide rail and laying blinding concrete inside heading tunnel	Labourer (male)	C406	4	Backhoe			1	EX21	h		
						Electric Breaker	1						
						Generator	1						
						Oxy-Acetylene			1		h		
						Water Pump 50mm	1						
						Water Pump 75mm	1						
						Welding Set	1						
	Area F - Lek Yuen Street Rest Garden	No activity as per KLKJV arrangement											
	Area G - Ngan Shing St.	No activity as per KLKJV arrangement											
	Area I - Contractor Office	No activity as per KLKJV arrangement											

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: ***Engineer's Representative***

Name/Post: Stephen Poon / RE

Date: 5.9.12

Signed: ***Contractor's Representative***

Wong Ching Lung / Site Agent

Date: 5/9/2012

Signed: ***IOW***

Tso Sai Kuen / Inspector of Works

Date: 5-9-2012

AECOM ASIA COMPANY LTD.

ENGINEER'S SITE DIARY

Client Department: Drainage Services Department

Contract Title: Drainage Improvement Works in Shuen Wan, Tai Po - Contract 1

Contractor: KWAN LEE - KULY JOINT VENTURE

Weather:

AM	PM	Rainfall (mm)
Fine	Fine	St 0, TP 0

(Hong Kong Observatory's record)

Typhoon / Warning Signal:

Thunderstorm Warning - 23:50~24:00

Contract No.: DC/2009/22 Date: 03/09/2012

Day: Monday

Instructions to Contractor
(Record verbal instructions given)

Comments by Engineer's / Contractor's Representative

Utilities
(Record location & nature of works)

Progress
(Mention briefly any matter delaying or obstructing progress)

Visitor
(Record names of visitors and time of visit)

Accidents
(Describe any occurance of accident)

Remarks

Contractor's Site Staff	No.
Assistant Surveyor	1
Chainman	3
Community Liaison Officer	1
CEG	1
Contract Manager	1
Engineer	1
Environmental Officer	1
Foreman/Assistant Foreman	2
General Foreman	1
Labour Officer	1
Land Surveyor	1
Project Director	1
Project Manager	2
Project Quantity Surveyor	1
Quantity Surveyor Manager	1
Safety Officer	1
Site Agent	1
Surveyor	1
Total	22

Assistance to Engineer	No.
Amah	1
Coordinate Engineer	
Drafting Assistant	1
Driver	2
Field Assistant	3
Office Assistant	1
Watchman	1
Total	9

Labour	Code	No.
Asphalter (Other Construction)	C301	
Asphalter (Roadworks)	C302	
Bamboo Scaffolder	C303	
Bar Bender & Fixer	C304	3
Bricklayer	C305	
Carpenter (Fender)	C306	
Carpenter (Formwork)	C307	2
Concrete Repairer	C308	
Concretor	C309	
Construction Plant Mechanic	C310	
Curtain Wall Installer	C311	
Demolition Worker	C312	
Diver	C313	
Drainlayer	C314	
Electrician (Main Contractor's)	C315	
Floor Layer	C316	
Gas Plumber	C317	
General Welder	C318	2
Glazier	C319	
Ground Investigation Operator/Driller/Borer	C320	
Grouting Worker	C321	
Joiner	C322	
Leveller	C323	
Marble Worker	C324	
Marine Construction Plant Operator	C325	
Mason	C326	
Metal Scaffolder	C327	
Metal Worker	C328	1
Painter & Decorator	C329	
Piling Operative	C330	
Pipelayer	C331	
Plant and Equipment Operator (Builder's Lift and Other Machinery)	C332	
Plant & Equipment Operator (Earthmoving Machinery)	C333	4
Plant and Equipment Operator (Hoist and Crane)	C334	1
Plant and Equipment Operator (Piling)	C335	
Plant and Equipment Operator (Tunnelling)	C336	
Plasterer	C337	
Plumber	C338	
Pneumatic Driller	C339	
Prestressing Operative	C340	
Rigger/Metal Formwork Erector	C341	
Shotcretor	C342	
Shotfirer	C343	
Slope Maintenance Worker	C344	
Structural Steel Erector	C345	
Structural Steel Welder	C346	
Tiler	C347	
Trackworker	C348	
Truck Driver / Coxswain / Barge Engineer / Working Ganger*	C349	1
Window Frame Installer	C350	
(To be continued)		

Labour	Code	No.
Chainman	C401	
Concreting Labourer	C402	
Diver's Linesman / Dredger Crew / Barge Crew	C403	
Excavator	C404	
Heavy Load Labourer	C405	
Labourer (male / female) / Lorry checker / Watchman/Office attendan	C406	30
Sewerman	C407	
Automation Equipment Mechanic	E301	
Building Services Mechanic	E302	
Cable Jointer (Power)	E303	
Carpenter	E304	
Electrician/Electrical Fitter	E305	
Fire Services Mechanic	E306	
Instrument Mechanic	E307	
Lift Electrician	E308	
Lift Mechanic	E309	
Mechanical Fitter	E310	
Overhead Linesman	E311	
Painter	E312	
Plumber and Pipe Fitter	E313	1
Refrigeration/AC/Ventilation Mechanic	E314	
Sheet Metal Worker	E315	
Sign Fabricator	E316	
Sign Installer	E317	
Thermal Insulation Craftsman	E318	
Welder	E319	
Labourer	E401	
Semi-skilled Worker	E402	
Technician	T	
Total Labour		45

Plant		
Type	No. Working	No. Idle
Air Compressor	1	
Backhoe	4	1
Blower	2	
Crawler Drill	1	
Dump Truck	1	
Electric Breaker	1	
Generator	2	
Grout Machine		1
Oxy-Acetylene	5	1
Water Pump 50mm	8	
Water Pump 75mm	6	
Welding Set	6	
Total	37	3

* Working ganger is equivalent to ordinary worker in the trade in which he is employed or, if the trade is not listed, truck driver (refer to GS Table 1.1)

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed:

Engineer's Representative

Name/Post: Stephen Poon / RE

Date: 3.9.12

Signed:

Contractor's Representative

Wong Ching Lung / Site Agent

Date: 4/9/2012

Signed:

IOW

Tso Sai Kuen / Inspector of Works

Date: 4/9/2012

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 03/09/2012

Day: Monday

Time	Location	Activity	Labour			Plant						Material Delivered	
						Type	Working		Idling			Description	Quantity
			Trade	Code	No.		No.	ID	No.	ID	Code		
	Area A - DN1800 Stormwater Drain	No activity as per KLKJV arrangement											
08:00 - 18:00	Area A - Pump Station	Excavating for heading tunnel of Ø225 sewer pipe between MS1 & FMH1023921at Ch.7.4~8.0 Dismantling tubular working platform outside store room Fabricating upper layer I-beam struts for Ø2100 pipe trench between manhole MH05 & MH06 General cleaning at roof and manade slope Installing push bar for stainless steel door (D1) and painting for chequer plate trench covers at transformer room Installing 2 nos. Ø450 & 4 nos .Ø900double flange pipes with puddle at wall between discharge chamber & valve chamber	General Welder	C318	0.5	Backhoe	1	EX50					
			Labourer (female)	C406	2	Blower	2						
			Labourer (male)	C406	9	Oxy-Acetylene	1						
			Metal Worker	C328	1	Water Pump 50mm	2						
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Water Pump 75mm	1						
			Plumber and Pipe Fitter	E313	1	Welding Set	2						
08:00 - 18:00	Area A - Pump Station - Box Culvert (Receiving Pit)	Excavating for receiving pit and fabricating lower layer I-beam walings and struts for shoring	General Welder	C318	0.5	Backhoe	1	EX36					
			Labourer (male)	C406	2	Oxy-Acetylene	1						
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Welding Set	1						
07:00 - 18:00 18:00 - 20:00	Area A - Ting Kok Road	Manual control of "stop/go" sign for traffic flow regulation (3 F/Lab.) Manual control of temporary traffic light for traffic flow regulation. (1 F/Lab)	Labourer (female)	C406	3								
08:00 - 18:00	Area A - Ting Kok Road (CH70-125)	Delivery of sand material from Contract 2's stockpile area at Tai Wah St. (15 truckloads) and backfilling to Ø2100 pipe trench at Ch. 78~125 Rebar fixing for upper walls of manhole MH03 Dismantling upper layer of I-beam walings and struts from shoring of Ø2100 pipe trench at Ch. 85~100	Bar Bender & Fixer	C304	3	Backhoe	1	EX17					
			Labourer (female)	C406	1	Dump Truck	1						
			Labourer (male)	C406	3	Oxy-Acetylene	1						
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Water Pump 50mm	2						
			Truck Driver	C349	1								
	Area B - Tung Tsz Nursery (CH00-CH40)	No activity as per KLKJV arrangement											
08:00 - 18:00	Area B - Tung Tsz Nursery (CH130-CH280)	Bay 10 - Formwork shuttering for walls and top slab Bay 13 - Erecting sheetpile stop end shoring to facilitate backfilling works	Carpenter (Formwork)	C307	2	Backhoe	1	EX08					
			General Welder	C318	1	Generator	1						
			Labourer (male)	C406	2	Oxy-Acetylene	1						

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: *Engineer's Representative*

Name/Post: Stephen Poon / RE

Date: 9.12

Signed: *Contractor's Representative*

Wong Ching Lung / Site Agent

Date: 4/9/2012

Signed: *IOW*

Tso Sai Kuen / Inspector of Works

Date: 4/9/2012

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 03/09/2012

Day: Monday

Time	Location	Activity	Labour			Plant						Material Delivered	
						Type	Working		Idling			Description	Quantity
			Trade	Code	No.		No.	ID	No.	ID	Code		
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Water Pump 50mm	1						
						Water Pump 75mm	2						
						Welding Set	1						
08:00 - 18:00	Area B - Tung Tsz Nursery (CH40-CH130)	General housekeeping & cleaning up sediments from wheel washing bay	Labourer (male)	C406	1	Water Pump 50mm	1						
						Water Pump 75mm	1						
08:00 - 18:00	Area B - Tung Tsz Nursery (Jacking Pit)	Dewatering from jacking pit and general housekeeping	Labourer (male)	C406	3	Air Compressor	1	AC05					
			Plant and Equipment Operator (Hoist and Crane)	C334	1	Crawler Drill	1	DR05					
						Grout Machine			1		h		
						Oxy-Acetylene	1						
						Water Pump 50mm	1						
						Water Pump 75mm	1						
						Welding Set	1						
08:00 - 18:00	Area E - Siu Lek Yuen Rd.Playground	PL 1602.1 - Breaking up brick wall of exsiting manhole inside heading tunnel Excavating to formation level of 1650Ø pipe trench Cart away excavated material to Aara A (1 truckload)	Labourer (male)	C406	4	Backhoe			1	EX21	h		
						Electric Breaker	1						
						Generator	1						
						Oxy-Acetylene			1		h		
						Water Pump 50mm	1						
						Water Pump 75mm	1						
						Welding Set	1						
	Area F - Lek Yuen Street Rest Garden	No activity as per KLKJV arrangement											
	Area G - Ngan Shing St.	No activity as per KLKJV arrangement											
	Area I - Contractor Office	No activity as per KLKJV arrangement											

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: *Engineer's Representative*

Name/Post: Stephen Poon / RE

Date: 4.9.12

Signed: *Contractor's Representative*

Wong Ching Lung / Site Agent

Date: 4/9/2012

Signed: *IOW*

Tso Sai Kuen / Inspector of Works

Date: 4/9/2012

AECOM ASIA COMPANY LTD.

ENGINEER'S SITE DIARY

Client Department: Drainage Services Department

Contract Title: Drainage Improvement Works in Shuen Wan, Tai Po - Contract 1

Contractor: KWAN LEE - KULY JOINT VENTURE

Weather:

AM	PM	Rainfall (mm)
Fine	Fine	ST 5, TP 10

(Hong Kong Observatory's record)

Typhoon / Warning Signal:

Thunderstorm Warning - 05:20~06:30

Contract No.: DC/2009/22 Date: 02/09/2012

Day: Sunday

Instructions to Contractor
(Record verbal instructions given)

Comments by Engineer's / Contractor's Representative

Utilities
(Record location & nature of works)

Progress
(Mention briefly any matter delaying or obstructing progress)

Visitor
(Record names of visitors and time of visit)

Accidents
(Describe any occurance of accident)

Remarks

Contractor's Site Staff	No.
Total	

Assistance to Engineer	No.
Driver	1
Watchman	1
Total	2

Labour	Code	No.
Asphalter (Other Construction)	C301	
Asphalter (Roadworks)	C302	
Bamboo Scaffolder	C303	
Bar Bender & Fixer	C304	
Bricklayer	C305	
Carpenter (Fender)	C306	
Carpenter (Formwork)	C307	
Concrete Repairer	C308	
Concretor	C309	
Construction Plant Mechanic	C310	
Curtain Wall Installer	C311	
Demolition Worker	C312	
Diver	C313	
Drainlayer	C314	
Electrician (Main Contractor's)	C315	
Floor Layer	C316	
Gas Plumber	C317	
General Welder	C318	
Glazier	C319	
Ground Investigation Operator/Driller/Borer	C320	
Grouting Worker	C321	
Joiner	C322	
Leveller	C323	
Marble Worker	C324	
Marine Construction Plant Operator	C325	
Mason	C326	
Metal Scaffolder	C327	
Metal Worker	C328	
Painter & Decorator	C329	
Piling Operative	C330	
Pipelayer	C331	
Plant and Equipment Operator (Builder's Lift and Other Machinery)	C332	
Plant & Equipment Operator (Earthmoving Machinery)	C333	
Plant and Equipment Operator (Hoist and Crane)	C334	
Plant and Equipment Operator (Piling)	C335	
Plant and Equipment Operator (Tunnelling)	C336	
Plasterer	C337	
Plumber	C338	
Pneumatic Driller	C339	
Prestressing Operative	C340	
Rigger/Metal Formwork Erector	C341	
Shotcretor	C342	
Shotfirer	C343	
Slope Maintenance Worker	C344	
Structural Steel Erector	C345	
Structural Steel Welder	C346	
Tiler	C347	
Trackworker	C348	
Truck Driver / Coxswain / Barge Engineer / Working Ganger*	C349	
Window Frame Installer	C350	
(To be continued)		

Labour	Code	No.
Chainman	C401	
Concreting Labourer	C402	
Diver's Linesman / Dredger Crew / Barge Crew	C403	
Excavator	C404	
Heavy Load Labourer	C405	
Labourer (male / female) / Lorry checker / Watchman/Office attendan	C406	6
Sewerman	C407	
Automation Equipment Mechanic	E301	
Building Services Mechanic	E302	
Cable Jointer (Power)	E303	
Carpenter	E304	
Electrician/Electrical Fitter	E305	
Fire Services Mechanic	E306	
Instrument Mechanic	E307	
Lift Electrician	E308	
Lift Mechanic	E309	
Mechanical Fitter	E310	
Overhead Linesman	E311	
Painter	E312	
Plumber and Pipe Fitter	E313	
Refrigeration/AC/Ventilation Mechanic	E314	
Sheet Metal Worker	E315	
Sign Fabricator	E316	
Sign Installer	E317	
Thermal Insulation Craftsman	E318	
Welder	E319	
Labourer	E401	
Semi-skilled Worker	E402	
Technician	T	
Total Labour		6

Plant		
Type	No. Working	No. Idle
Air Compressor		1
Backhoe		5
Crawler Drill		1
Generator		1
Steel Bending Machine		3
Water Pump 50mm	4	1
Water Pump 75mm	1	1
Total	5	13

* Working ganger is equivalent to ordinary worker in the trade in which he is employed or, if the trade is not listed, truck driver (refer to GS Table 1.1)

Day's record and instructions checked and agreed

Signed:
Engineer's Representative
Name/Post: Stephen Poon / RE
Date: 3.9.12

Signed:
Contractor's Representative
Wong Ching Lung / Site Agent
Date: 3/9/2012

Signed:
IOW
Tso Sai Kuen / Inspector of Works
Date: 3-9-2012

Original - ER's File

Duplicate - Contractor

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 02/09/2012

Day: Sunday

Time	Location	Activity	Labour			Plant						Material Delivered	
						Type	Working		Idling			Description	Quantity
			Trade	Code	No.		No.	ID	No.	ID	Code		
	Area A - DN1800 Stormwater Drain	No activity as per KLKJV arrangement											
08:00 - 18:00	Area A - Pump Station	Stripping off soffit formwork from roof of store room and general cleaning	Labourer (male)	C406	2	Backhoe			1	EX36	I		
						Backhoe			1	EX50	i		
						Steel Bending Machine			3		i		
						Water Pump 50mm	2						
						Water Pump 75mm	1						
07:00 - 18:00 18: 20:00	Area A - Ting Kok Road	Manual control of "stop/go" sign for traffic flow regulation (3 F/Lab.) Manual control of temporary traffic light for traffic flow regulation (1 M/Lab. from area I)	Labourer (female)	C406	3	Backhoe			1	EX17			
	Area A - Ting Kok Road (Intake Structure)	No activity as per KLKJV arrangement				Water Pump 50mm	1						
	Area B - Tung Tsz Nursery (CH130-CH280)	No activity as per KLKJV arrangement				Backhoe			1	EX08	i		
	Area B - Tung Tsz Nursery (CH40-CH130)	No activity as per KLKJV arrangement				Water Pump 50mm			1		i		
						Water Pump 75mm			1		i		
	Area B - Tung Tsz Nursery (Jacking Pit)	No activity as per KLKJV arrangement				Air Compressor			1	AC05	i		
						Crawler Drill			1	DR05	I		
						Water Pump 50mm	1						
	Area C - Shallow Marshy Area	No activity as per KLKJV arrangement											
	Area E - Siu Lek Yuen Rd.Playground	No activity as per KLKJV arrangement				Backhoe			1	EX21	i		
						Generator			1		i		
	Area F - Lek Yuen Street Rest Garden	No activity as per KLKJV arrangement											
	Area G - Ngan Shing St.	No activity as per KLKJV arrangement											

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: *Engineer's Representative*

Name/Post: Stephen Poon / RE

Date: 3.9.12

Signed: *Contractor's Representative*

Wong Ching Lung / Site Agent

Date: 3/9/2012

Signed: *IOW*

Tso Sai Kuen / Inspector of Works

Date: 3-9-2012

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 02/09/2012

Day: Sunday

Time	Location	Activity	Labour			Plant						Material Delivered	
						Type	Working		Idling			Description	Quantity
			Trade	Code	No.		No.	ID	No.	ID	Code		
08:00 - 18:00	Area I - Contractor Office	Office cleaning	Labourer (male)	C406	1								

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: ***Engineer's Representative***

Name/Post: Stephen Poon / RE

Date: 3.9.12

Signed: ***Contractor's Representative***

Wong Ching Lung / Site Agent

Date: 3/9/2012

Signed: ***IOW***

Tso Sai Kuen / Inspector of Works

Date: 3-9-2012

AECOM ASIA COMPANY LTD.

ENGINEER'S SITE DIARY

Client Department: Drainage Services Department

Contract Title: Drainage Improvement Works in Shuen Wan, Tai Po - Contract 1

Contractor: KWAN LEE - KULY JOINT VENTURE

Weather:

AM	PM	Rainfall (mm)
Shower	Cloudy	ST 5, TP 2

(Hong Kong Observatory's record)

Typhoon / Warning Signal:

Thunderstorm Warning - 01:05~03:00 & 15:05~16:45

Contract No.: DC/2009/22 Date: 01/09/2012

Day: Saturday

Instructions to Contractor
(Record verbal instructions given)

Comments by Engineer's / Contractor's Representative

Utilities
(Record location & nature of works)

Progress
(Mention briefly any matter delaying or obstructing progress)

Visitor
(Record names of visitors and time of visit)

Accidents
(Describe any occurance of accident)

Remarks

Contractor's Site Staff	No.
Assistant Surveyor	1
Chainman	3
Community Liaison Officer	1
CEG	1
Contract Manager	1
Engineer	1
Environmental Officer	1
Foreman/Assistant Foreman	2
General Foreman	1
Labour Officer	1
Land Surveyor	1
Project Director	1
Project Manager	2
Project Quantity Surveyor	1
Quantity Surveyor Manager	1
Safety Officer	1
Site Agent	1
Surveyor	1
Total	22

Assistance to Engineer	No.
Amah	1
Coordinate Engineer	
Drafting Assistant	1
Driver	2
Field Assistant	3
Office Assistant	1
Watchman	1
Total	9

Labour	Code	No.
Asphalter (Other Construction)	C301	
Asphalter (Roadworks)	C302	
Bamboo Scaffolder	C303	
Bar Bender & Fixer	C304	4
Bricklayer	C305	
Carpenter (Fender)	C306	
Carpenter (Formwork)	C307	4
Concrete Repairer	C308	
Concretor	C309	
Construction Plant Mechanic	C310	
Curtain Wall Installer	C311	
Demolition Worker	C312	
Diver	C313	
Drainlayer	C314	
Electrician (Main Contractor's)	C315	
Floor Layer	C316	
Gas Plumber	C317	
General Welder	C318	2
Glazier	C319	
Ground Investigation Operator/Driller/Borer	C320	
Grouting Worker	C321	
Joiner	C322	
Leveller	C323	
Marble Worker	C324	
Marine Construction Plant Operator	C325	
Mason	C326	
Metal Scaffolder	C327	
Metal Worker	C328	2
Painter & Decorator	C329	
Piling Operative	C330	
Pipelayer	C331	1
Plant and Equipment Operator (Builder's Lift and Other Machinery)	C332	
Plant & Equipment Operator (Earthmoving Machinery)	C333	4
Plant and Equipment Operator (Hoist and Crane)	C334	2
Plant and Equipment Operator (Piling)	C335	
Plant and Equipment Operator (Tunnelling)	C336	
Plasterer	C337	
Plumber	C338	
Pneumatic Driller	C339	
Prestressing Operative	C340	
Rigger/Metal Formwork Erector	C341	
Shotcretor	C342	
Shotfirer	C343	
Slope Maintenance Worker	C344	
Structural Steel Erector	C345	
Structural Steel Welder	C346	
Tiler	C347	
Trackworker	C348	
Truck Driver / Coxswain / Barge Engineer / Working Ganger*	C349	2
Window Frame Installer	C350	
(To be continued)		

Labour	Code	No.
Chainman	C401	
Concreting Labourer	C402	
Diver's Linesman / Dredger Crew / Barge Crew	C403	
Excavator	C404	
Heavy Load Labourer	C405	
Labourer (male / female) / Lorry checker / Watchman/Office attendan	C406	26
Sewerman	C407	
Automation Equipment Mechanic	E301	
Building Services Mechanic	E302	
Cable Jointer (Power)	E303	
Carpenter	E304	
Electrician/Electrical Fitter	E305	
Fire Services Mechanic	E306	
Instrument Mechanic	E307	
Lift Electrician	E308	
Lift Mechanic	E309	
Mechanical Fitter	E310	
Overhead Linesman	E311	
Painter	E312	
Plumber and Pipe Fitter	E313	
Refrigeration/AC/Ventilation Mechanic	E314	
Sheet Metal Worker	E315	
Sign Fabricator	E316	
Sign Installer	E317	
Thermal Insulation Craftsman	E318	
Welder	E319	
Labourer	E401	
Semi-skilled Worker	E402	
Technician	T	
Total Labour		47

Plant		
Type	No. Working	No. Idle
Air Compressor	1	
Backhoe	5	
Blower	2	
Crawler Drill	1	
Dump Truck	2	
Electric Breaker	1	
Generator	2	
Grout Machine		1
Oxy-Acetylene	3	2
Water Pump 50mm	8	
Water Pump 75mm	6	
Welding Set	4	
Total	35	3

* Working ganger is equivalent to ordinary worker in the trade in which he is employed or, if the trade is not listed, truck driver (refer to GS Table 1.1)

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: *Engineer's Representative*

Name/Post: Stephen Poon / RE

Date: 3.9.12

Signed: *Contractor's Representative*

Wong Ching Lung / Site Agent

Date: 3/9/2012

Signed: *IOW*

Tso Sai Kuen / Inspector of Works

Date: 3-9-2012

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 01/09/2012

Day: Saturday

Time	Location	Activity	Labour			Plant						Material Delivered	
						Type	Working		Idling			Description	Quantity
			Trade	Code	No.		No.	ID	No.	ID	Code		
	Area A - DN1800 Stormwater Drain	No activity as per KLKJV arrangement											
08:00 - 18:00	Area A - Pump Station	Excavating for heading tunnel of Ø225 sewer pipe between MS1 & FMH1023921at Ch.6.7~7.4 and installing shoring frames Stripping off soffits formwork from roof of store room and dismantling the falsework Fabricating upper layer I-beam struts for shoring of Ø2100 pipe trench between manhole MH05~06 General cleaning at roof and manade slope Installing stainless steel doors (D4 & D9) at switchroom Painting for chequer plate trench covers at transformer room Installing 2 nos. Ø450 & 4 nos. Ø900 double flange pipe with puddle at wall between discharge chamber & valve chamber	General Welder	C318	1	Backhoe	1	EX50					
			Labourer (female)	C406	2	Blower	2						
			Labourer (male)	C406	8	Oxy-Acetylene	1						
			Metal Worker	C328	2	Water Pump 50mm	2						
			Pipelayer	C331	1	Water Pump 75mm	1						
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Welding Set	2						
08:00 - 18:00	Area A - Pump Station - Box Culvert (Receiving Pit)	Excavating for receiving pit to 3.0 mPD & cart away excavated materials to Contract 2's stockpile area at Tai Wah Street. (16 Truckloads)	Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Backhoe	1	EX36					
			Truck Driver	C349	2	Dump Truck	2						
07:00 - 18:00 18:00 - 20:00	Area A - Ting Kok Road	Manual control of "stop/go" sign for traffic flow regulation (3 F/Lab.) Manual control of temporary traffic light for traffic flow requlation (1 F/lab.)	Labourer (female)	C406	3								
08:00 - 18:00	Area A - Ting Kok Road (CH70-125)	Backfilling sand material to Ø2100 pipe trench at Ch.78~125 and compacting Formwork shuttering for walls of manhole MH03 Dismantling upper layer of I-beam walings and struts from shoring of Ø2100 pipe trench at Ch. 90~100	Carpenter (Formwork)	C307	2	Backhoe	1	EX17					
			General Welder	C318	1	Oxy-Acetylene	1						
			Labourer (female)	C406	1	Water Pump 50mm	2						
			Labourer (male)	C406	2								
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1								
	Area B - Tung Tsz Nursery (CH00-CH40)	No activity as per KLKJV arrangement											
08:00 - 18:00	Area B - Tung Tsz Nursery (CH130-CH280)	Bay 13 - Formwork shuttering for access shaft Bay 12 - Stripping off soffit formwork and dismantling the falsework Bay 11~12 - Patching up tie bolt holes at external face of wall prior to backfilling Bay 10 - Rebar fixing for walls and top slab	Bar Bender & Fixer	C304	4	Backhoe	1	EX08					
			Carpenter (Formwork)	C307	2	Generator	1						

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: ***Engineer's Representative***

Name/Post: Stephen Poon / RE

Date: 3.9.12

Signed: ***Contractor's Representative***

Wong Ching Lung / Site Agent

Date: 3/9/2012

Signed: ***IOW***

Tso Sai Kuen / Inspector of Works

Date: 3-9-2012

AECOM ASIA COMPANY LTD.

Idling Code:

a Breakdown
b Standby
c Awaiting Instruction
d Assemble/Disassemble
e Bad Weather
f Task Completed
g No Operator
h Not Required
i Sunday/Public Holiday

Contract No.: DC/2009/22 Date: 01/09/2012

Day: Saturday

Time	Location	Activity	Labour			Plant						Material Delivered	
						Type	Working		Idling			Description	Quantity
			Trade	Code	No.		No.	ID	No.	ID	Code		
			Labourer (male)	C406	3	Oxy-Acetylene			1		h		
			Plant & Equipment Operator (Earthmoving Machinery)	C333	1	Water Pump 50mm	1						
						Water Pump 75mm	2						
08:00 - 18:00	Area B - Tung Tsz Nursery (CH40-CH130)	General housekeeping & cleaning up sediments from wheel washing bay	Labourer (male)	C406	1	Water Pump 50mm	1						
						Water Pump 75mm	1						
08:00 - 12:00	Area B - Tung Tsz Nursery (Jacking Pit)	Set up crawler drill and preparation works for grouting	Labourer (male)	C406	2	Air Compressor	1	AC05					
			Plant and Equipment Operator (Hoist and Crane)	C334	1	Crawler Drill	1	DR05					
						Grout Machine			1		h		
						Oxy-Acetylene	1						
						Water Pump 50mm	1						
						Water Pump 75mm	1						
						Welding Set	1						
08:00 - 18:00	Area E - Siu Lek Yuen Rd.Playground	PL 1602.1 - Excavating for heading tunnel at Ch.~5.0 and installation of shoring frames Breaking up brick wall of exsiting manhole for build in Ø1650 pipe PL 1604.1 - Driving sheet piles and fabricating top layer I-beam walings and struts for trench shoring	Labourer (male)	C406	4	Backhoe	1	EX21					
			Plant and Equipment Operator (Hoist and Crane)	C334	1	Electric Breaker	1						
						Generator	1						
						Oxy-Acetylene			1		h		
						Water Pump 50mm	1						
						Water Pump 75mm	1						
						Welding Set	1						
	Area F - Lek Yuen Street Rest Garden	No activity as per KLKJV arrangement											
	Area G - Ngan Shing St.	No activity as per KLKJV arrangement											
	Area I - Contractor Office	No activity as per KLKJV arrangement											

Day's record and instructions checked and agreed

Original - ER's File

Duplicate - Contractor

Signed: *Engineer's Representative*

Name/Post: Stephen Poon / RE

Date: 3.9.12

Signed: *Contractor's Representative*

Wong Ching Lung / Site Agent

Date: 3/9/2012

Signed: *IOW*

Tso Sai Kuen / Inspector of Works

Date: 3-9-2012