



PROJECT No.: TCS/00553/11

**CONTRACT NO. DC/2010/02 –  
DRAINAGE IMPROVEMENT IN SHUEN WAN AND  
SHEK WU WAI**

**MONTHLY ENVIRONMENTAL MONITORING AND  
AUDIT REPORT (NO.4) – OCTOBER 2011**

PREPARED FOR  
**KWAN LEE-KULY JOINT VENTURE**

**Quality Index**

<b>Date</b>	<b>Reference No.</b>	<b>Prepared By</b>	<b>Certified by</b>
14 November 2011	TCS00553/11/600/R0051v2	(Environmental Consultant)  Nicola Hon	(Environmental Team Leader)  T.W. Tam

<b>Ver.</b>	<b>Date</b>	<b>Description</b>
1	11 November 2011	First submission
2	14 November 2011	Amended against IEC's comments on 14 November 2011

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ENVIRON

Ref.: DSDSHUWNEM00\_0\_0269L.11

14<sup>th</sup> Nov 2011

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Projects and Development Branch  
Drainage Projects Division  
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By Post and Fax (2827 8700)

Attention : Mr. H.K. Chan & Mr. Ronald Siu

Dear Sir,

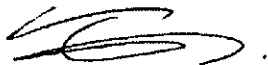
**Re: Agreement No. DP 01/2010**  
**Services as Independent Environmental Checker for the Drainage Improvement**  
**Works in Sha Tin and Tai Po under Contract No. DC/2010/02**  
**Monthly Environmental Monitoring and Audit Report for Oct 2011**

Reference is made to Environment Team's submission of the Monthly Environmental Monitoring and Audit Report for Oct 2011 by Email on 8<sup>th</sup> Nov 2011 (entitled "DC/2010/22 - Monthly EM&A Report (Contract 2) No.4 - October 2011") and the subsequent revision of the report by Email on 14<sup>th</sup> Nov 2011.

Please be informed that we have no further comment on the captioned revised report. We write to verify the captioned submission in accordance with Condition 5.4 of EP-303/2008.

Thank you very much for your kind attention and please do not hesitate to contact the undersigned should you have any queries.

Yours sincerely,



Tony Cheng  
Independent Environmental Checker

c.c. AUES  
Kwan Lee-Kuly JV

Attn: Mr. T. W. Tam  
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**EXECUTIVE SUMMARY**

ES.01. This is the 4<sup>th</sup> Monthly Environmental Monitoring and Audit (EM&A) Report for designated works of **DSD Contract No. DC/2010/02 - Drainage Improvement in Shuen Wan and Shek Wu Wai** (hereafter “Contract 2”) under Environmental Permit No.EP-303/2008, covering a period from **1 to 31 October 2011** (hereinafter ‘the Reporting Period’).

**ENVIRONMENTAL MONITORING AND AUDIT ACTIVITIES**

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

Issues	Environmental Monitoring Parameters / Inspection	Occasions
Construction Noise	Leq (30min) Daytime	20
Water Quality	Local Stream Water Sampling - W1 and W2	12
	Local Stream Water Sampling - W3 and W4	12
	Hydrological characteristics measurement – H1 and H2	4
	Hydrological characteristics measurement – H3 and H4	4
Inspection / Audit	Monthly Environmental Site Inspection and audit by IEC	1
	Regular weekly Environmental inspection by the Contractor, ET and Site Representative Engineer	4
Landscape & Visual	Bi-weekly Inspection by a registered Landscape Architect	2

ES.03. According to updated EM&A Manual Section 6.17, ecological monitoring is conducted by the IEC. Furthermore, a registered Landscape Architect as member of the ET is employed by the Contractor to undertake landscape and visual inspection.

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

ES.04. No exceedance in construction noise monitoring is recorded in this Reporting Period. For water quality monitoring, a total of 44 Action/Limit Level exceedances, namely 24 Action/Limit Level exceedances in dissolved oxygen, 17 Action/Limit Level exceedances in turbidity and 3 Limit Level exceedances in suspended solids were recorded in this Reporting Period. NOEs were issued to notify EPD, IEC, the Contractor and RE. According to construction activities records provided by KLKVJ, all the exceedances were considered not related to the works under the Project. The statistics of environmental exceedance, NOE issued and investigation of exceedance are summarized in the following table.

Environmental Issues	Monitoring Parameters	Action Level	Limit Level	Event & Action		
				NOE Issued	Investigation	Corrective Actions
Construction Noise	Leq <sub>30min</sub> Daytime	0	0	0	0	0
Water Quality	DO	5	19	24	Not related Contract 2	Not required
	Turbidity	4	13	17		
	SS	0	3	3		
Hydrological Characteristics	Water Flow	0	0	0	0	0
	Water Depth	0	0	0	0	0

*Note: NOE – Notification of Exceedance*

**ENVIRONMENTAL COMPLAINT**

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

Reporting Period	Environmental Complaint Statistics		
	Frequency	Cumulative	Complaint Nature
1 – 31 October 2011	0	0	NA

**NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS**

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

Reporting Period	Environmental Summons Statistics		
	Frequency	Cumulative	Complaint Nature
1 – 31 October 2011	0	0	NA

Reporting Period	Environmental Prosecution Statistics		
	Frequency	Cumulative	Complaint Nature
1 – 31 October 2011	0	0	NA

**REPORTING CHANGE**

ES.07. No report changes were made in this Reporting Period.

**SITE INSPECTION BY EXTERNAL PARTIES**

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

**FUTURE KEY ISSUES**

ES.09. During dry season, dust mitigation measures to avoid fugitive dust emissions from loose soil surface or haul road would be a key issue in coming months.. Nevertheless, special attention should be paid on the muddy water and other water quality pollutants via site surface water runoff into the local stream Wah Ha River. Mitigation measures for water quality should therefore be fully implemented and maintained.

ES.10. On the other hand, construction noise would be the other key environmental issue during sheet-piling works. Therefore, noise mitigation measures should be properly implemented accordingly.

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## 1.0 INTRODUCTION

### PROJECT BACKGROUND

- 1.01 *Kwan Lee-Kuly Joint Venture* (hereinafter ‘KLKJV’) has been awarded by Drainage Services Department (hereinafter ‘DSD’) of the Contract No. DC/2010/02 - Drainage Improvement in Shuen Wan and Shek Wu Wai (hereinafter ‘the Project’). The Project is scheduled to commence in May 2011 and complete in March 2014 for about 35 months.
- 1.02 The works to be executed under the Project are located in Shuen Wan and Shek Wu Wai. The works mainly comprise construction of about 735 metres long single-cell box culvert along Tung Tsz Road in Shuen Wan, Tai Po and construction of about 15 m long three-cell box culvert in Shek Wu Wai, San Tin .
- 1.03 For the Project, the construction work at Tung Tsz Road Shuen Wan (hereinafter ‘the Contract 2’) is part of the Drainage Improvement works amongst Shatin and Tai Po and it is defined as a “Designated Project” which controlled under Environmental Permit EP-303/2008. Currently, DSD has another Contract DC/2009/22 (hereinafter ‘the Contract 1’) ongoing for construction at Shuen Wan working area which under the same Environmental Permit and the updated Environmental Monitoring and Audit Manual (hereinafter ‘the Updated EM&A Manual’). Both DSD contract’s site boundary at Shuen Wan are shown in **Appendix A**. On the other hand, Shek Wu Wai San Tin is a non-designated project work and no environmental monitoring and audit is request to carry out.
- 1.04 In order to effectively implement the environmental protection measures stipulated in the Project Profile (hereinafter ‘the PP’), Environmental Impact Assessment Report (hereinafter “the EIAR”), Environmental Permit EP303/2008, a corresponding EM&A Manual have been prepared to outline the environmental monitoring and auditing (hereinafter ‘the EM&A’) programme undertake for the Contracts 1 and 2.
- 1.05 KLKJV has commissioned Action-United Environmental Services and Consulting (AUES) as an independent environmental team (hereinafter ‘the ET’) to implement the EM&A program for the environmental protection of the Project. Due to the construction of Contracts 1 and 2 carry out is just about the time, a Proposal Environmental Monitoring Programme and Methodology (hereinafter the “PEMPM”) was prepared and submitted to describe EM&A programme would be undertaken during construction period of the Contract 2.
- 1.06 The baseline monitoring of EM&A program has been performed by the Contract 1 ET. Although Action and Limit levels of environmental performance criteria have established by the Contract 1 ET, the Action/Limit levels re-establishment to use the Contract 2 was conducted by the Contract 2 ET. The re-established environment performance criteria has accepted by the IEC and also submitted to the EPD seek for endorsement.
- 1.07 This is the 4<sup>th</sup> Monthly EM&A Report for Contract 2 presenting the monitoring results and inspection findings for the reporting period from **1 to 31 October 2011**.

### REPORT STRUCTURE

- 1.08 The Monthly Environmental Monitoring and Audit (EM&A) Report is structured into the following sections:-.

<b>SECTION 1</b>	<b>INTRODUCTION</b>
<b>SECTION 2</b>	<b>PROJECT ORGANIZATION AND CONSTRUCTION PROGRESS AND SUBMISSION</b>
<b>SECTION 3</b>	<b>EM&amp;A PROGRAM REQUIREMENT FOR THE PROJECT</b>
<b>SECTION 4</b>	<b>IMPACT MONITORING RESULTS</b>
<b>SECTION 5</b>	<b>WASTE MANAGEMENT</b>
<b>SECTION 6</b>	<b>SITE INSPECTIONS</b>
<b>SECTION 7</b>	<b>ENVIRONMENTAL COMPLAINTS AND NON-COMPLIANCE</b>
<b>SECTION 8</b>	<b>IMPLEMENTATION STATUES OF MITIGATION MEASURES</b>
<b>SECTION 9</b>	<b>IMPACT FORECAST</b>
<b>SECTION 10</b>	<b>CONCLUSIONS AND RECOMMENDATION</b>

**2.0 PROJECT ORGANIZATION AND CONSTRUCTION PROGRESS AND SUBMISSION**

**PROJECT ORGANIZATION AND MANAGEMENT STRUCTURE**

2.01 Organization structure and contact details of relevant parties with respect to on-site environmental management are shown in *Appendix B*.

**CONSTRUCTION PROGRESS**

2.02 The master and three month rolling construction programs are enclosed in *Appendix C* and the major construction activities undertaken at Tung Tsz Road, Shuen Wan in this report period are listed below:

- Excavation permit for chainage 0-250
- Fixing of reinforcement for base slab of Bay 21 & 22
- Erection of formwork for base slab of Bay 21 & 22
- Concrete casting of base slab of Bay 21 & Bay 22
- Fixing of reinforcement for walls of Bay 20 & Bay 22
- Fixing of reinforcement for top slab of Bay 20
- Erection of formwork for walls and top slab of Bay 20
- 36 nos. of trees have been fell

**SUMMARY OF ENVIRONMENTAL SUBMISSIONS**

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

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

<b>Item</b>	<b>Description</b>	<b>License/Permit Status</b>
1	Air Pollution Control (Construction Dust)	Notified EPD on 17 October 2011
2	Chemical Waste Producer Registration (WPN5213-727-K2972-02)	Approved on 28 October 2011
3	Water Pollution Control Ordinance (Discharge License) WT00009528-2011	Valid to 31 July 2016
4	Billing Account for Disposal of Construction Waste (Account No.: 7012838)	Effective
5	Construction Noise Permit	In Progress

2.04 The “Proposal Environmental Monitoring Programme and Methodology (R0006 Version 2)” was set out in accordance with the Updated Environmental Monitoring and Audit Manual. It was approved by the ER and agreed with the Independent Environmental Checker (IEC) and submitted to the EPD for endorsement.

2.05 For Contract 2 of the Project, no Baseline Monitoring Report was issued by the ETL. However, a new set of the Action/ Limit levels as used to Contract 2 were proposed by ET. It had been accepted by the IEC and also submitted to the EPD seek for endorsement.



### 3.0 EM&A PROGRAM REQUIREMENT FOR THE CONTRACT 2

3.01 The EM&A requirements set out in the PP, EIAR, Environmental Permit EP303/2008 (hereinafter ‘the EP’), and the associated updated EM&A Manual, are presented below sub-section.

#### MONITORING PARAMETERS

3.02 According to the EIAR and the updated EM&A Manual, The monitoring parameters of each environmental aspect summarized in **Table 3-1** will be performed as under the Project.

**Table 3-1 Summary of Monitoring Parameters**

Environmental Aspect	Parameters	
Construction Noise	<ul style="list-style-type: none"> <li>A-weighted equivalent continuous sound pressure level (30min) (hereinafter ‘Leq(30min)’ during the normal working hours; and</li> <li>A-weighted equivalent continuous sound pressure level (5min) (hereinafter ‘Leq(5min)’ for construction work during the restricted hours.</li> </ul>	
Water Quality	In Situ Measurement	Temperature, Dissolved Oxygen, Dissolved Oxygen Saturation, pH and Turbidity
	Laboratory Analysis	Suspended Solids (hereinafter ‘SS’)
Hydrological Characteristics	The water flow and depth measurement onsite	
*Ecology	Monitor and audit the proper implementation of mitigation measures stipulated in EIA report and the updated EM&A Manual	
Landscape & Visual	Inspect and audit the implementation and maintenance of landscape and visual mitigation measures	

Remarks: \* the monitoring is carried out by IEC

#### MONITORING LOCATIONS

3.03 Monitoring locations have been proposed in the updated EM&A Manual. Graphic plot to show in **Appendix D** and summarized in **Table 3-2**.

**Table 3-2 Designated Monitoring Locations of the EM&A Programme**

Aspect	Location ID	Address
Construction Noise	M1	14, Shuen Wan Chim Uk
	AL1	Joint Village Office for Villages in Shuen Wan, Tai PO
	M2	150, San Tau Kok
	M3	31, Wai Ha
	M4	Block 15, T reasure Spot Garden
Water Quality	(#) W1	Between the Shuen Wan Marsh and ECA <ul style="list-style-type: none"> <li>Co-ordinates: E839301, N836386</li> <li>Existing River Bed Level: +1.75mPD).</li> </ul>
	W2	Between Tolo Harbour and Proposed Penstock <ul style="list-style-type: none"> <li>Co-ordinates: E839542, N836184</li> <li>Existing River Bed Level: +1.48mPD)</li> </ul>
	(*) W3	Upstream of Tung Tze Shan Road <ul style="list-style-type: none"> <li>Co-ordinates: E838760, N836714</li> <li>Existing River Bed Level: +5.08mPD)</li> </ul>
	W4	Wai Ha Village 29D <ul style="list-style-type: none"> <li>Co-ordinates: E838865, N836621</li> <li>Existing River Bed Level: +4.05mPD)</li> </ul>
Hydrological	H1	Between the Shuen Wan Marsh and ECA <ul style="list-style-type: none"> <li>Coordinates: E839306, N836379)</li> </ul>
	H2	Route 10 Sam Kung Temple <ul style="list-style-type: none"> <li>Coordinates: E839163, N836433</li> </ul>

Aspect	Location ID	Address
	H3	Upstream of Tung Tze Shan Road • Coordinates: E838760, N836714
	H4	Wai Ha Village 29D • Coordinates: E838865, N836621
Ecology	Areas within 100m of the works boundary under Contract 2	
Landscape & Visual	As within and adjacent to the construction sites and works areas under the Contract 2,	

Remarks:

(#) Control Station of Contract 1, however impact station of Contract 2

(\*) Control Station of Contract 2

### MONITORING FREQUENCY

- 3.04 The monitoring frequency and duration as specified in the updated EM&A Manual are summarized below.

#### Construction Noise

Frequency: Once a week during 0700-1900 on normal weekdays for Leq30min

If the construction work is undertake at restricted hour, the monitoring frequency of construction noise will be conducted in accordance with the related Construction Noise Permit requirement issued by EPD as follow

- 3 consecutive Leq5min at restrict hour from 1700 – 2300;
- 3 consecutive Leq5min for restrict hour from 2300 – 0700 next day;
- 3 consecutive Leq5min for Sunday or public holiday from 0700 – 1900;

Duration: Throughout the construction period when the major construction activities are undertaken

#### Water Quality

Frequency: Three times a week. The interval between 2 sets monitoring are not less than 36 hours

Duration: During the construction phase of Contract 2 to undertake (in accordance with the Updated EM&A Manual Section 4.27).

#### Hydrological Characteristics

Frequency: Once per week at mid-flood and mid-ebb tides

Duration: During the construction phase of Contract 2 to undertake; and one year after the construction is complete as operation phase monitoring (in accordance with the Updated EM&A Manual Section 4.32).

#### Ecology

- 3.05 In according with Section 6.17 of the Updated EM&A Manual, ecological monitoring should be conducted by the Independent Environmental Checker (hereinafter 'IEC'). Monitoring programme details should be agreed with the Agriculture, Fisheries and Conservation Department (AFCD). Moreover, the IEC should submit reports on the findings of each monitoring trip, and a final report summarizing the monitoring results over the entire monitoring period to AFCD and Environmental Protection Department (EPD). Hence, no monitoring or surveying should be carried out by ET of the Project.

#### Landscape & Visual

- 3.06 According to Section 7.4 of the Updated EM&A Manual, site inspection bi-weekly should be performed to check the implementation and maintenance of landscape and visual mitigation measures whether to full realize.

**MONITORING EQUIPMENT**

**Noise Monitoring**

3.07 Sound level meter in compliance with the *International Electrotechnical Commission Publications 651: 1979 (Type 1) and 804: 1985 (Type 1)* specifications shall be used for noise monitoring. The sound level meter shall be checked with an acoustic calibrator. The wind speed shall be checked with a portable wind speed meter, which capable to measure wind speed in m/s.

**Water Quality Monitoring**

3.08 **Dissolved Oxygen and Temperature Measuring Equipment** – The instrument should be a portable and weatherproof dissolved oxygen (DO) measuring instrument complete with cable and sensor, and use a DC power source. The equipment should be capable of measuring DO level in the range of 0 – 20mg L<sup>-1</sup> and 0 – 200% saturation; and temperature of 0 – 45 degree Celsius.

3.09 **pH Meter** – The instrument shall consist of a potentiometer, a glass electrode, a reference electrode and a temperature-compensating device. It shall be readable to 0.1 pH in arrange of 0 to 14.

3.10 **Turbidity (NTU) Measuring Equipment** – The instrument should be a portable and weatherproof turbidity measuring instrument using a DC power source. It should have a photoelectric sensor capable of measuring turbidity between 0 - 1000 NTU.

3.11 **Water Sampling Equipment** – A water sampler should comprise a transparent PVC cylinder, with a capacity of not less than 2 litres, which can be effectively sealed with latex cups at both ends. The sampler should have a positive latching system to keep it open and prevent premature closure until released by a messenger when the sampler is at the selected water depth.

3.12 **Water Depth Detector** – A portable, battery-operated echo sounder should be used for the determination of water depth at each designated monitoring station. The unit can either be hand held or affixed to the bottom of the work boat.

3.13 **Sample Containers and Storage** – Water samples for SS should be stored in high density polythene bottles with no preservative added, packed in ice (cooled to 4°C without being frozen).

3.14 **Suspended Solids Analysis** – Analysis of suspended solids shall be carried out in a HOKLAS or other international accredited laboratory.

**Hydrological Characteristics**

3.15 **Water Depth Detector** - A portable, battery-operated echo sounder shall be used for the determination of water depth at each designated monitoring station.

3.16 **Stream water flow Equipment** –A portable, battery-operated flow meter should be used for the determination of water flow rate at each designated monitoring location and record in m<sup>3</sup>/s.

3.17 The monitoring equipment using for the Project’s EM&A program were proposed by the ET and verified by the IEC prior commencement of the monitoring. Details of the equipment used for impact monitoring are listed in **Table 3-3**.

**Table 3-3 Monitoring Equipment Used in EM&A Program**

Equipment	Model
<b><i>Construction Noise</i></b>	
Integrating Sound Level Meter	B&K Type 2238
Calibrator	B&K Type 4231
Portable Wind Speed Indicator	Testo Anemometer
<b><i>Water quality</i></b>	
Water Depth Detector	Eagle Sonar
Water Sampler	A transparent PVC cylinder / bucket

Equipment	Model
Thermometer & DO meter	DO Meter YSI 55 or YSI Professional Plus
pH meter	Extech EC500
Turbidimeter	Hach 2100Q
Sample Container	High density polythene bottles (provided by laboratory)
Storage Container	'Willow' 33-litre plastic cool box
Suspended Solids	HOKLAS-accredited laboratory (ALS Technichem (HK) Pty Ltd)
<b>Hydrological Characteristics</b>	
Water flow meter	GLOBAL WATER model FP211
Water Depth Detector	Eagle Sonar or an appropriate steel ruler or rope with appropriate weight

## MONITORING METHODOLOGY

### Noise Monitoring

- 3.18 Noise measurements were taken in terms of the A-weighted equivalent sound pressure level ( $L_{eq}$ ) measured in decibels (dB). Supplementary statistical results ( $L_{10}$  and  $L_{90}$ ) were also obtained for reference.
- 3.19 Sound level meter as listed in **Table 3-3** are complied with the *International Electrotechnical Commission Publications 651: 1979 (Type 1) and 804: 1985 (Type 1)* specifications, as recommended in Technical Memorandum (TM) issued under the *Noise Control Ordinance (NCO)*.
- 3.20 During the monitoring, all noise measurements were performed with the meter set to FAST response and on the A-weighted equivalent continuous sound pressure level ( $L_{eq}$ ).  $L_{eq(30min)}$  in six consecutive  $L_{eq(5min)}$  measurements were used as the monitoring parameter for the time period between 0700-1900 hours on weekdays; and also  $L_{eq(15min)}$  in three consecutive  $L_{eq(5min)}$  measurements is used as monitoring parameter for other time periods (e.g. during restricted hours), if necessary.
- 3.21 During the course of measurement, the sound level meter is mounted on a tripod with a height of 1.2m above ground and placed at the assessment point and oriented such that the microphone is pointed to the site with the microphone facing perpendicular to the line of sight. The windshield is fitted for all measurements. The assessment point is normally set as free-field situation for the measurement.
- 3.22 Prior to noise measurement, the accuracy of the sound level meter is checked by an acoustic calibrator which generated a known sound pressure level at a known frequency. The checking was performed before and after the noise measurement.

### Water Quality

- 3.23 Water quality monitoring are conducted at the depth below:-
- Three depths: 1m below water surface, 1m above river bed and at mid-depth when the water depth exceeds 6m, or
  - If the water depth is between 3m and 6m, two depths: 1m below water surface and 1m above river bed, and or
  - If the water depth is less than 3m, 1 sample at mid-depth is taken
- 3.24 Water depths are determined prior to measurement and sampling, using a portable battery operated depth detector, brand named 'Eagle Sonar', if the depths exceed 1.5 meter. If the depth between 1.5 meter and 1 meter, plastic tape measurement tied with appropriate weight are used the depth estimation. For the depth well below 1 meter, an appropriate steel ruler or rope with appropriate weight are used for the depth measurement.

- 3.25 A transparent PVC cylinder, with a capacity of not less than 2 litres, is used for water sampling. The water sampler is lowered into the water body at a predetermined depth. The trigger system of the sampler is activated with a messenger and opening ends of the sampler are closed accordingly then the sample of water is collected. If the water depth is less than 500mm, a water bucket is be used as a water sampler to minimize the possibility of the latching system disturbing sediment during water sampling
- 3.26 A portable YSI 55 DO Meter or YSI Professional Plus is used for in-situ DO measurement. The DO meter is capable of measuring DO in the range of 0 - 20 mg/L and 0 - 200 % saturation and checked against water saturated ambient air on each monitoring day prior to monitoring. Although the DO Meter automatically compensates ambient water temperature to a standard temperature of 20<sup>0</sup>C for ease of comparison of the data under the changing reality, the temperature readings of the DO Meter are be recorded in the field data sheets. The equipment calibration is performed on quarterly basis.
- 3.27 A portable Extech EC500 pH Meter or YSI Professional Plus is used for in-situ pH measurement. The pH meter is capable of measuring pH in the range of 0 – 14 and readable to 0.1. Standard buffer solutions of pH 7 and pH 10 are used for calibration of the instrument before and after measurement. The equipment calibration is performed on quarterly basis.
- 3.28 A portable Hach 2100Q Turbidity Meter is be used for in-situ turbidity measurement. The turbidity meter is capable of measuring turbidity in the range of 0 – 1000 NTU. The equipment calibration is performed on quarterly basis.
- 3.29 Water samples are contained in screw-cap PE (Poly-Ethylene) bottles, which are provided and pretreated and ‘PE’ (Poly-Ethylene) sampling bottles provided and pre-treated according to corresponding analytical requirements. Where appropriate, the sampling bottles are rinsed with the water to be contained. Water sample is then transferred from the sampler to the sample bottles.
- 3.30 One liter or 500 mL water sample are collected from each depth for SS determination. The collected samples are stored in a cool box maintained at 4<sup>0</sup>C and delivered to laboratory upon completion of the sampling by end of each sampling day.
- 3.31 All water samples are analyzed with Suspended Solids (SS) as specified in the updated *EM&A Manual* by a local HOKLAS-accredited testing laboratory (ALS Technichem (HK) Pty Ltd HOKLAS registration no. 66). SS are determined by the laboratory upon receipt of the water samples using HOKLAS accredited analytical method. The detection limits and testing method are shown below in **Table 3-4**. The certificate of ALS Technichem (HK) Pty Ltd is provided in **Appendix E**.

**Table 3-4 Testing Method and Detection limit of Suspended Solids**

Determinant	Testing Method	Detection Limit
Suspended solid	Determination use HOKLAS accredited analytical methods namely ALS Method EA-025 (based on APHA 2540 D)	2mg/L

**Hydrological Characteristics**

- 3.32 A portable, water flow meter, brand named “*GLOBAL WATER model FP211*” are used to determine the water current flow at the designated monitoring stations. A water flow velocity is measured at mid depth of current water body or 0.5m below water level.
- 3.33 Water depths are determined prior to measurement, using a portable battery operated depth detector, brand named ‘Eagle Sonar’, if the depths exceed 1.5 meter. If the depth between 1.5 meter and 1 meter, plastic tape measurement tied with appropriate weight are used the depth estimation. For the depths well below 1 meter, an appropriate steel ruler or rope with appropriate weight are used for the depth measurement.

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

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

**OTHERS MONITORING IMPLEMENTATION FOR THE CONTRACT**

**Ecology**

- 3.36 Ecological monitoring and reporting should be performed by IEC. No equipment and procedure are presented in the EM&A Monthly Report.

**Landscape and Visual**

- 3.37 A registered Landscape Architect as member of the ET is employed by the Contractor to undertake site inspection. Site inspection will undertake at least once every two weeks throughout the construction period to ensure compliance with the intended aims of the mitigation measures are proposed in the EIA and the updated EM&A Manual, implemented by the Contractor.

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

- 3.38 The re-established performance criteria for construction noise, water quality and hydrological, namely Action and Limit levels is used for Contract 2 are listed in **Tables 3-5, 3-6, and 3-7.**

**Table 3-5 Action and Limit Levels for Construction Noise**

Location	Time Period	Action Level in dB(A)	Limit Level in dB(A)
M1, AL1, M2, M3, M4	Daytime 0700 – 1900 hrs on normal weekdays	When one documented complaint is received	> 75* dB(A)
	1900 – 2300 on all days and 0700 – 2300 on general holidays (including Sundays)		60/65/70 dB(A)**
	2300 – 0700 on all days		45/50/55 dB(A)**

Note: \* Reduces to 70dB(A) for schools and 65dB(A) during the school examination periods.

\*\* To be selected based on the Area Sensitivity Rating of A/B/C, and the conditions of the applicable CNP(s) must be followed

**Table 3-6 Action and Limit Levels for Water Quality**

Parameter	Performance Criteria	Impact Station		
		W1	W2	W4
DO Concentration (mg/L)	Action Level	7.27	7.26	9.27
	Limit Level	7.05	6.44	7.98
pH	Action Level	NA	NA	NA
	Limit Level	6 - 9	6 - 9	6 - 9
Turbidity (NTU)	Action Level	4.77	2.46	3.32
	Limit Level	5.26	3.42	4.52
Suspended Solids (mg/L)	Action Level	9.73	8.89	6.98
	Limit Level	10.77	9.75	7.66

Notes:

- The proposed Action/Limit Levels of DO are established to be used 5%-ile/1%-ile of all the baseline data;
- The proposed Action/Limit Levels of Turbidity and SS are established to be used 95%-ile/99%-ile of all the baseline data;
- For DO, non-compliance of the water quality limits occur is when monitoring result lower than the action/limit levels;
- For turbidity and SS, non-compliance of the water quality limits occurs is when monitoring result higher than the limits; and
- For pH, non-compliance of the quality limit occur is when monitoring result lower than 6 and higher than 9; and
- All the figures given in the table are used for reference only and the EPD may amend the figures whenever it is considered necessary

**Table 3-7 Action and Limit Levels for Hydrological Characteristics**

Parameter	Acceptance Criteria	Monitoring Station	
		H1	H2
Water Depth (m)	Action Level	0.08 (80% of baseline water depth)	0.40 (80% of baseline water depth)
	Limit Level	0.06 (60% of baseline water depth)	0.30 (60% of baseline water depth)
Volumetric Flow Rate (Q), m <sup>3</sup> /s	Action Level	120% of control station's water flow rate on the same day of measurement	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	140% of control station's water flow rate on the same day of measurement

3.39 The locations H3 and H4 are a reference measurement point in order to monitor any changes in the hydrological characteristics of Wai Ha River arising from the work Contract 2 to affect the Shuen Wan Marsh.

3.40 Should non-compliance of the environmental quality criteria occurs, remedial actions will be triggered according to the Event and Action Plan enclosed in **Appendix F**.

**EQUIPMENT CALIBRATION**

3.41 The sound level meter and calibrator are calibrated and certified by a laboratory accredited under HOKLAS or any other international accreditation scheme in yearly basis.

3.42 All the water quality monitoring equipment such as the DO, pH and Turbidity meters are calibrated by HOKLAS accredited laboratory of three month intervals.

3.43 A portable, water flow meter, brand named “GLOBAL WATER model FP211” is calibrated in yearly basis.

3.44 All updated calibration certificates of the monitoring equipment used for the impact monitoring program in this Reporting Period are attached in **Appendix E**.

**METEOROLOGICAL INFORMATION**

3.45 The meteorological information during the construction phase is obtained from Tai Po and Shatin Stations of the Hong Kong Observatory (HKO). The meteorological data during the impact monitoring days are summarized in **Appendix H**

#### 4.0 IMPACT MONITORING RESULTS

4.01 The monitoring schedule had been issued to relevant parties before each Reporting Period which presented in *Appendix G*. The works undertaken during the Reporting Period are illustrated in *Appendix C*. The monitoring results are presented in the following sub-sections.

##### MONITORING RESULTS SHARING

4.02 Environmental Permit EP-203/2008 was issued on 25 February 2008 by EPD which adopted for both Contracts 1 and 2 of DSD construction at Shuen Wan. Also, the EM&A programme of both contracts are undertaken in accordance with the same updated EM&A Manual which has to be carried out during construction period. According to the updated EM&A manual, designated monitoring Locations M1 and AL1 for noise monitoring stations, Locations W1 and W2 for water quality monitoring stations, and Locations H1 and H2 for hydrological measurement are requested to perform at both Contracts 1 and 2. Since Contract 1 has already commenced in January 2011, those results measured by Contract 1 would be shared for the Contract 2. This recommendation has been accepted by IEC and submitted to EPD.

##### RESULTS OF CONSTRUCTION NOISE MONITORING

4.03 In this Reporting Period, all noise monitoring results at the designated locations M1, AL1, M2, M3 and M4 are summarized in *Table 4-1*. The detail monitoring data are presented in *Appendix I*.

**Table 4-1 Summary of Construction Noise Monitoring Results, dB(A)**

Date	Leq30min (dB(A))				
	M1 <sup>(#)</sup>	AL1 <sup>(#)</sup>	M2 <sup>(*)</sup>	M3 <sup>(*)</sup>	M4 <sup>(*)</sup>
4-Oct-11	-	-	64.0	70.9	70.7
6-Oct-11	56.2	58.5	-	-	-
13-Oct-11	52.1	57.8	68.8	67.3	58.0
20-Oct-11	60.6	56.2	74.5	72.4	74.0
25-Oct-11	-	-	64.6	63.5	74.4
27-Oct-11	51.1	57.1	-	-	-
<b>Limit Level</b>	<b>&gt;75 dB(A)</b>				

**Remarks:**

(#) *The monitoring is undertaken under façade situation. No façade correction is added according to acoustical principles and EPD guidelines.*

(\*) *The monitoring is undertaken under free field situation. A façade correction of +3 dB(A) has been added according to acoustical principles and EPD guidelines*

4.04 The sound meter was set in a free field situation at the designated monitoring locations M2, M3 and M4, therefore, a façade correction of +3 dB(A) has been added according to acoustical principles and EPD guidelines. For Location A1 and AN1, the monitoring is undertaken under façade situation. No façade correction is added according to acoustical principles and EPD guidelines.

4.05 No noise complaint (which is an Action Level exceedance) was received in this Reporting Period. As shown in *Table 4-1*, all the noise monitoring result are well below 75dB(A) and no Action or Limit Level exceedance was triggered during this Reporting Period. The graphical plot is shown in *Appendix J*.

##### RESULTS OF LOCAL STREAM WATER QUALITY MONITORING

4.06 In this Reporting Period, 12 sampling days were performed at all designated measurement Points W1, W2, W3 and W4 for local stream water quality monitoring by the Contracts 1 and 2. The monitoring results including in-situ measurements and laboratory testing results are provided in *Appendix I*. The graphical plots are shown in *Appendix J*.

4.07 Monitoring results of 3 key parameters: dissolved oxygen (DO), turbidity and suspended solids in this Reporting Period, are summarized in *Table 4-2*.



Table 4-2 Water Quality Results Summary in Reporting Period

Sampling date	DO (mg/L)				Turbidity (NTU)				SS (mg/L)			
	W1	W2	W3*	W4	W1	W2	W3*	W4	W1	W2	W3*	W4
4-Oct-11	7.28	<b><u>6.32</u></b>	5.09	<b><u>5.42</u></b>	1.2	<b><u>5</u></b>	1.34	1.19	2.60	6.40	<2.00	<2.00
6-Oct-11	<b><u>3.57</u></b>	<b><u>3.83</u></b>	5.12	<b><u>5.43</u></b>	3.2	0.7	8.25	<b><u>7.80</u></b>	6.00	2.40	<2.00	<2.00
8-Oct-11	<b><u>7.26</u></b>	<b><u>7.13</u></b>	5.89	<b><u>7.01</u></b>	2.1	2.4	1.18	1.31	7.60	2.40	<2.00	<2.00
11-Oct-11	<b><u>3.49</u></b>	<b><u>4.81</u></b>	6.09	<b><u>5.11</u></b>	<b><u>6</u></b>	1.2	8.50	<b><u>7.45</u></b>	5.80	5.00	<2.00	<2.00
13-Oct-11	8.03	8.06	6.53	<b><u>5.87</u></b>	<b><u>25</u></b>	<b><u>20.9</u></b>	8.40	<b><u>7.55</u></b>	<b><u>18.00</u></b>	<b><u>12.00</u></b>	10.00	<2.00
15-Oct-11	8.09	7.86	5.19	<b><u>5.37</u></b>	4	<b><u>4</u></b>	7.55	<b><u>5.35</u></b>	7.60	2.60	15.00	5.00
18-Oct-11	<b><u>7.16</u></b>	<b><u>7.23</u></b>	5.21	<b><u>5.70</u></b>	<b><u>7.8</u></b>	<b><u>3.5</u></b>	5.10	<b><u>4.10</u></b>	5.40	5.00	2.00	<2.00
20-Oct-11	7.81	7.61	6.04	<b><u>5.28</u></b>	2.9	2.2	5.45	<b><u>4.70</u></b>	3.00	3.20	4.00	2.00
22-Oct-11	<b><u>7.03</u></b>	<b><u>6.25</u></b>	6.86	<b><u>6.47</u></b>	2.6	0.1	7.60	<b><u>5.00</u></b>	3.00	4.00	18.00	6.00
25-Oct-11	8.38	7.77	6.58	<b><u>5.88</u></b>	3.3	<b><u>2.9</u></b>	3.90	<b><u>3.50</u></b>	4.40	1.00	<2.00	<2.00
27-Oct-11	7.31	7.44	6.39	<b><u>5.84</u></b>	3.5	<b><u>2.9</u></b>	1.17	0.91	5.20	7.00	6.00	<2.00
29-Oct-11	7.38	<b><u>6.95</u></b>	5.92	<b><u>6.12</u></b>	1.8	<b><u>3.5</u></b>	0.94	0.68	5.00	4.00	16.00	<b><u>13.00</u></b>

Remarks:

- (\*) Control Station
- *Bold and Italic is exceeded Action Level*
- *Bold with underline is exceeded Limit Level*

4.08 During the Reporting Period, field measurements showed that stream water temperatures were within 24.0°C to 29.3°C and pH values within 7.06 to 8.70. Furthermore, salinity measured at W1 and W2 were detected respectively as 0.7-16.9 ppt and 0.7-23.9 ppt.

4.09 A statistics of exceedances for the three parameters: dissolved oxygen (DO), turbidity and suspended solids is shown in *Table 4-3*.

Table 4-3 Statistics Water Quality Exceedance in the Reporting Period

Station	DO		Turbidity		SS		Total Exceedance	
	Action	Limit	Action	Limit	Action	Limit	Action	Limit
W1	2	3	0	3	0	1	2	7
W2	3	4	2	4	0	1	5	9
W4	0	12	2	6	0	1	2	19
<b>No of Exceedance</b>	<b>5</b>	<b>19</b>	<b>4</b>	<b>13</b>	<b>0</b>	<b>3</b>	<b>9</b>	<b>35</b>

4.10 As shown in *Table 4-3*, a total of 44 Action/Limit Level exceedances, namely 24 Action/Limit Level exceedances in dissolved oxygen, 17 Action/Limit Level exceedances in turbidity and 3 Limit Level exceedances in suspended solids were recorded in this Reporting Period. NOEs were issued to notify EPD, IEC, the Contractor and RE upon confirmation of the results.

4.11 For the exceedances of turbidity and suspended solids, Contractor reported that fixing the reinforcement for top slab, concrete casting of side wall and top slab at Bay 20, concrete casting of slab between sheetpile and base slab of bay 21 and 22 and removal of formwork and fixing of reinforcement for side wall at Bay 22 during the captioned exceedance days. Such activities may lead to increase of turbidity or suspended solids levels for the nearby stream by washed out from stockpiles of dusty materials, excavated surface or dusty haul roads, etc. To minimize the impact to the existing stream, precautionary measures such as construction of a sedimentation pit and temporary artificial precipitation stream to remove the suspended solids from wastewater to maintain the water quality of downstream. Moreover, no direct wastewater discharged or site runoff from the construction site to the Wai Ha River is occurred during the course of monitoring. It is noted the construction work area is located at downstream of Locations W3 and W4, therefore, the water quality at Locations W3 and W4 affected by the Project is unlikely. Furthermore, tidal effect were affecting the monitoring results of Stations W1(+1.75mPD) and W2(+1.48mPD). It is concluded that the exceedances were not due to the Project.

- 4.12 In the regard of the dissolved oxygen exceedances, the construction activities during the DO exceedances as reported by the Contractor comprised none of DO depleting characteristics. It is concluded that all the exceedances were not due to the Project.
- 4.13 Anyhow, KLKJV should be fully implemented the required water quality mitigation measures in accordance with the updated EM&A Manual stipulation during construction under the Project. In particular when excavation and the associated box culvert construction works are undertaken near Wai Ha River, all construction wastewater or runoff generated from work area should be treated and drained to the designated discharge point.

#### RESULTS OF HYDROLOGICAL CHARACTERISTICS MONITORING

- 4.14 In this Reporting Period, hydrological characteristics measurement at H1, H2, H3 and H4 were carried out on 8, 15, 22 and 29 October 2011. The monitoring data of H1 and H2 provided by DC/2009/22 is showed *Appendix I*. The detailed H3 and H4 measurement results in this Reporting Period are presented in *Tables 4-4*.

**Table 4-4 Detailed monitoring results of hydrological characteristics at H3 and H4**

Date	Measurement Time	Tide Condition	River Width (m)	Water Depth (m)	Cut Section (m <sup>2</sup> )	Velocity Flow Rate (m/s)	Average Volumetric Flow Rate (Q), m <sup>3</sup> /s
<b>Measurement Point: H3</b>							
8 Oct 11	14:45	Flood	7.45	0.14	1.0430	0.4	0.417
	09:56	Ebb	7.45	0.14	1.0430	0.4	0.417
15 Oct 11	09:15	Flood	7.45	0.10	0.7450	0.5	0.373
	15:04	Ebb	7.45	0.12	0.8940	0.6	0.536
22 Oct 11	15:00	Flood	7.45	0.15	1.1175	0.6	0.671
	09:37	Ebb	7.45	0.14	1.0430	0.6	0.626
29 Oct 11	10:08	Flood	7.45	0.15	1.1175	0.6	0.671
	16:17	Ebb	7.45	0.13	0.9685	0.6	0.581
<b>Measurement Point: H4</b>							
8 Oct 11	15:00	Flood	2.74	0.22	0.6028	0.1	0.060
	09:49	Ebb	2.74	0.21	0.5754	0.2	0.115
15 Oct 11	09:02	Flood	2.74	0.23	0.6302	0.2	0.126
	15:12	Ebb	2.74	0.24	0.6576	0.2	0.132
22 Oct 11	15:15	Flood	2.74	0.30	0.8220	0.3	0.247
	09:51	Ebb	2.74	0.33	0.9042	0.2	0.181
29 Oct 11	10:18	Flood	2.74	0.40	1.0960	0.3	0.329
	16:30	Ebb	2.74	0.39	1.0686	0.2	0.214

Remarks: Tide information extract from Tai Po Kau Station

Date	Time	Height(m)	Time	Height(m)	Time	Height(m)	Time	Height(m)
08 Oct 2011	01:59	1.1	08:38	1.8	13:50	1.2	20:54	2.2
15 Oct 2011	06:28	0.7	13:10	1.6	16:12	1.4	21:21	2.4
22 Oct 2011	00:24	1.2	07:20	1.8	12:28	1.0	19:38	2.3
29 Oct 2011	00:16	2.6	06:22	0.5	13:26	1.6	17:06	1.4

- 4.15 Hydrological characteristics results of the all measurement points are summarized in *Tables 4-5* and *4-6*.

**Table 4-5 Summarized Hydrological Characteristics of Water Depth, m**

Date	Mid-Flood				Mid-Ebb			
	H1	H2	H3	H4	H1	H2	H3	H4
8 Oct 2011	0.1	0.1	0.14	0.22	0.09	0.1	0.14	0.21
15 Oct 2011	0.08	0.09	0.10	0.23	0.1	0.24	0.12	0.24
22 Oct 2011	0.12	0.12	0.15	0.30	0.09	0.12	0.14	0.33
29 Oct 2011	0.11	0.18	0.15	0.40	0.08	0.18	0.13	0.39

**Table 4-6 Summarized Hydrological Characteristics of Average Volumetric flow rate (Q), m<sup>3</sup>/s**

Date	Mid-Flood				Mid-Ebb			
	H1	H2	H3	H4	H1	H2	H3	H4
8 Oct 2011	0.075	0.754	0.417	0.060	0.075	0.377	0.417	0.115
15 Oct 2011	0.075	0.377	0.373	0.126	0.150	0.754	0.536	0.132
22 Oct 2011	0.075	0.754	0.671	0.247	0.075	0.377	0.626	0.181
29 Oct 2011	0.150	0.377	0.671	0.329	0.075	0.377	0.581	0.214

- 4.16 To compare the monitoring data between the Reporting Period (rainy season) and baseline monitoring period, the currently water depth and volumetric flow rate has insignificant changed. Furthermore, water depth and water flow rate were found no exceedance in this Reporting Period.

## 5.0 WASTE MANAGEMENT

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

### RECORDS OF WASTE QUANTITIES

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

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

5.03 The quantities of waste for disposal in this Reporting Period are summarized in *Table 5-1* and *5-2* and the Monthly Summary Waste Flow Table is shown in *Appendix K*. Whenever possible, materials were reused on-site as far as practicable.

**Table 5-1 Summary of Quantities of Inert C&D Materials**

Type of Waste	Quantity	Disposal Location
C&D Materials (Inert) (m <sup>3</sup> )	0	-
Reused in this Contract (Inert) (m <sup>3</sup> )	0	-
Reused in other Projects (Inert) (m <sup>3</sup> )	0	-
Disposal as Public Fill (Inert) (m <sup>3</sup> )	0	-

**Table 5-2 Summary of Quantities of C&D Wastes**

Type of Waste	Quantity	Disposal Location
Recycled Metal (kg)	0	-
Recycled Paper / Cardboard Packing (kg)	0	-
Recycled Plastic (kg)	0	-
Chemical Wastes (kg)	0	-
General Refuses (m <sup>3</sup> )	20	-

5.04 To control over the site performance on waste management, the Contractor shall ensure that all solid and liquid waste management works are in full compliance with the relevant license/permit requirements, such as the effluent discharge license and the chemical waste producer registration. The Contractor is also reminded to implement the recommended environmental mitigation measures according to the EM&A Manual based on actual site conditions.

## 6.0 SITE INSPECTION

### REGULAR SITE INSPECTION AND MONTHLY AUDIT

- 6.01 According to the Updated Environmental Monitoring and Audit Manual, regular site inspection to evaluate the project environmental performance should be carried out during construction phase. Weekly environmental site inspections had been carried out by the Contractor, ET and RE on **8, 14, 21 and 28 October 2011**. Also, joint site inspection with the IEC was carried out on **14 October 2011**. No non-compliance was noted.
- 6.02 Observations for the site inspection and monthly audit within this Reporting Period are summarized in **Table 6-1** and weekly inspection checklists are attached in **Appendix L**.

**Table 6-1 Site Inspection of Observations – Findings and Deficiencies**

Date	Findings / Deficiencies	Follow-Up Status
8 Oct 11	<ul style="list-style-type: none"> <li>Mud tail was observed at the site exit/ access road, the Contractor should apply water spray on those areas more frequently to minimize dust impact.</li> </ul>	The Observation has been rectified before the site inspection on 14 October 2011
14 Oct 11	<ul style="list-style-type: none"> <li>The Contractor was reminded to Improve the Sediment Treatment facilities ensure it effective remove mud water discharge.</li> <li>A chemical container was observed as located at working area. The Contractor was reminded to store it in a suitable area.</li> <li>General housekeeping should be enhanced.</li> </ul>	<ul style="list-style-type: none"> <li>The improvement has been undertaken before site inspection 20 October 2011.</li> <li>The observation was rectified immediately at time.</li> <li>Only reminder and not necessary</li> </ul>
20 Oct 11	<ul style="list-style-type: none"> <li>No adverse environmental impact was observed during site inspection.</li> </ul>	N.A.
27 Oct 11	<ul style="list-style-type: none"> <li>Stagnant water cumulated in the site area should be drained away to prevent mosquito breeding.</li> </ul>	To be followed in November.

### LANDSCAPE AND VISUAL INSPECTION

- 6.03 In this Reporting Period, landscape and visual inspection was carried on 7 and 20 October 2011. The stand-alone of monthly Landscape & Visual Report (October 2011) signed by the registered Landscape Architect attach at **Appendix M**.
- 6.04 According to monthly Landscape & Visual Report (October 2011), mitigation measures implemented in Reporting Period list as below:

**Table 6-2 Landscape & Visual Inspection of Observations**

Parameter	Observation	Recommendation
Visual Screen	<ul style="list-style-type: none"> <li>A section of temporary hoardings have been erected from west to east parts of Tung Tsz Road opposite to San Tau Kwok.</li> <li>No hoardings have been erected along the rest of the proposed works area since neither construction works nor any associated preparation works have been commenced.</li> </ul>	No specific recommendation is required
Contaminant / Sediment Control	<ul style="list-style-type: none"> <li>No direct discharge of contaminants or any polluted fluid was observed within the active works area. All used water and underground water was collected and drained into filtration beds and a sedimentation tanks before the discharge.</li> <li>As observed, a sheet of PVC liner was overlaid along the filtration beds within the active works area. This practice could lower the chance of contaminating the vegetation in the adjacent Shuen Wan marsh.</li> </ul>	Regular monitoring should be conducted to ensure no direct discharge or leakage of contaminants or any polluted fluid into the adjacent Wai Ha River

Parameter	Observation	Recommendation
Pollution Control	<ul style="list-style-type: none"> <li>• Drained water from underground was observed to be filtered in the sedimentation tank and filtration beds before the discharge.</li> <li>• As observed, a sheet of PVC liner was overlaid along the filtration beds within the active works area. This practice could lower the chance of contaminating the vegetation in the adjacent Shuen Wan marsh. No direct discharge of water into the adjacent Wai Ha River was observed.</li> </ul>	No specific recommendation is required
Existing Trees within Works Area	<ul style="list-style-type: none"> <li>• Tree felling of the proposed trees to be felled were conducted within the fenced area from west to east parts of Tung Tsz Road opposite to San Tau Kwok during the landscape &amp; visual monitoring on 20th October 2011. Clearance of herbaceous vegetation within the fenced area was also observed.</li> <li>• All trees proposed to be retained within the Project Area were recorded generally in fair health conditions. Significant signs of damage of existing tree crowns, trunks and roots resulting from the construction works were not observed in this monthly monitoring.</li> <li>• Protective areas had been established to protect the four specimens of the protected shrub species of conservation interest <i>Pavetta hongkongensis</i> (Photos 6-8). No significant signs of damage on the health of these specimens due to the Project were observed.</li> </ul>	<ul style="list-style-type: none"> <li>• Within the active works area, proper Tree Protection Zones (TPZs) should be demarcated for retained trees and trees to be transplanted which would be directly affected by the construction work. In addition, if necessary, these retained trees or trees to be transplanted shall be watered regularly to maintain their health.</li> <li>• Disturbance is prohibited in all TPZs. In any practical circumstances, the contractor should follow Section 8 of Annex 4 of the approved Landscape Plan for protecting the existing trees from any potential damages resulting from construction works.</li> </ul>
Construction Light	<ul style="list-style-type: none"> <li>• 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 Main Contractor.</li> </ul>	<ul style="list-style-type: none"> <li>• No specific recommendation is required</li> </ul>

6.05 The next bi-weekly Landscape & Visual Monitoring in November 2011 is scheduled to be conducted in the week of 1 and 14 November 2011.

**7.0 ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE**

**ENVIRONMENTAL COMPLAINT, SUMMONS AND PROSECUTION**

7.01 No environmental complaint, summons and prosecution was received in this Reporting Period. The statistical summary table of environmental complaint is presented in *Tables 7-1, 7-2 and 7-3.*

**Table 7-1 Statistical Summary of Environmental Complaints**

Reporting Period	Environmental Complaint Statistics		
	Frequency	Cumulative	Complaint Nature
July 2011 – September 2011	0	0	NA
October 2011	0	0	NA

**Table 7-2 Statistical Summary of Environmental Summons**

Reporting Period	Environmental Summons Statistics		
	Frequency	Cumulative	Complaint Nature
July 2011 – September 2011	0	0	NA
October 2011	0	0	NA

**Table 7-3 Statistical Summary of Environmental Prosecution**

Reporting Period	Environmental Prosecution Statistics		
	Frequency	Cumulative	Complaint Nature
July 2011 – September 2011	0	0	NA
October 2011	0	0	NA

## 8.0 IMPLEMENTATION STATUS OF MITIGATION MEASURES

8.01 The environmental mitigation measures that recommended in the Updated Environmental Monitoring and Audit Manual covered the issues of dust, noise and waste and they are summarized as follows:

### Noise Mitigation Measure

- (a) Only well-maintained plant should be operated on-site and plant shall be serviced regularly during the construction program;
- (b) Silencers or mufflers on construction equipment should be utilized and shall be properly maintained during the construction program;
- (c) Mobile plant, if any, should be sited as far from NSRs as possible;
- (d) Machines and plant (such as trucks) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum;
- (e) Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs;
- (f) Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction activities;
- (g) Use of quieter plants to carry out the construction tasks proposed for the Project;
- (h) Use about 3.5m high of temporary noise barriers as screened the noisy PME to carry out construction of box culvert and site clearance.
- (i) Low Impact Method, such as using PMEs smaller in size and to be enclosed by noise enclosure, should be adopted for the construction of box culvert and pipe laying in Wai Ha; and
- (j) Use of noise enclosure during the works area for pipe laying in Wai Ha.

### Dust Mitigation Measure

8.02 Implementation of mitigation measures stipulated in the Air Pollution Control (Construction Dust) Regulation and good site practices including but not limited to the following:

- (a) Use of regular watering to reduce dust emissions from exposed site surfaces and unpaved road, with complete coverage, particularly during dry weather;
- (b) Use of frequent watering for particularly dusty static construction areas and areas close to ASRs;
- (c) Tarpaulin covering of all dusty vehicle loads transported to, from and between site location;
- (d) Establishment and use of vehicle wheel and body washing facilities at the exit points of the site;
- (e) Routing of vehicles and positioning of construction plant should be at the maximum possible distance from ASRs;
- (f) Stockpiled excavated materials should be covered with tarpaulin and should be removed offsite within 24 hours to avoid any odour nuisance arising.

### Local Stream Water Quality Mitigation Measure

- (a) Before commencing any site formation work, all sewer and drainage connections shall be sealed to prevent debris, soil, sand etc. from entering public sewers/drains;
- (b) 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;
- (c) 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 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



- (d) Water pumped out from excavated pits shall be discharged into silt removal facilities;
- (e) 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
- (f) Exposed soil areas shall be minimized to reduce potential for increased siltation and contamination of runoff
- (g) 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;
- (h) Open stockpiles of construction materials or construction wastes on-site shall be covered with tarpaulin or similar fabric during rainstorms;
- (i) 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 01 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;
- (j) 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 0.1 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;
- (k) 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;
- (l) Tarpaulin sheets would be used to cover the excavation areas during heavy rainstorms. This would prevent the ingress of rainwater into the trench minimizing the risk of muddy water getting into Wai Ha River and the adjacent Conservation Area;
- (m) 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;
- (n) 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;
- (o) Debris and refuse generated on-site should be collected, handled and disposed of properly to avoid entering the Wai Ha River and fish ponds at Shuen Wan. Stockpiles of cement and other construction materials should be kept covered when not being used.
- (p) 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
- (q) Temporary sanitary facilities, such as portable chemical toilets, should be employed on-site. A licensed contractor would be responsible for appropriate disposal and maintenance of these facilities;
- (r) 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 should 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 April

**Waste Mitigation Measures**

- (a) The Contractor shall observe and comply with the Waste Disposal Ordinance (WDO) and its subsidiary regulations.
- (b) The Contractor shall submit to the Engineer for approval a Waste Management Plan with appropriate mitigation measures including the allocation of an area for waste segregation and shall ensure that the day-to-day site operations comply with the approved waste management plan.
- (c) The Contractor shall minimize the generation of waste from his work. Avoidance and minimization of waste generation can be achieved through changing or improving design and practices, careful planning and good site management.
- (d) The reuse and recycling of waste shall be practised as far as possible. The recycling materials shall include paper/cardboard, timber and metal etc.
- (e) The Contractor shall ensure that Construction and Demolition (C&D) materials are sorted into public fill (inert portion) and C&D waste (non-inert portion). The public fill which comprises soil, rock, concrete, brick, cement plaster/mortar, inert building debris, aggregates and asphalt shall be reused in earth filling, reclamation or site formation works. The C&D waste which comprises metal, timber, paper, glass, junk and general garbage shall be reused or recycled where possible and, as the last resort, disposal of at landfills.
- (f) The Contractor shall record the amount of wastes generated, recycled and disposed of (including the disposal sites). The Contractor shall use a trip ticket system for the disposal of C&D materials to any designated public filling facility and/or landfill.
- (g) In order to avoid dust or odour impacts, any vehicles leaving a works area carrying construction waste or public fill shall have their load covered.
- (h) To avoid the excessive use of wood, reusable steel shutters shall be used as a preferred alternative to formwork and falsework where possible.
- (i) The Contractor shall observe and comply with the Waste Disposal (Chemical Waste) (General) Regulation. The Contractor shall apply for registration as chemical waste producer under the Waste Disposal (Chemical Waste) (General) Regulation when chemical waste is produced. All chemical waste shall be properly stored, labeled, packaged and collected in accordance with the Regulation.

8.03 KLKJV had been implementing the required environmental mitigation measures according to the Updated Environmental Monitoring and Audit Manual subject to the site condition. Environmental mitigation measures generally implemented by KLKJV in this Reporting Period are summarized in *Table 8-1*.

**Table 8-1 Environmental Mitigation Measures**

Issues	Environmental Mitigation Measures
Water Quality	<ul style="list-style-type: none"> <li>• Wastewater were appropriately treated by treatment facilities;</li> <li>• Drainage channels were provided to convey run-off into the treatment facilities; and</li> <li>• Drainage systems were regularly and adequately maintained.</li> </ul>
Air Quality	<ul style="list-style-type: none"> <li>• Regular watering to reduce dust emissions from all exposed site surface, particularly during dry weather;</li> <li>• Frequent watering for particularly dusty construction areas and areas close to air sensitive receivers;</li> <li>• Cover all excavated or stockpile of dusty material by impervious sheeting or sprayed with water to maintain the entire surface wet;</li> <li>• Public roads around the site entrance/exit had been kept clean and free from dust; and</li> <li>• Tarpaulin covering of any dusty materials on a vehicle leaving the site.</li> </ul>
Noise	<ul style="list-style-type: none"> <li>• Good site practices to limit noise emissions at the sources;</li> <li>• Use of quiet plant and working methods;</li> <li>• Use of site hoarding or other mass materials as noise barrier to screen noise at ground level of NSRs;</li> <li>• Use of shrouds/temporary noise barriers to screen noise from relatively static PMEs;</li> <li>• Scheduling of construction works nearby Tung Tsz Road; and</li> <li>• Alternative use of plant items within one worksite, where practicable.</li> </ul>

Issues	Environmental Mitigation Measures
Waste and Chemical Management	<ul style="list-style-type: none"><li>• Excavated material should be reused on site as far as possible to minimize off-site disposal. Scrap metals or abandoned equipment should be recycled if possible;</li><li>• Waste arising should be kept to a minimum and be handled, transported and disposed of in a suitable manner;</li><li>• The Contractor should adopt a trip ticket system for the disposal of C&amp;D materials to any designed public filling facility and/or landfill; and</li><li>• Chemical waste shall be handled in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Wastes.</li></ul>
General	<ul style="list-style-type: none"><li>• The site was generally kept tidy and clean.</li></ul>

## **9.0 IMPACT FORCAST**

### **CONSTRUCTION ACTIVITIES FOR THE FORTH-COMING MONTH**

9.01 Construction activities planned to be carried out next month at Shuen Wan is listed as below:-

- Driving sheetpiles
- Excavation and installation of lateral shoring system
- Formwork and concreting of Box Culvert
- Tree felling

9.02 Three months Rolling Construction Program is attached in *Appendix C*

### **KEY ISSUES FOR THE COMING MONTH**

9.03 According to construction activities carry out in coming months, key issues to be considered include:

- Implementation of dust suppression measures at all times;
- Ensure dust suppression measures are implemented properly;
- Disposal of empty engine oil containers within site area;
- Sediment catch-pits and silt removal facilities should be regularly maintained;
- Management of chemical wastes;
- Discharge of site effluent to the nearby local stream or storm drainage, stockpiling or disposal of materials, and any dredging or construction area at this area are prohibited;
- Follow-up of improvement on general waste management issues; and
- Implementation of construction noise preventative control measures.

## 10.0 CONCLUSIONS AND RECOMMENTATIONS

### CONCLUSIONS

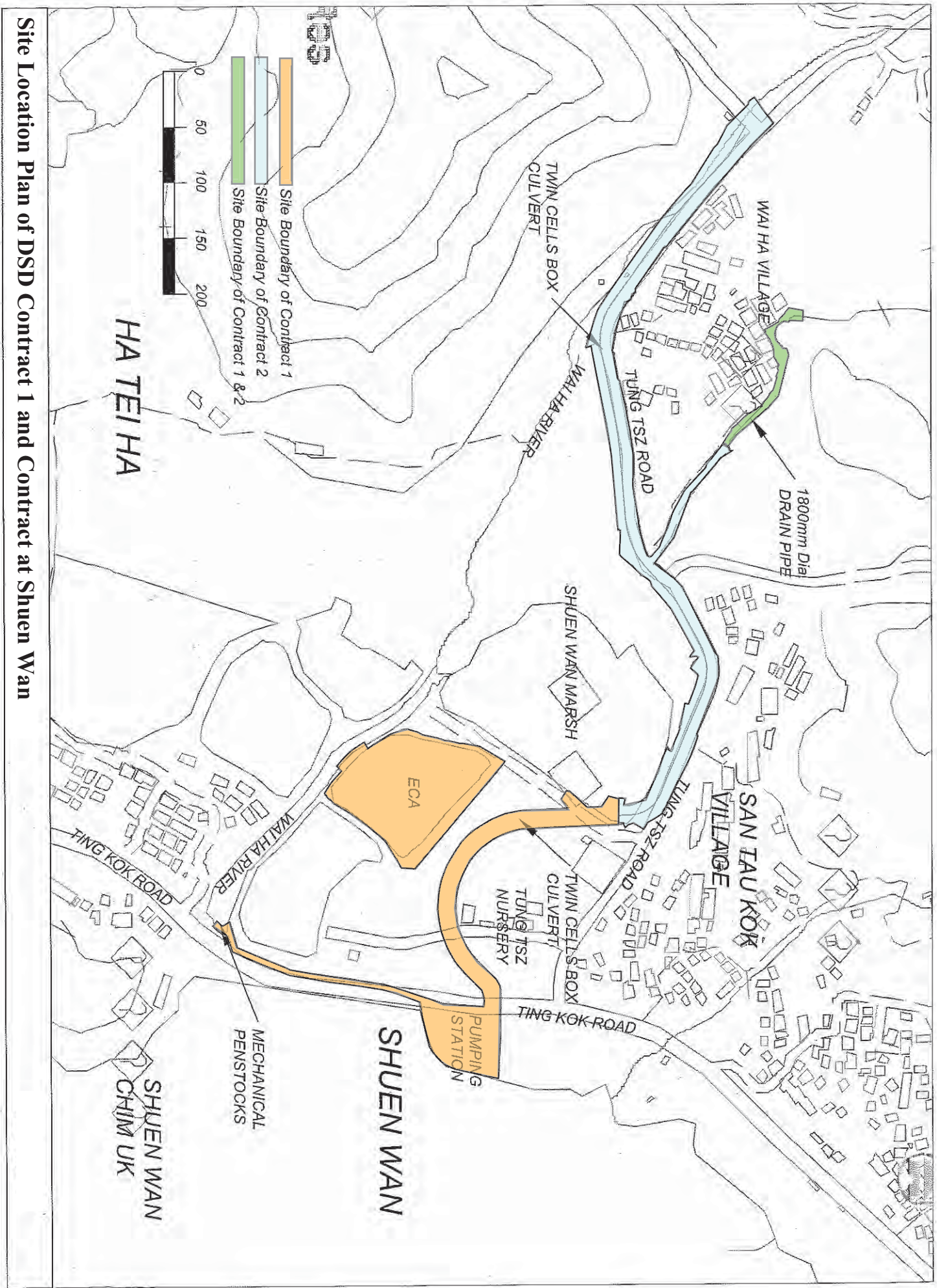
- 10.01 This is the 4<sup>th</sup> monthly EM&A report for Contract 2 presenting the monitoring results and inspection findings for the Reporting Period from **1 to 31 October 2011**.
- 10.02 No noise complaint (which is an Action Level exceedance) was received and no construction noise measurement results that exceeded the Limit Level were recorded in this Reporting Period. No NOE or the associated corrective actions were therefore issued.
- 10.03 For water quality monitoring, a total of 44 Action/Limit Level exceedances, namely 24 Action/Limit Level exceedances in dissolved oxygen, 17 Action/Limit Level exceedances in turbidity and 3 Limit Level exceedances in suspended solids were recorded in this Reporting Period. NOEs were issued to notify EPD, IEC, the Contractor and RE upon confirmation of the results. According to information such as construction activities provided by KLKJV, all the exceedances are considered not due to the Project. Furthermore, the hydrological characteristics of water depth and water flow rate were found no exceedance in this Reporting Period.
- 10.04 No documented complaint, notification of summons or successful prosecution was received.
- 10.05 Weekly environmental site inspections had been carried out by the Contractor, ET and the RE on **8, 14, 20 and 27 October 2011**. Furthermore, joint site inspection with the IEC was carried out on **14 October 2011**. No non-compliance was indicated during the site inspection. In general, it was reminded that good house-keeping practice should be maintained. The environmental performance of the Project was therefore considered satisfactory.
- 10.06 In this Reporting Period, landscape and visual inspection was carried on **7 and 20 October 2011**. The stand-alone of monthly Landscape & Visual Report (October 2011) as signed by the registered Landscape Architect.
- 10.07 No site visit was undertaken by any external party in this Reporting Period.

### RECOMMENDATIONS

- 10.08 As excavation works of construction box culvert or a trench, surface runoff or water discharge to local stream course should be key environment aspect issue. The contractor is reminded that mitigation measures for water quality and ecology should be fully implemented.
- 10.09 Furthermore, dry season (November to March next year) will come, special attention should be paid to the dust mitigation measures to avoid fugitive dust emissions from loose soil surface or haul road. On the other hand, construction noise should be other key environmental issue during sheet-piling process. The noise mitigation measures should be necessary to implement in accordance with EM&A Manual stipulation.
- 10.10 To control the site performance on waste management, the KLKJV shall ensure that all solid and liquid waste management works are fully in compliance with the relevant license/permit requirements, such as the effluent discharge licence and the chemical waste producer registration. KLKJV is also reminded to implement the recommended environmental mitigation measures according to the Updated Environmental Monitoring and Audit Manual.
- 10.11 Baseline monitoring of water quality was conducted during typical Hong Kong dry season (November to March of next year). It is important that influence of the seasonal changes is taken into account when interpreting monitoring data of water quality obtained in the coming wet season. Review of the baseline conditions may need to be conducted regularly in particular during times of seasonal changes. If the baseline changes are evident, the environmental performance criteria should be re-established under agreement of the ER and IEC and submitted to the EPD for endorsement.

## **Appendix A**

### **Site Location Plan (DSD Contract 1 and Contract 2 at Shuen Wan)**

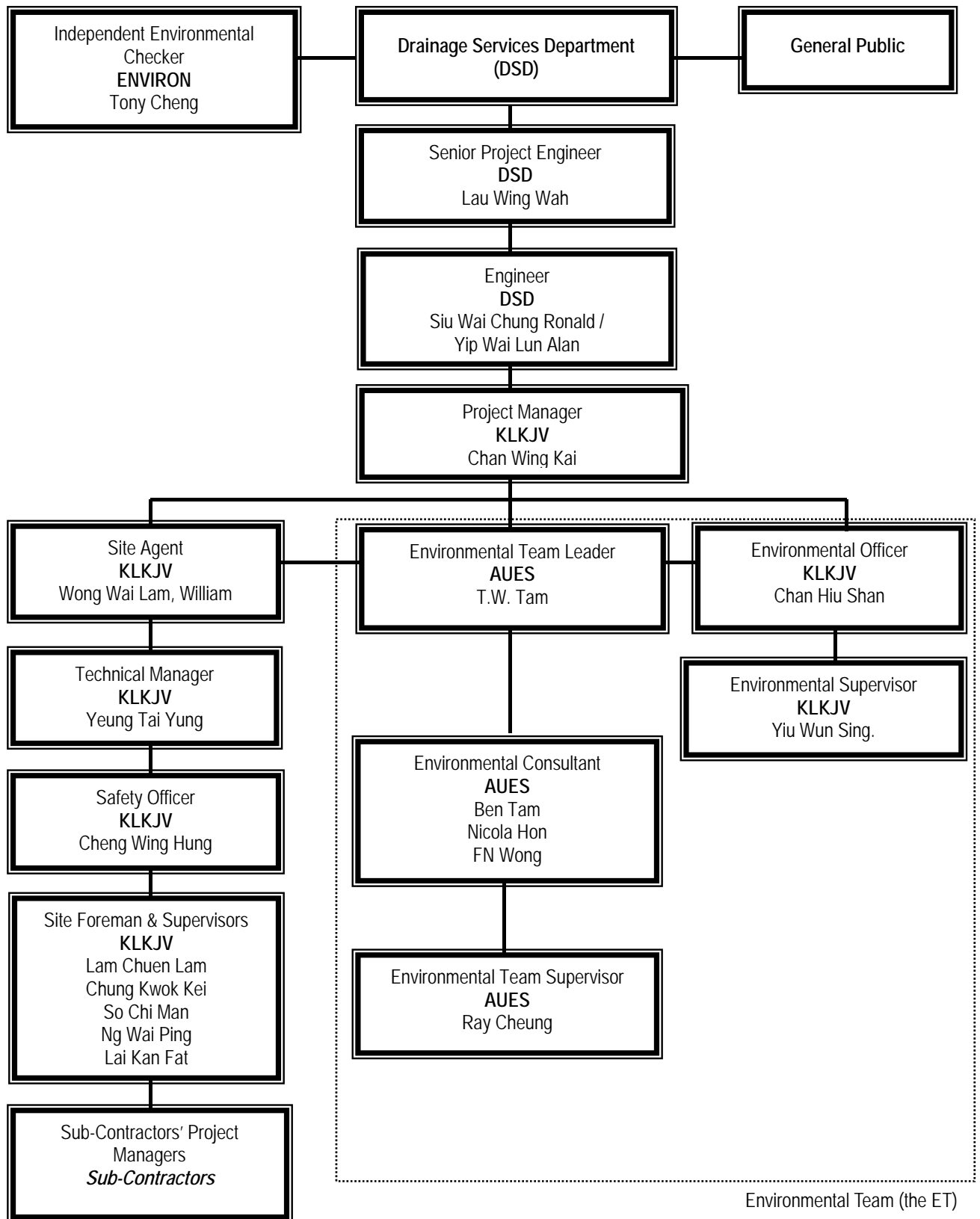


Site Location Plan of DSD Contract 1 and Contract at Shuen Wan

## **Appendix B**

### **Organization Chart and the Key Contact Person**





Environmental Team (the ET)

Environmental Management Organization

**Contact Details of Key Personnel**

Organization	Project Role	Name of Key Staff	Tel No.	Fax No.
DSD	Employer	Mr. Luk Wai Hung	2594 7400	2827 8700
DSD	Senior Engineer	Mr. Lau Wing Wah	2594 7402	2827 8700
DSD	Engineer	Mr. Siu Wai Chung, Ronald	2594 7595	2827 8700
DSD	Engineer	Mr. Yip Wai Lun	2594 7359	2827 8700
DSD	Senior Inspector	Mr. Tso Si On	6778 2708	2827 8700
ENVIRON	Independent Environmental Checker	Mr. Tong Cheng	3743-0788	3548-6988
KLKJV	Project Director	Mr. Poon Chi Yeung Francis	2674 3888	2674 9988
KLKJV	Project Manager	Mr. Chan Wing Kai	2674 3888	2674 9988
KLKJV	Site Agent	Mr. Wong Wai Lam, William	2674 3888	2674 9988
KLKJV	Technical Manager	Mr. Yeung Tai Yung	9674 9712	2674 9988
KLKJV	Site Forman	Mr. Lam Chuen Lam	2674 3888	2674 9988
KLKJV	Environmental Officer	Miss. Chan Hiu Shan	2674 3888	2674 9988
KLKJV	Environmental Supervisor	Mr. Yiu Wun Sing	2674 3888	2674 9988
AUES	Environmental Team Leader	Mr. T.W. Tam	2959-6059	2959-6079
AUES	Senior Environmental Consultant	Mr. Wong Fu Nam	2959-6059	2959-6079
AUES	Environmental Consultant	Miss. Nicola Hon	2959-6059	2959-6079
AUES	Environmental Consultant	Mr. Ben Tam	2959-6059	2959-6079
AUES	Environmental Team Supervisor	Mr. Ray Cheung	2959-6059	2959-6079

Legends:

*DSD (Employer) – Drainage Services Department*

*DSD (Engineer) – Drainage Services Department*

*KLKJV (Main Contractor) – Kwan Lee-Kuly Joint Venture*

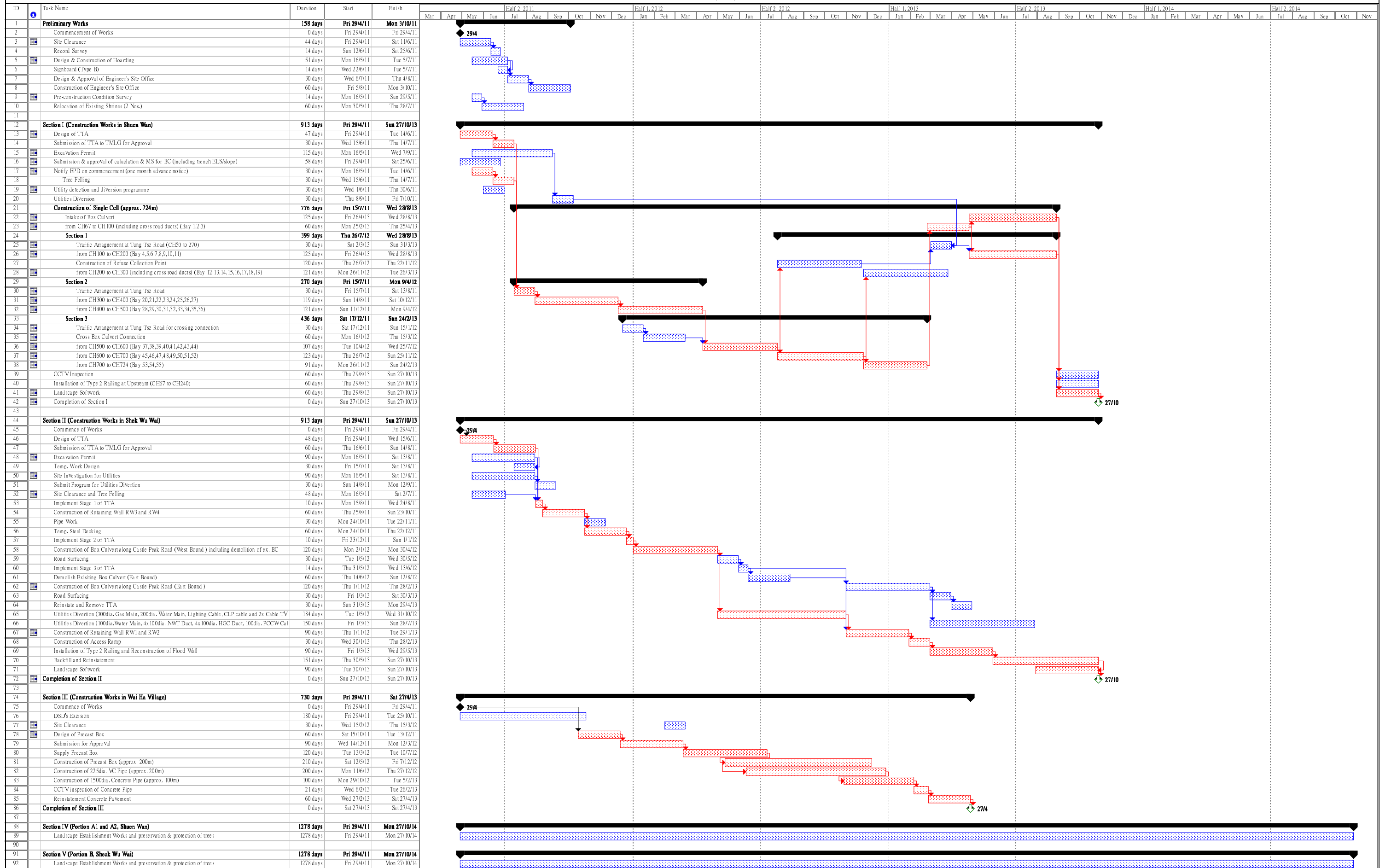
*ENVIRON (IEC) – ENVIRON Hong Kong Limited*

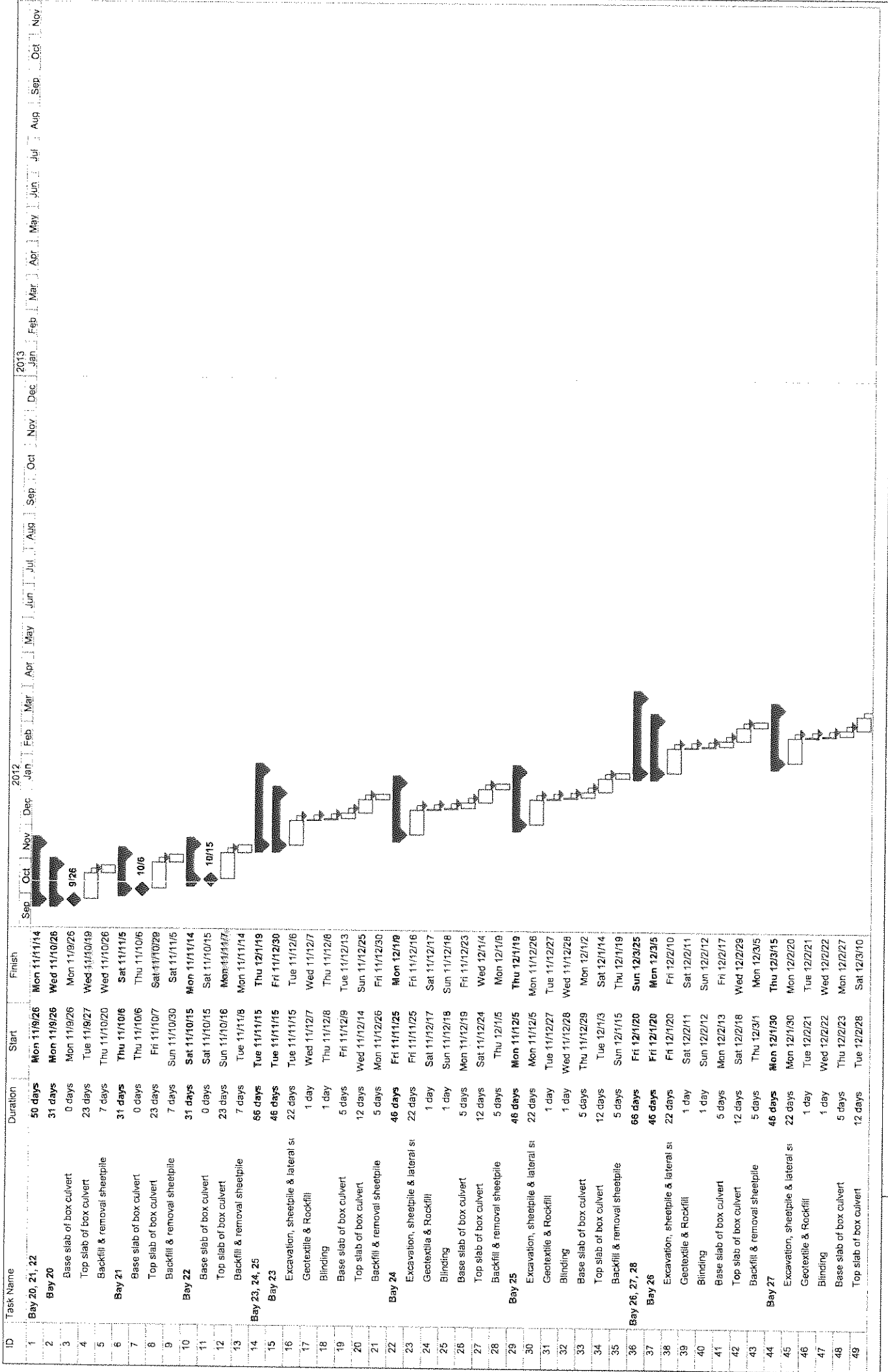
*AUES (ET) – Action-United Environmental Services & Consulting*

## **Appendix C**

### **Master and Three Months Rolling Construction Programs**

MASTER PROGRAMME (Rev. 1)



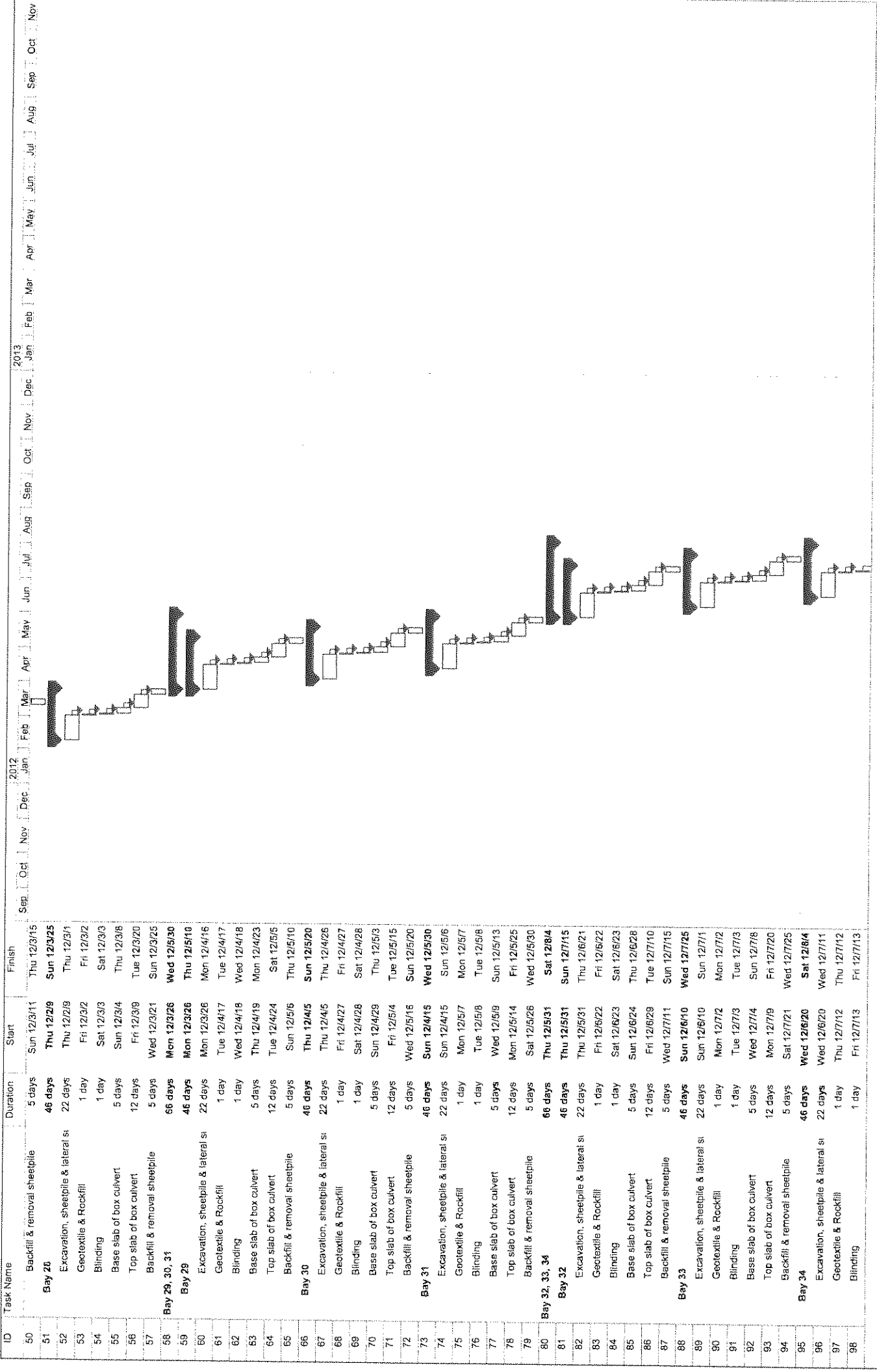


Project: Tung Tsz Road  
 Date: Wed 11/10/12

Legend:  
 Progress: [Solid Bar]  
 Milestone: [Diamond]  
 Summary: [Thick Bar]  
 Project Summary: [Thin Bar]  
 External Tasks: [Dotted Bar]  
 External Milestone: [Diamond]

Navigation: [Previous] [Next]

Page 1



ID	Task Name	Duration	Start	Finish
50	Backfill & removal sheetpile	5 days	Sun 12/3/11	Thu 12/3/15
51	<b>Bay 20</b>	<b>46 days</b>	<b>Thu 12/2/9</b>	<b>Sun 12/3/25</b>
52	Excavation, sheetpile & lateral sl	22 days	Thu 12/2/9	Thu 12/3/1
53	Geotextile & Rockfill	1 day	Fri 12/3/2	Fri 12/3/2
54	Blinding	1 day	Sat 12/3/3	Sat 12/3/3
55	Base slab of box culvert	5 days	Sun 12/3/4	Thu 12/3/8
56	Top slab of box culvert	12 days	Fri 12/3/9	Tue 12/3/20
57	Backfill & removal sheetpile	5 days	Wed 12/3/21	Sun 12/3/25
58	<b>Bay 29, 30, 31</b>	<b>66 days</b>	<b>Mon 12/3/26</b>	<b>Wed 12/5/30</b>
59	<b>Bay 29</b>	<b>46 days</b>	<b>Mon 12/3/26</b>	<b>Thu 12/5/10</b>
60	Excavation, sheetpile & lateral sl	22 days	Mon 12/3/26	Mon 12/4/16
61	Geotextile & Rockfill	1 day	Tue 12/4/17	Tue 12/4/17
62	Blinding	1 day	Wed 12/4/18	Wed 12/4/18
63	Base slab of box culvert	5 days	Thu 12/4/19	Mon 12/4/23
64	Top slab of box culvert	12 days	Tue 12/4/24	Sat 12/5/5
65	Backfill & removal sheetpile	5 days	Sun 12/5/6	Thu 12/5/10
66	<b>Bay 30</b>	<b>46 days</b>	<b>Thu 12/4/5</b>	<b>Sun 12/5/20</b>
67	Excavation, sheetpile & lateral sl	22 days	Thu 12/4/5	Thu 12/4/26
68	Geotextile & Rockfill	1 day	Fri 12/4/27	Fri 12/4/27
69	Blinding	1 day	Sat 12/4/28	Sat 12/4/28
70	Base slab of box culvert	5 days	Sun 12/4/29	Thu 12/5/3
71	Top slab of box culvert	12 days	Fri 12/5/4	Tue 12/5/15
72	Backfill & removal sheetpile	5 days	Wed 12/5/16	Sun 12/5/20
73	<b>Bay 31</b>	<b>46 days</b>	<b>Sun 12/4/15</b>	<b>Wed 12/5/30</b>
74	Excavation, sheetpile & lateral sl	22 days	Sun 12/4/15	Sun 12/5/6
75	Geotextile & Rockfill	1 day	Mon 12/5/7	Mon 12/5/7
76	Blinding	1 day	Tue 12/5/8	Tue 12/5/8
77	Base slab of box culvert	5 days	Wed 12/5/9	Sun 12/5/13
78	Top slab of box culvert	12 days	Mon 12/5/14	Fri 12/5/25
79	Backfill & removal sheetpile	5 days	Sat 12/5/26	Wed 12/5/30
80	<b>Bay 32, 33, 34</b>	<b>66 days</b>	<b>Thu 12/5/31</b>	<b>Sat 12/8/4</b>
81	<b>Bay 32</b>	<b>46 days</b>	<b>Thu 12/5/31</b>	<b>Sun 12/7/15</b>
82	Excavation, sheetpile & lateral sl	22 days	Thu 12/5/31	Thu 12/6/21
83	Geotextile & Rockfill	1 day	Fri 12/6/22	Fri 12/6/22
84	Blinding	1 day	Sat 12/6/23	Sat 12/6/23
85	Base slab of box culvert	5 days	Sun 12/6/24	Thu 12/6/28
86	Top slab of box culvert	12 days	Fri 12/6/29	Tue 12/7/10
87	Backfill & removal sheetpile	5 days	Wed 12/7/11	Sun 12/7/15
88	<b>Bay 33</b>	<b>46 days</b>	<b>Sun 12/6/10</b>	<b>Wed 12/7/25</b>
89	Excavation, sheetpile & lateral sl	22 days	Sun 12/6/10	Sun 12/7/1
90	Geotextile & Rockfill	1 day	Mon 12/7/2	Mon 12/7/2
91	Blinding	1 day	Tue 12/7/3	Tue 12/7/3
92	Base slab of box culvert	5 days	Wed 12/7/4	Sun 12/7/8
93	Top slab of box culvert	12 days	Mon 12/7/9	Fri 12/7/20
94	Backfill & removal sheetpile	5 days	Sat 12/7/21	Wed 12/7/25
95	<b>Bay 34</b>	<b>46 days</b>	<b>Wed 12/6/20</b>	<b>Sat 12/8/4</b>
96	Excavation, sheetpile & lateral sl	22 days	Wed 12/6/20	Wed 12/7/11
97	Geotextile & Rockfill	1 day	Thu 12/7/12	Thu 12/7/12
98	Blinding	1 day	Fri 12/7/13	Fri 12/7/13

Project: Tung Tsz Road  
 Date: Wed 11/10/12

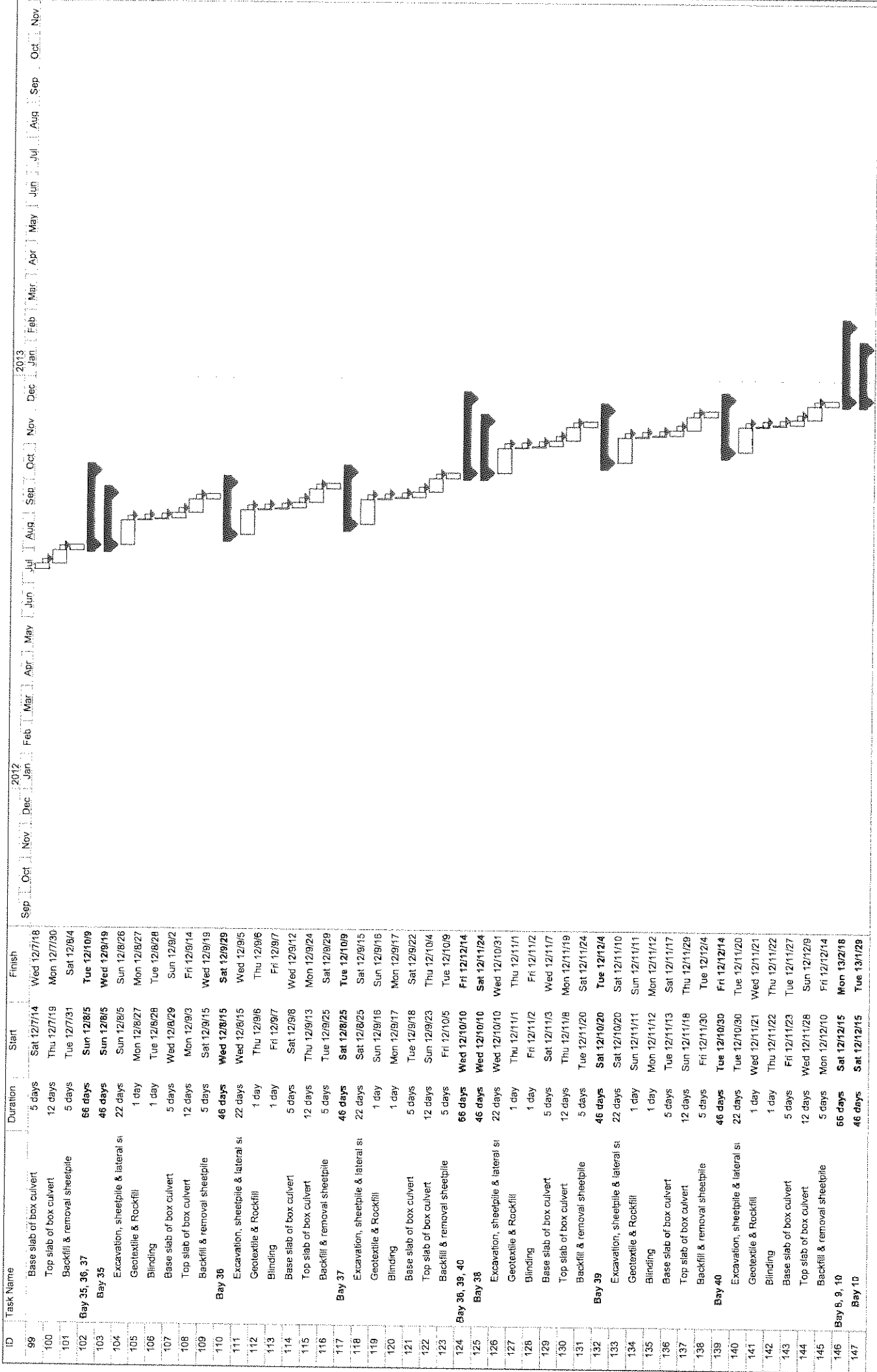
Task Split

Progress Milestone

Summary Project Summary

External Tasks External Milestone

Deadline

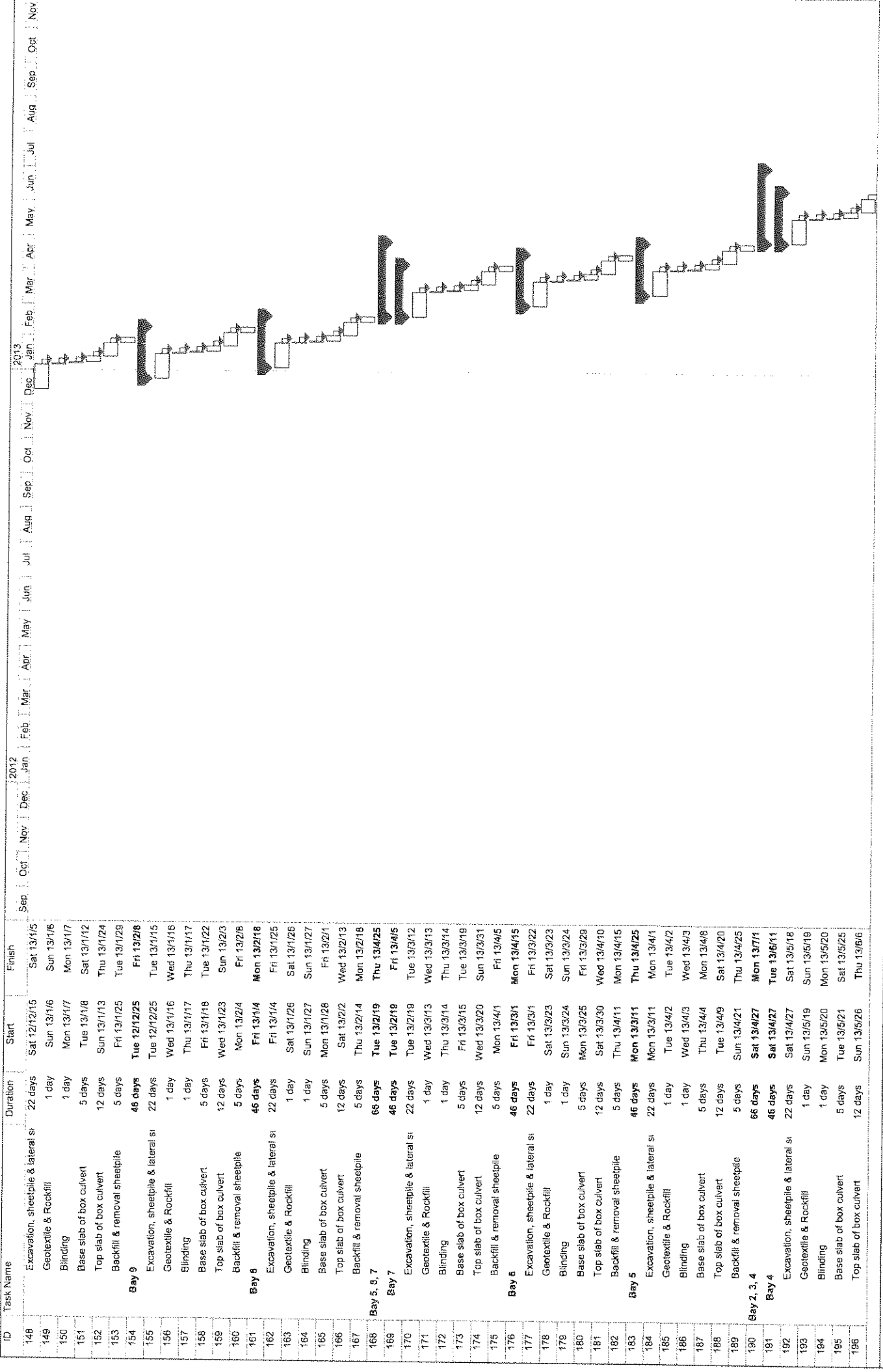


ID	Task Name	Duration	Start	Finish
99	Base slab of box culvert	5 days	Sat 12/7/14	Wed 12/7/18
100	Top slab of box culvert	12 days	Thu 12/7/19	Mon 12/7/30
101	Backfill & removal sheepile	5 days	Tue 12/7/31	Sat 12/8/4
102	Bay 35, 36, 37	66 days	Sun 12/8/5	Tue 12/10/9
103	Excavation, sheepile & lateral sl	22 days	Sun 12/8/5	Sun 12/8/26
104	Geotextile & Rockfill	1 day	Mon 12/8/27	Mon 12/8/28
105	Blinding	1 day	Tue 12/8/28	Tue 12/8/28
106	Base slab of box culvert	5 days	Wed 12/8/29	Sun 12/9/2
107	Top slab of box culvert	12 days	Mon 12/9/3	Fri 12/9/14
108	Backfill & removal sheepile	5 days	Sat 12/9/15	Wed 12/9/19
109	Bay 38	46 days	Wed 12/8/15	Sat 12/9/29
110	Excavation, sheepile & lateral sl	22 days	Wed 12/8/15	Wed 12/9/5
111	Geotextile & Rockfill	1 day	Thu 12/9/6	Thu 12/9/6
112	Blinding	1 day	Fri 12/9/7	Fri 12/9/7
113	Base slab of box culvert	5 days	Sat 12/9/8	Wed 12/9/12
114	Top slab of box culvert	12 days	Thu 12/9/13	Mon 12/9/24
115	Backfill & removal sheepile	5 days	Tue 12/9/25	Sat 12/9/29
116	Bay 37	46 days	Sat 12/8/25	Tue 12/10/9
117	Excavation, sheepile & lateral sl	22 days	Sat 12/8/25	Sat 12/9/15
118	Geotextile & Rockfill	1 day	Sun 12/9/16	Sun 12/9/16
119	Blinding	1 day	Mon 12/9/17	Mon 12/9/17
120	Base slab of box culvert	5 days	Tue 12/9/18	Sat 12/9/22
121	Top slab of box culvert	12 days	Sun 12/9/23	Thu 12/10/4
122	Backfill & removal sheepile	5 days	Fri 12/10/5	Tue 12/10/9
123	Bay 36, 39, 40	66 days	Wed 12/10/10	Fri 12/12/14
124	Excavation, sheepile & lateral sl	22 days	Wed 12/10/10	Sat 12/11/24
125	Geotextile & Rockfill	1 day	Thu 12/11/1	Thu 12/11/1
126	Blinding	1 day	Fr 12/11/2	Fr 12/11/2
127	Base slab of box culvert	5 days	Sat 12/11/3	Wed 12/11/7
128	Top slab of box culvert	12 days	Thu 12/11/8	Mon 12/11/19
129	Backfill & removal sheepile	5 days	Tue 12/11/20	Sat 12/11/24
130	Bay 39	46 days	Sat 12/10/20	Tue 12/12/4
131	Excavation, sheepile & lateral sl	22 days	Sat 12/10/20	Sat 12/11/10
132	Geotextile & Rockfill	1 day	Sun 12/11/11	Sun 12/11/11
133	Blinding	1 day	Mon 12/11/12	Mon 12/11/12
134	Base slab of box culvert	5 days	Tue 12/11/13	Sat 12/11/17
135	Top slab of box culvert	12 days	Thu 12/11/18	Thu 12/11/29
136	Backfill & removal sheepile	5 days	Fri 12/11/30	Tue 12/12/4
137	Bay 40	46 days	Tue 12/10/30	Fri 12/12/14
138	Excavation, sheepile & lateral sl	22 days	Tue 12/10/30	Tue 12/11/20
139	Geotextile & Rockfill	1 day	Wed 12/11/21	Wed 12/11/21
140	Blinding	1 day	Thu 12/11/22	Thu 12/11/22
141	Base slab of box culvert	5 days	Fri 12/11/23	Tue 12/11/27
142	Top slab of box culvert	12 days	Mon 12/12/10	Fri 12/12/14
143	Backfill & removal sheepile	5 days	Sat 12/12/15	Mon 13/2/18
144	Bay 8, 9, 10	66 days	Sat 12/12/15	Mon 13/2/18
145	Excavation, sheepile & lateral sl	22 days	Sat 12/12/15	Tue 13/1/29
146	Geotextile & Rockfill	1 day	Wed 12/11/21	Wed 12/11/21
147	Blinding	1 day	Thu 12/11/22	Thu 12/11/22

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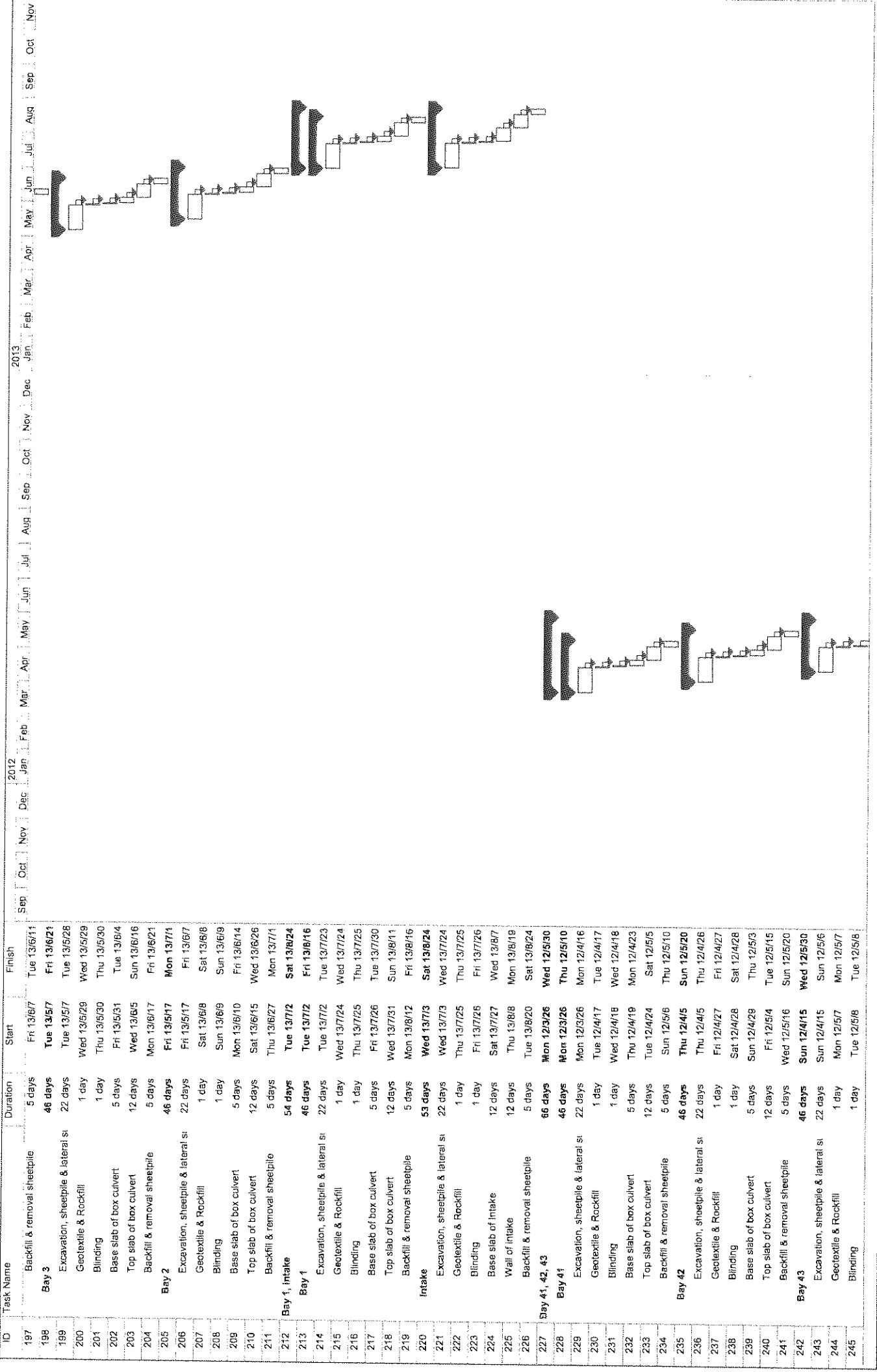
ID	Task Name	Duration	Start	Finish
148	Excavation, sheeppile & lateral si	22 days	Sat 12/12/15	Sat 13/1/15
149	Geotextile & Rockfill	1 day	Sun 13/1/16	Sun 13/1/16
150	Blinding	1 day	Mon 13/1/17	Mon 13/1/17
151	Base slab of box culvert	5 days	Tue 13/1/18	Sat 13/1/12
152	Top slab of box culvert	12 days	Sun 13/1/13	Thu 13/1/24
153	Backfill & removal sheeppile	5 days	Fri 13/1/25	Tue 13/1/29
154	<b>Bay 9</b>	<b>46 days</b>	<b>Tue 12/12/25</b>	<b>Fri 13/2/8</b>
155	Excavation, sheeppile & lateral si	22 days	Tue 12/12/25	Tue 13/1/15
156	Geotextile & Rockfill	1 day	Wed 13/1/16	Wed 13/1/16
157	Blinding	1 day	Thu 13/1/17	Thu 13/1/17
158	Base slab of box culvert	5 days	Fri 13/1/18	Tue 13/1/22
159	Top slab of box culvert	12 days	Wed 13/1/23	Sun 13/2/3
160	Backfill & removal sheeppile	5 days	Mon 13/2/4	Fri 13/2/8
161	<b>Bay 6</b>	<b>46 days</b>	<b>Fri 13/1/4</b>	<b>Mon 13/2/18</b>
162	Excavation, sheeppile & lateral si	22 days	Fri 13/1/4	Fri 13/1/25
163	Geotextile & Rockfill	1 day	Sat 13/1/26	Sat 13/1/26
164	Blinding	1 day	Sun 13/1/27	Sun 13/1/27
165	Base slab of box culvert	5 days	Mon 13/1/28	Fri 13/2/1
166	Top slab of box culvert	12 days	Sat 13/2/3	Wed 13/2/13
167	Backfill & removal sheeppile	5 days	Thu 13/2/14	Mon 13/2/18
168	<b>Bay 5, 6, 7</b>	<b>66 days</b>	<b>Tue 13/2/19</b>	<b>Thu 13/4/25</b>
169	Excavation, sheeppile & lateral si	22 days	Tue 13/2/19	Tue 13/3/12
170	Geotextile & Rockfill	1 day	Wed 13/3/13	Wed 13/3/13
171	Blinding	1 day	Thu 13/3/14	Thu 13/3/14
172	Base slab of box culvert	5 days	Fri 13/3/15	Tue 13/3/19
173	Top slab of box culvert	12 days	Wed 13/3/20	Sun 13/3/31
174	Backfill & removal sheeppile	5 days	Mon 13/4/1	Fri 13/4/5
175	<b>Bay 6</b>	<b>46 days</b>	<b>Fri 13/3/1</b>	<b>Mon 13/4/15</b>
176	Excavation, sheeppile & lateral si	22 days	Fri 13/3/1	Fri 13/3/22
177	Geotextile & Rockfill	1 day	Sat 13/3/23	Sat 13/3/23
178	Blinding	1 day	Sun 13/3/24	Sun 13/3/24
179	Base slab of box culvert	5 days	Mon 13/3/25	Fri 13/3/29
180	Top slab of box culvert	12 days	Sat 13/3/30	Wed 13/4/10
181	Backfill & removal sheeppile	5 days	Thu 13/4/11	Mon 13/4/15
182	<b>Bay 5</b>	<b>46 days</b>	<b>Mon 13/3/11</b>	<b>Thu 13/4/25</b>
183	Excavation, sheeppile & lateral si	22 days	Mon 13/3/11	Mon 13/4/1
184	Geotextile & Rockfill	1 day	Tue 13/4/2	Tue 13/4/2
185	Blinding	1 day	Wed 13/4/3	Wed 13/4/3
186	Base slab of box culvert	5 days	Thu 13/4/4	Mon 13/4/8
187	Top slab of box culvert	12 days	Tue 13/4/9	Sat 13/4/20
188	Backfill & removal sheeppile	5 days	Sun 13/4/21	Thu 13/4/25
189	<b>Bay 2, 3, 4</b>	<b>66 days</b>	<b>Sat 13/4/27</b>	<b>Mon 13/7/1</b>
190	Excavation, sheeppile & lateral si	22 days	Sat 13/4/27	Tue 13/6/11
191	Geotextile & Rockfill	1 day	Sat 13/4/27	Sat 13/5/16
192	Blinding	1 day	Sun 13/5/19	Sun 13/5/19
193	Base slab of box culvert	5 days	Mon 13/5/20	Mon 13/5/20
194	Top slab of box culvert	12 days	Tue 13/5/21	Sat 13/5/25
195	Backfill & removal sheeppile	5 days	Sun 13/5/26	Thu 13/6/6

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Legend:  
 Progress: [Solid Bar]  
 Milestone: [Diamond]  
 Summary: [Dotted Bar]  
 Project Summary: [Horizontal Line]  
 External Tasks: [Dotted Bar]  
 External Milestone: [Diamond]

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2013  
 Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov  
 2012  
 Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov

ID	Task Name	Duration	Start	Finish
197	Backfill & removal sheetpile	5 days	Fri 13/6/11	Tue 13/6/11
198	Bay 3	46 days	Tue 13/5/7	Fri 13/6/21
199	Excavation, sheetpile & lateral sheetpile	22 days	Tue 13/5/7	Tue 13/5/28
200	Geotextile & Rockfill	1 day	Wed 13/5/29	Wed 13/5/29
201	Blinding	1 day	Thu 13/5/30	Thu 13/5/30
202	Base slab of box culvert	5 days	Fri 13/5/31	Tue 13/6/4
203	Top slab of box culvert	12 days	Wed 13/6/5	Sun 13/6/16
204	Backfill & removal sheetpile	5 days	Mon 13/6/17	Fri 13/6/21
205	Bay 2	46 days	Fri 13/5/17	Mon 13/7/1
206	Excavation, sheetpile & lateral sheetpile	22 days	Fri 13/5/17	Fri 13/6/7
207	Geotextile & Rockfill	1 day	Sat 13/6/8	Sat 13/6/8
208	Blinding	1 day	Sun 13/6/9	Sun 13/6/9
209	Base slab of box culvert	5 days	Mon 13/6/10	Fri 13/6/14
210	Top slab of box culvert	12 days	Sat 13/6/15	Wed 13/6/26
211	Backfill & removal sheetpile	5 days	Thu 13/6/27	Mon 13/7/1
212	Bay 1, intake	54 days	Tue 13/7/2	Sat 13/8/24
213	Bay 1	46 days	Tue 13/7/2	Fri 13/8/16
214	Excavation, sheetpile & lateral sheetpile	22 days	Tue 13/7/2	Tue 13/7/23
215	Geotextile & Rockfill	1 day	Wed 13/7/24	Wed 13/7/24
216	Blinding	1 day	Thu 13/7/25	Thu 13/7/25
217	Base slab of box culvert	5 days	Fri 13/7/26	Tue 13/7/30
218	Top slab of box culvert	12 days	Wed 13/7/31	Sun 13/8/11
219	Backfill & removal sheetpile	5 days	Mon 13/8/12	Fri 13/8/16
220	Intake	53 days	Wed 13/7/3	Sat 13/8/24
221	Excavation, sheetpile & lateral sheetpile	22 days	Wed 13/7/3	Wed 13/7/24
222	Geotextile & Rockfill	1 day	Thu 13/7/25	Thu 13/7/25
223	Blinding	1 day	Fri 13/7/26	Fri 13/7/26
224	Base slab of intake	12 days	Sat 13/7/27	Wed 13/8/7
225	Wall of intake	12 days	Thu 13/8/8	Mon 13/8/19
226	Backfill & removal sheetpile	5 days	Tue 13/8/20	Sat 13/8/24
227	Bay 41, 42, 43	66 days	Mon 12/3/26	Wed 12/5/30
228	Bay 41	46 days	Mon 12/3/26	Thu 12/5/10
229	Excavation, sheetpile & lateral sheetpile	22 days	Mon 12/3/26	Mon 12/4/16
230	Geotextile & Rockfill	1 day	Tue 12/4/17	Tue 12/4/17
231	Blinding	1 day	Wed 12/4/18	Wed 12/4/18
232	Base slab of box culvert	5 days	Thu 12/4/19	Mon 12/4/23
233	Top slab of box culvert	12 days	Tue 12/4/24	Sat 12/5/5
234	Backfill & removal sheetpile	5 days	Sun 12/5/6	Thu 12/5/10
235	Bay 42	46 days	Thu 12/4/5	Sun 12/5/20
236	Excavation, sheetpile & lateral sheetpile	22 days	Thu 12/4/5	Thu 12/4/26
237	Geotextile & Rockfill	1 day	Fri 12/4/27	Fri 12/4/27
238	Blinding	1 day	Sat 12/4/28	Sat 12/4/28
239	Base slab of box culvert	5 days	Sun 12/4/29	Thu 12/5/3
240	Top slab of box culvert	12 days	Fri 12/5/4	Tue 12/5/15
241	Backfill & removal sheetpile	5 days	Wed 12/5/16	Sun 12/5/20
242	Bay 43	46 days	Sun 12/4/15	Wed 12/5/30
243	Excavation, sheetpile & lateral sheetpile	22 days	Sun 12/4/15	Sun 12/5/6
244	Geotextile & Rockfill	1 day	Mon 12/5/7	Mon 12/5/7
245	Blinding	1 day	Tue 12/5/8	Tue 12/5/8

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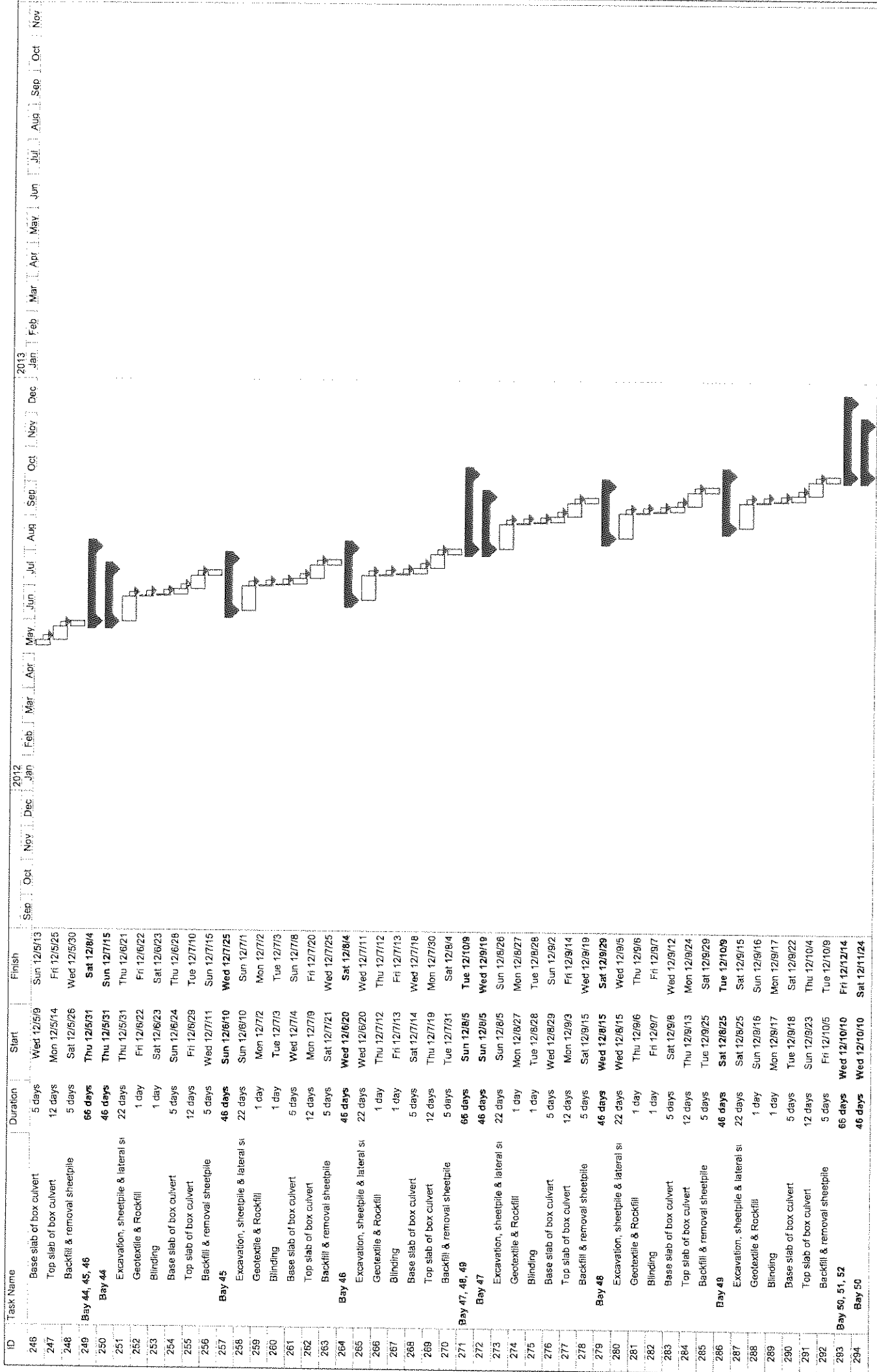
Task Split

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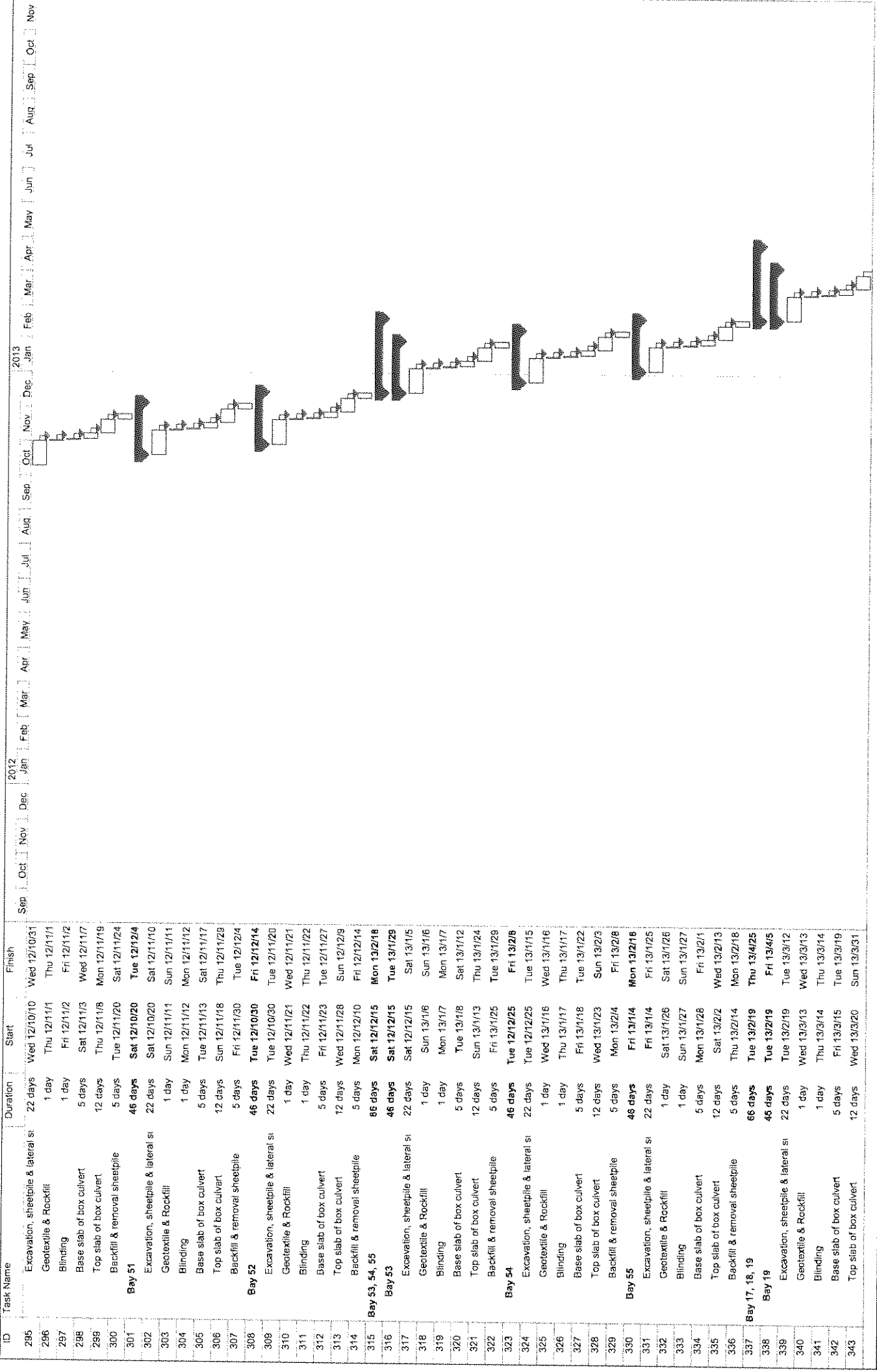
Deadline



ID	Task Name	Duration	Start	Finish
246	Base slab of box culvert	5 days	Wed 12/5/13	Sun 12/5/13
247	Top slab of box culvert	12 days	Mon 12/5/14	Fri 12/5/25
248	Backfill & removal sheetpile	5 days	Sat 12/5/26	Wed 12/5/30
249	Bay 44, 45, 46	66 days	Thu 12/5/31	Sat 12/8/14
250	Bay 44	46 days	Thu 12/5/31	Sun 12/7/15
251	Excavation, sheetpile & lateral sheetpiling	22 days	Thu 12/5/31	Thu 12/6/21
252	Geotextile & Rockfill	1 day	Fri 12/6/22	Fri 12/6/22
253	Blinding	1 day	Sat 12/6/23	Sat 12/6/23
254	Base slab of box culvert	5 days	Sun 12/6/24	Thu 12/6/28
255	Top slab of box culvert	12 days	Fri 12/6/29	Tue 12/7/10
256	Backfill & removal sheetpile	5 days	Wed 12/7/11	Sun 12/7/15
257	Bay 45	46 days	Sun 12/6/10	Wed 12/7/25
258	Excavation, sheetpile & lateral sheetpiling	22 days	Sun 12/6/10	Sun 12/7/1
259	Geotextile & Rockfill	1 day	Mon 12/7/2	Mon 12/7/2
260	Blinding	1 day	Tue 12/7/3	Tue 12/7/3
261	Base slab of box culvert	5 days	Wed 12/7/4	Sun 12/7/8
262	Top slab of box culvert	12 days	Mon 12/7/9	Fri 12/7/20
263	Backfill & removal sheetpile	5 days	Sat 12/7/21	Wed 12/7/25
264	Bay 46	46 days	Wed 12/6/20	Sat 12/8/14
265	Excavation, sheetpile & lateral sheetpiling	22 days	Wed 12/6/20	Wed 12/7/11
266	Geotextile & Rockfill	1 day	Thu 12/7/12	Thu 12/7/12
267	Blinding	1 day	Fri 12/7/13	Fri 12/7/13
268	Base slab of box culvert	5 days	Sat 12/7/14	Wed 12/7/18
269	Top slab of box culvert	12 days	Thu 12/7/19	Mon 12/7/30
270	Backfill & removal sheetpile	5 days	Tue 12/7/31	Sat 12/8/4
271	Bay 47, 48, 49	66 days	Sun 12/8/5	Tue 12/10/9
272	Bay 47	46 days	Sun 12/8/5	Wed 12/9/19
273	Excavation, sheetpile & lateral sheetpiling	22 days	Sun 12/8/5	Sun 12/8/26
274	Geotextile & Rockfill	1 day	Mon 12/8/27	Mon 12/8/27
275	Blinding	1 day	Tue 12/8/28	Tue 12/8/28
276	Base slab of box culvert	5 days	Wed 12/8/29	Sun 12/9/2
277	Top slab of box culvert	12 days	Mon 12/9/3	Fri 12/9/14
278	Backfill & removal sheetpile	5 days	Sat 12/9/15	Wed 12/9/19
279	Bay 48	46 days	Wed 12/8/15	Sat 12/9/29
280	Excavation, sheetpile & lateral sheetpiling	22 days	Wed 12/8/15	Wed 12/9/5
281	Geotextile & Rockfill	1 day	Thu 12/9/6	Thu 12/9/6
282	Blinding	1 day	Fri 12/9/7	Fri 12/9/7
283	Base slab of box culvert	5 days	Sat 12/9/8	Wed 12/9/12
284	Top slab of box culvert	12 days	Thu 12/9/13	Mon 12/9/24
285	Backfill & removal sheetpile	5 days	Tue 12/9/25	Sat 12/9/29
286	Bay 49	46 days	Sat 12/8/25	Tue 12/10/9
287	Excavation, sheetpile & lateral sheetpiling	22 days	Sat 12/8/25	Sat 12/9/15
288	Geotextile & Rockfill	1 day	Sun 12/9/16	Sun 12/9/16
289	Blinding	1 day	Mon 12/9/17	Mon 12/9/17
290	Base slab of box culvert	5 days	Tue 12/9/18	Sat 12/9/22
291	Top slab of box culvert	12 days	Sun 12/9/23	Thu 12/10/4
292	Backfill & removal sheetpile	5 days	Fri 12/10/5	Thu 12/10/9
293	Bay 50, 51, 52	66 days	Wed 12/10/10	Fri 12/12/14
294	Bay 50	46 days	Wed 12/10/10	Sat 12/11/24

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ID	Task Name	Duration	Start	Finish
295	Excavation, sheeppile & lateral s	22 days	Wed 12/10/10	Wed 12/10/31
296	Geotextile & Rockfill	1 day	Thu 12/11/1	Thu 12/11/1
297	Blinding	1 day	Fri 12/11/2	Fri 12/11/2
298	Base slab of box culvert	5 days	Sat 12/11/3	Wed 12/11/7
299	Top slab of box culvert	12 days	Thu 12/11/8	Mon 12/11/19
300	Backfill & removal sheeppile	5 days	Tue 12/11/20	Sat 12/11/24
301	<b>Bay 51</b>	<b>46 days</b>	<b>Sat 12/10/20</b>	<b>Tue 12/12/4</b>
302	Excavation, sheeppile & lateral s	22 days	Sat 12/10/20	Sat 12/11/10
303	Geotextile & Rockfill	1 day	Sun 12/11/11	Sun 12/11/11
304	Blinding	1 day	Mon 12/11/12	Mon 12/11/12
305	Base slab of box culvert	5 days	Tue 12/11/13	Sat 12/11/17
306	Top slab of box culvert	12 days	Sun 12/11/18	Thu 12/11/29
307	Backfill & removal sheeppile	5 days	Fri 12/11/30	Tue 12/12/4
308	<b>Bay 52</b>	<b>46 days</b>	<b>Tue 12/10/30</b>	<b>Fri 12/12/14</b>
309	Excavation, sheeppile & lateral s	22 days	Tue 12/10/30	Tue 12/11/20
310	Geotextile & Rockfill	1 day	Wed 12/11/21	Wed 12/11/21
311	Blinding	1 day	Thu 12/11/22	Thu 12/11/22
312	Base slab of box culvert	5 days	Fri 12/11/23	Tue 12/11/27
313	Top slab of box culvert	12 days	Wed 12/11/28	Sun 12/12/9
314	Backfill & removal sheeppile	5 days	Mon 12/12/10	Fri 12/12/14
315	<b>Bay 53, 54, 55</b>	<b>66 days</b>	<b>Sat 12/12/15</b>	<b>Mon 13/2/18</b>
316	<b>Bay 53</b>	<b>46 days</b>	<b>Sat 12/12/15</b>	<b>Tue 13/1/29</b>
317	Excavation, sheeppile & lateral s	22 days	Sat 12/12/15	Sat 13/1/5
318	Geotextile & Rockfill	1 day	Sun 13/1/6	Sun 13/1/6
319	Blinding	1 day	Mon 13/1/7	Mon 13/1/7
320	Base slab of box culvert	5 days	Tue 13/1/8	Sat 13/1/12
321	Top slab of box culvert	12 days	Sun 13/1/13	Thu 13/1/24
322	Backfill & removal sheeppile	5 days	Fri 13/1/25	Tue 13/1/29
323	<b>Bay 54</b>	<b>46 days</b>	<b>Tue 12/12/25</b>	<b>Fri 13/2/6</b>
324	Excavation, sheeppile & lateral s	22 days	Tue 12/12/25	Tue 13/1/15
325	Geotextile & Rockfill	1 day	Wed 13/1/16	Wed 13/1/16
326	Blinding	1 day	Thu 13/1/17	Thu 13/1/17
327	Base slab of box culvert	5 days	Fri 13/1/18	Tue 13/1/22
328	Top slab of box culvert	12 days	Wed 13/1/23	Sun 13/2/3
329	Backfill & removal sheeppile	5 days	Mon 13/2/4	Fri 13/2/6
330	<b>Bay 55</b>	<b>46 days</b>	<b>Fri 13/1/4</b>	<b>Mon 13/2/18</b>
331	Excavation, sheeppile & lateral s	22 days	Fri 13/1/4	Fri 13/1/25
332	Geotextile & Rockfill	1 day	Sat 13/1/26	Sat 13/1/26
333	Blinding	1 day	Sun 13/1/27	Sun 13/1/27
334	Base slab of box culvert	5 days	Mon 13/1/28	Fri 13/2/1
335	Top slab of box culvert	12 days	Sat 13/2/2	Wed 13/2/15
336	Backfill & removal sheeppile	5 days	Thu 13/2/14	Mon 13/2/18
337	<b>Bay 17, 18, 19</b>	<b>66 days</b>	<b>Tue 13/2/19</b>	<b>Thu 13/4/25</b>
338	<b>Bay 19</b>	<b>46 days</b>	<b>Tue 13/2/19</b>	<b>Fri 13/4/5</b>
339	Excavation, sheeppile & lateral s	22 days	Tue 13/2/19	Tue 13/3/12
340	Geotextile & Rockfill	1 day	Wed 13/3/13	Wed 13/3/13
341	Blinding	1 day	Thu 13/3/14	Thu 13/3/14
342	Base slab of box culvert	5 days	Fri 13/3/15	Tue 13/3/19
343	Top slab of box culvert	12 days	Wed 13/3/20	Sun 13/3/31

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Task Split

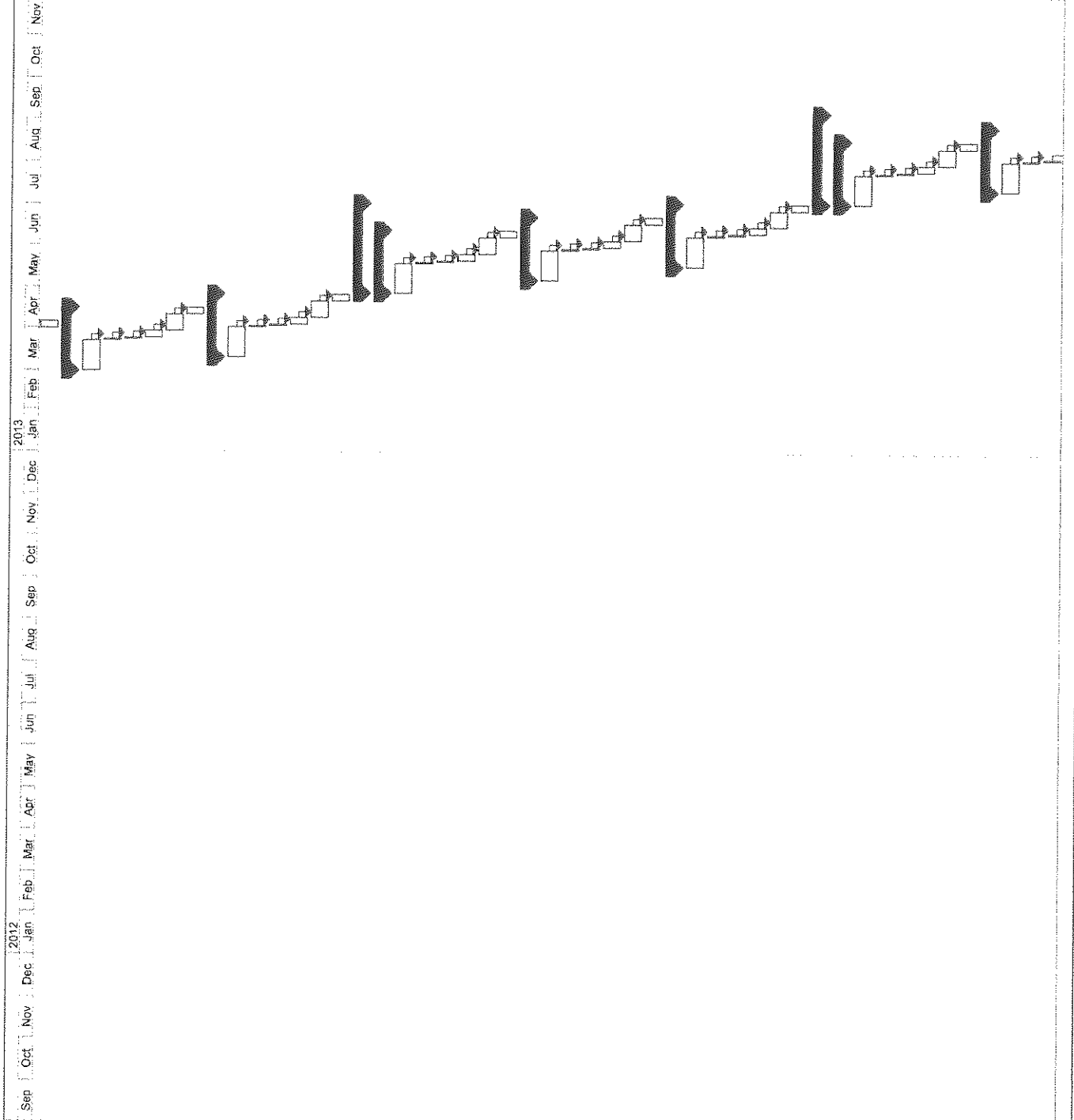
Progress Milestone

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ID	Task Name	Duration	Start	Finish
344	Backfill & removal sheetpile	5 days	Mon 13/4/1	Fri 13/4/5
345	Bay 18	46 days	Fri 13/3/1	Mon 13/4/15
346	Excavation, sheetpile & lateral si	22 days	Fri 13/3/1	Fri 13/3/22
347	Geotextile & Rockfill	1 day	Sat 13/3/23	Sat 13/3/23
348	Blinding	1 day	Sun 13/3/24	Sun 13/3/24
349	Base slab of box culvert	5 days	Mon 13/3/25	Fri 13/3/29
350	Top slab of box culvert	12 days	Sat 13/3/30	Wed 13/4/10
351	Backfill & removal sheetpile	5 days	Thu 13/4/11	Mon 13/4/15
352	Bay 17	46 days	Mon 13/3/11	Thu 13/4/25
353	Excavation, sheetpile & lateral si	22 days	Mon 13/3/11	Mon 13/4/1
354	Geotextile & Rockfill	1 day	Tue 13/4/2	Tue 13/4/2
355	Blinding	1 day	Wed 13/4/3	Wed 13/4/3
356	Base slab of box culvert	5 days	Thu 13/4/4	Mon 13/4/8
357	Top slab of box culvert	12 days	Tue 13/4/9	Sat 13/4/20
358	Backfill & removal sheetpile	5 days	Sun 13/4/21	Thu 13/4/25
359	Bay 14, 15, 16	66 days	Sat 13/4/27	Mon 13/7/1
360	Bay 16	46 days	Sat 13/4/27	Tue 13/6/11
361	Excavation, sheetpile & lateral si	22 days	Sat 13/4/27	Sat 13/5/18
362	Geotextile & Rockfill	1 day	Sun 13/5/19	Sun 13/5/19
363	Blinding	1 day	Mon 13/5/20	Mon 13/5/20
364	Base slab of box culvert	5 days	Tue 13/5/21	Sat 13/5/25
365	Top slab of box culvert	12 days	Sun 13/5/26	Thu 13/6/6
366	Backfill & removal sheetpile	5 days	Fri 13/6/7	Tue 13/6/11
367	Bay 15	46 days	Tue 13/5/7	Fri 13/6/21
368	Excavation, sheetpile & lateral si	22 days	Tue 13/5/7	Tue 13/6/28
369	Geotextile & Rockfill	1 day	Wed 13/5/29	Wed 13/5/29
370	Blinding	1 day	Thu 13/5/30	Thu 13/5/30
371	Base slab of box culvert	5 days	Fri 13/5/31	Tue 13/6/4
372	Top slab of box culvert	12 days	Wed 13/6/5	Sun 13/6/16
373	Backfill & removal sheetpile	5 days	Mon 13/6/17	Fri 13/6/21
374	Bay 14	46 days	Fri 13/5/17	Mon 13/7/1
375	Excavation, sheetpile & lateral si	22 days	Fri 13/5/17	Fri 13/6/7
376	Geotextile & Rockfill	1 day	Sat 13/6/8	Sat 13/6/8
377	Blinding	1 day	Sun 13/6/9	Sun 13/6/9
378	Base slab of box culvert	5 days	Mon 13/6/10	Fri 13/6/14
379	Top slab of box culvert	12 days	Sat 13/6/15	Wed 13/6/26
380	Backfill & removal sheetpile	5 days	Thu 13/6/27	Mon 13/7/1
381	Bay 11, 12, 13	66 days	Tue 13/7/2	Thu 13/9/5
382	Bay 13	46 days	Tue 13/7/2	Fri 13/8/16
383	Excavation, sheetpile & lateral si	22 days	Tue 13/7/2	Tue 13/7/23
384	Geotextile & Rockfill	1 day	Wed 13/7/24	Wed 13/7/24
385	Blinding	1 day	Thu 13/7/25	Thu 13/7/25
386	Base slab of box culvert	5 days	Fri 13/7/26	Tue 13/7/30
387	Top slab of box culvert	12 days	Wed 13/7/31	Sun 13/8/11
388	Backfill & removal sheetpile	5 days	Mon 13/8/12	Fri 13/8/16
389	Bay 12	46 days	Fri 13/7/12	Mon 13/9/26
390	Excavation, sheetpile & lateral si	22 days	Fri 13/7/12	Fri 13/8/2
391	Geotextile & Rockfill	1 day	Sat 13/8/3	Sat 13/8/3
392	Blinding	1 day	Sun 13/8/4	Sun 13/8/4

Project: Tung Tsz Road  
Date: Wed 11/10/12

Summary  
Project Summary

Progress  
Milestone

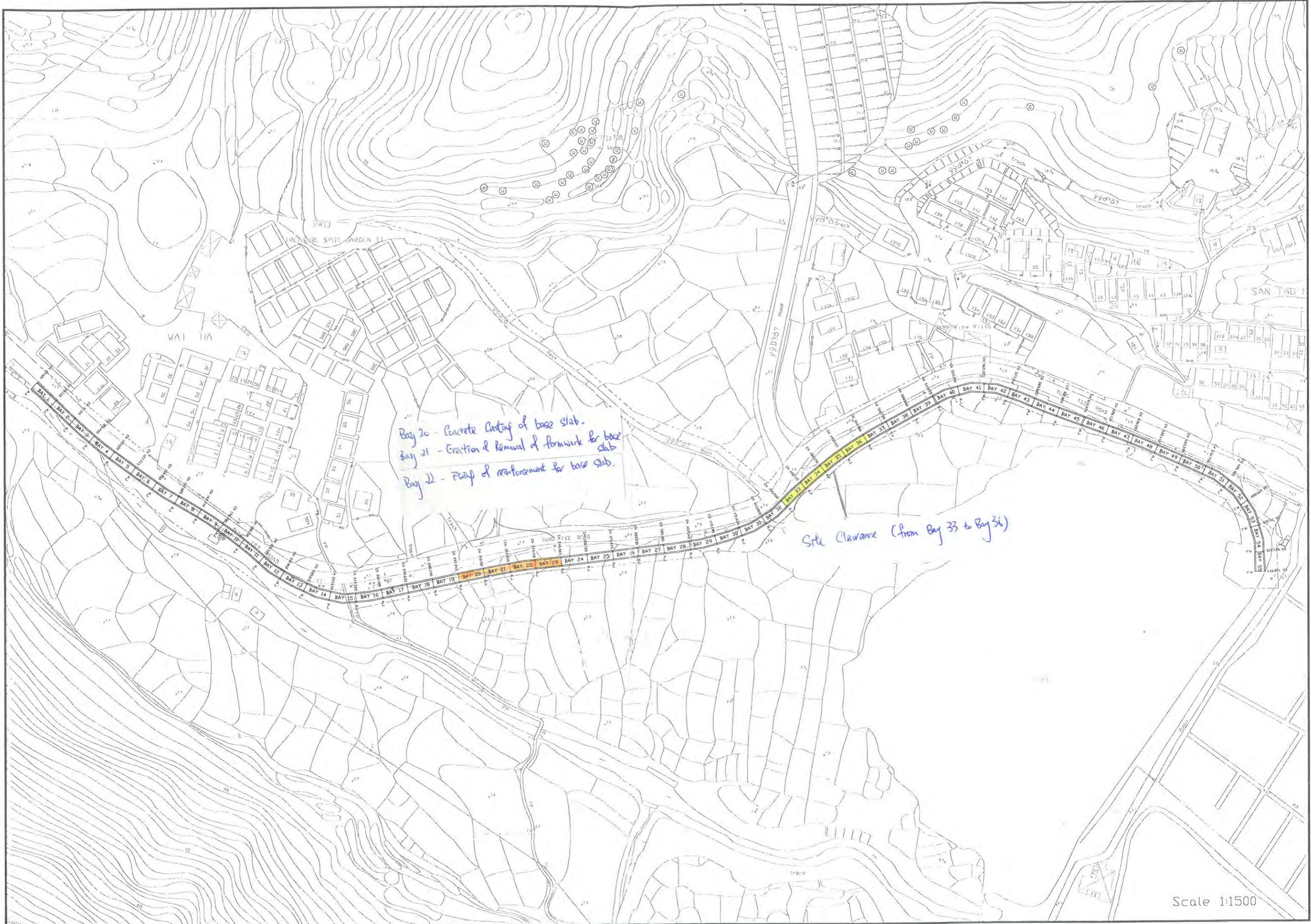
External Tasks  
External Milestone

Deadline

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ID	Task Name	Duration	Start	Finish
393	Base slab of box culvert	5 days	Mon 13/8/15	Fri 13/8/19
394	Top slab of box culvert	12 days	Sat 13/8/10	Wed 13/8/21
395	Backfill & removal sheetpile	5 days	Thu 13/8/22	Mon 13/8/26
396	Day 11	46 days	Mon 13/7/22	Thu 13/9/5
397	Excavation, sheetpile & lateral si	22 days	Mon 13/7/22	Mon 13/8/12
398	Geotextile & Rockfill	1 day	Tue 13/8/13	Tue 13/8/13
399	Blinding	1 day	Wed 13/8/14	Wed 13/8/14
400	Base slab of box culvert	5 days	Thu 13/8/15	Mon 13/8/19
401	Top slab of box culvert	12 days	Tue 13/8/20	Sat 13/8/31
402	Backfill & removal sheetpile	5 days	Sun 13/9/1	Thu 13/9/5



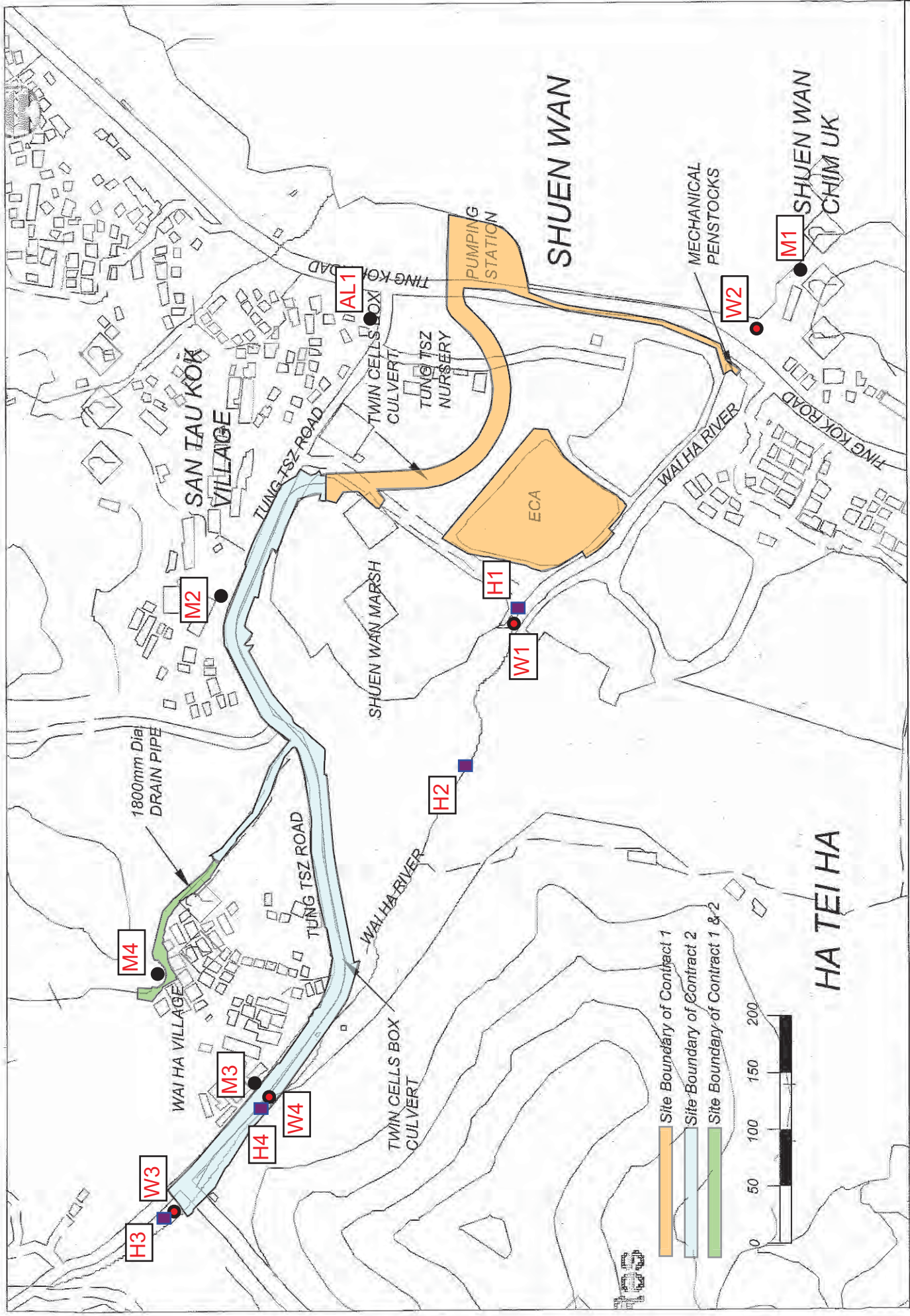


Bay 20 - Concrete casting of base slab.  
Bay 21 - Erection & Removal of formwork for base slab.  
Bay 22 - Pump of reinforcement for base slab.

Site Clearance (from Bay 33 to Bay 36)

## **Appendix D**

### **Environmental Monitoring Locations**



All Environmental Monitoring Locations



## **Appendix E**

### **Calibration certificates of the monitoring equipment and Certificate of ALS Technichem (HK) Pty Ltd**

**Equipment Calibration List**

Items	Aspect	Description of Equipment	Date of Calibration	Date of Next Calibration
1	Noise	Bruel & Kjaer Integrating Sound Level Meter (Serial No. 2285722)	18 May 11	18 May 12
2		Bruel & Kjaer Acoustical Calibrator (Serial No. 2326408)	04 May 11	04 May 12
3	Water	YSI DO Meter 55 (Serial No. 97F0837AM)	18 July 11	18 Oct 11
4*		YSI Professional Plus (Serial No. 10G101946)	16 Aug 11	16 Nov 11
5		Extech pH Meter EC500 (Work Order: HK1116556)	18 Jul 11	18 Oct 11
6		Turbidimeter HACH 2100p (Serial No. 950900008735)	06 Sep 11	06 Dec 11
7	Hydrological Characteristics	GLOBAL WATER model FP211 (Serial No.1124158766)	14 Jun 11	14 Jun 12

Note: \*Calibration certificates will only be provided when monitoring equipment is re-calibrated or new.



## ALS Technichem (HK) Pty Ltd

### REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

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

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

**PROJECT:** --

#### COMMENTS

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

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

#### NOTES

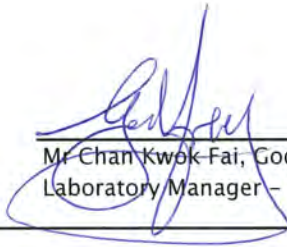
This is the Final Report and supersedes any preliminary report with this batch number.  
Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

#### ISSUING LABORATORY: HONG KONG

##### Address

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

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

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

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# REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

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



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

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

**Parameters:**

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

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

**pH Value**

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

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

**Salinity**

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

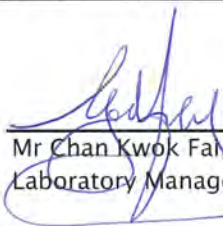
Expected Reading (g/L)	Displayed Reading (g/L)	Tolerance (%)
0.00	0.00	--
10.00	10.22	2.2
20.00	20.28	1.4
30.00	30.57	1.9
Tolerance Limit ( $\pm$ %)		10.0

**Temperature**

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

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

Reading of Ref. thermometer ( $^{\circ}$ C )	Displayed Reading ( $^{\circ}$ C )	Tolerance ( $^{\circ}$ C )
9.5	9.1	-0.4
22.0	21.6	-0.4
35.5	35.1	-0.4
Tolerance Limit ( $^{\circ}$ C)		2.0

  
 Mr Chan Kwok Fai, Godfrey  
 Laboratory Manager - Hong Kong

## **Appendix F**

### **Event and Action Plan**

**Event Action Plan for Construction Noise**

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

**Event and action Plan for Water Quality**

Event	ET Leader	IEC	ER	Contractor
<b>ACTION LEVEL</b>				
Action level being exceeded by one sampling day	<ol style="list-style-type: none"> <li>Repeat in-situ measurements to confirm findings;</li> <li>Identify reasons for non-compliance and source(s) of impact;</li> <li>Inform IEC, Contractor and Engineer;</li> <li>Check monitoring data, all plant, equipment and Contractor's working methods;</li> <li>Discuss mitigation measures with IEC, Engineer and Contractor;</li> <li>Ensure mitigation measures are implemented.</li> <li>Repeat measurement on next day of exceedance.</li> </ol>	<ol style="list-style-type: none"> <li>Discuss mitigation measures with ET, Engineer and Contractor;</li> <li>Review proposals on mitigation measures submitted by Contractor and advise the Engineer accordingly;</li> <li>Assess effectiveness of implemented mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>Discuss proposed mitigation measures with IEC, ET and Contractor;</li> <li>Make agreement on mitigation measures to be implemented;</li> <li>Assess effectiveness of implemented mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>Inform Engineer and confirm in writing notification of the non-compliance;</li> <li>Rectify unacceptable practice;</li> <li>Check all plant and equipment;</li> <li>Consider changes in working methods;</li> <li>Discuss with ET, IEC and Engineer and propose mitigation measures to IEC and Engineer within three working days;</li> <li>Implement agreed mitigation measures.</li> </ol>
Action level being exceeded by more than two consecutive sampling days	<ol style="list-style-type: none"> <li>Repeat in-situ measurements to confirm findings;</li> <li>Identify reasons for non-compliance and source(s) of impact;</li> <li>Inform IEC, Contractor and Engineer;</li> <li>Check monitoring data, all plant, equipment and Contractor's working methods;</li> <li>Discuss mitigation measures with IEC, Engineer and Contractor;</li> <li>Ensure mitigation measures are implemented.</li> <li>Prepare to increase the monitoring frequency to daily;</li> <li>Repeat measurement on next day of exceedance.</li> </ol>	<ol style="list-style-type: none"> <li>Discuss mitigation measures with ET, Engineer and Contractor;</li> <li>Review proposals on mitigation measures submitted by Contractor and advise the Engineer accordingly;</li> <li>Assess effectiveness of implemented mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>Discuss proposed mitigation measures with IEC, ET and Contractor;</li> <li>Make agreement on mitigation measures to be implemented;</li> <li>Assess effectiveness of implemented mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>Inform Engineer and confirm in writing notification of the non-compliance;</li> <li>Rectify unacceptable practice;</li> <li>Check all plant and equipment;</li> <li>Consider changes in working methods;</li> <li>Discuss with ET, IEC and Engineer and propose mitigation measures to IEC and Engineer within three working days;</li> <li>Implement agreed mitigation measures</li> </ol>
<b>LIMIT LEVEL</b>				
Limit level being exceeded by one sampling day	<ol style="list-style-type: none"> <li>Repeat in-situ measurements to confirm findings;</li> <li>Identify reasons for non-compliance and source(s) of impact;</li> <li>Inform EPD, IEC, Contractor and Engineer;</li> <li>Check monitoring data, all plant, equipment and Contractor's working methods;</li> <li>Discuss mitigation measures with IEC, Engineer and Contractor;</li> <li>Ensure mitigation measures are implemented;</li> <li>Increase the monitoring frequency to daily until no exceedance of Limit Level.</li> </ol>	<ol style="list-style-type: none"> <li>Discuss mitigation measures with ET, Engineer and Contractor;</li> <li>Review proposals on mitigation measures submitted by Contractor and advise the Engineer accordingly;</li> <li>Assess effectiveness of implemented mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>Discuss proposed mitigation measures with IEC, ET and Contractor;</li> <li>Request Contractor to critically review the working methods;</li> <li>Make agreement on mitigation measures to be implemented;</li> <li>Assess effectiveness of implemented mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>Inform Engineer and confirm in writing notification of the non-compliance;</li> <li>Rectify unacceptable practice;</li> <li>Check all plant and equipment;</li> <li>Consider changes in working methods;</li> <li>Discuss with ET, IEC and Engineer and propose mitigation measures to IEC and Engineer within three working days;</li> <li>Implement agreed mitigation measures.</li> </ol>
Limit level being exceeded by more than two consecutive sampling days	<ol style="list-style-type: none"> <li>Repeat in-situ measurements to confirm findings;</li> <li>Identify reasons for non-compliance and source(s) of impact;</li> <li>Inform EPD, IEC, Contractor and Engineer;</li> <li>Check monitoring data, all plant, equipment and Contractor's working methods;</li> <li>Discuss mitigation measures with IEC, Engineer and Contractor;</li> <li>Ensure mitigation measures are implemented.</li> <li>Increase the monitoring frequency to daily until no exceedance of Limit level for two consecutive days.</li> </ol>	<ol style="list-style-type: none"> <li>Discuss mitigation measures with ET, Engineer and Contractor;</li> <li>Review proposals on mitigation measures submitted by Contractor and advise the Engineer accordingly;</li> <li>Assess effectiveness of implemented mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>Discuss proposed mitigation measures with IEC, ET and Contractor;</li> <li>Request Contractor to critically review the working methods;</li> <li>Make agreement on mitigation measures to be implemented;</li> <li>Assess effectiveness of implemented mitigation measures;</li> <li>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.</li> </ol>	<ol style="list-style-type: none"> <li>Inform Engineer and confirm in writing notification of the non-compliance;</li> <li>Rectify unacceptable practice;</li> <li>Check all plant and equipment;</li> <li>Consider changes in working methods;</li> <li>Discuss with ET, IEC and Engineer and propose mitigation measures to IEC and Engineer within three working days;</li> <li>Implement agreed mitigation measures;</li> <li>As directed by the Engineer, slow down or stop all or part of the construction activities until no exceedance of Limit level.</li> </ol>

**Event and action Plan for Hydrological Characteristics**

Event	ET Leader	IEC	ER	Contractor
<b>ACTION LEVEL</b>				
Action level being exceeded by one sampling day	<ol style="list-style-type: none"> <li>Repeat in-situ measurements to confirm findings;</li> <li>Identify reasons for non-compliance and source(s) of impact;</li> <li>Inform IEC, Contractor and Engineer;</li> <li>Check monitoring data, Contractor's working methods and any excavation works or dewatering processes;</li> <li>Discuss mitigation measures with IEC, Engineer and Contractor;</li> <li>Ensure mitigation measures are implemented.</li> <li>Repeat measurement on next day of exceedance.</li> </ol>	<ol style="list-style-type: none"> <li>Discuss mitigation measures with ET, Engineer and Contractor;</li> <li>Review proposals on mitigation measures submitted by Contractor and advise the Engineer accordingly;</li> <li>Assess effectiveness of implemented mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>Discuss proposed mitigation measures with IEC, ET and Contractor;</li> <li>Make agreement on mitigation measures to be implemented;</li> <li>Assess effectiveness of implemented mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>Inform Engineer and confirm in writing notification of the non-compliance;</li> <li>Rectify unacceptable practice;</li> <li>Check working methods and any excavation works or dewatering processes;</li> <li>Consider changes in working methods and plans;</li> <li>Discuss with ET, IEC and Engineer and propose mitigation measures to IEC and Engineer within three working days;</li> <li>Implement agreed mitigation measures.</li> </ol>
Action level being exceeded by more than two consecutive sampling days	<ol style="list-style-type: none"> <li>Repeat in-situ measurements to confirm findings;</li> <li>Identify reasons for non-compliance and source(s) of impact;</li> <li>Inform IEC, Contractor and Engineer;</li> <li>Check monitoring data, Contractor's working methods and any excavation works or dewatering processes;</li> <li>Discuss mitigation measures with IEC, Engineer and Contractor;</li> <li>Ensure mitigation measures are implemented.</li> <li>Prepare to increase the monitoring frequency to daily;</li> <li>Repeat measurement on next day of exceedance.</li> </ol>	<ol style="list-style-type: none"> <li>Discuss mitigation measures with ET, Engineer and Contractor;</li> <li>Review proposals on mitigation measures submitted by Contractor and advise the Engineer accordingly;</li> <li>Assess effectiveness of implemented mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>Discuss proposed mitigation measures with IEC, ET and Contractor;</li> <li>Make agreement on mitigation measures to be implemented;</li> <li>Assess effectiveness of implemented mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>Inform Engineer and confirm in writing notification of the non-compliance;</li> <li>Rectify unacceptable practice;</li> <li>Check working methods and any excavation works or dewatering processes;</li> <li>Consider changes in working methods and plans;</li> <li>Discuss with ET, IEC and Engineer and propose mitigation measures to IEC and Engineer within three working days;</li> <li>Implement agreed mitigation measures</li> </ol>
<b>LIMIT LEVEL</b>				
Limit level being exceeded by one sampling day	<ol style="list-style-type: none"> <li>Repeat in-situ measurements to confirm findings;</li> <li>Identify reasons for non-compliance and source(s) of impact;</li> <li>Inform AFCD, IEC, Contractor and Engineer;</li> <li>Check monitoring data, and Contractor's working methods and any excavation works or dewatering processes;</li> <li>Discuss mitigation measures with IEC, Engineer and Contractor;</li> <li>Ensure mitigation measures are implemented;</li> <li>Increase the monitoring frequency to daily until no exceedance of Limit level.</li> </ol>	<ol style="list-style-type: none"> <li>Discuss mitigation measures with ET, Engineer and Contractor;</li> <li>Review proposals on mitigation measures submitted by Contractor and advise the Engineer accordingly;</li> <li>Assess effectiveness of implemented mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>Discuss proposed mitigation measures with IEC, ET and Contractor;</li> <li>Request Contractor to critically review the working methods;</li> <li>Make agreement on mitigation measures to be implemented;</li> <li>Assess effectiveness of implemented mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>Inform Engineer and confirm in writing notification of the non-compliance;</li> <li>Rectify unacceptable practice;</li> <li>Check working methods and any excavation works or dewatering processes;</li> <li>Consider changes in working methods and plans;</li> <li>Discuss with ET, IEC and Engineer and propose mitigation measures to IEC and Engineer within three working days;</li> <li>Implement agreed mitigation measures.</li> </ol>
Limit level being exceeded by more than two consecutive sampling days	<ol style="list-style-type: none"> <li>Repeat in-situ measurements to confirm findings;</li> <li>Identify reasons for non-compliance and source(s) of impact;</li> <li>Inform AFCD, IEC, Contractor and Engineer;</li> <li>Check monitoring data and Contractor's working methods and any excavation works or dewatering processes;</li> <li>Discuss mitigation measures with IEC, Engineer and Contractor;</li> <li>Ensure mitigation measures are implemented.</li> <li>Increase the monitoring frequency to daily until no exceedance of Limit level for two consecutive days.</li> </ol>	<ol style="list-style-type: none"> <li>Discuss mitigation measures with ET, Engineer and Contractor;</li> <li>Review proposals on mitigation measures submitted by Contractor and advise the Engineer accordingly;</li> <li>Assess effectiveness of implemented mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>Discuss proposed mitigation measures with IEC, ET and Contractor;</li> <li>Request Contractor to critically review the working methods;</li> <li>Make agreement on mitigation measures to be implemented;</li> <li>Assess effectiveness of implemented mitigation measures;</li> <li>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.</li> </ol>	<ol style="list-style-type: none"> <li>Inform Engineer and confirm in writing notification of the non-compliance;</li> <li>Rectify unacceptable practice;</li> <li>Check working methods and any excavation works or dewatering processes;</li> <li>Consider changes in working methods and plans;</li> <li>Discuss with ET, IEC and Engineer and propose mitigation measures to IEC and Engineer within three working days;</li> <li>Implement agreed mitigation measures;</li> <li>As directed by the Engineer, slow down or stop all or part of the construction activities until no exceedance of Limit level.</li> </ol>



## **Appendix G**

### **Monitoring Schedule in Reporting Period and the Coming Month**

Monitoring Schedule in this Reporting Period – October 2011

Date		Stream Monitoring		Noise Monitoring
		Water Sampling	Flow Monitoring	
Sat	1-Oct-11			
Sun	2-Oct-11			
Mon	3-Oct-11			
Tue	4-Oct-11	W1, W2, W3, W4		M2, M3, M4
Wed	5-Oct-11			
Thu	6-Oct-11	W1, W2, W3, W4		M1, AL1
Fri	7-Oct-11			
Sat	8-Oct-11	W1, W2, W3, W4	H1, H2, H3, H4	
Sun	9-Oct-11			
Mon	10-Oct-11			
Tue	11-Oct-11	W1, W2, W3, W4		
Wed	12-Oct-11			
Thu	13-Oct-11	W1, W2, W3, W4		M1, AL1, M2, M3, M4
Fri	14-Oct-11			
Sat	15-Oct-11	W1, W2, W3, W4	H1, H2, H3, H4	
Sun	16-Oct-11			
Mon	17-Oct-11			
Tue	18-Oct-11	W1, W2, W3, W4		
Wed	19-Oct-11			
Thu	20-Oct-11	W1, W2, W3, W4		M1, AL1, M2, M3, M4
Fri	21-Oct-11			
Sat	22-Oct-11	W1, W2, W3, W4	H1, H2, H3, H4	
Sun	23-Oct-11			
Mon	24-Oct-11			
Tue	25-Oct-11	W1, W2, W3, W4		M2, M3, M4
Wed	26-Oct-11			
Thu	27-Oct-11	W1, W2, W3, W4		M1, AL1
Fri	28-Oct-11			
Sat	29-Oct-11	W1, W2, W3, W4	H1, H2, H3, H4	
Sun	30-Oct-11			
Mon	31-Oct-11			

	Monitoring Day
	Sunday or Public Holiday

Monitoring Schedule in the coming month – November 2011

Date		Stream Monitoring		Noise Monitoring
		Water Sampling	Flow Monitoring	
Tue	1-Nov-11	W1, W2, W3, W4		
Wed	2-Nov-11			
Thu	3-Nov-11	W1, W2, W3, W4		
Fri	4-Nov-11			
Sat	5-Nov-11	W1, W2, W3, W4	H1, H2, H3, H4	M1, AL1, M2, M3, M4
Sun	6-Nov-11			
Mon	7-Nov-11			
Tue	8-Nov-11	W1, W2, W3, W4		M1, AL1, M2, M3, M4
Wed	9-Nov-11			
Thu	10-Nov-11	W1, W2, W3, W4		
Fri	11-Nov-11			
Sat	12-Nov-11	W1, W2, W3, W4	H1, H2, H3, H4	
Sun	13-Nov-11			
Mon	14-Nov-11			
Tue	15-Nov-11	W1, W2, W3, W4		
Wed	16-Nov-11			
Thu	17-Nov-11	W1, W2, W3, W4		M1, AL1, M2, M3, M4
Fri	18-Nov-11			
Sat	19-Nov-11	W1, W2, W3, W4	H1, H2, H3, H4	
Sun	20-Nov-11			
Mon	21-Nov-11			
Tue	22-Nov-11	W1, W2, W3, W4		M1, AL1, M2, M3, M4
Wed	23-Nov-11			
Thu	24-Nov-11	W1, W2, W3, W4		
Fri	25-Nov-11			
Sat	26-Nov-11	W1, W2, W3, W4	H1, H2, H3, H4	
Sun	27-Nov-11			
Mon	28-Nov-11			
Tue	29-Nov-11	W1, W2, W3, W4		
Wed	30-Nov-11			

	Monitoring Day
	Sunday or Public Holiday

## **Appendix H**

### **Meteorological Data of Reporting Period**

Meteorological Data in Reporting Period

Date		Weather	Total Rainfall (mm)	Tai Po Station		Shatin Station	
				Mean Air Temp. (°C)	Mean Relative Humidity (%)	Wind Speed (km/h)	Wind Direction
1-Oct-11	Sat	holiday					
2-Oct-11	Sun	STANDBY SIGNAL NO. 1	3.3	26	14.7	75.5	N/NE
3-Oct-11	Mon	The Strong Wind Signal, No. 3	1.6	23.4	19	71.7	N/NE
4-Oct-11	Tue	Fresh northeasterly winds	Trace	23.3	12	72.5	N/NE
5-Oct-11	Wed	Moderate northeasterly winds	0.1	23.9	11	74	N/NE
6-Oct-11	Thu	Mainly cloudy with one or two light rain patches.	0.1	24.8	10.5	71.5	N
7-Oct-11	Fri	Mainly cloudy.	Trace	26.2	9.1	74.7	N
8-Oct-11	Sat	Mainly cloudy	Trace	26.1	11.3	71.7	N
9-Oct-11	Sun	Mainly cloudy	0	24.7	10.1	67.2	E/SE
10-Oct-11	Mon	Moderate to fresh east to northeasterly winds.	5.3	26.9	11	79.7	N
11-Oct-11	Tue	Mainly fine and dry.	6.9	25.3	10.9	86.2	N/NE
12-Oct-11	Wed	Light to moderate easterly winds.	105.8	25.1	8.5	87	E/SE
13-Oct-11	Thu	rainy	30.7	26	7.4	85.5	E
14-Oct-11	Fri	Moderate east to northeasterly winds	3.8	26.2	6.6	82.7	N
15-Oct-11	Sat	mainly fine	0	25	9.2	63.5	N/NE
16-Oct-11	Sun	Mainly fine and dry.	0	25.4	7	68	N/NE
17-Oct-11	Mon	mainly fine	0	24.8	6.4	63	N/NE
18-Oct-11	Tue	Mainly fine and dry.	0	24.2	8.5	69.5	N
19-Oct-11	Wed	Moderate east to northeasterly winds	Trace	24	8	68.7	E
20-Oct-11	Thu	Dry with some haze	0	24	8.2	66.2	E/NE
21-Oct-11	Fri	Light to moderate east to northeasterly winds.	0	24.4	7	69.5	N
22-Oct-11	Sat	Mainly fine and dry.	0	24.7	5	69.7	E
23-Oct-11	Sun	Fine.	0	25.2	7.7	75.7	E/SE
24-Oct-11	Mon	Light to moderate easterly winds.	0	23.1	6	75	N/NE
25-Oct-11	Tue	Dry with sunny intervals.	0.5	24.1	7.2	81.7	N
26-Oct-11	Wed	Moderate to fresh east to northeasterly winds.	0.1	23.4	11.6	71.5	N/NE
27-Oct-11	Thu	Mainly fine.	1.5	24	5.9	74.2	E
28-Oct-11	Fri	Moderate east to northeasterly winds,	Trace	24.1	7.5	68.2	N/NE
29-Oct-11	Sat	Mainly cloudy.	0	24.2	8.2	71	N/NE
30-Oct-11	Sun	Moderate northeasterly winds.	Trace	24.4	7.7	67.5	N/NE
31-Oct-11	Mon	Mainly fine and dry.	Trace	25	9.2	65	E/NE

\* The record was extracted from The Hong Kong Observatory Weather Stations

## **Appendix I**

### **Data Base of Monitoring Results**

**Construction Noise Measurement Data**

**Designated Monitoring Station – M1 (14, Shuen Wan Chim Uk)**

Date	Start Time	1 <sup>st</sup> Leq <sub>5min</sub>	2 <sup>nd</sup> Leq <sub>5min</sub>	3 <sup>rd</sup> Leq <sub>5min</sub>	4 <sup>th</sup> Leq <sub>5min</sub>	5 <sup>th</sup> Leq <sub>5min</sub>	6 <sup>th</sup> Leq <sub>5min</sub>	Leq <sub>30min</sub> *
6-Oct-11	13:50	-	-	-	-	-	-	56.2
13-Oct-11	12:27	-	-	-	-	-	-	52.1
20-Oct-11	15:05	-	-	-	-	-	-	60.6
27-Oct-11	13:00	-	-	-	-	-	-	51.1
<b>Limit Level</b>								<b>&gt; 75 dB(A)</b>

(\*)The monitoring is undertaken under façade situation. No façade correction is added according to acoustical principles and EPD guidelines.

**Designated Monitoring Station – AL1 (Joint Village Office for Villages in Shuen Wan, Tai PO)**

Date	Start Time	1st Leq <sub>5min</sub>	2nd Leq <sub>5min</sub>	3rd Leq <sub>5min</sub>	4th Leq <sub>5min</sub>	5th Leq <sub>5min</sub>	6th Leq <sub>5min</sub>	Leq <sub>30min</sub> *
6-Oct-11	14:25	-	-	-	-	-	-	58.5
13-Oct-11	11:50	-	-	-	-	-	-	57.8
20-Oct-11	15:40	-	-	-	-	-	-	56.2
27-Oct-11	11:34	-	-	-	-	-	-	57.1
<b>Limit Level</b>								<b>&gt; 75 dB(A)</b>

(\*)The monitoring is undertaken under façade situation. No façade correction is added according to acoustical principles and EPD guidelines.

**Designated Monitoring Station - M2 (150, San Tau Kok)**

Date	Start Time	1 <sup>st</sup> Leq <sub>5min</sub>	2 <sup>nd</sup> Leq <sub>5min</sub>	3 <sup>rd</sup> Leq <sub>5min</sub>	4 <sup>th</sup> Leq <sub>5min</sub>	5 <sup>th</sup> Leq <sub>5min</sub>	6 <sup>th</sup> Leq <sub>5min</sub>	Leq <sub>30min</sub>	Corrected* Leq <sub>30min</sub>
4-Oct-11	10:01	60.7	59.2	61.4	63.3	62.5	55.0	61.0	64.0
13-Oct-11	16:18	61.0	55.7	59.7	60.1	64.5	72.2	65.8	68.8
20-Oct-11	17:00	70.8	70.8	71.3	73.0	70.9	71.7	71.5	74.5
25-Oct-11	16:09	50.9	67.1	41.6	50.9	63.2	60.4	61.6	64.6
<b>Limit Level</b>								<b>&gt; 75 dB(A)</b>	

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

**Designated Monitoring Station – M3 (31, Wai Ha)**

Date	Start Time	1 <sup>st</sup> Leq <sub>5min</sub>	2 <sup>nd</sup> Leq <sub>5min</sub>	3 <sup>rd</sup> Leq <sub>5min</sub>	4 <sup>th</sup> Leq <sub>5min</sub>	5 <sup>th</sup> Leq <sub>5min</sub>	6 <sup>th</sup> Leq <sub>5min</sub>	Leq <sub>30min</sub>	Corrected* Leq <sub>30min</sub>
4-Oct-11	10:48	65.3	64.0	57.3	74.6	56.1	61.8	67.9	70.9
13-Oct-11	14:46	66.8	65.0	60.5	61.8	65.5	63.4	64.3	67.3
20-Oct-11	16:13	70.8	70.2	69.6	66.9	69.5	68.3	69.4	72.4
25-Oct-11	15:02	58.8	66.1	51.7	57.7	58.1	57.0	60.5	63.5
<b>Limit Level</b>								<b>&gt; 75 dB(A)</b>	

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

**Designated Monitoring Station – M4 (Block 15, Treasure Spot Garden)**

Date	Start Time	1 <sup>st</sup> Leq <sub>5min</sub>	2 <sup>nd</sup> Leq <sub>5min</sub>	3 <sup>rd</sup> Leq <sub>5min</sub>	4 <sup>th</sup> Leq <sub>5min</sub>	5 <sup>th</sup> Leq <sub>5min</sub>	6 <sup>th</sup> Leq <sub>5min</sub>	Leq <sub>30min</sub>	Corrected* Leq <sub>30min</sub>
4-Oct-11	11:29	67.2	68.8	68.0	69.6	65.7	64.8	67.7	70.7
13-Oct-11	15:32	56.1	51.8	59.1	53.0	52.7	51.6	55.0	58.0
20-Oct-11	15:28	69.5	70.8	70.8	71.6	71.6	71.1	71.0	74.0
25-Oct-11	15:36	73.7	62.4	57.4	58.3	68.2	76.9	71.4	74.4
<b>Limit Level</b>								<b>&gt; 75 dB(A)</b>	

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

## Summary of Water Quality Monitoring Results

Location	DO (mg/L)				DO (%)		Turbidity (NTU)		pH		SS(mg/L)				
W3 (control)	n/a				n/a		n/a		n/a		n/a				
W4 (Impact)	Action				9.27	Action		n/a	Action		3.32	Action		n/a	6.98
	Limit				7.98	Limit		n/a	Limit		4.52	Limit		n/a	7.66
Date	4-Oct-11														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		SS(mg/L)		
W1(impact)	12:31	<1	24	24.0	7.28	7.3	82	82.0	1.2	1.2	7.26	7.3	2.6	2.6	
			24		7.28		82		1.2		7.26		2.6		
W2 (Impact)	12:00	<1	25.2	25.2	6.32	6.3	69	69.0	5	5.0	7.62	7.6	6.4	6.4	
			25.2		6.32		69		5		7.62		6.4		
W3 (control)	10:55	0.32	24.4	24.4	5.08	5.1	60.7	60.9	1.23	1.3	8.7	8.7	<2	2.0	
			24.4		5.09		61.1		1.44		8.7		<2		
W4 (impact)	11:03	0.10	24.4	24.4	5.40	5.4	64.6	64.7	1.17	1.2	8.2	8.2	<2	2.0	
			24.4		5.43		64.7		1.20		8.2		<2		
Date	6-Oct-11														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		SS(mg/L)		
W1(impact)	9:30	<1	25.2	25.2	3.57	3.6	34	34.0	3.2	3.2	7.1	7.1	6	6.0	
			25.2		3.57		34		3.2		7.1		6		
W2 (Impact)	9:09	<1	25.5	25.5	3.83	3.8	42	42.0	0.7	0.7	7.29	7.3	2.4	2.4	
			25.5		3.83		42		0.7		7.29		2.4		
W3 (control)	13:18	0.30	25.3	25.3	5.13	5.1	62.3	62.0	8.3	8.3	8.7	8.7	<2	2.0	
			25.2		5.10		61.7		8.2		8.7		<2		
W4 (impact)	13:36	0.20	25.8	25.8	5.40	5.4	64.6	64.7	7.8	7.8	8.2	8.2	<2	2.0	
			25.8		5.45		64.8		7.8		8.2		<2		
Date	8-Oct-11														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		SS(mg/L)		
W1(impact)	10:00	<1	26.2	26.2	7.26	7.3	89	89.0	2.1	2.1	7.06	7.1	7.6	7.6	
			26.2		7.26		89		2.1		7.06		7.6		
W2 (Impact)	10:30	<1	26.2	26.2	7.13	7.1	70	70.0	2.4	2.4	7.07	7.1	2.4	2.4	
			26.2		7.13		70		2.4		7.07		2.4		
W3 (control)	13:45	0.22	27.0	27.0	5.92	5.9	74.1	73.6	1.21	1.2	8.1	8.1	<2	2.0	
			27.0		5.86		73.1		1.14		8.1		<2		
W4 (impact)	13:55	0.14	26.4	26.4	7.01	7.0	80.9	80.8	1.33	1.3	8.1	8.1	<2	2.0	
			26.4		7.00		80.6		1.28		8.1		<2		
Date	11-Oct-11														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		SS(mg/L)		
W1(impact)	12:42	<1	25.2	25.2	3.49	3.5	40	40.0	6	6.0	7.08	7.1	5.8	5.8	
			25.2		3.49		40		6		7.08		5.8		
W2 (Impact)	11:50	<1	25.7	25.7	4.81	4.8	52	52.0	1.2	1.2	7.47	7.5	5	5.0	
			25.7		4.81		52		1.2		7.47		5		
W3 (control)	16:02	0.30	25.3	26.1	6.08	6.1	70.7	71.0	8.6	8.5	8.7	8.7	<2	2.0	
			26.9		6.10		71.3		8.4		8.7		<2		
W4 (impact)	16:31	0.40	25.3	26.1	5.09	5.1	60.7	61.8	7.5	7.5	8.4	8.4	<2	2.0	
			26.8		5.12		62.8		7.4		8.4		<2		
Date	13-Oct-11														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		SS(mg/L)		
W1(impact)	13:22	<1	26.2	26.2	8.03	8.0	81	81.0	25	25.0	7.11	7.1	18	18.0	
			26.2		8.03		81		25		7.11		18		
W2 (Impact)	12:39	<1	26.2	26.2	8.06	8.1	82	82.0	20.9	20.9	7.1	7.1	12	12.0	
			26.2		8.06		82		20.9		7.1		12		
W3 (control)	15:46	0.30	27.8	27.8	6.54	6.5	70.8	70.0	8.4	8.4	8.3	8.3	10	10.0	
			27.8		6.52		69.2		8.4		8.3		10		
W4 (impact)	15:58	0.20	27.7	27.8	5.91	5.9	68.6	68.0	7.6	7.6	8.5	8.5	<2	2.0	
			27.8		5.82		67.4		7.5		8.5		<2		
Date	15-Oct-11														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		SS(mg/L)		
W1(impact)	9:40	<1	24.8	24.8	8.09	8.1	86	86.0	4	4.0	7.17	7.2	7.6	7.6	
			24.8		8.09		86		4		7.17		7.6		
W2 (Impact)	9:00	<1	25.3	25.3	7.86	7.9	85	85.0	4	4.0	7.17	7.2	2.6	2.6	
			25.3		7.86		85		4		7.17		2.6		
W3 (control)	15:31	0.20	29.3	29.3	5.19	5.2	62.4	62.3	7.6	7.6	8.3	8.3	15	15.0	
			29.3		5.18		62.1		7.5		8.3		15		
W4 (impact)	15:46	0.30	29.2	29.2	5.38	5.4	64.5	64.4	5.4	5.4	8.6	8.6	5	5.0	
			29.2		5.35		64.2		5.3		8.6		5		
Date	18-Oct-11														
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		SS(mg/L)		
W1(impact)	14:30	<1	27.3	27.3	7.16	7.2	78	78.0	7.8	7.8	7.09	7.1	5.4	5.4	
			27.3		7.16		78		7.8		7.09		5.4		
W2 (Impact)	14:57	<1	28.3	28.3	7.23	7.2	78	78.0	3.5	3.5	7.65	7.7	5	5.0	
			28.3		7.23		78		3.5		7.65		5		
W3 (control)	10:30	0.30	28.5	28.5	5.19	5.2	62.4	63.4	5.3	5.1	8.7	8.7	2	2.0	
			28.4		5.23		64.4		4.9		8.7		2		
W4 (impact)	10:45	0.40	28.5	28.5	5.78	5.7	69.1	68.9	4.3	4.1	8.5	8.5	<2	2.0	
			28.4		5.62		68.7		3.9		8.5		<2		

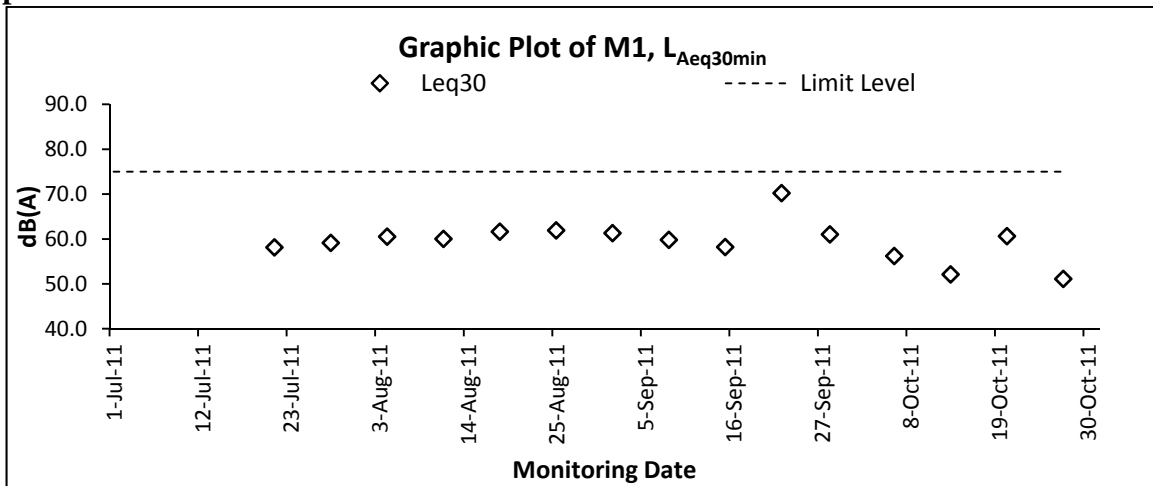


Location			DO (mg/L)		DO (%)		Turbidity (NTU)		pH		SS(mg/L)			
W3 (control)			n/a		n/a		n/a		n/a		n/a			
W4 (impact)	Action/ Limit Level		Action	9.27	Action	n/a	Action	3.32	Action	n/a	Action	6.98		
			Limit	7.98	Limit	n/a	Limit	4.52	Limit	n/a	Limit	7.66		
Date	20-Oct-11													
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		SS(mg/L)	
W1(impact)	16:06	<1	26.7	26.7	7.81	7.8	86	86.0	2.9	2.9	7.51	7.5	3	3.0
			26.7		7.81		86		2.9		7.51		3	
W2 (Impact)	15:33	<1	29	29.0	7.61	7.6	84	84.0	2.2	2.2	7.86	7.9	3.2	3.2
			29		7.61		84		2.2		7.86		3.2	
W3 (control)	15:15	0.30	28.5	28.5	6.05	6.0	71.6	71.5	5.7	5.5	8.5	8.5	4	4.0
			28.5		6.02		71.4		5.2		8.5		4	
W4 (impact)	15:30	0.40	28.5	28.5	5.23	5.3	5.23	5.3	4.8	4.7	8.3	8.3	2	2.0
			28.5		5.32		5.32		4.6		8.3		2	
Date	22-Oct-11													
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		SS(mg/L)	
W1(impact)	8:30	<1	27.3	27.3	7.03	7.0	69	69.0	2.6	2.6	7.31	7.3	3	3.0
			27.3		7.03		69		2.6		7.31		3	
W2 (Impact)	8:45	<1	26.2	26.2	6.25	6.3	63	63.0	0.1	0.1	7.42	7.4	4	4.0
			26.2		6.25		63		0.1		7.42		4	
W3 (control)	15:00	0.30	29.0	29.0	6.82	6.9	80.1	79.6	7.8	7.6	7.6	7.7	18	18.0
			29.0		6.90		79.0		7.4		7.8		18	
W4 (impact)	15:45	0.40	29.0	29.1	6.43	6.5	76.0	76.7	4.9	5.0	8.1	8.2	6	6.0
			29.2		6.50		77.4		5.1		8.3		6	
Date	25-Oct-11													
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		SS(mg/L)	
W1(impact)	11:53	<1	25.1	25.1	8.38	8.4	82	82.0	3.3	3.3	7.26	7.3	4.4	4.4
			25.1		8.38		82		3.3		7.26		4.4	
W2 (Impact)	11:20	<1	26.5	26.5	7.77	7.8	80	80.0	2.9	2.9	7.55	7.6	1	1.0
			26.5		7.77		80		2.9		7.55		1	
W3 (control)	14:20	0.30	26.8	26.8	6.61	6.6	66.5	66.8	4.02	3.9	7.8	7.8	<2	2.0
			26.8		6.54		67.0		3.77		7.8		<2	
W4 (impact)	15:20	0.40	26.5	26.5	5.81	5.9	60.3	60.4	3.47	3.5	7.8	7.8	<2	2.0
			26.5		5.94		60.5		3.52		7.8		<2	
Date	27-Oct-11													
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		SS(mg/L)	
W1(impact)	13:00	<1	25.2	25.2	7.31	7.3	74	74.0	3.5	3.5	7.27	7.3	5.2	5.2
			25.2		7.31		74		3.5		7.27		5.2	
W2 (Impact)	12:15	<1	26	26.0	7.44	7.4	75	75.0	2.9	2.9	7.88	7.9	7	7.0
			26		7.44		75		2.9		7.88		7	
W3 (control)	14:50	0.30	28.0	27.9	6.41	6.4	81.2	81.0	1.21	1.2	7.7	7.7	6	6.0
			27.8		6.37		80.8		1.13		7.7		6	
W4 (impact)	15:05	0.40	26.9	26.9	5.86	5.8	71.2	70.9	0.84	0.9	8.1	8.1	<2	2.0
			26.8		5.81		70.6		0.97		8.0		<2	
Date	29-Oct-11													
Location	Time	Depth (m)	Temp (oC)		DO (mg/L)		DO (%)		Turbidity (NTU)		pH		SS(mg/L)	
W1(impact)	12:21	<1	26.5	26.5	7.38	7.4	74	74.0	1.8	1.8	7.28	7.3	5	5.0
			26.5		7.38		74		1.8		7.28		5	
W2 (Impact)	13:45	<1	27.3	27.3	6.95	7.0	69	69.0	3.5	3.5	7.73	7.7	4	4.0
			27.3		6.95		69		3.5		7.73		4	
W3 (control)	10:10	0.30	24.5	24.3	5.93	5.9	70.8	70.9	0.95	0.9	7.8	7.8	16	16.0
			24.0		5.91		70.9		0.93		7.8		16	
W4 (impact)	10:20	0.40	24.7	24.8	6.15	6.1	71.3	71.4	0.65	0.7	7.9	7.9	13	13.0
			24.8		6.09		71.5		0.7		7.9		13	

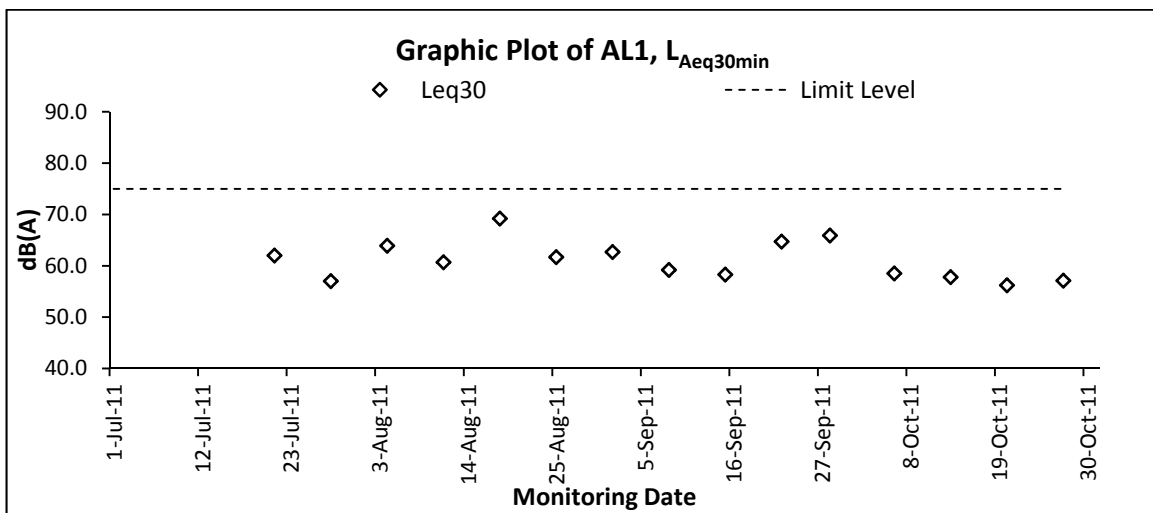
## **Appendix J**

### **Graphical Plots of Impact Monitoring – Noise, Water Quality and Hydrological Characteristics**

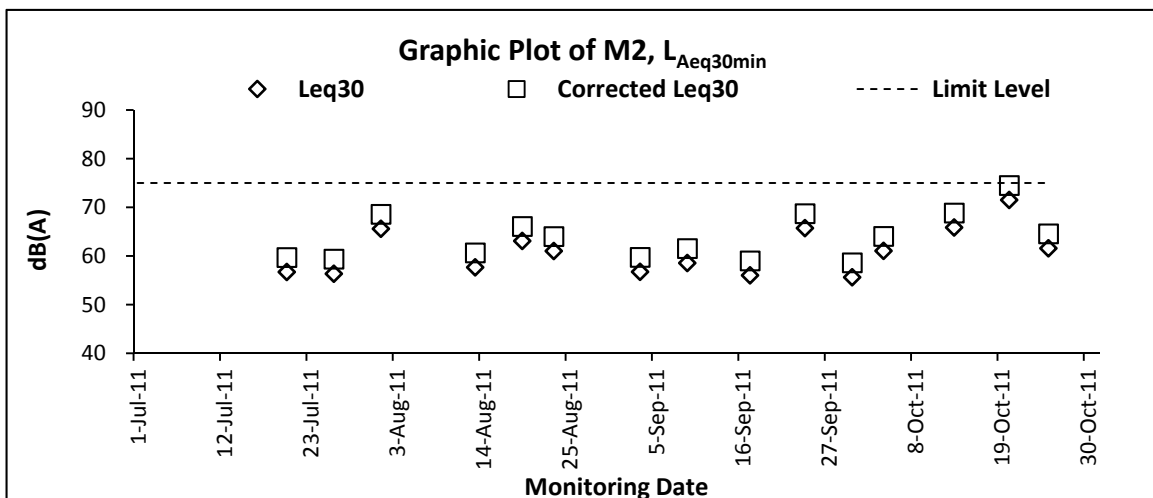
**Graphic Plot – Construction Noise**



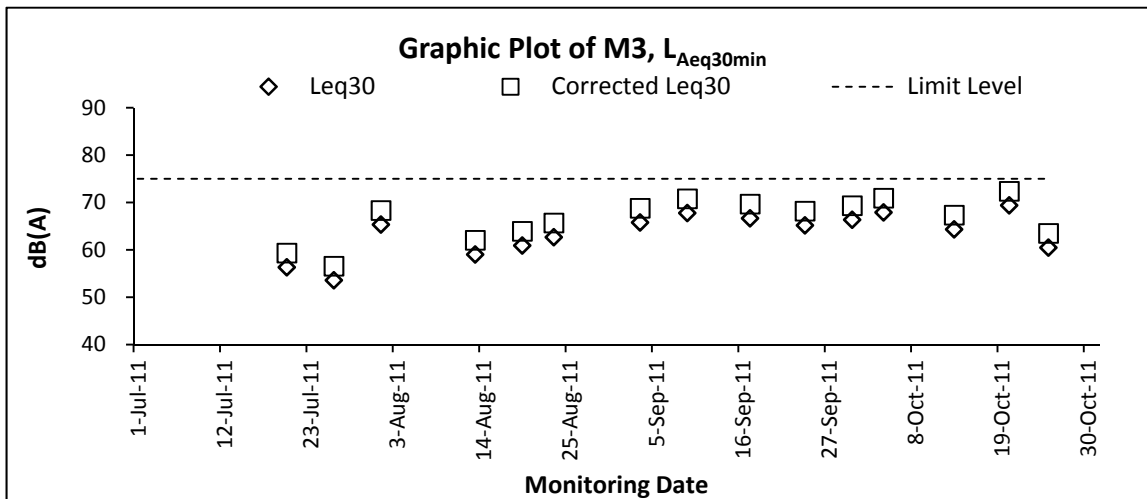
Remark: The monitoring is undertaken under façade situation. No façade correction is added according to acoustical principles and EPD guidelines.



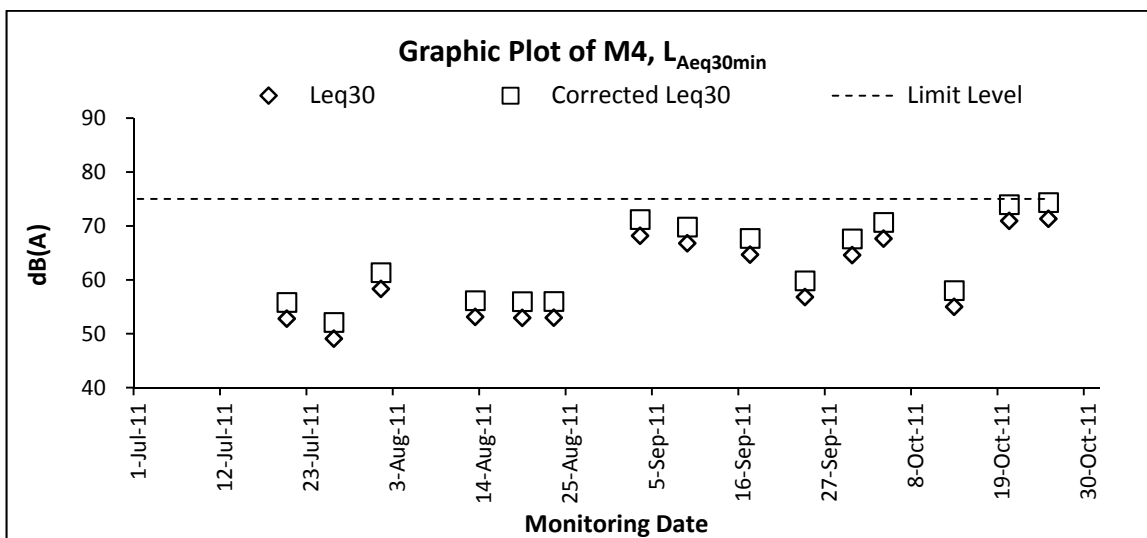
Remark: The monitoring is undertaken under façade situation. No façade correction is added according to acoustical principles and EPD guidelines.



Remark: The monitoring is undertaken under free field situation. A façade correction of +3 dB(A) has been added according to acoustical principles and EPD guidelines

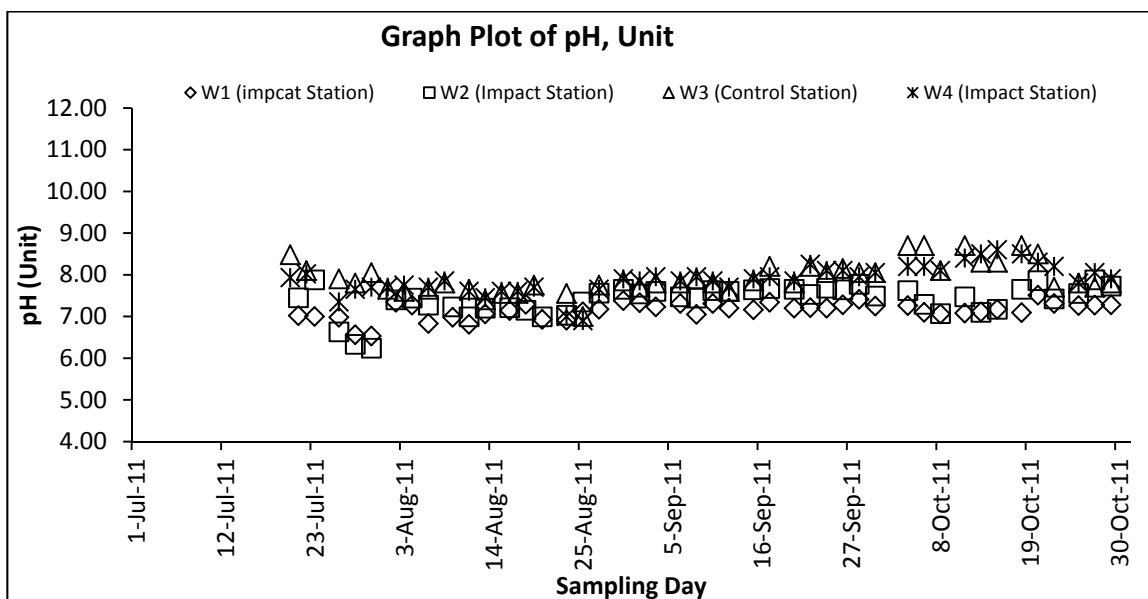
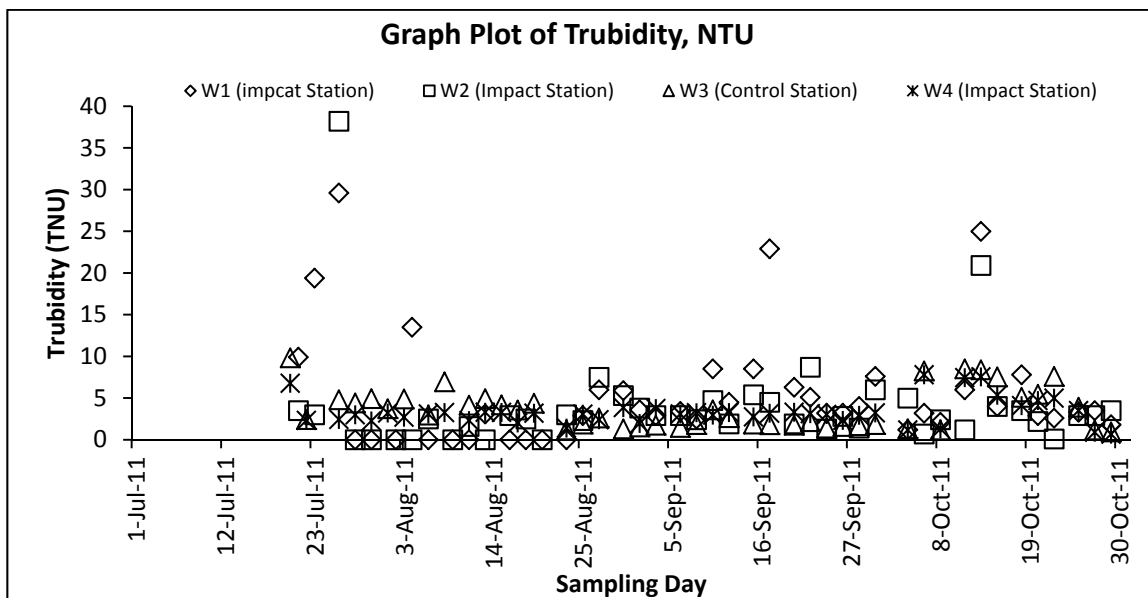
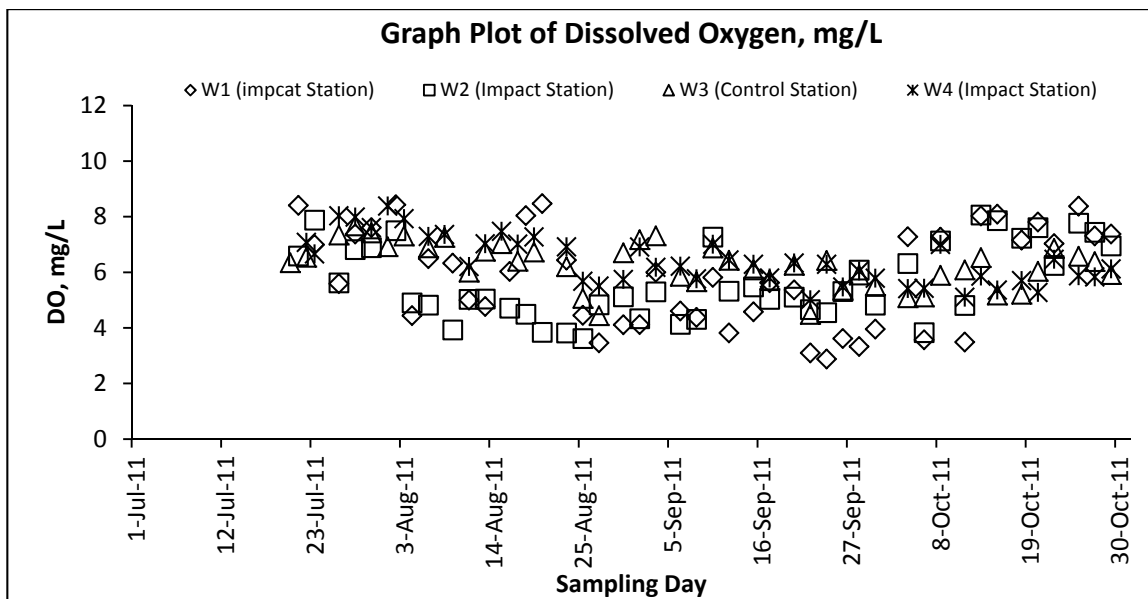


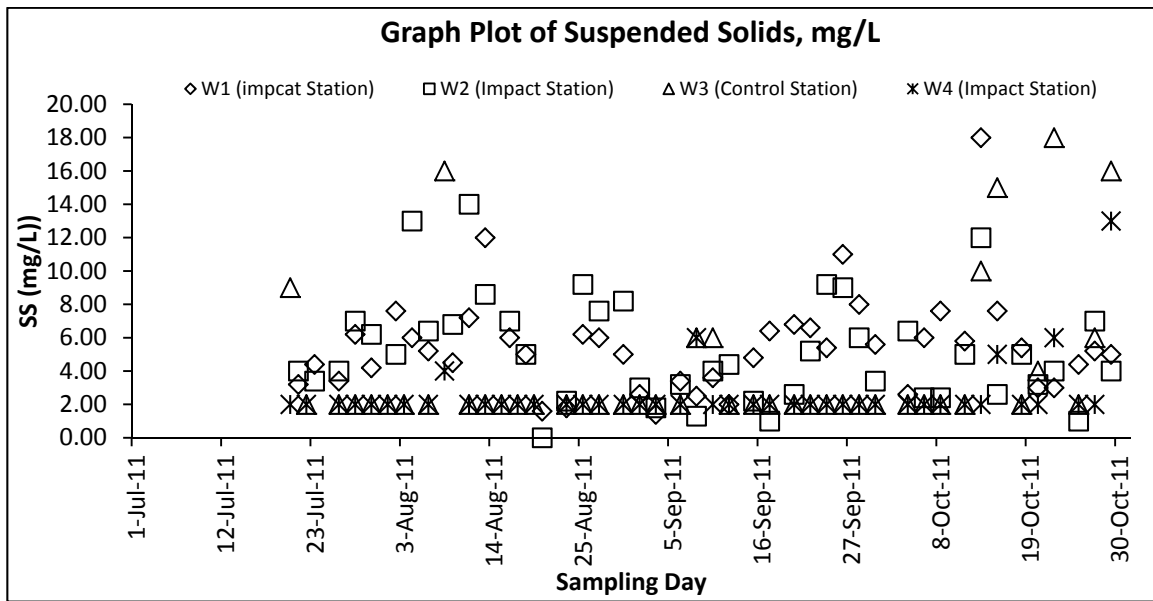
Remark: The monitoring is undertaken under free field situation. A façade correction of +3 dB(A) has been added according to acoustical principles and EPD guidelines



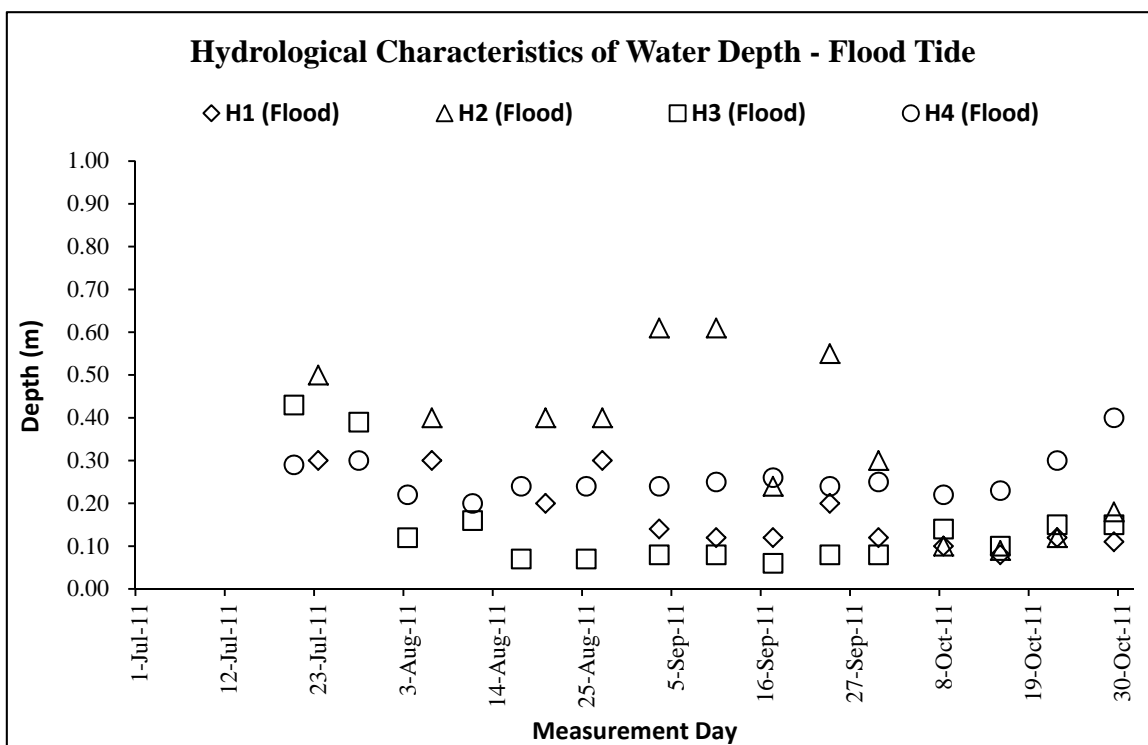
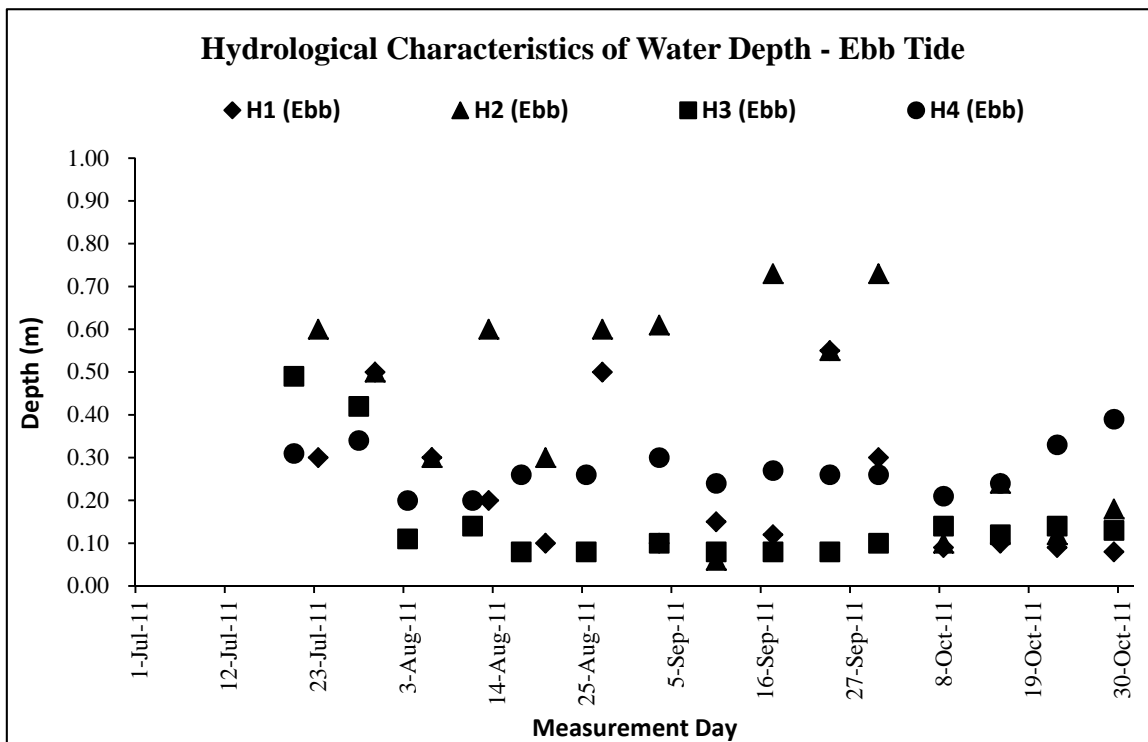
Remark: The monitoring is undertaken under free field situation. A façade correction of +3 dB(A) has been added according to acoustical principles and EPD guidelines

Graphic Plot – Water Quality

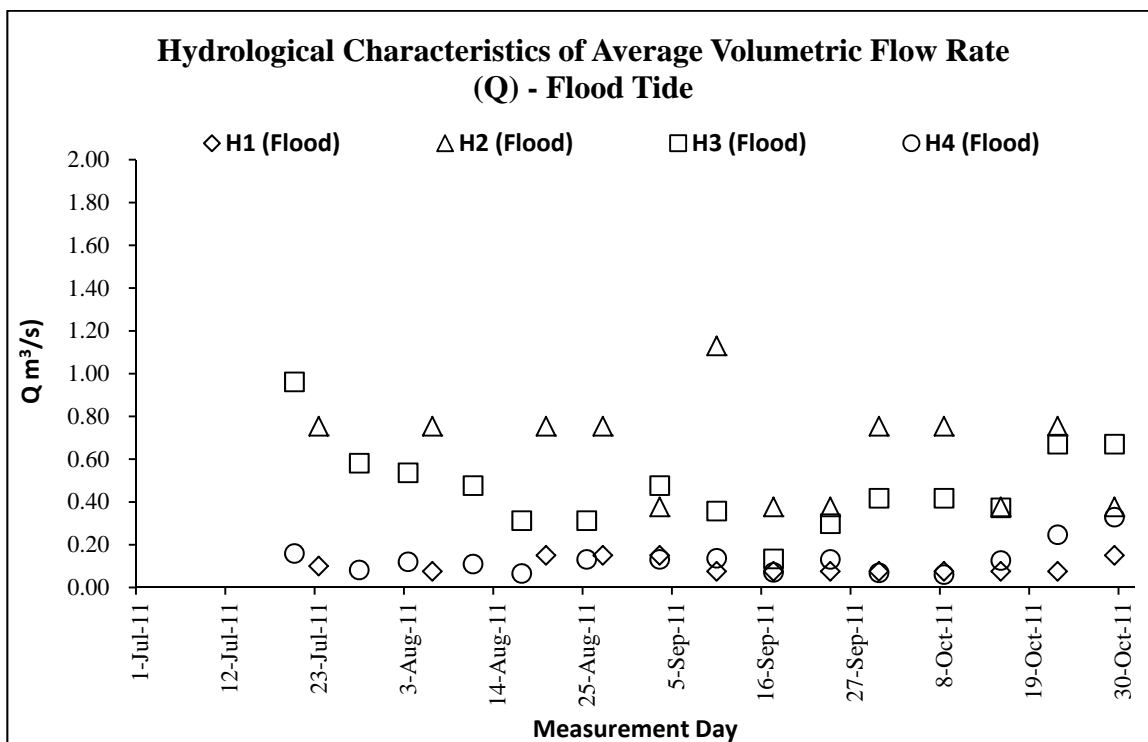
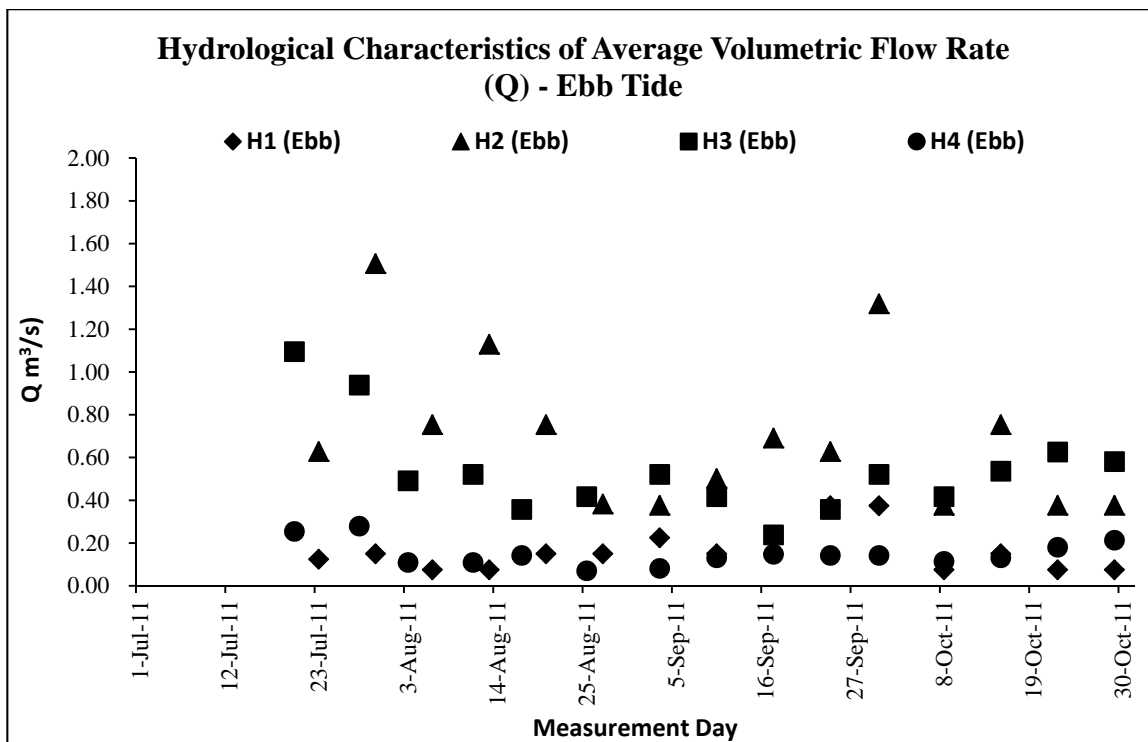




Graphic Plot – Hydrological Characteristics (Water Depth)



Graphic Plot – Hydrological Characteristics (Water Flow Rate)





## **Appendix K**

### **Monthly Summary Waste Flow Table**

Name of Department: DSD

Contract No.: DC/2010/02

**Monthly Summary Waste Flow Table for 2011 (Year)**

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 Note 3)	Chemical Waste	Others, e.g. general refuse
	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m <sup>3</sup> )
Apr	Nil	-	-	-	-	-	-	-	-	-	-
May	Nil	-	-	-	-	-	-	-	-	-	-
June	Nil	-	-	-	-	-	-	-	-	-	-
<b>Sub-Total</b>	<b>Nil</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
July	Nil	-	-	-	-	-	-	-	-	-	-
Aug	0.7855	0	0	0.7855	0	0	0	0	0	0	0
Sept	Nil	0	0	0	0	0	0	0	0	0	0
Oct	Nil	0	0	0	0	0	0	0	0	0	0.02
Nov											
Dec											
<b>Total</b>	<b>0.7855</b>	<b>0</b>	<b>0</b>	<b>0.7855</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.02</b>
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 Note 3)	Chemical Waste	Others, e.g. general refuse	
(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m <sup>3</sup> )	
23	1	10	0	10	2	5	2	1	1	3	

Notes:

- (1) The performance targets are given in ETWB Technical Circular PS Clause 6(14).
- (2) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
- (3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material
- (4) The Contractor shall also submit the latest forecast of the total amount of C&D materials expected to be generated from the Works, together with a breakdown of the nature where the total amount of C&D materials expected to be generated from the Works is equal to or exceeding 50,000 m<sup>3</sup>. (ETWB Technical Circular PS Clause 5(4)(b) refers).  
[Delete Note (4) and the table above on the forecast, where inapplicable].

**Summary Table for Work Processes or Activities Requiring Timber for Temporary Works**Contract No. : DC/2010/02

Contract Title : Drainage Improvement Works in Shuen Wan and Shek Wu Wai

<b>Item No.</b>	<b>Description of Works Process or Activity [see note (a) below]</b>	<b>Justifications for Using Timber in Temporary Construction Works</b>	<b>Est. Quantities of Timber Used (m3)</b>	<b>Actual Quantities used (m3)</b>	<b>Remarks</b>
1.	Formwork for concreting	Easy handle by manpower	2.8	2.7	
2.					
3.					
4.					
5.					
6.					
7.					
8.					
<b>Total Estimated Quantity of Timber Used</b>			2.8		

## Notes:

- a. The Contractor shall list out all the work items requiring timber for use in temporary construction works. Several minor work items may be grouped into one for ease of updating.
- b. The summary table shall be submitted to the \*Architect/Engineer's Representative monthly together with the Waste Flow Table for review and monitoring in accordance with the ETWB Technical Circular 19/2005 PS sub-clause 5(5) in Appendix C.

## **Appendix L**

### **Inspection and Auditing Checklist**

# Environmental Site Inspection Checklist

**Project:** DSD Contract No. DC/2010/02  
Drainage Improvement in Shuen Wan and Shek Wu Wai  
**Inspection:** Tung Tsz Road, Shuen Wan  
**Date:** 8 October 2011  
**Time:** 14:00

**Inspected by** \_\_\_\_\_  
**IEC/IEC's Representative:** \_\_\_\_\_  
**RE/RE's Representative:** Lau Siu Chuen  
**ETL/ ET's Representative:** Ben Tam  
**EO/EO's Representative:** Chan Hiu Shan  
**Contractor's Representative:** Chan Hiu Shan

**Checklist No.** DC1002-08102011

**PART A:**

**GENERAL INFORMATION**

**Environmental Permit No.**

Weather:  Sunny  Fine  Cloudy  Rainy  Calm  **EP-303/2008**  
 Temperature:  °C  
 Humidity:  High  Moderate  Low  **N/A**  
 Wind:  Strong  Breeze  Light

**Area Inspected**

1. Box Culvert Bay 20 - 23
- 2.
- 3.

**PART B:**

**SITE AUDIT**

<b>Note:</b> <b>Not Obs.:</b> Not Observed; <b>Yes:</b> Compliance; <b>No:</b> Non-Compliance; <b>Follow Up:</b> Observations requiring follow-Up actions <b>N/A:</b> Not Applicable	<b>Not Obs.</b>	<b>Yes</b>	<b>No</b>	<b>Follow Up</b>	<b>N/A</b>	<b>Photo/Remarks</b>
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**Section 1: Water Quality**

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

# Environmental Site Inspection Checklist

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

# Environmental Site Inspection Checklist

Note:	Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-Up actions N/A: Not Applicable	Not Obs.	Yes	No	Follow Up	N/A	Photo/Remarks
3.10	Are Construction Noise Permit(s) applied for general construction works during restricted hours?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
3.11	Are valid Construction Noise Permit(s) posted at site entrances?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.12	Use of quiet plant had been used on site to minimise the construction noise impact to the surrounding residences/dwellings (Level 1 mitigation measures).	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.13	Temporary/Moveable noise barrier or site hoarding are provide or erect at the site boundary to minimise the noise impact of the closest NSRs or stationary equipments shield by the noise barrier which cannot visible from NSRs (Level 2 mitigation measure)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.14	Temporary/Moveable noise barrier equal to or more than 3m height with 10kg/m2 are provide for noise mitigation measures (Level 2 mitigation measures).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Section 4: Waste/Chemical Management</b>							
4.01	Waste Management Plan had been submit to Engineer for approval.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.02	Are receptacles available for general refuse collection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.03	Is general refuse sorting or recycling implemented?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.04	Is general refuse disposed of properly and regularly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.05	Is the Contractor registered as a chemical waste producer?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	In Progress
4.06	Are the chemical waste containers properly labelled?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.07	Are the chemical wastes stored in proper storage areas?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.08	Is the chemical waste storage area properly labelled?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.09	Is the chemical waste storage area used for storage of chemical waste only?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.10	Are incompatible chemical wastes stored in different areas?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.11	Are the chemical wastes disposed of by licensed collectors?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	chemical waste producer license pending
4.12	Are trip tickets for chemical wastes disposal available for inspection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	chemical waste producer license pending
4.13	Are chemical/fuel storage areas bunded?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.14	Are designated areas identified for storage and sorting of construction wastes?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.15	Are construction wastes sorted (inert and non-inert) on site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.16	Are construction wastes reused?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.17	Are construction wastes disposed of properly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.18	Are site hoardings and signboards made of durable materials instead of timber?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.19	Is trip ticket system implemented for the disposal of construction wastes and records available for inspection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
4.20	Are appropriate procedures followed if contaminated material exists?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.21	Is relevant license/ permit for disposal of construction waste or excavated materials available for inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.22	Site cleanliness and appropriate waste management training had provided for the site workers.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.23	Contaminated sediments will managed according to WBTC No.12/2000 and EWTB TC(W) No. 34/2002.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
<b>Section 5: Landscape &amp; Visual</b>							
5.01	Are retained and transplanted trees in health condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.02	Are retained and transplanted trees properly protected?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

# Environmental Site Inspection Checklist


Note:	Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-Up actions N/A: Not Applicable	Not Obs.	Yes	No	Follow Up	N/A	Photo/Remarks
5.03	Are surgery works carried out for the damaged trees?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.04	Is damage to trees outside site boundary due to construction activities avoided?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.05	Is the night-time lighting controlled to minimize glare to sensitive receivers?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Section 6: Ecology</b>							
6.01	Gabion banks and base had been provide for channel linings and banks for typical sections of work area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
6.02	Prevent site effluent/runoff discharge to the seasonal wetlands at Wai Ha River?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6.03	Stockpiling or disposal of materials, and any dredging or construction activities at the seasonal wetlands at Wai Ha River are prohibited?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Section 7: Others</b>							
7.01	Are relevant Environmental Permits posted at all vehicle site entrances/exits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

**Remarks**

**Follow up of last Site Inspection:**

Nil.	
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**Observations recorded in this Site Inspection: (16-09-2011)**

	
1. Mud tail was observed at the site exit/ access road, the Contractor should apply water spray on those areas more frequently to minimize dust impact.	

**Reminder**

Nil.

<i>IEC's representative</i>	<i>RE's representative</i>	<i>ET's representative</i>	<i>EO's representative</i>	<i>Contractor's representative</i>
( )	( )	( Ben Tam )	( )	( )



# Environmental Site Inspection Checklist

**Project:** DSD Contract No. DC/2010/02  
Drainage Improvement in Shuen Wan and Shek Wu Wai  
**Inspection:** Tung Tsz Road, Shuen Wan  
**Date:** 14 October 2011  
**Time:** 10:00

**Inspected by** \_\_\_\_\_  
**IEC/IEC's Representative:** Justin Ye  
**RE/RE's Representative:** Lau Siu Chuen  
**ETL/ ET's Representative:** T.W. Tam  
**EO/EO's Representative:** Chan Hiu Shan  
**Contractor's Representative:** Chan Hiu Shan

**Checklist No.** DC1002-14102011  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**PART A:**

**GENERAL INFORMATION**

**Environmental Permit No.**

Weather:  Sunny  Fine  Cloudy  Rainy  Calm  **EP-303/2008**  
 Temperature:  °C  
 Humidity:  High  Moderate  Low  **N/A**  
 Wind:  Strong  Breeze  Light

**Area Inspected**

1. Box Culvert Bay 20 - 23
- 2.
- 3.

**PART B:**

**SITE AUDIT**

<b>Note:</b> <b>Not Obs.:</b> Not Observed; <b>Yes:</b> Compliance; <b>No:</b> Non-Compliance; <b>Follow Up:</b> Observations requiring follow-Up actions <b>N/A:</b> Not Applicable	<b>Not Obs.</b>	<b>Yes</b>	<b>No</b>	<b>Follow Up</b>	<b>N/A</b>	<b>Photo/Remarks</b>
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**Section 1: Water Quality**

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

# Environmental Site Inspection Checklist

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

# Environmental Site Inspection Checklist

Note:	Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-Up actions N/A: Not Applicable	Not Obs.	Yes	No	Follow Up	N/A	Photo/Remarks
3.10	Are Construction Noise Permit(s) applied for general construction works during restricted hours?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
3.11	Are valid Construction Noise Permit(s) posted at site entrances?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.12	Use of quiet plant had been used on site to minimise the construction noise impact to the surrounding residences/dwellings (Level 1 mitigation measures).	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.13	Temporary/Moveable noise barrier or site hoarding are provide or erect at the site boundary to minimise the noise impact of the closest NSRs or stationary equipments shield by the noise barrier which cannot visible from NSRs (Level 2 mitigation measure)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.14	Temporary/Moveable noise barrier equal to or more than 3m height with 10kg/m2 are provide for noise mitigation measures (Level 2 mitigation measures).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Section 4: Waste/Chemical Management</b>							
4.01	Waste Management Plan had been submit to Engineer for approval.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.02	Are receptacles available for general refuse collection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.03	Is general refuse sorting or recycling implemented?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.04	Is general refuse disposed of properly and regularly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.05	Is the Contractor registered as a chemical waste producer?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	In Progress
4.06	Are the chemical waste containers properly labelled?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.07	Are the chemical wastes stored in proper storage areas?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Photo 2
4.08	Is the chemical waste storage area properly labelled?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.09	Is the chemical waste storage area used for storage of chemical waste only?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.10	Are incompatible chemical wastes stored in different areas?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.11	Are the chemical wastes disposed of by licensed collectors?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	chemical waste producer license pending
4.12	Are trip tickets for chemical wastes disposal available for inspection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	chemical waste producer license pending
4.13	Are chemical/fuel storage areas bunded?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.14	Are designated areas identified for storage and sorting of construction wastes?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.15	Are construction wastes sorted (inert and non-inert) on site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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4.17	Are construction wastes disposed of properly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.18	Are site hoardings and signboards made of durable materials instead of timber?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.19	Is trip ticket system implemented for the disposal of construction wastes and records available for inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.20	Are appropriate procedures followed if contaminated material exists?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
4.21	Is relevant license/ permit for disposal of construction waste or excavated materials available for inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.22	Site cleanliness and appropriate waste management training had provided for the site workers.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.23	Contaminated sediments will managed according to WBTC No.12/2000 and EWTB TC(W) No. 34/2002.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
<b>Section 5: Landscape &amp; Visual</b>							
5.01	Are retained and transplanted trees in health condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.02	Are retained and transplanted trees properly protected?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

# Environmental Site Inspection Checklist

Note:	Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-Up actions N/A: Not Applicable	Not Obs.	Yes	No	Follow Up	N/A	Photo/Remarks
5.03	Are surgery works carried out for the damaged trees?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.04	Is damage to trees outside site boundary due to construction activities avoided?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.05	Is the night-time lighting controlled to minimize glare to sensitive receivers?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Section 6: Ecology</b>							
6.01	Gabion banks and base had been provide for channel linings and banks for typical sections of work area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
6.02	Prevent site effluent/runoff discharge to the seasonal wetlands at Wai Ha River?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6.03	Stockpiling or disposal of materials, and any dredging or construction activities at the seasonal wetlands at Wai Ha River are prohibited?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Section 7: Others</b>							
7.01	Are relevant Environmental Permits posted at all vehicle site entrances/exits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

**Remarks**

**Follow up of last Site Inspection (8 October 2011):**


Mud tail was observed at the site exit/ access road, the Contractor should apply water spray on those areas more frequently to minimize dust impact.	
The Observation has been rectified	

**Observations recorded in this Site Inspection (14-10-2011):**

	
1. The Contractor was reminded to Improve the Sediment Treatment facilities ensure it effective remove mud water discharge.	2. A chemical container was observed as located at working area. The Contractor was reminded to store it in a suitable area.

**Reminder**

Nil.

IEC's representative	RE's representative	ET's representative	EO's representative	Contractor's representative
( )	( )	 ( T.W Tam )	( )	( )

# Environmental Site Inspection Checklist

**Project:** DSD Contract No. DC/2010/02  
Drainage Improvement in Shuen Wan and Shek Wu Wai  
**Inspection:** Tung Tsz Road, Shuen Wan  
**Date:** 20 October 2011  
**Time:** 10:00

**Inspected by** \_\_\_\_\_  
**IEC/IEC's Representative:** \_\_\_\_\_  
**RE/RE's Representative:** \_\_\_\_\_  
**ETL/ ET's Representative:** Wong Hok Yin  
**EO/EO's Representative:** Chan Hiu Shan  
**Contractor's Representative:** Chan Hiu Shan

**Checklist No.** DC1002-20102011

**PART A:**

**GENERAL INFORMATION**

**Environmental Permit No.**

Weather:  Sunny  Fine  Cloudy  Rainy  Calm  EP-303/2008  
 Temperature:  °C  
 Humidity:  High  Moderate  Low  N/A  
 Wind:  Strong  Breeze  Light

**Area Inspected**

1. Box Culvert Bay 20 - 23
- 2.
- 3.

**PART B:**

**SITE AUDIT**

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

**Section 1: Water Quality**

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

# Environmental Site Inspection Checklist

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

# Environmental Site Inspection Checklist

<b>Note:</b>	<b>Not Obs.:</b> Not Observed; <b>Yes:</b> Compliance; <b>No:</b> Non-Compliance; <b>Follow Up:</b> Observations requiring follow-Up actions <b>N/A:</b> Not Applicable	<b>Not Obs.</b>	<b>Yes</b>	<b>No</b>	<b>Follow Up</b>	<b>N/A</b>	<b>Photo/Remarks</b>
3.10	Are Construction Noise Permit(s) applied for general construction works during restricted hours?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
3.11	Are valid Construction Noise Permit(s) posted at site entrances?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.12	Use of quiet plant had been used on site to minimise the construction noise impact to the surrounding residences/dwellings (Level 1 mitigation measures).	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.13	Temporary/Moveable noise barrier or site hoarding are provide or erect at the site boundary to minimise the noise impact of the closest NSRs or stationary equipments shield by the noise barrier which cannot visible from NSRs (Level 2 mitigation measure)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.14	Temporary/Moveable noise barrier equal to or more than 3m height with 10kg/m2 are provide for noise mitigation measures (Level 2 mitigation measures).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Section 4: Waste/Chemical Management</b>							
4.01	Waste Management Plan had been submit to Engineer for approval.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.02	Are receptacles available for general refuse collection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.03	Is general refuse sorting or recycling implemented?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.04	Is general refuse disposed of properly and regularly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.05	Is the Contractor registered as a chemical waste producer?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Application in progress
4.06	Are the chemical waste containers properly labelled?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.07	Are the chemical wastes stored in proper storage areas?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.08	Is the chemical waste storage area properly labelled?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.09	Is the chemical waste storage area used for storage of chemical waste only?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.10	Are incompatible chemical wastes stored in different areas?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.11	Are the chemical wastes disposed of by licensed collectors?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	chemical waste producer license pending
4.12	Are trip tickets for chemical wastes disposal available for inspection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	chemical waste producer license pending
4.13	Are chemical/fuel storage areas bunded?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.14	Are designated areas identified for storage and sorting of construction wastes?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.15	Are construction wastes sorted (inert and non-inert) on site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.16	Are construction wastes reused?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.17	Are construction wastes disposed of properly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.18	Are site hoardings and signboards made of durable materials instead of timber?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.19	Is trip ticket system implemented for the disposal of construction wastes and records available for inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.20	Are appropriate procedures followed if contaminated material exists?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
4.21	Is relevant license/ permit for disposal of construction waste or excavated materials available for inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.22	Site cleanliness and appropriate waste management training had provided for the site workers.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.23	Contaminated sediments will managed according to WBTC No.12/2000 and EWTB TC(W) No. 34/2002.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
<b>Section 5: Landscape &amp; Visual</b>							
5.01	Are retained and transplanted trees in health condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.02	Are retained and transplanted trees properly protected?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

# Environmental Site Inspection Checklist

Note:	Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-Up actions N/A: Not Applicable	Not Obs.	Yes	No	Follow Up	N/A	Photo/Remarks
5.03	Are surgery works carried out for the damaged trees?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.04	Is damage to trees outside site boundary due to construction activities avoided?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.05	Is the night-time lighting controlled to minimize glare to sensitive receivers?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Section 6: Ecology</b>							
6.01	Gabion banks and base had been provide for channel linings and banks for typical sections of work area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
6.02	Prevent site effluent/runoff discharge to the seasonal wetlands at Wai Ha River?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6.03	Stockpiling or disposal of materials, and any dredging or construction activities at the seasonal wetlands at Wai Ha River are prohibited?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Section 7: Others</b>							
7.01	Are relevant Environmental Permits posted at all vehicle site entrances/exits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

**Remarks**

**Follow up of last Site Inspection (14 October 2011):**

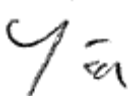
1. No muddy water was observed. The Observation has been rectified	2. No chemical container was observed as located at working area.
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**Observations recorded in this Site Inspection (20-10-2011):**

No adverse environmental impact was observed during site inspection.	

**Reminder**

Nil.

IEC's representative	RE's representative	ET's representative	EO's representative	Contractor's representative
				
( )	( )	( Wong Hok Yin )	( )	( )



# Environmental Site Inspection Checklist

**Project:** DSD Contract No. DC/2010/02  
Drainage Improvement in Shuen Wan and Shek Wu Wai

**Inspection:** Tung Tsz Road, Shuen Wan

**Date:** 27 October 2011

**Time:** 9:30

**Inspected by** \_\_\_\_\_  
**IEC/IEC's Representative:** \_\_\_\_\_  
**RE/RE's Representative:** \_\_\_\_\_  
**ETL/ ET's Representative:** Wong Hok Yin  
**EO/EO's Representative:** Chan Hiu Shan  
**Contractor's Representative:** Chan Hiu Shan

**Checklist No.** DC1002-27102011

**PART A:**

**GENERAL INFORMATION**

**Environmental Permit No.**

Weather:  Sunny  Fine  Cloudy  Rainy  Calm  EP-303/2008

Temperature:  °C

Humidity:  High  Moderate  Low  N/A

Wind:  Strong  Breeze  Light

**Area Inspected**

1. Box Culvert Bay 20 - 23
- 2.
- 3.

**PART B:**

**SITE AUDIT**

	<b>Note:</b> Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-Up actions N/A: Not Applicable	Not Obs.	Yes	No	Follow Up	N/A	Photo/Remarks
<b>Section 1: Water Quality</b>							
1.01	Is an effluent discharge license obtained for the Project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.02	Is the effluent discharged in accordance with the discharge licence?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.03	Is the discharge of turbid water avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.04	Are there proper desilting facilities in the drainage systems to reduce SS levels in effluent?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.05	Are there channels, sandbags or bunds to direct surface run-off to sedimentation tanks?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.06	Are there any perimeter channels provided at site boundaries to intercept storm runoff from crossing the site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.07	Is drainage system well maintained?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
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1.17	Are the vehicle and plant servicing areas paved and located within roofed areas?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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# Environmental Site Inspection Checklist

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

# Environmental Site Inspection Checklist

<b>Note:</b>	<b>Not Obs.:</b> Not Observed; <b>Yes:</b> Compliance; <b>No:</b> Non-Compliance; <b>Follow Up:</b> Observations requiring follow-Up actions <b>N/A:</b> Not Applicable	<b>Not Obs.</b>	<b>Yes</b>	<b>No</b>	<b>Follow Up</b>	<b>N/A</b>	<b>Photo/Remarks</b>
3.10	Are Construction Noise Permit(s) applied for general construction works during restricted hours?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
3.11	Are valid Construction Noise Permit(s) posted at site entrances?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.12	Use of quiet plant had been used on site to minimise the construction noise impact to the surrounding residences/dwellings (Level 1 mitigation measures).	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.13	Temporary/Moveable noise barrier or site hoarding are provide or erect at the site boundary to minimise the noise impact of the closest NSRs or stationary equipments shield by the noise barrier which cannot visible from NSRs (Level 2 mitigation measure)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.14	Temporary/Moveable noise barrier equal to or more than 3m height with 10kg/m2 are provide for noise mitigation measures (Level 2 mitigation measures).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Section 4: Waste/Chemical Management</b>							
4.01	Waste Management Plan had been submit to Engineer for approval.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.02	Are receptacles available for general refuse collection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.03	Is general refuse sorting or recycling implemented?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.04	Is general refuse disposed of properly and regularly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.05	Is the Contractor registered as a chemical waste producer?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Application in progress
4.06	Are the chemical waste containers properly labelled?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.07	Are the chemical wastes stored in proper storage areas?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.08	Is the chemical waste storage area properly labelled?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.09	Is the chemical waste storage area used for storage of chemical waste only?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.10	Are incompatible chemical wastes stored in different areas?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.11	Are the chemical wastes disposed of by licensed collectors?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	chemical waste producer license pending
4.12	Are trip tickets for chemical wastes disposal available for inspection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	chemical waste producer license pending
4.13	Are chemical/fuel storage areas bunded?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.14	Are designated areas identified for storage and sorting of construction wastes?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.15	Are construction wastes sorted (inert and non-inert) on site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.16	Are construction wastes reused?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.17	Are construction wastes disposed of properly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.18	Are site hoardings and signboards made of durable materials instead of timber?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.19	Is trip ticket system implemented for the disposal of construction wastes and records available for inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.20	Are appropriate procedures followed if contaminated material exists?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
4.21	Is relevant license/ permit for disposal of construction waste or excavated materials available for inspection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.22	Site cleanliness and appropriate waste management training had provided for the site workers.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.23	Contaminated sediments will managed according to WBTC No.12/2000 and EWTB TC(W) No. 34/2002.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
<b>Section 5: Landscape &amp; Visual</b>							
5.01	Are retained and transplanted trees in health condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.02	Are retained and transplanted trees properly protected?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

# Environmental Site Inspection Checklist


Note:	Not Obs.: Not Observed; Yes: Compliance; No: Non-Compliance; Follow Up: Observations requiring follow-Up actions N/A: Not Applicable	Not Obs.	Yes	No	Follow Up	N/A	Photo/Remarks
5.03	Are surgery works carried out for the damaged trees?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.04	Is damage to trees outside site boundary due to construction activities avoided?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.05	Is the night-time lighting controlled to minimize glare to sensitive receivers?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Section 6: Ecology</b>							
6.01	Gabion banks and base had been provide for channel linings and banks for typical sections of work area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
6.02	Prevent site effluent/runoff discharge to the seasonal wetlands at Wai Ha River?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6.03	Stockpiling or disposal of materials, and any dredging or construction activities at the seasonal wetlands at Wai Ha River are prohibited?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Section 7: Others</b>							
7.01	Are relevant Environmental Permits posted at all vehicle site entrances/exits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

**Remarks**

**Follow up of last Site Inspection (20 October 2011):**

Nil	
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**Observations recorded in this Site Inspection (27-10-2011):**

	
Stagnant water cumulated in the site area should be drained away to prevent mosquito breeding.	

**Reminder**

Nil.

IEC's representative	RE's representative	ET's representative	EO's representative	Contractor's representative
( )	( )	( Wong Hok Yin )	( )	( )

**Appendix M**  
**Monthly Landscape & Visual Report**

**Contract No. DC/2010/02 – Drainage  
Improvement Works in Shuen Wan and  
Shek Wu Wai**

**Bi-weekly Landscape & Visual  
Monitoring –  
EM&A (Landscape & Visual) Report  
October 2011  
(Issue 1)**



**November 2011**

**Contract No. DC/2010/02 – Drainage  
Improvement Works in Shuen Wan and  
Shek Wu Wai**

**Bi-weekly Landscape & Visual Monitoring**

**EM&A (Landscape & Visual) Report October 2011 (Issue 1)**

November 2011

	Name	Signature
Prepared & Reviewed by:	<b>Sandra KAM</b>	
Verified by:	<b>Ida YU</b>	
Date:	<b>7<sup>th</sup> November 2011</b>	

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14 November 2011

Kwan Lee - Kuly Joint Venture  
Unit 6, 16/F, Yuen Long Trading Centre  
33 Wang Yip Street West  
Yuen Long, Hong Kong

*Attn.: Nicola Hon*

*Our ref: 0125606\_Cert01\_20111114*

Dear Shan,

*Contract No. DC/2010/02 -  
Drainage Improvement in Shuen Wan, Tai Po - Contract 2  
Monthly EM&A (Landscape & Visual) Report*

Reference is made to the Monthly EM&A (Landscape & Visual) Report -  
Contract 2 for the month of October 2011, please kindly note that we have no  
adverse comment on the report.

Should you have any queries, please feel free to contact the undersigned at  
2271 3117.

Yours sincerely,  
For ERM-Hong Kong, Limited

  
Christina Ip  
Senior Landscape Architect



OHSAS 18001:2007  
Certificate No. OHS 515956



ISO 9001:2008  
Certificate No. FS 52515

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Offices worldwide



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3	LANDSCAPE & VISUAL MONITORING RESULTS .....	2
4	AUDIT SCHEDULE.....	5

## **LIST OF APPENDICE**

Appendix A – Photographs

## **1 INTRODUCTION**

1.1.1 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 December 2010) 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 14 February 2011.

1.1.2 This monthly monitoring report will detail the scope of landscape and visual monitoring work, monitoring findings and observations, and any recommendation and advice on proper implementation of the landscape mitigation measures in the works areas under Contract 2 of the Project.

## **2 SCOPE OF MONITORING**

### **2.1 Monitoring objectives**

2.1.1 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.

### **2.2 Monitoring during Construction Phase**

2.2.1 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* (Not relevant to Contract 2 of the Project) – 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.

### **2.3 Monitoring during Operational Phase**

2.3.1 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 (Not relevant to Contract 2 of the Project);
- Landscape design of pump house by providing sufficient planting around its boundary fence (Not relevant to Contract 2 of the Project);
- 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 root ball preparation prior to transplanting; and
- Reinstatement of affected area should be carried out to check that the works areas are properly reinstated.

## **3 LANDSCAPE & VISUAL MONITORING RESULTS**

### **3.1 Monitoring Date(s)**

3.1.1 This monthly Landscape and Visual Monitoring (October 2011) was conducted to cover only areas of Contract 2 of the Project (i.e. the construction of a twin-cell box culvert close to Shuen Wan Conservation Area and Wai Ha River along Tung Tsz Road, and a drainage pipe near Wai Ha Village). The bi-weekly monitoring was conducted on 7<sup>th</sup> and 20<sup>th</sup> October 2011.

3.1.2 All photos stated in this section are recorded in **Appendix A**.

### **3.2 Visual Screen**

3.2.1 No follow-up action by the Contractor is required as from the *Monthly EM&A Report for September 2011*.

Observation

- 3.2.2 A section of temporary hoardings have been erected from west to east parts of Tung Tsz Road opposite to San Tau Kwok.
- 3.2.3 No hoardings have been erected along the rest of the proposed works area since neither construction works nor any associated preparation works have been commenced. **Photos 1-2** show the views of the erected hoardings in the area.

Recommendation

- 3.2.4 No specific recommendation is required.

**3.3 Contaminant/ Sediment Control**

- 3.3.1 No follow-up action by the Contractor is required as from the *Monthly EM&A Report for September 2011*.

Observation

- 3.3.2 No direct discharge of contaminants or any polluted fluid was observed within the active works area. All used water and underground water was collected and drained into filtration beds and a sedimentation tanks before the discharge (**Photo 3**). As observed, a sheet of PVC liner was overlaid along the filtration beds within the active works area. This practice could lower the chance of contaminating the vegetation in the adjacent Shuen Wan marsh.

Recommendation

- 3.3.3 Regular monitoring should be conducted to ensure no direct discharge or leakage of contaminants or any polluted fluid into the adjacent Wai Ha River.

**3.4 Pollution Control**

- 3.4.1 No follow-up action by the Contractor is required as from the *Monthly EM&A Report for September 2011*.

Observation

- 3.4.2 Drained water from underground was observed to be filtered in the sedimentation tank and filtration beds before the discharge (**Photo 3**). As observed, a sheet of PVC liner was overlaid along the filtration beds within the active works area. This practice could lower the chance of contaminating the vegetation in the adjacent Shuen Wan marsh. No direct discharge of water into the adjacent Wai Ha River was observed (**Photo 4**).

Recommendation

- 3.4.3 No specific recommendation is required

**3.5 Liaison with Nursery**

3.5.1 The construction undertaken within Tung Tsz Nursery is restricted under Contract 1 of the Project. This monitoring item is not applicable to Contract 2 of the Project.

### **3.6 Existing Trees within Works Areas**

3.6.1 Tree Protection Zones (TPZs) were not yet demarcated for the retained trees and trees to be transplanted within the active construction areas in accordance with the recommendation stated in the *Monthly EM&A Report for September 2011*.

#### Observation

3.6.2 Tree felling of the proposed trees to be felled were conducted within the fenced area from west to east parts of Tung Tsz Road opposite to San Tau Kwok during the landscape & visual monitoring on 20<sup>th</sup> October 2011 (**Photo 5**). Clearance of herbaceous vegetation within the fenced area was also observed.

3.6.3 All trees proposed to be retained within the Project Area were recorded generally in fair health conditions. Significant signs of damage of existing tree crowns, trunks and roots resulting from the construction works were not observed in this monthly monitoring.

3.6.4 Protective areas had been established to protect the four specimens of the protected shrub species of conservation interest *Pavetta hongkongensis* (**Photos 6-8**). No significant signs of damage on the health of these specimens due to the Project were observed.

#### Recommendations

3.6.5 Within the active works area, proper TPZs should be demarcated for retained trees and trees to be transplanted which would be directly affected by the construction work. In addition, if necessary, these retained trees or trees to be transplanted shall be watered regularly to maintain their health.

3.6.6 Disturbance is prohibited in all TPZs. In any practical circumstances, the contractor should follow Section 8 of Annex 4 of the approved Landscape Plan for protecting the existing trees from any potential damages resulting from construction works.

### **3.7 Construction Light**

#### Observation

3.7.1 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 Main Contractor.

#### Recommendation







3.7.2 No specific recommendation is required.

#### **4 AUDIT SCHEDULE**

- 4.1.1 The next bi-weekly Landscape & Visual Monitoring in November 2011 is scheduled to be conducted in the weeks of 1<sup>st</sup> and 14<sup>th</sup> November 2011.

# **Appendix A**

## **Photographs**

	
<p><b>Photo 1</b> – Temporary hoardings have been erected around the active works area</p>	<p><b>Photo 2</b> - Temporary hoardings have been erected along Tung Tsz Road</p>
	
<p><b>Photo 3</b> – Sedimentation tank for water drained from the underground</p>	<p><b>Photo 4</b> – Upper stream of Wa Ha River. No direct water discharge into the Wai Ha River since no active works area has been set up adjacent to the River.</p>
	
<p><b>Photo 5</b> – Tree felling was observed within the active works area.</p>	<p><b>Photo 6</b> – Protective area for two young specimens of protected shrubs <i>Pavetta hongkongensis</i>.</p>





**Photo 7** – Protective area for a seedling of protected shrub of *Pavetta hongkongensis*.



**Photo 8** – A fenced-area for a seedling of protected shrub of *Pavetta hongkongensis*.