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Your Ref : (11) in EP2/N7/A/52Ax(1) Pt.19
Our Ref : (CV/2013/08)/M45/231/(F10698)

21 July 2016

By Hand

Environmental Impact Assessment Ordinance Register Office
Environmental Protection Department
27/F, Southorn Centre,
130 Hennessy Road,
Wanchai, Hong Kong

Attn: Mr. Charles Pang

Dear Sirs,

Contract No. CV/2012/08
Liantang / Heung Yuen Wai Boundary Control Point
Site Formation and Infrastructure Works – Contract 2

Environmental Permit No. EP-404/2011/C
Condition 3.2 – Waste Management Plan (Rev. G)

I refer to your above referenced letter dated 4 July 2016 provided with your comments regarding the submission of Waste Management Plan (Rev. F).

In response to the comments and with reference to Condition 3.2 of the Environmental Permit (EP) No. EP-404/2011/C for the captioned Project titled "Liantang / Heung Yuen Wai Boundary Control Point and Associated Works", on behalf of the Permit Holder, Civil Engineering and Development Department (CEDD), I would like to submit three hard copies of the Waste Management Plan (Rev. G) certified by the ET Leader and verified by the IEC for your approval.

Please be advised that the Waste Management Plan has been prepared in accordance with ETWB TC(W) No. 19/2005 "Environmental Management on Construction Sites" and we have no further comments on the submitted Waste Management Plan.

Should you have any queries, please contact our Resident Engineer Mr. Perry Yam at tel. no. 2171 3350 or the undersigned at 2171 3305.

Yours faithfully,

Gregory Lo
Senior Resident Engineer
AECOM Asia Co. Ltd.

Encl. (E18512)

c.c. CEDD/BCP - Attn: Mr. B. K. Chow
AECOM - Attn: Mr. Francis Leong / Mr. Edward Yip (with CD only)
SMEC(IEC) - Attn: Mr. Antony Wong (with CD only)
AUES(ET) - Attn: Mr. T. W. Tam (with CD only)
DHK - Attn: Mr. Edmond Wong (w/o encl.)

SM/GL/GW/PY/wsc

CONTRACTOR'S SUBMISSION FORM (CSF)

FROM : Mr. Daniel Altier Project Director Dragages Hong Kong Limited	**TO :** Mr. Simon Mui Engineer's Representative Contract No. CV/2012/08 Liantang / Heung Yuen Wai Boundary Control Point Site Formation and Infrastructure Works - Contract 2	**CSF NO. :** LTH/DHK/CSF/ENV/03881/A **SIGNED :** **DATE :** 13/7/16.

DOCUMENT TITLE	N / R*	DOCUMENT NO.	AECOM REF. NO.	CONTRACTOR'S COMMENTS
Waste Management Plan (Rev G)	N	LTH/DHK/MPL/PW/ENV/00006/G	(CV/2012/08)/M45/231/(F10274)	Response to EPD's comments. Pursuant to G.S. Clause 5.6.2 and EP Condition 3.2. Enclosed 5 hard copies and 4 soft copies for your onward submission.

Reviewed by :	Roger Lee	Reviewed by :	Edmond Wong	**EXTERNAL DISTRIBUTION** N/A.
Signature :		Signature :		

Internal Circulation : DAL / EWO / RLE / SWo

* N = New Submission R = Re-submission

LTH/DHK/TEM/PW/QAS/00008/F

E 18512

Contract No. CV/2012/08
Liantang / Heung Yuen Wai Boundary Control Point
Site Formation and Infrastructure Works - Contract 2
Response to EPD's Comments

Waste Management Plan (Rev. G)

Ref.: LTH/DHK/CSF/ENV/03197/C

Item No.	Reviewer	Document/Drawing Reference	Reviewer's Comment	Contractor's Response
1	Comments from EPD	AECOM ref.: (CV/2012/08)/M45/231/(F10274) EPD ref.: (11) in EP2/N7/A/52 Ax(1) Pt.19	2nd Bullet,Section 3: It should be "Waste Disposal (Chemical Waste) (General) Regulation (Cap 354C)". As stipulated in WDO Section 2, trade waste means waste from any trade, manufacture or business, but does not include animal waste, chemical waste, clinical waste or construction waste. The last statement "Construction waste is considered to fall within the definition of trade waste under the WDO" is confusing. WBTC Nos. 25/99, 25/99A and 25/99C and ETWB TC(W) No. 33/2002 have been subsumed into Project Administration Handbook for Civil Engineering Works.	The relevant sentence in Section 3 has been amened and highlighted in yellow.
2			5th Paragraph, Section 5.3: It should be "Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap 354N)".	The relevant sentence in Section 3 has been amened and highlighted in yellow.

Contract No. CV/2012/08
Liantang / Heung Yuen Wai Boundary Control Point
Site Formation and Infrastructure Works – Contract 2

MANAGEMENT PLAN

Document Ref. No.:

L T H	/	D H K	/	M P L	/	P W	/	E N V	/	0 0 0 0 6	/	G
Project Code		Issuer Code		Document Code		Geographic Code		Functional Code		Sequential Number		Rev. Index

Document Title:

Waste Management Plan

	PREPARED BY	INTERNAL REVIEW:			INTERNAL APPROVAL:
COMPANY	DHK	DHK	DHK	DHK	DHK
NAME	Simon WONG	Roger LEE	Alexandre PELLARIN	Edmond WONG	Daniel ALTIER
POSITION	Environmental Officer	QSE Manager	General Construction Manager	Deputy Project Director	Project Director
SIGNATURE					
DATE	11 Jul 2016	12 Jul 16		12/7/16	12/7/16

DOCUMENT STATUS

Details of Revision:

Revision	Rev. Date	Sections	Amendment Source and/or Details
A	05 Feb 2014	All	First Issue
B	12 Apr 2014	1.1, 1.2, 3, 4.4, 4.5, 5.2, 9.2, 11.1, 11.3, Appendices A, D, E and F	Address AECOM and IEC comments
C	09 Jun 2014	3, 4.5, 11.1, Appendices A, D, E and F	Address AECOM and IEC comments
D	18 Sep 2014	4.4 5.3 Appendix G	Address alternative disposal ground Address EPD and IEC comments, description on the arrangement for avoidance, reuse, recovery and recycling of the various wastes and treatment of waste added Summary of approved alternative disposal sites for surplus excavated material
E	05 Mar 2016	4.3 Appendix A Appendix B Appendix G	Update disposal site of different waste types Update Project Environmental Organization Structure Update Volume of C&D material of the Project Update List of Approved Alternative Disposal Sites (All the above amendments are highlighted in yellow)
F	19 May 2016	 Appendix B Appendix G	Address EPD comments: - Revise the table "Status of Page Revision" Update Volume of C&D material of the Project Update List of Approved Alternative Disposal Sites (All the above amendments are highlighted in green)
G	11 Jul 2016	3 5.3 Appendix A Appendix B Appendix G	Address EPD comments Address EPD comments Update Project Environmental Organization Structure Update Volume of C&D material of the Project Update List of Approved Alternative Disposal Sites (All the above amendments are highlighted in yellow)

Status of Page Revision:

Rev. ⇨ Section ⇩	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
1	X	X																			
1.1	X	X																			
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App. B	X				X	X	X														

Rev. ⇨ Section ⇩	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
App. C	X																				
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App. G				X	X	X	X														

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List of Appendices

1. INTRODUCTION

1.1 Preamble

The Dragages Hong Kong Limited (DHK) is appointed by Civil Engineering and Developing Department (CEDD) to commence the Contract No. CV/2012/08 – Liantang/ Heung Yuen Wai Boundary Control Point Site Formation and Infrastructure Works – Contract 2 (the Contract).

A specified Environmental Management Plan (EMP) as required under Special Condition of the Contract 67(2) and 67(4) has been prepared to deal with the environmental issues arising from the Contract. Waste Management of construction and demolition (C&D) materials and waste to be generated from the Contract is generally discussed in the EMP. Details of the waste management will be further elaborated in this Waste Management Plan (WMP) and will be submitted to Environmental Protection Department (EPD) for approval under Condition 3.2 of EP-404/2011/A. This plan is developed with reference to General Specification G5.6.2 and the purpose & scope is discussed in Sec 1.3.

For the purpose of executing this project, a management system that allows for auditing by the certification bodies and incorporated the requirements of the client and other stakeholders is required. Waste management will be one of the major elements to be incorporated in the management system of DHK, which complies with the requirements of ISO14001.

1.2 Scope of works

The permanent works under this Contract generally comprise the following:

a) construction of an approximately 5.4km long dual two-lane truck road (with about 0.6km of at-grade road and 4.8km of Lung Shan Tunnel) connecting the proposed Sha Tau Kok Road Interchange near Loi Tung and the proposed Fanling Highway Interchange near Kau Lung Hang;
b) construction of a total of 3 ventilation buildings (at north and south portals of Lung Shan tunnel and one at Po Kat Tsai) and the associated building services works;
c) construction of an administration building and the associated building services works at Shan Tong for tunnel operation;
d) provision of electrical and mechanical systems for Lung Shan tunnel;
e) provision of electrical and mechanical systems for Cheung Shan tunnel (civil works to be constructed by others);
f) provision of building services works for the ventilation buildings at portals of Cheung Shan tunnel (civil works to be constructed by others);
g) construction of road improvement works at Lau Shui Heung Road;
h) strengthening works within existing Nam Chung water tunnel;
i) associated environmental mitigation measures; and
j) other works which are shown on the Drawings or specified in the Specification or which may be ordered in accordance with the Conditions of Contract.

1.3 Purpose and Scope of Waste Management Plan

This Waste Management Plan (WMP) provides the details of the measures and procedures considered necessary to control and manage the storage, transportation and disposal of all wastes generated during the construction of Contract CV/2012/08.

In addition, this WMP identifies the construction activities that will generate waste, propose measures to reduce waste including C&D materials, metallic waste, timber, paper/ cardboard packing and chemical waste, and the handling of waste.

The main objectives of the WMP include the followings:

- make reference to statutory waste management requirements and obligations;
- clarify responsibilities within the environmental team;
- set out waste handling procedures;
- set out waste transportation procedures;
- set out waste disposal procedures;
- set out auditing and other checking requirements; and
- describe procedures for identifying contaminated soil.

2. PROJECT ORGANIZATION AND RESPONSIBILITIES

2.1 Organization Framework

The organizational structure for waste management during the course of the Contract is presented in Appendix A, which identifies the major parties for the waste management in the Contract and illustrates the lines of communication and authorities on the waste management matters.

2.2 Responsibilities and Duties

Descriptions on the roles and responsibilities of the parties presented in Appendix A are provided in the following sub-sections.

b) **The Engineer**

The Engineer will be appointed by the Employer, CEDD. His duties will cover the overall supervision of the Contract from the Employer's perspective, including the checking of the measures relating to environmental management and waste management are properly implemented by the Contractor as according to relevant requirements.

2.2.2 Project Director / Deputy Project Director

The Project Director (PD) or Deputy Project Director (DPD) will report to the DHK Management Board for overall planning, contract review, appointment of Site Safety and Environmental Representative and other site members for environmental matters, including waste management. He will ensure provision of adequate resources for addressing the waste management for the Contract.

2.2.3 Quality, Safety and Environmental (QSE) Manager

The Quality, Safety and Environmental (QSE) Manager will be responsible for overseeing all the environmental matters including the waste management of the Contract. Details of the duties in relation to the environmental matters can be referred to the Project Environmental Management Plan. Other duties related to waste management include but not limited to the following:

- prepare, implement and update the Waste Management Plan, if necessary;
- audit the waste management practice on site as according to this Plan;
- check for any non-compliance on the disposal of the waste with the relevant regulations;
- advise on measures to be implemented on site to enhance the waste reduction and recycling for the project;
- identify any opportunities to reuse of the C&D materials generated from the project;
- advise on potential contamination of the site area due to mal-practice adopted by the frontline operatives;
- develop an overall training programme to raise the environmental awareness of the project staff.

2.2.4 Environmental Officer

The Environmental Officer (EnvO), will be present full time on the Site and assist the QSE Manager for inspection, supervision and monitoring of the environmental performance, including waste management of the Contract. The duties of EnvO in the area of waste management will include:

- assist the QSE Manager in preparation, implement and update the Waste Management Plan;
- carry out inspections of the Site and attend the weekly environmental walk for checking and identifying any waste management practice on site not complying with this Plan and/ or relevant environmental regulations in Hong Kong;
- assist the QSE Manager on the implementation of site practice to meet the requirement on waste avoidance or waste reduction;
- advise the QSE Manager on the opportunities for reuse/ recycling of C&D materials generated on site;
- properly keep the records of the waste reuse, recycle or disposal for inspection by the Engineer
- maintain a database to trace the C&D materials and waste to be generated from the project;
- report and rectify any environmental mal-practice on site to avoid the generation of unnecessary C&D materials or waste from the project;
- carry out training to the DHK staff to promote the environmental awareness.

2.2.5 Site Engineers/ General Foremen

The Site Engineers / Foremen appointed by the DHK are responsible for the following duties in relation to environmental control:

- assist the project management team to implement in the Contract all environmental related plans, including but not limited to Environmental Management Plan, Waste Management Plan, Site Management Plan, etc.;
- control the Contract to fulfil the requirement of waste management as detailed in this Plan;
- ensure the disposal of C&D materials and waste was directed to designated areas as approved by The Engineer;
- report to the EnvO on the non-compliance of the frontline operatives or the sub-contractors on handling of the C&D materials and the waste as according to this Plan;
- implement remedial actions or mitigation measures on the non-compliance regarding the waste management on site;
- conduct environmental tool box talks to the labourers and workers to make them aware of environmental practice;
- collaborate with the EnvO in the implementation of waste management measures;
- assist the EnvO in arranging the necessary workforce for carrying out corrective actions as identified by the QSE Manager.

2.2.6 Environmental Team Leader (by the Employer)

During the course of the construction, an Environmental Team which is led by the Environmental Team Leader (ETL) as required under the Environmental Permit (EP) will be established by the Employer to undertake the environmental monitoring and audit during the construction stage. The ETL will be responsible for checking and certifying the overall environmental performance of the Contract, including the implementation of all the environmental protection and mitigation measures and any submissions relating to environmental monitoring and audit for the Contract.

2.2.7 Independent Environmental Checker (by the Employer)

An Independent Environmental Checker (IEC) will be appointed by the Employer as required in the EP. The IEC will be responsible for checking, reviewing, verifying and validating the overall environmental performance, including the implementation of all the environmental protection and mitigation measures and any submissions relating to environmental monitoring and audit for the Contract. The DHK will assist the IEC to fulfill their roles as required for the Contract.

2.2.8 Sub-contractors and Other Employees

All subcontractors and other employees have the duty to carry out waste management measures as instructed by the project management. Every employee will report promptly to project management any non-compliance of environmental protection and mitigation measures. They will actively participate in and co-operate with the project management to achieve the environmental objectives.

3. FRAMEWORK FOR CONTROL WASTE IN HONG KONG

The following legislations relate to the handling, treatment and disposal of wastes in Hong Kong, and shall be observed with regard to all wastes generated and requiring disposal due to the construction of Contract CV/2012/08, where applicable:

- Waste Disposal Ordinance (Cap 354);
- Waste Disposal (Chemical Waste) (General) Regulation (Cap 354C);
- Land (Miscellaneous Provisions) Ordinance (Cap 28);
- Public Health and Municipal Services Ordinance (Cap 132); and
- Dumping at Sea Ordinance (Cap 466).

The Contractor shall be responsible for obtaining all necessary permits and licences under these ordinances including, but not limited to:

- Chemical waste permits/licences under the Waste Disposal Ordinance (Cap 354);
- Public Dumping Licence under the Land (Miscellaneous Provisions) Ordinance (Cap 28); and
- Marine dumping permit under the Dumping at Sea Ordinance (Cap 466) (if necessary).

The Waste Disposal Ordinance (WDO) prohibits the unauthorised disposal of wastes. Construction waste is directly defined in the WDO and means any substance, matter or thing defined as construction waste by regulations made under section 33 of WDO, but does not include chemical waste. Under the WDO, wastes can only be disposed of at sites licensed by EPD.

Under the Waste Disposal (Chemical Waste) (General) Regulation, all producers of chemical wastes (including asbestos) must register with EPD and treat their wastes either utilising on-site plant licensed by EPD, or arranging for a licensed collector to take the wastes to a licensed facility. The Regulation also prescribes the storage facilities to be provided on site, including labelling and warning signs, and requires the preparation of written procedures and training to deal with emergencies such as spillages, leakages or accidents arising from the storage of chemical wastes.

Construction wastes that are wholly inert may be taken to designated Public Filling Area as directed by the Engineer. Public Filling Areas usually form part of land reclamation schemes operated by the Civil Engineering and Development Department (CEDD). The Land (Miscellaneous Provisions) Ordinance requires that individuals or companies who deliver suitable construction wastes to public dumps possessing dumping licences. CEDD issues the licences under delegated powers from the Director of Lands.

The Public Cleansing and Prevention of Nuisances By-Laws provide further controls on the illegal tipping of wastes on unauthorised (unlicensed) sites.

The following documents and guidelines also relate to waste management and disposal in Hong Kong and are considered of relevance to Contract CV/2012/08:

- Waste Disposal Plan for Hong Kong (December 1989), Planning, Environmental and Lands Branch, Hong Kong Government Secretariat;

- Chapter 9 Environmental, Hong Kong Planning Standards and Guidelines, Hong Kong Government;
- New Disposal Arrangements for Construction Waste (1992), Environmental Protection Department and Civil Engineering Department;
- Waste Disposal Ordinance (Chapter 354), Waste Disposal (Charge for Disposal of Construction Waste) Regulation, Environmental Protection Department;
- Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes (1992), Environmental Protection Department;
- Code of Practice on the Handling, Transportation and Disposal of Asbestos Waste, Environmental Protection Department;
- Works Bureau Technical Circular No 2/93, Public Dumps;
- Works Bureau Technical Circular No. 2/93B, Public Filling Facilities, Works Bureau;
- Works Bureau Technical Circular No 16/96, Wet Soil in Public Dumps;
- Project Administration Handbook for Civil Engineering Works;
- Works Bureau Technical Circular No. 12/00, Fill Management, Works Bureau;
- Works Bureau Technical Circular No. 19/01, Metallic Site Hoardings and Signboards, Works Bureau;
- Works Bureau Technical Circular No. 6/02 and 6/02A, Enhancement Specification for Site Cleanliness and Tidiness, Works Bureau;
- Environment, Transport and Works Bureau Technical Circular (Works) No. 15/2003, Waste Management on Construction Sites, Environment, Transport and Works Bureau;
- Environment, Transport and Works Bureau Technical Circular (Works) No. 19/2005, Environmental Management on Construction Sites, Environment, Transport and Works Bureau;
- Development Bureau Technical Circular (Works) No. 6/2010, Trip Ticket System for Disposal of C&D Materials;
- Memo ref. (15) in FM PF/GEN/18.01 Pt.4 dated 22 December 2004 on "Enhancement of Trip Ticket System for Disposal of Construction & Demolition Materials – Commencement of Implementation of Using bar-coded Disposal Delivery Form (DDF) on 15.1.2005", Secretary, Public Fill Committee, Civil Engineering & Development Department;
- Civil Engineering & Development Department Technical Circular No. 05/2005, Management of Construction & Demolition Materials, Civil Engineering & Development Department.

4. WASTE MANAGEMENT PROTOCOLS

4.1 General

The purpose of this section is to set out protocols necessary to ensure that all wastes generated during the construction of Contract CV/2012/08 are managed on-site, transported and disposed of in a manner that is both environmentally acceptable and in full compliance with statutory and contractual requirements.

4.2 Identification of Waste

Waste types as identified in Table 4.1 may be generated from various activities carried out on Contract CV/2012/08. The identification of those work processes and activities enables potential waste reduction, re-use and recycling opportunities to be identified and maximized. Improper handling and disposal of those wastes may cause secondary adverse impacts from pollution and nuisance.

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Table 4.1 Summary of Activities Producing Surplus Material

Work Process/Activity	Waste Types										
	Natural Excavated Material	Other Inert Material (eg concrete)	Plastic	Packaging	Paper	Timber	Bamboo Scaffolding	General Refuse	Vegetation and Trees	Metals	Chemical Waste
Site clearance	✓	✓						✓	✓		
Demolition	✓	✓	✓			✓	✓	✓		✓	
Earthworks	✓										
Maintenance of plant and equipment											✓
Underground drainage	✓	✓	✓							✓	
Formwork			✓			✓				✓	
Falsework						✓	✓			✓	
Concrete works	✓	✓				✓					
Pre-cast concrete		✓	✓			✓				✓	
Piling and foundations	✓	✓					✓				
Tunnelling	✓	✓									
Blasting	✓										
Non-blasting methods	✓										
Road works	✓	✓									
Hard landscape	✓	✓									
Soft landscape	✓								✓		
Finishing works			✓	✓		✓	✓	✓		✓	✓

Work Process/Activity	Waste Types										
	Natural Excavated Material	Other Inert Material (eg concrete)	Plastic	Packaging	Paper	Timber	Bamboo Scaffolding	General Refuse	Vegetation and Trees	Metals	Chemical Waste
Mechanical-ventilation and air-conditioning			✓	✓		✓				✓	✓
Electrical works			✓	✓		✓				✓	✓
Material handling and storage	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
Repair and rework	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
General welfare								✓			
Office activities			✓	✓	✓					✓	

4.3 Waste Disposal Sites

The Contractor shall ensure that different waste types shall generally be disposed of in accordance with Table 4.2.

Table 4.2 Disposal Sites for Different Waste Types

Waste Type	Typical Disposal Site	Anticipated Disposal Site
Steel (including steel mesh, reinforcement bars, window frames, railing, banisters etc.)	Licensed steel mills in Hong Kong or Overseas steel mills.	Scrap metals resulted from work will be the property of the sub-contractors and will be handled by them. Significant amount of scrap metal belongs to DHK will be handled case by case.
Natural excavated rocks, Inert construction and demolition material (rubble, boulder, earth soil, sand, concrete, brick, tile, masonry or used bentonite) that comply with the requirements of the Public Dumping Licence	Approved alternative disposal sites that require filling material; Public filling areas; Public filling barging points; and Public sorting facility.	Tuen Mun Area 38 (TM38)/ Tseung Kwan O Area 137 (TKO137)/ Approved alternative disposal sites
Asphalt material	Public Filling Areas	TM38
Slurry and Bentonite	Public Filling Areas	TKO137

Waste Type	Typical Disposal Site	Anticipated Disposal Site
Contaminated soil (North Portal at Sha Tau Kok Road and Mid-Vent Portal at Po Kat Tsai)	Disposal site depends on the nature and extent of the contamination and will be determined by EPD.	Further to the site investigation and the Contamination Assessment Report (CAR) approved by EPD, no contaminated soil was found.
Asbestos waste (Corrugated roof found from village houses at North Portal Area)	Disposed as special waste in strategic landfill as directed by EPD	SENT
Chemical waste as defined under *Schedule 1 of the Waste Disposal (Chemical Waste) Regulations*	Chemical waste treatment facility at Tsing Yi; Other facilities approved by EPD	Ecospace and Dunwell have been engaged as the licensed waste collector and disposer.
General refuse	Strategic landfill operated by EPD; or Refuse transfer stations.	NENT or as directed by the ER.
Sewage	Disposal site depends on the nature of sewage and will be determined by relevant Government Department; Usually the treated sewage will be directed to public sewer; or Disposal by licensed waste collector.	Regularly removed by licensed waste collector and discharge to the governmental sewage treatment plants at: - Pillar Point - Apleichau - Sai Kung
Plastic such as distilled bottle, PVC conduits, drainage pipes, plastic railing, barrier, traffic cone, safety hamlet.	Waste plastic will be recycled as far as possible. Non-recyclable plastic will be disposed to landfill site.	Recycling company engaged; Non-recyclable plastic will be disposed to NENT or as directed by the ER.
Timber and Bamboo	Collected by recycler or reused as far as possible. Scrap one will be disposed to landfill site.	Recycler to be confirmed; or disposed to NENT or as directed by the ER.
Paper & Packaging materials	Collected by recycler	Recycing company engaged; or disposed to NENT or as directed by the ER.
Spoil from TBM tunnel excavation	Approved alternative disposal sites that require filling material; Public filling areas; Public filling barging points; and Public sorting facility.	TM38 / TKO137 / Approved alternative disposal sites

4.4 Waste Management Protocols

All wastes generated through the construction phase of the Project shall be managed in accordance with the protocols set out in the followings:-

4.4.1 Avoidance

Table 4.3 General Waste Management – Avoidance

Item	Requirement		Responsibility
	Activity	Frequency	
1	All staff involved in the day to day handling and management of waste shall, as a minimum, be instructed in the requirements as set out in this WMP and the importance of waste minimization.	Prior to commencement and as new staff are appointed	Production Manager to implement, EnvO to provide advice on any particular CEDD requirements.
2	The Contractor shall aim to minimize waste generation through the following hierarchy: Avoidance and minimization (not generating waste through changing or improving practices and design); Reuse of materials, thus avoiding disposal (generally with only limited processing); Recovery and recycling, thus avoiding disposal (although reprocessing may be required); Treatment and disposal according to relevant regulations, guidelines and good practice	Throughout construction phase	Site Engineer / General Foremen to implement

4.4.2 Reuse

Table 4.4 General Waste Management – Reuse

Item	Requirement		Responsibility
	Activity	Frequency	
1	General refuse will be generated by food service activities on site, so reusable rather than disposable dishware should be used, if feasible.	Throughout construction phase	Site Engineer / General Foremen to implement as appropriate following confirmation of on-site canteen facilities, if any.

Item	Requirement		Responsibility
	Activity	Frequency	
2	Spoil generated from site activities will be reused as much as practicable, both on site and in alternative disposal facilities.	Throughout construction phase	Site Engineer / General Foremen to implement, EnvO to audit.

4.4.3 Recovery

Table 4.5 General Waste Management – Recovery

Item	Requirement		Responsibility
	Activity	Frequency	
1	Spoil generated from site activities will be reused as much as practicable, both on site and in alternative disposal facilities.	Throughout construction phase	Site Engineer / General Foremen to implement, EnvO to audit.

4.4.4 Recycling of Various Waste

Table 4.6 General Waste Management – Recycling

Item	Requirement		Responsibility
	Activity	Frequency	
1	Separate labeled bins should be provided, where practicable, to allow segregation of recyclable materials generated by individual site staff (e.g. aluminum cans) such that recycling collectors could be assisted	Throughout construction phase	Site Engineer / General Foremen to implement, EnvO to audit
2	Office wastes should be reduced through recycling of paper if volumes are large enough to warrant collection. Participation in a local collection scheme should be considered.	Throughout construction phase	EnvO to implement if paper volumes are large enough to warrant collection and a local collection scheme is available

4.4.5 Treatment of Waste / Others

Table 4.7 General Waste Management – Treatment / Others

Item	Requirement		Responsibility
	Activity	Frequency	
1	All works areas shall be cleansed of litter and refuse.	Daily	Site Engineer / General Foremen to implement, EnvO to audit.
2	General refuse and litter should be stored in enclosed bins or compaction units separate from construction or chemical wastes. A reputable waste collector should be used to remove general waste and litter off site for disposal.	Daily, or every other day.	Site Engineer / General Foremen to implement, EnvO to audit.
3	Refuse should not be burnt at any construction site.	At all times	Site Engineer / General Foremen to implement, EnvO to audit.
4	Spoil generated from site activities will be reused as much as practicable, both on site and in alternative disposal facilities.	Throughout construction phase	Site Engineer / General Foremen to implement, EnvO to audit.

Table 4.8 Storage, Collection, Reuse and Transport of Waste

Item	Requirement		Responsibility
	Activity	Frequency	
1	All stockpiled spoil > 50 m^3 should be covered with tarpaulin or other appropriate fabric to prevent runoff during rainstorms, or dust during dry and windy periods.	In advance of predicted rainstorms or particularly windy periods	Site Engineer / General Foremen to implement, EnvO to audit
2	All vehicles transporting wastes should have properly fitting tail boards & sides and mechanical covers.	All vehicles transporting waste	Site Engineer / General Foremen to implement, EnvO to audit
3	Only waste haulers licensed for specific waste categories should be retained.	Throughout the construction phase	Site Engineer / General Foremen to implement, EnvO to audit
4	All wastes should be stored in a manner ensuring that they are held securely without loss or leakage.	Throughout the construction phase	Site Engineer / General Foremen to implement, EnvO to audit

Item	Requirement		Responsibility
	Activity	Frequency	
5	All wastes should be removed from site in a timely manner.	At the earliest opportunity and in accordance with CEDD requirements	Site Engineer / General Foremen to implement
6	All waste storage areas should be cleaned and maintained regularly.	Weekly	Site Engineer / General Foremen to implement, EnvO to audit
7	All necessary disposal permits should be obtained from the appropriate authorities for each waste category.	Prior to commencement of disposal	Production Manager to implement, EnvO to audit
8	All wastes should only be disposed of to appropriate licensed sites.	Throughout construction phase	Site Engineer / General Foremen to implement, EnvO to audit
9	The Contractor's production managers should keep records of quantities of chemical wastes generated, recycled and disposed and agree the location of these records with the Engineer.	Throughout construction phase	Site Engineer / General Foremen to implement, EnvO to audit
10	The priority for off-site disposal of excavated inert waste should be in accordance with the following hierarchy: • Transport to other construction contracts to satisfy fill requirements elsewhere • Transport to other land formation sites for reuse • Transport to public filling areas *Notes: If fill materials are transported to private lands, the agreement with the relevant third party and EPD should be sought*	Throughout construction phase	Site Engineer / General Foremen to implement
11	The handling and disposal of bentonite slurries should follow the *Practice Note for Professional Persons, Construction Site Drainage* (ProPECC PN 1/94)	Throughout construction phase	Site Engineer / General Foremen to implement, EnvO to audit

Item	Requirement		Responsibility
	Activity	Frequency	
12	Waste for landfill disposal should be the non-inert portion of C&D materials and contain no free water; and Waste for public dump/filling areas must be 100% inert	Throughout construction phase	Site Engineer / General Foremen to observe

Table 4.9 Management of Chemical Waste and Asbestos

Item	Requirement		Responsibility
	Activity	Frequency	
1	Where practicable, processes shall be identified to pre-empt the production of chemical waste	Throughout construction phase	Site Engineer / General Foremen to implement
2	Chemical waste (as defined by Schedule 1 of the *Waste Disposal (Chemical Waste) (General) Regulation)* should be handled in accordance with the *Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes*	Throughout construction phase	Site Engineer / General Foremen to implement, EnvO to audit
3	Asbestos waste is stored, handled and disposed of in accordance with the *Code of Practice on the Handling, Transportation and Disposal of Asbestos Waste*	Throughout all asbestos abatement works	Site Engineer / General Foremen to implement, EnvO to audit

4.5 Training

In order to promote the awareness of the staff and workers on the environmental management for the project and the actual implementation of the waste avoidance, recycling and the proper way for waste disposal, site-specific induction and tool box trainings covering environmental and waste management will be provided to all staff, sub-contractors, and workers employed for the Works. Relevant training will be organized and arranged in accordance with the followings:

(i) All site management staff will have attended and completed the "Environmental Management Course for Construction Managers", run by Construction Industry Council (CIC) or similar training institutions, as agreed by the ER. If any site management staff has not attended the course, the DHK shall arrange such staff to attend the course within 14 days from the date of employment on site and to complete the training within 6 months from the said date.

(ii) The appointed Environmental Supervisors will have attended and completed the "Environmental Protection Course for Environmental Supervisors" or equivalent, organized by CIC or similar training institutions, as agreed with the ER. If any person who has not attended the course, the

DHK shall arrange such staff to attend the required training within 14 days from the date of employment of such staff on site and to complete the training within 6 months from the said date.

(iii) Site-specific induction trainings covering environmental and waste management, in additional to safety, will be given to all staff and workers employed for the Works, whether in the employment of the DHK or the subcontractors. The staff and workers of the contract are required to re-attend the site-specific induction trainings once every 6 months. The environmental part of the training shall be delivered by the EnvO or ES. The training content will cover the following topics:

- Environmental Policy;
- Environmental Targets;
- Environmental Organization Structure;
- Environmental Duties and Responsibilities;
- Environmental In-house rules and regulations;
- Environmental control measures;
- Contingency measures;

Apart from the site-specific induction training, EnvO or ES shall provide weekly tool-box talks for workers on environmental nuisance abatement and waste management. Prior approval will be sought from the ER in respect of the frequency and content of the tool-box talks.

5. CONSTRUCTION & DEMOLITION (C&D) WASTES

C&D wastes generated in the project area include concrete slab, bentonite slurry, cement grouts, timber, steel formwork or plastic facing, rubble and steel/metal, scrap, excavated spoil, wrappers, etc. The estimated volume of C&D waste for the Project is summarized in Appendix B. The actual quantity will be updated in the monthly progress report, Environmental Management Plan and Site Management Plan for Trip Ticket System as appropriate.

5.1 Construction Waste

- Careful design, planning and good site management shall be maintained to minimize over-ordering and waste of materials such as concrete, bentonite and cement grouts.
- The formwork will be designed to maximize the use of standard timber faced panels so that high reuse levels can be achieved. Alternatives such as steel formwork or plastic facing will be considered.
- General construction waste shall be separated into reusable items and materials to be disposed of or recycled. This work will be carried out by the general workforce under the supervision of the foremen and charge hands. It will be conducted at the working area immediately to avoid loss or leakage during handling. For example formwork and timber would be cleaned for reuse, off-cuts of reinforcement will be sorted into usable lengths and short off cuts will be stacked for scrap metal. Where it is no longer reusable, steel and metal items will be sent as scrap for recycling.
- Segregated materials shall be temporarily stored at designated areas for reuse on site. Steel will be stored at the reinforcement yards, timber at the formwork yard and rubble in a stockpile (either covered or sprayed to control dust).
- Any residual materials (Such as containers, wrappers or general waste material, etc.) shall be collected and placed in skips. These will be transported to the appropriate tips/dumps by licenced waste hauliers (where appropriate).
- Inert construction waste such as excavated rock, spoil, bentonite and cement grouts would be dumped into the public fill. For details, please see Section 8.
- Non-inert construction waste would be disposed of at designated landfills.

5.2 Demolition Waste

- Demolition waste will be generated by the breaking work for concrete surface or existing roads. The General Foremen will be responsible for the monitoring and management of the demolition waste. All demolition waste will be disposed offsite.
- Useful materials such as steel pipes, reinforcement shall be collected for recycling as scrap metal. Concrete and rubbles shall be segregated for reuse as backfill or for hard standings and site haul roads. This work will be carried out by the general workforce under the supervision of foremen and charge hands. It will conduct at the demolition area immediately to avoid loss or leakage during handling.
- A Registered Asbestos Consultant, a Registered Asbestos Contractor (AAA) and a Registered Asbestos Laboratory (Furgo) were appointed by DHK in early 2014 to conduct an asbestos investigation for a number of village houses to be demolished at the areas of North Portal and Administration Building of the Project. It is to ascertain whether there are any asbestos containing materials

(ACMs) present in the premises. If suspected material is encountered, the following procedure shall be followed:

(i) The demolition work shall be stopped immediately.

(ii) The asbestos containing material and suspect material shall be maintained in good condition to prevent further release of asbestos fibres.

(iii) The appointed Registered Asbestos Consultant shall carry out further investigation.

(iv) The appointed Registered Asbestos Laboratory shall perform asbestos sampling, identification and measurement.

(v) A Registered Asbestos Contractor shall be commissioned to carry out the removal work if the presence of asbestos is confirmed.

(vi) Inert demolition waste such as concrete slab shall be dumped as public fill. Whilst, non-inert demolition waste shall be disposed of at landfill (NENT) or as directed by the Engineer. The handling, storage and disposal of asbestos waste shall be in accordance with the Code of Practice on the Handling, Transportation and Disposal of Asbestos Waste.

5.3 On-site Waste Management

Construction and Demolition (C&D) materials refer to both inert and non-inert materials generated from construction and demolition activities of the Works. The inert portion of the C&D materials include materials such as soil, rock, broken concrete, and the non-inert portion comprises timber, paper, plastics, general refuse and the like.

All C&D materials arising from or in connection with the Works will be sorted on the Site to recover reusable and/or recyclable materials. The sorted and processed surplus materials arising from or in connection with the Works from the Site will be promptly removed to minimize temporary stockpiling on the Site.

A system will be devised for on-site sorting of C&D materials. The system will include the identification of the source of generation, estimated quantity, arrangement for on-site sorting and/or collection, temporary storage areas, frequency of collection by recycling contractors or frequency of removal off the Site, etc.

DHK will sort the materials at source into the following categories:

- metals;
- timber;
- paper and plastics; and
- materials suitable for disposal at public fill reception facilities, sorting facilities and landfills. Disposal at the sorting facilities should first be approved by the Engineer.

The materials to be disposed of at public fill reception facilities, sorting facilities, and landfills facilities, will comply with their respective requirements under Schedule 6 of the Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap 354N). For materials to be discharged via barges to CEDD public fill reception facilities, the following requirements in Section 17.3 of the Particular Specifications will also be complied by DHK so that:

- maximum size of disposed soil, rock and other inert C&D materials will be no greater than 250mm;

- disposed materials will be free from rebar, marine sediments, bituminous materials and other deleterious materials; and
- disposed materials will have a moisture content of 25% of its dry density or less.

DHK will seek for possibility of disposing excavated materials to other construction sites as alternative dumpsite, such as the Hong Kong-Zhuhai-Macao bridge project at the northeast end of Chek Lap Kok Airport, Central Wanchai Bypass project depending on the construction programmes of the Contract. DHK will closely liaise with CEDD on the possible arrangement if necessary.

When a potential alternative disposal ground is identified, DHK will submit all necessary information to the Engineer for approval. As of the date of this plan, alternative disposal grounds as agreed by the Engineer are summarized in Appendix G.

If DHK identifies certain works locations/ contractors in Mainland China which require filling materials from the DHK to be transported via barges, DHK will seek the approval from the Engineer and will comply with relevant regulations before the commencement of transportation. The quality of the filling materials will be agreed between the DHK and the receiver of the filling materials. The relevant information will be notified to the Engineer if required.

Material packaging (i.e. paper and cardboard) will be recovered, properly stockpiled in dry and covered condition to prevent cross contamination by other C&D materials. Particular attention will be paid to avoid cross contamination in the course of collecting paper for recycling.

Since each major works area is still in an establishment stage, allocation of waste collection / segregation facilities at each major works area will be illustrated and updated in this plan according to the site condition.

6. LAND CONTAMINATION

With reference to Section 8 of the approved EIA report, Contamination Assessment Report (CAR) and, if necessary, a Remediation Action Plan (RAP) and Remediation Report (RR) are recommended in the following works areas which classified as low contamination potential:

- Sha Tau Kok Road Section of the BCP connecting road (North Portal); and
- Site at Po Kat Tsai (Middle Ventilation Building Area).

At the design stage, a revised Contamination Assessment Plan (CAP) was submitted by CEDD on 14 Jul 2010 and approved by EPD on 12 Oct 2010. CAR will be prepared by the Project Environmental Team and submitted to EPD for review in due course.

Subject to the assessment as detailed in the CAR, further RAP and the RR will be prepared by the Project Environmental Team if land contamination is confirmed at the aforesaid areas, for approval by EPD.

7. HANDLING OF MARINE DEPOSITS/SEDIMENTS

With the reference of the construction method, Section 7 of the approved EIA report and Particular Specification, no marine deposits/sediments are expected to arise from the construction of CV/2012/08.

8. SPOIL DISPOSAL

8.1 Contract Requirements

Particular specification requires the contractor to prepare a Site Management Plan for Implementation of Trip Ticket System for Project (refer to PS Clause 25.25 (6)).

As controlled under the Construction Waste Disposal Charging Scheme, construction waste producers, prior to using government waste disposal facilities such as public fill facilities or landfill sites, shall possess a billing account with EPD and responsible for the C&D waste disposal charge. DHK has registered an account (Account No.: 7019105) since 8 January 2014.

8.2 Site Management Plan for Implementation of Trip Ticket System

The Site Management Plan for Implementation of Trip Ticket System describes the procedures for controlling the disposal of spoil generated at the site. The plan applies to the management of inert C&D waste destined for disposal at designated public filling areas and alternative disposal sites as directed by the Engineer. It also applies to the disposal of contaminated soil to a disposal point appointed by EPD if applicable. In addition, it will include:

- procedures for obtaining the necessary disposal licences;
- trip ticket system for recording the location of the disposal site; and
- procedure for preparing the records of quantities of disposed soil as required by the Engineer.

For easy reference, an executive summary of the Site Management Plan for Implementation of Trip Ticket System is presented in Appendix C.

8.3 Disposal of C&D waste from Drill & Blast and TBM Operation

Spoil resulting from drill & blast activity will generally fall into one of the following categories:

- rock;
- completely decomposed volcanic tuff (CDV); and
- a mixture of the two.

There are options on handling and disposal of the spoil. Each option will comply with requirements and is described below:

- The excavated spoil could be:
  - Stored on site or stored at a designated storage area to be agreed with the Engineer, if any and be disposed of during the period of 0700 to 1900 hours on normal working days to designated public filling area at Tuen Mun Area 38 Fill Bank or TKO Area 137 Fill Bank as directed by the Engineer. The wet spoil generated from TBM should be dewatered prior to disposal; or
  - Transported to an alternative disposal ground to be agreed with the Engineer (Proposal for alternative disposal ground will be submitted to the Engineer under separate cover).
- If excavation activity is carried out on general holiday, the spoil will be temporary stockpiled on site with proper environmental mitigation measures and disposed on the following normal working day. Any restricted hour work will be covered by a valid Construction Noise Permit; or

- To reuse the materials as temporary fill on site as much as possible for working platforms or temporary access roads.

8.4 Disposal of Spoil from Water Treatment System and Wheel Washing Facilities

Spoil from water treatment system and wheel washing facilities will contain high water content. It will be conditioned on site to reduce the water content by mixing with other on-site inert spoil before disposed of from site.

According to site condition, vacuum suction truck service will be arranged for handling of slurry if mixing with other inert spoil is not feasible.

In conclusion, the general principal for wet spoil disposal will be that all statutory and contractual requirements will be met in this regard.

9. CHEMICAL WASTES

9.1 General

The principal source of chemical waste (with the exception of contaminated soil) includes waste hydraulic oil and other lubricants from servicing and maintenance of the construction plant. These wastes contain chemicals, which may cause pollution or constitute a danger to the health of workers or pose a risk of pollution to the environment. The handling, storage and disposal of chemical waste therefore demand careful management.

In accordance with Waste Disposal Ordinance (Cap.354), DHK will register as a chemical waste producer with EPD.

9.2 Storage and Disposal

Requirements for the storage and disposal of chemical wastes are listed below:

- Chemical waste should be stored in containers of suitable design and construction so as to prevent leakage, spillage or escape of the contents under normal conditions of handling, storage and transport;
- The container materials must not be predisposed to any reaction with the intended contents such that any dangerous product results or the container is weakened;
- Containers for storing chemical waste must be securely closed, have a capacity of <450L (unless otherwise approved by EPD) and have a warning label in English and Chinese displayed on surface;
- Storage areas for chemical wastes must be clearly labelled and used solely for storing chemical waste;
- Storage areas of chemical wastes must be enclosed on at least three sides and have adequate ventilation;
- Storage areas for chemical wastes must be covered to prevent rainfall entering;
- Storage areas of chemical wastes must have an impermeable floor and with bund of a capacity equal to 110% of the storage capacity of the largest tank;
- Storage areas for chemical wastes must be arranged so that incompatible materials are adequately separated;
- Disposal of chemical waste from site must only be via a licensed waste collector in the EPD approved contractors list and to must be a facility licensed to receive the chemical waste.

9.3 Chemical Waste Minimization

- Minimization of chemical waste will be continuous investigated and advised by using suitable method statement. Information on chemical waste minimization would be provided as required;
- Production team will be reminded not to order large quantities of chemical one-time if possible; and
- Site storekeeper should regularly update the inventory to avoid excessive quantities of same chemical stored on site.

9.4 Emergency Procedures

DHK will provide staff, workers and subcontractors adequate instructions or training for implementing the procedures in the event of emergencies due to spillage, leakage or accidents arising from the handling and storage of chemical wastes. The detailed procedures are summarized as follows:

- Instruct untrained personnel to keep at a safe distance well away from the spillage area and report if anyone is injured to the Site Supervisors;
- Site Supervisors shall ensure that any injured persons are treated and assessed what has spilled/leaked;
- If necessary, open windows or provide forced ventilation and close the door/doors of the room where the spillage took place;
- If the spillage/leakage involves highly toxic, volatile or hazardous waste, initiate emergency evacuation and call the emergency services;
- Only trained persons equipped with suitable protective clothing and equipment should be allowed to enter and clean up the waste spillage/leakage area;
- Spillage/leakage of liquid waste at storage area – Where the spillage/leakage is contained in the enclosed storage area, the waste can be transferred back into suitable containers by suitable handheld equipment, such as hand operated pumps, scoops or shovels. If the spillage/leakage quantity is small, it can be covered and mixed with suitable absorbing materials such as tissue paper, dry soft sand or vermiculite. The resultant slurry should be treated as chemical waste and transferred to suitable containers for disposal;
- Spillage/leakage at other areas – For spillage/leakage in other areas, immediate action is required to contain the spillage/leakage. Suitable absorbing materials such as tissue paper, dry soft sand or vermiculite should be used to cover the spill. The resultant slurry should be treated as chemical waste and transferred to suitable containers for proper disposal;
- Areas that have been contaminated by chemical waste spillage/leakage should be cleaned. While water is a suitable solvent for aqueous chemical wastes and water soluble organic waste, kerosene or turpentine should be used for organic chemical wastes that are not soluble in water. The waste from the clean-up operation should be treated and disposed of as chemical waste;
- In incidents where spillage/leakage may result in significant contamination of an area or risk of pollution, the EPD should be informed immediately.

The Environmental Officer will prepare a report on the incident detailing the accident, clean up actions taken, any pollution problems and suggested measures to prevent similar accidents from happening again in the future. The incident report shall be checked by the QSE Manager and submitted to the Engineer for record.

9.5 Safety Equipment for Handling of Chemical Waste

Personal Safety and Protective Equipment

- Safety helmets;
- Safety glasses or goggles;
- Chemical-resistant gloves or gauntlets;
- Steel-toed rubber or plastic boots;
- Protective clothing or overalls;
- Appropriate respirators, gas masks;
- Eye-wash bottle or device;
- Face visor with hood; and
- First aid kits.

Equipment for Handling Emergencies and Spillage

- Fire extinguishers;
- Dustpan and brush;
- Dry soft sand;
- Mop and bucket;
- Paper tissue and towelling;
- Plastic bags, empty containers or drums;
- Absorbing agents e.g. vermiculite, sawdust, etc;
- Scoop
- Tweezers or forceps;
- Hand-operated pumps; and
- Suitable sampling device.

10. GENERAL WASTES / REFUSES

- General refuse generated on-site should be stored in enclosed bins or designated skips separated from construction and chemical wastes;
- Aluminium cans, plastic & waste paper are often recovered from the waste stream, respective labelled bin will be provided for ease of segregation;
- Office wastes will be reduced through recycling of paper and toner. DHK will join the local collection scheme to collect the office waste regularly;
- The estimated domestic debris is estimated to be generated on-site throughout the construction period;
- To enhance office staff's environmental awareness by:
  - (i) Reducing the number of photocopies to a minimum;
  - (ii) By copying on both sides of paper for internal documents and external documents where appropriate.
- Reputable waste hauler will be employed by DHK on daily basis to minimise odour and pest impacts. No open burning of refuse on site shall be permitted.

11. INSPECTIONS & AUDITS

11.1 Site Inspections

Site inspections provide a direct means to ensure compliance with specified waste management procedures and protocols. It is considered that such waste management audits should be included within more general environmental site audits. The general site inspections (including waste management aspects) will be undertaken weekly to check all construction activities for compliance with all appropriate environmental protection and pollution control measures, including those set out in this WMP.

The Environmental Officer and any Environmental Supervisor are responsible for the formulation of the formal site audit, deficiency and action reporting system, and for carrying out the site inspection works. This approach allows for audits to take place independently of the Contractor, thus pre-empting any perceived or actual conflicts of interest. Site inspections, including waste management audit, will be carried out weekly. The areas of inspection shall not be limited to the environmental situation, pollution control and mitigation measures within the site, but shall include the environmental situation outside the site area that is likely to be affected, directly or indirectly, by site activities. In conducting the inspection, the one shall make reference to the following in relation to waste management practices:

- This WMP;
- Provisions of the contract specific Implementation Schedule for mitigation measures in respect of Contract CV/2012/08;
- Works progress and the construction programme;
- Individual works methodology proposals (which shall include proposals on associated waste management measures);
- Contractual requirements for waste management practices;
- Relevant environmental protection and pollution control laws; and
- Previous site inspection results.

In addition, the ET will conduct regular site inspections together with the Environmental Officer of DHK during the course of undertaking the EM&A programme and will advise the Production Teams of observations for taking required corrective actions. A "Weekly Environmental Walk Inspection Report" (presented in Appendix D of this WMP) shall be issued for each visit on site, and shall be compounded by:

(i) A summary of follow up actions to record any environmental deficiency identified during the site inspection. The corrective actions shall be completed and verified by ER on or before the agreed due date for completion; and

(ii) A "Weekly Environmental Walk Inspection Checklist" including a photo record.

Upon requested, DHK should update the ET with all relevant information for him to carry out the site inspections. The inspection results and associated recommendations on improvements to the environmental protection and pollution control should be submitted by ET to the Engineer and the Contractor within 24 hours, for reference and for taking follow-up action.

In the event that any Notice of Non-compliance is received by DHK with respect to any waste management issues, DHK should carry out investigation, propose corrective action to the Engineer and take approved actions as requested.

11.2 Objectives of the Waste Audit

Objectives of the waste audit are to:

- Ensure that the waste arising from works are handled, stored, collected, transferred and disposed of in an environmentally acceptable manner;
- Ensure that the handling, storage, collection and disposal of waste arising from any demolition works comply with the relevant statutory requirements; and
- Encourage the reuse and recycling of materials.

In achieving these objectives, Table 11.1 below sets out the items that shall, as a minimum, be observed in waste management site audits.

11.3 Record keeping

Records of trip ticket / log will be kept by Environmental Officer or the nominated engineer. These records will record the vehicle registration number, type and quantity of excavated and disposal materials or wastes, time of departure from the spoil generated source, time in and out the dumpsite and the computer record from the dumpsite, if applicable for each trip of spoil disposal. In addition, a summary of quantity of waste generated and disposal of excavated materials will be sent to the Environmental Team for easy reference during the audits or enquiries.

Table 11.1 Waste Management Audit Checklist

Activity to Check	Frequency	Corrective Action for Non-compliance
All necessary waste disposal permits or licenses have been obtained.	Prior to commencement of each waste generating activity	Apply for necessary permits/licenses prior to disposal of waste. EnvO shall ensure that corrective action has been taken.
Only licensed waste haulers are used for waste collection.	Regularly	EnvO should ensure the Contractor to use a licensed waste hauler. Waste collection of that waste should be temporarily suspended until a licensed waste hauler is used. Corrective action should be taken within 48 hours.
Records of quantities of wastes generated, recycled and disposed are properly kept. For demolition waste, the number of loads for each day should be recorded.	Regularly	Estimate the missing data based on previous records and the activities carried out.
Wastes are removed from site in a timely manner. General refuse is collected on a daily frequent basis.	Regularly	EnvO should ensure the Contractor to remove waste accordingly.
Waste storage areas are properly cleaned and do not cause windblown litter or dust nuisance.	Regularly	EnvO should ensure the Contractor to clean the storage area and/or cover waste.
Different types of waste are segregated in different containers or skips to enhance recycling of material and proper disposal of waste.	Regularly	EnvO should ensure the Contractor to provide separate skips/ containers. The Contractor should ensure the workers place waste in appropriate containers.

Activity to Check	Frequency	Corrective Action for Non-compliance
Chemical wastes are disposed of in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Wastes, published by EPD.	Regularly	EnvO should ensure the Contractor to rectify the problems immediately. Warning should be given to the Contractor if corrective actions are not taken within 24 hours and the Waste Control Group of EPD should be notified.
Asbestos waste is stored, handled and disposed of in accordance with the Code of Practice on the Handling, Transportation and Disposal of Asbestos Waste.	Regularly during asbestos abatement works	EnvO should ensure the Contractor to rectify the problem immediately. Warning should be given to the Contractor if corrective actions are not taken within 24 hours and the Air Management Group of EPD should be notified.
Demolition material/waste in dump trucks is properly covered before leaving the site, except the wet materials due to the practical and safety reasons *.	Regularly	If the trucks are not transported the wet materials they should not be allowed to leave the site until the wastes are properly covered.
Wastes are disposed of at licensed sites.	Regularly	EnvO should ensure the wastes disposed by the Contractor to the licensed sites only. Should it include chemical waste, the Waste Control Group of EPD should be notified.

Note: 1. All communications between the IEC and the Contractor shall be via the Engineer.

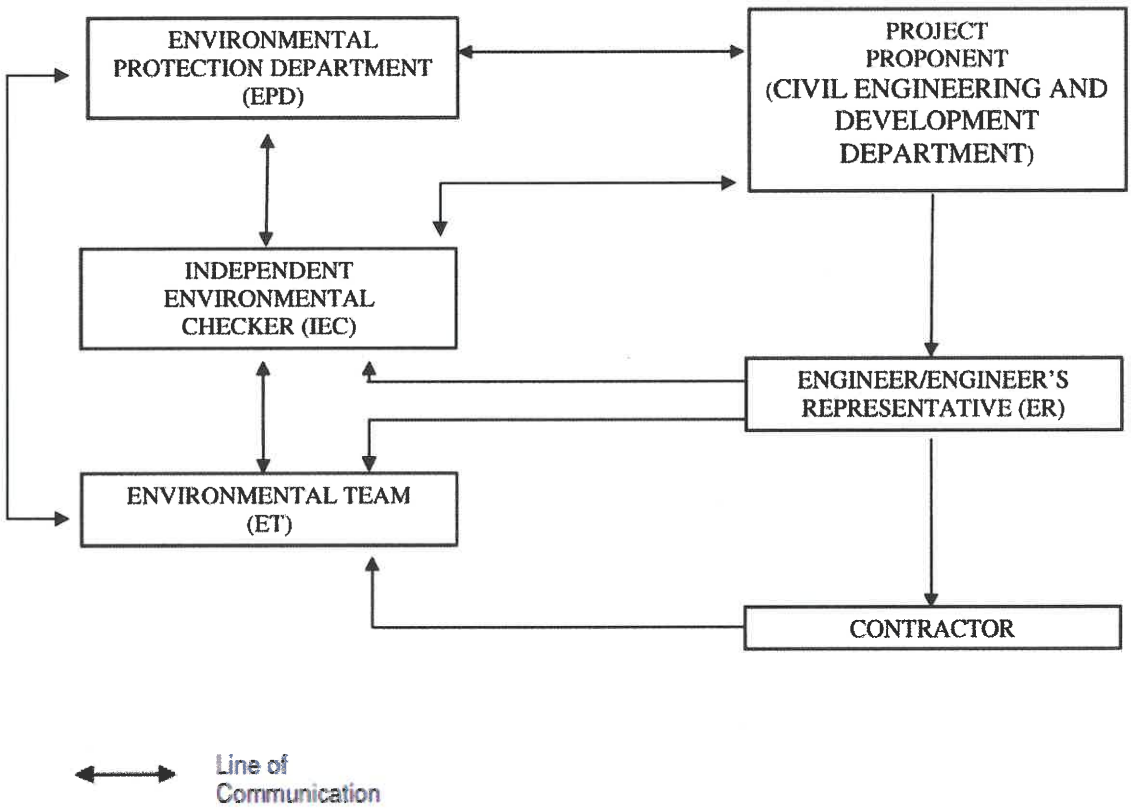
2. The Contractor is responsible to perform all corrective actions and comply with requirements.

** Based on the CEDD instruction issued to the Hong Kong Construction Association on 30 May 04.*

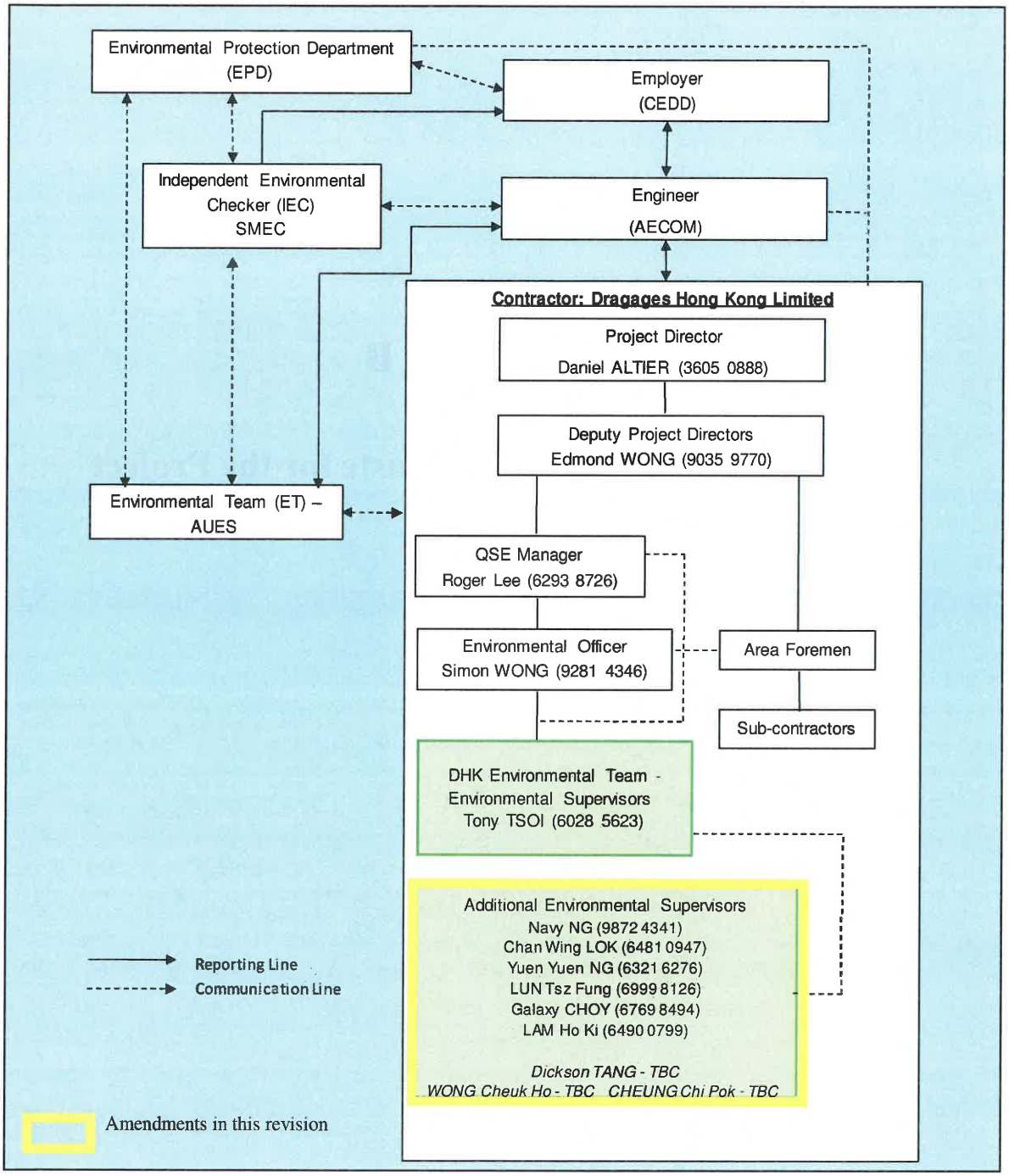
APPENDIX A

Organization Structure

Structure as Detailed in EM&A Manual

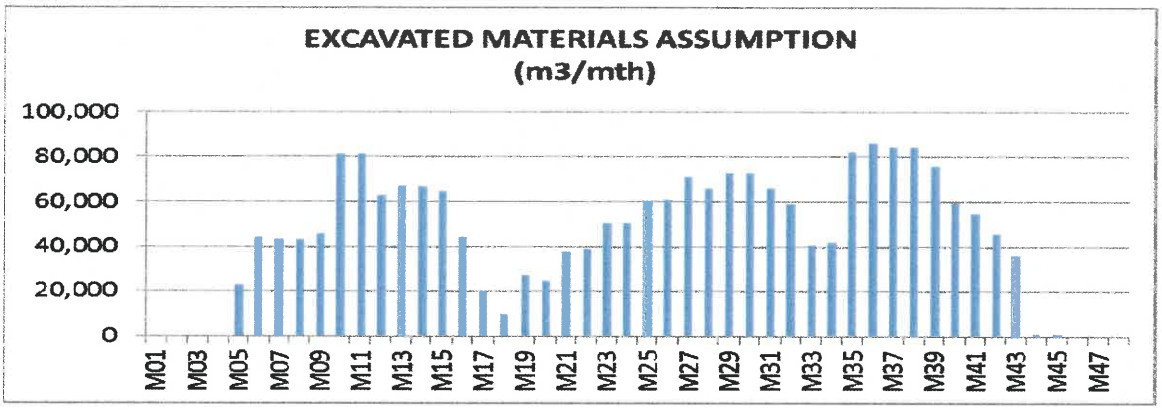


Structure within Dragages HK Ltd. For Waste Management



APPENDIX B

Estimated Volume of C&D Waste for the Project

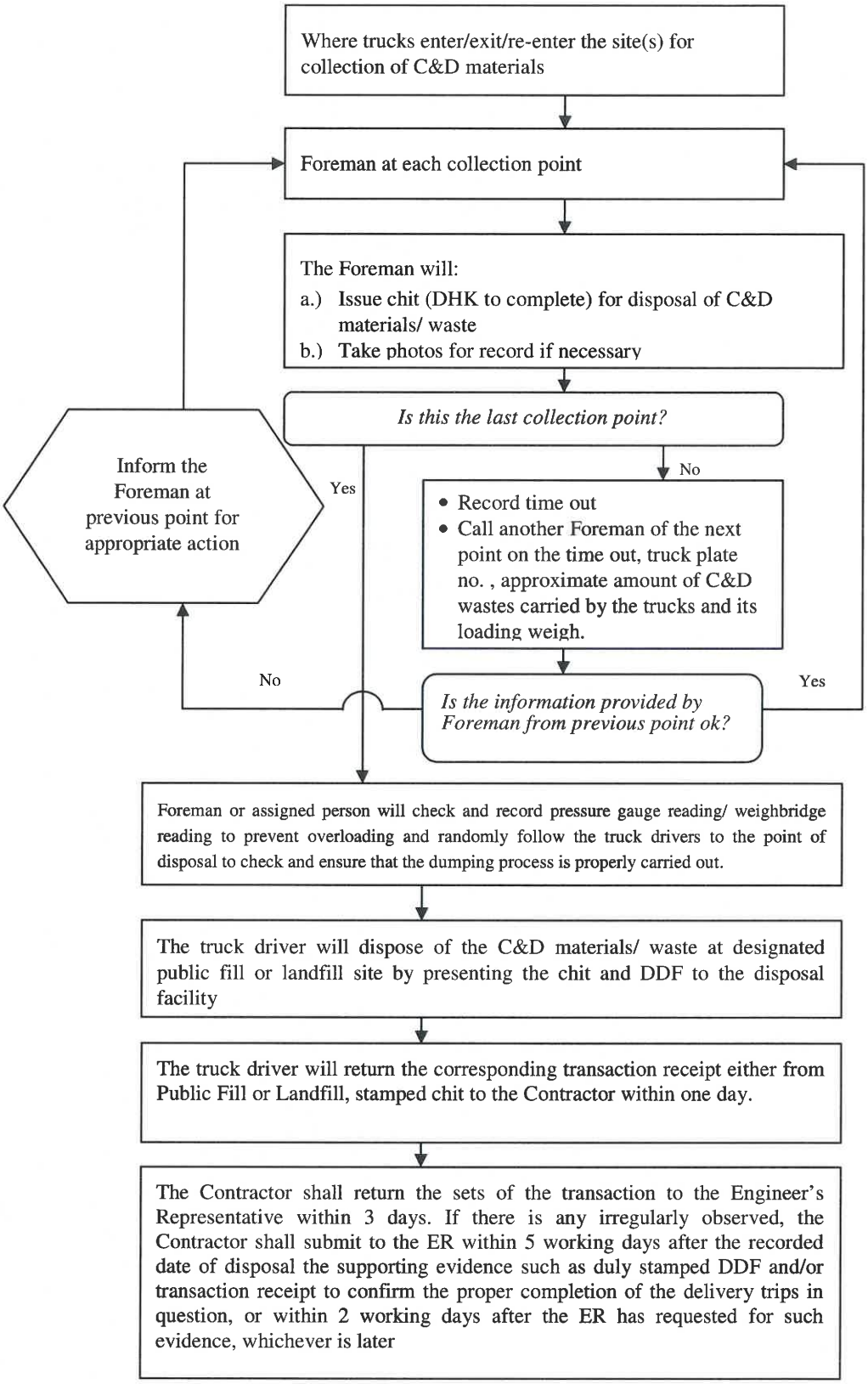


		Estimation on C&D Material & Waste Generated for Disposal							Actual Disposal Record			
Month Number	Month	Est. Amount of C&D Materials - Spoil, m3 =a+b+c	Est. Amount of C&D Materials - Spoil, m3 (Mid) a	Est. Amount of C&D Materials - Spoil, m3 (South) b	Est. Amount of C&D Material -, Spoil, m3 (North) c	Est. Amount of C&D Materials - Spoil to Public Fill, tonne (1)	Est. Amount of Waste to Landfill, tonne (2)	Total: (1)+(2)	Total C&D Materials to alternative facilities, tonne	Total C&D Materials to Public Fill, tonne	Total Waste to Landfill, tonne	Total
0	Dec-2013	0	0	0	0	0	0	0	0	0	0	0
1	Jan-2014	0	0	0	0	0	300	300	0	0	285.15	285.15
2	Feb-2014	0	0	0	0	0	300	300	0	0	155.43	155.43
3	Mar-2014	0	0	0	0	0	300	300	0	0	242.27	242.27
4	Apr-2014	0	0	0	0	0	300	300	58	126.99	18.29	203.28
5	May-2014	22833	2000	0	20833	50232.6	300	50532.6	31491.04	240.72	6.37	31738.13
6	Jun-2014	43667	2000	0	41667	96067.4	300	96367.4	48058.19	8620.36	1.32	56679.87
7	Jul-2014	43171	1504	0	41667	94976.2	500	95476.2	96204.14	27140.86	13.1	123358.1
8	Aug-2014	43171	1504	0	41667	94976.2	500	95476.2	112769.6	9682.8	24.83	122477.23
9	Sep-2014	45671	1504	0	44167	100476.2	500	100976.2	97882.88	23640.7	48.17	121571.75
10	Oct-2014	81567	1504	15063	65000	179447.4	500	179947.4	155797.4	30126.66	121.77	186045.83
11	Nov-2014	81567	1504	15063	65000	179447.4	500	179947.4	176926.2	1607.23	58.71	178592.14
12	Dec-2014	62734	1504	15063	46167	138014.8	500	138514.8	118870.1	695.36	54.38	119619.84
13	Jan-2015	66976	5746	15063	46167	147347.2	600	147947.2	144673.5	1202.69	98.64	145974.83
14	Feb-2015	66976	5746	15063	46167	147347.2	600	147947.2	35399.9	1432.81	93.35	36926.06
15	Mar-2015	64576	3346	15063	46167	142067.2	600	142667.2	143795.7	709.47	74.17	144579.34
16	Apr-2015	43742	3346	15063	25333	96232.4	600	96832.4	107622.4	454.49	35.42	108112.31
17	May-2015	20409	3346	15063	2000	44899.8	600	45499.8	76354.13	958.38	81.7	77394.21
18	Jun-2015	9896	3346	4550	2000	21771.2	600	22371.2	60172.81	995.21	272.49	61440.51
19	Jul-2015	27246	7080	4550	15616	59941.2	600	60541.2	58960.17	1837.83	79.4	60877.4
20	Aug-2015	24349	3733	0	20616	53567.8	600	54167.8	106672.8	582.95	163.34	107419.09
21	Sep-2015	37549	3733	3200	30616	82607.8	600	83207.8	91798.98	2458.65	97.69	94355.32
22	Oct-2015	38816	0	3200	35616	85395.2	600	85995.2	97091.56	615.91	114.53	97822
23	Nov-2015	50516	0	6400	44116	111135.2	600	111735.2	93616.9	3798.39	152.53	97567.82
24	Dec-2015	50516	0	6400	44116	111135.2	600	111735.2	108532	863.39	71.3	109466.69
25	Jan-2016	60524	0	9908	50616	133152.8	600	133752.8	71508	87446.85	199.48	159154.33
26	Feb-2016	60907	0	10291	50616	133995.4	600	134595.4	84366.5	35878.74	174.3	120419.54
27	Mar-2016	71123	0	20507	50616	156470.6	600	157070.6	64573	9912.79	122.75	74608.54
28	Apr-2016	66123	0	20507	45616	145470.6	600	146070.6	72323	117302.11	208.93	189834.04
29	May-2016	72831	0	27215	45616	160228.2	600	160828.2	83111	84714.91	211.15	168037.06
30	Jun-2016	72831	0	27215	45616	160228.2	600	160828.2	99696	36386.14	146.6	136228.74
31	Jul-2016	65951	0	30335	35616	145092.2	600	145692.2				0
32	Aug-2016	58951	0	30335	28616	129692.2	600	130292.2				0
33	Sep-2016	40785	0	30335	10450	89727	600	90327				0
34	Oct-2016	41742	0	30335	11407	91832.4	600	92432.4				0
35	Nov-2016	82486	0	33455	49031	181469.2	600	182069.2				0
36	Dec-2016	86364	0	33455	52909	190000.8	600	190600.8				0
37	Jan-2017	84364	0	33455	50909	185600.8	600	186200.8				0
38	Feb-2017	84364	0	33455	50909	185600.8	600	186200.8				0
39	Mar-2017	76096	0	25187	50909	167411.2	600	168011.2				0
40	Apr-2017	59560	0	8651	50909	131032	600	131632				0
41	May-2017	54560	0	8651	45909	120032	600	120632				0
42	Jun-2017	45909	0	0	45909	100999.8	500	101499.8				0
43	Jul-2017	35909	0	0	35909	78999.8	500	79499.8				0
44	Aug-2017	957	0	0	957	2105.4	500	2605.4				0
45	Sep-2017	957	0	0	957	2105.4	500	2605.4				0
46	Oct-2017	0	0	0	0	0	500	500				0
47	Nov-2017	0	0	0	0	0	500	500				0
48	Dec-2017	0	0	0	0	0	500	500				0
49	Jan-2018	0	0	0	0	0	400	400				0
50	Feb-2018	0	0	0	0	0	400	400				0
51	Mar-2018	0	0	0	0	0	400	400				0
52	Apr-2018	0	0	0	0	0	300	300				0
53	May-2018	0	0	0	0	0	300	300				0
54	Jun-2018	0	0	0	0	0	200	200				0
55	Jul-2018	0	0	0	0	0	200	200				0

Assumption: 1m³ of Inert C&D Materials weigh 2.2 tonnes and 1m³ of Non-Inert C&D Wastes weigh 1.6 tonnes

APPENDIX C

Executive Summary of Site Management Plan for Implementation of Trip Ticket System


Where trucks enter/exit/re-enter the site(s) for collection of C&D materials
Foreman at each collection point
The Foreman will:
a.) Issue chit (DHK to complete) for disposal of C&D materials/ waste
b.) Take photos for record if necessary
Is this the last collection point?
No
Yes
Inform the Foreman at previous point for appropriate action
Record time out
Call another Foreman of the next point on the time out, truck plate no. , approximate amount of C&D wastes carried by the trucks and its loading weigh.
Is the information provided by Foreman from previous point ok?
No
Yes
Foreman or assigned person will check and record pressure gauge reading/ weighbridge reading to prevent overloading and randomly follow the truck drivers to the point of disposal to check and ensure that the dumping process is properly carried out.
The truck driver will dispose of the C&D materials/ waste at designated public fill or landfill site by presenting the chit and DDF to the disposal facility
The truck driver will return the corresponding transaction receipt either from Public Fill or Landfill, stamped chit to the Contractor within one day.
The Contractor shall return the sets of the transaction to the Engineer's Representative within 3 days. If there is any irregularly observed, the Contractor shall submit to the ER within 5 working days after the recorded date of disposal the supporting evidence such as duly stamped DDF and/or transaction receipt to confirm the proper completion of the delivery trips in question, or within 2 working days after the ER has requested for such evidence, whichever is later

APPENDIX D

Weekly Environmental Walk Inspection Report

1) Summary of follow-up actions
2) Inspection Checklist

a. Summary of Follow-Up Actions

香港寶嘉 Dragages HongKong	Liantang/ Heung Yuen Wai Boundary Control Point Site Formation and Infrastructure Works – Contract 2 Contract No. CV/2012/08	Weekly Environmental Walk Inspection Summary of Follow-up Actions

Summary of Follow-up Actions

Inspection Report No.: LTH/QSE/WEW/

Part I:

Contract No.: CV/2012/08

Contract Title : Liantang/ Heung Yuen Wai Boundary Control Point Site Formation and Infrastructure Works – Contract 2

Date of Inspection :

Time :

Person (s) making the inspection :

	Name in Block Letters	Designation	Signature
1		Contractor's Agent (or his representative if agreed by A/E)	
2		Environmental Officer (or Environmental Supervisor if agreed by A/E)	
3		Architect/Engineer's nominated site representative	
4			

Part II:

Item No.	Location	Situation requiring follow up action	Agreed Due Date for Completion	Date Completed	Remarks
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

To be signed at the end of inspection:

The Contractor's performance on nuisance abatement and waste management *is/is not to the satisfaction of the Architect/Engineer's nominated siterepresentative at the time of inspection. (* delete as appropriate)

Engineer or his representative _____ Agent or his representative _____

Part II: (To be countersigned after ALL actions are completed)

Engineer or his representative _____ Environmental Officer _____

Date: _____ Date: _____

(Note : No payment will be made for the "Weekly Safety Walk" item under PFSS contracts if any one of the follow up actions is completed after the "Agreed Due Date for Completion".)

2) Weekly Environment Inspection Checklist

AUES

Environmental Team –Site Inspection and Environmental Audit Checklist

Project:	**Agreement No. CE 45/2008 (CE) - *Liantang/Heung Yuen Wai Boundary Control Point and Associated Works***	**Checklist No:** CE45/2008-( )-	
Project Contract No.	*Contract 2 / Contract 3 / Contract 4 / Contract 5 / Contract 6*	**Inspected by:**	
Date:		IEC	
Time:		RE	
Environmental Permit	EP- 404/2011/A	ET	
		EO	
		Contractor	

PART A: GENERAL INFORMATION

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

PART B: SITE AUDIT

Note: **Not Obs.**: Not Observed; **Yes**: Compliance; **No**: Non-Compliance; **Follow Up**: Observations requiring follow-Up actions **N/A**: Not Applicable

		Not Obs.	Yes	No	Follow Up	N/A	Photo/ Remarks
Section 1: Water Quality							
1.01	Is effluent discharge licence for the Contract obtained?	☐	☐	☐	☐	☐	
1.02	Is the discharge of turbid water avoided?	☐	☐	☐	☐	☐	
1.03	Are there proper desilting facilities in the drainage systems to reduce SS levels in effluent?	☐	☐	☐	☐	☐	
1.04	Are there channels, sandbags or bunds to direct surface run-off to sedimentation tanks?	☐	☐	☐	☐	☐	
1.05	Are there any perimeter channels provided at site boundaries to intercept storm runoff from crossing the site?	☐	☐	☐	☐	☐	
1.06	Is drainage system well maintained?	☐	☐	☐	☐	☐	
1.07	Are earthworks final surfaces well compacted or protected?	☐	☐	☐	☐	☐	
1.08	Are manholes adequately covered or temporarily sealed?	☐	☐	☐	☐	☐	
1.09	Are there any procedures and equipment for rainstorm protection?	☐	☐	☐	☐	☐	
1.10	Are there any wheel washing facilities?	☐	☐	☐	☐	☐	
1.11	Are there wheel washing facilities well maintained?	☐	☐	☐	☐	☐	
1.12	Is runoff from wheel washing facilities avoided?	☐	☐	☐	☐	☐	
1.13	Are there toilets provided on site?	☐	☐	☐	☐	☐	
1.14	Are toilets properly maintained?	☐	☐	☐	☐	☐	
1.15	Are there any vehicles and plant within the site?	☐	☐	☐	☐	☐	
1.16	Is the oil leakage or spillage from vehicle or plant avoided?	☐	☐	☐	☐	☐	
1.17	Are there any measures to prevent leaked oil from entering the drainage system?	☐	☐	☐	☐	☐	
1.18	Are there any measures to collect spilt cement and concrete washings during concreting works?	☐	☐	☐	☐	☐	
1.19	Are mobile toilets provided on site and located away from the stream course?	☐	☐	☐	☐	☐	
1.20	Is licensed collector employed for handling the waste generated from mobile toilet?	☐	☐	☐	☐	☐	
Section 2: Air Quality							
2.01	Are there wheel washing facilities with high pressure jets provided at every vehicle exit point?	☐	☐	☐	☐	☐	
2.02	Are vehicles washed to remove any dusty materials from their bodies and wheels before leaving construction sites?	☐	☐	☐	☐	☐	
2.03	Are the excavated materials sprayed with water during handling?	☐	☐	☐	☐	☐	
2.04	Are stockpiles of dusty materials sprayed with water, covered or placed in sheltered areas?	☐	☐	☐	☐	☐	
2.05	Are the access roads sprayed with water to maintain the entire road surface wet or paved?	☐	☐	☐	☐	☐	

Environmental Team –Site Inspection and Environmental Audit Checklist

AUES

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
2.06	Is the surface where any drilling, cutting, polishing or breaking operation continuously sprayed with water?	☐	☐	☐	☐	☐	
2.07	Is the load on vehicles covered entirely by clean impervious sheeting?	☐	☐	☐	☐	☐	
2.08	Is the loading of materials to a level higher than the side and tail boards during transportation by vehicles avoided?	☐	☐	☐	☐	☐	
2.09	Is the road leading to the construction site within 30m of the vehicle entrance kept clear of dusty materials?	☐	☐	☐	☐	☐	
2.10	Is dark smoke emission from plant/equipment avoided?	☐	☐	☐	☐	☐	
2.11	Are site vehicles travelling within the speed limit not more than 10km/hour?	☐	☐	☐	☐	☐	
2.12	Are hoardings of not less than 2.4m high provided along the site boundary, which adjoins areas accessible to the public?	☐	☐	☐	☐	☐	
2.13	Is open burning avoided?	☐	☐	☐	☐	☐	
Section 3: Noise							
3.01	Are noisy equipment and activities positioned as far as practicable from the sensitive receivers?	☐	☐	☐	☐	☐	
3.02	Is silenced equipment adopted?	☐	☐	☐	☐	☐	
3.03	Is idle equipment turned off or throttled down?	☐	☐	☐	☐	☐	
3.04	Are all plant and equipment well maintained and in good condition?	☐	☐	☐	☐	☐	
3.05	Are noise barriers or enclosures provided at areas where construction activities cause noise impact on sensitive receivers?	☐	☐	☐	☐	☐	
3.06	Are hand held breakers fitted with valid noise emission labels during operation?	☐	☐	☐	☐	☐	
3.07	Are air compressors fitted with valid noise emission labels during operation?	☐	☐	☐	☐	☐	
3.08	Are flaps and panels of mechanical equipment closed during operation?	☐	☐	☐	☐	☐	
3.09	Are Construction Noise Permit(s) applied for percussive piling works or construction activities out of restricted hours?	☐	☐	☐	☐	☐	
Section 4: Waste/Chemical Management							
4.01	Waste Management Plan had been submit to Engineer for approval.	☐	☐	☐	☐	☐	
4.02	Are receptacles available for general refuse collection?	☐	☐	☐	☐	☐	
4.03	Is general refuse sorting or recycling implemented?	☐	☐	☐	☐	☐	
4.04	Is general refuse disposed of properly and regularly?	☐	☐	☐	☐	☐	
4.05	Is the Contractor registered as a chemical waste producer?	☐	☐	☐	☐	☐	
4.06	Are the chemical waste containers properly labelled?	☐	☐	☐	☐	☐	
4.07	Are the chemical wastes stored in proper storage areas?	☐	☐	☐	☐	☐	
4.08	Is the chemical waste storage area properly labelled?	☐	☐	☐	☐	☐	
4.09	Is the chemical waste storage area used for storage of chemical waste only?	☐	☐	☐	☐	☐	
4.10	Are incompatible chemical wastes stored in different areas?	☐	☐	☐	☐	☐	
4.11	Are the chemical wastes disposed of by licensed collectors?	☐	☐	☐	☐	☐	
4.12	Are trip tickets for chemical wastes disposal available for inspection?	☐	☐	☐	☐	☐	
4.13	Are chemical/fuel storage areas bunded?	☐	☐	☐	☐	☐	
4.14	Are designated areas identified for storage and sorting of construction wastes?	☐	☐	☐	☐	☐	
4.15	Are construction wastes sorted (inert and non-inert) on site?	☐	☐	☐	☐	☐	
4.16	Are construction wastes reused?	☐	☐	☐	☐	☐	

Environmental Team –Site Inspection and Environmental Audit Checklist **AUES**

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
4.17	Is construction waste disposed of properly?	☐	☐	☐	☐	☐	
4.18	Are site hoardings and signboards made of durable materials instead of timber?	☐	☐	☐	☐	☐	
4.19	Is trip ticket system implemented for the disposal of construction wastes and records available for inspection?	☐	☐	☐	☐	☐	
4.20	Is relevant license/ permit for disposal of construction waste or excavated materials available for inspection?	☐	☐	☐	☐	☐	
Section 5: Landscape & Visual							
5.01	Are retained and transplanted trees in health condition?	☐	☐	☐	☐	☐	
5.02	Are retained and transplanted trees properly protected?	☐	☐	☐	☐	☐	
5.03	Are surgery works carried out for the damaged trees?	☐	☐	☐	☐	☐	
5.04	Is damage to trees outside site boundary due to construction activities avoided?	☐	☐	☐	☐	☐	
Section 6: Others							
6.01	Are relevant Environmental Permits posted at all vehicle site entrances/exits?	☐	☐	☐	☐	☐	

Follow-up prior site inspection (dated:)

Finding Non-compliance in this weekly site inspection:

General Reminder

IEC's representative	*RE's representative*	*ET's representative*	*Contractor's representative*
Name	*Name*	*Name*	*Name*
Date:	Date:	Date:	Date:

APPENDIX E

Waste Flow Table

Client: CEDD **Contract No./ Work Order No. :** **CV/2012/08**

Appendix E - Monthly Summary Waste Flow Table for 2014

(All quantities shall be rounded off to 3 decimal places)

Month	Actual Quantities of Inert C&D Materials Generated / Imported (in '000 m3)						Actual Quantities of Other C&D Materials / Wastes Generated				
	Total Quantities Generated (a+b+c+d)	Broken Concrete (including rock for recycling into aggregates) (a)	Reused in the Contract (b)	Reused in Other Projects (c)	Disposed as Public Fill (d)	Imported C&D Material	Metal (in '000kg)	Paper/ Cardboard Packaging (in '000kg)	Plastic (bottles/containers, plastic sheets/ foams from package material) (in '000kg)	Chemical Waste (in '000kg)	Others (e.g. General Refuse etc.) (in '000m3)
January											
February											
March											
April											
May											
June											
Half-year total											
July											
August											
September											
October											
November											
December											
Yearly Total											

Forecast of Total Quantities of C&D Materials to be Generated from the Project

Forecast Made at the End of the Project	Total Quantity Generated	Hard Rock & 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)	Chemicals Waste	Others, e.g. general refuse
Month-Year	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000 kg)
Dec-15											
Dec-16											
Dec-17											
Dec-18											
Total:	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0	0	0

APPENDIX F

Summary Table of Timber Usage

SUMMARY TABLE FOR WORK PROCESSES OR ACTIVITIES
REQUIRING TIMBER FOR TEMPORARY WORKS

Name of Department: CEDD
Contract No.: CV/2012/08
Contract Title: Liantang/ Heung Yuen Wai Boundary Control Point Site Formation and Infrastructure Works – Contract 2
Date: March 2014

Item No.	Description of Works Process or Activity [see note (a) below]	Justification for Using Timber in Temporary Construction Works	Est. Quantities of Timber Used (m^3)	Actual Quantities Used (m^3)	Remarks
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
		Total Estimated Quantity of Timber Used			

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 Engineer's Representative monthly together with the Waste Flow Table for review and monitoring in accordance with PS Clause 1.99(5)

APPENDIX G

Summary of Approved Alternative Disposal Sites

Summary of Approved Alternative Disposal Sites

Approved Alternative Disposal Ground	Estimated Disposal Volume (m3)	Commencement Date for delivery
WSD: 15/WSD/10 Tai Po Water Treatment Work Extension	45,500	Mar 2015
ASD: SS-C505 Liantang Boundary Control Point Building	2,000	Jan 2016
ASD: SS-Y307 Secondary Fence & Boundary Patrol Road	40,000	Apr 2014
CEDD: CV/2012/09 Liantang Contract 3	4,000	Jul 2014
CEDD: CV/2013/03 Liantang Contract 5	300,000	Apr 2014
CEDD: CV/2013/08 Liantang Contract 6	40,000	Sep 2015
CEDD: NE/2014/03 Liantang Contract 7	1,500	Jan 2016
CEDD: YL/2013/01 Tuen Mun Cycle Track	4,000	Aug 2015
EPD: EP/SP/12/92 NENT FarEast	400,000	Jul 2014
HAD: YLR16 Circulative Road at Shui Mei Tsuen	1,200	Jan 2016
HYD: HY/2008/09 Widening of Tolo Highway	5,000	Jul 2014
HYD: HY/2011/09 HKZMB – Hong Kong Link Road	3,000	Dec 2015
HYD: HY/2012/06 Widening of Fanling Highway	15,000	Sep 2014
HYD: HY/2012/08 TMCLK Link	20,000	Oct 2014
MTR: KTE-C1001 Ho Man Tin Station	17,000	Oct 2015
MTR: SCL-1128 South Ventilation Building to Admiralty Tunnels	1,500	Mar 2016
MTR: XRL-810B West Kowloon Terminus Station South	2,000	Mar 2016

Approved Alternative Disposal Ground	Estimated Disposal Volume (m3)	Commencement Date for delivery
MTR: XRL-811B West Kowloon Terminus Approach Tunnel	140,000	Nov 2014
Tailor Recycled Aggregates	100,000	May 2016