

→ COCEA)2

Your Ref : (16) in EP 2/N7/A/52 Ax(1) Pt.22 & (5) in EP 2/N7/A/5 Ax(1) Pt.24
 Our Ref : (CV/2012/08)/M45/231/(F19926)

18 May 2018

By Hand

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

Attn.: Mr. Steve Li

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/D
Condition 3.2 – Waste Management Plan (Rev. K)

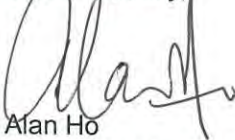
I refer to your above referenced letters dated 5 January 2018 and 6 April 2018 provided with your comments and further comments regarding the submission of Waste Management Plan (Rev. H).

In response to the comments and with reference to Condition 3.2 of the Environmental Permit (EP) No. EP-404/2011/D 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. K) 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.

Yours faithfully,



Alan Ho
 Senior Resident Engineer
 AECOM Asia Co. Ltd.



Encl.

c.c. CEDD/NDO	- Attn: Mr. Raymond Y B Leong	
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. Alan Kam	(w/o encl.)

Our ref: 7076192/L23045/AB/AW/MCC/rw

16 May 2018

AECOM
8/F, Grand Central Plaza, Tower 2
138 Shatin Rural Committee Road
Shatin, N.T.

Attention: Mr Edwin CHING

By Email & Post

Dear Sirs

Agreement No. CE 45/2008 (CE)
Liantang/Heung Yuen Wai Boundary Control Point and Associated Works
Independent Environmental Checker – Investigation
Waste Management Plan (Rev. K) – Contract No. CV/2012/08 (Contract 2)

With reference to the Waste Management Plan (WMP) Revision K provided to us on 16 May 2018 and the ET Leader's certification (ET's ref.: TCS00694/13/300/L1559 dated 16 May 2018), we have no adverse comments on the captioned submission. We herewith verify the WMP of Contract 2 (CV/2012/08) of the captioned Project in accordance with Condition 3.2 of Environmental Permit No. EP-404/2011/D.

Thank you for your attention and please do not hesitate to contact the undersigned on tel. 3995 8120 or by email to antony.wong@smec.com; or our Mr Arthur CHIU on tel. 3995 8144 or by email to arthur.chiu@smec.com.

Yours faithfully



Antony WONG
Independent Environmental Checker

cc	CEDD/BCP	-	Mr LU Pei Yu / Mr William CHEUNG	by fax: 3547 1659
	AECOM	-	Mr Pat LAM / Mr Perry YAM	by email
	DHK	-	Mr Daniel ALTIER	by email
	AUES	-	Mr TW TAM	by email

Our Ref: TCS00694/13/300/L1559

AECOM
8/f Grand Central Plaza, Tower 2
138 Shatin Rural Committee Road
Shatin, Hong Kong

Attn: Mr. Edwin Ching

16 May 2018
By E-mail

Dear Sir,

Re: CEDD Contract CV/2012/08
Liantang/Heung Yuen Wai Boundary Control Point Site Formation and
Infrastructure Works – Contract 2
Waste Management Plan (Revision K)

I refer to the Waste Management Plan (Rev. K) of Contract 2 submitted to us on 15 May 2018 by e-mail, please note that we have no adverse comment on this submission. We herewith certify the captioned submission accordance with *Condition 3.2* of Environmental Permit (EP) No. EP-404/2011/D.

Should you have any queries, please feel free to contact the undersigned at Tel: 2959-6059 or Fax: 2959-6079 or E-mail: twtam@fordbusiness.com.

Yours sincerely,
For and on Behalf of
Action-United Environmental Services & Consulting



T. W. Tam
Environmental Team Leader
TW/nh

cc Dragages Hong Kong Limited (Contractor of C2)
SMEC (IEC)

Mr. Alan Kam by e-mail
Mr. Antony Wong by e-mail

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




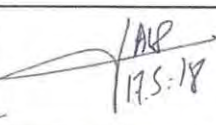
MANAGEMENT PLAN

Document Ref. No.:

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

Document Title:

Waste Management Plan

	PREPARED BY	INTERNAL APPROVAL:		
COMPANY	DHK	DHK	DHK	DHK
NAME	Simon WONG	Roger LEE	Alan KAM	Alexandre PELLARIN
POSITION	Environmental Officer	QSE Manager	Deputy Project Director	Project Director
SIGNATURE				
DATE	9 May 2018	16/5/18	16/5/18	16-5-18

Contract No. CV/2012/08
 Liantang / Heung Yuen Wai Boundary Control Point
 Site Formation and Infrastructure Works - Contract 2
 Response to EPD's Comments - EPD ref.: (16) in EP2/N7/A/52 Ax(1) Pt.22 dated 6 Apr 2018
 Waste Management Plan (Rev. K)

Reviewer	Item No.	Reviewer's Comment	Contractor's Response
General Comments from EPD	1)	The WMP requires further improvements on the following aspects:	
	i.	The approved waste disposal locations;	Section 5.3 of the WMP has mentioned that 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 approved by CEDD/The Engineer are summarized in Appendix G.
	ii.	The implementation of Trip Tickets System; and	Site Management Plan (SMP) for Implementation of Trip Ticket System has described in detail the procedures for controlling the disposal of spoils generated from site. The SMP (Rev F) was documented and approved by the Engineer's Representative in April 2016. The means of tracking using CHIT and Internal Trip Ticket developed by DHK has been implementing effectively since the commencement of the Project in 2014. An executive summary of the SMP has been updated and enclosed in Appendix C of the WMP for easy reference. In addition, a complete version of the SMP (Rev F) is enclosed in Appendix H for your perusal.
	iii.	Records keeping mechanism	Section 5 of the approved SMP (Rev F) has described in detail the implementation procedure including the record control of the Trip Ticket. An executive summary of the SMP is also attached in Appendix C of the WMP for easy reference.
	2)	A focused Implementation Schedule (IS) is suggested for inclusion to better reflect and summaries the details of specific mitigation measures recommended in WMP. A template of the IS for mitigation measures to be recommended in a WMP is attached in Annex 2 for follow-up	The IS summarizing the environmental mitigation measures of the WMP is enclosed in Appendix L.
	3)	You may wish to observe and make reference to the relevant legislation, regulations and guidelines on waste management. Please be reminded that the anticipated disposal outlets are subject to agreement with the respective facilities management authorities.	Section 3 of the WMP described in detail the relevant legislation, regulations and guidelines on waste management.

Contract No. CV/2012/08
 Liantang / Heung Yuen Wai Boundary Control Point
 Site Formation and Infrastructure Works - Contract 2
 Response to EPD's Comments - EPD ref.: (16) in EP2/N7/A/52 Ax(1) Pt.22 dated 6 Apr 2018

Waste Management Plan (Rev. K)

Reviewer	Item No.	Reviewer's Comment	Contractor's Response
Specific Comments from EPD	1)	Please mention as appropriate that "According to clauses 3.2 and 3.3 of the EP-404/2011/D, the WMP shall be submitted and all measures recommended in the approved WMP shall be fully implemented. For the purpose of compliance checking, a focused Implementation Schedule of this WMP is prepared at Appendix X to summarize the committed measures or actions for implementation." Please also mention EIAO and relevant requirement under the EP.	The suggested phrase has been added in the last paragraph of Section 1.3 of the WMP.
	2)	Trip Ticket System: Please add to this system the roles of ET and IEC and specify their responsibilities. Please add the CHIT and DDF will be made available for inspection by ET and IEC upon request. Please also advise if the "Site Management Plan for Implementation of Trip Ticket System" would be included in the EM&A report under the waste management section.	According to Condition 2.3 of the EP-404/2011/D, ET, IEC and Contractor are required to be independent for implementation of the EM&A programme. The Project Organization Structure is illustrated in Appendix A of the WMP. The detailed duties and responsibilities of the ET and the IEC are specified in Section 1.5 "Project Organisation" of the EM&A manual. The sentence "CHIT, DRS and WFT will be made available for inspection by ET and IEC upon request" has been added in Section 11.3 of the WMP. In accordance with Contract Particular Specification 25.25(6), the SMP shall be prepared by the Contractor but it is not required to be included in the EM&A report.
	3)	Trip Ticket System: A table which records the internal trip tickets and vessel chits showing that the quantity of the waste leaving the construction site and that received by CEDD or EPD Fill Bank by barge each time should be provided. The contractor should check the information recorded in the table against the disposal records in the Government facilities within a proposed reasonable time.	Daily Record Summary (DRS) shall be used to record the mentioned information. Each DRS shall be signed by DHK and verified by the inspectorate. The signed DRS will be submitted together with the CHITs to the Engineer for record. DHK is responsible for checking the information recorded in the DRS against the disposal records from the Governmental facilities within a reasonable timeframe. The relevant sentence has been added in Section 11.3 of the WMP.
	4)	Please specify how many registered barges would be used for the transportation; what are the barge registration no.; if non-registered barge would be used for transportation and if the existing registered barge are not enough. If yes, please specify the arrangement.	Total twenty registered barges were approved by the Fill Management Division of CEDD for delivery of C&D materials to Tuen Mun Area 38 Fill Bank. The registration numbers of the approved barges are listed in Section 8.5 of the WMP. Delivery of C&D materials via barge has been ceased since the breakthrough of TBM on 27 Apr 2018. No non-registered barge has ever been deployed for operation in the past.

Contract No. CV/2012/08
 Liantang / Heung Yuen Wai Boundary Control Point
 Site Formation and Infrastructure Works - Contract 2
 Response to EPD's Comments - EPD ref.: (16) in EP2/N7/A/52 Ax(1) Pt.22 dated 6 Apr 2018

Waste Management Plan (Rev. K)

Reviewer	Item No.	Reviewer's Comment	Contractor's Response
Specific Comments from EPD	5)	A table of Daily Record Summary to record daily disposal of C&D waste from the site should be included in the WMP.	The Daily Record Summary was enclosed in Appendix D of the SMP.
	6)	For disposal at non-Government facilities (e.g. alternative disposal sites) and Government facilities, the contractor should check the information recorded in the Daily Record Summary against the disposal records in these non-Government facilities or Governmental facilities within a proposed reasonable time	DHK is responsible for checking the information recorded in the DRS against the disposal records both from the Governmental facilities and the alternative disposal sites within a reasonable timeframe. The relevant sentence has been added in Section 11.3 of the WMP.
	7)	Appendix E: Monthly Waste Flow Table: The summaries shall be made available to ET and IEC upon request.	The relevant sentence has been added in Section 11.3 of the WMP.
	8)	For inspection and audits, please add the roles of ET and IEC for their responsibilities to perform audit against the committed measures as stated in the focused IS of this WMP.	Any observation identified by the ET during the weekly inspection and by IEC during the monthly surprise inspection shall be rectified by DHK. This sentence has been added in the last paragraph of Section 11.1.

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)

H	12 Oct 2017	8.5 Appendix A Appendix B Appendix G	Disposal of TBM Excavated Fill Materials from North Portal to Public Fill Bank via Barge Update Project Environmental Organization Structure Update Volume of C&D Material of the Project Update List of Approved Alternative Disposal Sites
I	9 Feb 2018	5.2 8.5 8.6 Appendix A Appendix B Appendix G 8.2, Appendix C & Appendix H Appendix C Appendix I	Disposal of demolition waste from the decommissioning of Tai Shu Ha Explosive Magazine Disposal of TBM Excavated Fill Materials from North Portal to Public Fill Bank via Barge Proposal of Delivery of TBM Excavated Fill Materials to Mainland China via Barge Update Project Environmental Organization Structure Update Volume of C&D Material of the Project Update List of Approved Alternative Disposal Sites <u>Address EPD comments</u> <u>(Ref.: (16) in EP 2/N7/A/52Ax(1) Pt.22 dated 5 January 2018</u> <u>Item a:</u> - Site Management Plan (SMP) for Implementation of the Trip Ticket System (Rev F) described in detail the procedure for controlling the disposal of spoils generated from site. (Please refer to Appendix H) - An executive summary of Site Management Plan for Implementation of Trip Ticket System has been updated (Please refer to Appendix C) <u>Item b:</u> Duties of Responsible Parties in the Implementation of the Trip Ticket System is enclosed in Appendix C <u>Item c:</u> Implementation Schedule to Summarize the Environmental Mitigation Measures of the WMP is enclosed in Appendix I
J	12 Mar 2018	1.1 8.5	<u>Address IEC comment</u> Update the latest EP number to EP-404/2011/D Update the information on the operation of jetty to dispose TBM excavated materials to public fill facilities via barge
K	9 May 2018	Appendix A Appendix B	Update Project Environmental Organization Structure Update Volume of C&D Material of the Project <u>Address EPD comments</u> <u>(Ref.: (5) in EP 2/N7/A/5 Ax(1) Pt.24 dated 6 April 2018</u> Please refer to the enclosed table - Response to EPD Comments.

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																			
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Rev. Section ↕	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
App. A	X	X	X		X		X	X	X		X										
App. B	X				X	X	X	X	X		X										
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App. D		X	X																		
App. E		X	X																		
App. F		X	X																		
App. G				X	X	X	X	X	X												
App. H									X												
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Appendix E	Waste Flow Table
Appendix F	Summary Table of Timber Usage
Appendix G	List of Approved Alternative Disposal Sites
Appendix H	Site Management Plan for Implementation of the Trip Ticket System (Rev F)
Appendix I	Implementation Schedule to summarize the environmental mitigation measures of the WMP

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/D. 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.

According to clauses 3.2 and 3.3 of the EP-404/2011/D, the WMP shall be submitted and all measures recommended in the approved WMP shall be fully implemented. For the purpose of compliance checking, a focused Implementation Schedule of this WMP is prepared at Appendix I to summarize the committed measures or actions for implementation.

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.

2.2.1 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.

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			✓	✓		✓	✓	✓		✓	✓

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
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 <i>Schedule 1 of the Waste Disposal (Chemical Waste) Regulations</i>	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	Recycling 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.
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
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: <ul style="list-style-type: none"> • Transport to other construction contracts to satisfy fill requirements elsewhere • Transport to other land formation sites for reuse • Transport to public filling areas <i>Notes: If fill materials are transported to private lands, the agreement with the relevant third party and EPD should be sought</i>	Throughout construction phase	Site Engineer / General Foremen to implement
11	The handling and disposal of bentonite slurries should follow the <i>Practice Note for Professional Persons, Construction Site Drainage (ProPECC PN 1/94)</i>	Throughout construction phase	Site Engineer / General Foremen to implement, EnvO to audit
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 <i>Waste Disposal (Chemical Waste) (General) Regulation</i>) should be handled in accordance with the <i>Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes</i>	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 <i>Code of Practice on the Handling, Transportation and Disposal of Asbestos Waste</i>	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 addition 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:

1. The demolition work shall be stopped immediately.
 2. The asbestos containing material and suspect material shall be maintained in good condition to prevent further release of asbestos fibres.
 3. The appointed Registered Asbestos Consultant shall carry out further investigation.
 4. The appointed Registered Asbestos Laboratory shall perform asbestos sampling, identification and measurement.
 5. A Registered Asbestos Contractor shall be commissioned to carry out the removal work if the presence of asbestos is confirmed.
 6. 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.
- Drill and Blast excavation for the South Tunnel was completed in August 2017. In accordance with condition of EP for operation of Tai Shu Ha Explosive Magazine under the Contract CV/2012/08, DHK has informed EPD the decommissioning of the magazine would be commenced in January 2018. No surplus Category I Dangerous Goods were remained in the magazine. During the reinstatement works, demolition waste generated from the breaking works of concrete road surface would be disposed to public fill reception facility using the existing construction waste billing account (No. 7019105) under the Contract.

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 (SMP) 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.

An executive summary of the SMP for Implementation of Trip Ticket System and duties of responsible parties in the implementation of the Trip Ticket System are updated and presented in Appendix C. A complete version of the SMP is also enclosed in Appendix H for reference.

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.

8.5 Disposal of TBM Excavated Fill Materials from North Portal to Public Fill Bank via Barge

To efficiently manage the TBM excavated materials, an alternative way is adopted to dispose the excavated materials via a jetty to the designated Fill Bank (TKO137), or dispose to TM38 as instructed by the Fill Management Division (FMD) of CEDD.

The jetty is operated within the Yuen Fat Wharf located in Cheung Sha Wan, it is a transfer station for unloading C&D excavated materials from various sources including Contract 2. It is anticipated that the number of truck per day delivering TBM excavated materials to the jetty will range from 50 to 300 and it is subject to change dependent upon the TBM excavation rate.

For each truckload of TBM excavated materials delivered to the jetty, the existing internal trip ticket system will continue to be used to ensure the excavated materials are properly delivered from North Portal site to the jetty.

Specific vessel CHIT shall be applied from the CEDD and EPD, for delivering each barge load of TBM excavated spoils to the fill bank for disposal. Each barge shall be registered and approved by the FMD. The excavated materials delivered by barge shall be prior cement treated to ensure the moisture content met the disposal requirement specified by the designated dumping facility.

The load capacity of each loaded and unloaded barge is verified according to its specific displacement table. The verification is witnessed by the operator of the jetty, DHK and the Engineer's Representative.

Total 20 barges were approved by the FMD of CEDD to deliver C&D materials to Public Fill Bank, the registration numbers of the approved barges are:

B21598V	B21705V	B21722V	B22506Y	B21612V
B21699V	B21642V	B21534V	B21706V	B22583Y
B21638V	B141450	B21576V	B21683V	B21765V
B21509V	B21695V	B21667V	B21725V	B21555V

8.6 Proposal of Delivery of TBM Excavated Fill Materials to Mainland China via Barge

In November 2017, DHK proposed to deliver TBM excavated fill materials for use in a new developing area of Zhongshan. All the necessary documents to substantiate the proposal were submitted to CEDD and AECOM for vetting and approval.

A joint visit at the designated disposal ground of Zhongshan was carried out in December 2017. No adverse comments were received from AECOM regarding the joint visits at the disposal site. Apart from that, a trial run was included in the approval process to ensure that all operational steps were satisfactorily demonstrated and relevant statutory requirements were fulfilled. The trial run for delivering one barge load (Approx 1,700m³) was arranged on 13 Jan 2018 under close supervision by the AECOM inspectorate. A Mainland Chinese self-propelled closed-bottom vessel was used and the vessel was installed with Automatic Identification System (AIS), an automatic tracking system used on the vessel and by vessel traffic service.

Both DHK and AECOM witnessed the vessel loading operation at the jetty in CSW on 13 Jan 2018 and unloading operation at the disposal ground in Zhongshan on 15 Jan 2018. All relevant documents including the customs record, barge displacement measured record and trip ticket duly signed by the representatives from DHK, AECOM, jetty operator, and the receptor site at Zhongshan were subsequently submitted to the CEDD and AECOM for supplementary information.

Owing to the receptor site considered the TBM excavated fill materials not suitable for their use, DHK did not processed further.

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.

Any observation identified by the ET during the weekly inspection and by IEC during the monthly surprise inspection shall be rectified by DHK.

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. CHIT, Daily Record Summary (DRS) and Waste Flow Table (WFT) will be made available for inspection by ET and IEC upon request. DHK is responsible for checking the information recorded in the DRS against the disposal records both from the Government facilities and the alternative disposal sites within a reasonable timeframe.

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.
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.

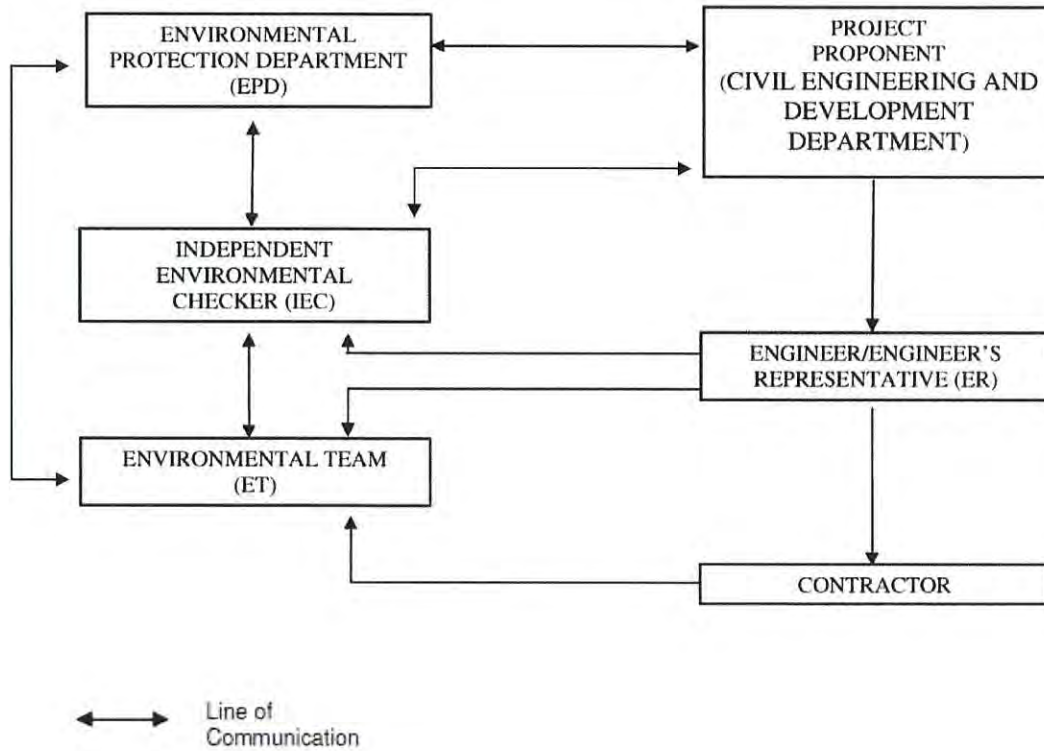
2. The Contractor is responsible to perform all corrective actions and comply with requirements.

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

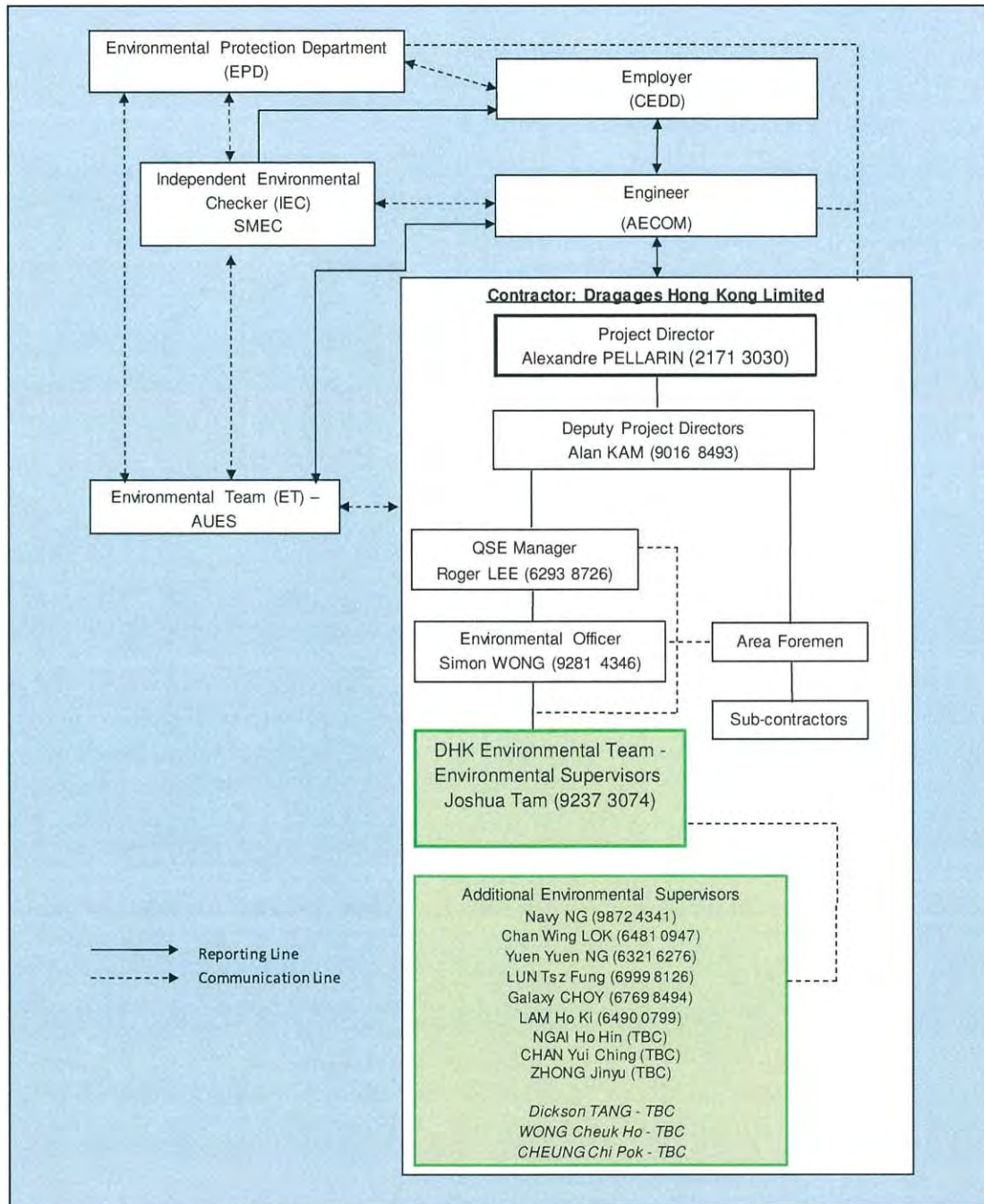
APPENDIX A

Organization Structure

Structure as Detailed in EM&A Manual

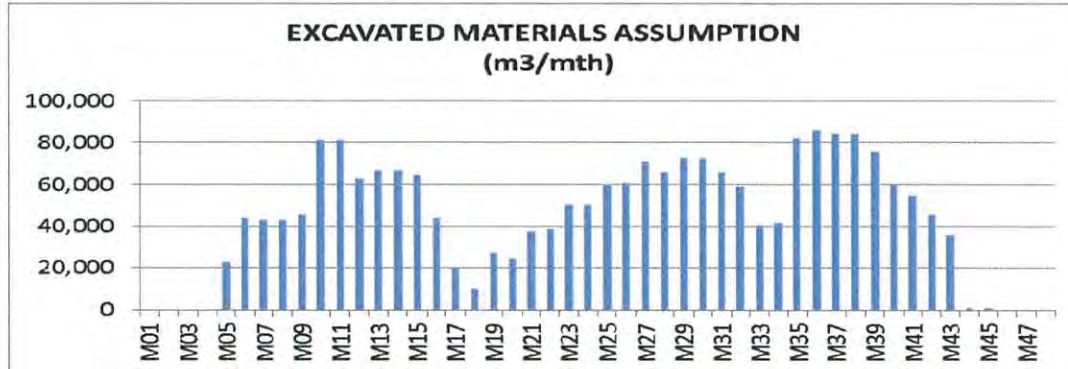


Structure within Dragages HK Ltd. For Waste Management



APPENDIX B

Estimated Volume of C&D Waste for the Project



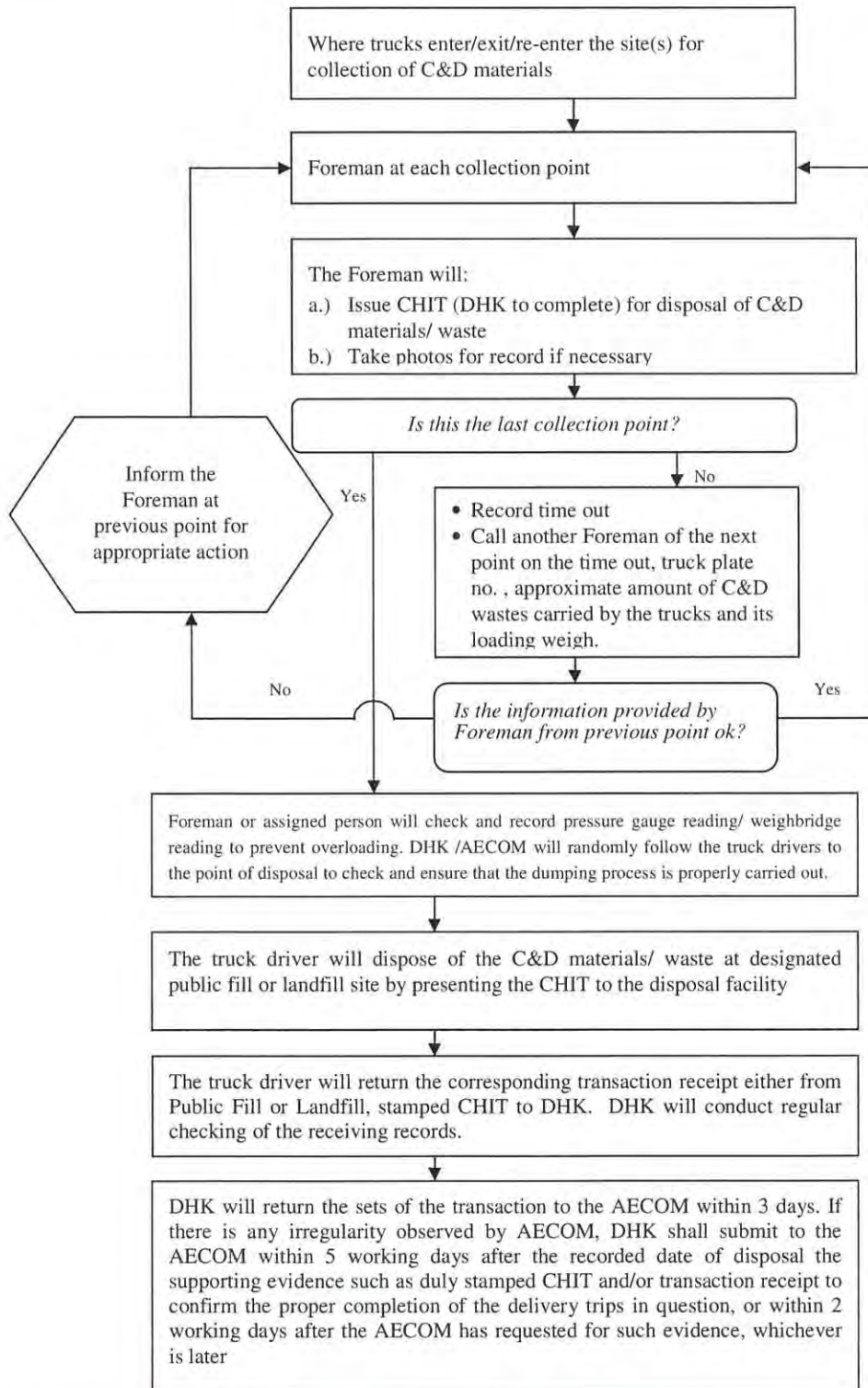
CEDD Contract No. CV/2012/08 Liantang / Heung Yuen Wai Boundary Control Point Site Formation and Infrastructure Works - Contract 2
Estimation on Excavated Spoil Generated from TBM and Drill & Blast Operation & Non-Waste Generated from the Project

Month Number	Month	Estimation on C&D Material & Waste Generated for Disposal						Actual Disposal Record			Total	
		Est. Amount of C&D Materials - Spoil, m3 (a+b)	Est. Amount of C&D Materials - Spoil, m3 (Mid) x	Est. Amount of C&D Materials - Spoil, m3 (South) b	Est. Amount of C&D Materials - 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
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	80667.4	300	80967.4	40058.19	8620.36	1.32	56679.87
7	Jul-2014	43171	1504	0	41667	84976.2	500	85476.2	96204.14	27140.86	19.1	123358.1
8	Aug-2014	43171	1504	0	41667	84976.2	500	85476.2	112769.6	9622.6	24.83	122477.23
9	Sep-2014	45671	1504	0	44167	100476.2	500	100976.2	97882.88	22640.7	48.17	123571.75
10	Oct-2014	81567	1504	15063	60000	179447.4	500	179947.4	155797.4	30126.6	121.77	196045.83
11	Nov-2014	81567	1504	15063	60000	179447.4	500	179947.4	176926.2	3607.23	58.71	178992.14
12	Dec-2014	62734	1504	15063	46167	139014.8	500	139514.8	118970.1	695.36	54.38	139618.84
13	Jan-2015	66976	5746	15063	46167	147347.2	600	147947.2	144673.2	1203.69	98.64	143974.83
14	Feb-2015	66976	5746	15063	46167	147347.2	600	147947.2	13399.9	1432.81	93.35	36936.06
15	Mar-2015	64576	3346	15063	46167	142067.2	600	142667.2	143795.7	709.47	74.17	144079.34
16	Apr-2015	43742	3346	15063	25333	86232.4	600	86832.4	107622.4	454.49	35.42	108112.31
17	May-2015	20409	3346	15063	2000	44898.8	600	45498.8	76354.13	958.38	81.7	77394.21
18	Jun-2015	9896	3346	4550	2000	21711.2	600	22311.2	60172.81	995.21	272.49	61440.51
19	Jul-2015	27246	7080	4550	15436	59841.2	600	60441.2	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	107418.09
21	Sep-2015	37549	3733	3200	30634	82607.8	600	83207.8	91798.98	3458.65	97.69	94355.32
22	Oct-2015	38816	0	3200	35616	85395.2	600	85995.2	97091.56	615.91	114.53	87222
23	Nov-2015	50516	0	6400	44116	111335.2	600	111935.2	93616.9	3798.39	152.53	97567.82
24	Dec-2015	50516	0	6400	44116	111335.2	600	111935.2	108532	863.39	71.3	109466.69
25	Jan-2016	60524	0	9908	50616	133132.8	600	133732.8	71508	87446.85	196.48	159154.33
26	Feb-2016	60907	0	10291	50616	133985.4	600	134585.4	84366.5	33678.74	174.3	120418.54
27	Mar-2016	71123	0	20507	50616	154470.6	600	155070.6	64573	9012.79	122.75	74608.54
28	Apr-2016	66123	0	20907	45616	145470.6	600	146070.6	72323	117302.11	208.93	189634.04
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	36886.14	146.6	165228.74
31	Jul-2016	63951	0	30235	35616	145082.2	600	145682.2	39120	134126	944.29	194596.29
32	Aug-2016	58951	0	30335	28616	129682.2	600	130282.2	39520	134833.45	237.12	194596.29
33	Sep-2016	40785	0	30335	10490	89727	600	90327	111910	99598.16	322.82	211791.98
34	Oct-2016	41742	0	30335	11407	91832.4	600	92432.4	89783	114634.97	296.28	204714.25
35	Nov-2016	32486	0	33455	49031	181468.2	600	182068.2	100192	119357.57	514.6	220064.17
36	Dec-2016	86364	0	33455	52909	190000.8	600	190600.8	71672	167286.66	451.47	179418.13
37	Jan-2017	84364	0	33455	50909	185000.8	600	185600.8	51816.5	85960.28	513.63	186290.41
38	Feb-2017	84364	0	33455	50909	185000.8	600	185600.8	73646.5	118315.42	138.41	183506.33
39	Mar-2017	76096	0	25187	50909	167411.2	600	168011.2	56451	6360.12	679.12	63484.24
40	Apr-2017	59560	0	8651	50909	131032	600	131632	50297	15765.75	199.19	60861.94
41	May-2017	54560	0	8651	48909	120032	600	120632	73058.5	10062.68	625.09	82766.27
42	Jun-2017	45908	0	0	48909	100998.8	500	101498.8	29808	53182.33	522.46	83602.79
43	Jul-2017	35909	0	0	35909	78998.8	500	79498.8	6243.5	179317.08	852.91	185413.6
44	Aug-2017	957	0	0	957	2105.4	500	2605.4	1767	158513.05	811.35	161091.4
45	Sep-2017	957	0	0	957	2105.4	500	2605.4	3286	150535.79	907.44	154728.23
46	Oct-2017	0	0	0	0	0	500	500	0	170780.06	1006.08	171786.14
47	Nov-2017	0	0	0	0	0	500	500	294.58	165176.22	1175.68	166646.48
48	Dec-2017	0	0	0	0	0	500	500	281.16	160280.12	1300	161861.28
49	Jan-2018	0	0	0	0	0	400	400	11640.5	189563	3236.8	204440.3
50	Feb-2018	0	0	0	0	0	400	400	11638	178976	1052	181046
51	Mar-2018	0	0	0	0	0	400	400	8074	65120	466	73650
52	Apr-2018	0	0	0	0	0	300	300	7416	114886	928	123256
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: $1m^3$ of Inert C&D Materials weigh 2.2 tonnes and $1m^3$ of Non-Inert C&D Wastes weigh 1.6 tonnes

APPENDIX C

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



Duties of Responsible Parties in the Implementation of the Trip Ticket System

	DHK Authorized Persons	DHK Weighbridge Attendant	DHK Subcontractor's Authorized Person	Dump Truck Driver	Disposal Facility Operator's Authorized Person	Jetty operator's Authorized Person	DHK Environmental Officer	AECOM
LAND TRANSPORTATION								
Record reading on the weighbridge and other information		✓						
Issue CHIT or internal trip tickets for the disposal of C&D materials (by signing, stamping on the CHIT or internal trip tickets)	✓							
Acknowledge receipt of internal trip tickets (by signing and stamping on the internal trip tickets)			✓					
Ensure mechanical covers fully closed and dump truck thoroughly cleansed before leaving the Site				✓				
Deliver C&D materials to the designated disposal locations (including public fill, landfill and alternative disposal grounds)				✓				
Sign and stamp on the CHIT or internal trip tickets upon receipt of C&D materials					✓	✓		
Return transaction receipts from public fill/landfill and stamped trip tickets to DHK			✓					
Random tracking of dump trucks leaving the Site to verify that the dumps are delivering C&D materials to the designated disposal locations							✓	✓
Regular checking of the transaction receipts and returned trip tickets							✓	✓
Prepare daily disposal summary together with associated records for submission to AECOM							✓	
SEA TRANSPORTATION								
Complete the Barge Measurement Record and verify the data entered into that form	✓							✓
Issue Vessel CHIT for the disposal of C&D materials to public fill	✓							
Sign and stamp on the Vessel CHIT upon receipt of C&D materials					✓			

Return transaction receipts from public fill to DHK			✓					
Surprise inspection to the jetty in CSW							✓	✓
Regular checking of the transaction receipts							✓	✓
Prepare daily disposal summary together with associated records for submission to AECOM							✓	

APPENDIX D

Weekly Environmental Walk Inspection Report

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



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

(1) Summary of Follow-Up Actions

	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
Inspection Report No.: LTH/QSE/VIEW/		

Part I:
Contract No.: CV/2012/08
Date of Inspection: _____
Contract Title: Liantang/ Heung Yuen Wai Boundary Control Point Site Formation and Infrastructure Works – Contract 2
Time: _____

Person (s) making the inspection: _____
Name in Block Letters: _____
Description: _____
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 site representative at the time of inspection. (* delete as appropriate)

Engineer or his representative: _____
Agent or his representative: _____

Part III: 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

Environmental Team – Site Inspection and Environmental Audit Checklist

AUES

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 <input type="checkbox"/>	Fine <input type="checkbox"/>	Cloudy <input type="checkbox"/>	Rainy <input type="checkbox"/>	Temperature: _____ °C
Humidity:	High <input type="checkbox"/>	Moderate <input type="checkbox"/>	Low <input type="checkbox"/>		
Wind:	Strong <input type="checkbox"/>	Breeze <input type="checkbox"/>	Light <input type="checkbox"/>	Calm <input type="checkbox"/>	

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
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Section 1: Water Quality

1.01	Is effluent discharge licence for the Contract obtained?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
1.02	Is the discharge of turbid water avoided?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
1.03	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 type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
1.04	Are there channels, sandbags or bunds to direct surface run-off to sedimentation tanks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
1.05	Are there any perimeter channels provided at site boundaries to intercept storm runoff from crossing the site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
1.06	Is drainage system well maintained?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
1.07	Are earthworks final surfaces well compacted or protected?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
1.08	Are manholes adequately covered or temporarily sealed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
1.09	Are there any procedures and equipment for rainstorm protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
1.10	Are there any wheel washing facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
1.11	Are there wheel washing facilities well maintained?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
1.12	Is runoff from wheel washing facilities avoided?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
1.13	Are there toilets provided on site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
1.14	Are toilets properly maintained?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
1.15	Are there any vehicles and plant within the site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
1.16	Is the oil leakage or spillage from vehicle or plant avoided?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
1.17	Are there any measures to prevent leaked oil from entering the drainage system?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
1.18	Are there any measures to collect spilt cement and concrete washings during concreting works?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
1.19	Are mobile toilets provided on site and located away from the stream course?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
1.20	Is licensed collector employed for handling the waste generated from mobile toilet?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

Section 2: Air Quality

2.01	Are there wheel washing facilities with high pressure jets provided at every vehicle exit point?	<input type="checkbox"/>	<input 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 type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
2.03	Are the excavated materials sprayed with water during handling?	<input type="checkbox"/>	<input 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 type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
2.05	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 type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
2.07	Is the load on vehicles covered entirely by clean impervious sheeting?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
2.08	Is the loading of materials to a level higher than the side and tail boards during transportation by vehicles avoided?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
2.09	Is the road leading to the construction site within 30m of the vehicle entrance kept clear of dusty materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
2.10	Is dark smoke emission from plant/equipment avoided?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
2.11	Are site vehicles travelling within the speed limit not more than 10km/hour?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
2.12	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 type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
2.13	Is open burning avoided?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Section 3: Noise							
3.01	Are noisy equipment and activities positioned as far as practicable from the sensitive receivers?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
3.02	Is silenced equipment adopted?	<input type="checkbox"/>	<input 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 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 type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
3.05	Are noise barriers or enclosures provided at areas where construction activities cause noise impact on sensitive receivers?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
3.06	Are hand held breakers fitted with valid noise emission labels during operation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
3.07	Are air compressors fitted with valid noise emission labels during operation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
3.08	Are flaps and panels of mechanical equipment closed during operation?	<input 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 or construction activities out of restricted hours?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
Section 4: Waste/Chemical Management							
4.01	Waste Management Plan had been submit to Engineer for approval.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
4.02	Are receptacles available for general refuse collection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
4.03	Is general refuse sorting or recycling implemented?	<input 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 type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
4.05	Is the Contractor registered as a chemical waste producer?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
4.06	Are the chemical waste containers properly labelled?	<input type="checkbox"/>	<input 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 type="checkbox"/>	<input type="checkbox"/>	_____
4.08	Is the chemical waste storage area properly labelled?	<input type="checkbox"/>	<input 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 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 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 type="checkbox"/>	<input type="checkbox"/>	_____
4.12	Are trip tickets for chemical wastes disposal available for inspection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
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 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 type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
4.16	Are construction wastes reused?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

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

Contract No./Work Order No. : CV/2012/08

Client: CEDD

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 m ³)				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 (boards/containers, plastic sheets/ foams, from package materials) (in '000kg)	Chemical Waste (in '000kg)	Others (e.g. General Refuse etc.) (in '000m ³)
January											
February											
March											
April											
May											
June											
Half-year total											
July											
August											
September											
October											
November											
December											
Yearly Total											

Forecast Made at the End of the Project	Forecast of Total Quantities of C&D Materials to be Generated from the Project										
	Total Quantity Generated (in '000m ³)	Hard Rock & Large Broken Concrete (in '000m ³)	Reused in the Contract (in '000m ³)	Reused in other Projects (in '000m ³)	Disposed as Public Fill (in '000m ³)	Imported Fill (in '000m ³)	Metals (in '000 kg)	Paper/ cardboard packaging (in '000 kg)	Plastics (see Note 3) (in '000 kg)	Chemicals Waste (in '000 kg)	Others, e.g. general refuse (in '000 kg)
Month-Year											
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

MTR: XRL-811B West Kowloon Terminus Approach Tunnel	140,000	Nov 2014
Tailor Recycled Aggregates	100,000	May 2016
HA Contract 20150042 Tin Shui Wai Housing Authority Contract	4,500	Dec 2016
Wing On Recycling Quarry at Longgang, Shenzhen, Mainland China	200,000	The plan is abandoned
Contract STTL579 Kau To Shan Private Development	120,000	Jan 2017
MTR: XRL-8127 Shek Yim Adit tunnel	28,000	Dec 2016

APPENDIX H

Site Management Plan for Implementation of the Trip Ticket System (Rev F)



AECOM
 8/F, Grand Central Plaza, Tower 2
 138 Shatin Rural Committee Road
 Shatin, Hong Kong
 香港新界沙田鄉事會路 138 號新城市
 中央廣場第 2 座 8 樓
 www.aecom.com

+852 2171 3300 tel
 +852 2171 3498 fax

Your Ref : LTH/DHK/CSF/ENV/03198/A
 Our Ref : (CV/2012/08)/R15/910/(F08665)

8 April 2016

Dragages Hong Kong Limited
 3/F Island Place Tower
 510 King's Road
 North Point, Hong Kong

Attn: Mr. Edmond Wong

Dear Sirs,

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

Site Management Plan for Implementation of the Trip Ticket System (Rev. F)

I refer to your above referenced Contractor's Submission Form dated 16 March 2016 regarding the captioned subject and have no adverse comments on your submission.

Should you have any queries, please contact our Resident Engineer Mr. Algy Lee at tel. no. 2171 3340 or the undersigned at tel. no. 2171 3305.

Yours faithfully,

Gregory Lo
 Engineer's Representative
 Senior Resident Engineer
 AECOM Asia Co. Ltd.




c.c. AECOM – Attn: Mr. Francis Leong / Mr. Edward Yip

SM/GL/GW/KKL/PY/ZC/wsc

Remarks:		
Confidential:	Yes	No
HKLTB (CV/2012/08)		
	ACT	INFO
FD-DAL		X
DFD		X
GCM		X
TBM		
Tradi		
MV & S		
Building		
Survey		
Plant		
Procurement		
TM		
Design		
Method		
Planning		
Geotechnical		
AGF		
COM		
QSE		X



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/03198/A SIGNED :  DATE : 11/3/16																																																										
DOCUMENT TITLE Site Management Plan for Implementation of the Trip Ticket System (Rev F)	N / R* N	DOCUMENT NO. LTH/DHK/MPL/PW/ENV/00007/F	AECOM REF. NO. N																																																									
		<table border="1" style="margin: auto;"> <thead> <tr> <th>Configuration</th> <th>Year</th> <th>No.</th> </tr> </thead> <tbody> <tr> <td colspan="3" style="text-align: center;">HKLTH (CV/2012/08)</td> </tr> <tr> <td>PD - DAL</td> <td>ACT</td> <td>ISSFD</td> </tr> <tr> <td>RFD</td> <td></td> <td></td> </tr> <tr> <td>GCM</td> <td></td> <td></td> </tr> <tr> <td>TDM</td> <td></td> <td></td> </tr> <tr> <td>Track</td> <td></td> <td></td> </tr> <tr> <td>Lev. & S.</td> <td></td> <td></td> </tr> <tr> <td>Bridging</td> <td></td> <td></td> </tr> <tr> <td>Survey</td> <td></td> <td></td> </tr> <tr> <td>Plant</td> <td></td> <td></td> </tr> <tr> <td>Procurement</td> <td></td> <td></td> </tr> <tr> <td>TM</td> <td></td> <td></td> </tr> <tr> <td>Design Method</td> <td></td> <td></td> </tr> <tr> <td>Planning</td> <td></td> <td></td> </tr> <tr> <td>Geotechnical</td> <td></td> <td></td> </tr> <tr> <td>AGF</td> <td></td> <td></td> </tr> <tr> <td>COM</td> <td></td> <td></td> </tr> <tr> <td>QSE</td> <td></td> <td style="text-align: center;">8</td> </tr> </tbody> </table>	Configuration	Year	No.	HKLTH (CV/2012/08)			PD - DAL	ACT	ISSFD	RFD			GCM			TDM			Track			Lev. & S.			Bridging			Survey			Plant			Procurement			TM			Design Method			Planning			Geotechnical			AGF			COM			QSE		8	CONTRACTOR'S COMMENTS For your further review and approval. [P.S. Clause 25.25(6) & EP Condition 3.2] (Only the amended pages are enclosed)
Configuration	Year	No.																																																										
HKLTH (CV/2012/08)																																																												
PD - DAL	ACT	ISSFD																																																										
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AGF																																																												
COM																																																												
QSE		8																																																										
Reviewed by : Roger Lee Signature : 	Reviewed by : Edmond Wong Signature : 	EXTERNAL DISTRIBUTION																																																										

Internal Circulation : DAL / EWO / RLE / SWG
 * N = New Submission R = Re-submission

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

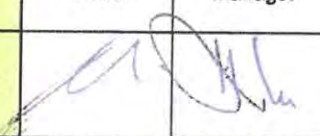
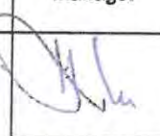
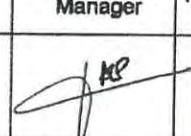
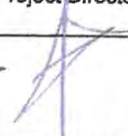
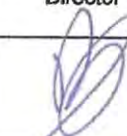
MANAGEMENT PLAN

Document Ref. No.:

L	T	H	/	D	H	K	/	M	P	L	/	P	W	/	E	N	V	/	0	0	0	0	7	/	F
Project Code			Issuer Code			Document Code			Geographic Code			Functional Code			Sequential Number				Rev. Index						

Document Title:

Site Management Plan
for Implementation of the Trip Ticket System

	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	9/3/2016	9/3/16	11.3.2016	11/3/16	11/3/16

DOCUMENT STATUS

Details of Revision:

Revision	Rev. Date	Sections	Amendment Source and/or Details
A	20 Feb 2014	All	First Issue
B	12 Apr 2014	1, 4.1, 5.1, 5.2, 5.3, 5.5, 6, Appendix F	Addressed AECOM comments
C	04 June 2014	5.1	Addressed AECOM comments
D	23 Aug 2014	5.4	Address alternative disposal ground and renumber the sections thereafter.
		5.5	Enhance the measures to avoid overloading
		Appendix B	Update Organization chart
		Appendix D	Update Daily Record Summary Form
		Appendix F	Introduce trip ticket to alternative disposal ground
E	24 Mar 2015	Appendix I	Monthly Waste Flow Table template
		5.1, 5.2, 5.6, Appendix B	Addressed AECOM comments
F	9 Mar 2016	Appendix B	Update Organization chart
		Appendix E	Update the template of trip ticket for internal transfer
		Appendix I	Update the template of waste flow table

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																			
2	X																				
3	X																				
4	X	X																			
4.1	X	X																			
4.2	X																				
4.3	X																				
4.4	X																				
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5.1	X	X	X		X																
5.2	X	X			X																
5.3	X																				
5.4	X			X																	
5.5	X	X		X																	
5.6	X				X																
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App. I	X			X		X															
App. J																					

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1. INTRODUCTION

This Site Management Plan (SMP) is developed by Dragages Hong Kong Ltd. (DHK) to demonstrate clearly the management of Trip Ticket System (TTS) for disposal of Construction and Demolition (C&D) waste generated in the execution of works for Liantang / Heung Yuen Wai Boundary Control Point Site Formation and Infrastructure Works – Contract 2 (CV/2012/08) (the Project). This SMP has been prepared in accordance with the PS Clause 25.25(6), 25.27, 25.28, GS Clause 25.26, 25.27 & 25.28, DEVB TCW No. 06/2010 and WBTC No. 19/2005. This SMP forms part of the Environmental Management Plan (EMP) of the Project. The measures specified in this SMP will be implemented on site to manage the disposal of construction and demolition (C&D) materials.

2. PROJECT DESCRIPTION

CV/2012/08 is one of the major sub-projects of the above mentioned Development. The Project's site boundary is shown in Appendix A. The project was granted to DHK on 13 December 2013 and the project period will be last for 54 months.

Major Scope of Works

- construction of an approximately 5.4km long dual two-lane trunk 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;
- 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;
- construction of an administration building and the associated building services works at Shan Tong for tunnel operation;
- provision of electrical and mechanical systems for Lung Shan tunnel;
- construction of road improvement works at Lau Shui Heung Road; and
- strengthening works within existing Nam Chung water tunnel.

3. PROJECT ORGANIZATION

The Project Environmental Management Organisation Chart depicting the functional inter-relationship of personnel is shown in Appendix B. It is clearly indicated the managerial control, the reporting structure and the interface relationship between all parties involved in the TTS management issue.

Duties and Responsibilities

The environmental roles and responsibilities are summarized as follows:

Title	Responsibilities
Project Director / Deputy Project Director	<ul style="list-style-type: none"> • Ultimately responsible for the company's environmental performance on site; • Assigning resources and facilities to provide an effective trip ticket system in the workplace; and • Task allocation to all staff.
QSE Manager	<ul style="list-style-type: none"> • Overall superintendence and control of all site matters within their respective area of works; • Arranging sufficient resources for the execution of this SMP and the respective mitigation measures; and • Ensuring that all site staff and sub-contractor and labour comply with legislation and the requirement as stated in this SMP.
Environmental Officer	<ul style="list-style-type: none"> • Development and future updating of this SMP including the disposal programme; • Co-ordinating, monitoring and overseeing the performance and implementation of this SMP; • Provision of the required training or briefing for the implementation of this SMP; • Performing monitoring, site inspection, audit and highlighting any deficiency for the management to take proper follow up action; and • Ensuring that each sub-contractor has been made aware of their obligations via sub-contract kick-off meetings and progress meetings.
Environmental Supervisor	<ul style="list-style-type: none"> • Follow and implement this SMP and ensure all dump truck leaving site with a valid trip ticket.
Area Foreman	<ul style="list-style-type: none"> • Implementing and overseeing the operation of the TTS

4. IDENTIFICATION AND CLASSIFICATION OF WASTE GENERATED FROM THE PROJECT

C&D waste generated will be sorted and / or temporary stored at designated location prior to reused or disposed of. Waste generated from the construction works are described as below.

4.1 Construction & Demolition (C&D) Materials

According to P.S. Clause 25.25(1), all surplus inert C&D materials (excluding used bentonite) that comprising soil, rock, concrete, rubble, etc. will be disposed of at the Public Filling Facility at Tuen Mun Area 38 or other disposal outlets as directed by the Engineer. Slurry and bentonite will be disposed at Tseung Kwan O Area 137 Fill Bank.

4.2 Construction & Demolition (C&D) Wastes / General Refuse

The non-inert portion of the C&D materials that are not recyclable will be disposed of at North East New Territories Landfill (NENT) or other disposal site as directed by the Engineer. For a truck load of C&D wastes to be accepted at the landfill, the weight of the waste divided by the permitted gross vehicle weight of the vehicle should not be greater than 0.25 for goods vehicle with demountable skip and 0.2 for other types of vehicle. The C&D waste delivered for landfill disposal shall further contain no free water and the liquid content shall not exceed 70 % by weight.

4.3 Chemical Waste

The maintenance and servicing of construction plant and equipment may generate some chemical waste, for instance, cleaning fluids, solvents, lubricating oil, paints and used batteries. Collection of chemical waste is regulated by a specific trip ticket system under the Waste Disposal (Chemical Waste) (General) Regulation and is beyond the scope of this SMP.

4.4 Other Waste

Recyclable materials such as metal, paper, plastics etc., will be sorted on site for recycling purpose. Designated recyclers will be appointed for collection to proper recycling outlet.

5. SITE PROCEDURES FOR TRIP TICKET SYSTEM (TTS)

5.1 Implementation Procedure

For the disposal of C&D materials, DHK will implement and comply with the requirements of the Trip-Ticket System as stipulated in TCW No. 6/2010. A typical chit is shown in Appendix C.

The Project has registered as a waste producer from the Environmental Protection Department (EPD) under the Construction Waste Disposal Charging Scheme. A billing account (No.7019105) has been granted for the payment of waste disposal and the issuance of Chits for the North East New Territories (NENT) Landfill, the Tseung Kwan O Area 137 (TKO137) and the Tuen Mun Area 38 (TM38) Public Fills.

Each vehicle load of public fill or C&D waste transported off-site will be accompanied by a duly completed Chit (Part B&C) which is provided by an area Foreman. Part A of the Chit will be retained by DHK. Every issued Chit will be registered by an area Foreman for subsequent monitoring of the return of the chit after the disposal.

For each vehicular trip, the dump truck driver will present to the operator of designated Public Filling Facility / Landfill the Chit (Part C) prior to disposal. Upon completion of the disposal, the public fill / landfill operator will return the dump truck driver with a computer print-out transaction record to acknowledge the disposal. The Environmental Officer / Supervisor will collect and verify the returned Chit (Part B) and the transaction record, in which the copies will be submitted to the Engineer for record. Environmental Officer / Environmental Supervisor will maintain original copies for record.

The Engineer may request information from the Designed Public Filling Facility/Landfill to verify the disposal of the C&D materials and information on the transaction record. DHK will maintain a daily record of C&D materials disposal including details of C&D materials, truck plate number, departure time, etc, using the Daily Record Summary (DRS) as shown in Appendix D. The Environmental Supervisor or Area Foremen (subject to change depending on availability) will fill in and sign Part 1 of the DRS in duplicate and inform the Engineer's staff before the departure of the vehicle. The Part 2 of the DRS shall be completed and submitted to the Engineer's Representative within one working day after the records are

posted at the EPD website. For disposal at government disposal facilities, DHK will check the information recorded in the DRS against available information including his own records and data from the following websites:

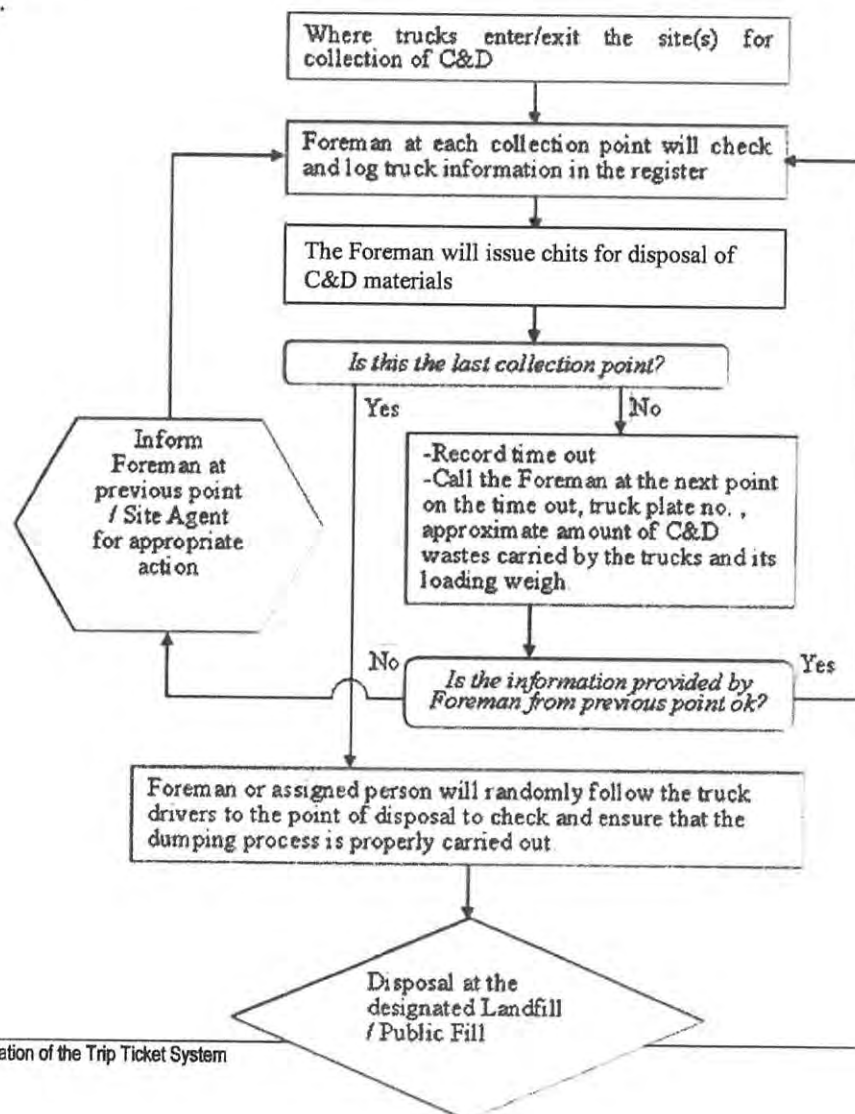
CEDD: <http://www.cedd.gov.hk/eng/services/tripticket/index.html>

EPD: <http://www.epd.gov.hk/epd/misc/cdm/trip.htm>

EPD: <http://www.epd.gov.hk/epd/misc/cdm/scheme.htm#j>

5.2 Surveillance

Surveillance on the truck driver will be carried out randomly by following the truck drivers to the point of disposal. This is to ensure that the disposal of C&D material at the designated disposal site and that the disposal activities fully comply with the client's requirements. A flowchart is shown as below.



According to P.S. Clause 25.25(6)(g), DHK will provide, operate, and maintain a video recording system to record all trucks leaving the Site. The video recording system is compounded with 3 cameras recording respectively the vehicle number, the loading material and the vehicle's weight. The cameras are located nearby the weight bridge area. In addition, pictures are taken for each vehicle leaving the site showing the 3 items mentioned as above. The video records will be kept for at least 60 days and the photographs will be kept until such time as instructed by the Engineer.

5.3 Internal Movement of C&D Material

The general principle with respect to internal movement of C&D materials within the Project is similar to the above. A sample of internal transfer trip ticket is shown in Appendix E.

5.4 Alternative Disposal Ground

The general principle with respect to alternative disposal of excavated materials from the Project is similar to the above. DHK shall obtain written consents from the both supervising officers of the Contracts prior to disposal. A sample of alternative disposal ground trip ticket is shown in Appendix F.

5.5 Prevention of Overloading

DHK will properly estimate the volume of C&D materials that can be carried by different dump trucks according to the permissible loading capacity of the dump trucks and the properties of the C&D materials, e.g. the bulk density with reference to the composition, moisture content and past data return, etc., in order to establish effective control measures to prevent overloading of dump trucks. They include:

- Height limit of the skip of the dump truck with consideration of its plan area and arrangement of measuring scale from the bottom of the skip; and/or
- Maximum number of grabs of the C&D materials loaded with the backhoe onto the dump truck with consideration of the grab capacity of the backhoe.

DHK will check the vehicle loads shown on the returned disposal transaction record to monitor its control measures against overloading. These control measures will be reviewed immediately if there is any deficiency identified.

Further measures have been implemented on site to avoid truck overloading:

- All dump trucks transport spoil in South Portal and Mid-Vent Portal are fitted with load cells;
- The weighbridge at the North Portal worksite shall be re-calibrated regularly or whenever necessary;
- A digital display is installed on the booth of the weighbridge for the driver to know the gross vehicle weight;
- A grab lorry is parked next to the weighbridge to pick up extra loads from the dump trucks,
- Each worksite, namely: Mid Ventilation Portal, North Portal and South Portal shall assign a site staff to record data on a daily summary sheet. The daily summary sheet will be checked by Resident Site Supervisors (RSS). The completed summary sheets will be further verified by RSS after receiving the transaction records from the designated disposal sites.
- Dump truck drivers will compare the reading of the Project weighbridge with the weight recorded in disposal locations weighbridge (if any). Training will be given to the fleet drivers that they should communicate with other truck drivers through radio or mobile phones should any overloading be recorded to ensure that prompt action can be taken to rectify the situation.

5.6 Irregularities of Disposal Trip

Where an irregularity is observed or where requested by the Engineer under special circumstances (e.g. a Chit has been issued but there is no disposal record at the designated disposal facilities), DHK will investigate to confirm proper completion of the delivery trips in question.

5.7 Procedure to report lost, stolen and Void Chits

In accordance with the Waste Disposal ordinance (Chapter 354) and the Waste Disposal (Charges for Disposal of Construction Waste) Regulation, DHK will report immediately in writing to the EPD for invalidation of the lost or stolen Chits. The Director of EPD will void the lost/stolen Chits as reported by the account-holder after a specified Notification Period following receipt of the written notification by the account-holder (usually 2 working days excluding Saturdays, Sundays and public holidays). After expiry of the Notification Period, the Chits reported lost/stolen by the account-holder will become invalid and DHK will destroy them accordingly to avoid any inappropriate or unauthorized use. If there is any person using the reported lost/stolen chits to dispose of construction waste, EPD will refer the case to the police for their necessary action on the spot.

To comply with this, DHK will submit to the Engineer's Representative within 5 working days after the recorded date of disposal the supporting evidence such as duly stamped CHIT and/or the Transaction Record Slip, or within 2 working days after the Engineer's Representative has requested for such evidence, whichever is later.

5.8 Mechanical Cover

All dump trucks (i.e. goods vehicles of gross vehicle weight equal to or more than 16 tonnes, fitted with a dump bed) leaving the Site carrying dusty materials must be fitted with a mechanical cover in good service condition which covers the dump bed.

5.9 Training for the Dump Truck Driver

Disposal trip training will be provided to all drivers engaged for removal of C&D materials from the Site. All drivers should fully understand the followings:

- a. Each truck carrying C&D materials leaving the Site for a disposal ground must bear a duly completed Chit, irrespective of the location and nature of the disposal ground;
- b. C&D materials must be disposed of at the designated disposal ground as stated on the Chit;

- c. What constitutes an improper disposal and that the Public Fill Committee (PFC) may consider revoking the Dumping Licence from the holder of the offending trucks;
- d. Driver must bear a valid Dumping Licence which is granted by CEDD;
- e. A notice (Appendix F) which will be issued to all dump truck drivers; and
- f. Sample of waste (Appendix G) to be rejected immediately at Public Fills Banks.

6. DISPOSAL PROGRAMME

- Disposal program will be submitted to the Engineer for information by 15th day of each month or the next working day if it is a public holiday, Sunday or Saturday, or a later date as agreed by the Engineer;
- Waste Flow Table will be updated monthly and shown in Appendix H; and
- Estimated volume of C&D materials from the Project is shown in Appendix I.

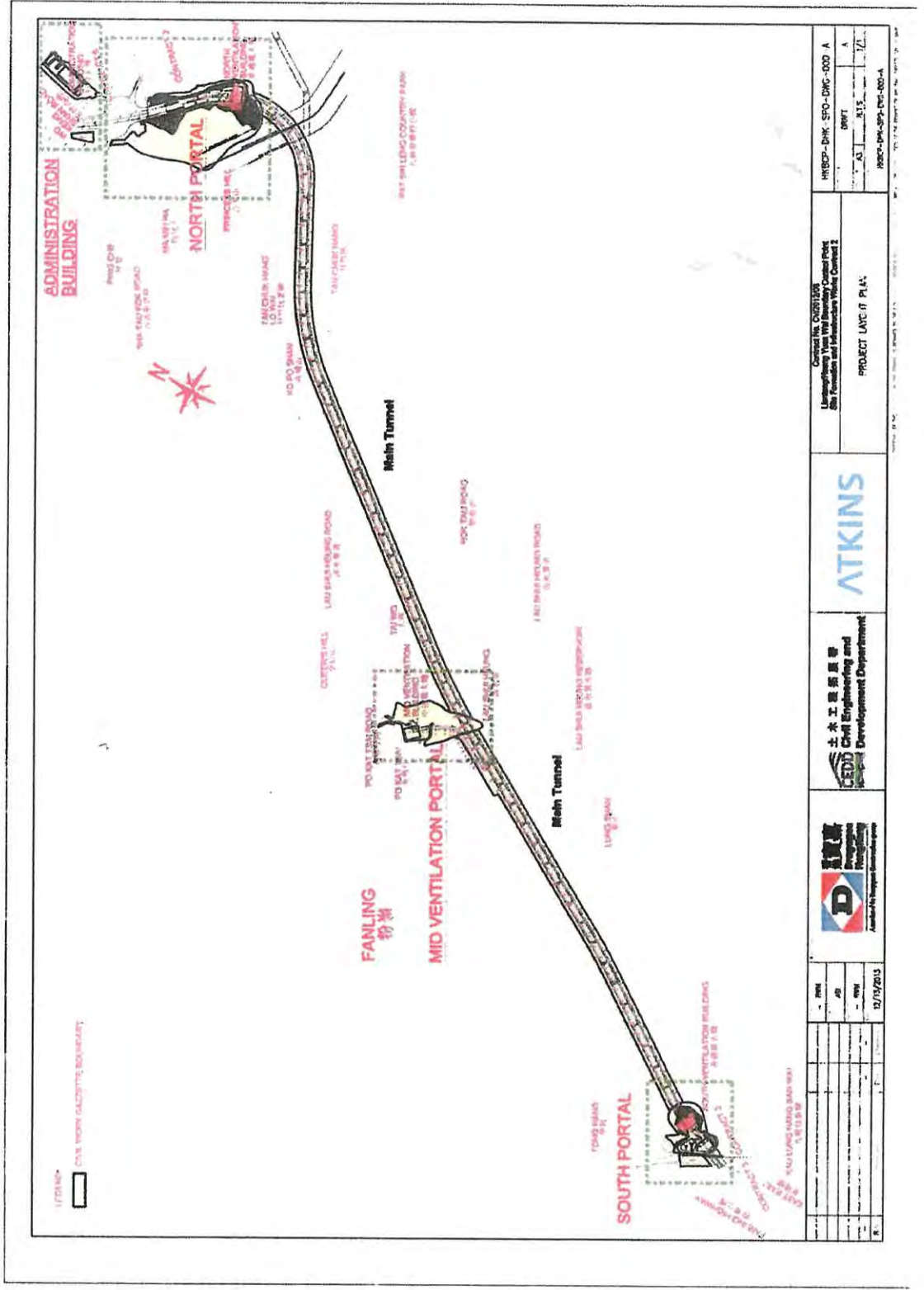
7. RECORD SYSTEM

Environmental Officer will maintain the following records during the course of the Project:

- a. Site Management Plan for Trip Ticket System;
- b. Yearly Waste Flow Table;
- c. Monthly Waste Flow Table;
- d. Registration as a Chemical Waste Producer;
- e. Returned Chit (Part B) and transaction record from the disposal ground;
- f. Register of Chit record;
- g. Daily Disposal Record;
- h. Trip tickets record for disposal of chemical waste;
- i. Photographs and various measurement records;
- j. Register of statutory permits application / renewal; and

[END OF CONTENT]

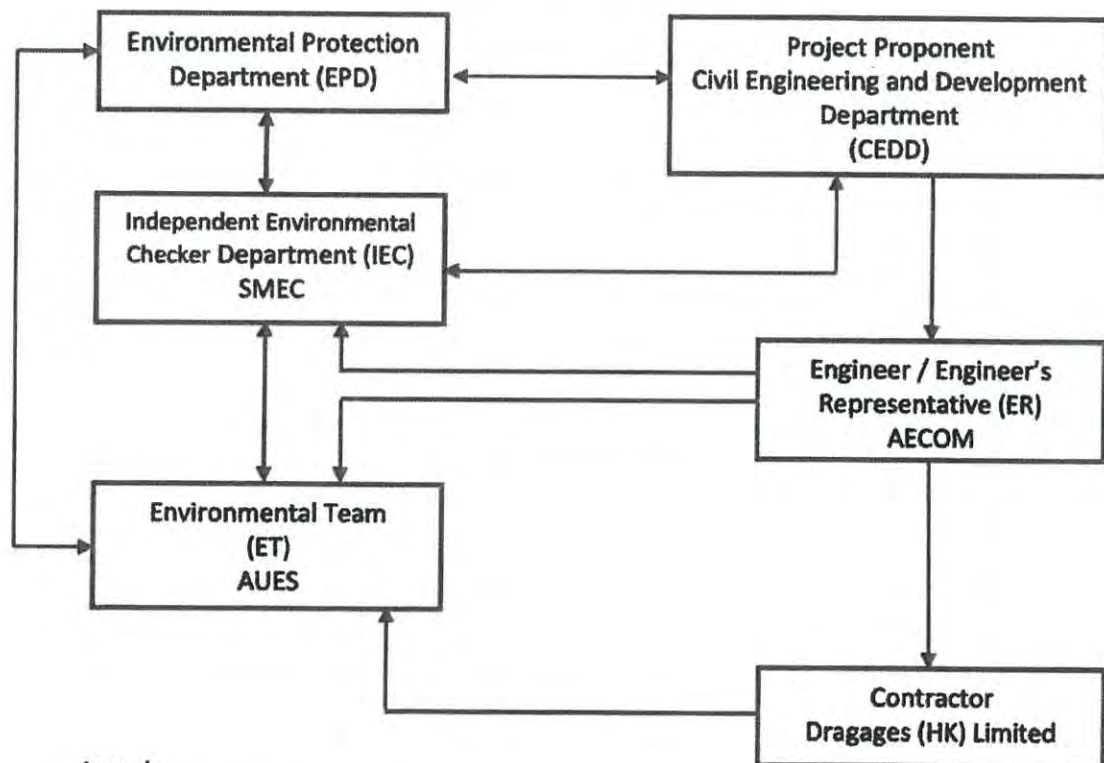
APPENDIX A: PROJECT SITE BOUNDARY



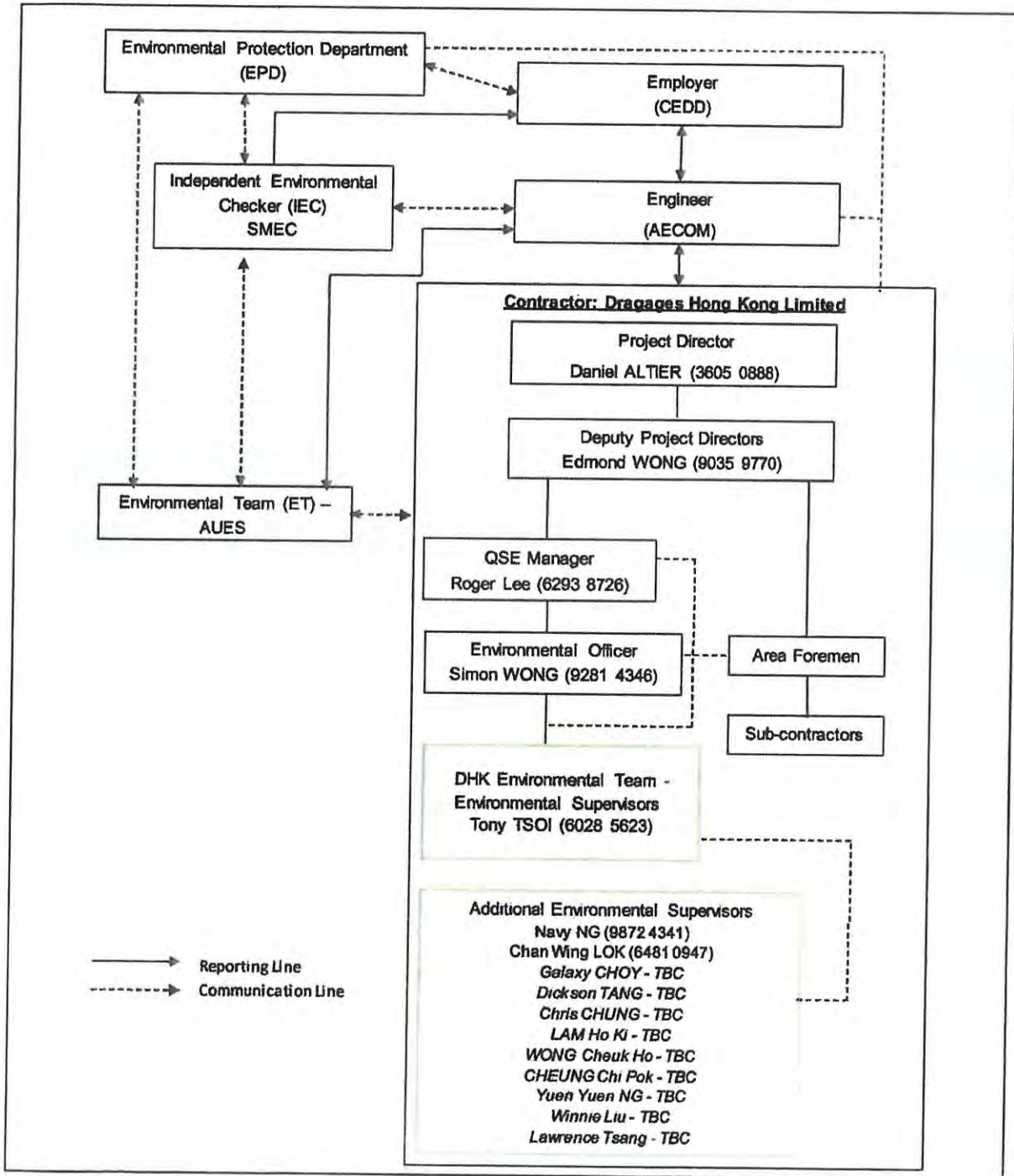
Contract No. CV/2012/08 Liantang / Heung Yuen Wai Boundary Crossing Control Point Site Formation and Infrastructure Works - Contract 2		HRBP-DHK-SFO-DKC-DDD-A DWIT A3 A13 A12
ATKINS		PROJECT LINE OF PLAN
 土木工程發展署 CEDD Civil Engineering and Development Department		Contract No. CV/2012/08 Liantang / Heung Yuen Wai Boundary Crossing Control Point Site Formation and Infrastructure Works - Contract 2
 D Dragages Hong Kong A member of the Bouygues Construction group		HRBP-DHK-SFO-DKC-DDD-A
1:1000	A3	DWIT
A13	A12	A12
1:1000	1:1000	1:1000

APPENDIX B: PROJECT ENVIRONMENTAL MANAGEMENT ORGANIZATION CHART

Project Organization Structure



Legend:
 ↔ Line of communication



APPENDIX C: SAMPLE OF TRIP TICKETS

EPD231

入帳單編號: Chit No.: <u>11610465</u>	入帳單編號: Chit No.: <u>11610465</u>
選擇 (✓) 何種明設施: Tick (✓) One Prescribed Facility:	選擇 (✓) 何種明設施: Tick (✓) One Prescribed Facility:
<input type="checkbox"/> 堆填區 Landfills	<input type="checkbox"/> 堆填區 Landfills
<input type="checkbox"/> 分類設施 Sorting Facilities	<input type="checkbox"/> 分類設施 Sorting Facilities
<input type="checkbox"/> 公眾堆填接收設施 Public Fill Reception Facilities	<input type="checkbox"/> 公眾堆填接收設施 Public Fill Reception Facilities
<input type="checkbox"/> 外島轉運設施 Outlying Islands Transfer Facilities	<input type="checkbox"/> 外島轉運設施 Outlying Islands Transfer Facilities
車輛號碼 Vehicle Registration Mark: _____	車輛號碼 Vehicle Registration Mark: _____
使用日期: Date of Use: _____	使用日期: Date of Use: _____
簽發人: Issued by: _____	簽發人: Issued by: _____
建築廢物產生地點: Construction Waste Generated Site: SHA TAU KOK ROAD	賬戶名稱: Name of the Account-holder: DRAGAGES HONG KONG LIMITED

香港法例第354章廢物處理條例
 廢物處理(建築廢物處理收費)規例
Waste Disposal Ordinance (Chapter 354)
Waste Disposal (Charges for Disposal of Construction Waste) Regulation

載運入帳票
CHIT

車輛號碼:
 Vehicle Registration Mark:



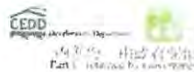
有效期至: **Not Applicable**

Valid Until: _____

建築廢物產生地點:
 Construction Waste Generated Site:
SHA TAU KOK ROAD

N 120435

賬戶編號: Account No.: <u>7019105</u>	賬戶編號: Account No.: <u>7019105</u>
<small>甲部份: 由賬戶持有保留 Part A. retained by Account-holder</small>	<small>乙部份: 由物料運輸商保留 Part B. retained by Waste Hauler</small>





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

APPENDIX D: DAILY RECORD SUMMARY

(1) Contract No. & Title 合約編號及名稱
 (2) Date of Disposal 填土日期

Daily Record Summary to record daily disposal of construction & demolition (C&D) materials from the Site
 "每日記錄紀錄填土紀錄每日由地盤所拆下的拆樓物料"
 CV/2012/08
 Liantang / Heung Yuen Wai Boundary Control Point Site Formation & Infrastructure Works – Contract 2

ORIGINAL FROM:
 Admin Bldg North Portal
 行政大樓 北圍口
 South Portal S401
 南圍口 工業寫字樓

C&D No. 填土入填土編號	Vehicle Type 車輛 車牌號碼	Vehicle Registration Mark 車牌號碼	TLOF 物料種類	C&D Material Type 物料種類				Waste Code 廢物代號	Disposal Method 處理方法	Remarks 備註
				TRUCK 貨車	TRUCK 貨車	TRUCK 貨車	TRUCK 貨車			
	Pure Asphalt 瀝青		Shurry 泥	Soil 土	Rock 石	Mixed Rock and Soil 混合石及土	Pure Clay 純黏土	General Refuse 一般廢物		
	Pure Asphalt 瀝青		Shurry 泥	Soil 土	Rock 石	Mixed Rock and Soil 混合石及土	Pure Clay 純黏土	General Refuse 一般廢物		
	Pure Asphalt 瀝青		Shurry 泥	Soil 土	Rock 石	Mixed Rock and Soil 混合石及土	Pure Clay 純黏土	General Refuse 一般廢物		
	Pure Asphalt 瀝青		Shurry 泥	Soil 土	Rock 石	Mixed Rock and Soil 混合石及土	Pure Clay 純黏土	General Refuse 一般廢物		
	Pure Asphalt 瀝青		Shurry 泥	Soil 土	Rock 石	Mixed Rock and Soil 混合石及土	Pure Clay 純黏土	General Refuse 一般廢物		
	Pure Asphalt 瀝青		Shurry 泥	Soil 土	Rock 石	Mixed Rock and Soil 混合石及土	Pure Clay 純黏土	General Refuse 一般廢物		
	Pure Asphalt 瀝青		Shurry 泥	Soil 土	Rock 石	Mixed Rock and Soil 混合石及土	Pure Clay 純黏土	General Refuse 一般廢物		
	Pure Asphalt 瀝青		Shurry 泥	Soil 土	Rock 石	Mixed Rock and Soil 混合石及土	Pure Clay 純黏土	General Refuse 一般廢物		
	Pure Asphalt 瀝青		Shurry 泥	Soil 土	Rock 石	Mixed Rock and Soil 混合石及土	Pure Clay 純黏土	General Refuse 一般廢物		
	Pure Asphalt 瀝青		Shurry 泥	Soil 土	Rock 石	Mixed Rock and Soil 混合石及土	Pure Clay 純黏土	General Refuse 一般廢物		
	Pure Asphalt 瀝青		Shurry 泥	Soil 土	Rock 石	Mixed Rock and Soil 混合石及土	Pure Clay 純黏土	General Refuse 一般廢物		
	Pure Asphalt 瀝青		Shurry 泥	Soil 土	Rock 石	Mixed Rock and Soil 混合石及土	Pure Clay 純黏土	General Refuse 一般廢物		
	Pure Asphalt 瀝青		Shurry 泥	Soil 土	Rock 石	Mixed Rock and Soil 混合石及土	Pure Clay 純黏土	General Refuse 一般廢物		
	Pure Asphalt 瀝青		Shurry 泥	Soil 土	Rock 石	Mixed Rock and Soil 混合石及土	Pure Clay 純黏土	General Refuse 一般廢物		

Prepared by: 填土
 Checked by: 填土

Name of Contractor: 香港嘉
 Name and Signature of the Officer:
 Name and Signature of the Officer:
 Date: 2012/08/08

Prepared by: 填土
 Checked by: 填土

Name of Contractor: 香港嘉
 Name and Signature of the Officer:
 Name and Signature of the Officer:
 Date: 2012/08/08

Prepared by: 填土
 Checked by: 填土

Name of Contractor: 香港嘉
 Name and Signature of the Officer:
 Name and Signature of the Officer:
 Date: 2012/08/08

APPENDIX E: TRIP TICKET FOR INTERNAL TRANSFER

Internal C&D Material Transfer Ticket

建築物料內運票據

Ticket No.:
泥票編號:

Date (日期):		
Truck No (車牌):		
PGVW (車籍總重):	24 / 30 / 38 公噸 Tonne	
Weighbridge / Load-cell Reading : (地磅 / 車斗磅):	公噸 Tonne	
Type of Material : 物料類別:	<input type="checkbox"/> Soil 泥 / <input type="checkbox"/> Rock 石 / <input type="checkbox"/> Slurry 泥漿水 <input type="checkbox"/> Mixed Soil & Rock 泥石混合	
Route : (運輸路線):	From (由): <input type="checkbox"/> 行政大樓 Admin Bldg <input type="checkbox"/> 流水管 Mid Vent <input type="checkbox"/> 北龍 North Portal <input type="checkbox"/> 南龍 South Portal	To (去): <input type="checkbox"/> 行政大樓 Admin Bldg <input type="checkbox"/> 流水管 Mid Vent <input type="checkbox"/> 北龍 North Portal <input type="checkbox"/> 南龍 South Portal
Departure and Arrival Time : (離開 / 到達時間):	Departure Time (離開時間):	Arrival Time (到達時間):
Name of DHK Representative : 寶嘉代表姓名:	Issued By (簽發人):	Received By (簽收人):
Signature of DHK Representative : 寶嘉代表簽名:	Issued By (簽發人):	Received By (簽收人):

APPENDIX F: TRIP TICKET FOR ALTERNATIVE DISPOSAL GROUND

香港寶嘉 Dragages HongKong
CEDD Contract No. CV/2012/08
Liantang / Heung Yuen Wai Boundary Control Point
Site Formation and Infrastructure Works - Contract 2

內運入帳票 Internal Trip Ticket 入帳票號碼 Ticket No.: **20151**

發售日期 Date: _____ H/D _____ M/M _____ Y/Y

車輛號碼 Vehicle Registration Mark: _____

車輛類型 PCVW: 24公噸 24Ton 30公噸 30Ton 其他 Other

大約承載量 Approximate Load: 滿載 Full 3/4載 半載 Half

物料類別 Type of Material: 泥土 Soil 石 Rock 碎石/混合土 Mixed Soil & Rock

運輸路線 Route:

由 From: 行政大樓 Admin Bldg 匯水壩 Mid West Portal 北潭口 North Portal 南潭口 South Portal

往 To: _____

離境時間 Departure Time: _____

留置負責人 Issued By: CHKO

留置人簽名 Signatur: CHKO

CEDD Contract No. CV/2012/08
Liantang / Heung Yuen Wai
Boundary Control Point
Site Formation and Infrastructure Works -
Contract 2
Dragages Hong Kong Ltd

**本頁由寶嘉填寫及保留
This page to be filled in and
retained by DHK**

白表 由寶嘉保留 White Copy retained by DHK

香港寶嘉 Dragages HongKong
CEDD Contract No. CV/2012/08
Liantang / Heung Yuen Wai Boundary Control Point
Site Formation and Infrastructure Works - Contract 2

內運入帳票 Internal Trip Ticket 入帳票號碼 Ticket No.: **20151**

發售日期 Date: _____ H/D _____ M/M _____ Y/Y

車輛號碼 Vehicle Registration Mark: _____

車輛類型 PCVW: 24公噸 24Ton 30公噸 30Ton 其他 Other

大約承載量 Approximate Load: 滿載 Full 3/4載 半載 Half

物料類別 Type of Material: 泥土 Soil 石 Rock 碎石/混合土 Mixed Soil & Rock

運輸路線 Route:

由 From: 行政大樓 Admin Bldg 匯水壩 Mid West Portal 北潭口 North Portal 南潭口 South Portal

往 To: _____

到達時間** Arrival Time: _____

留置負責人 Issued By: CHKO

留置人簽名** Signatur (Prescribed Facility): _____

留置人簽名 Signatur (Prescribed Facility): _____

預留訂明設施的入帳票重量** Weight In (Prescribed Facility): _____

預留設施的出帳票重量** Weight Out (Prescribed Facility): _____

**本頁由訂明設施保留
This page to be retained by
Prescribed Facility**

黃表 由訂明設施保留 Yellow Copy retained by Prescribed Facility

** 由訂明設施填寫 To be filled in by Prescribed Facility

香港寶嘉 Dragages HongKong
CEDD Contract No. CV/2012/08
Liantang / Heung Yuen Wai Boundary Control Point
Site Formation and Infrastructure Works - Contract 2

內運入帳票 Internal Trip Ticket 入帳票號碼 Ticket No.: **20151**

發售日期 Date: _____ H/D _____ M/M _____ Y/Y

車輛號碼 Vehicle Registration Mark: _____

車輛類型 PCVW: 24公噸 24Ton 30公噸 30Ton 其他 Other

大約承載量 Approximate Load: 滿載 Full 3/4載 半載 Half

物料類別 Type of Material: 泥土 Soil 石 Rock 碎石/混合土 Mixed Soil & Rock

運輸路線 Route:

由 From: 行政大樓 Admin Bldg 匯水壩 Mid West Portal 北潭口 North Portal 南潭口 South Portal

往 To: _____

離境時間 Departure Time: _____

留置負責人 Issued By: CHKO

留置人簽名 Signatur: CHKO

預留訂明設施的入帳票重量** Weight In (Prescribed Facility): _____

預留設施的出帳票重量** Weight Out (Prescribed Facility): _____

粉紅表：須由設施填寫並保留 Pink Copy: to be retained by CHK, by Blue star disposal

**** 由訂明設施填寫 To be filled in by Prescribed Facility**

APPENDIX G: NOTICE TO DUMP TRUCK DRIVER

各位泥車司機請注意

1. 從本合約工地出發的泥頭和廢棄物，只可運載本合約工地出發的泥頭和廢棄物，不可運載不是本合約工地出發的泥頭和廢物，如本公司發現有任何違規，必定以刑事追究
2. 所有泥頭除有本公司指示外，必須運載到屯門公眾填土轉運站
3. 泥漿和膨潤土除有本公司指示外，必須運載到將軍澳第137區填料庫
4. 所有泥車司機必須把泥車運送的物料用機動蓋掩蓋好，把泥車完全清洗，才可離開工地
5. 泥車司機必須注意泥車車速，切勿超速及影響其他道路使用者的安全
6. 在填土(料)區倒泥頭和廢棄物時，必須出示載運入帳票CHIT
7. 所有泥頭車不可超載，如有超載，請立即返回工地處理泥頭，切勿在填土(料)區附近自行處理
8. 倒泥頭和廢棄物後，所有尾票和回條必須在第二天或之前，還給科文

如有任何問題,可和以下環保部同事查詢

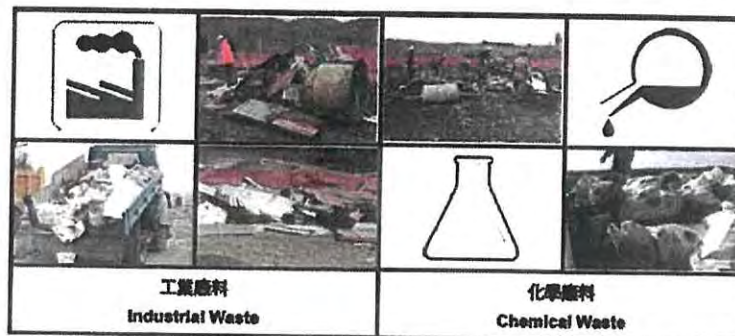
Simon Wong 9281 4346

APPENDIX II: SAMPLE OF WASTE TO BE REJECTED AT PRF



公眾填料接收設施
Public Fill Reception Facilities

即時拒收廢物 - 樣本
Some Samples of Waste to be Rejected Immediately





Contract No. CV/2012/08
Liantang/ Heung Yuen Wei Boundary Control Point Site

Name of Department : CEDD Contract No./ Work Order No. : CV/2012/08

Appendix I - Monthly Summary Waste Flow Table for YYYY

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

Month	Actual Quantities of Inert C&D Materials Generated / Imported (in '000 m ³)				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 '000m ³)
January											
February											
March											
April											
May											
June											
Half-year total											
July											
August											
September											
October											
November											
December											
Yearly Total											

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

Year	Actual Quantities of Inert C&D Materials Generated / Imported (in '000 m ³)				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 '000m ³)
2013											
2014											
2015											
2016											
2017											
2018											
Total											

Remark:

1) Density of C&D material to be

2.2 metric ton/m³

3) Density of Spent Oil to be

1.8 metric ton/m³

0.88 metric ton/m³

APPENDIX J: DISPOSAL PROGRAMME

CEDD Contract No. CV/2012/08 Liantang / Heung Yuen Wai Boundary Control Point Site Formation and Infrastructure Works - Contract
Estimation on Excavated Spoil Generated from TBM and Drill & Blast Operation & Non-Waste Generated from the Project

Month Number	Month	Estimation on C&D Material & Waste Generated for Disposal					Est. Amount of Waste to Landfill, tonne (T)	Total: (1)+(2)
		Est. Amount of C&D Materials - Spoil, m ³ (North) a	Est. Amount of C&D Materials - Spoil, m ³ (Mid) b	Est. Amount of C&D Materials - Spoil, m ³ (South) b	Est. Amount of C&D Materials - Spoil, m ³ (North) c	Est. Amount of C&D Materials - Spoil to Public Fill, tonne (1)		
0	Dec-2010	0	0	0	0	0	0	0
1	Jan-2011	0	0	0	0	0	300	300
2	Feb-2011	0	0	0	0	0	300	300
3	Mar-2011	0	0	0	0	0	300	300
4	Apr-2011	0	0	0	0	0	300	300
5	May-2011	2283	2000	0	2000	20117.6	300	24322.6
6	Jun-2011	4867	2000	0	4167	9667.8	300	9667.8
7	Jul-2011	4371	1500	0	4167	9476.2	300	9476.2
8	Aug-2011	4371	1500	0	4167	9476.2	300	9476.2
9	Sep-2011	4571	1500	0	4167	10047.2	300	10047.2
10	Oct-2011	8167	1500	13063	63000	27847.4	300	17947.4
11	Nov-2011	8167	1500	13063	63000	27847.4	300	17947.4
12	Dec-2011	6274	1500	13063	63000	27847.4	300	17947.4
13	Jan-2012	6274	1500	13063	63000	27847.4	300	17947.4
14	Feb-2012	6676	1500	13063	63000	27847.4	300	17947.4
15	Mar-2012	6476	1500	13063	63000	27847.4	300	17947.4
16	Apr-2012	4371	1500	13063	63000	27847.4	300	17947.4
17	May-2012	2000	1500	13063	2000	4000.0	300	4300.0
18	Jun-2012	9000	3000	4500	2000	21771.2	300	22071.2
19	Jul-2012	2724	3000	4500	1500	6000.0	300	6300.0
20	Aug-2012	2400	3723	0	2000	5367.8	300	5667.8
21	Sep-2012	3700	3723	3700	3000	8207.8	300	8507.8
22	Oct-2012	3000	0	3700	3500	8300.0	300	8600.0
23	Nov-2012	5000	0	4000	4000	11100.0	300	11400.0
24	Dec-2012	5000	0	4000	4000	11100.0	300	11400.0
25	Jan-2013	6000	0	4000	3000	10000.0	300	10300.0
26	Feb-2013	6000	0	4000	3000	10000.0	300	10300.0
27	Mar-2013	7127	0	2000	3000	11000.0	300	11300.0
28	Apr-2013	6627	0	2000	4000	11000.0	300	11300.0
29	May-2013	2200	0	2725	4000	10000.0	300	10300.0
30	Jun-2013	2200	0	2725	4000	10000.0	300	10300.0
31	Jul-2013	6000	0	6000	7000	14000.0	300	14300.0
32	Aug-2013	1000	0	6000	7000	14000.0	300	14300.0
33	Sep-2013	4000	0	6000	7000	14000.0	300	14300.0
34	Oct-2013	4100	0	6000	7000	14000.0	300	14300.0
35	Nov-2013	8200	0	3300	4000	10000.0	300	10300.0
36	Dec-2013	6400	0	3300	4000	10000.0	300	10300.0
37	Jan-2014	6400	0	3300	4000	10000.0	300	10300.0
38	Feb-2014	6400	0	3300	4000	10000.0	300	10300.0
39	Mar-2014	7000	0	2500	4000	10000.0	300	10300.0
40	Apr-2014	3000	0	600	4000	10000.0	300	10300.0
41	May-2014	4000	0	600	4000	10000.0	300	10300.0
42	Jun-2014	4500	0	0	4000	10000.0	300	10300.0
43	Jul-2014	3500	0	0	3500	7000.0	300	7300.0
44	Aug-2014	95	0	0	95	200.4	300	295.4
45	Sep-2014	95	0	0	95	200.4	300	295.4
46	Oct-2014	0	0	0	0	0	300	300
47	Nov-2014	0	0	0	0	0	300	300
48	Dec-2014	0	0	0	0	0	300	300
49	Jan-2015	0	0	0	0	0	300	300
50	Feb-2015	0	0	0	0	0	300	300
51	Mar-2015	0	0	0	0	0	300	300
52	Apr-2015	0	0	0	0	0	300	300
53	May-2015	0	0	0	0	0	300	300
54	Jun-2015	0	0	0	0	0	300	300
55	Jul-2015	0	0	0	0	0	300	300

APPENDIX I

Implementation Schedule to Summarize the Environmental Mitigation Measures of the WMP

IMPLEMENTATION SCHEDULE

EIA Ref.	EMVA Ref.	Recommended Mitigation Measures	Objectives of Recommended Measures	Action Party	Location	Time of Implementation	Conforming Standards
7.6.1.1	6	<p>Good Site Practices</p> <p>Adverse impacts related to waste management such as potential hazard, air, odor, noise, wastewater discharge and public transport as mentioned in section 3.4.7.2 (ii)(c) of the Study Brief are not expected to arise, provided that good site practices are strictly followed. Recommendations for good site practices during the construction activities include:</p> <ul style="list-style-type: none"> ▪ Nomination of persons to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site ▪ Training of site personnel in proper waste management and chemical handling procedures ▪ Provision of sufficient waste disposal points and regular collection of waste ▪ Provision of mechanical covers to all dump trucks. ▪ General refuse shall be removed away immediately for disposal. As such odor is not anticipated to be an issue to distant sensitive receiver. ▪ Provision of wheel washing facilities before the trucks leaving the works area so as to minimize dust introduction from public road. ▪ Provision of spoil basin with covers for the stockpiled C&D material to prevent dust impact or being washed away. ▪ Designate different locations for storage of C&D material to enhance reuse. ▪ Well planned programme for transportation of C&D material to lessen the off-site traffic impact. Well planned delivery programme for offsite disposal and imported filling material such that adverse noise impact from transporting of C&D material is not anticipated. ▪ Establishing and implementing Temporary Drainage Management Plans, including cleaning and regular maintenance of drainage systems. 	To minimize adverse environmental impact	DHK	Construction work sites	Construction phase	EIA recommendations, Waste Disposal Ordinance, Waste Disposal (Chemical Wastes)(General) Regulation, and ETWB TC(W) No. 19/2005: Environmental Management on Construction Site
7.6.1.2	6	<p>Waste Reduction Measures</p> <p>Good management and control can prevent the generation of a significant amount of waste. Waste reduction is best achieved at the planning and design stage, as well as by ensuring the implementation of good site practices. Recommendations to achieve waste reduction include:</p> <ul style="list-style-type: none"> ▪ Segregation and storage of different types of waste in different skips to enhance reuse or recycling of materials and their proper disposal ▪ Encourage collection of aluminum cans, waste paper and plastic wastes for recycling. 	To reduce the quantity of wastes	DHK	Construction work sites	Construction phase	EIA recommendations and Waste Disposal Ordinance
7.6.1.3	6	<p>C&D Materials</p> <p>In order to minimize impacts resulting from collection and transportation of C&D material for off-site disposal, the excavated materials should be reused on-site as backfilling materials as far as practicable. The surplus rock and other inert C&D material would be disposed of at Tuen Mun Area 38 or Tseung Kwan O Area 137 for beneficial use by other projects. In addition, endeavors will be made to identify as many alternative disposal grounds as reasonably practicable such that the materials can be used by other projects or users. C&D waste generated from general site clearance and tree felling works would require disposal to the designated landfill site. Other mitigation requirements are listed below:</p> <ul style="list-style-type: none"> ▪ A Waste Management Plan should be prepared and implemented in accordance with ETWB TC(W) No. 19/2005: Environmental Management on Construction Site; and ▪ In order to monitor the disposal of C&D material and solid wastes at public filling facilities, landfills and alternative disposal grounds, and to control fly-tipping, a trip ticket system is include and is being implemented. 	To minimize impacts resulting from C&D material	DHK	Construction work sites	Construction phase	EIA recommendations, Waste Disposal Ordinance, and ETWB TCW No. 31/2004

IMPLEMENTATION SCHEDULE

EIA Ref.	FMSA Ref.	Recommended Mitigation Measures	Objectives of Recommended Measures	Action Party	Location	Time of Implementation	Conforming Standards
7.6.1.4	6	<p>General Refuse General refuse should be stored in enclosed bins separated from other C&D material. A waste collector is employed to remove general refuse from the site.</p>	<p>To minimize impacts resulting from collection and transportation of general refuse for off-site disposal</p>	DHK	Construction work sites	Construction phase	Waste Disposal Ordinance and Public Health and Municipal Services Ordinance – Public Cleansing and Prevention of Nuisances Regulation
7.6.1.5	6	<p>Chemical Waste Chemical wastes are produced at the construction site. DHK has registered with the EPD as a chemical waste producer since the commencement of the Project and is following the guidelines stated in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Good quality containers compatible with the chemical wastes are used and incompatible chemicals are stored separately. Appropriate labels are securely attached on each chemical waste container. A licensed collector is engaged to transport and dispose of the chemical wastes to the licensed Chemical Waste Treatment Center, or other licensed facilities, in accordance with the Waste Disposal (Chemical Waste)(General) Regulation.</p>	<p>To minimize impacts resulting from collection and transportation of chemical waste for off-site disposal</p>	DHK	Construction work sites	Construction phase	Waste Disposal (Chemical Waste)(General) Regulation and Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes