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Special Duties (Works)
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101 Princess Margaret Road
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Contract No. CV/2007/06

Kwai Chung Incineration Plant Demolition and Decontamination Works

(Environmental Permit No. EP-121/2002/A)

Waste Management Plan (WMP) for Ground Decontamination Works

April 2010

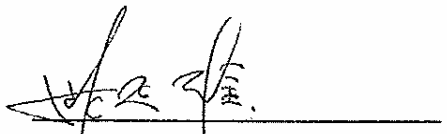
(Version 1.4)

Waste Management Policy

We are committed to reduce/minimise the generation of construction and demolition (C&D) material and to undertake construction activities in an environmental friendly manner.

We are committed to:

- Ensure construction works complied with specified standards and statutory requirements.
- Achieve the objectives we have established in this Waste Management Plan (WMP).
- Provide adequate resources and facilities to facilitate the implementation of this WMP.
- Ensure that all staff members in relevant departments perform their duties according to this WMP.
- Conduct regular review and audit to monitor the implementation of this WMP.



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Project Director
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April 2009

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1 INTRODUCTION

1.1 Background

1.1.1 This Waste Management Plan (WMP) has been prepared to fulfil Condition 2.8 of the Environmental Permit (EP No. EP-121/2002/A) with respect to the ground decontamination works of the Project – "Kwai Chung Incineration Plant Demolition and Decontamination Works", Contract No. CV/2007/06. The boundary of the project is shown in Figure 1

1.1.2 The demolition works of the Project including the removal of all asbestos containing material (ACM) and dioxin containing material (DCM) in chimney and superstructures were completed in the previous phase of the project, this WMP shall be focusing on the ground decontamination works of the Project.

1.1.3 This WMP does not cover the demolition works that had been completed for the Kwai Chung Incineration Plant (KCIP) previously. This WMP has therefore focused on and finalized the rest of waste management aspects with respect to waste generation, treatment and disposal with respect to the ground decontamination works for this Project.

1.2 Scope of Ground Decontamination Works of the Project

1.2.1 The ground decontamination works of the Project involve remediation of soil contaminated by hydrocarbon by biopiling and heavy metals by cement solidification, and subsequent on-site backfilling of remediated soil.

1.3 Construction Programme

1.3.1 The Contract for the Project was awarded on 26 October 2007 and contractually commenced on 31 October 2007. The main contract will last for 45 months excluding 12 months for landscape establishment works.

1.3.2 In accordance with Condition 1.11 of the Environmental Permit EP-121/2002/A, the Director of Environmental Protection (DEP) was notified that the commencement date for the decommissioning of the Project was 24 January 2008 within the context of the Environmental Permit. The demolition part of the project works was completed in December 2009.

1.3.3 The master works programme for the ground decontamination works is under preparation and is not included in this submission. The general method of the remediation works, for cement solidification and biopiling, is included in Appendix A.

1.4 Obligations under the EP

1.4.1 Condition 2.8 of the Environmental Permit EP-121/2002/A requires that a WMP shall be submitted to the DEP 8 weeks before the commencement of the decommissioning of the Project. With regard to the ground decontamination works, in accordance with 1.0 of Appendix 19 – Waste Management Plan of the Particular Specification, the Contractor shall also submit a separate Waste Management Plan (WMP) covering the period from the commencement of ground decontamination works to the completion of the Works to the Engineer for comment within one month from the ground decontamination milestone date or within a period as agreed by the Engineer or DEP. This WMP is prepared to fulfil

such requirement.

1.4.2 This WMP includes details on the types, quantities, disposal methods, timings and locations for treatment and disposal of wastes, responsibilities for implementation and possible recycling and reuse of materials and is written with reference to the requirements set out in the ETWB TCW No. 19/2005.

1.4.3 This WMP has taken into account in devising any findings and recommendations in the waste management section of the EIA Report (Register No. AEIAR-049/2002), and relevant findings of the Reassurance and Confirmatory Testing Report ("RCT"). Before submission to the Director, the WMP will have to be certified by the ET Leader and verified by the IEC as conforming to the information and recommendations contained in the EIA Report, and any relevant findings of the RCT.

1.4.4 This WMP has included, but not limited to, the following information for each type of the wastes relevant to the specific Project part that it is intended to cover. The types of wastes covered include general refuse, chemical waste, remediation surpluses and construction and demolition ("C&D") materials.

- summary of the locational sources, quantity, level of contamination (if applicable), remediation required prior to disposal (if applicable), on-site and off-site disposal methods for different type of wastes;
- timings for generation, remediation (if applicable), temporary on-site stockpiling or storage, and final on-site or off-site disposal of different type of wastes;
- method statements on the remediation works to be carried out on different types of contaminated soil (if applicable) and wastes, and the confirmatory and parallel independent testing to be conducted;
- on-site waste management measures to control nuisances during the generation, handling, remediation (if applicable), and temporary stockpiling of the different types of wastes;
- possible recycling and reuse of materials;
- location of the disposal site(s) for various types of wastes;
- confirmation on whether or not barges would be used for removal of wastes;
- transportation routing(s) of the removal of various types of wastes from the project site to the disposal site(s);
- measures to control nuisances due to transportation of different type of wastes; to remove possible soil left on the first several hundred meters of roads by vehicles leaving the site, such as using specially design road cleansing vehicle; and to reduce dust nuisance from trucks carrying wastes, such as installing mechanical covers to trucks;
- trip-ticket system for waste transfer/disposal operations, including a certification system to confirm to the disposal site's operator that the contaminated wastes have been remediated to meet the specific disposal criteria; and
- responsibilities for implementation.

1.5 Environmental Legislation and Guidelines

Regulatory Requirements

1.5.1 During the Contract, the Contractor will comply with the following Ordinances and Regulations, which cover, or have some bearing upon, the handling, treatment and disposal of wastes in the Hong Kong SAR.

Waste Disposal Ordinance (Cap 354)

1.5.2 The Waste Disposal Ordinance (WDO) prohibits any person from using any land or premises for the disposal of wastes unless one has been authorised by or has obtained a license from the Waste Disposal Authority, the Environmental Protection Department (EPD).

Waste Disposal (Chemical Waste) (General) Regulation (CWR), Enacted under the WDO

1.5.3 The Regulation has provisions to require any person who produces chemical waste to register with the EPD as well as to control the processing, storage, collection, transport and disposal of chemical waste. In additional, the CWR also provides for the licensing of waste collection, transport and disposal activities.

1.5.4 For chemical waste registration, Contractor is required to provide particulars on the location of waste generating activities, the nature of operation and waste types to be generated. A registration form shall be prepared and submitted to the EPD for approval prior to the waste generating activities. Upon successful completion of the registration procedure, the EPD will then issue a confirmation note and assign a waste producer number. Any disposal of chemical waste registered shall give prior notification to EPD and the disposal has to follow directions of the EPD. If certain types of chemical wastes are classifiable as Dangerous Goods under the Dangerous Goods Ordinance (Cap. 295) (DGO), handling of these wastes shall also comply with the requirements of the DGO and its regulations.

Waste Disposal (Charges for Disposal of Construction Waste) Regulation

1.5.5 The Charging Scheme has come into operation on 1 December 2005. Processing of account applications by the Environmental Protection Department has started on the same day.

1.5.6 Starting from 1 December 2005, main contractor who undertakes construction work under a contract with value of $1 million or above is required to open a billing account solely for the contract. Application shall be made within 21 days after the contract is awarded. Failing this will be an offence under the law.

1.5.7 Charging for disposal of construction waste has started on 20 January 2006 and from this day, any person before using waste disposal facilities for disposal of construction waste needs to open an account.

Land (Miscellaneous Provisions) Ordinance (Cap 28)

1.5.8 Public fill construction wastes may be taken to public dumps. The Land (Miscellaneous Provisions) Ordinance (LO) requires that dumping licences be obtained by individuals or companies who deliver suitable construction wastes to public dumps. The licences are issued by the CEDD. In the case that public dumping of public fill construction waste is desired, contractor shall apply for the licence prior to disposal of the construction wastes.

Public Health and Municipal Services Ordinance (Cap 132) - Public Cleansing and Prevention of Nuisances Regulation

1.5.9 The Public Health and Municipal Services Ordinance (PHMSO), Water Pollution Control Ordinance Cap. 358, and Waste Disposal Ordinance Cap. 354 have provisions on the control of the discharge of hazardous materials to sewers and for the control of littering. The ordinances prohibit placing or throwing any solid matter, mud or waste into public sewers or drains and also placing these substances in a location where they may fall into these public sewers/drains.

1.5.10 It also has provisions to require the owner or occupier of the land adjoining any street or place in which is situated near a public sewer to exercise measures to prevent obstruction of sewers and drains caused by soil and waste.

Additional Guidelines

1.5.11 This WMP has been prepared with reference to the following 'guideline' documents:

- Waste Disposal Plan for Hong Kong (December 1989), Planning, Environment and Lands Branch Government Secretariat;
- Chapter 9 Environment of Hong Kong Planning Standards and Guidelines, Hong Kong Government;
- Works Branch Technical Circular No. 2/93, Public Dumps, Works Branch, Hong Kong Government;
- Works Branch Technical Circular No. 2/93B, Public Filling Facilities; Works Branch, Hong Kong Government;
- Works Branch Technical Circular No. 16/96, Wet Soil in Public Dumps; Works Branch, Hong Kong Government;
- Works Bureau Technical Circular No. 4/98 & 4/98A, Use of Public Fill in Reclamation and Earth Filling Projects; Works Bureau, Hong Kong SAR Government;
- Waste Reduction Framework Plan, 1998 to 2007, Planning, Environment and Lands Bureau, Government Secretariat, 5 November 1998;
- Works Bureau Technical Circular No 19/2001, Metallic Site Hoardings and Signboards; Works Bureau, Hong Kong SAR Government;
- Works Bureau Technical Circular No. 12/2000, Fill Management; Works Bureau, Hong Kong SAR Government;
- Works Bureau Technical Circular No 12/2002, Specifications Facilitating the Use of Recycled Aggregates. Works Bureau, Hong Kong SAR Government;
- Environment, Transport and Works Bureau Technical Circular (Works) No 33/2002, Management of Construction and Demolition Material Including Rock, Environment, Transport and Works Bureau, Hong Kong SAR;
- Works Bureau Technical Circular No 31/2004, Trip-ticket System for Disposal of Construction and Demolition Material; Works Bureau, Hong Kong SAR Government;
- A Guide to Chemical Waste Control Scheme and A Guide to the Registration of Chemical Waste Producer, Environmental Protection Department, Hong Kong SAR; and
- Code of Practice on the Packaging, Labelling and Storage of Chemical

1.6 Licenses, Permit and Approvals

1.6.1 The Contractor have applied for, where appropriate, and maintain all the following permits and licenses required under the legislation for the handling and disposal of waste arising from the Contract. And the Contractor will undertake further application for any license and permit if necessary.

- Public Dumping Licence under the Land (Miscellaneous Provisions) Ordinance (Cap 28);
- Chemical Waste Producer Licence under the Waste Disposal (Chemical Waste) (General) Regulation (Cap 354);
- Chemical Waste Collection Licence under the Waste Disposal (Chemical Waste) (General) Regulation (Cap 354);
- Land (Miscellaneous Provisions) Ordinance
  - Dumping licences are issued free of charge by the Fill Management Division, Civil Engineering Department to lorry owners for delivering public fill to public fill reception facilities. The licences are valid to the end of each calendar year and the licensee need to apply for a new licence for the new calendar year. Dumping labels are also issued together with the licences for display on the wind-screen of the lorry.
- Waste Disposal (Chemical Waste) (General) Regulation
  - Chemical waste, as defined under the Waste Disposal (Chemical Waste) (General) Regulation, includes any substance or thing being scrap material, effluent, or an unwanted substances or by-product arising from the application of or in the course of any process or trade activity, and which is or contains any substance or chemical specified in the prescribed schedule (i.e. Schedule 1 of the Waste Disposal Regulations) if such substance or chemical occurs in such form, quantity or concentration so as to cause pollution, constitute a danger to health or risk of pollution to the environment.

2 WASTE MANAGEMENT POLICY

2.1 General Principles

2.1.1 The principles of waste management to be adopted in this Project will be in line with the latest Government policy on environmental management.

2.2 Hierarchy of Waste Management

2.2.1 The various waste management options will be categorised in terms of preference from an environmental viewpoint. The options considered to be more preferable have the least impacts and are more sustainable in the longer term. Hence, the hierarchy of waste management is as follows in descending order:

Table 1 Hierarchy of Waste Management

Avoidance and Minimization	Avoid and minimize generation of C&D materials through careful planning and design of works
Reuse	Reuse inert portion of the C&D materials generated.
Recovery and Recycle	Undertake on-site and off-site waste recycling
Treatment and Disposal	Properly treat and dispose of waste in accordance with legislative requirements, guidelines and good practices.

2.2.2 This hierarchy will be used to evaluate waste management options, thus allowing maximum waste reduction. Waste reduction measures will be introduced at the planning and detailed design stage and carried through the decontamination works, whenever possible, by careful purchasing control and good site management.

3 ORGANIZATIONAL STRUCTURE FOR WASTE MANAGEMENT

3.1 General

3.1.1 The organisation of the waste management team is described under this section, the personnel responsible for waste management shall:

- Work within the scope of the ground decontamination works;
- Participate in the waste management site inspections undertaken by the Environmental Team (ET) and the Independent Environmental Checker (IEC) and undertake any corrective actions instructed by the Engineer's Representative (ER); and
- Take responsibility and strictly adhere to the provisions of the WMP and the contract specifications.

3.2 Roles and Responsibilities of Key Waste Management Personnel for KCIP

3.2.1 The major scope of the ground decontamination works is remediation of soil mainly contaminated by hydrocarbon and heavy metals, and subsequent on-site backfilling of remediated soil.

3.2.2 A Project Team Organization Chart for waste management is shown in Appendix B. The roles and responsibilities of the key waste management personnel shall include, but not be limited to the following:-

The Project Proponent (Special Duties (Works) / Civil Engineering and Development Department)

3.2.3 The Project Proponent shall be responsible for providing full support on the implementation of the approved WMP.

The Engineer's Representative (ER)(Resident Engineer / Mott MacDonald HK Ltd)

3.2.4 The ER shall:

- Ensuring that the WMP is fully implemented throughout the Project;
- Review the waste monitoring and audit report submitted by the ET;
- Follow up and ensure the Contractor's proposed corrective actions to be in accordance with the WMP;
- Investigate and audit the Contractor's equipment and work methodologies with respect to waste management; and
- Monitor and report to the Project Proponent any exceedance/observation/area required improvement under the environmental permit and pollution control ordinances.

The Contractor's Representative (CR) (Project Manager of CWE)

3.2.5 The CR is responsible for overall planning, site operations, appointment of committee members for waste management, staff supervision control, co-ordination and external liaison. The CR shall:

- Oversee the waste management within the Project, which achieve by implementation of the WMP;
- Participate and provide necessary support to the Environmental Officer for the preparation and review of WMP;
- Ensure that staff attends environmental training with regard to waste management organized by the Waste Manager;
- Implement environmental controls and mitigation as set out in this WMP as well as any additional measures necessary for compliance with environmental control measures;
- Ensure the recommendations and instructions of the ER or ET are implemented to improve the waste management practice and carry out immediate action to rectify the non-compliance/observation/area required improvement of waste management and environmental protection requirements;
- Providing leadership in the efficient management of the Project and in meeting the Work's waste management objectives; and
- Anticipate waste generation impacts that may require mitigation before the problem arises.

Site Agent / Waste Manager

3.2.6 The Site Agent shall also be the Waste Manager and shall:

- Arrange routine joint site inspection with Environmental Officer and review environmental inspection reports;
- Ensure works are undertaken in accordance with the recommendations made and instructions given by the ER and ET;
- Monitor and control the works including those of subcontractors to ensure compliance with specified environmental requirements;
- Ensure appropriate waste management mitigation measures are properly implemented;
- Ensure follow up actions are properly and promptly undertaken in the event of non-compliance/observation/area required improvement of the WMP;
- Review method statement to ensure appropriate mitigation measures are implemented prior to execution of work;
- Liaise with ER and ET on waste management and environmental protection issues;
- Review records of all trained personnel in the site offices;
- Review statutory requirements and submit application for waste management permits/licenses including dumping license, chemical waste producer, admission ticket and etc.;

- Monitor the following documents:
  - Waste Management permits / licenses
  - C&D material disposal delivery record;
  - Waste reuse / recycle / disposal summary and
  - Waste and treated soil record
- Keep abreast of the statutory requirements and regulations about waste management; and
- Supervise and arrange the maintenance of waste and soil remediation management facilities.

Waste Coordinator

3.2.7 The Waste Coordinator shall:

- Ensure all relevant legislation and the Contractor's duty of care is complied with throughout the duration of the Project;
- Initiate waste reduction scheme on site;
- Ensure that all the Contractor's employees of their responsibilities regarding the content of the WMP; and
- Co-ordinate waste management on site, gather data on waste and keep accurate records on waste movement both on and off site.

Decontamination Specialist

3.2.8 The Decontamination Specialist shall:

- Prepare an excavation and excavated material management plan for the ground decontamination works;
- Undertake detailed design for the soil remediation works;
- Prepare all necessary reporting including EP required Remediation Report;
- Prepare method statement and programme for the soil remediation works
- Formulate and undertake treatability test for the soil remediation works;
- Carry out supervision of the soil remediation process;
- Conduct sampling for Toxicity Characteristic Leachate Procedure (TCLP) tests on the solidified/stabilised soil;
- Undertake cleanup progress monitoring;
- Provide advice/suggestion on how to optimise/expedite the cleanup process; and
- Provide advice/suggestion on environmental mitigation measures to mitigate the environmental impacts resulting from the remediation process, and carry out the associated assessment/monitoring; and if necessary, post remediation monitoring and obtain approval from the Engineer and DEP.

Decontamination Contractor

3.2.9 The Decontamination Contractor shall:

- Excavation of contaminated soil for appropriate remediations;
- Carry out confirmatory testing
- Be responsible for the decontamination works including the cement solidification for heavy metals contaminated soil, and biopiling for the hydrocarbon contaminated soil;
- Establishment, setting up, operation and decommissioning of the remediation facilities including the cement solidification plant and the biopile treatment plant, and the associated auxiliary facilities;
- Carry out the necessary environmental monitoring requirements for the decontamination works;
- Carry out the necessary treatability testing for the decontamination works including cement solidification for heavy metals contaminated soil, and biopiling for the hydrocarbon contaminated soil;
- Carry out TCLP and Universal Compressive Strength (UCS) tests on remediated soils;
- Be responsible for on-site backfilling of remediated soil; and
- Provide experienced full-time Decontamination Supervisor(s) on site during the course of the decontamiantion works.

Decontamination Supervisor

3.2.10 The Decontamination Supervisor shall:

- Oversee all safety procedures and monitor the decontamination works;
- Provide assistance to the Decontmaiantion Specialist in carrying out the decontamination works; and
- Provide assistance to the Safety Officer in ensuring that all decontamination workers are trained with the appropriated training as per the Heath and Safety Plan for Ground Decontamination works (HASP-GD) and fitted with appropriate personal protective equipment.

Site Engineer

3.2.11 The Site Engineer shall:

- Assist the Site Agent in the implementation of WMP;
- Monitor and control works including those of subcontractors to ensure compliance of WMP;
- Report to the Site Agent regarding non-compliance/observation/area required improvement of waste management issues; and
- Ensure the remedial actions or mitigation measures are carried out on or before the planned due date.

Foremen

Foremen shall:

- Assist the Site Engineer in the implementation of WMP;
- Control works, including those of subcontractors, to fulfil the requirement of waste management issues;
- Report to the Site Engineer any non-compliance/observation/area required improvement of waste management issues;
- Maintain the on-site waste management facilities including sorting area, temporary storage area, general refuse bins and recycling bins etc;
- Carry out remedial actions or mitigation measures to rectify non-compliance/ observation/area required improvement;
- Carry out routine maintenance of waste management facilities and proper maintenance records shall be kept in site office; and
- Report non-compliance/observation/area required improvement of environmental protection issues.

Subcontractor and other employees

3.2.12 Every employee and subcontractor has the duty to carry out the waste management practices instructed by the Site Engineers and Foreman. Copies of WMP are to be issued to all subcontractors.

3.2.13 Every employee and subcontractor shall report promptly to foreman regarding any non-compliance/observation/area required improvement of waste management and environmental protection issues.

The Environmental Team (ET) and ET Leader

3.2.14 The ET, including the ETL, shall:

- Be responsible for the duties defined in the EM&A Manual of the EIA Report;
- Conduct site inspections and investigate and inspect the Contractor's equipment and work methodologies with respect to waste management and environmental mitigation measures. They shall review the works for anticipating potential waste management and environmental pollution implications;
- Review the programme of works to anticipate potential waste management implications;
- Report the implementation status of waste management mitigation measures from site inspections; and
- Follow the procedures stipulated in the agreed Event and Action Plans in the event of non-compliance/observation/area required improvement or complaint.
- Be responsible for the implementation of the EM&A programme in accordance with the EM&A requirements as contained in the EM&A Manual; and

- Keep a contemporaneous log-book of each and every instance or circumstance or change of circumstances which may affect the environmental impact assessment and for each and every non-compliance/observation/area required improvement of the EIA Report or the EP.

The IEC

3.2.15 The IEC shall:

- Be responsible for the duties defined in the EM&A Manual of the EIA Report, and shall audit the overall EM&A programme described in the EIA Report, including the implementation of all environmental mitigation measures, submissions required in the EM&A Manual, and any other submissions required under the EP;
- Be responsible for verifying the environmental acceptability of permanent and temporary works, relevant design plans and submissions under the EP;
- Verify the log-book(s) kept by the ETL;
- Notify EPD of each and every occurrence, change of circumstances or non-compliance/observation/area required improvement with the EIA Report or the EP, which might affect the monitoring or control of adverse environmental impact;
- Review and audit all aspects of the EM&A programme, including the WMP;
- Assist the ET on complaint investigation and recommend and/or instruct mitigation measures as appropriate; and
- Liaise with the ET on all environmental performance matters.

4 WASTE GENERATION AND DISPOSAL

4.1 Waste Overview

4.1.1 The following types of waste would be generated from the ground decontamination works under this contract:

- General refuse
- Non-inert Construction and Demolition (C&D) Material
- Inert C&D Material
- Recyclables
- Chemical waste

4.1.2 As soil contaminated by heavy metals and/or hydrocarbons shall be remediated by cement solidification and/or bioremediation followed by on-site backfilling, they do not contribute as waste requiring to be disposed of at disposal facilities. Which means any soil, both contaminated and uncontaminated soil, excavated during ground decontamination work will be backfilled on site and will not be disposed of at the Public Fill Reception Facilities or to a recycling facility upon approval from the Engineer.

4.1.3 However, upon completion of the final topography of backfilling profile, small quantities of inert C& D material resulting from the demolition work may need to be disposed of at the Public Fill Reception Facilities or to a recycling facility upon approval from the Engineer. The disposal of inert C&D materials generated from demolition works have been covered under Waste Management Plan version 3.3 for the demolition works. The estimated period of disposal of such surplus inert C&D material from the demolition work, if any, will be after the backfilling process (after June 2011).

4.1.4 Waste type, classification, proposed/designated disposal site and tentative schedule of disposal for the wastes generated from the Project are indicated in the Table 2 below.

Table 2 Summary of Waste Disposal

Waste Type	Classification	Disposal Site	Tentative Schedule of Disposal
General Refuse	• Packaging waste • Office waste • Putrescible wastes • Vegetation	SENT Landfill by vehicles	May 2010 – Dec 2011
Inert C&D material (demolition phase)	• Broken concrete • Brick • Aggregate	Public Fill Reception Facilities: Tuen Mun Area 38 Fill Bank; or Recycling Facility upon approval from the Engineer	June 2011 – Dec 2011
Non-inert C&D material	• Wood • Bamboo	SENT Landfill by vehicles	May 2010 – Dec 2011
Recyclables	• Paper • Plastic • Steel / Metal	Recycling collectors	May 2010 – Dec 2011
Chemical Waste	• Spent lubricant oil • Surplus paint • Spent diesel • Activated carbon and cartilage filters	To be collected by licensed waste collector	June 2010 – Dec 2011

4.2 General Refuse & Non-Inert C&D Material

Source of Wastes

4.2.1 General refuse will be generated largely by food service activities for on-site staff, from office work and certain aspects of the construction works, and will include food wastes, un-recyclable waste etc.

4.2.2 During soil excavation, a certain amount of refuse and non-inert C&D material are also expected as part of the waste generated.

Estimated Quantities and Timing for Generation

4.2.3 It is estimated that the general refuse and non-inert C&D material arising will be less than 50m^3 per month. Although the size of the site office establishment will vary at different stages of the decontamination works, thus be observed that the relative contribution to the general wastes from site staff, which will be generated throughout the whole contract period, will be small in terms of the overall wastes arising.

4.2.4 As an estimation, the refuse and other non-inert C&D material, includes but not limited to metal, paper, cardboard, plastic and packaging waste, arising from the excavation works shall be approximately 1.8 tonnes. The estimation shall be subjected to revision as the excavation works commence.

4.2.5 The tentative programme of the general refuse and non-inert C&D material generation would be from May 2010 to December 2011.

Control Measures

4.2.6 As the refuse and non-inert C&D material arising from the excavation works are more or less abiding, careful sorting and handling during excavation shall aid in keeping this proportion as low as practicable.

4.2.7 Office waste will be reduced through reduce use of paper and minimize the waste generation.

4.2.8 General refuse including food wastes, such as lunch boxes, and domestic wastes generated on-site will be stored in enclosed bins or compaction units separated from construction and chemical wastes.

On-Site Handling or Storage

4.2.9 Putrescible wastes, such as lunch box, and domestic wastes generated on-site will be stored in enclosed bins or compaction units separate from C&D and chemical wastes. Location of temporary storage of general refuse is indication in Figure 2.

Disposal Arrangement

4.2.10 A reputable waste collector will be employed by the Contractor to remove general refuse and to be disposed of at landfill site, separately from C&D material and chemical wastes, preferably daily to minimise odour, pest and litter impacts. The burning of refuse on construction sites is prohibited by law.

4.2.11 Waste disposal records will be obtained from the appropriate authorities and collection of general refuse and general site housekeeping will be carried out in accordance with the Waste Disposal Ordinance (Cap. 354), Waste Disposal (Chemical Waste) (General)

Regulation (Cap. 354), the Government Land (Miscellaneous Provisions) Ordinance (Cap. 28) and the recommendation given in Section 9 of KCIP EIA Final Report – September 2001.

4.3 C&D Materials & Recyclables

Source of Wastes

4.3.1 Due to the nature of the works, C&D materials, other than material mentioned at Section 4.2, will also be generated under the contract. The types of C&D materials include the following:

- Inert C&D materials (including rock, broken concrete from soil excavation, etc);
- Recyclables non-inert materials such as steel / metal, plastic & paper;

4.3.2 Inert C&D material comprises materials broken up during soil excavation, including concrete and rocks etc. The bulk of the Inert C&D material will come from the excavation works. Inert C&D material may comprise different types of materials.

Estimated Quantities and Timing for Generation

4.3.3 A total of 36,751 m^3 of soil shall be excavated from the KCIP site during ground decontamination phase, which included a total of 11,815 m^3 of contaminated soil (including heavy metals, hydrocarbons, and heavy metals and hydrocarbons contaminated soil) shall be remediated and 24,936 m^3 uncontaminated soil. The quantities of each type of soil and the generation time frame are estimated in Table 3 and Table 4 respectively. The location of remediation of KCIP is shown in Figure 3 by a grid system. It is intended that the treated contaminated soil, meeting the relevant leachatability and unconfined compressive strength tests, together with the uncontaminated soil shall be backfilled on-site. Soil excavated during ground decontamination stage, both uncontaminated and contaminated soil, will not be disposed of to any public fill reception facilities area or disposed of at other recycling facility or landfill.

Table 3 Estimated Volumes of Soil Requiring Excavation and Remediation

		Volumes of Excavation
Uncontaminated soil (m^3)		**24,936**
Contaminated soil: Remediation Volume (m^3)	**Heavy Metals**	**8,751**
	Hydrocarbons	**1,751**
	Heavy Metals and Hydrocarbons	**1,313**
	Sub-Total	**11,815**
Total Excavated Volume (m^3)		**36,751**

Table 4 Estimated Generation Schedule of C&D Materials

Location of Remediation (grid no.)	Uncontaminated soil (m^3)	Contaminated soil (m^3)			Estimated Schedule for Excavation and Remediation of Contaminated Soil (1)	Estimated Schedule for Excavation and Remediation of Contaminated Soil (2) + (3)
		Heavy Metal (1)	Hydrocarbon (2)	Heavy metals and Hydrocarbon (3)		
4	4,812	1,313	438	--	Jun 10 – Nov 10	Jun 10 – May 11
12	5,249	1,313	1,313	--	Jun 10 – Nov 10	Jul 10 – May 11
13	1,750	875	--	--	Aug 10 – Nov 10	--
16	2,625	--	--	1,313	--	Aug 10 – May 11
15	5,250	2,625	--	--	Nov 10 – Feb 11	--
14	5,250	2,625	--	--	Jan 10 – Apr 11	--
Total volume (m^3)	**24,936**	**8,751**	**1,751**	**1,313**		

4.3.4 Meanwhile, a small portion of recyclables which would be collected by the recycling collectors would also be generated from the decontamination works. The estimated quantities of recyclables would be:

- Steel / Metal: 100kg per month
- Plastic: 10kg per month; and
- Paper: 10kg per month.

4.3.5 The tentative programme of inert and non-inert C&D materials (uncontaminated and treated soil) generation would be from May 2010 to July 2011.

On-Site Handling or Storage

4.3.6 To reduce / minimize the generation of C&D materials, materials resulted from the decontamination works will be sorted properly to recover the inert portions for reuse on site.

4.3.7 Sorting of inert and non-inert portions from the excavation works will be carried out within the site. During ground decontaminated phase, treated contaminated soil together with the uncontaminated soil will be used for backfilling purpose within the site. Reusable / recycling materials of non-inert portion will be further recovered for on-site reuse.

4.3.8 Contaminated and non-contaminated materials will be segregated from other wastes to avoid cross contamination. Different areas will be allocated for separate stockpiles to prevent cross contamination, and avoid the release of contamination material to the surrounding environment.

Control Measures

4.3.9 Due to the large volumes of both contaminated, non-contaminated and solidified/stabilised soil from the decontamination works, it is important that they are stockpiled separately to avoid cross-contamination and are suitable to on-site backfilling and/or reuse. Environmental mitigation measures and preventive control for ground decontamination works will be carried out throughout the whole process, which include,

but not limiting to, implementation of excavation and soil remediation procedures, fully covering of contaminated soils using impermeable liner, establishment of earth bund around stockpile areas and excavated areas, provisions for pumping facilities for heavy rainfall, provision of impermeable sheeting for covering open excavated areas during rainfall. In addition, the areas of excavation shall be limited to manageable sizes in order that environmental mitigation measures can be effectively implemented.

Disposal Arrangement

4.3.10 No inert C&D materials from ground decontamination works will be disposed of off site. All treated contaminated soils and inert C&D materials generated from ground decontamination works will be backfilled within the site. After the backfilling process (after June 2011), disposal of inert C&D material generated from demolition work (surplus materials recycled from buildings/chimney demolition stage) may be required and the following disposal arrangement will be adopted.

4.3.11 Environment, Transport and Works Bureau Technical Circular (Works) No. 31/2004 – Trip-ticket System for Disposal of Construction and Demolition Materials promulgates the policy to implement a trip-ticket system in Public Works Programme (PWP) contracts for the proper disposal of inert C&D material at public fill reception facilities or landfill site. A trip-ticket system should be implemented for this Project in accordance with ETWB TC(W) No. 31/2004 as per the recommendation of the approved EIA Report and the conditions of the Environmental Permit therefore overrule the exemption quantity of 50,000 m^3 specified in ETWB TC(W) No. 31/2004.

4.3.12 Where necessary, disposal of inert C&D material shall be transported by trucks or barge to designated public fill reception facilities or other areas as designated by EPD, truck chits forms/vessel chits forms should be used for inert C&D material disposal of at public fill reception facilities based on the way of transportation.

4.3.13 As the public fill reception facilities have the limited space, the Contractor would consider the recycling facility for the inert C&D material. Upon the approval of the Engineer, the inert C&D material would be delivered to the recycling facility. The Contractor would follow the trip-ticket system for disposal

4.3.14 The transportation route for disposal of inert C&D material by trucks and barge is shown in Figure 4.

4.4 Chemical Wastes

Source of Wastes

4.4.1 The chemical wastes generated from the decontamination works will primarily arise from the maintenance of plant and equipment. These wastes include spent lubricant oil, surplus paint, spent diesel, used activated carbon and cartilage filters resulting from the biopile treatment plant.

4.4.2 For chemical waste produced from a process, as defined by Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation, registration will be made with EPD as a Waste Producer.

Estimated Quantity and Timing for generation

4.4.3 The generation of chemical wastes from the maintenance of plant and equipment is anticipated throughout the decontamination works of the project based on the utilisation of plant and equipment. The maintenance of plants and equipments will be minimized conducted on site except emergency maintenance.

4.4.4 It is estimated that the generation of chemical waste shall not be greater than 50 drums over the entire decontamination works (approx. 200 kg for 1 drum and 10 tonnes for 50 drums). It is expected the time of generation shall be from June 2010 to December 2011.

Control Measures

4.4.5 Preventive measures will be implemented for leakage and spillage of fuel and lubricating oil to avoid contamination of the construction site.

4.4.6 All plant and equipment will require regular maintenance. Their maintenance records will be kept in site office for future reference.

4.4.7 Good housekeeping practices will be adopted to deal with chemical waste include:

(i) Generating less chemical waste through:
- Delivering appropriate quantity of chemicals to the construction site.
- Avoiding unnecessary wastage of chemicals by using the chemicals more sensible and in accordance with the manufacturer's instructions.
- Finishing one bottle/container of chemicals before opening the next one for use.
- Collecting the remaining chemicals in suitable containers.
- Removing the unused chemicals out of the construction site after completion of the project.

(ii) Preventing illegal discharge of chemicals or chemical wastes through staff of the project.

(iii) Minimising the volume of unused chemicals to be disposed of through:
- Using the chemicals before the expiry date.
- Ordering appropriate quantity of chemicals and avoiding unnecessary storage of excess chemicals.

On-site Handling and Storage

4.4.8 Chemical waste will be handled in accordance with the *Code of Practice on the Packaging, Handling and Storage of Chemical Waste*. The details are described as follows and the location of temporary storage area of chemical waste is indicated in Figure 2.

(i) Containers used for the storage of chemical waste will:
- be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed;
- have a capacity of less than 450 litres unless the specification have been approved by EPD; and
- display a label in English and Chinese in accordance with instruction prescribed in Schedule 2 of the Regulations.

(ii) The storage area for chemical waste will:
- be clearly labelled and used solely for the storage of chemical waste;
- be enclosed on at least three sides;

- have an impermeable floor and bund, 110% capacity of the largest container or 20% of the storage capacity, whichever is the greatest;
- have adequate ventilation;
- be covered to prevent rainfall entering (water collected within the bund must be tested and disposed as chemical waste if necessary); and
- be arranged so that incompatible materials are adequately separated.

Disposal Arrangement

4.4.9 In accordance with the recommendation given in the Section 9 of KCIP EIA Final Report – September 2001, chemical waste will be disposed of:

- via a licensed waste collector;
- to a facility licensed to receive chemical waste, e.g. Chemical Waste Treatment Facility in Tsing Yi; or others
- to a re-user of the waste, under the approval from the EPD.

5 IMPLEMENTATION OF WASTE MANAGEMENT

5.1 Waste Flow Table (WFT)

5.1.1 Waste Flow Tables will be used to record all waste removed off site each month.

5.1.2 The estimated and actual quantities of wastes that will be generated each year from the project will be reported, using the table "Yearly Summary Waste Flow Table", which is attached in Appendix C of this WMP.

5.1.3 The actual quantities of wastes generated in each month will be recorded in a monthly basis, using the table "Monthly Summary Waste Flow Table", which is attached in Appendix D of this WMP.

5.1.4 Site Agent will be responsible to update the Yearly and Monthly Summary Waste Flow Tables.

5.2 Recycling Proposal

5.2.1 As outline in Sections 4, the Contractor will segregate, as far as practical, the recyclable materials (mainly metals), from the inert C&D waste stream and general waste, so that the recycling contractors can collect the materials on a regular basis for recycling or export. Waste sorting and segregation will be carried out in accordance with the following categories for recycling:

- Plastic (i.e. plastic bag, plastic bottle, plastic packaging, etc.);
- Rubber;
- Paper;
- Wood/ timber;
- Glass;
- Textile; and
- Metal (i.e. aluminium can, steel metal, ferrous metal, and non-ferrous)

5.3 Trip-ticket System

5.3.1 The disposal of inert C&D Material, if there are any surplus from C&D generated from demolition work, will be carried out in accordance with the ETWB TC(W) No. 31/2004. The Contractor will produce a Construction and Demolition Material Disposal Delivery Form (DDF) for each and every vehicular trip transporting inert C&D material off site. The Contractor will complete all relevant details on the Form in quadruplicate except for the Time of Departure. A sample of the Form is attached in Appendix E. All inert C&D material will be disposed of by trucks or barge to the designated public fill reception facilities or other areas as designated by EPD or other area as approved by the Engineer. Truck chits forms/vessel chits forms should be used for inert C&D material disposal of at public fill reception facilities based on the way of transportation.

5.3.2 Prior to the vehicle leaving the site, the Contractor shall present to the ER or his designated staff the completed DDF. The ER or his designated staff will insert the Time of Departure and stamp the Form. The ER will retain a copy of the DDF and return the original to the Contractor. The DDF will be carried on board the vehicle at all times throughout the vehicular trip.

5.3.3 In case marine transportation is employed for disposal of inert C&D material, the

Contractor follow the vessel trip-ticket system arrangement for all barges to deliver to designated public fill reception facilities. The copies of the Form and the receipt will be maintained on site for future references.

5.3.4 For each trip of off-site disposal of chemical waste, trip tickets issued for every chemical waste collection made by the licensed waste collector will be copied to the ER with the original maintained on site for future inspection.

5.3.5 The Site Management Plan for Trip-Ticket System is attached for reference in Appendix E.

5.4 Inspection Programme and Performance Monitoring

5.4.1 Auditing of each waste stream will be carried out periodically by both ET and IEC to determine if wastes are being managed in accordance with approved procedures. The audits will look at all aspects of waste management including waste generation, storage, recycling, treatment, transport, and disposal. An appropriate audit programme would be to undertake a first audit at the commencement of the ground decontamination works, and then to audit quarterly thereafter.

5.4.2 The waste coordinator and the Environmental Officer will be responsible for the monitoring and auditing of the waste management practice during his weekly site inspection in order to ensure that appropriate control measures are properly implemented.

5.4.3 If deficiency of the waste control measures were identified during the site inspection and audit, the Waste Coordinator will discuss with the Site Agent for formulation of remedial measures and the Site Agent will implement the remedial measures promptly to rectify the situation. If deficiency persists, alternative and/or additional control measures will be proposed to the satisfaction of the ER.

5.5 Record Keeping and Reporting

5.5.1 The Contractor will keep adequate and proper records such as trip tickets, photographs and measurement records relating to the implementation of the WMP, and submit such records of each calendar month to the ER within the first week of the following calendar month for their onward submission via the Project Proponent to the Public Fill Committee for information. The record will include the amount of wastes generated, recycled and disposed of (including the disposal sites).

5.5.2 After the completion of the Contract, the Contractor will submit a report on the implementation of the WMP in the content to be agreed by the ER. The report will include the following information and any other information as the ER may consider appropriate:

- The quantities of different types of C&D material as estimated at the commencement of the Contract;
- A statistics on the monthly quantities of different types of C&D material generated and their disposal method; and
- Reasons for any significant differences between the estimated quantities at (a) and the actual quantities at (b).

6 EMERGENCY RESPONSE

6.1 Objective of the Emergency Response Procedure

6.1.1 The plan addresses emergencies related to the treatment, storage and transportation of contaminated materials. Such emergencies may include:

- Chemicals and chemical wastes spillages on land;
- Overflow of contaminated surface run-off due to heavy rain storm attack; and
- On-site traffic accident.

6.2 Definition of Emergency

6.2.1 An emergency is an existing or imminent event that presents a danger of major proportions to human health or the environment. An emergency requires prompt co-ordination of actions to protect the health, safety or welfare of people, and/or to limit damage to the environment or property and equipment.

6.3 Emergency Response Team

6.3.1 An Emergency Response Team (ERT) has been formed and consists of the following personnel:

- Safety Officer;
- Safety Supervisor;
- Site Agent;
- Environmental Officer;
- Foreman;
- Site Engineer;
- First Aider;
- Electrician; and
- Public Relation Officer.

The ERT members and the action of each stakeholder for tackling emergency situations are included in Table 3

Table 5 Emergency Response Team Member List

Name	Position	Emergency Team	Contact No.	Action, Roles and Responsibilities in Emergency Situations
Mr. Vincent LEUNG	Safety Officer	ERT Leader	9475 3666	● Manage all resources on-site for the implementation of emergency. ● Inform Project Manager / Site Agent ● Responsible for all emergency arrangement on-site and develop appropriate handling procedures. ● Advice on health and safety related issues.
Mr. Peter TANG	Site Agent	Deputy ERT Leader	9220 1611	● Assist the ERT leader for carrying out his duties in case of emergency event. ● Implement emergency procedures. ● Oversee the emergency management and provide necessary support to ERT Leader. ● Advise on clean-up procedure and co-ordination of resources.
Mr. Keith Lee	Environmental Officer	ERT member	5191 8251	● Provide support and advice on implementing emergency procedure
Mr. LAM Leung	Safety Supervisor	ERT member	6281 8610	● Assist the Safety Officer for carrying out his duties in case of emergency event.
Mr. Sze Man Pat	Foreman	ERT member	6281 8620	● Assist in implementing emergency procedures.
Mr. Steven HO	Site Engineer	ERT member	6281 8608	● Notify relevant Government Department and Parties, where necessary.
Mr. Vincent Leung	First Aider	ERT member	9475 3660	● Provide necessary on-site first aid recovery as instructed by ERT Leader under safe environmental condition.
Mr. Tony Ho	Electrician	ERT member	9100 8721	● Ensure electrical safety as instructed by ERT Leader under safe environmental condition.
Mr. Ivan KONG	Public Relation Officer	ERT member	8102 2699	● Answer 24-hr Hotline. ● Provide communication support and service. ● Manage public communications in the event of issues, crisis and complaints.
24-hr Hotline			**8102 2699**	

6.4 Chain of Command

6.4.1 A person within the ERT will be appointed to be the ERT leader - a primary decision-maker in the event of an emergency. In the case that the ERT leader cannot be contacted, an alternative person will be available to conduct the duties of the ERT leader. The responsibilities of the ERT leader are as follows:

- To understand the project emergency plan and rescue procedures.
- To immediately notify the ERT members in the event of an emergency.
- To arrange the whole operation of the emergency rescue and fire fighting.
- To determine the seriousness of the cases and take appropriate actions to handle the emergency / fire;
- To assign personnel in the ERT to assist the ERT leader to carry out the rescue procedures in case of fire / emergency.
- Immediately notify the Site Engineer and Project Manager of the detail of any accident and rescue procedures in case of a serious accident.
- Review and recommend changes if necessary, the emergency procedures periodically with other safety personnel and monitor the system and its implementation.
- To arrange necessary fire fighting / rescue equipment in accordance with legislation requirements.
- To re-organise the ERT members from time to time to ensure the effectiveness of the system and competency of the members.
- To arrange practice drills for assessing the efficiency and effectiveness of the rescue team regularly.

6.4.2 In general, anyone that has discovered chemical leakage and spillage shall immediately report to the ERT leader, ET/ ET Leader, and the Waste Manager. ERT leader shall take into account the safety and environmental advises from Environmental Officer and Safety Officer once the chemical leakage and spillage incident is observed/ reported.

6.5 Internal Communications

6.5.1 Telephones and direct face-to-face communication will form the basis of communications within the site. The site office will be equipped with telephones. Cellular phones will allow for communication among field personnel, truck drivers and the site office.

6.6 Communications with the Public

6.6.1 All community enquiries or complaints in relation to activities described in this emergency section should be directed to the project 24-hr Hotline and the project representatives identified in the ERT member list. A separate Public Relation (PR) Plan has been prepared by the Public Relation Officer detailing the communication channel with the public. (Contract Clause PSA 2.4)

6.6.2 Communication between the public and project personnel will only be required in the event of issues, crisis and complaints where the situation is to be handled within the

project site. However, depending on the nature of an emergency, in the event where the situation has been handed to the Police or FSD, Police or FSD will be the overall commander and communication with government agencies, medical service providers, external experts and the public. The ERT leader will maintain close liaison with the Police or FSD representative on site.

6.7 Emergency Call List

6.7.1 An up-to-date emergency call-out list including major ERT members will be displayed on a prominent position in the site office. This list shall be a dynamic document and be continuously updated as necessary. This list is currently based on normal working hours but will be updated if required by an increase in operational hours.

6.7.2 In addition to the above contacts, other organisations that may need to be contacted in the event of an emergency include:

Kwai Chung Fire Station	*2426-5694*
Tsuen Wan Fire Station	*2499-5044*
Water Supplies Department	*2824-5000*
Police Emergency Call	*999*
HKPF – Duty Officer, Kwai Tsing District	*2410 2205*
Drainage Services Department	*2300-1110*
Hong Kong Observatory	*2926-8200*
The Hong Kong and China Gas Company	*2880-6999*
CLP Power Hong Kong Limited	*2678 2678 Customer Service (24-hour)*
(Emergency Reporting)	*2728 8333 (24-hour)*
(Engineering)	*2678 7900*

6.8 Training

6.8.1 An emergency often creates unfamiliar circumstances and a hostile working environment for people required to respond to the emergency. In addition, time is usually a very important factor in determining the most appropriate response to an emergency. Training and experience can significantly improve the effectiveness of the responders and decision-makers. Training is therefore a vital part of the implementation of an Emergency Response Procedure (ERP).

6.8.2 The specialist personnel identified in this procedure will be trained and qualified in their respective roles as identified in this procedure. For example, it will be ensured that all First Aiders hold valid First Aid Certificates.

6.8.3 All workers will be briefed of the emergency response process in the site induction, and all workers identified in this section will be trained in its content in the language that the worker understands.

6.9 The Contractor and Employees

6.9.1 All employees of the Contractor shall be thoroughly familiar with company policies and procedures for responding to emergencies. He/she will be knowledgeable in the contents under this section of the plan, and be actively involved in the training of other personnel identified under this section.

6.9.2 All personnel at the site will be made familiar with the Chain of Command with respect to reporting emergencies and subsequently taking directions from identified personnel. Every person is a potential resource in the early detection of problems, which if not reported and not addressed could lead to emergency situations.

6.9.3 The frequency of the training necessarily depends on the personnel and the circumstances at the site. New personnel should be trained systematically. Changes in the roles of individual personnel would warrant new training.

6.10 Sub-Contractors and Others

6.10.1 Sub-contractors and all other personnel working at the site shall also be made familiar with the chain of command with respect to reporting emergencies and subsequently taking directions from site personnel.

6.11 Emergency Response Procedures

Response to General Emergency

6.11.1 Where the ERT leader deems an emergency situation, he will contact the necessary personnel identified in the ERT. The Safety Officer will go to the site of the incident and relay all details to the other ERT members who will gather at the contractor site office. The Safety Office will advise the ERT of all necessary equipment/PPE requirements/first aid treatment needed at the accident site. The ERT and associated team members will then co-ordinate all items require by the Safety Officer.

6.11.2 Upon clearing the accident site, a post-mortem report will be completed which details all occurrences prior to, during and following the incident. Applicable workers will be briefed on the contents of the incident report following its completion.

Chemicals & Chemical Wastes Spillages on Land

6.11.3 Transportation of chemical waste shall be carried out by licensed waste collector, and be contained either in steel drums lined with plastic sheeting or by use of safety and suitable labelled containers.

Overflow of Contaminated Surface Run-off Due to Heavy Rain Storm Attack

6.11.4 In order to prevent water retention on the site, all storm and surface water drains, ditches and out-falls will be regularly checked and if necessary cleared of debris, soil and litter. Treatment and storage for the contaminated material shall be secured and covered in designated area. As such, none of the excavated contaminated material will be exposed to the surface run-off due to heavy rain storm in its untreated stated, overflow of contaminated surfaces of the excavation areas are not anticipated.

On-site Traffic Accident

6.11.5 On-site traffic accident will be minimised by speed control limit for all vehicle to 8 km/hr. In additional, all storage area of contaminated material shall form within a fenced / protected area of the project site.

6.11.6 All vehicles shall only be driven by personnel who have been trained in the Emergency Response Procedure and hold a valid Hong Kong driving licence for the class of vehicle operated.

Power Failure during Decontamination

6.11.7 In the event of loss of power, back-up power will be available from portable generators. These units are readily available in the event of a disruption to the power supply.

6.11.8 Appropriate back-up facilities will be supplied in order to ensure the effective operation of the site and associated decontamination plants when the standard facilities are out of action due to power failure.

6.12 Post-Emergency Procedures

6.12.1 An investigation will be carried out immediately after incident occurred. It aims to find out the causes of such incident. Base on this information, adequate preventive measures as well as toolbox training to relevant staffs will be provided in order to minimize the probability of recurrence. A post-mortem report of emergency incident including mitigation and preventive measures shall be submitted to the authorities.

7 Training

7.1.1 The Contractor shall arrange and provide training on waste management in the site-specific induction and its refresher training for all employee and subcontractors involved in the works. The content of the training will include but not necessary limited to the following:

- Concepts of Site cleanliness.
- The steps/requirements of the WMP stipulated in the Contract.
- Classification of different waste types in accordance with the WMP.
- Proper segregation, handling and storage of different types of waste in accordance with the WMP.
- Procedures and measures for waste minimisation, reuse and recycling.
- Locations of designated storage areas for different waste types in accordance with the WMP; and
- Emergency Response Procedure and mitigation measures.

An auditable record will be maintained for all environmental training undertaken.

Figures

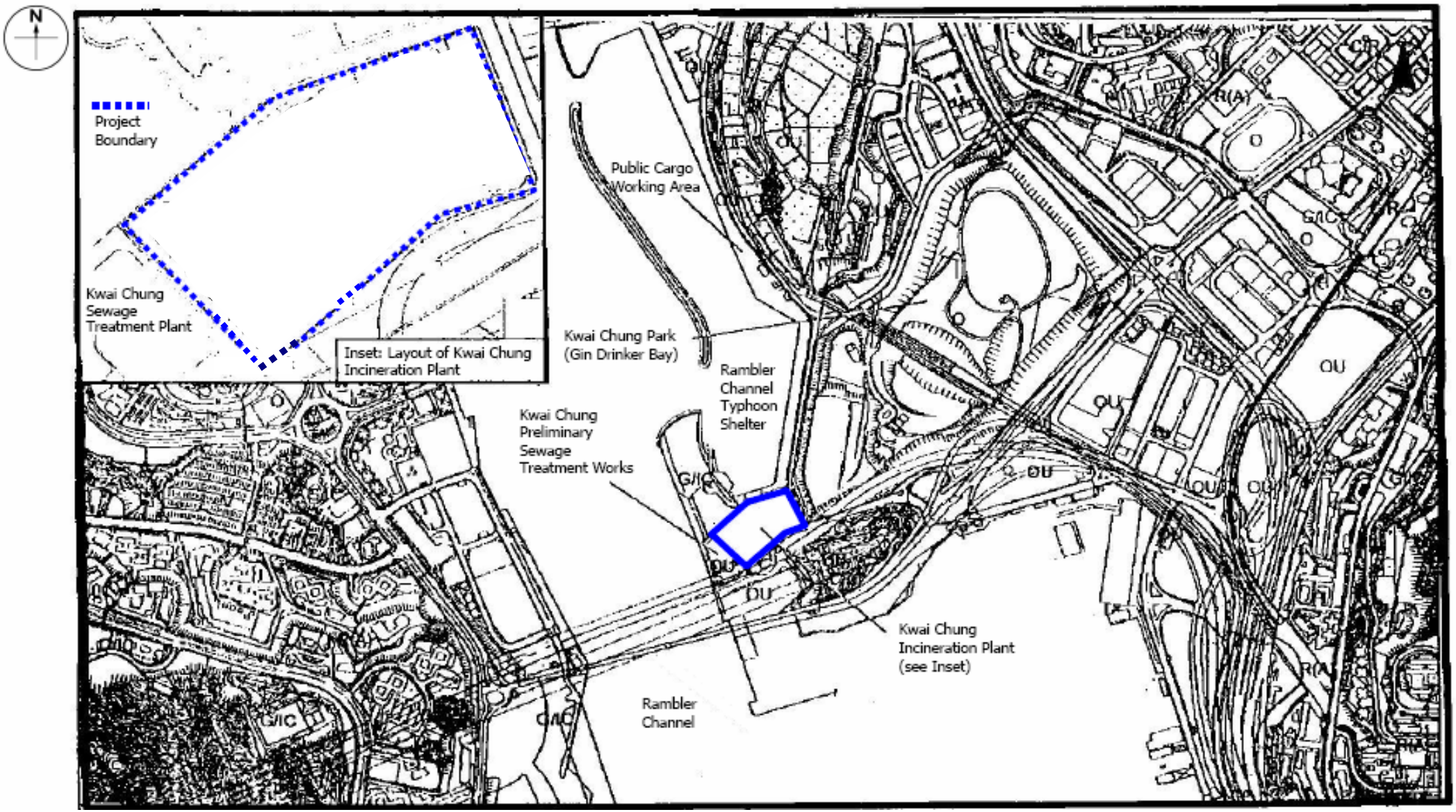


Figure:	1		
Title:	Location Plan of Project Site	Drawn by:	KL
		Checked by:	PT
Project:	Kwai Chung Incineration Plant Demolition and Decontamination Works (Environmental Permit No. EP-121/2002/A) Waste Management Plan (WMP) for Ground Decontamination Works	Rev.:	1.0
		Date:	Feb 2010

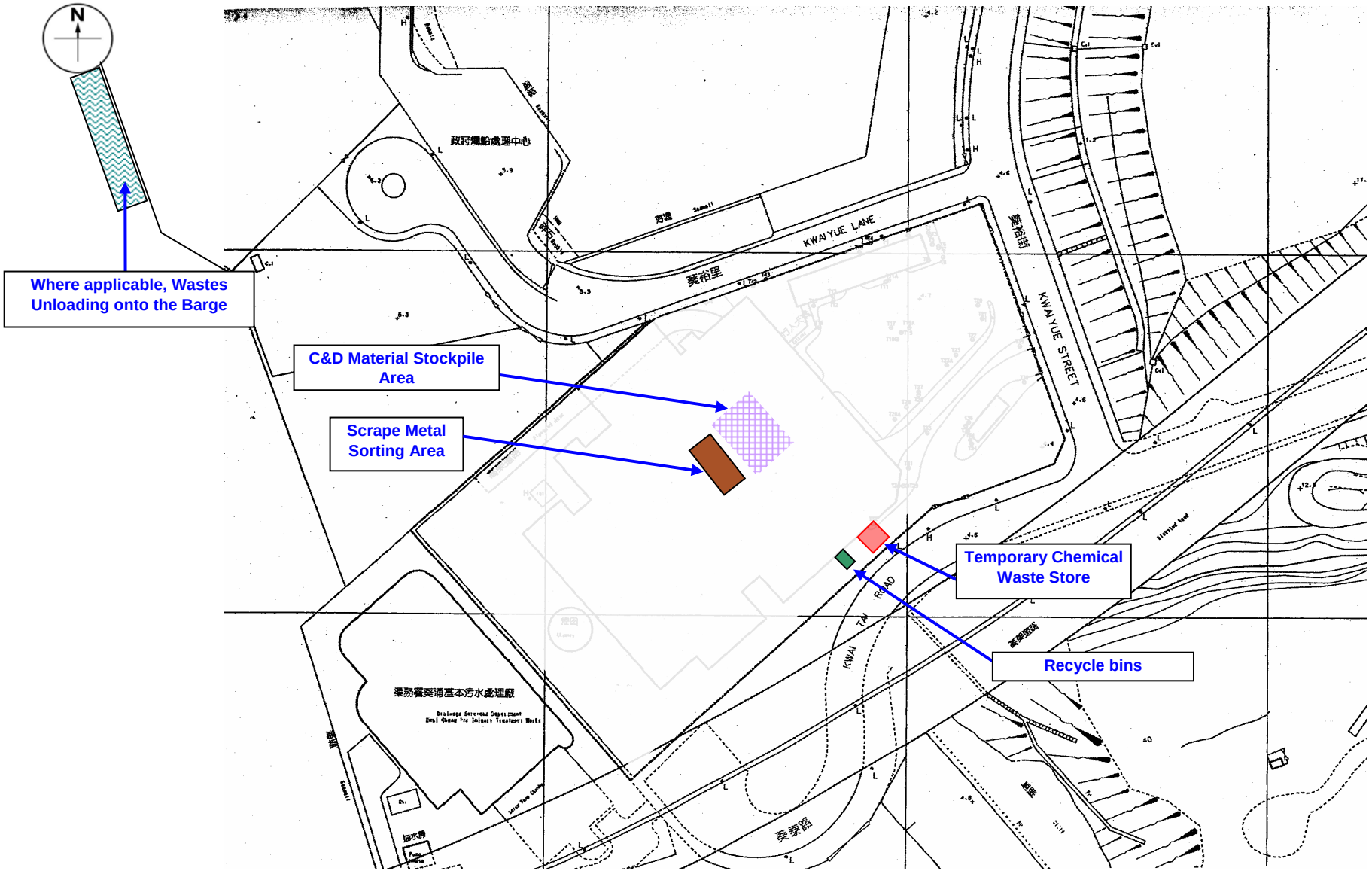


Figure:	2	
Title:	Location of Temporary Storage Area	Drawn by: KL Checked by: PT
Project:	Kwai Chung Incineration Plant Demolition and Decontamination Works (Environmental Permit No. EP-121/2002/A) Waste Management Plan (WMP) for Ground Decontamination Works	Rev.: 3.0 Date: Feb 2010

CONTAMINATION GRID SETTING OUT POINTS

POINT	EASTING	NORTHING
PT 1	829887.333	823544.764
PT 2	829910.437	823565.462
PT 3	829908.055	823521.738
PT 4	829931.160	823542.406
PT 5	829967.423	823562.109
PT 6	829996.607	823572.561
PT 7	829978.138	823533.020
PT 8	830007.323	823542.471
PT 9	829986.149	823511.335
PT 10	830006.839	823530.181
PT 11	830011.642	823531.747
PT 12	829986.739	823601.953
PT 13	830015.925	823612.405
PT 14	829997.455	823572.863
PT 15	830026.641	823583.316
PT 16	830008.170	823543.775
PT 17	830037.357	823554.227
PT 18	830012.498	823532.026
PT 19	830040.531	823542.288
PT 20	830042.113	823545.941

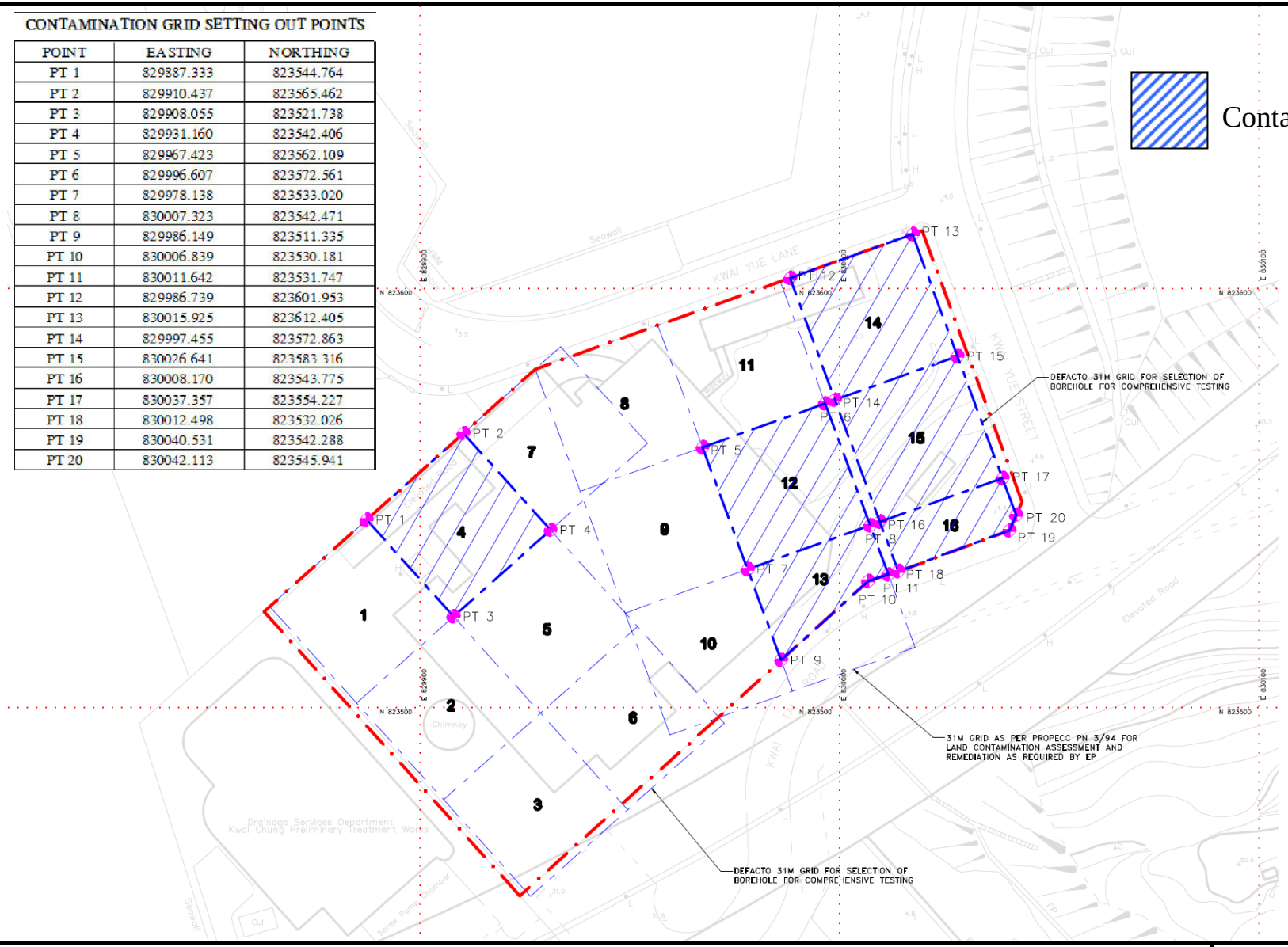


Figure:	3		
Title:	Location of Remediation	Drawn by:	KL
		Checked by:	PT
Project:	Kwai Chung Incineration Plant Demolition and Decontamination Works (Environmental Permit No. EP-121/2002/A) Waste Management Plan (WMP) for Ground Decontamination Works	Rev.:	4.1
		Date:	Mar 2010

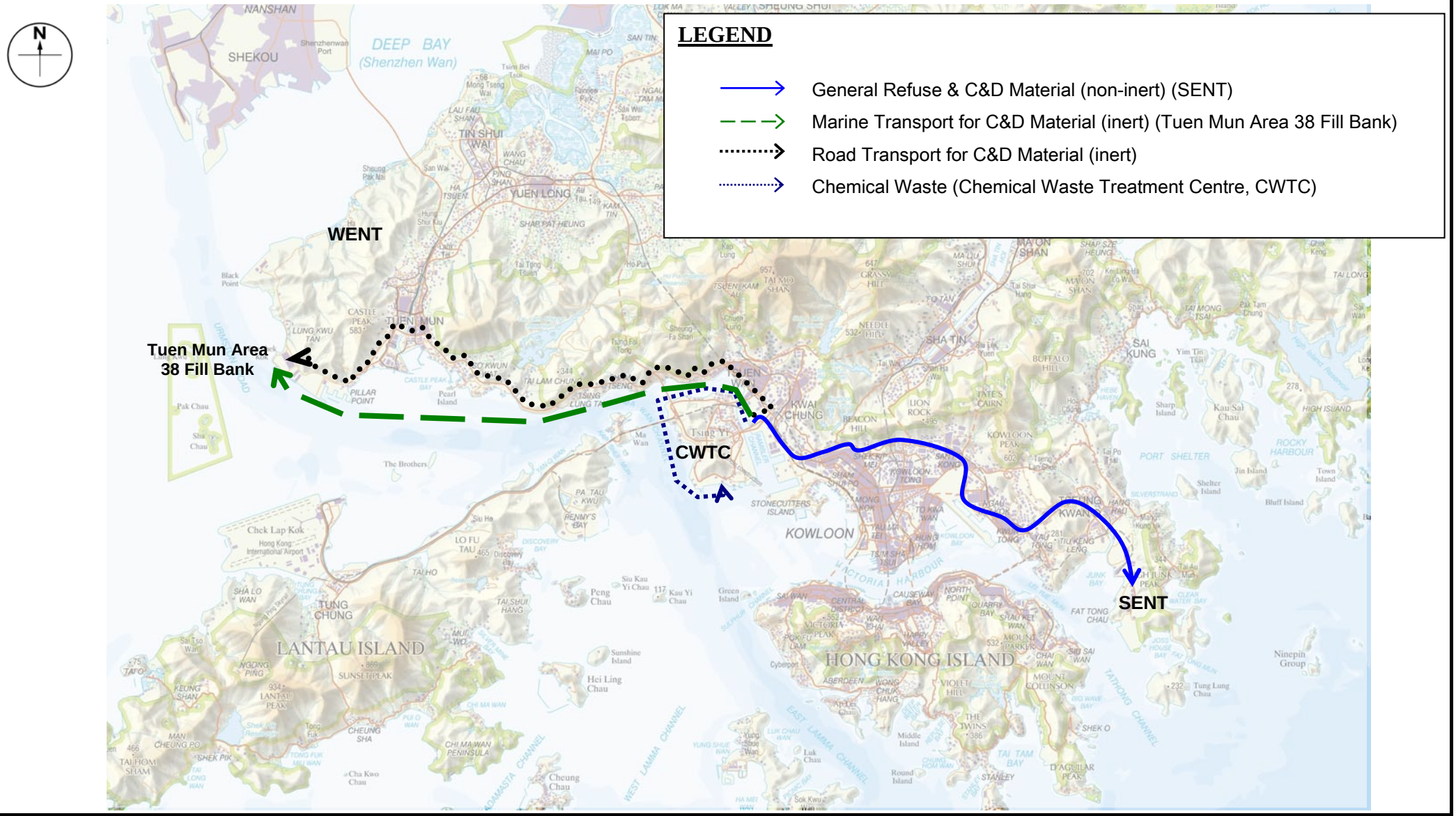


Figure: 4	
Title: Transportation Route for Different Type of Waste	Drawn by: KL Checked by: PT
Project: Kwai Chung Incineration Plant Demolition and Decontamination Works (Environmental Permit No. EP-121/2002/A) Waste Management Plan (WMP) for Ground Decontamination Works	Rev.: 4.1 Date: Apr 2010

APPENDICES

List of Appendices

Appendix A

General Method of Remediation

INTRODUCTION

Scope of Works

- Solidification has been identified as the preferred method for treating soils contaminated with heavy metals and involves the immobilization of the contaminant within the soil matrix by mixing cement in with the soil.
- Bioremediation (i.e. biopiling) has been identified as the preferred method for the treatment of soils contaminated with hydrocarbon based substances (including Semi-Volatile Organic Compounds (SVOCs), Volatile Organic Compound (VOC), and Total Petroleum Hydrocarbon (TPH)). Materials that also contain heavy metal contamination shall be further treated via solidification, following the successful completion of biopile treatment.
- Material on the KCIP site has been classified into three distinct categories, which is based on the contaminant present in the soil. These categories are as follows:
  - Type A: Heavy Metals
  - Type B: Hydrocarbons
  - Type C: Heavy Metals & Hydrocarbons

- According to the Engineer's "RBRG for Contaminated Land Management Contamination Assessment Report (CAR) and Remediation Action Plan (RAP) at Kwai Chung Incineration Plant (August 2009) (Ref: 203204/KCIP/RBRG/04/E) which was approved by the EPD, the quantities of contaminated soil requiring excavation and remediation at the KCIP site have is summarized in Table 1.

Table 1 Volumes of Contaminated Soil Requiring Excavation and Remediation

		Volumes of Contaminated Soil Requiring Excavation and Remediation
Excavation Volume (m^3) (uncontaminated soil)		**36,751**
Remediation Volume (m^3)	**Heavy Metals**	**8,751**
	Hydrocarbons	**1,751**
	Heavy Metals and Hydrocarbons	**1,313**

- The remediation works for KCIP site shall be carried out for contamination soil classified under the RBRG standard for both "Industrial" and "Public Park" land use scenarios, which ever is more stringent for each corresponding heavy metals and hydrocarbons contaminants. Table 2 summarised and identified the volumes of contaminated soil requiring excavation and remediation under the more stringent requirement for the RBRG standards between both the "Industrial" and "Public Park" land use scenarios for the identified contaminants.

Table 2 Summary of RBRG Standards (with selection of more stringent requirement)

Parameter	**Risk-Based Remediation Goals for Soil**		
	Industrial (mg/kg	**Public Parks (mg/kg)**	**More Stringent**
Heavy Metals			
Copper (Cu)	*1.00×10^4	9.79×10^3	Public Parks
Lead (Pb)	2.29×10^3	8.57×10^2	Public Parks
Hydrocarbons			
Benzo(a)pyrene	9.18	3.83	Public Parks

Polychlorinated Biphenyls (PCBs)	7.48×10^{-1}	7.56×10^{-1}	Industrial
Petroleum Carbon Ranges			
C6-C8	$*1.00 \times 10^{4}$	$*1.00 \times 10^{4}$	Same
C9-C16	$*1.00 \times 10^{4}$	$*1.00 \times 10^{4}$	Same
C17-C35	$*1.00 \times 10^{4}$	$*1.00 \times 10^{4}$	Same

* indicates a "ceiling limit" concentration
indicates more stringent RBRG requirement

- CIWEC shall be responsible for the design, provision, installation, commissioning, operation, and decommissioning of a cement solidification plant at KCIP site for the remediation of excavated soils contaminated with metals (Type A), and soils contaminated with metals and hydrocarbons (Type C), and also for the design, provision, installation, commissioning, operation, and decommissioning of a biopile at KCIP site for the remediation of excavated soils contaminated with hydrocarbons (Type B), and soils contaminated with metals and hydrocarbons (Type C). A summary of the remediation approach is detailed in Table 3.

Table 3 Summary of Remediation Approach for Various Types of Contaminated Soils

Type	**Contaminants**	**Estimated Quantity of Contaminated Soil under different land use scenarios (m^3)**	**Remediation Method**
A	**Heavy Metals**	**8,751**	**Solidification**
B	**Hydrocarbons**	**1,751**	**Biopiling**
C	**Heavy Metals and Hydrocarbons**	**1,313**	**Biopiling followed by Solidification**

CEMENT SOLIDIFICATION

Methodologies and Procedures

- CIWEC shall design the appropriate mix for the cement solidification process to meet the cleanup targets. The primary activities involved with cement solidification are:
  1. Setting-up of the mixing plant and equipment for cement solidification;
  2. Erect temporary shed/cover to prevent rainfall from falling on the mixing plant set up;
  3. Transfer of untreated soil to mixing chamber (pugmill);
  4. Removal of debris and oversize (i.e. soil screening);
  5. Sampling and testing of untreated contaminated material samples (where necessary);
  6. Addition of cement, water and additives as required;
  7. Homogeneous mixing of soil-cement-water mixture;
  8. Setting of soil-cement-water mixture;
  9. Control of fugitive dust generation during the every stage of plant operation;
  10. Sampling and testing of solidified material samples; and
  11. Solidified material shall achieve an unconfined compressive strength of not less than 1 MPa.
- The Contractor shall carry out treatability test for setting out the design and operation requirements for the cement solidification process. Prior to the commencement of the test, the

Contractor shall submit a Treatability Test Plan (TTP) for the agreement with the Engineer and approval of DEP. Upon completion of the treatability test, the Contractor shall submit a Treatability Test Report (TTR) within 14 days upon completion of the treatability test for the agreement by the Engineer and approval of DEP. Upon approval of the TTR, the Contractor shall take into account of the findings from the treatability test and incorporate them into the solidification detailed design.

- The mixing equipment identified to perform the solidification treatment of heavy metal contaminated soils at the KCIP site is a mixing chamber (pugmill). The pugmill was chosen for its capability to achieve a homogeneous soil-cement-water mixture.
- The mixing plant shall be set up on a concrete pad and surrounded by a berm to prevent any surface runoff from leaching and/or overspill. The mixing portion of the solidification facilities shall be roofed and sheltered to avoid the generation of dust and contaminated runoff.
- The mixing plant shall provide a mean to produce the desired specified material combination by pre-mixing cement, or other additives and water as conditions may require. The uniformity of the mix is particularly critical. Infinitely variable and wide ranging feed adjustments for fine particulate (cement) and liquid (water) additives allow proportioning of components in line with specification requirements. The base material feed can be adjusted to match throughput requirements. The speed of each of the variable rate metering devices is individually controlled.

Remediation Targets

- For the solidification treatment process, Toxicity Characteristics Leaching Procedure (TCLP) testing shall be performed to measure the degree of immobilization of contaminants. TCLP tests shall be conducted in accordance with USEPA Method 1311 and USEPA Method 6020 for the relevant heavy metals of concern
- "Universal Treatment Standards" (UTS) shall be used for interpretation of the TCLP test results. UTS for the concerned heavy metals are summarized in Table 4

Table 4 Universal Treatment Standards (UTS) for the Concerned Heavy Metals

Parameter	Universal Treatment Standards* (UTS)
Copper (Cu)	0.75 mg/L as TCLP
Lead (Pb)	7.8** mg/L as TCLP

** Reference to Universal Treatment Standards (UTS) of U.S. Resource Conservation and Recovery Act (RCRA) in Title 40 of the Code of Federal Regulations (CFR) Parts 268.*

*** It should be noted that UTS standard for copper is unavailable. To determine the UTS for copper, a comparison has been made between Drinking Water Standards for the USEPA and the USEPA Federal Register. It was found that the 2 sets of standards differ by a factor of ~6 (for Chromium) to ~2950 (for Cyanide). Using a more conservative approach, the factor of 6 is taken. Therefore, the UTS for copper is taken to be the Drinking Water Standard value of 1.3 mg/L times a factor of 6, giving a value of 7.8 mg/L. this derivation was adopted in the approved EIA for Decommissioning of Cheoy Lee Shipyard at Penny's Bay (AEIAR-055/2002) and Decommissioning of the Former Kai Tak Airport other than the North Apron (AEIAR-114/2007)*

- The treated soil shall also be compacted to a minimum Unconfined Compressive Strength (UCS) of 1MPa.
- During the solidification treatment process, three cubes for every $100m^3$ of treated soil sample shall be collected; one sample will be tested to confirm the treated soils meet the minimum required compressive strength of 1 MPa test by HOKLAS laboratory, while the other two samples shall be kept for contingency in case of damages to the sample being tested.
- Remediated soil passing the relevant remediation targets and UCS tests shall be used for on-site backfilling.

BIOREMEDIATION

Methodologies and Procedures

- Detailed design of the biopile will be completed following the conclusion of the biopile treatability tests. The treatability tests will provide the information necessary to calculate:
  - Air flow rates and related pipe work and blower design;
  - Nutrient and moisture addition regimes;
  - Theoretical operational life; and
  - Location and number of soil monitoring probes.
- While the final aeration system to be implemented is subjected to the results of the biopile treatability tests, a typical arrangement includes:

  1. Regenerative blower:
  2. A typical source of aeration is a regenerative centrifugal blower. Once the blower requirements have been finalised, it shall be placed on a concrete pad in a weatherproof enclosure, which shall adequately protect the blower system from climatic / environmental conditions. This weatherproof enclosure shall also be designed as a silencer to minimise noise impact during operations.
  3. Air manifold and header pipe connected to the blower:
  4. Typical aeration legs are constructed of 100mm diameter bland and slotted PVC pipe or equivalent, capped on one end or connected to a second header pipe. It is envisaged that aeration legs will be placed at:
  5. Approximately 5m centres in the horizontal plane; and
  6. Approximately 1m centres (may be offset) in the vertical plan starting 1m above the drainage layer (if required).
  7. Valves at the manifold branch points to allow balancing of the air flow;
  8. Air inlet hose if an impermeable cover is in direct contact with the soil (i.e. if sufficient air flow cannot be maintained);
  9. Water knockout pot, pump and collection tank; and
  10. Exhaust gas treatment system (carbon filters and optional biofilter).

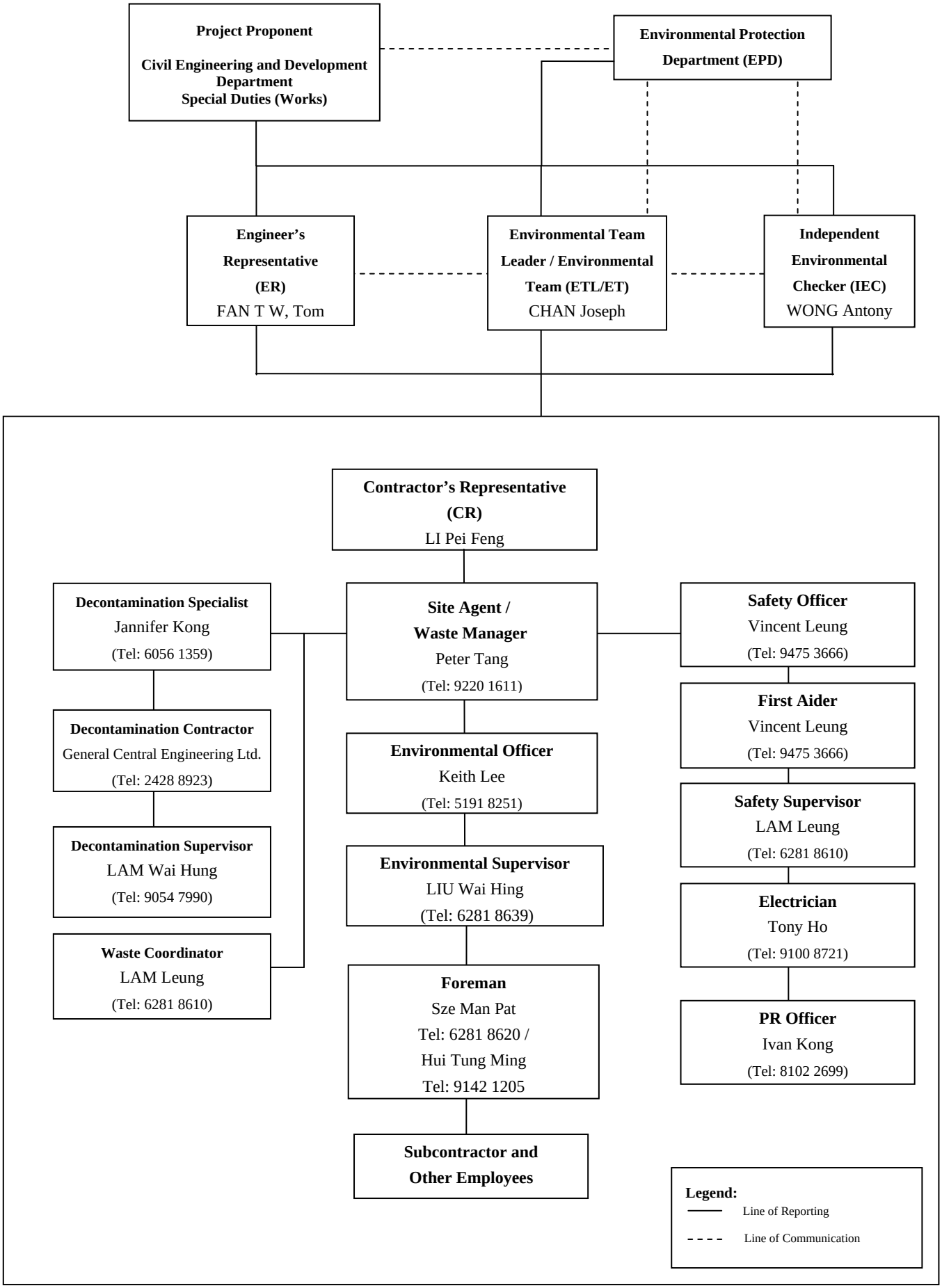
- An emission characterization study for the biopiling process shall be conducted in order to determine the parameters of the emission control system and to identify exact concentrations of individual species of VOC's. This will be conducted during the treatability test by sampling and analyzing column emissions at the beginning of the test. Samples shall be collected in a tedlar bag or canister via a smpling port at the column outlets. The emission samples shall be analysed for Total Organic Carbon (TOC) and the sample with the highest TOC concentration will be identified.

Biopile Methodologies

- Biopile treatment requires a period of operation and maintenance before clean up goals are attained. From previous biopile operations, this period may take from 9 to 12 months depending on the properties of the soil and nature and concentration of contaminants.
- Detail design and operation of the biopile shall be submitted to the Engineer for approval.
- Remediated soil passing the relevant remediation targets shall be used for on-site backfilling.

Appendix B

Project Organization Chart


Project Proponent
Civil Engineering and Development Department
Special Duties (Works)
Environmental Protection Department (EPD)
Engineer's Representative (ER)
FAN T W, Tom
Environmental Team Leader / Environmental Team (ETL/ET)
CHAN Joseph
Independent Environmental Checker (IEC)
WONG Antony
Contractor's Representative (CR)
LI Pei Feng
Decontamination Specialist
Jannifer Kong
(Tel: 6056 1359)
Site Agent / Waste Manager
Peter Tang
(Tel: 9220 1611)
Safety Officer
Vincent Leung
(Tel: 9475 3666)
Decontamination Contractor
General Central Engineering Ltd.
(Tel: 2428 8923)
Environmental Officer
Keith Lee
(Tel: 5191 8251)
First Aider
Vincent Leung
(Tel: 9475 3666)
Decontamination Supervisor
LAM Wai Hung
(Tel: 9054 7990)
Environmental Supervisor
LIU Wai Hing
(Tel: 6281 8639)
Safety Supervisor
LAM Leung
(Tel: 6281 8610)
Waste Coordinator
LAM Leung
(Tel: 6281 8610)
Foreman
Sze Man Pat
Tel: 6281 8620 /
Hui Tung Ming
Tel: 9142 1205
Electrician
Tony Ho
(Tel: 9100 8721)
PR Officer
Ivan Kong
(Tel: 8102 2699)
Subcontractor and Other Employees
Legend:
Line of Reporting
Line of Communication

Appendix C

Yearly Summary Waste Flow Table

Contract No. CV/2007/06
Kwai Chung Incineration Plant Demolition and Decontamination Works

Yearly Summary Waste Flow Table

Year	Estimated Annual Quantities of Inert C&D Materials (in '000m^3)										Estimated Annual Quantities of C&D Wastes									
	Total Quantity Generated		Broken Concrete (see Note 4)		Reused in the Contract		Reused in other Projects		Disposed as Public Fill		Metals		Paper/ cardboard packaging		Plastics (see Note 3)		Chemical Waste (incld. spent oil, activated carbon and cartilage filters from biopile etc.)		Others, e.g. general refuse	
	(a)		(b)		(c)		(d)		(a-b-c-d)		(in '000 kg)		(in '000 kg)		(in '000 kg)		(in '000 kg)		(in '000m^3)	
	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.
2010	21.87		0.00		21.87				0.00		0.80		0.08		0.08		3.50		0.40	
2011	14.88		0.00		14.88				0.00		0.50		0.12		0.12		6.50		0.60	
Grand Total	36.75	0.00	0.00	0.00	36.75	0.00	0.00	0.00	0.00	0.00	1.30	0.00	0.20	0.00	0.20	0.00	10.00	0.00	1.00	0.00

Notes: (1) The performance targets are given in Sub-clause 2(5)(c) of this Appendix to the PS.

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

(3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material

(4) Broken concrete for recycling into aggregates

Appendix D

Monthly Summary Waste Flow Table

Contract No. CV/2007/06
Kwai Chung Incineration Plant Demolition and Decontamination Works

Monthly Summary Waste Flow Table for 2010

Month	Actual Quantities of Inert C&D Materials Generated Monthly										Actual Quantities of C&D Wastes Generated Monthly									
	Total Quantity Generated		Broken Concrete (see Note 4)		Reused in the Contract		Reused in other Projects		Disposed as Public Fill		Metals		Paper/ cardboard packaging		Plastics (see Note 3)		Chemical Waste (incld. spent oil, activated carbon and cartilage filters from biopile etc.)		Others, e.g. general refuse	
	(in '000m^3)		(in '000m^3)		(in '000m^3)		(in '000m^3)		(in '000m^3)		(in '000 kg)		(in '000kg)		(in '000kg)		(in '000kg)		(in '000m^3)	
	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.
Jan																				
Feb																				
Mar																				
Apr																				
May	0.00		0.00		0.00				0.00		0.10		0.01		0.01				0.05	
June	2.11		0.00		2.11				0.00		0.10		0.01		0.01		0.50		0.05	
Sub-total	2.11		0.00		2.11				0.00		0.20		0.02		0.02		0.50		0.10	
July	2.11		0.00		2.11				0.00		0.10		0.01		0.01		0.50		0.05	
Aug	4.08		0.00		4.08				0.00		0.10		0.01		0.01		0.50		0.05	
Sept	4.08		0.00		4.08				0.00		0.10		0.01		0.01		0.50		0.05	
Oct	2.77		0.00		2.77				0.00		0.10		0.01		0.01		0.50		0.05	
Nov	4.74		0.00		4.74				0.00		0.10		0.01		0.01		0.50		0.05	
Dec	1.97		0.00		1.97				0.00		0.10		0.01		0.01		0.50		0.05	
Total	21.87		0.00		21.87				0.00		0.80		0.08		0.08		3.50		0.40	

Notes: (1) The performance targets are given in Sub-clause 2(5)(c) of this Appendix to the PS.

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

(3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material

(4) Broken concrete for recycling into aggregates

Contract No. CV/2007/06
Kwai Chung Incineration Plant Demolition and Decontamination Works

Monthly Summary Waste Flow Table for 2011

Month	Actual Quantities of Inert C&D Materials Generated Monthly										Actual Quantities of C&D Wastes Generated Monthly									
	Total Quantity Generated		Broken Concrete (see Note 4)		Reused in the Contract		Reused in other Projects		Disposed as Public Fill (e.g. site clearance)		Metals		Paper/ cardboard packaging		Plastics (see Note 3)		Chemical Waste (incld. spent oil, activated carbon and cartilage filters from biopile etc.)		Others, e.g. general refuse, site clearance	
	(in '000m^3)		(in '000m^3)		(in '000m^3)		(in '000m^3)		(in '000m^3)		(in '000 kg)		(in '000kg)		(in '000kg)		(in '000kg)		(in '000m^3)	
	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.
Jan	3.94		0.00		3.94				0.00		0.10		0.01		0.01		0.55		0.05	
Feb	3.94		0.00		3.94				0.00		0.10		0.01		0.01		0.55		0.05	
Mar	1.97		0.00		1.97				0.00		0.10		0.01		0.01		0.55		0.05	
Apr	1.97		0.00		1.97				0.00		0.10		0.01		0.01		0.55		0.05	
May	3.06		0.00		3.06				0.00		0.10		0.01		0.01		0.55		0.05	
June	0.00		0.00		0.00				0.00		0.00		0.01		0.01		0.55		0.05	
Sub-total	14.88		0.00		14.88				0.0000		0.50		0.06		0.06		3.30		0.30	
July	0.00		0.00		0.00				0.00		0.00		0.01		0.01		0.55		0.05	
Aug	0.00		0.00		0.00				0.00		0.00		0.01		0.01		0.55		0.05	
Sept	0.00		0.00		0.00				0.00		0.00		0.01		0.01		0.55		0.05	
Oct	0.00		0.00		0.00				0.00		0.00		0.01		0.01		0.55		0.05	
Nov	0.00		0.00		0.00				0.00		0.00		0.01		0.01		0.50		0.05	
Dec	0.00		0.00		0.00				0.00		0.00		0.01		0.01		0.50		0.05	
Total	14.88		0.00		14.88		-		0.0000		0.50		0.12		0.12		6.50		0.60	

Notes: (1) The performance targets are given in Sub-clause 2(5)(c) of this Appendix to the PS.

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

(3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material

(4) Broken concrete for recycling into aggregates

Appendix E

Site Management Plan for Trip-ticket System

Contract No. CV / 2007 / 06

Kwai Chung Incineration Plant

Demolition and Decontamination Works

Site Management Plan for TRIP TICKET SYSTEM

(Version 1.4)

March 2010

CONTENT

1. Introduction

The Site Management Plan for Implementation of trip-ticket system (TTS) has been developed for implementation of measures, procedures and initiatives to control and manage the removal of construction and demolition (C&D) materials arising from the demolition works of CEDD Contract CV/2007/06 (the Contract). This plan complies with the CEDD & Environmental Protection Departments requirements regarding on transportation and disposal of C&D materials from this contract site to the designated disposal ground. The inert portion of C&D materials includes soil, broken rock and concrete shall be disposed of at specified public fill reception facilities (PFPF) at Fill bank of Tuen Mun Area 38 or other designated area for recycling as directed by the Engineer as mentioned in PS Clause 25.25A of the Contract. The non-inert portion of the C&D materials that are not recyclable shall be disposed of at SENT landfill as listed in PS Clause 25.25A of the Contract. In accordance with Construction Waste Disposal Charging Scheme came into operation on 1 December 2005, the Main Contractor has opened a billing account **CHIT A/C – 7006285 as per** EPD/EID's letter ref.: WFG06164 dated 16 November 2007 for the Contract. This TTS concentrated on the continued monitoring the disposal of C&D material and solid wastes to public filling reception facilities and landfills under a three ways approach:

- Sets out TTS in most efficient way
- Implemented under supervision
- Regularly reviewing the situation and ensure TTS dovetail with current or works programme

This TTS will be achieved by:

1. Set out the system to ensure both inert and non-inert C&D material being disposed to designated disposal ground;

2. Identify other construction projects where both inert and non-inert C& D materials can be reused;

3. Set out the system with a view to enhance knowledge on solid waste control and to increase awareness and to ensure no illegal dumping of any inert and non-inert C& D materials;

4. Establish a site management plan and ensure implementation under the supervision of the Contractor's Environmental Team;

5. Establish and follow closely the general procedures of record keeping.

6. Monitor TTS performance by including review of site management plan and implementation of TTS and review of non-compliance incidents and follow up actions in agenda of the site safety and environmental committee meeting and site safety and environmental management committee meeting.

7. Set out the system to ensure no improper disposal and major improper disposal.

8. Set out a recording system to ensure timely retrieval of the Disposal Delivery Form (DDF) and CHIT receipt from the disposal grounds, and makes it available for inspection by the Engineer's Representative or his staff upon request or where irregularities are observed.

2. Disposal of C&D Materials to Designated Disposal Ground

2.1 The C&D materials includes the inert portion and the non-inert portion.

2.2 The inert portion comprising the followings:

a. Soil
b. Broken rock
c. Broken concrete etc.

2.3 The non-inert portion comprising

a. Steel
b. Timber etc.
c. Plastic.

2.4 The inert portion of C&D materials shall be disposed of at Public Fill Reception Facilities of Tuen Mun Area 38 or other designated area as directed by the Engineer.

2.5 The non-inert portion of C&D materials such as steel waste shall be reused or recycled by steel waste collector collected on site.

2.6 The non-inert portion of C&D materials that are not recycled or reused shall be disposed of at SENT landfill (or landfills) or other areas as designated by the Waste Disposal Authority (WDA).

2.7 The waste load shall be delivered by truck with power-operated covered as stated in Appendix 32 to PS.

2.8 Disposal of all C& D materials shall through either by road transport by truck or marine transport by means of barge/vessel.

3. Site Management Plan for Trip Ticket Implementation

3.1 Site Organization and Staff Duties

3.1.1 Site Organization Chart –

Please refer to attached management structure in Appendix No. 1.

3.1.2 Duties of Staff –

a. **Site Agent** is resident on site and is the point of contact for day-to-day waste management issues. He has responsibility for coordinating all waste management matters with the Engineer Representative, Environmental Officer, Waste Coordinator and environmental team;

b. **Environmental Officer shall:**
- Monitor the performance of the Waste Coordinator in overseeing the implementation of TTS;
- Identify/Recommend of remedial actions and ensure implementation of solution to any problems arising.

c. **Waste Manager shall:**
- Be the senior staff member (with more than two years experience in site management) fully implementing and overseeing the operation of TTS and ensure that no NC is observed during the operation;
- Prepare C&D materials disposal records and keep adequate and proper records for inspection by the Engineer Representative; and
- Investigate potential re-use and recycle opportunities of waste generated.

d. **Foreman shall:**
- Supervise the exit from the Site for the purpose of checking every truck carrying C&D materials leaving the Site; and
- Supervise and ensure all truck drivers bear a duly completed, signed and stamped Disposal Delivery Form (DDF) and CHIT.
- Supervise and monitor the material loading process;
- Supervise and ensure quality, no overloading and proper cover as stated in Appendix 32 to PS. of the Contract; and
- Pass the duly completed, signed and stamped Disposal

Delivery Form (DDF) and CHIT to truck drivers.

3.2 Disposal Programme

3.2.1 The Contractor does not identify other construction projects where C&D materials generated by the site can be used for the time being. Once the Contractor identifies other construction project where C&D materials generated can be used, the Contractor shall review and update the disposal programme.

3.2.2 The Contractor shall prepare a monthly programme for disposal of C&D materials off the Site. (Record forms refer to Appendices No. 2 & 3)

3.2.3 The monthly programme should indicate estimated quantity, types of the C&D materials and corresponding disposal grounds.

3.2.4 The Contractor shall update the programme on a monthly basis.

3.2.5 The Contractor shall submit the updated programme to the Engineer for information by a 1st day of each month, or other specified date as agreed by the Engineer's Representative.

3.3 Waste Reduction (Recycling Materials) Management

Waste reduction is best achieved by segregation of temporary store of C&D materials disposal and recyclable materials such as metal, paper, plastics etc., which have been sorted on the Site to enhance reuse or recycling of materials and their proper disposal. The estimate quantities of metal, paper/cardboard packaging & plastics as per section 4.3 in the Waste Management Plan. For such sorted recyclable materials, the Contractor shall devise appropriate control measures such as different types of recycling materials should be segregated and stored in different containers or designed area. An on-site temporary storage area should be provided. This will be achieved by:

3.3.1 Integrating TTS and ground decontamination works programme planning can reduce the generation of significant amounts of waste, which in turn alleviates the demands put on to public fill reception facilities and landfills and lessens the impact on the environment;

3.3.2 Avoid over ordering of materials;

3.3.3 Avoid cross contamination of C&D materials, either for use in site or for reuse and recycling;

3.3.4 Minimize the use of timber in temporary works;

3.3.5 Office paper consumption at site office shall be minimized by copying on both sides of paper and reused paper that is printed on one side;

3.3.6 Packaging Materials and Pallets

For materials delivered to site, reusable and recyclable packaging materials pallets shall be reused, recycled or returned to the supplier.

3.4 General Refuse & Non-Inert C&D Material

3.4.1 General refuse generated on-site shall be stored in enclosed bins or and enclosed area. A reputable waste collector shall be employed by the Contractor to remove general refuse from the site daily or every second days basis to minimize odour, pest and other nuisance. General refuse and non-inert C&D material will be disposed by a reputable waste collector to landfill site.

3.5 Chemical Waste (Spent Oil / Lubricant)

3.5.1 Preventive measures will be implemented for leakage and spillage of fuel and lubricating oil to avoid contamination of the construction site. Spent oil / lubricant will be collected by licensed waste collector.

3.6 Site Procedures

3.6.1 The Contractor shall establish site procedures to ensure that each load of C&D materials leaving the Site will bear a duly competed DDF and CHIT. Details of the site procedures are given in Appendix No. 4.

3.6.2 The Contractor shall establish the mechanism to ensure timely retrieval of the DDF and CHIT and/or receipt from the disposal grounds where irregularities are observed. Details of the mechanism are given in Appendix No. 5.

3.7 Recording System

Waste Coordinator / Foremen shall be responsible to supervise the implementation of all the procedures. Daily site inspection shall be carried out by foreman to avoid any observation, area required improvement or non-compliance to this Site Management Plan for trip ticket system (TTS). No unauthorized disposal of C&D materials without the stamped DDF & CHIT tickets will be permitted to exit and re-enter the Site for delivery of any C&D material generated under any conditions.

3.7.1 The Contractor shall maintain a comprehensive register filing system of the DDF & CHIT tickets issued and keep by waste coordinator. The summary record will be submitted to Engineer's Representative in monthly basis. The part 1 of daily record summary of C&D material disposal will be submitted to Engineer's Representative by 1:00pm of following working day and part 2 will be submitted within 3 working days of the disposal trip. The monthly disposal summary and daily disposal record are given in Appendix 6.

3.7.2 The Contractor shall make the DDF register available for inspection by the Engineer's Representative upon request.

3.7.3 The Contractor shall establish the record system for the recyclable materials, such as time record and delivery note number.

3.7.4 The Contractor shall establish the trip-ticket system for the chemical waste such as spent oil, etc.

3.8 Control Measure to Track Internal Movement of Materials

3.8.1 The Contractor shall devise control measures to ensure that the C&D materials generated by the Site are not disposed of outside the Site in breach of the Contract. Details of the control measure are given to Appendix No. 7.

3.9 Surveillance

3.9.1 The Contractor shall establish a surveillance system within the Site to check that the disposal activities comply with the requirements as set out in PS25.25A. The trucks / barge leaving the Site shall bear a duly competed DDF & CHIT. This will be achieved by:

- For each vehicular trip, a receipt from the operator of the public fill reception facilities shall be obtained. The original receipt shall be submitted to the ER's representative within 14 working days of the vehicular trip, and we can fax/by hand to ER's representative within 2 working days. Late return without any acceptable reason may be regarded as non-compliance by the ER. Follow-up action shall be taken to trace back the receipt by interview the truck driver/ responsible site personnel.
- Site inspections will be checked by the foreman/Waste Manager randomly so as to provide a direct means to trigger and enforce the specified procedure are properly implemented.
- The Contractor shall counter check from CEDD website http://www.cedd.gov.hk/eng/services/tripticket/index.html to verify the printout of corresponding public fill reception facilities or the landfill and the accuracy of the information on that DDF and CHIT receipt.
- Under normal circumstance, late return or non-return of DDF and CHIT is not allowed. This preventive measures will achieve by:

  a) Appoint one site personnel as waste coordinator to assist Waste Manager to keep in/out DDF and CHIT records;

  b) Record the contact phone number for each dump truck driver in the back of duplicated DDF and CHIT for reference/traceability;

  c) `A dump truck without a valid Dumping License shall be rejected, and all the dump truck shall be registered and recorded by the Waste coordinator and keep in the contractor's site office for inspection by the Engineer's Representative or his designated staff upon request; and

  d) The truck and vessel/barge shall be kept monitoring throughout the disposal delivery periods. The DDF and CHIT shall be collected immediately after disposal of C&D materials by the Waste Coordinator

A sample of the DDF & CHIT is attached in Appendix 8 and Work Execution Plan by Chun Ming Machinery Engineering Ltd. for Chun Ming Vessel No. 23, 33, 68, 78 is attached in Appendix 9.

4. Informing the Truck, Barge /Vessel Operator

4.1 The Contractor shall write to all truck drivers, barge /vessel operator whom be engaged for removal of C&D materials from the Site and draw their attention to the following ground:

a. Each truck and barge/vessel carrying C&D materials leaving the Site to a disposal ground must bear a duly completed and stamped Delivery Disposal Form (DDF) and CHIT, irrespective of the location and nature of the disposal ground.

b. The C&D materials must be disposed of at the disposal ground as stipulated in the DDF and CHIT.

c. When constitutes an improper disposal and that the Public Fill Committee will consider revoking the Dumping Licence from the holder of the offending truck or vessel/barge.

Both English and Chinese versions of the written instruction are enclosed in Appendix No. 10.

5. General Procedures of the TTS and Record Keeping

Inert C&D Materials

5.1 Inform the Engineer's Representative or his designated staff the date of disposal of C&D material and solid waste activities in a reasonable time, then the stamped Delivery Disposal Form (DDF) and CHIT with the Contract bar code will prepare and hand to the Waste coordinator/foreman. Then the Contractor will hand the DDF with CHIT tickets to dump truck driver/vessel/barge operator after checking which complied with conditions as stated in Appendix 32 mechanical dump truck covers of PS. The barging point location for barge/vessel is shown in Appendix No. 11.

5.2 For disposal of C&D materials by mean of land transport, each truck carrying C&D materials leaving the Site, the Contractor's truck driver should bear a duly completed, signed and stamped DDF and CHIT with the Contract bar code & CHIT.

5.3 For disposal of inert C&D materials by mean of marine transport, the dump truck will unload the inert C&D materials to barge by means of crane grab at barging point at Portion B. For each barge/vessel carrying inert C&D materials leaving the Site, the Contractor's vessel/barge operator should bear a duly completed, signed and stamped DDF and CHIT with the Contract bar code & vessel CHIT. The barging point location is shown in Appendix No. 11.

5.4 The truck driver or vessel/barge operator shall proceed to the disposal ground as stipulated in the DDF and CHIT. Where the disposal ground is a government disposal facility, the Contractor's truck driver or vessel/barge operator shall present the DDF and CHIT to the facility operator. The facility operator will return the Contractor's truck driver, vessel/barge operator a transaction receipt and stamp the DDF and CHIT if material accepted, these documents shall be returned to the contractor.

General Refuse & Non-Inert C&D Material

5.5 General refuse and non-inert C&D materials will be loaded on the dump truck. The truck driver collected DDF and CHIT form the ER's designated staff and Foreman respectively. The truck driver should bear a duly completed, signed and stamped DDF with the Contract bar code & CHIT.

5.6 The truck driver shall proceed to the disposal ground as stipulated in the DDF and CHIT. Where the disposal ground is a government disposal facility, the truck driver shall present the DDF and CHIT to the facility operator. The facility operator will give the truck driver a transaction receipt and stamp the DDF and CHIT if the material accepted.

Chemical Waste

5.7 Spent oil will be collected by the licensed waste collector on site on required basis. The Trip-ticket will be given from the licensed waste collector to Contractor. The Contractor will keep record and report to the ER by monthly basis.

Record Keeping

5.8 The Contractor shall maintain a daily record of disposal of C&D materials from the site, including details/types of the C&D materials, the truck's plate number, the vessel/barge number and name, departure time etc, using the Daily Record Summary (DRS).

5.9 The Contractor shall submit the duly completed Part 1 of the DRS form promptly to the Engineer's Representative by 1:00 pm of the working day following the date of disposal.

5.10 For disposal at government disposal facilities, the Contractor shall check the information recorded in the DRS against available information including his own records and data from CEDD website http://www.cedd.gov.hk/eng/services/tripticket/index.html and then complete Part 2 of the DRS form for submission to the Engineer's Representative within 2 working days after the date.

5.11 Where an irregularity is observed or where requested by the Engineer's Representative under special circumstances the Contractor shall submit to the Engineer's Representative within 5 working days after the recorded date of disposal the supporting evidence to confirm proper completion of the delivery records in question, within 2 working days after the Engineer's Representative has requested for such evidence, whichever is later. A fax copy of the DDF and CHIT and transaction receipt is acceptable, unless otherwise directed by the Engineer's Representative.

6. Performance Monitoring

The following items should be included in the agenda for discussion at every Site Safety and Environmental Management Committee Meeting and Site Safety and Environmental Committee Meeting for performance monitoring. This will focus on:

a. Regularly reviewing the site management plan and implementation of the TTS, and identify non-compliance/areas required improvement/observation, in a timely manner.

b. Regularly reviewing incidents of observation, area required improvement or non-compliance and discuss the necessary follow-up actions.

c. Monitor the follow-up action on defects and deficiencies identified.

7. Removal of C&D Materials from Unauthorized Disposal Ground

7.1 Where C&D materials from the Site have been dumped at a place other than that designated under the Contract or approved by the Engineer, the Contractor shall at his own cost undertake the following remedial action:

a. Remove the dumped C&D materials from unauthorized disposal ground.
b. Reinstate the unauthorized disposal ground to the condition before dumping of the C&D materials.
c. Remove the C&D materials to the disposal ground as designated under the Contract or approved by the Engineer to this satisfaction.

7.2 Where the unauthorized disposal ground is a private property, the Contractor shall be responsible for obtaining the landowner's consent before removal of the dumped C&D materials.

7.3 Should the Contractor fail to remove the C&D materials from the unauthorized disposal ground or fail to reinstate the unauthorized disposal ground the employer may instruct another contractor to perform the work and the Employer shall be entitled to recover such costs form the Contractor.

8. Improper Disposal of C&D Material

Improper disposals are

a. Loaded trucks or vessel/barge having left site without proper DDF and CHIT.
b. Disposal at ground not designated.
c. Fail to produce the stamped DDF and CHIT or the transaction receipts.

Major improper disposals are:

a. Disposal at ground not designated and such ground is private agricultural land.
b. Illegal dumping of C&D materials.

8.1 The Contractor notes that the Employer takes a very serious view of any non-compliance with the TTS requirement.

8.2 The Contractor also notes that the performance in implementing the TTS will be fully reflected in the Report on the Contractor's Performance and subject to relevant regulating actions.

8.3 The Contractor further notes that the Public Fill Committee will consider revoking the Dumping Licence from the holder of the offending truck or vessel/barge

9. Arrangement for Collection of Recyclable Materials by Recycling Contractors

9.1 Introduction

a. The Contractor shall make arrangements with potential recycling contractors to facilitate that recyclable materials sorted from the site are collected with reasonable care.

b. The Contractor shall record the quantities of all the recyclable materials (steel, paper, plastic) before disposal of off site by the recycling contractors and include the details in the Waste Flow Table for submission to the Engineer's representative.

9.2 The Arrangement

a. The Contractor has made arrangement with potential recycling contractors for disposal of recyclable materials (waste collectors).

b. The Contractor has appointed Foreman to record the quantities of all the recyclable materials before removal off sites by the recycling contractors.

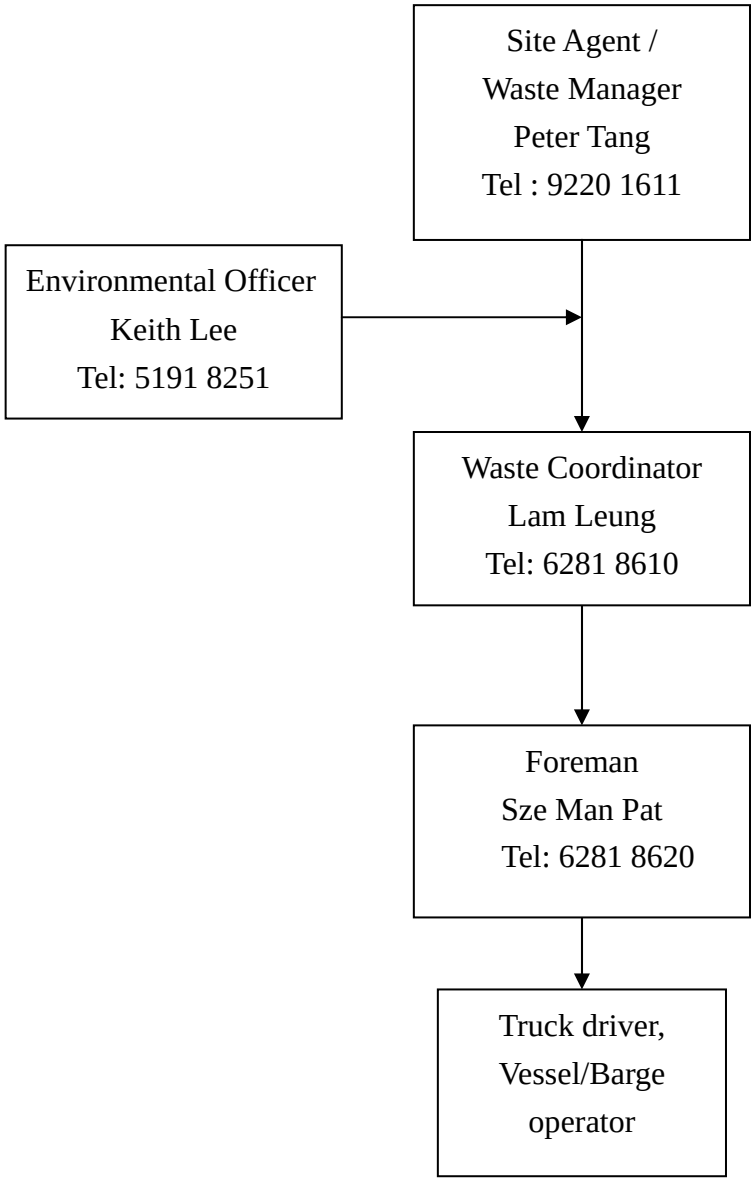
c. The Waste Flow Table given in Appendices 2 & 3 of WMP shall include the quantities of all the recyclable materials before removal off sites by the recycling contractors.

10. APPENDICES

Appendix No.	Content
1.	Management Structure for TTS
2	Yearly Summary Waste Flow Table
3.	Monthly Summary Waste Flow Table
4..	Site procedure s to ensure each truckload of C&D material leaving the Site will bear a duly completed DDF and CHIT
5.	Proposed Mechanism to ensure timely retrieval of DDF and CHIT
6.	Summary of the DDF issued and Sample of Daily Disposal Form
7.	Control Measures to track internal movement of materials
8.	Sample Format of the Construction and Demolition Material Disposal Delivery Form and CHIT
9.	Works Execution Plan by Chun Ming Machinery Engineering Ltd. for Chun Ming Vessel No. 23, 33, 68, 78
10.	Written Instruction to Barge Operator & Truck Drivers
11.	Site Layout Plan Showing Outlets

Appendix No.1

Management Structure



Appendix No.2 & 3

Refer to Waste Flow Tables at Appendix D and E of WMP

Contract No. CV / 2007 / 06 Appendix 4

SITE PROCEDURES TO ENSURE EACH TRUCKLOAD OF C&D MATERIAL LEAVING THE SITE WILL BEAR A DULY COMPLETED DDF / CHIT

No.	Procedure	Action by	Monitored by	Checked by
1.	Registration of truck or vessel/barge at check point by form in Appendix No. 6	Foreman	Foreman	Waste Coordinator
2.	Loading of C& D materials onto truck or vessel/barge (ensure quality, no overloading and ensure proper cover)	Disposal Worker	Foreman	Foreman
3.	The truck driver or vessel/barge operator should then obtain a completed DDF and CHIT from the experienced person before being allowed to leave the outlet check point	Foreman	Foreman	Waste Coordinator
4.	No truck or vessel/barge without registration at entering the outlet check spot shall be allowed to load any C&D materials	Foreman	Foreman	Waste Coordinator
5.	No truck or vessel/barge with or without loading of C&D materials shall be allowed to leave the site without checking at the check points	Foreman	Foreman	Waste Coordinator

Remark: This procedure shall be reviewed every three months by the Waste Coordinator and checked by the Site Agent

Contract No. CV / 2007 / 06 Appendix 5

PROPOSED MECHANISM TO ENSURE TIMELY RETRIEVAL OF DDF / CHIT

No.	Procedure	Action by	Monitor by
1.	Prepare registration of all approved truck driver or vessel/barge operator including names, contact telephone no. and address	Waste Coordinator	Site Agent
2.	The truck driver or vessel/barge operator shall be instructed both verbally and in writing the procedure of reporting promptly the result of dumping, whether successful or not, to the Foreman responsible for the C&D material disposal	Foreman	Waste Coordinator
3.	The truck driver or vessel/barge operator shall return the DDF and CHIT within two working days	Vessel/Barge Operator	Foreman
4.	Should the truck driver or vessel/barge operator fail to return the DDF and CHIT within two days, the Foreman shall remind him to do so promptly or demand him to return the DDF and CHIT through speed mail.	Foreman	Waste Coordinator
5.	The Foreman should ensure completing the register of truck driver vessel/barge by form in Appendix No. 6 before leaving the site ,and for further action to speed up the return of DDF and CHIT	Foreman	Waste Coordinator
6.	For any suspected irregularities the Waste Coordinator should contact the disposal ground immediately to know the truth and report to the Waste Manager for further action	Waste Coordinator	Site Agent
7.	Check on CEDD web site daily whether any N/C or not	Waste Coordinator	Site Agent

Remark: this mechanism shall be reviewed every three months by the Site Agent and further checked by the Project Manager

Appendix 6

Contract No. CV / 2007 / 06

REGISTER OF THE DDF ISSUED

Date	DDF No.	Vehicle Registration No.	Departure Time from Site	Approx. Vol.	Type of Waste	Actual Disposal Ground	Arrival Time at Disposal Ground	Remarks

Contract No.: CV/2007/06

Kwai Chung Incineration Plant Demolition and Decontamination Works

Monthly Record Summary to Record Daily Disposal of C&D Materials from the Site

Designated Disposal Ground(s): (a) SENT Landfill
(b) TM38 Fill Bank

Part 1						Part 2		
Date	DDF no.	Vehicle Registration no.	Departure Time from Site	Approx Vol. (Full / 3/4 / Half / 1/4)	Type of Wastes	Actual Disposal Ground	Arrival Time at Disposal Ground	Remarks

Part 1:

Submitted by: _____

Signature: _____

Date: _____

Received by: _____

Post: _____

Date & Time: _____

Part 2:

Submitted by: _____

Signature: _____

Date: _____

Received by: _____

Post: _____

Date & Time: _____

Note:
Part 1 - The Contractor shall complete Part 1 and submit it to the Engineer's Representative by 1:00pm of the following working day of the disposal trip.
Part 2 - The Contractor shall complete Part 2 and submit it to the Engineer's Representative within 3 working days of the disposal trip.

Appendix 7

Contract No. CV/2007/06

CONTROL MEASURES TO TRACK INTERNAL MOVEMENT OF MATERIALS

1. The Contractor shall set up guiding path at outlet Point from Portion A to Portion B, and ensure any trucks leaving the outlet Portion A are heading to the temporary barging point at Portion B only. Foreman shall oversee the uploading process at Portion A and pass an internal trip-ticket to truck driver. The barge operator is responsible to collect the internal trip-ticket when C&D material is unloaded at Portion B.

2. The Foreman shall check for any illegal disposal of C&D materials within or adjacent to the site area.

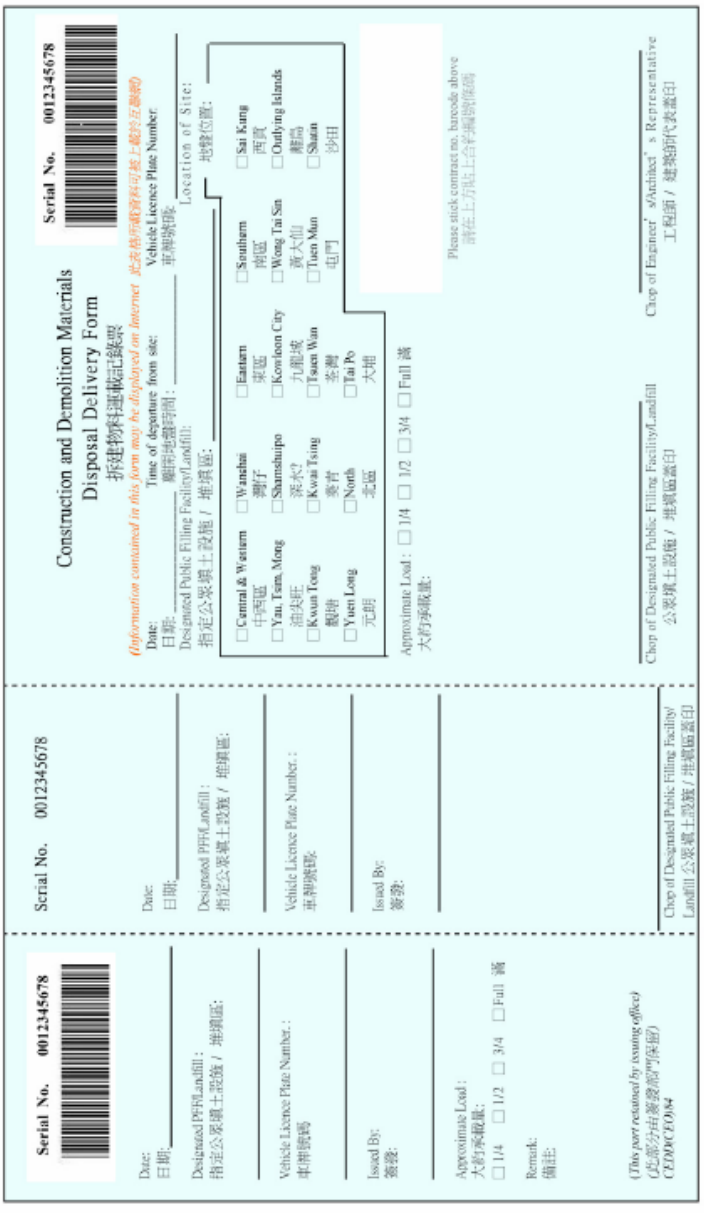
3. Disobedient vessel/barge operator and truck drivers would be dismissed immediately at discovery of their poor conduct.

4. Before commencement of the disposal of inert C&D materials, all approved vessel/barge operator and truck drivers should attend a disposal briefing training section organized by the training section of the Contractor which includes Site Agent, Environmental Officer, Waste Coordinator, Foreman and Safety Officer of the site. All attendees shall be briefed on the TTS procedure of works and related site and safety matters. During the briefing section, all involved operators and drivers are required to sign and receive a copy of Instruction to Work regarding disposal of C&D materials created by activities of the Site.

Appendix 8

Contract No. CV/2007/06

SAMPLE FORMAT OF THE CONSTRUCTION AND DEMOLITION MATERIAL DISPOSAL DELIVERY FORM



Remark: Original form with a light red and inclined watermark "DDF".

Appendix 8

Contract No. CV/2007/06

SAMPLE FORMAT OF THE CONSTRUCTION AND DEMOLITION MATERIAL CHIT FORM

EPD231

入帳票編號: 05292253
Chit No.:

選擇「✓」一個訂明設施:
Tick (✓) One Prescribed Facility:
- 堆填區 Landfills
- 篩選分類設施 Sorting Facilities
- 公眾填料接收設施 Public Fill Reception Facilities
- 離島廢物轉運設施 Outlying Islands Transfer Facilities

車牌號碼 Vehicle Registration Mark:

使用日期:
Date of Use:

簽發人:
Issued by:

建築廢物產生地點:
Construction Waste Generated Site:
KWAI CHUNG INCINERATION PLANT

甲部份: 由帳戶戶主保留
Part A: retained by Account-holder

入帳票編號: 05292253
Chit No.:

選擇「✓」一個訂明設施:
Tick (✓) One Prescribed Facility:
- 堆填區 Landfills
- 篩選分類設施 Sorting Facilities
- 公眾填料接收設施 Public Fill Reception Facilities
- 離島廢物轉運設施 Outlying Islands Transfer Facilities

車牌號碼 Vehicle Registration Mark:

使用日期:
Date of Use:

簽發人:
Issued by:

帳戶名稱:
Name of the Account-holder:
CHINA INTERNATIONAL WATER & ELECTRIC CORPORATION

乙部份: 由廢物運輸商保留
Part B: retained by Waste Hauler

香港法例第354章廢物處置條例
廢物處置(建築廢物處置收費)規例
Waste Disposal Ordinance (Chapter 354)
Waste Disposal (Charges for Disposal of Construction Waste) Regulatio

載運入帳票
CHIT

車牌號碼:
Vehicle Registration Mark:

0 5 2 9 2 2 5 3

有效期至: 28/02/2010
Valid Until:

只適用於船隻
For Vessel use only

建築廢物產生地點:
Construction Waste Generated Site:
KWAI CHUNG INCINERATION PLANT

帳戶名稱:
Name of the Account-holder:
CHINA INTERNATIONAL WATER & ELECTRIC CORPORATION

7 0 0 8 0 1 9

丙部份: 由政府保留
Part C: retained by Government

G 378U3U

帳戶編號: 7008019
Account No.:

帳戶編號: 7008019
Account No.:

Appendix 9

Contract No. CV/2007/06

WORKS EXECUTION PLAN BY CHUN MING MACHINERY ENGINEERING LTD. FOR CHUN MING VESSEL NO. 23, 33, 68, 78

CHUN MING MACHINERY ENGINEERING LTD.

Works Execution Plan

Chung Ming Vessel No. 23, 33, 68, 78

CHUN MING MACHINERY ENGINEERING LTD.
No. 19 Tam Kung Temple Road, Shau Kei Wan, Hong Kong.

1. Overview

This work Execution Plan (WEP) has been developed specifically to support the barge general operations that will take place in loading and dumping jetty. The purpose of this plan is to provide a set of procedures that will be used by the barge attendants. The concerns addressed by this plan are personal safety and vessel safety.

2. This Work Execution Plan is composed of the following elements.

- Distribution of WEP
- Training and Implementation
- Project Location
- Offshore Safe Working Conditions
- Rigging and Lifting Operations
- Anchoring and Berthing Operations
- Crewboat

3. Distribution of WEP

This WEP will be distributed to all barge attendants, the main contractor's project related staff and dumpling truck driver.

4. Training and Implementation

Chun Ming Machinery Engineering Ltd.'s (CMMEL) project manager, field supervisors will review the contents of this WEP at a pre-dispositioning kick-off meeting that will take place before any marine field work. Comments and suggestions made during this meeting may be inserted into revised versions.

5. Project Location

The dumping jetty will take place in working site of Contract CV/2007/06. The jetting is well away from ship traffic areas and water visibility is generally in excess of 100 m.

6. Offshore Safe Working Conditions

In the event of unsafe sea states or weather conditions, CMMEL's project manager will not permit any operation that effected by these conditions. In addition CMMEL will take care of the weather forecast to daily weather and sea state predictions. These forecasts will have a 5 day look-forward report as well.

7. Rigging and Lifting Operations

All critical rigging and lifting of heavy objects will be pre-determined and pre-planned, and all these lifting chain, rope, gear and appliances shall be tested and examined by registered professional engineer in accordance with the requirement of Form 6 and 7 of Labour Department.

8. Anchoring and Berthing Operations

Anchoring operations will take place as specified in place via each anchor's crown line. No anchors will be allowed to drag on the seafloor. All anchor handling crews will be trained and experienced in operating the anchor winches, flying anchors to location, releasing anchors and recovering anchors. The berthing operations will be towed and tended by a tugboat. The Barge shall be tightly moored along the berthing edge, so as to avoid clearance generating that may cause spoil / debris / wastes accidentally falling in the sea. All C & D and Chemical Wastes which loaded onto the barge, shall be covered with tarpaulin sheet and tied up to anchor bollard throughout the entire trip.

9. Crewboat

A crewboat will be employed by CMMEL to haul attendants and related personnel to and from the local shore base on a daily basis. The crewboat will travel the most direct route between the work site and local shore base.

Appendix 10

Contract No. CV/2007/06
WRITTEN INSTRUCTION TO
BARGE OPERATOR & TRUCK DRIVERS

To: All Approved Operators and Drivers for Disposal of C&D Materials of this Contract

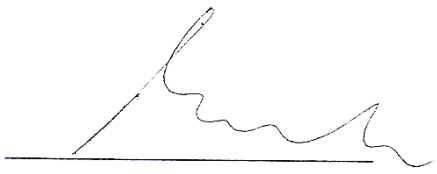
All vessel / barge operator, and truck drivers selected to work for this site should obey the following working rules:

1. **Each Vessel / Barge or dump truck carrying C&D materials leaving the Site for a disposal ground must bear a duly completed and stamped DDF and CHIT, irrespective of the location and nature of the disposal ground.**

2. **The C&D materials must be disposed of at the disposal ground as stipulated in the DDF and CHIT.**

3. **What constitutes an improper disposal and that the Public Fill Committee will consider revoking the Dumping Licence from the holder of the offending vessel/barge or dump truck.**

For and On Behalf of
China International Water &
Electric Corporation



Peter Tang
Site Agent

Appendix 10

合約編號：CV/2007/06

躉船船長及泥頭車司機指引

至：本工程批准之運載拆建物料躉船船長及泥頭車司機

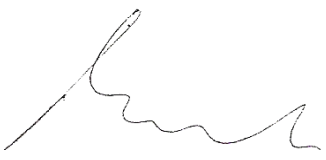
所有於本地盤工作之躉船船長及泥頭車司機請遵守以下規則：

一、 每首運載拆建物料的躉船或車輛必須持有一張已填寫及經工程顧問公司蓋章之拆建物料運載記錄票，方可離開本地盤作物料處置。

二、 所有拆建物料必須傾倒於列印在拆建物料運載記錄票上之指定傾瀉點。

三、 任何對拆建物料作出違規處置的船長或泥頭車司機，其傾瀉牌照將會被公眾填土區之委員撤銷。

中國水利電力對外公司



鄧彼德

地盤主管

Appendix 11

Contract No. CV / 2007 / 06

SITE LAYOUT PLAN SHOWING OUTLETS