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HIGHWAYS DEPARTMENT
港珠澳大橋香港工程管理處
Hong Kong - Zhuhai - Macao Bridge
Hong Kong Project Management Office

Contract No. HY/2011/03

Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road Section between Scenic Hill and Hong Kong Boundary Crossing Facilities

Spill Response Plan

8 October 2012

Rev. 2

Main Contractor

中國建築工程(香港)有限公司
CHINA STATE CONSTRUCTION ENGINEERING (HONG KONG) LTD.

Designer

ATKINS

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1 Introduction

1.1 Background

1.1.1 This Spill Response Plan ("SRP") is prepared for Contract HY/2011/03 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Section between Scenic Hill and Hong Kong Boundary Facilities ("the Contract") for the Highways Department of HKSAR and the General Site Area is presented as **Appendix A**. The Contract is part of the Hong Kong – Zhuhai – Macao Bridge Hong Kong Link Road (HKLR) Project and Hong Kong – Zhuhai – Macao Bridge Hong Kong Boundary Crossing Facilities (HKBCF) Project, these projects are considered to be "Designated Projects", under Schedule 2 of the Environmental Impact Assessment (EIA) Ordinance (Cap 499) and Environmental Impact Assessment (EIA) Reports were prepared for the Project (Register No. AEIAR-144/2009 and AEIAR-145/2009). The current Environmental Permit (EP) EP-352/2009/A for HKLR and EP-353/2009/D for HKBCF were issued on 31 October 2011 and 7 March 2012, respectively. These documents are available through the Environmental Impact Assessment Ordinance Register.

1.1.2 The following Spill Response Plan is required under and Clause 2.8 of EP No. EP-352/2009/A and Clause 2.7 of EP No. EP-353/2009/D, "*The Permit Holder shall deposit with the Director, at least one month before the commencement of construction of the Project, three hard copies and one electronic copy of a Spill Response Plan detailing the actions to be taken in the event of accidental spillage of oil or other hazardous chemicals from construction activities including vessels operating for the Project, with specific provisions for protecting marine ecology and the Chinese White Dolphins.*"

2 General Site Practices

2.1 General Site Practices

2.1.1 In order to minimize the potential for the accidental release of fuel, oils, or other hazardous chemicals during the construction of this contract, the following measures, subject to site constraints, will be implemented for work areas and storage rooms/areas:

2.2 General Site Practices for Work Areas

2.2.1 Drip trays will be used to collect any leakage from operating equipment onsite such as generators. The drip trays will be regularly emptied and maintained by the onsite workforce and the contents of the drip trays will be stored in suitable containers for subsequent transportation and disposal at a licensed chemical waste collector or treatment facilities.

2.2.2 Operators of equipment (such as excavators, trucks etc.) will inspect the equipment that they are using on a regular basis for leaks or drips. Should any leaks or drips be identified they must be repaired prior to the equipment being used.

2.2.3 Vehicle maintenance will be carried out on a regular basis and upon necessary during the course of the contract and good housekeeping practices will be implemented.

2.2.4 A product inventory will be maintained with details (chemical details, number of storage containers, location etc.) of all containers of chemicals, chemical waste that is stored onsite.

2.2.5 Any oil filling activities should be carried out within a bunded area or inside a drip tray to minimize the potential for spillages.

2.3 General Site Practices for Work Areas at Sea and the Operation of Vessels

2.3.1 Drip trays will be used to collect any leakage from operating equipment used on vessels and works at sea, such as generators. The drip trays will be regularly emptied and maintained by the crew/workforce and the contents of the drip trays will be stored in suitable containers for subsequent transportation and disposal at a licensed chemical waste collector or treatment facilities.

2.3.2 Operators of equipment will inspect the equipment that they are using on a regular basis for leaks or drips. Should any leaks or drips be identified they must be repaired prior to the equipment being used.

2.3.3 Maintenance of vessels will be carried out on a regular basis and upon necessary during the course of the contract and good housekeeping practices will be implemented.

2.3.4 Any oil filling activities should be carried out within a bunded area or inside a drip tray to minimize the potential for spillages.

2.4 General Site Practices for Chemical Storage Areas

2.4.1 Appropriate drums and other storage containers, depend on the characteristics of chemicals, will be used for stored within a storage area.

2.4.2 Drums and other storage containers used onsite, will be tightly sealed at all times, when not in use, to minimize the release of the drum or storage container's contents, to the environment if knocked over.

2.4.3 Specific areas for the storage of drums and other containers of similar or compatible contents will be identified and used and will be located as far as practicable from the coast and bodies of water. Incompatible chemicals will be stored separately. The storage areas will be adequately ventilated as necessary to prevent the buildup of a hazardous environment. Additionally, bunding or another suitable containment system will be constructed for the storage areas to isolate any spill or release that may take place.

2.4.4 Storage areas will be inspected on a weekly basis, for signs of spills (such as staining on the ground), general housekeeping, availability of appropriate spill control supplies and also to confirm that the drums and/or storage containers are in good condition (e.g. not holed or rusted), are properly stored and are appropriately sealed.

2.4.5 Suitable storage containers which are resistant to the stored chemical will be used for the storage of chemicals and fuel onsite.

2.4.6 All drums and other storage containers used to store hazardous chemicals onsite will be clearly labeled.

2.4.7 Smoking and the use of open flames will be prohibited near the chemical storage areas and signage will be posted informing the workforce of this requirement.

2.4.8 Adequate space will be provided in the storage areas for the safe and easy handling, and inspection of the storage containers.

2.4.9 The point of ingress to the chemical storage area will be locked.

2.4.10 Suitable firefighting (i.e. extinguishers suitable for the chemicals being stored), spill response (e.g. absorbent pads) and health and safety equipment will be located in, or, in the vicinity of the storage areas. Suitable signage will also be posted with the appropriate emergency contact information and evacuation routes and also to highlight the location of equipment to the workforce and any emergency responders.

2.4.11 The chemical storage area will be used for chemical storage only and will be enclosed on three sides with materials suitable for the construction of such enclosures.

2.4.12 The storage area will have an impermeable floor or surface made of suitable materials for the storage of containers of chemicals. The storage area will be designed to contain the contents of the largest container intended for use or 20% of the total quantity of the chemicals to be stored, whichever is greater.

2.5 General Site Practices for Chemical Waste Storage Areas

2.5.1 Appropriate drums and other storage containers, depend on the characteristics of chemical wastes, will be used to store chemical waste.

2.5.2 Drums and other chemical waste storage containers used onsite, will be tightly sealed at all times, when not in use, to minimize the release of the drum or storage container's contents, to the environment if knocked over.

2.5.3 Specific areas for the storage of chemical waste will be identified and used and will be located as far as practicable from the coast and bodies of water

2.5.4 Chemical waste storage areas will be inspected on a weekly basis, concurrent with the inspection of chemical storage areas, for signs of spills (such as staining on the ground), general housekeeping, availability of appropriate spill control supplies and also to confirm that the drums and/or chemical waste storage containers are in good condition (e.g. not holed or rusted), are properly stored and are appropriately sealed.

2.5.5 Suitable storage containers which are resistant to the stored chemical waste will be used for the storage of chemical waste products onsite.

2.5.6 All drums and other storage containers used to store chemical waste onsite will be clearly labeled in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.

2.5.7 Smoking and the use of open flames will be prohibited near the chemical waste storage and signage will be posted informing the workforce of this requirement.

2.5.8 Adequate space will be provided in the chemical waste storage area for the safe and easy handling, and inspection of the storage containers.

2.5.9 The point of ingress to the chemical waste storage area will be locked.

2.5.10 Suitable firefighting (i.e. extinguishers suitable for the chemicals being stored), spill response (e.g. absorbent pads) and health and safety equipment will be located in, or, in the vicinity of the chemical waste storage area. Suitable signage will also be posted with the appropriate emergency contact information and evacuation routes and also to highlight the location of equipment to the workforce and any emergency responders.

2.5.11 The chemical waste storage areas, will be, where practicable, located close to the source of the waste generation to minimize waste handling and to facilitate management control.

2.5.12 The chemical waste storage area will be used for chemical waste storage only and will be enclosed on three sides with materials suitable for the construction of such enclosures.

2.5.13 The storage area will have an impermeable floor or surface made of suitable materials for the storage of containers of liquid chemical waste. The storage area will be designed to contain the contents of the largest container intended for use or 20% of the total quantity of chemical waste to be stored, whichever is greater.

2.5.14 Should there be less than 300L of chemical waste produced a cupboard or cabinet will be used with shelves with a leak proof sill or spill catcher trays and ventilation holes.

3 Transfer and Transport Precautions

3.1.1 In order to minimize the risk of accidental spills occurring during the transportation of drums or storage containers of chemicals to and from the site, the following precautionary measures, subject to site constraints, will be used:

i. Suitably sized storage containers will be used onsite to reduce the risk of spills due to overfilling.

ii. Ensure that only appropriate, safe and suitably labeled drums or other storage containers are used onsite.

iii. Onsite, where possible, manual pumping systems will be used to transfer chemical waste between storage containers, instead of manually pouring.

iv. Provide bunding or another suitable containment structure will be provided onsite to isolate any chemicals, chemical waste, fuel that is spilled.

v. Only use suitable equipment (forklift, trolley, etc) to transport the chemicals, chemical waste onsite and to and from trucks.

vi. Only engage suitably licensed, trained and responsible chemical waste collection companies to carry out the transportation of chemicals, chemical waste to and from the site.

vii. The storage containers should be checked to ensure they are tightly sealed with no leakage before loading on the trucks for transportation.

viii. Suitable preventative measures (such as anchoring of containers, avoiding stacking containers, etc) should be taken to avoid any spillage during transportation of containers.

4 Spill Response

4.1 Spill Response

4.1.1 The response to any spill onsite shall be carried out promptly and efficiently, to minimize the amount of oil or other hazardous chemical or chemical waste that is released into the environment. The general spill response includes the following:

4.2 Spills on Land or onto the Deck of a Marine Vessel

4.2.1 Suitable signage should be posted to inform workers of emergency telephone numbers, the location/s of emergency shower stations, the location of spill response and firefighting equipment, and emergency evacuation routes.

4.2.2 Should a spill response be necessary, the following steps will be followed:

i. Immediately inform the Emergency Team of the following details of the spill incident:
   - The approximate location of the spill.
   - The type and approximate quantity of material spilled.
   - Details of what the material spilled onto, such as concrete or dirt.
   - The time of the spill.
   - Whether the spill is contained (by bunding etc) or has reached the environment.

ii. Take all reasonable measures to isolate, contain, reduce and/or stop the spillage, provided it is safe to do so.

iii. Provided it is safe to do so, the area containing the spill shall be ventilated by mechanical means in order to make a safe spillage condition.

iv. The Emergency Team Leader shall be responsible for organizing adequate resources to identify the spill source and if necessary stop or cease it.

v. The Emergency Team Leader as the assigned person shall equip all people involved in the cleanup works with suitable personal protective equipment ("PPE") prior to the removal of any leaked chemical, chemical waste.

vi. Suitable spill response equipment such as absorbent pads, dry sand or sawdust shall be used to absorb the leakage. Any contaminated spill response equipment shall be collected after cleaning up the spill and sealed in black plastic bags and clearly labeled as "chemical waste". All collected chemical waste shall be placed in an area designated for chemical waste storage and transported by an approved company to an approved disposal facility.

vii. An incident report will be submitted to the Supervising Officer's Representative (SOR) within two working days of the spill.

4.3 Spill into the Marine Environment

4.3.1 A spill into the marine environment is considered to be serious, given the vulnerability of the marine ecosystem to chemicals. This notification system is separated into two scales, depending upon the approximate area affected by the spill.

4.3.2 Immediately upon identifying a spill, CSHK will use suitable spill response equipment (such as spill kits, booms, oil dispersant, etc) to contain the spill. The standard spill kit includes items such as absorbent pads and pillows and Secondary Oil Containment. Secondary Oil Containment is used to enclose the spill area and to prevent the spill from migrating outside of the Secondary Oil Containment. The absorbent pads and pillow are used for absorbing and recovering the spill that is contained within the Secondary Oil Containment. Examples of standard spill kit equipment are provided in **Appendix C** of this SRP.

4.3.3 It is the responsibility of the person observing the spill to report details of their observation immediately to their supervisor, who shall inform the Foremen and Site Manager as Emergency Team Leader. The Foremen shall be assigned to deploy the spill kits to the spill site. Depending on the scale of the spillage area, the reporting system is separated into the following two systems:

i. For a spill area of greater than 100 m^2:

- The Site Manager shall inform all parties such as the SOR, Marine Department (MD), Fire Services Department, Agriculture, Fisheries and Conservation Department (AFCD), Environmental Protection Department (EPD), Environmental Team (ET) and Independent Environmental Checker (IEC) immediately. The parties to be contacted are listed in Section 8.0 of this SRP.
- The weather forecast for the area will also be used to determine the likely direction of movement (if any) of the surface spill
- The Emergency Team Leader shall be responsible for organizing adequate resources to identify the spill source and if necessary stop or cease it.
- The Emergency Team Leader as the assigned person shall equip all people involved in the cleanup works with suitable PPE prior to the removal of any leaked chemical, chemical waste.
- The spillage area shall be contained using the Secondary Oil Containment of the spill kit.
- Booms together with the absorbent pads and pillows of the spill kit shall be deployed to contain, absorb and mitigate the spillage within the Secondary Oil Containment. The absorbent pads and pillows will be collected into disposal bags that are part of the spill kit.
- An incident report will be submitted to the SOR within two working days of the spill

ii. For a spill area less than 100 m^2:

- The Site Manager shall inform the parties such as the SOR, ET and IEC immediately. The parties to be contacted are listed in Section 8.0 of this SRP.
- The Emergency Team Leader shall be responsible for organizing adequate resources to identify the spill source and if necessary stop or cease it.

- The Emergency Team Leader as the assigned person shall equip all people involved in the cleanup works with suitable PPE prior to the removal of any leaked chemical, chemical waste.
- The spillage area shall be contained by using the Secondary Oil Containment of the spill kit.
- Absorbent pads and pillows of the spill kit shall be deployed to absorb and mitigate the spillage within the Secondary Oil Containment. The absorbent pads and pillows will be collected into disposal bags that are part of the spill kit.
- An incident report will be submitted to the SOR within two working days of the spill.

4.4 Spills during Tunnel Construction

4.4.1 A spill of during the construction of the tunnel portion of the contract is also considered to be serious, given the restricted access to the tunnel, an enclosed atmosphere that will be regulated by mechanical ventilation and general tight working conditions. Signage will be posted to inform workers of emergency telephone numbers, the location/s of emergency shower stations, the location of spill response and firefighting equipment, and emergency evacuation routes. In addition to signage, suitable means of communication will be needed by workers in case of a spill.

4.4.2 Should a spill take place underground during construction of the tunnel, the following steps should be taken:

i. Immediately inform the Emergency Team of the following details of the spill incident:
   - The approximate location of the spill.
   - The type and approximate quantity of material spilled.
   - Details of what the material spilled onto, such as concrete or dirt.
   - The time of the spill.
   - Whether the spill is contained (by bunding etc.) or has reached the environment.

ii. Take all reasonable measures to isolate, contain, reduce and/or stop the spillage, provided it is safe to do so.

iii. Given that the spill will be in a tunnel, provided that it is safe to do so, mechanical ventilation should be maintained to prevent the buildup of a toxic and/or explosive atmosphere.

iv. The Emergency Team Leader shall be responsible for organizing adequate resources to identify the spill source and if necessary stop or cease it.

v. The Emergency Team Leader as the assigned person shall equip all people involved in the cleanup works with suitable PPE prior to the removal of any leaked chemical, chemical waste.

vi. The Emergency Team Leader or a designated representative will monitor the atmosphere during the cleanup of the spill and if a hazardous atmosphere is identified evacuate workers from the spill area and continue to ventilate the spill area

vii. Suitable spill response equipment such as absorbent pads, dry sand or sawdust shall be used to absorb the leakage. Any contaminated spill response equipment shall be collected after cleaning

up the spill and sealed in black plastic bags and clearly labeled as "chemical waste". All collected chemical waste shall be placed in an area designated for chemical waste storage and transported by an approved company to an approved disposal facility

viii. An incident report will be submitted to the SOR within two working days of the spill.

4.5 Spillage Control Material

4.5.1 One spill kit will be distributed around the site at locations nearby to any storage area for chemicals /chemical waste. Additional spill kits will also be located near to the office of the Environmental Officer and the Environmental Officer shall ensure that sufficient spill kits available on site at all times.

4.5.2 Absorbent pads and pillows of the spill kits mitigate spills by means of physical absorption. No chemical or biological reaction would take place during whilst using the absorbent pads and pillows. Used absorbent pads and pillows will be collected after completion of spillage removal.

4.5.3 The inventory of hazardous chemicals that will be used for this contract will be inspected periodically by the Environmental Officer and Foremen every two months.

4.5.4 At least four sets of spill kits will be provided on site in case of any emergency and the inventory of spill kits will be managed by the on shift Foremen or Emergency Team Leader's delegates (numbers and locations of the spill kits will be discussed in **Section 7.2**). CSHK will also provide additional spill kit(s) on site when it is deemed necessary, and the total numbers of such kits would be agreed with the SOR.

4.6 Inventory of Hazardous Chemicals

4.6.1 It is anticipated that the major chemical that will be stored onsite during the construction of the contract will be lubricants and oils are also anticipated to be stored onsite for the maintenance of equipment.

4.6.2 An inventory of the hazardous chemicals that are stored onsite will be maintained and regularly updated by the contractor. This inventory will contain details of the type of chemicals, the quantity of chemicals, the storage container (e.g. steel drum) and the location of material onsite. All subcontractors present onsite will provide details of the chemicals that they are storing onsite. Checks of the materials that are stored onsite by subcontractors will be made by Foreman from CSHK, together with Foremen from the subcontractors. The inventory and check record will be made available for inspection by the SOR.

4.7 Protection of Sensitive Receptors

4.7.1 The information that is outlined within this section will become applicable if the area of a spill is estimated to be greater than 100m^2. In order to protect sensitive receviers within the vicinity of the HKLR site during a spill of greater than 100m^2 the following steps will be taken:

i. The location of the spill relative to a sensitive water receivers such as water intakes, ecological sensitive receivers and Tai Ho Wan will be determined.

ii. Absorbent booms, or similar, will be deployed near to the receptors to protect sensitive marine receptors.

iii. The Contractor will immediately inform the relevant parties as outlined in Section 4.2 of this SRP.

iv. The on shift Foremen or Emergency Team Leader's delegates will employ all possible mitigation measures in order to isolate the spill and minimize any potential adverse effects to sensitive marine receptors.

v. Follow the procedures that are outlined in **Appendix B** of this SRP.

vi. The Contractor, SOR, ET and IEC will discuss and implement a suitable program of water sampling to monitor for any potential adverse effects to sensitive receptors.

5 Dolphin Contingency Plan during a Spill Response

5.1.1 It is not known what specific impacts a spill of diesel fuel, or other chemicals would have upon the Chinese White Dolphin and its food supply. Given that these effects are unclear, a proactive approach will be used to isolate the Chinese White Dolphins from any spill response event that may take place during the course of the construction of the contract.

5.2 Initial Response

5.2.1 Observations from platform(s) as high as practicable will be used to determine the approximate size of a spill.

5.2.2 Whilst determining the size of the spill it will be determined whether any Chinese White Dolphins are present in the vicinity of the spill.

5.2.3 The weather forecast for the area will also be used to determine the likely direction of movement (if any) of the surface spill. In addition the vessel traffic centre will be contacted to determine if any vessels may pass through the location of the spill.

5.2.4 A suitable course of action can then be decided upon once information such as the size of the spill, the proximity of any Chinese White Dolphins to the spills and the likelihood of the Chinese White Dolphins encountering the spill.

5.3 Efforts to Isolate Spill Areas from Chinese White Dolphins

5.3.1 The use of absorbent booms is an effective containment method for small spills within the marine environment and will prevent the spread of a spill and thus help to minimize the potential for Chinese White Dolphins to come into contact with the spill. Deployment of such absorbent booms, together with teams of observers is considered to be an appropriate response to a small spill that can be cleaned up in the short term.

5.3.2 In the event of spills of a larger area, the deployment of underwater barrier nets (such as anti-shark nets) in addition to the measures outline above, could be an effective means of isolating the spill area from Chinese White Dolphins.

5.3.3 If Chinese White Dolphin(s) is/are observed within the enclosed area which contains the spill, the same protocol used in the event of injury or of live stranded cetaceans, as described in the Dolphin Watch Plan will be followed.

6 Health and Safety Equipment

6.1.1 The following is a list of the health and safety equipment that will be made available on site:

i. Fire extinguishers (such as foam) which are suitable for fighting fires with flammable or combustible liquids.

ii. Brushes, dustpans, mops and buckets.

iii. Dry sand, sawdust or other absorbent material.

iv. Tissue and towels (both paper and cloth).

v. Storage containers or drums that will be suitable for the storage of including plastic bags, absorbent pads, etc.

vi. Spill response kits.

7 Spill Response Plan Implementation

7.1 Training and Notification System

7.1.1 The onsite workforce will receive training from the Environmental Officer regarding the measures outlined in this SRP, during the site induction training, and the Environmental Officer shall periodically conduct Tool Box talks with the site workers regarding the SRP. During the induction training, a demonstration of the containment methods and equipment shall be carried out by the Environmental Officer. All site workers will be required to receive this training.

Table 7.1 Site Training Requirements

Trainer	Training	Staff	Training Frequency
Environmental Officer	Safety around spills	All Workers	Every two months
	Containment of spills	All Foremen	
	Recovery and clean up of spills		Every two months
	Disposal of spill response waste		
	Reporting of spills		
	Types of sensitive receptors	Worker involved with handling hazardous chemicals or fuel. All Foremen	Every two months
	Locations of the sensitive receptors		
	Methods to protect these sensitive receptors from spills and the necessary response to spills outlined in this SRP		

7.1.2 In the event of a spill being identified, the spill response outlined in Section 4.0 of this SRP will be followed. For the contact information of the relevant parties please refer to Section 8.0 of this SRP. CSHK will follow the procedures outlined in **Appendix B** of this SRP**.**

7.2 Location of Spill Kits

7.2.1 One spill kit will be stored onsite near to chemical storage areas. Three spill kits will be on the vessels involved in the marine works ready for use if a spill takes place. A further two spill kits would be stored on patrol boat/s and any platforms used for dolphin monitoring. The Environmental Officer will notify Foremen of the locations of spill kits.

8 Relevant Party Contact List

8.1.1 The following tables provide details of the parties that maybe contacted during a spill.

Table 8.1 Emergency Team Contact List

Role	Contact Details
Site Manager	9633 0973
Deputy Site Agent	9078 0458
Construction Manager	9424 8437
	9097 1310
	9672 8904
	9869 0631
Site Safety Manager	9424 2146
Traffic Coordinator	9484 1926
Environmental Officer	9842 2703
Environmental Supervisor	9255 9301
	9220 1070
	9308 0838
Foremen	9040 7725
	9789 0772
	9132 0177
	9045 7022

Table 8.2 Government Agency/Department Contact List

Agency / Department		Contact Details
General Emergency Services		999
Labour Department		2717 1717
Fire Services Department		2723 2233
Agriculture, Fisheries and Conservation Department		2708 8885
Environmental Protection Department		2838 3111
Nearest Fire Stations:	Tung Chung Fire Station	2988 1898
	Chek Lap Kok Fire Station	2949 9081
Nearest Ambulance Depots:	Tung Chung Ambulance Depot	2988 8282
	Castle Peak Bay Ambulance Depot	2451 7193
Nearest Hospital:	Tuen Mun Hospital	2468 5111
Hong Kong Airport Authority		2186 7111
Weather Forecast		187 8200
Marine Department		2852 4472-77
Vessel Traffic Centre		2858 2163 , VHF channel 12 or 14
Marine Police Control Centre		2803 6241
Maritime Rescue Coordination Centre		2545 0181 or 2233 7999

Table 8.3 Utility Company Contact List

Utility Company		Contact Details
China Light and Power Co. Ltd.		2728 8333
China Gas Co. Ltd.		2880 6999
Water Supplies Department	Hong Kong & Island	2811 0788
	Kowloon & New Territory	2396 0210

Table 8.4 Supervising Officer's Representative Contact List

Title	Name	Contact Details
CRE	Robert Evans	2528 3031

Table 8.5 Environmental Team (BMT Asia Pacific) Contact List

Title	Name	Contact Details
Environmental Team Leader	Claudine Lee	2815 2221

Table 8.6 Independent Environmental Checker Contact List

Title	Name	Contact Details
IEC	Antony Wong	3743 0788

9 Roles and Responsibilities

9.1 Site Manager

9.1.1 The Site Manager is responsible for ensuring the commitment onsite to the SRP and ensuring that adequate resources are available to fulfill the requirements of the SRP.

9.1.2 The Site Manager will also fulfill the role of the Emergency Team Leader for spill response and will inform the Emergency Team of the details of any spills as outlined in this SRP.

9.1.3 The Site Manager is also responsible to inform relevant external parties in the event of spillage in accordance to Appendix B of this SRP.

9.2 Deputy Site Agent

9.2.1 The Deputy Site Agent is responsible for assisting the Site Manager in ensuring the commitment onsite to the SRP.

9.3 Construction Manager

9.3.1 The Construction Manager reports to the Site Manager and coordinates all environmental matters related to the SRP onsite. The Construction Manager is also responsible for all site operations, management of environmental issues, staff supervision, control, coordination, planning, external liaison as well as implementing and monitoring necessary corrective actions as they relate to the SRP. With the assistance of the Environmental Officer, he would also oversee the implementation and performance of the SRP.

9.3.2 The Construction Manager will also act as an Emergency Coordinator should a spill occur on the site and assist the Site Manager as outlined in this SRP.

9.4 Site Safety Manager

9.4.1 The Site Safety Manager is responsible for all safety, health and environmental matters related to the SRP.

9.4.2 The Site Safety Manager is also assist in the investigation of spill incidents and accidents as outlined in this SRP.

9.5 Traffic Coordinator

9.5.1 The Traffic Coordinator is responsible for managing the onsite movements of vehicles transporting chemicals and other hazardous chemicals in accordance with the SRP.

9.6 Environmental Officer

9.6.1 The Environmental Officer will be appointed on site for the overall coordination, monitoring and overseeing the performance and implementation of the SRP on the site. The responsibilities of the Environmental Officer are as follows:

- Review the SRP, and ensure that all work onsite is executed in accordance with the requirements of the SRP.
- Implement the measures and requirements outlined in the SRP onsite.
- Train the workforce in the requirements of the SRP as outlined in this SRP.

9.7 Environmental Supervisor

9.7.1 The Environmental Supervisor is responsible for the implementation of the SRP with the assistance of the Foremen. The Environmental Supervisors are also responsible for:

- Assisting the Environmental Officer in a spill response as outlined in this SRP.
- Attend environmental meetings relating to this SRP, when necessary.
- Carry out environmental site inspections with the Environmental Officer as outlined in this SRP

9.8 Foremen

9.8.1 The Foremen are responsible for site supervision and coordination of the works as well as implementation of any spill response actions required by this SRP, as directed by the Construction Manager / Environmental Officer. The Foremen are also responsible for:

- Assisting in the implementation of the SRP.
- Supervise the cleanup, as outlined in this SRP, of any spills.
- Ensuring that waste generated during the cleanup of any spills, is collected and stored appropriately as outlined in this SRP.
- Foremen shall be required to deploy spill kits when a spill occurs as outlined in this SRP.

9.9 Workers

9.9.1 The workers are responsible to carry out the requirements of this SRP and follow the instructions of Foremen as they relate to this SRP. They are required to carry out the following tasks:

- Attend training given by the Environmental Officer in the correct handling and storage of chemicals on site as outlined in this SRP.
- Use spill kits, when directed in accordance with this SRP.
- Collect and store wastes generated during the cleanup of any spills as outlined in this SRP.

10 Notification to Relevant Parties

10.1.1 If a spill is small and can be contained and cleaned up easily, then the Environmental Officer shall be informed and information will be given to the SOR in an incident report within two working days. The Environmental Officer or SOR may choose to inspect the area if the spill is less than 100m^2 to confirm that the spill is contained and the correct / most suitable clean up procedure has been implemented. For all spills, photographs shall be taken (before and after) cleaning up to document the cleanup of the spill.

10.1.2 The Environmental Officer shall be responsible for maintaining a record of all spills onsite and the record will be provided to the SOR upon request. For spills larger than 100m^2, the Environmental Officer and the SOR will attend the area to confirm that the spill has been contained and cleanup methods, as outlined in this SRP were used. A photographic record shall be kept, as shall a record by both the Environmental Officer and the SOR. The Construction Manager and Site Safety Manager shall also be informed of the incident. If the spill was contained and no significant quantity entered into the marine environment, then the event shall be documented in an incident report for submission to the SOR.

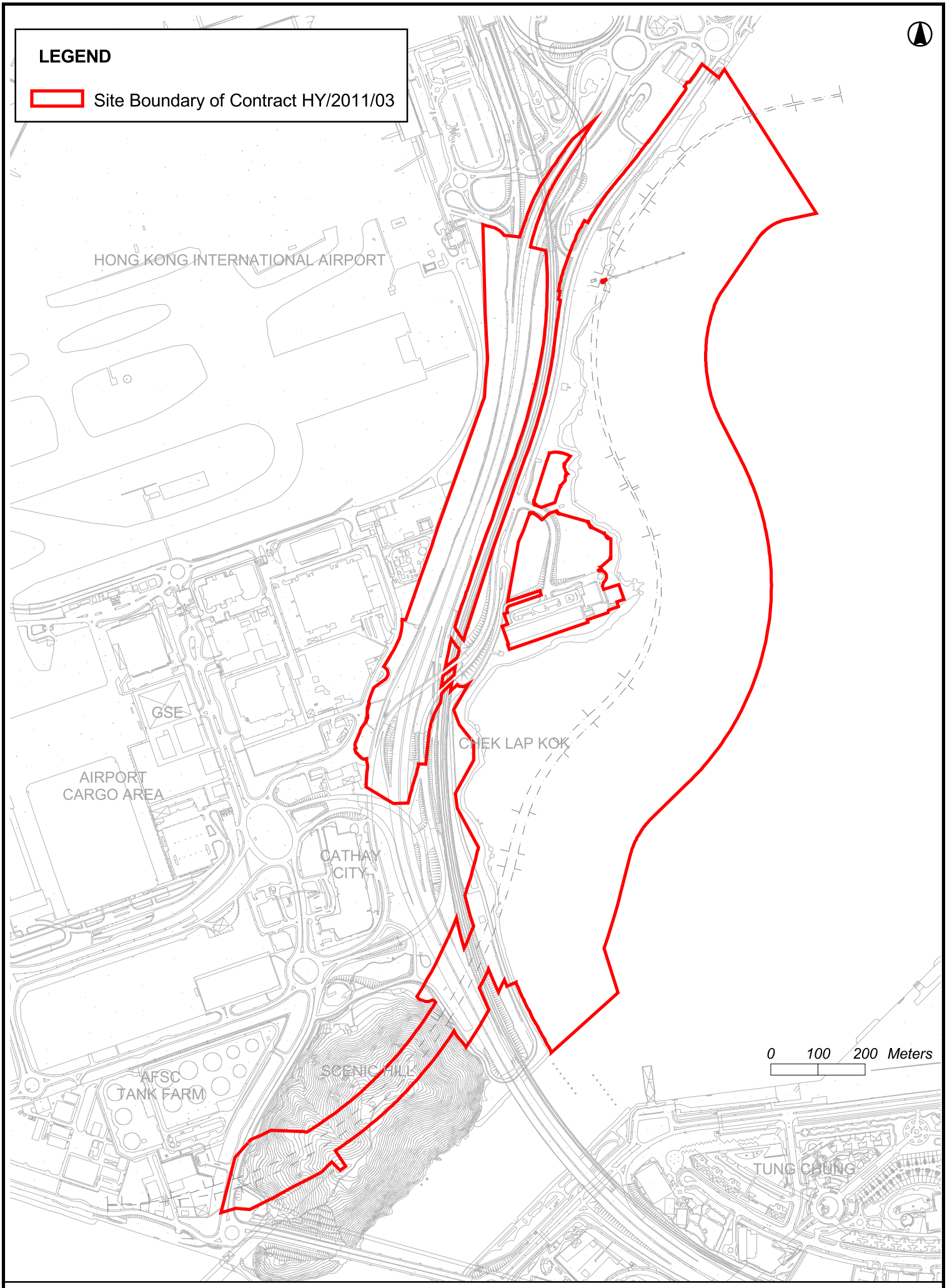
10.1.3 If a significant release of fuel or other chemicals to the marine environment occurs (spill of greater than 100m^2), then a full scale notification shall occur. Under such circumstances, the people identified in the relevant parties section of this SRP shall be notified for support as needed. The contact details of the relevant parties are listed in Section 8.0 of this SRP.

11 Emergency Team Organization

11.1.1 The SRP Emergency Team Organization Chart is shown in **Appendix D**.

APPENDIX A

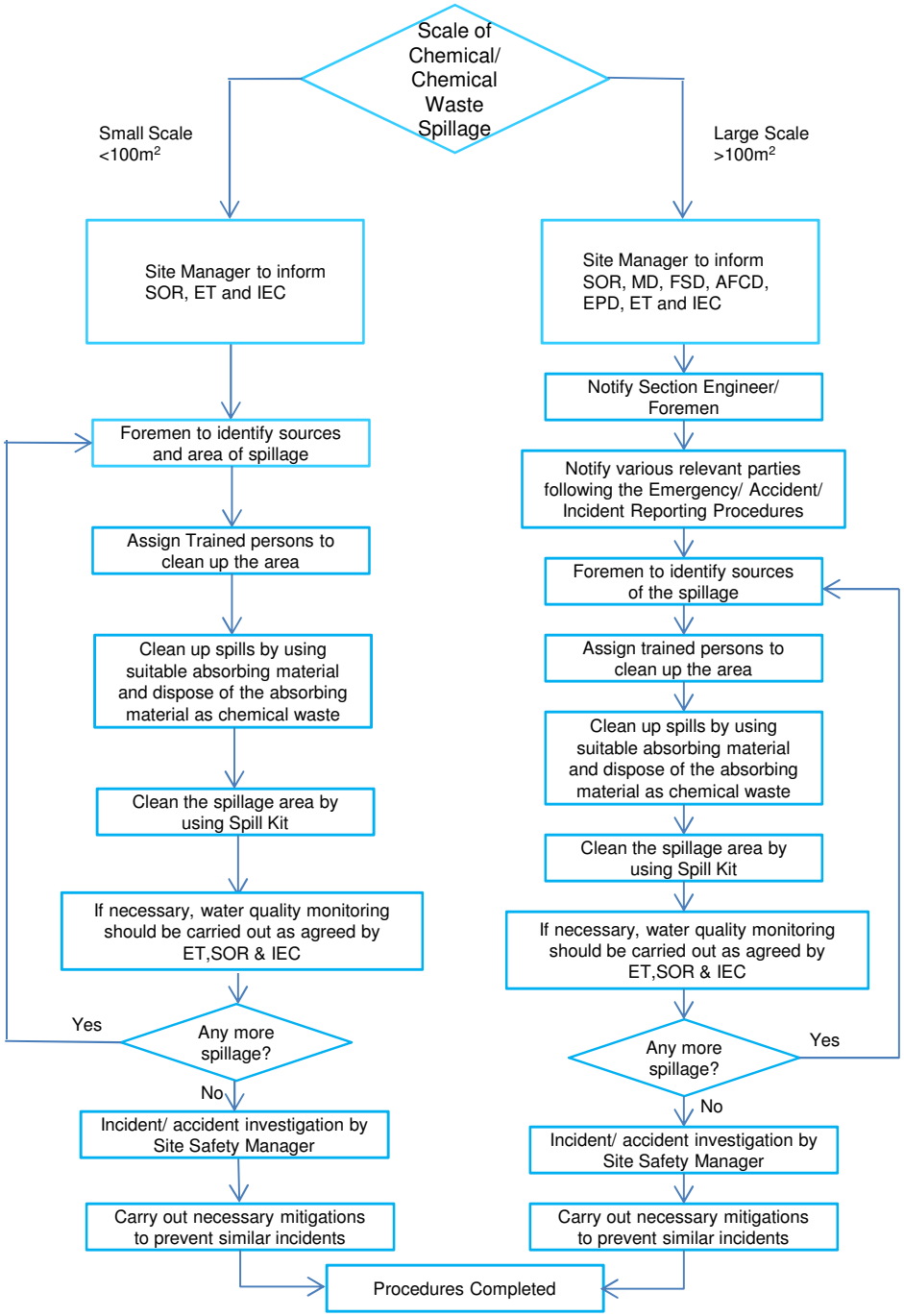
GENERAL SITE AREA



Location of the Site

APPENDIX B

FLOW DIAGRAM FOR SPILL HANDLING


Scale of Chemical/ Chemical Waste Spillage
Small Scale <100m2
Large Scale >100m2
Site Manager to inform SOR, ET and IEC
Foremen to identify sources and area of spillage
Assign Trained persons to clean up the area
Clean up spills by using suitable absorbing material and dispose of the absorbing material as chemical waste
Clean the spillage area by using Spill Kit
If necessary, water quality monitoring should be carried out as agreed by ET,SOR & IEC
Yes
Any more spillage?
No
Incident/ accident investigation by Site Safety Manager
Carry out necessary mitigations to prevent similar incidents
Site Manager to inform SOR, MD, FSD, AFCD, EPD, ET and IEC
Notify Section Engineer/ Foremen
Notify various relevant parties following the Emergency/ Accident/ Incident Reporting Procedures
Foremen to identify sources of the spillage
Assign trained persons to clean up the area
Clean up spills by using suitable absorbing material and dispose of the absorbing material as chemical waste
Clean the spillage area by using Spill Kit
If necessary, water quality monitoring should be carried out as agreed by ET,SOR & IEC
Any more spillage?
Yes
No
Incident/ accident investigation by Site Safety Manager
Carry out necessary mitigations to prevent similar incidents
Procedures Completed

APPENDIX C

INFORMATION ON SPILL RESPONSE MEASURES

SPC ENVIRONMENTAL SPILL KITS

55 Gallon Drum Spill Kit - Oil Only

Description for 55 Gallon Drum Spill Kit - Oil Only

The Oil Only 55 Gallon Drum can be easily opened and closed for a fast response to a medium sized spill of oil based materials. Drum meets UN specifications. Contents:

- (50) - 15" x 19" Pads
- (4) - 3" x 12' SOCs
- (8) - 17" x 19" Pillows
- (1) - Pair Nitrile Gloves
- (5) - Disposal Bags
- Goggles
- Emergency Response Handbook

95 Gallon Overpack Spill Kit - Oil Only - # SKO-95

Description for 95 Gallon Overpack Spill Kit - Oil Only

The Oil Only 95 Gallon Overpack Spill Kit is tough, secure, and highly visible. This top-quality screw topped overpack drum meets UN and DOT specifications. Best for a larger spill response of oil based materials. Contents:

- (110) - 15" x 19" Pads
- (12) - 3" x 4' SOCs
- (8) - 3" x 12' SOCs
- (8) - 17" x 19" Pillows
- (1) - Pair Nitrile Gloves
- (10) - Disposal Bags
- Goggles
- Emergency Response Handbook

APPENDIX D

EMERGENCY TEAM ORGANISATION FOR ACCIDENTAL SPILLAGE OF OIL OR OTHER HAZARDOUS CHEMICALS

Emergency Team Organisation for Accidental Spillage of Oil or Other Hazardous Chemicals