

Contract No. HY/2011/09
Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Section
between HKSAR Boundary and Scenic Hill






Non - Technical Document

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Spill Response Plan

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1.0 CONTENT

CONTENT

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2.0 DOCUMENT STATUS

3.0 INTRODUCTION

- 3.1 Purpose
- 3.2 Contract Description

4.0 GENERAL PRECAUTIONS

5.0 TRANSFER & TRANSPORT PRECAUTIONS

6.0 GENERAL RESPONSE TO SPILL INCIDENTS

- 6.1 Spill contained on the deck of a vessel or on land
- 6.2 Spill into the Marine Environment

7.0 EMERGENCY TEAM

- 7.1 Team Structure
- 7.2 Roles and Responsibilities

8.0 IMPLEMENTATION OF SPILL RESPONSE PLAN

- 8.1 Location of Spill kits
- 8.2 Staff Training
- 8.3 Drill Exercise

APPENDICES

- Appendix A:** Photos of Floating Boom and Spill kit
- Appendix B:** Catalogue and Specification of the oil absorbent pads
- Appendix C:** External Support Teams and Contacts
- Appendix D:** Locations of Works Areas



2.0 DOCUMENT STATUS

2.1 Details of Revision:

Rev.	Rev. Date	Sections	Amendment Source and/or Details
A	5/10/2012	All	For the first submission to the SOR.
B	15/10/2012	Related-text	Amended to incorporate SOR/IEC/ENPO's comments dated 12 October via an email.
C	27/8/2013	Section 6.2, 8.1, Appendix A	Amended to update the spill kit and floating booms information.
D	20/11/2013	Section 6.2	Amended to update the spill kit information.
E	17/2/2014	Appendix B	Amended to incorporate IEC's comments and amend the text where necessary.
F	28/3/2014	Section 3.1	Amended to incorporate IEC's comments and amend the text where necessary.
G	7/7/2014	Section 3.1, Appendix B	Amended to prove the newly proposed materials possess same performance with the originally approved one.



3.0 INTRODUCTION

3.1 Purpose

The Spill Response Plan (SRP) has been developed in accordance with Condition 2.8 of the Environmental Permit (EP-352/2009/C) for the Highways Department Contract namely Contract No. HY/2011/09 – Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Section between HKSAR Boundary and Scenic Hill.

The SRP shall describe 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 Contract, with specific provisions for protecting marine ecology and the Chinese White Dolphins.

This revised version is amended relating to a change of the emergency spill product. The suitable products in the previously approved plan (Version B) could not be found at the earlier time. At this moment, the product having similar natures and functions was found and adopted, and therefore we would like to change the Plan showing the adoption.

3.2 Contract Description

Highways Department commissioned the contract “Hong Kong Link Road- Section between HKSAR Boundary and Scenic Hill” (hereinafter called the Contract) with Contract No: HY/2011/09. Dragages -China Harbour-VSL Joint Venture (DCVJV) is awarded the Contract to undertake this Contract. The scope of the Contract works comprises the following major item:

- (i) a dual 3-lane carriageway in the form of viaduct from the HKSAR boundary (connecting with the HZMB Main Bridge) to the Scenic Hill (connecting with the tunnel under separate Contract No. HY/2011/03), of approximately 9.4km in length with a hard shoulder for each bound of carriageway and a utilities trough on the outer edge of each bound of viaducts;
- (ii) a grade-separated turnaround facility located near San Shek Wan, composed of slip roads in the form of viaduct with single-lane carriageway bifurcated from the HKLR mainline with an elevated junction above the mainline;
- (iii) provision of ancillary facilities including, but not limited to, meteorological enhancement measures including the provisioning of anemometers and modification of the wind profiler station at hillside of Sha Lo Wan, provisioning of a compensatory marine radar, and provisioning of security systems; and
- (iv) associated civil, structural, geotechnical, marine, environmental protection, landscaping, drainage and highways electrical and mechanical (E&M) works, street lightings, traffic aids and sign gantries, marine navigational aids, ship impact protection system, water mains and fire hydrants, lightning protection system, structural health monitoring and maintenance management system (SHM&MMS), supervisory control and data acquisition (SCADA) system, as well as operation and maintenance provisions of viaducts, provisioning of facilities for installation of traffic control and surveillance system (TCSS), provisioning of facilities for installation of telecommunication cables/equipments and re provisioning works of affected existing facilities/utilities.

Cinotech Consultants Limited was commissioned by the DCVJV to undertake the EM&A works for the contract and was appointed as the Environmental Team (ET).

4.0 GENERAL PRECAUTIONS

In order to minimize the possibilities of accidental spillage of oil or other hazardous chemicals at the construction site and on vessels, the following precautionary measures will be implemented on site as far as possible:

- the storage areas of chemicals and chemical wastes on land should be located remote from the coast and any other water bodies as far as practicable.
- Use drip trays for storage containers of chemical oil fuel tanks and / or generators.
- Reduce the danger of stacked containers of oil or chemicals falling.



- Provide tightly closed lids so as to avoid leakage of chemicals and chemical waste especially if accidentally knocked over.
- Store chemicals and chemical waste in separate storage areas.
- Inspect the storage area regularly to detect if any leakage has occurred or if any of the containers become defective on a regular weekly basis.
- Use suitable containers, which are resistant to the stored chemicals or the chemical waste so as to prevent leakage.
- Label the storage containers and the chemical tanks according to the EPD's "Code of Practice on the Package, Labelling and Storage of Chemical Wastes Labeling".
- Provide adequate ventilation in the storage area as necessary.
- Prohibit open flames and smoking near the chemical storage and fuel storage areas.
- Store large and heavy containers on the floor as far as possible and avoid storing these containers higher than 0.75m above the floor level (storage in vessel / barges are exclusive).
- Keep all chemical, chemical waste and fuel oil storage containers below eye level for easy inspection.
- Provide adequate space for safe and easy handling and inspection of the containers.
- Maintain an up-to-date log of all chemicals, chemical waste and fuel oil stored at site.
- Separate incompatible chemicals from one another.
- Keep the ingress to the chemical storage area locked and restrict access.
- Provide a bucket of dry sand and a suitable fire extinguisher in the storage area.

5.0 TRANSFER & TRANSPORT PRECAUTIONS

In order to minimize the chance of accidental spillage occurring during the transportation of chemicals or containers of chemicals to and from the construction site, some precautionary measures will be implemented on site. These precautions are subject to site conditions and constraints. These are:

- Use a suitably sized container so as to avoid overfilling.
- Use pumps to transfer chemical waste instead of manually pouring them.
- Provide a containment structure able to hold any chemical or chemical waste that is accidentally spilled.
- Use proper, safe and suitably labeled containers.
- Use suitable carrying equipment to transfer the chemical and chemical; waste containers from one location to another.
- Only employ and use suitably licensed, trained and responsible chemical waste collection persons to carry out the transportation requirements.

6.0 GENERAL RESPONSE TO SPILL INCIDENTS

The general response to the spill shall be carried out to minimize the amount of oil or hazardous chemicals to the marine environment. The location of the spill is also a consideration. The general responses include the following and they are illustrated in a flowchart.

6.1 Spill contained on the deck of a vessel or on land

Workers should be made aware of the emergency telephone numbers, locations of emergency showers, location of spill kits and emergency evacuation routes. Medical emergency response should also be undertaken whenever necessary. The response actions to an incident should include, but not limit to, the following steps:

1. Immediately inform the Emergency Team of the spill incident occurring.
2. Take all possible measures to reduce or stop the spillage, such as shut off the valve.
3. Provided it is safe to do so, the area containing the spill shall have forced ventilation installed in order to make a safe spillage condition.
4. The Emergency Co-ordinator shall be responsible for organizing the manpower to identify the spill source and stop or cease it.



5. The Emergency Co-ordinator as the assigned person shall equip all people involved in the cleanup works suitable personal protective equipment prior to the removal of any leaked chemical or chemical waste.
6. If possible and practical, the spilt chemical shall be put back into the containers of origin. Otherwise a suitable material like dry sand or sawdust shall be used to absorb the leakage.
7. Any contaminated sand / sawdust / other materials shall be collected and put into black plastic bags and shall be clearly labeled as "chemical waste".
8. All collected chemical waste shall be placed in an area designated for chemical waste storage.

6.2 **Spill into the Marine Environment**

This type of spill is considered the most serious in terms of the possibility of causing impact to the local cetacean community and other marine organisms. The notification system is separated into two scales, as determined by the area of spillage of 100 m².

Upon spillage, we will use the floating booms and spill kits. The spill kit includes items such as gloves, oil absorbents and disposal plastic bags. The floating booms will be acted as secondary oil containment (SOC) to enclose the spillage area to contain the spillage spreading outside. The oil absorbents are used for absorbing and removing the spillage within the booms. The photos of Floating Boom and spill kit are attached in Appendix A.

It is the responsibility of all persons observing the spill to report this immediately to their immediate supervisor who shall inform the Deputy Project Director as the Emergency Co-ordinator. A site agent in Emergency Team shall be assigned to lead a working team and to deploy the spill kits to the spillage site. Depending on the scale of the spillage area of 100 m², there are 2 sets of spill response procedures to be applied.

6.2.1 For spillage area larger than 100 m²

- Emergency Co-ordinator shall inform all parties such as Environmental Team (ET), Supervisory Officer Representative (SOR), Highways Department (HyD), Independent Environmental Checker (IEC), Marine Department (MD), Fire Services Department (FSD), Agriculture, Fisheries and Conservation Department (AFCD), Environmental Protection Department (EPD) and the DCVJV emergency team members immediately. The contacts of the other concerned parties tabulated are in Appendix C.
- The Emergency Co-ordinator shall be responsible for organizing the manpower to identify the spill source and stop or cease it.
- The Emergency Co-ordinator is the assigned persons who shall equip with suitable personal protective equipment to remove any leaked chemical or chemical waste.
- The spillage area shall be contained by using secondary oil containment (SOC).
- Oil absorbents in the spill kit shall be applied to absorb and remove the spillage within the SOC. They will be collected by disposal plastic bags as part of the spill kits item.
- The used spill kits will be treated, stored and disposed of as chemical waste according to the necessary procedures.
- Subject to the SOR discretion, a report will be submitted to the SOR within agreed and reasonable time.

6.2.2 For spillage area small than 100 m²

- The Emergency Co-ordinator shall inform the parties such as Supervisory Officer Representative (SOR) and the DCVJV emergency team members.
- The Emergency Co-ordinator shall be responsible for organizing the manpower to identify the spill source and stop or cease it.
- The Emergency Co-ordinator is the assigned persons who shall equip with suitable personal protective equipment to remove of any leaked chemical or chemical waste.
- The spillage area shall be contained by using secondary oil containment (SOC).
- Oil absorbents in the spill kit shall be applied to absorb and remove the spillage within the SOC. They will be collected by disposal plastic bags as part of the spill kits item.



- The used spill kits will be treated, stored and disposed of as chemical waste according to the necessary procedures.

6.2.3 All Reasonable Attempts to be Made to Keep Dolphins Away from Contaminated Areas

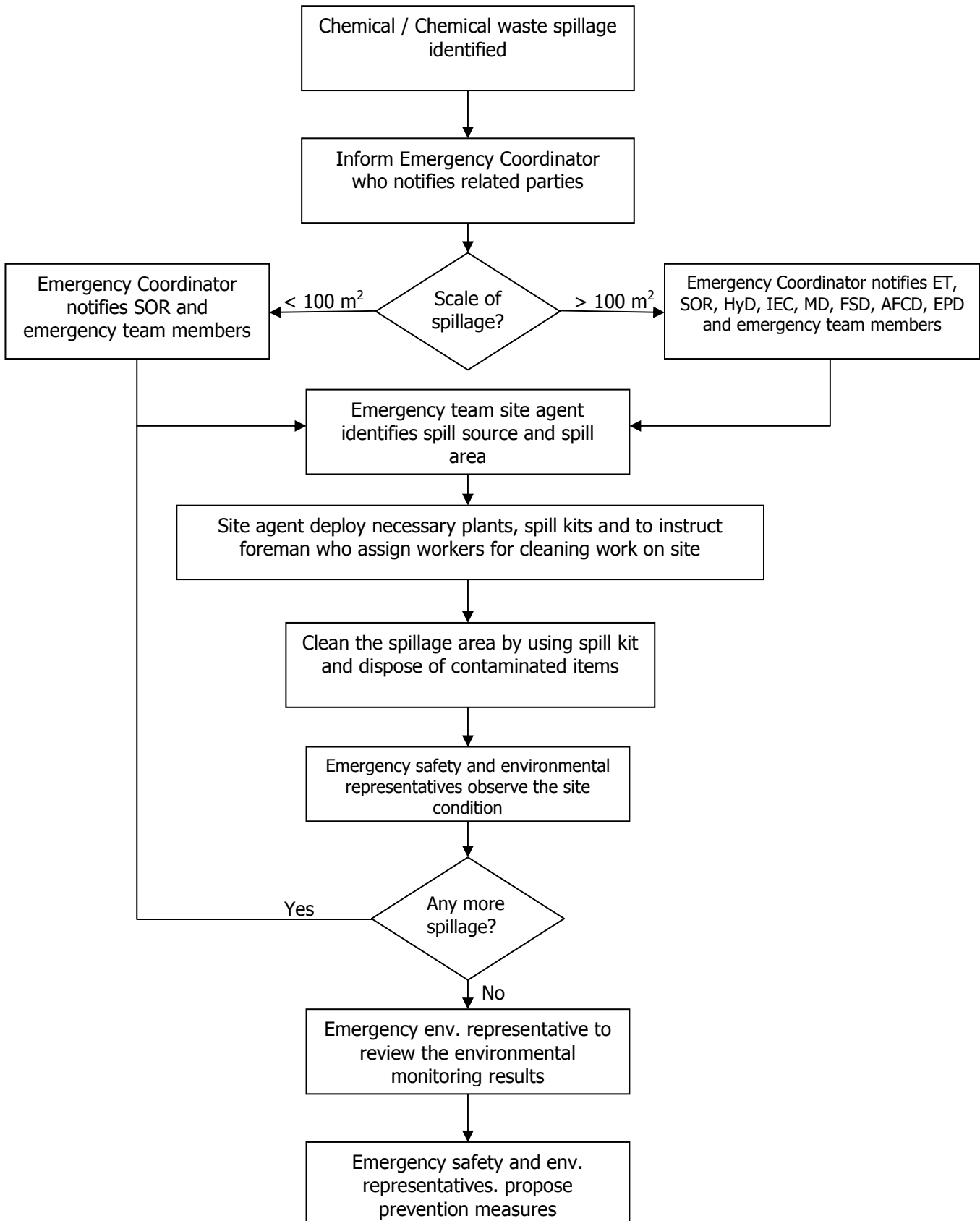
The use of booms is an effective containment method and can also act as a barrier to dolphins. Deployment of such with concomitant visual and acoustic observations is appropriate for small and controllable spills that can be dealt with in the short term.

In the event of larger spills, the deployment of barrier nets (such as silt curtains or anti-shark nets) would be an effective means of keeping dolphins out of the contaminated area until such times as the area was free of contamination.

If dolphins were found within spillage areas, the environmental representative would inform dolphin experts and seek their view for appropriate actions.



Flowchart to illustrate the general responses of spillage incidents



7.0 EMERGENCY TEAM

7.1 Team Structure

An emergency team shall be established for the Contract in order to dealing with spillage cases promptly. The emergency team shall comprise members of an emergency coordinator, emergency safety and environmental representatives and team members. Table 7-1 lists the members' names and contact numbers of the emergency team.

Table 7-1 Emergency Team Members

Post	Name	Contact No.
Emergency Co-ordinator	W K POON	94618397
Emergency Safety Representative	C S MA	96276217
Emergency Env. Representative	C S CHU	68711634
Work Team Members – Site Agent	C Y WONG	93031266
Work Team Members – Foreman	CHAN Kit Ho	90414398

This emergency team member list will be maintained and revised from time to time to ensure it is up-to-date. The telephone contact numbers shall be displayed on notice boards of all site portions.

7.2 Roles and Responsibilities

Emergency Coordinator

- Co-ordinate of all emergency situations,
- Determine the seriousness of the cases to take appropriate responding actions and to deploy manpower and transportation resources,
- Lead the emergency team to carry out appropriate emergency measures to minimize impacts arising from spillage incidents,
- Inform the emergency safety / environmental representatives, work team members, and the SOR as soon as possible in case of an spillage incidents,
- Ensure that staff are well trained for emergency procedures.

Emergency Safety Representative

- Assist the Emergency Coordinator in handling of responding actions towards emergency events,
- Design evacuation procedures and routes for emergency events of the tank farm,
- Advise the Emergency Coordinator on hidden danger or unforeseeable situation to be occurred in the contract site arising from emergency events,
- Observe the whole proceeding of the emergency procedures,
- Participate periodical emergency drills, scrutinize the steps taken and give recommendation to the Emergency Coordinator for further improvement,
- Ensure the follow-up safety actions are implemented after emergency drill.

Emergency Environmental Representative

- Assist the Emergency Coordinator in handling of responding actions towards emergency events,
- Advise the Emergency Coordinator on hidden danger or unforeseeable situations on environmental aspects to be occurred in the contract site arising from emergency events,
- Notify the Environmental Team Leader the emergency events, and make known to dolphin experts,
- Monitor the marine water quality to identify environmental impacts at sensitive receivers in vicinities,
- Arrange *ad hoc* site inspections to sensitive receivers,



- Assess the potential impacts on the local environment, Chinese White Dolphins and ecology issues,
- Liaise the SOR for environmental measures in the contract site after emergency events,
- Liaise relevant governmental departments such as EPD and AFCD to deal with environmental consequences arising from emergency events.

Work Team – Site Agents and Foreman

- Responsible to the Emergency Coordinator and shall follow the instruction to perform their duties,
- Be familiar with the emergency procedures, uses of spillage kits, and locations of the first-aid points, work areas,
- Inspect and examine the spill kit and associated equipments at regular intervals to ensure the spill kit is in place and in good condition,
- Hasten spill emergency procedure after receiving emergency calls from the Emergency Coordinator,
- Arrange necessary plants, boats or vehicles for cleaning works,
- Control or mitigate hazards at the scene to prevent further damages to the property or injury to person under a safe condition,
- In cases of injuries, provide suitable first aid treatment at scene by certified first aiders,
- Report the latest situation of the injured person to the Emergency Coordinator.

8.0 IMPLEMENTATION OF SPILL RESPONSE PLAN

8.1 Location of Spill Kits

It is planned to keep 3 sets of spill kits in site areas of WA4, WA6 and WA7 where marine access is feasible to load spill kits on boards for spillage in water. Another spill kit dealing with land spillage will be kept in WA3. An additional set of spill kit and floating booms to be stored in the working vessels that consistently travel along the bridge viaduct work areas. The locations of the site areas are shown in Appendix D.

8.2 Staff Training

All the workers are briefed for spill prevention and emergency procedures during the mandatory safety and environmental induction training and refresh training per 6 months. The Environmental Officer, or other qualified trainers, shall periodically conduct tool box talks to the site workers. Where appropriate, a demonstration of the spill kit, or similar equipment may be delivered to related Emergency Team members.

Subcontractors are required to ensure the spill preventive measures and emergency procedures are observed by their workers.

Site agents are responsible to check regularly their machineries, equipment or storage for any irregularities such as malfunction, deterioration, operator error, leaks or spills. Any of these that is leaking or in need of repair will be immediately removed from site and repaired prior to resuming work.

8.3 Drill Exercise

Emergency preparedness drill will be conducted in a frequency of 6 months and incorporated into the drill programme of DCVJV safety plan. All personnel on site should be notified in advance of the drill. An incident should be simulated and observations made of the response. A post drill meeting should be conducted to review the response and address any deficiencies.

END OF TEXT



Appendix A – Photos of Floating Booms and Spill Kit



Floating Booms



Spill Kit



Appendix B – Catalogue and Specification of the oil absorbent pads

Main Power Hydraulics Machinery Co.
<http://www.mainpowerhyd.com>

明力油壓機械工程

TG
OIL ABSORBENT PAD



“TG” Environmental Oil Absorbent



Main Power Hydraulics Machinery Co.

<http://www.mainpowerhyd.com>

明力油壓機械工程

OIL ABSORBENT PAD TG68

“TG” is manufacturer of environmental cleaning absorbent in U.S.A. with ISO 9002 certificate. We are the sole distributor of “TG” in Hong Kong and Mainland China. We deal with a lot of construction sites with more than 10 years experience.

We would like to introduce to your esteemed company our TG68 oil absorbent pad and B510 Sorbent Boom for solving the problem of hydraulic system oil leakage.





Oil Absorbent Pads



Our oil absorbent pads are 100% meltblown polypropylene and are hydrophobic meaning they absorb oil only and not water making them excellent for use when both oil and water are present. These pads float on water soaking up the oil from its surface making clean up quick and easy.

Our absorbent pads are:

- 100% Polypropylene.
- Absorb hydrocarbons not water.
- Light blue material turns dark when saturated.
- Excellent absorbent capacity.
- High strength even when fully saturated.

Item no.	Size	Thickness	Qty/Box	Absorbency
	mm	mm	Pcs	L
TG68	400*500	2	200	144

Source:

<http://www.mainpowerhyd.com/product/Oil%20Absorbent%20Series/Oil%20absorbent%20pads.html>

Notes:

The absorbency of the originally proposed materials is 18L/set, while the absorbency of the newly proposed materials is 144L/200 pieces of oil absorbent pads. In order to achieve the same absorbency of 18L, 25 pieces of oil absorbent pads will be provided.



Appendix C – External Support Teams and Contacts

Contact	Telephone No.
Marine Department (VTC, Maritime Rescue & Oil Spill) (24 hrs)	2233 7801
Tuen Mun Hospital (switchboard) (24 hrs)	2468 5111
Environmental Protection Department (For marine spill, LI Kim Man (S(WP)1) / Leung Hing-biu, Joseph (E(WP)13)	2411 9604 / 2594 6152
Environmental Protection Department (Regional South Office)	2516 1718
Agriculture, Fisheries and Conservation Department	2150 6882
Hong Kong Flying Services	2305 8212
Airport Authority (Integrated Airport Centre)	2910 1108
Drainage Services Department	2300 1110
Water Services Department	2824 5000
Fire Services Department / Tung Chung Fire Station	2723 2233 / 2988 1898
HK & China Gas	2880 6999
PCCW	109
Typhoon Enquiry (Hotline)	2835 1473
Weather Enquiry (Hotline)	187 8200
Thunderstorm Enquiry (Hotline)	2926 8473



Appendix D – Location Plan of Works Areas

