

### Environmental Complaint Form

<b>RECEIPT OF COMPLAINT</b>		<b>Ref: ENPO-C0135</b>
Date:	22 June 2018	
Time:	N/A	
Via:	HyD	
<b>COMPLAINANT</b>		
Name:	Not specified in complaint	Address: N/A
Contact no.:	N/A	
<b>DETAILS OF COMPLAINT</b>		
Date:	-	
Time:	13 June 2018	
Parameter:	Water Quality	Other (specify): N/A
Description:	The complaint was about discharge of muddy water from HKBCF. According to site photos provided by HyD (see <b>Attachment 1</b> ), it is noticed that there was muddy water discharged via as-constructed box culverts/outfall structures at various parts of seawall on 13 June 2018. An opening in the silt curtain at Box Culvert C was also observed.	
<b>INVESTIGATION RESULT &amp; RESPONSE</b>		
IEC and ER notified on: 25 June 2018		
ET inspected site on: 27 June 2018		
Result of investigation:		
<p>This investigation reports the findings with respect to Box Culverts C and D which are located inside HY/2013/04 works site. It is noted that more than one HKBCF contract site was subject to the present complaint.</p> <p>It is noted that the construction of Box Culverts C and D is divided into two parts, with HY/2013/04 and the adjacent BCF contract each responsible for the part inside its respective site boundary. The general HY/2013/04 site arrangement map showing the locations of Box Culverts C and D relative to these contracts is provided in <b>Attachment 2</b>.</p> <p>As informed by the Contractor of HY/2013/04, land-based construction of the main structure of Box Culverts C and D (including the outfalls) were completed by May 2018 and no further works inside the main structures were conducted. Since then, land-based reinstatement of the seawall at ground level were in progress.</p> <p>Prior to the subject incident, ET conducted weekly site inspection on 11 June 2018, during which the HY/2013/04 site shoreline interfacing with open waters was inspected. There was no observation regarding any overflow of site runoff or presence of silty water in the open waters associated with that shoreline, including at Box Culverts C and D. Silt curtains at Box Culverts C and D were observed as secured with no leakage of muddy water into the open waters. No HY/2013/04 site works were observed which may be a potential cause of muddy water discharge. Relevant photos are presented in <b>Attachment 3</b>.</p> <p>It is noted that amber rainstorm warning signal was issued during the daytime on 13 June 2018 from 15:00 to 18:15. The relevant record from the Hong Kong Observatory is presented in <b>Attachment 4</b>.</p> <p>The Contractor confirmed that prior to the heavy rain on 13 June 2018 it had inspected the silt curtains which were functioning properly with no leakage of muddy water into the open waters. Photo provided by the Contractor is presented in <b>Attachment 3</b>.</p>		



After the heavy rain, the silt curtains were inspected and readjusted to ensure no leakage of site runoff into the open waters. Photo taken by the Contractor on 16 June 2018 is also presented in **Attachment 3**.

ET conducted weekly site inspection on 20 June 2018, during which the HY/2013/04 site shoreline interfacing with open waters was inspected. There was no observation regarding any overflow of site runoff or presence of silty water in the open waters associated with that shoreline. Silt curtains at Box Culverts C and D were observed as secured with no leakage of muddy water into the open waters. According to the Contractor, the opening in the silt curtain at Box Culvert C was repaired by 20 June 2018. Relevant photos are presented in **Attachment 3**.

Following receipt of the subject complaint, ET conducted weekly site inspections on 27 June 2018, during which the HY/2013/04 site shoreline interfacing with open waters was inspected. There was no observation regarding any overflow of site runoff or presence of silty water in the open waters associated with that shoreline. Silt curtains at Box Culverts C and D were observed as secured with no leakage of muddy water into the open waters. No HY/2013/04 site works were observed which may be a potential cause of muddy water discharge. Relevant photos are presented in **Attachment 3**.

As part of the regular weekly site inspection process, mitigation measures for surface runoff collection and treatment were audited. According to the Contractor's approved Site Temporary Drainage Management Plan (Section 4.1.1 for HKBCF island site), in the event of flooding on site due to heavy rainstorm, the effluent and surface water would be collected by temporary drainage channels to on-site waste water treatment facilities (including, but not limited to, sedimentation tank and Wetsep) and then discharged by discharge well on-site; furthermore, temporary drainage channel or earth bund shall be formed in front of the existing crest of sloping seawall within the site area in order to prevent the effluent from being overflowed into the sea due to heavy rainstorm. It is noted that the temporary site drainage system are not connected to Box Culverts C and D within HY/2013/04 site and therefore it is not anticipated that muddy surface runoff would flow into these box culverts. The Layout Plan for Site Temporary Drainage is presented in **Attachment 5**. Throughout June 2018, no adverse observations were made in relation to muddy surface runoff, and no muddy surface runoff was observed as overflowing from the HY/2013/04 site area into these box culverts or the open waters.

It is concluded that the source of the discharged runoff is not related to this contract and may be upstream of the HY/2013/04 works area.

#### **RECOMMENDATIONS / MITIGATION MEASURES / ACTIONS**

The Contractor is reminded to observe all conditions stated in the relevant discharge licence and implement all necessary water quality mitigation measures identified in the EM&A Manual.

The following specific mitigation measures, as stated in the EMIS of EM&A Manual, are highlighted for constant maintenance and reinforcement to prevent future recurrence:

- single layer silt curtains will be applied around all works; and
- silt curtain shall be fully maintained throughout the works.

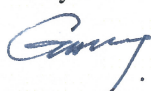
Specifically, for land works:

- wastewater from temporary site facilities should be controlled to prevent direct discharge to surface or marine waters; and
- silt removal facilities, channels and manholes shall be maintained and any deposited silt and grit shall be removed regularly, including specifically at the onset of and after each rainstorm.

To prevent recurrence of this incident, the following measures are proposed for Contractor's consideration:

- more frequent checking of the silt curtain's integrity.
- more frequent pumping of the runoff contained inside the silt curtain; and
- a larger silt curtain to contain a larger area of silt runoff within.



Prepared by: Gary Chow	Title: Environmental Team Leader
Signature: 	Date: 31 July 2018

**ATTACHMENTS**

1. Site photos of muddy water discharge (from HyD)
2. General HY/2013/04 site arrangement map
3. Photo records of Box Culverts C and D
4. Hong Kong Observatory weather warnings and signals record (13 Jun 2018)
5. Layout Plan for Site Drainage Management (extracted from Appendix A, Site Temporary Drainage Management Plan)



## **Attachment 1**





Date: 13 June 2018

Location: Box Culvert at Portion AC1 (off PCB)





Date: 13 June 2018

Location: Box Culvert at Portion AC1 (off PCB)





Date: 13 June 2018

Location: Box Culvert C at Portion B (Ch. 840)





Date: 13 June 2018

Location: Box Culvert D at Portion B (near cell K030)





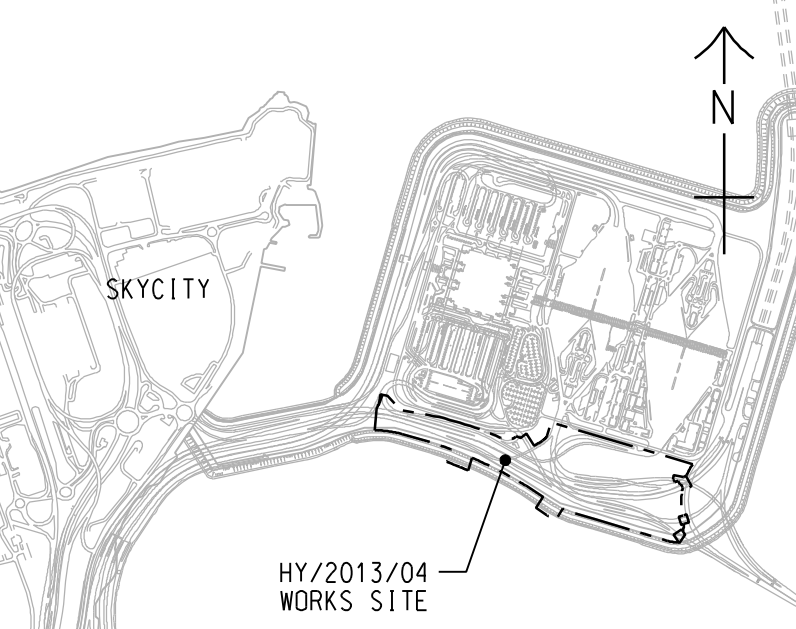
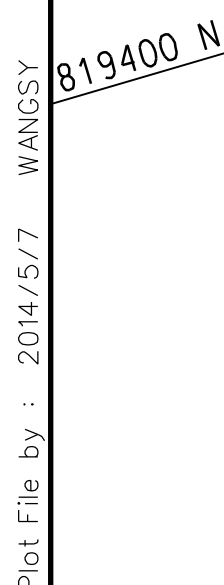
Date: 13 June 2018

Location: Box Culvert B at Portion C2b (near cell C093)






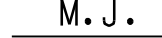



## **Attachment 2**





## SCALE 1 : 25000

LEGEND:

- |   |                      |
|---|----------------------|
|  | SITE BOUNDARY        |
|  | AT-GRADE WORKS LIMIT |
|  | MOVEMENT JOINT       |
|  | BRIDGE               |
|  | BUILDING/FACILITIES  |
|  | AT-GRADE ROAD        |
|  | BOX CULVERT          |

B	WORKING DRAWING	BWCW	SCI	APR. 15
A	TENDER ADDENDUM NO. 3	BWCW	SCI	MAY. 14
-	TENDER DRAWING	BWCW	SCI	FEB. 14
REV. REVISION	DESCRIPTION 内容摘要	D.E. CHECKED 审核		P.E. DATE 日期



HONG KONG-ZHUHAI-MACAO BRIDGE  
HONG KONG BOUNDARY CROSSING FACILITIES  
- INFRASTRUCTURE WORKS STAGE 11 (SOUTHERN PORTION)

## GENERAL ARRANGEMENT



**Rogers Stirk Harbour + Partners**  
BURO HAPPOLD    ATKINS    ADI

# Aedas

DRG.NO. 60191048/C4/000/C00/1002B  
圖紙編號

DESIGNED BY 設計		CONTRACT NO. 合約編號		P. Dir. APPROVED 批准人	
BWCW		HY/2013/04		TKH <i>WT</i>	
DRAWN BY 繪圖		STATUS 階段		<b>WORKING DRAWING</b>	
WSY					
SCALE 比例		A1 1 : 2000			
DIMENSIONS ARE IN 尺寸單位		METRES		© COPYRIGHT RESERVED 版權所有	



## **Attachment 3**



**Photo record on 11 June 2018 (during ET's weekly site audit)**

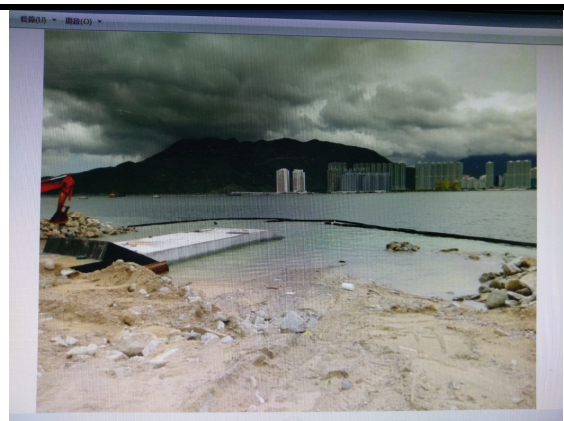


1. Silt curtain at Box Culvert C was observed as secured. No leakage of muddy water into the open waters was observed.



2. Silt curtain at Box Culvert D was observed as secured. No leakage of muddy water into the open waters was observed.

**Photo record on 13 & 16 June 2018 (by Contractor)**



1. 13 June 2018 (daytime): Silt curtain at Box Culvert C was observed as secured. No leakage of muddy water into the open waters was observed.



2. 16 June 2018: Silt curtain at Box Culvert C was observed as secured. No leakage of muddy water into the open waters was observed.

**Photo record on 20 June 2018 (during ET's weekly site audit)**



1. Silt curtain at Box Culvert C was observed as secured. No leakage of muddy water into the open waters was observed.



2. Silt curtain at Box Culvert D was observed as secured. No leakage of muddy water into the open waters was observed.



**Photo record on 27 June 2018 (during ET's weekly site audit)**



1. Silt curtain at Box Culvert C was observed as secured. No leakage of muddy water into the open waters was observed.



2. Silt curtain at Box Culvert D was observed as secured. No leakage of muddy water into the open waters was observed.



## **Attachment 4**



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## Weather Warning and Signals Record (13/Jun/2018)

### Rainstorm Warnings

	Warning and Signals	Start Time		End Time	
		hh:mm	dd/mon/yyyy	hh:mm	dd/mon/yyyy
	Amber Rainstorm Warning Signal	02:10	13/Jun/2018	05:45	13/Jun/2018
	Amber Rainstorm Warning Signal	15:00	13/Jun/2018	18:15	13/Jun/2018

### Thunderstorm Warning

	Warning and Signals	Start Time		End Time	
		hh:mm	dd/mon/yyyy	hh:mm	dd/mon/yyyy
	Thunderstorm Warning	01:35	13/Jun/2018	06:00	13/Jun/2018
	Thunderstorm Warning	07:05	13/Jun/2018	08:30	13/Jun/2018
	Thunderstorm Warning	10:50	13/Jun/2018	12:00	13/Jun/2018
	Thunderstorm Warning	13:10	13/Jun/2018	19:30	13/Jun/2018

2003 [Important notices](#)

Last revision date: &lt;18 Jun 2013&gt;



## **Attachment 5**



# THE LAYOUT PLAN FOR THE SITE HAUL ROAD

