

Appendix L

Cumulative Statistics on
Exceedances, Complaints,
Notifications of Summons
and Successful Prosecutions

Appendix L1 Cumulative Statistics on Exceedances

		Total No. recorded in this quarter	Total No. recorded since contract commencement
1-Hr TSP	Action	0	0
	Limit	0	1
24-Hr TSP	Action	0	2
	Limit	0	0
Noise	Action	0	0
	Limit	0	0
Water Quality	Action	2	226
	Limit	0	24
Impact Dolphin Monitoring	Action	0	11
	Limit	1	16

Appendix L2 Cumulative Statistics on Complaints, Notifications of Summons and Successful Prosecutions

Reporting Period	Cumulative Statistics		
	Complaints	Notifications of Summons	Successful Prosecutions
This quarter	0	0	0
Total No. received since contract commencement	14	0	0

Email
message

Environmental
Resources
Management

To Ramboll Hong Kong Limited (ENPO)

From ERM- Hong Kong, Limited

Ref/Project number Contract No. HY/2012/07
Tuen Mun – Chek Lap Kok Link – Southern
Connection Viaduct Section

Subject Notification of Exceedance for Marine Water
Quality Impact Monitoring

Date 30 May 2019

2507,
25/F One Harbourfront,
18 Tak Fung Street,
Hung Hom, Hong Kong
Telephone: (852) 2271 3113
Facsimile: (852) 2723 5660
E-mail: jasmine.ng@erm.com



ERM

Dear Sir/ Madam,

Please find attached the Notification of Exceedance (NOE) of the following
Log no.:

Action Level Exceedance
0215660_15 May 2019_ Depth-averaged SS_E_Station IS8

A total of one exceedance was recorded on 15 May 2019.

Regards,

A handwritten signature in blue ink that reads "Jasmine".

Dr Jasmine Ng
Environmental Team Leader

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ERM-Hong Kong, Limited

CONTRACT NO. HY/2012/07

TUEN MUN – CHEK LAP KOK LINK –
SOUTHERN CONNECTION VIADUCT SECTION

Marine Water Quality Impact Monitoring

Notification of Exceedance

Log No.	<u>Action Level Exceedance</u> 0215660_15 May 2019_ Depth-averaged SS_E_Station IS8 [Total No. of Exceedance = 1]	
Date	15 May 2019 (Measured) 16 May 2019 (<i>In situ</i> results received by ERM) 24 May 2019 (Laboratory results received by ERM)	
Monitoring Station	CS(Mf)5, SR4a, SR4(N), IS8, IS(Mf)16, IS(Mf)9, CS(Mf)3(N)	
Parameter(s) with Exceedance(s)	Depth-average SS	
Action Levels for SS	Depth-averaged SS	23.5 mg/L
Limit Levels for SS	Depth-averaged SS	34.4 mg/L
Measured Levels	<u>Action Level Exceedance</u> 1. Mid-ebb at IS8 (Depth-averaged SS = 24.7 mg/L)	
Works Undertaken (at the time of monitoring event)	Reinstatement of seawall at seafront was undertaken under this Contract on 15 May 2019.	
Possible Reason for Action or Limit Level Exceedance(s)	<p>The exceedances of SS are unlikely to be due to the Contract, in view of the following</p> <ul style="list-style-type: none"> • Apart from SS exceedance at IS8 during mid-ebb tide, levels of SS at all monitoring stations were in compliance with the Action and Limit Levels during both mid-ebb and mid-flood tides on the same day. • Levels of turbidity at all monitoring stations were in compliance with the Action and Limit levels during both mid-ebb and mid-flood tides on the same day. • No effluent discharge from platforms and work areas was observed during the sampling on the same day (refer to <i>Site Photo Record</i>). 	
Actions Taken/ To Be Taken	No immediate action is considered necessary. The ET will monitor for future trends in exceedances.	
Remarks	The monitoring results on 15 May 2019 and locations of water quality monitoring stations are attached. Site photo record on 15 May 2019 is attached.	

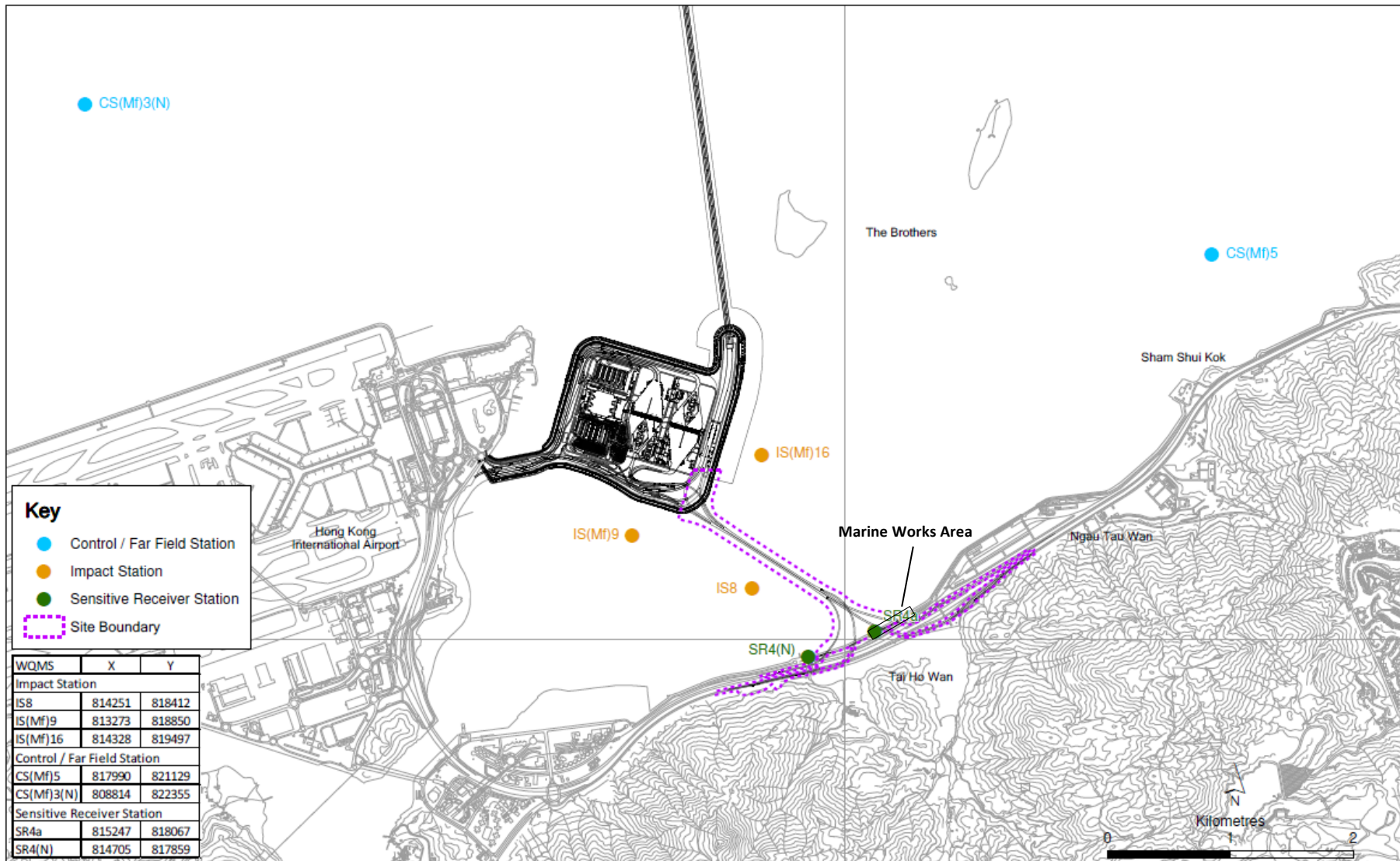
Project	Works	Date (yyyy-mm-dd)	Tide	Station	Start Time	Level	Replicate	Temperature (°C)	pH	Salinity (ppt)	DO (mg/L)	Average DO (mg/L)	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	CS(Mf)5	9:51	Surface	1	26.5	8.1	21.3	8.8	8.6	4.7	4.3	11.5	12.8
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	CS(Mf)5	9:51	Surface	2	26.5	8.2	21.3	8.8		4.8		12.8	
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	CS(Mf)5	9:51	Middle	1	26.4	8.1	21.9	8.3		4.1		13.0	
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	CS(Mf)5	9:51	Middle	2	26.4	8.1	21.9	8.3		4.2		12.9	
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	CS(Mf)5	9:51	Bottom	1	26.5	8.1	23.3	8.2	8.2	4.1	4.3	13.0	12.8
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	CS(Mf)5	9:51	Bottom	2	26.5	8.1	23.3	8.2		4.0		13.5	
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	CS(Mf)3(N)	11:02	Surface	1	25.3	8.1	20.6	8.6	8.4	4.1	4.7	8.0	9.2
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	CS(Mf)3(N)	11:02	Surface	2	25.3	8.1	20.5	8.6		4.0		9.2	
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	CS(Mf)3(N)	11:02	Middle	1	25.2	8.1	20.9	8.2		5.0		9.9	
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	CS(Mf)3(N)	11:02	Middle	2	25.2	8.1	20.9	8.2		5.0		9.7	
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	CS(Mf)3(N)	11:02	Bottom	1	25.2	8.1	21.0	8.2	8.2	5.1	4.7	9.2	9.2
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	CS(Mf)3(N)	11:02	Bottom	2	25.2	8.1	21.0	8.2		5.1		9.2	
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	IS(Mf)16	10:25	Surface	1	26.4	8.2	21.6	8.6	8.6	10.8	11.0	18.5	18.7
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	IS(Mf)16	10:25	Surface	2	26.5	8.2	21.6	8.6		10.3		17.9	
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	IS(Mf)16	10:25	Middle	1									
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	IS(Mf)16	10:25	Middle	2									
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	IS(Mf)16	10:25	Bottom	1	26.3	8.2	21.8	8.5	8.5	11.5	11.0	19.6	18.7
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	IS(Mf)16	10:25	Bottom	2	26.3	8.2	21.8	8.5		11.5		18.8	
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	SR4a	10:33	Surface	1	26.4	8.2	21.9	8.6	8.6	6.8	7.0	17.8	18.3
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	SR4a	10:33	Surface	2	26.5	8.2	21.9	8.6		6.8		17.3	
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	SR4a	10:33	Middle	1									
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	SR4a	10:33	Middle	2									
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	SR4a	10:33	Bottom	1	26.2	8.2	22.0	8.5	8.5	7.2	7.0	18.6	18.3
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	SR4a	10:33	Bottom	2	26.2	8.2	22.0	8.5		7.1		19.6	
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	SR4(N)	10:38	Surface	1	26.6	8.1	21.6	8.2	8.2	10.3	9.1	13.5	13.7
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	SR4(N)	10:38	Surface	2	26.6	8.1	21.6	8.2		10.5		14.5	
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	SR4(N)	10:38	Middle	1									
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	SR4(N)	10:38	Middle	2									
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	SR4(N)	10:38	Bottom	1	26.8	8.1	21.7	8.2	8.2	7.7	9.1	13.0	13.7
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	SR4(N)	10:38	Bottom	2	26.8	8.1	21.7	8.2		7.8		13.9	
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	IS8	10:43	Surface	1	26.4	8.2	22.1	8.6	8.6	16.1	15.3	25.1	24.7
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	IS8	10:43	Surface	2	26.4	8.2	22.0	8.6		16.0		25.7	
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	IS8	10:43	Middle	1									
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	IS8	10:43	Middle	2									
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	IS8	10:43	Bottom	1	26.3	8.2	22.1	8.6	8.6	14.6	15.3	23.4	24.7
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	IS8	10:43	Bottom	2	26.3	8.2	22.1	8.6		14.6		24.4	
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	IS(Mf)9	10:51	Surface	1	27.1	8.3	21.5	9.5	9.5	6.4	6.4	15.7	15.1
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	IS(Mf)9	10:51	Surface	2	27.1	8.3	21.5	9.5		6.5		14.6	
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	IS(Mf)9	10:51	Middle	1									
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	IS(Mf)9	10:51	Middle	2									
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	IS(Mf)9	10:51	Bottom	1	27.1	8.3	21.4	9.4	9.5	6.4	6.4	14.4	15.1
TMCLKL	HY/2012/07	2019/05/15	Mid-Ebb	IS(Mf)9	10:51	Bottom	2	27.1	8.3	21.4	9.5		6.3		15.5	

Project	Works	Date (yyyy-mm-dd)	Tide	Station	Start Time	Level	Replicate	Temperature (°C)	pH	Salinity (ppt)	DO (mg/L)	Average DO (mg/L)	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	CS(Mf)5	16:01	Surface	1	26.5	8.3	21.4	9.1	9.1	4.8	5.8	12.0	11.4
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	CS(Mf)5	16:01	Surface	2	26.5	8.3	21.5	9.1		4.9		11.6	
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	CS(Mf)5	16:01	Middle	1	26.3	8.3	21.4	9.0		7.1		11.0	
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	CS(Mf)5	16:01	Middle	2	26.5	8.3	21.4	9.2		6.0		10.5	
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	CS(Mf)5	16:01	Bottom	1	26.3	8.3	21.7	9.1	9.1	6.2	5.8	11.9	11.4
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	CS(Mf)5	16:01	Bottom	2	26.3	8.3	21.7	9.0		5.6		11.2	
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	CS(Mf)3(N)	14:57	Surface	1	26.5	8.3	17.4	10.1	9.0	4.5	4.5	10.9	12.5
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	CS(Mf)3(N)	14:57	Surface	2	26.5	8.3	17.4	10.1		4.4		11.8	
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	CS(Mf)3(N)	14:57	Middle	1	25.2	8.0	18.3	7.8		4.4		12.0	
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	CS(Mf)3(N)	14:57	Middle	2	25.2	8.0	18.1	7.9		4.4		13.0	
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	CS(Mf)3(N)	14:57	Bottom	1	25.7	8.0	20.1	7.9	7.9	4.5	4.5	13.6	13.8
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	CS(Mf)3(N)	14:57	Bottom	2	25.5	8.0	20.2	7.9		4.5		13.8	
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	IS(Mf)16	15:34	Surface	1	26.6	8.3	21.2	10.1	10.1	9.4	7.3	7.2	8.5
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	IS(Mf)16	15:34	Surface	2	26.6	8.3	21.2	10.1		9.2		7.7	
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	IS(Mf)16	15:34	Middle	1									
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	IS(Mf)16	15:34	Middle	2									
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	IS(Mf)16	15:34	Bottom	1	26.7	8.3	21.2	10.1	10.1	5.2	10.1	9.4	13.8
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	IS(Mf)16	15:34	Bottom	2	26.7	8.3	21.2	10.1		5.2		9.7	
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	SR4a	15:25	Surface	1	26.9	8.4	21.4	10.3	10.3	3.8	3.9	13.2	13.8
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	SR4a	15:25	Surface	2	26.9	8.4	21.4	10.3		3.9		13.9	
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	SR4a	15:25	Middle	1									
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	SR4a	15:25	Middle	2									
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	SR4a	15:25	Bottom	1	26.8	8.4	21.5	9.8	9.8	3.9	9.8	14.1	10.9
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	SR4a	15:25	Bottom	2	26.8	8.4	21.5	9.8		3.8		14.1	
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	SR4(N)	15:22	Surface	1	26.8	8.4	21.2	10.3	10.3	11.3	8.7	9.7	10.9
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	SR4(N)	15:22	Surface	2	26.8	8.4	21.2	10.3		12.6		8.9	
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	SR4(N)	15:22	Middle	1									
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	SR4(N)	15:22	Middle	2									
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	SR4(N)	15:22	Bottom	1	26.8	8.4	21.3	10.3	10.3	5.3	10.3	12.3	13.7
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	SR4(N)	15:22	Bottom	2	26.8	8.4	21.3	10.3		5.4		12.7	
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	IS8	15:17	Surface	1	26.4	8.3	21.3	9.4	9.4	10.7	9.5	14.5	13.7
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	IS8	15:17	Surface	2	26.4	8.3	21.3	9.4		10.6		14.6	
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	IS8	15:17	Middle	1									
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	IS8	15:17	Middle	2									
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	IS8	15:17	Bottom	1	26.4	8.3	21.4	9.4	9.4	8.2	9.4	12.2	13.6
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	IS8	15:17	Bottom	2	26.4	8.3	21.4	9.4		8.6		13.3	
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	IS(Mf)9	15:08	Surface	1	26.6	8.3	20.9	9.5	9.5	9.8	9.0	13.0	13.6
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	IS(Mf)9	15:08	Surface	2	26.6	8.3	20.9	9.5		10.4		13.0	
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	IS(Mf)9	15:08	Middle	1									
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	IS(Mf)9	15:08	Middle	2									
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	IS(Mf)9	15:08	Bottom	1	26.5	8.3	21.1	9.5	9.5	7.8	9.5	13.8	13.6
TMCLKL	HY/2012/07	2019/05/15	Mid-Flood	IS(Mf)9	15:08	Bottom	2	26.5	8.3	21.1	9.5		7.8		14.4	

Note: Indicates Exceedance of Action Level
Indicates Exceedance of Limit Level

Photo 1 - Mid-Ebb at IS8 on 15 May 2019





Key

- Control / Far Field Station
- Impact Station
- Sensitive Receiver Station
- Site Boundary

WQMS	X	Y
Impact Station		
IS8	814251	818412
IS(Mf)9	813273	818850
IS(Mf)16	814328	819497
Control / Far Field Station		
CS(Mf)5	817990	821129
CS(Mf)3(N)	808814	822355
Sensitive Receiver Station		
SR4a	815247	818067
SR4(N)	814705	817859

Locations of Water Quality Monitoring Stations

Email
message

Environmental
Resources
Management

To Ramboll Hong Kong Limited (ENPO)

From ERM- Hong Kong, Limited

Ref/Project number Contract No. HY/2012/07
Tuen Mun – Chek Lap Kok Link – Southern
Connection Viaduct Section

Subject Notification of Exceedance for Marine Water
Quality Impact Monitoring

Date 11 June 2019

2507,
25/F One Harbourfront,
18 Tak Fung Street,
Hung Hom, Hong Kong
Telephone: (852) 2271 3113
Facsimile: (852) 2723 5660
E-mail: jasmine.ng@erm.com



ERM

Dear Sir/ Madam,

Please find attached the Notification of Exceedance (NOE) of the following
Log no.:

Action Level Exceedance
0215660_29 May 2019_ Depth-averaged SS_F_Station SR4(N)

A total of one exceedance was recorded on 29 May 2019.

Regards,

A handwritten signature in blue ink that reads "Jasmine". The signature is written in a cursive, flowing style.

Dr Jasmine Ng
Environmental Team Leader

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ERM-Hong Kong, Limited

CONTRACT NO. HY/2012/07

TUEN MUN – CHEK LAP KOK LINK –
SOUTHERN CONNECTION VIADUCT SECTION

Marine Water Quality Impact Monitoring

Notification of Exceedance

Log No.	<u>Action Level Exceedance</u> 0215660_15 May 2019_ Depth-averaged SS_E_Station IS8 [Total No. of Exceedance = 1]	
Date	29 May 2019 (Measured) 31 May 2019 (<i>In situ</i> results received by ERM) 10 June 2019 (Laboratory results received by ERM)	
Monitoring Station	CS(Mf)5, SR4a, SR4(N), IS8, IS(Mf)16, IS(Mf)9, CS(Mf)3(N)	
Parameter(s) with Exceedance(s)	Depth-average SS	
Action Levels for SS	Depth-averaged SS	23.5 mg/L
Limit Levels for SS	Depth-averaged SS	34.4 mg/L
Measured Levels	<u>Action Level Exceedance</u> 1. Mid-flood at SR4(N) (Depth-averaged SS = 24.4 mg/L)	
Works Undertaken (at the time of monitoring event)	Reinstatement of seawall at seafront was undertaken under this Contract on 29 May 2019.	
Possible Reason for Action or Limit Level Exceedance(s)	<p>The exceedances of SS are unlikely to be due to the Contract, in view of the following</p> <ul style="list-style-type: none"> • Apart from SS exceedance at SR4(N) during mid-flood tide, levels of SS at all monitoring stations (including SR4a that closer to the marine works area) were in compliance with the Action and Limit Levels during both mid-ebb and mid-flood tides on the same day. • Levels of turbidity at all monitoring stations were in compliance with the Action and Limit levels during both mid-ebb and mid-flood tides on the same day. • No effluent discharge from platforms and work areas was observed during the sampling on the same day (refer to <i>Site Photo Record</i>). 	
Actions Taken / To Be Taken	No immediate action is considered necessary. The ET will monitor for future trends in exceedances.	
Remarks	The monitoring results on 29 May 2019 and locations of water quality monitoring stations are attached. Site photo record on 29 May 2019 is attached.	

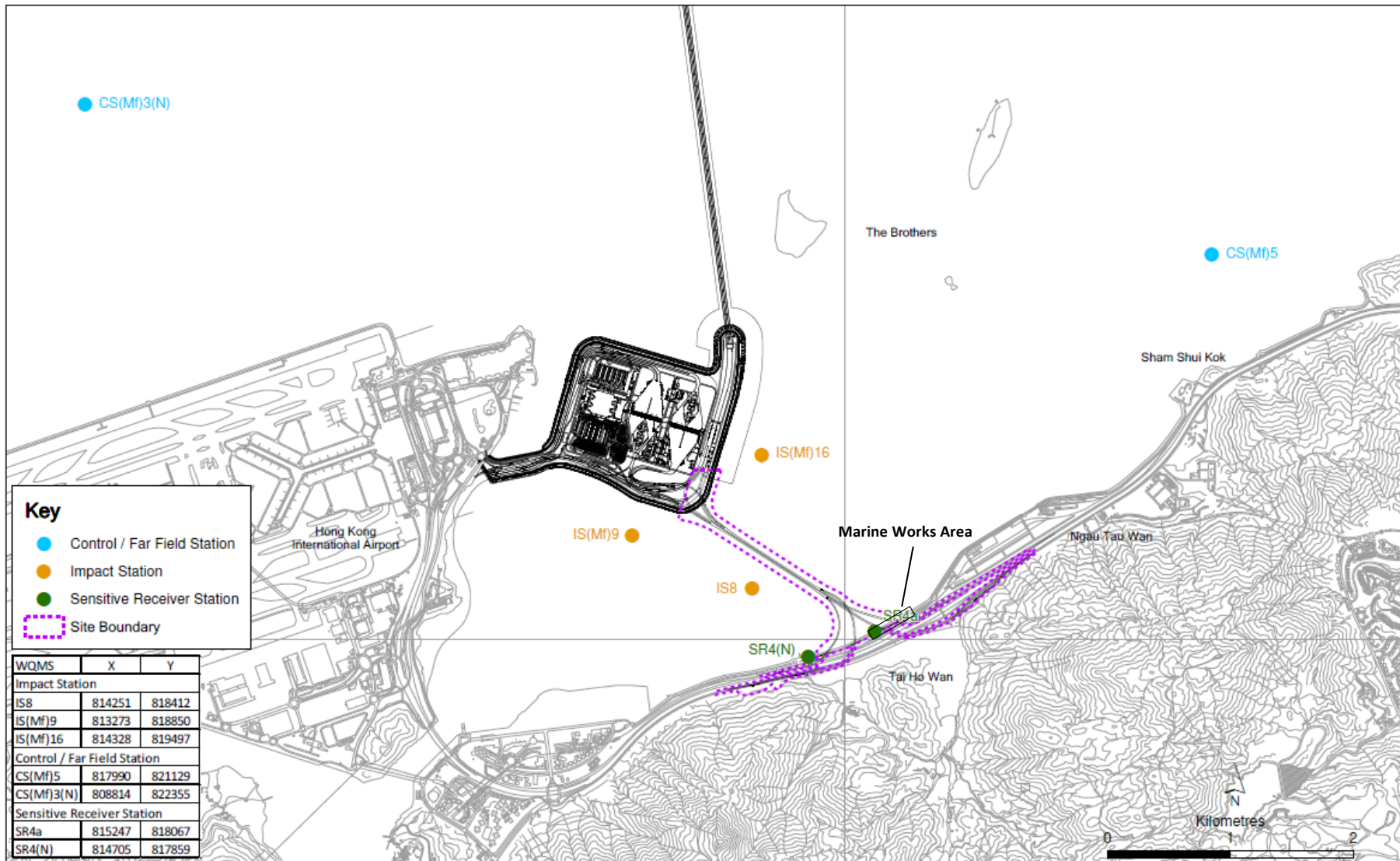
Project	Works	Date (yyyy-mm-dd)	Tide	Station	Start Time	Level	Replicate	Temperature (°C)	pH	Salinity (ppt)	DO (mg/L)	Average DO (mg/L)	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS
HY/2012/07	2019/05/29	Mid-Ebb	CS(Mf)5	9:39	Surface	1	1	26.5	8.0	21.3	6.6	6.6	1.7	1.8	0.8	0.7
HY/2012/07	2019/05/29	Mid-Ebb	CS(Mf)5	9:39	Surface	1	2	26.5	8.0	21.3	6.6		1.7		0.9	
HY/2012/07	2019/05/29	Mid-Ebb	CS(Mf)5	9:39	Middle	2	1	26.4	8.0	21.3	6.5		2.2		<0.5	
HY/2012/07	2019/05/29	Mid-Ebb	CS(Mf)5	9:39	Middle	2	2	26.4	8.0	21.3	6.6	6.5	2.2	1.8	0.6	0.7
HY/2012/07	2019/05/29	Mid-Ebb	CS(Mf)5	9:39	Bottom	3	1	26.4	8.0	23.2	6.5		1.6		0.8	
HY/2012/07	2019/05/29	Mid-Ebb	CS(Mf)5	9:39	Bottom	3	2	26.4	8.0	23.2	6.5		1.6		1.1	
HY/2012/07	2019/05/29	Mid-Ebb	CS(Mf)3(N)	11:00	Surface	1	1	26.6	7.9	19.3	6.5	6.5	4.6	5.1	2.4	2.7
HY/2012/07	2019/05/29	Mid-Ebb	CS(Mf)3(N)	11:00	Surface	1	2	26.6	7.9	19.3	6.5		4.6		2.3	
HY/2012/07	2019/05/29	Mid-Ebb	CS(Mf)3(N)	11:00	Middle	2	1	26.6	7.9	19.3	6.5		4.5		3.2	
HY/2012/07	2019/05/29	Mid-Ebb	CS(Mf)3(N)	11:00	Middle	2	2	26.6	7.9	19.3	6.5	6.6	4.5	5.1	2.7	2.7
HY/2012/07	2019/05/29	Mid-Ebb	CS(Mf)3(N)	11:00	Bottom	3	1	26.6	7.9	19.3	6.6		6.1		3.0	
HY/2012/07	2019/05/29	Mid-Ebb	CS(Mf)3(N)	11:00	Bottom	3	2	26.6	7.9	19.3	6.6		6.1		2.7	
HY/2012/07	2019/05/29	Mid-Ebb	IS(Mf)16	10:09	Surface	1	1	26.4	8.0	19.0	6.6	6.6	3.2	3.5	2.8	2.8
HY/2012/07	2019/05/29	Mid-Ebb	IS(Mf)16	10:09	Surface	1	2	26.4	8.0	19.0	6.6		3.2		2.8	
HY/2012/07	2019/05/29	Mid-Ebb	IS(Mf)16	10:09	Middle	2	1									
HY/2012/07	2019/05/29	Mid-Ebb	IS(Mf)16	10:09	Middle	2	2					6.6		3.5		2.8
HY/2012/07	2019/05/29	Mid-Ebb	IS(Mf)16	10:09	Bottom	3	1	26.4	8.0	19.1	6.6		3.7		2.7	
HY/2012/07	2019/05/29	Mid-Ebb	IS(Mf)16	10:09	Bottom	3	2	26.4	8.0	19.1	6.6		3.7		2.8	
HY/2012/07	2019/05/29	Mid-Ebb	SR4a	10:17	Surface	1	1	26.6	8.0	14.7	6.8	6.8	7.6	5.9	5.1	4.3
HY/2012/07	2019/05/29	Mid-Ebb	SR4a	10:17	Surface	1	2	26.6	8.0	14.7	6.8		7.6		5.2	
HY/2012/07	2019/05/29	Mid-Ebb	SR4a	10:17	Middle	2	1									
HY/2012/07	2019/05/29	Mid-Ebb	SR4a	10:17	Middle	2	2					6.4		5.9		4.3
HY/2012/07	2019/05/29	Mid-Ebb	SR4a	10:17	Bottom	3	1	26.5	8.0	19.7	6.4		4.2		3.7	
HY/2012/07	2019/05/29	Mid-Ebb	SR4a	10:17	Bottom	3	2	26.5	8.0	19.7	6.4		4.2		4.1	
HY/2012/07	2019/05/29	Mid-Ebb	SR4(N)	10:21	Surface	1	1	26.4	7.9	17.4	6.1	6.1	5.4	5.8	6.2	7.1
HY/2012/07	2019/05/29	Mid-Ebb	SR4(N)	10:21	Surface	1	2	26.4	7.9	17.4	6.1		5.4		5.9	
HY/2012/07	2019/05/29	Mid-Ebb	SR4(N)	10:21	Middle	2	1									
HY/2012/07	2019/05/29	Mid-Ebb	SR4(N)	10:21	Middle	2	2					6.0		5.8		7.1
HY/2012/07	2019/05/29	Mid-Ebb	SR4(N)	10:21	Bottom	3	1	26.4	7.9	19.8	6.0		6.2		8.0	
HY/2012/07	2019/05/29	Mid-Ebb	SR4(N)	10:21	Bottom	3	2	26.4	7.9	19.8	6.0		6.2		8.3	
HY/2012/07	2019/05/29	Mid-Ebb	IS8	10:27	Surface	1	1	26.5	8.0	17.5	6.6	6.6	5.6	6.2	8.0	9.1
HY/2012/07	2019/05/29	Mid-Ebb	IS8	10:27	Surface	1	2	26.5	8.0	17.5	6.6		5.6		7.8	
HY/2012/07	2019/05/29	Mid-Ebb	IS8	10:27	Middle	2	1									
HY/2012/07	2019/05/29	Mid-Ebb	IS8	10:27	Middle	2	2					6.5		6.2		9.1
HY/2012/07	2019/05/29	Mid-Ebb	IS8	10:27	Bottom	3	1	26.4	8.0	18.9	6.5		6.7		10.3	
HY/2012/07	2019/05/29	Mid-Ebb	IS8	10:27	Bottom	3	2	26.4	8.0	18.9	6.5		6.7		10.1	
HY/2012/07	2019/05/29	Mid-Ebb	IS(Mf)9	10:34	Surface	1	1	26.3	8.0	18.2	6.7	6.7	4.0	4.5	4.3	3.6
HY/2012/07	2019/05/29	Mid-Ebb	IS(Mf)9	10:34	Surface	1	2	26.3	8.0	18.2	6.7		3.9		4.5	
HY/2012/07	2019/05/29	Mid-Ebb	IS(Mf)9	10:34	Middle	2	1									
HY/2012/07	2019/05/29	Mid-Ebb	IS(Mf)9	10:34	Middle	2	2					6.7		4.5		3.6
HY/2012/07	2019/05/29	Mid-Ebb	IS(Mf)9	10:34	Bottom	3	1	26.3	8.0	17.8	6.7		5.1		5.2	
HY/2012/07	2019/05/29	Mid-Ebb	IS(Mf)9	10:34	Bottom	3	2	26.3	8.0	17.8	6.7		5.1		5.7	

Project	Works	Date (yyyy-mm-dd)	Tide	Station	Start Time	Level	Replicate	Temperature (°C)	pH	Salinity (ppt)	DO (mg/L)	Average DO (mg/L)	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS
HY/2012/07	2019/05/29	Mid-Flood	CS(Mf)5	15:05	Surface	1	1	26.0	8.1	20.9	6.8	6.7	2.6	3.4	3.0	3.3
HY/2012/07	2019/05/29	Mid-Flood	CS(Mf)5	15:05	Surface	1	2	26.0	8.1	20.9	6.8		2.6		3.3	
HY/2012/07	2019/05/29	Mid-Flood	CS(Mf)5	15:05	Middle	2	1	26.1	8.0	21.1	6.6		4.7		3.1	
HY/2012/07	2019/05/29	Mid-Flood	CS(Mf)5	15:05	Middle	2	2	26.1	8.0	21.1	6.7	6.5	4.7	3.4	3.2	3.3
HY/2012/07	2019/05/29	Mid-Flood	CS(Mf)5	15:05	Bottom	3	1	25.9	8.0	22.9	6.5		2.9		3.6	
HY/2012/07	2019/05/29	Mid-Flood	CS(Mf)5	15:05	Bottom	3	2	25.9	8.0	22.9	6.5		2.8		3.5	
HY/2012/07	2019/05/29	Mid-Flood	CS(Mf)3(N)	14:13	Surface	1	1	26.6	7.9	18.9	6.9	6.9	3.9	3.9	1.2	1.4
HY/2012/07	2019/05/29	Mid-Flood	CS(Mf)3(N)	14:13	Surface	1	2	26.6	7.9	18.9	6.9		3.9		1.0	
HY/2012/07	2019/05/29	Mid-Flood	CS(Mf)3(N)	14:13	Middle	2	1	26.6	7.9	18.9	6.8		3.9		1.3	
HY/2012/07	2019/05/29	Mid-Flood	CS(Mf)3(N)	14:13	Middle	2	2	26.6	7.9	18.9	6.8	6.9	3.9	3.9	1.4	1.4
HY/2012/07	2019/05/29	Mid-Flood	CS(Mf)3(N)	14:13	Bottom	3	1	26.6	7.9	19.0	6.9		4.0		1.7	
HY/2012/07	2019/05/29	Mid-Flood	CS(Mf)3(N)	14:13	Bottom	3	2	26.6	7.9	19.0	6.9		4.0		1.6	
HY/2012/07	2019/05/29	Mid-Flood	IS(Mf)16	14:39	Surface	1	1	26.3	8.0	19.7	6.7	6.7	3.5	6.2	3.6	4.4
HY/2012/07	2019/05/29	Mid-Flood	IS(Mf)16	14:39	Surface	1	2	26.3	8.0	19.7	6.7		3.5		4.1	
HY/2012/07	2019/05/29	Mid-Flood	IS(Mf)16	14:39	Middle	2	1									
HY/2012/07	2019/05/29	Mid-Flood	IS(Mf)16	14:39	Middle	2	2					6.7		6.2		4.4
HY/2012/07	2019/05/29	Mid-Flood	IS(Mf)16	14:39	Bottom	3	1	26.4	8.0	19.8	6.7		8.9		4.7	
HY/2012/07	2019/05/29	Mid-Flood	IS(Mf)16	14:39	Bottom	3	2	26.4	8.0	19.8	6.7		9.0		5.1	
HY/2012/07	2019/05/29	Mid-Flood	SR4a	14:30	Surface	1	1	26.5	8.0	19.8	6.6	6.6	3.4	8.3	5.7	13.1
HY/2012/07	2019/05/29	Mid-Flood	SR4a	14:30	Surface	1	2	26.5	8.0	19.8	6.6		3.4		6.0	
HY/2012/07	2019/05/29	Mid-Flood	SR4a	14:30	Middle	2	1									
HY/2012/07	2019/05/29	Mid-Flood	SR4a	14:30	Middle	2	2					6.9		8.3		13.1
HY/2012/07	2019/05/29	Mid-Flood	SR4a	14:30	Bottom	3	1	25.9	8.0	18.8	6.9		13.3		16.5	
HY/2012/07	2019/05/29	Mid-Flood	SR4a	14:30	Bottom	3	2	25.9	8.0	18.8	6.8		13.2		16.7	
HY/2012/07	2019/05/29	Mid-Flood	SR4(N)	14:27	Surface	1	1	26.2	8.0	18.3	6.6	6.6	12.4	12.1	25.0	24.4
HY/2012/07	2019/05/29	Mid-Flood	SR4(N)	14:27	Surface	1	2	26.1	8.0	18.3	6.6		12.3		25.7	
HY/2012/07	2019/05/29	Mid-Flood	SR4(N)	14:27	Middle	2	1									
HY/2012/07	2019/05/29	Mid-Flood	SR4(N)	14:27	Middle	2	2					6.6		12.1		24.4
HY/2012/07	2019/05/29	Mid-Flood	SR4(N)	14:27	Bottom	3	1	26.2	8.0	18.9	6.6		11.8		23.2	
HY/2012/07	2019/05/29	Mid-Flood	SR4(N)	14:27	Bottom	3	2	26.2	8.0	18.9	6.6		11.8		23.7	
HY/2012/07	2019/05/29	Mid-Flood	IS8	14:23	Surface	1	1	26.3	8.0	20.2	6.6	6.6	3.5	5.3	2.8	2.8
HY/2012/07	2019/05/29	Mid-Flood	IS8	14:23	Surface	1	2	26.2	8.0	20.0	6.6		3.5		3.3	
HY/2012/07	2019/05/29	Mid-Flood	IS8	14:23	Middle	2	1									
HY/2012/07	2019/05/29	Mid-Flood	IS8	14:23	Middle	2	2					6.6		5.3		2.8
HY/2012/07	2019/05/29	Mid-Flood	IS8	14:23	Bottom	3	1	26.3	8.0	20.2	6.6		7.1		2.4	
HY/2012/07	2019/05/29	Mid-Flood	IS8	14:23	Bottom	3	2	26.3	8.0	20.2	6.6		7.0		2.6	
HY/2012/07	2019/05/29	Mid-Flood	IS(Mf)9	14:15	Surface	1	1	26.3	8.0	19.9	6.6	6.6	6.1	5.3	3.9	2.9
HY/2012/07	2019/05/29	Mid-Flood	IS(Mf)9	14:15	Surface	1	2	26.4	8.0	19.9	6.6		6.1		3.7	
HY/2012/07	2019/05/29	Mid-Flood	IS(Mf)9	14:15	Middle	2	1									
HY/2012/07	2019/05/29	Mid-Flood	IS(Mf)9	14:15	Middle	2	2					6.6		5.3		2.9
HY/2012/07	2019/05/29	Mid-Flood	IS(Mf)9	14:15	Bottom	3	1	26.2	8.0	19.7	6.6		4.5		3.7	
HY/2012/07	2019/05/29	Mid-Flood	IS(Mf)9	14:15	Bottom	3	2	26.2	8.0	19.7	6.6		4.6		3.9	

Note: Indicates Exceedance of Action Level
Indicates Exceedance of Limit Level

Photos 1 and 2 - Mid-flood at SR4(N) on 29 May 2019





Locations of Water Quality Monitoring Stations

Email
message

**Environmental
Resources
Management**

To Ramboll Hong Kong, Limited (ENPO)

From ERM- Hong Kong, Limited

Ref/Project number Contract No. HY/2012/07 Tuen Mun–Chek Lap
Kok Link–Southern Connection Viaduct Section

Subject Notification of Exceedance for Impact Dolphin
Monitoring

Date 21 August 2019

2507
25/F
One Harbourfront
18 Tak Fung Street
Hung Hom
Kowloon
Hong Kong
Telephone: (852) 2271 3113
Facsimile: (852) 2723 5660
E-mail: jasmine.ng@erm.com



Dear Sir or Madam,

Please find attached the Notification of Exceedance (NOE) of the following
Log no.:

0215660_March/May2019_dolphin_STG&ANI_NEL&NWL

A total of one limit level exceedance was recorded in the quarterly impact
dolphin monitoring data between March to May 2019.

Regards,

A handwritten signature in blue ink that reads 'Jasmine'.

Dr Jasmine Ng
Environmental Team Leader

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ERM-Hong Kong, Limited

CONTRACT NO. HY/2012/07

TUEN MUN – CHEK LAP KOK LINK –
SOUTHERN CONNECTION VIADUCT SECTION

Impact Dolphin Monitoring
Notification of Exceedance

Log No.	0215660_Mar/May2019_dolphin_STG&ANI_NEL&NWL [Total No. of Exceedance = 1]	
Date	March - May 2019 (monitored) 19 August 2019 (results received by ERM)	
Monitoring Area	Northeast Lantau (NEL) and Northwest Lantau (NWL)	
Parameter(s) with Exceedance(s)	Quarterly encounter rate of dolphin sightings (STG) Quarterly encounter rate of total number of dolphins (ANI)	
Action Levels	North Lantau Social cluster	NEL: STG < 4.2 & ANI < 15.5 or NWL: STG < 6.9 & ANI < 31.3
Limit Levels		NEL: STG < 2.4 & ANI < 8.9 and NWL: STG < 3.9 & ANI < 17.9
Recorded Levels	NEL	STG = 0 & ANI = 0
	NWL	STG = 1.13 & ANI = 2.54
	One Limit Level Exceedance was recorded in the quarterly impact dolphin monitoring at NEL and NWL between March to May 2019. The exceedance was reported in the approved <i>Sixty-seventh Monthly EM&A Report</i> dated 14 June 2019.	
Statistical Analyses	<p>Further to the review of the available and relevant dolphin monitoring data in the EM&A under this Contract, statistical analyses were conducted as follows:</p> <ul style="list-style-type: none"> A two-way ANOVA with repeated measures and unequal sample size was conducted using Period (2 levels: baseline vs impact – present impact quarter, March to May 2019) and Location (2 levels: NEL and NWL) as fixed factors to examine whether there were any significant differences in the average encounter rates between the baseline and present impact monitoring quarter. By setting $\alpha = 0.05$ as the significance level in the statistical tests, significant differences in STG ($p = 0.0019$) and ANI ($p = 0.0113$) were detected between Periods. A two-way ANOVA with repeated measures and unequal sample size was conducted using Cumulative Period (2 levels: baseline vs impact – cumulative quarters, December 2012 to May 2019) and Location (2 levels: NEL and NWL) as fixed factors to examine whether there were any significant differences in the average encounter rates between the baseline and cumulative impact monitoring quarter. By setting $\alpha = 0.00001$ as the significance level in the statistical tests, significant difference in STG ($p = 0.000000$) and in ANI ($p = 0.000000$) between Cumulative Period (baseline and impact phases) and Location (NEL and NWL) were detected. <p>* Note: The commencement date under <i>Contract No. HY/2012/07</i> is 31 October 2013.</p>	
Works Undertaken (in the monitoring quarter)	In the quarter between March to May 2019, marine works was undertaken under <i>Contract No. HY/2012/07</i> include reinstatement of seafront.	

<p>Possible Reason for Action or Limit Level Exceedance(s)</p>	<p>The potential factors that may have contributed to the observed exceedance are reviewed below:</p> <ul style="list-style-type: none"> • Blocking of CWD travelling corridor: The <i>Monitoring of Marine Mammals in Hong Kong Waters (2018 – 19)</i> ⁽¹⁾ reported that dolphin usage and traveling activities to the northern side of the airport (dolphin traveling corridor) are affected by frequent high-speed ferry traffic from Sky Pier (not related to this Contract), which is likely one of the factors resulting in the decrease in dolphin abundances in North Lantau. • Marine works of the Contract: As per the findings from the EIA report (<i>Section 8.11.9</i>), the major influences on the Chinese White Dolphin (CWD) <i>Sousa chinensis</i> under this Contract are marine traffics and bored piling works. The <i>Monitoring of Marine Mammals in Hong Kong Waters (2018-2019)</i> reported that CWD decline were likely influenced by reclamation works from construction activities. Based on these possible reasons, implementation of mitigation measures are reviewed. This Contract does not have any reclamation works, thus no habitat loss was caused by reclamation. In the reporting period, the Contractor implemented the marine traffic control as per the requirements in the <i>EP-354/2009/D</i> and the updated <i>EM&A Manual</i>. Most of the vessels of this Contract also worked within the site boundary, in which the area is seldom used by CWD. Disturbance from vessels of this Contract is considered minor. All of the marine bored piling works of this Contract was completed in September 2015. Thus, underwater noise emission from this Contract had been substantially reduced. During dolphin monitoring in this quarter, no unacceptable impact on CWD due to the activities under this Contract was observed. • Impact on water quality: According to the findings in the water quality monitoring results at the impact monitoring stations between March to May 2019, there were two (2) Action Level of Suspended Solids (SS) exceedances for water quality impact monitoring in the reporting period. The exceedances were considered not related to this Contract upon further investigation and the investigation reports are presented in <i>Appendix L of the 22nd Quarterly EM&A Report (March to May 2019)</i>. <p>In view of the above, marine ecological mitigation measures were considered properly implemented, and thus no unacceptable impact on CWD or its habitat was associated with this Contract in this quarter.</p>
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(1) Hung SKY (2019). Prepared for AFCD. Available at: [https://www.afcd.gov.hk/english/conservation/con_mar/con_mar_chi/con_mar_chi_chi_chi/files/Final_Report_2018_19.pdf](https://www.afcd.gov.hk/english/conservation/con_mar/con_mar_chi/con_mar_chi_chi/files/Final_Report_2018_19.pdf)

<p>Actions Taken/ To Be Taken</p>	<p>With reference to the site inspection records in this quarter, the respective marine ecological mitigation measures have been implemented properly by the Contractor throughout the marine works period, including:</p> <ol style="list-style-type: none"> 1. 250m dolphin exclusion zone; 2. Acoustic decoupling plan; 3. Training to workers; 4. Offsite vessel routing control in accordance with Regular Marine Travel Routes Plan, including routing control within existing marine park boundaries; 5. Vessels speed limited at 5 knots and 10 knots within existing marine park boundaries and site boundary respectively; 6. Idling and mooring of working vessels within site boundary <p>The existing mitigation measures are recommended to be continuously implemented. Furthermore, it is also recommended to reduce the vessels for marine works as much as possible. The ET will monitor for future trends in exceedance(s).</p> <p>A joint team meeting was held on 11 March 2019 for discussion on CWD trend, with attendance of ENPO, Representatives of Resident Site Staff (RSS), Representatives of Environmental Teams (ETs) for Contract No. HY/2011/03, HY/2012/07, HY/2012/08 and HY/2013/04. The discussion/recommendation as presented in the meeting, which might be relevant to this Contract are summarized below. It was concluded that the HZMB works is one of the contributing factors affecting the dolphins. It was also concluded the contribution of impacts due to the HZMB works as a whole (or individual marine contracts) cannot be quantified or separate from the other stress factors. It was reminded that the ETs shall keep reviewing the implementation status of the dolphin related mitigation measures and remind the contractors to ensure the relevant measures are fully implemented. It was recommended that the marine works of HZMB projects should be completed as soon as possible to reduce the overall duration of impacts and allow the dolphins population to recover as early as possible. The participants were also reminded that the protection measures (e.g. speed limit control) for the BMP shall be implemented so as to provide a better habitat for dolphin recovery. It is noted that even though marine vessels may moor within the mooring site of BMP, commercial activities including loading / unloading / transshipment are not allowed except a permit is obtained. The HZMB works vessels were recommended to avoid the BMP. It was also recommended that the marine works footprint and vessels for the marine works should be reduced as much as possible, and vessels idling / mooring in other part of the North Lantau shall be avoided whenever possible.</p> <p>Dolphin specialists of the Projects confirmed that the CWD sighting nearby north of Sha Chau and Lung Kwu Chau Marine Park has significantly declined. The reason for the decline was likely related to the re-routing of high-speed ferry from Skypier.</p>
<p>Remarks</p>	<p>The results of impact water quality and impact dolphin monitoring, the status of implemented marine ecological mitigation measures are documented in the approved <i>Sixty-fifth to Sixty-seventh Monthly EM&A Reports</i>. Comparison on water quality between impact and baseline periods is elaborated in the <i>22nd Quarterly EM&A Report</i>.</p>