

Appendix N1 Cumulative Statistics on Exceedances

		Total No. recorded in this reporting month	Total No. recorded since project 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	31	176
	Limit	2	19
Impact Dolphin Monitoring	Action	0	11
	Limit	0	11

Appendix N2 Cumulative Statistics on Complaints, Notifications of Summons and Successful Prosecutions

Reporting Period	Cumulative Statistics		
	Complaints	Notifications of Summons	Successful Prosecutions
This Reporting Month (August 2018)	0	0	0
Total No. received since project commencement	14	0	0

Email
message

**Environmental
Resources
Management**

To Ramboll Hong Kong Limited (ENPO)

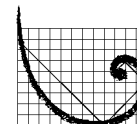
From ERM- Hong Kong, Limited

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 07 August 2018

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



ERM

Dear Sir/ Madam,

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

Action Level Exceedance

0215660_06 August 2018_ Bottom-depth DO_E_Station SR4a
0215660_06 August 2018_ Surface and Middle-depth DO_E_Station SR4(N)
0215660_06 August 2018_ Bottom-depth DO_E_Station SR4(N)

A total of three exceedances were recorded on 06 August 2018.

Regards,



Mr Jovy Tam
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.	<p><u>Limit Level Exceedance</u> 0215660_06 August 2018_ Bottom-depth DO_E_Station SR4a 0215660_06 August 2018_ Surface and Middle-depth DO_E_Station SR4(N) 0215660_06 August 2018_ Bottom-depth DO_E_Station SR4(N)</p> <p>[Total No. of Exceedance = 3]</p>	
Date	<p>06 August 2018 (Measured) 07 August 2018 (<i>In situ</i> results received by ERM) 14 August 2018 (Laboratory results received by ERM)</p>	
Monitoring Station	CS(Mf)5, SR4a, SR4, IS8, IS(Mf)16, IS(Mf)9, CS(Mf)3(N)	
Parameter(s) with Exceedance(s)	Surface and Middle-depth Dissolved Oxygen (DO), Bottom-depth DO	
Action Levels for DO	Surface and Middle-depth DO	5.0 mg/L
	Bottom-depth DO	4.7 mg/L
Limit Levels for DO	Surface and Middle-depth DO	4.2 mg/L
	Bottom-depth DO	3.6 mg/L
Measured Levels	<p><u>Action Level Exceedance</u></p> <ol style="list-style-type: none"> 1. Mid-ebb at SR4a (Bottom-depth DO = 4.6 mg/L); 2. Mid-ebb at SR4(N) (Surface and Middle-depth DO = 4.7 mg/L); 3. Mid-ebb at SR4(N) (Bottom-depth DO = 4.1 mg/L) 	
Works Undertaken (at the time of monitoring event)	Demolition of marine platform was undertaken at Viaduct E under this Contract on 06 August 2018.	
Possible Reason for Action or Limit Level Exceedance(s)	<p>The exceedances of DO are unlikely to be due to the Project, in view of the following</p> <ul style="list-style-type: none"> • All monitored parameters, except DO, 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. • Apart from SR4a and SR4(N), levels of DO at all Impact stations were in compliance with the Action and Limit Levels during both mid-flood and mid-ebb tides on the same day. • The DO patterns at SR4a and SR4(N) were similar to the control station where the bottom-depth DO levels were generally lower. DO levels were generally lower at water quality monitoring stations due to reduce in natural ability for water to hold dissolved oxygen under higher water temperature in summer months. In addition, lower bottom-depth DO levels may possibly caused by the stratification of seawater during summer when the freshwater discharged from the Pearl River tended to form a surface layer of lower salinity water, which is probably responsible for the lower Salinity recorded at the surface and middle levels compared to the higher Salinity recorded at the bottom level of the monitoring stations. The stratification of seawater in the water column is likely a contributing factor to the results of lower levels of DO at the bottom level. 	
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 6 August 2018 and locations of water quality monitoring stations are attached. Site photo record on 6 August 2018 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	2018-08-06	Mid-Ebb	CS(Mf)5	7:58	Surface	1	29.8	8.1	21.2	5.3	5.0	7.5	7.5	7.4	8.0
TMCLKL	HY/2012/07	2018-08-06	Mid-Ebb	CS(Mf)5	7:58	Surface	2	29.5	8.1	20.6	5.4		6.1		7.5	
TMCLKL	HY/2012/07	2018-08-06	Mid-Ebb	CS(Mf)5	7:58	Middle	1	29.7	8.1	22.3	4.6		8.3		7.5	
TMCLKL	HY/2012/07	2018-08-06	Mid-Ebb	CS(Mf)5	7:58	Middle	2	29.4	8.1	21.9	4.7	3.8	6.7	7.5	8.2	8.0
TMCLKL	HY/2012/07	2018-08-06	Mid-Ebb	CS(Mf)5	7:58	Bottom	1	27.3	8.1	29.6	3.7		9.0		8.2	
TMCLKL	HY/2012/07	2018-08-06	Mid-Ebb	CS(Mf)5	7:58	Bottom	2	27.0	8.0	29.2	3.8	4.4	7.6	3.0	8.9	4.9
TMCLKL	HY/2012/07	2018-08-06	Mid-Ebb	CS(Mf)3(N)	9:27	Surface	1	29.8	7.7	19.0	5.0		2.4		4.0	
TMCLKL	HY/2012/07	2018-08-06	Mid-Ebb	CS(Mf)3(N)	9:27	Surface	2	30.0	7.8	19.0	5.0		0.4		3.8	
TMCLKL	HY/2012/07	2018-08-06	Mid-Ebb	CS(Mf)3(N)	9:27	Middle	1	28.7	7.7	24.9	3.7	3.7	4.7	3.0	3.8	4.9
TMCLKL	HY/2012/07	2018-08-06	Mid-Ebb	CS(Mf)3(N)	9:27	Middle	2	28.9	7.8	24.6	3.7		2.7		4.7	
TMCLKL	HY/2012/07	2018-08-06	Mid-Ebb	CS(Mf)3(N)	9:27	Bottom	1	28.6	7.7	25.1	3.7	5.2	5.0	7.1	7.0	8.3
TMCLKL	HY/2012/07	2018-08-06	Mid-Ebb	CS(Mf)3(N)	9:27	Bottom	2	28.8	7.8	24.9	3.7		2.8		5.8	
TMCLKL	HY/2012/07	2018-08-06	Mid-Ebb	IS(Mf)16	8:30	Surface	1	30.1	8.1	21.2	5.1	5.2	6.4	7.1	8.3	8.3
TMCLKL	HY/2012/07	2018-08-06	Mid-Ebb	IS(Mf)16	8:30	Surface	2	29.7	8.1	20.9	5.3		6.8		7.8	
TMCLKL	HY/2012/07	2018-08-06	Mid-Ebb	IS(Mf)16	8:30	Middle	1									
TMCLKL	HY/2012/07	2018-08-06	Mid-Ebb	IS(Mf)16	8:30	Middle	2					4.9		7.1		8.3
TMCLKL	HY/2012/07	2018-08-06	Mid-Ebb	IS(Mf)16	8:30	Bottom	1	29.3	8.1	23.9	4.8		7.9		9.0	
TMCLKL	HY/2012/07	2018-08-06	Mid-Ebb	IS(Mf)16	8:30	Bottom	2	29.0	8.1	23.5	4.9	5.0	7.4	13.1	8.1	10.6
TMCLKL	HY/2012/07	2018-08-06	Mid-Ebb	SR4a	8:40	Surface	1	30.2	8.1	20.4	4.9		10.1		10.6	
TMCLKL	HY/2012/07	2018-08-06	Mid-Ebb	SR4a	8:40	Surface	2	29.9	8.1	20.3	5.1		9.3		10.2	
TMCLKL	HY/2012/07	2018-08-06	Mid-Ebb	SR4a	8:40	Middle	1					4.6		13.1		10.6
TMCLKL	HY/2012/07	2018-08-06	Mid-Ebb	SR4a	8:40	Middle	2									
TMCLKL	HY/2012/07	2018-08-06	Mid-Ebb	SR4a	8:40	Bottom	1	29.4	8.0	23.4	4.5	4.6	16.5	13.4	10.5	11.0
TMCLKL	HY/2012/07	2018-08-06	Mid-Ebb	SR4a	8:40	Bottom	2	29.1	8.0	23.0	4.6		16.3		11.0	
TMCLKL	HY/2012/07	2018-08-06	Mid-Ebb	SR4(N)	8:45	Surface	1	30.3	8.1	20.0	4.6		12.8		10.4	
TMCLKL	HY/2012/07	2018-08-06	Mid-Ebb	SR4(N)	8:45	Surface	2	30.0	8.1	19.6	4.7	4.7	12.2	13.4	10.8	11.0
TMCLKL	HY/2012/07	2018-08-06	Mid-Ebb	SR4(N)	8:45	Middle	1									
TMCLKL	HY/2012/07	2018-08-06	Mid-Ebb	SR4(N)	8:45	Middle	2					4.1		10.3		11.0
TMCLKL	HY/2012/07	2018-08-06	Mid-Ebb	SR4(N)	8:45	Bottom	1	29.8	7.9	22.2	4.0		14.7		10.6	
TMCLKL	HY/2012/07	2018-08-06	Mid-Ebb	SR4(N)	8:45	Bottom	2	29.5	8.0	21.9	4.1	5.6	14.0	10.3	12.1	11.0
TMCLKL	HY/2012/07	2018-08-06	Mid-Ebb	IS8	8:52	Surface	1	30.6	8.2	20.2	5.6		9.0		10.5	
TMCLKL	HY/2012/07	2018-08-06	Mid-Ebb	IS8	8:52	Surface	2	30.3	8.2	19.9	5.6		9.5		10.6	
TMCLKL	HY/2012/07	2018-08-06	Mid-Ebb	IS8	8:52	Middle	1					5.1		10.3		11.0
TMCLKL	HY/2012/07	2018-08-06	Mid-Ebb	IS8	8:52	Middle	2									
TMCLKL	HY/2012/07	2018-08-06	Mid-Ebb	IS8	8:52	Bottom	1	30.1	8.0	21.5	5.0	5.1	11.1	10.3	11.8	11.0
TMCLKL	HY/2012/07	2018-08-06	Mid-Ebb	IS8	8:52	Bottom	2	29.8	8.1	21.2	5.1		11.7		11.0	
TMCLKL	HY/2012/07	2018-08-06	Mid-Ebb	IS(Mf)9	9:01	Surface	1	30.6	8.2	19.7	6.1	6.2	6.9	6.6	8.1	9.1
TMCLKL	HY/2012/07	2018-08-06	Mid-Ebb	IS(Mf)9	9:01	Surface	2	30.4	8.2	19.4	6.3		6.5		8.7	
TMCLKL	HY/2012/07	2018-08-06	Mid-Ebb	IS(Mf)9	9:01	Middle	1									
TMCLKL	HY/2012/07	2018-08-06	Mid-Ebb	IS(Mf)9	9:01	Middle	2					6.1		6.6		9.1
TMCLKL	HY/2012/07	2018-08-06	Mid-Ebb	IS(Mf)9	9:01	Bottom	1	30.5	8.2	20.2	5.9		6.4		9.5	
TMCLKL	HY/2012/07	2018-08-06	Mid-Ebb	IS(Mf)9	9:01	Bottom	2	30.3	8.2	19.9	6.2	6.1	6.4	6.6	9.9	9.1
TMCLKL	HY/2012/07	2018-08-06	Mid-Ebb	IS(Mf)9	9:01	Bottom	2	30.3	8.2	19.9	6.2		6.4		9.9	

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	2018-08-06	Mid-Flood	CS(Mf)5	14:28	Surface	1	30.0	8.2	19.9	5.6	5.2	6.3	7.0	4.6	5.2
TMCLKL	HY/2012/07	2018-08-06	Mid-Flood	CS(Mf)5	14:28	Surface	2	30.3	8.2	20.2	5.5		6.9		5.0	
TMCLKL	HY/2012/07	2018-08-06	Mid-Flood	CS(Mf)5	14:28	Middle	1	29.2	8.1	22.3	4.9		6.6		4.8	
TMCLKL	HY/2012/07	2018-08-06	Mid-Flood	CS(Mf)5	14:28	Middle	2	29.5	8.1	22.5	4.9	5.3	6.8	7.0	4.8	5.2
TMCLKL	HY/2012/07	2018-08-06	Mid-Flood	CS(Mf)5	14:28	Bottom	1	28.5	8.1	25.5	5.3		7.6		5.3	
TMCLKL	HY/2012/07	2018-08-06	Mid-Flood	CS(Mf)5	14:28	Bottom	2	29.0	8.1	25.2	5.3	5.9	7.9	8.0	6.4	6.1
TMCLKL	HY/2012/07	2018-08-06	Mid-Flood	CS(Mf)3(N)	13:25	Surface	1	30.5	7.8	13.9	6.2		7.1		5.0	
TMCLKL	HY/2012/07	2018-08-06	Mid-Flood	CS(Mf)3(N)	13:25	Surface	2	30.3	7.8	14.0	6.2		7.1		4.2	
TMCLKL	HY/2012/07	2018-08-06	Mid-Flood	CS(Mf)3(N)	13:25	Middle	1	30.1	7.8	17.5	5.5	4.8	8.6	8.0	6.4	6.1
TMCLKL	HY/2012/07	2018-08-06	Mid-Flood	CS(Mf)3(N)	13:25	Middle	2	29.9	7.8	17.7	5.5		8.1		6.8	
TMCLKL	HY/2012/07	2018-08-06	Mid-Flood	CS(Mf)3(N)	13:25	Bottom	1	29.6	7.7	21.2	4.8	5.9	8.5	5.3	7.7	6.2
TMCLKL	HY/2012/07	2018-08-06	Mid-Flood	CS(Mf)3(N)	13:25	Bottom	2	29.4	7.8	21.3	4.8		8.7		6.6	
TMCLKL	HY/2012/07	2018-08-06	Mid-Flood	IS(Mf)16	14:03	Surface	1	30.1	8.2	19.7	5.9	5.9	5.3	5.3	5.5	6.2
TMCLKL	HY/2012/07	2018-08-06	Mid-Flood	IS(Mf)16	14:03	Surface	2	30.4	8.2	20.0	5.8		5.2		5.9	
TMCLKL	HY/2012/07	2018-08-06	Mid-Flood	IS(Mf)16	14:03	Middle	1									
TMCLKL	HY/2012/07	2018-08-06	Mid-Flood	IS(Mf)16	14:03	Middle	2					5.2		5.3		6.2
TMCLKL	HY/2012/07	2018-08-06	Mid-Flood	IS(Mf)16	14:03	Bottom	1	28.9	8.1	24.1	5.2		5.3		7.1	
TMCLKL	HY/2012/07	2018-08-06	Mid-Flood	IS(Mf)16	14:03	Bottom	2	29.2	8.1	24.2	5.1	6.2	5.3	6.6	6.4	3.8
TMCLKL	HY/2012/07	2018-08-06	Mid-Flood	SR4a	13:51	Surface	1	30.2	8.2	19.8	6.3		6.2		2.8	
TMCLKL	HY/2012/07	2018-08-06	Mid-Flood	SR4a	13:51	Surface	2	30.4	8.2	20.0	6.1		7.1		4.0	
TMCLKL	HY/2012/07	2018-08-06	Mid-Flood	SR4a	13:51	Middle	1					6.0		6.6		4.6
TMCLKL	HY/2012/07	2018-08-06	Mid-Flood	SR4a	13:51	Middle	2						6.2		7.1	
TMCLKL	HY/2012/07	2018-08-06	Mid-Flood	SR4a	13:51	Bottom	1	29.9	8.1	20.6	6.1	6.2	6.3	6.6	3.8	4.6
TMCLKL	HY/2012/07	2018-08-06	Mid-Flood	SR4a	13:51	Bottom	2	30.1	8.2	21.0	5.9		6.8		4.6	
TMCLKL	HY/2012/07	2018-08-06	Mid-Flood	SR4(N)	13:48	Surface	1	30.2	8.2	19.7	6.3		6.3		4.3	
TMCLKL	HY/2012/07	2018-08-06	Mid-Flood	SR4(N)	13:48	Surface	2	30.4	8.2	19.9	6.1	6.2	6.8	6.6	4.5	4.6
TMCLKL	HY/2012/07	2018-08-06	Mid-Flood	SR4(N)	13:48	Middle	1									
TMCLKL	HY/2012/07	2018-08-06	Mid-Flood	SR4(N)	13:48	Middle	2					6.0		6.6		4.6
TMCLKL	HY/2012/07	2018-08-06	Mid-Flood	SR4(N)	13:48	Bottom	1	29.8	8.1	20.9	6.0		6.5		4.6	
TMCLKL	HY/2012/07	2018-08-06	Mid-Flood	SR4(N)	13:48	Bottom	2	30.0	8.2	21.3	5.9	6.2	6.9	6.3	5.1	4.1
TMCLKL	HY/2012/07	2018-08-06	Mid-Flood	IS8	13:43	Surface	1	30.2	8.2	19.6	6.3		6.2		3.7	
TMCLKL	HY/2012/07	2018-08-06	Mid-Flood	IS8	13:43	Surface	2	30.4	8.2	19.9	6.1		5.8		3.6	
TMCLKL	HY/2012/07	2018-08-06	Mid-Flood	IS8	13:43	Middle	1					6.0		6.3		4.1
TMCLKL	HY/2012/07	2018-08-06	Mid-Flood	IS8	13:43	Middle	2						6.3		4.8	
TMCLKL	HY/2012/07	2018-08-06	Mid-Flood	IS8	13:43	Bottom	1	29.9	8.1	20.7	6.1	5.5	6.8	14.4	4.1	7.5
TMCLKL	HY/2012/07	2018-08-06	Mid-Flood	IS8	13:43	Bottom	2	30.1	8.2	21.0	5.9		6.0		6.8	
TMCLKL	HY/2012/07	2018-08-06	Mid-Flood	IS(Mf)9	13:35	Surface	1	30.2	8.1	20.1	5.5	5.5	13.2	14.4	6.7	7.5
TMCLKL	HY/2012/07	2018-08-06	Mid-Flood	IS(Mf)9	13:35	Surface	2	30.5	8.1	20.6	5.4		12.8		6.4	
TMCLKL	HY/2012/07	2018-08-06	Mid-Flood	IS(Mf)9	13:35	Middle	1									
TMCLKL	HY/2012/07	2018-08-06	Mid-Flood	IS(Mf)9	13:35	Middle	2					5.5		14.4		7.5
TMCLKL	HY/2012/07	2018-08-06	Mid-Flood	IS(Mf)9	13:35	Bottom	1	29.8	8.1	22.0	5.5		15.8		8.5	
TMCLKL	HY/2012/07	2018-08-06	Mid-Flood	IS(Mf)9	13:35	Bottom	2	30.1	8.0	22.4	5.4	5.5	15.8	8.4		

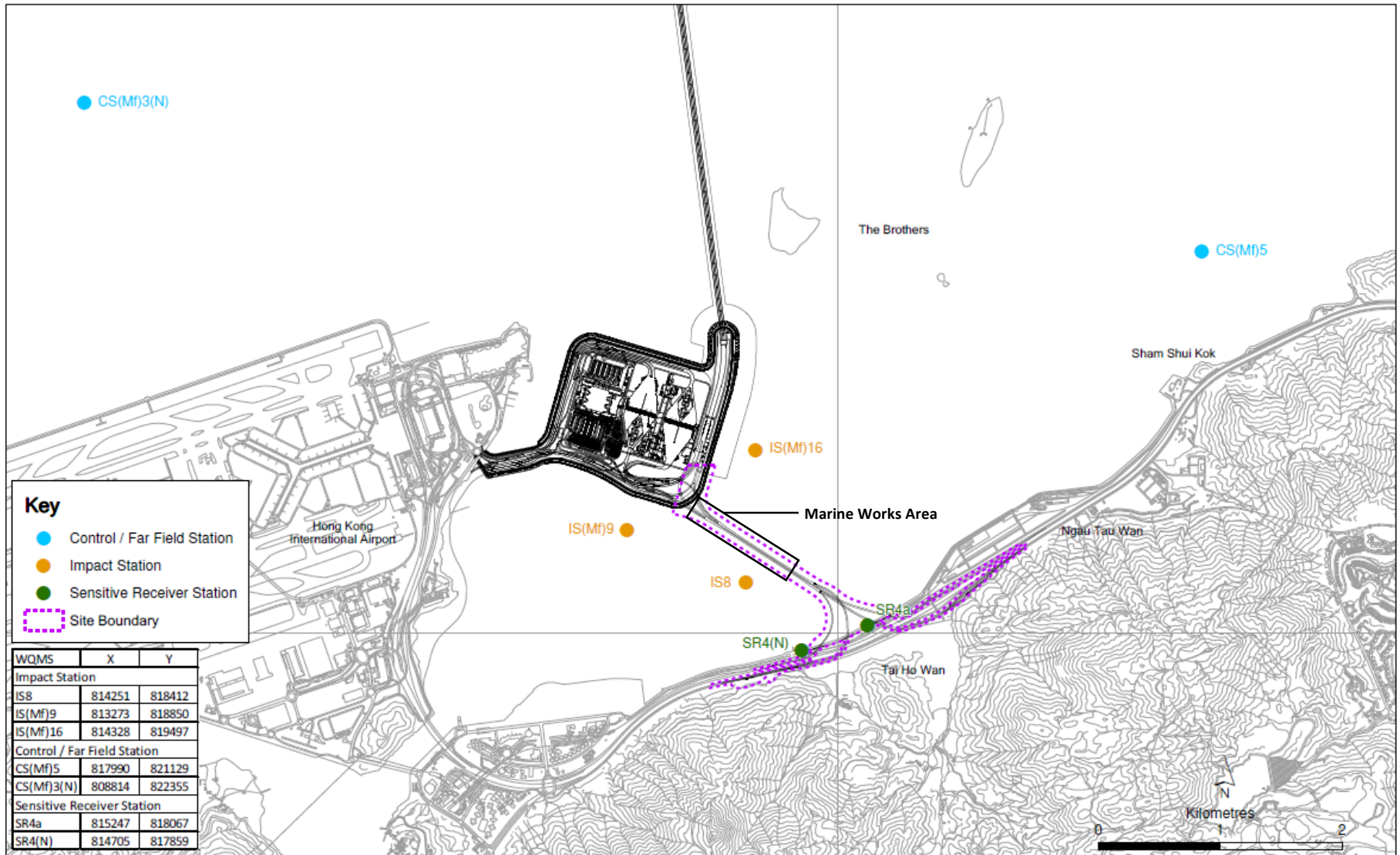
Note: Indicates Exceedance of Action Level
Indicates Exceedance of Limit Level

Photo 1 - Mid-Ebb at SR4(a) on 6 August 2018



Photo 2 - Mid-Ebb at SR4(N) on 6 August 2018





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

File: T:\GIS\CONTRACT\0215660\Mxd\0215660_WQMS.mxd
Date: 20/3/2018

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 13 August 2018

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



ERM

Dear Sir/ Madam,

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

Action Level Exceedance

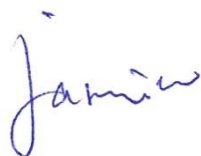
0215660_08 August 2018_ Surface and Middle-depth DO_E_Station IS(Mf)16
0215660_08 August 2018_ Bottom-depth DO_E_Station IS(Mf)16
0215660_08 August 2018_ Surface and Middle-depth DO_E_Station SR4a
0215660_08 August 2018_ Bottom-depth DO_E_Station SR4(N)
0215660_08 August 2018_ Bottom-depth DO_E_Station IS8
0215660_08 August 2018_ Bottom-depth DO_E_Station IS(Mf)9
0215660_08 August 2018_ Bottom-depth DO_F_Station SR4a

Limit Level Exceedance

0215660_08 August 2018_ Bottom-depth DO_E_Station SR4a
0215660_08 August 2018_ Surface and Middle-depth DO_E_Station IS8

A total of nine exceedances were recorded on 08 August 2018.

Regards,



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.	<p style="text-align: center;"><u>Action Level Exceedance</u></p> <p style="text-align: center;">0215660_08 August 2018_Surface and Middle-depth DO_E_Station IS(Mf)16 0215660_08 August 2018_Bottom-depth DO_E_Station IS(Mf)16 0215660_08 August 2018_Surface and Middle-depth DO_E_Station SR4a 0215660_08 August 2018_Bottom-depth DO_E_Station SR4(N) 0215660_08 August 2018_Bottom-depth DO_E_Station IS8 0215660_08 August 2018_Bottom-depth DO_E_Station IS(Mf)9 0215660_08 August 2018_Bottom-depth DO_F_Station SR4a</p> <p style="text-align: center;"><u>Limit Level Exceedance</u></p> <p style="text-align: center;">0215660_08 August 2018_Bottom-depth DO_E_Station SR4a 0215660_08 August 2018_Surface and Middle-depth DO_E_Station IS8</p> <p style="text-align: center;">[Total No. of Exceedance = 9]</p>	
Date	08 August 2018 (Measured) 09 August 2018 (<i>In situ</i> results received by ERM) 15 August 2018 (Laboratory results received by ERM)	
Monitoring Station	CS(Mf)5, SR4a, SR4, IS8, IS(Mf)16, IS(Mf)9, CS(Mf)3(N)	
Parameter(s) with Exceedance(s)	Surface and Middle-depth Dissolved Oxygen (DO), Bottom-depth DO	
Action Levels for DO	Surface and Middle-depth DO	5.0 mg/L
	Bottom-depth DO	4.7 mg/L
Limit Levels for DO	Surface and Middle-depth DO	4.2 mg/L
	Bottom-depth DO	3.6 mg/L
Measured Levels	<p><u>Action Level Exceedance</u></p> <ol style="list-style-type: none"> 1. Mid-ebb at IS(Mf)16 (Surface and Middle-depth DO = 4.5 mg/L); 2. Mid-ebb at IS(Mf)16 (Bottom-depth DO = 4.2 mg/L); 3. Mid-ebb at SR4a (Surface and Middle-depth DO = 4.4 mg/L); 4. Mid-ebb at SR4(N) (Bottom-depth DO = 3.9 mg/L); 5. Mid-ebb at IS8 (Bottom-depth DO = 3.6 mg/L); 6. Mid-ebb at IS(Mf)9 (Bottom-depth DO = 4.2 mg/L); 7. Mid-flood at SR4a (Bottom-depth DO = 4.2 mg/L); <p><u>Limit Level Exceedance</u></p> <ol style="list-style-type: none"> 8. Mid-ebb at SR4a (Bottom-depth DO = 3.4 mg/L); 9. Mid-ebb at IS8 (Surface and Middle-depth DO = 3.8 mg/L) 	
Works Undertaken (at the time of monitoring event)	Demolition of marine platform was undertaken at Viaduct E under this Contract on 08 August 2018.	

Possible Reason for Action or Limit Level Exceedance(s)	<p>The exceedances of DO are unlikely to be due to the Project, in view of the following</p> <ul style="list-style-type: none"> • All monitored parameters, except DO, 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. • The DO patterns at Sensitive Receiver Stations and Impact Stations were similar to the control station where surface and middle-depth and bottom-depth DO levels were low. • DO levels were generally lower at water quality monitoring stations due to two possible reasons of natural variation: <ol style="list-style-type: none"> 1. Natural ability for water to hold dissolved oxygen is reduced due to higher water body temperature in summer months. 2. The higher Salinity recorded at the bottom level of the water quality monitoring stations was possibly caused by the stratification of seawater during summer when the freshwater discharged from the Pearl River tended to form a surface layer of lower salinity water, which is probably responsible for the lower Salinity recorded at the surface and middle levels compared to the higher Salinity recorded at the bottom level of the monitoring stations. The stratification of seawater in the water column is likely a contributing factor to the results of lower levels of DO at the bottom level as the DO exceedances recorded at the bottom level showed higher levels of Salinity than the middle and surface levels.
Actions Taken / To Be Taken	<p>No immediate action is considered necessary. The ET will monitor for future trends in exceedances.</p>
Remarks	<p>The monitoring results on 8 August 2018 and locations of water quality monitoring stations are attached. Site photo record on 8 August 2018 is attached.</p>

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	2018-08-08	Mid-Ebb	CS(Mf)5	9:41	Surface	1	29.0	7.9	22.6	5.4	4.9	1.7	5.4	1.7	3.6
TMCLKL	HY/2012/07	2018-08-08	Mid-Ebb	CS(Mf)5	9:41	Surface	2	29.2	7.9	22.4	5.4		4.2		1.7	
TMCLKL	HY/2012/07	2018-08-08	Mid-Ebb	CS(Mf)5	9:41	Middle	1	27.9	7.9	26.2	4.5		3.8		3.9	
TMCLKL	HY/2012/07	2018-08-08	Mid-Ebb	CS(Mf)5	9:41	Middle	2	28.0	7.9	26.3	4.4		3.4		4.1	
TMCLKL	HY/2012/07	2018-08-08	Mid-Ebb	CS(Mf)5	9:41	Bottom	1	26.4	7.9	30.5	3.8	3.8	9.3	5.4	5.4	
TMCLKL	HY/2012/07	2018-08-08	Mid-Ebb	CS(Mf)5	9:41	Bottom	2	26.6	7.8	30.3	3.8		9.7		4.9	
TMCLKL	HY/2012/07	2018-08-08	Mid-Ebb	CS(Mf)3(N)	11:21	Surface	1	29.9	8.1	21.0	5.3	4.3	6.8	11.3	2.5	3.0
TMCLKL	HY/2012/07	2018-08-08	Mid-Ebb	CS(Mf)3(N)	11:21	Surface	2	29.6	8.1	20.9	5.2		6.1		1.9	
TMCLKL	HY/2012/07	2018-08-08	Mid-Ebb	CS(Mf)3(N)	11:21	Middle	1	29.0	8.0	25.9	3.4		12.5		2.8	
TMCLKL	HY/2012/07	2018-08-08	Mid-Ebb	CS(Mf)3(N)	11:21	Middle	2	28.7	8.0	25.8	3.4		12.9		3.5	
TMCLKL	HY/2012/07	2018-08-08	Mid-Ebb	CS(Mf)3(N)	11:21	Bottom	1	28.8	8.0	26.7	3.3	3.2	15.0	4.1	3.0	
TMCLKL	HY/2012/07	2018-08-08	Mid-Ebb	CS(Mf)3(N)	11:21	Bottom	2	28.6	8.0	26.6	3.0		14.7		4.1	
TMCLKL	HY/2012/07	2018-08-08	Mid-Ebb	IS(Mf)16	10:11	Surface	1	29.1	7.9	23.6	4.5	4.5	4.7	4.5	3.8	5.2
TMCLKL	HY/2012/07	2018-08-08	Mid-Ebb	IS(Mf)16	10:11	Surface	2	29.4	7.9	23.3	4.5		4.7		4.6	
TMCLKL	HY/2012/07	2018-08-08	Mid-Ebb	IS(Mf)16	10:11	Middle	1									
TMCLKL	HY/2012/07	2018-08-08	Mid-Ebb	IS(Mf)16	10:11	Middle	2									
TMCLKL	HY/2012/07	2018-08-08	Mid-Ebb	IS(Mf)16	10:11	Bottom	1	27.8	7.9	27.5	4.2	4.2	4.2	5.9	6.6	
TMCLKL	HY/2012/07	2018-08-08	Mid-Ebb	IS(Mf)16	10:11	Bottom	2	28.1	7.9	27.1	4.2		4.2		5.9	
TMCLKL	HY/2012/07	2018-08-08	Mid-Ebb	SR4a	10:21	Surface	1	29.0	7.9	22.8	4.3	4.4	9.6	11.7	3.6	3.5
TMCLKL	HY/2012/07	2018-08-08	Mid-Ebb	SR4a	10:21	Surface	2	29.1	7.8	22.5	4.4		9.9		2.5	
TMCLKL	HY/2012/07	2018-08-08	Mid-Ebb	SR4a	10:21	Middle	1									
TMCLKL	HY/2012/07	2018-08-08	Mid-Ebb	SR4a	10:21	Middle	2									
TMCLKL	HY/2012/07	2018-08-08	Mid-Ebb	SR4a	10:21	Bottom	1	28.3	7.9	25.4	3.3	3.4	13.6	4.1	3.8	
TMCLKL	HY/2012/07	2018-08-08	Mid-Ebb	SR4a	10:21	Bottom	2	28.6	7.8	25.0	3.5		13.6		4.1	
TMCLKL	HY/2012/07	2018-08-08	Mid-Ebb	SR4(N)	10:30	Surface	1	29.8	7.9	21.8	5.5	5.6	6.1	8.8	5.0	4.9
TMCLKL	HY/2012/07	2018-08-08	Mid-Ebb	SR4(N)	10:30	Surface	2	30.0	7.9	21.6	5.6		6.7		4.3	
TMCLKL	HY/2012/07	2018-08-08	Mid-Ebb	SR4(N)	10:30	Middle	1									
TMCLKL	HY/2012/07	2018-08-08	Mid-Ebb	SR4(N)	10:30	Middle	2									
TMCLKL	HY/2012/07	2018-08-08	Mid-Ebb	SR4(N)	10:30	Bottom	1	28.6	7.9	24.6	3.9	3.9	11.1	5.3	5.0	
TMCLKL	HY/2012/07	2018-08-08	Mid-Ebb	SR4(N)	10:30	Bottom	2	28.9	7.8	24.3	3.9		11.4		5.3	
TMCLKL	HY/2012/07	2018-08-08	Mid-Ebb	IS8	10:37	Surface	1	29.4	7.9	23.6	3.8	3.8	5.2	6.1	3.8	4.3
TMCLKL	HY/2012/07	2018-08-08	Mid-Ebb	IS8	10:37	Surface	2	29.6	7.8	23.3	3.7		5.6		4.6	
TMCLKL	HY/2012/07	2018-08-08	Mid-Ebb	IS8	10:37	Middle	1									
TMCLKL	HY/2012/07	2018-08-08	Mid-Ebb	IS8	10:37	Middle	2									
TMCLKL	HY/2012/07	2018-08-08	Mid-Ebb	IS8	10:37	Bottom	1	29.0	7.9	24.4	3.6	3.6	6.6	4.6	4.2	
TMCLKL	HY/2012/07	2018-08-08	Mid-Ebb	IS8	10:37	Bottom	2	29.3	7.8	24.2	3.6		6.9		4.6	
TMCLKL	HY/2012/07	2018-08-08	Mid-Ebb	IS(Mf)9	10:47	Surface	1	29.7	7.9	21.3	6.0	6.1	3.7	4.8	2.5	2.6
TMCLKL	HY/2012/07	2018-08-08	Mid-Ebb	IS(Mf)9	10:47	Surface	2	29.9	8.0	21.0	6.1		0.9		1.8	
TMCLKL	HY/2012/07	2018-08-08	Mid-Ebb	IS(Mf)9	10:47	Middle	1									
TMCLKL	HY/2012/07	2018-08-08	Mid-Ebb	IS(Mf)9	10:47	Middle	2									
TMCLKL	HY/2012/07	2018-08-08	Mid-Ebb	IS(Mf)9	10:47	Bottom	1	29.5	7.9	22.8	4.1	4.2	7.2	3.0	3.0	
TMCLKL	HY/2012/07	2018-08-08	Mid-Ebb	IS(Mf)9	10:47	Bottom	2	29.8	7.8	22.5	4.2		7.2		3.2	

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	2018-08-08	Mid-Flood	CS(Mf)5	17:26	Surface	1	29.0	7.9	24.8	5.4	4.5	7.8	11.1	4.2	4.3
TMCLKL	HY/2012/07	2018-08-08	Mid-Flood	CS(Mf)5	17:26	Surface	2	28.7	7.8	25.1	5.4		7.8		3.9	
TMCLKL	HY/2012/07	2018-08-08	Mid-Flood	CS(Mf)5	17:26	Middle	1	27.1	7.8	29.0	3.6		9.3		4.6	
TMCLKL	HY/2012/07	2018-08-08	Mid-Flood	CS(Mf)5	17:26	Middle	2	26.9	7.8	29.3	3.6		9.9		3.8	
TMCLKL	HY/2012/07	2018-08-08	Mid-Flood	CS(Mf)5	17:26	Bottom	1	26.7	7.8	29.8	3.3	3.3	15.8		4.8	
TMCLKL	HY/2012/07	2018-08-08	Mid-Flood	CS(Mf)5	17:26	Bottom	2	26.5	7.8	30.1	3.3		15.7		4.3	
TMCLKL	HY/2012/07	2018-08-08	Mid-Flood	CS(Mf)3(N)	16:05	Surface	1	31.1	8.1	16.6	6.4	5.8	8.9	10.0	4.4	5.1
TMCLKL	HY/2012/07	2018-08-08	Mid-Flood	CS(Mf)3(N)	16:05	Surface	2	30.8	8.1	16.3	6.5		8.2		5.0	
TMCLKL	HY/2012/07	2018-08-08	Mid-Flood	CS(Mf)3(N)	16:05	Middle	1	30.2	7.9	20.0	5.0		10.5		4.5	
TMCLKL	HY/2012/07	2018-08-08	Mid-Flood	CS(Mf)3(N)	16:05	Middle	2	29.9	8.0	19.5	5.1		10.0		5.3	
TMCLKL	HY/2012/07	2018-08-08	Mid-Flood	CS(Mf)3(N)	16:05	Bottom	1	29.8	7.9	21.6	4.6	4.7	11.2		5.4	
TMCLKL	HY/2012/07	2018-08-08	Mid-Flood	CS(Mf)3(N)	16:05	Bottom	2	29.4	8.0	21.1	4.7		11.3		5.8	
TMCLKL	HY/2012/07	2018-08-08	Mid-Flood	IS(Mf)16	16:57	Surface	1	29.8	8.0	22.9	6.6	6.6	6.5	10.0	3.8	4.5
TMCLKL	HY/2012/07	2018-08-08	Mid-Flood	IS(Mf)16	16:57	Surface	2	29.6	7.8	23.1	6.6		6.0		3.3	
TMCLKL	HY/2012/07	2018-08-08	Mid-Flood	IS(Mf)16	16:57	Middle	1									
TMCLKL	HY/2012/07	2018-08-08	Mid-Flood	IS(Mf)16	16:57	Middle	2									
TMCLKL	HY/2012/07	2018-08-08	Mid-Flood	IS(Mf)16	16:57	Bottom	1	29.0	7.9	24.5	5.1	5.1	13.5		5.7	
TMCLKL	HY/2012/07	2018-08-08	Mid-Flood	IS(Mf)16	16:57	Bottom	2	28.8	7.8	24.7	5.1		13.8		5.1	
TMCLKL	HY/2012/07	2018-08-08	Mid-Flood	SR4a	16:46	Surface	1	29.5	8.0	23.7	5.3	5.3	9.1	11.2	11.0	13.9
TMCLKL	HY/2012/07	2018-08-08	Mid-Flood	SR4a	16:46	Surface	2	29.3	7.8	23.9	5.3		9.5		10.5	
TMCLKL	HY/2012/07	2018-08-08	Mid-Flood	SR4a	16:46	Middle	1									
TMCLKL	HY/2012/07	2018-08-08	Mid-Flood	SR4a	16:46	Middle	2									
TMCLKL	HY/2012/07	2018-08-08	Mid-Flood	SR4a	16:46	Bottom	1	28.9	7.8	24.7	4.2	4.2	13.2		17.3	
TMCLKL	HY/2012/07	2018-08-08	Mid-Flood	SR4a	16:46	Bottom	2	28.6	7.8	24.9	4.2	13.0	16.7			
TMCLKL	HY/2012/07	2018-08-08	Mid-Flood	SR4(N)	16:42	Surface	1	29.4	7.9	23.5	5.3	5.3	11.4	11.6	16.6	17.5
TMCLKL	HY/2012/07	2018-08-08	Mid-Flood	SR4(N)	16:42	Surface	2	29.2	7.8	23.7	5.3		12.0		16.7	
TMCLKL	HY/2012/07	2018-08-08	Mid-Flood	SR4(N)	16:42	Middle	1									
TMCLKL	HY/2012/07	2018-08-08	Mid-Flood	SR4(N)	16:42	Middle	2									
TMCLKL	HY/2012/07	2018-08-08	Mid-Flood	SR4(N)	16:42	Bottom	1	29.4	7.9	23.5	5.3	5.3	11.3		18.5	
TMCLKL	HY/2012/07	2018-08-08	Mid-Flood	SR4(N)	16:42	Bottom	2	29.2	7.8	23.7	5.3		11.8		18.0	
TMCLKL	HY/2012/07	2018-08-08	Mid-Flood	IS8	16:35	Surface	1	30.0	8.0	22.9	6.6	6.6	16.1	16.5	18.3	18.6
TMCLKL	HY/2012/07	2018-08-08	Mid-Flood	IS8	16:35	Surface	2	29.8	7.9	23.2	6.6		16.0		17.3	
TMCLKL	HY/2012/07	2018-08-08	Mid-Flood	IS8	16:35	Middle	1									
TMCLKL	HY/2012/07	2018-08-08	Mid-Flood	IS8	16:35	Middle	2									
TMCLKL	HY/2012/07	2018-08-08	Mid-Flood	IS8	16:35	Bottom	1	30.0	8.0	23.0	6.4	6.4	17.0		19.9	
TMCLKL	HY/2012/07	2018-08-08	Mid-Flood	IS8	16:35	Bottom	2	29.7	7.9	23.2	6.4		16.8		18.7	
TMCLKL	HY/2012/07	2018-08-08	Mid-Flood	IS(Mf)9	16:26	Surface	1					5.7		11.5		6.5
TMCLKL	HY/2012/07	2018-08-08	Mid-Flood	IS(Mf)9	16:26	Surface	2									
TMCLKL	HY/2012/07	2018-08-08	Mid-Flood	IS(Mf)9	16:26	Middle	1	29.6	7.9	23.3	5.7		11.4		6.2	
TMCLKL	HY/2012/07	2018-08-08	Mid-Flood	IS(Mf)9	16:26	Middle	2	29.4	7.8	23.6	5.7		11.6		6.8	
TMCLKL	HY/2012/07	2018-08-08	Mid-Flood	IS(Mf)9	16:26	Bottom	1									
TMCLKL	HY/2012/07	2018-08-08	Mid-Flood	IS(Mf)9	16:26	Bottom	2									

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

Photo 1 - Mid-Ebb at IS(Mf)16 on 8 August 2018

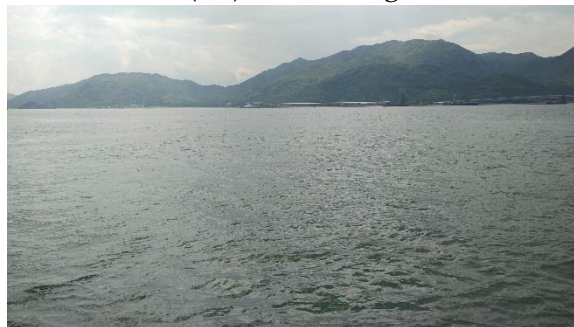


Photo 2 - Mid-Ebb at SR4a on 8 August 2018



Photo 3 - Mid-Ebb at SR4(N) on 8 August 2018



Photo 4 - Mid-Ebb at IS8 on 8 August 2018

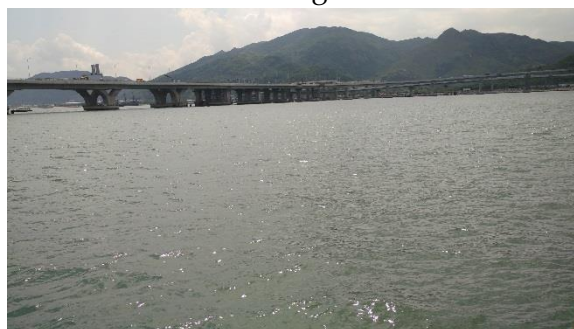
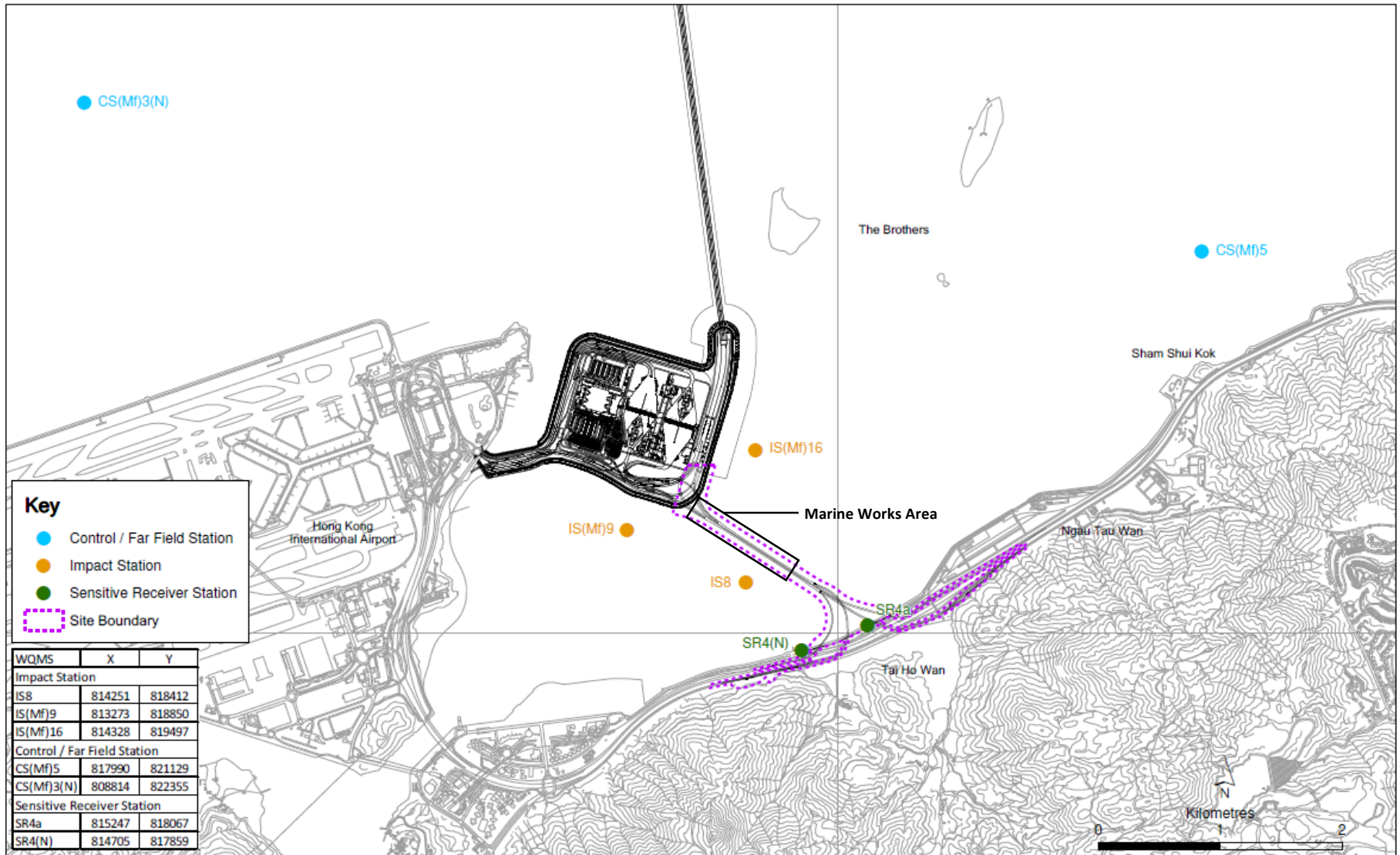


Photo 5 - Mid-Ebb at IS(Mf)9 on 8 August 2018



Photo 6 - Mid-Flood at SR4a on 8 August 2018





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

File: T:\GIS\CONTRACT\0215660\Mxd\0215660_WQMS.mxd
Date: 20/3/2018

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 13 August 2018

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



ERM

Dear Sir/ Madam,

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

Action Level Exceedance

0215660_10 August 2018_ Surface and Middle-depth DO_E_Station IS(Mf)16

0215660_10 August 2018_ Bottom-depth DO_E_Station IS(Mf)16

A total of two exceedances were recorded on 10 August 2018.

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

CONFIDENTIALITY NOTICE

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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.	<p style="text-align: center;"><u>Action Level Exceedance</u> 0215660_10 August 2018_Surface and Middle-depth DO_E_Station IS(Mf)16 0215660_10 August 2018_Bottom-depth DO_E_Station IS(Mf)16</p> <p style="text-align: center;">[Total No. of Exceedance = 2]</p>	
Date	<p style="text-align: center;">10 August 2018 (Measured) 11 August 2018 (<i>In situ</i> results received by ERM) 17 August 2018 (Laboratory results received by ERM)</p>	
Monitoring Station	<p style="text-align: center;">CS(Mf)5, SR4a, SR4, IS8, IS(Mf)16, IS(Mf)9, CS(Mf)3(N)</p>	
Parameter(s) with Exceedance(s)	<p style="text-align: center;">Surface and Middle-depth Dissolved Oxygen (DO), Bottom-depth DO</p>	
Action Levels for DO	Surface and Middle-depth DO	5.0 mg/L
	Bottom-depth DO	4.7 mg/L
Limit Levels for DO	Surface and Middle-depth DO	4.2 mg/L
	Bottom-depth DO	3.6 mg/L
Measured Levels	<p><u>Action Level Exceedance</u> 1. Mid-ebb at IS(Mf)16 (Surface and Middle-depth DO = 4.9 mg/L); 2. Mid-ebb at IS(Mf)16 (Bottom-depth DO = 4.0 mg/L)</p>	
Works Undertaken (at the time of monitoring event)	<p>Demolition of marine platform was undertaken at Viaduct E under this Contract on 10 August 2018.</p>	
Possible Reason for Action or Limit Level Exceedance(s)	<p>The exceedances of DO are unlikely to be due to the Project, in view of the following</p> <ul style="list-style-type: none"> • All monitored parameters, except DO, 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. • Apart from IS(Mf)16, levels of DO at all Impact stations were in compliance with the Action and Limit Levels during both mid-flood and mid-ebb tides on the same day. • The DO patterns at IS(Mf)16 were similar to the control station where the bottom-depth DO levels were generally lower. DO levels were lower at IS(Mf)16 due to high Salinity recorded at the bottom level which was possibly caused by the stratification of seawater during summer when the freshwater discharged from the Pearl River tended to form a surface layer of lower salinity water, which is probably responsible for the lower Salinity recorded at the surface and middle levels compared to the higher Salinity recorded at the bottom level of the monitoring stations. The stratification of seawater in the water column is likely a contributing factor to the results of lower levels of DO at the bottom level as the DO exceedances recorded at the bottom level showed higher levels of Salinity than the middle and surface levels. 	
Actions Taken / To Be Taken	<p>No immediate action is considered necessary. The ET will monitor for future trends in exceedances.</p>	
Remarks	<p>The monitoring results on 10 August 2018 and locations of water quality monitoring stations are attached. Site photo record on 10 August 2018 is attached.</p>	

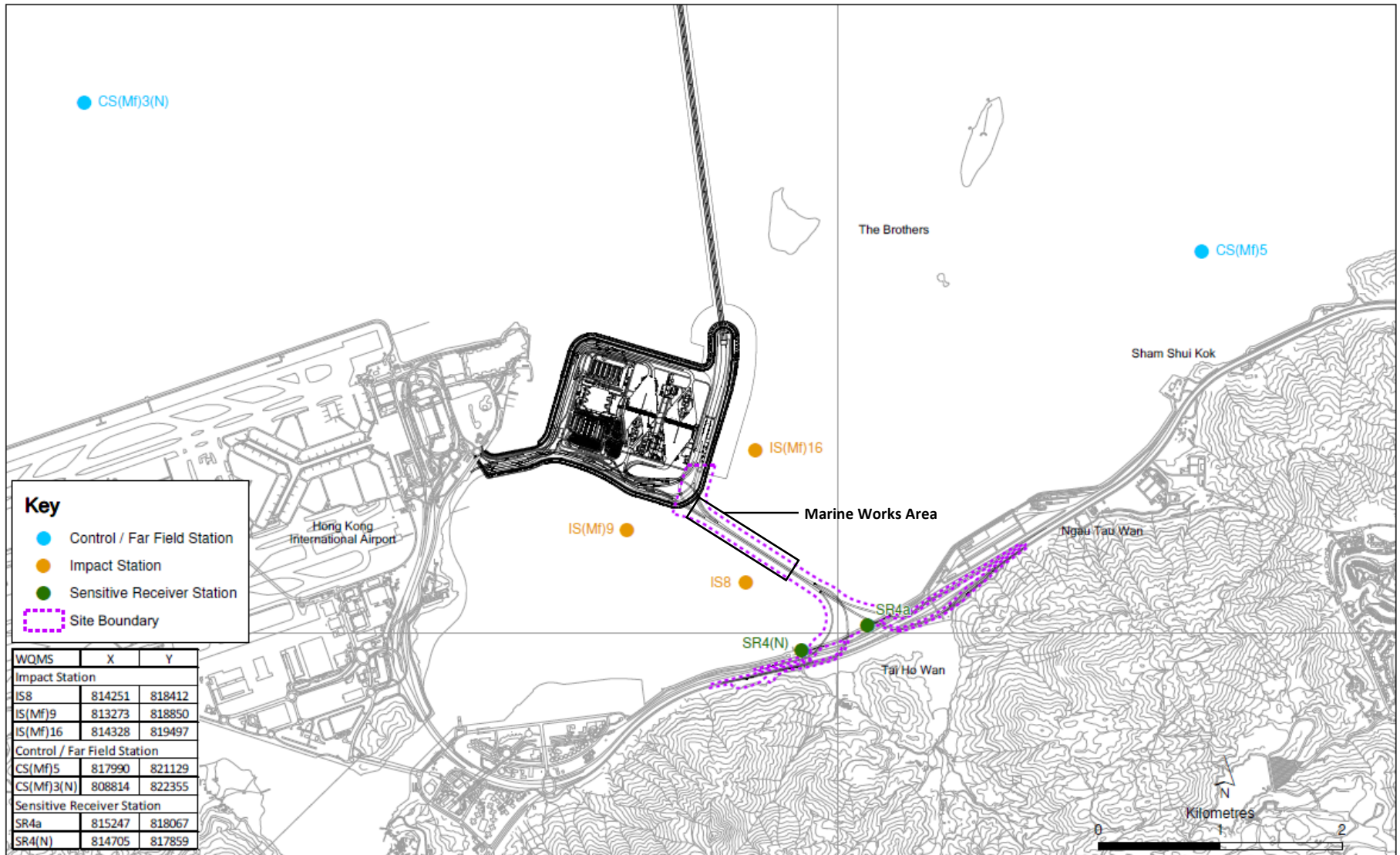
Project	Works	Date (yyyy-mm-dd)	Tide	Station	Start Time	Level	Replicate	Temperature (°C)	pH	Salinity (ppt)	DO (mg/L)	Average DO (mg/L)	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS
TMCLKL	HY/2012/07	2018-08-10	Mid-Ebb	CS(Mf)5	11:12	Surface	1	28.4	7.9	25.8	5.1	4.8	5.2	8.1	7.3	8.1
TMCLKL	HY/2012/07	2018-08-10	Mid-Ebb	CS(Mf)5	11:12	Surface	2	28.6	7.9	25.6	5.1		5.5		6.8	
TMCLKL	HY/2012/07	2018-08-10	Mid-Ebb	CS(Mf)5	11:12	Middle	1	28.0	7.9	26.9	4.4		7.9		7.8	
TMCLKL	HY/2012/07	2018-08-10	Mid-Ebb	CS(Mf)5	11:12	Middle	2	28.2	7.9	26.7	4.4	4.3	8.2	8.1	8.7	8.1
TMCLKL	HY/2012/07	2018-08-10	Mid-Ebb	CS(Mf)5	11:12	Bottom	1	27.8	7.9	27.2	4.3		10.6		8.8	
TMCLKL	HY/2012/07	2018-08-10	Mid-Ebb	CS(Mf)5	11:12	Bottom	2	28.1	7.9	27.0	4.3	5.2	11.2	14.2	9.3	4.7
TMCLKL	HY/2012/07	2018-08-10	Mid-Ebb	CS(Mf)3(N)	12:33	Surface	1	29.1	8.1	23.3	5.3		8.1		3.6	
TMCLKL	HY/2012/07	2018-08-10	Mid-Ebb	CS(Mf)3(N)	12:33	Surface	2	29.1	8.1	23.3	5.4		7.6		4.2	
TMCLKL	HY/2012/07	2018-08-10	Mid-Ebb	CS(Mf)3(N)	12:33	Middle	1	29.1	8.1	23.6	5.0	4.9	15.5	7.4	5.2	8.0
TMCLKL	HY/2012/07	2018-08-10	Mid-Ebb	CS(Mf)3(N)	12:33	Middle	2	29.0	8.1	23.7	5.0		13.2		4.7	
TMCLKL	HY/2012/07	2018-08-10	Mid-Ebb	CS(Mf)3(N)	12:33	Bottom	1	28.9	8.0	24.3	4.9	4.9	20.2	7.4	4.6	8.0
TMCLKL	HY/2012/07	2018-08-10	Mid-Ebb	CS(Mf)3(N)	12:33	Bottom	2	28.9	8.0	24.3	4.8		20.3		5.8	
TMCLKL	HY/2012/07	2018-08-10	Mid-Ebb	IS(Mf)16	11:45	Surface	1	28.4	7.9	26.0	4.9	4.9	8.6	7.4	6.7	8.0
TMCLKL	HY/2012/07	2018-08-10	Mid-Ebb	IS(Mf)16	11:45	Surface	2	28.7	7.9	25.8	4.9		8.2		7.2	
TMCLKL	HY/2012/07	2018-08-10	Mid-Ebb	IS(Mf)16	11:45	Middle	1									
TMCLKL	HY/2012/07	2018-08-10	Mid-Ebb	IS(Mf)16	11:45	Middle	2					4.0		7.4		8.0
TMCLKL	HY/2012/07	2018-08-10	Mid-Ebb	IS(Mf)16	11:45	Bottom	1	27.7	7.9	27.7	4.0		6.6		8.6	
TMCLKL	HY/2012/07	2018-08-10	Mid-Ebb	IS(Mf)16	11:45	Bottom	2	27.9	7.9	27.5	4.0	5.2	6.2	6.5	9.3	7.7
TMCLKL	HY/2012/07	2018-08-10	Mid-Ebb	SR4a	11:53	Surface	1	28.8	7.9	25.0	5.2		6.2		7.0	
TMCLKL	HY/2012/07	2018-08-10	Mid-Ebb	SR4a	11:53	Surface	2	29.1	7.9	24.8	5.2		5.7		7.3	
TMCLKL	HY/2012/07	2018-08-10	Mid-Ebb	SR4a	11:53	Middle	1					5.2		6.5		7.7
TMCLKL	HY/2012/07	2018-08-10	Mid-Ebb	SR4a	11:53	Middle	2									
TMCLKL	HY/2012/07	2018-08-10	Mid-Ebb	SR4a	11:53	Bottom	1	28.8	7.9	25.1	5.2	5.2	6.7	6.5	8.7	7.7
TMCLKL	HY/2012/07	2018-08-10	Mid-Ebb	SR4a	11:53	Bottom	2	29.0	7.9	24.9	5.2		7.2		7.6	
TMCLKL	HY/2012/07	2018-08-10	Mid-Ebb	SR4(N)	12:01	Surface	1	29.2	7.9	24.8	5.6	5.6	9.0	10.6	10.0	11.2
TMCLKL	HY/2012/07	2018-08-10	Mid-Ebb	SR4(N)	12:01	Surface	2	29.4	7.9	24.6	5.6		9.5		10.8	
TMCLKL	HY/2012/07	2018-08-10	Mid-Ebb	SR4(N)	12:01	Middle	1									
TMCLKL	HY/2012/07	2018-08-10	Mid-Ebb	SR4(N)	12:01	Middle	2					5.6		10.6		11.2
TMCLKL	HY/2012/07	2018-08-10	Mid-Ebb	SR4(N)	12:01	Bottom	1	29.0	7.9	25.1	5.3		12.2		11.5	
TMCLKL	HY/2012/07	2018-08-10	Mid-Ebb	SR4(N)	12:01	Bottom	2	29.3	7.9	24.9	5.3	5.3	11.6	10.6	12.6	11.2
TMCLKL	HY/2012/07	2018-08-10	Mid-Ebb	IS8	12:07	Surface	1	29.1	7.9	25.1	5.6		7.4		10.2	
TMCLKL	HY/2012/07	2018-08-10	Mid-Ebb	IS8	12:07	Surface	2	29.3	7.9	24.9	5.6	5.6	7.5	8.7	9.4	14.4
TMCLKL	HY/2012/07	2018-08-10	Mid-Ebb	IS8	12:07	Surface	1									
TMCLKL	HY/2012/07	2018-08-10	Mid-Ebb	IS8	12:07	Middle	1									
TMCLKL	HY/2012/07	2018-08-10	Mid-Ebb	IS8	12:07	Middle	2					5.5		8.7		14.4
TMCLKL	HY/2012/07	2018-08-10	Mid-Ebb	IS8	12:07	Bottom	1	29.0	7.9	25.2	5.5		10.2		19.5	
TMCLKL	HY/2012/07	2018-08-10	Mid-Ebb	IS8	12:07	Bottom	2	29.3	7.9	24.9	5.5	5.5	9.7	8.7	18.4	14.4
TMCLKL	HY/2012/07	2018-08-10	Mid-Ebb	IS(Mf)9	12:15	Surface	1	29.0	7.9	25.2	5.6		5.0		9.5	
TMCLKL	HY/2012/07	2018-08-10	Mid-Ebb	IS(Mf)9	12:15	Surface	2	29.2	7.9	24.9	5.6	5.6	4.4	5.4	9.1	9.7
TMCLKL	HY/2012/07	2018-08-10	Mid-Ebb	IS(Mf)9	12:15	Surface	1									
TMCLKL	HY/2012/07	2018-08-10	Mid-Ebb	IS(Mf)9	12:15	Middle	1									
TMCLKL	HY/2012/07	2018-08-10	Mid-Ebb	IS(Mf)9	12:15	Middle	2					5.6		5.4		9.7
TMCLKL	HY/2012/07	2018-08-10	Mid-Ebb	IS(Mf)9	12:15	Middle	2						5.9		10.5	
TMCLKL	HY/2012/07	2018-08-10	Mid-Ebb	IS(Mf)9	12:15	Bottom	1	28.9	7.9	25.2	5.6	5.6	5.9	5.4	10.5	9.7
TMCLKL	HY/2012/07	2018-08-10	Mid-Ebb	IS(Mf)9	12:15	Bottom	2	29.2	7.9	24.9	5.5		6.2		9.8	

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	2018-08-10	Mid-Flood	CS(Mf)5	19:00	Surface	1	28.4	7.8	25.4	5.0	4.8	5.2	6.4	9.6	12.3
TMCLKL	HY/2012/07	2018-08-10	Mid-Flood	CS(Mf)5	19:00	Surface	2	28.6	7.9	25.1	5.0		5.4		10.5	
TMCLKL	HY/2012/07	2018-08-10	Mid-Flood	CS(Mf)5	19:00	Middle	1	28.3	7.8	26.2	4.5		6.6		11.2	
TMCLKL	HY/2012/07	2018-08-10	Mid-Flood	CS(Mf)5	19:00	Middle	2	28.5	7.9	25.9	4.5		6.4		12.0	
TMCLKL	HY/2012/07	2018-08-10	Mid-Flood	CS(Mf)5	19:00	Bottom	1	27.7	7.8	27.7	4.1	4.1	7.1		14.9	
TMCLKL	HY/2012/07	2018-08-10	Mid-Flood	CS(Mf)5	19:00	Bottom	2	27.9	7.8	27.4	4.1		7.4		15.3	
TMCLKL	HY/2012/07	2018-08-10	Mid-Flood	CS(Mf)3(N)	17:48	Surface	1	29.5	7.9	19.2	5.1	4.9	11.4	13.9	6.7	8.5
TMCLKL	HY/2012/07	2018-08-10	Mid-Flood	CS(Mf)3(N)	17:48	Surface	2	29.5	7.9	19.2	5.1		11.5		7.6	
TMCLKL	HY/2012/07	2018-08-10	Mid-Flood	CS(Mf)3(N)	17:48	Middle	1	29.5	7.9	20.4	4.7		14.3		8.0	
TMCLKL	HY/2012/07	2018-08-10	Mid-Flood	CS(Mf)3(N)	17:48	Middle	2	29.5	7.9	20.4	4.8		14.1		7.6	
TMCLKL	HY/2012/07	2018-08-10	Mid-Flood	CS(Mf)3(N)	17:48	Bottom	1	29.3	7.9	21.0	4.8	4.8	15.5		10.2	
TMCLKL	HY/2012/07	2018-08-10	Mid-Flood	CS(Mf)3(N)	17:48	Bottom	2	29.4	7.9	20.9	4.7		16.4		10.6	
TMCLKL	HY/2012/07	2018-08-10	Mid-Flood	IS(Mf)16	18:32	Surface	1	28.6	7.8	24.8	5.2	5.2	7.8	9.9	10.0	10.7
TMCLKL	HY/2012/07	2018-08-10	Mid-Flood	IS(Mf)16	18:32	Surface	2	28.9	7.9	24.5	5.2		7.8		10.8	
TMCLKL	HY/2012/07	2018-08-10	Mid-Flood	IS(Mf)16	18:32	Middle	1									
TMCLKL	HY/2012/07	2018-08-10	Mid-Flood	IS(Mf)16	18:32	Middle	2									
TMCLKL	HY/2012/07	2018-08-10	Mid-Flood	IS(Mf)16	18:32	Bottom	1	28.6	7.8	25.3	5.3	5.3	12.2		11.1	
TMCLKL	HY/2012/07	2018-08-10	Mid-Flood	IS(Mf)16	18:32	Bottom	2	28.8	7.9	25.1	5.3		11.9		10.7	
TMCLKL	HY/2012/07	2018-08-10	Mid-Flood	SR4a	18:20	Surface	1	28.7	7.8	24.9	5.6	5.6	10.8	11.0	10.8	11.5
TMCLKL	HY/2012/07	2018-08-10	Mid-Flood	SR4a	18:20	Surface	2	28.9	7.9	24.6	5.5		11.5		11.7	
TMCLKL	HY/2012/07	2018-08-10	Mid-Flood	SR4a	18:20	Middle	1									
TMCLKL	HY/2012/07	2018-08-10	Mid-Flood	SR4a	18:20	Middle	2									
TMCLKL	HY/2012/07	2018-08-10	Mid-Flood	SR4a	18:20	Bottom	1	28.7	7.8	24.9	5.6	5.6	10.3		11.3	
TMCLKL	HY/2012/07	2018-08-10	Mid-Flood	SR4a	18:20	Bottom	2	28.9	7.9	24.6	5.6		11.3		12.0	
TMCLKL	HY/2012/07	2018-08-10	Mid-Flood	SR4(N)	18:16	Surface	1	28.6	7.8	25.2	5.6	5.6	13.2	13.9	12.2	12.7
TMCLKL	HY/2012/07	2018-08-10	Mid-Flood	SR4(N)	18:16	Surface	2	28.9	7.9	25.0	5.6		12.9		12.3	
TMCLKL	HY/2012/07	2018-08-10	Mid-Flood	SR4(N)	18:16	Middle	1									
TMCLKL	HY/2012/07	2018-08-10	Mid-Flood	SR4(N)	18:16	Middle	2									
TMCLKL	HY/2012/07	2018-08-10	Mid-Flood	SR4(N)	18:16	Bottom	1	28.6	7.8	25.4	5.6	5.6	15.0		13.4	
TMCLKL	HY/2012/07	2018-08-10	Mid-Flood	SR4(N)	18:16	Bottom	2	28.9	7.9	25.2	5.6		14.6		12.7	
TMCLKL	HY/2012/07	2018-08-10	Mid-Flood	IS8	18:10	Surface	1	28.6	7.8	25.3	5.7	5.7	19.0	20.4	12.8	9.4
TMCLKL	HY/2012/07	2018-08-10	Mid-Flood	IS8	18:10	Surface	2	28.9	7.9	25.0	5.7		18.5		12.4	
TMCLKL	HY/2012/07	2018-08-10	Mid-Flood	IS8	18:10	Middle	1									
TMCLKL	HY/2012/07	2018-08-10	Mid-Flood	IS8	18:10	Middle	2									
TMCLKL	HY/2012/07	2018-08-10	Mid-Flood	IS8	18:10	Bottom	1	28.6	7.8	25.5	5.7	5.7	22.0		6.3	
TMCLKL	HY/2012/07	2018-08-10	Mid-Flood	IS8	18:10	Bottom	2	28.9	7.9	25.3	5.7		21.9		6.1	
TMCLKL	HY/2012/07	2018-08-10	Mid-Flood	IS(Mf)9	18:03	Surface	1					5.8		12.8		9.0
TMCLKL	HY/2012/07	2018-08-10	Mid-Flood	IS(Mf)9	18:03	Surface	2									
TMCLKL	HY/2012/07	2018-08-10	Mid-Flood	IS(Mf)9	18:03	Middle	1	28.6	7.8	25.4	5.8		12.7		9.3	
TMCLKL	HY/2012/07	2018-08-10	Mid-Flood	IS(Mf)9	18:03	Middle	2	28.9	7.9	25.1	5.8		12.9		8.7	
TMCLKL	HY/2012/07	2018-08-10	Mid-Flood	IS(Mf)9	18:03	Bottom	1									
TMCLKL	HY/2012/07	2018-08-10	Mid-Flood	IS(Mf)9	18:03	Bottom	2									

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

Photo 1 - Mid-Ebb at IS(Mf)16 on 10 August 2018





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 15 August 2018

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



ERM

Dear Sir/ Madam,

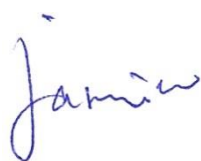
Please find attached the Notification of Exceedance (NOE) of the following
Log no.:

Action Level Exceedance

0215660_13 August 2018_ Surface and Middle-depth DO_E_Station SR4a
0215660_13 August 2018_ Surface and Middle-depth DO_F_Station IS(Mf)16

A total of two exceedances were recorded on 13 August 2018.

Regards,



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.	<p><u>Limit Level Exceedance</u> 0215660_13 August 2018_ Surface and Middle-depth DO_E_Station SR4a 0215660_13 August 2018_ Surface and Middle-depth DO_F_Station IS(Mf)16</p> <p>[Total No. of Exceedance = 2]</p>	
Date	<p>13 August 2018 (Measured) 14 August 2018 (<i>In situ</i> results received by ERM) 17 August 2018 (Laboratory results received by ERM)</p>	
Monitoring Station	<p>CS(Mf)5, SR4a, SR4, IS8, IS(Mf)16, IS(Mf)9, CS(Mf)3(N)</p>	
Parameter(s) with Exceedance(s)	<p>Surface and Middle-depth Dissolved Oxygen (DO), Bottom-depth DO</p>	
Action Levels for DO	Surface and Middle-depth DO	5.0 mg/L
	Bottom-depth DO	4.7 mg/L
Limit Levels for DO	Surface and Middle-depth DO	4.2 mg/L
	Bottom-depth DO	3.6 mg/L
Measured Levels	<p><u>Action Level Exceedance</u> 1. Mid-ebb at SR4a (Surface and Middle-depth DO = 4.9 mg/L); 2. Mid-flood at IS(Mf)16 (Surface and Middle-depth DO = 4.8 mg/L)</p>	
Works Undertaken (at the time of monitoring event)	<p>Demolition of marine platform was undertaken at Viaduct E under this Contract on 13 August 2018.</p>	
Possible Reason for Action or Limit Level Exceedance(s)	<p>The exceedances of DO are unlikely to be due to the Project, in view of the following</p> <ul style="list-style-type: none"> • All monitored parameters, except DO, 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. • Apart from SR4a and IS(Mf)16, levels of DO at all Impact stations were in compliance with the Action and Limit Levels during both mid-flood and mid-ebb tides on the same day. • The marginal DO exceedances at SR4a and IS(Mf)16 were similar to the control station where the surface and middle-depth DO were low. Low DO levels at water quality monitoring stations were likely due to reduce in natural ability for water to hold dissolved oxygen under higher water temperature in summer months. 	
Actions Taken/ To Be Taken	<p>No immediate action is considered necessary. The ET will monitor for future trends in exceedances.</p>	
Remarks	<p>The monitoring results on 13 August 2018 and locations of water quality monitoring stations are attached. Site photo record on 13 August 2018 is attached.</p>	

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	2018-08-13	Mid-Ebb	CS(Mf)5	14:08	Surface	1	28.9	7.8	24.2	4.9	4.6	10.4	16.9	9.5	10.3
TMCLKL	HY/2012/07	2018-08-13	Mid-Ebb	CS(Mf)5	14:08	Surface	2	28.7	7.8	24.5	4.9		11.0		9.6	
TMCLKL	HY/2012/07	2018-08-13	Mid-Ebb	CS(Mf)5	14:08	Middle	1	28.0	7.8	25.5	4.3		17.8		10.3	
TMCLKL	HY/2012/07	2018-08-13	Mid-Ebb	CS(Mf)5	14:08	Middle	2	27.8	7.8	25.7	4.3	4.3	16.7		10.0	
TMCLKL	HY/2012/07	2018-08-13	Mid-Ebb	CS(Mf)5	14:08	Bottom	1	27.9	7.8	25.9	4.3		22.6		11.1	
TMCLKL	HY/2012/07	2018-08-13	Mid-Ebb	CS(Mf)5	14:08	Bottom	2	27.7	7.8	26.1	4.3	5.1	22.9	20.4	11.1	9.9
TMCLKL	HY/2012/07	2018-08-13	Mid-Ebb	CS(Mf)3(N)	13:06	Surface	1	29.1	8.0	22.7	5.1		15.1		8.5	
TMCLKL	HY/2012/07	2018-08-13	Mid-Ebb	CS(Mf)3(N)	13:06	Surface	2	29.1	8.0	22.8	5.1		14.1		9.6	
TMCLKL	HY/2012/07	2018-08-13	Mid-Ebb	CS(Mf)3(N)	13:06	Middle	1	28.8	8.1	24.4	5.0	5.0	23.2		8.9	
TMCLKL	HY/2012/07	2018-08-13	Mid-Ebb	CS(Mf)3(N)	13:06	Middle	2	28.8	8.1	24.5	5.0		23.1		9.6	
TMCLKL	HY/2012/07	2018-08-13	Mid-Ebb	CS(Mf)3(N)	13:06	Bottom	1	28.8	8.1	24.7	5.0	5.2	22.6		11.1	
TMCLKL	HY/2012/07	2018-08-13	Mid-Ebb	CS(Mf)3(N)	13:06	Bottom	2	28.8	8.1	24.7	5.0		24.0		11.8	
TMCLKL	HY/2012/07	2018-08-13	Mid-Ebb	IS(Mf)16	13:46	Surface	1	29.1	7.8	23.4	5.2	5.2	8.0	8.5	5.6	5.9
TMCLKL	HY/2012/07	2018-08-13	Mid-Ebb	IS(Mf)16	13:46	Surface	2	28.8	7.8	23.7	5.2		8.6		5.3	
TMCLKL	HY/2012/07	2018-08-13	Mid-Ebb	IS(Mf)16	13:46	Middle	1									
TMCLKL	HY/2012/07	2018-08-13	Mid-Ebb	IS(Mf)16	13:46	Middle	2					4.7				
TMCLKL	HY/2012/07	2018-08-13	Mid-Ebb	IS(Mf)16	13:46	Bottom	1	28.1	7.8	25.2	4.6		8.7		6.6	
TMCLKL	HY/2012/07	2018-08-13	Mid-Ebb	IS(Mf)16	13:46	Bottom	2	27.8	7.8	25.5	4.7	4.9	8.6	9.0	6.1	8.2
TMCLKL	HY/2012/07	2018-08-13	Mid-Ebb	SR4a	13:36	Surface	1	28.5	7.8	23.4	4.9		8.8		7.6	
TMCLKL	HY/2012/07	2018-08-13	Mid-Ebb	SR4a	13:36	Surface	2	28.3	7.8	23.6	4.9		8.7		8.2	
TMCLKL	HY/2012/07	2018-08-13	Mid-Ebb	SR4a	13:36	Middle	1					4.9				
TMCLKL	HY/2012/07	2018-08-13	Mid-Ebb	SR4a	13:36	Middle	2									
TMCLKL	HY/2012/07	2018-08-13	Mid-Ebb	SR4a	13:36	Bottom	1	28.5	7.8	23.4	4.9	5.0	9.2	12.2	8.4	10.9
TMCLKL	HY/2012/07	2018-08-13	Mid-Ebb	SR4a	13:36	Bottom	2	28.3	7.8	23.7	4.9		9.2		8.4	
TMCLKL	HY/2012/07	2018-08-13	Mid-Ebb	SR4(N)	13:32	Surface	1	28.6	7.8	23.2	5.0	5.0	11.8	12.2	10.2	10.9
TMCLKL	HY/2012/07	2018-08-13	Mid-Ebb	SR4(N)	13:32	Surface	2	28.3	7.8	23.4	5.0		10.8		10.4	
TMCLKL	HY/2012/07	2018-08-13	Mid-Ebb	SR4(N)	13:32	Middle	1									
TMCLKL	HY/2012/07	2018-08-13	Mid-Ebb	SR4(N)	13:32	Middle	2					5.0				
TMCLKL	HY/2012/07	2018-08-13	Mid-Ebb	SR4(N)	13:32	Bottom	1	28.5	7.8	23.5	4.9		13.1		11.8	
TMCLKL	HY/2012/07	2018-08-13	Mid-Ebb	SR4(N)	13:32	Bottom	2	28.3	7.8	23.8	5.0	5.2	13.0	12.2	11.1	8.4
TMCLKL	HY/2012/07	2018-08-13	Mid-Ebb	IS8	13:27	Surface	1	28.7	7.8	23.4	5.2		10.7		7.6	
TMCLKL	HY/2012/07	2018-08-13	Mid-Ebb	IS8	13:27	Surface	2	28.4	7.9	23.6	5.2		11.0		8.0	
TMCLKL	HY/2012/07	2018-08-13	Mid-Ebb	IS8	13:27	Middle	1					4.8				
TMCLKL	HY/2012/07	2018-08-13	Mid-Ebb	IS8	13:27	Middle	2									
TMCLKL	HY/2012/07	2018-08-13	Mid-Ebb	IS8	13:27	Bottom	1	28.5	7.8	23.7	4.8	5.2	13.3	15.2	8.5	9.3
TMCLKL	HY/2012/07	2018-08-13	Mid-Ebb	IS8	13:27	Bottom	2	28.2	7.9	23.9	4.8		13.9		9.3	
TMCLKL	HY/2012/07	2018-08-13	Mid-Ebb	IS(Mf)9	13:21	Surface	1	29.1	7.8	23.4	5.2	5.2	13.4	15.2	8.6	9.3
TMCLKL	HY/2012/07	2018-08-13	Mid-Ebb	IS(Mf)9	13:21	Surface	2	28.8	7.8	23.7	5.2		15.9		8.5	
TMCLKL	HY/2012/07	2018-08-13	Mid-Ebb	IS(Mf)9	13:21	Middle	1									
TMCLKL	HY/2012/07	2018-08-13	Mid-Ebb	IS(Mf)9	13:21	Middle	2					5.1				
TMCLKL	HY/2012/07	2018-08-13	Mid-Ebb	IS(Mf)9	13:21	Bottom	1	28.9	7.8	23.5	5.1		15.0		10.1	
TMCLKL	HY/2012/07	2018-08-13	Mid-Ebb	IS(Mf)9	13:21	Bottom	2	28.7	7.8	23.7	5.1	16.3	9.9			

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	2018-08-13	Mid-Flood	CS(Mf)5	6:54	Surface	1	28.1	7.8	23.7	4.8	4.7	7.1	11.5	7.7	8.9
TMCLKL	HY/2012/07	2018-08-13	Mid-Flood	CS(Mf)5	6:54	Surface	2	28.4	7.8	23.5	4.8		7.6		8.4	
TMCLKL	HY/2012/07	2018-08-13	Mid-Flood	CS(Mf)5	6:54	Middle	1	27.9	7.8	24.6	4.6		8.9		8.8	
TMCLKL	HY/2012/07	2018-08-13	Mid-Flood	CS(Mf)5	6:54	Middle	2	28.1	7.8	24.4	4.6		9.0		8.4	
TMCLKL	HY/2012/07	2018-08-13	Mid-Flood	CS(Mf)5	6:54	Bottom	1	27.5	7.8	26.9	4.2	4.2	18.2		9.6	
TMCLKL	HY/2012/07	2018-08-13	Mid-Flood	CS(Mf)5	6:54	Bottom	2	27.8	7.8	26.6	4.2		18.3		10.6	
TMCLKL	HY/2012/07	2018-08-13	Mid-Flood	CS(Mf)3(N)	8:09	Surface	1	28.7	7.9	20.8	5.0	5.0	21.6	22.1	21.0	21.8
TMCLKL	HY/2012/07	2018-08-13	Mid-Flood	CS(Mf)3(N)	8:09	Surface	2	28.7	7.9	20.8	5.0		21.5		20.8	
TMCLKL	HY/2012/07	2018-08-13	Mid-Flood	CS(Mf)3(N)	8:09	Middle	1	28.7	7.9	20.8	5.0		20.1		21.6	
TMCLKL	HY/2012/07	2018-08-13	Mid-Flood	CS(Mf)3(N)	8:09	Middle	2	28.7	7.9	20.8	5.0		19.9		22.1	
TMCLKL	HY/2012/07	2018-08-13	Mid-Flood	CS(Mf)3(N)	8:09	Bottom	1	28.7	7.9	20.8	5.0	5.0	24.7		22.5	
TMCLKL	HY/2012/07	2018-08-13	Mid-Flood	CS(Mf)3(N)	8:09	Bottom	2	28.7	7.9	20.8	4.9		24.7		22.7	
TMCLKL	HY/2012/07	2018-08-13	Mid-Flood	IS(Mf)16	7:20	Surface	1	28.1	7.7	23.4	4.8	4.8	8.2	9.4	7.5	7.2
TMCLKL	HY/2012/07	2018-08-13	Mid-Flood	IS(Mf)16	7:20	Surface	2	28.4	7.8	23.2	4.8		8.3		6.8	
TMCLKL	HY/2012/07	2018-08-13	Mid-Flood	IS(Mf)16	7:20	Middle	1									
TMCLKL	HY/2012/07	2018-08-13	Mid-Flood	IS(Mf)16	7:20	Middle	2									
TMCLKL	HY/2012/07	2018-08-13	Mid-Flood	IS(Mf)16	7:20	Bottom	1	28.1	7.7	24.2	4.8	4.8	10.5		7.7	
TMCLKL	HY/2012/07	2018-08-13	Mid-Flood	IS(Mf)16	7:20	Bottom	2	28.4	7.8	23.9	4.8		10.4		6.9	
TMCLKL	HY/2012/07	2018-08-13	Mid-Flood	SR4a	7:28	Surface	1	28.1	7.7	22.6	5.0	5.0	8.9	9.9	7.1	7.8
TMCLKL	HY/2012/07	2018-08-13	Mid-Flood	SR4a	7:28	Surface	2	28.4	7.8	22.3	5.0		8.5		8.0	
TMCLKL	HY/2012/07	2018-08-13	Mid-Flood	SR4a	7:28	Middle	1									
TMCLKL	HY/2012/07	2018-08-13	Mid-Flood	SR4a	7:28	Middle	2									
TMCLKL	HY/2012/07	2018-08-13	Mid-Flood	SR4a	7:28	Bottom	1	28.1	7.7	23.0	4.9	4.9	11.1		7.7	
TMCLKL	HY/2012/07	2018-08-13	Mid-Flood	SR4a	7:28	Bottom	2	28.4	7.7	22.8	4.8		11.0		8.4	
TMCLKL	HY/2012/07	2018-08-13	Mid-Flood	SR4(N)	7:35	Surface	1	28.1	7.7	22.7	5.0	5.0	7.8	8.6	6.8	7.4
TMCLKL	HY/2012/07	2018-08-13	Mid-Flood	SR4(N)	7:35	Surface	2	28.4	7.8	22.4	5.0		7.2		6.9	
TMCLKL	HY/2012/07	2018-08-13	Mid-Flood	SR4(N)	7:35	Middle	1									
TMCLKL	HY/2012/07	2018-08-13	Mid-Flood	SR4(N)	7:35	Middle	2									
TMCLKL	HY/2012/07	2018-08-13	Mid-Flood	SR4(N)	7:35	Bottom	1	28.1	7.7	22.9	5.0	5.0	9.5		8.2	
TMCLKL	HY/2012/07	2018-08-13	Mid-Flood	SR4(N)	7:35	Bottom	2	28.4	7.8	22.7	5.0		9.8		7.6	
TMCLKL	HY/2012/07	2018-08-13	Mid-Flood	IS8	7:39	Surface	1	28.1	7.7	23.2	5.0	5.0	9.6	10.8	5.7	7.4
TMCLKL	HY/2012/07	2018-08-13	Mid-Flood	IS8	7:39	Surface	2	28.4	7.8	23.0	5.0		9.1		6.1	
TMCLKL	HY/2012/07	2018-08-13	Mid-Flood	IS8	7:39	Middle	1									
TMCLKL	HY/2012/07	2018-08-13	Mid-Flood	IS8	7:39	Middle	2									
TMCLKL	HY/2012/07	2018-08-13	Mid-Flood	IS8	7:39	Bottom	1	28.1	7.7	23.5	5.0	5.0	12.1		8.6	
TMCLKL	HY/2012/07	2018-08-13	Mid-Flood	IS8	7:39	Bottom	2	28.4	7.8	23.2	5.0		12.2		9.1	
TMCLKL	HY/2012/07	2018-08-13	Mid-Flood	IS(Mf)9	7:47	Surface	1	28.1	7.8	24.0	5.0	5.0	9.5	10.0	9.3	9.7
TMCLKL	HY/2012/07	2018-08-13	Mid-Flood	IS(Mf)9	7:47	Surface	2	28.3	7.8	23.7	5.0		9.8		9.0	
TMCLKL	HY/2012/07	2018-08-13	Mid-Flood	IS(Mf)9	7:47	Middle	1									
TMCLKL	HY/2012/07	2018-08-13	Mid-Flood	IS(Mf)9	7:47	Middle	2									
TMCLKL	HY/2012/07	2018-08-13	Mid-Flood	IS(Mf)9	7:47	Bottom	1	28.1	7.8	24.0	5.0	5.0	10.3		10.1	
TMCLKL	HY/2012/07	2018-08-13	Mid-Flood	IS(Mf)9	7:47	Bottom	2	28.3	7.8	23.7	5.0		10.5		10.5	

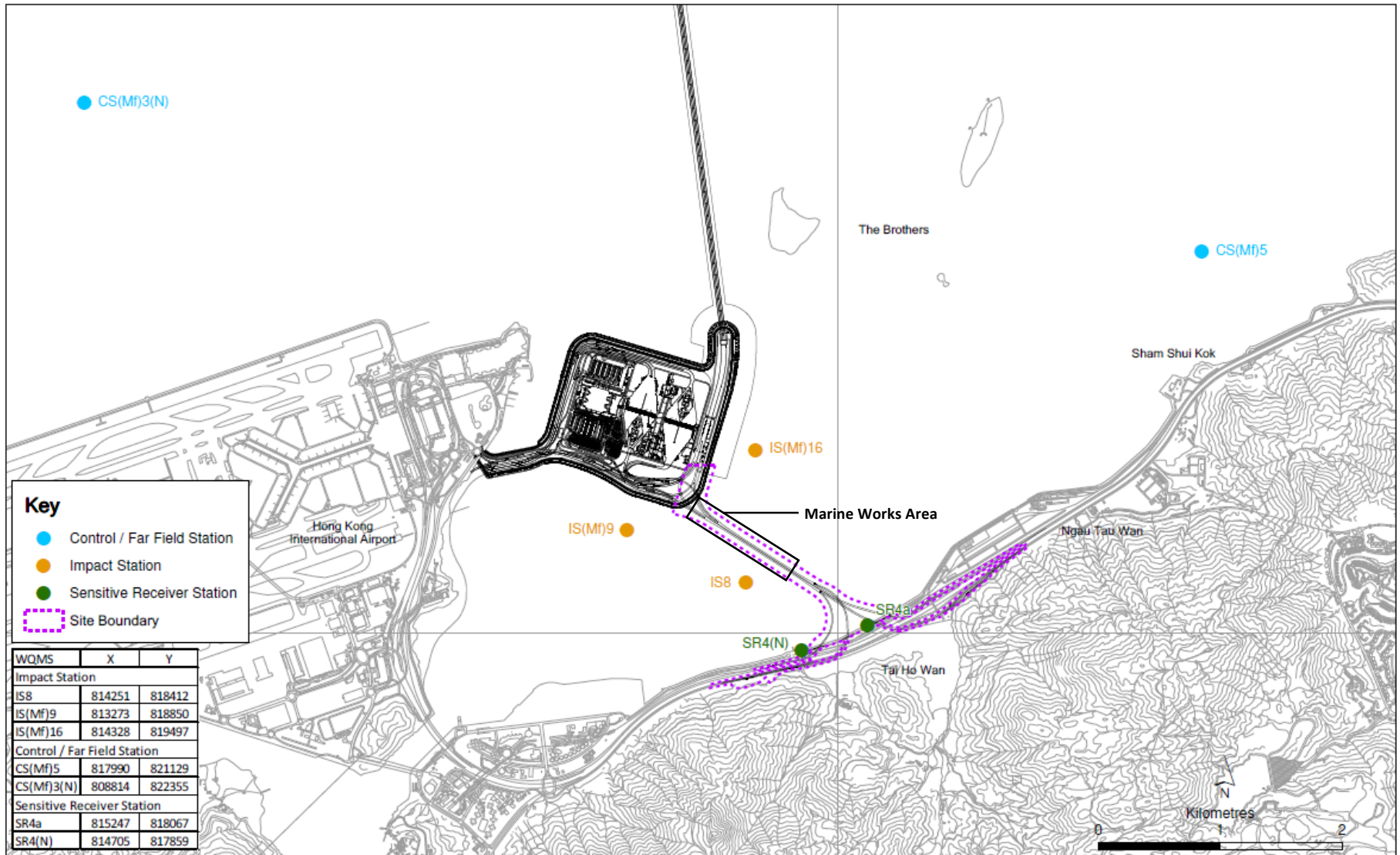
Note: Indicates Exceedance of Action Level
Indicates Exceedance of Limit Level

Photo 1 - Mid-Ebb at SR4(a) on 13 August 2018



Photo 2 - Mid-Flood at IS(Mf)16 on 13 August 2018





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

File: T:\GIS\CONTRACT\0215660\Mxd\0215660_WQMS.mxd
Date: 20/3/2018

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 21 August 2018

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



ERM

Dear Sir/ Madam,

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

Action Level Exceedance

0215660_17 August 2018_ Surface and Middle-depth DO_E_Station SR4a
0215660_17 August 2018_ Surface and Middle-depth DO_E_Station SR4(N)

A total of two exceedances were recorded on 17 August 2018.

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.	<p><u>Action Level Exceedance</u></p> <p>0215660_17 August 2018_ Surface and Middle-depth DO_E_Station SR4a 0215660_17 August 2018_ Surface and Middle-depth DO_E_Station SR4(N)</p> <p>[Total No. of Exceedance = 2]</p>	
Date	<p>17 August 2018 (Measured) 18 August 2018 (<i>In situ</i> results received by ERM) 29 August 2018 (Laboratory results received by ERM)</p>	
Monitoring Station	CS(Mf)5, SR4a, SR4, IS8, IS(Mf)16, IS(Mf)9, CS(Mf)3(N)	
Parameter(s) with Exceedance(s)	Surface and Middle-depth Dissolved Oxygen (DO)	
Action Levels for DO	Surface and Middle-depth DO	5.0 mg/L
Limit Levels for DO	Surface and Middle-depth DO	4.2 mg/L
Measured Levels	<p><u>Action Level Exceedance</u></p> <p>1. Mid-ebb at SR4a (Surface and Middle-depth DO = 4.9 mg/L); 2. Mid-ebb at SR4(N) (Surface and Middle-depth DO = 4.8 mg/L)</p>	
Works Undertaken (at the time of monitoring event)	Demolition of marine platform was undertaken at Viaduct E under this Contract on 17 August 2018.	
Possible Reason for Action or Limit Level Exceedance(s)	<p>The exceedances of DO are unlikely to be due to the Project, in view of the following</p> <ul style="list-style-type: none"> • All monitored parameters, except DO, 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. • Apart from marginal DO exceedances at SR4a and SR4(N), levels of DO at all Impact stations were in compliance with the Action and Limit Levels during both mid-flood and mid-ebb tides on the same day. • SR4a and SR4(N) are relatively far from the works area. No DO exceedance was recorded at the monitoring stations nearby the works area i.e. IS(Mf)9, IS(Mf)16 and IS8. • No observation of construction works undertaken by this Project was reported at SR4a and SR4(N). 	
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 17 August 2018 and locations of water quality monitoring stations are attached. Site photo record on 17 August 2018 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	2018-08-17	Mid-Ebb	CS(Mf)5	17:00	Surface	1	28.4	7.8	23.6	5.0	4.7	6.7	8.1	3.4	3.6
TMCLKL	HY/2012/07	2018-08-17	Mid-Ebb	CS(Mf)5	17:00	Surface	2	28.7	7.9	23.4	5.0		6.9		3.2	
TMCLKL	HY/2012/07	2018-08-17	Mid-Ebb	CS(Mf)5	17:00	Middle	1	28.2	7.8	26.1	4.5		7.8		3.3	
TMCLKL	HY/2012/07	2018-08-17	Mid-Ebb	CS(Mf)5	17:00	Middle	2	28.4	7.9	25.9	4.4		8.0		3.4	
TMCLKL	HY/2012/07	2018-08-17	Mid-Ebb	CS(Mf)5	17:00	Bottom	1	28.0	7.8	27.5	4.4	4.4	9.6		4.4	
TMCLKL	HY/2012/07	2018-08-17	Mid-Ebb	CS(Mf)5	17:00	Bottom	2	28.3	7.9	27.3	4.4		9.7		4.1	
TMCLKL	HY/2012/07	2018-08-17	Mid-Ebb	CS(Mf)3(N)	16:05	Surface	1	29.0	8.1	20.4	5.3	5.1	8.2	12.1	2.7	3.4
TMCLKL	HY/2012/07	2018-08-17	Mid-Ebb	CS(Mf)3(N)	16:05	Surface	2	29.0	8.0	20.4	5.3		8.5		3.0	
TMCLKL	HY/2012/07	2018-08-17	Mid-Ebb	CS(Mf)3(N)	16:05	Middle	1	29.1	8.1	21.3	4.9		12.7		3.2	
TMCLKL	HY/2012/07	2018-08-17	Mid-Ebb	CS(Mf)3(N)	16:05	Middle	2	29.0	7.9	21.2	5.0		12.4		2.7	
TMCLKL	HY/2012/07	2018-08-17	Mid-Ebb	CS(Mf)3(N)	16:05	Bottom	1	29.0	8.1	22.5	5.1	5.1	15.4		4.1	
TMCLKL	HY/2012/07	2018-08-17	Mid-Ebb	CS(Mf)3(N)	16:05	Bottom	2	28.9	8.0	22.3	5.1		15.4		4.4	
TMCLKL	HY/2012/07	2018-08-17	Mid-Ebb	IS(Mf)16	16:36	Surface	1	28.4	7.8	23.4	5.2	5.2	5.5	6.4	3.7	4.0
TMCLKL	HY/2012/07	2018-08-17	Mid-Ebb	IS(Mf)16	16:36	Surface	2	28.7	7.8	23.1	5.2		5.2		3.7	
TMCLKL	HY/2012/07	2018-08-17	Mid-Ebb	IS(Mf)16	16:36	Middle	1									
TMCLKL	HY/2012/07	2018-08-17	Mid-Ebb	IS(Mf)16	16:36	Middle	2									
TMCLKL	HY/2012/07	2018-08-17	Mid-Ebb	IS(Mf)16	16:36	Bottom	1	28.3	7.8	24.8	4.9	4.9	7.3		4.1	
TMCLKL	HY/2012/07	2018-08-17	Mid-Ebb	IS(Mf)16	16:36	Bottom	2	28.6	7.8	24.5	4.9		7.5		4.3	
TMCLKL	HY/2012/07	2018-08-17	Mid-Ebb	SR4a	16:26	Surface	1	28.5	7.8	22.8	4.9	4.9	7.4	8.7	4.0	4.9
TMCLKL	HY/2012/07	2018-08-17	Mid-Ebb	SR4a	16:26	Surface	2	28.7	7.8	22.6	4.9		8.0		4.0	
TMCLKL	HY/2012/07	2018-08-17	Mid-Ebb	SR4a	16:26	Middle	1									
TMCLKL	HY/2012/07	2018-08-17	Mid-Ebb	SR4a	16:26	Middle	2									
TMCLKL	HY/2012/07	2018-08-17	Mid-Ebb	SR4a	16:26	Bottom	1	28.5	7.8	23.1	4.9	4.9	9.6		5.6	
TMCLKL	HY/2012/07	2018-08-17	Mid-Ebb	SR4a	16:26	Bottom	2	28.7	7.8	22.8	4.9		9.8		6.0	
TMCLKL	HY/2012/07	2018-08-17	Mid-Ebb	SR4(N)	16:23	Surface	1	28.5	7.8	23.0	4.8	4.8	4.3	6.6	5.0	5.4
TMCLKL	HY/2012/07	2018-08-17	Mid-Ebb	SR4(N)	16:23	Surface	2	28.8	7.8	22.7	4.8		4.7		4.5	
TMCLKL	HY/2012/07	2018-08-17	Mid-Ebb	SR4(N)	16:23	Middle	1									
TMCLKL	HY/2012/07	2018-08-17	Mid-Ebb	SR4(N)	16:23	Middle	2									
TMCLKL	HY/2012/07	2018-08-17	Mid-Ebb	SR4(N)	16:23	Bottom	1	28.5	7.8	23.1	4.7	4.7	8.6		6.2	
TMCLKL	HY/2012/07	2018-08-17	Mid-Ebb	SR4(N)	16:23	Bottom	2	28.8	7.8	22.9	4.7		8.6		5.9	
TMCLKL	HY/2012/07	2018-08-17	Mid-Ebb	IS8	16:17	Surface	1	28.5	7.8	23.0	5.2	5.3	8.3	9.6	3.2	4.0
TMCLKL	HY/2012/07	2018-08-17	Mid-Ebb	IS8	16:17	Surface	2	28.7	7.8	22.8	5.3		8.1		3.3	
TMCLKL	HY/2012/07	2018-08-17	Mid-Ebb	IS8	16:17	Middle	1									
TMCLKL	HY/2012/07	2018-08-17	Mid-Ebb	IS8	16:17	Middle	2									
TMCLKL	HY/2012/07	2018-08-17	Mid-Ebb	IS8	16:17	Bottom	1	28.4	7.8	23.6	5.1	5.1	10.9		4.6	
TMCLKL	HY/2012/07	2018-08-17	Mid-Ebb	IS8	16:17	Bottom	2	28.7	7.8	23.3	5.1		10.9		4.7	
TMCLKL	HY/2012/07	2018-08-17	Mid-Ebb	IS(Mf)9	16:09	Surface	1	28.5	7.8	22.9	5.4	5.4	5.2	5.6	2.8	4.2
TMCLKL	HY/2012/07	2018-08-17	Mid-Ebb	IS(Mf)9	16:09	Surface	2	28.8	7.9	22.6	5.4		5.5		3.4	
TMCLKL	HY/2012/07	2018-08-17	Mid-Ebb	IS(Mf)9	16:09	Middle	1									
TMCLKL	HY/2012/07	2018-08-17	Mid-Ebb	IS(Mf)9	16:09	Middle	2									
TMCLKL	HY/2012/07	2018-08-17	Mid-Ebb	IS(Mf)9	16:09	Bottom	1	28.5	7.8	23.1	5.3	5.3	5.8		5.0	
TMCLKL	HY/2012/07	2018-08-17	Mid-Ebb	IS(Mf)9	16:09	Bottom	2	28.8	7.9	22.9	5.3		5.9		5.4	

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	2018-08-17	Mid-Flood	CS(Mf)5	10:33	Surface	1	28.8	7.9	22.2	5.2	5.1	1.2	5.5	2.2	3.5	
TMCLKL	HY/2012/07	2018-08-17	Mid-Flood	CS(Mf)5	10:33	Surface	2	28.5	7.8	22.4	5.2		1.0		2.9		
TMCLKL	HY/2012/07	2018-08-17	Mid-Flood	CS(Mf)5	10:33	Middle	1	28.7	7.9	23.1	5.0		6.9		4.3		
TMCLKL	HY/2012/07	2018-08-17	Mid-Flood	CS(Mf)5	10:33	Middle	2	28.4	7.8	23.3	5.0	4.5	6.7	5.5	3.4	3.5	
TMCLKL	HY/2012/07	2018-08-17	Mid-Flood	CS(Mf)5	10:33	Bottom	1	28.3	7.9	26.6	4.5		8.8		4.2		
TMCLKL	HY/2012/07	2018-08-17	Mid-Flood	CS(Mf)5	10:33	Bottom	2	28.1	7.8	26.9	4.5	5.2	8.5	19.8	4.1	8.2	
TMCLKL	HY/2012/07	2018-08-17	Mid-Flood	CS(Mf)3(N)	11:54	Surface	1	29.2	8.1	19.9	5.1		14.3		8.2		
TMCLKL	HY/2012/07	2018-08-17	Mid-Flood	CS(Mf)3(N)	11:54	Surface	2	29.0	8.0	19.9	5.2		14.7		7.3		
TMCLKL	HY/2012/07	2018-08-17	Mid-Flood	CS(Mf)3(N)	11:54	Middle	1	29.2	8.1	20.4	5.1	5.1	20.0	5.4	8.0	5.3	
TMCLKL	HY/2012/07	2018-08-17	Mid-Flood	CS(Mf)3(N)	11:54	Middle	2	29.0	8.0	20.4	5.2		20.1		8.6		
TMCLKL	HY/2012/07	2018-08-17	Mid-Flood	CS(Mf)3(N)	11:54	Bottom	1	29.2	8.1	20.6	5.1	5.2	24.9	5.4	8.7	4.3	
TMCLKL	HY/2012/07	2018-08-17	Mid-Flood	CS(Mf)3(N)	11:54	Bottom	2	29.0	8.1	20.6	5.1		24.8		8.2		
TMCLKL	HY/2012/07	2018-08-17	Mid-Flood	IS(Mf)16	10:56	Surface	1	28.8	7.9	22.4	5.2	5.2	4.3	5.4	4.9	5.3	
TMCLKL	HY/2012/07	2018-08-17	Mid-Flood	IS(Mf)16	10:56	Surface	2	28.5	7.8	22.6	5.2		4.5		4.7		
TMCLKL	HY/2012/07	2018-08-17	Mid-Flood	IS(Mf)16	10:56	Middle	1										
TMCLKL	HY/2012/07	2018-08-17	Mid-Flood	IS(Mf)16	10:56	Middle	2					5.2		5.4		5.3	
TMCLKL	HY/2012/07	2018-08-17	Mid-Flood	IS(Mf)16	10:56	Bottom	1	28.8	7.9	22.6	5.2		6.2		5.6		
TMCLKL	HY/2012/07	2018-08-17	Mid-Flood	IS(Mf)16	10:56	Bottom	2	28.5	7.8	22.8	5.2	5.4	6.5	5.8	6.1	4.3	
TMCLKL	HY/2012/07	2018-08-17	Mid-Flood	SR4a	11:07	Surface	1	28.7	7.9	21.7	5.4		2.9		3.4		
TMCLKL	HY/2012/07	2018-08-17	Mid-Flood	SR4a	11:07	Surface	2	28.4	7.8	22.0	5.4		2.9		3.8		
TMCLKL	HY/2012/07	2018-08-17	Mid-Flood	SR4a	11:07	Middle	1					5.5		5.8		4.3	
TMCLKL	HY/2012/07	2018-08-17	Mid-Flood	SR4a	11:07	Middle	2										
TMCLKL	HY/2012/07	2018-08-17	Mid-Flood	SR4a	11:07	Bottom	1	28.7	7.9	21.8	5.5	5.4	8.6	5.4	4.8	5.6	
TMCLKL	HY/2012/07	2018-08-17	Mid-Flood	SR4a	11:07	Bottom	2	28.4	7.8	22.1	5.5		8.8		5.1		
TMCLKL	HY/2012/07	2018-08-17	Mid-Flood	SR4(N)	11:14	Surface	1	28.7	7.9	21.7	5.4	5.4	3.0	5.4	5.3	5.6	
TMCLKL	HY/2012/07	2018-08-17	Mid-Flood	SR4(N)	11:14	Surface	2	28.4	7.8	21.9	5.4		3.6		5.1		
TMCLKL	HY/2012/07	2018-08-17	Mid-Flood	SR4(N)	11:14	Middle	1										
TMCLKL	HY/2012/07	2018-08-17	Mid-Flood	SR4(N)	11:14	Middle	2					5.4		5.4		5.6	
TMCLKL	HY/2012/07	2018-08-17	Mid-Flood	SR4(N)	11:14	Bottom	1	28.7	7.9	21.8	5.4		7.4		5.7		
TMCLKL	HY/2012/07	2018-08-17	Mid-Flood	SR4(N)	11:14	Bottom	2	28.4	7.8	22.1	5.4	5.4	7.5	1.8	6.2	7.1	
TMCLKL	HY/2012/07	2018-08-17	Mid-Flood	IS8	11:19	Surface	1	28.7	7.9	21.7	5.4		1.0		6.2		
TMCLKL	HY/2012/07	2018-08-17	Mid-Flood	IS8	11:19	Surface	2	28.4	7.8	21.9	5.4	5.4	1.1	1.8	6.5	7.1	
TMCLKL	HY/2012/07	2018-08-17	Mid-Flood	IS8	11:19	Middle	1										
TMCLKL	HY/2012/07	2018-08-17	Mid-Flood	IS8	11:19	Middle	2										
TMCLKL	HY/2012/07	2018-08-17	Mid-Flood	IS8	11:19	Bottom	1	28.7	7.9	21.8	5.4	5.4	2.5	6.0	7.5	5.8	
TMCLKL	HY/2012/07	2018-08-17	Mid-Flood	IS8	11:19	Bottom	2	28.4	7.8	22.0	5.4		2.4		8.2		
TMCLKL	HY/2012/07	2018-08-17	Mid-Flood	IS(Mf)9	11:26	Surface	1	28.7	7.8	23.2	5.1	5.1	4.8	6.0	5.1	5.8	
TMCLKL	HY/2012/07	2018-08-17	Mid-Flood	IS(Mf)9	11:26	Surface	2	28.4	7.8	23.4	5.1		4.5		4.8		
TMCLKL	HY/2012/07	2018-08-17	Mid-Flood	IS(Mf)9	11:26	Middle	1										
TMCLKL	HY/2012/07	2018-08-17	Mid-Flood	IS(Mf)9	11:26	Middle	2					5.0		6.0		5.8	
TMCLKL	HY/2012/07	2018-08-17	Mid-Flood	IS(Mf)9	11:26	Bottom	1	28.7	7.8	23.4	5.0		7.3		6.5		
TMCLKL	HY/2012/07	2018-08-17	Mid-Flood	IS(Mf)9	11:26	Bottom	2	28.5	7.8	23.6	5.0	7.2	6.9				

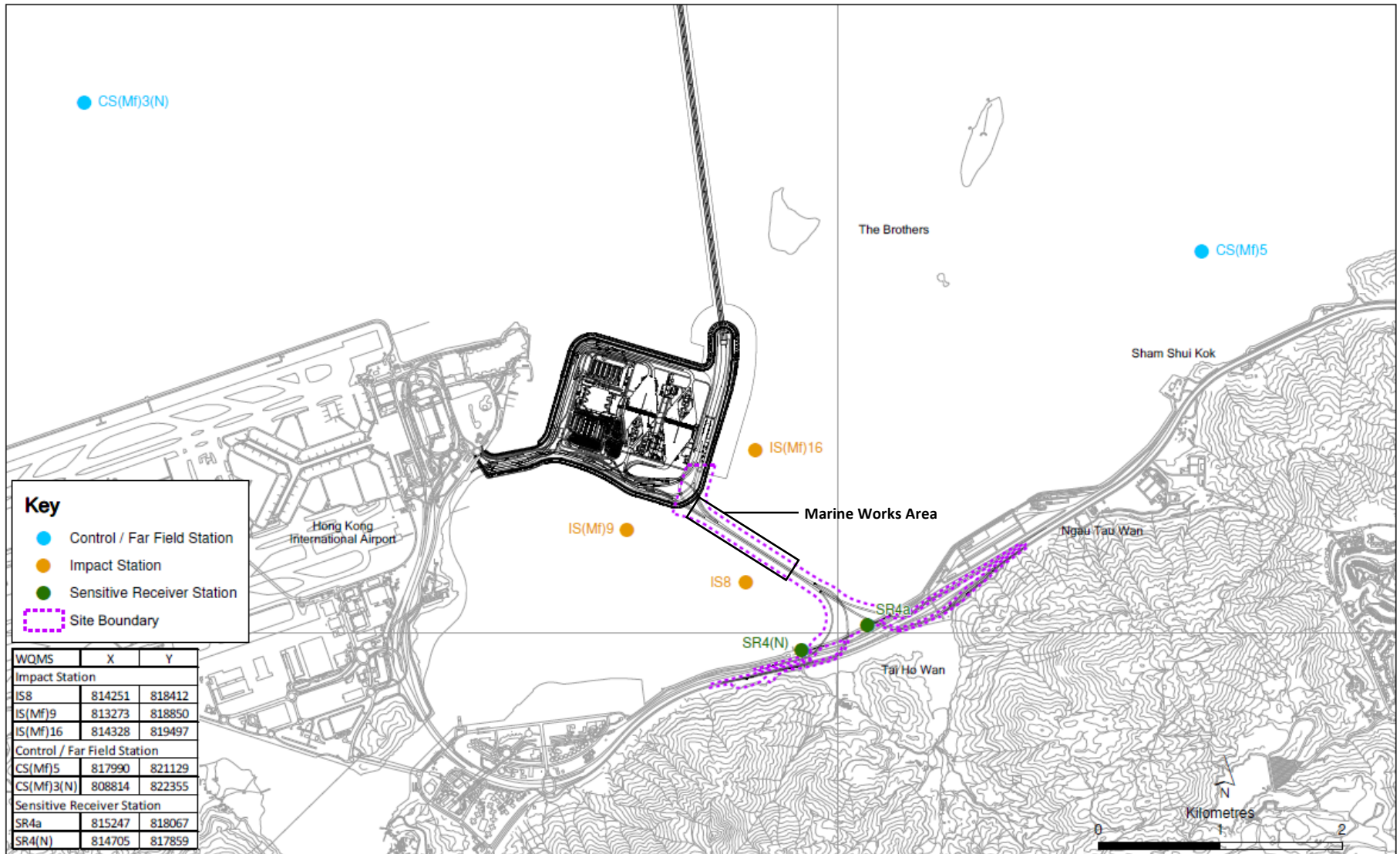
Note: Indicates Exceedance of Action Level
Indicates Exceedance of Limit Level

Photo 1 - Mid-Ebb at SR4(a) on 17 August 2018



Photo 2 - Mid-Ebb at SR4(N) on 17 August 2018





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

File: T:\GIS\CONTRACT\0215660\Mxd\0215660_WQMS.mxd
Date: 20/3/2018

Email
message

**Environmental
Resources
Management**

To Ramboll Hong Kong Limited (ENPO)

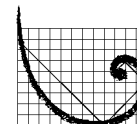
From ERM- Hong Kong, Limited

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 21 August 2018

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



ERM

Dear Sir/ Madam,


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

Action Level Exceedance

0215660_20 August 2018_ Bottom-depth DO_E_Station IS(Mf)16
0215660_20 August 2018_ Bottom-depth DO_E_Station SR4a
0215660_20 August 2018_ Surface and Middle-depth DO_E_Station SR4(N)
0215660_20 August 2018_ Bottom-depth DO_E_Station SR4(N)
0215660_20 August 2018_ Bottom-depth DO_E_Station IS8

A total of five exceedances were recorded on 20 August 2018.

Regards,



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.	<p style="text-align: center;"><u>Action Level Exceedance</u> 0215660_20 August 2018_ Bottom-depth DO_E_Station IS(Mf)16 0215660_20 August 2018_ Bottom-depth DO_E_Station SR4a 0215660_20 August 2018_ Surface and Middle-depth DO_E_Station SR4(N) 0215660_20 August 2018_ Bottom-depth DO_E_Station SR4(N) 0215660_20 August 2018_ Bottom-depth DO_E_Station IS8</p> <p style="text-align: center;">[Total No. of Exceedance = 5]</p>	
Date	<p style="text-align: center;">20 August 2018 (Measured) 21 August 2018 (<i>In situ</i> results received by ERM) 29 August 2018 (Laboratory results received by ERM)</p>	
Monitoring Station	<p style="text-align: center;">CS(Mf)5, SR4a, SR4, IS8, IS(Mf)16, IS(Mf)9, CS(Mf)3(N)</p>	
Parameter(s) with Exceedance(s)	<p style="text-align: center;">Surface and Middle-depth Dissolved Oxygen (DO), Bottom-depth DO</p>	
Action Levels for DO	Surface and Middle-depth DO	5.0 mg/L
	Bottom-depth DO	4.7 mg/L
Limit Levels for DO	Surface and Middle-depth DO	4.2 mg/L
	Bottom-depth DO	3.6 mg/L
Measured Levels	<p><u>Action Level Exceedance</u></p> <ol style="list-style-type: none"> 1. Mid-ebb at IS(Mf)16 (Bottom-depth DO = 4.4 mg/L); 2. Mid-ebb at SR4a (Bottom-depth DO = 4.4 mg/L); 3. Mid-ebb at SR4(N) (Surface and Middle-depth DO = 4.2 mg/L); 4. Mid-ebb at SR4(N) (Bottom-depth DO = 3.8 mg/L); 5. Mid-ebb at IS8 (Bottom-depth DO = 4.2 mg/L) 	
Works Undertaken (at the time of monitoring event)	Demolition of marine platform was undertaken at Viaduct E under this Contract on 20 August 2018.	
Possible Reason for Action or Limit Level Exceedance(s)	<p>The exceedances of DO are unlikely to be due to the Project, in view of the following</p> <ul style="list-style-type: none"> • All monitored parameters, except DO, 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. • The bottom-level DO exceedances at IS(Mf)16, SR4a, SR4(N) and IS8 were similar to the control station where the bottom-depth DO were generally low. Low DO levels at water quality monitoring stations were likely due to high Salinity recorded at the bottom level which was possibly caused by the stratification of seawater during summer when the freshwater discharged from the Pearl River tended to form a surface layer of lower salinity water, which is probably responsible for the lower Salinity recorded at the surface and middle levels compared to the higher Salinity recorded at the bottom level of the monitoring stations. The stratification of seawater in the water column is likely a contributing factor to the results of lower levels of DO at the bottom level as the DO exceedances recorded at the bottom level showed higher levels of Salinity than the middle and surface levels. • SR4(N) is relatively far from the works area. Apart from surface and middle-depth DO exceedance at SR4(N), levels of surface and middle- depth DO at all Impact stations, including those nearby the works area, were in compliance with the Action and Limit Levels during both mid-flood and mid-ebb tides on the same day. • No particular observation was reported at IS(Mf)16, SR4a, SR4(N) and IS8. 	

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 20 August 2018 and locations of water quality monitoring stations are attached. Site photo record on 20 August 2018 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	2018-08-20	Mid-Ebb	CS(Mf)5	8:16	Surface	1	28.9	7.8	20.3	5.7	5.6	1.2	1.5	3.2	3.9
TMCLKL	HY/2012/07	2018-08-20	Mid-Ebb	CS(Mf)5	8:16	Surface	2	29.1	7.9	20.1	5.6		2.0		3.4	
TMCLKL	HY/2012/07	2018-08-20	Mid-Ebb	CS(Mf)5	8:16	Middle	1	28.9	7.8	20.5	5.5		1.0		4.0	
TMCLKL	HY/2012/07	2018-08-20	Mid-Ebb	CS(Mf)5	8:16	Middle	2	29.1	7.9	20.3	5.5	4.5	2.0	1.5	3.9	3.9
TMCLKL	HY/2012/07	2018-08-20	Mid-Ebb	CS(Mf)5	8:16	Bottom	1	27.7	7.8	29.0	4.5		1.0		4.5	
TMCLKL	HY/2012/07	2018-08-20	Mid-Ebb	CS(Mf)5	8:16	Bottom	2	28.0	7.9	28.7	4.4	5.1	1.7	3.7	4.4	4.8
TMCLKL	HY/2012/07	2018-08-20	Mid-Ebb	CS(Mf)3(N)	9:34	Surface	1	29.2	8.1	18.9	5.4		2.3		4.0	
TMCLKL	HY/2012/07	2018-08-20	Mid-Ebb	CS(Mf)3(N)	9:34	Surface	2	29.3	8.1	18.8	5.5		2.4		3.9	
TMCLKL	HY/2012/07	2018-08-20	Mid-Ebb	CS(Mf)3(N)	9:34	Middle	1	28.9	8.1	23.5	4.7	4.1	3.6	3.7	4.6	4.8
TMCLKL	HY/2012/07	2018-08-20	Mid-Ebb	CS(Mf)3(N)	9:34	Middle	2	28.9	8.1	23.5	4.6		3.3		4.4	
TMCLKL	HY/2012/07	2018-08-20	Mid-Ebb	CS(Mf)3(N)	9:34	Bottom	1	28.7	8.1	25.9	4.1	5.0	5.1	3.3	5.9	2.4
TMCLKL	HY/2012/07	2018-08-20	Mid-Ebb	CS(Mf)3(N)	9:34	Bottom	2	28.7	8.1	25.9	4.1		5.2		5.7	
TMCLKL	HY/2012/07	2018-08-20	Mid-Ebb	IS(Mf)16	8:46	Surface	1	28.7	7.7	20.8	5.0	5.0	3.5	3.3	2.1	2.4
TMCLKL	HY/2012/07	2018-08-20	Mid-Ebb	IS(Mf)16	8:46	Surface	2	28.9	7.8	20.5	5.0		4.2		2.6	
TMCLKL	HY/2012/07	2018-08-20	Mid-Ebb	IS(Mf)16	8:46	Middle	1									
TMCLKL	HY/2012/07	2018-08-20	Mid-Ebb	IS(Mf)16	8:46	Middle	2					4.4		3.3		2.4
TMCLKL	HY/2012/07	2018-08-20	Mid-Ebb	IS(Mf)16	8:46	Bottom	1	28.4	7.7	24.9	4.4		2.7		2.5	
TMCLKL	HY/2012/07	2018-08-20	Mid-Ebb	IS(Mf)16	8:46	Bottom	2	28.6	7.7	24.9	4.4	2.7	2.5	6.6	3.7	5.4
TMCLKL	HY/2012/07	2018-08-20	Mid-Ebb	SR4a	8:54	Surface	1	29.1	7.7	19.4	5.5	3.4	3.9			
TMCLKL	HY/2012/07	2018-08-20	Mid-Ebb	SR4a	8:54	Surface	2	29.4	7.8	19.2	5.5	4.5	3.9			
TMCLKL	HY/2012/07	2018-08-20	Mid-Ebb	SR4a	8:54	Middle	1					5.5		6.6		5.4
TMCLKL	HY/2012/07	2018-08-20	Mid-Ebb	SR4a	8:54	Middle	2									
TMCLKL	HY/2012/07	2018-08-20	Mid-Ebb	SR4a	8:54	Bottom	1	28.5	7.7	24.7	4.4	4.4	9.4	7.2	6.8	9.7
TMCLKL	HY/2012/07	2018-08-20	Mid-Ebb	SR4a	8:54	Bottom	2	28.8	7.6	24.2	4.3	9.1	7.1			
TMCLKL	HY/2012/07	2018-08-20	Mid-Ebb	SR4(N)	9:00	Surface	1	28.8	7.7	21.2	4.2	7.0	9.2			
TMCLKL	HY/2012/07	2018-08-20	Mid-Ebb	SR4(N)	9:00	Surface	2	29.0	7.7	21.0	4.2	4.2	6.3	7.2	9.6	9.7
TMCLKL	HY/2012/07	2018-08-20	Mid-Ebb	SR4(N)	9:00	Middle	1									
TMCLKL	HY/2012/07	2018-08-20	Mid-Ebb	SR4(N)	9:00	Middle	2							2.7		3.5
TMCLKL	HY/2012/07	2018-08-20	Mid-Ebb	SR4(N)	9:00	Bottom	1	28.7	7.7	22.8	3.8	7.7	10.0			
TMCLKL	HY/2012/07	2018-08-20	Mid-Ebb	SR4(N)	9:00	Bottom	2	29.0	7.7	22.5	3.8	3.8	7.7	9.8	1.6	9.8
TMCLKL	HY/2012/07	2018-08-20	Mid-Ebb	IS8	9:05	Surface	1	28.9	7.7	19.1	5.6	3.0	2.9			
TMCLKL	HY/2012/07	2018-08-20	Mid-Ebb	IS8	9:05	Surface	2	29.1	7.9	19.2	5.3	1.7	3.1			
TMCLKL	HY/2012/07	2018-08-20	Mid-Ebb	IS8	9:05	Middle	1					5.5		2.7		3.5
TMCLKL	HY/2012/07	2018-08-20	Mid-Ebb	IS8	9:05	Middle	2									
TMCLKL	HY/2012/07	2018-08-20	Mid-Ebb	IS8	9:05	Bottom	1	28.8	7.7	23.7	4.2	4.2	3.7	1.6	4.3	4.3
TMCLKL	HY/2012/07	2018-08-20	Mid-Ebb	IS8	9:05	Bottom	2	29.1	7.7	23.3	4.1	2.2	3.8			
TMCLKL	HY/2012/07	2018-08-20	Mid-Ebb	IS(Mf)9	9:13	Surface	1					6.2		1.6		4.3
TMCLKL	HY/2012/07	2018-08-20	Mid-Ebb	IS(Mf)9	9:13	Surface	2									
TMCLKL	HY/2012/07	2018-08-20	Mid-Ebb	IS(Mf)9	9:13	Middle	1	29.3	7.8	19.0	6.2		1.6		4.1	
TMCLKL	HY/2012/07	2018-08-20	Mid-Ebb	IS(Mf)9	9:13	Middle	2	29.5	7.9	18.7	6.2	1.5	4.4	1.6	4.4	4.3
TMCLKL	HY/2012/07	2018-08-20	Mid-Ebb	IS(Mf)9	9:13	Bottom	1									
TMCLKL	HY/2012/07	2018-08-20	Mid-Ebb	IS(Mf)9	9:13	Bottom	2							1.6	4.4	4.3

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	2018-08-20	Mid-Flood	CS(Mf)5	16:00	Surface	1	28.6	7.8	19.9	5.9	4.9	3.4	8.3	4.4	4.7
TMCLKL	HY/2012/07	2018-08-20	Mid-Flood	CS(Mf)5	16:00	Surface	2	28.8	8.0	19.9	5.9		4.3		3.5	
TMCLKL	HY/2012/07	2018-08-20	Mid-Flood	CS(Mf)5	16:00	Middle	1	27.7	7.8	28.2	3.9		6.7		4.4	
TMCLKL	HY/2012/07	2018-08-20	Mid-Flood	CS(Mf)5	16:00	Middle	2	27.9	7.9	27.9	3.9		6.8		4.8	
TMCLKL	HY/2012/07	2018-08-20	Mid-Flood	CS(Mf)5	16:00	Bottom	1	27.0	7.8	31.1	3.6	3.6	14.4		5.8	
TMCLKL	HY/2012/07	2018-08-20	Mid-Flood	CS(Mf)5	16:00	Bottom	2	27.3	7.9	30.8	3.6		14.2		5.5	
TMCLKL	HY/2012/07	2018-08-20	Mid-Flood	CS(Mf)3(N)	14:58	Surface	1	29.8	8.1	15.6	6.7	6.1	3.4	4.7	4.6	4.7
TMCLKL	HY/2012/07	2018-08-20	Mid-Flood	CS(Mf)3(N)	14:58	Surface	2	29.9	8.1	15.6	6.7		3.5		4.5	
TMCLKL	HY/2012/07	2018-08-20	Mid-Flood	CS(Mf)3(N)	14:58	Middle	1	29.4	8.0	19.0	5.5		3.3		4.5	
TMCLKL	HY/2012/07	2018-08-20	Mid-Flood	CS(Mf)3(N)	14:58	Middle	2	29.5	8.0	19.0	5.5		3.1		5.0	
TMCLKL	HY/2012/07	2018-08-20	Mid-Flood	CS(Mf)3(N)	14:58	Bottom	1	29.3	8.0	24.1	4.5	4.5	7.4		4.7	
TMCLKL	HY/2012/07	2018-08-20	Mid-Flood	CS(Mf)3(N)	14:58	Bottom	2	29.1	8.0	24.2	4.5		7.4		4.6	
TMCLKL	HY/2012/07	2018-08-20	Mid-Flood	IS(Mf)16	15:35	Surface	1	28.9	7.8	19.5	6.0	6.0	5.4	9.8	3.5	4.0
TMCLKL	HY/2012/07	2018-08-20	Mid-Flood	IS(Mf)16	15:35	Surface	2	29.1	8.0	19.2	6.0		5.2		3.7	
TMCLKL	HY/2012/07	2018-08-20	Mid-Flood	IS(Mf)16	15:35	Middle	1									
TMCLKL	HY/2012/07	2018-08-20	Mid-Flood	IS(Mf)16	15:35	Middle	2									
TMCLKL	HY/2012/07	2018-08-20	Mid-Flood	IS(Mf)16	15:35	Bottom	1	28.7	7.8	21.4	4.9	4.9	14.2		4.3	
TMCLKL	HY/2012/07	2018-08-20	Mid-Flood	IS(Mf)16	15:35	Bottom	2	29.0	7.8	21.3	4.9		14.5		4.5	
TMCLKL	HY/2012/07	2018-08-20	Mid-Flood	SR4a	15:23	Surface	1	29.1	7.8	18.0	6.2	6.2	9.7	12.2	5.2	6.1
TMCLKL	HY/2012/07	2018-08-20	Mid-Flood	SR4a	15:23	Surface	2	29.3	8.0	17.8	6.2		9.6		5.1	
TMCLKL	HY/2012/07	2018-08-20	Mid-Flood	SR4a	15:23	Middle	1									
TMCLKL	HY/2012/07	2018-08-20	Mid-Flood	SR4a	15:23	Middle	2									
TMCLKL	HY/2012/07	2018-08-20	Mid-Flood	SR4a	15:23	Bottom	1	28.8	7.8	23.5	4.8	4.8	14.6		6.9	
TMCLKL	HY/2012/07	2018-08-20	Mid-Flood	SR4a	15:23	Bottom	2	29.0	7.8	23.2	4.7		14.7		7.0	
TMCLKL	HY/2012/07	2018-08-20	Mid-Flood	SR4(N)	15:19	Surface	1	29.4	7.8	17.6	6.9	6.9	1.5	7.9	4.6	4.9
TMCLKL	HY/2012/07	2018-08-20	Mid-Flood	SR4(N)	15:19	Surface	2	29.6	8.0	17.4	6.8		1.0		4.4	
TMCLKL	HY/2012/07	2018-08-20	Mid-Flood	SR4(N)	15:19	Middle	1									
TMCLKL	HY/2012/07	2018-08-20	Mid-Flood	SR4(N)	15:19	Middle	2									
TMCLKL	HY/2012/07	2018-08-20	Mid-Flood	SR4(N)	15:19	Bottom	1	29.0	7.8	21.4	5.3	5.3	14.6		5.3	
TMCLKL	HY/2012/07	2018-08-20	Mid-Flood	SR4(N)	15:19	Bottom	2	29.3	7.8	21.3	5.2		14.6		5.2	
TMCLKL	HY/2012/07	2018-08-20	Mid-Flood	IS8	15:14	Surface	1	29.2	7.8	18.4	6.6	6.6	12.4	12.4	8.7	8.9
TMCLKL	HY/2012/07	2018-08-20	Mid-Flood	IS8	15:14	Surface	2	29.5	8.0	18.1	6.6		12.3		8.2	
TMCLKL	HY/2012/07	2018-08-20	Mid-Flood	IS8	15:14	Middle	1									
TMCLKL	HY/2012/07	2018-08-20	Mid-Flood	IS8	15:14	Middle	2									
TMCLKL	HY/2012/07	2018-08-20	Mid-Flood	IS8	15:14	Bottom	1	29.1	7.8	20.6	6.0	6.0	12.5		9.6	
TMCLKL	HY/2012/07	2018-08-20	Mid-Flood	IS8	15:14	Bottom	2	29.4	8.0	20.3	6.0		12.4		9.1	
TMCLKL	HY/2012/07	2018-08-20	Mid-Flood	IS(Mf)9	15:05	Surface	1					6.8		6.3		6.1
TMCLKL	HY/2012/07	2018-08-20	Mid-Flood	IS(Mf)9	15:05	Surface	2									
TMCLKL	HY/2012/07	2018-08-20	Mid-Flood	IS(Mf)9	15:05	Middle	1	29.3	7.8	18.3	6.8		6.4		6.1	
TMCLKL	HY/2012/07	2018-08-20	Mid-Flood	IS(Mf)9	15:05	Middle	2	29.6	8.0	18.1	6.8		6.1		6.0	
TMCLKL	HY/2012/07	2018-08-20	Mid-Flood	IS(Mf)9	15:05	Bottom	1									
TMCLKL	HY/2012/07	2018-08-20	Mid-Flood	IS(Mf)9	15:05	Bottom	2									

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

Photo 1 - Mid-Ebb at IS(Mf)16 on 20 August 2018



Photo 2 - Mid-Ebb at SR4a on 20 August 2018

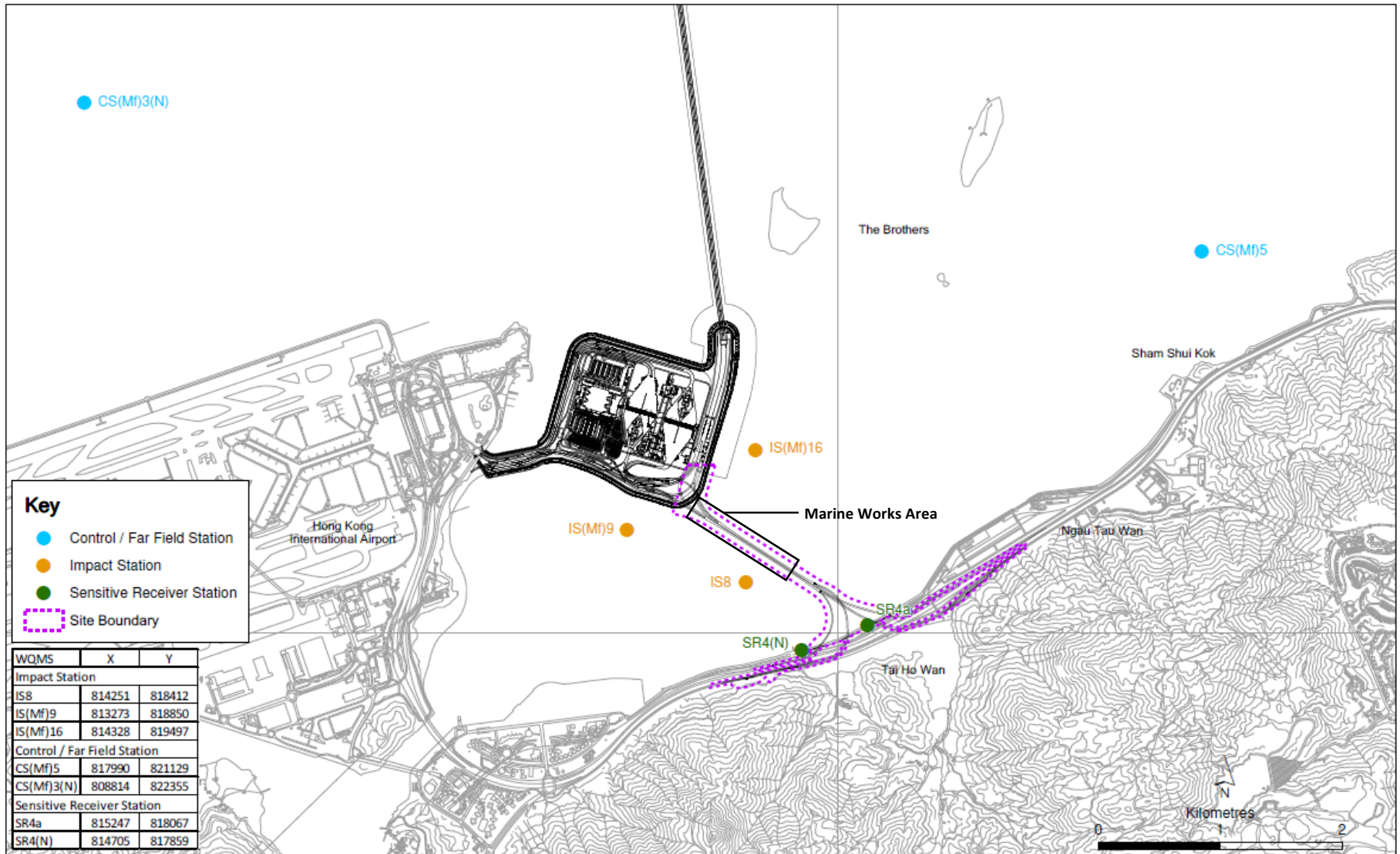


Photo 3 - Mid-Ebb at SR4(N) on 20 August 2018



Photo 4 - Mid-Ebb at IS8 on 20 August 2018





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

File: T:\GIS\CONTRACT\0215660\Mxd\0215660_WQMS.mxd
Date: 20/3/2018

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 27 August 2018

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,

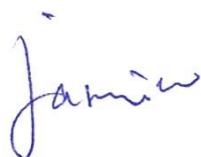
Please find attached the Notification of Exceedance (NOE) of the following
Log no.:

Action Level Exceedance

0215660_22 August 2018_ Bottom-depth DO_E_Station IS(Mf)16
0215660_22 August 2018_ Bottom-depth DO_E_Station SR4a
0215660_22 August 2018_ Surface and Middle-depth DO_E_Station SR4(N)
0215660_22 August 2018_ Bottom-depth DO_E_Station SR4(N)
0215660_22 August 2018_ Bottom-depth DO_E_Station IS8
0215660_22 August 2018_ Bottom-depth DO_E_Station IS(Mf)9
0215660_22 August 2018_ Bottom-depth DO_F_Station SR4a

A total of seven exceedances were recorded on 22 August 2018.

Regards,



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.	<p style="text-align: center;"><u>Action Level Exceedance</u> 0215660_22 August 2018_ Bottom-depth DO_E_Station IS(Mf)16 0215660_22 August 2018_ Bottom-depth DO_E_Station SR4a 0215660_22 August 2018_ Surface and Middle-depth DO_E_Station SR4(N) 0215660_22 August 2018_ Bottom-depth DO_E_Station SR4(N) 0215660_22 August 2018_ Bottom-depth DO_E_Station IS8 0215660_22 August 2018_ Bottom-depth DO_E_Station IS(Mf)9 0215660_22 August 2018_ Bottom-depth DO_F_Station SR4a</p> <p style="text-align: center;">[Total No. of Exceedance = 7]</p>	
Date	<p style="text-align: center;">22 August 2018 (Measured) 23 August 2018 (<i>In situ</i> results received by ERM) 03 September 2018 (Laboratory results received by ERM)</p>	
Monitoring Station	<p style="text-align: center;">CS(Mf)5, SR4a, SR4, IS8, IS(Mf)16, IS(Mf)9, CS(Mf)3(N)</p>	
Parameter(s) with Exceedance(s)	<p style="text-align: center;">Surface and Middle-depth Dissolved Oxygen (DO), Bottom-depth DO</p>	
Action Levels for DO	Surface and Middle-depth DO	5.0 mg/L
	Bottom-depth DO	4.7 mg/L
Limit Levels for DO	Surface and Middle-depth DO	4.2 mg/L
	Bottom-depth DO	3.6 mg/L
Measured Levels	<p><u>Action Level Exceedance</u></p> <ol style="list-style-type: none"> 1. Mid-ebb at IS(Mf)16 (Bottom-depth DO = 3.7 mg/L); 2. Mid-ebb at SR4a (Bottom-depth DO = 4.1 mg/L); 3. Mid-ebb at SR4(N) (Surface and Middle-depth DO = 4.8 mg/L); 4. Mid-ebb at SR4(N) (Bottom-depth DO = 3.6 mg/L); 5. Mid-ebb at IS8 (Bottom-depth DO = 3.6 mg/L); 6. Mid-ebb at IS(Mf)9 (Bottom-depth DO = 4.2 mg/L); 7. Mid-flood at SR4a (Bottom-depth DO = 4.4 mg/L) 	
Works Undertaken (at the time of monitoring event)	<p>Demolition of marine platform was undertaken at Viaduct E under this Contract on 22 August 2018.</p>	
Possible Reason for Action or Limit Level Exceedance(s)	<p>The exceedances of DO are unlikely to be due to the Project, in view of the following</p> <ul style="list-style-type: none"> • All monitored parameters, except DO, 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. • Low DO levels at IS(Mf)16, IS8 and IS(Mf)9 were likely due to high Salinity recorded at the bottom level which was possibly caused by the stratification of seawater during summer when the freshwater discharged from the Pearl River tended to form a surface layer of lower salinity water, which is probably responsible for the lower Salinity recorded at the surface and middle levels compared to the higher Salinity recorded at the bottom level of the monitoring stations. • SR4a and SR4(N) are relatively far from the works area. The low DO levels at SR4a and SR4(N) were likely due to stratification of seawater during summer, in which Salinity level at the bottom level was relatively higher than the surface and middle level. • No particular observation was reported at IS(Mf)16, SR4a, SR4(N), IS8 and IS(Mf)9. 	
Actions Taken/ To Be Taken	<p>No immediate action is considered necessary. The ET will monitor for future trends in exceedances.</p>	

Remarks	The monitoring results on 22 August 2018 and locations of water quality monitoring stations are attached. Site photo record on 22 August 2018 is attached.
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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	2018-08-22	Mid-Ebb	CS(Mf)5	10:00	Surface	1	28.6	7.8	23.7	5.5	4.9	3.9	5.5	4.2	4.9
TMCLKL	HY/2012/07	2018-08-22	Mid-Ebb	CS(Mf)5	10:00	Surface	2	28.8	8.0	23.5	5.5		4.0		4.8	
TMCLKL	HY/2012/07	2018-08-22	Mid-Ebb	CS(Mf)5	10:00	Middle	1	28.1	7.8	26.1	4.3		5.3		4.8	
TMCLKL	HY/2012/07	2018-08-22	Mid-Ebb	CS(Mf)5	10:00	Middle	2	28.3	7.9	25.8	4.4		5.3		5.3	
TMCLKL	HY/2012/07	2018-08-22	Mid-Ebb	CS(Mf)5	10:00	Bottom	1	27.0	7.8	29.8	3.7	3.7	7.3		5.3	
TMCLKL	HY/2012/07	2018-08-22	Mid-Ebb	CS(Mf)5	10:00	Bottom	2	27.3	7.9	29.5	3.7		6.9		4.9	
TMCLKL	HY/2012/07	2018-08-22	Mid-Ebb	CS(Mf)3(N)	11:28	Surface	1	29.5	8.0	19.5	5.9	5.8	4.2	6.2	3.9	4.9
TMCLKL	HY/2012/07	2018-08-22	Mid-Ebb	CS(Mf)3(N)	11:28	Surface	2	29.6	8.0	19.5	6.0		4.0		3.3	
TMCLKL	HY/2012/07	2018-08-22	Mid-Ebb	CS(Mf)3(N)	11:28	Middle	1	29.4	8.0	26.3	5.6		5.8		4.7	
TMCLKL	HY/2012/07	2018-08-22	Mid-Ebb	CS(Mf)3(N)	11:28	Middle	2	29.3	8.0	26.3	5.5		6.1		5.3	
TMCLKL	HY/2012/07	2018-08-22	Mid-Ebb	CS(Mf)3(N)	11:28	Bottom	1	29.6	8.0	25.7	5.7	5.7	8.4		6.2	
TMCLKL	HY/2012/07	2018-08-22	Mid-Ebb	CS(Mf)3(N)	11:28	Bottom	2	29.7	8.0	25.6	5.6		8.5		5.9	
TMCLKL	HY/2012/07	2018-08-22	Mid-Ebb	IS(Mf)16	10:31	Surface	1	28.9	7.8	22.9	5.2	5.2	4.0	5.8	3.9	4.5
TMCLKL	HY/2012/07	2018-08-22	Mid-Ebb	IS(Mf)16	10:31	Surface	2	29.1	7.9	22.7	5.2		3.8		4.1	
TMCLKL	HY/2012/07	2018-08-22	Mid-Ebb	IS(Mf)16	10:31	Middle	1									
TMCLKL	HY/2012/07	2018-08-22	Mid-Ebb	IS(Mf)16	10:31	Middle	2									
TMCLKL	HY/2012/07	2018-08-22	Mid-Ebb	IS(Mf)16	10:31	Bottom	1	28.4	7.7	26.3	3.7	3.7	7.8		5.2	
TMCLKL	HY/2012/07	2018-08-22	Mid-Ebb	IS(Mf)16	10:31	Bottom	2	28.7	7.8	26.0	3.7		7.6		4.8	
TMCLKL	HY/2012/07	2018-08-22	Mid-Ebb	SR4a	10:37	Surface	1	29.0	7.8	21.3	5.9	5.9	5.7	10.9	4.2	4.8
TMCLKL	HY/2012/07	2018-08-22	Mid-Ebb	SR4a	10:37	Surface	2	29.3	8.0	21.0	5.9		5.7		3.8	
TMCLKL	HY/2012/07	2018-08-22	Mid-Ebb	SR4a	10:37	Middle	1									
TMCLKL	HY/2012/07	2018-08-22	Mid-Ebb	SR4a	10:37	Middle	2									
TMCLKL	HY/2012/07	2018-08-22	Mid-Ebb	SR4a	10:37	Bottom	1	28.3	7.8	25.4	4.1	4.1	16.4		5.6	
TMCLKL	HY/2012/07	2018-08-22	Mid-Ebb	SR4a	10:37	Bottom	2	28.6	7.9	25.1	4.1		15.7		5.7	
TMCLKL	HY/2012/07	2018-08-22	Mid-Ebb	SR4(N)	10:45	Surface	1	29.0	7.8	21.0	4.8	4.8	7.5	10.2	6.5	7.3
TMCLKL	HY/2012/07	2018-08-22	Mid-Ebb	SR4(N)	10:45	Surface	2	29.3	7.9	19.6	4.8		7.0		6.9	
TMCLKL	HY/2012/07	2018-08-22	Mid-Ebb	SR4(N)	10:45	Middle	1									
TMCLKL	HY/2012/07	2018-08-22	Mid-Ebb	SR4(N)	10:45	Middle	2									
TMCLKL	HY/2012/07	2018-08-22	Mid-Ebb	SR4(N)	10:45	Bottom	1	28.3	7.7	25.4	3.6	3.6	12.4		8.0	
TMCLKL	HY/2012/07	2018-08-22	Mid-Ebb	SR4(N)	10:45	Bottom	2	28.6	7.8	25.1	3.6		13.7		7.9	
TMCLKL	HY/2012/07	2018-08-22	Mid-Ebb	IS8	10:52	Surface	1	29.4	7.8	21.7	5.8	5.8	6.0	9.1	4.0	4.6
TMCLKL	HY/2012/07	2018-08-22	Mid-Ebb	IS8	10:52	Surface	2	29.7	8.0	21.5	5.8		5.7		4.6	
TMCLKL	HY/2012/07	2018-08-22	Mid-Ebb	IS8	10:52	Middle	1									
TMCLKL	HY/2012/07	2018-08-22	Mid-Ebb	IS8	10:52	Middle	2									
TMCLKL	HY/2012/07	2018-08-22	Mid-Ebb	IS8	10:52	Bottom	1	28.3	7.7	25.9	3.6	3.6	12.0		4.8	
TMCLKL	HY/2012/07	2018-08-22	Mid-Ebb	IS8	10:52	Bottom	2	28.6	7.8	25.6	3.6		12.8		5.0	
TMCLKL	HY/2012/07	2018-08-22	Mid-Ebb	IS(Mf)9	11:00	Surface	1	29.3	7.8	21.3	6.1	6.1	3.6	5.8	4.7	6.4
TMCLKL	HY/2012/07	2018-08-22	Mid-Ebb	IS(Mf)9	11:00	Surface	2	29.6	8.0	21.0	6.1		3.4		5.2	
TMCLKL	HY/2012/07	2018-08-22	Mid-Ebb	IS(Mf)9	11:00	Middle	1									
TMCLKL	HY/2012/07	2018-08-22	Mid-Ebb	IS(Mf)9	11:00	Middle	2									
TMCLKL	HY/2012/07	2018-08-22	Mid-Ebb	IS(Mf)9	11:00	Bottom	1	28.6	7.7	24.2	4.2	4.2	8.0		7.5	
TMCLKL	HY/2012/07	2018-08-22	Mid-Ebb	IS(Mf)9	11:00	Bottom	2	28.9	7.9	24.0	4.2		8.0		8.0	

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	2018-08-22	Mid-Flood	CS(Mf)5	18:00	Surface	1	29.4	7.9	22.6	8.5	6.3	4.7	7.3	7.5	9.9
TMCLKL	HY/2012/07	2018-08-22	Mid-Flood	CS(Mf)5	18:00	Surface	2	29.7	8.0	22.4	8.5		4.4		7.7	
TMCLKL	HY/2012/07	2018-08-22	Mid-Flood	CS(Mf)5	18:00	Middle	1	27.2	7.8	28.9	4.0		6.8		9.8	
TMCLKL	HY/2012/07	2018-08-22	Mid-Flood	CS(Mf)5	18:00	Middle	2	27.5	7.7	28.6	4.0		7.0		10.0	
TMCLKL	HY/2012/07	2018-08-22	Mid-Flood	CS(Mf)5	18:00	Bottom	1	26.5	7.8	31.0	3.6	3.6	10.1	7.3	11.9	9.9
TMCLKL	HY/2012/07	2018-08-22	Mid-Flood	CS(Mf)5	18:00	Bottom	2	26.8	7.7	30.8	3.5		10.8		12.4	
TMCLKL	HY/2012/07	2018-08-22	Mid-Flood	CS(Mf)3(N)	16:44	Surface	1	30.7	8.1	17.0	7.3	7.3	6.8	7.9	5.7	6.7
TMCLKL	HY/2012/07	2018-08-22	Mid-Flood	CS(Mf)3(N)	16:44	Surface	2	30.7	8.1	17.0	7.4		6.3		6.0	
TMCLKL	HY/2012/07	2018-08-22	Mid-Flood	CS(Mf)3(N)	16:44	Middle	1	30.7	8.1	16.9	7.2		8.1		6.8	
TMCLKL	HY/2012/07	2018-08-22	Mid-Flood	CS(Mf)3(N)	16:44	Middle	2	30.7	8.1	16.9	7.3		8.4		6.7	
TMCLKL	HY/2012/07	2018-08-22	Mid-Flood	CS(Mf)3(N)	16:44	Bottom	1	30.7	8.1	18.4	7.1	7.1	9.1	7.9	7.3	11.0
TMCLKL	HY/2012/07	2018-08-22	Mid-Flood	CS(Mf)3(N)	16:44	Bottom	2	30.7	8.0	18.4	7.1		8.9		7.7	
TMCLKL	HY/2012/07	2018-08-22	Mid-Flood	IS(Mf)16	17:34	Surface	1	29.4	7.9	22.4	7.9	7.9	9.0	10.1	9.6	9.9
TMCLKL	HY/2012/07	2018-08-22	Mid-Flood	IS(Mf)16	17:34	Surface	2	29.7	8.0	22.2	7.9		8.4		9.7	
TMCLKL	HY/2012/07	2018-08-22	Mid-Flood	IS(Mf)16	17:34	Middle	1									
TMCLKL	HY/2012/07	2018-08-22	Mid-Flood	IS(Mf)16	17:34	Middle	2									
TMCLKL	HY/2012/07	2018-08-22	Mid-Flood	IS(Mf)16	17:34	Bottom	1	28.5	7.9	24.8	5.5	5.5	11.7	15.1	12.0	9.9
TMCLKL	HY/2012/07	2018-08-22	Mid-Flood	IS(Mf)16	17:34	Bottom	2	28.8	7.8	24.6	5.5		11.2		12.7	
TMCLKL	HY/2012/07	2018-08-22	Mid-Flood	SR4a	17:23	Surface	1	30.1	7.9	21.3	9.5	9.4	11.3	14.7	9.2	8.4
TMCLKL	HY/2012/07	2018-08-22	Mid-Flood	SR4a	17:23	Surface	2	30.3	8.1	21.1	9.3		11.5		9.9	
TMCLKL	HY/2012/07	2018-08-22	Mid-Flood	SR4a	17:23	Middle	1									
TMCLKL	HY/2012/07	2018-08-22	Mid-Flood	SR4a	17:23	Middle	2									
TMCLKL	HY/2012/07	2018-08-22	Mid-Flood	SR4a	17:23	Bottom	1	28.6	7.9	24.8	4.4	4.4	18.8	14.6	10.1	10.3
TMCLKL	HY/2012/07	2018-08-22	Mid-Flood	SR4a	17:23	Bottom	2	28.8	7.7	24.6	4.4	18.6	10.4			
TMCLKL	HY/2012/07	2018-08-22	Mid-Flood	SR4(N)	17:18	Surface	1	30.1	7.9	21.0	10.2	10.2	12.7	14.7	5.8	8.4
TMCLKL	HY/2012/07	2018-08-22	Mid-Flood	SR4(N)	17:18	Surface	2	30.3	8.1	20.8	10.2		12.8		6.3	
TMCLKL	HY/2012/07	2018-08-22	Mid-Flood	SR4(N)	17:18	Middle	1									
TMCLKL	HY/2012/07	2018-08-22	Mid-Flood	SR4(N)	17:18	Middle	2									
TMCLKL	HY/2012/07	2018-08-22	Mid-Flood	SR4(N)	17:18	Bottom	1	29.1	7.9	23.5	6.6	6.6	16.6	14.6	10.9	10.3
TMCLKL	HY/2012/07	2018-08-22	Mid-Flood	SR4(N)	17:18	Bottom	2	29.4	7.9	23.2	6.5		16.7		10.5	
TMCLKL	HY/2012/07	2018-08-22	Mid-Flood	IS8	17:12	Surface	1	29.9	7.9	21.2	10.0	10.1	11.3	14.6	10.2	10.3
TMCLKL	HY/2012/07	2018-08-22	Mid-Flood	IS8	17:12	Surface	2	30.2	8.1	20.9	10.1		11.4		10.3	
TMCLKL	HY/2012/07	2018-08-22	Mid-Flood	IS8	17:12	Middle	1									
TMCLKL	HY/2012/07	2018-08-22	Mid-Flood	IS8	17:12	Middle	2									
TMCLKL	HY/2012/07	2018-08-22	Mid-Flood	IS8	17:12	Bottom	1	29.7	7.9	21.7	9.2	9.2	18.0	10.9	10.2	6.6
TMCLKL	HY/2012/07	2018-08-22	Mid-Flood	IS8	17:12	Bottom	2	30.0	8.0	21.5	9.1		17.8		10.4	
TMCLKL	HY/2012/07	2018-08-22	Mid-Flood	IS(Mf)9	17:04	Surface	1	29.9	7.9	22.0	9.2	9.3	8.2	10.9	5.7	6.6
TMCLKL	HY/2012/07	2018-08-22	Mid-Flood	IS(Mf)9	17:04	Surface	2	30.1	8.1	21.8	9.3		8.9		6.4	
TMCLKL	HY/2012/07	2018-08-22	Mid-Flood	IS(Mf)9	17:04	Middle	1									
TMCLKL	HY/2012/07	2018-08-22	Mid-Flood	IS(Mf)9	17:04	Middle	2									
TMCLKL	HY/2012/07	2018-08-22	Mid-Flood	IS(Mf)9	17:04	Bottom	1	28.9	7.9	24.8	4.9	4.9	13.1	10.9	7.3	6.6
TMCLKL	HY/2012/07	2018-08-22	Mid-Flood	IS(Mf)9	17:04	Bottom	2	29.1	7.7	24.7	4.8		13.3		7.0	

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

Photo 1 - Mid-Ebb at IS(Mf)16 on 22 August 2018



Photo 2 - Mid-Ebb at SR4a on 22 August 2018



Photo 3 - Mid-Ebb at SR4(N) on 22 August 2018



Photo 4 - Mid-Ebb at IS8 on 22 August 2018

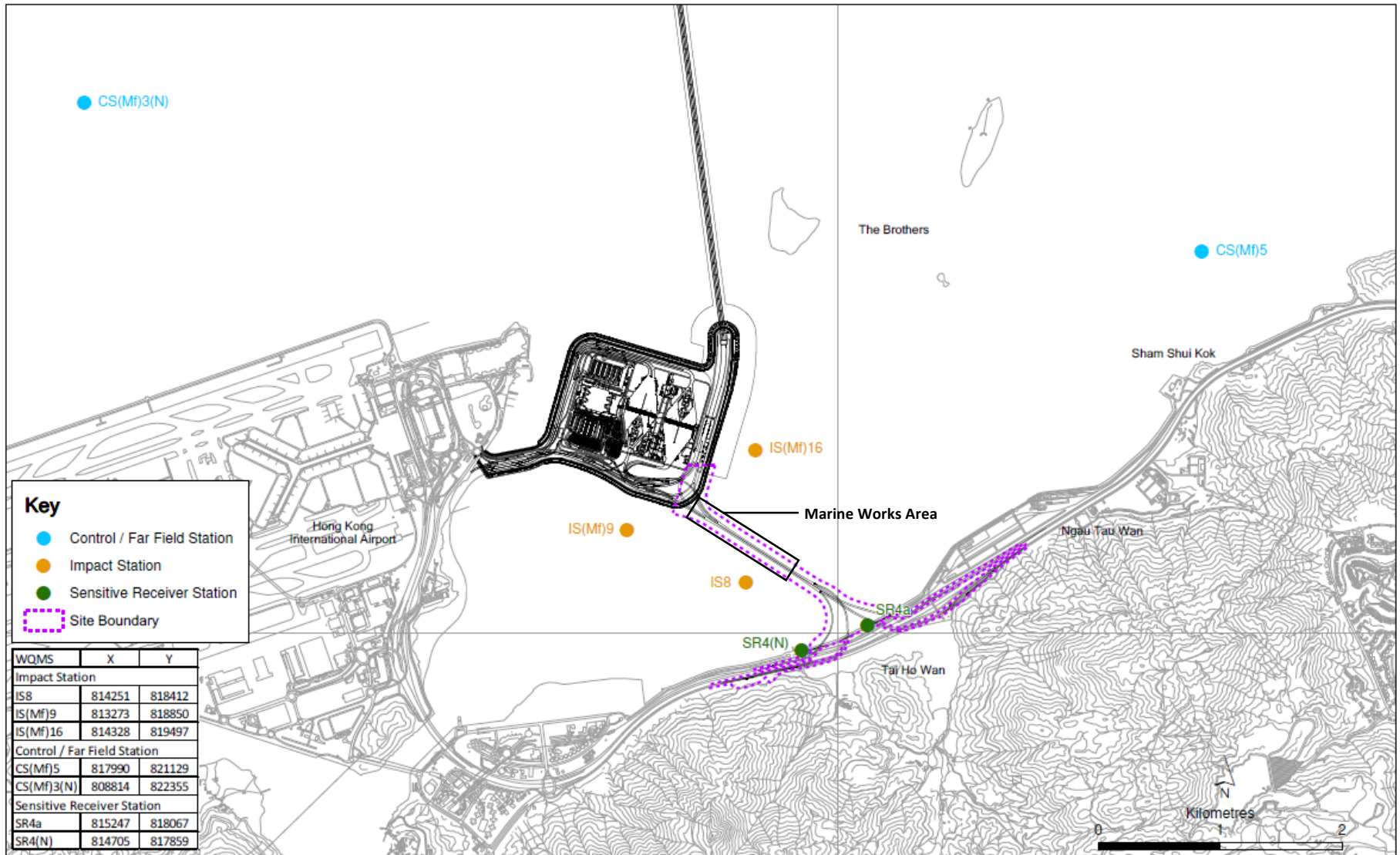


Photo 5 - Mid-Ebb at IS(Mf)9 on 22 August 2018



Photo 6 - Mid-Flood at SR4a on 22 August 2018





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

File: T:\GIS\CONTRACT\0215660\Mxd\0215660_WQMS.mxd
Date: 20/3/2018

Environmental Resources Management



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 27 August 2018

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

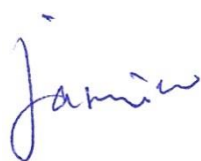
Dear Sir/ Madam,

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

Action Level Exceedance
0215660_24 August 2018_ Bottom-depth DO_E_Station SR4(N)

A total of one exceedance was recorded on 24 August 2018.

Regards,



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.	<p><u>Action Level Exceedance</u> 0215660_24 August 2018_ Bottom-depth DO_E_Station SR4(N)</p> <p>[Total No. of Exceedance = 1]</p>	
Date	<p>24 August 2018 (Measured) 25 August 2018 (<i>In situ</i> results received by ERM) 05 September 2018 (Laboratory results received by ERM)</p>	
Monitoring Station	CS(Mf)5, SR4a, SR4, IS8, IS(Mf)16, IS(Mf)9, CS(Mf)3(N)	
Parameter(s) with Exceedance(s)	Bottom-depth DO	
Action Levels for DO	Bottom-depth DO	4.7 mg/L
Limit Levels for DO	Bottom-depth DO	3.6 mg/L
Measured Levels	<p><u>Action Level Exceedance</u> 1. Mid-ebb at SR4(N) (Bottom-depth DO = 3.9 mg/L)</p>	
Works Undertaken (at the time of monitoring event)	Demolition of marine platform was undertaken at Viaduct E under this Contract on 24 August 2018.	
Possible Reason for Action or Limit Level Exceedance(s)	<p>The exceedances of DO are unlikely to be due to the Project, in view of the following</p> <ul style="list-style-type: none"> • All monitored parameters, except DO, 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. • Apart from SR4(N), levels of DO at all Impact stations were in compliance with the Action and Limit Levels during both mid-flood and mid-ebb tides on the same day. • SR4(N) is relatively far from the works area. The low bottom-level DO at SR4(N) was likely due to stratification of seawater during summer, in which Salinity level at the bottom level was relatively higher than the surface and middle level. • No particular observation was reported at SR4(N). 	
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 24 August 2018 and locations of water quality monitoring stations are attached. Site photo record on 24 August 2018 is attached.	

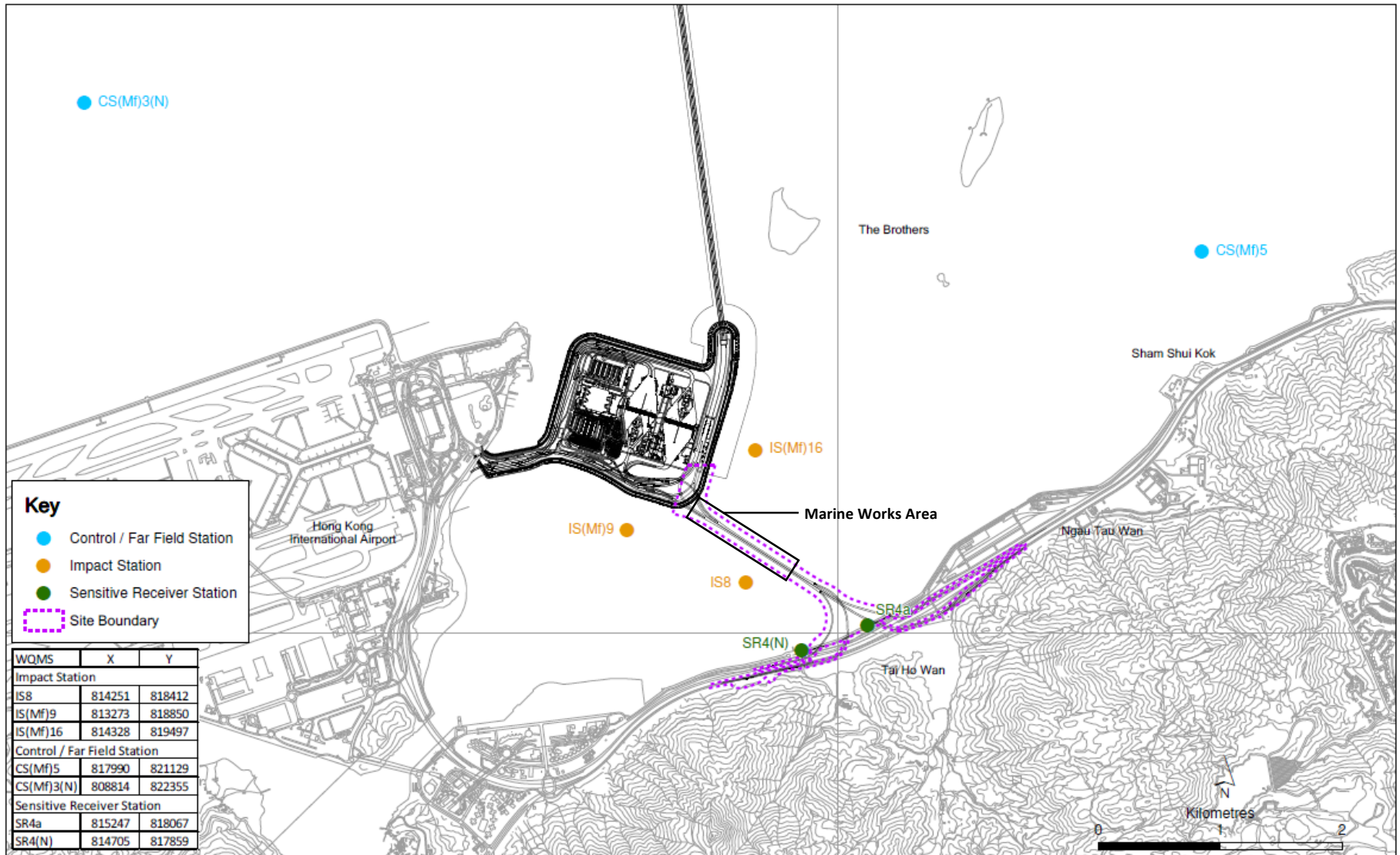
Project	Works	Date (yyyy-mm-dd)	Tide	Station	Start Time	Level	Replicate	Temperature (°C)	pH	Salinity (ppt)	DO (mg/L)	Average DO (mg/L)	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS
TMCLKL	HY/2012/07	2018-08-24	Mid-Ebb	CS(Mf)5	11:26	Surface	1	28.3	7.8	24.7	6.5	5.7	4.5	5.8	7.2	9.2
TMCLKL	HY/2012/07	2018-08-24	Mid-Ebb	CS(Mf)5	11:26	Surface	2	28.6	7.9	24.4	6.5		4.4		7.4	
TMCLKL	HY/2012/07	2018-08-24	Mid-Ebb	CS(Mf)5	11:26	Middle	1	27.7	7.8	27.5	4.9		5.5		8.8	
TMCLKL	HY/2012/07	2018-08-24	Mid-Ebb	CS(Mf)5	11:26	Middle	2	27.9	7.8	27.2	4.9	4.0	5.4	5.8	9.0	9.2
TMCLKL	HY/2012/07	2018-08-24	Mid-Ebb	CS(Mf)5	11:26	Bottom	1	26.3	7.8	31.0	4.0		7.8		11.2	
TMCLKL	HY/2012/07	2018-08-24	Mid-Ebb	CS(Mf)5	11:26	Bottom	2	26.5	7.8	30.7	4.0	6.4	7.4	7.5	11.7	5.9
TMCLKL	HY/2012/07	2018-08-24	Mid-Ebb	CS(Mf)3(N)	13:03	Surface	1	29.4	8.2	21.8	8.2		2.2		5.1	
TMCLKL	HY/2012/07	2018-08-24	Mid-Ebb	CS(Mf)3(N)	13:03	Surface	2	29.6	8.2	21.8	8.2		2.2		4.6	
TMCLKL	HY/2012/07	2018-08-24	Mid-Ebb	CS(Mf)3(N)	13:03	Middle	1	28.7	8.0	27.3	4.7	4.6	7.9	7.5	5.5	5.9
TMCLKL	HY/2012/07	2018-08-24	Mid-Ebb	CS(Mf)3(N)	13:03	Middle	2	29.0	8.0	27.2	4.6		7.4		5.6	
TMCLKL	HY/2012/07	2018-08-24	Mid-Ebb	CS(Mf)3(N)	13:03	Bottom	1	28.7	8.0	28.1	4.6	6.1	12.4	6.3	6.9	11.5
TMCLKL	HY/2012/07	2018-08-24	Mid-Ebb	CS(Mf)3(N)	13:03	Bottom	2	28.9	8.0	28.1	4.5		12.9		7.4	
TMCLKL	HY/2012/07	2018-08-24	Mid-Ebb	IS(Mf)16	11:59	Surface	1	28.1	7.8	25.1	6.1	6.1	5.8	6.3	11.1	11.5
TMCLKL	HY/2012/07	2018-08-24	Mid-Ebb	IS(Mf)16	11:59	Surface	2	28.4	7.9	24.7	6.1		5.9		10.8	
TMCLKL	HY/2012/07	2018-08-24	Mid-Ebb	IS(Mf)16	11:59	Middle	1									
TMCLKL	HY/2012/07	2018-08-24	Mid-Ebb	IS(Mf)16	11:59	Middle	2					4.9		6.3		11.5
TMCLKL	HY/2012/07	2018-08-24	Mid-Ebb	IS(Mf)16	11:59	Bottom	1	27.5	7.8	27.8	4.9		6.4		12.2	
TMCLKL	HY/2012/07	2018-08-24	Mid-Ebb	IS(Mf)16	11:59	Bottom	2	27.8	7.8	27.6	4.9	7.6	6.9	11.7	11.9	9.6
TMCLKL	HY/2012/07	2018-08-24	Mid-Ebb	SR4a	12:09	Surface	1	28.9	7.8	22.4	7.5		4.6		7.6	
TMCLKL	HY/2012/07	2018-08-24	Mid-Ebb	SR4a	12:09	Surface	2	29.2	8.0	22.2	7.6		5.0		7.2	
TMCLKL	HY/2012/07	2018-08-24	Mid-Ebb	SR4a	12:09	Middle	1					4.8		11.7		9.6
TMCLKL	HY/2012/07	2018-08-24	Mid-Ebb	SR4a	12:09	Middle	2									
TMCLKL	HY/2012/07	2018-08-24	Mid-Ebb	SR4a	12:09	Bottom	1	28.1	7.8	25.9	4.8	7.6	18.9	11.7	11.2	9.6
TMCLKL	HY/2012/07	2018-08-24	Mid-Ebb	SR4a	12:09	Bottom	2	28.3	7.8	25.6	4.8		18.4		12.3	
TMCLKL	HY/2012/07	2018-08-24	Mid-Ebb	SR4(N)	12:16	Surface	1	28.9	7.8	22.8	7.0		5.1		8.3	
TMCLKL	HY/2012/07	2018-08-24	Mid-Ebb	SR4(N)	12:16	Surface	2	29.2	8.0	22.6	7.1	7.1	5.0	10.4	8.6	9.5
TMCLKL	HY/2012/07	2018-08-24	Mid-Ebb	SR4(N)	12:16	Middle	1									
TMCLKL	HY/2012/07	2018-08-24	Mid-Ebb	SR4(N)	12:16	Middle	2					3.9		10.4		9.5
TMCLKL	HY/2012/07	2018-08-24	Mid-Ebb	SR4(N)	12:16	Bottom	1	28.2	7.7	25.4	3.9		15.8		10.8	
TMCLKL	HY/2012/07	2018-08-24	Mid-Ebb	SR4(N)	12:16	Bottom	2	28.5	7.7	25.1	3.8	8.7	15.7	7.4	10.3	10.1
TMCLKL	HY/2012/07	2018-08-24	Mid-Ebb	IS8	12:23	Surface	1	29.3	7.8	22.8	8.7		4.6		8.6	
TMCLKL	HY/2012/07	2018-08-24	Mid-Ebb	IS8	12:23	Surface	2	29.6	8.1	22.6	8.7		5.1		8.3	
TMCLKL	HY/2012/07	2018-08-24	Mid-Ebb	IS8	12:23	Middle	1					5.4		7.4		10.1
TMCLKL	HY/2012/07	2018-08-24	Mid-Ebb	IS8	12:23	Middle	2									
TMCLKL	HY/2012/07	2018-08-24	Mid-Ebb	IS8	12:23	Bottom	1	28.6	7.8	25.3	5.5	5.4	9.7	7.4	11.7	10.1
TMCLKL	HY/2012/07	2018-08-24	Mid-Ebb	IS8	12:23	Bottom	2	28.9	7.8	24.9	5.3		10.0		11.9	
TMCLKL	HY/2012/07	2018-08-24	Mid-Ebb	IS(Mf)9	12:33	Surface	1	28.7	7.8	23.2	8.2	8.3	8.2	10.8	4.4	6.1
TMCLKL	HY/2012/07	2018-08-24	Mid-Ebb	IS(Mf)9	12:33	Surface	2	29.0	8.1	22.9	8.3		8.0		4.5	
TMCLKL	HY/2012/07	2018-08-24	Mid-Ebb	IS(Mf)9	12:33	Middle	1									
TMCLKL	HY/2012/07	2018-08-24	Mid-Ebb	IS(Mf)9	12:33	Middle	2					5.8		10.8		6.1
TMCLKL	HY/2012/07	2018-08-24	Mid-Ebb	IS(Mf)9	12:33	Bottom	1	28.3	7.8	25.7	5.8		13.1		7.6	
TMCLKL	HY/2012/07	2018-08-24	Mid-Ebb	IS(Mf)9	12:33	Bottom	2	28.6	7.8	25.4	5.8	5.8	13.7	10.8	7.7	6.1
TMCLKL	HY/2012/07	2018-08-24	Mid-Ebb	IS(Mf)9	12:33	Bottom	2	28.6	7.8	25.4	5.8					

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	2018-08-24	Mid-Flood	CS(Mf)5	19:03	Surface	1	28.2	7.8	25.7	5.9	5.0	4.5	7.0	5.6	7.6
TMCLKL	HY/2012/07	2018-08-24	Mid-Flood	CS(Mf)5	19:03	Surface	2	28.5	7.9	25.3	6.0		5.0		5.7	
TMCLKL	HY/2012/07	2018-08-24	Mid-Flood	CS(Mf)5	19:03	Middle	1	26.7	7.8	29.8	4.1		6.2		7.0	
TMCLKL	HY/2012/07	2018-08-24	Mid-Flood	CS(Mf)5	19:03	Middle	2	27.0	7.8	29.5	4.1	4.2	6.0	7.0	7.5	7.6
TMCLKL	HY/2012/07	2018-08-24	Mid-Flood	CS(Mf)5	19:03	Bottom	1	26.4	7.8	30.5	4.2		10.4		9.6	
TMCLKL	HY/2012/07	2018-08-24	Mid-Flood	CS(Mf)5	19:03	Bottom	2	26.7	7.8	30.1	4.2	6.0	9.6	4.0	10.0	8.9
TMCLKL	HY/2012/07	2018-08-24	Mid-Flood	CS(Mf)3(N)	17:41	Surface	1	30.2	8.0	18.7	6.1		3.1		6.0	
TMCLKL	HY/2012/07	2018-08-24	Mid-Flood	CS(Mf)3(N)	17:41	Surface	2	30.0	7.9	18.7	6.2		3.2		7.0	
TMCLKL	HY/2012/07	2018-08-24	Mid-Flood	CS(Mf)3(N)	17:41	Middle	1	30.1	8.0	19.4	5.9	5.2	3.6	4.0	9.0	8.9
TMCLKL	HY/2012/07	2018-08-24	Mid-Flood	CS(Mf)3(N)	17:41	Middle	2	29.9	7.9	19.3	5.9		3.4		9.3	
TMCLKL	HY/2012/07	2018-08-24	Mid-Flood	CS(Mf)3(N)	17:41	Bottom	1	29.1	7.9	24.9	5.2	5.2	5.4	4.0	11.1	8.9
TMCLKL	HY/2012/07	2018-08-24	Mid-Flood	CS(Mf)3(N)	17:41	Bottom	2	28.9	7.9	24.6	5.2		5.2		11.0	
TMCLKL	HY/2012/07	2018-08-24	Mid-Flood	IS(Mf)16	18:35	Surface	1	29.0	7.9	23.6	9.7	9.8	8.8	12.2	6.3	7.8
TMCLKL	HY/2012/07	2018-08-24	Mid-Flood	IS(Mf)16	18:35	Surface	2	29.3	8.2	23.4	9.8		9.5		5.9	
TMCLKL	HY/2012/07	2018-08-24	Mid-Flood	IS(Mf)16	18:35	Middle	1									
TMCLKL	HY/2012/07	2018-08-24	Mid-Flood	IS(Mf)16	18:35	Middle	2					7.4		12.2		7.8
TMCLKL	HY/2012/07	2018-08-24	Mid-Flood	IS(Mf)16	18:35	Bottom	1	28.6	7.9	24.8	7.4		14.9		9.8	
TMCLKL	HY/2012/07	2018-08-24	Mid-Flood	IS(Mf)16	18:35	Bottom	2	28.9	8.0	24.5	7.3	10.4	15.6	8.3	9.2	11.6
TMCLKL	HY/2012/07	2018-08-24	Mid-Flood	SR4a	18:24	Surface	1	29.3	7.9	22.7	10.3		7.2		9.6	
TMCLKL	HY/2012/07	2018-08-24	Mid-Flood	SR4a	18:24	Surface	2	29.5	8.2	22.5	10.4	10.4	7.7	8.3	9.7	11.6
TMCLKL	HY/2012/07	2018-08-24	Mid-Flood	SR4a	18:24	Middle	1									
TMCLKL	HY/2012/07	2018-08-24	Mid-Flood	SR4a	18:24	Middle	2					8.2		8.3		11.6
TMCLKL	HY/2012/07	2018-08-24	Mid-Flood	SR4a	18:24	Bottom	1	28.9	7.9	23.6	8.1		9.2		13.2	
TMCLKL	HY/2012/07	2018-08-24	Mid-Flood	SR4a	18:24	Bottom	2	29.1	8.0	23.3	8.2	9.6	9.1	12.3	13.7	13.4
TMCLKL	HY/2012/07	2018-08-24	Mid-Flood	SR4(N)	18:19	Surface	1	29.2	7.9	22.8	9.6		8.8		11.2	
TMCLKL	HY/2012/07	2018-08-24	Mid-Flood	SR4(N)	18:19	Surface	2	29.5	8.1	22.6	9.6	9.6	9.2	12.3	11.8	13.4
TMCLKL	HY/2012/07	2018-08-24	Mid-Flood	SR4(N)	18:19	Middle	1									
TMCLKL	HY/2012/07	2018-08-24	Mid-Flood	SR4(N)	18:19	Middle	2					8.2		12.3		13.4
TMCLKL	HY/2012/07	2018-08-24	Mid-Flood	SR4(N)	18:19	Bottom	1	28.8	7.9	24.1	8.3		15.4		15.4	
TMCLKL	HY/2012/07	2018-08-24	Mid-Flood	SR4(N)	18:19	Bottom	2	29.1	8.0	23.8	8.1	8.2	15.6	12.3	15.0	13.4
TMCLKL	HY/2012/07	2018-08-24	Mid-Flood	IS8	18:12	Surface	1	29.0	7.9	23.6	9.1		16.3		11.4	
TMCLKL	HY/2012/07	2018-08-24	Mid-Flood	IS8	18:12	Surface	2	29.3	8.1	23.3	9.2	9.2	16.9	18.1	10.7	14.9
TMCLKL	HY/2012/07	2018-08-24	Mid-Flood	IS8	18:12	Middle	1									
TMCLKL	HY/2012/07	2018-08-24	Mid-Flood	IS8	18:12	Middle	2					8.0		18.1		14.9
TMCLKL	HY/2012/07	2018-08-24	Mid-Flood	IS8	18:12	Bottom	1	28.8	7.9	24.1	7.9		19.3		18.7	
TMCLKL	HY/2012/07	2018-08-24	Mid-Flood	IS8	18:12	Bottom	2	29.1	8.0	23.8	8.0	8.0	19.7	18.1	18.6	14.9
TMCLKL	HY/2012/07	2018-08-24	Mid-Flood	IS(Mf)9	18:03	Surface	1	28.9	7.9	24.3	8.4		19.9		10.1	
TMCLKL	HY/2012/07	2018-08-24	Mid-Flood	IS(Mf)9	18:03	Surface	2	29.2	8.1	24.1	8.4	8.4	19.3	20.5	10.2	11.0
TMCLKL	HY/2012/07	2018-08-24	Mid-Flood	IS(Mf)9	18:03	Middle	1									
TMCLKL	HY/2012/07	2018-08-24	Mid-Flood	IS(Mf)9	18:03	Middle	2					8.2		20.5		11.0
TMCLKL	HY/2012/07	2018-08-24	Mid-Flood	IS(Mf)9	18:03	Bottom	1	28.9	7.9	24.4	8.1		21.0		11.6	
TMCLKL	HY/2012/07	2018-08-24	Mid-Flood	IS(Mf)9	18:03	Bottom	2	29.1	8.0	24.1	8.2	8.2	21.6	20.5	12.0	11.0
TMCLKL	HY/2012/07	2018-08-24	Mid-Flood	IS(Mf)9	18:03	Bottom	2	29.1	8.0	24.1	8.2		21.6		12.0	

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

Photo 1 - Mid-Ebb at SR4(N) on 24 August 2018





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 03 September 2018

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



ERM

Dear Sir/ Madam,

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

Action Level Exceedance

0215660_29 August 2018_ Surface and Middle-depth DO_F_Station SR4(N)
0215660_29 August 2018_ Surface and Middle-depth DO_F_Station IS(Mf)9

A total of two exceedances were recorded on 29 August 2018.

Regards,

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

Dr Jasmine Ng
Environmental Team Leader

CONFIDENTIALITY NOTICE

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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.	<p style="text-align: center;"><u>Action Level Exceedance</u> 0215660_29 August 2018_Surface and Middle-depth DO_F_Station SR4(N) 0215660_29 August 2018_Surface and Middle-depth DO_F_Station IS(Mf)9</p> <p style="text-align: center;">[Total No. of Exceedance = 2]</p>	
Date	<p style="text-align: center;">29 August 2018 (Measured) 30 August 2018 (<i>In situ</i> results received by ERM) 07 September 2018 (Laboratory results received by ERM)</p>	
Monitoring Station	<p style="text-align: center;">CS(Mf)5, SR4a, SR4, IS8, IS(Mf)16, IS(Mf)9, CS(Mf)3(N)</p>	
Parameter(s) with Exceedance(s)	<p style="text-align: center;">Surface and Middle-depth DO</p>	
Action Levels for DO	Surface and Middle-depth DO	5.0 mg/L
Limit Levels for DO	Surface and Middle-depth DO	4.2 mg/L
Measured Levels	<p><u>Action Level Exceedance</u> 1. Mid-flood at SR4(N) (Surface and Middle-depth DO = 4.9 mg/L); 2. Mid-flood at IS(Mf)9 (Surface and Middle-depth DO = 4.9 mg/L)</p>	
Works Undertaken (at the time of monitoring event)	<p>Demolition of marine platform was undertaken at Viaduct E under this Contract on 29 August 2018.</p>	
Possible Reason for Action or Limit Level Exceedance(s)	<p>The exceedances of DO are unlikely to be due to the Project, in view of the following</p> <ul style="list-style-type: none"> • All monitored parameters, except DO, 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. • Apart from marginal DO exceedances at SR4(N) and IS(Mf)9, levels of DO at all Impact stations were in compliance with the Action and Limit Levels during both mid-flood and mid-ebb tides on the same day. • DO levels at SR4(N) and IS(Mf)9 are similar to the control station CS(Mf)5 where surface and middle-depth DO is relatively low during summer period. • No particular observation was reported at SR4(N) and IS(Mf)9. 	
Actions Taken/ To Be Taken	<p>No immediate action is considered necessary. The ET will monitor for future trends in exceedances.</p>	
Remarks	<p>The monitoring results on 29 August 2018 and locations of water quality monitoring stations are attached. Site photo record on 29 August 2018 is attached.</p>	

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	2018-08-29	Mid-Ebb	CS(Mf)5	14:11	Surface	1	27.8	8.2	25.5	5.0	4.8	7.4	8.6	9.5	9.9
TMCLKL	HY/2012/07	2018-08-29	Mid-Ebb	CS(Mf)5	14:11	Surface	2	27.8	8.1	25.7	5.0		7.5		9.7	
TMCLKL	HY/2012/07	2018-08-29	Mid-Ebb	CS(Mf)5	14:11	Middle	1	27.5	8.2	26.6	4.7		9.9		9.5	
TMCLKL	HY/2012/07	2018-08-29	Mid-Ebb	CS(Mf)5	14:11	Middle	2	27.5	8.1	26.9	4.6		10.0		9.9	
TMCLKL	HY/2012/07	2018-08-29	Mid-Ebb	CS(Mf)5	14:11	Bottom	1	27.7	8.2	26.0	4.7	4.7	8.3	8.6	10.3	9.9
TMCLKL	HY/2012/07	2018-08-29	Mid-Ebb	CS(Mf)5	14:11	Bottom	2	27.7	8.1	26.3	4.7		8.4		10.3	
TMCLKL	HY/2012/07	2018-08-29	Mid-Ebb	CS(Mf)3(N)	13:16	Surface	1	28.6	7.9	21.7	5.4	5.3	4.1	4.4	4.5	6.6
TMCLKL	HY/2012/07	2018-08-29	Mid-Ebb	CS(Mf)3(N)	13:16	Surface	2	28.6	7.8	21.5	5.3		4.3		4.8	
TMCLKL	HY/2012/07	2018-08-29	Mid-Ebb	CS(Mf)3(N)	13:16	Middle	1	28.3	7.9	23.0	5.2		4.6		6.4	
TMCLKL	HY/2012/07	2018-08-29	Mid-Ebb	CS(Mf)3(N)	13:16	Middle	2	28.3	7.9	22.9	5.2		4.2		5.9	
TMCLKL	HY/2012/07	2018-08-29	Mid-Ebb	CS(Mf)3(N)	13:16	Bottom	1	28.2	7.9	23.2	5.3	5.3	4.9	4.4	9.1	6.6
TMCLKL	HY/2012/07	2018-08-29	Mid-Ebb	CS(Mf)3(N)	13:16	Bottom	2	28.2	7.9	23.1	5.2		4.5		9.1	
TMCLKL	HY/2012/07	2018-08-29	Mid-Ebb	IS(Mf)16	13:48	Surface	1	28.0	8.2	24.9	5.0	5.0	8.0	9.2	5.8	7.7
TMCLKL	HY/2012/07	2018-08-29	Mid-Ebb	IS(Mf)16	13:48	Surface	2	28.0	8.1	25.2	5.0		8.1		5.4	
TMCLKL	HY/2012/07	2018-08-29	Mid-Ebb	IS(Mf)16	13:48	Middle	1									
TMCLKL	HY/2012/07	2018-08-29	Mid-Ebb	IS(Mf)16	13:48	Middle	2									
TMCLKL	HY/2012/07	2018-08-29	Mid-Ebb	IS(Mf)16	13:48	Bottom	1	28.0	8.2	25.1	5.0	4.9	10.2	9.2	9.5	7.7
TMCLKL	HY/2012/07	2018-08-29	Mid-Ebb	IS(Mf)16	13:48	Bottom	2	28.0	8.1	25.4	4.8		10.3		9.9	
TMCLKL	HY/2012/07	2018-08-29	Mid-Ebb	SR4a	13:35	Surface	1	28.0	8.2	24.9	5.2	5.2	7.9	8.0	5.8	6.8
TMCLKL	HY/2012/07	2018-08-29	Mid-Ebb	SR4a	13:35	Surface	2	28.0	8.1	25.2	5.1		8.0		5.6	
TMCLKL	HY/2012/07	2018-08-29	Mid-Ebb	SR4a	13:35	Middle	1									
TMCLKL	HY/2012/07	2018-08-29	Mid-Ebb	SR4a	13:35	Middle	2									
TMCLKL	HY/2012/07	2018-08-29	Mid-Ebb	SR4a	13:35	Bottom	1	28.0	8.2	25.0	5.1	5.1	7.9	8.0	7.7	6.8
TMCLKL	HY/2012/07	2018-08-29	Mid-Ebb	SR4a	13:35	Bottom	2	28.0	8.1	25.3	5.1		8.0		8.2	
TMCLKL	HY/2012/07	2018-08-29	Mid-Ebb	SR4(N)	13:32	Surface	1	28.1	8.2	24.8	5.2	5.2	7.1	7.2	9.5	10.4
TMCLKL	HY/2012/07	2018-08-29	Mid-Ebb	SR4(N)	13:32	Surface	2	28.1	8.1	25.1	5.2		7.2		10.3	
TMCLKL	HY/2012/07	2018-08-29	Mid-Ebb	SR4(N)	13:32	Middle	1									
TMCLKL	HY/2012/07	2018-08-29	Mid-Ebb	SR4(N)	13:32	Middle	2									
TMCLKL	HY/2012/07	2018-08-29	Mid-Ebb	SR4(N)	13:32	Bottom	1	28.1	8.2	24.9	5.2	5.2	7.2	7.2	11.3	10.4
TMCLKL	HY/2012/07	2018-08-29	Mid-Ebb	SR4(N)	13:32	Bottom	2	28.1	8.1	25.1	5.2		7.3		10.4	
TMCLKL	HY/2012/07	2018-08-29	Mid-Ebb	IS8	13:27	Surface	1	28.0	8.2	25.2	5.2	5.2	10.3	10.4	6.5	7.9
TMCLKL	HY/2012/07	2018-08-29	Mid-Ebb	IS8	13:27	Surface	2	28.0	8.1	25.4	5.2		10.4		6.8	
TMCLKL	HY/2012/07	2018-08-29	Mid-Ebb	IS8	13:27	Middle	1									
TMCLKL	HY/2012/07	2018-08-29	Mid-Ebb	IS8	13:27	Middle	2									
TMCLKL	HY/2012/07	2018-08-29	Mid-Ebb	IS8	13:27	Bottom	1	28.0	8.2	25.2	4.9	4.9	10.3	10.4	8.9	7.9
TMCLKL	HY/2012/07	2018-08-29	Mid-Ebb	IS8	13:27	Bottom	2	28.0	8.1	25.5	4.8		10.4		9.2	
TMCLKL	HY/2012/07	2018-08-29	Mid-Ebb	IS(Mf)9	13:22	Surface	1	28.1	8.2	24.8	5.1	5.1	6.5	6.6	9.0	10.0
TMCLKL	HY/2012/07	2018-08-29	Mid-Ebb	IS(Mf)9	13:22	Surface	2	28.1	8.1	25.0	5.1		6.6		9.1	
TMCLKL	HY/2012/07	2018-08-29	Mid-Ebb	IS(Mf)9	13:22	Middle	1									
TMCLKL	HY/2012/07	2018-08-29	Mid-Ebb	IS(Mf)9	13:22	Middle	2									
TMCLKL	HY/2012/07	2018-08-29	Mid-Ebb	IS(Mf)9	13:22	Bottom	1	28.1	8.2	24.7	5.1	5.1	6.6	6.6	10.8	10.0
TMCLKL	HY/2012/07	2018-08-29	Mid-Ebb	IS(Mf)9	13:22	Bottom	2	28.1	8.1	25.0	5.1		6.7		11.2	

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	2018-08-29	Mid-Flood	CS(Mf)5	7:39	Surface	1	28.0	8.2	24.5	5.1	5.0	6.5	7.8	7.4	8.1
TMCLKL	HY/2012/07	2018-08-29	Mid-Flood	CS(Mf)5	7:39	Surface	2	28.0	8.1	24.8	5.1		6.7		7.3	
TMCLKL	HY/2012/07	2018-08-29	Mid-Flood	CS(Mf)5	7:39	Middle	1	27.7	8.2	25.7	4.8		8.5		8.5	
TMCLKL	HY/2012/07	2018-08-29	Mid-Flood	CS(Mf)5	7:39	Middle	2	27.7	8.1	26.0	4.8	4.7	8.7	7.8	7.9	8.1
TMCLKL	HY/2012/07	2018-08-29	Mid-Flood	CS(Mf)5	7:39	Bottom	1	27.6	8.1	27.0	4.7		8.1		8.9	
TMCLKL	HY/2012/07	2018-08-29	Mid-Flood	CS(Mf)5	7:39	Bottom	2	27.6	8.1	27.4	4.6	5.2	8.3	14.6	8.7	16.2
TMCLKL	HY/2012/07	2018-08-29	Mid-Flood	CS(Mf)3(N)	8:50	Surface	1	28.3	8.0	22.4	5.2		10.0		13.6	
TMCLKL	HY/2012/07	2018-08-29	Mid-Flood	CS(Mf)3(N)	8:50	Surface	2	28.4	8.0	22.2	5.2		10.1		13.4	
TMCLKL	HY/2012/07	2018-08-29	Mid-Flood	CS(Mf)3(N)	8:50	Middle	1	28.3	8.0	22.5	5.1	5.1	13.2	14.6	14.9	16.2
TMCLKL	HY/2012/07	2018-08-29	Mid-Flood	CS(Mf)3(N)	8:50	Middle	2	28.4	8.0	22.3	5.1		13.2		15.7	
TMCLKL	HY/2012/07	2018-08-29	Mid-Flood	CS(Mf)3(N)	8:50	Bottom	1	28.2	7.9	22.8	5.1	5.2	20.4	7.7	19.5	8.7
TMCLKL	HY/2012/07	2018-08-29	Mid-Flood	CS(Mf)3(N)	8:50	Bottom	2	28.3	7.9	22.6	5.1		20.6		20.1	
TMCLKL	HY/2012/07	2018-08-29	Mid-Flood	IS(Mf)16	8:02	Surface	1	27.8	8.2	23.1	5.2	5.2	6.3	7.7	7.8	8.7
TMCLKL	HY/2012/07	2018-08-29	Mid-Flood	IS(Mf)16	8:02	Surface	2	27.8	8.1	25.0	5.2		6.4		8.1	
TMCLKL	HY/2012/07	2018-08-29	Mid-Flood	IS(Mf)16	8:02	Middle	1									
TMCLKL	HY/2012/07	2018-08-29	Mid-Flood	IS(Mf)16	8:02	Middle	2					5.1		7.7		8.7
TMCLKL	HY/2012/07	2018-08-29	Mid-Flood	IS(Mf)16	8:02	Bottom	1	27.8	8.2	25.2	5.1		9.0		9.0	
TMCLKL	HY/2012/07	2018-08-29	Mid-Flood	IS(Mf)16	8:02	Bottom	2	27.8	8.1	25.6	5.1	5.0	9.2	14.7	9.9	17.0
TMCLKL	HY/2012/07	2018-08-29	Mid-Flood	SR4a	8:11	Surface	1	27.8	8.2	25.1	5.0		14.3		9.8	
TMCLKL	HY/2012/07	2018-08-29	Mid-Flood	SR4a	8:11	Surface	2	27.8	8.1	25.4	4.9	5.0	14.4	14.7	10.4	17.0
TMCLKL	HY/2012/07	2018-08-29	Mid-Flood	SR4a	8:11	Middle	1									
TMCLKL	HY/2012/07	2018-08-29	Mid-Flood	SR4a	8:11	Middle	2					4.9		7.0		8.8
TMCLKL	HY/2012/07	2018-08-29	Mid-Flood	SR4a	8:11	Bottom	1	27.8	8.2	25.2	4.9		14.9		24.0	
TMCLKL	HY/2012/07	2018-08-29	Mid-Flood	SR4a	8:11	Bottom	2	27.8	8.1	25.5	4.9	4.9	15.0	7.0	23.7	8.8
TMCLKL	HY/2012/07	2018-08-29	Mid-Flood	SR4(N)	8:18	Surface	1	27.8	8.1	25.3	4.9		6.8		8.4	
TMCLKL	HY/2012/07	2018-08-29	Mid-Flood	SR4(N)	8:18	Surface	2	27.9	8.1	25.6	4.9	4.9	6.9	7.0	8.4	8.8
TMCLKL	HY/2012/07	2018-08-29	Mid-Flood	SR4(N)	8:18	Middle	1									
TMCLKL	HY/2012/07	2018-08-29	Mid-Flood	SR4(N)	8:18	Middle	2					4.9		7.0		8.8
TMCLKL	HY/2012/07	2018-08-29	Mid-Flood	SR4(N)	8:18	Bottom	1	27.8	8.1	25.4	4.9		7.0		9.4	
TMCLKL	HY/2012/07	2018-08-29	Mid-Flood	SR4(N)	8:18	Bottom	2	27.8	8.1	25.8	4.9	5.1	7.1	11.8	9.0	8.4
TMCLKL	HY/2012/07	2018-08-29	Mid-Flood	IS8	8:23	Surface	1	27.8	8.2	25.0	5.1		10.9		7.0	
TMCLKL	HY/2012/07	2018-08-29	Mid-Flood	IS8	8:23	Surface	2	27.9	8.1	25.3	5.1	5.1	11.0	11.8	7.7	8.4
TMCLKL	HY/2012/07	2018-08-29	Mid-Flood	IS8	8:23	Middle	1									
TMCLKL	HY/2012/07	2018-08-29	Mid-Flood	IS8	8:23	Middle	2					5.1		11.8		8.4
TMCLKL	HY/2012/07	2018-08-29	Mid-Flood	IS8	8:23	Bottom	1	27.8	8.2	25.2	5.1		12.6		9.3	
TMCLKL	HY/2012/07	2018-08-29	Mid-Flood	IS8	8:23	Bottom	2	27.8	8.1	25.5	5.0	5.1	12.7	11.8	9.7	8.4
TMCLKL	HY/2012/07	2018-08-29	Mid-Flood	IS(Mf)9	8:29	Surface	1	27.8	8.1	25.5	4.9		12.7		7.0	
TMCLKL	HY/2012/07	2018-08-29	Mid-Flood	IS(Mf)9	8:29	Surface	2	27.8	8.1	25.8	4.9	4.9	12.8	12.0	7.8	10.0
TMCLKL	HY/2012/07	2018-08-29	Mid-Flood	IS(Mf)9	8:29	Middle	1									
TMCLKL	HY/2012/07	2018-08-29	Mid-Flood	IS(Mf)9	8:29	Middle	2					5.0		12.0		10.0
TMCLKL	HY/2012/07	2018-08-29	Mid-Flood	IS(Mf)9	8:29	Bottom	1	27.8	8.1	25.4	5.0		11.2		12.8	
TMCLKL	HY/2012/07	2018-08-29	Mid-Flood	IS(Mf)9	8:29	Bottom	2	27.8	8.1	25.7	4.9	5.0	11.3	12.2	12.2	10.0

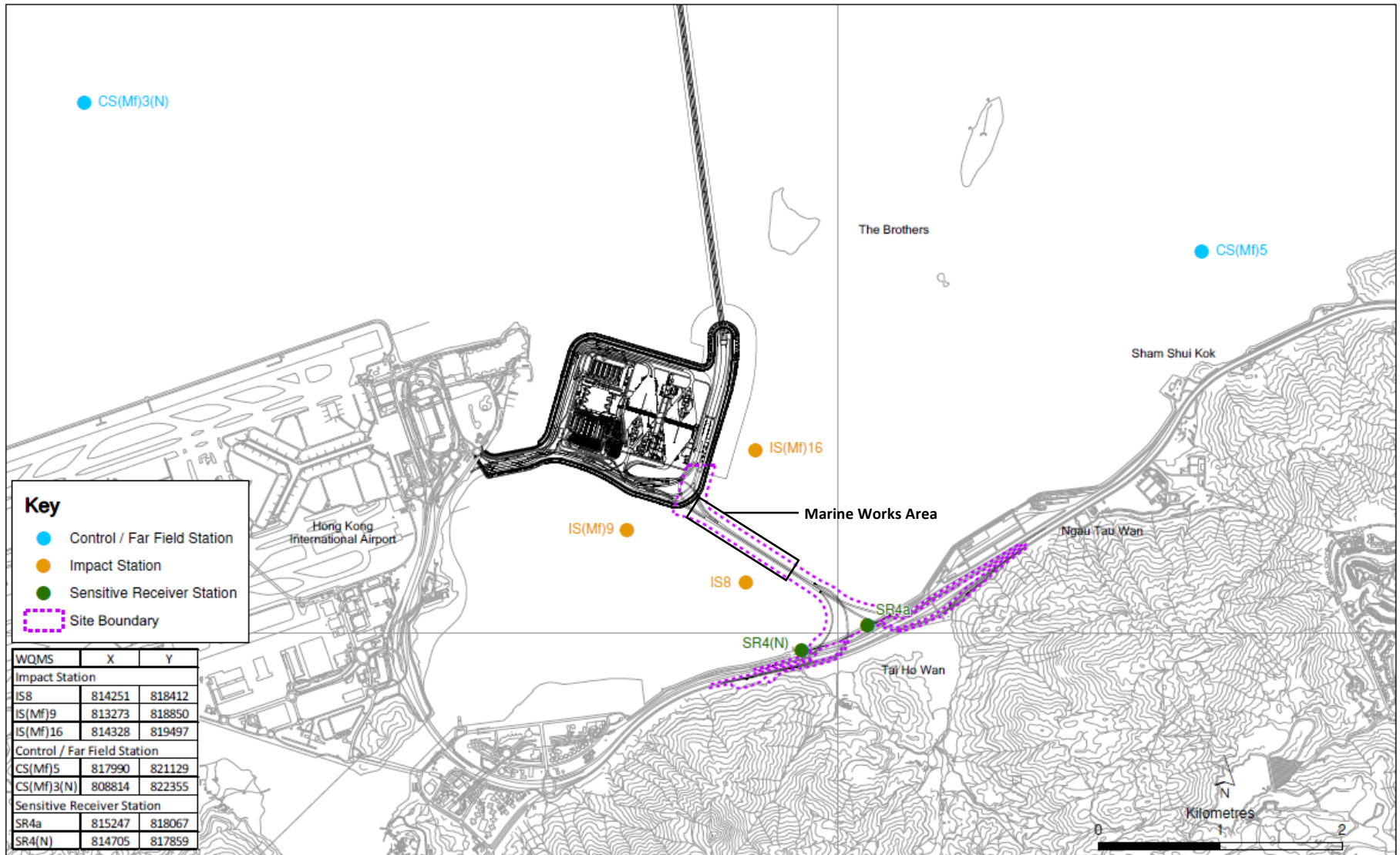
Note: Indicates Exceedance of Action Level
Indicates Exceedance of Limit Level

Photo 1 - Mid-Flood at SR4(N) on 29 August 2018



Photo 2 - Mid-Flood at IS(Mf)9 on 29 August 2018





Key

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

WQMS	X	Y
Impact Station		
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IS(Mf)9	813273	818850
IS(Mf)16	814328	819497
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Sensitive Receiver Station		
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SR4(N)	814705	817859

Locations of Water Quality Monitoring Stations