Appendix L

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

Table L1 Cumulative Statistics on Exceedances

Parameters	Level of Exceedance	Total No. recorded in this reporting month	Total No. recorded since Contract commencement
1-hr TSP	Action	0	93
	Limit	1	8
24-hr TSP	Action	0	10
	Limit	0	4
Water Quality	Action	36	164
	Limit	0	19
Impact Dolphin Monitoring	Action	0	11
	Limit	0	16

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

Reporting Period	Cumulative Statistics		
	Complaints	Notifications of Summons	Successful Prosecutions
This Reporting Month (September 2019)	0	0	0
Total No. received since Contract commencement	17	1	0

Email message

Environmental Resources Management

2507, 25/F One Harbourfront
18 Tak Fung Street
Hunghom, Kowloon
Hong Kong
Telephone: (852) 2271 3000
Facsimile: (852) 2723 5660

To	Ramboll Hong Kong, Limited (ENPO)
From	ERM- Hong Kong, Limited
Ref/Project number	Contract No. HY/2012/08 Tuen Mun–Chek Lap Kok Link–Northern Connection Sub-sea Tunnel Section
Subject	Notification of Exceedance for Air Quality Impact Monitoring
Date	27 September 2019

Dear Sir or Madam,

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

0212330_20September2019_1hrTSP_Station ASR1

One Limit Level Exceedance was recorded on 20 September 2019.

Regards,

Dr Jasmine Ng
Environmental Team Leader

ERM-Hong Kong, Limited

CONTRACT NO. HY/2012/08
TUEN MUN – CHEK LAP KOK LINK – NORTHERN CONNECTION SUB-SEA TUNNEL SECTION

Air Quality Impact Monitoring
Notification of Exceedance

Log No.	**Limit Level Exceedance** **0212330_20September2019_1hrTSP_Station ASR1** **[Total No. of Exceedances = 1]**	
Date	20 September 2019 (Measured) 26 September 2019 (Laboratory results received by ERM)	
Monitoring Station	ASR1, ASR5, ASR6, ASR10 and AQMS1	
Parameter(s) with Exceedance(s)	1-hr TSP	
Action Levels	24-hr TSP (µg/m^3)	ASR1 = 213 ASR5 = 238 AQMS1 = 213 ASR6 = 238 ASR10 = 214
	1-hr TSP (µg/m^3)	ASR1 = 331 ASR5 = 340 AQMS1 = 335 ASR6 = 338 ASR10 = 337
Limit Levels	1-hr TSP (µg/m^3)	500
	24-hr TSP (µg/m^3)	260
Measured Levels	Limit Level Exceedance for 1-hr TSP is observed at ASR1 (539 µg/m3) during 1049 – 1149 hrs.	
Works Undertaken (at the time of monitoring event)	On 20 September 2019, Road and Drainage Works were carried out on site.	
Possible Reason for Action or Limit Level Exceedance(s)	The exceedance is unlikely to be due to this Contract, in view of the following: • According to the construction information provided by the Contractor, only Road and Drainage Works were carried out on site on 20 September 2019 • The exceedance is unlikely to be due to this Contract as dust suppression measures were implemented properly on site. Water spraying was applied on site to prevent dust. Water spraying was also applied on exposed soil within the Project site and associated works areas. • With reference to the recorded wind direction (ranged between 2^o and 5^o, blowing from a northerly direction) and wind speed (ranged between 0.5 and 0.7 m/s) during the works period, Stations ASR1 are located downstream to the construction works at Portion N-A. However, the exceedance was only recorded in the third hour of 1-hour TSP monitoring with the same construction works and dust mitigation measures being carried out. Road & Drainage Works carried out at Portion N-A are unlikely to cause significant dust impact. Based on the above, the exceedance is unlikely to be due to this Contract.	

Actions Taken / To Be Taken	The Contractor has been reminded to implement the required mitigation measures as per the EP, approved EIA and Updated EM&A Manual including watering to maintain all exposed road surfaces and dust sources wet, use of sprinklers for water spraying, covering the materials having the potential to create dust by clean tarpaulin, use of water truck and watering on all exposed soil within the Project site throughout the construction period.
Remarks	The monitoring results and the locations of air quality monitoring stations are attached.

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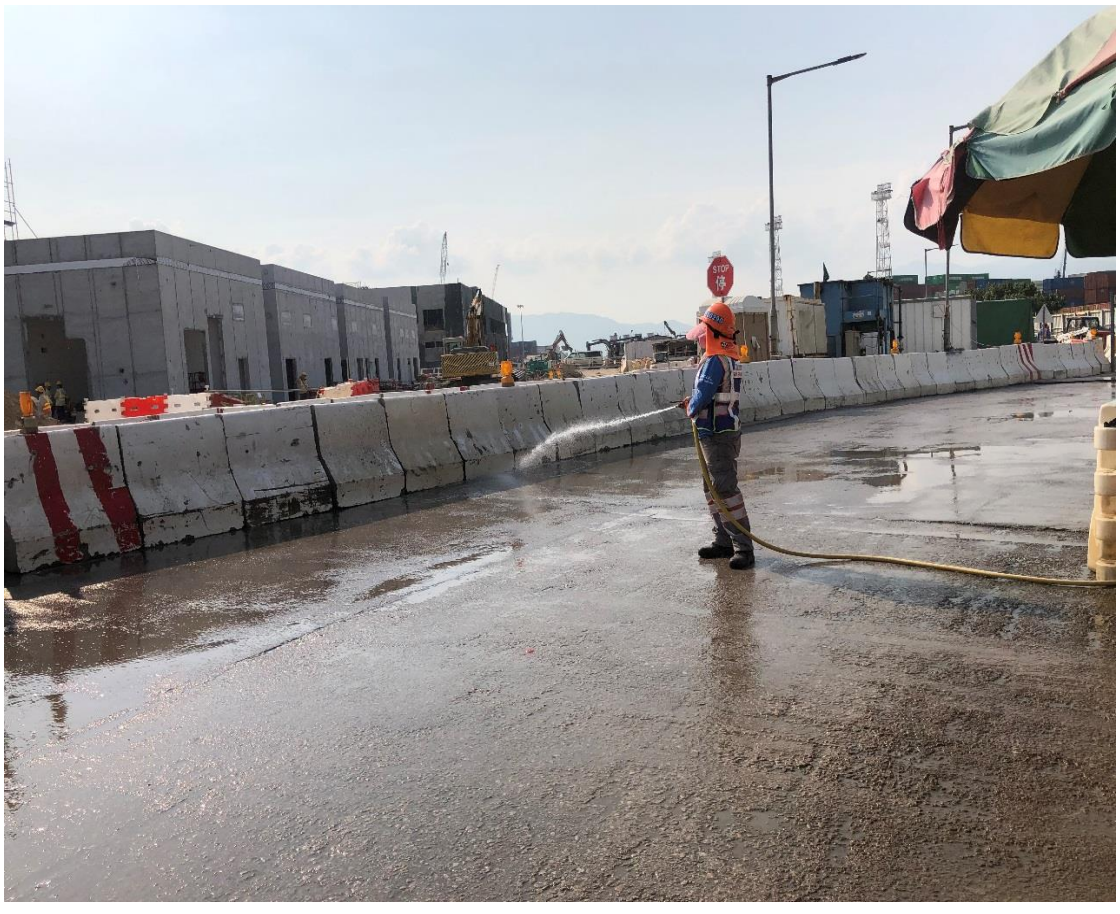
Annex A Photos provided by the Contractor

*Note: Photos taken on 20/9/2019

Water truck was used for water spraying to prevent dust. (Works Area Portion N-C)



Water spraying was applied on main haul road to prevent dust. (Works Area Portion N-A)

Air quality monitoring results on 20/9/2019								
Project	Contract	Date	Station	Weather	Start time	Parameters	Results	Unit
TMCLKL	HY/2012/08	20/9/2019	AQMS1	Sunny	8:56	1-hour TSP	125	ug/m3
TMCLKL	HY/2012/08	20/9/2019	AQMS1	Sunny	9:58	1-hour TSP	116	ug/m3
TMCLKL	HY/2012/08	20/9/2019	AQMS1	Sunny	11:00	1-hour TSP	112	ug/m3
TMCLKL	HY/2012/08	20/9/2019	ASR1	Sunny	8:45	1-hour TSP	220	ug/m3
TMCLKL	HY/2012/08	20/9/2019	ASR1	Sunny	9:47	1-hour TSP	214	ug/m3
TMCLKL	HY/2012/08	20/9/2019	ASR1	Sunny	10:49	1-hour TSP	539	ug/m3
TMCLKL	HY/2012/08	20/9/2019	ASR10	Sunny	8:11	1-hour TSP	107	ug/m3
TMCLKL	HY/2012/08	20/9/2019	ASR10	Sunny	9:13	1-hour TSP	93	ug/m3
TMCLKL	HY/2012/08	20/9/2019	ASR10	Sunny	10:15	1-hour TSP	58	ug/m3
TMCLKL	HY/2012/08	20/9/2019	ASR5	Sunny	8:33	1-hour TSP	141	ug/m3
TMCLKL	HY/2012/08	20/9/2019	ASR5	Sunny	9:35	1-hour TSP	188	ug/m3
TMCLKL	HY/2012/08	20/9/2019	ASR5	Sunny	10:37	1-hour TSP	144	ug/m3
TMCLKL	HY/2012/08	20/9/2019	ASR6	Sunny	8:23	1-hour TSP	152	ug/m3
TMCLKL	HY/2012/08	20/9/2019	ASR6	Sunny	9:25	1-hour TSP	163	ug/m3
TMCLKL	HY/2012/08	20/9/2019	ASR6	Sunny	10:27	1-hour TSP	131	ug/m3
TMCLKL	HY/2012/08	20/9/2019	AQMS1	Sunny	12:02	24-hour TSP	67	ug/m3
TMCLKL	HY/2012/08	20/9/2019	ASR1	Sunny	11:51	24-hour TSP	114	ug/m3
TMCLKL	HY/2012/08	20/9/2019	ASR10	Sunny	11:17	24-hour TSP	62	ug/m3
TMCLKL	HY/2012/08	20/9/2019	ASR5	Sunny	11:39	24-hour TSP	107	ug/m3
TMCLKL	HY/2012/08	20/9/2019	ASR6	Sunny	11:29	24-hour TSP	101	ug/m3

Meteorological Data for Impact Monitoring in the reporting period			
Date (yy-mm-dd)	**Time (24hrs)**	**Average of Wind Speed (m/s)**	**Average of Wind Direction(degree)**
19/09/20	0:00	0.5	274
19/09/20	1:00	0.6	285
19/09/20	2:00	1.2	291
19/09/20	3:00	1	288
19/09/20	4:00	1.1	251
19/09/20	5:00	0.5	322
19/09/20	6:00	0.4	288
19/09/20	7:00	0.3	351
19/09/20	8:00	0.5	350
19/09/20	9:00	0.6	347
19/09/20	10:00	0.7	5
19/09/20	11:00	0.5	2
19/09/20	12:00	0.5	347
19/09/20	13:00	0.3	322
19/09/20	14:00	0.8	21
19/09/20	15:00	0.2	24
19/09/20	16:00	0.1	3
19/09/20	17:00	0.1	357
19/09/20	18:00	0.2	344
19/09/20	19:00	0.3	351
19/09/20	20:00	0.5	352
19/09/20	21:00	0.6	287
19/09/20	22:00	1.1	295
19/09/20	23:00	0.4	354
19/09/20	0:00	0.3	305

Figure 1

Indicative Construction Works Area on 20 September 2019

DATE: 06/03/2013

Environmental Resources Management

ERM

Dragages - Bouygues Joint Venture 實嘉 · 布依格聯營	Contract No. HY/2012/08 Tuen Mun – Chek Lap Kok Link Northern Connection Sub-sea Tunnel Section	**Weekly Water Spraying Record** **每週灑水檢查記錄**

Site Location 地盤位置: Northern Landfall

Date 日期: 16 Sep 2019 to 至 22 Sep 2019

	Time 時間	Monday 星期一	Tuesday 星期二	Wednesday 星期三	Thursday 星期四	Friday 星期五	Saturday 星期六	Sunday 星期日
1	8:00 – 8:45	✓	✓	✓	✓	✓	✓	✓
2	8:45 – 9:30	✓	✓	✓	✓	✓	✓	✓
3	9:30 – 10:15	✓	✓	✓	✓	✓	✓	✓
4	10:15 – 11:00	✓	✓	✓	✓	✓	✓	✓
5	11:00 – 11:45	✓	✓	✓	✓	✓	✓	✓
6	11:45 – 12:30	✓	✓	✓	✓	✓	✓	✓
7	12:30 – 13:15	✓	✓	✓	✓	✓	✓	✓
8	13:15 – 14:00	✓	✓	✓	✓	✓	✓	✓
9	14:00 – 14:45	✓	✓	✓	✓	✓	✓	✓
10	14:45 – 15:30	✓	✓	✓	✓	✓	✓	✓
11	15:30 – 16:45	✓	✓	✓	✓	✓	✓	✓
12	16:45 – 17:30	✓	✓	✓	✓	✓	✓	✓
	Verified by Site Foreman 地盤科文簽署確認	✓	✓	✓	✓	✓	✓	✓

Night shift 夜間工作 (if necessary 如需要)								
	17:30 – 19:00							
	19:00 – 20:30							
	20:30 – 22:00							
	22:00 – 23:00							

*Please - tick (√) in the box if complete the spraying of water.
circle (O) in the box if it is raining.

*如果 - 已經完成灑水, 請於方格內加上剔號(√)。
是下雨天, 請於方格內加上圓圈(O)。

Remarks:

(1) Pursuant to EP Clause 3.15, the Permit Holder shall undertake watering at least 12 times per day on all exposed soil within the Project site and associated work areas in Tuen Mun area throughout the construction phase.
(2) Spraying position includes the main haul road, open area, slopes, stockpiles and any other dusty materials.
(3) If it is raining, no water spraying is needed.
(4) The no of spraying will be increased due to site condition.

備註:

(1) 根據環境許可證 3.15 條例，在整個施工階段內，許可證持有人須每天至少 12 次在屯門區項目工地和相關的工作區域內的所有暴露土壤灑水。
(2) 灑水位置包括主要運輸道路，空曠地帶，斜坡，存料堆，以及任何其他產生塵埃物料。
(3) 當下雨時，地盤將不需要灑水。
(4) 如果地盤情況更改或有需要時，灑水次數會相應增加。

Email message

Environmental Resources Management

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

To	Ramboll Hong Kong Limited (ENPO)
From	ERM- Hong Kong, Limited
Ref/Project number	Contract No. HY/2012/08 Tuen Mun–Chek Lap Kok Link–Northern Connection Sub-sea Tunnel Section
Subject	Notification of Exceedance for Water Quality Impact Monitoring
Date	16 September 2019

ERM

Dear Sir or Madam,

Please find the Notification of Exceedance (NOE) of the following Log no.:
Action Level Exceedance
0212330_6 September 2019_ Bottom DO_F_Station SR4a

A total of one Action Level exceedance was recorded on 6 September 2019.

Regards,

Dr Jasmine Ng
Environmental Team Leader

ERM-Hong Kong, Limited

CONTRACT NO. HY/2012/08
TUEN MUN – CHEK LAP KOK LINK – NORTHERN CONNECTION SUB-SEA TUNNEL SECTION

Marine Water Quality Impact Monitoring
Notification of Exceedance

Log No.	**<u>Action Level Exceedance</u> 0212330_6 September 2019_ Bottom DO_F_Station SR4a [Total No. of Exceedances = 1]**		
Date	6 September 2019 (Measured) 9 September 2019 (*In situ* results received by ERM) 17 September 2019 (Laboratory results received by ERM)		
Monitoring Station	CS(Mf)5, SR4a, SR4(N2), IS8(N), IS(Mf)16, IS(Mf)9, CS(Mf)3(N), SR7, IS17, IS(Mf)11		
Parameter(s) with Exceedance(s)	Dissolved Oxygen (mg/L)		
Action Levels	DO	Surface and Middle 5.0 mg/L	Bottom 4.7 mg/L
Limit Levels	DO	Surface and Middle 4.2 mg/L	Bottom 3.6 mg/L
Measured Levels	<u>Action Level Exceedance</u> 1. Mid-flood at SR4a (Bottom-depth DO = 4.5 mg/L)		
Works Undertaken (at the time of monitoring event)	According to the information provided by the Contractor, Seawall Modification Works was carried out on 6 September 2019.		
Possible Reason for Action or Limit Level Exceedance(s)	The exceedances are unlikely to be due to the Contract, in view of the following: • 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. • SR4a is far away (>2 km) from the Seawall Modification Works Area *(Figure 1)*, thus the observed exceedance should not be affected by the marine works under this Contract. Therefore, the exceedance is unlikely to be related to this Contract. • The DO pattern at SR4a during mid-flood tide was similar to their corresponding control station where the bottom-depth DO levels were generally lower. Lower bottom-depth DO levels may be 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 reported by the marine mammal observer, no discharge of organic matters into waters from landside works area was recorded. Moreover, no exceedance was recorded at IS(Mf)16 which is the closest station to the Seawall Modification Works Area during both mid-ebb and mid-flood tide. Therefore, exceedances recorded at SR4a during mid-flood tide are unlikely to be caused by the marine works of this Contract.		
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 September 2019 and locations of water quality monitoring stations are attached.		

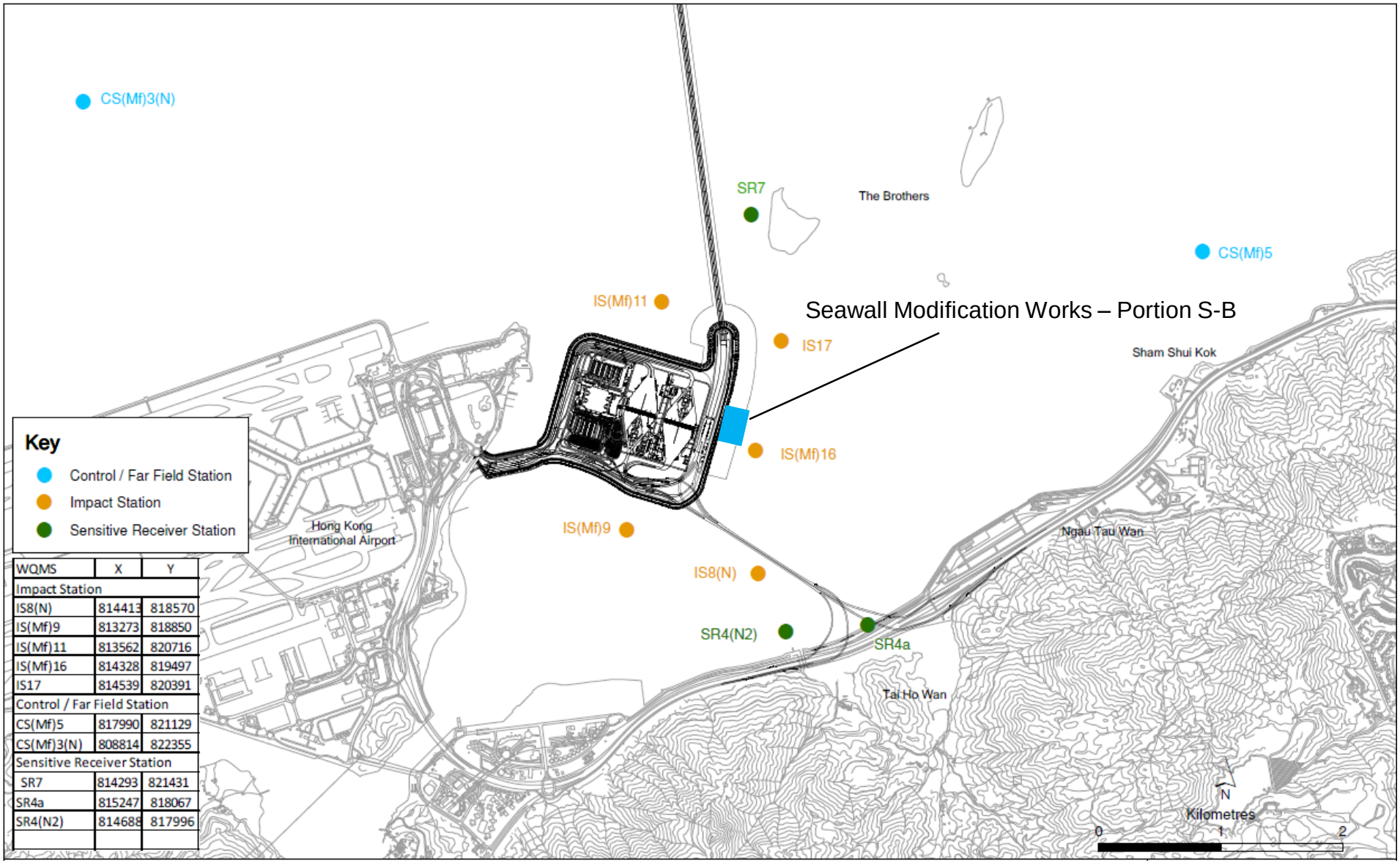
Project	Contract	Date (yyyy-mm-dd)	Tide	Station	Start Time	Level	Lev_Cod	Replicate	Temperature (°C)	pH	Salinity (ppt)	DO (mg/L)	Average DO (mg/L)	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	CS(Mf)5	18:40	Surface	1	1	28.0	7.9	25.8	5.5	5.2	1.0	1.4	3.2	2.7
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	CS(Mf)5	18:40	Surface	1	2	28.1	7.9	25.6	5.6		1.0		3.2	
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	CS(Mf)5	18:40	Middle	2	1	27.5	7.9	27.8	4.9		1.6		3.2	
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	CS(Mf)5	18:40	Middle	2	2	27.5	7.9	27.7	4.9		1.5		3.5	
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	CS(Mf)5	18:40	Bottom	3	1	27.5	7.9	27.7	4.9	4.9	1.7		1.6	
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	CS(Mf)5	18:40	Bottom	3	2	27.5	7.9	27.8	4.9		1.7		1.3	
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	CS(Mf)3(N)	17:53	Surface	1	1	28.4	7.9	19.7	5.6	5.4	2.5	3.2	3.5	4.8
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	CS(Mf)3(N)	17:53	Surface	1	2	28.5	7.9	19.8	5.5		2.7		3.7	
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	CS(Mf)3(N)	17:53	Middle	2	1	28.0	7.9	22.9	5.3		2.7		4.3	
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	CS(Mf)3(N)	17:53	Middle	2	2	28.0	7.9	22.9	5.3		2.5		3.8	
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	CS(Mf)3(N)	17:53	Bottom	3	1	28.0	7.9	25.2	5.4	5.4	4.4		6.4	
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	CS(Mf)3(N)	17:53	Bottom	3	2	28.0	7.9	25.1	5.4		4.2		7.0	
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	IS(Mf)16	17:18	Surface	1	1	28.0	7.9	24.9	5.5	5.6	5.2	5.2	7.1	5.1
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	IS(Mf)16	17:18	Surface	1	2	28.1	7.9	24.7	5.6		5.3		6.7	
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	IS(Mf)16	17:18	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	IS(Mf)16	17:18	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	IS(Mf)16	17:18	Bottom	3	1	27.6	7.8	25.8	5.0	5.0	5.2		3.2	
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	IS(Mf)16	17:18	Bottom	3	2	27.6	7.8	25.8	5.0		5.2		3.5	
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	SR4a	17:09	Surface	1	1	28.1	7.8	24.6	5.7	5.7	9.4	12.3	4.0	4.7
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	SR4a	17:09	Surface	1	2	28.2	7.8	24.4	5.7		9.2		3.9	
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	SR4a	17:09	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	SR4a	17:09	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	SR4a	17:09	Bottom	3	1	27.9	7.8	24.9	4.9	4.9	15.2		5.4	
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	SR4a	17:09	Bottom	3	2	27.9	7.8	24.9	4.9		15.4		5.3	
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	SR4(N2)	17:04	Surface	1	1	28.4	7.9	24.1	5.9	5.9	4.1	6.4	5.6	4.6
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	SR4(N2)	17:04	Surface	1	2	28.4	7.9	24.1	5.9		4.2		5.2	
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	SR4(N2)	17:04	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	SR4(N2)	17:04	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	SR4(N2)	17:04	Bottom	3	1	28.4	7.8	24.2	6.0	6.0	8.5		3.7	
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	SR4(N2)	17:04	Bottom	3	2	28.3	7.8	24.2	6.0		8.8		3.7	
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	IS8(N)	17:01	Surface	1	1	28.3	7.9	24.4	5.6	5.6	9.1	9.6	4.5	4.0
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	IS8(N)	17:01	Surface	1	2	28.3	7.9	24.4	5.6		8.8		4.6	
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	IS8(N)	17:01	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	IS8(N)	17:01	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	IS8(N)	17:01	Bottom	3	1	28.3	7.8	24.4	5.6	5.6	10.1		3.6	
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	IS8(N)	17:01	Bottom	3	2	28.3	7.8	24.4	5.6		10.2		3.3	
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	IS(Mf)9	16:58	Surface	1	1	28.8	7.9	24.6	6.1	6.1	11.8	12.5	7.2	11.4
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	IS(Mf)9	16:58	Surface	1	2	28.8	7.9	24.6	6.1		11.7		7.6	
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	IS(Mf)9	16:58	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	IS(Mf)9	16:58	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	IS(Mf)9	16:58	Bottom	3	1	28.6	7.8	24.6	6.1	6.1	13.4		16.1	
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	IS(Mf)9	16:58	Bottom	3	2	28.6	7.8	24.6	6.1		13.0		14.5	
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	IS(Mf)11	18:15	Surface	1	1	28.5	7.9	23.1	6.1	5.6	5.2	7.5	5.2	8.4
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	IS(Mf)11	18:15	Surface	1	2	28.7	7.9	22.9	6.1		5.5		4.7	
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	IS(Mf)11	18:15	Middle	2	1	27.6	7.9	26.0	5.0		8.9		6.7	
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	IS(Mf)11	18:15	Middle	2	2	27.6	7.9	25.9	5.0		8.9		7.3	
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	IS(Mf)11	18:15	Bottom	3	1	27.5	7.9	26.2	4.8	4.8	8.3		12.9	
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	IS(Mf)11	18:15	Bottom	3	2	27.5	7.9	26.3	4.8		8.2		13.6	
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	SR7	18:22	Surface	1	1	28.3	7.9	24.7	5.7	5.8	2.7	4.0	5.5	4.7
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	SR7	18:22	Surface	1	2	28.4	7.9	24.6	5.8		2.3		5.5	
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	SR7	18:22	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	SR7	18:22	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	SR7	18:22	Bottom	3	1	28.2	7.9	24.9	5.6	5.7	5.5		4.0	
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	SR7	18:22	Bottom	3	2	28.2	7.9	24.9	5.7		5.3		3.7	
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	IS17	17:24	Surface	1	1	28.1	7.9	25.1	5.7	5.3	1.7	4.4	6.6	4.4
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	IS17	17:24	Surface	1	2	28.2	7.9	24.9	5.7		1.5		6.1	
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	IS17	17:24	Middle	2	1	27.5	7.9	26.4	4.8		5.6		3.5	
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	IS17	17:24	Middle	2	2	27.5	7.9	26.3	4.9		5.0		3.4	

Project	Contract	Date (yyyy-mm-dd)	Tide	Station	Start Time	Level	Lev_Cod	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/2012/08	2019/09/06	Mid-Ebb	IS17	17:24	Bottom	3	1	27.5	7.9	26.6	4.9	4.9	6.1		3.5	
TMCLKL	HY/2012/08	2019/09/06	Mid-Ebb	IS17	17:24	Bottom	3	2	27.4	7.9	26.7	4.9		6.5		3.2	
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	CS(Mf)5	11:50	Surface	1	1	27.8	7.8	24.7	5.4	5.3	1.8	3.5	2.0	3.3
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	CS(Mf)5	11:50	Surface	1	2	27.9	7.9	24.3	5.5		1.6		2.1	
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	CS(Mf)5	11:50	Middle	2	1	27.5	7.8	25.8	5.0		2.1		3.3	
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	CS(Mf)5	11:50	Middle	2	2	27.6	7.8	25.5	5.1		2.3		3.1	
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	CS(Mf)5	11:50	Bottom	3	1	27.3	7.8	27.1	4.8	4.8	6.6		4.8	
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	CS(Mf)5	11:50	Bottom	3	2	27.3	7.8	27.2	4.8		6.5		4.3	
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	CS(Mf)3(N)	12:47	Surface	1	1	28.9	7.8	18.0	6.1	5.8	2.2	3.2	9.9	5.3
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	CS(Mf)3(N)	12:47	Surface	1	2	29.0	7.8	18.0	6.1		2.3		10.7	
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	CS(Mf)3(N)	12:47	Middle	2	1	28.3	7.8	19.8	5.6		3.7		3.9	
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	CS(Mf)3(N)	12:47	Middle	2	2	28.3	7.8	20.0	5.5		3.4		3.3	
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	CS(Mf)3(N)	12:47	Bottom	3	1	28.4	7.8	22.3	5.5	5.5	3.8		1.9	
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	CS(Mf)3(N)	12:47	Bottom	3	2	28.3	7.8	22.4	5.5		3.9		1.8	
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	IS(Mf)16	13:27	Surface	1	1	28.1	7.8	24.4	5.6	5.6	5.5	6.1	7.5	6.6
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	IS(Mf)16	13:27	Surface	1	2	28.1	7.8	24.3	5.6		5.7		7.6	
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	IS(Mf)16	13:27	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	IS(Mf)16	13:27	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	IS(Mf)16	13:27	Bottom	3	1	28.0	7.8	24.4	5.7	5.7	6.4		5.9	
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	IS(Mf)16	13:27	Bottom	3	2	28.0	7.8	24.4	5.7		6.6		5.3	
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	SR4a	13:36	Surface	1	1	28.4	7.8	24.1	5.7	5.7	8.4	8.2	2.9	3.2
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	SR4a	13:36	Surface	1	2	28.5	7.8	23.9	5.7		8.2		2.5	
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	SR4a	13:36	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	SR4a	13:36	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	SR4a	13:36	Bottom	3	1	27.8	7.8	25.0	4.5	4.5	8.1		3.6	
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	SR4a	13:36	Bottom	3	2	27.7	7.8	25.0	4.5		8.1		3.8	
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	SR4(N2)	13:41	Surface	1	1	28.3	7.9	24.0	5.7	5.7	2.9	2.7	4.8	3.3
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	SR4(N2)	13:41	Surface	1	2	28.4	7.9	23.9	5.7		2.7		4.5	
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	SR4(N2)	13:41	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	SR4(N2)	13:41	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	SR4(N2)	13:41	Bottom	3	1	28.5	7.9	23.7	5.7	5.7	2.5		1.8	
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	SR4(N2)	13:41	Bottom	3	2	28.4	7.9	23.9	5.6		2.8		1.9	
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	IS8(N)	13:48	Surface	1	1	28.6	7.9	24.0	5.9	5.9	2.7	3.4	3.5	3.1
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	IS8(N)	13:48	Surface	1	2	28.6	7.9	23.9	5.9		2.2		3.5	
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	IS8(N)	13:48	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	IS8(N)	13:48	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	IS8(N)	13:48	Bottom	3	1	28.4	7.8	24.2	5.8	5.8	4.4		2.8	
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	IS8(N)	13:48	Bottom	3	2	28.4	7.8	24.2	5.7		4.3		2.6	
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	IS(Mf)9	13:54	Surface	1	1	28.1	7.9	24.9	5.5	5.5	10.3	12.3	6.0	9.7
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	IS(Mf)9	13:54	Surface	1	2	28.1	7.9	24.9	5.5		10.7		5.3	
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	IS(Mf)9	13:54	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	IS(Mf)9	13:54	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	IS(Mf)9	13:54	Bottom	3	1	28.2	7.9	24.9	5.5	5.5	14.2		13.0	
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	IS(Mf)9	13:54	Bottom	3	2	28.2	7.9	25.0	5.4		13.8		14.4	
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	IS(Mf)11	12:23	Surface	1	1	28.0	7.9	24.5	5.4	5.1	6.2	11.8	3.7	8.9
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	IS(Mf)11	12:23	Surface	1	2	28.2	7.9	24.3	5.4		6.0		3.6	
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	IS(Mf)11	12:23	Middle	2	1	27.5	7.8	26.1	4.9		13.9		6.9	
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	IS(Mf)11	12:23	Middle	2	2	27.5	7.8	26.1	4.8		13.3		7.0	
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	IS(Mf)11	12:23	Bottom	3	1	27.6	7.8	26.1	5.1	5.1	15.9		15.7	
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	IS(Mf)11	12:23	Bottom	3	2	27.6	7.8	26.1	5.0		15.7		16.5	
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	SR7	12:15	Surface	1	1	28.1	7.8	24.6	5.4	5.4	7.5	9.6	6.7	7.1
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	SR7	12:15	Surface	1	2	28.2	7.8	24.3	5.4		7.9		6.5	
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	SR7	12:15	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	SR7	12:15	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	SR7	12:15	Bottom	3	1	27.7	7.8	25.6	4.9	4.9	11.3		7.6	
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	SR7	12:15	Bottom	3	2	27.7	7.8	25.7	4.9		11.6		7.7	
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	IS17	13:19	Surface	1	1	27.8	7.9	24.8	5.2	5.2	3.3	5.9	7.0	5.7
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	IS17	13:19	Surface	1	2	27.8	7.9	24.8	5.2		3.7		6.6	
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	IS17	13:19	Middle	2	1	27.6	7.8	25.6	5.1		4.4		5.2	
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	IS17	13:19	Middle	2	2	27.6	7.8	25.4	5.1		4.4		5.4	
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	IS17	13:19	Bottom	3	1	27.5	7.8	26.1	4.8	4.8	9.9		5.2	
TMCLKL	HY/2012/08	2019/09/06	Mid-flood	IS17	13:19	Bottom	3	2	27.5	7.8	26.3	4.8		9.9		4.9	

Note:

Indicates Exceedance of Action Level

Indicates Exceedance of Limit Level



WQMS	X	Y
Impact Station		
IS8(N)	814413	818570
IS(Mf)9	813273	818850
IS(Mf)11	813562	820716
IS(Mf)16	814328	819497
IS17	814539	820391
Control / Far Field Station		
CS(Mf)5	817990	821129
CS(Mf)3(N)	808814	822355
Sensitive Receiver Station		
SR7	814293	821431
SR4a	815247	818067
SR4(N2)	814688	817996

Figure 1

Environmental Resources Management

ERM

Email message

Environmental Resources Management

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

To	Ramboll Hong Kong Limited (ENPO)
From	ERM- Hong Kong, Limited
Ref/Project number	Contract No. HY/2012/08 Tuen Mun–Chek Lap Kok Link–Northern Connection Sub-sea Tunnel Section
Subject	Notification of Exceedance for Water Quality Impact Monitoring
Date	23 September 2019

ERM

Dear Sir or Madam,

Please find the Notification of Exceedance (NOE) of the following Log no.:
Action Level Exceedance
0212330_9 September 2019_ Depth-averaged SS_E_Station IS(Mf)9

A total of one Action Level exceedance was recorded on 9 September 2019.

Regards,

Dr Jasmine Ng
Environmental Team Leader

ERM-Hong Kong, Limited

CONTRACT NO. HY/2012/08
TUEN MUN – CHEK LAP KOK LINK – NORTHERN CONNECTION SUB-SEA TUNNEL SECTION

Marine Water Quality Impact Monitoring
Notification of Exceedance

Log No.	**Action Level Exceedance** **0212330_9 September 2019_ Depth-averaged SS_E_Station IS(Mf)9** **[Total No. of Exceedances = 1]**	
Date	9 September 2019 (Measured) 12 September 2019 (*In situ* results received by ERM) 19 September 2019 (Laboratory results received by ERM)	
Monitoring Station	CS(Mf)5, SR4a, SR4(N2), IS8(N), IS(Mf)16, IS(Mf)9, CS(Mf)3(N), SR7, IS17, IS(Mf)11	
Parameter(s) with Exceedance(s)	Suspended Solids (mg/L)	
Action Levels	SS	120% of upstream control station at the same tide of the same day and 95%-ile of baseline data, i.e., 23.5 mg/L
Limit Levels	SS	130% of upstream control station at the same tide of the same day and 10mg/L for WSD Seawater Intakes at Tuen Mun and 99%-ile of baseline data, i.e., 34.4 mg/L
Measured Levels	Action Level Exceedance 1. Mid-ebb at IS(Mf)9 (Depth-averaged SS = 24.2 mg/L)	
Works Undertaken (at the time of monitoring event)	According to the information provided by the Contractor, Seawall Modification Works was carried out on 9 September 2019.	
Possible Reason for Action or Limit Level Exceedance(s)	The exceedances are unlikely to be due to the Contract, in view of the following: • All monitored parameters, except SS, at all monitoring stations were in compliance with the Action and Limit Levels during both mid-ebb and mid-flood tides on the same day. • For the exceedance of SS level at IS(Mf)9 during mid-ebb tide, IS(Mf)9 is far away (>1.5km) from the Seawall Modification Works Area (Figure 1), thus the observed exceedance should not be affected by the marine works under this Contract. Moreover, no exceedance of SS was recoded at IS(Mf)16 during mid-ebb tide, which are closer to the Seawall Modification Works Area than IS(Mf)9. Therefore, the exceedance is unlikely to be related to this Contract.	
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 9 September 2019 and locations of water quality monitoring stations are attached.	

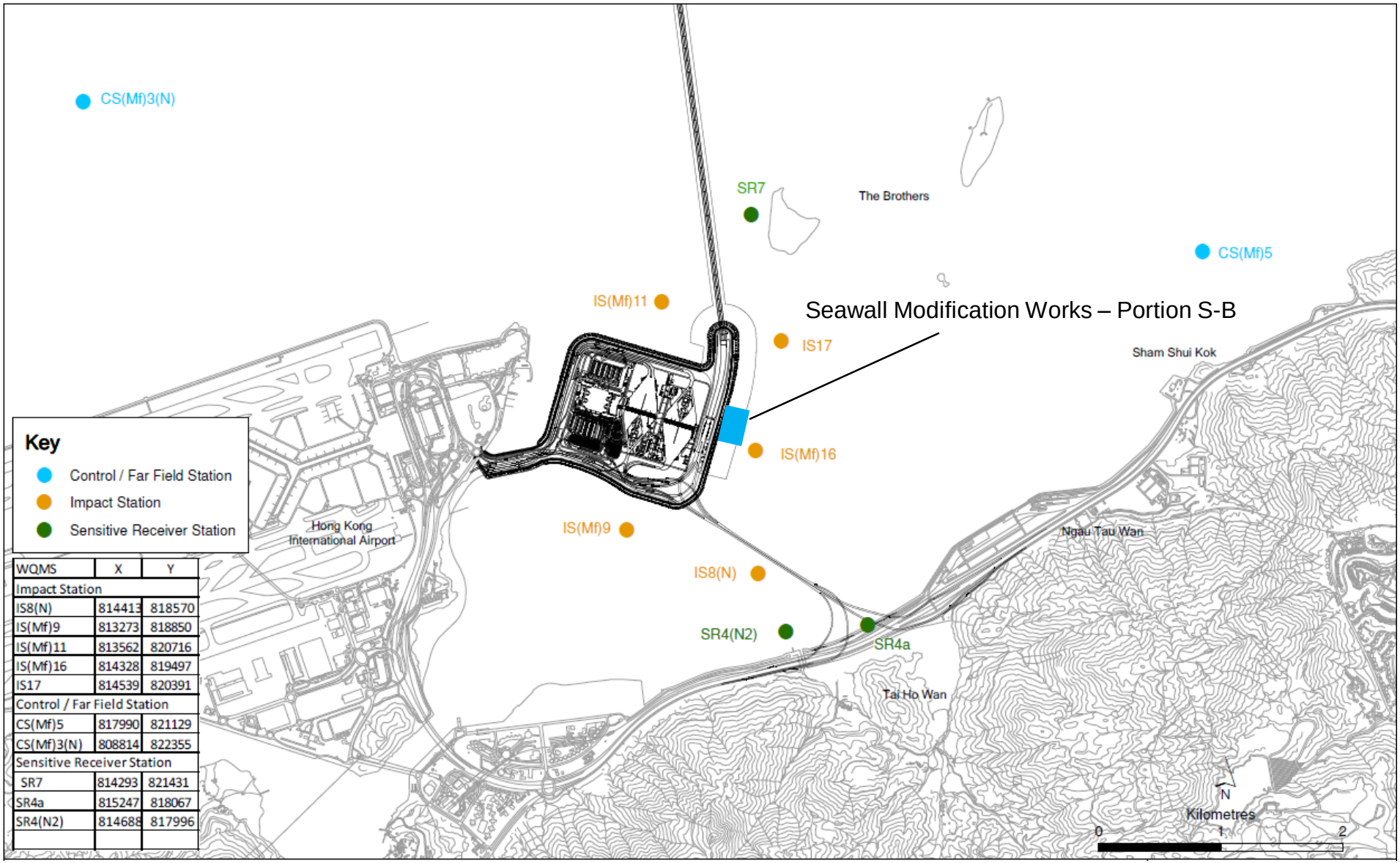
Project	Contract	Date (yyyy-mm-dd)	Tide	Station	Start Time	Level	Lev_Cod	Replicate	Temperature (°C)	pH	Salinity (ppt)	DO (mg/L)	Average DO (mg/L)	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	CS(Mf)5	8:55	Surface	1	1	29.4	7.8	19.2	7.8		1.0		5.3	
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	CS(Mf)5	8:55	Surface	1	2	29.4	8.0	18.8	7.8	6.4	1.1		5.6	
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	CS(Mf)5	8:55	Middle	2	1	28.4	7.8	26.9	5.0		2.2	2.9	4.4	4.6
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	CS(Mf)5	8:55	Middle	2	2	28.4	7.8	26.4	5.0		2.5		4.4	
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	CS(Mf)5	8:55	Bottom	3	1	27.9	7.8	29.8	4.2	4.2	5.4		3.8	
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	CS(Mf)5	8:55	Bottom	3	2	27.9	7.8	29.3	4.2		5.1		4.1	
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	CS(Mf)3(N)	9:57	Surface	1	1	29.6	8.0	15.7	8.3		1.4		4.7	
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	CS(Mf)3(N)	9:57	Surface	1	2	29.6	8.0	15.4	8.3	7.4	1.2		4.6	
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	CS(Mf)3(N)	9:57	Middle	2	1	29.4	7.9	20.1	6.4		2.5	2.2	4.7	4.5
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	CS(Mf)3(N)	9:57	Middle	2	2	29.4	7.8	19.6	6.4		2.0		4.0	
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	CS(Mf)3(N)	9:57	Bottom	3	1	28.3	7.7	26.2	4.9	4.9	3.3		4.2	
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	CS(Mf)3(N)	9:57	Bottom	3	2	28.3	7.8	25.6	4.9		2.7		5.0	
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	IS(Mf)16	10:32	Surface	1	1	30.0	8.1	21.0	11.0		3.6		9.9	
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	IS(Mf)16	10:32	Surface	1	2	30.0	8.2	20.6	11.0	11.0	3.1		9.0	
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	IS(Mf)16	10:32	Middle	2	1							5.2		8.5
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	IS(Mf)16	10:32	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	IS(Mf)16	10:32	Bottom	3	1	28.8	8.0	25.7	5.7	5.8	7.2		7.0	
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	IS(Mf)16	10:32	Bottom	3	2	28.8	7.9	25.2	5.8		6.7		8.0	
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	SR4a	10:43	Surface	1	1	29.7	8.0	19.5	8.9		1.9		5.8	
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	SR4a	10:43	Surface	1	2	29.7	8.0	19.2	8.8	8.9	1.6		5.7	
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	SR4a	10:43	Middle	2	1							3.8		5.8
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	SR4a	10:43	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	SR4a	10:43	Bottom	3	1	28.7	7.8	24.1	5.1	5.1	6.1		5.8	
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	SR4a	10:43	Bottom	3	2	28.7	7.8	23.7	5.1		5.6		5.7	
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	SR4(N2)	10:50	Surface	1	1	29.9	8.0	19.2	9.1		4.1		6.3	
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	SR4(N2)	10:50	Surface	1	2	29.9	8.1	18.8	9.1	9.1	3.3		7.3	
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	SR4(N2)	10:50	Middle	2	1							6.0		7.2
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	SR4(N2)	10:50	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	SR4(N2)	10:50	Bottom	3	1	29.6	7.8	21.6	7.0	7.0	8.5		7.2	
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	SR4(N2)	10:50	Bottom	3	2	29.6	7.9	21.2	7.0		8.0		8.0	
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	IS8(N)	10:57	Surface	1	1	29.9	8.1	19.0	10.2		1.6		6.4	
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	IS8(N)	10:57	Surface	1	2	29.9	8.2	18.6	10.3	10.3	1.3		5.9	
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	IS8(N)	10:57	Middle	2	1							3.4		7.5
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	IS8(N)	10:57	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	IS8(N)	10:57	Bottom	3	1	29.9	8.0	20.4	10.1	10.1	5.5		9.4	
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	IS8(N)	10:57	Bottom	3	2	29.9	8.1	20.0	10.1		5.1		8.4	
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	IS(Mf)9	11:05	Surface	1	1									
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	IS(Mf)9	11:05	Surface	1	2					10.1				
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	IS(Mf)9	11:05	Middle	2	1	30.1	8.1	22.2	10.0		10.6	10.6	22.8	24.2
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	IS(Mf)9	11:05	Middle	2	2	30.1	8.1	21.7	10.1		10.5		25.6	
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	IS(Mf)9	11:05	Bottom	3	1					#DIV/0!				
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	IS(Mf)9	11:05	Bottom	3	2									
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	IS(Mf)11	9:29	Surface	1	1	29.7	7.9	18.7	8.0		2.5		5.7	
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	IS(Mf)11	9:29	Surface	1	2	29.6	8.0	18.3	8.0	6.6	2.1		5.3	
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	IS(Mf)11	9:29	Middle	2	1	28.7	7.8	23.5	5.2		2.7	2.4	5.8	5.6
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	IS(Mf)11	9:29	Middle	2	2	28.7	7.8	23.0	5.2		2.2		4.7	
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	IS(Mf)11	9:29	Bottom	3	1	28.0	7.7	28.0	4.8	4.8	2.6		6.6	
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	IS(Mf)11	9:29	Bottom	3	2	28.0	7.8	27.5	4.7		2.3		5.6	
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	SR7	9:21	Surface	1	1	29.7	7.9	17.3	8.4		1.6		6.0	
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	SR7	9:21	Surface	1	2	29.7	8.0	17.0	8.4	8.4	1.4		5.0	
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	SR7	9:21	Middle	2	1							1.9		5.7
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	SR7	9:21	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	SR7	9:21	Bottom	3	1	29.4	7.8	19.2	7.2	7.2	2.1		5.4	
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	SR7	9:21	Bottom	3	2	29.4	7.9	18.8	7.2		2.3		6.3	
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	IS17	10:25	Surface	1	1	29.6	7.9	21.4	8.8		2.2		19.4	
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	IS17	10:25	Surface	1	2	29.6	8.0	20.9	8.8	7.3	2.0		17.1	
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	IS17	10:25	Middle	2	1	28.7	7.8	23.8	5.9		4.1	4.4	5.4	12.8
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	IS17	10:25	Middle	2	2	28.7	7.8	23.3	5.8		3.4		5.5	

Project	Contract	Date (yyyy-mm-dd)	Tide	Station	Start Time	Level	Lev_Cod	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/2012/08	2019/09/09	Mid-Ebb	IS17	10:25	Bottom	3	1	28.0	7.8	28.1	4.8	4.9	7.6		15.6	
TMCLKL	HY/2012/08	2019/09/09	Mid-Ebb	IS17	10:25	Bottom	3	2	28.0	7.7	27.5	4.9		6.9		14.0	
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	CS(Mf)5	18:04	Surface	1	1	29.2	7.9	22.0	7.9	6.5	1.2	3.8	6.0	6.1
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	CS(Mf)5	18:04	Surface	1	2	29.2	7.9	21.6	7.9		1.0		6.7	
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	CS(Mf)5	18:04	Middle	2	1	28.3	7.9	28.1	5.0		2.0		6.6	
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	CS(Mf)5	18:04	Middle	2	2	28.3	7.8	27.6	5.0		1.9		5.9	
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	CS(Mf)5	18:04	Bottom	3	1	28.1	8.0	29.3	4.6	4.7	8.7		5.2	
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	CS(Mf)5	18:04	Bottom	3	2	28.1	7.8	28.7	4.7		7.8		6.2	
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	CS(Mf)3(N)	17:07	Surface	1	1	31.2	8.1	12.0	11.2	10.6	4.1	5.6	5.7	8.3
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	CS(Mf)3(N)	17:07	Surface	1	2	31.2	8.1	11.7	11.2		3.3		4.7	
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	CS(Mf)3(N)	17:07	Middle	2	1	30.5	8.0	15.9	10.0		6.7		7.4	
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	CS(Mf)3(N)	17:07	Middle	2	2	30.4	8.0	15.7	9.9		5.9		8.2	
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	CS(Mf)3(N)	17:07	Bottom	3	1	28.7	8.0	23.5	5.2	5.2	6.9		11.7	
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	CS(Mf)3(N)	17:07	Bottom	3	2	28.7	7.8	23.0	5.2		6.5		12.0	
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	IS(Mf)16	16:33	Surface	1	1	30.6	8.2	19.1	14.1	14.2	3.5	5.6	8.0	7.6
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	IS(Mf)16	16:33	Surface	1	2	30.6	8.1	18.8	14.3		2.9		7.9	
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	IS(Mf)16	16:33	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	IS(Mf)16	16:33	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	IS(Mf)16	16:33	Bottom	3	1	29.5	7.9	22.1	8.7	8.7	8.5		6.7	
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	IS(Mf)16	16:33	Bottom	3	2	29.5	7.7	21.7	8.6		7.5		7.7	
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	SR4a	16:23	Surface	1	1	30.5	8.1	19.5	12.9	13.0	4.9	5.8	9.8	8.3
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	SR4a	16:23	Surface	1	2	30.5	8.0	19.2	13.1		4.1		9.0	
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	SR4a	16:23	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	SR4a	16:23	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	SR4a	16:23	Bottom	3	1	29.6	7.8	21.3	8.2	8.3	7.6		7.4	
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	SR4a	16:23	Bottom	3	2	29.6	7.7	20.9	8.3		6.7		7.1	
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	SR4(N2)	16:17	Surface	1	1	30.8	8.2	19.2	14.7	14.8	2.4	3.8	6.4	5.8
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	SR4(N2)	16:17	Surface	1	2	30.8	8.2	18.9	14.9		2.3		5.6	
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	SR4(N2)	16:17	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	SR4(N2)	16:17	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	SR4(N2)	16:17	Bottom	3	1	29.9	8.1	20.3	11.8	11.9	5.4		5.0	
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	SR4(N2)	16:17	Bottom	3	2	29.9	7.9	19.9	11.9		4.9		6.0	
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	IS8(N)	16:10	Surface	1	1	30.4	8.1	18.8	12.7	12.8	3.9	4.6	8.0	8.8
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	IS8(N)	16:10	Surface	1	2	30.4	8.0	18.5	12.8		3.8		8.9	
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	IS8(N)	16:10	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	IS8(N)	16:10	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	IS8(N)	16:10	Bottom	3	1	30.3	8.0	19.2	12.1	12.2	5.9		9.6	
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	IS8(N)	16:10	Bottom	3	2	30.3	8.0	18.8	12.2		4.9		8.6	
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	IS(Mf)9	16:00	Surface	1	1					10.2		5.5		7.8
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	IS(Mf)9	16:00	Surface	1	2									
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	IS(Mf)9	16:00	Middle	2	1	29.8	7.9	20.8	10.1		5.8		8.0	
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	IS(Mf)9	16:00	Middle	2	2	29.9	7.8	20.3	10.3		5.2		7.5	
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	IS(Mf)9	16:00	Bottom	3	1					#DIV/0!				
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	IS(Mf)9	16:00	Bottom	3	2									
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	IS(Mf)11	17:35	Surface	1	1	30.2	8.0	19.0	11.0	8.3	4.1	8.7	6.0	8.6
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	IS(Mf)11	17:35	Surface	1	2	30.2	8.1	18.6	11.0		3.3		5.0	
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	IS(Mf)11	17:35	Middle	2	1	28.4	7.8	26.0	5.5		11.2		6.7	
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	IS(Mf)11	17:35	Middle	2	2	28.4	7.8	25.4	5.5		10.6		7.5	
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	IS(Mf)11	17:35	Bottom	3	1	28.3	7.9	26.8	4.7	4.7	11.7		12.4	
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	IS(Mf)11	17:35	Bottom	3	2	28.2	7.8	26.3	4.7		11.2		13.9	
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	SR7	17:43	Surface	1	1	30.8	8.2	16.8	12.6	12.7	2.5	3.8	5.6	5.9
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	SR7	17:43	Surface	1	2	30.8	8.2	16.6	12.7		2.3		6.6	
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	SR7	17:43	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	SR7	17:43	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	SR7	17:43	Bottom	3	1	29.8	8.1	20.6	9.3	9.3	5.5		6.0	
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	SR7	17:43	Bottom	3	2	29.8	8.0	20.3	9.3		4.9		5.3	
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	IS17	16:39	Surface	1	1	30.9	8.2	17.6	14.5	11.8	2.3	4.0	8.0	7.0
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	IS17	16:39	Surface	1	2	30.9	8.2	17.3	14.7		2.1		7.0	
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	IS17	16:39	Middle	2	1	29.5	8.0	21.8	8.9		3.0		6.0	
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	IS17	16:39	Middle	2	2	29.5	7.8	21.5	8.9		2.9		6.9	
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	IS17	16:39	Bottom	3	1	28.2	7.9	27.4	4.6	4.7	7.0		7.4	
TMCLKL	HY/2012/08	2019/09/09	Mid-flood	IS17	16:39	Bottom	3	2	28.2	7.8	26.8	4.7		6.4		6.8	

Note:

Indicates Exceedance of Action Level

Indicates Exceedance of Limit Level



WQMS	X	Y
Impact Station		
IS8(N)	814413	818570
IS(Mf)9	813273	818850
IS(Mf)11	813562	820716
IS(Mf)16	814328	819497
IS17	814539	820391
Control / Far Field Station		
CS(Mf)5	817990	821129
CS(Mf)3(N)	808814	822355
Sensitive Receiver Station		
SR7	814293	821431
SR4a	815247	818067
SR4(N2)	814688	817996

Figure 1

Environmental Resources Management

ERM

Email message

Environmental Resources Management

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

To	Ramboll Hong Kong Limited (ENPO)
From	ERM- Hong Kong, Limited
Ref/Project number	Contract No. HY/2012/08 Tuen Mun–Chek Lap Kok Link–Northern Connection Sub-sea Tunnel Section
Subject	Notification of Exceedance for Water Quality Impact Monitoring
Date	23 September 2019

Dear Sir or Madam,

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

Action Level Exceedance

0212330_16 September 2019_ Bottom DO_E_Station SR4a
0212330_16 September 2019_ Surface & Middle DO_E_Station IS8(N)
0212330_16 September 2019_ Bottom DO_E_Station IS17
0212330_16 September 2019_ Surface & Middle DO_F_Station IS(Mf)11
0212330_16 September 2019_ Surface & Middle DO_F_Station SR7
0212330_16 September 2019_ Surface & Middle DO_F_Station IS17
0212330_16 September 2019_ Bottom DO_F_Station IS17

A total of seven Action Level exceedance was recorded on 16 September 2019.

Regards,

Dr Jasmine Ng
Environmental Team Leader

ERM-Hong Kong, Limited

CONTRACT NO. HY/2012/08
TUEN MUN – CHEK LAP KOK LINK – NORTHERN CONNECTION SUB-SEA TUNNEL SECTION

Marine Water Quality Impact Monitoring
Notification of Exceedance

Log No.	**<u>Action Level Exceedance</u>** **0212330_16 September 2019_ Bottom DO_E_Station SR4a** **0212330_16 September 2019_ Surface & Middle DO_E_Station IS8(N)** **0212330_16 September 2019_ Bottom DO_E_Station IS17** **0212330_16 September 2019_ Surface & Middle DO_F_Station IS(Mf)11** **0212330_16 September 2019_ Surface & Middle DO_F_Station SR7** **0212330_16 September 2019_ Surface & Middle DO_F_Station IS17** **0212330_16 September 2019_ Bottom DO_F_Station IS17** **[Total No. of Exceedances = 7]**		
Date	16 September 2019 (Measured) 18 September 2019 (*In situ* results received by ERM) 24 September 2019 (Laboratory results received by ERM)		
Monitoring Station	CS(Mf)5, SR4a, SR4(N2), IS8(N), IS(Mf)16, IS(Mf)9, CS(Mf)3(N), SR7, IS17, IS(Mf)11		
Parameter(s) with Exceedance(s)	Dissolved Oxygen (mg/L)		
Action Levels	DO	Surface and Middle 5.0 mg/L	Bottom 4.7 mg/L
Limit Levels	DO	Surface and Middle 4.2 mg/L	Bottom 3.6 mg/L
Measured Levels	Action Level Exceedance 1. Mid-ebb at SR4a (Bottom-depth DO = 4.2 mg/L) 2. Mid-ebb at IS8(N) (Surface & Middle-depth DO = 4.9 mg/L) 3. Mid-ebb at IS17 (Bottom-depth DO = 4.4 mg/L) 4. Mid-flood at IS(Mf)11 (Surface & Middle-depth DO = 4.8 mg/L) 5. Mid-flood at SR7 (Surface & Middle-depth DO = 4.9 mg/L) 6. Mid-flood at IS17 (Surface & Middle-depth DO = 4.9 mg/L) 7. Mid-flood at IS17 (Bottom-depth DO = 4.6 mg/L)		
Works Undertaken (at the time of monitoring event)	According to the information provided by the Contractor, Seawall Modification Works was carried out on 16 September 2019.		

Possible Reason for Action or Limit Level Exceedance(s)	The exceedances are unlikely to be due to the Contract, in view of the following: • 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. • SR4a, IS8(N), IS(Mf)11 and SR7 are far away (>2 km) from the Seawall Modification Works Area *(Figure 1)*, thus the observed exceedance should not be affected by the marine works under this Contract. Therefore, the exceedance is unlikely to be related to this Contract. • The DO pattern at SR4a and IS17 during mid-ebb tide were similar to their corresponding control station where the bottom-depth DO levels were generally lower. Lower bottom-depth DO levels may be 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. • Bottom-depth DO levels at IS17 was similar to the corresponding control stations, CS(Mf)5, during mid-flood tide, in which the recorded Bottom-depth DO levels at the corresponding control station were below Action Level. • Surface & Middle-depth DO levels at IS(Mf)11, SR7 and IS17 were similar to the corresponding control stations, CS(Mf)5, during mid-flood tide, in which the recorded Surface & Middle-depth DO levels at the corresponding control station were below Action Level. • As reported by the marine mammal observer, no discharge of organic matters into waters from landside works area was recorded. Moreover, no exceedance was recorded at IS(Mf)16 which is the closest station to the Seawall Modification Works Area during both mid-ebb and mid-flood tide. Therefore, exceedances recorded at IS8(N) during mid-ebb tide are unlikely to be caused by the marine works of this Contract.
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 16 September 2019 and locations of water quality monitoring stations are attached.

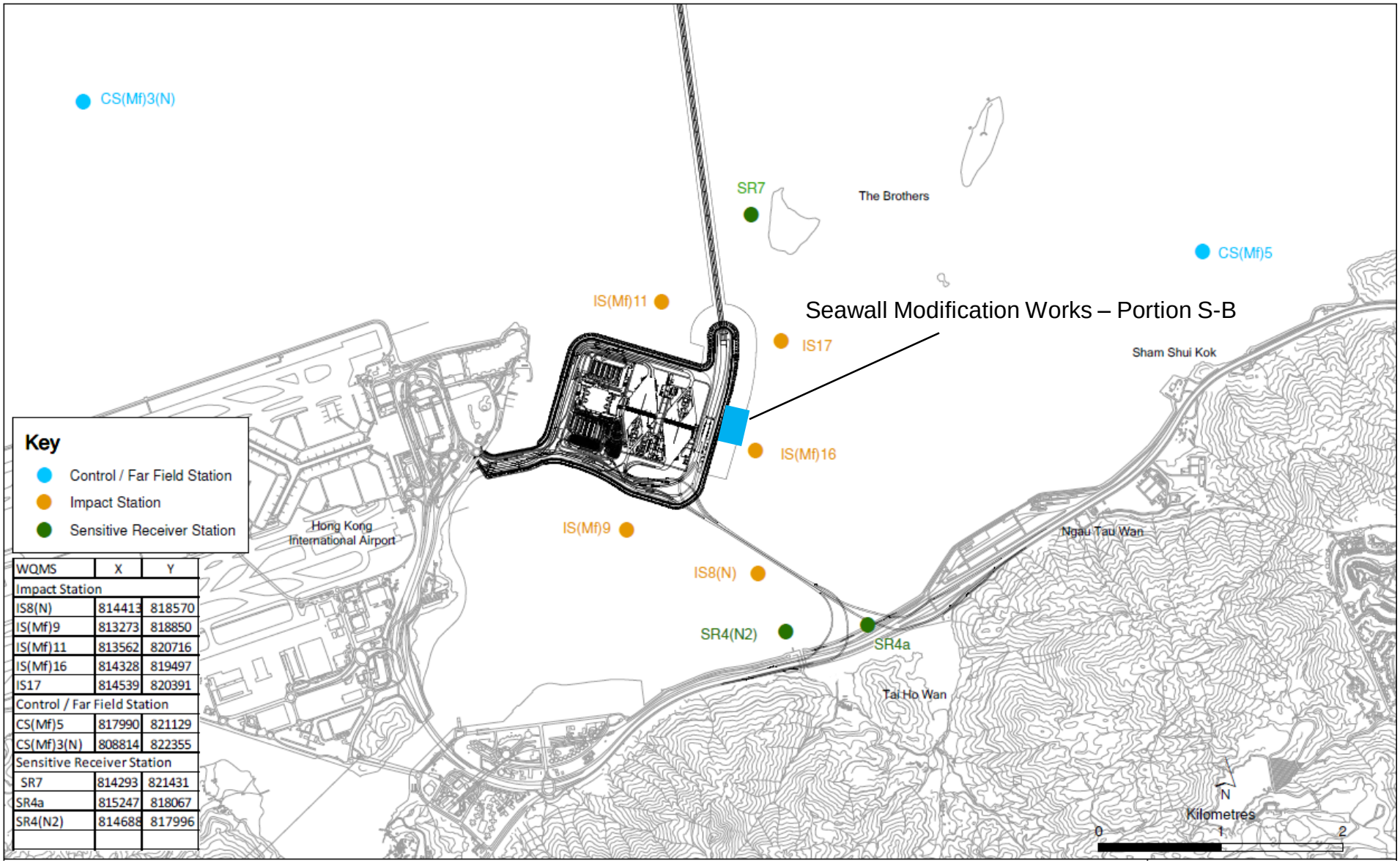
Project	Contract	Date (yyyy-mm-dd)	Tide	Station	Start Time	Level	Lev_Cod	Replicate	Temperature (°C)	pH	Salinity (ppt)	DO (mg/L)	Average DO (mg/L)	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	CS(Mf)5	14:54	Surface	1	1	28.8	7.8	24.7	5.1	4.8	7.6	10.2	10.6	11.4
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	CS(Mf)5	14:54	Surface	1	2	29.7	7.9	24.3	5.1		7.9		10.0	
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	CS(Mf)5	14:54	Middle	2	1	28.3	7.9	26.5	4.6		9.4		12.0	
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	CS(Mf)5	14:54	Middle	2	2	29.3	7.9	26.0	4.5		9.3		12.2	
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	CS(Mf)5	14:54	Bottom	3	1	28.3	7.9	26.8	4.6	4.6	13.3		11.7	
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	CS(Mf)5	14:54	Bottom	3	2	29.2	7.9	26.3	4.5		13.9		12.0	
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	CS(Mf)3(N)	14:06	Surface	1	1	29.2	7.8	22.7	5.6	5.4	4.0	7.0	4.6	5.0
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	CS(Mf)3(N)	14:06	Surface	1	2	30.1	7.9	22.3	5.6		4.1		5.0	
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	CS(Mf)3(N)	14:06	Middle	2	1	29.1	7.8	23.4	5.2		5.3		5.4	
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	CS(Mf)3(N)	14:06	Middle	2	2	30.1	7.9	23.0	5.3		5.3		4.9	
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	CS(Mf)3(N)	14:06	Bottom	3	1	28.4	7.9	23.2	5.0	4.9	11.8		5.0	
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	CS(Mf)3(N)	14:06	Bottom	3	2	29.3	7.9	25.5	4.8		11.6		5.0	
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	IS(Mf)16	13:19	Surface	1	1	28.8	8.0	25.2	5.1	5.1	6.8	5.9	7.8	9.0
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	IS(Mf)16	13:19	Surface	1	2	29.7	7.9	24.7	5.0		6.9		8.3	
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	IS(Mf)16	13:19	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	IS(Mf)16	13:19	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	IS(Mf)16	13:19	Bottom	3	1	28.1	8.0	27.4	4.7	4.7	4.8		10.4	
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	IS(Mf)16	13:19	Bottom	3	2	29.1	7.9	26.8	4.7		4.9		9.4	
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	SR4a	13:09	Surface	1	1	28.9	7.9	24.1	5.2	5.2	3.2	8.2	3.7	3.1
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	SR4a	13:09	Surface	1	2	29.8	7.9	23.7	5.2		3.1		3.3	
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	SR4a	13:09	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	SR4a	13:09	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	SR4a	13:09	Bottom	3	1	28.6	7.9	25.2	4.2	4.2	13.1		2.5	
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	SR4a	13:09	Bottom	3	2	29.6	7.9	24.8	4.1		13.5		2.8	
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	SR4(N2)	13:02	Surface	1	1	28.9	8.0	24.1	5.2	5.2	5.9	7.6	4.2	4.2
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	SR4(N2)	13:02	Surface	1	2	29.9	7.9	23.7	5.2		5.8		4.9	
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	SR4(N2)	13:02	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	SR4(N2)	13:02	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	SR4(N2)	13:02	Bottom	3	1	28.7	8.0	24.5	4.8	4.8	9.4		4.1	
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	SR4(N2)	13:02	Bottom	3	2	29.7	8.0	24.1	4.8		9.2		3.4	
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	IS8(N)	12:54	Surface	1	1	28.8	8.0	24.7	4.9	4.9	8.9	11.2	5.9	6.1
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	IS8(N)	12:54	Surface	1	2	29.8	8.0	24.2	4.9		9.0		6.9	
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	IS8(N)	12:54	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	IS8(N)	12:54	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	IS8(N)	12:54	Bottom	3	1	28.8	8.0	24.9	4.9	4.9	13.5		6.3	
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	IS8(N)	12:54	Bottom	3	2	29.7	8.1	24.5	4.8		13.4		5.3	
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	IS(Mf)9	12:46	Surface	1	1	29.5	8.0	24.4	5.5	5.5	5.0	5.6	5.1	5.5
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	IS(Mf)9	12:46	Surface	1	2	30.5	8.0	24.0	5.4		4.9		5.1	
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	IS(Mf)9	12:46	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	IS(Mf)9	12:46	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	IS(Mf)9	12:46	Bottom	3	1	29.0	8.0	24.5	5.3	5.3	6.2		5.4	
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	IS(Mf)9	12:46	Bottom	3	2	30.0	8.0	24.1	5.3		6.2		6.3	
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	IS(Mf)11	14:27	Surface	1	1	29.1	7.8	23.6	5.4	5.2	5.4	8.0	4.1	4.3
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	IS(Mf)11	14:27	Surface	1	2	30.1	7.8	23.2	5.3		5.3		3.9	
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	IS(Mf)11	14:27	Middle	2	1	28.8	7.8	24.4	5.0		7.8		4.2	
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	IS(Mf)11	14:27	Middle	2	2	29.8	7.7	24.0	5.0		8.1		4.9	
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	IS(Mf)11	14:27	Bottom	3	1	28.6	7.8	25.5	4.9	4.9	10.0		4.3	
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	IS(Mf)11	14:27	Bottom	3	2	29.6	7.9	25.0	4.8		11.2		4.2	
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	SR7	14:36	Surface	1	1	28.8	7.8	24.8	5.1	5.1	6.9	7.2	8.8	10.1
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	SR7	14:36	Surface	1	2	29.8	7.9	24.4	5.0		6.9		9.7	
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	SR7	14:36	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	SR7	14:36	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	SR7	14:36	Bottom	3	1	28.8	7.8	24.9	5.2	5.2	7.4		10.3	
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	SR7	14:36	Bottom	3	2	29.7	7.9	24.5	5.2		7.5		11.7	
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	IS17	13:27	Surface	1	1	30.1	7.9	22.2	5.6	5.3	7.5	7.2	8.1	9.7
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	IS17	13:27	Surface	1	2	30.0	7.9	23.8	5.6		7.5		7.1	
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	IS17	13:27	Middle	2	1	28.7	7.9	25.4	4.9		7.4		10.4	
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	IS17	13:27	Middle	2	2	29.7	7.9	24.9	4.9		7.4		10.0	

Project	Contract	Date (yyyy-mm-dd)	Tide	Station	Start Time	Level	Lev_Cod	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/2012/08	2019/09/16	Mid-Ebb	IS17	13:27	Bottom	3	1	28.1	8.0	27.4	4.4	4.4	6.8		10.7	
TMCLKL	HY/2012/08	2019/09/16	Mid-Ebb	IS17	13:27	Bottom	3	2	29.1	7.8	26.9	4.4		6.8		12.1	
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	CS(Mf)5	7:11	Surface	1	1	28.6	7.8	24.4	5.1	4.9	4.2	5.3	5.7	5.0
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	CS(Mf)5	7:11	Surface	1	2	29.6	8.0	24.0	5.0		4.1		5.4	
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	CS(Mf)5	7:11	Middle	2	1	28.4	7.8	25.8	4.7		4.3		4.5	
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	CS(Mf)5	7:11	Middle	2	2	29.3	7.9	25.5	4.7		4.2		4.8	
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	CS(Mf)5	7:11	Bottom	3	1	27.8	7.9	28.5	4.4	4.4	7.3		5.0	
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	CS(Mf)5	7:11	Bottom	3	2	28.7	8.0	28.1	4.4		7.5		4.8	
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	CS(Mf)3(N)	8:07	Surface	1	1	28.8	7.8	23.6	5.1	5.1	8.9	10.5	15.6	16.6
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	CS(Mf)3(N)	8:07	Surface	1	2	29.8	7.9	23.2	5.1		9.8		16.0	
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	CS(Mf)3(N)	8:07	Middle	2	1	28.8	7.8	23.6	5.1		10.2		16.3	
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	CS(Mf)3(N)	8:07	Middle	2	2	29.8	7.9	23.2	5.1		10.1		17.5	
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	CS(Mf)3(N)	8:07	Bottom	3	1	28.8	7.8	23.6	5.1	5.1	12.1		17.0	
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	CS(Mf)3(N)	8:07	Bottom	3	2	29.7	7.9	23.2	5.1		12.1		17.4	
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	IS(Mf)16	8:52	Surface	1	1	28.6	8.0	24.6	5.2	5.2	4.1	5.5	4.6	5.2
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	IS(Mf)16	8:52	Surface	1	2	29.6	8.1	24.1	5.1		4.2		4.6	
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	IS(Mf)16	8:52	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	IS(Mf)16	8:52	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	IS(Mf)16	8:52	Bottom	3	1	28.6	8.0	24.9	5.0	5.0	6.8		5.9	
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	IS(Mf)16	8:52	Bottom	3	2	29.5	8.1	24.4	5.0		7.0		5.6	
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	SR4a	9:02	Surface	1	1	29.6	8.1	23.7	5.0	5.0	4.5	4.8	6.6	5.5
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	SR4a	9:02	Surface	1	2	29.6	8.1	23.7	5.0		4.4		6.7	
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	SR4a	9:02	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	SR4a	9:02	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	SR4a	9:02	Bottom	3	1	29.6	8.1	24.0	4.7	4.7	5.0		4.7	
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	SR4a	9:02	Bottom	3	2	29.6	8.1	24.0	4.7		5.2		3.8	
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	SR4(N2)	9:09	Surface	1	1	29.6	8.1	23.8	5.0	5.1	4.9	5.0	3.5	3.6
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	SR4(N2)	9:09	Surface	1	2	29.6	8.1	23.8	5.1		4.7		4.5	
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	SR4(N2)	9:09	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	SR4(N2)	9:09	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	SR4(N2)	9:09	Bottom	3	1	29.6	8.1	23.9	5.2	5.2	5.2		2.7	
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	SR4(N2)	9:09	Bottom	3	2	29.6	8.1	23.9	5.1		5.2		3.6	
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	IS8(N)	9:16	Surface	1	1	28.7	8.0	24.0	5.3	5.3	6.0	7.9	5.5	5.6
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	IS8(N)	9:16	Surface	1	2	29.7	8.1	23.5	5.3		5.9		6.2	
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	IS8(N)	9:16	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	IS8(N)	9:16	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	IS8(N)	9:16	Bottom	3	1	28.7	8.0	24.2	5.4	5.4	9.8		4.8	
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	IS8(N)	9:16	Bottom	3	2	29.7	8.1	23.7	5.3		9.7		5.8	
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	IS(Mf)9	9:24	Surface	1	1	28.7	8.0	24.3	5.2	5.2	6.4	6.0	8.5	7.1
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	IS(Mf)9	9:24	Surface	1	2	29.7	8.2	23.8	5.1		6.6		7.7	
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	IS(Mf)9	9:24	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	IS(Mf)9	9:24	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	IS(Mf)9	9:24	Bottom	3	1	28.7	8.0	24.4	5.2	5.2	5.5		6.5	
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	IS(Mf)9	9:24	Bottom	3	2	29.6	8.2	24.0	5.2		5.3		5.5	
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	IS(Mf)11	7:44	Surface	1	1	28.6	7.9	24.6	4.9	4.8	9.6	10.1	10.1	11.2
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	IS(Mf)11	7:44	Surface	1	2	29.6	8.0	24.2	4.9		9.9		10.1	
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	IS(Mf)11	7:44	Middle	2	1	28.4	7.9	25.8	4.7		9.4		11.0	
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	IS(Mf)11	7:44	Middle	2	2	29.4	8.0	25.3	4.6		9.3		12.0	
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	IS(Mf)11	7:44	Bottom	3	1	28.3	7.9	26.1	4.7	4.7	11.1		12.0	
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	IS(Mf)11	7:44	Bottom	3	2	29.3	8.0	25.7	4.6		11.1		12.0	
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	SR7	7:36	Surface	1	1	28.5	7.9	25.0	4.9	4.9	8.9	10.0	5.7	6.5
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	SR7	7:36	Surface	1	2	29.5	8.0	24.5	4.8		8.9		6.6	
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	SR7	7:36	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	SR7	7:36	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	SR7	7:36	Bottom	3	1	28.4	7.9	25.6	4.7	4.7	11.0		7.5	
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	SR7	7:36	Bottom	3	2	29.4	8.0	25.1	4.7		11.1		6.0	
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	IS17	8:42	Surface	1	1	28.7	7.8	24.7	4.9	4.9	3.9	5.2	8.7	5.1
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	IS17	8:42	Surface	1	2	29.6	8.0	24.2	4.9		3.9		8.5	
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	IS17	8:42	Middle	2	1	28.6	7.9	25.1	4.8		4.2		4.5	
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	IS17	8:42	Middle	2	2	29.5	8.0	24.7	4.8		4.0		3.6	
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	IS17	8:42	Bottom	3	1	28.1	7.8	27.2	4.6	4.6	7.8		2.6	
TMCLKL	HY/2012/08	2019/09/16	Mid-flood	IS17	8:42	Bottom	3	2	29.1	8.0	26.7	4.6		7.6		2.9	

Note:

Indicates Exceedance of Action Level

Indicates Exceedance of Limit Level



WQMS	X	Y
Impact Station		
IS8(N)	814413	818570
IS(Mf)9	813273	818850
IS(Mf)11	813562	820716
IS(Mf)16	814328	819497
IS17	814539	820391
Control / Far Field Station		
CS(Mf)5	817990	821129
CS(Mf)3(N)	808814	822355
Sensitive Receiver Station		
SR7	814293	821431
SR4a	815247	818067
SR4(N2)	814688	817996

Figure 1

Environmental Resources Management

ERM

Email message

Environmental Resources Management

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

To	Ramboll Hong Kong Limited (ENPO)
From	ERM- Hong Kong, Limited
Ref/Project number	Contract No. HY/2012/08 Tuen Mun–Chek Lap Kok Link–Northern Connection Sub-sea Tunnel Section
Subject	Notification of Exceedance for Water Quality Impact Monitoring
Date	23 September 2019

Dear Sir or Madam,

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

Action Level Exceedance

0212330_18 September 2019_ Surface & Middle DO_E_Station IS8(N)
0212330_18 September 2019_ Surface & Middle DO_E_Station IS(Mf)9
0212330_18 September 2019_ Surface & Middle DO_E_Station IS(Mf)11
0212330_18 September 2019_ Bottom DO_E_Station IS(Mf)11
0212330_18 September 2019_ Surface & Middle DO_E_Station IS17
0212330_18 September 2019_ Bottom DO_E_Station IS17
0212330_18 September 2019_ Surface & Middle DO_F_Station IS(Mf)16
0212330_18 September 2019_ Surface & Middle DO_F_Station SR4a
0212330_18 September 2019_ Surface & Middle DO_F_Station SR4(N2)
0212330_18 September 2019_ Bottom DO_F_Station SR4(N2)
0212330_18 September 2019_ Surface & Middle DO_F_Station IS(Mf)9
0212330_18 September 2019_ Surface & Middle DO_F_Station IS(Mf)11
0212330_18 September 2019_ Bottom DO_F_Station IS(Mf)11
0212330_18 September 2019_ Surface & Middle DO_F_Station SR7
0212330_18 September 2019_ Bottom DO_F_Station SR7
0212330_18 September 2019_ Surface & Middle DO_F_Station IS17
0212330_18 September 2019_ Bottom DO_F_Station IS17

A total of seventeen Action Level exceedance was recorded on 18 September 2019.

Email message

Regards,

Dr Jasmine Ng
Environmental Team Leader

ERM-Hong Kong, Limited

CONTRACT NO. HY/2012/08
TUEN MUN – CHEK LAP KOK LINK – NORTHERN CONNECTION SUB-SEA TUNNEL SECTION

Marine Water Quality Impact Monitoring
Notification of Exceedance

Log No.	**<u>Action Level Exceedance</u>** **0212330_18 September 2019_ Surface & Middle DO_E_Station IS8(N)** **0212330_18 September 2019_ Surface & Middle DO_E_Station IS(Mf)9** **0212330_18 September 2019_ Surface & Middle DO_E_Station IS(Mf)11** **0212330_18 September 2019_ Bottom DO_E_Station IS(Mf)11** **0212330_18 September 2019_ Surface & Middle DO_E_Station IS17** **0212330_18 September 2019_ Bottom DO_E_Station IS17** **0212330_18 September 2019_ Surface & Middle DO_F_Station IS(Mf)16** **0212330_18 September 2019_ Surface & Middle DO_F_Station SR4a** **0212330_18 September 2019_ Surface & Middle DO_F_Station SR4(N2)** **0212330_18 September 2019_ Bottom DO_F_Station SR4(N2)** **0212330_18 September 2019_ Surface & Middle DO_F_Station IS(Mf)9** **0212330_18 September 2019_ Surface & Middle DO_F_Station IS(Mf)11** **0212330_18 September 2019_ Bottom DO_F_Station IS(Mf)11** **0212330_18 September 2019_ Surface & Middle DO_F_Station SR7** **0212330_18 September 2019_ Bottom DO_F_Station SR7** **0212330_18 September 2019_ Surface & Middle DO_F_Station IS17** **0212330_18 September 2019_ Bottom DO_F_Station IS17** **[Total No. of Exceedances = 17]**		
Date	18 September 2019 (Measured) 20 September 2019 (*In situ* results received by ERM) 25 September 2019 (Laboratory results received by ERM)		
Monitoring Station	CS(Mf)5, SR4a, SR4(N2), IS8(N), IS(Mf)16, IS(Mf)9, CS(Mf)3(N), SR7, IS17, IS(Mf)11		
Parameter(s) with Exceedance(s)	Dissolved Oxygen (mg/L)		
Action Levels	DO	Surface and Middle 5.0 mg/L	Bottom 4.7 mg/L
Limit Levels	DO	Surface and Middle 4.2 mg/L	Bottom 3.6 mg/L

Measured Levels	Action Level Exceedance 1. Mid-ebb at IS8(N) (Surface & Middle-depth DO = 4.9 mg/L) 2. Mid-ebb at IS(Mf)9 (Surface & Middle-depth DO = 4.9 mg/L) 3. Mid-ebb at IS(Mf)11 (Surface & Middle-depth DO = 4.8 mg/L) 4. Mid-ebb at IS(Mf)11 (Bottom-depth DO = 4.4 mg/L) 5. Mid-ebb at IS17 (Surface & Middle-depth DO = 4.7 mg/L) 6. Mid-ebb at IS17 (Bottom-depth DO = 4.3 mg/L) 7. Mid-flood at IS(Mf)16 (Surface & Middle-depth DO = 4.8 mg/L) 8. Mid-flood at SR4a (Surface & Middle-depth DO = 4.8 mg/L) 9. Mid-flood at SR4(N2) (Surface & Middle-depth DO = 4.8 mg/L) 10. Mid-flood at SR4(N2) (Bottom-depth DO = 4.6 mg/L) 11. Mid-flood at IS(Mf)9 (Surface & Middle-depth DO = 4.9 mg/L) 12. Mid-flood at IS(Mf)11 (Surface & Middle-depth DO = 4.6 mg/L) 13. Mid-flood at IS(Mf)11 (Bottom-depth DO = 4.4 mg/L) 14. Mid-flood at SR7 (Surface & Middle-depth DO = 4.6 mg/L) 15. Mid-flood at SR7 (Bottom-depth DO = 4.6 mg/L) 16. Mid-flood at IS17 (Surface & Middle-depth DO = 4.8 mg/L) 17. Mid-flood at IS17 (Surface & Middle-depth DO = 4.2 mg/L)
Works Undertaken (at the time of monitoring event)	According to the information provided by the Contractor, Seawall Modification Works was carried out on 18 September 2019.
Possible Reason for Action or Limit Level Exceedance(s)	The exceedances are unlikely to be due to the Contract, in view of the following: • 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. • IS8(N), IS(Mf)9, IS(Mf)11, SR4a, SR4(N2) and SR7 are far away (>2 km) from the Seawall Modification Works Area *(Figure 1)*, thus the observed exceedance should not be affected by the marine works under this Contract. Therefore, the exceedance is unlikely to be related to this Contract. • Bottom-depth DO levels at IS(Mf)11 and IS17 was similar to the corresponding control stations, CS(Mf)3(N), during mid-ebb tide, in which the recorded Bottom-depth DO levels at the corresponding control station were below Action Level. • Surface & Middle-depth DO levels at IS8(N), IS(Mf)9, IS(Mf)11 and IS17 were similar to the corresponding control stations, CS(Mf)3(N), during mid-ebb tide, in which the recorded Surface & Middle-depth DO levels at the corresponding control station were below Action Level. • Bottom-depth DO levels at SR4(N2), IS(Mf)11, SR7 and IS17 was similar to the corresponding control stations, CS(Mf)5, during mid-flood tide, in which the recorded Bottom-depth DO levels at the corresponding control station were below Action Level. • Surface & Middle-depth DO levels at IS(Mf)16, SR4a, SR4(N2), IS(Mf)9, IS(Mf)11, SR7 and IS17 were similar to the corresponding control stations, CS(Mf)5, during mid-flood tide, in which the recorded Surface & Middle-depth DO levels at the corresponding control station were below Action Level. • As reported by the marine mammal observer, no discharge of organic matters into waters from landside works area was recorded. Therefore, the recorded exceedances are unlikely to be caused by the marine works of this Contract.
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 18 September 2019 and locations of water quality monitoring stations are attached.

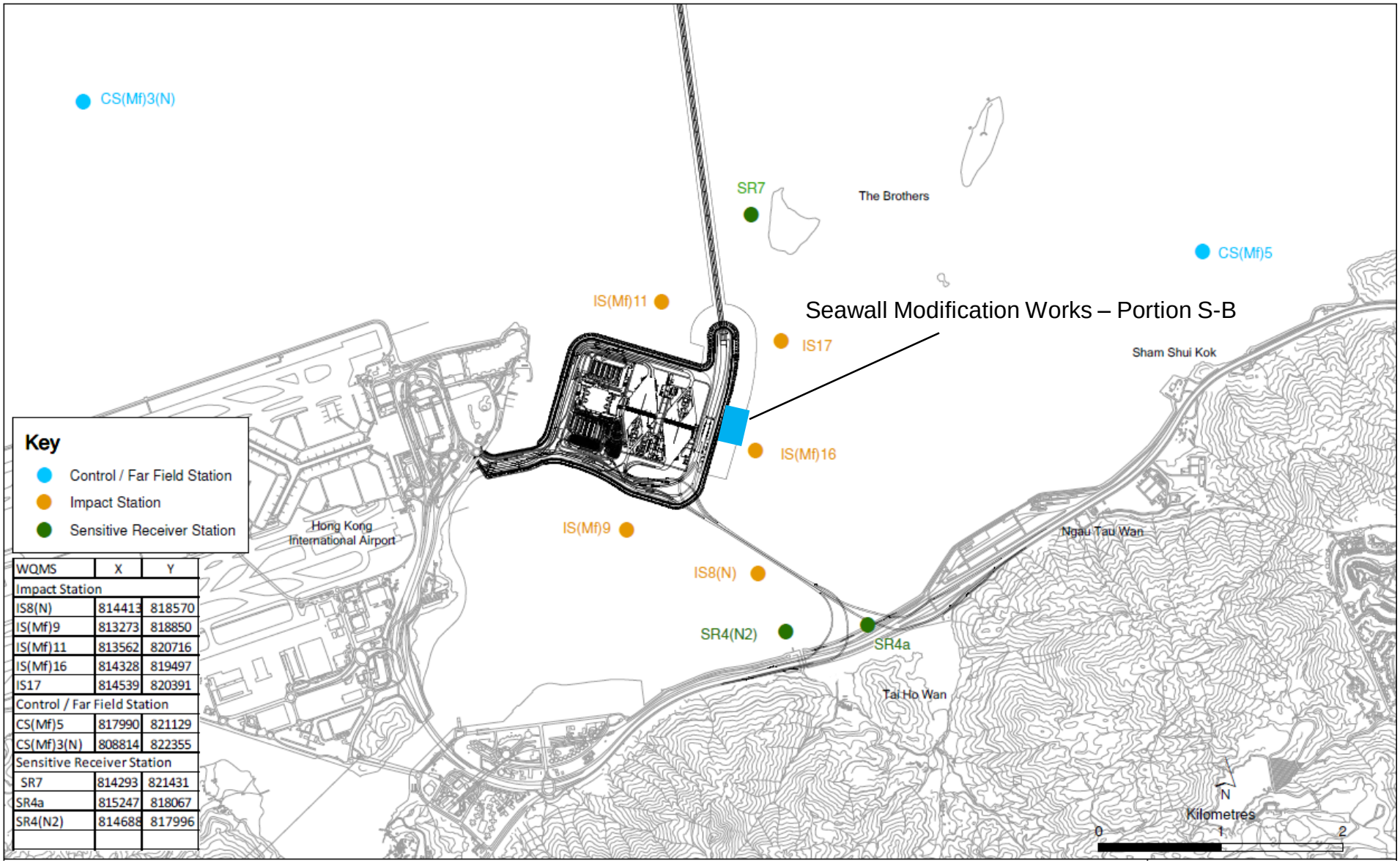
Project	Contract	Date (yyyy-mm-dd)	Tide	Station	Start Time	Level	Lev_Cod	Replicate	Temperature (°C)	pH	Salinity (ppt)	DO (mg/L)	Average DO (mg/L)	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	CS(Mf)5	15:25	Surface	1	1	29.7	8.2	25.7	4.7	4.6	4.6	6.7	5.4	4.9
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	CS(Mf)5	15:25	Surface	1	2	28.7	8.1	26.2	4.8		4.6		4.8	
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	CS(Mf)5	15:25	Middle	2	1	29.2	8.1	26.3	4.4		5.5		4.2	
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	CS(Mf)5	15:25	Middle	2	2	28.2	8.1	26.8	4.4		5.4		5.1	
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	CS(Mf)5	15:25	Bottom	3	1	28.8	8.2	27.9	4.3	4.3	9.9		5.3	
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	CS(Mf)5	15:25	Bottom	3	2	27.9	8.2	28.5	4.3		10.1		4.6	
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	CS(Mf)3(N)	14:44	Surface	1	1	29.8	8.1	23.5	4.9	4.8	4.8	6.6	6.1	6.6
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	CS(Mf)3(N)	14:44	Surface	1	2	28.8	8.1	24.0	5.0		5.0		6.7	
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	CS(Mf)3(N)	14:44	Middle	2	1	29.4	8.0	24.7	4.6		7.1		6.2	
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	CS(Mf)3(N)	14:44	Middle	2	2	28.4	8.1	25.3	4.6		7.1		6.8	
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	CS(Mf)3(N)	14:44	Bottom	3	1	29.3	8.0	25.4	4.5	4.6	7.7		6.7	
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	CS(Mf)3(N)	14:44	Bottom	3	2	28.3	8.1	25.9	4.6		7.6		7.0	
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	IS(Mf)16	13:57	Surface	1	1	30.2	8.1	24.5	5.0	5.1	8.0	9.2	5.6	5.2
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	IS(Mf)16	13:57	Surface	1	2	29.2	8.1	25.0	5.1		8.0		4.8	
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	IS(Mf)16	13:57	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	IS(Mf)16	13:57	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	IS(Mf)16	13:57	Bottom	3	1	29.3	8.1	26.1	4.7	4.7	10.4		5.1	
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	IS(Mf)16	13:57	Bottom	3	2	28.3	8.1	26.6	4.7		10.4		5.3	
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	SR4a	13:48	Surface	1	1	30.3	8.1	23.6	5.5	5.5	4.2	6.9	3.7	3.1
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	SR4a	13:48	Surface	1	2	29.2	8.1	24.2	5.5		4.1		3.7	
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	SR4a	13:48	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	SR4a	13:48	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	SR4a	13:48	Bottom	3	1	29.5	8.1	24.4	4.6	4.7	9.7		2.0	
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	SR4a	13:48	Bottom	3	2	28.5	8.1	24.8	4.7		9.6		2.8	
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	SR4(N2)	13:44	Surface	1	1	30.3	8.0	21.9	5.6	5.6	4.4	7.3	3.5	3.9
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	SR4(N2)	13:44	Surface	1	2	29.3	8.0	22.4	5.6		4.4		3.5	
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	SR4(N2)	13:44	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	SR4(N2)	13:44	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	SR4(N2)	13:44	Bottom	3	1	29.5	8.1	24.4	4.7	4.7	10.3		4.4	
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	SR4(N2)	13:44	Bottom	3	2	28.5	8.0	24.9	4.7		10.1		4.3	
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	IS8(N)	13:37	Surface	1	1	29.8	8.0	24.0	4.9	4.9	10.2	10.6	15.7	14.5
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	IS8(N)	13:37	Surface	1	2	28.8	7.9	24.5	4.9		9.9		14.2	
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	IS8(N)	13:37	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	IS8(N)	13:37	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	IS8(N)	13:37	Bottom	3	1	29.8	8.1	24.1	4.8	4.8	11.1		13.7	
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	IS8(N)	13:37	Bottom	3	2	28.8	8.0	24.6	4.8		11.3		14.4	
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	IS(Mf)9	13:30	Surface	1	1	29.9	8.0	23.7	4.9	4.9	6.5	9.4	15.0	14.2
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	IS(Mf)9	13:30	Surface	1	2	28.9	8.0	24.2	4.9		6.7		13.1	
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	IS(Mf)9	13:30	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	IS(Mf)9	13:30	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	IS(Mf)9	13:30	Bottom	3	1	29.7	8.0	24.3	4.9	4.9	12.1		13.9	
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	IS(Mf)9	13:30	Bottom	3	2	28.7	8.0	24.8	4.9		12.2		14.7	
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	IS(Mf)11	14:11	Surface	1	1	30.0	8.1	23.6	5.0	4.8	4.5	5.8	4.5	4.0
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	IS(Mf)11	14:11	Surface	1	2	29.1	8.1	24.1	5.1		4.6		4.0	
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	IS(Mf)11	14:11	Middle	2	1	29.5	8.1	25.1	4.5		6.6		4.3	
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	IS(Mf)11	14:11	Middle	2	2	28.5	8.0	25.6	4.6		6.6		4.0	
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	IS(Mf)11	14:11	Bottom	3	1	29.0	8.2	27.1	4.4	4.4	6.1		3.8	
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	IS(Mf)11	14:11	Bottom	3	2	28.0	8.0	27.6	4.4		6.2		3.2	
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	SR7	15:08	Surface	1	1	29.9	8.1	22.8	5.2	5.2	3.9	5.2	4.3	3.5
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	SR7	15:08	Surface	1	2	28.9	8.2	23.3	5.2		3.9		3.4	
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	SR7	15:08	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	SR7	15:08	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	SR7	15:08	Bottom	3	1	29.5	8.1	25.5	4.8	4.9	6.5		3.2	
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	SR7	15:08	Bottom	3	2	28.6	8.1	26.0	4.9		6.6		3.0	
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	IS17	14:02	Surface	1	1	30.0	8.2	25.1	5.0	4.7	7.2	9.6	5.6	5.2
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	IS17	14:02	Surface	1	2	29.0	8.2	25.6	5.0		7.3		4.6	
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	IS17	14:02	Middle	2	1	29.2	8.1	26.3	4.3		7.2		5.8	
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	IS17	14:02	Middle	2	2	28.3	8.1	26.8	4.3		7.2		4.8	

Project	Contract	Date (yyyy-mm-dd)	Tide	Station	Start Time	Level	Lev_Cod	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/2012/08	2019/09/18	Mid-Ebb	IS17	14:02	Bottom	3	1	29.0	8.1	26.9	4.3	4.3	14.2		4.9	
TMCLKL	HY/2012/08	2019/09/18	Mid-Ebb	IS17	14:02	Bottom	3	2	28.1	8.1	27.4	4.3		14.3		5.7	
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	CS(Mf)5	8:06	Surface	1	1	29.5	8.1	24.2	4.9	4.8	3.8	4.4	9.5	8.8
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	CS(Mf)5	8:06	Surface	1	2	28.5	7.9	24.7	4.9		3.7		9.5	
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	CS(Mf)5	8:06	Middle	2	1	29.4	8.0	24.9	4.6		4.5		8.0	
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	CS(Mf)5	8:06	Middle	2	2	28.4	8.0	25.4	4.7		4.4		9.0	
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	CS(Mf)5	8:06	Bottom	3	1	28.8	8.1	27.7	4.1	4.2	4.9		8.1	
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	CS(Mf)5	8:06	Bottom	3	2	27.9	8.0	28.2	4.2		5.0		8.6	
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	CS(Mf)3(N)	8:52	Surface	1	1	29.7	7.9	23.6	4.9	5.0	7.0	8.8	9.6	10.1
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	CS(Mf)3(N)	8:52	Surface	1	2	28.7	8.1	24.0	4.9		6.8		8.6	
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	CS(Mf)3(N)	8:52	Middle	2	1	29.6	8.2	23.6	5.0		9.3		9.0	
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	CS(Mf)3(N)	8:52	Middle	2	2	28.7	8.1	24.1	5.0		9.4		9.9	
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	CS(Mf)3(N)	8:52	Bottom	3	1	29.3	8.2	23.7	5.1	5.2	10.1		10.9	
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	CS(Mf)3(N)	8:52	Bottom	3	2	28.4	8.1	24.2	5.2		10.2		12.8	
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	IS(Mf)16	9:44	Surface	1	1	29.5	8.1	24.4	4.7	4.8	9.8	9.9	2.5	3.3
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	IS(Mf)16	9:44	Surface	1	2	28.6	8.0	24.8	4.8		9.7		2.4	
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	IS(Mf)16	9:44	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	IS(Mf)16	9:44	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	IS(Mf)16	9:44	Bottom	3	1	29.5	8.1	24.5	4.8	4.8	10.2		4.3	
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	IS(Mf)16	9:44	Bottom	3	2	28.5	8.0	25.0	4.8		10.0		4.0	
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	SR4a	9:53	Surface	1	1	29.6	8.1	23.7	4.8	4.8	4.2	5.4	4.3	3.7
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	SR4a	9:53	Surface	1	2	28.6	8.1	24.2	4.8		4.0		3.4	
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	SR4a	9:53	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	SR4a	9:53	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	SR4a	9:53	Bottom	3	1	29.4	8.1	24.3	4.9	4.9	6.8		3.9	
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	SR4a	9:53	Bottom	3	2	28.4	8.1	24.8	4.8		6.6		3.1	
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	SR4(N2)	9:58	Surface	1	1	29.5	8.1	23.9	4.8	4.8	5.4	6.4	7.2	6.8
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	SR4(N2)	9:58	Surface	1	2	28.5	8.1	24.4	4.8		5.4		7.2	
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	SR4(N2)	9:58	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	SR4(N2)	9:58	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	SR4(N2)	9:58	Bottom	3	1	29.4	8.1	24.2	4.6	4.6	7.2		5.9	
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	SR4(N2)	9:58	Bottom	3	2	28.5	8.1	24.7	4.6		7.4		6.9	
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	IS8(N)	10:04	Surface	1	1	29.7	8.1	23.6	5.1	5.1	4.5	4.6	5.6	5.2
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	IS8(N)	10:04	Surface	1	2	28.7	8.1	24.1	5.1		4.9		4.6	
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	IS8(N)	10:04	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	IS8(N)	10:04	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	IS8(N)	10:04	Bottom	3	1	29.7	8.1	23.6	5.2	5.2	4.4		5.2	
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	IS8(N)	10:04	Bottom	3	2	28.7	8.1	24.1	5.2		4.7		5.5	
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	IS(Mf)9	10:10	Surface	1	1	29.5	8.2	24.2	4.9	4.9	10.3	11.2	12.4	12.7
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	IS(Mf)9	10:10	Surface	1	2	28.5	8.1	24.7	4.9		10.2		10.7	
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	IS(Mf)9	10:10	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	IS(Mf)9	10:10	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	IS(Mf)9	10:10	Bottom	3	1	29.5	8.2	24.2	5.0	5.0	12.0		13.5	
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	IS(Mf)9	10:10	Bottom	3	2	28.5	8.1	24.7	5.0		12.1		14.2	
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	IS(Mf)11	9:27	Surface	1	1	29.5	8.1	24.2	4.8	4.6	6.0	9.9	7.6	6.1
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	IS(Mf)11	9:27	Surface	1	2	28.5	8.1	24.7	4.9		6.0		15.7	
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	IS(Mf)11	9:27	Middle	2	1	29.3	8.0	25.3	4.4		7.4		4.5	
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	IS(Mf)11	9:27	Middle	2	2	28.3	8.1	25.8	4.4		7.7		3.5	
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	IS(Mf)11	9:27	Bottom	3	1	29.2	8.0	25.5	4.4	4.4	16.2		2.9	
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	IS(Mf)11	9:27	Bottom	3	2	28.3	8.1	26.0	4.4		16.2		2.1	
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	SR7	8:27	Surface	1	1	29.4	8.1	24.9	4.6	4.6	7.2	11.2	14.6	13.4
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	SR7	8:27	Surface	1	2	28.4	8.2	25.4	4.6		7.0		14.0	
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	SR7	8:27	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	SR7	8:27	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	SR7	8:27	Bottom	3	1	29.3	8.0	25.3	4.6	4.6	15.2		12.6	
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	SR7	8:27	Bottom	3	2	28.3	8.1	25.8	4.6		15.2		12.4	
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	IS17	9:36	Surface	1	1	29.6	8.1	23.8	5.0	4.8	3.0	5.8	2.5	3.7
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	IS17	9:36	Surface	1	2	28.7	7.9	24.3	5.1		3.0		3.5	
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	IS17	9:36	Middle	2	1	29.4	8.1	24.9	4.6		3.9		3.6	
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	IS17	9:36	Middle	2	2	28.4	8.0	25.4	4.6		4.1		3.9	
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	IS17	9:36	Bottom	3	1	29.1	8.1	26.5	4.2	4.2	10.2		4.1	
TMCLKL	HY/2012/08	2019/09/18	Mid-flood	IS17	9:36	Bottom	3	2	28.1	8.0	27.0	4.2		10.3		4.3	

Note:

Indicates Exceedance of Action Level

Indicates Exceedance of Limit Level



WQMS	X	Y
Impact Station		
IS8(N)	814413	818570
IS(Mf)9	813273	818850
IS(Mf)11	813562	820716
IS(Mf)16	814328	819497
IS17	814539	820391
Control / Far Field Station		
CS(Mf)5	817990	821129
CS(Mf)3(N)	808814	822355
Sensitive Receiver Station		
SR7	814293	821431
SR4a	815247	818067
SR4(N2)	814688	817996

Figure 1

Environmental Resources Management

ERM

Email message

Environmental Resources Management

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

To	Ramboll Hong Kong Limited (ENPO)
From	ERM- Hong Kong, Limited
Ref/Project number	Contract No. HY/2012/08 Tuen Mun–Chek Lap Kok Link–Northern Connection Sub-sea Tunnel Section
Subject	Notification of Exceedance for Water Quality Impact Monitoring
Date	24 September 2019

ERM

Dear Sir or Madam,

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

Action Level Exceedance

0212330_20 September 2019_ Surface & Middle DO_E_Station IS17
0212330_20 September 2019_ Bottom DO_E_Station IS17
0212330_20 September 2019_ Bottom DO_F_Station SR4(N2)
0212330_20 September 2019_ Surface & Middle DO_F_Station IS(Mf)11
0212330_20 September 2019_ Bottom DO_F_Station IS(Mf)11
0212330_20 September 2019_ Surface & Middle DO_F_Station SR7
0212330_20 September 2019_ Surface & Middle DO_F_Station IS17
0212330_20 September 2019_ Bottom DO_F_Station IS17

A total of eight Action Level exceedances were recorded on 20 September 2019.

Regards,

Dr Jasmine Ng
Environmental Team Leader

ERM-Hong Kong, Limited

CONTRACT NO. HY/2012/08
TUEN MUN – CHEK LAP KOK LINK – NORTHERN CONNECTION SUB-SEA TUNNEL SECTION

Marine Water Quality Impact Monitoring
Notification of Exceedance

Log No.	**Action Level Exceedance** **0212330_20 September 2019_ Surface & Middle DO_E_Station IS17** **0212330_20 September 2019_ Bottom DO_E_Station IS17** **0212330_20 September 2019_ Bottom DO_F_Station SR4(N2)** **0212330_20 September 2019_ Surface & Middle DO_F_Station IS(Mf)11** **0212330_20 September 2019_ Bottom DO_F_Station IS(Mf)11** **0212330_20 September 2019_ Surface & Middle DO_F_Station SR7** **0212330_20 September 2019_ Surface & Middle DO_F_Station IS17** **0212330_20 September 2019_ Bottom DO_F_Station IS17** **[Total No. of Exceedances = 8]**		
Date	20 September 2019 (Measured) 23 September 2019 (*In situ* results received by ERM) 2 October 2019 (Laboratory results received by ERM)		
Monitoring Station	CS(Mf)5, SR4a, SR4(N2), IS8(N), IS(Mf)16, IS(Mf)9, CS(Mf)3(N), SR7, IS17, IS(Mf)11		
Parameter(s) with Exceedance(s)	Dissolved Oxygen (mg/L)		
Action Levels	DO	Surface and Middle 5.0 mg/L	Bottom 4.7 mg/L
Limit Levels	DO	Surface and Middle 4.2 mg/L	Bottom 3.6 mg/L
Measured Levels	Action Level Exceedance 1. Mid-ebb at IS17 (Surface & Middle -depth DO = 4.5 mg/L) 2. Mid-ebb at IS17 (Bottom-depth DO = 4.5 mg/L) 3. Mid-flood at SR4(N2) (Bottom-depth DO = 4.6 mg/L) 4. Mid-flood at IS(Mf)11 (Surface & Middle-depth DO = 4.7 mg/L) 5. Mid-flood at IS(Mf)11 (Bottom-depth DO = 4.5 mg/L) 6. Mid-flood at SR7 (Surface & Middle-depth DO = 4.7 mg/L) 7. Mid-flood at IS17 (Surface & Middle -depth DO = 4.8 mg/L) 8. Mid-flood at IS17 (Bottom-depth DO = 4.6 mg/L)		
Works Undertaken (at the time of monitoring event)	According to the information provided by the Contractor, Seawall Modification Works was carried out on 20 September 2019.		

Possible Reason for Action or Limit Level Exceedance(s)	The exceedances are unlikely to be due to the Contract, in view of the following: • 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. • SR4(N2), IS(Mf)11 and SR7 are far away (>2 km) from the Seawall Modification Works Area *(Figure 1)*, thus the observed exceedance should not be affected by the marine works under this Contract. Therefore, the exceedance is unlikely to be related to this Contract. • Bottom-depth DO levels at SR4(N2), IS(Mf)11 and IS17 were similar to the corresponding control stations, CS(Mf)5, during mid-flood tide, in which the recorded Bottom-depth DO levels at the corresponding control station were below Action Level. • Surface & Middle-depth DO levels at IS(Mf)11, SR7 and IS17 were similar to the corresponding control stations, CS(Mf)5, during mid-flood tide, in which the recorded Surface & Middle-depth DO levels at the corresponding control station were below Action Level. • As reported by the marine mammal observer, no discharge of organic matters into waters from landside works area was recorded. Moreover, no exceedance was recorded at IS(Mf)16 which is the closest station to the Seawall Modification Works Area during both mid-ebb and mid-flood tide. Therefore, exceedances recorded at IS17 during mid-ebb tide are unlikely to be caused by the marine works of this Contract.
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 September 2019 and locations of water quality monitoring stations are attached.

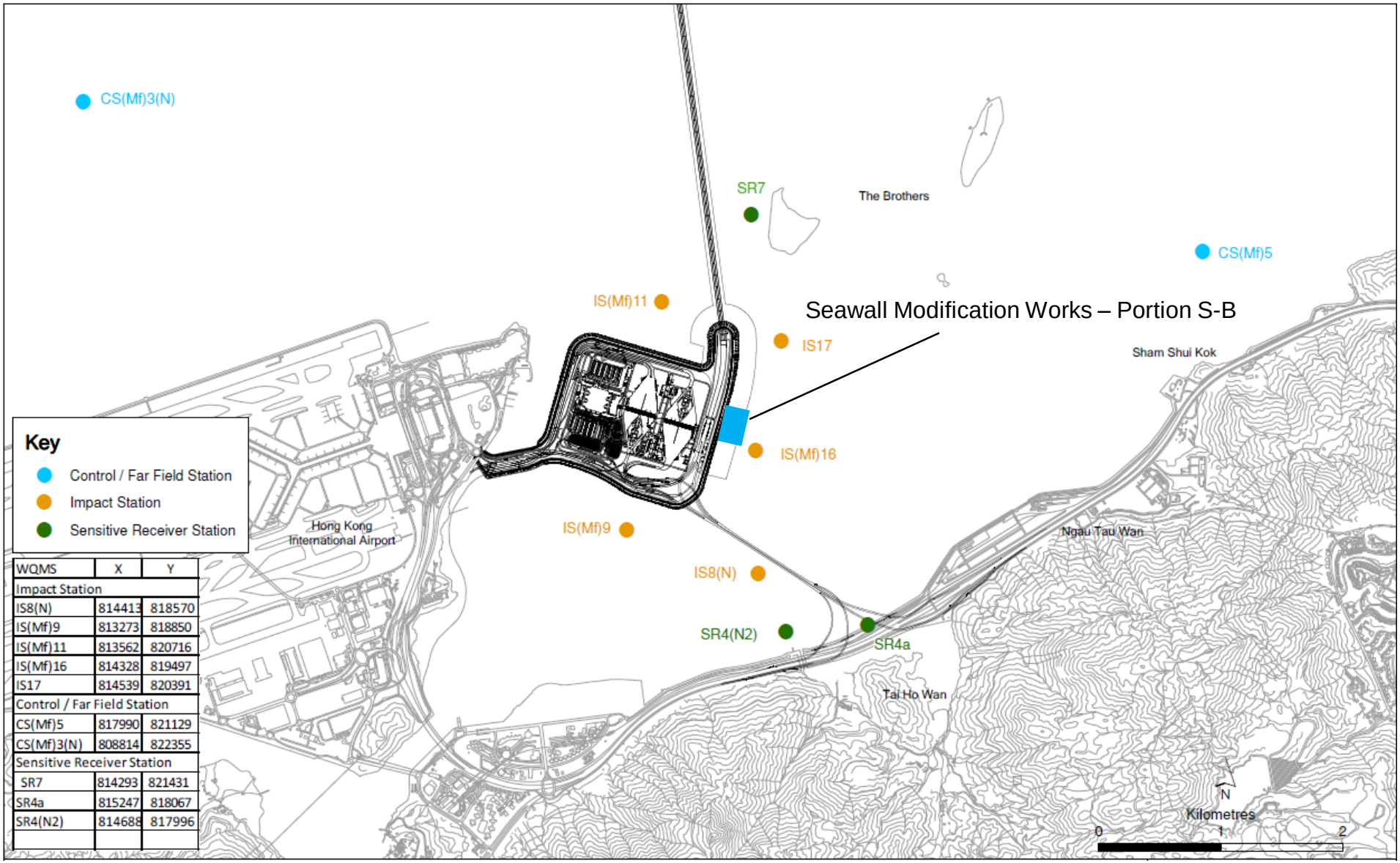
Project	Contract	Date (yyyy-mm-dd)	Tide	Station	Start Time	Level	Lev_Cod	Replicate	Temperature (°C)	pH	Salinity (ppt)	DO (mg/L)	Average DO (mg/L)	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	CS(Mf)5	16:44	Surface	1	1	28.9	7.8	26.8	5.6	5.3	2.1	3.1	3.3	4.1
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	CS(Mf)5	16:44	Surface	1	2	28.9	7.8	26.7	5.6		2.1		4.0	
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	CS(Mf)5	16:44	Middle	2	1	28.4	7.8	28.5	5.0		3.4		3.1	
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	CS(Mf)5	16:44	Middle	2	2	28.4	7.8	28.2	5.0		3.4		4.0	
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	CS(Mf)5	16:44	Bottom	3	1	28.1	7.8	29.5	4.6	4.6	3.8		4.7	
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	CS(Mf)5	16:44	Bottom	3	2	28.1	7.8	29.5	4.6		3.9		5.4	
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	CS(Mf)3(N)	16:02	Surface	1	1	28.9	7.9	22.9	6.2	5.7	2.7	5.5	3.7	4.4
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	CS(Mf)3(N)	16:02	Surface	1	2	29.0	7.9	22.8	6.2		2.7		4.5	
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	CS(Mf)3(N)	16:02	Middle	2	1	28.7	8.0	24.5	5.2		4.0		3.8	
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	CS(Mf)3(N)	16:02	Middle	2	2	28.7	8.0	24.5	5.1		4.0		4.7	
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	CS(Mf)3(N)	16:02	Bottom	3	1	28.3	8.0	27.0	5.1	5.1	9.7		5.0	
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	CS(Mf)3(N)	16:02	Bottom	3	2	28.3	8.0	27.0	5.1		9.7		4.4	
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	IS(Mf)16	15:21	Surface	1	1	28.5	7.9	26.3	5.0	5.0	7.5	7.4	10.6	10.1
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	IS(Mf)16	15:21	Surface	1	2	28.5	7.9	26.3	5.0		7.4		9.7	
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	IS(Mf)16	15:21	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	IS(Mf)16	15:21	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	IS(Mf)16	15:21	Bottom	3	1	28.5	8.0	26.4	5.2	5.2	7.4		9.8	
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	IS(Mf)16	15:21	Bottom	3	2	28.5	8.0	26.5	5.2		7.3		10.2	
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	SR4a	15:13	Surface	1	1	29.0	7.9	25.6	5.8	5.8	3.4	4.0	5.0	4.8
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	SR4a	15:13	Surface	1	2	29.0	7.9	25.6	5.8		3.4		4.7	
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	SR4a	15:13	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	SR4a	15:13	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	SR4a	15:13	Bottom	3	1	28.7	7.9	26.0	5.0	5.1	4.6		4.7	
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	SR4a	15:13	Bottom	3	2	28.7	7.9	26.0	5.1		4.5		4.6	
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	SR4(N2)	15:09	Surface	1	1	28.9	7.9	25.7	5.6	5.6	4.6	7.1	8.0	7.3
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	SR4(N2)	15:09	Surface	1	2	28.9	7.9	25.7	5.6		4.6		7.0	
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	SR4(N2)	15:09	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	SR4(N2)	15:09	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	SR4(N2)	15:09	Bottom	3	1	28.5	7.9	26.2	4.9	4.9	9.7		6.8	
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	SR4(N2)	15:09	Bottom	3	2	28.6	7.9	26.2	4.9		9.5		7.3	
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	IS8(N)	15:04	Surface	1	1	29.0	8.1	25.9	6.6	6.6	8.4	8.3	11.5	11.8
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	IS8(N)	15:04	Surface	1	2	29.0	8.1	25.9	6.6		8.4		11.8	
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	IS8(N)	15:04	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	IS8(N)	15:04	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	IS8(N)	15:04	Bottom	3	1	28.9	8.1	26.0	6.3	6.4	8.2		11.6	
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	IS8(N)	15:04	Bottom	3	2	28.9	8.1	26.0	6.4		8.2		12.4	
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	IS(Mf)9	14:57	Surface	1	1	28.9	8.1	26.1	5.6	5.6	5.7	5.9	9.5	8.9
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	IS(Mf)9	14:57	Surface	1	2	28.9	8.1	26.1	5.6		5.8		9.0	
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	IS(Mf)9	14:57	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	IS(Mf)9	14:57	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	IS(Mf)9	14:57	Bottom	3	1	28.9	8.0	26.1	5.7	5.7	6.0		8.8	
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	IS(Mf)9	14:57	Bottom	3	2	28.9	8.0	26.1	5.6		6.0		8.2	
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	IS(Mf)11	15:35	Surface	1	1	28.9	7.9	25.9	5.5	5.3	4.7	5.6	5.0	6.6
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	IS(Mf)11	15:35	Surface	1	2	28.9	7.9	25.9	5.5		4.7		4.0	
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	IS(Mf)11	15:35	Middle	2	1	28.7	7.9	26.4	5.1		5.3		7.5	
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	IS(Mf)11	15:35	Middle	2	2	28.7	7.9	26.4	5.1		5.2		7.5	
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	IS(Mf)11	15:35	Bottom	3	1	28.3	7.9	27.6	4.7	4.7	7.0		8.0	
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	IS(Mf)11	15:35	Bottom	3	2	28.3	7.9	27.6	4.7		6.9		7.5	
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	SR7	16:27	Surface	1	1	28.9	7.9	24.5	6.1	6.1	3.1	3.4	3.4	4.3
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	SR7	16:27	Surface	1	2	28.9	7.9	24.5	6.1		3.1		4.4	
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	SR7	16:27	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	SR7	16:27	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	SR7	16:27	Bottom	3	1	28.7	7.9	24.9	5.7	5.8	3.8		4.0	
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	SR7	16:27	Bottom	3	2	28.7	7.9	24.8	5.9		3.7		5.5	
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	IS17	15:27	Surface	1	1	28.4	7.9	27.5	4.5	4.5	6.7	6.0	7.6	9.1
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	IS17	15:27	Surface	1	2	28.4	7.9	27.5	4.5		6.6		8.5	
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	IS17	15:27	Middle	2	1	28.2	8.0	28.6	4.5		4.6		9.8	
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	IS17	15:27	Middle	2	2	28.2	8.0	28.6	4.5		4.6		9.6	

Project	Contract	Date (yyyy-mm-dd)	Tide	Station	Start Time	Level	Lev_Cod	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/2012/08	2019/09/20	Mid-Ebb	IS17	15:27	Bottom	3	1	28.1	8.0	29.2	4.5	4.5	6.9		9.0	
TMCLKL	HY/2012/08	2019/09/20	Mid-Ebb	IS17	15:27	Bottom	3	2	28.1	8.0	29.2	4.5		6.8		10.0	
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	CS(Mf)5	10:09	Surface	1	1	28.4	7.9	26.6	4.9	4.7	3.3	3.3	3.3	4.8
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	CS(Mf)5	10:09	Surface	1	2	28.4	7.9	26.5	4.9		3.3		3.6	
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	CS(Mf)5	10:09	Middle	2	1	28.3	7.9	27.9	4.5		3.4		4.7	
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	CS(Mf)5	10:09	Middle	2	2	28.3	7.9	27.8	4.5		3.4		5.7	
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	CS(Mf)5	10:09	Bottom	3	1	28.3	7.9	28.1	4.6	4.6	3.2		6.0	
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	CS(Mf)5	10:09	Bottom	3	2	28.3	7.9	28.1	4.5		3.1		5.5	
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	CS(Mf)3(N)	11:00	Surface	1	1	28.7	7.9	23.4	5.5	5.4	3.2	6.1	4.0	7.3
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	CS(Mf)3(N)	11:00	Surface	1	2	28.7	7.9	23.4	5.5		3.2		4.9	
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	CS(Mf)3(N)	11:00	Middle	2	1	28.6	8.0	24.7	5.2		7.4		6.5	
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	CS(Mf)3(N)	11:00	Middle	2	2	28.5	8.0	24.8	5.2		7.4		6.0	
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	CS(Mf)3(N)	11:00	Bottom	3	1	28.5	7.9	25.1	5.1	5.1	7.7		11.0	
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	CS(Mf)3(N)	11:00	Bottom	3	2	28.5	7.9	25.1	5.1		7.7		11.5	
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	IS(Mf)16	11:44	Surface	1	1	28.5	7.8	25.9	5.0	5.0	8.2	8.2	9.1	9.4
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	IS(Mf)16	11:44	Surface	1	2	28.5	7.8	25.9	5.0		8.2		8.1	
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	IS(Mf)16	11:44	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	IS(Mf)16	11:44	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	IS(Mf)16	11:44	Bottom	3	1	28.4	7.9	26.1	5.0	5.0	8.1		10.2	
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	IS(Mf)16	11:44	Bottom	3	2	28.4	7.9	26.1	5.0		8.1		10.1	
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	SR4a	11:55	Surface	1	1	28.6	7.8	25.9	5.1	5.1	4.3	4.6	6.2	7.0
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	SR4a	11:55	Surface	1	2	28.7	7.8	25.8	5.1		4.3		5.2	
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	SR4a	11:55	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	SR4a	11:55	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	SR4a	11:55	Bottom	3	1	28.5	7.8	26.0	5.0	5.0	4.9		7.8	
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	SR4a	11:55	Bottom	3	2	28.5	7.8	26.0	5.0		4.9		8.7	
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	SR4(N2)	11:59	Surface	1	1	28.6	7.8	25.9	5.1	5.1	4.6	6.2	6.4	7.5
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	SR4(N2)	11:59	Surface	1	2	28.6	7.8	25.9	5.1		4.6		5.4	
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	SR4(N2)	11:59	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	SR4(N2)	11:59	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	SR4(N2)	11:59	Bottom	3	1	28.4	7.8	26.2	4.6	4.6	7.9		8.7	
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	SR4(N2)	11:59	Bottom	3	2	28.4	7.8	26.2	4.6		7.8		9.6	
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	IS8(N)	12:06	Surface	1	1	28.7	7.7	25.5	5.3	5.3	4.5	5.1	7.9	7.7
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	IS8(N)	12:06	Surface	1	2	28.7	7.7	25.5	5.3		4.5		8.4	
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	IS8(N)	12:06	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	IS8(N)	12:06	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	IS8(N)	12:06	Bottom	3	1	28.6	7.7	25.6	5.2	5.2	5.8		7.7	
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	IS8(N)	12:06	Bottom	3	2	28.6	7.7	25.6	5.2		5.7		6.8	
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	IS(Mf)9	12:14	Surface	1	1	28.6	7.8	26.0	5.1	5.1	6.3	7.0	7.7	10.3
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	IS(Mf)9	12:14	Surface	1	2	28.6	7.8	26.0	5.1		6.3		8.2	
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	IS(Mf)9	12:14	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	IS(Mf)9	12:14	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	IS(Mf)9	12:14	Bottom	3	1	28.7	7.9	26.0	5.3	5.3	7.7		12.6	
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	IS(Mf)9	12:14	Bottom	3	2	28.6	7.9	26.0	5.3		7.7		12.8	
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	IS(Mf)11	10:35	Surface	1	1	28.4	8.0	25.8	4.9	4.7	6.4	13.3	10.1	16.4
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	IS(Mf)11	10:35	Surface	1	2	28.4	8.0	25.7	4.9		6.4		9.1	
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	IS(Mf)11	10:35	Middle	2	1	28.3	7.9	27.4	4.4		16.3		18.0	
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	IS(Mf)11	10:35	Middle	2	2	28.3	7.9	27.3	4.4		16.2		17.1	
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	IS(Mf)11	10:35	Bottom	3	1	28.3	7.8	27.4	4.5	4.5	17.1		21.1	
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	IS(Mf)11	10:35	Bottom	3	2	28.3	7.8	27.4	4.4		17.1		22.8	
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	SR7	10:28	Surface	1	1	28.4	7.8	26.8	4.7	4.7	9.1	11.2	9.5	10.2
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	SR7	10:28	Surface	1	2	28.4	7.8	26.8	4.7		9.0		9.6	
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	SR7	10:28	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	SR7	10:28	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	SR7	10:28	Bottom	3	1	28.4	7.7	27.2	4.7	4.7	13.4		11.2	
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	SR7	10:28	Bottom	3	2	28.3	7.7	27.2	4.7		13.4		10.3	
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	IS17	11:37	Surface	1	1	28.5	7.9	26.2	4.9	4.8	3.5	3.8	4.0	5.0
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	IS17	11:37	Surface	1	2	28.5	7.9	26.1	4.9		3.5		4.2	
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	IS17	11:37	Middle	2	1	28.4	7.9	26.5	4.7		3.6		4.7	
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	IS17	11:37	Middle	2	2	28.4	7.9	26.4	4.8		3.5		5.7	
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	IS17	11:37	Bottom	3	1	28.3	7.9	27.3	4.6	4.6	4.3		6.1	
TMCLKL	HY/2012/08	2019/09/20	Mid-flood	IS17	11:37	Bottom	3	2	28.3	7.9	27.2	4.6		4.3		5.2	

Note:

Indicates Exceedance of Action Level

Indicates Exceedance of Limit Level



WQMS	X	Y
Impact Station		
IS8(N)	814413	818570
IS(Mf)9	813273	818850
IS(Mf)11	813562	820716
IS(Mf)16	814328	819497
IS17	814539	820391
Control / Far Field Station		
CS(Mf)5	817990	821129
CS(Mf)3(N)	808814	822355
Sensitive Receiver Station		
SR7	814293	821431
SR4a	815247	818067
SR4(N2)	814688	817996

Figure 1

Environmental Resources Management

ERM

Email message

Environmental Resources Management

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

To	Ramboll Hong Kong Limited (ENPO)
From	ERM- Hong Kong, Limited
Ref/Project number	Contract No. HY/2012/08 Tuen Mun–Chek Lap Kok Link–Northern Connection Sub-sea Tunnel Section
Subject	Notification of Exceedance for Water Quality Impact Monitoring
Date	26 September 2019

Dear Sir or Madam,

Please find the Notification of Exceedance (NOE) of the following Log no.:
Action Level Exceedance
0212330_23 September 2019_ Surface & Middle DO_E_Station SR4(N2)
0212330_23 September 2019_ Bottom DO_E_Station SR4(N2)

A total of two Action Level exceedances were recorded on 23 September 2019.

Regards,

Dr Jasmine Ng
Environmental Team Leader

ERM-Hong Kong, Limited

CONTRACT NO. HY/2012/08
TUEN MUN – CHEK LAP KOK LINK – NORTHERN CONNECTION SUB-SEA TUNNEL SECTION

Marine Water Quality Impact Monitoring
Notification of Exceedance

Log No.	**<u>Action Level Exceedance</u>** **0212330_23 September 2019_ Surface & Middle DO_E_Station SR4(N2)** **0212330_23 September 2019_ Bottom DO_E_Station SR4(N2)** **[Total No. of Exceedances = 2]**		
Date	23 September 2019 (Measured) 24 September 2019 (*In situ* results received by ERM) 4 October 2019 (Laboratory results received by ERM)		
Monitoring Station	CS(Mf)5, SR4a, SR4(N2), IS8(N), IS(Mf)16, IS(Mf)9, CS(Mf)3(N), SR7, IS17, IS(Mf)11		
Parameter(s) with Exceedance(s)	Dissolved Oxygen (mg/L)		
Action Levels	DO	Surface and Middle 5.0 mg/L	Bottom 4.7 mg/L
Limit Levels	DO	Surface and Middle 4.2 mg/L	Bottom 3.6 mg/L
Measured Levels	Action Level Exceedance 1. Mid-ebb at SR4(N2) (Surface & Middle -depth DO = 4.7 mg/L) 2. Mid-ebb at SR4(N2) (Bottom-depth DO = 4.6 mg/L)		
Works Undertaken (at the time of monitoring event)	According to the information provided by the Contractor, Seawall Modification Works was carried out on 23 September 2019.		
Possible Reason for Action or Limit Level Exceedance(s)	The exceedances are unlikely to be due to the Contract, in view of the following: • 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. • SR4(N2) is far away (>2 km) from the Seawall Modification Works Area *(Figure 1)*, thus the observed exceedance should not be affected by the marine works under this Contract. Therefore, the exceedance is unlikely to be related to this Contract. • As reported by the marine mammal observer, no discharge of organic matters into waters from landside works area was recorded. Moreover, no exceedance was recorded at IS(Mf)16 which is the closest station to the Seawall Modification Works Area during both mid-ebb and mid-flood tide. Therefore, exceedances recorded at SR4(N2) during mid-ebb tide are unlikely to be caused by the marine works of this Contract.		
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 23 September 2019 and locations of water quality monitoring stations are attached.		

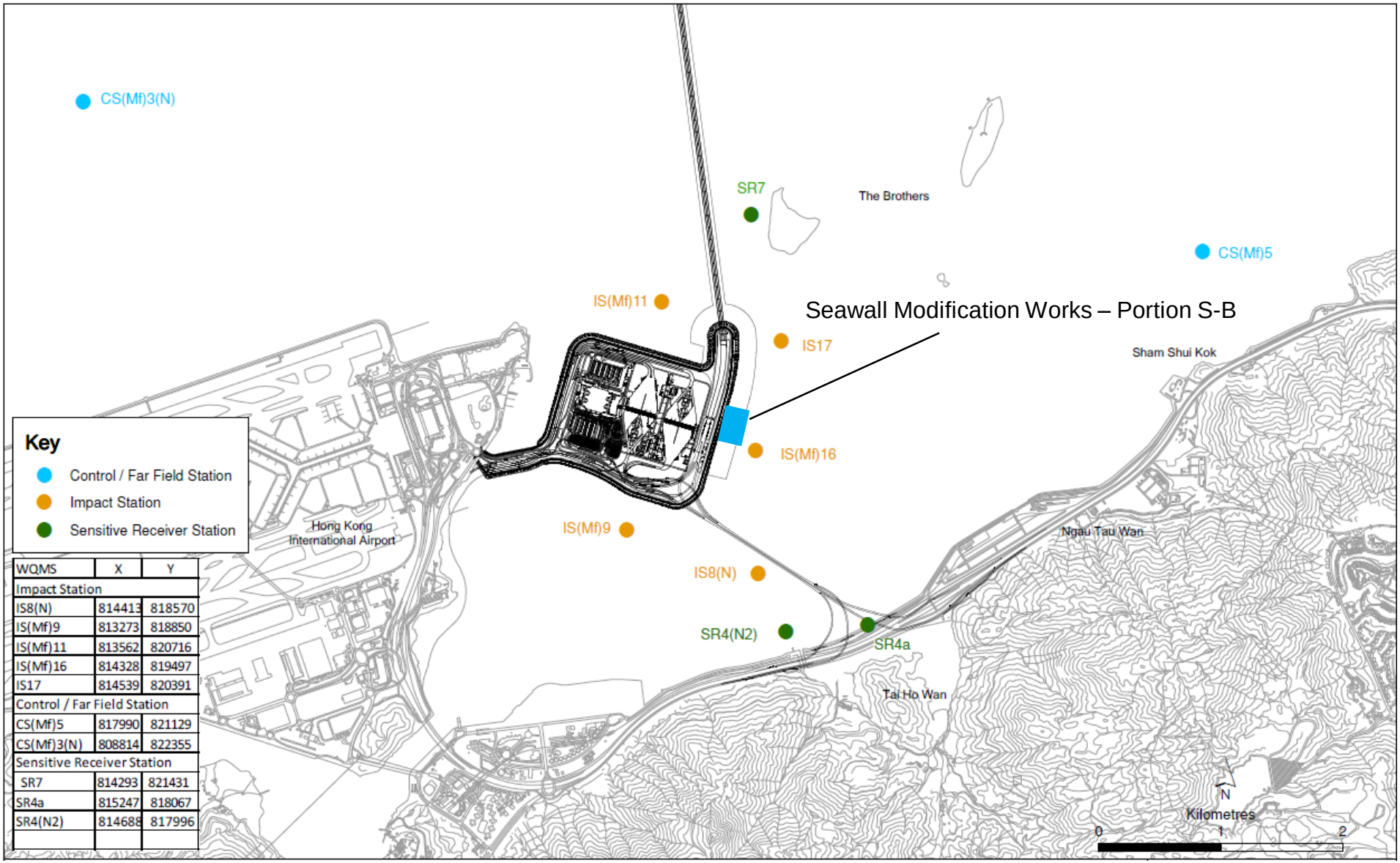
Project	Contract	Date (yyyy-mm-dd)	Tide	Station	Start Time	Level	Lev_Cod	Replicate	Temperature (°C)	pH	Salinity (ppt)	DO (mg/L)	Average DO (mg/L)	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	CS(Mf)5	5:48	Surface	1	1	26.8	8.2	28.2	6.5	5.8	2.5	2.8	5.1	6.4
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	CS(Mf)5	5:48	Surface	1	2	27.8	8.1	27.1	6.5		2.7		5.4	
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	CS(Mf)5	5:48	Middle	2	1	28.2	8.1	31.9	5.0		2.2		5.8	
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	CS(Mf)5	5:48	Middle	2	2	29.1	8.1	30.7	5.0		2.4		6.3	
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	CS(Mf)5	5:48	Bottom	3	1	28.1	8.0	32.3	5.4	5.4	3.5		7.9	
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	CS(Mf)5	5:48	Bottom	3	2	29.1	8.1	31.1	5.3		3.2		7.6	
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	CS(Mf)3(N)	6:49	Surface	1	1	27.1	8.1	28.7	6.3	6.3	2.0	3.6	7.9	9.5
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	CS(Mf)3(N)	6:49	Surface	1	2	28.0	8.2	27.6	6.3		2.1		8.2	
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	CS(Mf)3(N)	6:49	Middle	2	1	27.2	8.1	28.9	6.3		2.3		9.1	
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	CS(Mf)3(N)	6:49	Middle	2	2	28.1	8.2	27.8	6.3		2.3		9.4	
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	CS(Mf)3(N)	6:49	Bottom	3	1	27.5	8.1	30.3	6.2	6.2	6.6		11.4	
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	CS(Mf)3(N)	6:49	Bottom	3	2	28.4	8.2	29.0	6.1		6.5		11.0	
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	IS(Mf)16	7:26	Surface	1	1	27.9	8.1	30.5	5.1	5.1	3.5	3.7	15.9	17.3
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	IS(Mf)16	7:26	Surface	1	2	28.9	8.1	29.2	5.1		3.7		16.3	
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	IS(Mf)16	7:26	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	IS(Mf)16	7:26	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	IS(Mf)16	7:26	Bottom	3	1	28.0	8.1	31.5	5.4	5.4	3.7		18.5	
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	IS(Mf)16	7:26	Bottom	3	2	29.0	8.1	30.3	5.3		3.7		18.6	
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	SR4a	7:36	Surface	1	1	27.5	8.0	28.4	5.3	5.3	4.0	6.1	10.9	11.3
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	SR4a	7:36	Surface	1	2	28.5	8.1	27.3	5.2		4.2		11.1	
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	SR4a	7:36	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	SR4a	7:36	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	SR4a	7:36	Bottom	3	1	28.0	8.0	30.4	4.8	4.9	8.1		11.7	
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	SR4a	7:36	Bottom	3	2	28.9	8.1	29.2	5.0		8.1		11.5	
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	SR4(N2)	7:40	Surface	1	1	28.0	8.0	29.6	4.7	4.7	7.6	9.1	9.2	10.0
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	SR4(N2)	7:40	Surface	1	2	28.9	8.1	28.4	4.7		7.7		9.4	
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	SR4(N2)	7:40	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	SR4(N2)	7:40	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	SR4(N2)	7:40	Bottom	3	1	28.0	8.0	30.4	4.5	4.6	10.5		10.6	
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	SR4(N2)	7:40	Bottom	3	2	28.9	8.1	29.2	4.7		10.4		10.9	
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	IS8(N)	7:46	Surface	1	1	27.6	8.1	28.7	5.9	5.9	5.7	5.9	12.4	12.6
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	IS8(N)	7:46	Surface	1	2	28.5	8.1	27.5	5.9		5.4		12.1	
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	IS8(N)	7:46	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	IS8(N)	7:46	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	IS8(N)	7:46	Bottom	3	1	27.8	8.0	29.7	4.9	4.9	6.2		13.1	
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	IS8(N)	7:46	Bottom	3	2	28.8	8.1	28.5	4.9		6.4		12.7	
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	IS(Mf)9	7:55	Surface	1	1					6.4		4.4		17.3
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	IS(Mf)9	7:55	Surface	1	2									
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	IS(Mf)9	7:55	Middle	2	1	27.1	8.2	27.8	6.4		4.3		17.3	
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	IS(Mf)9	7:55	Middle	2	2	28.1	8.2	26.7	6.4		4.4		17.2	
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	IS(Mf)9	7:55	Bottom	3	1					#DIV/0!				
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	IS(Mf)9	7:55	Bottom	3	2									
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	IS(Mf)11	6:20	Surface	1	1	27.1	8.1	28.9	6.1	5.5	2.4	3.2	8.7	8.6
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	IS(Mf)11	6:20	Surface	1	2	28.1	8.1	27.8	6.0		2.5		9.1	
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	IS(Mf)11	6:20	Middle	2	1	28.1	8.1	31.1	5.0		3.0		8.8	
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	IS(Mf)11	6:20	Middle	2	2	29.0	8.1	29.9	5.0		3.0		8.5	
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	IS(Mf)11	6:20	Bottom	3	1	28.1	8.2	31.6	5.0	5.0	4.4		8.1	
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	IS(Mf)11	6:20	Bottom	3	2	29.1	8.1	30.3	5.0		4.0		8.3	
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	SR7	6:13	Surface	1	1	27.2	8.1	29.2	6.2	6.2	2.2	2.3	6.7	8.3
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	SR7	6:13	Surface	1	2	28.1	8.2	28.1	6.1		2.1		6.2	
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	SR7	6:13	Middle	2	1									
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	SR7	6:13	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	SR7	6:13	Bottom	3	1	27.2	8.2	29.4	6.2	6.2	2.4		10.4	
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	SR7	6:13	Bottom	3	2	28.1	8.1	28.3	6.2		2.3		9.7	
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	IS17	7:19	Surface	1	1	27.1	8.1	28.9	5.9	5.9	3.3	4.3	12.3	13.9
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	IS17	7:19	Surface	1	2	28.1	8.1	27.8	5.9		3.2		12.6	
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	IS17	7:19	Middle	2	1	27.2	8.1	29.1	5.8		3.6		14.5	
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	IS17	7:19	Middle	2	2	28.1	8.1	27.9	5.8		3.6		14.7	

Project	Contract	Date (yyyy-mm-dd)	Tide	Station	Start Time	Level	Lev_Cod	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/2012/08	2019/09/23	Mid-Ebb	IS17	7:19	Bottom	3	1	28.0	8.1	31.5	5.2	5.3	6.1		14.7	
TMCLKL	HY/2012/08	2019/09/23	Mid-Ebb	IS17	7:19	Bottom	3	2	29.0	8.1	30.3	5.3		6.1		14.3	
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	CS(Mf)5	20:18	Surface	1	1	27.9	8.2	31.6	5.5		3.9		3.5	
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	CS(Mf)5	20:18	Surface	1	2	28.9	8.1	30.4	5.5	5.4	3.7		3.8	
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	CS(Mf)5	20:18	Middle	2	1	28.0	8.2	32.2	5.3		4.7	4.6	4.1	4.1
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	CS(Mf)5	20:18	Middle	2	2	28.9	8.1	30.9	5.4		4.4		4.3	
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	CS(Mf)5	20:18	Bottom	3	1	28.0	8.1	32.3	5.4	5.5	5.5		4.2	
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	CS(Mf)5	20:18	Bottom	3	2	28.9	8.1	31.0	5.5		5.5		4.4	
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	CS(Mf)3(N)	19:24	Surface	1	1	27.7	8.1	29.5	6.6		3.3		10.1	
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	CS(Mf)3(N)	19:24	Surface	1	2	28.7	8.2	28.3	6.6	6.4	3.3		10.5	
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	CS(Mf)3(N)	19:24	Middle	2	1	27.8	8.2	30.5	6.1		9.9	8.1	8.1	9.1
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	CS(Mf)3(N)	19:24	Middle	2	2	28.8	8.2	29.2	6.1		10.0		8.2	
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	CS(Mf)3(N)	19:24	Bottom	3	1	27.8	8.1	30.7	6.1	6.1	11.1		8.6	
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	CS(Mf)3(N)	19:24	Bottom	3	2	28.8	8.2	29.5	6.1		11.1		9.1	
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	IS(Mf)16	18:43	Surface	1	1	27.9	8.3	29.6	8.1		5.1		21.5	
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	IS(Mf)16	18:43	Surface	1	2	28.9	8.3	28.3	8.1	8.1	5.3		21.8	
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	IS(Mf)16	18:43	Middle	2	1							7.9		22.4
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	IS(Mf)16	18:43	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	IS(Mf)16	18:43	Bottom	3	1	27.9	8.1	30.6	5.8	5.8	10.7		22.9	
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	IS(Mf)16	18:43	Bottom	3	2	28.8	8.1	29.4	5.7		10.4		23.2	
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	SR4a	18:33	Surface	1	1	27.9	8.2	29.5	6.6		5.2		7.7	
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	SR4a	18:33	Surface	1	2	28.8	8.2	28.3	6.6	6.6	5.0		8.1	
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	SR4a	18:33	Middle	2	1							5.7		7.8
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	SR4a	18:33	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	SR4a	18:33	Bottom	3	1	27.8	8.2	29.7	6.2	6.2	6.3		7.7	
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	SR4a	18:33	Bottom	3	2	28.7	8.2	28.4	6.2		6.2		7.5	
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	SR4(N2)	18:29	Surface	1	1	27.9	8.2	29.3	6.8		6.7		8.7	
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	SR4(N2)	18:29	Surface	1	2	28.9	8.2	28.1	6.8	6.8	6.6		8.6	
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	SR4(N2)	18:29	Middle	2	1							8.2		9.1
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	SR4(N2)	18:29	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	SR4(N2)	18:29	Bottom	3	1	27.9	8.1	29.4	6.5	6.5	9.5		9.5	
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	SR4(N2)	18:29	Bottom	3	2	28.8	8.2	28.2	6.5		9.8		9.5	
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	IS8(N)	18:24	Surface	1	1	27.8	8.1	29.6	7.2		10.0		12.2	
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	IS8(N)	18:24	Surface	1	2	28.8	8.1	28.3	7.3	7.3	10.3		11.9	
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	IS8(N)	18:24	Middle	2	1							10.1		12.4
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	IS8(N)	18:24	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	IS8(N)	18:24	Bottom	3	1	27.8	8.2	29.6	7.0	7.1	10.1		12.5	
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	IS8(N)	18:24	Bottom	3	2	28.8	8.2	28.3	7.1		10.1		12.9	
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	IS(Mf)9	18:19	Surface	1	1									
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	IS(Mf)9	18:19	Surface	1	2					8.2				
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	IS(Mf)9	18:19	Middle	2	1	28.0	8.1	29.4	8.2		4.4	4.4	14.0	13.8
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	IS(Mf)9	18:19	Middle	2	2	28.9	8.2	28.1	8.2		4.3		13.5	
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	IS(Mf)9	18:19	Bottom	3	1					#DIV/0!				
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	IS(Mf)9	18:19	Bottom	3	2									
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	IS(Mf)11	18:56	Surface	1	1	27.9	8.2	30.1	6.1		4.2		6.4	
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	IS(Mf)11	18:56	Surface	1	2	28.9	8.1	28.9	6.1	5.6	4.3		6.1	
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	IS(Mf)11	18:56	Middle	2	1	28.0	8.1	31.0	5.0		7.1	6.3	6.7	6.6
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	IS(Mf)11	18:56	Middle	2	2	28.9	8.1	29.8	5.0		7.2		6.9	
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	IS(Mf)11	18:56	Bottom	3	1	28.0	8.1	31.1	5.1	5.1	7.5		6.6	
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	IS(Mf)11	18:56	Bottom	3	2	28.9	8.1	29.8	5.1		7.4		6.8	
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	SR7	19:54	Surface	1	1	27.6	8.2	30.1	7.8		2.4		9.2	
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	SR7	19:54	Surface	1	2	28.6	8.2	28.9	7.8	7.8	2.6		9.4	
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	SR7	19:54	Middle	2	1							3.8		9.2
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	SR7	19:54	Middle	2	2									
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	SR7	19:54	Bottom	3	1	27.8	8.2	30.5	6.7	6.7	5.1		9.0	
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	SR7	19:54	Bottom	3	2	28.8	8.2	29.2	6.7		5.1		9.0	
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	IS17	18:49	Surface	1	1	27.7	8.2	29.9	7.1		3.1		11.7	
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	IS17	18:49	Surface	1	2	28.7	8.2	28.7	7.2	6.7	3.1		11.5	
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	IS17	18:49	Middle	2	1	27.7	8.1	30.7	6.2		2.6	3.3	12.0	12.8
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	IS17	18:49	Middle	2	2	28.6	8.2	29.4	6.2		2.7		12.3	
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	IS17	18:49	Bottom	3	1	27.8	8.1	31.5	5.4	5.4	4.2		14.9	
TMCLKL	HY/2012/08	2019/09/23	Mid-flood	IS17	18:49	Bottom	3	2	28.8	8.1	30.2	5.4		4.0		14.6	

Note:

Indicates Exceedance of Action Level

Indicates Exceedance of Limit Level



WQMS	X	Y
Impact Station		
IS8(N)	814413	818570
IS(Mf)9	813273	818850
IS(Mf)11	813562	820716
IS(Mf)16	814328	819497
IS17	814539	820391
Control / Far Field Station		
CS(Mf)5	817990	821129
CS(Mf)3(N)	808814	822355
Sensitive Receiver Station		
SR7	814293	821431
SR4a	815247	818067
SR4(N2)	814688	817996

Figure 1

Environmental Resources Management

ERM