#### Appendix I

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

 Table I1
 Cumulative Statistics on Exceedances

Monitoring Parameters	Action/Limit Level	Total No. recorded in this reporting quarter	Total No. recorded since project commencement
1-Hr TSP	Action	2	68
	Limit	0	4
24-Hr TSP	Action	0	8
	Limit	0	4
Water Quality	Action	0	20
-	Limit	0	1
Impact Dolphin	Action	0	11
Monitoring	Limit	1	13

Table I2 Cumulative Statistics on Complaints, Notifications of Summons and Successful Prosecutions

Reporting Period	Cumulative Statistics			
	Complaints	Notifications of	Successful	
		Summons	Prosecutions	
This Reporting Period	0	0	0	
(June 2018 to August				
2018)				
Total No. received	16	1	0	
since project				
commencement				

Email message

Environmental Resources Management

To Ramboll Hong Kong, Limited (ENPO)

16/F Berkshire House, 25 Westlands Road Quarry Bay, Hong Kong Telephone: (852) 2271 311

From

ERM- Hong Kong, Limited

Quarry Bay, Hong Kong Telephone: (852) 2271 3113 Facsimile: (852) 2723 5660 E-mail: jovy.tam@erm.com

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

26 August 2018



Dear Sir or Madam,

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

0212330\_26August2018\_1hrTSP\_Station ASR1

One Action Level Exceedance was recorded on 26 August 2018.

Regards,

Dr Jasmine Ng

**Environmental Team Leader** 

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#### **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.	0212330_26August2018_1hrTSP_Station ASR1		
		[Total No. of Exceedances = 1]	
Date	26 August 2018 (Measured)		
	31 August 2018 (Laboratory results received by ERM)		
Monitoring Station	ASR	R1, ASR5, ASR6, ASR10 and AQMS1	
Parameter(s) with		1-hr TSP	
Exceedance(s)		1-10 151	
Action Levels	24-hr TSP (μg/m³)	ASR1 = 213	
		ASR5 = 238	
		AQMS1 = 213	
		ASR6 = 238	
		ASR10 = 214	
	1-hr TSP (μg/m³)	ASR1 = 331	
		ASR5 = 340	
		AQMS1 = 335	
		ASR6 = 338	
		ASR10 = 337	
Limit Levels	1-hr TSP (μg/m³)	500	
	24-hr TSP (μg/m³)	260	
Measured Levels	Action Level Exceedance for 1-hr T	TSP is observed at ASR1 (417 μg/m3) during 1057 - 1157 hrs.	
Works Undertaken (at	On 26 August 2018, no construction	n works were carried out on site.	
the time of monitoring			
event)			
Possible Reason for	The exceedance is unlikely to be due to the Project, in view of the following:		
Action or Limit Level	According to the construction information provided by the Contractor, no construction		
Exceedance(s)	works were carried out on 26 August 2018.		
	The exceedances are unlikely to be due to the project as dust suppression measures were		
	implemented properly on s	ite. Water spraying was applied on site to prevent dust.	
	Based on the above, the exceedance	es are unlikely to be due to the project.	

Actions Taken/To Be	According to the construction information provided by the Contractor, no construction works were
Taken	carried out on 26 August 2018. Water spraying was applied to prevent dust. Photos taken during AQM were provided in Annex A. No significant dust impact was observed at ASR1. Dust suppression measures were properly implemented during the site inspections. Based on the above, no additional action is required.
	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. The Contractor was also reminded to ensure all dust mitigation measures are provided at Portion N-A and Portion N-C, where the construction works are carried out.
Remarks	The monitoring results and the locations of air quality monitoring stations are attached.



#### Annex A Photos provided by the Contractor

\*Note: Photos taken on 26/8/2018



Water spraying was applied frequently on site. (Works Area Portion N-A)



Water spraying was applied frequently on site. (Works Area Portion N-A)



### Annex A Photos taken during AQM

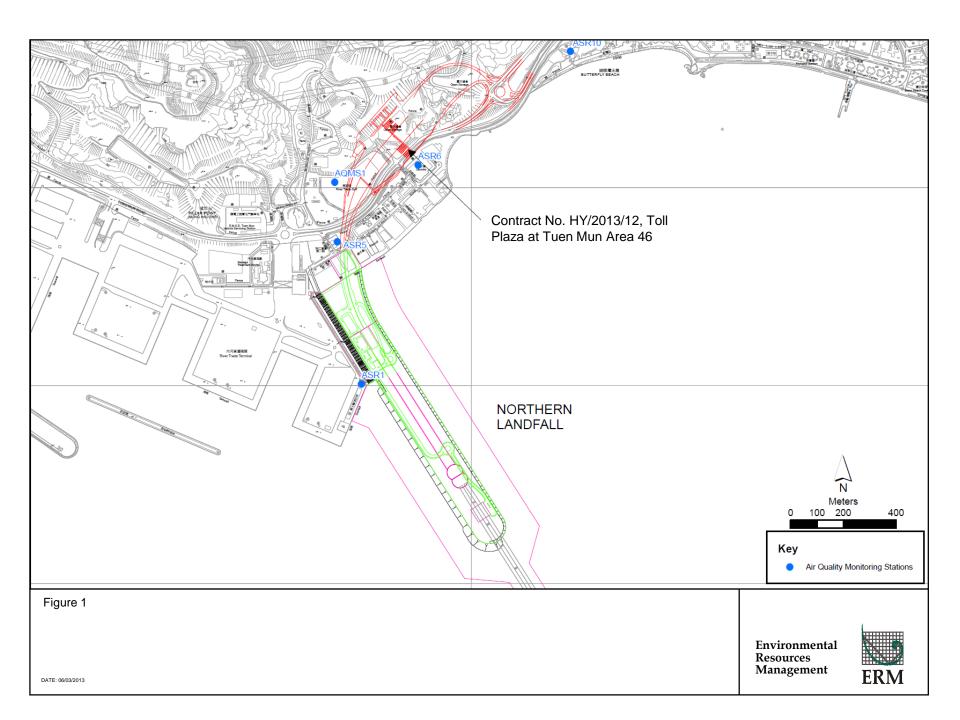
\*Note: Photos taken on 26/8/2018



ASR1

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)	
18/08/26	0:00	1.3	281	
18/08/26	1:00	0.9	301	
18/08/26	2:00	0.9	287	
18/08/26	3:00	0.9	316	
18/08/26	4:00	1.3	326	
18/08/26	5:00	0.9	298	
18/08/26	6:00	0.4	305	
18/08/26	7:00	0	-	
18/08/26	8:00	0.9	16	
18/08/26	9:00	0.9	3	
18/08/26	10:00	1.3	20	
18/08/26	11:00	2.7	18	
18/08/26	12:00	2.2	311	
18/08/26	13:00	1.8	297	
18/08/26	14:00	2.2	287	
18/08/26	15:00	1.3	290	
18/08/26	16:00	0.9	231	
18/08/26	17:00	1.3	126	
18/08/26	18:00	2.2	96	
18/08/26	19:00	2.2	83	
18/08/26	20:00	1.8	91	
18/08/26	21:00	2.2	91	
18/08/26	22:00	0.9	88	
18/08/26	23:00	1.3	92	

TMCLKL	HY/2012/08	26/8/2018	AQMS1	Sunny	9:04	1-hour TSP	87	ug/m3
TMCLKL	HY/2012/08	26/8/2018	AQMS1	Sunny	10:06	1-hour TSP	50	ug/m3
TMCLKL	HY/2012/08	26/8/2018	AQMS1	Sunny	11:08	1-hour TSP	120	ug/m3
TMCLKL	HY/2012/08	26/8/2018	ASR1	Sunny	8:53	1-hour TSP	169	ug/m3
TMCLKL	HY/2012/08	26/8/2018	ASR1	Sunny	9:55	1-hour TSP	200	ug/m3
TMCLKL	HY/2012/08	26/8/2018	ASR1	Sunny	10:57	1-hour TSP	417	ug/m3
TMCLKL	HY/2012/08	26/8/2018	ASR10	Sunny	8:20	1-hour TSP	63	ug/m3
TMCLKL	HY/2012/08	26/8/2018	ASR10	Sunny	9:22	1-hour TSP	39	ug/m3
TMCLKL	HY/2012/08	26/8/2018	ASR10	Sunny	10:24	1-hour TSP	39	ug/m3
TMCLKL	HY/2012/08	26/8/2018	ASR5	Sunny	8:42	1-hour TSP	177	ug/m3
TMCLKL	HY/2012/08	26/8/2018	ASR5	Sunny	9:44	1-hour TSP	86	ug/m3
TMCLKL	HY/2012/08	26/8/2018	ASR5	Sunny	10:46	1-hour TSP	103	ug/m3
TMCLKL	HY/2012/08	26/8/2018	ASR6	Sunny	8:30	1-hour TSP	121	ug/m3
TMCLKL	HY/2012/08	26/8/2018	ASR6	Sunny	9:32	1-hour TSP	51	ug/m3
TMCLKL	HY/2012/08	26/8/2018	ASR6	Sunny	10:34	1-hour TSP	49	ug/m3
TMCLKL	HY/2012/08	26/8/2018	AQMS1	Sunny	12:10	24-hour TSP	51	ug/m3
TMCLKL	HY/2012/08	26/8/2018	ASR1	Sunny	11:59	24-hour TSP	90	ug/m3
TMCLKL	HY/2012/08	26/8/2018	ASR10	Sunny	11:26	24-hour TSP	41	ug/m3
TMCLKL	HY/2012/08	26/8/2018	ASR5	Sunny	11:48	24-hour TSP	54	ug/m3
TMCLKL	HY/2012/08	26/8/2018	ASR6	Sunny	11:36	24-hour TSP		ug/m3



Email message

Environmental Resources Management

To Ramboll Hong Kong, Limited (ENPO)

16/F Berkshire House, 25 Westlands Road Quarry Bay, Hong Kong Telephone: (852) 2271 311:

From ERM- Hong Kong, Limited

Quarry Bay, Hong Kong Telephone: (852) 2271 3113 Facsimile: (852) 2723 5660 E-mail: jovy.tam@erm.com

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 29 August 2018



Dear Sir or Madam,

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

0212330\_29August2018\_1hrTSP\_Station ASR1

One Action Level Exceedance was recorded on 29 August 2018.

Regards,

Dr Jasmine Ng

Environmental Team Leader

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#### **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.	0212330_29August2018_1hrTSP_Station ASR1		
		[Total No. of Exceedances = 1]	
Date	29 August 2018 (Measured)		
	6 September 2018 (Laboratory results received by ERM)		
Monitoring Station	AS	SR1, ASR5, ASR6, ASR10 and AQMS1	
Parameter(s) with		1 L. TCD	
Exceedance(s)		1-hr TSP	
Action Levels	24-hr TSP (μg/m³)	ASR1 = 213	
		ASR5 = 238	
		AQMS1 = 213	
		ASR6 = 238	
		ASR10 = 214	
	1-hr TSP (μg/m³)	ASR1 = 331	
		ASR5 = 340	
		AQMS1 = 335	
		ASR6 = 338	
		ASR10 = 337	
Limit Levels	1-hr TSP (μg/m³)	500	
	24-hr TSP (μg/m³)	260	
Measured Levels	Action Level Exceedance for 1-hr	TSP is observed at ASR1 (403 μg/m3) during 1336 – 1436 hrs.	
Works Undertaken (at	On 29 August 2018, TBM tunnel	works were carried out on site.	
the time of monitoring			
event)			
Possible Reason for	The exceedance is unlikely to be due to the Project, in view of the following:		
Action or Limit Level	According to the construction information provided by the Contractor, TBM tunnel works		
Exceedance(s)	were carried out on site.	No ground construction works were carried out.	
	The exceedance is unlikely	y to be due to the project as dust suppression measures were	
	implemented properly on	site. Water spraying was applied on site to prevent dust.	
		nces are unlikely to be due to the project.	

#### Actions Taken / To Be According to the construction information provided by the Contractor, no ground construction Taken works were carried out on 29 August 2018. Site inspection was also carried out by the ET on 29 August 2018. Water spraying was applied to prevent dust. No significant dust impact was observed on site. Photos taken during AQM were provided in Annex A. No significant dust impact was observed at ASR1. Dust suppression measures were properly implemented during the site inspections. Based on the above, no additional action is required. 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. The Contractor was also reminded to ensure all dust mitigation measures are provided at Portion N-A and Portion N-C, where the construction works are carried out. Remarks The monitoring results and the locations of air quality monitoring stations are attached.

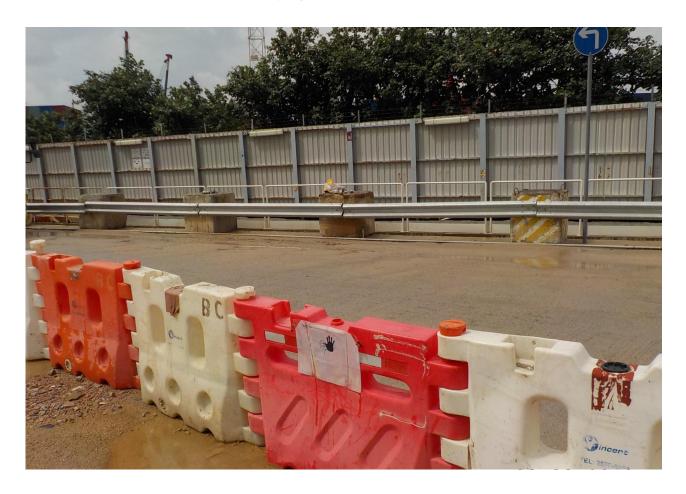


### Annex A Photos taken during site inspection

\*Note: Photos taken on 29/8/2018



Water spraying was applied to prevent dust.



Water spraying was applied to prevent dust.



### Annex A Photos taken during AQM

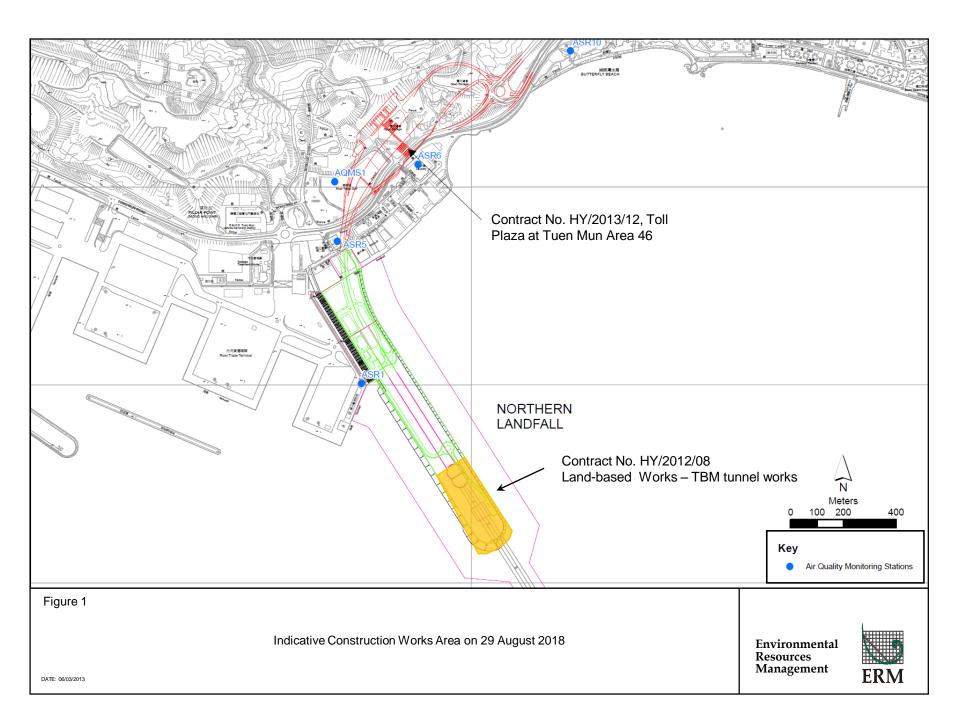
\*Note: Photos taken on 29/8/2018



ASR1

TMCLKL	HY/2012/08	29/8/2018	AQMS1	Rainy	13:48	1-hour TSP	158	ug/m3
TMCLKL	HY/2012/08	29/8/2018	AQMS1	Rainy	14:50	1-hour TSP	60	ug/m3
TMCLKL	HY/2012/08	29/8/2018	AQMS1	Rainy	15:52	1-hour TSP	57	ug/m3
TMCLKL	HY/2012/08	29/8/2018	ASR1	Rainy	13:36	1-hour TSP	403	ug/m3
TMCLKL	HY/2012/08	29/8/2018	ASR1	Rainy	14:38	1-hour TSP	87	ug/m3
TMCLKL	HY/2012/08	29/8/2018	ASR1	Rainy	15:40	1-hour TSP	72	ug/m3
TMCLKL	HY/2012/08	29/8/2018	ASR10	Rainy	13:02	1-hour TSP	129	ug/m3
TMCLKL	HY/2012/08	29/8/2018	ASR10	Rainy	14:04	1-hour TSP	54	ug/m3
TMCLKL	HY/2012/08	29/8/2018	ASR10	Rainy	15:06	1-hour TSP	46	ug/m3
TMCLKL	HY/2012/08	29/8/2018	ASR5	Rainy	13:24	1-hour TSP	327	ug/m3
TMCLKL	HY/2012/08	29/8/2018	ASR5	Rainy	14:26	1-hour TSP	64	ug/m3
TMCLKL	HY/2012/08	29/8/2018	ASR5	Rainy	15:28	1-hour TSP	46	ug/m3
TMCLKL	HY/2012/08	29/8/2018	ASR6	Rainy	13:13	1-hour TSP	125	ug/m3
TMCLKL	HY/2012/08	29/8/2018	ASR6	Rainy	14:15	1-hour TSP	69	ug/m3
TMCLKL	HY/2012/08	29/8/2018	ASR6	Rainy	15:17	1-hour TSP	42	ug/m3
TMCLKL	HY/2012/08	29/8/2018	AQMS1	Rainy	16:54	24-hour TSP	46	ug/m3
TMCLKL	HY/2012/08	29/8/2018	ASR1	Rainy	16:42	24-hour TSP	58	ug/m3
TMCLKL	HY/2012/08	29/8/2018	ASR10	Rainy	16:08	24-hour TSP	35	ug/m3
TMCLKL	HY/2012/08	29/8/2018	ASR5	Rainy	16:30	24-hour TSP	47	ug/m3
TMCLKL	HY/2012/08	29/8/2018	ASR6	Rainy	16:19	24-hour TSP	62	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)		
18/08/29	0:00	1.3	132		
18/08/29	1:00	1.3	133		
18/08/29	2:00	1.3	140		
18/08/29	3:00	0.4	351		
18/08/29	4:00	1.3	126		
18/08/29	5:00	0.4	1		
18/08/29	6:00	0.4	3		
18/08/29	7:00	0	-		
18/08/29	8:00	1.8	199		
18/08/29	9:00	0.9	235		
18/08/29	10:00	0.9	220		
18/08/29	11:00	1.3	224		
18/08/29	12:00	1.8	290		
18/08/29	13:00	0.9	140		
18/08/29	14:00	2.2	214		
18/08/29	15:00	1.8	200		
18/08/29	16:00	1.8	284		
18/08/29	17:00	0.9	294		
18/08/29	18:00	0.9	2		
18/08/29	19:00	0.9	344		
18/08/29	20:00	0.9	339		
18/08/29	21:00	0.4	294		
18/08/29	22:00	0.4	299		
18/08/29	23:00	0.9	147		



Email message

Environmental Resources Management

To Ramboll Hong Kong, Limited (ENPO)

2507, 25/F One Harbourfront 18 Tak Fung Street Hunghom, Kowloon

Hunghom, Kowle Hong Kong

From ERM- Hong Kong, Limited

Telephone: (852) 2271 3000 Facsimile: (852) 2723 5660

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 Impact Dolphin

Monitoring

Date 14 September 2018



Dear Sir or Madam,

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

 $0212330\_Jun2018/Aug2018\_dolphin\_STG\&ANI\_NEL\&NWL$ 

A total of one limit level exceedance was recorded in the quarterly impact dolphin monitoring data between June 2018 and August 2018.

Regards,

Dr Jasmine Ng

**Environmental Team Leader** 

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#### **ERM-Hong Kong, Limited**

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

#### Impact Dolphin Monitoring Notification of Exceedance

Log No.	0212330_ Jun/Aug2018_dolphin_STG&ANI_NEL&NWL			
	[Total No.	of Exceedances = 1 Limit Level Exceedance]		
Date	June to August 2018 (monitored)			
	2 C	October 2018 (results received by ERM)		
Monitoring Area	Northeast	Lantau (NEL) and Northwest Lantau (NWL)		
Parameter(s) with	Ouarterl	y encounter rate of dolphin sightings (STG)		
Exceedance(s)		ncounter rate of total number of dolphins (ANI)		
Action Levels		NEL: STG < 4.2 & ANI < 15.5		
		or		
	North Lorenze Conial alcotor	NWL: STG < 6.9 & ANI < 31.3		
Limit Levels	North Lantau Social cluster	NEL: STG < 2.4 & ANI < 8.9		
		and		
		NWL: STG < 3.9 & ANI < 17.9		
Recorded Levels	NEL	STG = 0 & ANI = 0		
	NWL	STG = 1.16 & ANI = 2.87		
	One Limit Level Exceedance was	recorded in the quarterly impact dolphin monitoring at NEL and		
	NWL between June and August	2018. The exceedance was reported in the approved Fifty-eighth		
	Monthly EM&A Report dated 12 S	September 2018.		
	,	•		
Statistical Analyses	Further to the review of the avail	able and relevant dolphin monitoring data in the EM&A		
	programme by this Contract, stat	tistical analyses were conducted as follows:		
	A two-way ANOVA with 1	repeated measures and unequal sample size was conducted using		
	· ·	s impact – present impact quarter, June to August 2018) and		
	,	d NWL) as fixed factors to examine whether there were any		
		ne average encounter rates between the baseline and present impact		
		etting $\alpha = 0.05$ as the significance level in the statistical tests,		
		IG ( $p = 0.0022$ ) and ANI ( $p = 0.0144$ ) were detected between		
	Periods.  • A two-way ANOVA with repeated measures and unequal sample size was conducted using			
	· ·	s: baseline vs impact – cumulative quarters, December 2012 to		
		(2 levels: NEL and NWL) as fixed factors to examine whether there		
	,	ences in the average encounter rates between the baseline and		
		ring quarter. By setting $\alpha = 0.00001$ as the significance level in the		
		difference in STG ( $p = 0.000000$ ) and in ANI ( $p = 0.000000$ ) between		
	Cumulative Period and Lo			
	*Note: The commencement date	under Contract No. HY/2012/08 is 1 November 2013.		
Works Undertaken (in	In the quarter between June and	August 2018, no marine works was undertaken under Contract No.		
the monitoring	HY/2012/08.			
quarter)				

#### Possible Reason for Action or Limit Level Exceedance(s)

The potential factors that may have contributed to the observed exceedance are reviewed below:

- Blocking of CWD travelling corridor:

  The *Monitoring of Marine Mammals in Hong Kong Waters* (2017 18) <sup>(1)</sup> reported that dolphin usage and traveling activities to the northern side of the airport (dolphin traveling corridor) are affected by frequent high-speed ferry traffic from Sky Pier (not related to this Contract), which is likely a major factor resulting in the decrease in dolphin abundances in North Lantau.
- Marine works of the Contract:
  As per the findings from the EIA report (*Section 8.11.9*), the major influences on the Chinese White Dolphin (CWD) *Sousa chinensis* under this Contract are marine traffics, reclamation and dredging works. The Contractor implemented the marine traffic control in the reporting period as per the requirements in the *EP-354/2009/D* and the updated *EM&A Manual*. Most of the vessels of this Contract also worked within the site boundary, in which the area is seldom used by CWD. Disturbance from vessels of this Contract is considered minor. Seawall enhancement works and the seawall construction and filling works were completed on 19 December 2017. During this quarter of dolphin monitoring, no adverse impact on CWD due to the activities under this Contract was observed.

In view of the above, marine ecological mitigation measures were considered properly implemented, and thus no unacceptable impact on CWD or its habitat was associated with this Contract in this quarter.

## Actions Taken / To Be Taken

In the quarter between June and August 2018, no marine based works were carried out.

The existing mitigation measures are recommended to be continuously implemented. Furthermore, it is also recommended to reduce the vessels for marine works as much as possible. The ET will monitor for future trends in exceedance(s).

A joint team meeting was held on 4 September 2018 for discussion on CWD trend, with attendance of ENPO, Representatives of Resident Site Staff (RSS), Representatives of Environmental Teams (ETs) for Contract No. HY/2013/01, HY/2011/03, HY/2012/07 and HY/2012/08. The discussion/recommendation as recorded in the minutes of the meeting, which might be relevant to this Contract are summarized below. It was concluded that the HZMB works is one of the contributing factors affecting the dolphins. It was also concluded the contribution of impacts due to the HZMB works as a whole (or individual marine contracts) cannot be quantified or separate from the other stress factors. ENPO presented the interim CWD survey results in mainland waters obtained from Hong Kong-Zhuhai-Macao Bridge Authority that some CWDs that previously more often sighted in Hong Kong waters have expanded their ranges into mainland waters, and some with reduced usage in Hong Kong waters, while they are partially accounted for the local decline. It was reminded that the ETs shall keep reviewing the implementation status of the dolphin related mitigation measures and remind the contractors to ensure the relevant measures are fully implemented. The ETs were also reminded to update the Brothers Marine Park (BMP) boundary in the Regular Marine Travel Route Plan. It was recommended that the marine works of HZMB projects should be completed as soon as possible to reduce the overall duration of impacts and allow the dolphins population to recover as early as possible. The participants were also reminded that the protection measures (e.g. speed limit control) for the BMP shall be implemented so as to provide a better habitat for dolphin recovery. It is noted that even though marine vessels may moor within the mooring site of BMP, commercial activities including loading / unloading / transhipment are not allowed except a permit is obtained. The HZMB works vessels were recommended to avoid the BMP. It was also recommended that the marine works footprint and vessels for the marine works should be reduced as much as possible, and vessels idling / mooring in other part of the North Lantau shall be avoided whenever possible.

Dolphin specialists of the Projects confirmed that the CWD sighting nearby north of Sha Chau and Lung Kwu Chau Marine Park has significantly declined. The reason for the decline was likely related to the re-routing of high-speed ferry from Sky Pier. The CWDs in the area should be closely followed.

#### Remarks

The results of impact dolphin monitoring, the status of implemented marine ecological mitigation measures are documented in the approved *Fifty-sixth to Fifty-eighth Monthly EM&A Reports*.