

**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	4	34
	Limit	0	2
24-Hr TSP	Action	0	5
	Limit	0	1
Water Quality	Action	0	6
	Limit	0	1
Impact Dolphin Monitoring	Action	0	9
	Limit	1	9

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

Reporting Period	Cumulative Statistics		
	Complaints	Notifications of Summons	Successful Prosecutions
This Reporting Period (June 2017 to August 2017)	0	0	0
Total No. received since project commencement	14	1	0

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**To** Ramboll Environ - Hong Kong, Limited (ENPO)

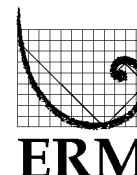
**From** ERM- Hong Kong, Limited

**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** 29 July 2017

16/F Berkshire House,  
25 Westlands Road  
Quarry Bay, Hong Kong  
Telephone: (852) 2271 3113  
Facsimile: (852) 2723 5660  
E-mail: jovy.tam@erm.com



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Dear Sir or Madam,

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

0212330\_29July2017\_1hrTSP\_Station ASR10  
0212330\_29July2017\_1hrTSP\_Station ASR5  
0212330\_29July2017\_1hrTSP\_Station ASR6

A total of three Action Level Exceedances were recorded on 29 July 2017.

Regards,

A handwritten signature in black ink, appearing to be 'Jovy Tam', written in a cursive style.

Mr Jovy Tam  
Environmental Team Leader

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<b>Actions Taken/ To Be Taken</b>	Based on the record of weekly site inspection on 26 July 2017 and 2 August 2017, no dust nuisance was recorded at the Northern Landfall and activities conducted in this Contract's work has strictly followed the requirements stated in the EP (EP-354/2009/C) (see photo records on <i>Annex A</i> ). Inspection of the AQM stations has also been carried out on 4 August 2017. No significant dust impact was observed at all stations. In addition, the Contractor has implemented the required mitigation measures as per the EP, approved EIA and Updated EM&A Manual (e.g. use of water truck on exposed soil within the Project site and associated work areas; use of wheel washing facilities) throughout the construction period, no additional mitigation is deemed necessary. The Enhanced TSP Monitoring has commenced on 24 October 2014, the ET will monitor for future trends in exceedances.
<b>Remarks</b>	The monitoring results and the locations of air quality monitoring stations are attached.



# 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_29July2017_1hrTSP_Station ASR10 0212330_29July2017_1hrTSP_Station ASR5 0212330_29July2017_1hrTSP_Station ASR6 [Total No. of Exceedances = 3]	
Date	29 July 2017 (Measured) 7 August 2017 (Laboratory results received by ERM)	
Monitoring Station	ASR1, ASR5, ASR6, ASR10 and AQMS1	
Parameter(s) with Exceedance(s)	1-hr TSP	
Action Levels	1-hr TSP ( $\mu\text{g}/\text{m}^3$ )	ASR10 = 337 ASR5 = 340 ASR6 = 338
	24-hr TSP ( $\mu\text{g}/\text{m}^3$ )	ASR10 = 214 ASR5 = 238 ASR6 = 238
Limit Levels	1-hr TSP ( $\mu\text{g}/\text{m}^3$ )	500
	24-hr TSP ( $\mu\text{g}/\text{m}^3$ )	260
Measured Levels	Action Level Exceedance for 1-hr TSP is observed at ASR10 ( $475 \mu\text{g}/\text{m}^3$ ) during 1524 - 1624 hrs. Action Level Exceedance for 1-hr TSP is observed at ASR6 ( $401 \mu\text{g}/\text{m}^3$ ) during 1534 - 1634 hrs. Action Level Exceedance for 1-hr TSP is observed at ASR5 ( $370 \mu\text{g}/\text{m}^3$ ) during 1545 - 1645hrs.	
Works Undertaken (at the time of monitoring event)	On 29 July 2017, Surcharge filling was carried out at Works Area Portion N-A and Construction of Ventilation Building at Portion N-C.	
Possible Reason for Action or Limit Level Exceedance(s)	<p>The exceedance(s) are unlikely to be due to the Project, in view of the following:</p> <ul style="list-style-type: none"> <li>According to the construction information provided by the Contractor, the majority of construction works on 29 July 2017 were Surcharge Filling at Works Area Portion N-A and Construction of Ventilation Building at Portions N-C. During the period of the land-based construction works, the Contractor has implemented the required mitigation measures as per the EP, approved EIA and Updated EM&amp;A Manual (e.g. water spraying by water trucks on exposed soil within the Project site and associated work areas; use of wheel washing facilities).</li> <li>Whilst exceedances of Action Level were observed at ASR10, ASR5 and ASR6, the 24-hr TSP level at the monitoring station (ASR10 = <math>99 \mu\text{g}/\text{m}^3</math>, ASR5 = <math>100 \mu\text{g}/\text{m}^3</math>, ASR6 = <math>114 \mu\text{g}/\text{m}^3</math>) on 29 July 2017 were in compliance with the Action and Limit Levels.</li> <li>Same level and extent of construction works were carried out at the same works area on 23<sup>rd</sup> July and 26<sup>th</sup> July whilst no exceedance was recorded. It is thus considered that the observed exceedances for 1-hour TSP at ASR10, ASR5 and ASR6 may represent sporadic event associated with traffic emissions and anthropogenic activities during afternoon rush hour at Lung Mun Road.</li> <li>As stated in the EIA report (Section 4.2.3), the background TSP level of Tuen Mun is higher than the other region of Hong Kong, thus the exceedances may be also contributed cumulatively by the other construction works / traffic within the Tuen Mun Area rather than causing by the construction works of the Project.</li> </ul>	

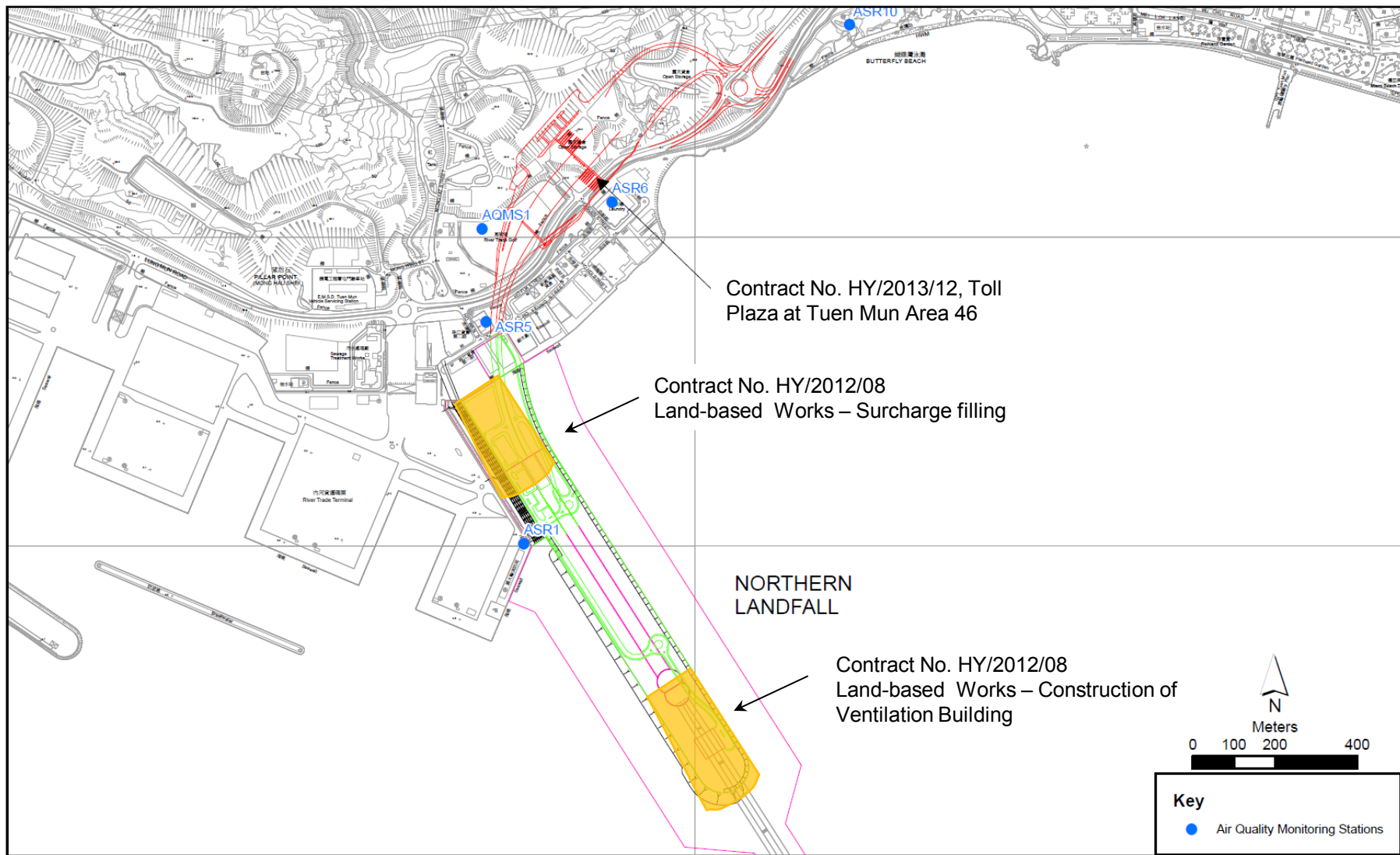


Figure 1

Indicative Construction Works Area on 29 July 2017

Project	Works	Date	Station	Weather	Start time	Parameters	Results	Unit
TMCLKL	HY/2012/08	2017-07-23	AQMS1	Cloudy	15:05	1-hour TSP	47	ug/m3
TMCLKL	HY/2012/08	2017-07-23	AQMS1	Cloudy	16:07	1-hour TSP	63	ug/m3
TMCLKL	HY/2012/08	2017-07-23	AQMS1	Cloudy	17:09	1-hour TSP	31	ug/m3
TMCLKL	HY/2012/08	2017-07-23	ASR1	Cloudy	14:54	1-hour TSP	52	ug/m3
TMCLKL	HY/2012/08	2017-07-23	ASR1	Cloudy	15:56	1-hour TSP	56	ug/m3
TMCLKL	HY/2012/08	2017-07-23	ASR1	Cloudy	16:58	1-hour TSP	52	ug/m3
TMCLKL	HY/2012/08	2017-07-23	ASR10	Cloudy	14:22	1-hour TSP	43	ug/m3
TMCLKL	HY/2012/08	2017-07-23	ASR10	Cloudy	15:24	1-hour TSP	55	ug/m3
TMCLKL	HY/2012/08	2017-07-23	ASR10	Cloudy	16:26	1-hour TSP	47	ug/m3
TMCLKL	HY/2012/08	2017-07-23	ASR5	Cloudy	14:44	1-hour TSP	34	ug/m3
TMCLKL	HY/2012/08	2017-07-23	ASR5	Cloudy	15:46	1-hour TSP	42	ug/m3
TMCLKL	HY/2012/08	2017-07-23	ASR5	Cloudy	16:48	1-hour TSP	40	ug/m3
TMCLKL	HY/2012/08	2017-07-23	ASR6	Cloudy	14:33	1-hour TSP	44	ug/m3
TMCLKL	HY/2012/08	2017-07-23	ASR6	Cloudy	15:35	1-hour TSP	37	ug/m3
TMCLKL	HY/2012/08	2017-07-23	ASR6	Cloudy	16:37	1-hour TSP	36	ug/m3
TMCLKL	HY/2012/08	2017-07-26	AQMS1	Sunny	13:50	1-hour TSP	51	ug/m3
TMCLKL	HY/2012/08	2017-07-26	AQMS1	Sunny	14:52	1-hour TSP	89	ug/m3
TMCLKL	HY/2012/08	2017-07-26	AQMS1	Sunny	15:54	1-hour TSP	78	ug/m3
TMCLKL	HY/2012/08	2017-07-26	ASR1	Sunny	13:39	1-hour TSP	127	ug/m3
TMCLKL	HY/2012/08	2017-07-26	ASR1	Sunny	14:41	1-hour TSP	93	ug/m3
TMCLKL	HY/2012/08	2017-07-26	ASR1	Sunny	15:43	1-hour TSP	48	ug/m3
TMCLKL	HY/2012/08	2017-07-26	ASR10	Sunny	13:07	1-hour TSP	43	ug/m3
TMCLKL	HY/2012/08	2017-07-26	ASR10	Sunny	14:09	1-hour TSP	99	ug/m3
TMCLKL	HY/2012/08	2017-07-26	ASR10	Sunny	15:11	1-hour TSP	43	ug/m3
TMCLKL	HY/2012/08	2017-07-26	ASR5	Sunny	13:29	1-hour TSP	103	ug/m3
TMCLKL	HY/2012/08	2017-07-26	ASR5	Sunny	14:31	1-hour TSP	146	ug/m3
TMCLKL	HY/2012/08	2017-07-26	ASR5	Sunny	15:33	1-hour TSP	102	ug/m3
TMCLKL	HY/2012/08	2017-07-26	ASR6	Sunny	13:18	1-hour TSP	79	ug/m3
TMCLKL	HY/2012/08	2017-07-26	ASR6	Sunny	14:20	1-hour TSP	169	ug/m3
TMCLKL	HY/2012/08	2017-07-26	ASR6	Sunny	15:22	1-hour TSP	70	ug/m3
TMCLKL	HY/2012/08	2017-07-29	AQMS1	Sunny	14:02	1-hour TSP	177	ug/m3
TMCLKL	HY/2012/08	2017-07-29	AQMS1	Sunny	15:04	1-hour TSP	171	ug/m3
TMCLKL	HY/2012/08	2017-07-29	AQMS1	Sunny	16:06	1-hour TSP	224	ug/m3
TMCLKL	HY/2012/08	2017-07-29	ASR1	Sunny	13:52	1-hour TSP	225	ug/m3
TMCLKL	HY/2012/08	2017-07-29	ASR1	Sunny	14:54	1-hour TSP	200	ug/m3
TMCLKL	HY/2012/08	2017-07-29	ASR1	Sunny	15:56	1-hour TSP	209	ug/m3
TMCLKL	HY/2012/08	2017-07-29	ASR10	Sunny	13:20	1-hour TSP	165	ug/m3
TMCLKL	HY/2012/08	2017-07-29	ASR10	Sunny	14:22	1-hour TSP	95	ug/m3
TMCLKL	HY/2012/08	2017-07-29	ASR10	Sunny	15:24	1-hour TSP	475	ug/m3
TMCLKL	HY/2012/08	2017-07-29	ASR5	Sunny	13:41	1-hour TSP	243	ug/m3
TMCLKL	HY/2012/08	2017-07-29	ASR5	Sunny	14:43	1-hour TSP	323	ug/m3
TMCLKL	HY/2012/08	2017-07-29	ASR5	Sunny	15:45	1-hour TSP	370	ug/m3
TMCLKL	HY/2012/08	2017-07-29	ASR6	Sunny	13:30	1-hour TSP	264	ug/m3

TMCLKL	HY/2012/08	2017-07-29	ASR6	Sunny	14:32	1-hour TSP	320	ug/m3
TMCLKL	HY/2012/08	2017-07-29	ASR6	Sunny	15:34	1-hour TSP	401	ug/m3
TMCLKL	HY/2012/08	2017-07-23	AQMS1	Cloudy	18:11	24-hour TSP	41	ug/m3
TMCLKL	HY/2012/08	2017-07-23	ASR1	Cloudy	18:00	24-hour TSP	41	ug/m3
TMCLKL	HY/2012/08	2017-07-23	ASR10	Cloudy	17:28	24-hour TSP	47	ug/m3
TMCLKL	HY/2012/08	2017-07-23	ASR5	Cloudy	17:50	24-hour TSP	39	ug/m3
TMCLKL	HY/2012/08	2017-07-23	ASR6	Cloudy	17:39	24-hour TSP	42	ug/m3
TMCLKL	HY/2012/08	2017-07-26	AQMS1	Sunny	16:56	24-hour TSP	35	ug/m3
TMCLKL	HY/2012/08	2017-07-26	ASR1	Sunny	16:45	24-hour TSP	137	ug/m3
TMCLKL	HY/2012/08	2017-07-26	ASR10	Sunny	16:13	24-hour TSP	21	ug/m3
TMCLKL	HY/2012/08	2017-07-26	ASR5	Sunny	16:35	24-hour TSP	57	ug/m3
TMCLKL	HY/2012/08	2017-07-26	ASR6	Sunny	16:24	24-hour TSP	51	ug/m3
TMCLKL	HY/2012/08	2017-07-29	AQMS1	Sunny	17:08	24-hour TSP	77	ug/m3
TMCLKL	HY/2012/08	2017-07-29	ASR1	Sunny	16:58	24-hour TSP	152	ug/m3
TMCLKL	HY/2012/08	2017-07-29	ASR10	Sunny	16:26	24-hour TSP	99	ug/m3
TMCLKL	HY/2012/08	2017-07-29	ASR5	Sunny	16:47	24-hour TSP	100	ug/m3
TMCLKL	HY/2012/08	2017-07-29	ASR6	Sunny	16:36	24-hour TSP	114	ug/m3





## Annex A Photo Records taken during Weekly Site Inspection

\*Note: Photos taken on 26/7/2017



Water spraying was applied frequently during dry conditions.(Works Area Portion N-A)



Use of water truck on exposed soil within the Project site and associated work areas.  
(Works Area Portion N-C)



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**To** Ramboll Environ - Hong Kong, Limited (ENPO)

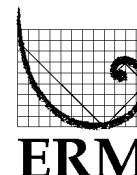
**From** ERM- Hong Kong, Limited

**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** 22 August 2017

16/F Berkshire House,  
25 Westlands Road  
Quarry Bay, Hong Kong  
Telephone: (852) 2271 3113  
Facsimile: (852) 2723 5660  
E-mail: jovy.tam@erm.com



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Dear Sir or Madam,

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

0212330\_22August2017\_1hrTSP\_Station ASR1

One Action Level Exceedance was recorded on 22 August 2017.

Regards,

Mr Jovy Tam  
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_22August2017_1hrTSP_Station ASR1 [Total No. of Exceedances = 1]	
Date	22 August 2017 (Measured) 1 September 2017 (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 ( $\mu\text{g}/\text{m}^3$ )	ASR1 = 213 ASR5 = 238 AQMS1 = 213 ASR6 = 238 ASR10 = 214
	1-hr TSP ( $\mu\text{g}/\text{m}^3$ )	ASR1 = 331 ASR5 = 340 AQMS1 = 335 ASR6 = 338 ASR10 = 337
Limit Levels	1-hr TSP ( $\mu\text{g}/\text{m}^3$ )	500
	24-hr TSP ( $\mu\text{g}/\text{m}^3$ )	260
Measured Levels	Action Level Exceedance for 1-hr TSP is observed at ASR1 ( $360 \mu\text{g}/\text{m}^3$ ) during 1505 - 1605 hrs.	
Works Undertaken (at the time of monitoring event)	On 22 August 2017, no construction works was carried out as Typhoon Hato was approaching and The Hong Kong Observatory expected to issue T8 signal soon.	
Possible Reason for Action or Limit Level Exceedance(s)	The exceedance is unlikely to be due to the Project, in view of the following: <ul style="list-style-type: none"> <li>According to the construction information provided by the Contractor, all construction works has been stopped by the time of recorded exceedance. Typhoon Hato was approaching and T8 signal was expected to be issued later.</li> </ul>	
Actions Taken/ To Be Taken	Based on the record of weekly site inspection on 24 August 2017 and contractor's photo record on 22 August 2017, no dust nuisance was recorded at the Northern Landfall and activities conducted in this Contract's work have strictly followed the requirements stated in the EP (EP-354/2009/D). In addition, the Contractor has implemented 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 wheel washing facilities, use of sprinklers for water spraying, materials having the potential to create dust covered by a clean tarpaulin, use of water truck and watering on all exposed soil within the Project site ) throughout the construction period, no additional mitigation is deemed necessary. Photo record is provided in Annex A. Weekly water spraying record is also provided. The Enhanced TSP Monitoring has commenced on 24 October 2014, the ET will monitor for future trends in exceedances.	

<b>Remarks</b>	<p>The monitoring results and the locations of air quality monitoring stations are attached.</p> <p>The exceedance is considered not related to this Contract as there was no construction works during the time of recorded exceedance. Materials having the potential to create dust were also covered by tarpaulin sheets.</p> <p>However, the Contractor has also been reminded to adhere strictly to implement all relevant dust mitigation measures recommended or specified in the EP (EP-354/2009/D), the approved EIA and the Updated EM&amp;A Manual of this Project to avoid causing dust nuisance.</p>
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Figure 1

Air Quality Monitoring Stations for the Enhanced TSP Monitoring



## Annex A Photo Records provided by the Contractor

\*Note: Photos taken on 22/8/2017



Water spraying was applied frequently during dry conditions.(Works Area Portion N-A)



No dust nuisance was observed. (Works Area Portion N-A)





## Annex A Photo Records provided by the Contractor

\*Note: Photos taken on 22/8/2017



Cement bags are covered by tarpaulin sheets. (Works Area Portion N-A)



Use of water truck for water spraying. (Works Area Portion N-A)



## Annex A Photo Records provided by the Contractor

\*Note: Photos taken on 22/8/2017



Watering on all exposed soil within the site. (Works Area Portion N-B)





## Annex A Photo Records taken during Weekly Site Inspection

\*Note: Photos taken on 24/8/2017



Water spraying was applied frequently during dry conditions.(Works Area Portion N-B)



Sprinklers are installed for water spraying. (Works Area Portion N-C)

Site Location 地盤位置:

Date 日期:

Northern Landfill  
21-Aug-2017 to 27-Aug-2017

	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	G	G	G	G	G	G	G

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:

- 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.
- Spraying position includes the main haul road, open area, slopes, stockpiles and any other dusty materials.
- If it is raining, no water spraying is needed.
- The no of spraying will be increased due to site condition.

備註:

- 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。
- 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。
- 當下雨時, 地盤將不需要灑水。
- 如果地盤情況更改或有需要時, 灑水次數會相應增加。

TMCLKL	HY/2012/08	2017-08-22	AQMS1	Sunny	14:14	1-hour TSP	176	ug/m3
TMCLKL	HY/2012/08	2017-08-22	AQMS1	Sunny	15:16	1-hour TSP	202	ug/m3
TMCLKL	HY/2012/08	2017-08-22	AQMS1	Rainy	16:18	1-hour TSP	88	ug/m3
TMCLKL	HY/2012/08	2017-08-22	ASR1	Sunny	14:03	1-hour TSP	155	ug/m3
TMCLKL	HY/2012/08	2017-08-22	ASR1	Sunny	15:05	1-hour TSP	360	ug/m3
TMCLKL	HY/2012/08	2017-08-22	ASR1	Rainy	16:07	1-hour TSP	331	ug/m3
TMCLKL	HY/2012/08	2017-08-22	ASR10	Sunny	13:29	1-hour TSP	84	ug/m3
TMCLKL	HY/2012/08	2017-08-22	ASR10	Sunny	14:31	1-hour TSP	106	ug/m3
TMCLKL	HY/2012/08	2017-08-22	ASR10	Rainy	15:33	1-hour TSP	72	ug/m3
TMCLKL	HY/2012/08	2017-08-22	ASR5	Sunny	13:52	1-hour TSP	195	ug/m3
TMCLKL	HY/2012/08	2017-08-22	ASR5	Sunny	14:54	1-hour TSP	269	ug/m3
TMCLKL	HY/2012/08	2017-08-22	ASR5	Rainy	15:56	1-hour TSP	278	ug/m3
TMCLKL	HY/2012/08	2017-08-22	ASR6	Sunny	13:40	1-hour TSP	181	ug/m3
TMCLKL	HY/2012/08	2017-08-22	ASR6	Sunny	14:42	1-hour TSP	247	ug/m3
TMCLKL	HY/2012/08	2017-08-22	ASR6	Rainy	15:44	1-hour TSP	290	ug/m3



Email  
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Environmental  
Resources  
Management

**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 Impact Dolphin  
Monitoring

**Date** 26 January 2018

16/F Berkshire House,  
25 Westlands Road  
Quarry Bay, Hong Kong  
Telephone: (852) 2271 3113  
Facsimile: (852) 2723 5660  
E-mail: jovy.tam@erm.com



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Dear Sir or Madam,

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

0212330\_Jun2017/Aug2017\_dolphin\_STG&ANI\_NEL&NWL

A total of one limit level exceedance was recorded in the quarterly impact  
dolphin monitoring data between June 2017 and August 2017.

Regards,

Mr Jovy Tam  
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**

<b>Log No.</b>	0212330_ Jun2017/Aug2017_dolphin_STG&ANI_NEL&NWL [Total No. of Exceedances = 1 Limit Level Exceedance]	
<b>Date</b>	June to August 2017 (monitored) 29 October 2017 (results received by ERM)	
<b>Monitoring Area</b>	Northeast Lantau (NEL) and Northwest Lantau (NWL)	
<b>Parameter(s) with Exceedance(s)</b>	Quarterly encounter rate of dolphin sightings (STG) Quarterly encounter rate of total number of dolphins (ANI)	
<b>Action Levels</b>	North Lantau Social cluster	NEL: STG < 4.2 & ANI < 15.5 or NWL: STG < 6.9 & ANI < 31.3
<b>Limit Levels</b>		NEL: STG < 2.4 & ANI < 8.9 and NWL: STG < 3.9 & ANI < 17.9
<b>Recorded Levels</b>	NEL	STG = 0 & ANI = 0
	NWL	STG = 2.2 & ANI = 6.58
	One Limit Level Exceedance was recorded in the quarterly impact dolphin monitoring at NEL and NWL between June 2017 and August 2017. The exceedance was reported in the approved <i>Forty-sixth Monthly EM&amp;A Report</i> dated 13 September 2017.	
<b>Statistical Analyses</b>	<p>Further to the review of the available and relevant dolphin monitoring data in the EM&amp;A programme by this Contract, statistical analyses were conducted as follows:</p> <ul style="list-style-type: none"> <li>A two-way ANOVA with repeated measures and unequal sample size was conducted using Period (2 levels: baseline vs impact – present impact quarter, June to August 2017) and Location (2 levels: NEL and NWL) as fixed factors to examine whether there were any significant differences in the average encounter rates between the baseline and present impact monitoring quarter. By setting <math>\alpha = 0.05</math> as the significance level in the statistical tests, significant differences in STG (<math>p = 0.0044</math>) and ANI (<math>p = 0.0202</math>) were detected between Periods.</li> <li>A two-way ANOVA with repeated measures and unequal sample size was conducted using Cumulative Period (2 levels: baseline vs impact – cumulative quarters, December 2012 to August 2017) and Location (2 levels: NEL and NWL) as fixed factors to examine whether there were any significant differences in the average encounter rates between the baseline and cumulative impact monitoring quarter. By setting <math>\alpha = 0.00001</math> as the significance level in the statistical tests, significant difference in STG (<math>p = 0.000001</math>) and in ANI (<math>p = 0.000000</math>) between Cumulative Period and Location were detected.</li> </ul> <p>*Note: The commencement date under <i>Contract No. HY/2012/08</i> is 1 November 2013.</p>	
<b>Works Undertaken (in the monitoring quarter)</b>	In the quarter between June 2017 and August 2017, no marine works was carried out in this Contract.	

<b>Possible Reason for Action or Limit Level Exceedance(s)</b>	<p>The potential factors that may have contributed to the observed exceedance are reviewed below:</p> <ul style="list-style-type: none"> <li>• Blocking of CWD travelling corridor: The <i>Monitoring of Marine Mammals in Hong Kong Waters (2016 – 17)</i> <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.</li> <li>• Marine works of the Contract: As per the findings from the EIA report (<i>Section 8.11.9</i>), the major influences on the Chinese White Dolphin (CWD) <i>Sousa chinensis</i> under this Contract are marine traffics, reclamation and dredging works. The Contractor implemented the marine traffic control in the reporting period as per the requirements in the <i>EP-354/2009/D</i> and the updated <i>EM&amp;A Manual</i>. Most of the vessels of this Contract also worked within the site boundary, in which the area is seldom used by CWD. Disturbance from vessels of this Contract is considered minor. Phase-II reclamation was completed in the end of May. During this quarter of dolphin monitoring, no adverse impact on CWD due to the activities under this Contract was observed.</li> </ul> <p>In view of the above, marine ecological mitigation measures were considered properly implemented, and thus no unacceptable impact on CWD or its habitat was associated with this Contract in this quarter from June 2017 and August 2017.</p>
<b>Actions Taken/ To Be Taken</b>	<p>In the quarter between June 2017 and August 2017, no marine works was carried out in this Contract.</p> <p>The existing mitigation measures are recommended to be continuously implemented. Furthermore, it is also recommended to reduce the vessels for marine works as much as possible. The ET will monitor for future trends in exceedance(s).</p> <p>A joint team meeting was held on 9 October 2017 for discussion on CWD trend, with attendance of ENPO, Representatives of Resident Site Staff (RSS), Representatives of Environmental Team (ET) for Contract No. HY/2010/02, HY2011/03, 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. It was reminded that the ETs shall keep reviewing the implementation status of the dolphin related mitigation measures and remind the contractor to ensure the relevant measures are fully implemented. The ETs were also reminded to update the 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 so as to reduce the overall duration of impacts and allow the dolphins population to recover as early as possible. It was also suggested that the protection measures (e.g., speed limit control) for the Brothers Marine Park (BMP) shall be implemented to provide a better habitat for dolphin recovery. It is noted that even though marine vessels may moor within the mooring site of BMP, commercial activities including loading / unloading / transshipment are not allowed except a permit is obtained. The HZMB works vessels were recommended to avoid the BMP. It was also recommended that the marine works footprint and vessels for the marine works should be reduced as much as possible, and vessels idling / mooring in other part of the North Lantau shall be avoided whenever possible.</p> <p>Dolphin specialists of the Projects confirmed that the CWD sighting nearby north of Sha Chau and Lung Kwu Chau Marine Park has significantly declined. The reason for the decline was likely related to the re-routing of high-speed ferry from Sky Pier. The CWDs in the area should be closely followed.</p>
<b>Remarks</b>	<p>The results of impact dolphin monitoring, the status of implemented marine ecological mitigation measures are documented in the approved <i>Forty-fourth to Forty-sixth Monthly EM&amp;A Reports</i>.</p>

(1) Hung S K Y (2017). Prepared for AFCD. Available at: [https://www.afcd.gov.hk/english/conservation/con\\_mar\\_chi/con\\_mar\\_chi\\_chi/files/Final\\_Report\\_2016\\_17.pdf](https://www.afcd.gov.hk/english/conservation/con_mar_chi/con_mar_chi_chi/files/Final_Report_2016_17.pdf)