

**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	0	30
	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	4

**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 (December 2015 to February 2016)	0	0	0
Total No. received since project commencement	4	0	0

Email  
message

Environmental  
Resources  
Management

**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 Impact Dolphin  
Monitoring

**Date** 26 April 2016

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Dear Sir or Madam,

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

0212330\_Dec2015/Feb2016\_dolphin\_STG&ANI\_NEL&NWL

A total of one limit level exceedance was recorded in the quarterly impact  
dolphin monitoring data between December 2015 and February 2016.

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**

Log No.	0212330_Dec2015/Feb2016_dolphin_STG&ANI_NEL&NWL [Total No. of Exceedances = 1 Limit Level Exceedance]	
Date	December 2015 to February 2016 (monitored) 18 April 2016 (results received by ERM)	
Monitoring Area	Northeast Lantau (NEL) and Northwest Lantau (NWL)	
Parameter(s) with Exceedance(s)	Quarterly encounter rate of dolphin sightings (STG) Quarterly encounter rate of total number of dolphins (ANI)	
Action Levels	North Lantau Social cluster	NEL: STG < 4.2 & ANI < 15.5 or NWL: STG < 6.9 & ANI < 31.3
Limit Levels		NEL: STG < 2.4 & ANI < 8.9 and NWL: STG < 3.9 & ANI < 17.9
Recorded Levels	NEL	STG = 0.0 & ANI = 0.0
	NWL	STG = 2.64 & ANI = 10.98
	One Limit Level Exceedance was recorded in the quarterly impact dolphin monitoring at NEL and NWL between December 2015 and February 2016. The exceedance was reported in the approved <i>Twenty-Eighth Monthly EM&amp;A Report</i> dated 11 March 2016.	
Statistical Analyses	<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 quarter, December 2015 to February 2016) 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 = 0.0043</math>) and ANI (<math>p = 0.0275</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 February 2016) 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 quarters. By setting <math>\alpha = 0.00005</math> as the significance level in the statistical tests, significant difference in STG (<math>p = 0.00004</math>) and in ANI (<math>p = 0.00001</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>	
Works Undertaken (in the monitoring quarter)	In the quarter between December 2015 and February 2016, 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 (2014 – 15)</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>. The reclamation and dredging works of this Contract (Phase 1) was completed in December 2014. Thus, underwater noise emission from this Contract had been relatively low in the reporting period when comparing to the previous quarters. During dolphin monitoring in this quarter, no unacceptable 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 December 2015 to February 2016.</p>
<b>Actions Taken/ To Be Taken</b>	<p>A joint team meeting was held on 20 April 2016 for discussion on CWD trend, with attendance of ENPO, HyD, Representatives of Resident Site Staff (RSS), for Contract No. HY/2010/02, HY2011/03 and HY/2012/08, Representatives of Environmental Team (ET) for Contract No. HY/2010/02, HY2011/03, HY/2012/07 and HY/2012/08, and Representatives of Main Contractor for Contract No. 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 CWD sighting and photo-identification survey results in mainland waters obtained from Hong Kong-Zhuhai-Macao Bridge Authority that some CWDs that were 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. <i>Monitoring of Chinese White Dolphins in Southwest Lantau Waters – Fourth Quarterly Report (December 2015 – February 2016)</i> <sup>(2)</sup> also reported some dolphins have extended their range to West and Southwest Lantau waters. 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 participants were requested by ENPO to collect and report the marine traffic statistics. 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.</p> <p>Also, 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; Protection measures (e.g. speed limit control) for the proposed Brothers Marine Park (BMP) shall be brought forward as soon as possible before its establishment so as to provide a better habitat for dolphin recovery. As the draft map of the proposed BMP was gazetted in February 2016, the ETs were reminded to update the proposed BMP boundary in the Regular Marine Travel Route Plan.</p>
<b>Remarks</b>	<p>The results of impact water quality and impact dolphin monitoring, the status of implemented marine ecological mitigation measures are documented in the approved <i>Twenty-Sixth to Twenty-Eighth Monthly EM&amp;A Reports</i>.</p>

(1) Hung SKY (2015). Prepared for AFCD. Available from: [http://www.afcd.gov.hk/english/conservation/con\\_mar/con\\_mar\\_chi/con\\_mar\\_chi\\_chi/con\\_mar\\_chi\\_chi.html](http://www.afcd.gov.hk/english/conservation/con_mar/con_mar_chi/con_mar_chi_chi/con_mar_chi_chi.html)

(2) Hung SKY (2016). Prepared for the Environmental Project Office for the HZMB, HKLR, HZMB HKBCF and TM-CLKL – Investigation. Available at: [http://www.enpo.com.hk/EMnA\\_Report/ENPO\\_R7C/quarterly/pdf/SWL\\_201512-201602.pdf](http://www.enpo.com.hk/EMnA_Report/ENPO_R7C/quarterly/pdf/SWL_201512-201602.pdf)