

*Appendix L1 Cumulative Statistics on Exceedances*

|                              |        | Total No. recorded in<br>this quarter | Total No. recorded<br>since project<br>commencement |
|------------------------------|--------|---------------------------------------|---|
| 1-Hr TSP                     | Action | 0                                     | 0   |
|                              | Limit  | 0                                     | 0   |
| 24-Hr TSP                    | Action | 0                                     | 2   |
|                              | Limit  | 0                                     | 0   |
| Noise                        | Action | 0                                     | 0   |
|                              | Limit  | 0                                     | 0   |
| Water Quality                | Action | 0                                     | 1   |
|                              | Limit  | 0                                     | 0   |
| Impact Dolphin<br>Monitoring | Action | 2                                     | 5   |
|                              | Limit  | 0                                     | 0   |

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

| Reporting Period                                    | Cumulative Statistics |                             |                            |
|---|-----------------------|-----------------------------|----------------------------|
|   | Complaints            | Notifications of<br>Summons | Successful<br>Prosecutions |
| This quarter  | 1                     | 0                           | 0                          |
| Total No. received<br>since project<br>commencement | 2                     | 0                           | 0                          |



ERM-Hong Kong, Limited

CONTRACT NO. HY/2012/07

TUEN MUN - CHEK LAP KOK LINK -  
SOUTHERN CONNECTION VIADUCT SECTION

Impact Dolphin Monitoring  
Notification of Exceedance

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|--|--|--|
| Log No.                                      | 0215660_Jun2014/Aug2014_dolphin_STG&ANI_NEL<br>0215660_Jun2014/Aug2014_dolphin_STG&ANI_NWL<br>[Total No. of Exceedances = 2]   |  |
| Date   | June 2014 to August 2014 (monitored)<br>27 October 2014 (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)<br>Quarterly encounter rate of total number of dolphins (ANI)  |  |
| Action Levels                                | North Lantau Social cluster  | NEL: STG < 4.2 & ANI < 15.5<br>or<br>NWL: STG < 6.9 & ANI < 31.3 |
| Limit Levels                                 |  | NEL: STG < 2.4 & ANI < 8.9<br>and<br>NWL: STG < 3.9 & ANI < 17.9 |
| Recorded Levels                              | NEL  | STG = 0.4 & ANI = 1.7  |
|  | NWL  | STG = 4.7 & ANI = 17.5   |
|  | Two Action Level Exceedances are recorded in the quarterly impact dolphin monitoring at NEL and NWL between June 2014 and August 2014. The exceedances were reported in the approved <i>Tenth Monthly EM&amp;A Report</i> dated 11 September 2014.   |  |
| Statistical Analyses                         | <p>Further to the review of the available and relevant dolphin monitoring data in the EM&amp;A under 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 2014) and Location (2 levels: NEL and NWL) as fixed factors to examine whether there were any significant differences in the averages encounter rates between the baseline and present impact monitoring quarter. By setting <math>\alpha = 0.1</math> as the significance level in the statistical tests, significant difference in STG (<math>p = 0.0199</math>) and in ANI (<math>p = 0.0597</math>) between Period were detected.</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 2014) and Location (2 levels: NEL and NWL) as fixed factors to examine whether there were any significant differences in the averages encounter rates between the baseline and present impact monitoring quarter. By setting <math>\alpha = 0.1</math> as the significance level in the statistical tests, significant difference in STG (<math>p = 0.0037</math>) and in ANI (<math>p = 0.0013</math>) between Cumulative Period and Location were detected.</li> </ul> <p>* Note: The commencement date under <i>Contract No. HY/2012/07</i> is 31 October 2013.</p> |  |
| Works Undertaken (in the monitoring quarter) | <p>In the quarter between June 2014 and August 2014, the major marine works under <i>Contract No. HY/2012/07</i> included:</p> <ul style="list-style-type: none"> <li>Additional marine ground investigation (GI) and laboratory testing;</li> <li>Marine piling platform installation;</li> <li>Marine Piling at Viaducts B, D &amp; E; and</li> <li>Construction of rockfill platform at Viaduct D landing.</li> </ul>   |  |

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|--|---|
| <b>Possible Reason for Action or Limit Level Exceedance(s)</b> | <p>The exceedance is considered to be the natural variation of Chinese white dolphin (CWD) <i>Sousa chinensis</i> ranging pattern and unlikely to be due to the Project, in view of the following:</p> <ul style="list-style-type: none"> <li>• The <i>Monitoring of Marine Mammals in Hong Kong Waters (2013 – 14)</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 project), which is likely a contributing factor for the decrease in dolphin abundances in NEL.</li> <li>• As per the findings from the EIA report (Section 8.11.9), the major influences on the CWD under this Contract are marine traffics and bored piling works. The Contractor has implemented the marine traffic control as per the requirements in the EP-354/2009/B and the updated EM&amp;A Manual. Likewise, the bored piling works were undertaken within a metal casing as described in the EP and the approved EIA Report. After reviewing of the bored piling records, the bored piling working rates in this quarter are within the allowable working rate described in the EP (<i>Clause 3.11</i>), in which construction works were not undertaken at more than 15 piers sites from June to August. Also, no installation of metal caisson into rock was conducted in June to avoid disturbance to CWD calving as required in <i>Clause 3.2</i> of the EP. During this quarter of dolphin monitoring, no adverse impact on CWD due to the activities under this Contract was observed.</li> <li>• According to the findings in the quarterly water monitoring results between June and August 2014, the impact mean level of SS (Mid-ebb: 3.9 mg/L; Mid-flood: 4.1 mg/L) in this quarter is well below of the baseline mean level of SS (Mid-ebb: 10.2 mg/L; Mid-flood: 12.1 mg/L). This would imply that no unacceptable impact on SS levels was associated with the marine works under this Contract, and thus no indirect impacts on marine habitat quality due to change in water quality is observed in this Contract.</li> <li>• Seasonal variation in individual ranging pattern which has been well documented in the literatures <sup>(2)</sup> <sup>(3)</sup>.</li> </ul> |
| <b>Actions Taken/ To Be Taken</b>                              | <p>With reference to the site inspection records in this quarter, the respective marine ecological mitigation measures (including 250 m dolphin exclusion zone, marine bored piling monitoring, underwater acoustic decoupling plan and marine traffic control) have been implemented properly by the Contractor throughout the marine works period. No immediate additional action is considered necessary. The ET will monitor for future trends in exceedance(s).</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>Eighth to Tenth EM&amp;A Monthly Reports</i>.</p>   |

(1) Hung SKY (2014). 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) Jefferson & Hung (2010) A review of the status of the Indo-Pacific Humpback Dolphin (*Sousa chinensis*) in Chinese Waters. *Aquatic Mammals* (30): 149 – 158.

(3) Chen et al., (2010) Distribution, abundance, and individual movements of Indo-Pacific humpback dolphins (*Sousa chinensis*) in the Pearl River Estuary, China. *Mammalia* (74): 117 – 125.