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EXECUTIVE SUMMARY

Contract No. HY/2010/02 – Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Reclamation Work (here below, known as "the Contract") mainly comprises reclamation at the northeast of the Hong Kong International Airport of an area of about 130-hectare for the construction of an artificial island for the development of the Hong Kong Boundary Crossing Facilities (HKBCF), and about 19-hectare for the southern landfall of the Tuen Mun - Chek Lap Kok Link (TMCLKL). It is a designated Project and is governed by the current permits for the Contract, i.e. the amended Environmental Permits (EPs) issued on 17 July 2015 (EP-353/2009/I) and 13 March 2015 (EP-354/2009/D) (for TMCLKL Southern Landfall Reclamation only).

Ove Arup & Partners Hong Kong Limited (Arup) was appointed by Highways Department (HyD) as the consultants for the design and construction assignment for the Contract's reclamation works (i.e. the Engineer for the Contract).

China Harbour Engineering Company Limited (CHEC) was awarded by HyD as the Contractor to undertake the construction work of the Contract.

Ramboll Environ Hong Kong Ltd. was employed by HyD as the Independent Environmental Checker (IEC) and Environmental Project Office (ENPO) for the Project.

AECOM Asia Co. Ltd. (AECOM) was appointed by CHEC to undertake the role of Environmental Team for the Contract for carrying out the environmental monitoring and audit (EM&A) works.

The construction phase of the Contract under the EPs was commenced on 12 March 2012 and will be tentatively completed by early Year 2016. The EM&A programme, including air quality, noise, water quality and dolphin monitoring and environmental site inspections, was commenced on 12 March 2012.

This report documents the findings of EM&A works conducted in the period between 1 June 2015 and 31 August 2015. As informed by the Contractor, major activities in the reporting quarter were:-

Marine-base

- Cellular structure – Connecting Arcs
- Cellular structure – Capping Beams
- Cellular structure – Backfill
- Conforming sloping seawalls – Geo-textile
- Maintenance of silt curtain & silt screen at sea water intake of HKIA
- Rubble Mound Seawall
- Rock fill

Land-base

- Earthwork fill
- Jet grout columns works
- Surcharge removal & laying
- Deep Cement Mixing
- Removal of Temporary Seawall
- Vertical Band Drains
- Installations of Precast Culverts except sloping outfalls
- Maintenance works of Site Office at Works Area WA2
- Maintenance works of Public Works Regional Laboratory at Works Area WA3
- Maintenance of Temporary Marine Access at Works Area WA2

A summary of monitoring and audit activities conducted in the reporting quarter is listed below:

24-hour Total Suspended Particulates (TSP) monitoring	16 sessions
1-hour TSP monitoring	16 sessions
Noise monitoring	13 sessions
Impact water quality monitoring	40 sessions
Impact dolphin monitoring	6 surveys
Joint Environmental site inspection	13 sessions

Breaches of Action and Limit Levels for Air Quality

One (1) Limit Level Exceedance of 24hr-TSP was recorded at AMS2 on 10 August 2015. After investigation, there is no adequate information to conclude the recorded exceedances are related to this Contract. No 1hr-TSP was recorded in the reporting period.

Breaches of Action and Limit Levels for Noise

For construction noise, no exceedance was recorded at all monitoring stations in the reporting month.

Breaches of Action and Limit Levels for Water Quality

Two (2) Action Level Exceedances of suspend solids were recorded at IS5 and IS(Mf)6 during flood tide on 17 July 2015, the exceedances were confirmed after checking against relevant control station(s) during flood tide i.e. CS6, CSA and CS(Mf)5 following the Action and Limit Levels for Water Quality. After investigation, there is no adequate information to conclude the recorded exceedances are related to this Contract.

Breaches of Action and Limit Levels for Impact Dolphin Monitoring

One (1) Limit Level exceedance of dolphin monitoring was recorded in the reporting quarter. After investigation, 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 nor separate from the other stress factors. Event Action Plan for Impact Dolphin Monitoring was triggered. For detail of investigation, please refer to appendix L. Event Action Plan for Impact Dolphin Monitoring was triggered. For detail of investigation, please refer to appendix L.

Implementation Status and Review of Environmental Mitigation Measures

Most of the recommended mitigation measures, as included in the EM&A programme, were implemented properly in the reporting quarter.

The recommended environmental mitigation measures effectively minimize the potential environmental impacts from the Project. The EM&A programme effectively monitored the environmental impacts from the construction activities and ensure the proper implementation of mitigation measures. No particular recommendation was advised for the improvement of the programme.

Moreover, regular review and checking on the construction methodologies, working processes and plants were carried out to ensure the environmental impacts were kept minimal and recommended environmental mitigation measures were implemented effectively.

Complaint, Notification of Summons and Successful Prosecution

As informed by the Contractor, 3 July 2015, an air quality complaint has been received on 11 June 2015 by HyD via complaint hotline 1823. The complainant complained that sand and dust pollution near Richland Garden, 138 Wu Chui Road, Tuen Mun, caused by sand delivery barges. After investigation, there is no adequate information to conclude the observed impact is related to this Contract.

As informed by ER of this Contract on 13 July 2015, EPD referred a noise related complaint to this Contract on 13 July 2015. The complainant complained noise came from BCF site near HK Skycity Marriott Hotel during nighttime period of the past 10 days which involves excavation with a grab dredger, transfer of excavated material using a derrick barge and a tug boat, and backfilling with a pelican barge. Based on EPD's record, the above activities are covered by CNP no. GW-RS0503-15. After investigation, the construction activities carried

out during restricted hour between 1- 13 July 2015 were considered complied with CNP conditions (no. GW-RS0503-15).

As informed by the Contractor on 30 July, Home Affairs Department referred a complaint to Project team of this Contract on 29 July 2015. The complaint involved Mr. Chan and Mr. Tang, Resident Representatives of Tong Fuk Village who complained significant sand loss of Tong Fuk Beach, particularly after typhoon when the beach was hit by strong waves; this exposed the rocks at the beach. The complainant enquired whether the sand loss is related to sand extraction for construction of airport and reclamation works of HZMB artificial island. After investigation, the complaint is considered as non-Contract related.

No notification of summons or prosecution was received in the reporting period

1 INTRODUCTION

1.1 Background

1.1.1 Contract No. HY/2010/02 – Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Reclamation Work (here below, known as "the Contract") mainly comprises reclamation at the northeast of the Hong Kong International Airport of an area of about 130-hectare for the construction of an artificial island for the development of the Hong Kong Boundary Crossing Facilities (HKBCF), and about 19-hectare for the southern landfall of the Tuen Mun - Chek Lap Kok Link (TMCLKL).

1.1.2 The environmental impact assessment (EIA) reports (Hong Kong – Zhuhai – Macao Bridge Hong Kong Boundary Crossing Facilities – EIA Report (Register No. AEIAR-145/2009) (HKBCFEIA) and Tuen Mun – Chek Lap Kok Link – EIA Report (Register No. AEIAR-146/2009) (TMCLKLEIA), and their environmental monitoring and audit (EM&A) Manuals (original EM&A Manuals), for the Contract were approved by Environmental Protection Department (EPD) in October 2009.

1.1.3 EPD subsequently issued the Environmental Permit (EP) for HKBCF in November 2009 (EP-353/2009) and the Variation of Environmental Permit (VEP) in June 2010 (EP-353/2009/A), November 2010 (EP-353/2009/B), November 2011 (EP-353/2009/C), March 2012 (EP-353/2009/D), October 2012 (EP-353/2009/E), April 2013 (EP-353/2009/F), August 2013 (EP-353/2009/G), January 2015 (EP-353/2009/H) and July 2015 (EP-353/2009/I). Similarly, EPD issued the Environmental Permit (EP) for TMCLKL in November 2009 (EP-354/2009) and the Variation of Environmental Permit (VEP) in December 2010 (EP-354/2009/A), January 2014 (EP-354/2009/B), December 2014 (EP-354/2009/C) and March 2015 (EP-354/2009/D).

1.1.4 The Project is a designated Project and is governed by the current permits for the Project, i.e. the amended EPs issued on 17 July 2015 (EP-353/2009/I) and 13 March 2015 (EP-354/2009/D) (for TMCLKL Southern Landfall Reclamation only).

1.1.5 A Contract Specific EM&A Manual, which included all Contract-relation contents from the original EM&A Manuals for the Project, was issued in May 2012.

1.1.6 Ove Arup & Partners Hong Kong Limited (Arup) was appointed by Highways Department (HyD) as the consultants for the design and construction assignment for the Contract's reclamation works (i.e. the Engineer for the Contract).

1.1.7 China Harbour Engineering Company Limited (CHEC) was awarded by HyD as the Contractor to undertake the construction work of the Contract.

1.1.8 Ramboll Environ Hong Kong Ltd. was employed by HyD as the Independent Environmental Checker (IEC) and Environmental Project Office (ENPO) for the Project.

1.1.9 AECOM Asia Co. Ltd. (AECOM) was appointed by CHEC to undertake the role of Environmental Team for the Contract for carrying out the EM&A works.

1.1.10 The construction phase of the Contract under the EPs was commenced on 12 March 2012 and will be tentatively completed by early Year 2016.

1.1.11 According to the Contract Specific EM&A Manual, there is a need of an EM&A programme including air quality, noise, water quality and dolphin monitoring and environmental site inspections. The EM&A programme of the Contract commenced on 12 March 2012.

1.2 Scope of Report

1.2.1 This is the fourteenth quarterly EM&A Report under the Contract No. HY/2010/02 Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Reclamation Works. This report presents a summary of the environmental monitoring and audit works, list of activities and mitigation measures proposed by the ET for the Contract from 1 June 2015 to 31 August 2015.

1.3 Contract Organization

1.3.1 The Contract organization structure is shown in Appendix A. The key personnel contact names and numbers are summarized in Table 1.1.

Table 1.1 Contact Information of Key Personnel

Party	Position	Name	Telephone	Fax
Engineer's Representative (ER) (Ove Arup & Partners Hong Kong Limited)	Chief Resident Engineer	Paul Appleton	3698 5889	2698 5999
IEC / ENPO (Ramboll Environ Hong Kong Limited)	Independent Environmental Checker	Raymond Dai	3465 2888	3548 6988
	Environmental Project Office Leader	Y.H. Hui	3547 2133	3465 2899
Contractor (China Harbour Engineering Company Limited)	General Manager (S&E)	Daniel Leung	3157 1086	2578 0413
	Environmental Officer	Louie Chan	36932254	2578 0413
	24-hour Hotline	Alan C.C. Yeung	9448 0325	--
ET (AECOM Asia Company Limited)	ET Leader	Echo Leong	3922 9280	2317 7609

1.4 Summary of Construction Works

1.4.1 The construction phase of the Project under the EP commenced on 12 March 2012.

1.4.2 As informed by the Contractor, details of the major works carried out in the reporting quarter are listed below:-

Marine-base

- Cellular structure – Connecting Arcs
- Cellular structure – Capping Beams
- Cellular structure – Backfill
- Conforming sloping seawalls – Geo-textile
- Maintenance of silt curtain & silt screen at sea water intake of HKIA
- Rubble Mound Seawall
- Rock fill

Land-base

- Earthwork fill
- Jet grout columns works
- Surcharge removal & laying
- Deep Cement Mixing
- Removal of Temporary Seawall
- Vertical Band Drains
- Installations of Precast Culverts except sloping outfalls
- Maintenance works of Site Office at Works Area WA2
- Maintenance works of Public Works Regional Laboratory at Works Area WA3
- Maintenance of Temporary Marine Access at Works Area WA2

1.4.3 The 3-month rolling construction programme of the Contract is shown in Appendix B.

1.4.4 The general layout plan of the Contract site showing the detailed works areas is shown in Figure 1.

1.4.5 The environmental mitigation measures implementation schedule are presented in Appendix C.

2 SUMMARY OF EM&A PROGRAMME REQUIREMENTS

2.1 Monitoring Parameters

2.1.1 The Contract Specific EM&A Manual designated 4 air quality monitoring stations, 2 noise monitoring stations, 21 water monitoring stations (9 Impact Stations, 7 Sensitive Receiver Stations and 5 Control/Far Field Stations) to monitor environmental impacts on air quality, noise and water quality respectively. Pre-set and fixed transect line vessel based dolphin survey was required in two AFCD designated areas (Northeast and Northwest Lantau survey areas). The impact dolphin monitoring at each survey area should be conducted twice per month.

2.1.2 For impact air quality monitoring, monitoring locations AMS2 (Tung Chung Development Pier) and AMS7 (Hong Kong SkyCity Marriott Hotel) were set up at the proposed locations in accordance with Contract Specific EM&A Manual. The conditional omission of Monitoring Station AMS6 was effective since 19 November 2012. For monitoring location AMS3 (Ho Yu College), as proposed in the Contract Specific EM&A Manual, approval for carrying out impact monitoring could not be obtained from the principal of the school. Permission on setting up and carrying out impact monitoring works at nearby sensitive receivers, like Caribbean Coast and Coastal Skyline, was also sought. However, approvals for carrying out impact monitoring works within their premises were not obtained. Impact air quality monitoring was conducted at site boundary of the site office area in Works Area WA2 (AMS3B) respectively. Same baseline and Action Level for air quality, as derived from the baseline monitoring data recorded at Ho Yu College, was adopted for this alternative air quality location.

2.1.3 For impact noise monitoring, monitoring locations NMS2 (Seaview Crescent Tower 1) was set up at the proposed locations in accordance with Contract Specific EM&A Manual. However, for monitoring location NMS3 (Ho Yu College), as proposed in the Contract Specific EM&A Manual, approval for carrying out impact monitoring could not be obtained from the principal of the school. Permission on setting up and carrying out impact monitoring works at nearby sensitive receivers, like Caribbean Coast and Coastal Skyline, was also sought. However, approvals for carrying out impact monitoring works within their premises were not obtained. Impact noise monitoring was conducted at site boundary of the site office area in Works Area WA2 (NMS3B) respectively. Same baseline noise level, as derived from the baseline monitoring data recorded at Ho Yu College was adopted for this alternative noise monitoring location. Reference is made to ET's proposal of relocation of air quality monitoring station (AMS7) dated on 2 February 2015, with no further comment received from IEC on 2 February 2015 and no objection received from EPD on 5 February 2015, the impact air quality monitoring station AMS7 (Hong Kong SkyCity Marriott Hotel) has been relocated to AMS7A (Chu Kong Air-Sea Union Transportation Company Limited) on 3 February 2015. Action Level for air quality, as derived from the baseline monitoring data recorded at Hong Kong SkyCity Marriott Hotel, was adopted for this alternative air quality location.

2.1.4 In accordance with the Contract Specific EM&A Manual, twenty-one stations were designated for impact water quality monitoring. The nine Impact Stations (IS) were chosen on the basis of their proximity to the reclamation and thus the greatest potential for water quality impacts, the seven Sensitive Receiver Stations (SR) were chosen as they are close to the key sensitive receives and the five Control/ Far Field Stations (CS) were chosen to facilitate comparison of the water quality of the IS stations with less influence by the Contract/ ambient water quality conditions.

2.1.5 Due to safety concern and topographical condition of the original locations of SR4 and SR10B, alternative impact water quality monitoring stations, naming as SR4(N) and SR10B(N), were adopted, which are situated in vicinity of the original impact water quality monitoring stations (SR4 and SR10B) and could be reachable. Same baseline and Action Level for water quality, as derived from the baseline monitoring data recorded, were adopted for these alternative impact water quality monitoring stations.

2.1.6 The monitoring locations used during the reporting quarter are depicted in Figures 2, 3 and 4 respectively.

2.1.7 The Contract Specific EM&A Manual also required environmental site inspections for air quality, noise, water quality, chemical, waste management, marine ecology and landscape and visual impact.

2.2 Environmental Quality Performance (Action/Limit Levels)

2.2.1 The environmental quality performance limits (i.e. Action and/or Limit Levels) of air and water quality monitoring were derived from the baseline air and water quality monitoring results at the respective monitoring stations, while the environmental quality performance limits of noise monitoring were defined in the EM&A Manual.

2.2.2 The environmental quality performance limits of air quality, noise and water monitoring are given in Appendix D.

2.3 Environmental Mitigation Measures

2.3.1 Relevant environmental mitigation measures were stipulated in the Particular Specification and EPs (EP-353/2009/I and EP-354/2009/D) (for TMCLKL Southern Landfall Reclamation only) for the Contractor to adopt. A list of environmental mitigation measures and their implementation statuses are given in Appendix C.

3 MONITORING RESULTS

3.1 Air Quality Monitoring

3.1.1 In accordance with the Contract Specific EM&A Manual, impact 1-hour Total Suspended Particulates (TSP) monitoring was conducted for at least three times every 6 days, while impact 24-hour TSP monitoring was carried out for at least once every 6 days at the 4 monitoring stations (AMS2, AMS3B, AMS6 and AMS7A).

3.1.2 The monitoring locations for impact air quality monitoring are depicted in Figure 2. However, for AMS6 (Dragonair/CNAC (Group) Building), permission on setting up and carrying out impact monitoring works was sought, however, access to the premise has not been granted yet on this report issuing date.

3.1.3 Reference is made to ET's proposal of relocation of air quality monitoring station (AMS7) dated on 2 February 2015, with no further comment received from IEC on 2 February 2015 and no objection received from EPD on 5 February 2015, the impact air quality monitoring station AMS7 (Hong Kong SkyCity Marriott Hotel) has been relocated to AMS7A (Chu Kong Air-Sea Union Transportation Company Limited) on 3 February 2015. Action Level for air quality, as derived from the baseline monitoring data recorded at Hong Kong SkyCity Marriott Hotel, was adopted for this alternative air quality location.

3.1.4 The weather was mostly fine and sunny, with occasional cloudy in the reporting quarter. The major dust source in the reporting quarter included construction activities from the Contract, as well as nearby traffic emissions.

3.1.5 The number of monitoring events and exceedances recorded in each month of the reporting quarter are presented in Table 3.1 and Table 3.2 respectively.

3.1.6 Due to malfunction of High Volume Sampler equipment located at monitoring station AMS3B, the 24hr TSP monitoring need to be rescheduled from 1 June 2015 16:00pm – 2 June 2015 16:00pm to 2 June 2015 13:30 pm – 3 June 2015 13:30 pm.

Table 3.1 Summary of Number of Monitoring Events for 1-hr & 24-hr TSP Concentration

Monitoring Parameter	Location	No. of monitoring events		
		June 15	July 15	August 15
1-hr TSP	AMS2	18	15	15
	AMS3B	18	15	15
	AMS7A	18	15	15
24-hr TSP	AMS2	6	5	5
	AMS3B	6	5	5
	AMS7A	6	5	5

Table 3.2 Summary of Number of Exceedances for 1-hr & 24-hr TSP Monitoring

Monitoring Parameter	Location	Level of Exceedance	Numbers of Exceedance		
			June 15	July 15	August 15
1-hr TSP	AMS2	Action	0	0	0
		Limit	0	0	0
	AMS3B	Action	0	0	0
		Limit	0	0	0
	AMS7A	Action	0	0	0
		Limit	0	0	0
		Total	***0***	***0***	***0***
24-hr TSP	AMS2	Action	0	0	0
		Limit	0	0	1
	AMS3B	Action	***0***	0	0
		Limit	0	0	0
	AMS7A	Action	0	0	0
		Limit	0	0	0

		Total	***0***	***0***	***1***

3.1.7 One (1) Limit Level Exceedance of 24hr-TSP with a reading of 270μg/m3 was recorded at AMS2 on 10 August 2015.

3.1.7.1 According to information provided by the Contractor during the monitoring period, no changes of major works in the construction site of this Contract since box-culvert installation had been commenced in July 2015.

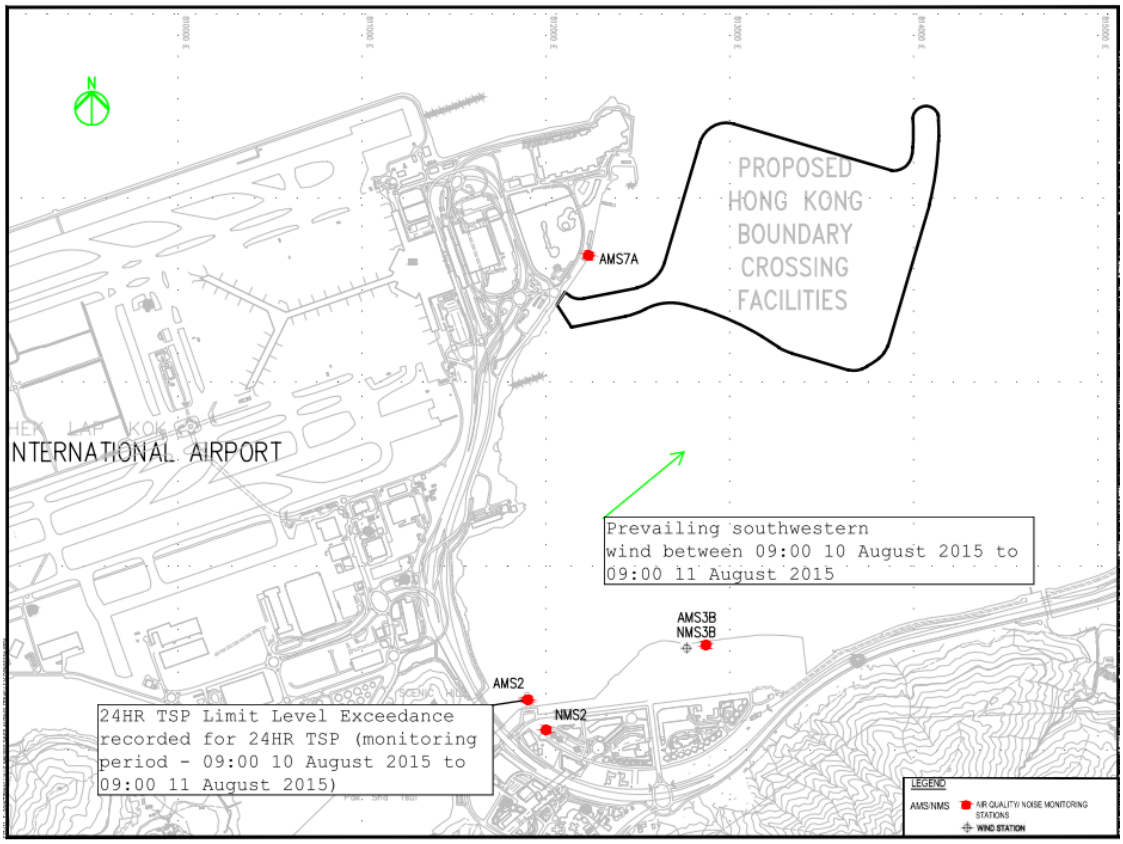
3.1.7.2 Functional checking on HVS at AMS2 was done. Air flow of the HVS was checked and the flow was steady during the 24-hr TSP sampling at AMS2. The filter paper was re-weighted by the assigned HOKLAS laboratory and the result was reconfirmed.

3.1.7.3 The 1-hr TSP values recorded at AMS2 on 10 August 15, were 81μg/m3, 80μg/m3 and 81μg/m3 respectively. All measured values are well below the Action and Limit Levels.

3.1.7.4 The measured 24-hr TSP values recorded at AMS7A (which is located closer to active works than AMS2) on 10 August 15 was 29μg/m3, which was below the Action and Limit Levels.

3.1.7.5 Site inspection for box-culvert installation at Portion D was jointly conducted by ET, Contractor and RSS on 6 August 2015, no fugitive dust was observed at Portion D during the joint site inspection on 6 August 2015.

3.1.7.6 Box-culvert being installed at Portion D which is relatively far away from monitoring station AMS2 where the limit exceedance of 24-hr TSP was recorded. As refer to the wind direction data collected at Chek Lap Kok by Hong Kong Observatory during the monitoring period on 10 and 11 August 2015 (also see attached), Southwestern winds were prevailing during the monitoring period. Construction works carried out by this Contract are unlikely to cause dust exceedance at AMS2 under the abovementioned prevailing wind directions. (Also see below layout map for reference.)



3.1.7.7 In addition, no fugitive dust was expected to be generated in the process of box-culvert installation, as such, works activities from this Contract is unlikely to contribute to the recorded 24hr-TSP limit level exceedance.

3.1.7.8 The latest available checking record shows that plant engine is operated by ULSD.

3.1.7.9 With reference to the watering record, watering was provided 8 times per day on site from 8 to 14 August 2015.

3.1.7.10 As such, the dust exceedance was therefore considered not to be due to works of this Contract

3.1.7.11 The Contractor was recommended to continue implementing existing dust mitigation measures and the Contractor was reminded ensure to undertake watering at least 8 times per day on all exposed soil within the Contract site and associated work areas throughout the construction phase.

3.1.7.12 The event action plan is annexed in Appendix K.

3.1.7.13 Meteorological information collected from the wind station during the monitoring periods on the monitoring dates, as shown in Figure 2, including wind speed and wind direction, is annexed in Appendix H of monthly EM&A report June, July and August 2015 respectively.

3.2 Noise Monitoring

3.2.1 Impact noise monitoring was conducted at the 2 monitoring stations (NMS2 and NMS3B) for at least once per week during 07:00 – 19:00 in the reporting quarter.

3.2.2 The monitoring locations used during the reporting quarter are depicted in Figure 2.

3.2.3 No Action or Limit Level Exceedance of construction noise was recorded in the reporting quarter.

3.2.4 Major noise sources during the noise monitoring included construction activities of the Contract and nearby traffic noise.

3.2.5 The number of impact noise monitoring events and exceedances are summarized in Table 3.3 and Table 3.4 respectively.

Table 3.3 Summary of Number of Monitoring Events for Impact Noise

Monitoring Parameter	Location	No. of monitoring events		
		June 15	July 15	August 15
	NMS2	5	4	4
	NMS3B	5	4	4

Table 3.4 Summary of Number of Monitoring Exceedances for Impact Noise

Monitoring Parameter	Location	Level of Exceedance	Level of Exceedance		
			June 15	July 15	August 15
	NMS2	Action	0	0	0
		Limit	0	0	0
	NMS3B	Action	0	0	0
		Limit	0	0	0
		Total	***0***	***0***	***0***

3.2.6 The graphical plots of the trends of the monitoring results are provided in Appendix F. No specific trend of the monitoring results or existence of persistent pollution source was noted.

3.2.7 The event action plan is annexed in Appendix K.

3.3 Water Quality Monitoring

3.3.1 The monitoring locations used during the reporting quarter are depicted in Figure 3.

3.3.2 The scheduled water quality monitoring at mid ebb on 10 July 2015 was cancelled due to Tropical Cyclone Warning Signal no. 3 or above was hoisted 3 hours before the commencement of scheduled water quality monitoring.

3.3.3 A total of (2) two exceedances were recorded in this reporting quarter:

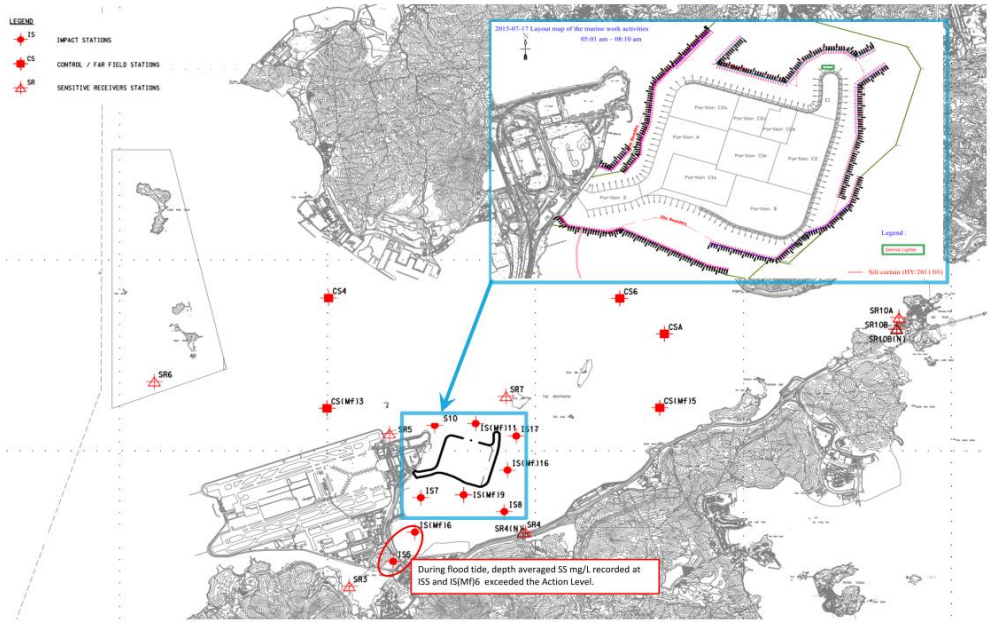
Table 3.5 Summary of Water Quality Exceedances in June 2015 – August 2015

Station	Exceedance Level	DO (S&M)		DO (Bottom)		Turbidity		SS		Total	
		Ebb	Flood	Ebb	Flood	Ebb	Flood	Ebb	Flood	Ebb	Flood
IS5	Action	0	0	0	0	0	0	0	**1**	0	**1**
	Limit	0	0	0	0	0	0	0	0	0	0
IS(Mf)6	Action	0	0	0	0	0	0	0	**1**	0	**1**
	Limit	0	0	0	0	0	0	0	0	0	0
IS7	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
IS8	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
IS(Mf)9	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
IS10	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
IS(Mf)11	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
IS(Mf)16	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
IS17	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
SR3	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
SR4(N)	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
SR5	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
SR6	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
SR7	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
SR10A	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
SR10B (N)	Action	0	0	0	0	0	0	0	0	0	0
	Limit	0	0	0	0	0	0	0	0	0	0
Total	Action	0	0	0	0	0	0	0	**2**	**2**	
	Limit	0	0	0	0	0	0	0	0	0	

Note: S: Surface;
M: Mid-depth;

3.3.4 For the two (2) Action Level Exceedances of suspended solids were recorded at IS5 and IS(Mf)6 during flood tide on 17 July 2015, the exceedances were confirmed after checking against relevant control station(s) during flood tide i.e. CS6, CSA and CS(Mf)5 following the Action and Limit Levels for Water Quality.

3.3.4.1 Below layout map shows no marine work was conducted at south and southwestern part of the HKBCF Reclamation Works during flood tide on 17 July 2015:



3.3.4.2 Exceedances recorded at IS5 and IS(Mf)6 during flood tide are unlikely due to marine based construction activities of the Contract because:

3.3.4.3 Attached layout map shows no marine work was conducted at south and southwestern part of the HKBCF Reclamation Works during flood tide on 17 July 2015, therefore it is unlikely that the SS exceedances recorded at IS5 and IS(Mf)6 during flood tide are caused by HKBCF Reclamation Works.

3.3.4.4 Monitoring stations IS7 and IS(Mf)9 are located relatively closer to HKBCF Reclamation Works than monitoring station IS(Mf)6 and IS5. However, all suspended solid results recorded at IS7 and IS(Mf)9 were lower than the action and limit level, as such, the action level exceedances of SS recorded at IS(Mf)6 and IS5 are unlikely attributed to HKBCF Reclamation Works.

3.3.4.5 In addition, turbidity level recorded at IS5, IS(Mf)6, IS7 and IS(Mf)9 were below the action and limit level. This indicates the turbidity level at area near IS5 and IS(Mf)6 was not adversely affected.

3.3.4.6 With reference to the silt curtain checking record of 17 July 2015, defects such as disconnection of the silt curtain was not observed at south and southwestern part of the perimeter silt curtain which are close to the IS5 and IS(Mf)6.

3.3.4.7 The exceedances are likely due to local effects in the vicinity of IS5 and IS(Mf)6.

3.3.4.8 After investigation, there is no adequate information to conclude the recorded exceedances are related to this Contract.

3.3.4.9 Action taken under the action plan

1. Not applicable as SS was not measured in situ;
2. After considering the above mentioned investigation results, it appears that it was unlikely that the SS exceedances were attributed to active construction activities of this Contract;
3. IEC, Contractor and ER were informed via email;
4. Monitoring data, all plant, equipment and Contractor's working methods were checked;
5. Since it is considered that the SS exceedance is unlikely to be Contract related, as such, actions 5-7 under the EAP are not considered applicable.

3.3.4.10 Nevertheless, the Contractor was reminded to ensure provision of ongoing maintenance to the silt curtains and to carry out maintenance work once defects were found.

3.3.4.11 Maintenance work of the silt curtain was carried out by the Contractor on a daily basis except Sunday and public holiday.

3.3.5 The graphical plots of the trends of the monitoring results are provided in Appendix G. No specific trend of the monitoring results or existence of persistent pollution source was noted.

3.3.6 The event action plan is annexed in Appendix K.

3.4 Dolphin Monitoring

3.4.1 In accordance with the Contract Specific EM&A Manual, pre-set and fixed transect line vessel based dolphin survey was required in two AFCD designated areas (Northeast Lantau (NEL) and Northwest Lantau (NWL) survey areas). The impact dolphin monitoring at each survey area should be conducted twice per month.

3.4.2 The impact dolphin monitoring conducted is vessel-based and combines line-transect and photo-ID methodology, which have adopted similar survey methodologies as that adopted during baseline monitoring to facilitate comparisons between datasets.

3.4.3 The layout map of impact dolphin monitoring have been provided by AFCD and is shown in Figure 4.

3.4.4 The effort summary and sighting details during the reporting quarter are shown in the Appendix H. A summary of key findings of the dolphin surveys completed during the reporting quarter is shown below:

Table 3.6 Summary of Key Dolphin Survey Findings in June 2015 – August 2015

Number of Impact Surveys Completed^	6
Survey Distance Travelled under Favourable On- Effort Condition	644.6km
Number of Sightings	13 sightings (7 sightings are ”on effort” (which are all under favourable condition), 6 “sightings are opportunistic”)
Number of dolphin individual sighted	43 individuals (the best estimated group size)
Dolphin Encounter Rate#	NEL: 0 NWL: 1.7
Dolphin Group Size	Average of NEL: 0 Average of NWL: 3.3 Varied from 1-9 individuals
Most Often frequent dolphin sighting area	Northern Sha Chau and Lung Kwu Chau Marine Park, the western limit of NWL and Tai O area.

Remarks:
^ Completion of line transect survey of NEL and NWL survey area once was counted as one complete survey.
# Dolphin Encounter Rate = (Sum of 1st 2nd, 3rd month’s total sighting/ Sum of 1st , 2nd, 3rd month’s total effort)*100km (encounter rates are calculated using on effort sightings made under favourable conditions only.)

3.4.5 One (1) Limit Level exceedance of dolphin monitoring was recorded in the reporting quarter. After investigation, 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 nor separate from the other stress factors. Event Action Plan for Impact Dolphin Monitoring was triggered. For detail of investigation, please refer to appendix L.

Table 3.7 Summary of STG and ANI encounter rates in June 2015 - August 2015

	NEL	NWL	Level Exceeded
STG*	0	1.7	Limit
ANI**	0	4.7	

*Quarterly Average Encounter Rate of Number of Dolphin Sightings (STG) presents averaged encounter rates of the three monitored months in terms of groups per 100km per survey event.
STG Encounter rate = (Average of (total number sighting/total effort) of 1st and 2nd completed survey# of 1st month+ Average of (total number sighting/total effort) of 1st and 2nd completed survey# of 2nd month + Average of (total number sighting/total effort) of 1st and 2nd completed survey# of 3rd month)/3*100km
**Quarterly Average Encounter Rate of Total Number of Dolphins (ANI) presents averaged encounter rates of the three monitored months in terms of individuals per 100km per survey event.
ANI Encounter rate = (Average of (total number of Individual/total effort) of 1st and 2nd completed survey# of 1st month+ Average of (total number of Individual/total effort) of 1st and 2nd completed survey# of 2nd month + Average of (total number of Individual/total effort) of 1st and 2nd completed survey# of 3rd month +)/3*100km

3.4.6 Details of the comparison and analysis methodology and their findings and discussions are annexed in Appendix H. re

3.4.7 Coordinates for transect lines 1, 2, 7, 8, 9 and 11 have been proposed by ET on 19 July 2015 , verified by IEC on 4 August 2015 and approved by EPD on 19 August. For this Contract HY/2010/02, the approved lines were travelled since 24 and 25 August 2015.

3.5 Environmental Site Inspection and Audit

3.5.1 Site Inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control and mitigation measures for the Contract. In the reporting quarter, 13 site inspections were carried out. Recommendations on remedial actions were given to the Contractors for the deficiencies identified during the site audits.

3.5.2 Particular observations during the site inspections are described below:

Air Quality

3.5.3 Dust was observed when vehicle passes through access roads at portion C2c and E2 and when vehicle passed through road at Portion C1a and Portion D; fugitive dust was observed when vehicle was drove pass portion C2c and road at Portion B, E2 and during rock filling; fugitive dust was observed at northeastern part of the site and at northeastern part of the site. the Contractor was reminded to provide sufficient dust control measures to prevent generation of fugitive dust. The Contractor provided watering or other preventative measures to prevent generation of fugitive dust. (Closed)

3.5.4 Exposed soil was observed at Portion D, the Contractor was reminded to provide sufficient measures to prevent site runoff of turbid water to the sea or to area which is outside the site boundary. (Reminder)

3.5.5 Dark smoke emission from plant/equipment was observed at Portion D and C1a; from pelican barge was observed at Portion C2b and emitted from excavator was observed at Portion D, the Contractor was reminded to ensure dark smoke emission from plant/equipment should be avoided. The Contractor prevented dark smoke emission of plant/equipment. (Closed)

3.5.6 Watering was observed during site walk, the Contractor was reminded to continue to provide sufficient dust control measures and ensure generation of fugitive dust is prevented. (Reminder)

3.5.7 Rock material was observed dry; the Contractor was reminded to moisten to prevent generation of fugitive dust during operation. The Contractor provided dust control measure on barge. (Closed)

Noise

3.5.8 The panel of the air compressor at Portion C2c was observed open during operation. The Contractor was reminded to keep all flaps and/or panels closed during operation. The Contractor subsequently closed the panels. (Closed)

Water Quality

3.5.9 Defect on part of the pipe for transferring DCM material was observed on barge (天駿 3). The Contractor was reminded to ensure all pipes in a good condition and provide sandbags along the edge of the barge in order to prevent such materials from entering nearby water (Closed)

3.5.10 Tipping of rock material to the sea was observed at Portion D, the Contractor was reminded to keep the tipping point as low as possible. (Reminder)

3.5.11 Insufficient sand bags was observed on idle grout production facilities, the Contractor was reminded to provide enough sand bags before operation of the grout production facilities to prevent potential runoff. (Reminder)

Chemical and Waste Management

3.5.12 A generator was placed on ground without provision of drip tray on barge (天駿 3), chemical containers were placed on bare ground without provision of drip tray at Portion C2C.. The Contractor was reminded to provide the generator with drip tray to retain oil leakage, if any. The Contractor removed the generator on barge on barge (天駿 3). (Closed)

3.5.13 Oil drum was observed outside drip tray at Portion C1 and on barge Wing Hop Lee, were observed without drip tray at workshop area; oil drums were observed without drip tray on barge. The Contractor was reminded to provide mitigation measure such as drip tray to oil drum. The Contractor provided drip tray to oil drums. (Closed)

3.5.14 Idle air compressors were observed without drip tray, the Contractor was reminded to provide trip tray to air compressor before use of air compressor. (Reminder)

3.5.15 General refuse and bags of general refuse were observed on land area of Portion D and C1a; was observed at entrance area of workshop at portion C1a and C2c.. The Contractor was reminded to regularly clear the general refuse and provide rubbish bin with cover/lid. The Contractor cleared the general refuse on land area of Portion D and C1a. (Closed)

3.5.16 Water was observed inside drip tray at workshop area, the Contractor was reminded to clear the water accumulated inside drip tray to prevent runoff. The Contractor subsequently cleared the water accumulated in the drip tray. (Closed)

3.5.17 Oil stain was observed on ground at workshop area; the Contractor was reminded to clean the oil stain and disposed them of as chemical waste, subsequently, the Contractor cleared the oil stain and disposed them of as chemical waste. (Closed)

3.5.18 Floating debris on water surface at Portion D was observed. The Contractor was reminded to remove the debris on sea regularly. The Contractor removed the debris on sea. (Closed)

3.5.19 Temporary waste storage or rubbish bin was not provided on land area of Portion B beside Portion E2. To keep the site clean and tidy, the Contractor was reminded to provide rubbish bin with cover/lid to works area. (Reminder)

3.5.20 It was observed that liquid was accumulated inside drip tray, the Contractor was reminded to regularly clear the water accumulated inside drip tray to prevent potential runoff. The Contractor subsequently rectified the situation and cleared the water accumulated inside drip tray. (Closed)

3.5.21 It was observed that sand was loaded inside drip tray. The Contractor was reminded to clear the sand inside drip tray. (Pending for Contractor's rectification)

3.5.22 A deformed drip tray was observed on site. The Contractor was reminded to provide drip tray which can effectively contain potential leakage of oil. (Pending for Contractor's rectification)

Landscape and Visual Impact

3.5.23 No relevant adverse impact was observed in the reporting month.

Others

3.5.24 Rectifications of remaining identified items are undergoing by the Contractor. Follow-up inspections on the status on provision of mitigation measures will be conducted to ensure all identified items are mitigated properly.

4 ADVICE ON THE SOLID AND LIQUID WASTE MANAGEMENT STATUS

4.1 Summary of Solid and Liquid Waste Management

4.1.1 The Contractor registered as a chemical waste producer for this Contract. Sufficient numbers of receptacles were available for general refuse collection and sorting.

4.1.2 As advised by the Contractor, 522,025.4m^3 of fill were imported for the Contract use in the reporting period. 15kg of metal, 979kg of paper/cardboard packaging, 5,122kg plastics, and 169m^3 of general refuse were generated and disposed of in the reporting period. Monthly summary of waste flow table is detailed in Appendix I.

4.1.3 The Contractor is advised to properly maintain on site C&D materials and wastes collection, sorting and recording system, dispose of C&D materials and wastes at designated ground and maximize reuse / recycle of C&D materials and wastes. The Contractor is reminded to properly maintain the site tidiness and dispose of the wastes accumulated on site regularly and properly.

4.1.4 The Contractor is reminded that chemical waste containers should be properly treated and stored temporarily in designated chemical waste storage area on site in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.

5 IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURES

5.1 Implementation Status of Environmental Mitigation Measures

5.1.1 In response to the site audit findings, the Contractors carried out corrective actions.

5.1.2 A summary of the Implementation Schedule of Environmental Mitigation Measures (EMIS) is presented in Appendix C. Most of the recommended mitigation measures are being upheld. Moreover, regular review and checking on the construction methodologies, working processes and plants were carried out to ensure the environmental impacts were kept minimal and recommended environmental mitigation measures were implemented effectively.

5.1.3 Training of marine travel route for marine vessels operator was given to relevant staff and relevant records were kept properly.

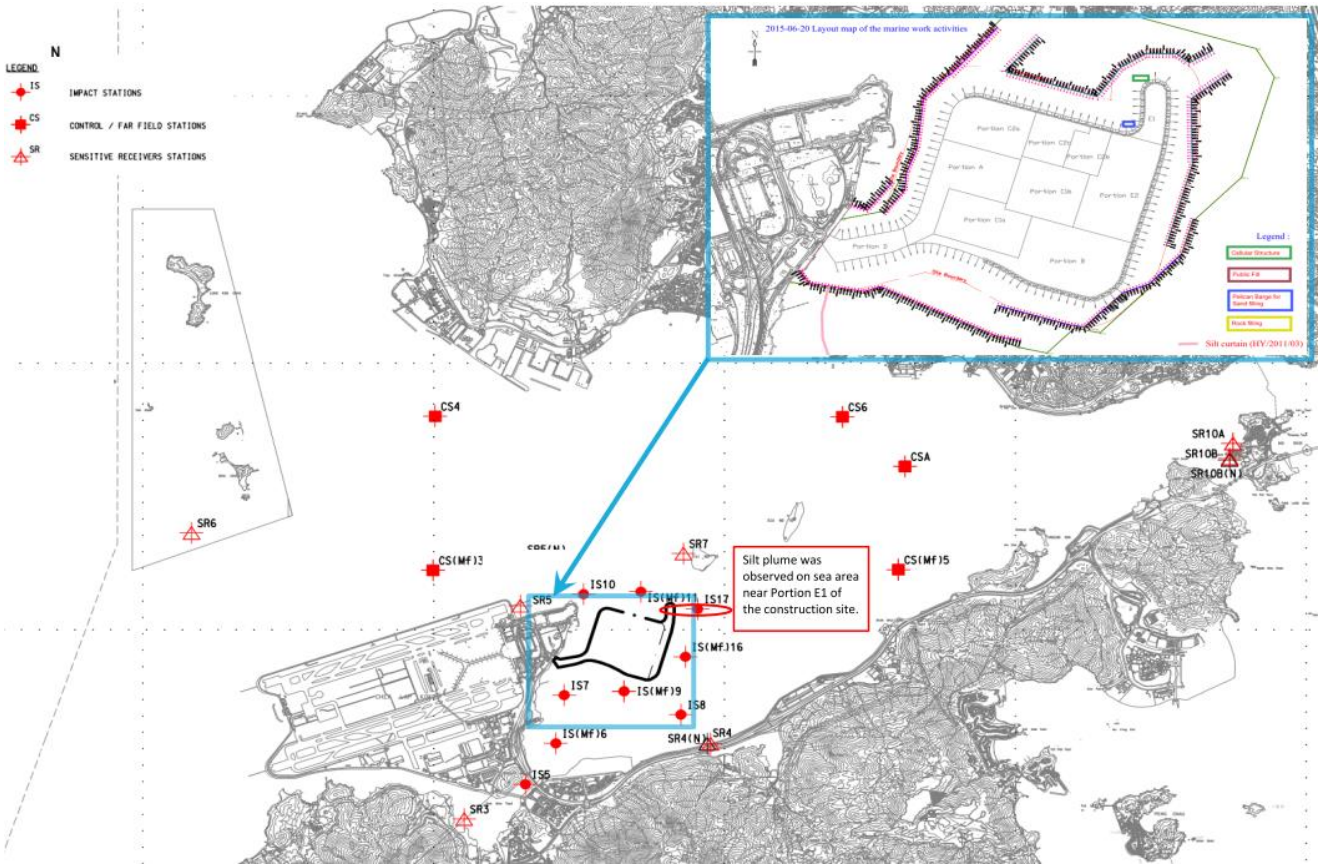
5.1.4 Regarding the implementation of dolphin monitoring and protection measures (i.e. implementation of Dolphin Watching Plan, Dolphin Exclusion Zone and Silt Curtain integrity Check), regular checks were conducted by experienced MMOs within the works area to ensure that no dolphins were trapped by the silt curtain area. There were no dolphins spotted within the silt curtain during this quarter. The relevant procedures were followed and all measures were well implemented. The silt curtains were also inspected in accordance to the submitted plan. As informed by the Contractor, a precast box culvert segment was delivered to Portion D on 10 Aug 2015, 22 Aug 2015 and 25 Aug 2015, the northwestern part of the perimeter silt curtain was temporarily opened for the delivery. Dolphin Exclusion Zone was implemented accordingly.

5.1.5 Acoustic decoupling measures on noisy plants on construction vessels were checked regularly and the Contractor was reminded to ensure provision of ongoing maintenance to noisy plants and to carry out improvement work once insufficient acoustic decoupling measures were found.

5.1.6 Frequency of watering per day on exposed soil was checked; with reference to the record provided by the Contract, watering was conducted at least 8 times per day on reclaimed land. The frequency of watering is the mainly refer to water truck. Sprinklers are only served to strengthen dust control measure for busy traffic at the entrance of Portion D. As informed by the Contractor, during the mal-function period of sprinkler, water truck will enhance watering at such area. The Contractor was reminded to ensure provision of watering of at least 8 times per day on all exposed soil within the Contract site and associated works areas throughout the construction phase.

5.1.7 As informed by the Contractor, an area of Portion B has been handed over to other Contract and the perimeter silt curtain near this area of Portion B has been rearranged on 31 July 2015 for berthing another Contractor's vessels (which do not belong to this Contract). IEC/ENPO was informed on 5 Aug 2015 immediately after ET's review. IEC/ENPO provided further comments on 1 September 2015, ET responded 2 September 2015 with notification letter ref.:60249820/rmky15090201. IEC/ENPO expressed no further comment via letter ref.: HYDHZMBEEM00_0_03351L.15 on 8 September 2015 for the removal of section of perimeter silt curtain near Portion B of HKBCF.

5.1.8 IEC/ENPO notified ET via email on 22 June 2015 that silt plume was observed being dispersed from Portion E1 to the open waters outside the silt curtain for the HZMB HKBCF Contract maintained by Contract No. HY/2010/02 at about 3:00 pm on 20 June 2015. For location of sea area near Portion E1 of the construction site, also see layout map below:



5.1.8.1 Investigation actions taken:

- Tide level, construction activities and implementation of mitigation measures were reviewed.
- Site inspection was conducted on 22 and 25 June 2015 to inspect sea area Portion E1 of HKBCF Reclamation Works.
- Available Impact Water Quality Monitoring (IWQM) data obtained 19 and 22 June 2015 were reviewed (refer to monitoring data attached). Available Impact Water Quality Monitoring (IWQM) data obtained 19 and 22 June 2015 were reviewed (refer to monitoring data attached).

5.1.8.2 Review of Contractor's silt curtain:

- Contractor's silt curtain checking record of 19 and 22 June 2015 were reviewed. Defects such as disconnection or missing parts of silt curtain was not observed at the perimeter silt curtain located northeast of the HKBCF reclamation works.

5.1.8.3 During the site inspection conducted on 22 and 25 June 2015, Defects such as disconnection or missing parts of silt curtain was not observed at the perimeter silt curtain located northeast of the HKBCF reclamation works.

5.1.8.4 Photo records taken on 22 and 25 June 2015 shows that the sea condition at sea area near the northeast side of the HKBCF Reclamation Works and no silt plume was observed spreading out from Portion E1 of the construction site through the silt curtain.

5.1.8.5 Review of Contractor's vessel activities on 20 June 2015 and tidal level for working vessels belonging to Contract No. HY/2010/02 as observed in the photo:

5.1.8.6 As show by attached layout map, vessel 起七 for cellular structure installation was located at near arc-cell nos.079-080 of Portion E1 of HKBCF reclamation works on 20 June 2015. Site record provided by the Contractor shows that vessel 起七 was under maintenance between 20-22 June 2015 due to lifting crane was broken down, therefore both vessel 起七 & arc cell installation works was basically idled.

5.1.8.7 Information obtained from Hong Kong Observatory shows that the tide level was approximately 1.3 meter at 15:00 at Chek Lap Kok on 20 June 2015. However, vessel 起七 was a non-self-propelled vessel and no tug boat was observed at about 15:00 as shown by the photo taken on 20 June 2015 (Also refer to attached photo record for reference). In addition, for the marine working vessels anchored near the left side of 起七, no working activity was found according to Contractor's site daily record of 20 June 2015. The two boats located at far left on the photo, near silt plume, are unlikely belong to this Contract. The vessel in the middle of the photo, near silt plume, is a flattop barge waiting for or commencement of the box culvert work at Portion D, therefore it is likely that the flattop barge was idle at about 15:00 on 20 June 2015. As such, there was no adequate information to indicate that the observed silt plume was generated by active works or due to inadequate clearance maintained between vessels of this Contract and the sea bed during navigation.

5.1.8.8 Furthermore, no observation of silt plume was reported to this Contract after 1500 on 20 June 2015, it is likely that the silt plume disappeared shortly after it was observed on 20 June 2015.

5.1.8.9 Site inspection conducted on 22 and 25 June 2015:

5.1.8.10 No silt plume around the E1 of HKBCF reclamation works were observed during the site inspection conducted on 22 and 25 June 2015. (Also refer to attached photo record for reference.)

5.1.8.11 Review of Suspended Solids (SS) level and turbidity level recorded at IS(Mf)11, IS17, IS(Mf)16 and SR7 on 19 and 22 June 2015:

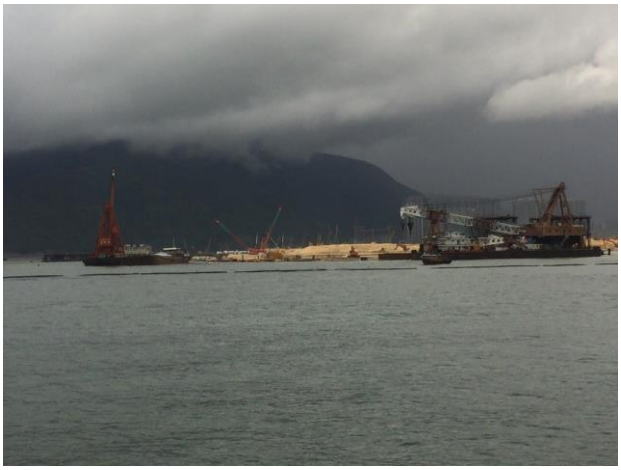
5.1.8.12 Available water quality monitoring data shows that data recorded on 19 and 22 June 2015 at monitoring station close the observed silt plume i.e. IS(Mf)11, IS17, IS(Mf)16 and SR7 were below the action and limit level. This indicates the water quality at sea area close to portion E1 was not adversely affected on 19 and 22 June 2015.

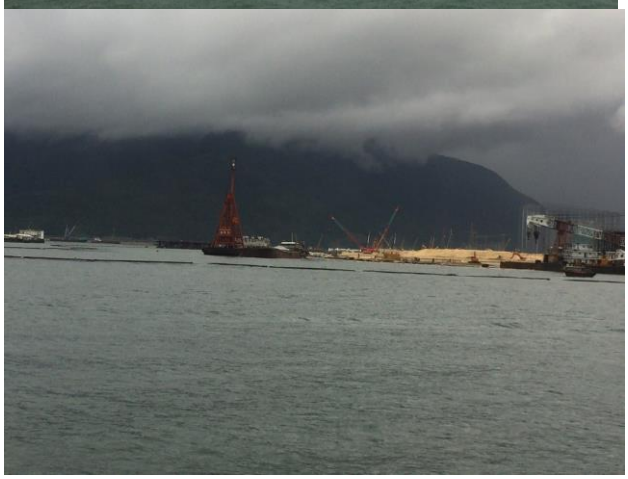
5.1.8.13 There were no silt plume observed on 22 and 25 June 2015 during site inspection and no deterioration of water quality were recorded on 19 and 22 June 2015, as such, there is no adequate information which indicates that the silt plume observed on 20 June 2015 was lasting and continuous.

5.1.8.14 Nevertheless, the Contractor was reminded to regularly check the performance of the silt curtain and ensure swift provision of maintenance to the perimeter silt curtains once defects of the perimeter silt curtain were observed.

5.1.8.15 Photo record taken on 20 June 2015 at about 15:00 shows that silt plume was observed near the silt curtain for HZMB HKBCF Contract maintained by Contract No. HY/2010/02.

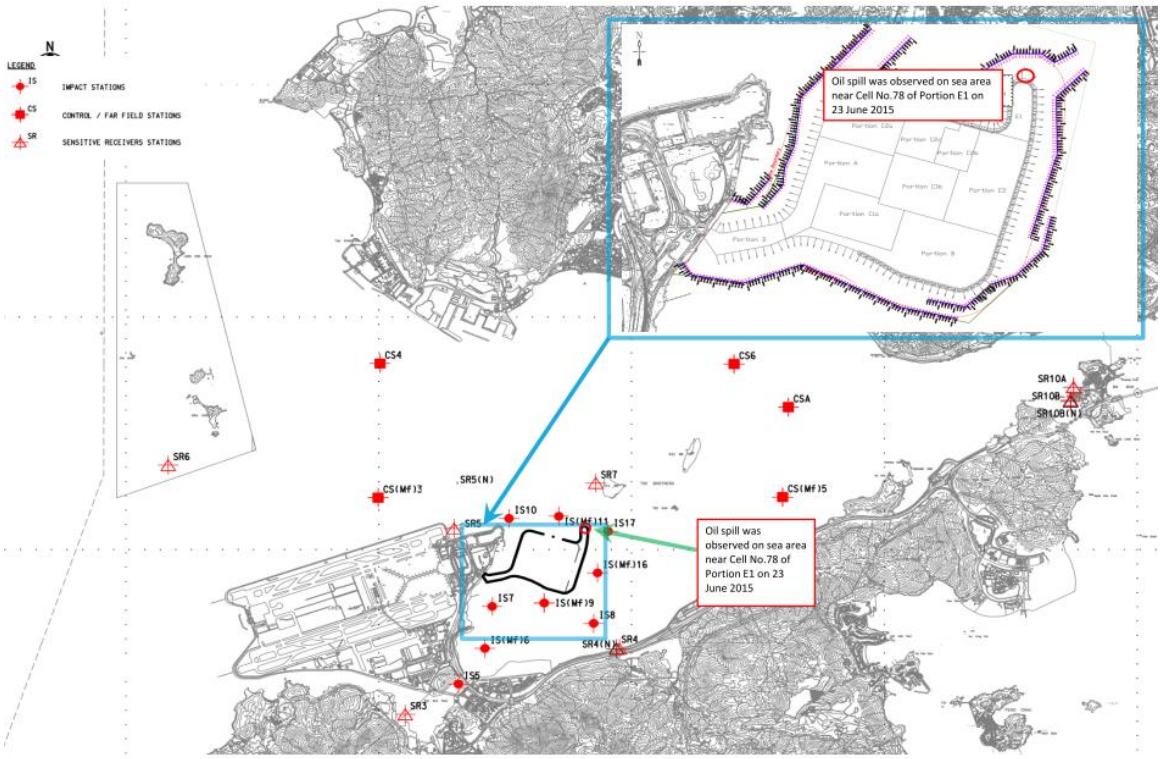
5.1.8.16 Photo record taken on 22 June 2015 shows that no silt plume around Portion E1 of HKBCF reclamation works were observed during the site inspection conducted on 22 June 2015.





5.1.8.17 Photo record taken on 25 June 2015 shows that no silt plume around Portion E1 of HKBCF reclamation works were observed during the site inspection conducted on 25 June 2015.

5.1.9 Oil spillage incident was observed at Sea area near Cell No. 78 on 23 June 2015 (also refer to attached layout map).



5.1.9.1 Detail of the oil spill and Contractor's actions taken in response to the spill incident have been reviewed and summarised as follow:

- The oil on sea was observed by the Contractor and RSS on 23 June 2015.
- The Contractor organised manpower to identify the spill source, but the source of oil spill was not identified.
- The Contractor equipped people involved in the cleanup works with personal protective equipment such as gloves prior to the removal of any leaked chemical or chemical waste.
- Pads and Pillow of the Spill Kit were applied to absorb and remove the spillage.

5.1.9.2 Oil observed on sea area near Cell No. 78 on 23 June 2015 at 09:45 a.m. on 23 June 2015 by Contractor and RSS. The following actions was taken by the Contractor:

5.1.9.3 The Contractor organized manpower to identify the spill source, the vessel (三航起 7) located close to the oil spill was inspected but the source of oil spill was not identified.

5.1.9.4 The oil spill was identified during join site inspection conducted by the Contractor and RSS on 23 June 2015 as discrete, non-continuous source with approximately 10m2 spread. Also refer to photo below:

5.1.9.5 The oil spill was identified during join site inspection conducted by the Contractor and RSS on 23 June 2015 as discrete, non-continuous source with approximately 10m2 spread. The below photo shows that the Contractor deployed absorption booms to remove the floating oil from water.

5.1.9.6 The used absorption booms were collected using disposal bags as part of the spill kits item. The used absorption booms were disposed of as chemical waste by the Contractor. (Also refer to photo record below)

5.1.9.7 The oil stain observed was limited at nearby Northeastern sea area within the silt curtain.

5.1.9.8 Photo record shows that oil on sea was no longer on sea area near Cell No. 78. (Also refer to photo record below)

5.1.9.9 Monitoring stations IS10, IS(Mf)11, SR7 and IS17 are the monitoring stations close to location of observed oil spill (also refer to attached layout map). Available Impact water quality monitoring data record of IS10, IS(Mf)11, SR7 and IS17 have been reviewed. There is no water quality exceedance recorded at IS10, IS(Mf)11, SR7 and IS17 on 24 June 2015.

5.1.9.10 The Contractor was reminded to enhance environmental toolbox talk on chemical waste handling and to continue to follow the spill response plan when oil is observed on sea.

5.1.9.11 As informed by the Contractor, an area of Portion B has been handed over to other Contract and the perimeter silt curtain near this area of Portion B has been rearranged on 31 July 2015 for berthing another Contractor's vessels (which do not belong to this Contract). IEC/ENPO was informed on 5 Aug 2015 immediately after ET's review. IEC/ENPO provided further comments on 1 September 2015, ET responded 2 September 2015 with notification letter ref.:60249820/rmky15090201. IEC/ENPO expressed no further comment via letter ref.: HYDHZMBEEM00_0_03351L.15 on 8 September 2015 for the removal of section of perimeter silt curtain near Portion B of HKBCF.

6 SUMMARY OF EXCEEDANCES OF THE ENVIRONMENTAL QUALITY PERFORMANCE LIMIT

6.1.1 One (1) Limit Level Exceedance of 24hr-TSP was recorded at AMS2 on 10 August 2015. After investigation, there is no adequate information to conclude the recorded exceedances are related to this Contract. All 1-Hour TSP results were below the Action and Limit Level in the reporting period.

6.1.2 For construction noise, no exceedance was recorded at all monitoring stations in the reporting period.

6.1.3 Two (2) Action Level Exceedances of suspend solids were recorded at IS5 and IS(Mf)6 during flood tide on 17 July 2015, the exceedances were confirmed after checking against relevant control station(s) during flood tide i.e. CS6, CSA and CS(Mf)5 following the Action and Limit Levels for Water Quality. After investigation, there is no adequate information to conclude the recorded exceedances are related to this Contract.

6.1.4 One (1) Limit Level exceedance of dolphin monitoring was recorded in the reporting quarter. After investigation, 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 nor separate from the other stress factors. Event Action Plan for Impact Dolphin Monitoring was triggered. For detail of investigation, please refer to appendix L.

6.1.5 Cumulative statistics on exceedances is provided in Appendix J.

7 SUMMARY OF COMPLAINTS, NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

7.1 Summary of Environmental Complaints, Notification of Summons and Successful Prosecutions

7.1.1 The Environmental Complaint Handling Procedure is annexed in Figure 5.

7.1.2 As informed by the Contractor, 3 July 2015, an air quality complaint was received on 11 June 2015 by HyD via complaint hotline 1823. The complainant complained that sand and dust pollution near Richland Garden, 138 Wu Chui Road, Tuen Mun, caused by sand delivery barges. After investigation, there is no adequate information to conclude the observed impact is related to this Contract.

7.1.2.1 Investigation Actions:

- Reviewed 1-hour TSP and 24-hours TSP monitoring data within the complaint period 2- 29 June 2015.

- Site inspections were conducted jointly with RSS, IEC and the Contractor on 11 June 2015 and jointly with RSS and the Contractor on 4, 18 and 25 June 2015.

- Reviewed information provided by the Contractor.

7.1.2.2 Investigation findings:

- There is no sufficient information provided by the complainant to make sure that the concerned barges are related to this Contract.

- Date of the observed impact was not specified by the complainant so the impact air quality monitoring (IAQM) results between 2- 29 June 2015 for monitoring stations close to the concerned area – AQMS1, ASR1, ASR5, ASR6 and ASR10 have been reviewed and there was no action/limit level exceedance of 1-hour TSP or 24-hour TSP of impact air quality monitoring results recorded at AQMS1, ASR1, ASR5, ASR6 and ASR10 between 2- 29 June 2015.

- In addition, site inspections were conducted jointly with RSS, IEC and the Contractor on 11 June 2015 and jointly with RSS and the Contractor on 4, 18 and 25 June 2015, but no generation of fugitive dust was observed to be caused by barges loaded with filling material.

- As informed by the Contract, no sand barge of this Contract was berthed near Tuen Mun area in June 2015.

7.1.2.3 After investigation, there is no adequate information to conclude the observed impact is related to this Contract.

7.1.2.4 The Contractor was advised to ensure to continue the provision of fugitive dust mitigation measures to barges loaded with filling material such as watering to sand filling material on sand barges, as necessary.

7.1.3 As informed by ER of this Contract on 13 July 2015, EPD referred a noise related complaint to this Contract on 13 July 2015, details as follows:

- A complainant complained that serious noise nuisance was caused by loading and unloading of construction material of barges at construction site of HZMB artificial island near Tung Chung development pier during late night period. The complainant requested follow-up and reply.

- A complainant left message at EPD's complaint hotline on 11 July 2015 and complained that construction noise was generated even after 23:00 at night from the artificial island outside Seaview Crescent, this situation has last over 10 days and requested follow-up.

7.1.3.1 As further informed by ENPO which further checked with EPD regarding the captioned complaint, with respect to the further information provided by EPD, two complaints could be referred as the same incident. Further complaint detail was given by EPD to Project team of this Contract on 15 July 2015 as follows:

- The complainant complained noise came from BCF site near HK Skycity Marriott Hotel during nighttime period of the past 10 days which involves excavation with a grab dredger, transfer of excavated material using a derrick barge and a tug boat, and backfilling with a pelican barge. Based on EPD's record, the above activities are covered by CNP no. GW-RS0503-15.

7.1.3.2 Investigation Actions:

- Review of valid CNP no. GW-RS0503-15.
- Review of Contractor's construction activities conducted at BCF site near HK Skycity Marriott Hotel, Zone D of CNP No.GW-RS0503-15, between 23:00 till 07:00 of next day on 1 - 13 July 2015
- Review of Contractor compliance checking record.

7.1.3.3 Investigation and Findings:

- After review of the valid CNP no. GW-RS0503-15 for this Contract, operation of a grab dredger, a derrick barge, a tug boat, and pelican barge during nighttime period is covered by CNP no. GW-RS0503-15 between 1- 13 July 2015.

- With referred to the site dairy summary records provided by the Contractor, no more than 1 vessel (dredger or derrick) operated at the same time between 23:00 till 07:00 of next day on 1 - 13 July 2015 at Zone D of CNP No.GW-RS0503-15 (please see attached Plan no.1 for respective zones). This shows that the construction activities carried out after 23:00 from 01 July to 13 July 2015 at Zone D complied with the conditions of a valid CNP No.GW-RS0503-15. Construction activities conducted between 23:00 till 07:00 of next day on 1 - 13 July 2015 at Zone D of CNP No.GW-RS0503-15 were summarised on layout maps attached.

- Compliance checking records of 1- 13 July 2015 provided by the Contractor were reviewed and record shows that construction works were carried out in compliance with the CNP no. GW-RS0503-15 in effect.

- Further informed by the Contractor on 15 July 2015 EPD spot-checked the construction site of this Contract in the afternoon of 15 July 2015 and on 16 July 2015, EPD spot-checked the construction site of this Contract from 23:35 15 July 2015 to 01:55 16 July 2015. No adverse comments or non-conformance was observed by the EPD on both visits. The Contractor was reminded by EPD to strictly follow with all terms and conditions of the CNP no. GW-RS0503-15.

- As a result, the construction activities carried out during restricted hour between 1- 13 July 2015 were considered complied with conditions CNP no. GW-RS0503-15.

7.1.3.4 The Contractor was reminded to continue to strictly follow with all terms and conditions of a valid CNP

7.1.4 As informed by the Contractor on 30 July 2015, Home Affairs Department referred a complaint to Project team of this Contract on 29 July 2015. The complaint involved Mr. Chan and Mr. Tang, Resident Representatives of Tong Fuk Village who complained significant sand loss of Tong Fuk Beach, particularly after typhoon when the beach was hit by strong waves; this exposed the rocks at the beach. The complainant enquired whether the sand loss is related to sand extraction for construction of airport and reclamation works of HZMB artificial island.

7.1.4.1 Investigation action:

- Review Contractor's source of sand filling material.

7.1.4.2 Investigation result:

- The Contractor of HKBCF Reclamation Works confirmed that this Contract did not have any sand filling material that was sourced from the captioned area. As such, it is unlikely that the reported sand loss is attributed to construction activities of this Contract.

7.1.4.3 The complaint is considered as non-Contract related.

7.1.5 No notification of summons or prosecution was received in the reporting quarter.

7.1.6 Statistics on complaints, notifications of summons and successful prosecutions are summarized in Appendix N.

8 COMMENTS, RECOMMENDATIONS AND CONCLUSIONS

8.1 Comments on mitigation measures

8.1.1 According to the environmental site inspections performed in the reporting quarter, the following recommendations were provided:

Air Quality Impact

- All working plants and vessels on site should be regularly inspected and properly maintained to avoid dark smoke emission.
- All vehicles should be washed to remove any dusty materials before leaving the site.
- Haul roads should be sufficiently dampened to minimize fugitive dust generation.
- Wheel washing facilities should be properly maintained and reviewed to ensure properly functioning.
- Temporary exposed slopes and open stockpiles should be properly covered.
- Enclosure should be erected for cement debagging, batching and mixing operations.
- Water spraying should be provided to suppress fugitive dust for any dusty construction activity.
- Regular review and provide maintenance to dust control measures such as sprinkler system.

Construction Noise Impact

- Quieter powered mechanical equipment should be used as far as possible.
- Noisy operations should be oriented to a direction away from sensitive receivers as far as possible.
- Proper and effective noise control measures for operating equipment and machinery on-site should be provided, such as erection of movable noise barriers or enclosure for noisy plants. Closely check and replace the sound insulation materials regularly
- Vessels and equipment operating should be checked regularly and properly maintained.
- Noise Emission Label (NEL) shall be affixed to the air compressor and hand-held breaker operating within works area.
- Acoustic decoupling measures should be properly implemented for all existing and incoming construction vessels with continuous and regularly checking to ensure effective implementation of acoustic decoupling measures.

Water Quality Impact

- Regular review and maintenance of silt curtain systems, drainage systems and desilting facilities in order to make sure they are functioning effectively.
- Construction of seawall should be completed as early as possible.
- Regular inspect and review the loading process from barges to avoid splashing of material.
- Silt, debris and leaves accumulated at public drains, wheel washing bays and perimeter u-channels and desilting facilities should be cleaned up regularly.
- Silty effluent should be treated/ desilted before discharged. Untreated effluent should be prevented from entering public drain channel.

- Proper drainage channels/bunds should be provided at the site boundaries to collect/intercept the surface run-off from works areas.
- Exposed slopes and stockpiles should be covered up properly during rainstorm.

Chemical and Waste Management

- All types of wastes, both on land and floating in the sea, should be collected and sorted properly and disposed of timely and properly. They should be properly stored in designated areas within works areas temporarily.
- All chemical containers and oil drums should be properly stored and labelled.
- All plants and vehicles on site should be properly maintained to prevent oil leakage.
- All kinds of maintenance works should be carried out within roofed, paved and confined areas.
- All drain holes of the drip trays utilized within works areas should be properly plugged to avoid any oil and chemical waste leakage.
- Oil stains on soil surface and empty chemical containers should be cleared and disposed of as chemical waste.
- Regular review should be conducted for working barges and patrol boats to ensure sufficient measures and spill control kits were provided on working barges and patrol boats to avoid any spreading of leaked oil/chemicals.

Landscape and Visual Impact

- All existing, retained/transplanted trees at the works areas should be properly fenced off and regularly inspected.
- Control night-time lighting and glare by hooding all lights.

8.2 Recommendations on EM&A Programme

8.2.1 The impact monitoring programme for air quality, noise, water quality and dolphin ensured that any deterioration in environmental condition was readily detected and timely actions taken to rectify any non-compliance. Assessment and analysis of monitoring results collected demonstrated the environmental impacts of the Contract. With implementation of recommended effective environmental mitigation measures, the Contract's environmental impacts were considered as environmentally acceptable. The weekly environmental site inspections ensured that all the environmental mitigation measures recommended were effectively implemented.

8.2.2 The recommended environmental mitigation measures, as included in the EM&A programme, effectively minimize the potential environmental impacts from the Contract. Also, the EM&A programme effectively monitored the environmental impacts from the construction activities and ensure the proper implementation of mitigation measures. No particular recommendation was advised for the improvement of the programme.

8.3 Conclusions

8.3.1 The construction phase and EM&A programme of the Contract commenced on 12 March 2012.

8.3.2 One (1) Limit Level Exceedance of 24hr-TSP was recorded at AMS2 on 10 August 2015. After investigation, there is no adequate information to conclude the recorded exceedances are related to this Contract. All 1-Hour TSP results were below the Action and Limit Level in the reporting period.

8.3.3 For construction noise, no exceedance was recorded at all monitoring stations in the reporting period.

8.3.4 Two (2) Action Level Exceedances of suspend solids were recorded at IS5 and IS(Mf)6 during flood tide on 17 July 2015, the exceedances were confirmed after checking against relevant control station(s) during flood tide i.e. CS6, CSA and CS(Mf)5 following the Action and Limit Levels for Water Quality. After investigation, there is no adequate information to conclude the recorded exceedances are related to this Contract.

8.3.5 One (1) Limit Level exceedance of dolphin monitoring was recorded in the reporting quarter. After investigation, 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 nor separate from the other stress factors. Event Action Plan for Impact Dolphin Monitoring was triggered. For detail of investigation, please refer to appendix L.

8.3.6 Due to malfunction of High Volume Sampler equipment located at monitoring station AMS3B, the 24hr TSP monitoring need to be rescheduled from 1 June 2015 16:00pm – 2 June 2015 16:00pm to 2 June 2015 13:30 pm – 3 June 2015 13:30 pm.

8.3.7 The scheduled water quality monitoring at mid ebb on 10 July 2015 was cancelled due to Tropical Cyclone Warning Signal no. 3 or above was hoisted 3 hours before the commencement of scheduled water quality monitoring.

8.3.8 As informed by the Contractor, an area of Portion B has been handed over to other Contract and the perimeter silt curtain near this area of Portion B has been rearranged on 31 July 2015 for berthing another Contractor's vessels (which do not belong to this Contract). IEC/ENPO was informed on 5 Aug 2015 immediately after ET's review. IEC/ENPO provided further comments on 1 September 2015, ET responded 2 September 2015 with notification letter ref.:60249820/rmky15090201. IEC/ENPO expressed no further comment via letter ref.: HYDHZMBEEM00_0_03351L.15 on 8 September 2015 for the removal of section of perimeter silt curtain near Portion B of HKBCF.

8.3.9 Environmental site inspection was carried out thirteen times in the reporting quarter. Recommendations on remedial actions were given to the Contractors for the deficiencies identified during the site audits.

8.3.10 As informed by the Contractor, 3 July 2015, an air quality complaint has been received on 11 June 2015 by HyD via complaint hotline 1823. The complainant complained that sand and dust pollution near Richland Garden, 138 Wu Chui Road, Tuen Mun, caused by sand delivery barges. After investigation, there is no adequate information to conclude the observed impact is related to this Contract.

8.3.11 As informed by ER of this Contract on 13 July 2015, EPD referred a noise related complaint to this Contract on 13 July 2015. The complainant complained noise came from BCF site near HK Skycity Marriott Hotel during nighttime period of the past 10 days which involves excavation with a grab dredger, transfer of excavated material using a derrick barge and a tug boat, and backfilling with a pelican barge. Based on EPD's record, the above activities are covered by CNP no. GW-RS0503-15. After investigation, the construction activities carried out during restricted hour between 1- 13 July 2015 were considered complied with CNP conditions (no. GW-RS0503-15).

8.3.12 As informed by the Contractor on 30 July, Home Affairs Department referred a complaint to Project team of this Contract on 29 July 2015. The complaint involved Mr. Chan and Mr. Tang, Resident Representatives of Tong Fuk Village who complained significant sand loss of Tong Fuk Beach, particularly after typhoon when the beach was hit by strong waves; this exposed the rocks at the beach. The complainant enquired whether the sand loss is related to sand extraction for construction of airport and reclamation works of HZMB artificial island. After investigation, the complaint is considered as non-Contract related.

8.3.13 Notification of summons or prosecution was received in the reporting quarter.

8.3.14 IEC/ENPO notified ET via email on 22 June 2015 that silt plume was observed being dispersed from Portion E1 to the open waters outside the silt curtain for the HZMB HKBCF Contract maintained by Contract No. HY/2010/02 at about 3:00 pm on 20 June 2015. After investigation, no adequate information which indicates that the silt plume observed on 20 June 2015 was lasting and continuous.

8.3.15 Oil spillage incident was observed at Sea area near Cell No. 78 on 23 June 2015. Following the spill response plan ET, IEC and the RSS were informed of the incident by the Contractor.

8.3.16 Apart from the above mentioned monitoring, most of the recommended mitigation measures, as included in the EM&A programme, were implemented properly in the reporting quarter.

8.3.17 The recommended environmental mitigation measures effectively minimize the potential environmental impacts from the Contract. The EM&A programme effectively monitored the environmental impacts from the construction activities and ensure the proper implementation of mitigation measures. No particular recommendation was advised for the improvement of the programme.

8.3.18 Moreover, regular review and checking on the construction methodologies, working processes and plants were carried out to ensure the environmental impacts were kept minimal and recommended environmental mitigation measures were implemented effectively.