AECOM

China Harbour Engineering Company Limited

Contract No. HY/2010/02

Hong Kong – Zhuhai – Macao Bridge Hong Kong Boundary Crossing Facilities – Reclamation Works

Quarterly EM&A Report for September 2014- November 2014

[04/2015]

	Name	Signature
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Disclaimer

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Ref.: HYDHZMBEEM00_0_2898L.15 17 April 2015

Engineer's Representative By Fax (3698 5999) and By Post
Ove Arup & Partners
Chief Resident Engineer's Office
5 Ying Hei Road, Tung Chung, Lantau
Hong Kong

Attention: Mr. Roger Marechal

Dear Sir,

Re: Agreement No. CE 48/2011 (EP)
Environmental Project Office for the
HZMB Hong Kong Link Road, HZMB Hong Kong Boundary Crossing Facilities, and Tuen Mun-Chek Lap Kok Link – Investigation

Contract No. HY/2010/02 HZMB HKBCF – Reclamation Works
Quarterly EM&A Report for September 2014 to November 2014

Reference is made to the Environmental Team's submission of the Quarterly Environmental Monitoring & Audit Report for September 2014 to November 2014 (Letter ref: 60249820/C/RMKY15041701 dated 17 April 2015) copied to us by e-mail on 17 April 2015.

We are pleased to inform you that we have no adverse comment on the captioned Quarterly EM&A Report for September 2014 to November 2014.

ET is reminded to submit the proposed modelling analyses in the next Quarterly EM&A Report for December 2014 to February 2015 as stated in the previous report for June 2014 to August 2014.

Thank you very much for your kind attention and please do not hesitate to contact the undersigned should you have any queries.

Yours sincerely,

Raymond Dai
Independent Environmental Checker

c.c.	HyD	Mr. Matthew Fung	(By Fax: 3188 6614)
	HyD	Mr. Wai-ping Lee	(By Fax: 3188 6614)
	AECOM	Ms. Echo Leong	(By Fax: 2317 7609)
	CHEC	Mr. Lim Kim Chuan	(By Fax: 2578 0413)

Internal: DY, YH, SL, JM, ENPO Site

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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 Project") 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 Project, i.e. the amended Environmental Permits (EPs) issued on 19 January 2015 (EP-353/2009/H) and 10 December 2014 (EP-354/2009/C) (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 Project's reclamation works (i.e. the Engineer for the Project).

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

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 Project for carrying out the environmental monitoring and audit (EM&A) works.

The construction phase of the Project 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 September 2014 and 30 November 2014. As informed by the Contractor, major activities in the reporting quarter were:-

Marine-based Works

- Cellular structure installation
- Laying geo-textile
- Optimizing rubble mound seawalls
- Conforming sloping seawalls
- Sand blanket laying
- Sand filling
- Rock filling
- Public filling
- Maintenance of silt curtain & silt screen at sea water intake of HKIA
- Band drain installation
- Surcharge remove & laying
- Backfill cellular structure
- Geotechnical Instrumentation works
- Surcharge laying
- Capping Beams structures
- Construction of temporary jetties for surcharge laying
- Temporary Watermain construction
- Flat barge of unloading public fill for surcharge laying
- Precast Yard Setup
- Precast Yard for seawall blocks & culverts

Land-based Works

- 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	39 sessions
Impact dolphin monitoring	6 surveys
Joint Environmental site inspection	13 sessions

Breaches of Action and Limit Levels for Air Quality

One (1) 24-hour TSP result at AMS3B exceeded Action Level on 27 October 2014, after investigation, the exceedance was considered not related to this Contract. All 1-Hour TSP results were below the Action and Limit Level 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 period.

Breaches of Action and Limit Levels for Water Quality

A total of (23) twenty-three exceedances were recorded in this reporting quarter:

(1) One Action Level Exceedance of SS at IS8 at mid-flood tide on 5 September 2014; (2) Two Action Level Exceedances of SS at IS5 and SR3 respectively at Mid-Ebb tide were recorded on 10 September 2014 and (1) one Action level exceedance of SS were recorded at SR10B(N) at Mid-Flood tide on 12 September 2014; (1) One Limit Level Exceedance of Turbidity and (1) Limit Level Exceedance of Suspended Solids were recorded at IS17 during ebb tide on 10 October 2014; (1) One Action Level Exceedance of SS at SR10B(N) was recorded on10 October 2014 during flood tide; (1) One Action Level Exceedance of SS at IS8 was recorded on 3 October 2014 during flood tide; (1) One Action Level Exceedance of SS at IS(Mf)11 was recorded on 6 October 2014 during ebb tide; (2) Two Action Level Exceedances of SS at IS(Mf)11 and SR5 were recorded on 6 October 2014 during flood tide; (3) Three Action Level Exceedances of SS were recorded at IS10, SR4(N) and SR5 on 13 October 2014 during flood tide; (1) One Action Level Exceedance of SS was recorded at IS17 on 20 October 2014 during ebb tide; (1) action level exceedance and (1) limit level exceedance of SS were recorded at SR4(N) and IS8 respectively on 20 October 2014 during flood tide; (2) Two Action Level Exceedances of SS were recorded at SR10A and SR10B(N) on 22 October 2014 during flood tide; (2) Two Action Level Exceedances of SS were recorded at IS10 and SR4(N) during flood tide on 24 October 2014. (1) Action Level Exceedance of SS was recorded at IS8 on 31 October 2014 during ebb tide. (1) action level exceedance of SS was recorded at IS17 on 28 November 2014 during mid ebb tide.

After investigation, all impact water quality exceedances were considered not related to this Contract except the Limit Level Exceedance of Turbidity, Limit Level Exceedance of Suspended Solids recorded at IS17 during ebb tide on 10 October 2014 and Action Level Exceedance of Suspended Solids recorded at IS17 during flood tide on 20 October 2014, which were considered related to this Contract. Recommendation has been given and rectification has been carried on by the Contractor on 28 October 2014.

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.

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

Three environmental complaints have been received in September 2014.

As informed by the Contractor on 15 Sept 14, there is an environmental complaint received on 29 August 14 by HyD. The complainant who lives at Tower 4, Melody Garden, Tuen Mun called reflecting environmental issues arisen from many sand barges in the waters facing her apartment. According to the complainant, sand was blown into her apartment because the barges were not covered and it was worse when sand was transferred from one vessel to another on conveyor belts. After investigation, there is no adequate information to conclude the observed impact is related to this Contract.

As informed by the Contractor, a public complaint has been received by ICC on 9 September 2014 and it was referred to this Contract, the complainant raised concern about a large amount of general refuse such as food container and plastic bottles were observed on sea area off the Gold Coast, Tuen Mun. After investigation, there is no adequate information to conclude the observed impact is related to this Contract.

An air quality complaint has been received by the Contractor on 29 September 2014 via email. The complaint was first received by EPD via email on 5 September 2014 and it was referred by EPD to the HZMB HK Project Management Office (Management Office) to handle the complaint directly on 10 September 2014 following the request of the complainant. The Management Office responded to the complainant directly on 17 September 2014. Subsequently, the complainant followed up with the response given by the Management Office and complained again on 26 September 2014. This follow up complaint was referred to the project team to investigate. The complainant complained that many of the sand barges did not stay at area of reclamation works near Chek Lap Kok or at the sea area near Tuen Mun River Trade Terminal but moored in the sea area close to Melody Garden. Sand were easily blown to the inside house during days with moderate wind. The complainant suggested that, sand barges should be requested to move away from residential areas and sand barges should be provided with cover fabric and sprinkling to minimise environmental pollution caused by sand. After investigation, there is no adequate information to conclude the observed impact is related to this Contract.

Two environmental complaints have been received in October 2014.

As informed by the Contractor on 14 October 2014, a follow up air quality complaint has been received by this Contract (same case to environmental complaint reported in the last reporting month). The complainant complained that about 20-30 sand barges always moor at the sea area opposite to tower 4 of Melody Garden and Richland Garden. This problem has affected the air quality. After investigation, there is no adequate information to conclude the observed impact is related to this Contract.

With reference to RSS's letter ref.: 211036/(HY2010/02)/M05/432/B07605 dated on 30 September 2014 pertaining the performance on barges operations at the sea area off the Tuen Mun Ferry Pier. A complaint concerning leakage of sand filling material from vessels at sea area off Tuen Mun Ferry Pier was first received by EPD from Tuen Mun District Council (TM DC) on 19 September 2014 and it was subsequently referred by EPD to the Highways Department to handle on 23 September 2014 through EPD's memo ref.: EP/RW/0000362128.Referring to EPD's Memo, it is also noted that some local residents at Tuen Mun expressed their concern that the stockpile of dusty sand material on the barges should be covered with impervious sheeting to avoid causing fugitive dust emissions of sand and dust. Subsequently, TM DC followed up their complaint with Highways Department on 17 October 2014. The follow up complaint concerning water quality impact at sea area off Tuen Mun area was referred to the project team to response on 17 October 2014. After investigation, there is no adequate information to conclude the observed impact is related to this Contract.

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

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 Project") mainly comprises seawall construction and 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 Project 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) and January 2015 (EP-353/2009/H). 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) and December 2014 (EP-354/2009/C).

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 19 January 2015 (EP-353/2009/H) and 10 December 2014 (EP-354/2009/C) (for TMCLKL Southern Landfall Reclamation only).

1.1.5 A Project Specific EM&A Manual, which included all project-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 Project's reclamation works (i.e. the Engineer for the Project).

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

1.1.8 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 Project for carrying out the EM&A works.

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

1.1.11 According to the Project 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 Project commenced on 12 March 2012.

1.2 Scope of Report

1.2.1 This is the eleventh 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 Project from 1 September 2014 to 30 November 2014.

1.3 Project Organization

1.3.1 The project 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	Roger Marechal	2528 3031	2668 3970
IEC / ENPO (ENVIRON Hong Kong Limited)	Independent Environmental Checker	Raymond Dai	3465 2888	3548 6988
	Environmental Project Office Leader	Y.H. Hui	3465 2868	3465 2899
Contractor (China Harbour Engineering Company Limited)	General Manager (S&E)	Daniel Leung	3157 1086	2578 0413
	Environmental Officer	Richard Ng	36932253	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-based Works

- Cellular structure installation
- Laying geo-textile
- Optimizing rubble mound seawalls
- Conforming sloping seawalls
- Sand blanket laying
- Sand filling
- Rock filling
- Public filling
- Maintenance of silt curtain & silt screen at sea water intake of HKIA
- Band drain installation
- Surcharge remove & laying
- Backfill cellular structure
- Geotechnical Instrumentation works
- Surcharge laying
- Capping Beams structures
- Construction of temporary jetties for surcharge laying
- Temporary Watermain construction
- Flat barge of unloading public fill for surcharge laying
- Precast Yard Setup
- Precast Yard for seawall blocks & culverts

Land-based Works

- 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 Project is shown in Appendix B.

1.4.4 The general layout plan of the Project 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 Project 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 Project 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 Project 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 Project Specific EM&A Manual. However, for monitoring location NMS3 (Ho Yu College), as proposed in the Project 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.

2.1.4 In accordance with the Project 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 Project/ 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 Project 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/H and EP-354/2009/C) (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 Project 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 AMS7).

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

3.1.4 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.

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

Monitoring Parameter	Location	No. of monitoring events		
		September 14	October 14	November 14
1-hr TSP	AMS2	18	15	15
	AMS3B	18	15	15
	AMS7	18	15	15
24-hr TSP	AMS2	6	5	5
	AMS3B	6	5	5
	AMS7	6	5	5

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

Monitoring Parameter	Location	Level of Exceedance	Level of Exceedance		
			September 14	October 14	November 14
1-hr TSP	AMS2	Action	0	0	0
		Limit	0	0	0
	AMS3B	Action	0	0	0
		Limit	0	0	0
	AMS7	Action	0	0	0
		Limit	0	0	0
		Total	0	0	0
24-hr TSP	AMS2	Action	0	0	0
		Limit	0	0	0
	AMS3B	Action	0	**1**	0
		Limit	0	0	0
	AMS7	Action	0	0	0
		Limit	0	0	0
		Total	0	**1**	0

3.1.5 One (1) 24-hour TSP result at AMS3B exceeded Action Level on 27 October 2014, after investigation, the exceedance was considered not related to this Contract. All 1-Hour TSP results were below the Action and Limit Level in the reporting period.

3.1.5.1 For the 24-hour TSP action level exceedance on 27 October 2014 at AMS3B:

3.1.5.2 According to information provided by the Contractor, no land-based construction was being undertaken at Works Area WA2 during the monitoring period.

3.1.5.3 Site inspection has been conducted on 7 November 2014 to review works activities of adjacent construction site(s) for identifying the possible source(s), construction site was observed and the source of impact may be contributed by adjacent construction site which do not belongs to this contract. Please see below photo record for reference.

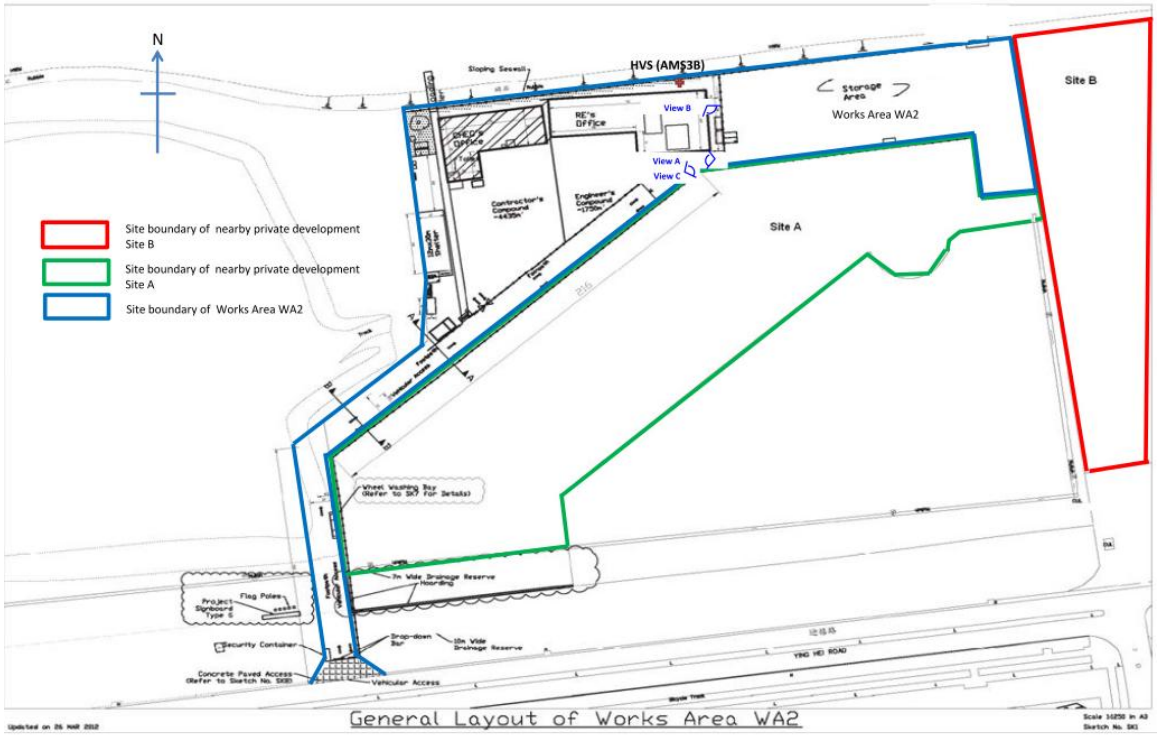
3.1.5.4 Functional checking on HVS at AMS3B was done. Air flow of the HVS was checked and the flow was steady during the 24-hr TSP sampling at AMS3B, initial flow, final flow and average rate are 1.34m3/min. The filter paper was re-weighted by the assigned HOKLAS laboratory and the result was reconfirmed.

3.1.5.5 The 1-hr TSP values recorded at AMS3B on 27 October 14, which are within the monitoring period of the 1-hr TSP, were 75μg/m^3, 76μg/m^3 and 76μg/m^3 respectively. All measured values are well below the Action and Limit Levels.

3.1.5.6 The measured 24-hr TSP values recorded at AMS2 and AMS7 (which are closer to the marine-based works areas) on 27 October 2014 date were 76μg/m3 and 92μg/m3, which are below the Action and Limit Levels.

3.1.5.7 The measured 24-hr TSP values recorded at AMS3B on next monitoring date, 1 November 2014 was 76μg/m^3, which did not exceed the Action or Limit Level.

3.1.5.8 Below layout map shows the location of HVS at AMS3B:



- Photo record taken on 7 November 2014 during ad hoc site inspection: View B on layout map

- Photo record taken on 7 November 2014 during ad hoc site inspection: View C on layout map

3.1.5.9 The following dust mitigation measures have been implemented at Works Area WA2:

1 Works Area WA2's surface was hard-paved, compacted or hydro-seeded (Please refer to above layout map and photo records below (View A))

2 Vehicle washing facility was provided at vehicle exit points,
3 Measures for preventing fugitive dust emission are provided, e.g. canvas/tarpaulin covers.

3.1.5.10 After investigation, the dust exceedance was considered not to be due to works of this Contract.

3.1.6 The event action plan is annexed in Appendix K.

3.1.7 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 September, October and November 2014 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 Project 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		
		September 14	October 14	November 14
	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		
			September 14	October 14	November 14
	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 A total of (23) twenty-three exceedances were recorded in this reporting quarter:

3.3.3 (1) One Action Level Exceedance of SS at IS8 at mid-flood tide on 5 September 2014, (2) Two Action Level Exceedances of SS at IS5 and SR3 respectively at Mid-Ebb tide were recorded on 10 September 2014 and (1) one Action Level Exceedance of SS were recorded at SR10B(N) at Mid-Flood tide on 12 September 2014. (1) One Limit Level Exceedance of Turbidity and (1) Limit Level Exceedance of Suspended Solids were recorded at IS17 during ebb tide on 10 October 2014; (1) One Action Level Exceedance of SS at SR10B(N) was recorded on 10 October 2014 during flood tide; (1) One Action Level Exceedance of SS at IS8 was recorded on 3 October 2014 during flood tide; (1) One Action Level Exceedance of SS at IS(Mf)11 was recorded on 6 October 2014 during ebb tide; (2) Two Action Level Exceedances of SS at IS(Mf)11 and SR5 were recorded on 6 October 2014 during flood tide; (3) Three Action Level Exceedances of SS were recorded at IS10, SR4(N) and SR5 on 13 October 2014 during flood tide; (1) One Action Level Exceedance of SS was recorded at IS17 on 20 October 2014 during ebb tide; (1) Action Level Exceedance and (1) Limit Level Exceedance of SS were recorded at SR4(N) and IS8 respectively on 20 October 2014 during flood tide; (2) Two Action Level Exceedances of SS were recorded at SR10A and SR10B(N) on 22 October 2014 during flood tide; (2) Two Action Level Exceedances of SS were recorded at IS10 and SR4(N) during flood tide on 24 October 2014. (1) Action Level Exceedance of SS was recorded at IS8 on 31 October 2014 during ebb tide. (1) Action Level Exceedance of SS was recorded at IS17 on 28 November 2014 during mid ebb tide.

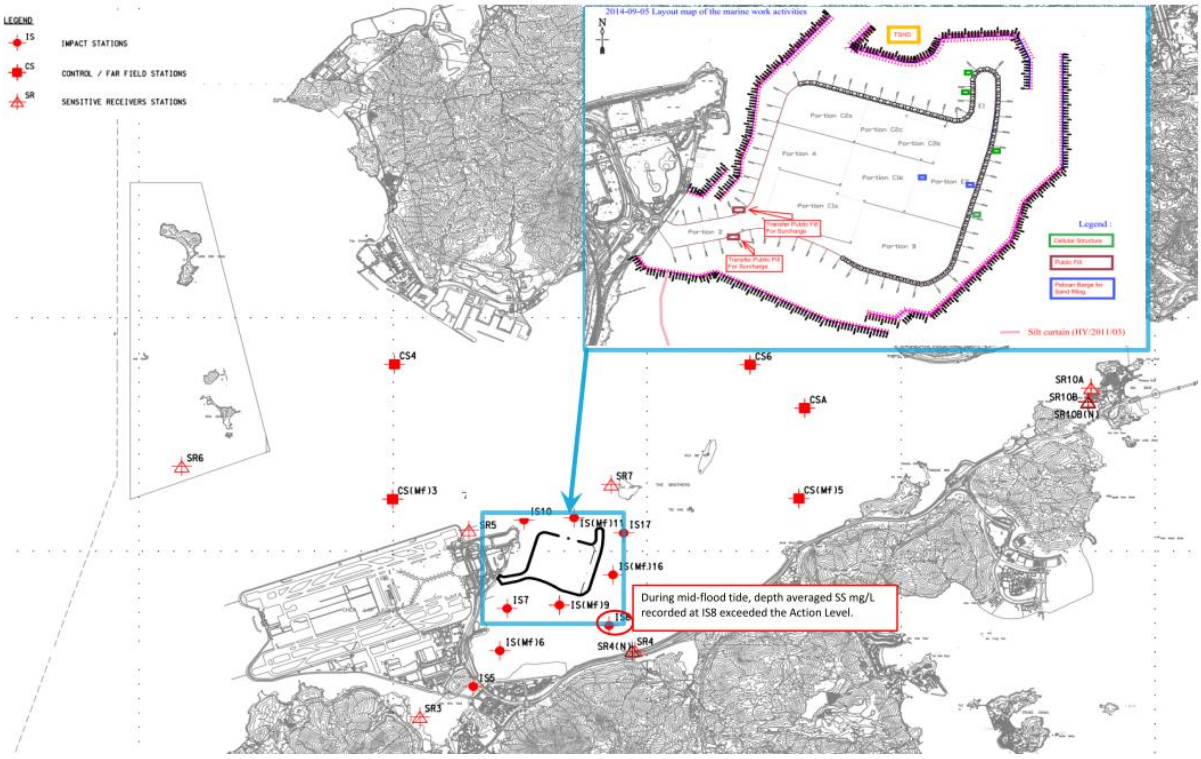
Table 3.5 Summary of Water Quality Exceedances in September 2014 – November 2014

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	(1) 10 Sep 14	0	1	0
	Limit	0	0	0	0	0	0	0	0	0	0
IS(Mf)6	Action	0	0	0	0	0	0	0	0	0	0
	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	(1) 31 Oct 14	(2) 5 Sep 14 and 3 Oct 14	1	2
	Limit	0	0	0	0	0	0	0	(1) 20 Oct 14	0	1
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	(2) 13 and 24 Oct 14	0	2
	Limit	0	0	0	0	0	0	0	0	0	0

Station	Exceedance Level	DO (S&M)		DO (Bottom)		Turbidity		SS		Total	
		Ebb	Flood	Ebb	Flood	Ebb	Flood	Ebb	Flood	Ebb	Flood
IS(Mf)11	Action	0	0	0	0	0	0	(1) 6 Oct 14	(1) 6 Oct 14	1	1
	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	(2) 20 Oct and 28 Nov 14	0	0	2
	Limit	0	0	0	0	(1) 10 Oct 14	0	(1) 10 Oct	0	2	0
SR3	Action	0	0	0	0	0	0	(1) 10 Sep 14	0	1	0
	Limit	0	0	0	0	0	0	0	0	0	0
SR4(N)	Action	0	0	0	0	0	0	0	(3) 13, 20 and 24 Oct 14	0	3
	Limit	0	0	0	0	0	0	0	0	0	0
SR5	Action	0	0	0	0	0	0	0	(2) 6 and 13 Oct 14	0	2
	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	(1) 22 Oct 14	0	1
	Limit	0	0	0	0	0	0	0	0	0	0
SR10B (N)	Action	0	0	0	0	0	0	(1) 12 Sep 14	(2) 10 and 22 Oct 14	1	2
	Limit	0	0	0	0	0	0	0	0	0	0
Total	Action	0	0	0	0	0	0	7	13	20	
	Limit	0	0	0	0	1	0	1	1	3	

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

3.3.4 (1) One Action Level Exceedance of SS (27.4mg/L) was recorded at IS8 during flood tide on 5 September 2014. The exceedance was 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 For marine works, marine filling was conducted at portion E2 during flood at area behind cellular structures on 5 September 2014. Also refer to layout map above.

3.3.4.2 Exceedance was not due to marine based construction works of the Project because:

3.3.4.3 As informed by the Contractor, filling was conducted on 3, 5 and 8 September 2014 at Portion E2, but with referred to monitoring record and photo record attached, no sediment plume has been observed to flow from the inside of the perimeter silt curtain to the outside of the perimeter silt curtain and no discoloration of sea water has been observed.

3.3.4.4 Photo record of sea condition taken during flood tide at the North of HKBCF Reclamation Works near IS8 on 5 September 2014.

3.3.4.5 Construction activities were reviewed, almost the same marine works were conducted at almost the same location on 3, 5 and 8 September 2014, but no SS exceedance was recorded on 3 and 8 September 2014. This indicates that the SS exceedance was unlikely to attribute to marine works of this Contract.

3.3.4.6 IS(Mf)9 and IS(Mf)16 are located closer to the active works than monitoring station IS8. Depth Averaged Suspended Solids (SS) values (in mg/L) recorded during the flood tide on the same day at IS(Mf)9 and IS(Mf)16 were below the Action and Limit Level which shows that the water quality closer to active works was not adversely affected.

3.3.4.7 The monitoring location of monitoring station IS8 are considered located upstream to the active works of this project during flood tide. Therefore it was unlikely that the exceedance recorded at IS8 was due to active construction activities of this project.

3.3.4.8 Turbidity level (NTU) result recorded on 5 September 2014 at IS8 during flood tide is 24.5 NTU which is below the Action and Limit Level, this indicates turbidity level was not adversely affected.

3.3.4.9 The exceedance was likely due to local effects in the vicinity of IS8.

3.3.4.10 For action required under the action plan, refer to EM&A manual of this Contract for Event and Action Plan for Water Quality.

3.3.4.11 Action taken under the action plan:

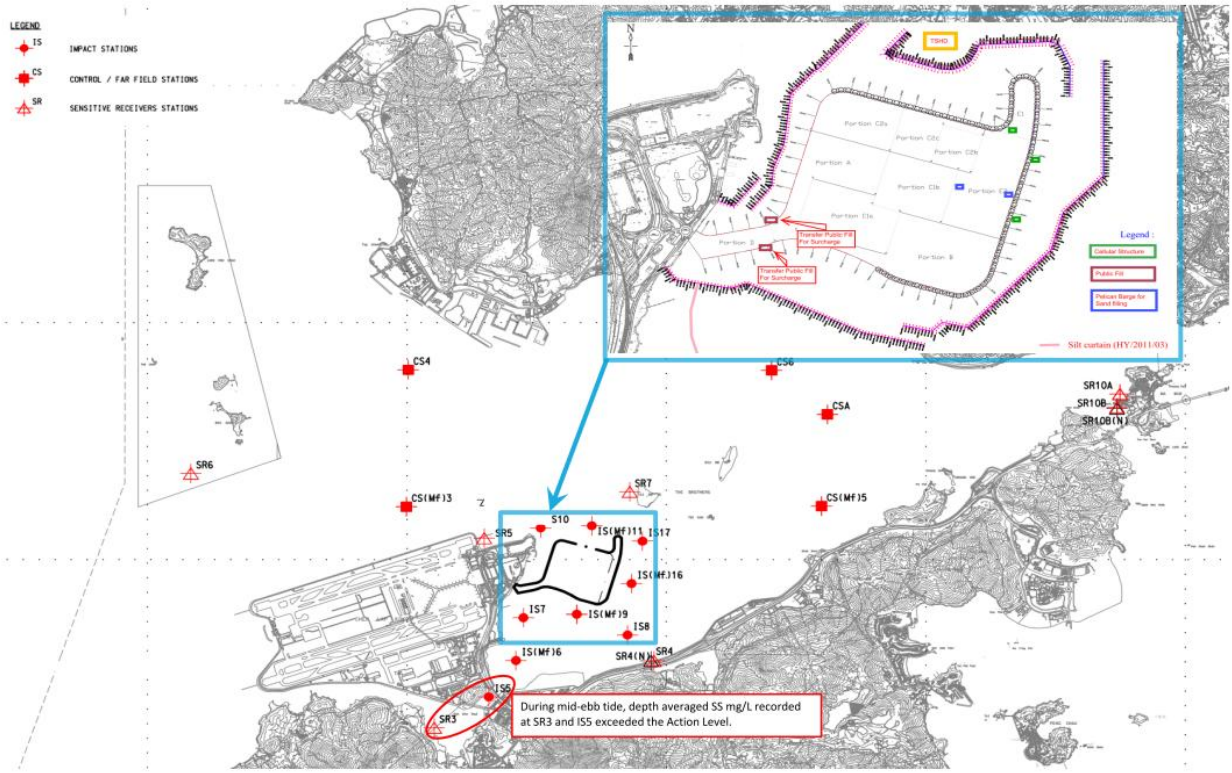
1. Not applicable as SS was not measured in situ;
2. After considering the above mentioned investigation results, it appears that it was unlikely that the SS exceedance was attributed to active construction activities of this project;
3. IEC, contractor and ER were informed via email;
4. Monitoring data,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

3.3.4.12 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.

3.3.4.13 As informed by the Contractor, maintenance work of the silt curtain is on-going and carried out by the Contractor on a daily basis.

3.3.5 (2) Two Action Level Exceedances of SS (26mg/L and 32.3mg/L) were recorded at IS5 and SR3 during ebb tide on 10 September 2014. The exceedances were confirmed after checking against relevant control station(s) during ebb tide i.e. CS4 and CS(Mf)3 following the Action and Limit Levels for Water Quality.

3.3.5.1 For marine works, marine filling was conducted at portion E2 during ebb tide at area behind cellular structures on 10 September 2014.



3.3.5.2 Exceedances were not due to marine based construction works of the Project because:

3.3.5.3 As informed by the Contractor, filling was conducted on 8, 10 and 12 September 2014 at Portion E2, but with referred to monitoring record and photo record attached, no sediment plume has been observed to flow from the inside of the perimeter silt curtain to the outside of the perimeter silt curtain and no discoloration of sea water has been observed.

3.3.5.4 Photo record of sea condition taken at South of HKBCF Reclamation Works near IS5 and SR3 on 10 September 2014.

3.3.5.5 Construction activities were reviewed, almost the same marine works were conducted at almost the same location on 8, 10 and 12 September 2014, but no SS exceedance was recorded at IS5 or SR3 on 8 and 12 September 2014. This indicates that the SS exceedances were unlikely to attribute to marine works of this Contract.

3.3.5.6 IS7 and IS(Mf)6 are located closer to the active works than monitoring station IS5 and SR3. Depth Averaged Suspended Solids (SS) values (in mg/L) recorded during the ebb tide on the same day at IS7 and IS(Mf)6 were below the Action and Limit Level which shows that the water quality closer to active works was not adversely affected. Therefore it was unlikely that the SS exceedances recorded at IS5 and SR3 were due to active construction activities of this project.

3.3.5.7 Turbidity level (NTU) result recorded on 10 September 2014 at IS5 and SR3 during ebb tide are 22.3 NTU and 23.9 NTU respectively which are below the Action and Limit Level, this indicates turbidity level was not adversely affected.

3.3.5.8 The exceedances were likely due to local effects in the vicinity of IS5 and SR3.

3.3.5.9 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 exceedance was attributed to active construction activities of this project;
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 project related, as such, actions 5 - 7 under the EAP are not considered applicable.

3.3.5.10 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.

3.3.5.11 As informed by the Contractor, maintenance work of the silt curtain is on-going and carried out by the Contractor on a daily basis.

3.3.6 (1) One Action Level Exceedance of SS (24.5mg/L) was recorded at IS10B(N) during ebb tide on 12 September 2014. The exceedance was confirmed after checking against relevant control station(s) during ebb tide i.e. CS4 and CS(Mf)3 following the Action and Limit Levels for Water Quality.

3.3.6.1 For marine works, marine filling was conducted at portion E2 during flood at area behind cellular structures on 12 September 2014. Also refer to layout map attached.

3.3.6.2 Exceedance was not due to marine based construction works of the Project because:

3.3.6.3 IS(Mf)11 and IS10 are located downstream and closer to the active works than monitoring station SR10B(N) during flood tide. Depth Averaged Suspended Solids (SS) values (in mg/L) recorded during flood tide on the same day at IS(Mf)11 and IS10 were below the Action and Limit Level which indicates project work is unlikely to contribute to the action level exceedance recorded at SR10B(N).

3.3.6.4 The monitoring location of monitoring station SR10B(N) are considered upstream and remote to the active works of this project during flood tide. Therefore it was unlikely that the exceedance recorded at SR10B(N) during flood tide was due to active construction activities of this project.

3.3.6.5 The exceedance was likely due to local effects in the vicinity of SR10B(N).

3.3.6.6 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 exceedance was attributed to active construction activities of this project;
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 project related, as such, actions 5 - 7 under the EAP are not considered applicable.

3.3.6.7 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.

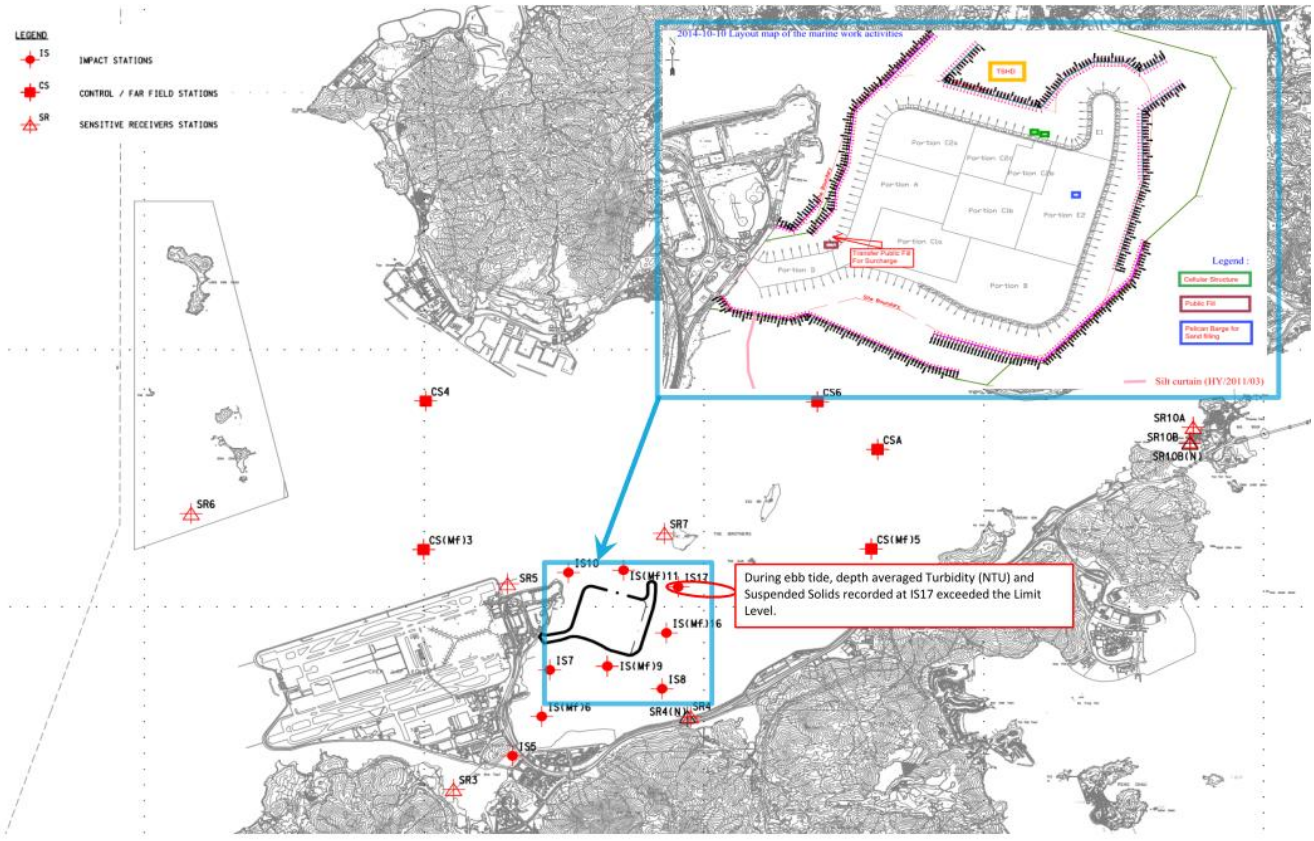
3.3.6.8 As informed by the Contractor, maintenance work of the silt curtain is on-going and carried out by the Contractor on a daily basis.

3.3.7 (1) One Limit Level Exceedance of Turbidity and (1) Limit Level Exceedance of Suspended Solids were recorded at IS17 during ebb tide on 10 October 2014. The exceedance was confirmed after checking against relevant control station(s) during ebb tide i.e. CS4 and CS(Mf)3 following the Action and Limit Levels for Water Quality.

3.3.7.1 Exceedances recorded at IS17 are likely due to marine based construction activities of the Project because: marine based construction activities of the Project because:

3.3.7.2 With refer to monitoring record, appearance of water was relatively more turbid at IS17 when compared with the appearance of water at IS(Mf)11, IS10 and IS(Mf)16 during monitoring at ebb tide on 10 Oct 14.

3.3.7.3 As informed by the Contractor, sand filling was carried out at Portion E2 on 8, 10 and 13 Oct 14 at almost the same location but no exceedance was recorded at monitoring station IS17 on 8 and 13 Oct 14 during mid ebb tide. This indicates filling works were unlikely to cause the exceedance in turbidity at monitoring station IS17.



3.3.7.4 The source of impact is likely due pelican barge's propeller movement at shallow water during ebb tide when the position of the barge was adjusted at portion E. In addition, with refer to the silt curtain condition on 10 Oct 14, defects of the perimeter silt curtain was observed at northwest of the construction site. The dispersion of turbid water from the inside of the perimeter silt curtain to the outside of the perimeter silt curtain is potentially due to defects of northwest part of the perimeter silt curtain.

3.3.7.5 Action taken under the event and action plan

1. In situ measurement was repeated to confirm findings of the exceedance of turbidity. Repeat in situ measurement is not applicable to suspended solid as SS was not measured in situ;
2. Source of impact refer to Section 4.7.3.3

3. IEC, Contractor, ER and EPD were noticed of the limit level exceedances via email;
4. Monitoring data was reviewed; plant, equipment and contractor's working methods were checked. Please refer to the layout map above.
5. The Contractor was reminded to ensure swift provision of ongoing maintenance to the silt curtains and to carry out maintenance work once defects were found.
6. Mitigation measures such as perimeter silt curtain was implemented by the Contractor, however defects of the perimeter silt curtain was observed, the Contractor was reminded to ensure swift provision of maintenance to the silt curtains once defects were found. With refer to the maintenance record provided by the Contractor, maintenance work for the defects of the northwest part of the perimeter silt curtain was conducted on 28 October 2014.
7. Monitoring results show no recurrence of exceedance at IS17 during ebb tide on 13 Oct 2014.

3.3.7.6 ET's conclusions and recommendations for mitigation: Exceedances recorded at IS17 are likely to be related to vessel movement at shallow water during ebb tide. The Contractor was further reminded to control the vessel traffic at this area and ensure swift provision of maintenance to the silt curtains once defect was found.

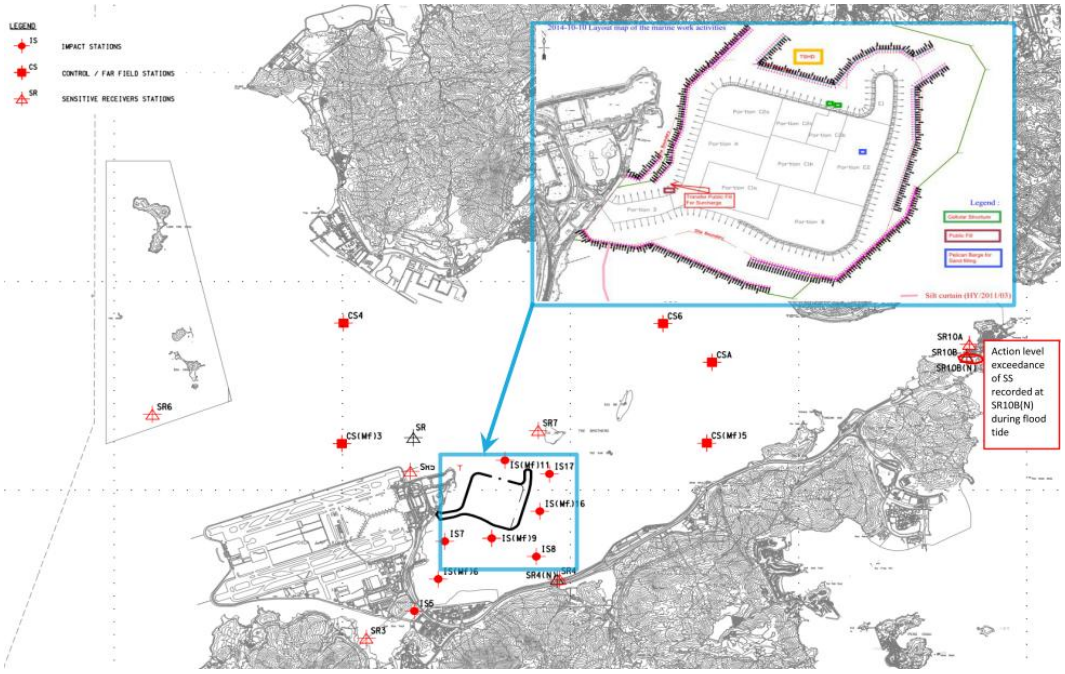
3.3.7.7 Contractor's actions to implement the mitigation: As informed by the Contractor, traffic control such as vessel speed limit was implemented and operation of sand filling vessel at shallow water during ebb tide was avoided. Monitoring results show no recurrence of exceedance at IS17 on 13 Oct 2014.

3.3.7.8 With refer to the maintenance record provided by the Contractor, maintenance work for the defects of the northwest part of the perimeter silt curtain was conducted on 28 October 2014.

3.3.8 (1) One Action Level Exceedance of SS at SR10B(N) was recorded on 10 October 2014 during flood tide. The exceedance was 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.

3.3.8.1 Exceedance was not due to marine based construction works of the Project because:

3.3.8.2 IS(Mf)11 and IS10 are located downstream and closer to the active works than monitoring station SR10B(N) during flood tide. Depth Averaged Suspended Solids (SS) values (in mg/L) recorded during flood tide on the same day at IS(Mf)11 and IS10 were below the Action and Limit Level which indicates project work is unlikely to contribute to the action level exceedance recorded at SR10B(N).



3.3.8.3 The monitoring location of monitoring station SR10B(N) are considered upstream and remote to the active works of this project during flood tide. Therefore it was unlikely that the exceedance recorded at SR10B(N) during flood tide was due to active construction activities of this project.

3.3.8.4 The exceedance was likely due to local effects in the vicinity of SR10B(N).

3.3.8.5 Action taken under the action plan

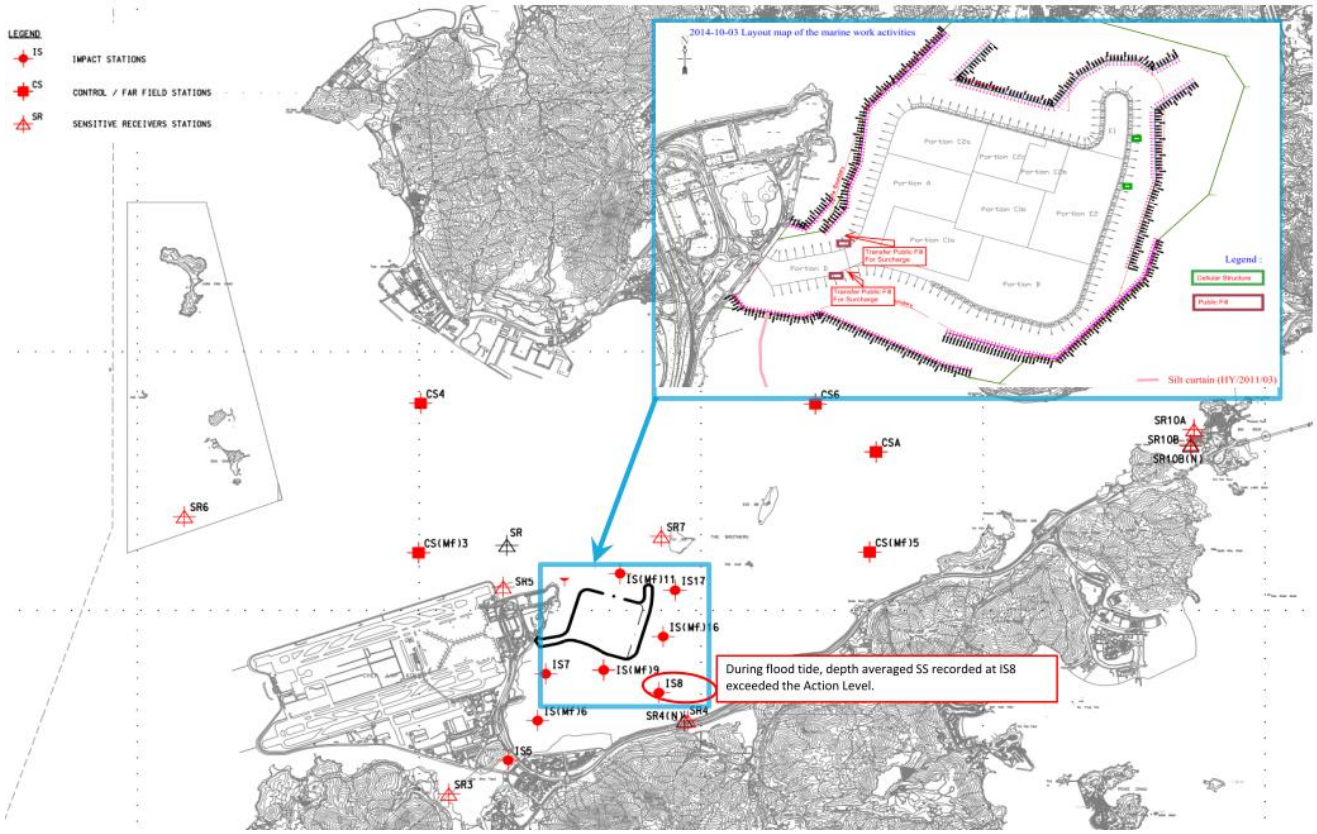
1. Not applicable as SS was not measured in situ;
2. After considering the above mentioned investigation results, it appears that it was unlikely that the SS exceedance was attributed to active construction activities of this project;
3. IEC, contractor and ER were informed via email;
4. Monitoring data,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

3.3.8.6 ET's conclusions and recommendations for mitigation: Exceedance was not due to marine based construction works of the Project. 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.

3.3.8.7 Contractor's actions to implement the mitigation: As informed by the Contractor, maintenance work of the silt curtain is on-going and carried out by the Contractor on a daily basis.

3.3.9 (1) One Action Level Exceedance of SS at IS8 was recorded on 3 October 2014 during flood tide. The exceedance was 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.

3.3.9.1 Layout map for work activities carried out on 03 October 14 is showed below:



3.3.9.2 Exceedance recorded at IS8 during mid-flood tide is unlikely due to marine based construction activities of the Project because:

3.3.9.3 With reference to the information provided by the Contractor, only cellular structure installation was conducted at the northeast part of the HKBCF reclamation works during mid flood tide, but cellular structure installation is unlikely to cause silt plume and contribute to the elevation of SS at IS8 during flood tide.

3.3.9.4 IS(Mf)9 and IS(Mf)16 are located closer to the active works than monitoring station IS8. Depth Averaged Suspended Solids (SS) values (in mg/L) recorded during the flood tide on the same day at IS(Mf)9 and IS(Mf)16 were below the Action and Limit Level which shows that the water quality closer to active works was not adversely affected.

3.3.9.5 In accordance with the silt curtain integrity checking record of 3 October 2014, disconnection of the perimeter silt curtain was observed at the southeast part of HKBCF Reclamation Works, but with referred to monitoring record and photo record below, no sediment plume has been observed to flow from the inside of the perimeter silt curtain to the outside of the perimeter silt curtain and no discoloration of sea water has been observed. (Please refer to below photo). In accordance with the silt curtain integrity checking record, the observed disconnection was rectified on 6 October 2014.

3.3.9.6 Photo record above shows the sea condition taken during flood tide at HKBCF Reclamation Works near IS8 on 3 October 2014.

3.3.9.7 Turbidity level recorded at IS8, IS(Mf)9 and IS(Mf)16 were below the action and limit level. This indicates the turbidity level at area near IS8 was not adversely affected.

3.3.9.8 The exceedance was likely due to local effects in the vicinity of IS8.

3.3.9.9 As such, the exceedance recorded at IS8 is unlikely to be project related.

3.3.9.10 Action taken under the event and action plan:

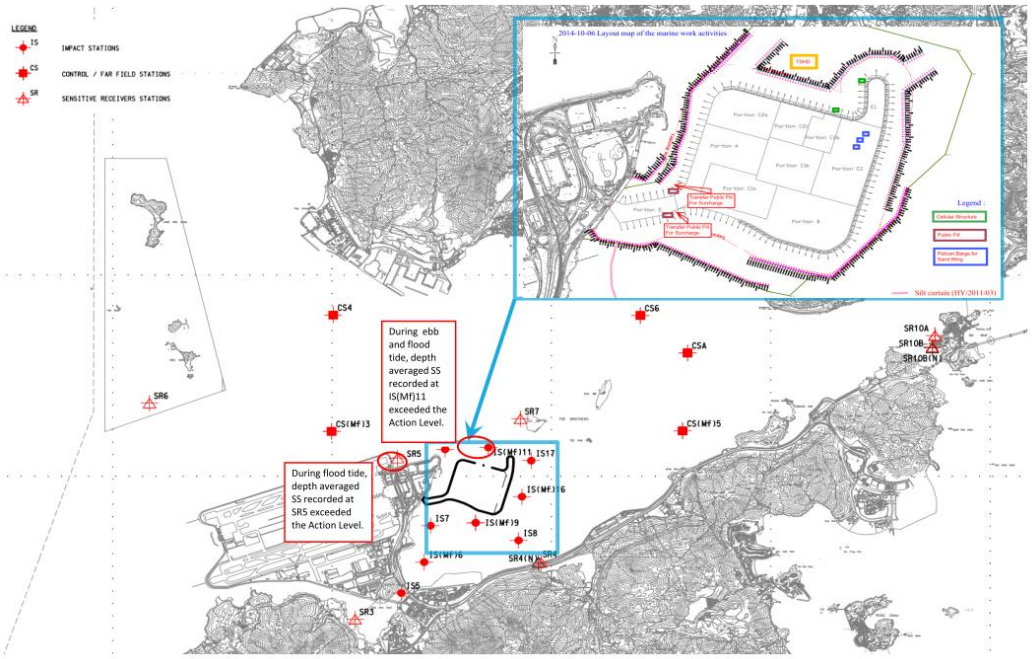
1. Not applicable as SS was not measured in situ;
2. After considering the above mentioned investigation results, it appears that it was unlikely that the SS exceedance was attributed to active construction activities of this project;
3. IEC, contractor and ER were informed via email;
4. Monitoring data,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

3.3.9.11 ET’s conclusions and recommendations for mitigation: 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.

3.3.9.12 Contractor’s actions to implement the mitigation: As informed by the Contractor, maintenance work of the silt curtain is on-going and carried out by the Contractor on a daily basis.

3.3.10 (1) One Action Level Exceedance of SS at IS(Mf)11 was recorded on 6 October 2014 during ebb tide; (2) Two Action Level Exceedances of SS at IS(Mf)11 and SR5 were recorded on 6 October 2014 during flood tide. The exceedance was confirmed after checking against relevant control station(s) during each tide following the Action and Limit Levels for Water Quality, i.e. CS6, CSA and CS(Mf)5 during flood tide and CS4 and CS(Mf)3 during ebb tide.

3.3.10.1 Layout map below shows active works conducted on 6-Oct-14. Works such as cellular structure installation was conducted at north part of the HKBCF Reclamation Works and sand filling was conducted at Portion E2 when monitoring was conducted.



3.3.10.2 Exceedance recorded at SR5 during mid-flood tide are unlikely due to marine based construction activities of the Project because:

3.3.10.3 With reference to the silt curtain checking record defects was observed at parts of the perimeter silt curtain which are close to the SR5.

3.3.10.4 With reference to the information provided by the Contractor, same types of work were carried out at almost the same locations on 3, 6 and 8 October 2014, impact water quality monitoring data recorded on 3 and 8 October 2014 at SR5 are all below the Action and Limit Level which indicates exceedance at SR5 was unlikely due to active works.

3.3.10.5 The location of monitoring station IS10 is located downstream and closer to active works than SR5 but no exceedance was recorded at IS10 during flood tide. This the acton level exceedance of SS at SR5 is unlikely attribute to active construction works.

3.3.10.6 Turbidity level recorded at SR5, IS10 and IS(Mf)11 recorded on 6 October 2014 were below the action and limit level. This indicates the turbidity level at area near SR5 was not adversely affected.

3.3.10.7 With refer to monitoring record, no silt plumes was observed when monitoring is conducted in SR5.

3.3.10.8 The exceedance was likely due to local effects in the vicinity of SR5.

3.3.10.9 Exceedances recorded at IS(Mf)11 during ebb and flood tide are unlikely due to marine based construction activities of the Project because:

3.3.10.10 With reference to the information provided by the Contractor, same types of work were carried out at almost the same locations on 3, 6 and 8 October 2014, impact water quality monitoring data recorded on 3 and 8 October 2014 at IS(Mf)11 are all below the Action and Limit Level which indicates exceedance were unlikely due to active works.

3.3.10.11 With reference to the silt curtain checking record defects was observed at parts of the perimeter silt curtain which are close to the IS(Mf)11. As informed by the Contractor, maintenance work of the silt curtain is on-going and carried out by the Contractor on a daily basis.

3.3.10.12 Turbidity level recorded at SR5, IS10, IS(Mf)11 and IS17 recorded on 6 October 2014 were below the action and limit level. This indicates the turbidity level at area near IS(Mf)11 was not adversely affected.

3.3.10.13 With refer to monitoring record, no dispersion of turbid water from the inside of the perimeter silt curtain to the outside of the perimeter silt curtain or silt plumes was observed when monitoring is conducted in IS(Mf)11.

3.3.10.14 The exceedances were likely due to local effects in the vicinity of IS(Mf)11.

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

3.3.10.16 Action taken under the event and 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 exceedance was attributed to active construction activities of this project;
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 project related, as such, actions 5 - 7 under the EAP are not considered applicable.

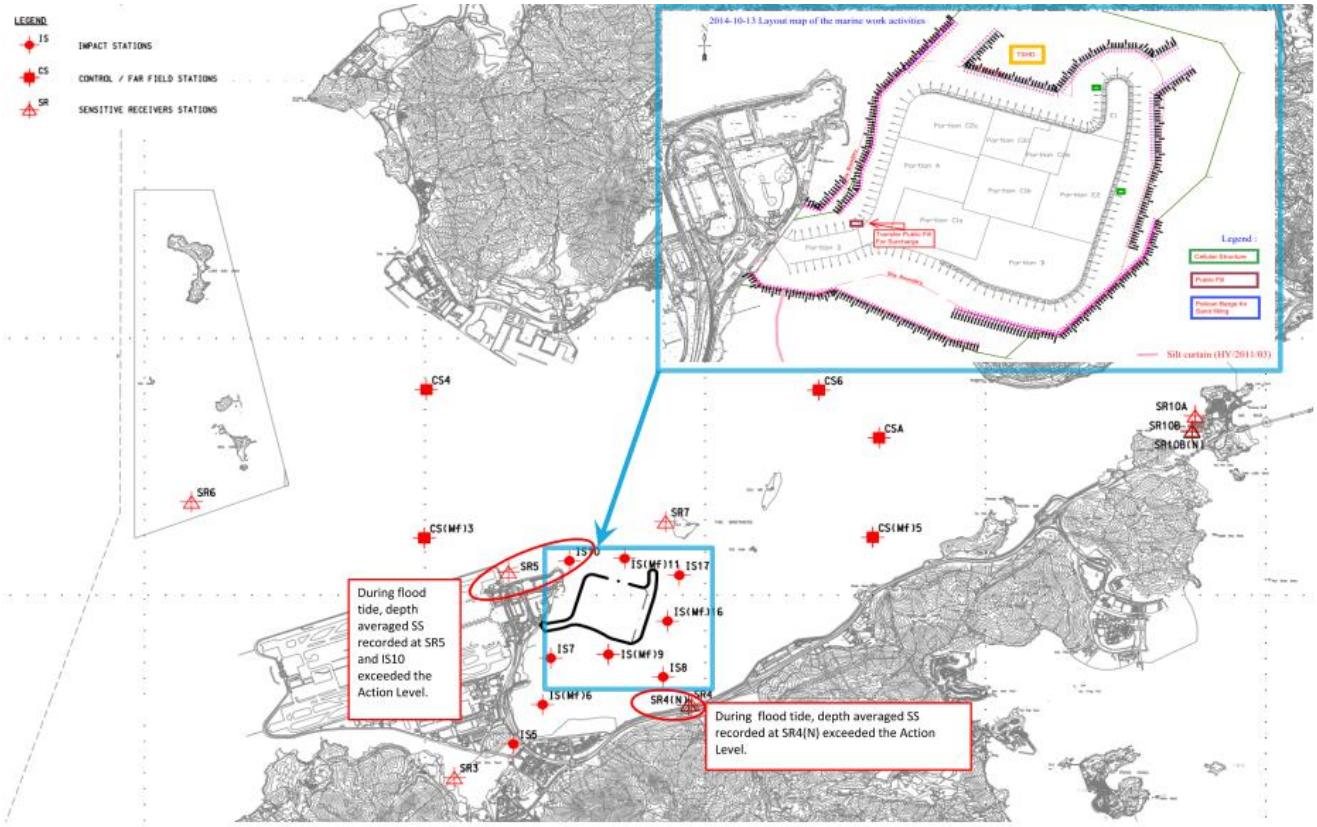
3.3.10.17 ET's conclusions and recommendations for mitigation: Mitigation measures such as perimeter silt curtain was implemented by the Contractor, however defects of the perimeter silt curtain was observed, the Contractor was reminded to ensure swift provision of maintenance to the silt curtains once defects were found.

3.3.10.18 Contractor's actions to implement the mitigation: With refer to the maintenance record provided by the Contractor, maintenance work for the defects of the northwest part of the perimeter silt curtain was conducted on 28 October 2014.

3.3.10.19 Photo shows sea condition at northwest part of HKBCF reclamation works on 6 Oct 2014 during ebb tide.

3.3.11 (3) Three Action Level Exceedances of SS were recorded at IS10, SR4(N) and SR5 on 13 October 2014 during flood tide. 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.

3.3.11.1 Layout map below shows active works conducted on 13-Oct-14. Works such as construction works for cellular structure were conducted at northeast part of the HKBCF Reclamation Works.



3.3.11.2 Exceedance recorded at IS10 and SR5 during mid-flood tide are unlikely due to marine based construction activities of the Project because:

3.3.11.3 With reference to the silt curtain checking record, defects was observed at parts of the perimeter silt curtain which are close to the IS10 and SR5.

3.3.11.4 With reference to the information provided by the Contractor, active construction works were carried out at locations closer to SR5 and IS10 on 10 October 2014. There were more active construction works carried out on 15 October 2014 during the same tide, impact water quality monitoring data recorded on 10 and 15 October 2014 at SR5 and IS10 are all below the Action and Limit Level which indicate exceedances at SR5 and IS10 were unlikely due to active construction works for cellular structure.

3.3.11.5 Relative more turbid water were observed at IS10 and SR5 during flood tide but no filling activities was observed in progress and no silt plume was observed to flow from the inside of the perimeter silt curtain to the outside of the perimeter silt curtain when monitoring was conducted at IS10 and SR5.

3.3.11.6 Also, turbidity level recorded at SR5, IS10 and IS(Mf)11 were below the action and limit level. This indicates the turbidity level at area near SR5 and IS10 was not adversely affected.

3.3.11.7 The exceedance was likely due to local effects in the vicinity of SR5 and IS10.

3.3.11.8 Exceedance recorded at SR4(N) during flood tide IS unlikely due to marine based construction activities of the Project because:

3.3.11.9 With reference to the silt curtain checking record defects was not observed at southeast part of the perimeter silt curtain which the closest to SR4(N).

3.3.11.10 The SS level recorded at IS(Mf)9, IS8 and IS(Mf)16 which located closer to active works were below the action and limit level which indicates exceedance at SR4(N) were unlikely due to active construction works for cellular structure.

3.3.11.11 Turbidity level recorded at SR4(N), IS(Mf)9, IS8 and IS(Mf)16 were below the action and limit level. This indicates the turbidity level at area near IS(Mf)11 was not adversely affected.

3.3.11.12 The exceedance was likely due to local effects in the vicinity of SR4(N).

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

3.3.11.14 Action taken under the event and action plan:

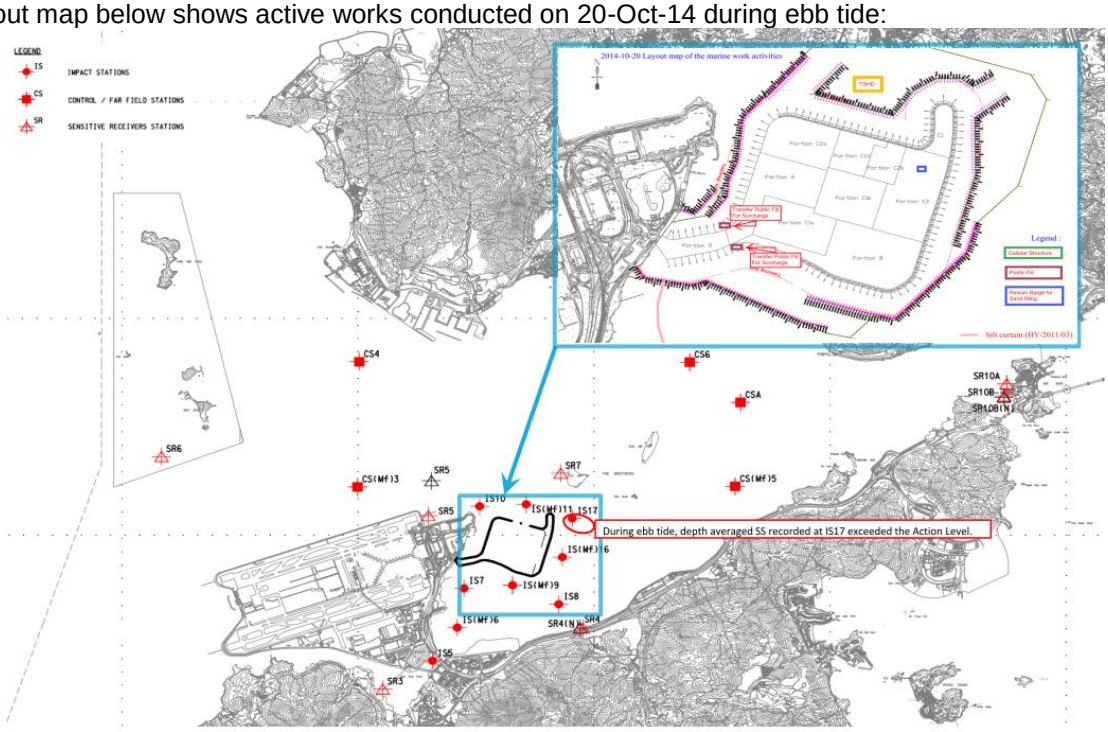
1. Not applicable as SS was not measured in situ;
2. After considering the above mentioned investigation results, it appears that it was unlikely that the SS exceedance was attributed to active construction activities of this project;
3. IEC, contractor and ER were informed via email;
4. Monitoring data,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

3.3.11.15 ET’s conclusions and recommendations for mitigation: Mitigation measures such as perimeter silt curtain was implemented by the Contractor, however defects of the perimeter silt curtain was observed, the Contractor was reminded to ensure swift provision of maintenance to the silt curtains once defects were found.

3.3.11.16 Contractor’s actions to implement the mitigation: With refer to the maintenance record provided by the Contractor, maintenance work for the defects of the northwest part of the perimeter silt curtain was conducted on 28 October 2014.

3.3.12 (1) One Action Level Exceedance of SS was recorded at IS17 on 20 October 2014 during ebb tide. The exceedance was confirmed after checking against relevant control station(s) during ebb tide i.e. CS4 and CS(Mf)3 following the Action and Limit Levels for Water Quality.

3.3.12.1 Layout map below shows active works conducted on 20-Oct-14 during ebb tide:



3.3.12.2 Exceedance recorded at IS17 is likely due to marine based construction activities of the Project because:

3.3.12.3 With refer to monitoring record, appearance of water was relatively more turbid at IS17 when compared with the appearance of water at IS(Mf)11, IS10 and IS(Mf)16 during monitoring at ebb tide on 20-Oct-14.

3.3.12.4 With refer to the layout map above; sand filling was carried out at Portion E2 on 20-Oct-14 during ebb tide.

3.3.12.5 The source of impact is likely due pelican barge's propeller movement at shallow water during ebb tide when the position of the barge was adjusted at Portion E. In addition, with refer to the silt curtain condition on 20-Oct-14, defects of the perimeter silt curtain was observed at Northeastern of the construction site. The turbid water observed at IS17 is likely due to the dispersion of turbid water from the inside of the perimeter silt curtain to the outside of the perimeter silt curtain through the defective part of the perimeter silt curtain.

3.3.12.6 Action taken under the event and action plan

1. Repeat in situ measurement is not applicable to suspended solid as SS was not measured in situ;
2. Source of impact refer to bullet point section 4.7.8.4
3. IEC, Contractor, ER and EPD were noticed of the limit level exceedances via email;
4. Monitoring data was reviewed, plant, equipment and contractor's working methods were checked. Please refer to the layout map above.
5. The Contractor was reminded to ensure swift provision of ongoing maintenance to the silt curtains and to carry out maintenance work once defects were found.
6. Mitigation measures such as perimeter silt curtain was implemented by the Contractor, however defects of the perimeter silt curtain was observed, the Contractor was reminded to ensure swift provision of maintenance to the silt curtains once defects were found. With refer to

the maintenance record provided by the Contractor, maintenance work for the defects of the Northeastern part of the perimeter silt curtain was conducted on 28-Oct-14.

7. Monitoring results show no recurrence of exceedance at IS17 during ebb tide on 22 Oct 2014.

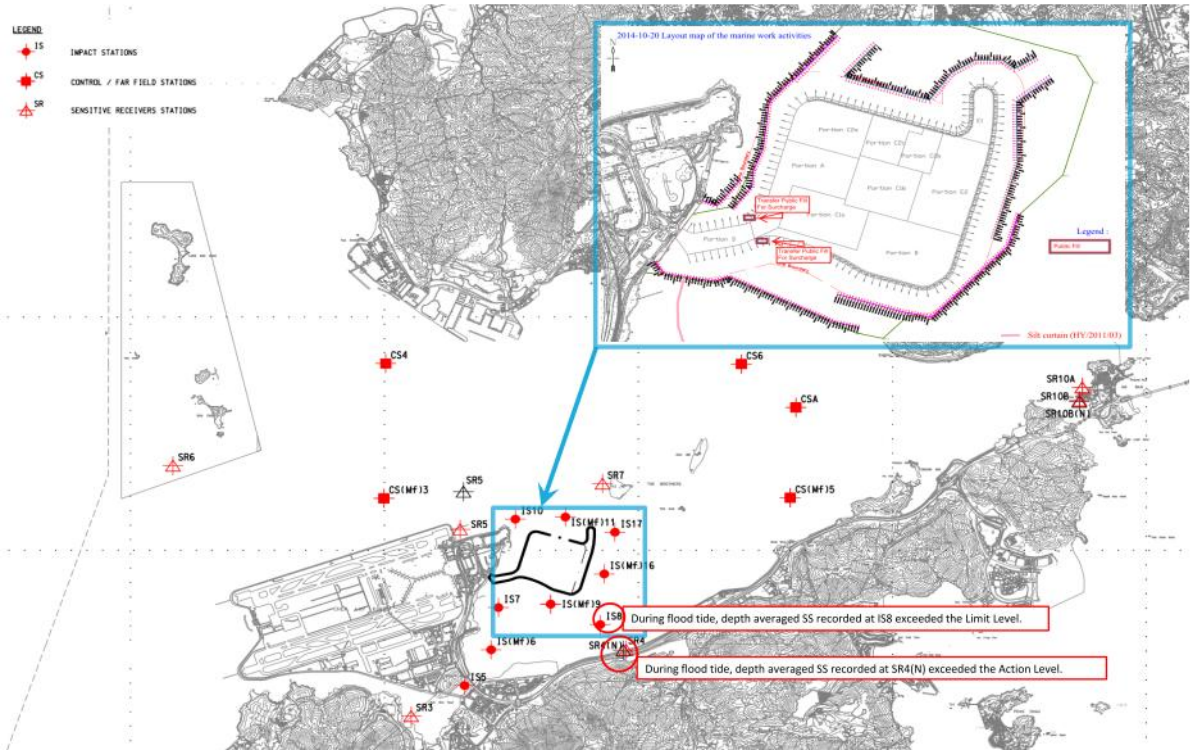
3.3.12.7 ET's conclusions and recommendations for mitigation: Exceedances recorded at IS17 are likely to be related to vessel movement at shallow water during ebb tide. The Contractor was further reminded to control the vessel traffic at this area and ensure swift provision of maintenance to the silt curtains once defect was found.

3.3.12.8 Contractor's actions to implement the mitigation: As informed by the Contractor, traffic control such as vessel speed limit was implemented and operation of sand filling vessel at shallow water during ebb tide was avoided. Monitoring results show no recurrence of exceedance at IS17 on 22-Oct-14.

3.3.12.9 With refer to the maintenance record provided by the Contractor, maintenance work for the defects of the Northeastern part of the perimeter silt curtain was conducted on 28-Oct-14.

3.3.13 (1) One action level exceedance and (1) limit level exceedance of SS were recorded at SR4(N) and IS8 respectively on 20 October 2014 during flood tide. The exceedance was 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.

3.3.13.1 Layout map below shows active works conducted on 20-Oct-14 during flood tide.



3.3.13.2 With reference to the information provided by the Contractor, only public fill was transferred at Portion D for surcharge on 20 October 2014 during flood tide and no active marine construction activity from this Contract was conducted near IS8, as such, it is unlikely to cause silt plume and contribute to the elevation of SS at IS8 during flood tide.

3.3.13.3 IS(Mf)9 is located closer to the construction site than monitoring station IS8. Depth Averaged Suspended Solids (SS) values (in mg/L) recorded during the flood tide on the same day at IS(Mf)9 was below the Action and Limit Level which shows that the water quality closer to construction site was not adversely affected.

3.3.13.4 In accordance with the silt curtain integrity checking record of 20 October 2014, no defect of the perimeter silt curtain was observed at the southeast part of HKBCF Reclamation Works. In addition, with referred to monitoring record , no sediment plume has been observed to flow from the inside of the perimeter silt curtain to the outside of the perimeter silt curtain and no discoloration of sea water has been observed at IS8.

3.3.13.5 Turbidity level recorded at IS8, IS(Mf)9 and IS(Mf)16 were below the action and limit level. This indicates the turbidity level at area near IS8 was not adversely affected.

3.3.13.6 The exceedance was likely due to local effects in the vicinity of IS8.

3.3.13.7 As such, the exceedance recorded at IS8 is unlikely to be project related.

3.3.13.8 Exceedance recorded at SR4(N) during flood tide is unlikely due to marine based construction activities of the Project because:

3.3.13.9 With reference to the information provided by the Contractor, only public fill was transferred at Portion D for surcharge on 20 October 2014 during flood tide and no active marine construction activity from this Contract was conducted near SR4(N), as such, it is unlikely to cause silt plume and contribute to the elevation of SS at SR4(N) during flood tide.

3.3.13.10 With reference to the silt curtain checking record defects was not observed at southeast part of the perimeter silt curtain which the closest to SR4(N) on 20 October 2014.

3.3.13.11 The SS level recorded at IS(Mf)9, IS8 and IS(Mf)16 which located closer to active works were below the action and limit level on 20 October 2014 which indicates exceedance at SR4(N) was unlikely due to active construction works for cellular structure .

3.3.13.12 Turbidity level recorded at SR4(N), IS(Mf)9, IS8 and IS(Mf)16 on 20 October 2014 were below the action and limit level. This indicates the turbidity level at area near IS(Mf)11 was not adversely affected.

3.3.13.13 The exceedance was likely due to local effects in the vicinity of SR4(N).

3.3.13.14 Action taken under the event and action plan:

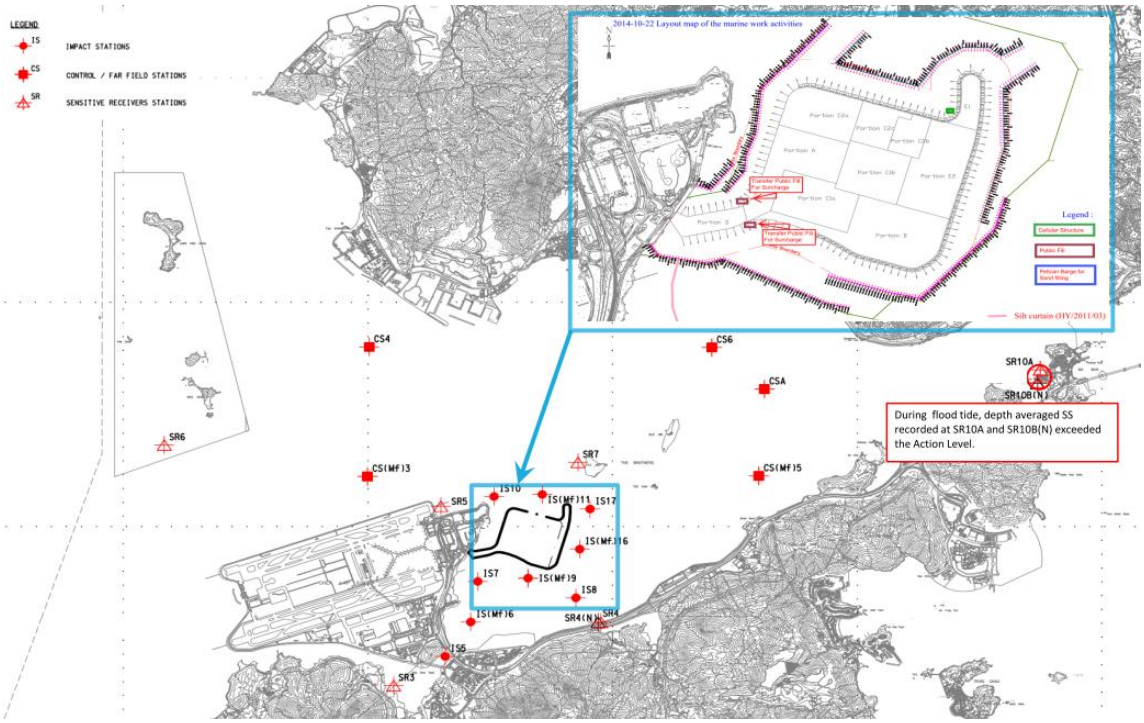
1. Not applicable as SS was not measured in situ;
2. After considering the above mentioned investigation results, it appears that it was unlikely that the SS exceedance was attributed to active construction activities of this project;
3. IEC, contractor and ER were informed via email;
4. Monitoring data,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

3.3.13.15 Nevertheless, the Contractor was reminded to ensure provision of ongoing maintenance to the silt curtains and to carry out maintenance work once

3.3.13.16 Maintenance work of the silt curtain was carried out by the Contractor on a daily basis.

3.3.14 (2) Two Action Level Exceedances of SS were recorded at SR10A and SR10B(N) on 22 October 2014 during flood tide. The exceedance was 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.

3.3.14.1 For marine works, works involve cellular structure was conducted at portion E1 during flood tide on 22 October 2014. Also refer to layout map below:



3.3.14.2 Exceedances were not due to marine based construction works of the Project because:

3.3.14.3 IS(Mf)11 and IS10 are located downstream and closer to the active works than monitoring station SR10B(N) and SR10A during flood tide on 22 October 2014. Depth Averaged Suspended Solids (SS) values (in mg/L) recorded during flood tide on the same day at IS(Mf)11 and IS10 were below the Action and Limit Level which indicates project work is unlikely to contribute to the action level exceedance recorded at SR10B(N) and SR10A.

3.3.14.4 The monitoring location of monitoring station SR10B(N) and SR10A are considered upstream and remote to the active works of this project during flood tide. Therefore it was unlikely that the exceedances recorded at SR10B(N) and SR10A during flood tide were due to active construction activities of this project on 22 October 2014.

3.3.14.5 The exceedances are likely due to local effects in the vicinity of SR10B(N) and SR10A.

3.3.14.6 Action taken under the event and action plan:

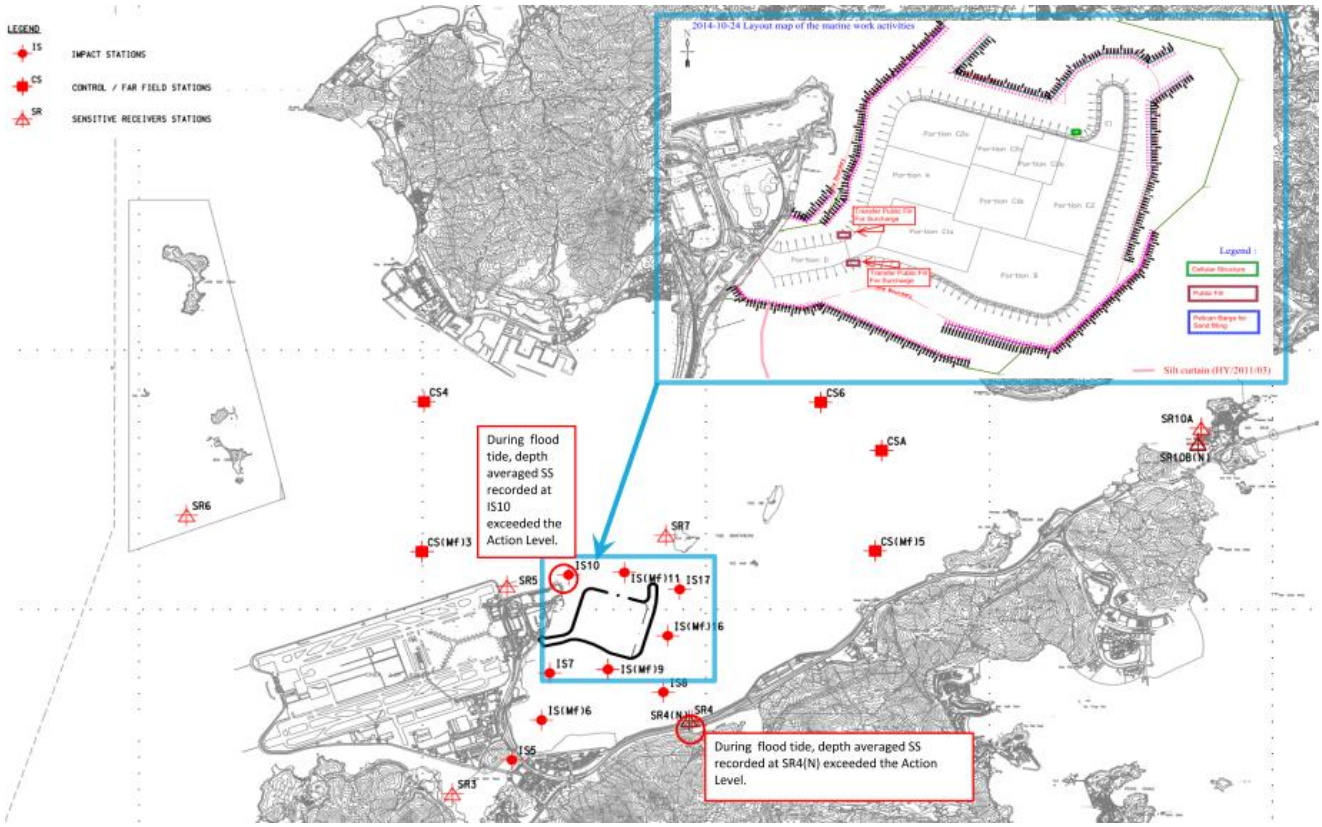
1. Not applicable as SS was not measured in situ;
2. After considering the above mentioned investigation results, it appears that it was unlikely that the SS exceedance was attributed to active construction activities of this project;
3. IEC, contractor and ER were informed via email;
4. Monitoring data,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

3.3.14.7 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.

3.3.14.8 As informed by the Contractor, maintenance work of the silt curtain is on-going and carried out by the Contractor on a daily basis.

3.3.15 (2) Two Action Level Exceedances of SS were recorded at IS10 and SR4(N) during flood tide on 24 October 2014. The exceedance was 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.

3.3.15.1 Layout map below shows active works conducted on 24-Oct-14.



3.3.15.2 Exceedance recorded at IS10 during mid-flood tide is unlikely due to marine based construction activities of the Project because:

3.3.15.3 With reference to the silt curtain checking record, defects was observed at parts of the perimeter silt curtain which are close to the IS10.

3.3.15.4 With reference to the information provided by the Contractor, active construction works for cellular structure was carried out northeast part of the perimeter silt curtain. Almost the same active construction works was carried out on 22 and 27 October 2014 during the same tide, impact water quality monitoring data recorded on 22 and 27 October 2014 IS10 are all below the Action and Limit Level which indicate exceedance recorded at IS10 was unlikely due to active construction works for cellular structure.

3.3.15.5 No filling activities was observed in progress and no silt plume was observed to flow from the inside of the perimeter silt curtain to the outside of the perimeter silt curtain when monitoring was conducted at IS10.

3.3.15.6 Also, turbidity level recorded at SR5, IS10 and IS(Mf)11 recorded on 24 October 2014 were below the action and limit level. This indicates the turbidity level at area near IS10 was not adversely affected.

3.3.15.7 The exceedance was likely due to local effects in the vicinity of IS10.

3.3.15.8 Exceedance recorded at SR4(N) during flood tide IS unlikely due to marine based construction activities of the Project because:

3.3.15.9 With reference to the silt curtain checking record defects was not observed at southeast part of the perimeter silt curtain which the closest to SR4(N).

3.3.15.10 The SS level recorded at IS(Mf)9, IS8 and IS(Mf)16 which located closer to active works were below the action and limit level which indicates exceedance at SR4(N) were unlikely due to active construction works for cellular structure .

3.3.15.11 Turbidity level recorded at SR4(N), IS(Mf)9, IS8 and IS(Mf)16 recorded on 24 October 2014 were below the action and limit level. This indicates the turbidity level at area near IS(Mf)11 was not adversely affected.

3.3.15.12 The exceedance was likely due to local effects in the vicinity of SR4(N).

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

3.3.15.14 Action taken under the event and action plan:

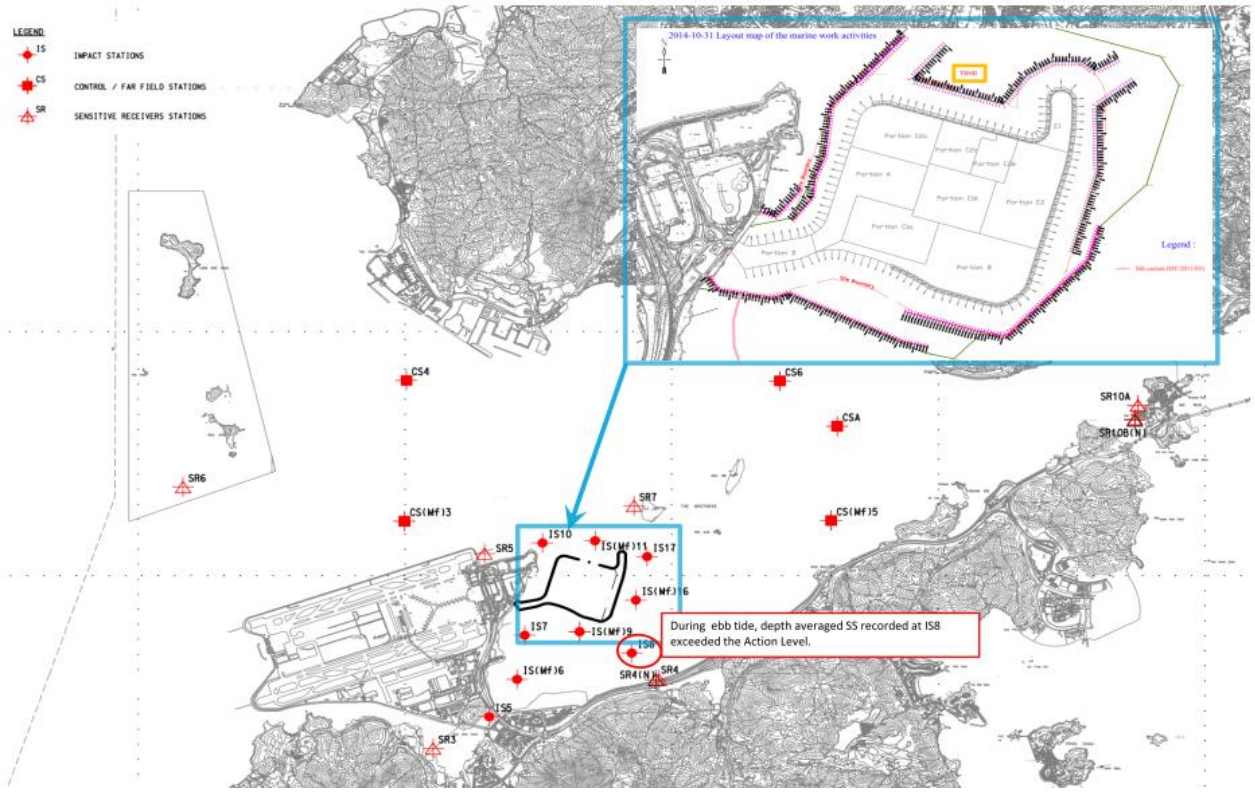
1. Not applicable as SS was not measured in situ;
2. After considering the above mentioned investigation results, it appears that it was unlikely that the SS exceedance was attributed to active construction activities of this project;
3. IEC, contractor and ER were informed via email;
4. Monitoring data,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

3.3.15.15 ET’s conclusions and recommendations for mitigation: Mitigation measures such as perimeter silt curtain was implemented by the Contractor, however defects of the perimeter silt curtain was observed, the Contractor was reminded to ensure swift provision of maintenance to the silt curtains once defects were found.

3.3.15.16 Contractor’s actions to implement the mitigation: With refer to the maintenance record provided by the Contractor, maintenance work for the defects of the northwest part of the perimeter silt curtain was conducted on 28 October 2014.

3.3.16 For the action level exceedance of SS noted at IS8 during ebb tide on 31 October 2014. The exceedance was confirmed after checking against relevant control station(s) during ebb tide i.e. CS4 and CS(Mf)3 following the Action and Limit Levels for Water Quality.

3.3.17 Layout map below shows active works conducted on 31-Oct-14 during ebb tide.



3.3.17.1 Exceedance recorded at IS8 during ebb tide is unlikely due to marine based construction activities of the Project because:

3.3.17.2 With reference to the information provided by the Contractor, no marine works was conducted during ebb tide, it is unlikely to cause silt plume and contribute to the elevation of SS at IS8 during ebb tide.

3.3.17.3 IS(Mf)9 is located closer to the construction site than monitoring station IS8. Depth Averaged Suspended Solids (SS) values (in mg/L) recorded during the ebb tide on 31 October 2014 at IS(Mf)9 was below the Action and Limit Level which shows that the water quality closer to construction site was not adversely affected.

3.3.17.4 In accordance with the silt curtain integrity checking record of 31 October 2014, no defect of the perimeter silt curtain was observed at the southeast part of HKBCF Reclamation Works. In addition, with referred to monitoring record , no sediment plume has been observed to flow from the inside of the perimeter silt curtain to the outside of the perimeter silt curtain and no discoloration of sea water has been observed at IS8.

3.3.17.5 Turbidity level recorded at IS8, IS(Mf)9 and IS(Mf)16 on 31 October were below the action and limit level. This indicates the turbidity level at area near IS8 was not adversely affected

3.3.17.6 The exceedance was likely due to local effects in the vicinity of IS8.

3.3.17.7 As such, the exceedance recorded at IS8 is unlikely to be project related.

3.3.17.8 Action taken under the event and action plan:

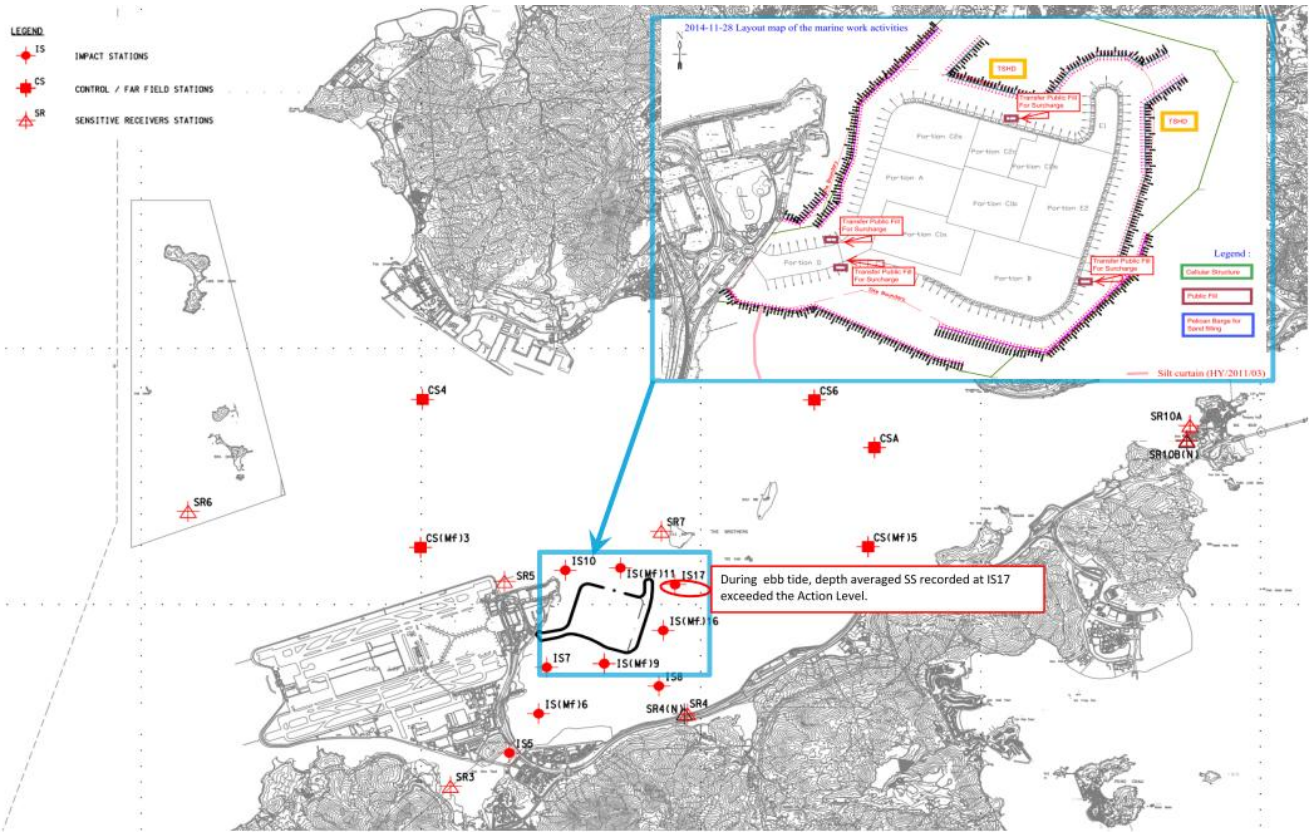
1. Not applicable as SS was not measured in situ;
2. After considering the above mentioned investigation results, it appears that it was unlikely that the SS exceedance was attributed to active construction activities of this project;
3. IEC, contractor and ER were informed via email;
4. Monitoring data,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

3.3.17.9 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.

3.3.17.10 As informed by the Contractor, maintenance work of the silt curtain is on-going and carried out by the Contractor on a daily basis.

3.3.18 For water quality, one (1) action level exceedance was recorded at IS17 on 28 November 2014 during mid ebb tide. The exceedance was confirmed after checking against relevant control station(s) during ebb tide i.e. CS4 and CS(Mf)3 following the Action and Limit Levels for Water Quality.

3.3.18.1 Layout map below shows active works conducted on 28 November 2014 during ebb tide.



3.3.18.2 Exceedance recorded at IS17 on 28 November 2014 during ebb tide is unlikely due to marine based construction activities of the Project because:

3.3.18.3 With refer to monitoring record, appearance of water was relatively more turbid at IS17 when compared with the appearance of water at IS(Mf)11, IS10 and IS(Mf)16 during monitoring at ebb tide on 28 November 2014.

3.3.18.4 However, with refer to the layout map attached; only public fill was being transferred as surcharge at near Portion D, C2c and B and since no filling was conducted during ebb tide on IS17 on 28 November 2014.Ttherefore, they are unlikely contribute to the action level exceedance of SS at IS17.

3.3.18.5 The location and type of active works conducted were almost the same on 26 and 28 November 2014 during ebb tide but no exceedance was recorded a IS17 on 26 November 2014. This indicates that the exceedance at monitoring station IS17 were unlikely to be contributed by active works.

3.3.18.6 In addition, with referred to monitoring record, no sediment plume has been observed to flow from the inside of the perimeter silt curtain to the outside of the perimeter silt curtain.

3.3.18.7 Turbidity level recorded at IS17, IS(Mf)11 and IS(Mf)16 on 28 November 2014 were below the action and limit level. This indicates the turbidity level at area near IS17 was not adversely affected.

3.3.18.8 The exceedance was likely due to local effects in the vicinity of IS17.

3.3.18.9 As such, the exceedance recorded at IS17 is unlikely to be project related.

3.3.18.10 Action taken under the action plan

3.3.18.11 Not applicable as SS was not measured in situ;

3.3.18.12 After considering the above mentioned investigation results, it appears that it was unlikely that the SS exceedance was attributed to active construction activities of this Contract;

3.3.18.13 IEC, contractor and ER were informed via email;

3.3.18.14 Monitoring data, all plant, equipment and Contractor's working methods were checked;

3.3.18.15 Since it is considered that the SS exceedance is unlikely to be project related, as such, actions 5-7 under the EAP are not considered applicable.

3.3.18.16 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.

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

3.3.19 The event action plan is annexed in Appendix K.

3.4 Dolphin Monitoring

3.4.1 In accordance with the Project 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 September – November 2014

Number of Impact Surveys Completed^	6
Survey Distance Travelled under Favourable On- Effort Condition	660.3km
Number of Sightings	15 sightings (9 sightings are ”on effort” (which are all under favourable condition), 6 “sightings are opportunistic”)
Number of dolphin individual sighted	54 individuals (the best estimated group size)
Dolphin Encounter Rate#	NEL: 0 NWL: 2.1
Dolphin Group Size	Average of NEL: 0 Average of NWL: 3.6 Varied from 1-8 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.

3.4.5 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.)

3.4.6 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. Investigation report is annexed in Appendix L. Actions were taken according to the Event Action Plan for impact dolphin monitoring. Please refer to Appendix L for details of action taken.

Table 3.7 Summary of STG and ANI encounter rates in September - November 2014

	NEL	NWL	Level Exceeded
STG*	0	2.1	Limit
ANI**	0	7.1	

*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

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

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 Project. 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 Filling was observed conducted by barge, the Contractor was reminded to keep the filling material wet or lower the conveyor belt to prevent generation of fugitive dust. (Reminder)

3.5.4 Dust was observed when truck passed a slope; the Contractor was reminded to enhance the dust control measures to prevent generation of fugitive dust. The Contractor enhanced the dust control measures to prevent generation of fugitive dust. (Closed)

3.5.5 Fugitive dust was observed generated when truck pass through a road at Portion D. The Contractor is reminded to provide sufficient dust control measures to prevent generation of fugitive dust. The Contractor provided dust control measures to prevent generation of fugitive dust. (Closed)

3.5.6 Dust control measure was not observed at the ramp of Portion D. The Contractor was reminded to provide dust control measure such to ramp with exposed soil which the water car has no access. (Reminder)

3.5.7 Exposed sand was observed at near Portion A. The Contractor was reminded to enhance dust control measures. (Reminder)

Noise

3.5.8 No adverse observation was identified in the reporting quarter.

Chinese White Dolphin

3.5.9 No adverse observation was identified in the reporting quarter.

Water Quality

3.5.10 Muddy water was observed at land area where ground investigation works was conducted, the Contractor was reminded to prevent muddy water to be released out of the site boundary. (Reminder)

3.5.11 Defects such as disconnection and insufficient overlapping of the perimeter silt curtain have been observed. The Contractor was advised to rectify the defects such as disconnection and insufficient overlapping of the perimeter silt curtain as soon as possible. The Contractor rectified the defects such as disconnection and insufficient overlapping of the perimeter silt curtain as soon as possible. (Closed)

3.5.12 Public fill were observed on the edge of barge at Portion D. The Contractor was reminded to clear it to prevent potential runoff to the surrounding (Reminder)

3.5.13 Defects such as disconnection and insufficient overlapping of the perimeter silt curtain have been observed. The Contractor was advised to rectify the defects such as disconnection and insufficient overlapping of the perimeter silt curtain as soon as possible. The Contractor rectified the defects such as disconnection and insufficient overlapping of the perimeter silt curtain. (Closed)

3.5.14 Silty water was observed at both side of the northern part of the perimeter silt curtain. The Contractor was reminded to conduct necessary checking of the integrity of the silt curtain and swiftly carry out

maintenance and repair once any defect is found. Photo record shows that the situation was not observed on 10 Oct 2014. (Closed)

3.5.15 Powered Mechanical Equipment (PME) was observed located close to sea. The Contractor was reminded to put the PME away from sea to prevent potential runoff. (Reminder)

3.5.16 Oil water mixture was observed stored inside oil drums without cover/lid and drip tray. The Contractor was reminded to provide cover/lid to tightly cover oil drums and provide drip tray to prevent spillage and runoff. The oil drum was removed by the Contractor. (Closed)

Chemical and Waste Management

3.5.17 General refuses observed at cell 56 and on water of arc cell between cell 55 and 56 and near a container office. The Contractor was reminded to clear the general refuses and keep the site clean and tidy. The Contractor cleared the general refuses and kept the site clean and tidy. (Closed)

3.5.18 General refuses was observed near a container office. The Contractor was reminded to clear the general refuses and keep the site clean and tidy. The Contractor cleared the general refuses and keeps the site clean and tidy. (Closed)

3.5.19 Battery and oil drum were placed on bare ground without drip tray. The Contractor was reminded to provide mitigation measures such as drip tray such that spillage/leakage can be easily collected. The Contractor provided mitigation measures such as drip tray so that spillage/leakage can be easily collected. (Closed)

3.5.20 Water was observed accumulated inside drip tray on barge SHB209. The Contractor was reminded to clear the water accumulated inside drip tray regularly. The Contractor cleared the water accumulated inside drip tray. (Closed)

3.5.21 Stack of cardboard paper and wave barriers were observed when inspection was conducted at area between steel cell #91 – 94. The Contractor was reminded to stored general refuse within a temporary refuse collection facility, in appropriate containers prior to collection and disposal. (Reminder)

3.5.22 General refuse was observed at portion D, the Contractor was reminded to clear the general refuse regularly to keep the site clean and tidy. The Contractor cleared the generate refuse. (Closed)

3.5.23 General refuse was observed on ground and temporary waste collection or rubbish bin was not observed. The Contractor was reminded to regularly collect and store general refuse within a temporary refuse collection facility, in appropriate containers prior to collection and disposal. The Contractor provided regularly collect and store general refuse within a temporary refuse collection facility and general refuse was stored in containers prior to collection and disposal. (Closed)

3.5.24 Rubbish bin was not observed. The Contractor was reminded to provide rubbish bin to collect and temporarily keep general refuse. The Contractor provided mitigation measures such as rubbish bin to collect and temporarily keep general refuse. (Closed)

3.5.25 Defects (hole and deformed frame) were observed within frame of a drip trays. The Contractor was reminded to provide proper mitigation measure such as drip tray without defect to PMEs. The Contractor provided proper mitigation measure such as drip tray without defect to PMEs. (Closed)

3.5.26 Oil drum was observed without drip tray. The Contractor was reminded to provide mitigation measures such as drip tray or bunding to oil drum. The Contractor was provided mitigation measures such as drip tray or bunding to oil drum. (Closed)

3.5.27 Oil drum was observed without drip tray. The Contractor was reminded to provide mitigation measures such as drip tray or bunding to oil drum. The Contractor provided mitigation measures such as drip tray to oil drum. (Closed)

3.5.28 Oil drum was observed without drip tray, the Contractor was reminded to provide drip tray to oil drums. The Contractor cleared the oil drum. (Closed)

3.5.29 It was observed that the frame of a drip tray was deformed; the Contractor was reminded to provide drip tray without defects. The Contractor provided drip tray without defects to oil drums. (Closed)

3.5.30 Oil and water mixture was observed accumulated inside a drip tray. The Contractor was reminded to clear the mixture to prevent runoff. The Contractor cleared the mixture. (Closed)

3.5.31 Oil drum and generator was observed without drip tray. The Contractor was reminded to provide mitigation measures such as drip trays to oil drum and generator. The Contractor removed the oil drum and generated from the area (Closed)

3.5.32 Oil stain was observed on sea area and the Contractor was reminded to take actions following the spill response plan and rectify the situation. The Contractor used absorption booms and pads as SOC to remove all the observed oil stain on 13 Nov 14 and the used booms and pads were treated and disposed of as chemical waste. (Closed)

3.5.33 Oil drum was observed without drip tray. The Contractor was reminded to provide mitigation measures such as drip tray to oil drums. The Contractor removed the oil drum from the area. (Closed)

Landscape and Visual Impact

3.5.34 No relevant works was carried out in the reporting Quarter.

Others

3.5.35 The text on the EP was blurred and cannot be seen clearly on barge SHB209. The Contractor was reminded to replace the copy of the EP so that the text of the EP can be shown clearly. The Contractor replaced the copy of the EP so that the text of the EP can be shown clearly. (Closed)

3.5.36 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 project. Sufficient numbers of receptacles were available for general refuse collection and sorting.

4.1.2 As advised by the Contractor, 4,909,877m^3 of fill were imported for the Project use in the reporting period. 444kg of paper/cardboard packaging, 342,625kg of metals, 1kg of plastics, 1,200kg of chemical waste, 260m^3 of general refuse were generated and disposed of in the reporting period. 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.

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 Project site and associated works areas throughout the construction phase.

5.1.7 EPD conducted inspection at HKBCF Reclamation Works at 11:36am on 23 October 2014, silt plume was observed spreading out from the Portion E1 of the construction site through the silt curtain when filling activities by derrick barge (振明 28) was undergoing.

5.1.7.1 EPD subsequently issued a yellow form and requested Contractor to report them via ET Leader and IEC within 7 days after issuing the yellow form for the remedial actions and preventive actions taken to improve the situation.

5.1.7.2 Insufficient Mitigation Measures: Silt plume was found spreading out from Portion E1 of the construction site through the silt curtain on 23 October 2014.

5.1.7.3 Review of Contractor's investigation report and rectifications.

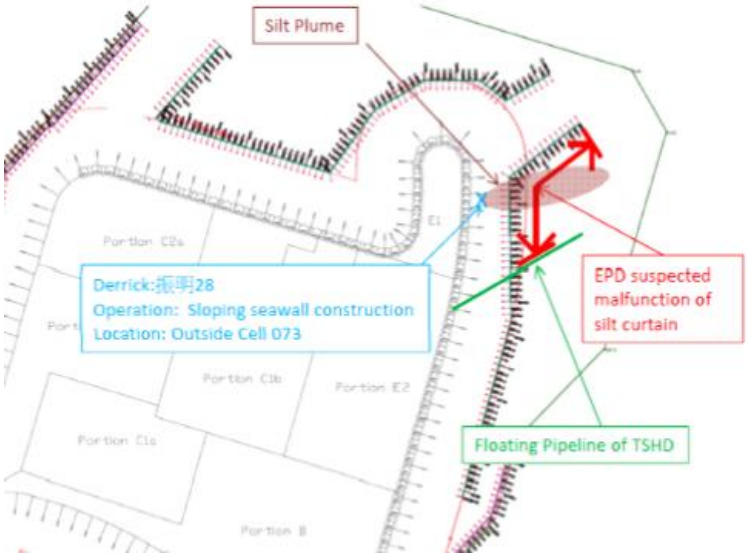
5.1.7.4 Investigation actions:

- Review of monitoring data obtained 20, 22, 24 and 27 October 2014.
- Investigation report provided by the Contractor on 29 October 2014 was reviewed:
- Diver checking and rectification record for integrity of silt curtain has been checked.
- Inspection condition of sea area near Portion E1 on 31 October 2014 around 1pm.

5.1.7.5 Investigation results:

- Suspended Solids (SS) level and turbidity level recorded at IS(Mf)11, IS17 and IS(Mf)16 and IS8 on 20, 22, 24 and 27 October 2014 were reviewed. (for IWQM data, refer to Appendix J)
- Review of Suspended Solids (SS) level and turbidity level recorded at IS(Mf)11, IS17 and IS(Mf)16 and IS8 on 20 October 2014:
- Limit Level Exceedance of SS at IS8 during flood tide and Action Level Exceedance of IS17 during ebb tide was noted on 20 October 2014. After investigation, the exceedance recorded at IS8 are unlikely to be project related. However, exceedance recorded at IS17 is likely due to marine based construction activities of the Project. For details of investigation, please refer to investigation details section 4.7.3 to 4.7.4.
- Review of Suspended Solids (SS) level and turbidity level recorded at IS(Mf)11, IS17, IS(Mf)16 and IS8 on 22, 24 and 27 October 2014:
- Turbidity level and Suspended Solids recorded on 22, 24 and 27 October 2014 at IS(Mf)11, IS17, IS(Mf)16 and IS8 were below the action and limit level. This indicates the turbidity level and suspended solid at sea area close to portion E1 was not adversely affected on 22, 24 and 27 October 2014.
- The silt plume was no longer observed at 02:09pm on 23 October 2014 after derrick barge (振明 28) ceased the work at 11:40am.
- The Contractor arranged diver to check the integrity of the concerned silt curtain. Minor damaged found on the concerned silt curtain and rectification works had been carried out by the Contractor.

- Diver checking and rectification record for integrity of silt curtain has been checked and it shows that the part of the silt curtain which was suspected to be malfunction (showed by red arrow in the diagram below) has been rectified by the Contractor.



- Subsequently, a rock placement trial was conducted by the Contractor on 28 October 2014. Silt plume was observed during the process but Figure 3.8 of the investigation report shows that spreading to the outside of the silt curtain was prevented by the silt curtain.
- Photo records taken on 31 October 2014 shows 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:

5.1.7.6 As informed by the Contractor, rockfill materials would be placed more slowly by the derrick as well as the lowest dropping point to minimize the generation of silt plume. Daily site inspection in the area would be conducted so that any damaged parts of silt curtain can be observed and repaired promptly.

5.1.7.7 The Contractor was further reminded to ensure swift provision of maintenance to the perimeter silt curtains once defects of the perimeter silt curtain were observed and continue the preventive measures during rock filling and keep the site inspected at least daily to ensure compliance with respect to the recommendations in the EIA Report and EM&A Manual in particular on EIA Ref. Section 9.11.1.1

5.1.7.8 IWQM results on 29 and 31 October 2014 were review, no exceedance was recorded at IS17, IS(Mf)11 and IS(Mf)16 which indicates that no adverse water quality impact after the implementation of the preventive measures.

5.1.7.9 To prevent recurrence of the observed incident, inspection has been conducted by the Contractor on a daily basis to review if there is an impact to the water quality caused by rock filling activities using derrick barge and to promptly provide maintenance once any damaged parts of silt curtain is observed. The Contractor was further reminded to carry out swift rectification works to the situation once any adverse impact to the water quality is observed.

5.1.7.10 The Contractor was reminded that all water quality mitigation measures with respect to the recommendations in the EIA Report and EM&A Manual in particular on EIA Ref. Section 9.11.1.1 should be fully and properly implemented.

5.1.8 Review of Contractor's work and mitigation measures with respect to the recommendations in the EIA Ref. Section 9.11.1.6:

5.1.8.1 Actions taken:

- Review of monitoring results on 27 and 29 October 2014.
- Ad hoc site inspection was conducted on 31 October 2014

5.1.8.2 Investigation results:

- IWQM data obtained on 27 and 29 October 2014 were reviewed; no water quality monitoring exceedance was noted on 27 and 29 October 2014.
- Ad hoc site inspection was subsequently conducted on 31 October 2014 but no silt plume or turbid water was observed on 31 October 2014. Photo records taking on 31 October 2014 at around 01:00pm which shows the sea condition at sea area near Portion E1 of the HKBCF Reclamation Works:

5.1.8.3 The water quality will be closely monitored through IWQM works of this Contract, should any water quality exceedance is recorded, investigation will be conducted following the EAP for IWQM. Furthermore, joint site inspection will be conducted regularly to check whether the water quality at monitoring stations of HKBCF reclamation works is adversely affected.

5.1.8.4 The Contractor was reminded that all water quality mitigation measures with respect to the recommendations in the EIA Report and EM&A Manual in particular on EIA Ref. Section 9.11.1.6 should be fully and properly implemented.

5.1.9 As informed by the Contractor, an oil spillage incident (<10m^2) was found at open sea area near cells 51 at 2:00 p.m. on 12 November 2014. Following the spill response plan, ET, IEC and the RSS were informed of the incident by the Contractor. The oil spill was identified on 12 November 2014 as continuous source with approximately less than 10m^2 spread.

5.1.9.1 Investigation actions:

- Details of the oil spillage incident (12 November 2014) including size, location, time of the spillage and Contractor's action taken in response to the spill incident, have been reviewed.
- Site inspection was conducted on 14 November 2014 to observe the sea condition near sea area next to steel cell 51.
- Impact water quality monitoring record of 12, 14 and 17 November 2014 have been reviewed.

5.1.9.2 The oil spillage was caused by a drilling machine fell into the water near steel cell 51. The drilling machine which caused the oil spillage was lifted up and as informed by the Contractor, the machine was lifted and removed from the water on 12 November 2014 soon after the oil spillage incident was observed. (Also refer to photo record below).

5.1.9.3 The Contractor used absorption booms to enclose and remove the floating oil from water and absorption booms used was collected using disposal bags as part of the spill kits item. The used absorption booms were disposed of as chemical waste (Also refer to photo record below).

5.1.9.4 Site inspection was conducted 13 November 2014. Oil spillage was further observed on site. The oil spill observed on 13 November 2014 was identified as discrete, non-continuous source with approximately 50m2 spread. After the inspection jointly conducted with RSS and the Contractor, the source of oil spillage was not identified. In addition, there was no exceedance recorded at monitoring station IS(Mf)16 on 12, 14 and 17 November 2014 which is the closest to sea area next to steel cell 51. This indicates it is unlikely that water quality is affected by the oil spillage occurred at sea area near steel cell 51.

5.1.9.5 Ad hoc site inspection was conducted on 14 November 2014 and no oil spillage was observed on site. (Also refer to photo record below).

5.1.9.6 The contractor was reminded to continue to follow the spill response plan in the event of accidental oil spillage.

5.1.10 As informed by the Contractor, oil was observed at sea area near cells 51 at 10:00am on 13 November 2014. Following the spill response plan ET, IEC and the RSS were informed of the incident by the Contractor.

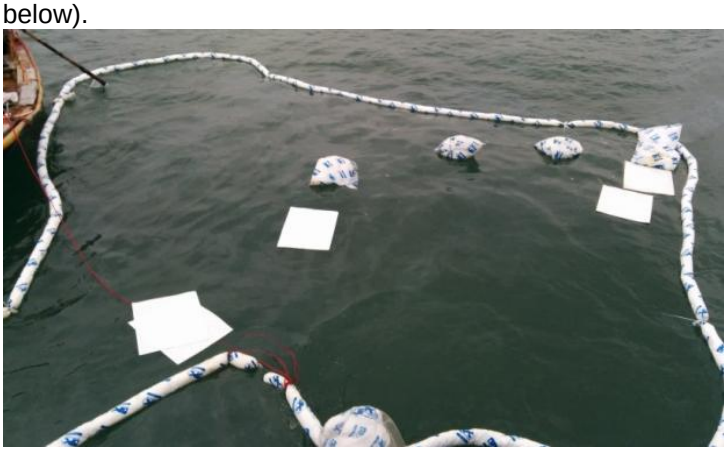
5.1.10.1 Investigation actions:

- Details of the oil spillage incident (13 November 2014) including size, location, time of the spillage and Contractor's action taken in response to the spill incident, have been reviewed.
- Site inspection was conducted on 14 November 2014 to observe the sea condition near sea area next to steel cell 51.
- Impact water quality monitoring record of 14 and 17 November 2014 has been reviewed.

5.1.10.2 The oil spill was identified during join site inspection conducted by the Contractor, ET and RSS on 13 November 2014 as discrete, non-continuous source with approximately 50m2 spread.

5.1.10.3 After the inspection jointly conducted with ET, RSS and the Contractor on 13 November 2014, the source of oil spillage was not identified

5.1.10.4 The Contractor used absorption booms as secondary oil container to contain and remove the floating oil from water and absorption booms used was collected using disposal bags as part of the spill kits item. The used absorption booms were disposed of as chemical waste. (Also refer to photo record below).



5.1.10.5 The oil stain observed was limited at nearby eastern sea area within the silt curtain.

5.1.10.6 An independent site inspection was conducted on 14 November 2014 at sea area next to steel cell 51 and no oil spillage was observed on site. (Also refer to photo record below).

5.1.10.7 Impact water quality monitoring record of 14 and 17 November 2014 of IS(Mf)16 which is the closest location to location of observed oil spill have been reviewed. There is no water quality exceedance recorded at IS(Mf) 16 on 14 and 17 November 2014.

5.1.10.8 The contractor was reminded to continue to follow the spill response plan in the event of accidental oil spillage.

5.1.10.9 Recommendation:

- The Contractor was reminded to keep chemical and chemical waste containers in good condition and free from corrosion and damage which may impair the performance of the containers.
- The Contractor was reminded to provide tightly closed lids to chemical container so as to avoid leakage of chemicals and chemical waste. In addition, the Contractor was reminded to ensure every chemical and chemical waste containers securely closed or sealed, correctly placed and kept clean.
- The contractor was reminded to continue to follow the spill response plan in the event of accidental oil spillage.

6 SUMMARY OF EXCEEDANCES OF THE ENVIRONMENTAL QUALITY PERFORMANCE LIMIT

6.1 Summary of Exceedances of the Environmental Quality Performance Limit

6.1.1 One (1) 24-hour TSP result at AMS3B exceeded Action Level on 27 October 2014, after investigation, the exceedance was considered not 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 A total of (23) twenty-three exceedances were recorded in this reporting quarter: (1) One Action Level Exceedance of SS at IS8 at mid-flood tide on 5 September 2014, (2) Two Action Level Exceedances of SS at IS5 and SR3 respectively at Mid-Ebb tide were recorded on 10 September 2014 and (1) one Action level exceedance of SS were recorded at SR10B(N) at Mid-Flood tide on 12 September 2014. (1) One Limit Level Exceedance of Turbidity and (1) Limit Level Exceedance of Suspended Solids were recorded at IS17 during ebb tide on 10 October 2014; (1) One Action Level Exceedance of SS at SR10B(N) was recorded on10 October 2014 during flood tide; (1) One Action Level Exceedance of SS at IS8 was recorded on 3 October 2014 during flood tide; (1) One Action Level Exceedance of SS at IS(Mf)11 was recorded on 6 October 2014 during ebb tide; (2) Two Action Level Exceedances of SS at IS(Mf)11 and SR5 were recorded on 6 October 2014 during flood tide; (3) Three Action Level Exceedances of SS were recorded at IS10, SR4(N) and SR5 on 13 October 2014 during flood tide; (1) One Action Level Exceedance of SS was recorded at IS17 on 20 October 2014 during ebb tide; (1) action level exceedance and (1) limit level exceedance of SS were recorded at SR4(N) and IS8 respectively on 20 October 2014 during flood tide; (2) Two Action Level Exceedances of SS were recorded at SR10A and SR10B(N) on 22 October 2014 during flood tide; (2) Two Action Level Exceedances of SS were recorded at IS10 and SR4(N) during flood tide on 24 October 2014. (1) Action Level Exceedance of SS was recorded at IS8 on 31 October 2014 during ebb tide. (1) action level exceedance of SS was recorded at IS17 on 28 November 2014 during mid ebb tide.

6.1.4 After investigation, all impact water quality exceedances were considered not related to this Contract except the Limit Level Exceedance of Turbidity, Limit Level Exceedance of Suspended Solids recorded at IS17 during ebb tide on 10 October 2014 and Action Level Exceedance of Suspended Solids recorded at IS17 during flood tide on 20 October 2014, which were considered related to this Contract. Recommendation has been given and rectification has been carried on by the Contractor on 28 October 2014.

6.1.5 One (1) limit level exceedance of Chinese White 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.

6.1.6 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 Five (5) environmental complaints have been received in reporting quarter.

7.1.3 As informed by the Contractor on 15 Sept 14, there is an environmental complaint received on 29 August 14 by HyD. The complainant who lives at Tower 4, Melody Garden, Tuen Mun called reflecting environmental issues arisen from many sand barges in the waters facing her apartment. According to the complainant, sand was blown into her apartment because the barges were not covered and it was worse when sand was transferred from one vessel to another on conveyor belts.

7.1.3.1 Investigation Actions:

- 1hr TSP and 24hrs TSP monitoring data of 4 August to 1 September 2014 have been reviewed.
- Site inspections were conducted jointly on 28 August and 4 September 2014 with RSS and the Contractor.

7.1.3.2 Investigation findings:

- There is no sufficient information provided by the complainant to make sure that the concerned barges are related to this project.
- Date of the observed impact was not specified by the complainant so the impact air quality monitoring (IAQM) results available for August 2014 and early September 2014 for monitoring stations close to the concerned area – AQMS1, ASR1, ASR5, ASR6 and ASR10 have been reviewed and there was no impact air quality monitoring result that shows 1-hour TSP or 24-hour TSP exceeded the action (AL)/limit level (LL).
- Photo record below shows that sand barges were not covered but they are equipped with watering equipment and in order to prevent generation of fugitive dust, watering equipment was used to keep the sand filling material wet.

- In addition, site inspection has been jointly conducted with the Contractor and RSS on 28 August and 4 September 2014, but no generation of fugitive dust was observed to be caused by barges loaded with filling material. Transfer of sand between vessels was not observed.

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

7.1.3.4 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 to keep the surface of stockpile of filling material wet.

7.1.4 As informed by the Contractor, a public complaint has been received by ICC on 9 September 2014 and it was referred to this Contract, the complainant raised concern about a large amount of general refuse such as food container and plastic bottles were observed on sea area off the Gold Coast, Tuen Mun.

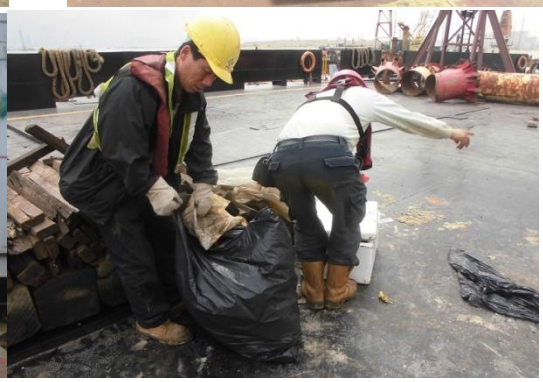
7.1.4.1 Investigation actions:

- Site inspections were conducted jointly on 25 September 2014 with RSS and the Contractor and 18 jointly with RSS, IEC and the Contractor
- Site visit to the sea area between HKBCF Reclamation Works and Tune Mun was conducted on 22 September 2014.
- Checking sample of training record

7.1.4.2 Investigation findings:

- There is no sufficient information provided by the complainant to make sure that the general refuse such as food container and plastic bottles are related to this project.
- Photo of site condition was reviewed, temporary refuse collection facility/ appropriate containers such as rubbish bins were provided by the Contractor on reclamation and vessel to collect general refuses, please refer to the photo below:
-



- Photo records shows collection of general refuse by workers on a regular basis:


- Site inspections were conducted on 18 September 2014 jointly with RSS, IEC and the Contractor and jointly on 25 September 2014 with RSS and the Contractor, but no general refuse was observed on sea area.
- In addition, site visit to the sea area between HKBCF Reclamation Works and Tune Mun was conducted on 22 September 2014. No general refuse was observed to flow from HKBCF Reclamation Works to Tune Mun area. Also refer to photo record below:

7.1.4.3 Below photo shows condition of the sea area facing Tuen Mun on 22 September14.

7.1.4.4 Below photo shows condition of the sea area facing HKBCF Reclamation Works on 22 September 14.

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

7.1.4.6 The Contractor was advised to ensure to continue the provision of waste mitigation measures to barges on reclamation land and vessels.

7.1.4.7 The Contractor was recommended that the site and surroundings shall be kept tidy and litter free. General refuse generated on-site should be stored in enclosed bins or compaction units separately from construction and chemical wastes.

7.1.5 An air quality complaint has been received by the Contractor on 29 September 2014 via email. The complaint was first received by EPD via email on 5 September 2014 and it was referred by EPD to the HZMB HK Project Management Office (Management Office) to handle the complaint directly on 10 September 2014 following the request of the complainant. The Management Office responded to the complainant directly on 17 September 2014.

7.1.5.1 Subsequently, the complainant followed up with the response given by the Management Office and complained again on 26 September 2014. This follow up complaint was referred to the project team to investigate. The complainant complained that many of the sand barges did not stay at area of reclamation works near Chek Lap Kok or at the sea area near Tuen Mun River Trade Terminal but moored in the sea area close to Melody Garden. Sand were easily blown to the inside house during days with moderate wind.

7.1.5.2 The complainant suggested that, sand barges should be requested to move away from residential areas and sand barges should be provided with cover fabric and sprinkling to minimise environmental pollution caused by sand.

7.1.5.3 Investigation Actions:

- 1hr TSP and 24hrs TSP monitoring data of September 2014 have been reviewed.
- Site inspections were conducted jointly with RSS, IEC and the Contractor on 18 September 2014 and jointly with RSS and the Contractor on 25 September 2014.

7.1.5.4 Investigation findings:

- There is no sufficient information provided by the complainant to make sure that the concerned barges are related to this project.
- Date of the observed impact was not specified by the complainant so the impact air quality monitoring (IAQM) results available for September 2014 for monitoring stations close to the concerned area – AQMS1, ASR1, ASR5, ASR6 and ASR10 have been reviewed and there was no impact air quality monitoring result that shows 1-hour TSP or 24-hour TSP exceeded the action (AL)/limit level (LL).
- Photo record below shows that sand barges were not covered but they are equipped with watering equipment and in order to prevent generation of fugitive dust, watering equipment was used to keep the sand filling material wet.

- In addition, site inspections were conducted jointly with RSS, IEC and the Contractor on 18 September 2014 and jointly with RSS and the Contractor on 25 September 2014, but no generation of fugitive dust was observed to be caused by barges loaded with filling material.
- After investigation, there is no adequate information to conclude the observed impact is related to this Contract.

7.1.5.5 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 to keep the surface of stockpile of filling material wet.

7.1.6 As informed by the Contractor on 14 October 2014, a follow up air quality complaint has been received by this Contract (same case to environmental complaint EC-026). The complainant complained that about 20-30 sand barges always moor at the sea area opposite to tower 4 of Melody Garden and Richland Garden. This problem has affected the air quality.

7.1.6.1 Investigation Actions:

- 1hr TSP and 24hrs TSP monitoring data of complaint period 1- 15 October 2014 have been reviewed.
- Site inspections were conducted jointly with RSS, IEC and the Contractor on 16 October 2014 and jointly with RSS and the Contractor on 23 October 2014.

7.1.6.2 Investigation findings:

- There is no sufficient information provided by the complainant to make sure that the concerned barges are related to this project.
- Date of the observed impact was not specified by the complainant so the impact air quality monitoring (IAQM) results within the complaint period 1- 15 October 2014 for monitoring stations close to the concerned area – AQMS1, ASR1, ASR5, ASR6 and ASR10 have been reviewed and there was one action level exceedance of 24hr TSP on impact air quality monitoring result recorded at ASR1 but no information which shows that the action level exceedance at ASR1 is related to vessel of this Contract. IAQM data AQMS1, ASR1, ASR5, ASR6 and ASR10 also available online from: http://www.hzmbenpo.com/php/list_air_year_All.php)
- As informed by the Contractor, the Contractor would continue to provide watering to stockpile of sand on sand delivery barges.
- Photo record below shows that sand barges were not covered but they are equipped with watering equipment and in order to prevent generation of fugitive dust, watering equipment was used to keep the sand filling material wet.

- In addition, site inspections were conducted jointly with RSS, IEC and the Contractor on 16 October 2014 and jointly with RSS and the Contractor on 23 October 2014, but no generation of fugitive dust was observed to be caused by barges loaded with filling material.
- Sand barges usually moor at around Sham Shui Kok anchorage area and the Contractor would continue to provide watering to stockpile of sand on sand delivery barges, therefore the potential impact to resident areas concerned by the complainant is low.
- The Contractor usually moor vessel at around Sham Shui Kok anchorage area (Except upon request by HK government and under this circumstances, then they will moor at Tuen Mun waters shortly for inspection.)

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

7.1.6.4 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 to keep the surface of stockpile of filling material wet.

7.1.7 With reference to RSS's letter ref.: 211036/(HY2010/02)/M05/432/B07605 dated on 30 September 2014 pertaining the performance on barges operations at the sea area off the Tuen Mun Ferry Pier. A complaint concerning leakage of sand filling material from vessels at sea area off Tuen Mun Ferry Pier was first received by EPD from Tuen Mun District Council (TM DC) on 19 September 2014 and it was subsequently referred by EPD to the Highways Department to handle on 23 September 2014 through EPD's memo ref.: EP/RW/0000362128. Referring to EPD's Memo, it is also noted that some local residents at Tuen Mun expressed their concern that the stockpile of dusty sand material on the barges should be covered with impervious sheeting to avoid causing fugitive dust emissions of sand and dust. Subsequently, TM DC followed up their complaint with Highways Department on 17 October 2014. The follow up complaint concerning water quality impact at sea area off Tuen Mun area was referred to the project team to response on 17 October 2014.

7.1.7.1 Investigation actions:

- Spot check of travel route record of sand delivery barges and review whether sand delivery barges of this Contract would moor/stay at sea area near Tuen Mun Ferry Pier
- Impact water quality monitoring (IWQM) results recorded in September and October 2014 which cover IWQM station(s) - IS14, IS15 and SR9 which are near to the concern area(s), have been reviewed.
- Regular site inspections were conducted jointly with RSS, IEC and the Contractor on 16 October 2014 and jointly with RSS and the Contractor on 23 October 2014.

7.1.7.2 Investigation findings:

- Spot check of travel route record also shows that that sand delivering vessels follow a designated marine travel route. However, only in particular cases, those vessels will moor near sea area off Butterfly beach for government department to carry out inspection. In general, the sand delivery barges were requested by the Contractor to moor as far away from residence as possible and continue to provide watering to stockpile of sand on sand delivery barges.
- Impact water quality monitoring (IWQM) results recorded in September and October 2014 which cover IWQM station(s) - IS14, IS15 and SR9 which are near to the concern area(s), have been reviewed. However no IWQM exceedance was noted in September and October 2014 at monitoring station IS14, IS15 and SR9 which are near to the concern area(s). (IWQM data of IS14, IS15 and SR9 available online at: http://www.hzmbenpo.com/php/list_water_year.php)
- In addition, site inspections were conducted jointly with RSS, IEC and the Contractor on 16 October 2014 and jointly with RSS and the Contractor on 23 October 2014, but no leakage of sand material or generation of fugitive dust was observed to be caused by barges loaded with sand material.
- In addition, sand delivery barges are equipped with watering equipment and in order to prevent generation of fugitive dust, watering equipment was used to keep the sand filling material wet.

- Nonetheless, as informed by the Contractor, the Contractor would study the feasibility of covering stockpile of sand on sand delivery barges.

7.1.7.3 After investigation, there is no adequate information to conclude the observed impact is related to this Contract. However, as informed by the Contractor, the Contractor would study the feasibility of covering stockpile of sand on sand delivery barges.

7.1.7.4 Nonetheless, the Contractor was advised to ensure that all vessels should have regular maintenance to ensure that all Sand Barge functioning well so that any leakage of filling material is prevented.

7.1.7.5 The Contractor was reminded, when vessel was not requested by government department for inspection at sea area off Tuen Mun Ferry Pier, the Contractor should avoid mooring their vessels at the concerned area as far as possible.

7.1.7.6 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 to keep the surface of stockpile of filling material wet.

7.1.7.7 In response to the concern raised on both air quality and water quality, effectiveness of relevant mitigation measures would be monitored through regular EM&A monitoring and site inspection of this project.

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

7.1.9 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 Project. With implementation of recommended effective environmental mitigation measures, the Project'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 Project. 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 Project commenced on 12 March 2012.

8.3.2 One (1) 24-hour TSP result at AMS3B exceeded Action Level on 27 October 2014, after investigation, the exceedance was considered not 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 A total of (23) twenty-three exceedances were recorded in this reporting quarter: (1) One Action Level Exceedance of SS at IS8 at mid-flood tide on 5 September 2014, (2) Two Action Level Exceedances of SS at IS5 and SR3 respectively at Mid-Ebb tide were recorded on 10 September 2014 and (1) one Action level exceedance of SS were recorded at SR10B(N) at Mid-Flood tide on 12 September 2014. (1) One Limit Level Exceedance of Turbidity and (1) Limit Level Exceedance of Suspended Solids were recorded at IS17 during ebb tide on 10 October 2014; (1) One Action Level Exceedance of SS at SR10B(N) was recorded on10 October 2014 during flood tide; (1) One Action Level Exceedance of SS at IS8 was recorded on 3 October 2014 during flood tide; (1) One Action Level Exceedance of SS at IS(Mf)11 was recorded on 6 October 2014 during ebb tide; (2) Two Action Level Exceedances of SS at IS(Mf)11 and SR5 were recorded on 6 October 2014 during flood tide; (3) Three Action Level Exceedances of SS were recorded at IS10, SR4(N) and SR5 on 13 October 2014 during flood tide; (1) One Action Level Exceedance of SS was recorded at IS17 on 20 October 2014 during ebb tide; (1) action level exceedance and (1) limit level exceedance of SS were recorded at SR4(N) and IS8 respectively on 20 October 2014 during flood tide; (2) Two Action Level Exceedances of SS were recorded at SR10A and SR10B(N) on 22 October 2014 during flood tide; (2) Two Action Level Exceedances of SS were recorded at IS10 and SR4(N) during flood tide on 24 October 2014. (1) Action Level Exceedance of SS was recorded at IS8 on 31 October 2014 during ebb tide.(1) action level exceedance of SS was recorded at IS17 on 28 November 2014 during mid ebb tide.

8.3.5 After investigation, all impact water quality exceedances were considered not related to this Contract except the Limit Level Exceedance of Turbidity, Limit Level Exceedance of Suspended Solids recorded at IS17 during ebb tide on 10 October 2014 and Action Level Exceedance of Suspended Solids recorded at IS17 during flood tide on 20 October 2014, which were considered related to this Contract. Recommendation has been given and rectification has been carried on by the Contractor on 28 October 2014.

8.3.6 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.

8.3.7 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.

8.3.8 As informed by the Contractor on 15 Sept 14, there is an environmental complaint received on 29 August 14 by HyD. The complainant who lives at Tower 4, Melody Garden, Tuen Mun called reflecting environmental issues arisen from many sand barges in the waters facing her apartment. According to the complainant, sand was blown into her apartment because the barges were not covered and it was worse when sand was transferred from one vessel to another on conveyor belts. After investigation, there is no adequate information to conclude the observed impact is related to this Contract.

8.3.9 As informed by the Contractor, a public complaint has been received by ICC on 9 September 2014 and it was referred to this Contract, the complainant raised concern about a large amount of general refuse such as food container and plastic bottles were observed on sea area off the Gold Coast,

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

8.3.10 An air quality complaint has been received by the Contractor on 29 September 2014 via email. The complaint was first received by EPD via email on 5 September 2014 and it was referred by EPD to the HZMB HK Project Management Office (Management Office) to handle the complaint directly on 10 September 2014 following the request of the complainant. The Management Office responded to the complainant directly on 17 September 2014. Subsequently, the complainant followed up with the response given by the Management Office and complained again on 26 September 2014. This follow up complaint was referred to the project team to investigate. The complainant complained that many of the sand barges did not stay at area of reclamation works near Chek Lap Kok or at the sea area near Tuen Mun River Trade Terminal but moored in the sea area close to Melody Garden. Sand were easily blown to the inside house during days with moderate wind. The complainant suggested that, sand barges should be requested to move away from residential areas and sand barges should be provided with cover fabric and sprinkling to minimise environmental pollution caused by sand. After investigation, there is no adequate information to conclude the observed impact is related to this Contract.

8.3.11 As informed by the Contractor on 14 October 2014, a follow up air quality complaint has been received by this Contract (same case to environmental complaint reported in the last reporting month). The complainant complained that about 20-30 sand barges always moor at the sea area opposite to tower 4 of Melody Garden and Richland Garden. This problem has affected the air quality. After investigation, there is no adequate information to conclude the observed impact is related to this Contract.

8.3.12 With reference to RSS's letter ref.: 211036/(HY2010/02)/M05/432/B07605 dated on 30 September 2014 pertaining the performance on barges operations at the sea area off the Tuen Mun Ferry Pier. A complaint concerning leakage of sand filling material from vessels at sea area off Tuen Mun Ferry Pier was first received by EPD from Tuen Mun District Council (TM DC) on 19 September 2014 and it was subsequently referred by EPD to the Highways Department to handle on 23 September 2014 through EPD's memo ref.: EP/RW/0000362128.Referring to EPD's Memo, it is also noted that some local residents at Tuen Mun expressed their concern that the stockpile of dusty sand material on the barges should be covered with impervious sheeting to avoid causing fugitive dust emissions of sand and dust. Subsequently, TM DC followed up their complaint with Highways Department on 17 October 2014. The follow up complaint concerning water quality impact at sea area off Tuen Mun area was referred to the project team to response on 17 October 2014. After investigation, there is no adequate information to conclude the observed impact is related to this Contract.

8.3.13 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.

8.3.14 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.

8.3.15 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.