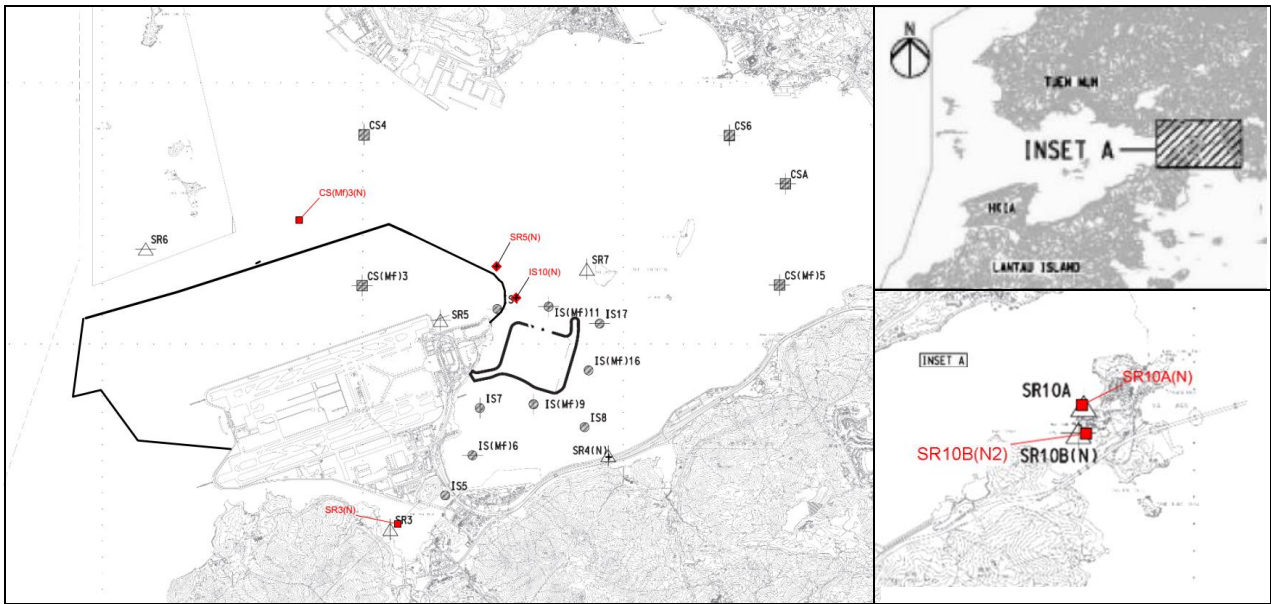


Contract No. HY/2013/01 - Hong Kong- Zhuhai- Macao Bridge Hong Kong Boundary Crossing Facilities – Passenger Clearance Building Notifications of Environmental Quality Limits Exceedances							Notification No.: 20171204SS
Date of Notification: 8 December 2017				Date of Investigation Report: 14 December 2017			
Works Inspected: Data collected from water sampling works on 4 December 2017 and the results were issued on 8 December 2017							
Monitoring Location: Water Quality Monitoring Station							
Parameter: Dissolved Oxygen (DO) / Suspended Solid (SS)/ Turbidity (TURB)							
Action & Limit Level (AL & LL) / Measured Level:							
PARAM	STATION	DEPTH	AL (mg/L)	LL (mg/L)	MEASURED AT MID-EBB TIDE (mg/L)	MEASURED AT MID-FLOOD TIDE (mg/L)	
SS	SR6	Depth Average	23.5 and 120% (i.e. 17.9 for mid-ebb/13.6 for mid-flood) of upstream control station's SS at the same tide of the same day	34.4 and 130% (i.e. 19.4 for mid-ebb/14.8 for mid-flood) of upstream control station's SS at the same tide of the same day and 10mg/L for WSD Seawater intakes	26.0	19.3	
	SR7				12.1	24.1	
	SR10B(N)				13.4	24.0	
Notes: AL means Action Level. LL means Limit Level. Bold means AL exceedances. Bold with underline means LL exceedances. Upstream control stations of mid-ebb tide: CS(Mf)3(N) and CS4 Upstream control stations of mid-flood tide: CS(Mf)5, CS6 and CSA							

On 4 December 2017, one AL exceedance of SS at SR6 was recorded during mid-ebb tide and two AL exceedances of SS at SR7 and SR10B(N) were recorded during mid-flood tide.



Actions taken/ to be taken:

As the exceedance was not related to the Contract, no immediate actions are required. However, the Contractor was also reminded to implement environmental mitigation measures in accordance with Environmental Mitigation Implementation Schedule.

Prepared by: Evan Wong

Title: Environmental Team Representative

Signature: 

Date: 14 December 2017

Checked by: Keith Chau

Title: Environmental Team Leader

Signature: 

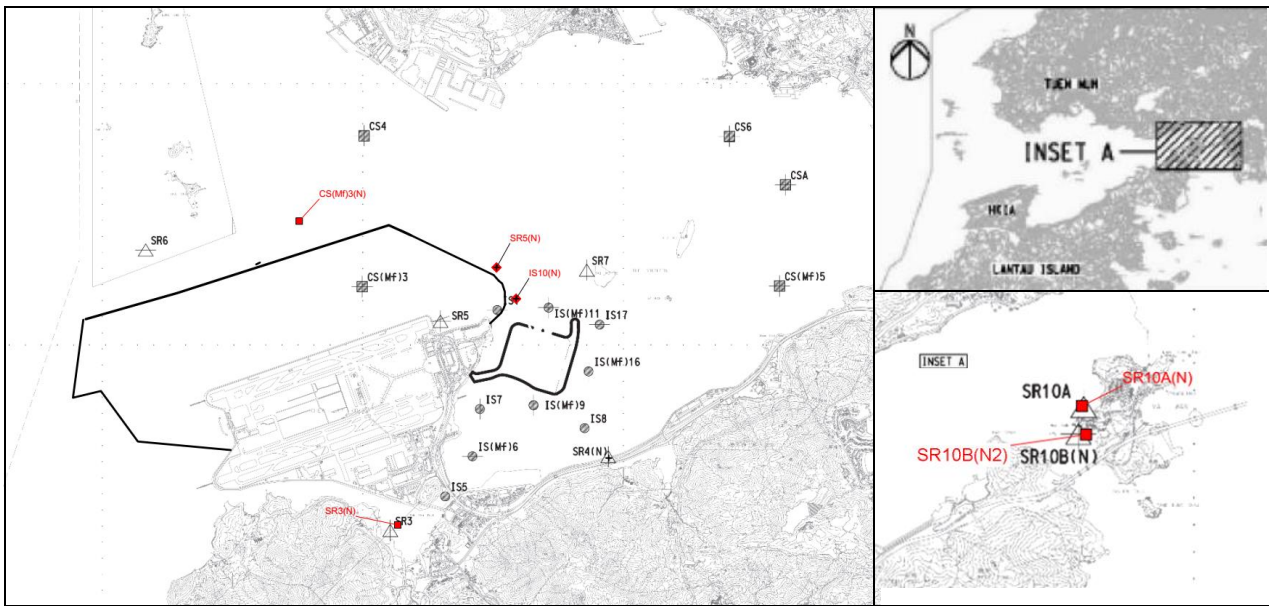
Date: 14 December 2017

Copied to : Contractor, Engineer Representative and IEC/ENPO

Contract No. HY/2013/01 - Hong Kong- Zhuhai- Macao Bridge Hong Kong Boundary Crossing Facilities – Passenger Clearance Building Notifications of Environmental Quality Limits Exceedances					Notification No.: 20171206SS	
Date of Notification: 14 December 2017			Date of Investigation Report: 19 December 2017			
Works Inspected: Data collected from water sampling works on 6 December 2017 and the results were issued on 14 December 2017						
Monitoring Location: Water Quality Monitoring Station						
Parameter: Dissolved Oxygen (DO) / Suspended Solid (SS)/ Turbidity (TURB)						
Action & Limit Level (AL & LL) / Measured Level:						
PARAM	STATION	DEPTH	AL (mg/L)	LL (mg/L)	MEASURED AT MID-EBB TIDE (mg/L)	MEASURED AT MID-FLOOD TIDE (mg/L)
SS	IS8	Depth Average	23.5 and 120% (i.e. 21.1 for mid-ebb/15 for mid-flood) of upstream control station's SS at the same tide of the same day	34.4 and 130% (i.e. 22.8 for mid-ebb/16.3 for mid-flood) of upstream control station's SS at the same tide of the same day and 10mg/L for WSD Seawater intakes	19.3	31.8
	IS(Mf)9				7.1	24.0
	SR5(N)				11.9	25.6
	SR6				14.2	27.5
Notes: AL means Action Level. LL means Limit Level. Bold means AL exceedances. <u>Bold with underline</u> means LL exceedances. Upstream control stations of mid-ebb tide: CS(Mf)3(N) and CS4 Upstream control stations of mid-flood tide: CS(Mf)5, CS6 and CSA						

Possible reason for Action / Limit Level Non-compliance:



On 6 December 2017, four AL exceedances of SS at IS8, IS(Mf)9, SR5(N) and SR6 were recorded during mid-flood tide.



As confirmed by the Contractor, there was no marine transportation and marine-based work on 6 December 2017. No site runoff within the Contract site has been observed. Therefore, it is concluded that the exceedances were not related to the Contract.

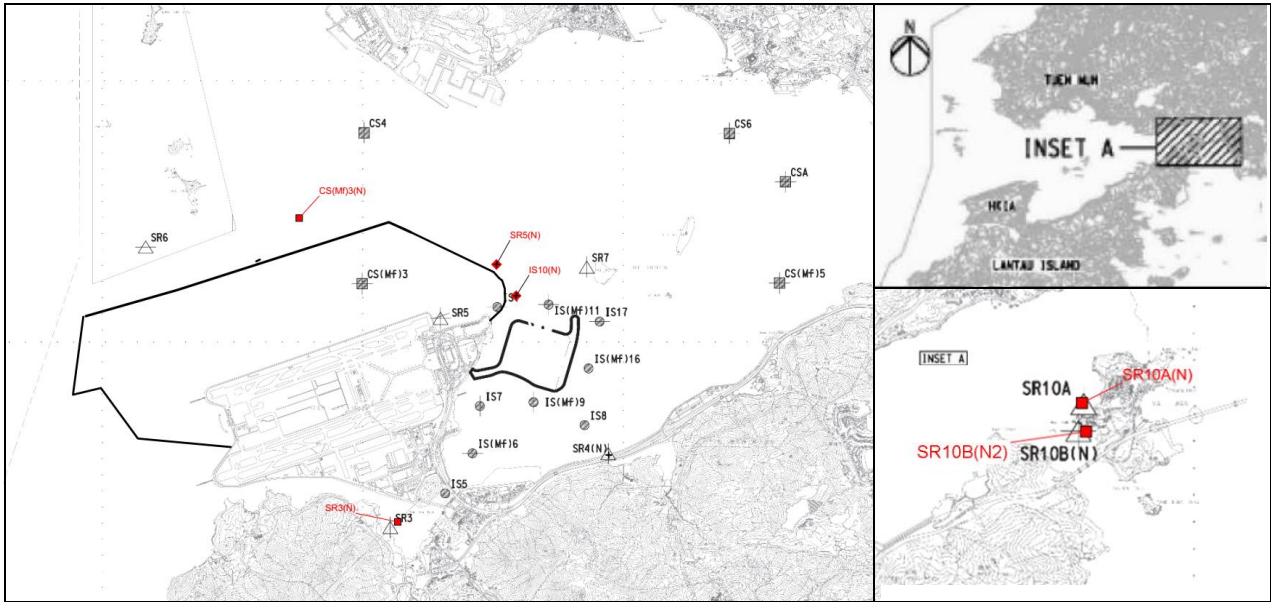
Actions taken/ to be taken:

As the exceedance was not related to the Contract, no immediate actions are required. However, the Contractor was also reminded to implement environmental mitigation measures in accordance with Environmental Mitigation Implementation Schedule.

Prepared by:	<u>Ruby Law</u>	Title:	<u>Environmental Team Representative</u>
Signature:	<u></u>	Date:	<u>19 December 2017</u>
Checked by:	<u>Keith Chau</u>	Title:	<u>Environmental Team Leader</u>
Signature:	<u></u>	Date:	<u>19 December 2017</u>
Copied to	: Contractor, Engineer Representative and IEC/ENPO		

Contract No. HY/2013/01 - Hong Kong- Zhuhai- Macao Bridge Hong Kong Boundary Crossing Facilities – Passenger Clearance Building Notifications of Environmental Quality Limits Exceedances					Notification No.: 20171208SS	
Date of Notification: 15 December 2017			Date of Investigation Report: 19 December 2017			
Works Inspected: Data collected from water sampling works on 8 December 2017 and the results were issued on 15 December 2017						
Monitoring Location: Water Quality Monitoring Station						
Parameter: Dissolved Oxygen (DO) / Suspended Solid (SS)/ Turbidity (TURB)						
Action & Limit Level (AL & LL) / Measured Level:						
PARAM	STATION	DEPTH	AL (mg/L)	LL (mg/L)	MEASURED AT MID-EBB TIDE (mg/L)	MEASURED AT MID-FLOOD TIDE (mg/L)
SS	IS8	Depth Average	23.5 and 120% (i.e. 21 for mid-ebb/15.1 for mid-flood) of upstream control station's SS at the same tide of the same day	34.4 and 130% (i.e. 22.8 for mid-ebb/16.4 for mid-flood) of upstream control station's SS at the same tide of the same day and 10mg/L for WSD Seawater intakes	19.3	33.3
	SR4(N)				18.4	26.3
	SR6				26.8	22.7
	SR10A				11.0	26.9
Notes: AL means Action Level. LL means Limit Level. Bold means AL exceedances. <u>Bold with underline</u> means LL exceedances. Upstream control stations of mid-ebb tide: CS(Mf)3(N) and CS4 Upstream control stations of mid-flood tide: CS(Mf)5, CS6 and CSA						

On 8 December 2017, one AL exceedance of SS at SR6 was recorded during mid-ebb tide and three AL exceedances of SS at IS8, SR4(N) and SR10A were recorded during mid-flood tide.



Actions taken/ to be taken:

As the exceedance was not related to the Contract, no immediate actions are required. However, the Contractor was also reminded to implement environmental mitigation measures in accordance with Environmental Mitigation Implementation Schedule.

Title: Environmental Team Representative

Date: 19 December 2017

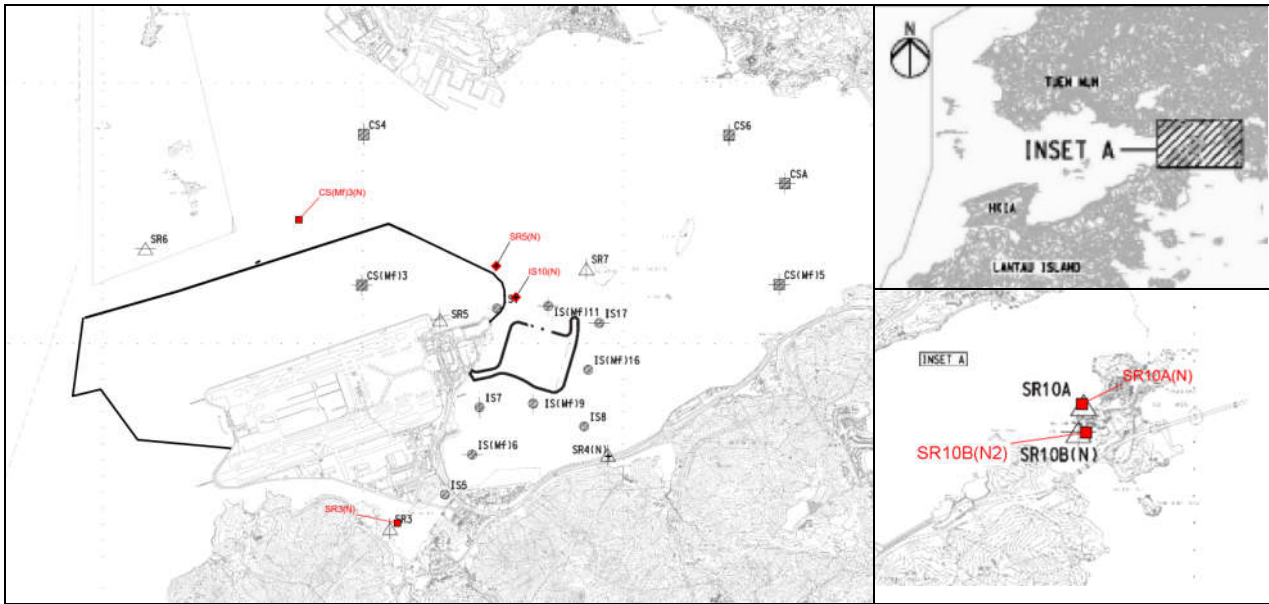
Title: Environmental Team Leader

Date: 19 December 2017

Copied to : Contractor, Engineer Representative and IEC/ENPO

Contract No. HY/2013/01 - Hong Kong- Zhuhai- Macao Bridge Hong Kong Boundary Crossing Facilities – Passenger Clearance Building Notifications of Environmental Quality Limits Exceedances					Notification No.: 20171211SS	
Date of Notification: 19 December 2017				Date of Investigation Report: 9 January 2018		
Works Inspected: Data collected from water sampling works on 11 December 2017 and the results were issued on 15 December 2017						
Monitoring Location: Water Quality Monitoring Station						
Parameter: Dissolved Oxygen (DO) /Suspended Solid (SS)/ Turbidity (TURB)						
Action & Limit Level (AL & LL) / Measured Level:						
PARAM	STATION	DEPTH	AL (mg/L)	LL (mg/L)	MEASURED AT MID-EBB TIDE (mg/L)	MEASURED AT MID-FLOOD TIDE (mg/L)
SS	IS(Mf)9	Depth Average	23.5 and 120% (i.e. 11.3 for mid-ebb/10 for mid-flood) of upstream control station's SS at the same tide of the same day	34.4 and 130% (i.e. 12.3 for mid-ebb/10.8 for mid-flood) of upstream control station's SS at the same tide of the same day and 10mg/L for WSD Seawater intakes	28.5	11.8
Notes: AL means Action Level. LL means Limit Level. Bold means AL exceedances. Bold with underline means LL exceedances. Upstream control stations of mid-ebb tide: CS(Mf)3(N) and CS4 Upstream control stations of mid-flood tide: CS(Mf)5, CS6 and CSA						

On 11 December 2017, one AL exceedance of SS at IS(Mf)9 was recorded during mid-ebb tide.



Actions taken/ to be taken:

As the exceedance was not related to the Contract, no immediate actions are required. However, the Contractor was also reminded to implement environmental mitigation measures in accordance with Environmental Mitigation Implementation Schedule.

Prepared by: Ruby Law

Title: Environmental Team Representative

Signature:

Date: 9 January 2018

Checked by: Keith Chau

Title: Environmental Team Leader

Signature: _____

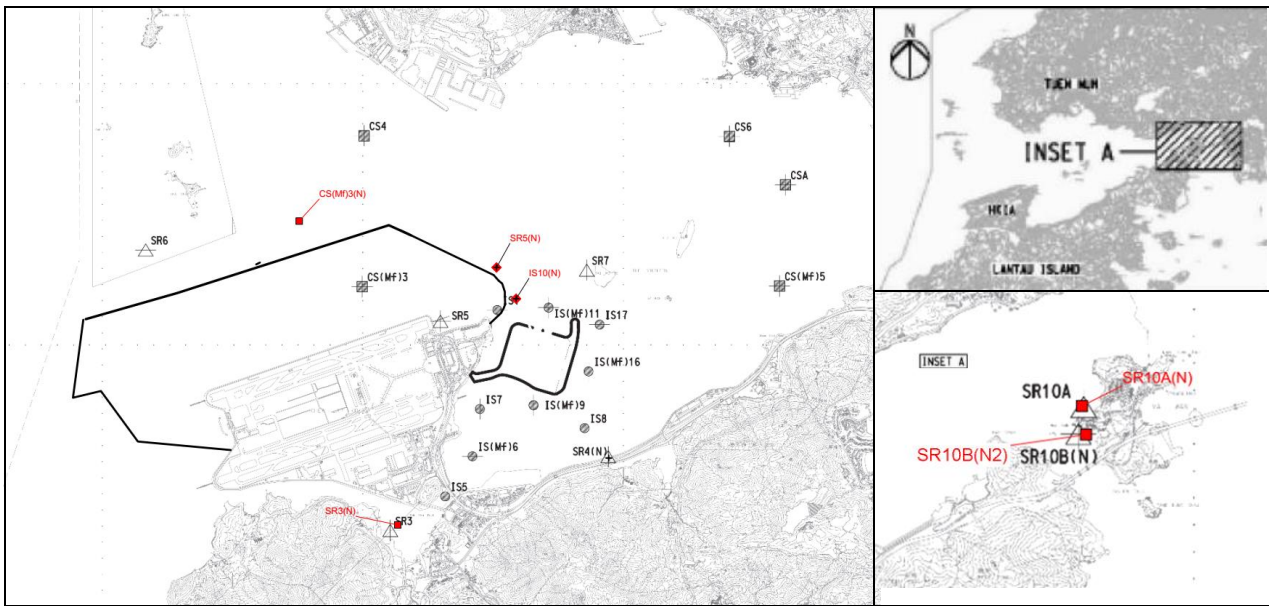
Date: 9 January 2018

Copied to : Contractor, Engineer Representative and IEC/ENPO

Contract No. HY/2013/01 - Hong Kong- Zhuhai- Macao Bridge Hong Kong Boundary Crossing Facilities – Passenger Clearance Building Notifications of Environmental Quality Limits Exceedances							Notification No.: 20171213SS
Date of Notification: 20 December 2017				Date of Investigation Report: 21 December 2017			
Works Inspected: Data collected from water sampling works on 13 December 2017 and the results were issued on 20 December 2017							
Monitoring Location: Water Quality Monitoring Station							
Parameter: Dissolved Oxygen (DO) / Suspended Solid (SS) / Turbidity (TURB)							
Action & Limit Level (AL & LL) / Measured Level:							
PARAM	STATION	DEPTH	AL (mg/L)	LL (mg/L)	MEASURED AT MID-EBB TIDE (mg/L)	MEASURED AT MID-FLOOD TIDE (mg/L)	
SS	IS8	Depth Average	23.5 and 120% (i.e. 8.2 for mid-ebb/10.7 for mid-flood) of upstream control station's SS at the same tide of the same day	34.4 and 130% (i.e. 8.9 for mid-ebb/11.6 for mid-flood) of upstream control station's SS at the same tide of the same day and 10mg/L for WSD Seawater intakes	25.0	21.4	
Notes: AL means Action Level. LL means Limit Level. Bold means AL exceedances. <u>Bold with underline</u> means LL exceedances. Upstream control stations of mid-ebb tide: CS(Mf)3(N) and CS4 Upstream control stations of mid-flood tide: CS(Mf)5, CS6 and CSA							

Possible reason for Action / Limit Level Non-compliance:



On 13 December 2017, one AL exceedance of SS at IS8 was recorded during mid-ebb tide.



As confirmed by the Contractor, there was no marine transportation and marine-based work on 13 December 2017. No site runoff within the Contract site has been observed. Therefore, it is concluded that the exceedances were not related to the Contract.

Actions taken/ to be taken:

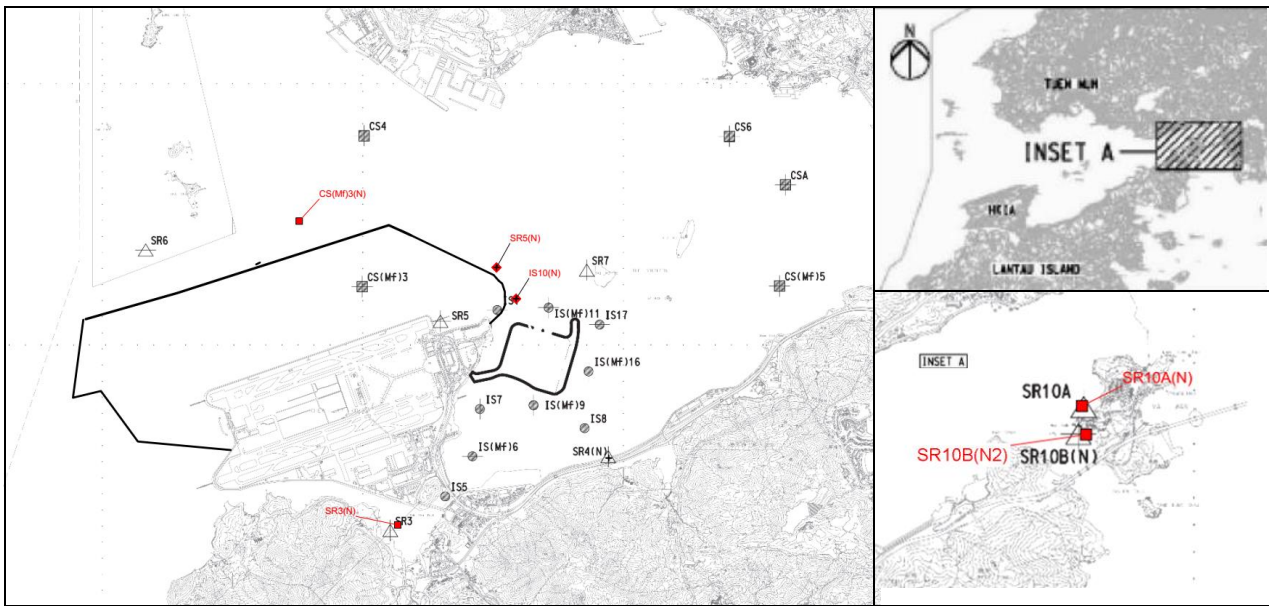
As the exceedance was not related to the Contract, no immediate actions are required. However, the Contractor was also reminded to implement environmental mitigation measures in accordance with Environmental Mitigation Implementation Schedule.

Prepared by:	<u>Ruby Law</u>	Title:	<u>Environmental Team Representative</u>
Signature:	<u></u>	Date:	<u>21 December 2017</u>
Checked by:	<u>Keith Chau</u>	Title:	<u>Environmental Team Leader</u>
Signature:	<u></u>	Date:	<u>21 December 2017</u>
Copied to	: Contractor, Engineer Representative and IEC/ENPO		

Contract No. HY/2013/01 - Hong Kong- Zhuhai- Macao Bridge Hong Kong Boundary Crossing Facilities – Passenger Clearance Building Notifications of Environmental Quality Limits Exceedances							Notification No.: 20171220SS
Date of Notification: 3 January 2018					Date of Investigation Report: 8 January 2018		
Works Inspected: Data collected from water sampling works on 20 December 2017 and the results were issued on 3 January 2018							
Monitoring Location: Water Quality Monitoring Station							
Parameter: Dissolved Oxygen (DO) / Suspended Solid (SS) / Turbidity (TURB)							
Action & Limit Level (AL & LL) / Measured Level:							
PARAM	STATION	DEPTH	AL (mg/L)	LL (mg/L)	MEASURED AT MID-EBB TIDE (mg/L)	MEASURED AT MID-FLOOD TIDE (mg/L)	
SS	SR6	Depth Average	23.5 and 120% (i.e. 11.4 for mid-ebb/14.5 for mid-flood) of upstream control station's SS at the same tide of the same day	34.4 and 130% (i.e. 12.3 for mid-ebb/15.7 for mid-flood) of upstream control station's SS at the same tide of the same day and 10mg/L for WSD Seawater intakes	12.6	28.9	
Notes: AL means Action Level. LL means Limit Level. Bold means AL exceedances. <u>Bold with underline</u> means LL exceedances. Upstream control stations of mid-ebb tide: CS(Mf)3(N) and CS4 Upstream control stations of mid-flood tide: CS(Mf)5, CS6 and CSA							

Possible reason for Action / Limit Level Non-compliance:



On 20 December 2017, one AL exceedance of SS at SR6 was recorded during mid-flood tide.



As confirmed by the Contractor, there was no marine transportation and marine-based work on 20 December 2017. No site runoff within the Contract site has been observed. Therefore, it is concluded that the exceedances were not related to the Contract.

Actions taken/ to be taken:

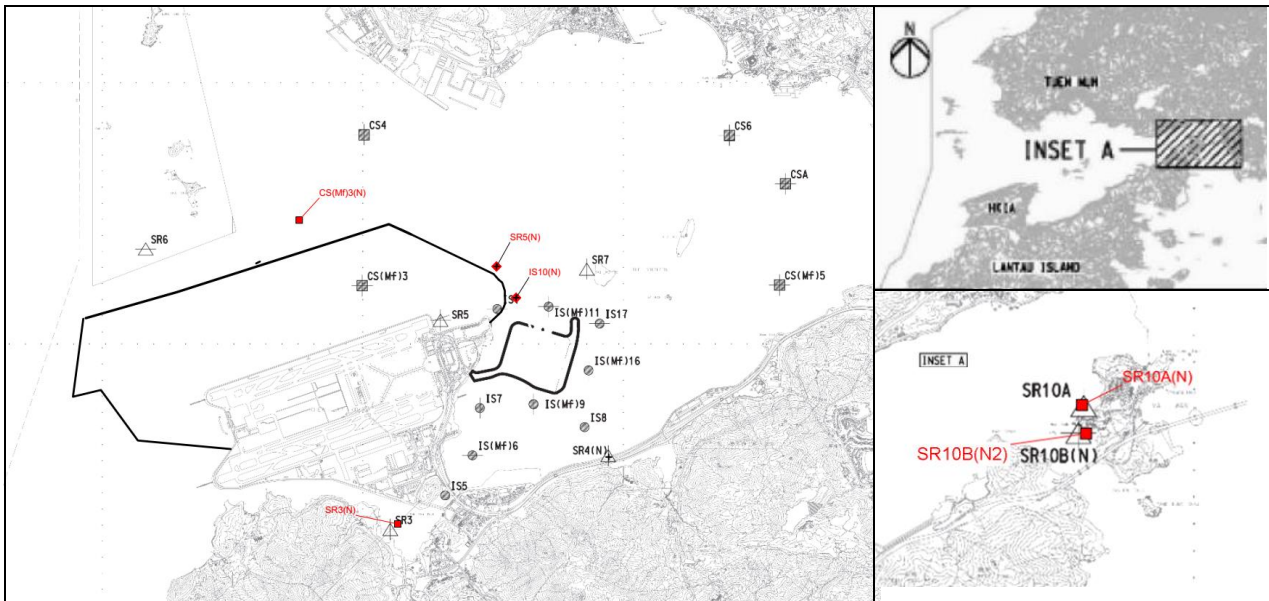
As the exceedance was not related to the Contract, no immediate actions are required. However, the Contractor was also reminded to implement environmental mitigation measures in accordance with Environmental Mitigation Implementation Schedule.

Prepared by:	<u>Ruby Law</u>	Title:	<u>Environmental Team Representative</u>
Signature:	<u></u>	Date:	<u>8 January 2018</u>
Checked by:	<u>Keith Chau</u>	Title:	<u>Environmental Team Leader</u>
Signature:	<u></u>	Date:	<u>8 January 2018</u>
Copied to	: Contractor, Engineer Representative and IEC/ENPO		

Contract No. HY/2013/01 - Hong Kong- Zhuhai- Macao Bridge Hong Kong Boundary Crossing Facilities – Passenger Clearance Building Notifications of Environmental Quality Limits Exceedances					Notification No.: 20171222SS_v1	
Date of Notification: 4 January 2018			Date of Investigation Report: 10 January 2018			
Works Inspected: Data collected from water sampling works on 22 December 2017 and the results were issued on 4 January 2018						
Monitoring Location: Water Quality Monitoring Station						
Parameter: Dissolved Oxygen (DO) / Suspended Solid (SS)/ Turbidity (TURB)						
Action & Limit Level (AL & LL) / Measured Level:						
PARAM	STATION	DEPTH	AL (mg/L)	LL (mg/L)	MEASURED AT MID-EBB TIDE (mg/L)	MEASURED AT MID-FLOOD TIDE (mg/L)
SS	SR6	Depth Average	23.5 and 120% (i.e. 17.3 for mid-ebb/12.7 for mid-flood) of upstream control station's SS at the same tide of the same day	34.4 and 130% (i.e. 18.7 for mid-ebb/13.8 for mid-flood) of upstream control station's SS at the same tide of the same day and 10mg/L for WSD Seawater intakes	26.0	28.3
Notes: AL means Action Level. LL means Limit Level. Bold means AL exceedances. <u>Bold with underline</u> means LL exceedances. Upstream control stations of mid-ebb tide: CS(Mf)3(N) and CS4 Upstream control stations of mid-flood tide: CS(Mf)5, CS6 and CSA						

Possible reason for Action / Limit Level Non-compliance:

On 22 December 2017, one AL exceedance of SS at SR6 was recorded during mid-flood tide and one AL exceedance of SS at SR6 was recorded during mid-ebb tide.





As confirmed by the Contractor, there was no marine transportation on 22 December 2017. According to information from Contractor, temporary loading and unloading facility dismantling which is marine-based work conducted on 22 December 2017. Although AL exceedances were recorded, the exceedance station, SR6, was far away from marine based work (more than 6km). No exceedances were recorded at monitoring stations IS10(N) and SR5(N), which are closer to the marine-based works, on the same day. No site runoff within the Contract site has been observed. Therefore, it is concluded that the exceedances were not related to the Contract.

Actions taken/ to be taken:

Actions were taken under 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 suspended solids exceedance was attributed to active construction activities of this Contract;
3. IEC, Contractor and ER were informed via email;
4. Monitoring data, all plant, equipment and Contractor's working methods were checked;
5. Since it is considered that the suspended solids exceedance is unlikely to be contract related, as such, Actions 5-7 under the EAP are not considered applicable.

However, the Contractor was also reminded to implement environmental mitigation measures in accordance with Environmental Mitigation Implementation Schedule.

Prepared by:	<u>Ruby Law</u>	Title:	<u>Environmental Team Representative</u>
Signature:		Date:	<u>10 January 2018</u>
Checked by:	<u>Keith Chau</u>	Title:	<u>Environmental Team Leader</u>
Signature:		Date:	<u>10 January 2018</u>
Copied to	: Contractor, Engineer Representative and IEC/ENPO		

Appendix A – Photos of the sea condition during samples monitoring at SR6

Photo during Ebb tide



Photo during flood tide



Appendix B - Photos showing the condition of marine-based works area

Photo 1 Marine works on 22 December 2017



Photo 2 Marine works on 22 December 2017



Contract No. HY/2013/01 - Hong Kong- Zhuhai- Macao Bridge Hong Kong Boundary Crossing Facilities – Passenger Clearance Building Notifications of Environmental Quality Limits Exceedances					Notification No.: 201711223_Air_24hr
Date of Notification: 5 January 2018			Date of Investigation Report: 10 January 2018		
Date of Environmental Quality Limit Exceedance: 23 December 2017 and the results were issued on 4 January 2018					
Monitoring Location: AMS3B – Site Boundary of Site Office Area at Work Area WA2					
Monitoring Date: 23 December 2017		Start Time: 08:00			
Action & Limit Level (AL & LL) / Measured Level:					
PARAMETER	STATION	AL (µg/m ³)	LL (µg/m ³)	MEASURED LEVEL, µg/m ³	
24-hr TSP	AMS3B – Site Boundary of Site Office Area at Works Area WA2	167	260	182	
Notes: <i>Bold Italic</i> means AL exceedance <i><u>Bold Italic with underline</u></i> means LL exceedance					

Possible reason for Action / Limit Level Non-compliance:

On 23 December 2017, one AL exceedance of 24-hr TSP at AMS3B was recorded.

Based on the information from the Contractor, the construction works undertaken on 23 and 24 December 2017 are shown as below:

- Backfilling
- Falsework stripping
- Pipework and ductwork installation
- Wet trade works
- Dry trade works
- MEP High Level Containment
- Removal of temporary works
- Window wall glazing
- Hanging scaffolding removal
- Southern toilet
- MISC steelwork
- Lift installation
- Escalator Installation
- Glazed lift installation
- Road & Kerbing
- Water features and planters
- Temporary Loading and Unloading facility dismantling

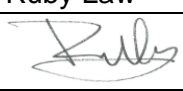

The Contractor confirmed that the mitigation measures according to Water Spraying Plan in December 2017 (Appendix A) are implemented to avoid dust emission. Photos of haul road condition and dust suppression are included in Appendix A. The Contractor has provided the guideline to remind the site vehicles travel within speed limit of 8km/hr. According to the site inspection conducted on 27 December 2017, no dusty activities and dry condition in haul road were observed in the site area.

The Air Quality Health Index (AQHI) of Tung Chung station with the wind data from the on-site wind station are shown in Appendix B. The hourly AQHI of Tung Chung Station ranged 3 to 8 (Low to Very High) on 23 and 24 December 2017 during monitoring period. According to the wind data at on-site wind station, no prevailing wind direction was found in the monitoring period. The PCB site of HKBCF is far away from AMS3B (more than 1km). No potential dust source was observed near the monitoring station at AMS3B during the monitoring period.

Therefore, it is concluded that the exceedances were not related to the Contract.

Actions taken/ to be taken:

The Water Spraying Plan including the information of watering schedule, routing of trucks for watering and the location of water filling, was prepared and submitted to RE and ENPO. The Contractor was also reminded to implement all necessary mitigation as specified in EIA (Section 5.5.6.3), EM&A Manual (EM&A Log Ref: A3), EMP, Method Statements, General and Particular Specifications of this Project to minimize the potential dust impact during construction activities.

Prepared by:	<u>Ruby Law</u>	Title:	<u>Environmental Team Representative</u>
Signature:		Date:	<u>10 January 2018</u>
Checked by:	<u>Keith Chau</u>	Title:	<u>Environmental Team Leader</u>
Signature:		Date:	<u>10 January 2018</u>
Copied to	: Contractor, Engineer Representative and IEC/ENPO		



Contract No. HY/2013/01
Hong Kong – Zhuhai – Macao – Bridge
Boundary Crossing Facility – Passenger Clearance Building

Water Truck License Plate Number: TH7681

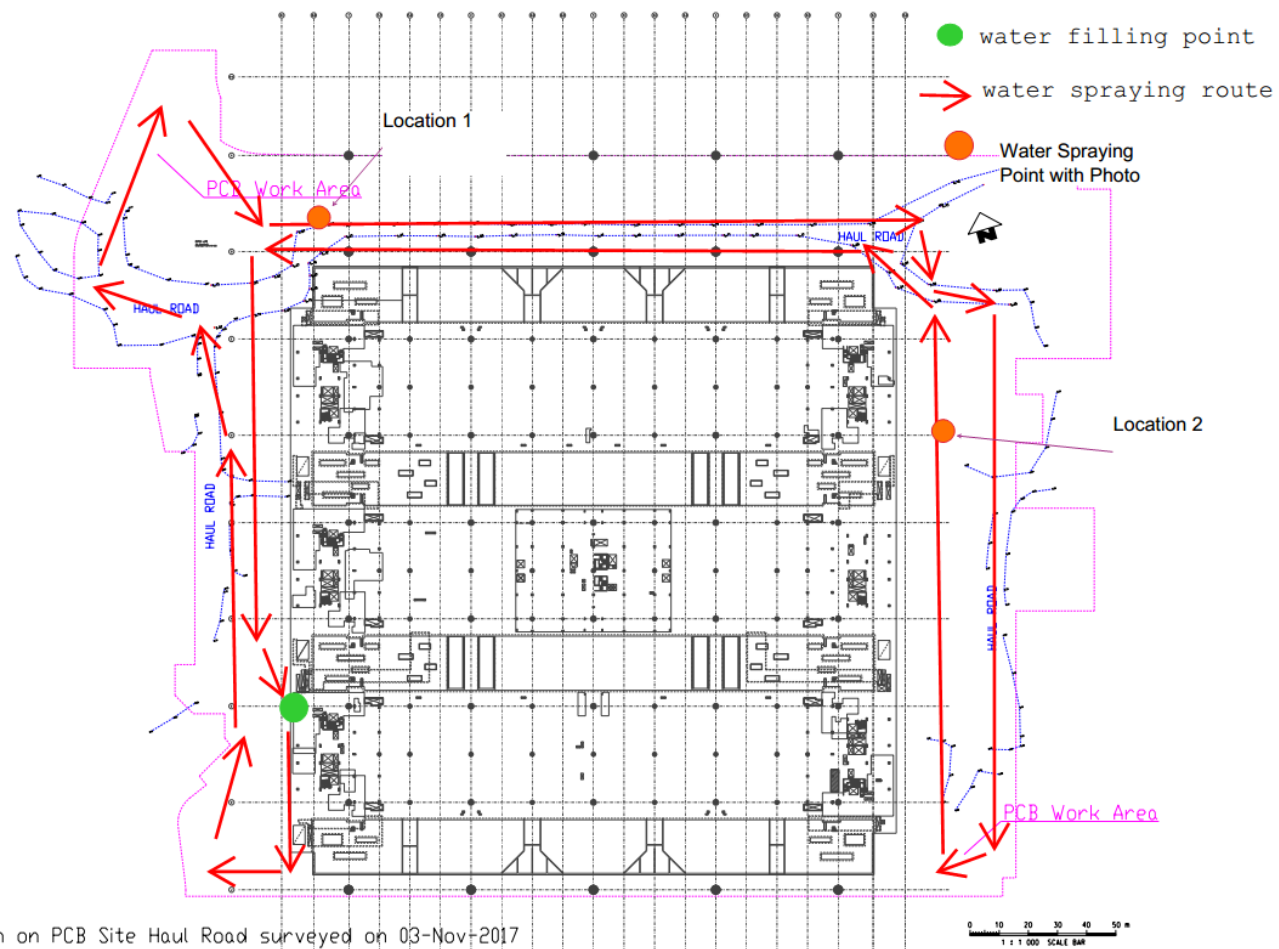
Capacity of Water Truck: 18000L

Volume of water / distance travelled = 11.4L/m

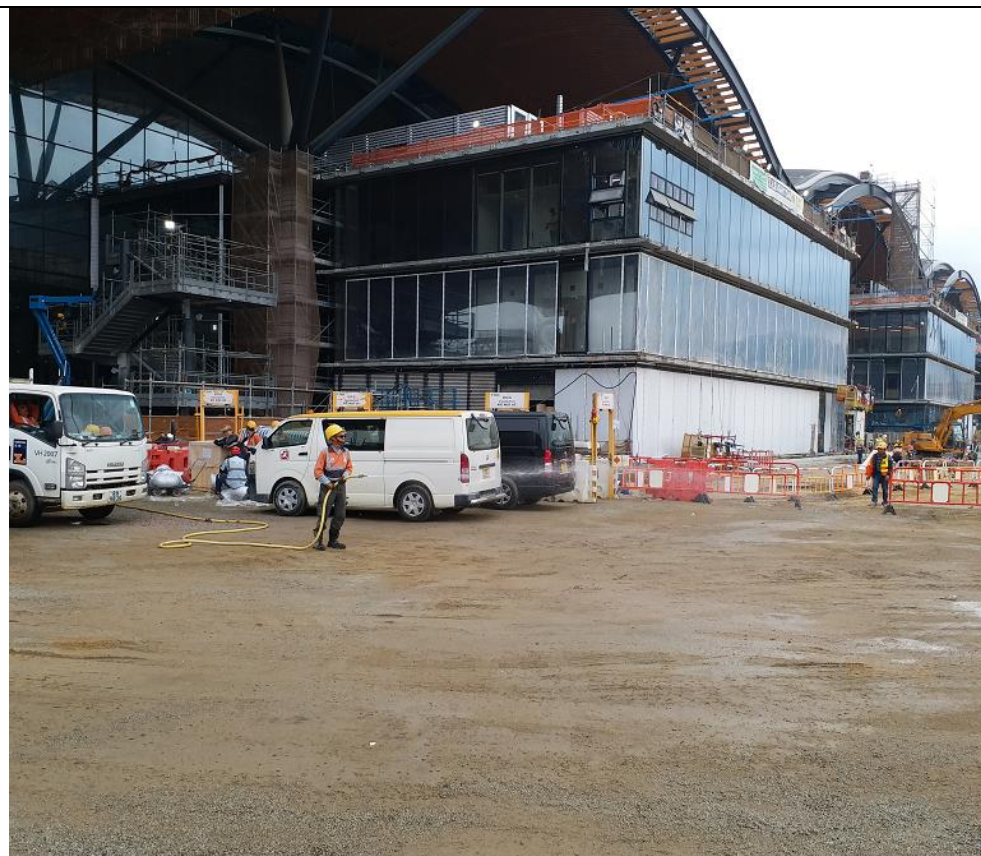
Water Truck could spray 18000L in one 50 minutes trip.

Planned Schedule of Watering Spraying by Water Truck

Cycle	Time of water spraying
1	08:00 – 09:15
2	09:15 – 10:30
3	10:30 – 11:45
4	13:00 – 14:15
5	14:15 – 15:30
6	15:30 – 16:45
7	16:45 – 18:00
8	18:00 – 19:00



Water spraying record



Haul road is wet (Location 1)



Water truck spray water on haul road (Location 2)



Haul road is wet (Photo taken during site inspection on 27 December 2017)



Haul road is wet (Photo taken during site inspection on 27 December 2017)

Appendix B

Date	Hour	AQHI at Tung Chung Station	Average Wind Speed (m/s) #	Average Wind Direction #
23/12/2017	08:00	3	0	ENE
23/12/2017	09:00	3	0	NNE
23/12/2017	10:00	4	0	ENE
23/12/2017	11:00	4	0	ENE
23/12/2017	12:00	4	0	NNE
23/12/2017	13:00	4	0	N
23/12/2017	14:00	4	0	NE
23/12/2017	15:00	5	0	NE
23/12/2017	16:00	6	0	NNE
23/12/2017	17:00	6	0	N
23/12/2017	18:00	6	0	---
23/12/2017	19:00	6	0	NE
23/12/2017	20:00	6	0	WNW
23/12/2017	21:00	5	0	N
23/12/2017	22:00	5	0	N
23/12/2017	23:00	5	0	NNW
24/12/2017	00:00	5	0	ENE
24/12/2017	01:00	6	0	ESE
24/12/2017	02:00	5	0	---
24/12/2017	03:00	6	0	---
24/12/2017	04:00	7	0	W
24/12/2017	05:00	8	0	SSE
24/12/2017	06:00	8	0	NNW
24/12/2017	07:00	7	0	---
24/12/2017	08:00	7	0	---

Remark:

^ The data collection for calculation of AQHI was affected due to station or equipment maintenance, the data of a most similar station was adopted.

#- The related wind data is obtained from the on-site wind station.

N.A. - Not available.

Contract No. HY/2013/01 - Hong Kong- Zhuhai- Macao Bridge Hong Kong Boundary Crossing Facilities – Passenger Clearance Building Notifications of Environmental Quality Limits Exceedances				Notification No.: 20180117_Air_24hr_v2	
Date of Notification: 29 January 2018			Date of Investigation Report: 20 February 2018		
Date of Environmental Quality Limit Exceedance: 17 January 2018 and the results were issued on 29 January 2018					
Monitoring Location: AMS2 – Tung Chung Pier and AMS3B – Site Boundary of Site Office Area at Works Area WA2					
Monitoring Date: 17 January 2018		Start Time: 08:00			
Action & Limit Level (AL & LL) / Measured Level:					
PARAMETER	STATION	AL (µg/m ³)	LL (µg/m ³)	MEASURED LEVEL, µg/m ³	
24-hr TSP	AMS2 – Tung Chung Pier	176	260	<i>184</i>	
24-hr TSP	AMS3B – Site Boundary of Site Office Area at Works Area WA2	167	260	<i>183</i>	
Notes: <i>Bold Italic</i> means AL exceedance <i><u>Bold Italic with underline</u></i> means LL exceedance					

Possible reason for Action / Limit Level Non-compliance:

On 17 January 2018, one AL exceedance of 24-hr TSP at AMS2 and one AL exceedance of 24-hr TSP at AMS3B were recorded.

Based on the information from the Contractor, the construction works undertaken on 17 and 18 January 2018 are shown as below:

- Backfilling
- Falsework stripping
- Pipework and ductwork installation
- Wet trade works
- Dry trade works
- MEP High Level Containment
- Removal of temporary works
- Window wall glazing
- Hanging scaffolding removal
- Southern toilet
- MISC steelwork
- Glazed Lift installation
- Road & Kerbing
- EVA Roadwork

Contractor confirmed that the mitigation measures according to Water Spraying Plan in January 2018 (Appendix A) are implemented to avoid dust emission. Photos of haul road condition and dust suppression are included in Appendix A. Contractor has provided the guideline to remind the site vehicles travel within speed limit of 8km/hr.

The Air Quality Health Index (AQHI) of Tung Chung station with the wind data from the on-site wind station are shown in Appendix B. The hourly AQHI of Tung Chung Station ranged 3 to 10+ (Low to Serious) on 17 and 18 January 2018 during monitoring period. According to the wind data at on-site wind station, no prevailing wind direction was found in the monitoring period. The PCB site of HKBCF is far away from AMS2 and AMS3B (more than 1km). No potential dust source was observed near the monitoring station at AMS2 and AMS3B during the monitoring period.

Therefore, it is concluded that the exceedances were not related to the Contract.

Actions taken/ to be taken:

The Water Spraying Plan including the information of watering schedule, routing of trucks of for watering and the location of water filling, was prepared and submitted to RE and ENPO. The Contractor was also reminded to implement all necessary mitigation as specified in EIA (Section 5.5.6.3), EM&A Manual (EM&A Log Ref: A3), EMP, Method Statements, General and Particular Specifications of this Project to minimize the potential dust impact during construction activities.

Prepared by: Ruby Law Title: Environmental Team Representative

Signature:  Date: 20 February 2018

Checked by: Keith Chau Title: Environmental Team Leader

Signature:  Date: 20 February 2018

Copied to : Contractor, Engineer Representative and IEC/ENPO



Contract No. HY/2013/01
Hong Kong – Zhuhai – Macao – Bridge
Boundary Crossing Facility – Passenger Clearance Building

Water Truck License Plate Number: TH7681

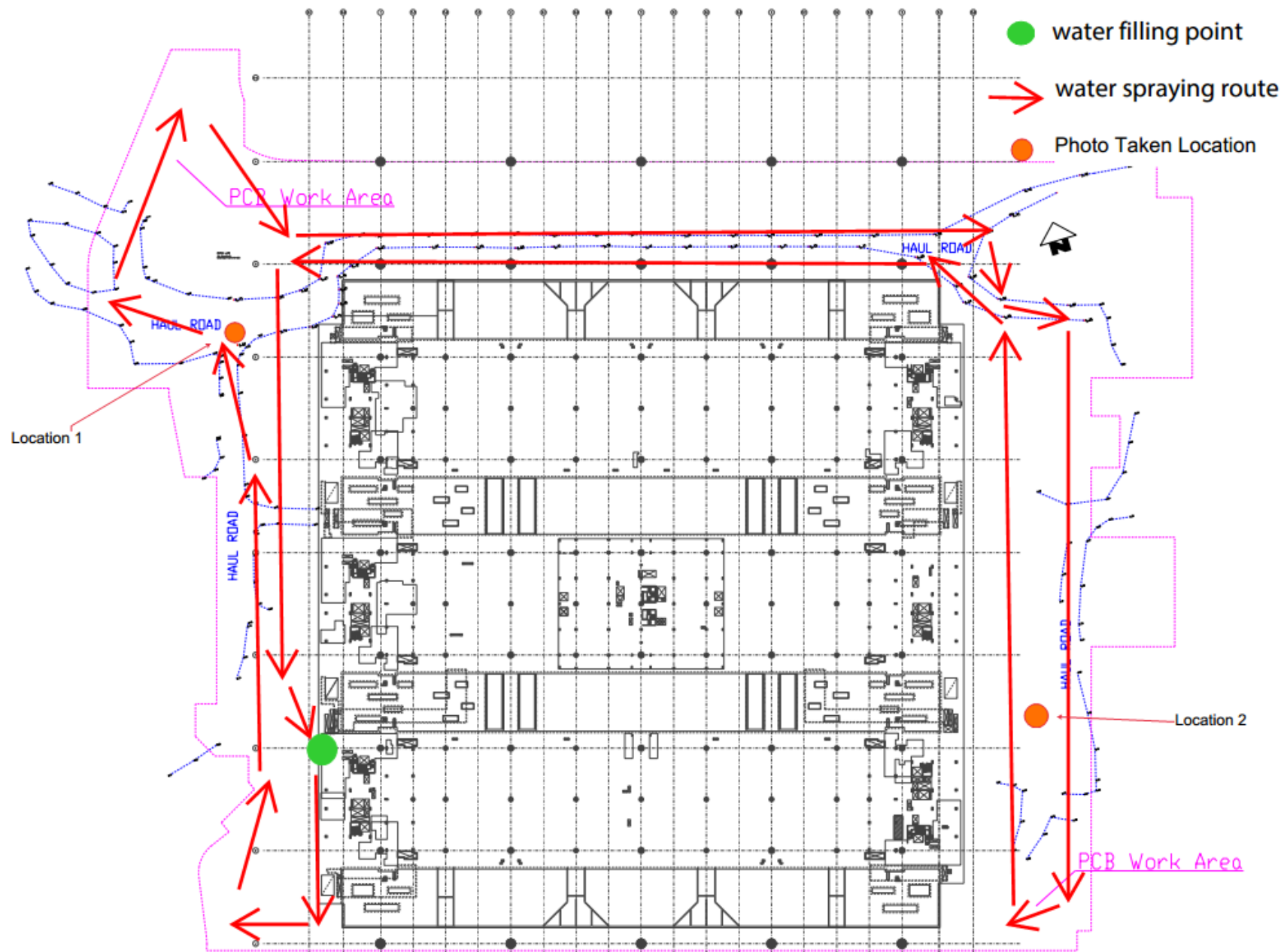
Capacity of Water Truck: 18000L

Volume of water / distance travelled = 11.4L/m

Water Truck could spray 18000L in one 50 minutes trip.

Planned Schedule of Watering Spraying by Water Truck

Cycle	Time of water spraying
1	08:00 – 09:15
2	09:15 – 10:30
3	10:30 – 11:45
4	13:00 – 14:15
5	14:15 – 15:30
6	15:30 – 16:45
7	16:45 – 18:00
8	18:00 – 19:00



Plan on PCB Site Haul Road surveyed on 03-Nov-2017

Water spraying record



Haul road is wet (Location 1)



Water spray on haul road (Location 2)

Appendix B

Date	Hour	AQHI at Tung Chung Station	Average Wind Speed (m/s) #	Average Wind Direction #
17/01/2018	08:00	6	0	SW
17/01/2018	09:00	6	0	SW
17/01/2018	10:00	6	0	SSW
17/01/2018	11:00	8	0	SSW
17/01/2018	12:00	10	0	W
17/01/2018	13:00	10+	0	---
17/01/2018	14:00	10+	0	W
17/01/2018	15:00	10+	0	W
17/01/2018	16:00	10+	0	W
17/01/2018	17:00	10+	0	W
17/01/2018	18:00	10+	0	E
17/01/2018	19:00	10+	0	---
17/01/2018	20:00	9	0	SSE
17/01/2018	21:00	6	0	SSE
17/01/2018	22:00	5	0	E
17/01/2018	23:00	5	0	SE
18/01/2018	00:00	5	0	SSE
18/01/2018	01:00	4	0	E
18/01/2018	02:00	4	0	SE
18/01/2018	03:00	4	0	SSE
18/01/2018	04:00	4	0	SE
18/01/2018	05:00	4	0	SSE
18/01/2018	06:00	3	0	SSW
18/01/2018	07:00	3	0	---
18/01/2018	08:00	3	0	---

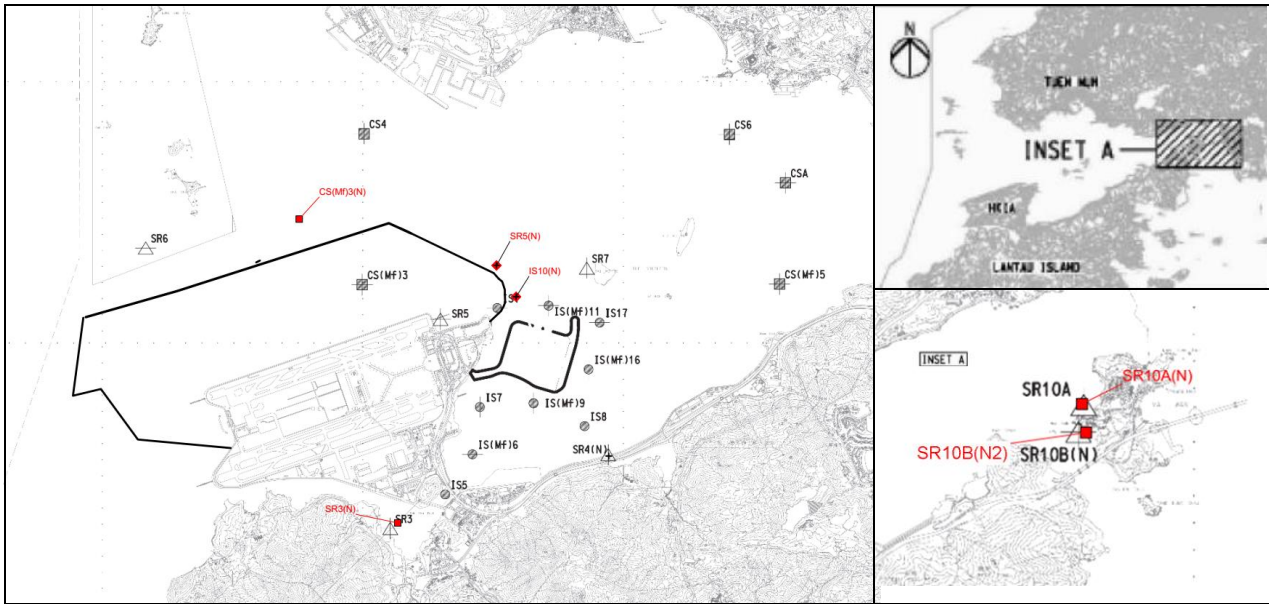
Remark:

#- The related wind data is obtained from the on-site wind station.

Contract No. HY/2013/01 - Hong Kong- Zhuhai- Macao Bridge Hong Kong Boundary Crossing Facilities – Passenger Clearance Building Notifications of Environmental Quality Limits Exceedances							Notification No.: 20180131SS
Date of Notification: 7 February 2018					Date of Investigation Report: 9 February 2018		
Works Inspected: Data collected from water sampling works on 31 January 2018 and the results were issued on 7 February 2018							
Monitoring Location: Water Quality Monitoring Station							
Parameter: Dissolved Oxygen (DO) / Suspended Solid (SS)/ Turbidity (TURB)							
Action & Limit Level (AL & LL) / Measured Level:							
PARAM	STATION	DEPTH	AL (mg/L)	LL (mg/L)	MEASURED AT MID-EBB TIDE (mg/L)	MEASURED AT MID-FLOOD TIDE (mg/L)	
SS	SR6	Depth Average	23.5 and 120% (i.e. 18.2 for mid-ebb/14.4 for mid-flood) of upstream control station's SS at the same tide of the same day	34.4 and 130% (i.e. 19.7 for mid-ebb/15.6 for mid-flood) of upstream control station's SS at the same tide of the same day and 10mg/L for WSD Seawater intakes	26.2	21.5	
Notes: AL means Action Level. LL means Limit Level. Bold means AL exceedances. Bold with underline means LL exceedances. Upstream control stations of mid-ebb tide: CS(Mf)3(N) and CS4 Upstream control stations of mid-flood tide: CS(Mf)5, CS6 and CSA							

Possible reason for Action / Limit Level Non-compliance:

On 31 January 2018, one AL exceedance of SS at SR6 was recorded during mid-ebb tide.





As confirmed by the Contractor, there was no marine transportation on 31 January 2018. According to information from Contractor, temporary loading and unloading facility dismantling which is marine-based work conducted on 31 January 2018 and the work was conducted within silt curtain. Although AL exceedance was recorded, the exceedance station, SR6, was far away from marine based work (more than 6km). No exceedances were recorded at monitoring stations IS10(N) and SR5(N), which are closer to the marine-based works, on the same day. No site runoff within the Contract site has been observed. Therefore, it is concluded that the exceedances were not related to the Contract.

Actions taken/ to be taken:

Actions were taken under 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 suspended solids exceedance was attributed to active construction activities of this Contract;
3. IEC, Contractor and ER were informed via email;
4. Monitoring data, all plant, equipment and Contractor's working methods were checked;
5. Since it is considered that the suspended solids exceedance is unlikely to be contract related, as such, Actions 5-7 under the EAP are not considered applicable.

However, the Contractor was also reminded to implement environmental mitigation measures in accordance with Environmental Mitigation Implementation Schedule.

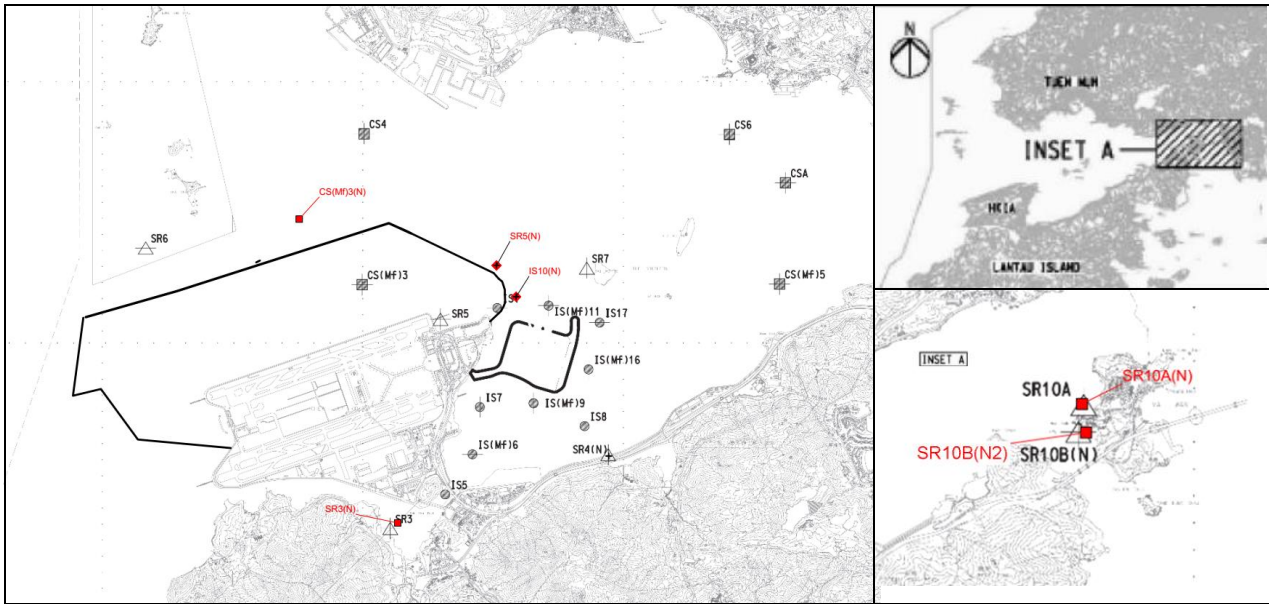
Prepared by:	<u>Ruby Law</u>	Title:	<u>Environmental Team Representative</u>
Signature:		Date:	<u>9 February 2018</u>
Checked by:	<u>Keith Chau</u>	Title:	<u>Environmental Team Leader</u>
Signature:		Date:	<u>9 February 2018</u>

Copied to : Contractor, Engineer Representative and IEC/ENPO

Contract No. HY/2013/01 - Hong Kong- Zhuhai- Macao Bridge Hong Kong Boundary Crossing Facilities – Passenger Clearance Building Notifications of Environmental Quality Limits Exceedances					Notification No.: 20180202SS	
Date of Notification: 9 February 2018			Date of Investigation Report: 2 March 2018			
Works Inspected: Data collected from water sampling works on 2 February 2018 and the results were issued on 9 February 2018						
Monitoring Location: Water Quality Monitoring Station						
Parameter: Dissolved Oxygen (DO) / Suspended Solid (SS) / Turbidity (TURB)						
Action & Limit Level (AL & LL) / Measured Level:						
PARAM	STATION	DEPTH	AL (mg/L)	LL (mg/L)	MEASURED AT MID-EBB TIDE (mg/L)	MEASURED AT MID-FLOOD TIDE (mg/L)
SS	SR6	Depth Average	23.5 and 120% (i.e. 18.2 for mid-ebb/14.4 for mid-flood) of upstream control station's SS at the same tide of the same day	34.4 and 130% (i.e. 19.7 for mid-ebb/15.6 for mid-flood) of upstream control station's SS at the same tide of the same day and 10mg/L for WSD Seawater intakes	14.5	24.3
SS	SR7	Depth Average			16.7	24.2
Notes: AL means Action Level. LL means Limit Level. Bold means AL exceedances. <u>Bold with underline</u> means LL exceedances. Upstream control stations of mid-ebb tide: CS(Mf)3(N) and CS4 Upstream control stations of mid-flood tide: CS(Mf)5, CS6 and CSA						

Possible reason for Action / Limit Level Non-compliance:

On 2 February 2018, two AL exceedances of SS at SR6 and SR7 was recorded during mid-flood tide.



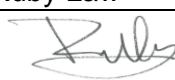

As confirmed by the Contractor, there was no marine transportation and marine-based work on 2 February 2018. No site runoff within the Contract site has been observed. Therefore, it is concluded that the exceedances were not related to the Contract.

Actions taken/ to be taken:

Actions were taken under 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 suspended solids exceedance was attributed to active construction activities of this Contract;
3. IEC, Contractor and ER were informed via email;
4. Monitoring data, all plant, equipment and Contractor's working methods were checked;
5. Since it is considered that the suspended solids exceedance is unlikely to be contract related, as such, Actions 5-7 under the EAP are not considered applicable.

However, the Contractor was also reminded to implement environmental mitigation measures in accordance with Environmental Mitigation Implementation Schedule.

Prepared by:	<u>Ruby Law</u>	Title:	<u>Environmental Team Representative</u>
Signature:		Date:	<u>2 March 2018</u>
Checked by:	<u>Keith Chau</u>	Title:	<u>Environmental Team Leader</u>
Signature:		Date:	<u>2 March 2018</u>
Copied to	: Contractor, Engineer Representative and IEC/ENPO		

Contract No. HY/2013/01 - Hong Kong- Zhuhai- Macao Bridge Hong Kong Boundary Crossing Facilities – Passenger Clearance Building Notification of Environmental Quality Limit Exceedance			Notification No.: 201712-201802D
Date of Notification: 4 March 2019			
Works Inspected: Not Applicable			
Monitoring Location: NEL & NWL			
Parameter: Ecology (Chinese White Dolphin Monitoring)			
Action & Limit Levels			Monitoring Results
	North Lantau Social Cluster		The quarter of December 2017 – February 2018
	Action Level (AL)	Limit Level (LL)	
Northeast Lantau (NEL)	STG < 4.2 & ANI < 15.5	NEL: (STG < 2.4 & ANI < 8.9)	<i><u>STG = 0.52; ANI = 2.61</u></i>
Northwest Lantau (NWL)	STG < 6.9 & ANI < 31.3	NWL: (STG < 3.9 & ANI < 17.9)	<i><u>STG = 3.80; ANI = 14.25</u></i>
Notes: <ol style="list-style-type: none"> 1. STG means quarterly encounter rate of number of dolphin sightings. 2. ANI means quarterly encounter rate of total number of dolphins. 3. For North Lantau Social Cluster, AL will be triggered if either NEL or NWL falls below the criteria; LL will be triggered if both NEL and NWL fall below the criteria. 4. <i>Bold Italic</i> means AL exceedances. 5. <i><u>Bold Italic with underline</u></i> means LL exceedances 			
Possible reason for Action / Limit Level Non-compliance: <p>One Limit Level exceedance of dolphin monitoring was recorded during quarterly monitoring (December 2017 – February 2018). The ETL informed IEC, ENPO, ER and Contractor via email on 14 March 2018.</p> <p>According to information provided by ER, the marine based works undertaken during the quarterly were shown as below:</p> <p><u>Contract No.: HY/2013/01</u></p> <ul style="list-style-type: none"> • Localized silt curtain deployment at jetty; • Localized silt curtain removal at seawater intake and box culvert; • Temporary Loading and Unloading facility dismantling and • Marine transportation for delivery of materials from temporary loading and unloading facility. <p>There is no evidence showing the current LL non-compliance directly related to the construction works of Contract No. HY/2013/01 (the Contract). The working vessels under the Contract have been travelling from source to destination in accordance with the Marine Travel Route to minimize impacts on Chinese White Dolphin (CWD). In addition, the fundamental principle is that the routes will not go through the dolphin hotspots near Brothers Marine Park.</p> <p><u>Contract No.: HY/2013/02</u></p> <ul style="list-style-type: none"> • No marine based works. <p><u>Contract No.: HY/2013/03</u></p> <ul style="list-style-type: none"> • Box Culvert B outfall construction with cofferdams. <p><u>Contract No.: HY/2013/04</u></p> <ul style="list-style-type: none"> • Construction of temp steel cofferdam for Outfall construction at Box C and D. 			
Actions taken/ to be taken: <ol style="list-style-type: none"> 1. Statistical data analysis has been repeated to confirm findings; 2. All available and relevant data, including raw data and statistical analysis results of other parameters covered in the EM&A have been reviewed; 3. Identification of source of impact was carried out; 4. The ETL informed IEC, ENPO, ER and Contractor have been informed of findings on 14 March 2018; 5. Monitoring data have been checked; 6. Repeated review to ensure all the dolphin protective measures are fully and properly implemented and advise on additional measures if necessary; 7. After investigation, there was no evidence that indicated that the reduced number of dolphins in NWL and NEL was related solely to Project works. It was also concluded the contributed of impacted due to the HZMB works as a whole (or individual nor separate. 			

Recommendations/ mitigation measures/ actions if necessary:

All dolphin protective measures are fully and properly implemented in accordance with the EM&A Manual.

Contract No.: HY/2013/01

According to information from ER, silt curtain was installed.

Contract No.: HY/2013/02

Not applicable.

Contract No.: HY/2013/03

According to information from ER, silt curtain was installed.

Contract No.: HY/2013/04

According to information from ER, silt curtain was installed.

Based on section 10.2.19 of the Updated EM&A Manual (for Hong Kong Boundary Crossing Facilities)(version 1.0) that verification by IEC on 4 January 2012, the travelling speed of vessels must not exceed 10 knots within the boundaries of the Sha Chau/Lung Kwu Chau Marine Park appears to be effective in protecting the dolphins from vessel collisions. The Contractor will continue to provide training for Captains of construction vessels working in the West Lantau waters and near the Brothers Marine Parks should undergo training to learn about local dolphins and porpoises.

They should be trained to be aware of the protocol for "dolphin friendly" vessel operation. All working vessels should be required to use regular travel routes, in order to minimize the chance of vessel collision. And the routes would not go through the dolphin hotspot near Brothers Marine Parks.

A meeting was held on 7 March 2018 with attendance of representative of ENPO, Resident Site Staff (RSS), Environmental Team (ET) and dolphin specialist for Contract Nos. HY/2013/01, HY/2011/03, HY/2011/09, HY/2012/07, HY/2012/08, to discuss dolphin encounter rates during the period December 2017 - February 2018.

In the meeting, it was concluded that the Hong Kong-Zhuhai-Macao (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.

It was reminded that the ETs shall keep reviewing the implementation status of the dolphin related mitigation measures and remind the contractor to ensure the relevant measures were fully implemented.

It was recommended that the marine works of HZMB projects should be completed as soon as possible so as to reduce the overall duration of impacts and allow the dolphins population to recover as early as possible.

It was also recommended that the marine works footprint (e.g., reduce the size of peripheral silt curtain) and vessels for the marine works should be reduced as much as possible, and vessels idling / mooring in other part of the North Lantau shall be avoided whenever possible.

The marine travel route will shift along the edge of Brothers Marine Park (BMP) as much as practical under the Regular Marine Travel Route Plan. It was noted that even though marine vessels may moor within the mooring site of BMP, commercial activities including loading / unloading / transshipment are not allowed except a permit is obtained. The HZMB works vessels were recommended to avoid the BMP.

Prepared by: Ruby Law

Title: ET Representative (up to 31 October 2018)



Date: 4 March 2019

Reviewed by: Keith Chau

Title: ET Leader (up to 31 October 2018)



Date : 4 March 2019

Copied to: IEC/ENPO, Contractor and Engineer Representative