Contract No. HY/2011/03 -

Hong Kong- Zhuhai- Macao Bridge

Hong Kong Link Road Section between Scenic Hill and Hong Kong Boundary Crossing Facilities

Notifications of Environmental Quality Limits Exceedances Notification No.: 208

Date of Notification: 27th March 2015

Works Inspected: 1-hr TSP monitoring was undertaken on 06 March 2015

Monitoring Location: AMS5 – Ma Wan Chung Village

Parameter: 1-hour TSP monitoring

Action & Limit Level (AL & LL) / Measured Level:

PARAMETER	STATION	AL (µg/m^3)	LL (µg/m^3)	MEASURED LEVEL, µg/m^3
1-hr TSP (13:21-14:21)	Ma Wan Chung Village	368	500	273.8
1-hr TSP (14:21-15:21)	Ma Wan Chung Village	368	500	***456.4***
1-hr TSP (15:21-16:21)	Ma Wan Chung Village	368	500	***507.6***

Notes: ***Bold Italic*** means AL exceedance
Bold Italic with underline means LL exceedance

Possible reason for Action or Limit Level Non-compliance:

One Action Level exceedance and one Limit level exceedance of 1-hr TSP level were recorded at AMS5 – Ma Wan Chung Village on 06 March 2015.

According to the information provided by the Contractor, the following construction activities were undertaken near AMS5 during the sampling period:

Zone 2

- Seawall construction

Zone 3A
- Seawall construction

The construction activities undertaken during the sampling period did not generate significant dust impact and these activities were undertaken far away from AMS5.

The general weather conditions at Tung Chung were haze during the dust sampling period. The haze weather would cause higher readings of the portable dust meter. The wind direction during the dust monitoring was east, so the particulate matters which generated from the Contract were unlikely to reach the dust monitoring station (AMS5). Therefore, it is considered that the exceedances are not related to the construction activities of the Contract and were caused by the weather condition.

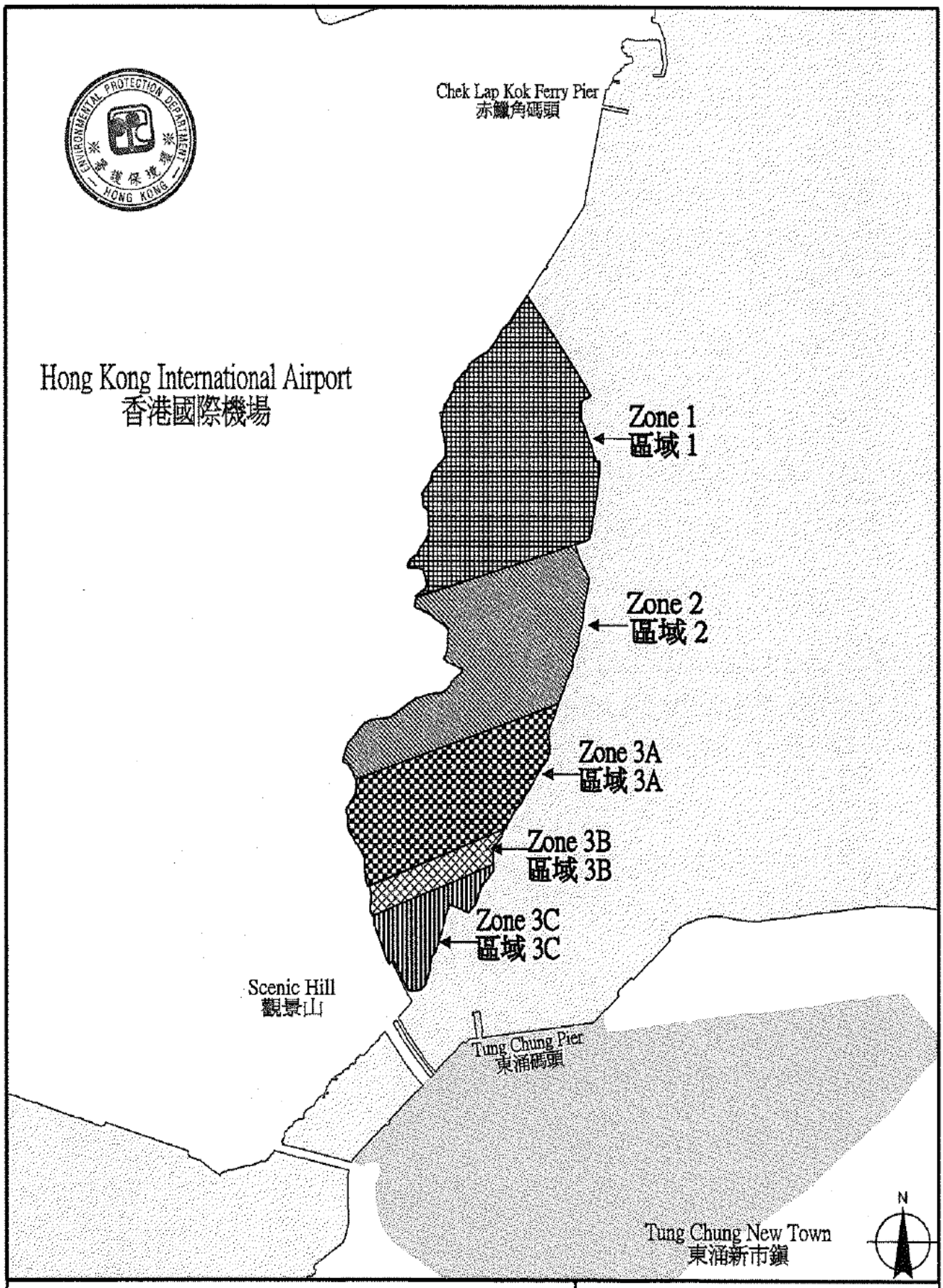
Actions taken/ to be taken:

No immediately actions are required.

Reviewed by : Claudine Lee Title : ET Leader

Date : 27th March 2015

Copied to : Supervising Officer and Contractor



環境保護署 噪音管制監督

Environmental Protection Department Noise Control Authority

圖例 Legend

Zone 1 區域 1 | Zone 2 區域 2 | Zone 3A 區域 3A | Zone 3B 區域 3B | Zone 3C 區域 3C

Contract No. HY/2011/03 -
Hong Kong- Zhuhai- Macao Bridge
Hong Kong Link Road Section between Scenic Hill and Hong Kong Boundary Crossing Facilities
Notifications of Environmental Quality Limits Exceedances Notification No.: 209

Date of Notification: 27th March 2015

Works Inspected: Data collected from water sampling works on 04 March 2015 and the test report was issued on 11 March 2015.

Monitoring Location: Water Quality Monitoring Stations

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	DA	**23.5** and 120% of upstream control station's suspended solid at the same tide of the same day (i.e. CS2: 4.68 x 120% = **5.6** mg/L for mid ebb) AND CS(Mf)5: 3.22 x 120% = **3.9** mg/L for mid flood)	**34.4** and 130% of upstream control station's suspended solid at the same tide of the same day (i.e. CS2: 4.68 x 130% = **6.1** mg/L for mid ebb) AND CS(Mf)5: 3.22 x 130% = **4.2** mg/L for mid flood)	5.2	***27.4***

Notes:
DA means depth average.
Bold Italic means AL exceedances.
Bold Italic with underline means LL exceedances.

Possible reason for Action or Limit Level Non-compliance:

On 04 March 2015, an AL exceedance of suspended solid at station IS8 was recorded during the mid-flood tide. The exceedance has been investigated and is considered unlikely to be related to contract works due to the following reasons:

1. Seawall construction works at Zones 2 and 3A were carried out within silt curtain as recommended in the EIA Report.
2. The ranges of suspended solid at station IS8 during the baseline monitoring are shown as below:

Station	Range of Suspended Solid (mg/L) Mid- Ebb Tide			Range of Suspended Solid (mg/L) Mid- Flood Tide		
IS8	5.5	to	25.5	5.8	to	31.3

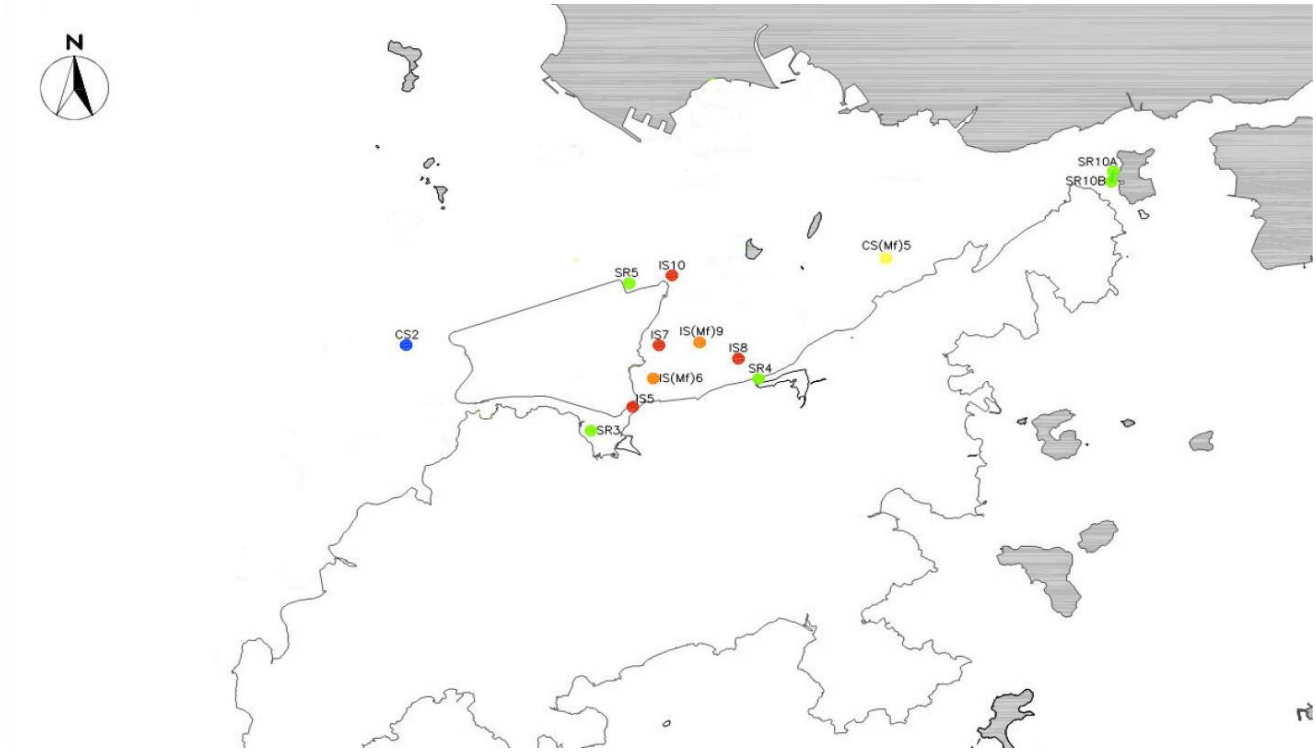
   The measured value at the station IS8 was within the range of suspended solid during baseline monitoring for the mid-flood tide. In addition, there were no specific activities recorded during the monitoring period that would cause any significant impacts on the monitoring results.
3. No leakage of turbid water or any abnormity or malpractice was observed during the sampling exercise.

As such, the suspended solid levels recorded at this station are considered to be attributed to other external factors rather than the contract works.

Actions taken/ to be taken:

As the suspended solid levels recorded beyond the water quality criteria were not related to contract works, no immediate actions are considered necessary.

Location Plan:



Reviewed by : Claudine Lee Title : ET Leader

Date : 27th March 2015

Copied to : Supervising Officer, IEC, EPD, Contractor, ENPO-+

Contract No. HY/2011/03 -
Hong Kong- Zhuhai- Macao Bridge
Hong Kong Link Road Section between Scenic Hill and Hong Kong Boundary Crossing Facilities
Notifications of Environmental Quality Limits Exceedances Notification No.: 210

Date of Notification: 27th March 2015

Works Inspected: Data collected from water sampling works on 09 March 2015 and the test report was issued on 16 March 2015.

Monitoring Location: Water Quality Monitoring Stations

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	SR4	DA	**23.5** and 120% of upstream control station's suspended solid at the same tide of the same day (i.e. CS2: 4.32 x 120% = **5.2** mg/L for mid ebb) AND CS(Mf)5: 3.68 x 120% = **4.4** mg/L for mid flood)	**34.4** and 130% of upstream control station's suspended solid at the same tide of the same day (i.e. CS2: 4.32 x 130% = **5.6** mg/L for mid ebb) AND CS(Mf)5: 3.68 x 130% = **4.8** mg/L for mid flood)	6.1	***27.2***

Notes:
DA means depth average.
Bold Italic means AL exceedances.
Bold Italic with underline means LL exceedances.

Possible reason for Action or Limit Level Non-compliance:

On 09 March 2015, an AL exceedance of suspended solid at station SR4 was recorded during the mid-flood tide. The exceedance has been investigated and is considered unlikely to be related to contract works due to the following reasons:

1. Seawall construction works at Zones 1, 2 and 3A were carried out within silt curtain as recommended in the EIA Report.
2. The ranges of suspended solid at station SR4 during the baseline monitoring are shown as below:

Station	Range of Suspended Solid (mg/L) Mid- Ebb Tide			Range of Suspended Solid (mg/L) Mid- Flood Tide		
SR4	5.3	to	20	5.6	to	24.5

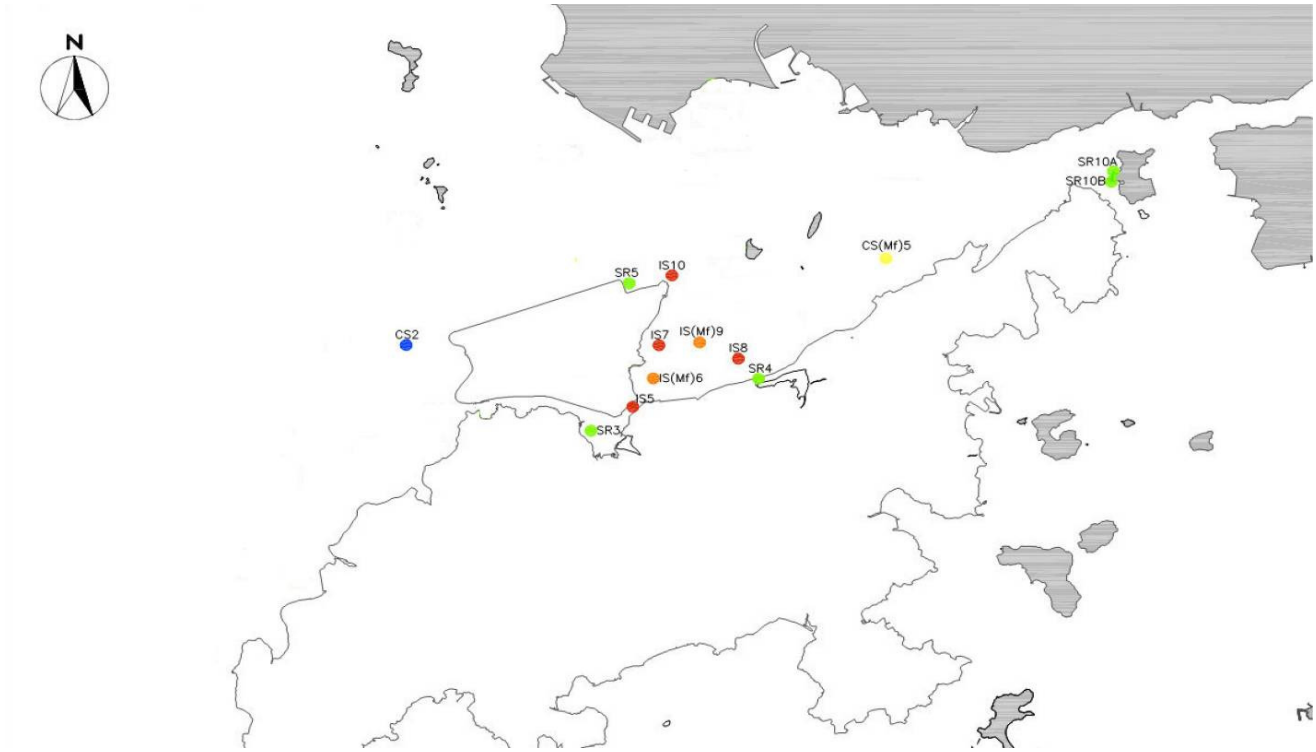
   The measured value at station SR4 was slightly above the range of suspended solid during baseline monitoring for the mid-flood tide. However, there were no specific activities recorded during the monitoring period that would cause any significant impacts on the monitoring results.
3. No leakage of turbid water or any abnormity or malpractice was observed during the sampling exercise.

As such, the suspended solid levels recorded at this station are considered to be attributed to other external factors rather than the contract works.

Actions taken/ to be taken:

As the suspended solid levels recorded beyond the water quality criteria were not related to contract works, no immediate actions are considered necessary.

Location Plan:



Reviewed by : Claudine Lee Title : ET Leader

Date : 27th March 2015

Copied to : Supervising Officer, IEC, EPD, Contractor, ENPO

Contract No. HY/2011/03 -
Hong Kong- Zhuhai- Macao Bridge
Hong Kong Link Road Section between Scenic Hill and Hong Kong Boundary Crossing Facilities
Notifications of Environmental Quality Limits Exceedances Notification No.: 211

Date of Notification: 9 April 2015

Works Inspected: Data collected from water sampling works on 23 March 2015 and the test report was issued on 30 March 2015.

Monitoring Location: Water Quality Monitoring Stations

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	IS10	DA	**23.5** and 120% of upstream control station's suspended solid at the same tide of the same day (i.e. CS2: 7.62 x 120% = **9.1** mg/L for mid ebb) AND CS(Mf)5: 6.73 x 120% = **8.1** mg/L for mid flood)	**34.4** and 130% of upstream control station's suspended solid at the same tide of the same day (i.e. CS2:7.62 x 130% = **9.9** mg/L for mid ebb) AND CS(Mf)5: 6.73 x 130% = **8.8** mg/L for mid flood)	6.2	***24.7***
SS	SR5	DA			6.4	***25.0***

Notes:
DA means depth average.
Bold Italic means AL exceedances.
Bold Italic with underline means LL exceedances.

Possible reason for Action or Limit Level Non-compliance:

On 23 March 2015, AL exceedances of suspended solid at stations IS10 and SR5 were recorded during the mid-flood tide. The exceedances have been investigated and are considered unlikely to be related to contract works due to the following reasons:

1. Seawall construction works at Zones 1, 2 and 3A were carried out within silt curtain as recommended in the EIA Report.
2. The ranges of suspended solid at stations IS10 and SR5 during the baseline monitoring are shown as below:

Station	Range of Suspended Solid (mg/L) Mid- Ebb Tide			Range of Suspended Solid (mg/L) Mid- Flood Tide		
IS10	6.1	to	20.2	7.2	to	16
SR5	6.7	to	16.5	6.5	to	31.2

The measured value at station SR5 was below the range of suspended solid during baseline monitoring for the mid-flood tide. The measured value at station IS10 was above the range of suspended solid during baseline monitoring for the mid-flood tide. However, there were no specific activities recorded during the monitoring period that would cause any significant impacts on the monitoring results.

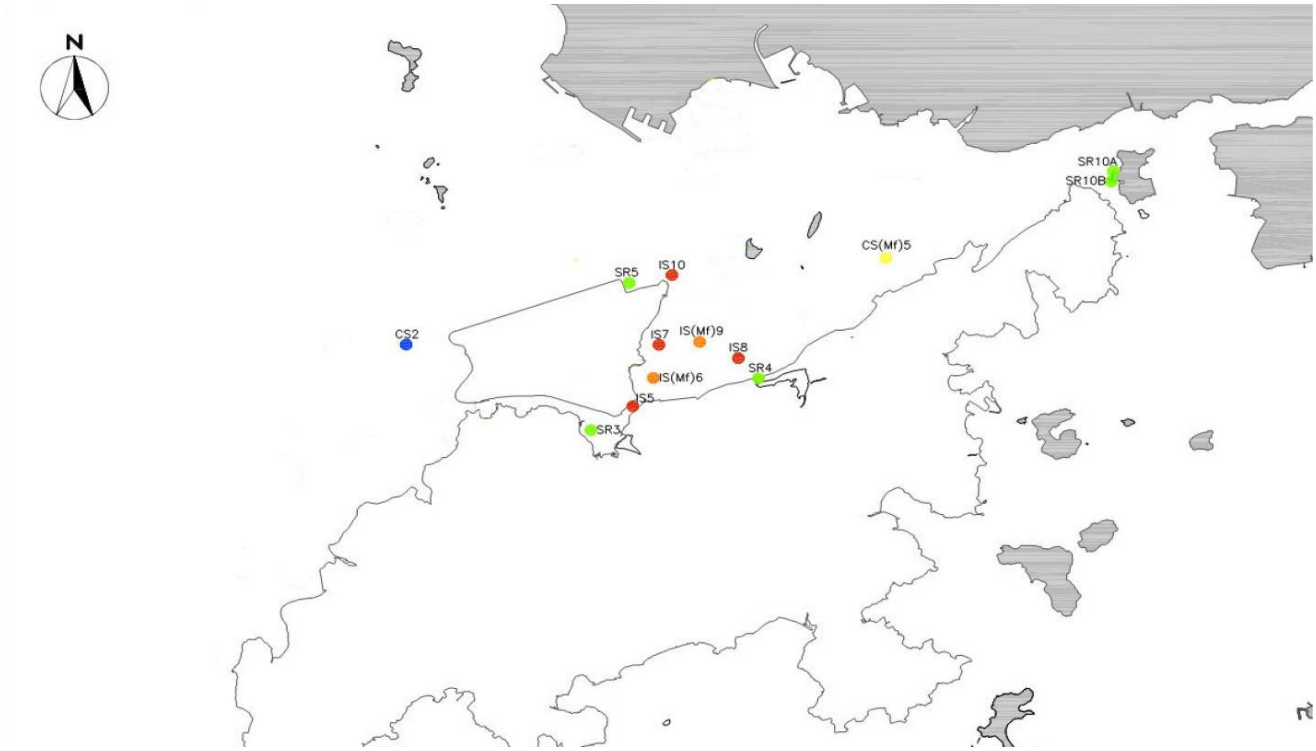
3. No leakage of turbid water or any abnormity or malpractice was observed during the sampling exercise.

As such, the suspended solid levels recorded at these stations are considered to be attributed to other external factors rather than the contract works.

Actions taken/ to be taken:

As the suspended solid levels recorded beyond the water quality criteria were not related to contract works, no immediate actions are considered necessary.

Location Plan:



Reviewed by : Claudine Lee Title : ET Leader

Date : 9 April 2015

Copied to : Supervising Officer, IEC, EPD, Contractor, ENPO

Contract No. HY/2011/03 -
Hong Kong- Zhuhai- Macao Bridge
Hong Kong Link Road Section between Scenic Hill and Hong Kong Boundary Crossing Facilities
Notifications of Environmental Quality Limits Exceedances Notification No.: 212 ver0

Date of Notification: 29 July 2015

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 March 2015 – May 2015
	Action Level (AL)	Limit Level (LL)	
Northeast Lantau (NEL)	STG < 4.2 & ANI < 15.4	NEL: (STG < 2.4 & ANI <8.9) and NWL: (STG < 3.9 & ANI <17.9)	***STG = 0; ANI = 0***
Northwest Lantau (NWL)	STG < 6.9 & ANI < 31.3		***STG = 0.47; ANI = 2.36***

Notes:
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. ***Bold Italic*** means AL exceedances.
5. ***Bold Italic with underline*** means LL exceedances

Possible reason for Limit Level Non-compliance:

According to the contractor's information, the marine activities undertaken for HKLR03 during the quarter of March 2015 to May 2015 included reclamation, excavation of stone platform, construction of seawall, temporary drainage diversion and ground investigation.

There is no evidence showing the current LL non-compliance directly related to the construction works of HKLR03 (where the amounts of working vessels for HKLR03 have been decreasing), although the generally increased amount of vessel traffic in NEL since the impact phase (October 2012). It should also be noted that reclamation work under HKLR03 (adjoining the Airport Island) situates in waters which has rarely been used by dolphins in the past, and the working vessels under HKLR03 have been travelling from source to destination in accordance with the Marine Travel Route to minimize impacts on Chinese White Dolphin. In addition, the contractor will implement proactive mitigation measures such as avoiding anchoring at Marine Department's designated anchorage site – Sham Shui Kok Anchorage (near Brothers Island) as far as practicable.

Actions taken/ to be taken:

Inform the IEC, ER/SOR and Contractor
The ETL informed IEC, ENPO, SOR and Contractor via email on 16 June 2015.

Repeat statistical data analysis to confirm findings and check monitoring data:

A two-way ANOVA with repeated measures and unequal sample size was conducted to examine whether there were any significant differences in the average encounter rates between the baseline and impact monitoring periods. The two variables that were examined included the two periods (baseline and impact phases) and two locations (NEL and NWL).

For the comparison between the baseline period and the present quarter (tenth quarter of the impact phase being assessed), the p-value for the differences in average dolphin encounter rates of STG and ANI were 0.0015 and 0.0139 respectively. If the alpha value is set at 0.05, significant differences were detected between the baseline and present quarters in both dolphin encounter rates of STG and ANI.

For the comparison between the baseline period and the cumulative quarters in impact phase (i.e. first ten quarters of the impact phase being assessed), the p-value for the differences in average dolphin encounter rates of STG and ANI were 0.0004 and 0.0001 respectively. Even if the alpha value is set at 0.01, significant differences were detected in both the average dolphin encounter rates of STG and ANI (i.e. between the two periods and the locations).

Review all available and relevant data, including raw data and statistical analysis results of other parameters covered in the EM&A, to ascertain if differences are as a result of natural variation or previously observed seasonal differences:

The AFCD monitoring data during March 2015 to May 2015 has been reviewed by the dolphin specialist. During the same quarter, no dolphin was sighted from 87.62 km of survey effort on primary lines in NEL, while only one group of three dolphins were sighted from 184.19 km of survey effort on primary lines in NWL. This review has confirmed that the extremely low occurrence of dolphins reported by the HKLR03 monitoring survey in spring 2015 in NEL and NWL survey areas is accurate.

Identify source(s) of impact:

There is no evidence showing that the sources of impact directly related to the construction works of HKLR03 that may have affected the dolphin usage in the NEL region.

Recommendations/ mitigation measures/ actions if necessary:

Review to ensure all the dolphin protective measures are fully and properly implemented and advise on additional measures if necessary:

All dolphin protective measures are fully and properly implemented in accordance with the EM&A Manual. According to the Marine Travel Route Plan, if vessels are crossing along edge of the proposed marine park, the travelling speed will keep not exceeding 5 knots when crossing the edge of the proposed marine park. The Contractor will continue to provide training for skippers to ensure that their working vessels travel from source to destination to minimize impacts on Chinese White Dolphin and avoid anchoring at Marine Department's designated anchorage site - Sham Shui Kok Anchorage (near Brothers Island) as far as practicable. Also, it is recommended to complete the marine works of the Contract as soon as possible so as to reduce the overall duration of impacts and allow the dolphins population to recover as early as possible.

A meeting was held on 10 July 2015 with attendance of representative of Highways Department, ENPO, Resident Site Staff (RSS), Environmental Team (ET) and dolphin specialist for Contract Nos. HY/2010/02, HY/2011/03, HY/2012/07, HY/2012/08. Also, main Contractor for Contract Nos. HY/2011/03 and HY/2012/08 attended the meeting. The discussion/recommendation as recorded in the minutes of the meeting, which might be relevant to HKLR03 Contract are summarized below.

It was concluded that the HZMB works is one of the contributing factors affecting the dolphins. It was also concluded the contribution of impacts due to the HZMB works as a whole (or individual marine contracts) cannot be quantified 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.

It was suggested that the protection measures (e.g., speed limit control) for the proposed Brothers Island Marine Park (BMP) shall be brought forward as soon as possible before its establishment so as to provide a better habitat for dolphin recovery. It was noted that under the Regular Marine Travel Route Plan, the contractors have committed to reduce the vessel speed in BMP.

There was a discussion on exploring possible further mitigation measures, for example, controlling the underwater noise. It was noted that the EIA reports for the projects suggested several mitigation measures, all of which have been implemented.

Reviewed by : Claudine Lee Title : ET Leader

Date : 29 July 2015

Copied to : Supervising Officer, ENPO, IEC, EPD, Contractor

Summary of Notifications of Summons and Prosecutions

Total No. of Notifications of Summons / Prosecutions Received	No. of Notifications of Summons / Prosecutions Received during Reporting Period	Status of Notifications of Summons / Prosecutions
0	0	N/A