

**Contract No. HY/2012/08  
Tuen Mun – Chek Lap Kok Link –  
Northern Connection Sub-sea Tunnel  
Section**

*Seventieth Monthly Environmental Monitoring &  
Audit (EM&A) Report*

13 September 2019

**Environmental Resources Management**  
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Ref.: HYDHZMBEEM00\_0\_7662L.19

13 September 2019

By Fax (2293 6300) and By Post

AECOM Asia Co. Ltd.  
Supervising Officer Representative's Office  
No.8 Mong Fat Street, Tuen Mun, New Territories, Hong Kong

Attention: Messrs. Andy Westmoreland / Roger Man

Dear Sirs,

**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/2012/08  
TM-CLKL – Northern Connection Sub-sea Tunnel Section  
70<sup>th</sup> Monthly EM&A Report for August 2019 (EP-354/2009/D)**

Reference is made to the Monthly EM&A Report for August 2019 (ET's ref.: "0212330\_70th Monthly EM&A\_20190912.doc") certified by the ET Leader and provided to us via e-mail on 13 September 2019.

Please be informed that we have no adverse comments on the captioned Report. We write to verify the captioned submission in accordance with Condition 4.4 of EP-354/2009/D.

Thank you for your attention. Please do not hesitate to contact the undersigned or the ENPO Leader Mr. Y. H. Hui should you have any queries.

Yours sincerely,



F. C. Tsang  
Independent Environmental Checker  
Tuen Mun – Chek Lap Kok Link

c.c.

HyD	Mr. Patrick Ng	(By Fax: 3188 6614)
HyD	Mr. Cheng Pan	(By Fax: 3188 6614)
AECOM	Mr. Conrad Ng	(By Fax: 3922 9797)
ERM	Dr. Jasmine Ng	(By Fax: 2723 5660)
DBJV	Mr. Bryan Lee	(By Fax: 2293 7499)

Internal: DY, YH, DF, ENPO Site

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# Contract No. HY/2012/08


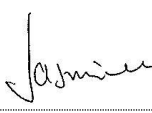


## Tuen Mun – Chek Lap Kok Link – Northern Connection Sub-sea Tunnel Section

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*Seventieth Monthly Environmental Monitoring & Audit (EM&A) Report*

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Client:  DBJV		Project No:  0212330			
Summary:  This document presents the Seventieth Monthly EM&A Report for Tuen Mun – Chek Lap Kok Link Northern Connection Sub-sea Tunnel Section.		Date: 13 September 2019			
		Approved by:  			
		Mr Craig Reid Partner			
		Certified by:  			
		Dr Jasmine Ng ET Leader			
	70 <sup>th</sup> Monthly EM&A Report	VAR	JN	CAR	13/09/19
Revision	Description	By	Checked	Approved	Date
<p>This report has been prepared by Environmental Resources Management the trading name of 'ERM Hong-Kong, Limited', with all reasonable skill, care and diligence within the terms of the Contract with the client, incorporating our General Terms and Conditions of Business and taking account of the resources devoted to it by agreement with the client.</p> <p>We disclaim any responsibility to the client and others in respect of any matters outside the scope of the above.</p>		<p>Distribution</p> <p><input type="checkbox"/> Internal</p> <p><input checked="" type="checkbox"/> Public</p> <p><input type="checkbox"/> Confidential</p>			
		 			

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## **EXECUTIVE SUMMARY**

Under *Contract No. HY/2012/08*, Dragages – Bouygues Joint Venture (DBJV) is commissioned by the Highways Department (HyD) to undertake the design and construction of the Northern Connection Sub-sea Tunnel Section of the Tuen Mun – Chek Lap Kok Link Project (TM-CLK Link Project) while AECOM Asia Company Limited was appointed by HyD as the Supervising Officer. For implementation of the environmental monitoring and audit (EM&A) programme under the Contract, ERM-Hong Kong, Limited (ERM) has been appointed as the Environmental Team (ET) in accordance with *Environmental Permit No. EP-354/2009/A*. Ramboll Hong Kong Ltd. was employed by HyD as the Independent Environmental Checker (IEC) and Environmental Project Office (ENPO). Subsequent applications for variation of environmental permits (VEP), *EP-354/2009/B*, *EP-354/2009/C* and *EP-354/2009/D*, were granted on 28 January 2014, 10 December 2014 and 13 March 2015, respectively.

The construction phase of the Contract commenced on 1 November 2013 and will tentatively be completed by the end of 2019. The impact monitoring of the EM&A programme, including air quality, water quality, marine ecological monitoring and environmental site inspections, were commenced on 1 November 2013.

This is the Seventieth Monthly EM&A report presenting the EM&A works carried out during the period from 1 to 31 August 2019 for the *Contract No. HY/2012/08 Northern Connection Sub-sea Tunnel Section* (the “Contract”) in accordance with the Updated EM&A Manual of the TM-CLK Link Contract. As informed by the Contractor, major activities in the reporting period included:

### *Land-based Works*

- Construction of Thermal barrier – TBM tunnel;
- Construction of Walkway Corbel & Cover – TBM Tunnel;
- Road & Drainage works – Portion N-A
- RC structure – Portion S-A;
- Backfilling – Portion S-A;

### *Marine-based Works*

- Seawall Modification Works – Portion S-B

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

24-hour TSP Monitoring	10 sessions
1-hour TSP Monitoring	10 sessions
Water Quality Monitoring	13 sessions
Impact Dolphin Monitoring	2 sessions
Joint Environmental Site Inspection	4 sessions

#### *Implementation of Marine Mammal Exclusion Zone*

Daily marine mammal exclusion zone was in effect during the period of silt curtain installation in open waters under this Contract. No sighting of the Indo-Pacific humpback dolphin *Sousa chinensis* (i.e. Chinese White Dolphin) was recorded in August 2019 during the exclusion zone monitoring.

#### Summary of Breaches of Action/Limit Levels

##### *Breaches of Action and Limit Levels for Air Quality*

No exceedances were recorded in the air quality monitoring of this reporting month.

##### *Breaches of Action and Limit Levels for Water Quality*

Fifty-four (54) Action Level and four (4) Limit Level exceedances for Dissolved Oxygen were recorded in the water quality monitoring of this reporting month. One (1) Action Level exceedance for Depth-averaged suspended solids was recorded.

##### *Breaches of Action and Limit Levels for Dolphin Monitoring*

Whilst one (1) Limit Level exceedance was observed for the quarterly dolphin monitoring data between June and August 2019, no unacceptable impact from the construction activities of the TM-CLKL Northern Connection Sub-sea Tunnel Section on Chinese White Dolphins was noticeable from general observations. Due to monthly variation in dolphin occurrence within the study area, it would be more appropriate to draw conclusion on whether any impacts on dolphins have been detected related to the construction activities of the TM-CLKL Northern Connection Sub-sea Tunnel Section in the quarterly EM&A reports, where comparison on distribution, group size and encounter rates of dolphins between the quarterly impact monitoring period and baseline monitoring period will be made.

#### Environmental Complaints, Non-compliance & Summons

No non-compliance with EIA recommendations, EP conditions and other requirements associated with the construction of this Contract was recorded in this reporting period.

No environmental complaint was received in this reporting period.

No environmental summons was received in this reporting period.

### Reporting Change

As the Seawall Modification Works has commenced on 12 August 2019, water quality monitoring was carried out in this reporting month.

### Upcoming Works for the Next Reporting Month

Works to be undertaken in the next monitoring period of September 2019 include the following:

#### *Land-based Works*

- Construction of Thermal barrier - TBM tunnel;
- Construction of Walkway Corbel & Cover - TBM Tunnel;
- Backfilling - Portion N-A
- RC structure - Portion S-A;
- Louver Installation - Portion S-A;
- Construction of Parapet - Portion S-C
- VST Tower Dismantling - Portion S-C
- 

#### *Marine-based Works*

- Seawall Modification Works - Portion S-B

### Future Key Issue

Potential environmental impacts arising from the above upcoming construction activities in the next reporting month of September 2019 are mainly associated with dust, marine water quality, marine ecology and waste management issues.

## 1.1

## BACKGROUND

According to the findings of the Northwest New Territories (NWNT) Traffic and Infrastructure Review conducted by the Transport Department, Tuen Mun Road, Ting Kau Bridge, Lantau Link and North Lantau Highway would be operating beyond capacity after 2016. This forecast has been based on the estimated increase in cross boundary traffic, developments in the Northwest New Territories (NWNT), and possible developments in North Lantau, including the Airport developments, the Lantau Logistics Park (LLP) and the Hong Kong – Zhuhai – Macao Bridge (HZMB). In order to cope with the anticipated traffic demand, two new road sections between NWNT and North Lantau – Tuen Mun – Chek Lap Kok Link (TM-CLKL) and Tuen Mun Western Bypass (TMWB) are proposed.

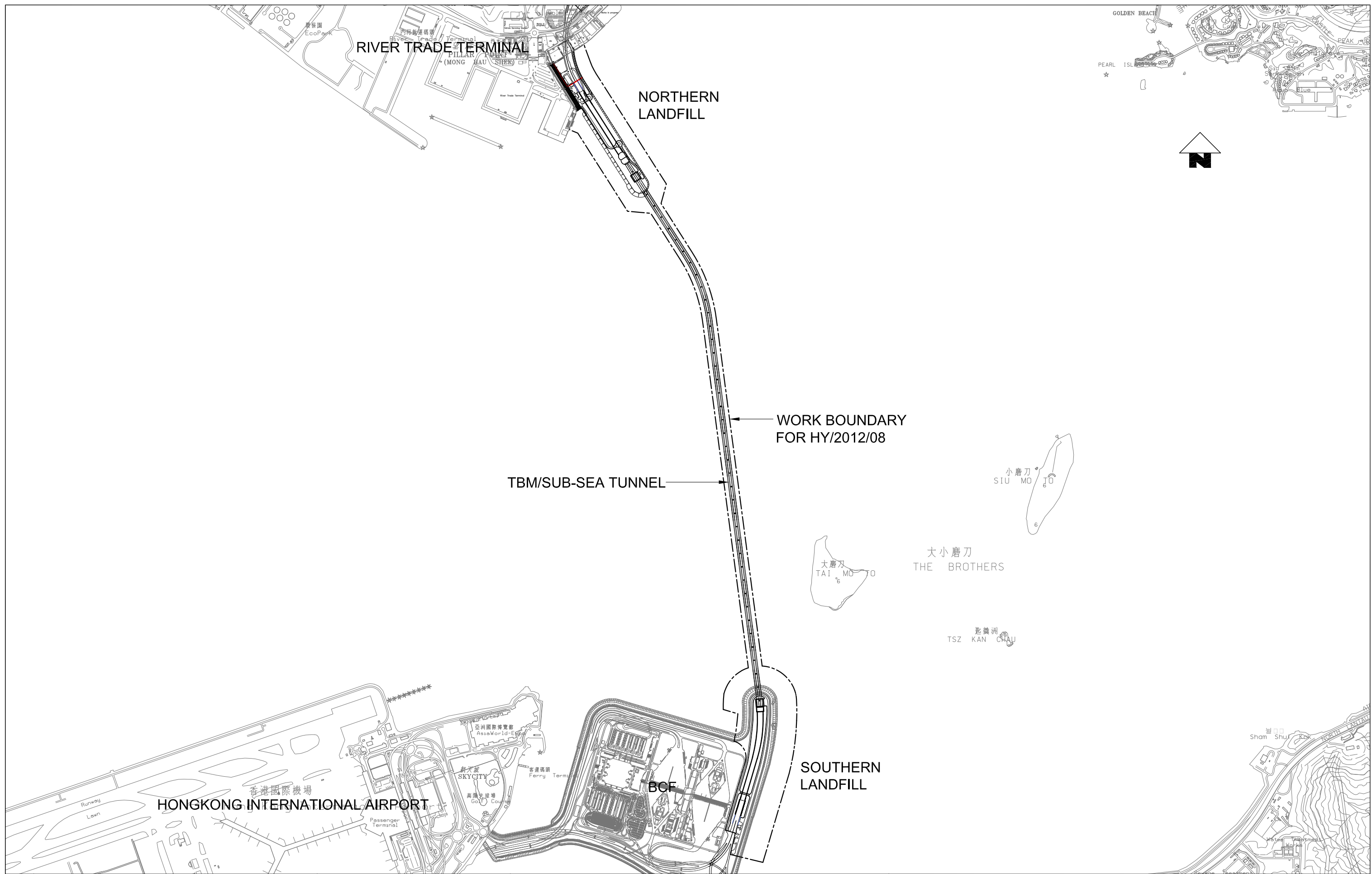
An Environmental Impact Assessment (EIA) of TM-CLKL (the Project) was prepared in accordance with the EIA Study Brief (No. ESB-175/2007) and the *Technical Memorandum of the Environmental Impact Assessment Process (EIAO-TM)*. The EIA Report was submitted under the Environmental Impact Assessment Ordinance (EIAO) in August 2009. Subsequent to the approval of the EIA Report (EIAO Register Number AEIAR-146/2009), an Environmental Permit (EP-354/2009) for TM-CLKL was granted by the Director of Environmental Protection (DEP) on 4 November 2009, and EP variation (VEP) (EP-354/2009/A) was issued on 8 December 2010. Subsequent applications for variation of environmental permits (VEPs), *EP-354/2009/B*, *EP-354/2009/C* and *EP-354/2009/D*, were granted on 28 January 2014, 10 December 2014 and 13 March 2015, respectively.

Under *Contract No. HY/2012/08*, Dragages – Bouygues Joint Venture (DBJV) is commissioned by the Highways Department (HyD) to undertake the design and construction of the Northern Connection Sub-sea Tunnel Section of TM-CLKL while AECOM Asia Company Limited was appointed by HyD as the Supervising Officer. For implementation of the environmental monitoring and audit (EM&A) programme under the Contract, ERM-Hong Kong, Limited (ERM) has been appointed as the Environmental Team (ET). Ramboll Hong Kong Ltd. was employed by HyD as the Independent Environmental Checker (IEC) and Environmental Project Office (ENPO).

Layout of the Contract components is presented in *Figure 1.1*.

The construction phase of the Contract commenced on 1 November 2013 and will tentatively be completed by the end of 2019. The impact monitoring phase of the EM&A programme, including air quality, water quality, marine ecological monitoring and environmental site inspections, were commenced on 1 November 2013.





Designed By	PKV		
Drawn By	DAI		
Approved By	SPo		
Date	11SEP2013	PKV	
Rev.	Description	Date	Checked
A	FIRST ISSUE	11SEP13	PKV

Main Contractor

Dragages - Bouygues Joint Venture 寶嘉 - 布依格聯營

Client

路政署  
HIGHWAYS DEPARTMENT

Contractor's Designer

Arup Ove Arup & Partners  
Hong Kong Limited

Project

Contract No. HY/2012/08  
Tuen Mun - Chek Lap Kok Link -  
Northern Connection Sub-Sea Tunnel Section

Drawing Title

**Figure 1.1**

Drawing no.	TMCLKL8-DBJ-GEN-DWG-00174
Scale	1:25000 © A3
CADD Ref.	TMCLKL8-DBJ-GEN-DWG-00174-DFT-A
Issue Status	DFT (DRAFT)
Revision	A

## 1.2 SCOPE OF REPORT

This is the Seventieth Monthly EM&A Report under the *Contract No. HY/2012/08 Tuen Mun – Chek Lap Kok Link – Northern Connection Sub-sea Tunnel Section*. This report presents a summary of the environmental monitoring and audit works in August 2019.

## 1.3 ORGANIZATION STRUCTURE

The organization structure of the Contract is shown in *Appendix A*. The key personnel contact names and contact details are summarized in *Table 1.1* below.

**Table 1.1** *Contact Information of Key Personnel*

Party	Position	Name	Telephone	Fax
Highways Department	Engr 24/SD	Ken T.M. Cheng	2762 4062	3188 6614
SOR (AECOM Asia Company Limited)	Chief Resident Engineer	Roger Man	2293 6388	2293 6300
		Andrew Westmoreland	2293 6360	2293 6300
ENPO / IEC (Ramboll Hong Kong Ltd.)	ENPO Leader	Y.H. Hui	3465 2850	3465 2899
	IEC	Dr. F.C. Tsang	3465 2851	3465 2899
Contractor (Dragages – Bouygues Joint Venture)	Deputy Environmental Manager	Bryan Lee	2293 7323	2293 7499
		24-hour hotline	2293 7330	
ET (ERM-HK)	ET Leader	Jasmine Ng	2271 3311	2723 5660

## 1.4 SUMMARY OF CONSTRUCTION WORKS

The construction phase of this Contract was commenced on 1 November 2013. The construction programme is shown in *Appendix B*.

As per DBJV's information, details of major construction works carried out in this reporting period are summarized in *Table 1.2*.

The general layout plan of the site showing the detailed works areas is shown in *Figure 1.2*. The Environmental Sensitive Receivers in the vicinity of the Project are shown in *Figure 1.3*.

The implementation schedule of environmental mitigation measures is presented in *Appendix C*.

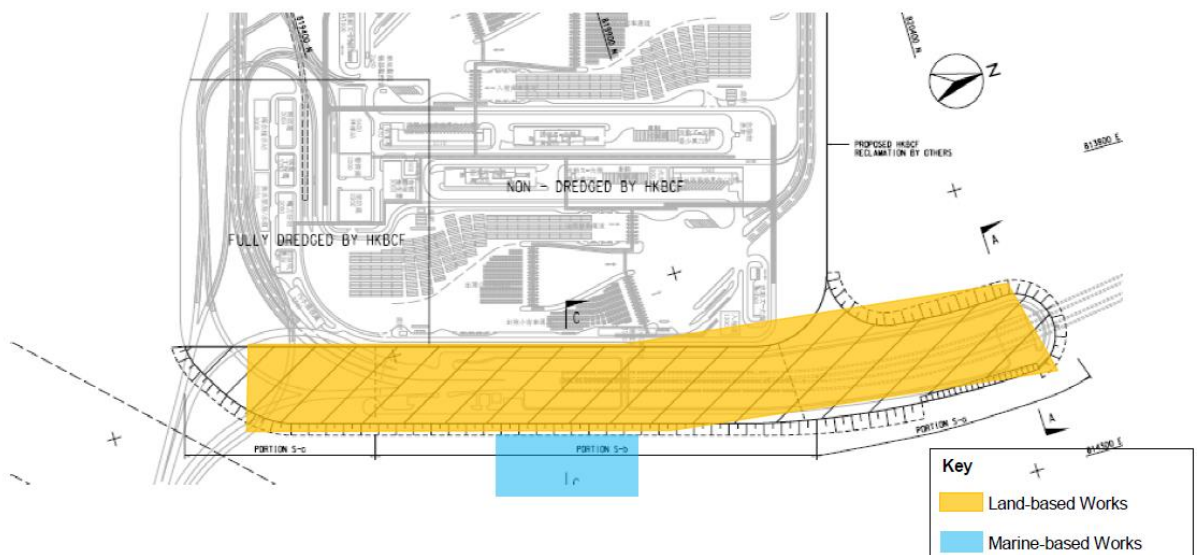
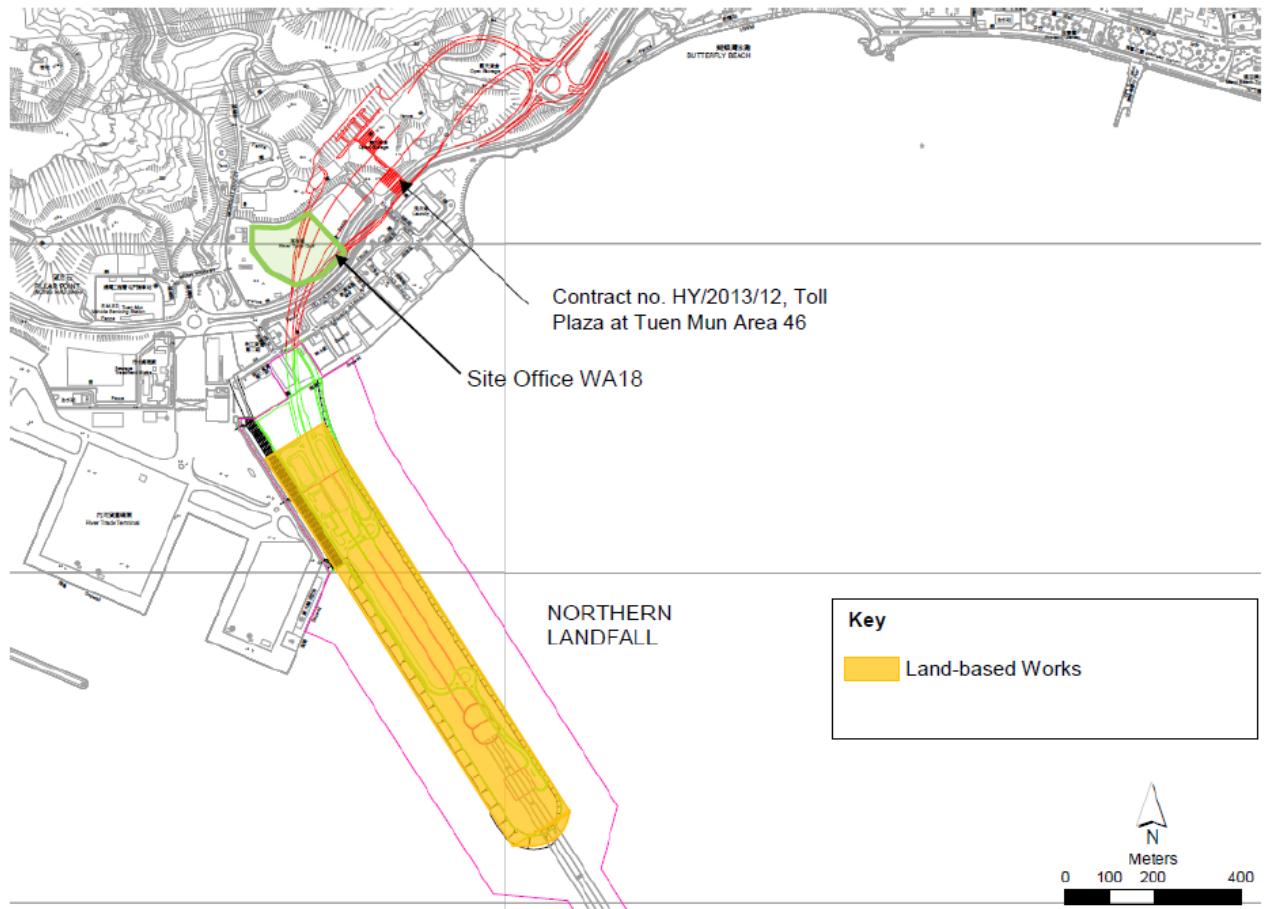
**Table 1.2**      **Summary of Construction Activities Undertaken during the Reporting Period**

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<b>Construction Activities Undertaken</b>
<i>Land-based Works</i>
<ul style="list-style-type: none"><li>• Construction of Thermal barrier – TBM tunnel;</li><li>• Construction of Walkway Corbel &amp; Cover – TBM Tunnel;</li><li>• Road &amp; Drainage works – Portion N-A</li><li>• RC structure – Portion S-A;</li><li>• Backfilling – Portion S-A;</li></ul>
<i>Marine-based Works</i>
<ul style="list-style-type: none"><li>• Seawall Modification Works – Portion S-B</li></ul>

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Figure 1.2 Locations of Construction Activities – August 2019



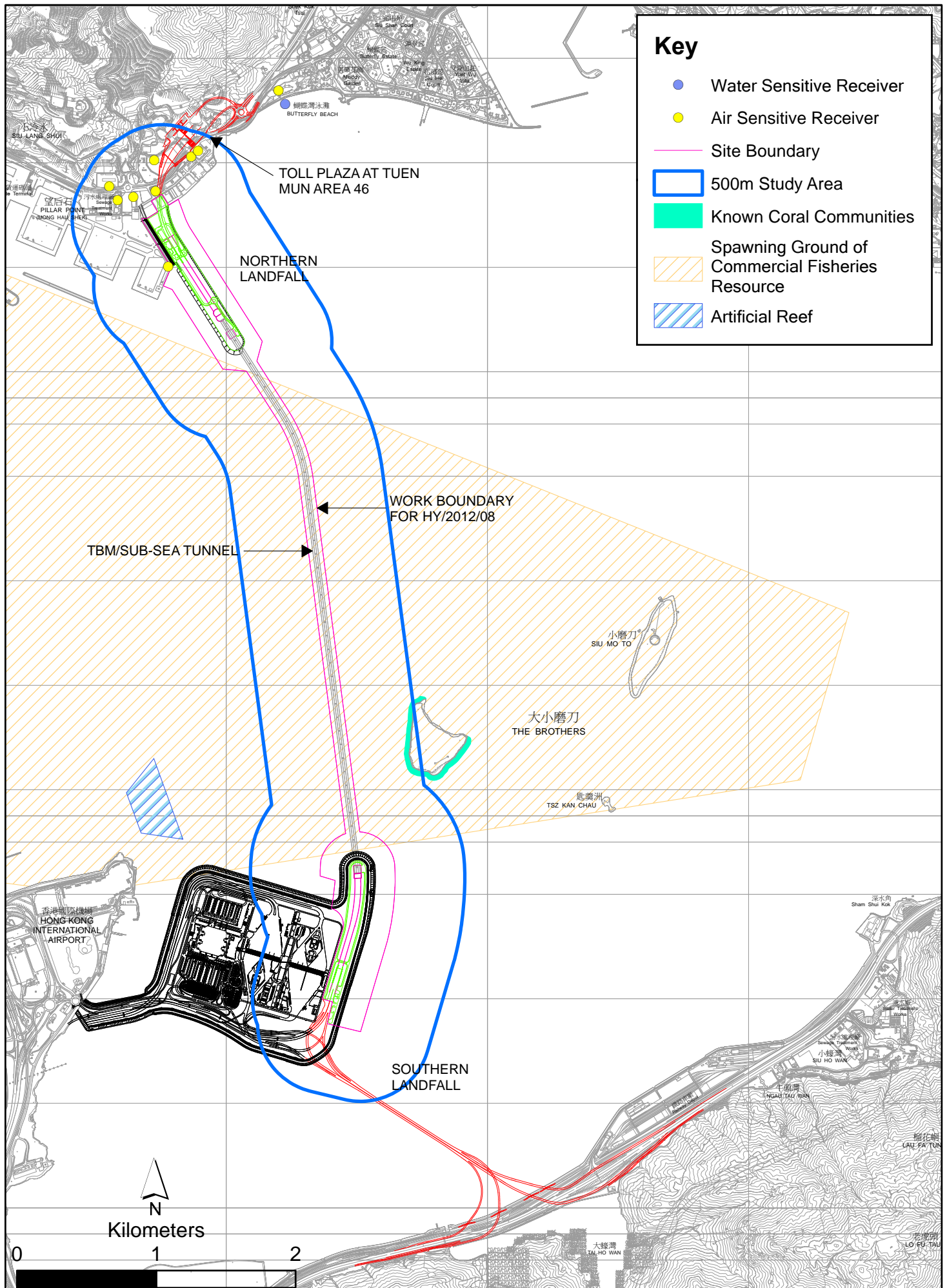


Figure 1.3 Environmental Sensitive Receivers in the vicinity of Contract No. HY/2012/08 Tuen Mun - Chek Lap Kok Link - Northern Connection Sub-Sea Tunnel Section

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Date: 15/4/2014



The EM&A programme required environmental monitoring for air quality, water quality and marine ecology as well as environmental site inspections for air quality, noise, water quality, waste management, marine ecology and landscape and visual impacts. The EM&A requirements and related findings for each component are summarized in the following sections

## 2.1 AIR QUALITY

### 2.1.1 Monitoring Requirements and Equipment

In accordance with the Updated EM&A Manual and the Enhanced TSP Monitoring Plan, impact 1-hour TSP monitoring was conducted three (3) times every six (6) days and impact 24-hour TSP monitoring was carried out once every six (6) days when the highest dust impact was expected. 1-hr and 24-hr TSP monitoring frequency was increased to three times per day every three days and daily every three days, respectively, as excavation works for launching shaft commenced on 24 October 2014.

High volume samplers (HVSs) were used to carry out the 1-hour and 24-hour TSP monitoring on 3, 6, 9, 12, 15, 18, 21, 24, 27 and 30 August 2019 at the five (5) air quality monitoring stations in accordance with the requirements stipulated in the Updated EM&A Manual (*Figure 2.1; Table 2.1*). Wind meter was installed at the rooftop of ASR5 for logging wind speed and wind direction. Details of the equipment deployed are provided in *Table 2.2*. Copies of the calibration certificates for the equipment are presented in *Appendix E*.

**Table 2.1** *Locations of Impact Air Quality Monitoring Stations and Monitoring Dates in this Reporting Period*

Monitoring Station	Monitoring Dates	Location	Description	Parameters & Frequency
ASR1	3, 6, 9, 12, 15, 18, 21, 24, 27 and 30 August 2019	Tuen Mun Fireboat Station	Office	TSP monitoring <ul style="list-style-type: none"> <li>1-hour Total Suspended Particulates (1-hour TSP, <math>\mu\text{g}/\text{m}^3</math>), 3 times in every 6 days</li> </ul>
ASR5		Pillar Point Fire Station	Office	<ul style="list-style-type: none"> <li>24-hour Total Suspended Particulates (24-hour TSP, <math>\mu\text{g}/\text{m}^3</math>), daily for 24-hour in every 6 days</li> </ul>
AQMS1		Previous River Trade Golf	Bare ground	Enhanced TSP monitoring (commenced on 24 October 2014)
ASR6		Butterfly Beach Laundry	Office	<ul style="list-style-type: none"> <li>1-hour Total Suspended Particulates (1-hour TSP, <math>\mu\text{g}/\text{m}^3</math>), 3 times in every 3 days</li> </ul>
ASR10		Butterfly Beach Park	Recreational uses	<ul style="list-style-type: none"> <li>24-hour Total Suspended Particulates (24-hour TSP, <math>\mu\text{g}/\text{m}^3</math>), daily for 24-hour in every 3 days</li> </ul>

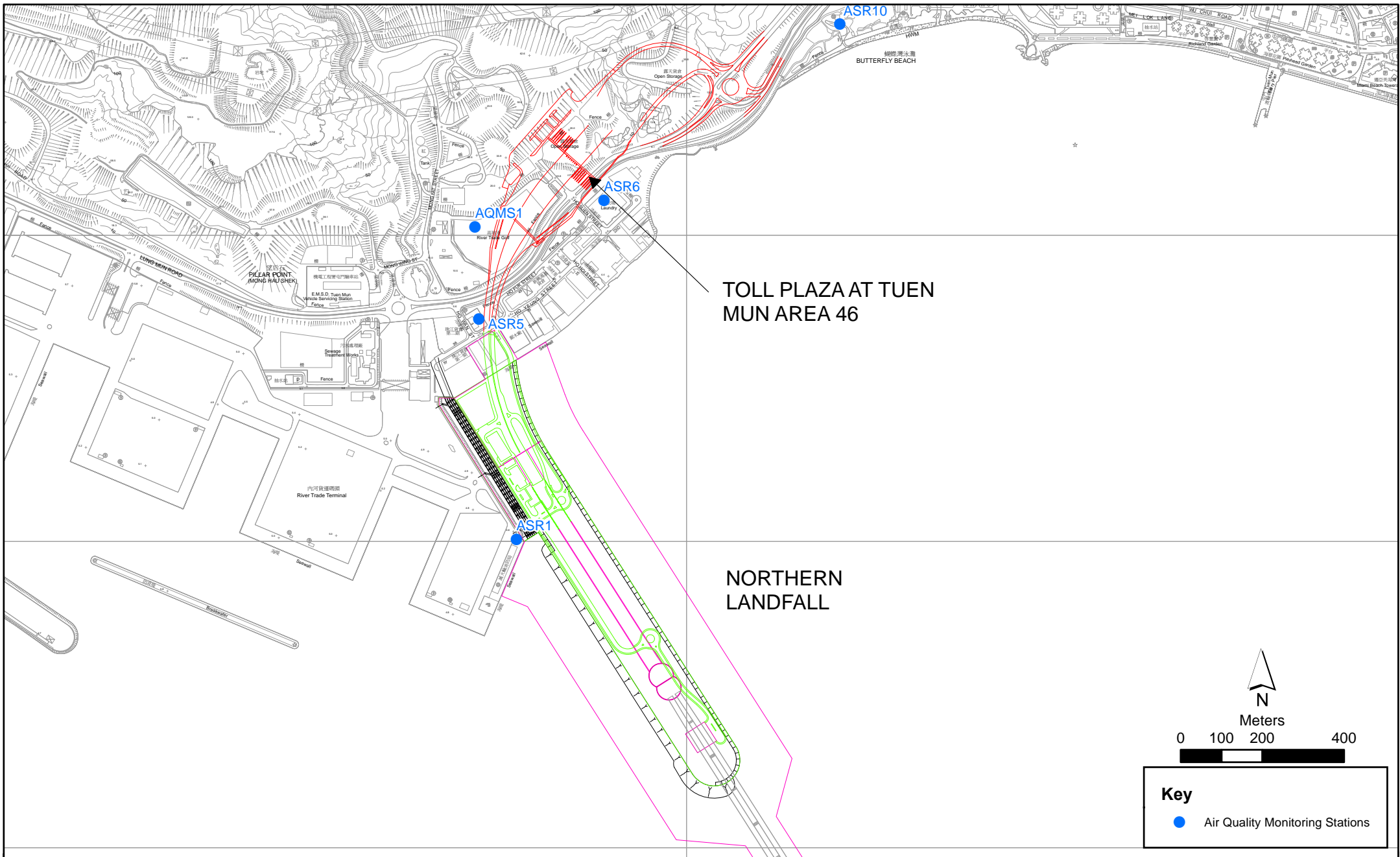


Figure 2.1

Air Quality Monitoring Stations for the Enhanced TSP Monitoring

**Table 2.2 Air Quality Monitoring Equipment**

Equipment	Brand and Model
High Volume Sampler (1-hour TSP and 24-hour TSP)	Tisch Environmental Mass Flow Controlled Total Suspended Particulate (TSP) High Volume Sampler (Model No. TE-5170)
Wind Meter	Davis (Model: Vantage Pro 2 (S/N: AS160104014)
Wind Anemometer for calibration	Lutron (Model No. AM-4201)

**2.1.2 Action & Limit Levels**

The Action and Limit Levels of the air quality monitoring is provided in *Appendix D*. The Event and Action plan is presented in *Appendix K*.

**2.1.3 Monitoring Schedule for the Reporting Month**

The schedule for air quality monitoring in August 2019 is provided in *Appendix F*.

**2.1.4 Results and Observations**

The monitoring results for 1-hour TSP and 24-hour TSP are summarized in *Tables 2.3 and 2.4*, respectively. Detailed impact air quality monitoring results and graphical presentations are presented in *Appendix G*.

**Table 2.3 Summary of 1-hour TSP Monitoring Results in this Reporting Period**

Station	Average ( $\mu\text{g}/\text{m}^3$ )	Range ( $\mu\text{g}/\text{m}^3$ )	Action Level ( $\mu\text{g}/\text{m}^3$ )	Limit Level ( $\mu\text{g}/\text{m}^3$ )
ASR1	96	26 - 185	331	500
ASR5	128	30 - 255	340	500
AQMS1	87	29 - 183	335	500
ASR6	92	41 - 247	338	500
ASR10	57	14 - 121	337	500

**Table 2.4 Summary of 24-hour TSP Monitoring Results in this Reporting Period**

Station	Average ( $\mu\text{g}/\text{m}^3$ )	Range ( $\mu\text{g}/\text{m}^3$ )	Action Level ( $\mu\text{g}/\text{m}^3$ )	Limit Level ( $\mu\text{g}/\text{m}^3$ )
ASR1	66	38 - 116	213	260
ASR5	64	36 - 100	238	260
AQMS1	50	32 - 64	213	260
ASR6	50	33 - 73	238	260
ASR10	38	23 - 73	214	260

The weather condition during the monitoring period varied from sunny to cloudy. The major dust sources in the reporting period included construction activities under the Contract as well as nearby traffic emissions.

A total of 10 1-hour TSP and 24-hour TSP monitoring were undertaken in this reporting month. No exceedances were recorded in the air quality monitoring of this reporting month.

Meteorological information collected at the ASR5, including wind speed and wind direction, is provided in *Appendix H*.

## 2.2 WATER QUALITY MONITORING

### 2.2.1 Monitoring Requirements & Equipment

The Seawall Modification Works has commenced on 12 August 2019. Water quality monitoring was carried out in this reporting month.

In accordance with the approved Environmental Review Report dated 21 March 2018 for the Change in Design of Vertical Seawall to Sloping Seawall on Southern Landfall, Updated Impact water quality monitoring programme and water quality monitoring stations IS17, SR7 and IS(Mf)11 specified under the EM&A Manual for HZMB HKBCF project will be adopted. (*Figure 2.2; Table 2.5*).

The Action and Limit Levels of the water quality monitoring were adopted from the EM&A Manual for HZMB HKBCF project. The Action and Limit Levels are provided in Appendix D.

**Table 2.5** *Locations of Water Quality Monitoring Stations and the Corresponding Monitoring Requirements*

Station ID	Type	Coordinates		*Parameters, unit	Depth	Frequency
		Easting	Northing			
IS(Mf)11	Impact Station (Close to HKBCF construction site) 8	813562	820716	<ul style="list-style-type: none"> <li>• Temperature(°C)</li> <li>• pH(pH unit)</li> <li>• Turbidity (NTU)</li> <li>• Water depth (m)</li> <li>• Salinity (ppt)</li> </ul>	3 water depths: 1m below sea	Impact monitoring: 3 days per week, at mid-flood and mid- ebb tides during the construction period of the Contract.
IS17	Impact Station (Close to HKBCF construction site)	814539	820391	<ul style="list-style-type: none"> <li>• DO (mg/L and % of saturation)</li> <li>• SS (mg/L)</li> </ul>	surface, mid- depth and 1m above sea bed.	
SR7	Sensitive receivers (Tai Mo Do)	814293	821431		If the water depth is less than 3m, mid- depth sampling only. If water depth less than 6m, mid- depth may be omitted.	

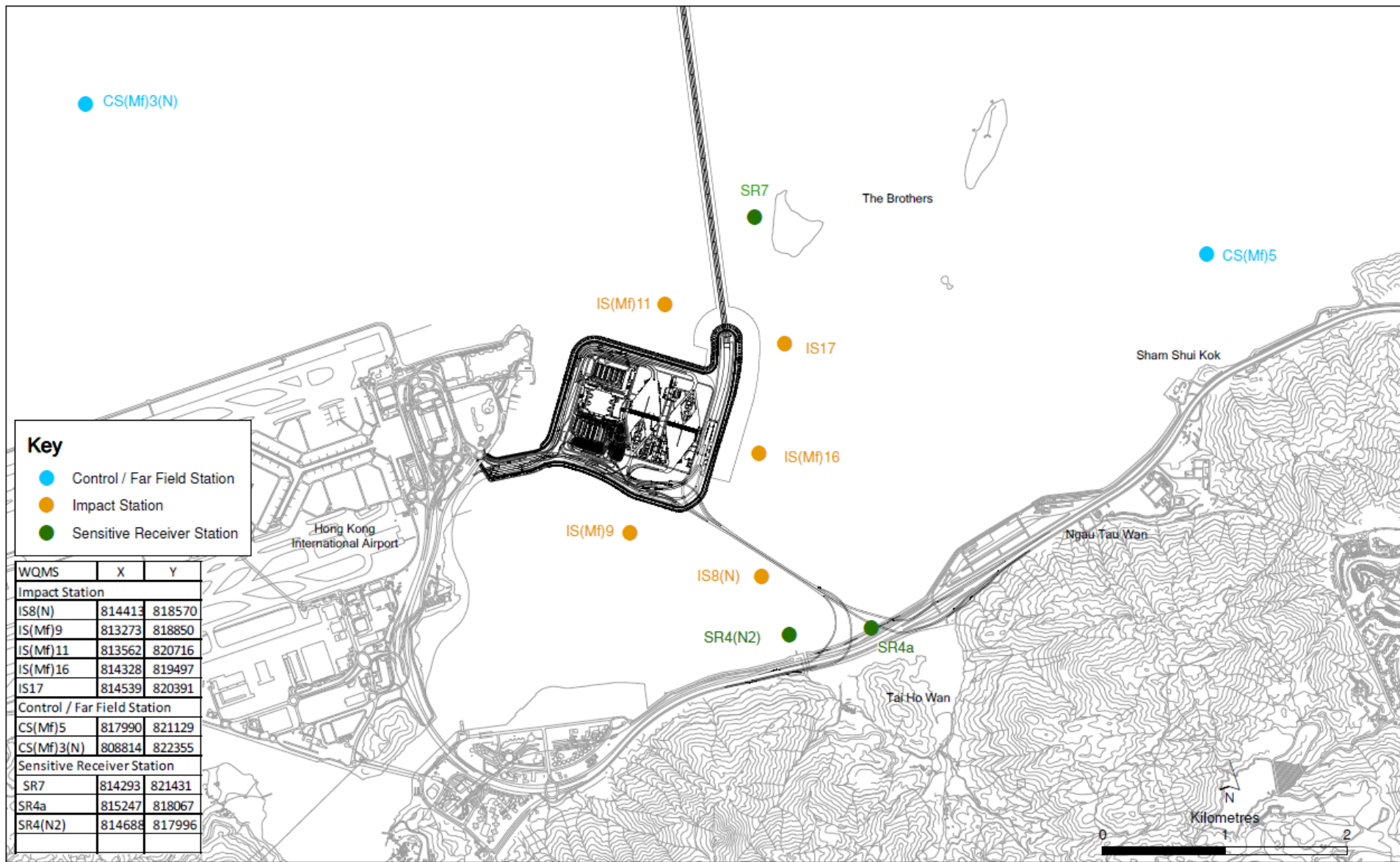


Figure 2.2

## Water Quality Monitoring Stations



Station ID	Type	Coordinates		*Parameters, unit	Depth	Frequency
IS(Mf)9	Impact Station (Close to HKBCF construction site)	813273	818850			
IS(Mf)16	Impact Station (Close to HKBCF construction site)	814328	819497			
IS8(N)	Impact Station (Close to HKBCF construction site)	814413	818570			
SR4(N2)	Sensitive receiver (Tai Ho Inlet)	814688	817996			
SR4a	Sensitive receiver	815247	818067			
CS(Mf)3(N)	Control Station	808814	822355			
CS(Mf)5	Control Station	817990	821129			

\*Notes:

In addition to the parameters presented monitoring location/position, time, water depth, sampling depth, tidal stages, weather conditions and any special phenomena or works underway nearby were also recorded. Water Quality Monitoring Station CS(Mf)3 was relocated to CS(Mf)3(N) since 2 May 2017.

Water Quality Monitoring Station SR4 was relocated to SR4(N) since 2 March 2018.

Water Quality Monitoring Station SR4(N) was relocated to SR4(N2) since 12 June 2019

Water Quality Monitoring Station IS8 was relocated to IS8(N) since 12 June 2019.

*Table 2.6 summarizes the equipment used in the impact water quality monitoring programme. Copies of the calibration certificates are attached in Appendix E.*

**Table 2.6** *Water Quality Monitoring Equipment*

<b>Equipment</b>	<b>Model</b>
Multi-Parameters	YSI ProDss 18A104824
Multi-Parameters	YSI ProDss 15M100005
Multi-Parameters	YSI ProDss 0001C6A7
Multi-Parameters	YSI ProDss 17H105557
Multi-Parameters	YSI ProDss 17E100747
Positioning Equipment	Furuno GP-170
Water Depth Detector	Lowrance Mark 5x / Garmin Striker 4

**2.2.2** *Action & Limit Levels*

The Action and Limit levels of water quality impact monitoring are shown in *Appendix D*. The Event and Action plan is presented in *Appendix K*.

**2.2.3** *Monitoring Schedule for the Reporting Month*

The schedule for water quality monitoring in August 2019 is provided in *Appendix F*.

**2.2.4** *Results and Observations*

Impact water quality monitoring was conducted at all designated monitoring stations in the reporting month. Results and graphical presentations of impact water quality monitoring are presented in *Appendix J*.

In this reporting period, a total of thirteen (13) monitoring events were undertaken in fifty-four (54) Action Level and four (4) Limit Level exceedances for Dissolved Oxygen were recorded in the water quality monitoring of this reporting month. One (1) Action Level exceedance for Depth-averaged suspended solids was recorded.

**2.3** *DOLPHIN MONITORING*

**2.3.1** *Monitoring Requirements*

Impact dolphin monitoring is required to be conducted by a qualified dolphin specialist team to evaluate whether there have been any effects on the dolphins. In order to fulfil the EM&A requirements and make good use of available resources, the on-going impact line transect dolphin monitoring data collected by HyD's *Contract No. HY/2011/03 Hong Kong-Zhuhai-Macao Bridge. Hong Kong Link Road - Section between Scenic Hill and Hong Kong Boundary Crossing Facilities* on the monthly basis is adopted to avoid duplicates of survey effort.

**2.3.2** *Monitoring Equipment*

*Table 2.7* summarises the equipment used for the impact dolphin monitoring.

**Table 2.7** *Dolphin Monitoring Equipment*

<b>Equipment</b>	<b>Model</b>
Global Positioning System (GPS)	Garmin 18X-PC Geo One Phottix
Camera	Nikon D90 300m 2.8D fixed focus Nikon D90 20-300m zoom lens
Laser Binocular	Infinitor LRF 1000
Marine Binocular	Bushell 7 x 50 marine binocular with compass and reticules
Vessel for Monitoring	65 foot single engine motor vessel with viewing platform 4.5m above water level

### **2.3.3** *Monitoring Parameter, Frequencies & Duration*

Dolphin monitoring should cover all transect lines in Northeast Lantau (NEL) and the Northwest Lantau (NWL) survey areas twice per month throughout the entire construction period. The monitoring data should be compatible with, and should be made available for, long-term studies of small cetacean ecology in Hong Kong. In order to provide a suitable long-term dataset for comparison, identical methodology and line transects employed in baseline dolphin monitoring was followed in the impact dolphin monitoring.

### **2.3.4** *Monitoring Location*

The impact dolphin monitoring was carried out in the NEL and NWL along the line transect as depicted in *Figure 2.3*. The co-ordinates of all transect lines are shown in *Table 2.8* below.

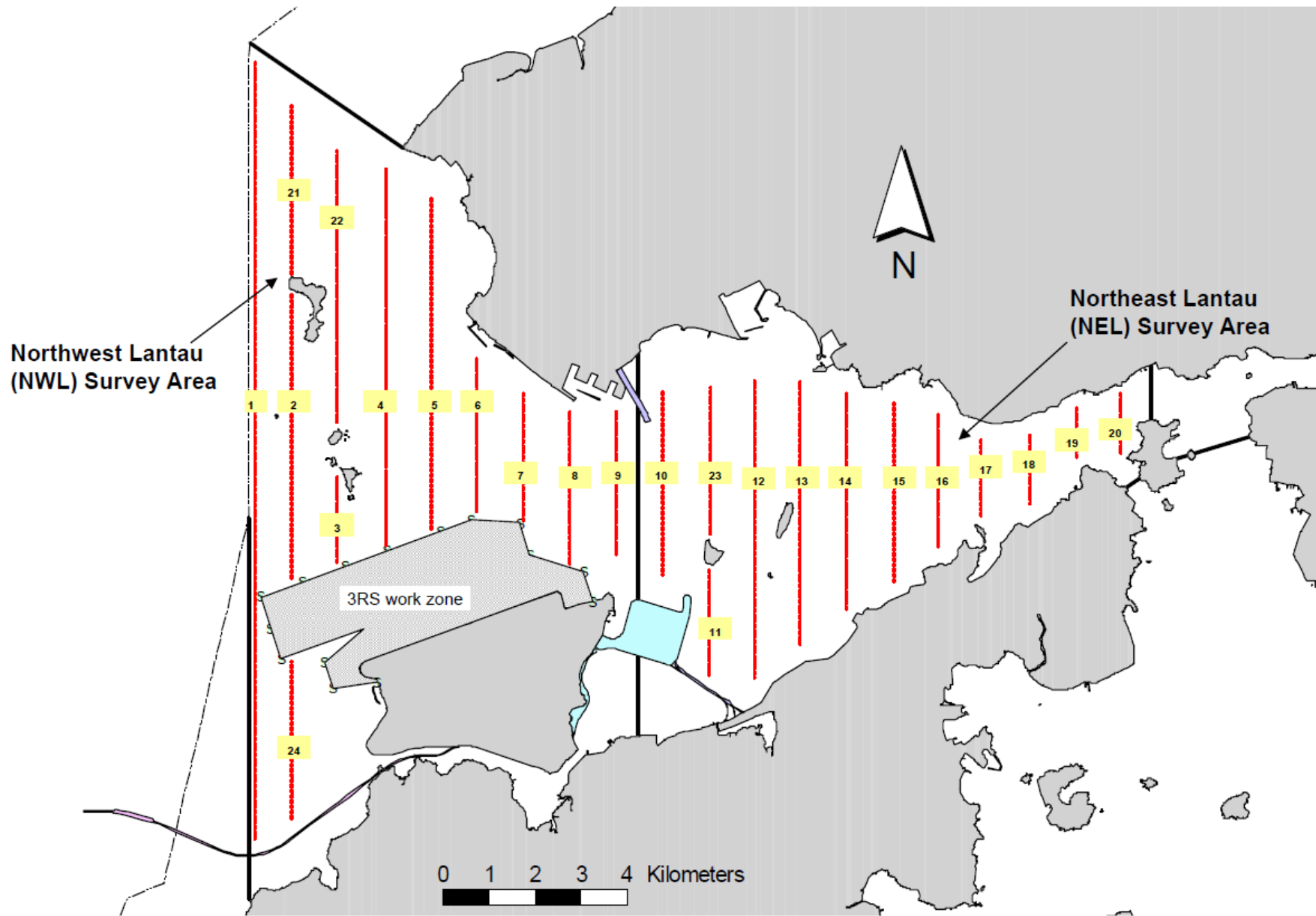


Figure 2.3

Layout of Transect Lines of Dolphin Monitoring in Northwest and Northeast Lantau Areas

**Table 2.8 Impact Dolphin Monitoring Line Transect Co-ordinates**

Line No.		Easting	Northing	Line No.		Easting	Northing
1	Start Point	804671	815456	13	Start Point	816506	819480
1	End Point	804671	831404	13	End Point	816506	824859
2	Start Point	805476	820800*	14	Start Point	817537	820220
2	End Point	805476	826654	14	End Point	817537	824613
3	Start Point	806464	821150*	15	Start Point	818568	820735
3	End Point	806464	822911	15	End Point	818568	824433
4	Start Point	807518	821500*	16	Start Point	819532	821420
4	End Point	807518	829230	16	End Point	819532	824209
5	Start Point	808504	821850*	17	Start Point	820451	822125
5	End Point	808504	828602	17	End Point	820451	823671
6	Start Point	809490	822150*	18	Start Point	821504	822371
6	End Point	809490	825352	18	End Point	821504	823761
7	Start Point	810499	822000*	19	Start Point	822513	823268
7	End Point	810499	824613	19	End Point	822513	824321
8	Start Point	811508	821123	20	Start Point	823477	823402
8	End Point	811508	824254	20	End Point	823477	824613
9	Start Point	812516	821303	21	Start Point	805476	827081
9	End Point	812516	824254	21	End Point	805476	830562
10	Start Point	813525	821176	22	Start Point	806464	824033
10	End Point	813525	824657	22	End Point	806464	829598
11	Start Point	814556	818853	23	Start Point	814559	821739
11	End Point	814556	820992	23	End Point	814559	824768
12	Start Point	815542	818807	24*	Start Point	805476*	815900*
12	End Point	815542	824882	24*	End Point	805476*	819100*

*Remarks: The coordinates of several starting and ending points have been revised due to the presence of a work zone to the north of the airport platform with intense construction activities in association with the construction of the third runway expansion for the Hong Kong International Airport. Co-ordinates in red and marked with asterisk are revised co-ordinates of transect line.*

### 2.3.5 Action & Limit Levels

The Action and Limit levels of impact dolphin monitoring are shown in *Appendix D*. The Event and Action plan is presented in *Appendix K*.



### 2.3.6 *Monitoring Schedule for the Reporting Month*

Dolphin monitoring was carried out on 13, 14, 20, 26 and 29 of August 2019. The dolphin monitoring schedule for the reporting month is shown in *Appendix F*.

### 2.3.7 *Results & Observations*

A total of 265.53 km of survey effort was collected, with 96.5% of the total survey effort being conducted under favourable weather conditions (i.e. Beaufort Sea State 3 or below with good visibility) in August 2019. Among the two areas, 94.63 km and 168.90 km of survey effort were collected from NEL and NWL survey areas, respectively. The total survey effort conducted on primary and secondary lines were 195.51 km and 68.02 km respectively. The survey efforts are summarized in *Appendix I*.

No Chinese White Dolphins sighting was recorded during the two sets of surveys in August 2019.

No dolphin sighting was made in the proximity of the TM-CLKL alignment.

Encounter rates of Chinese White Dolphins are deduced from the survey effort and on-effort sighting data made under favourable conditions (Beaufort 3 or below) in August 2019 with the results present in *Tables 2.9* and *2.10*.

**Table 2.9** *Individual Survey Event Encounter Rates*

		Encounter rate (STG) (no. of on-effort dolphin sightings per 100 km of survey effort)	Encounter rate (ANI) (no. of dolphins from all on-effort sightings per 100 km of survey effort)
		Primary Lines Only	Primary Lines Only
NEL	Set 1: August 13 <sup>th</sup> / 14 <sup>th</sup>	0.0	0.0
	Set 2: August 20 <sup>th</sup> / 26 <sup>th</sup> / 29 <sup>th</sup>	0.0	0.0
NWL	Set 1: August 13 <sup>th</sup> / 14 <sup>th</sup>	0.0	0.0
	Set 2: August 20 <sup>th</sup> / 26 <sup>th</sup> / 29 <sup>th</sup>	0.0	0.0

Note: Dolphin Encounter Rates are deduced from the Two Sets of Surveys (Two Surveys in one Set, Three surveys in one Set) in August 2019 in Northeast (NEL) and Northwest Lantau (NWL)

**Table 2.10 Monthly Average Encounter Rates**

	Encounter rate (STG) (no. of on-effort dolphin sightings per 100 km of survey effort)		Encounter rate (ANI) (no. of dolphins from all on-effort sightings per 100 km of survey effort)	
	Primary Lines Only	Both Primary and Secondary Lines	Primary Lines Only	Both Primary and Secondary Lines
<b>Northeast Lantau</b>	0.0	0.0	0.0	0.0
<b>Northwest Lantau</b>	0.0	0.0	0.0	0.0

Note: Overall dolphin encounter rates (sightings per 100 km of survey effort) from all five surveys are conducted in August 2019 on primary lines only as well as both primary lines and secondary lines in Northeast and Northwest Lantau.

Due to monthly variation in dolphin occurrence within the survey area, it would be more appropriate to draw conclusion on whether any unacceptable impacts on dolphins have been detected in relation to the construction activities of this Contract in the quarterly EM&A reports, where comparison on distribution, group size and encounter rates of dolphins between the quarterly impact monitoring period and baseline monitoring period will be made.

**2.3.8 Implementation of Marine Mammal Exclusion Zone**

Daily marine mammal exclusion zone was in effect during the period of silt curtain installation in open waters under this Contract. No sighting of the Indo-Pacific humpback dolphin *Sousa chinensis* (i.e. Chinese White Dolphin) was recorded in August 2019 during the exclusion zone monitoring.

## 2.4

*EM&A SITE INSPECTION*

Site inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control and mitigation measures under the Contract. In the reporting month, four (4) site inspections were carried out on 7, 14, 21 and 28 August 2019.

Key observations and recommendations during the site inspections in this reporting period are summarized in *Table 2.11*.

**Table 2.11** *Specific Observations and Recommendations during the Weekly Site Inspection in this Reporting Month*

<b>Inspection Date</b>	<b>Observations</b>	<b>Recommendations/ Remarks</b>
7 August 2019	<p>Works Area – Portion N-A</p> <ul style="list-style-type: none"> <li>Food waste in the waste skip should be cleared.</li> </ul> <p>Works Area - Portion S-A</p> <ul style="list-style-type: none"> <li>Label of general waste should be put on the skip.</li> <li>Food waste should be cleared.</li> <li>Food waste and stagnant water should be cleared.</li> </ul>	<p>Works Area – Portion N-A</p> <ul style="list-style-type: none"> <li>The Contractor was reminded to clear the food waste in the waste skip.</li> </ul> <p>Works Area - Portion S-A</p> <ul style="list-style-type: none"> <li>The Contractor was reminded to put the label of general waste on the skip.</li> <li>The Contractor was reminded to clear the food waste.</li> <li>The Contractor was reminded to clear the food waste and stagnant water.</li> </ul>
14 August 2019	<p>Works Area – TBM tunnel</p> <ul style="list-style-type: none"> <li>Water spraying should be applied for dust control.</li> <li>Drip tray should be provided for the chemical containers.</li> </ul> <p>Works Area - Portion S-A</p> <ul style="list-style-type: none"> <li>Better housekeeping should be maintained.</li> <li>Cement bags should be covered with tarpaulin sheets.</li> <li>Drip tray should be provided for the chemical containers.</li> </ul> <p><b>Reminder from the SOR</b></p> <p>Works Area – Portion S-A</p> <ul style="list-style-type: none"> <li>Stagnant water above the H-beam should be cleared.</li> </ul>	<p>Works Area – TBM tunnel</p> <ul style="list-style-type: none"> <li>The Contractor was reminded to apply water spraying for dust control.</li> <li>The Contractor was reminded to provide drip tray for the chemical containers.</li> </ul> <p>Works Area - Portion S-A</p> <ul style="list-style-type: none"> <li>The Contractor was reminded to maintain better housekeeping.</li> <li>The Contractor was reminded to cover the cement bags with tarpaulin sheets.</li> <li>The Contractor was reminded to provide drip tray for the chemical containers.</li> </ul> <p><b>Reminder from the SOR</b></p> <p>Works Area – Portion S-A</p> <ul style="list-style-type: none"> <li>The Contractor was reminded to clear the stagnant water above the H-Beam.</li> </ul>
21 August 2019	<p>Works Area – Portion N-A</p> <ul style="list-style-type: none"> <li>Drip tray should be provided for the chemical containers.</li> </ul> <p>Works Area - Portion S-A</p> <ul style="list-style-type: none"> <li>Waste should be removed and better housekeeping should be maintained.</li> </ul> <p><b>Reminder from the SOR</b></p> <p>Works Area – Portion N-A</p> <ul style="list-style-type: none"> <li>Lifting eyes should be filled with sand.</li> </ul>	<p>Works Area – Portion N-A</p> <ul style="list-style-type: none"> <li>The Contractor was reminded to provide drip tray for the chemical containers.</li> </ul> <p>Works Area - Portion S-A</p> <ul style="list-style-type: none"> <li>The Contractor was reminded to remove the waste and maintain better housekeeping.</li> </ul> <p><b>Reminder from the SOR</b></p> <p>Works Area – Portion N-A</p> <ul style="list-style-type: none"> <li>The Contractor was reminded to fill the lifting eyes with sand.</li> </ul>

Inspection Date	Observations	Recommendations/ Remarks
28 August 2019	<p>Works Area – TBM tunnel</p> <ul style="list-style-type: none"> <li>Better housekeeping should be maintained to prevent dust.</li> <li>Drip tray should be provided for the chemical containers.</li> </ul> <p>Works Area - Portion S-A</p> <ul style="list-style-type: none"> <li>Drip tray should be provided for the chemical containers.</li> <li>Cement bags should be covered by tarpaulin sheets.</li> </ul>	<p>Works Area – TBM tunnel</p> <ul style="list-style-type: none"> <li>The Contractor was reminded to maintain better housekeeping to prevent dust.</li> <li>The Contractor was reminded to provide drip tray for the chemical containers.</li> </ul> <p>Works Area - Portion S-A</p> <ul style="list-style-type: none"> <li>The Contractor was reminded to provide drip tray for the chemical containers.</li> <li>The Contractor was reminded to cover cement bags with tarpaulin sheets.</li> </ul>

The Contractor has rectified all of the observations as identified during environmental site inspections in the reporting month.

## 2.5 WASTE MANAGEMENT STATUS

The Contractor had submitted application form for registration as chemical waste producer under the Contract. Sufficient numbers of receptacles were available for general refuse collection and sorting.

Wastes generated during this reporting period included mainly construction wastes (inert and non-inert). Reference has been made to the waste flow table prepared by the Contractor (*Appendix M*). The quantities of different types of wastes are summarized in *Table 2.12*.

**Table 2.12 Quantities of Different Waste Generated in the Reporting Month**

Month/Year	Inert Construction Waste <sup>(a)</sup> (tonnes)	Inert Construction Waste Re-used (tonnes)	Non-inert Construction Waste <sup>(b)</sup> (tonnes)	Recyclable Materials <sup>(c)</sup> (kg)	Chemical Wastes (kg)	Marine Sediment (m <sup>3</sup> )		
						Category L	Category M (M <sub>p</sub> & M <sub>f</sub> )	Mixed (L+M)
August 2019	2,322	0	703	507,510	3,800	0	0	0

**Notes:**

- (a) Inert construction wastes include hard rock and large broken concrete, and materials disposed as public fill.
- (b) Non-inert construction wastes include general refuse disposed at landfill.
- (c) Recyclable materials include metals, paper, cardboard, plastics, timber and others.

The Contractor was advised to properly maintain on site C&D materials and waste 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 was also reminded to properly maintain the site tidiness and dispose of the wastes accumulated on site regularly and properly.

For chemical waste containers, the Contractor was reminded to treat properly and store 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.

## 2.6

### *ENVIRONMENTAL LICENSES AND PERMITS*

The status of environmental licensing and permit is summarized in *Table 2.13* below.

**Table 2.13 Summary of Environmental Licensing and Permit Status**

License/ Permit	License or Permit No.	Date of Issue	Date of Expiry	License/ Permit Holder	Remarks
Environmental Permit	EP-354/2009/D	13 March 2015	Throughout the Contract	HyD	Application for VEP on 3 March 2015 to supersede EP-354/2009/C
Construction Dust Notification	363510	19 August 2013	Throughout the Contract	DBJV	Northern Landfall
Construction Dust Notification	403620	10 June 2016	Throughout the Contract	DBJV	Southern Landfall
Chemical Waste Registration	5213-422-D2516-02	18 January 2017	Throughout the Contract	DBJV	Northern Landfall
Chemical Waste Registration	5213-951-D2591-01	25 May 2016	Throughout the Contract	DBJV	Southern Landfall
Construction Waste Disposal Account	7018108	28 August 2013	Throughout the Contract	DBJV	Waste disposal in Contract No. HY/2012/08
Construction Waste Disposal Account	7021715	4 July 2019	14 October 2019	DBJV	Vessel Disposal
Waste Water Discharge License	WT00031435-2018	2 August 2018	31 August 2023	DBJV	Southern Landfall
Waste Water Discharge License	WT00034060-2019	25 July 2019	30 June 2024	DBJV	Northern Landfall (4 Discharge Point)
Marine Dumping Permit	EP/MD/20-013	19 May 2019	18 November 2019	DBJV	Type 1 (Open Sea Disposal)
Construction Noise Permit	GW-RW0406-18	27 April 2019	15 October 2019	DBJV	Urmston Road in front of Pillar Point
Construction Noise Permit	GW-RW0063-19	20 February 2019	19 August 2019	DBJV	WA23 @ Tsing Yi
Construction Noise Permit	GW-RW0374-19	20 August 2019	19 February 2020	DBJV	WA23 @ Tsing Yi
Construction Noise Permit	GW-RS0224-19	25 March 2019	24 September 2019	DBJV	Southern Landfall
Construction Noise Permit	GW-RW0179-19	27 April 2019	15 October 2019	DBJV	Urmston Road in front of Pillar Point

**Notes:**

HyD = Highways Department

DBJV = Dragages - Bouygues Joint Venture

VEP = Variation of Environmental Permit

## 2.7 *IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURES*

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

A summary of the Implementation Schedule of Environmental Mitigation Measures (EMIS) is presented in *Appendix C*. The necessary mitigation measures relevant to this Contract were implemented properly.

## 2.8 *SUMMARY OF EXCEEDANCES OF THE ENVIRONMENTAL QUALITY PERFORMANCE LIMIT*

No exceedances were recorded in the air quality monitoring of this reporting month.

Fifty-four (54) Action Level and four (4) Limit Level exceedances for Dissolved Oxygen were recorded in the water quality monitoring of this reporting month. One (1) Action Level exceedance for Depth-averaged suspended solids was recorded.

Cumulative statistics are provided in *Appendix L*.

## 2.9 *SUMMARY OF COMPLAINTS, NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS*

The Environmental Complaint Handling Procedure is provided in *Figure 2.4*.

No environmental complaint was received in this reporting period.

No environmental summons was received in this reporting period.

Statistics on complaints, notifications of summons and successful prosecutions are summarized in *Appendix L*.

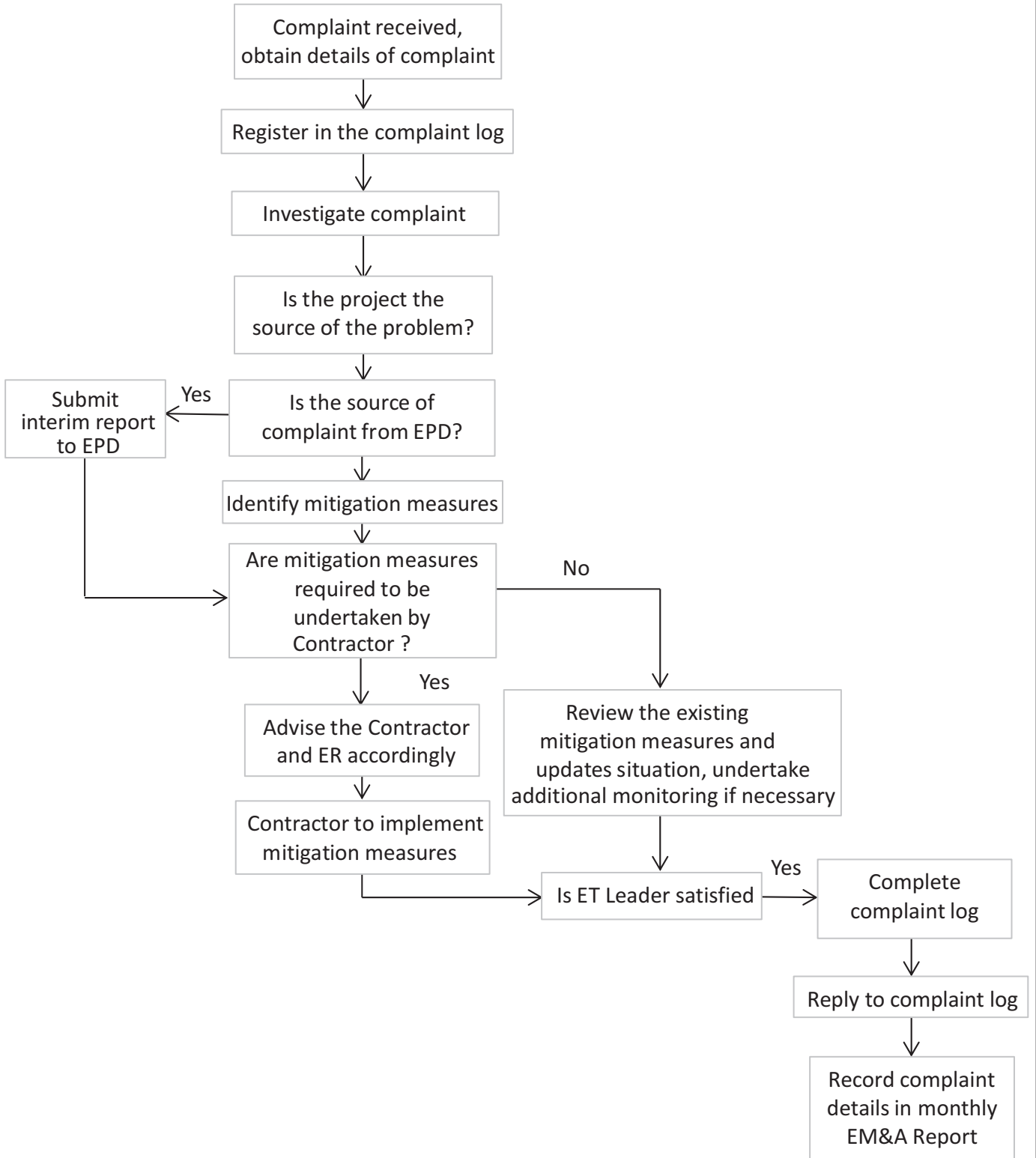


Figure 2.4

Environmental Complaint Handling Procedure



### 3 FUTURE KEY ISSUES

#### 3.1 CONSTRUCTION ACTIVITIES FOR THE COMING MONTH

As informed by the Contractor, the major works for the Contract in September 2019 are summarized in *Table 3.1*.

**Table 3.1** *Construction Works to Be Undertaken in the Coming Month*

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<b>Works to be undertaken</b>
<i>Land-based Works</i>
<ul style="list-style-type: none"><li>• Construction of Thermal barrier - TBM tunnel;</li><li>• Construction of Walkway Corbel &amp; Cover - TBM Tunnel;</li><li>• Backfilling - Portion N-A</li><li>• RC structure - Portion S-A;</li><li>• Louver Installation - Portion S-A;</li><li>• Construction of Parapet - Portion S-C</li><li>• VST Tower Dismantling - Portion S-C</li><li>•</li></ul>
<i>Marine-based Works</i>
<ul style="list-style-type: none"><li>• Seawall Modification Works - Portion S-B</li></ul>

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#### 3.2 KEY ISSUES FOR THE COMING MONTH

Potential environmental impacts arising from the above upcoming construction activities in the next reporting month of September 2019 are mainly associated with dust, marine water quality, marine ecology and waste management issues.

#### 3.3 MONITORING SCHEDULE FOR THE COMING MONTH

The tentative schedule for environmental monitoring in September 2019 is provided in *Appendix F*.

**4.1 CONCLUSIONS**

This Seventieth Monthly EM&A Report presents the findings of the EM&A activities undertaken during the period from 1 to 31 August 2019, in accordance with the Updated EM&A Manual and the requirements of EP-354/2009/D.

Air quality (including 1-hour TSP and 24-hour TSP), water quality monitoring and dolphin monitoring were carried out in this reporting month.

No exceedances were recorded in the air quality monitoring of this reporting month.

Fifty-four (54) Action Level and four (4) Limit Level exceedances for Dissolved Oxygen were recorded in the water quality monitoring of this reporting month. One (1) Action Level exceedance for Depth-averaged suspended solids was recorded.

No Chinese White Dolphins sighting was recorded during the two sets of surveys in August 2019.

Environmental site inspection was carried out four (4) times in August 2019. Remedial actions recommended for the deficiencies identified during the site audits were properly implemented by the Contractor.

No non-compliance event was recorded during the reporting period.

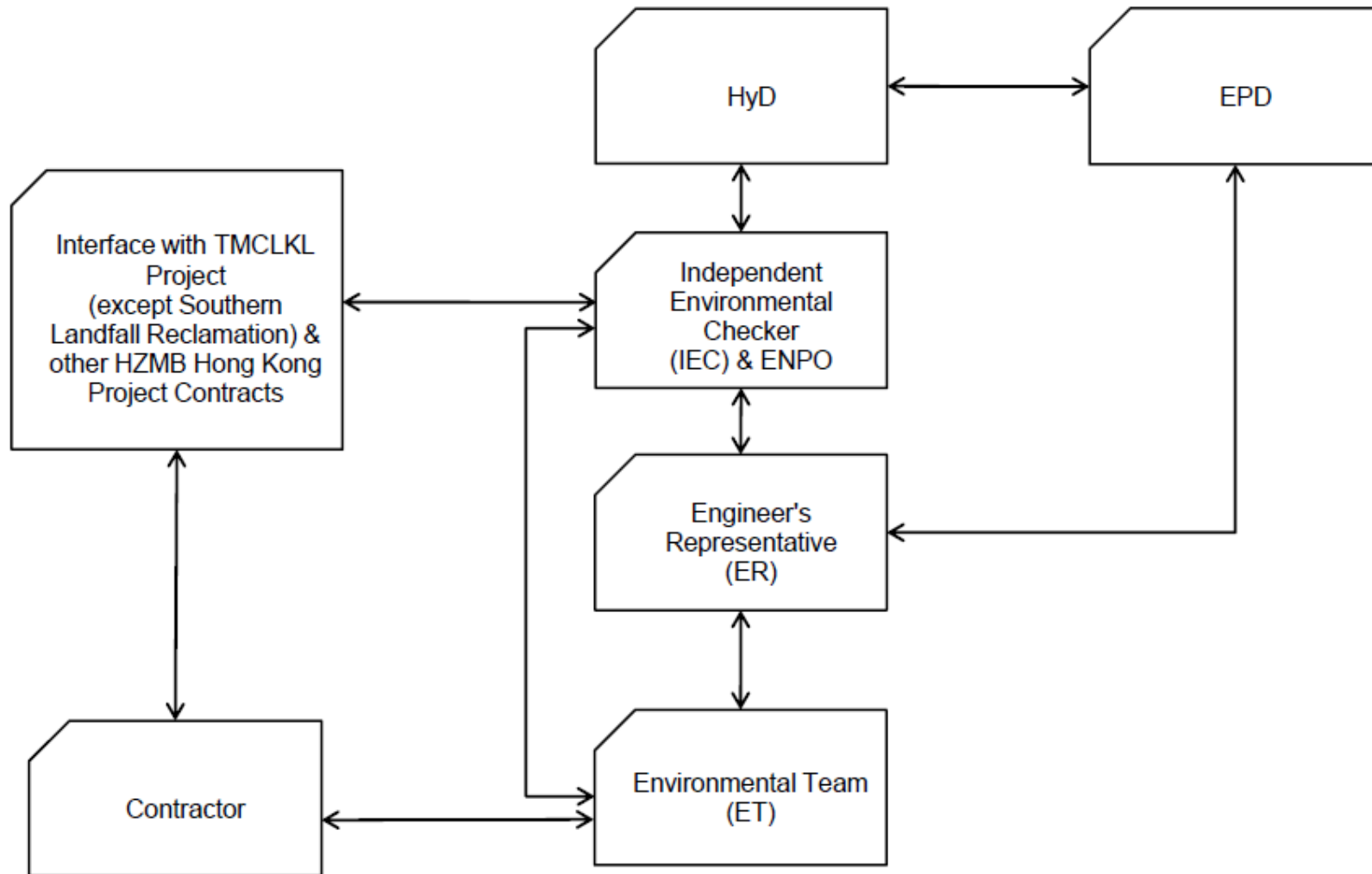
No environmental complaint was received in this reporting period.

No environmental summons was received in this reporting period.

The ET will keep track on the construction works to confirm compliance of environmental requirements and the proper implementation of all necessary mitigation measures.

Appendix A

## Project Organization for Environmental Works



↔ Line of Communication

Appendix B

## Construction Programme

**TMCLKL Northern Connection Sub-sea Tunnel Section**

**Possession / Access Dates**

N13Ji, Jii, Ki & Kii - Possession / Access (after E&M scope)	0	16-Oct-19	
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**Contract Key Dates**

[KD-2b] Stage 2b Completion - TSS between CP33 to CP13	0	15-Apr-19*	
[KD-2c] Stage 2c Completion - Remaining TSS & TSA	0	30-Sep-19*	
[KD-2d] Stage 2d Completion - MHS C&C Tunnel	0	15-Nov-19*	
[KD-3b] Stage 3b Completion - NLF Provision for CLP, LV & ...	0	02-Oct-19*	
[KD-3f] Stage 3f Achievement - NLS/NAR - provide access	0	02-Oct-19*	
[KD-3g] Stage 3g Completion - SVS Tunnel	0	30-Sep-19*	
[KD-3i] Stage 3i Completion - South Approach Ramp	0	15-Oct-19*	
[KD-10] Section 3A Completion - SVB	0	20-Jul-19*	
[KD-10a] Stage 5 Completion - SVB BL2	0	11-May-19*	

**Portion Handover Dates**

N5 - Handover	0	30-Apr-19*	
N10 (excl Tunnel) - Handover	0	30-Sep-19*	
N11A - Handover	0	15-Feb-19*	
N11B - Handover	0	15-Feb-19*	
N13Ji, Jii, Ki & Kii - Handover for E&M Contract scope	0	15-Feb-19*	
N13B - Handover	0	12-Apr-19*	

**North Approach Ramp**

[KD-3f] Stage 3f Achievement - NAR - provide access	0	02-Oct-19*	
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**Access Ramp Section**

NAR Pipe Pile Section - Base Slab	48	22-Jan-19	25-Mar-19
NAR Pipe Pile Section - Strut S2 Removal	24	12-Mar-19	09-Apr-19
NAR Pipe Pile Section - Wall up to S1	48	26-Mar-19	27-May-19
NAR Pipe Pile Section - Strut S1 Removal	24	14-May-19	11-Jun-19
NAR Pipe Pile Section - Wall Remaining	48	28-May-19	24-Jul-19

**NLS Interface (OAP-NAR-DWG-10442-B)**

NLS Cell 3 Dwall removal (down to -3.0mPD) - 188m3	18	18-Jan-19	14-Feb-19
Strut Installation and Excavation down to FWL	12	15-Feb-19	28-Feb-19
NLS Cell 3 Dwall removal (down to -6.0mPD) - 134m3	18	01-Mar-19	21-Mar-19
NLS/NAR Stitch structure - Base Slab & S2 removed	36	19-Mar-19	04-May-19
Resume Tunnel Ramp Access	0	06-May-19	
NLS/NAR Stitch structure - Remaining Wall Structure & Stru	48	06-May-19	03-Jul-19
NAR Parapet, Cable Trough	58	25-Jul-19	02-Oct-19*

**North Launching Shaft**

[KD-3f] Stage 3f Achievement - NLS - provide access	0	02-Oct-19*	
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**NLS Cell 1-3 Remaining Structure**

Availability of NAR Access to Tunnel	0	06-May-19	
Cell 1 & 2 Top Slab Closing	24	22-May-19	19-Jun-19
<b>ML02</b>			
ML02 Cell 1 & 2 OHVD Slab	24	16-Jan-19	19-Feb-19
<b>ML03</b>			
ML03 Cell 1 & 2 Preparation for BRL structure	24	16-Jan-19	19-Feb-19
ML03 Cell 1 & 2 BRL Structure	48	20-Feb-19	17-Apr-19
NLS W6 & W7 - Wall opening - closing	24	03-Apr-19	06-May-19
ML03 Cell 1 & 2 OHVD Slab	24	18-Apr-19	21-May-19

**NLF Demobilization & At-grade works**

[KD-3b] Stage 3b Completion - NLF Provision for CLP, LV & ...	0	02-Oct-19*	
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**Portion N12 & Portion N6B**

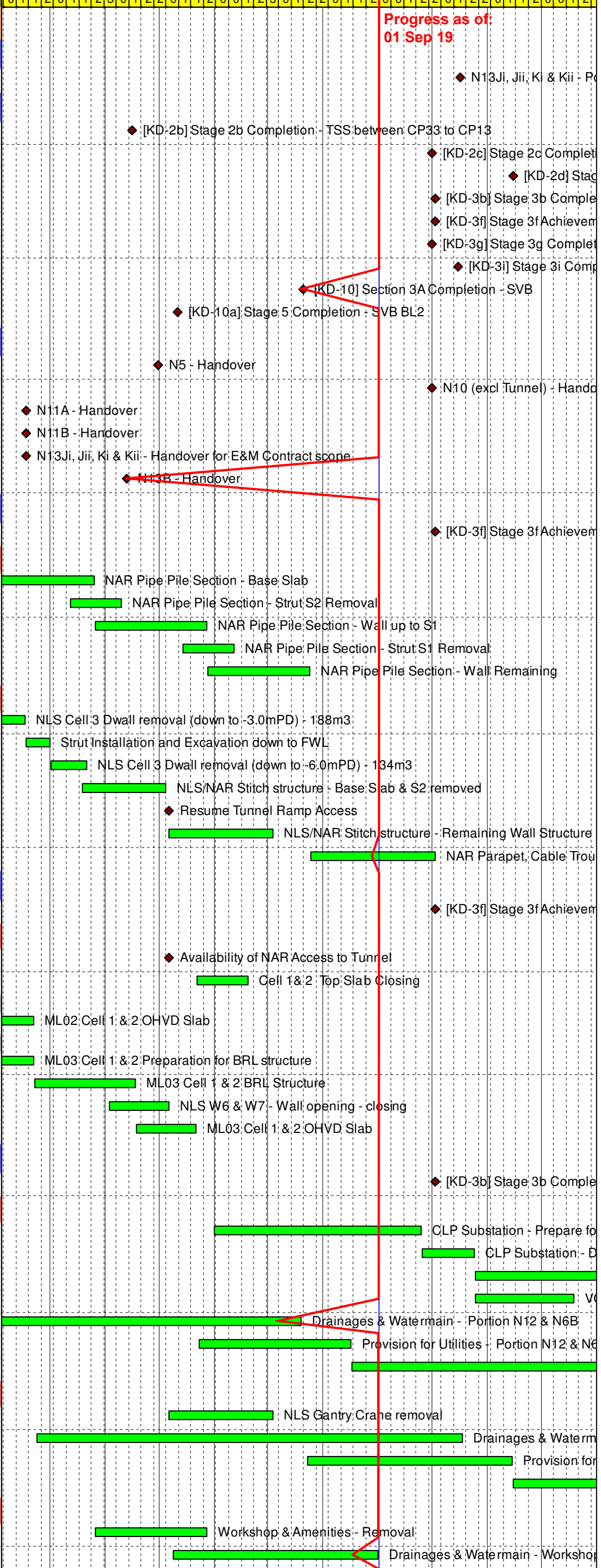
CLP Substation - Prepare for CLP Consent for de-energiza	96	01-Jun-19	24-Sep-19
CLP Substation - De-energization	24	25-Sep-19	24-Oct-19
CLP Substation - Dismantling & Removal	178	25-Oct-19	01-Jun-20
VO-009 Temporary Protection Barrier - Dismantling & Remc	48	25-Oct-19	19-Dec-19
Drainages & Watermain - Portion N12 & N6B	144	17-Jan-19	19-Jul-19
Provision for Utilities - Portion N12 & N6B	72	23-May-19	16-Aug-19
Utilities parties coordination & Remaining Civil Provision - I	117	17-Aug-19	07-Jan-20

**North Launching Shaft**

NLS Gantry Crane removal	48	06-May-19	03-Jul-19
Drainages & Watermain - NLS	194	21-Feb-19	17-Oct-19
Provision for Utilities - NLS	96	23-Jul-19	14-Nov-19
Utilities parties coordination & Remaining Civil Provision - I	43	15-Nov-19	07-Jan-20

**Sloping Seawall**

Workshop & Amenities - Removal	48	26-Mar-19	27-May-19
Drainages & Watermain - Workshop & Amenities	96	09-May-19	31-Aug-19







Activity Name	Orig Dur	Start	Finish	2019																			
				F	March	April	May	June	July	August	S	October	N	D									
				0	1	2	0	1	1	2	3	0	1	2	0	1	2	3	0	1	2	0	1
ML02 SVS OHVD Slab	18	27-Dec-18	17-Jan-19	ML02 SVS OHVD Slab																			
ML02 SVS Tunnel Roof Slab	15	18-Jan-19	04-Feb-19	ML02 SVS Tunnel Roof Slab																			
ML02 SVS BRL (West) - Ramp / Backfill Removal	12	24-Apr-19	08-May-19	ML02 SVS BRL (West) - Ramp / Backfill Removal																			
ML02 SVS BRL walls (West)	33	09-May-19	18-Jun-19	ML02 SVS BRL walls (West)																			
ML02 SVS RL Slab (West)	15	19-Jun-19	06-Jul-19	ML02 SVS RL Slab (West)																			
ML02 SVS West wall remaining after CP7	18	02-Sep-19	23-Sep-19	ML02 SVS West wall remaining after CP7																			
ML02 SVS Tunnel - Prepare for E&M Contractor Access	6	24-Sep-19	30-Sep-19	ML02 SVS Tunnel - Prepare for E&M Contractor Access																			
<b>Above Tunnel Vent Duct</b>																							
ML02 SVS Tunnel Roof Wall (-28.70 to -21.90)	30	12-Feb-19	18-Mar-19	ML02 SVS Tunnel Roof Wall (-28.70 to -21.90)																			
ML02 SVS Above Tunnel Roof Wall & Slab (-21.90 to -18.7)	36	19-Mar-19	04-May-19	ML02 SVS Above Tunnel Roof Wall & Slab (-21.90 to -18.7)																			
ML02 SVS Below BL2 Wall & Slab + Backfill (-18.70 to -6.95)	60	06-May-19	17-Jul-19	ML02 SVS Below BL2 Wall & Slab + Backfill (-18.70 to -6.95)																			
ML02 SVS Dwall opening for Duct connection to SVB S1	24	18-Jul-19	14-Aug-19	ML02 SVS Dwall opening for Duct connection to SVB S1																			
ML02 SVS BL2 Wall & Slab (-6.95 to -0.45)	27	15-Aug-19	16-Sep-19	ML02 SVS BL2 Wall & Slab (-6.95 to -0.45)																			
ML02 SVS Dwall opening for Duct connection to SVB S2	27	24-Sep-19	26-Oct-19	ML02 SVS Dwall opening for Duct connection to SVB S2																			
ML02 SVS BL1 Wall & Slab (-0.45 to +1.80)	30	28-Oct-19	30-Nov-19	ML02 SVS BL1 Wall & Slab (-0.45 to +1.80)																			
ML02 SVS Duct Roof Wall & Slab	24	02-Dec-19	31-Dec-19	ML02 SVS Duct Roof Wall & Slab																			
ML02 SVS Tunnel Roof to BBL2 W/P & Backfill (-21.90 to -18.70)	60	06-May-19	17-Jul-19	ML02 SVS Tunnel Roof to BBL2 W/P & Backfill (-21.90 to -18.70)																			
ML02 SVS BL2 W/P & Backfill (-8.00 to -0.65)	21	29-Aug-19	23-Sep-19	ML02 SVS BL2 W/P & Backfill (-8.00 to -0.65)																			

**CP7 South Ventilation Shaft**

**ML02 SVS**

ML02 SVS Access Ramp for CP7	6	12-Feb-19	18-Feb-19
ML02 SVS CP7 Dwall opening + Excavation (Bottom)	24	19-Feb-19	18-Mar-19
ML02 SVS CP7 Invert Slab, Wall & Middle Slab	15	19-Mar-19	04-Apr-19
ML02 SVS CP7 Temp Strut	6	06-Apr-19	12-Apr-19
ML02 SVS CP7 Bottom section backfilling	6	13-Apr-19	23-Apr-19
ML02 SVS CP7 Upper Excavation & modify arches	24	08-Jul-19	03-Aug-19
ML02 SVS CP7 Top section - Structure	24	05-Aug-19	31-Aug-19

**ML03 South Ventilation Shaft**

**ML03 SVS Structure**

Tunnel Box			
ML03 SVS RL Wall	30	19-Dec-18	25-Jan-19
ML03 SVS OHVD Slab	18	26-Jan-19	22-Feb-19
ML03 SVS ARL Wall	21	23-Feb-19	19-Mar-19
ML03 SVS Tunnel Roof Slab	15	20-Mar-19	06-Apr-19
Above Tunnel Vent Duct			
ML03 SVS Tunnel Roof Wall (-28.70 to -21.90)	30	08-Apr-19	17-May-19
ML03 SVS Above Tunnel Roof Wall & Slab	36	18-May-19	29-Jun-19
ML03 SVS Below BL2 Wall & Slab (-18.70 to -6.95)	50	02-Jul-19	28-Aug-19
ML03 SVS Dwall opening for Duct connection to SVB	18	29-Aug-19	19-Sep-19
ML03 SVS BL2 Duct Connection to SVB	30	20-Sep-19	26-Oct-19
ML03 SVS Dwall opening for Duct connection to SVB	18	04-Nov-19	23-Nov-19
ML03 SVS BL1 Duct connection to SVB	30	25-Nov-19	31-Dec-19
ML03 SVS Tunnel Roof to BBL2 W/P & Backfill (-21.90 to -18.70)	45	16-Jul-19	05-Sep-19
ML03 SVS BL2 W/P & Backfill (-8.00 to -0.65)	24	05-Oct-19	02-Nov-19

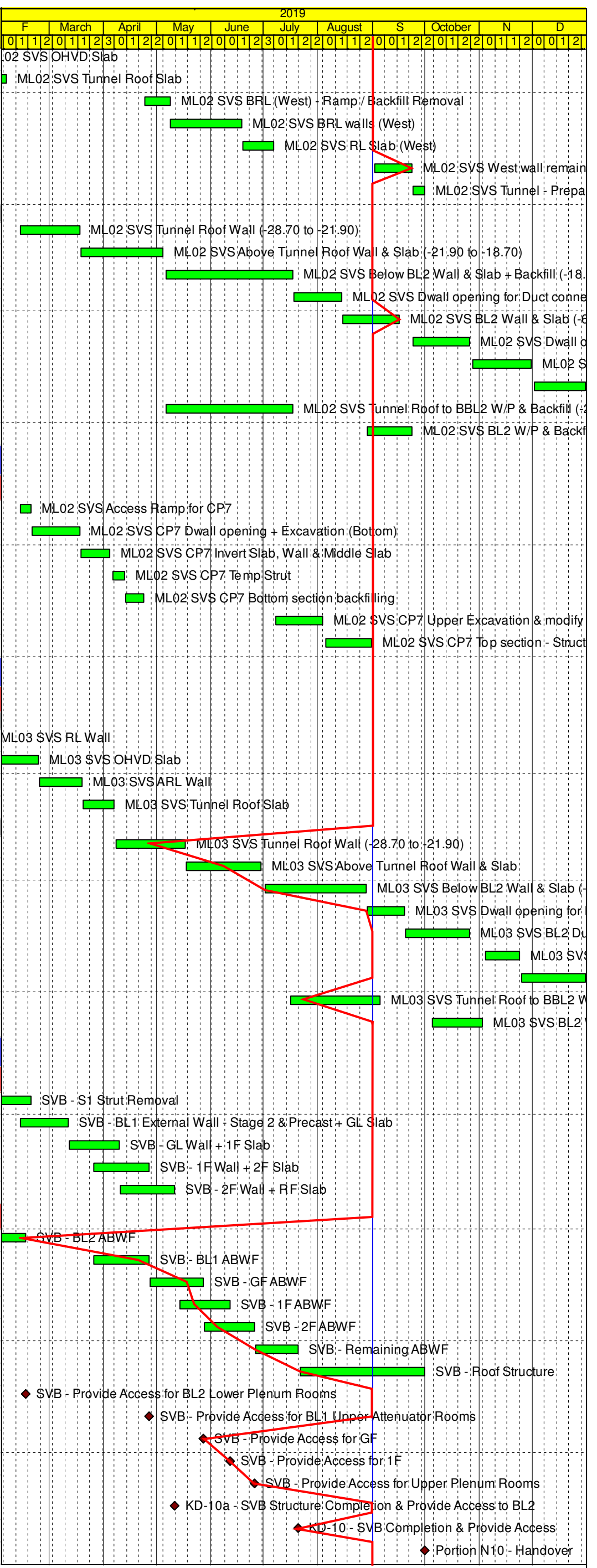
**South Ventilation Building**

**Structure**

SVB - S1 Strut Removal	12	29-Jan-19	18-Feb-19
SVB - BL1 External Wall - Stage 2 & Precast + GL Slab	24	12-Feb-19	11-Mar-19
SVB - GL Wall + 1F Slab	24	12-Mar-19	09-Apr-19
SVB - 1F Wall + 2F Slab	24	26-Mar-19	26-Apr-19
SVB - 2F Wall + RF Slab	24	10-Apr-19	11-May-19

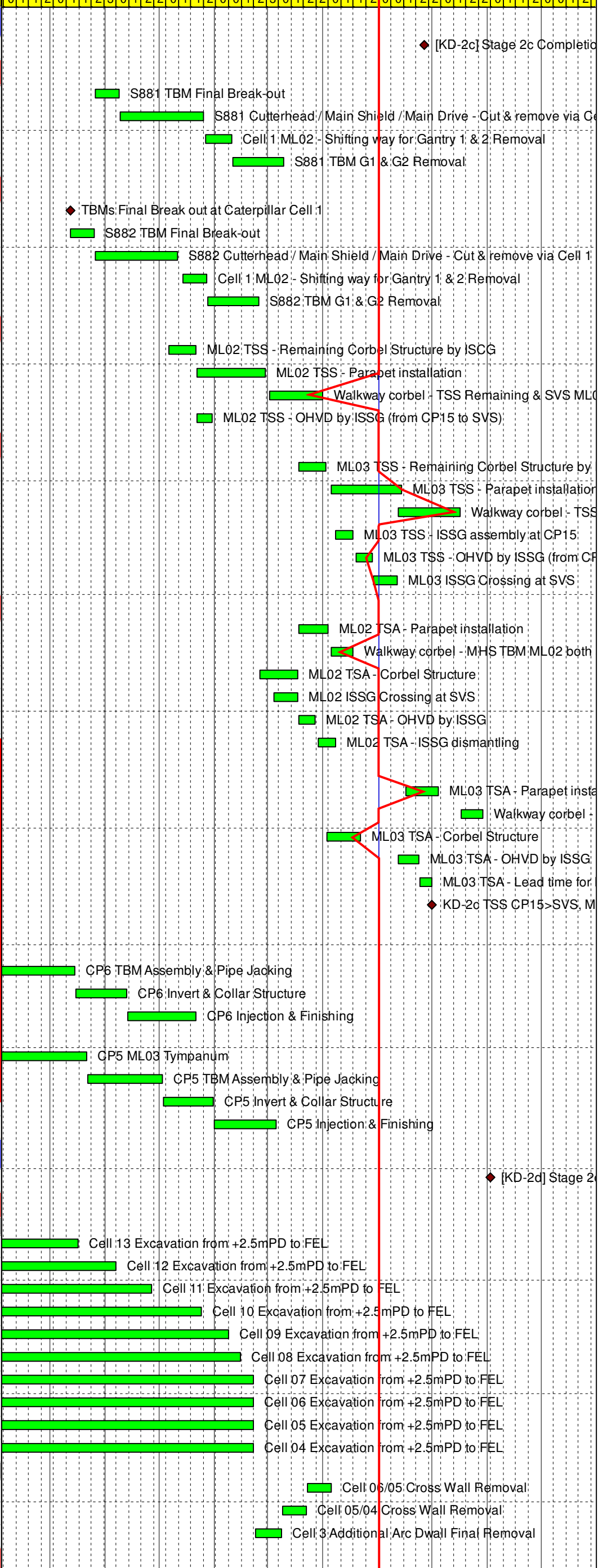
**ABWF**

SVB - BL2 ABWF	40	21-Dec-18	15-Feb-19
SVB - BL1 ABWF	24	26-Mar-19	26-Apr-19
SVB - GF ABWF	24	27-Apr-19	27-May-19
SVB - 1F ABWF	24	14-May-19	11-Jun-19
SVB - 2F ABWF	24	28-May-19	25-Jun-19
SVB - Remaining ABWF	21	26-Jun-19	20-Jul-19
SVB - Roof Structure	60	22-Jul-19	30-Sep-19
SVB - Provide Access for BL2 Lower Plenum Rooms	0		15-Feb-19
SVB - Provide Access for BL1 Upper Attenuator Rooms	0		26-Apr-19
SVB - Provide Access for GF	0		27-May-19
SVB - Provide Access for 1F	0		11-Jun-19
SVB - Provide Access for Upper Plenum Rooms	0		25-Jun-19
KD-10a - SVB Structure Completion & Provide Access to BL2	0		11-May-19*
KD-10 - SVB Completion & Provide Access	0		20-Jul-19*
Portion N10 - Handover	0		30-Sep-19*





Activity Name	Orig Dur	Start	Finish
<b>South Approach TBM Tunnel</b>			
[KD-2c] Stage 2c Completion - Remaining TSS & TSA	0		26-Sep-19*
<b>S881 TBM</b>			
S881 TBM Final Break-out	14	26-Mar-19	08-Apr-19
S881 Cutterhead / Main Shield / Main Drive - Cut & remove	36	09-Apr-19	25-May-19
Cell 1 ML02 - Shifting way for Gantry 1 & 2 Removal	12	27-May-19	10-Jun-19
S881 TBM G1 & G2 Removal	24	11-Jun-19	09-Jul-19
<b>S882 TBM</b>			
TBMs Final Break out at Caterpillar Cell 1	0	12-Mar-19	
S882 TBM Final Break-out	14	12-Mar-19	25-Mar-19
S882 Cutterhead / Main Shield / Main Drive - Cut & remove	36	26-Mar-19	11-May-19
Cell 1 ML02 - Shifting way for Gantry 1 & 2 Removal	12	14-May-19	27-May-19
S882 TBM G1 & G2 Removal	24	28-May-19	25-Jun-19
<b>ML02 TSS Internal Structure</b>			
ML02 TSS - Remaining Corbel Structure by ISCG	13	06-May-19	21-May-19
ML02 TSS - Parapet installation	33	22-May-19	29-Jun-19
Walkway corbel - TSS Remaining & SVS ML02 both side	26	02-Jul-19	31-Jul-19
ML02 TSS - OHVD by ISSG (from CP15 to SVS)	8	22-May-19	30-May-19
<b>ML03 TSS Internal Structure</b>			
ML03 TSS - Remaining Corbel Structure by ISCG	14	18-Jul-19	02-Aug-19
ML03 TSS - Parapet installation	35	05-Aug-19	13-Sep-19
Walkway corbel - TSS Remaining & SVS ML03 both side	27	12-Sep-19	16-Oct-19
ML03 TSS - ISSG assembly at CP15	9	08-Aug-19	17-Aug-19
ML03 TSS - OHVD by ISSG (from CP15 to SVS)	9	19-Aug-19	28-Aug-19
ML03 ISSG Crossing at SVS	12	29-Aug-19	11-Sep-19
<b>ML02 TSA Internal Structure</b>			
ML02 TSA - Parapet installation	15	18-Jul-19	03-Aug-19
Walkway corbel - MHS TBM ML02 both sides	12	05-Aug-19	17-Aug-19
ML02 TSA - Corbel Structure	18	26-Jun-19	17-Jul-19
ML02 ISSG Crossing at SVS	12	04-Jul-19	17-Jul-19
ML02 TSA - OHVD by ISSG	9	18-Jul-19	27-Jul-19
ML02 TSA - ISSG dismantling	9	29-Jul-19	07-Aug-19
<b>ML03 TSA Internal Structure</b>			
ML03 TSA - Parapet installation	16	16-Sep-19	04-Oct-19
Walkway corbel - MHS TBM ML03 both sides	11	17-Oct-19	29-Oct-19
ML03 TSA - Corbel Structure	16	03-Aug-19	21-Aug-19
ML03 TSA - OHVD by ISSG	9	12-Sep-19	23-Sep-19
ML03 TSA - Lead time for Fire Proofing	6	24-Sep-19	30-Sep-19
KD-2c TSS CP15>SVS, MHS TBM Tunnel - Provide Access	0		30-Sep-19*
<b>TSA Cross Passage</b>			
<b>CP6</b>			
CP6 TBM Assembly & Pipe Jacking	42	01-Feb-19	14-Mar-19
CP6 Invert & Collar Structure	24	15-Mar-19	12-Apr-19
CP6 Injection & Finishing	28	13-Apr-19	21-May-19
<b>CP5</b>			
CP5 ML03 Tympanum	36	01-Feb-19	21-Mar-19
CP5 TBM Assembly & Pipe Jacking	42	22-Mar-19	02-May-19
CP5 Invert & Collar Structure	24	03-May-19	31-May-19
CP5 Injection & Finishing	28	01-Jun-19	05-Jul-19
<b>MHS Cut-and-cover Tunnel</b>			
[KD-2d] Stage 2d Completion - MHS C&C Tunnel	0		02-Nov-19*
<b>N MHS C&amp;C Caterpillar Excavation</b>			
<b>MHS C&amp;C Cell 12 to 04</b>			
Cell 13 Excavation from +2.5mPD to FEL	75	10-Dec-18	16-Mar-19
Cell 12 Excavation from +2.5mPD to FEL	80	24-Dec-18	06-Apr-19
Cell 11 Excavation from +2.5mPD to FEL	89	02-Jan-19	26-Apr-19
Cell 10 Excavation from +2.5mPD to FEL	105	09-Jan-19	24-May-19
Cell 09 Excavation from +2.5mPD to FEL	105	23-Jan-19	08-Jun-19
Cell 08 Excavation from +2.5mPD to FEL	105	30-Jan-19	15-Jun-19
Cell 07 Excavation from +2.5mPD to FEL	111	30-Jan-19	22-Jun-19
Cell 06 Excavation from +2.5mPD to FEL	123	16-Jan-19	22-Jun-19
Cell 05 Excavation from +2.5mPD to FEL	129	09-Jan-19	22-Jun-19
Cell 04 Excavation from +2.5mPD to FEL	140	24-Dec-18	22-Jun-19
<b>Cross Wall Removal</b>			
Cell 06/05 Cross Wall Removal	12	23-Jul-19	05-Aug-19
Cell 05/04 Cross Wall Removal	12	09-Jul-19	22-Jul-19
Cell 3 Additional Arc Dwall Final Removal	12	24-Jun-19	08-Jul-19
<b>N MHS C&amp;C Caterpillar Structure</b>			





Appendix C

Environmental Mitigation  
and Enhancement Measure  
Implementation Schedules

*Contract No. HY/2012/08  
Tuen Mun – Chek Lap Kok Link  
Northern Connection Sub-sea Tunnel Section  
Environmental Mitigation and Enhancement Measure Implementation Schedule*

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status *
						D	C	O	
<b>Air Quality</b>									
4.8.1	3.8	An effective watering programme of twice daily watering with complete coverage, is estimated to reduce by 50%. This is recommended for all areas in order to reduce dust levels to a minimum;	All areas / throughout construction period	Contractor	TMEIA Avoid smoke impacts and disturbance		Y		✓
4.8.1	3.8	Watering of the construction sites in Lantau for 8 times/day and in Tuen Mun for 12 times/day to reduce dust emissions by 87.5% and 91.7% respectively and shall be undertaken.	All areas / throughout construction period	Contractor	TMEIA Avoid dust generation		Y		✓
4.8.1	3.8	The Contractor shall, to the satisfaction of the Engineer, install effective dust suppression measures and take such other measures as may be necessary to ensure that at the Site boundary and any nearby sensitive receiver, dust levels are kept to acceptable levels.	All areas / throughout construction period	Contractor	TMEIA Avoid dust generation		Y		✓
4.8.1	3.8	The Contractor shall not burn debris or other materials on the works areas.	All areas / throughout construction period	Contractor	TMEIA Avoid dust generation		Y		✓
4.8.1	3.8	In hot, dry or windy weather, the watering programme shall maintain all exposed road surfaces and dust sources wet.	All unpaved haul roads / throughout construction period in hot, dry or windy weather	Contractor	TMEIA Avoid smoke impacts and disturbance		Y		✓
4.8.1	3.8	Where breaking of oversize rock/concrete is required, watering shall be implemented to control dust. Water spray shall be used during the handling of fill material at the site and at active cuts, excavation and fill sites where dust is likely to be created.	All areas / throughout construction period	Contractor	TMEIA Avoid dust generation		Y		✓
4.8.1	3.8	Open dropping heights for excavated materials shall be controlled to a maximum height of 2m to minimise the fugitive dust arising from unloading.	All areas / throughout construction period	Contractor	TMEIA Avoid dust generation		Y		✓
4.8.1	3.8	During transportation by truck, materials shall not be loaded to a level higher than the side and tail boards, and shall be dampened or covered before transport.	All areas / throughout construction period	Contractor	TMEIA Avoid dust generation		Y		✓

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**Northern Connection Sub-sea Tunnel Section**  
**Environmental Mitigation and Enhancement Measure Implementation Schedule**

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status *
						D	C	O	
4.8.1	3.8	Materials having the potential to create dust shall not be loaded to a level higher than the side and tail boards, and shall be covered by a clean tarpaulin. The tarpaulin shall be properly secured and shall extend at least 300mm over the edges of the side and tail boards.	All areas / throughout construction period	Contractor	TMEIA Avoid dust generation		Y		<>
4.8.1	3.8	No earth, mud, debris, dust and the like shall be deposited on public roads. Wheel washing facility shall be usable prior to any earthworks excavation activity on the site.	All site exits / throughout construction period	Contractor	TMEIA Avoid dust		Y		✓
4.8.1	3.8	Areas of exposed soil shall be minimised to areas in which works have been completed shall be restored as soon as is practicable.	All exposed surfaces / throughout construction period	Contractor	TMEIA Avoid dust generation		Y		✓
4.8.1	3.8	All stockpiles of aggregate or spoil shall be enclosed or covered and water applied in dry or windy condition.	All areas / throughout construction period	Contractor	TMEIA Avoid dust generation		Y		<>
4.11	Section 3	EM&A in the form of 1 hour and 24 hour dust monitoring and site audit.	All representative existing ASRs / throughout construction period	Contractor	EM&A Manual		Y		✓
<b>WATER QUALITY</b>									
<i>Marine Works (Sequence A)</i>									
6.1	Annex A	Construction of seawalls to be advanced by at least 200m before the main reclamation dredging and filling can commence. The protection by advanced seawall is a dynamic process depending on the progress of the construction activities and the stage when such protection could be realised is illustrated in Figure 6.2a and detailed in Appendix D6a. The part of the works where such measures can be undertaken for the majority of the time includes the following locations:  - TM-CLKL northern reclamation;	All areas/ prior to dredging and backfilling works	Contractor	TM-EIAO		Y		✓
6.1	-	a maximum of 50% public fill to be used for all seawall filling below +2.5mPD for TM-CLKL southern and northern landfalls.	TM-CLKL seawall filling	Contractor	TM-EIAO		Y		✓

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EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status *
						D	C	O	
6.1	-	a maximum of 30% public fill to be used for reclamation filling below +2.5mPD for TM-CLKL southern landfall	TM-CLKL southern landfall reclamation filling	Contractor	TM-EIAO		Y		N/A
6.1	-	a maximum of 100% public fill to be used for reclamation filling below +2.5mPD for TM-CLKL northern landfall	TM-CLKL northern landfall reclamation filling	Contractor	TM-EIAO		Y		✓
6.1	-	Use of cage type silt curtains round allgrab dredgers during the HKBCF, HKLR and TM-CLKL southern reclamation works.	All areas dredging works	Contractor	TM-EIAO		Y		✓
	Figure 1.1 of Annex C	A layer of floating type silt curtain will be applied when dredging and reclamation works are being undertaken at Portion N-a as shown in Figure 1.1 of Annex C of the EM&A Manual.	All areas/ through out marine works	Contractor	TM-EIAO		Y		✓
6.1	-	Trailer suction hopper dredgers shall not allow mud to overflow.	All areas/ throughout construction period	Contractor	Marine Fill Committee Guidelines. DASO permit conditions.		Y		✓
6.1	-	The use of Lean Material Overboard (LMOB) systems shall be prohibited.	All areas/ throughout construction period	Contractor	Marine Fill Committee Guidelines. DASO permit conditions.		Y		✓
6.1	Annex A  Figure 6.2b Appendix D6b	For other parts of the reclamation works construction of seawalls to be advanced by at least 200m before the main reclamation dredging and filling can commence. It should be noted that the protection by advanced seawall is a dynamic process depending on the progress of the construction activities and the stage when such protection could be realised is illustrated in Figure 6.2b and detailed in Appendices D6b. The part of the works where such measures can be undertaken for the majority of the time includes the following locations:  - TM-CLKL northern reclamation;  - Reclamation filling for Portion D of HKBCF; Reclamation filling for FSD berth of HKBCF; and	TM-CLKL northern landfall, Portion D of HKBCF and HKLR	Contractor	TM-EIAO		Y		✓

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**Environmental Mitigation and Enhancement Measure Implementation Schedule**

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status *
						D	C	O	
		- Reclamation dredging and filling for Portion 1 of HKLR;							
6.1	-	The filling material for the other parts of the works are the same as Sequence A;	All other areas/backfilling works	Contractor	TM-EIAO		Y		N/A
6.1	5.7	Cage type silt curtain (with steel enclosure) shall be used for grab dredgers working in the site of HKBCF and TM- CLKL southern reclamation. Cage type silt curtains will be applied round all grab dredgers at other works area.	HKBCF, HKLR and TM-CLKL grab dredging	Contractor	TM-EIAO		Y		✓
6.1	Annex A	A layer of floating type silt curtain will be applied around all works as defined in Appendix D6b.	All areas/ through out marine works	Contractor	TM-EIAO		Y		✓
6.1	-	TM-CLKL northern landfall: - Reclamation filling shall not proceed until at least 200m section of leading seawall at both the east and west sides of the reclamation are formed above +2.5 mPD, except for 100m gaps for marine access;	All areas/ through out marine works	Contractor	TM-EIAO		Y		✓
<i>General Marine Works</i>									
6.1	-	Use of TBM for the construction of the submarine tunnel.	Tunnel works / Construction phase	Contractor	TM-EIAO		Y		N/A
6.1	-	Export dredged spoils from NWWCZ.	All areas as much as possible / dredging activities	Contractor	DASO Permit conditions		Y		✓
6.1	-	Where public fill is proposed for filling below +2.5mPD, the fine content in the public fill will be controlled to 25%	All areas/ backfilling works	Contractor	TM-EIAO		Y		N/A
6.1	-	Where sand fill is proposed for filling below +2.5mPD, the fine content in the sand fill will be controlled to 5%.	All areas/ backfilling works	Contractor	TM-EIAO		Y		N/A
6.1	-	Mechanical grabs shall be designed and maintained to avoid spillage and should seal tightly while being lifted.	All areas/ throughout construction period	Contractor	Marine Fill Committee Guidelines. DASO permit conditions.		Y		✓
6.1	-	Barges and hopper dredgers shall have tight fitting seals to their bottom openings to prevent leakage of material.	All areas/ throughout construction period	Contractor	Marine Fill Committee		Y		✓

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Northern Connection Sub-sea Tunnel Section  
Environmental Mitigation and Enhancement Measure Implementation Schedule*

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status *
						D	C	O	
					Guidelines. DASO permit conditions.				
6.1	-	Any pipe leakages shall be repaired quickly. Plant should not be operated with leaking pipes.	All areas/ throughout construction period	Contractor	Marine Fill Committee Guidelines. DASO permit conditions.		Y		✓
6.1	-	Loading of barges and hoppers shall be controlled to prevent splashing of dredged material to the surrounding water. Barges or hoppers shall not be filled to a level which will cause overflow of materials or pollution of water during loading or transportation.	All areas/ throughout construction period	Contractor	Marine Fill Committee Guidelines. DASO permit conditions.		Y		✓
6.1	-	Excess material shall be cleaned from the decks and exposed fittings of barges and hopper dredgers before the vessel is moved.	All areas/ throughout construction period	Contractor	Marine Fill Committee Guidelines. DASO permit conditions.		Y		✓
6.1	-	Adequate freeboard shall be maintained on barges to reduce the likelihood of decks being washed by wave action;	All areas/ throughout construction period	Contractor	Marine Fill Committee Guidelines. DASO permit conditions.		Y		N/A
6.1	-	All vessels shall be sized such that adequate clearance is maintained between vessels and the sea bed at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash.	All areas/ throughout construction period	Contractor	Marine Fill Committee Guidelines. DASO permit conditions.		Y		N/A
6.1	-	The works shall not cause foam, oil, grease, litter or other objectionable matter to be present in the water within and adjacent to the works site.	All areas/ throughout construction period	Contractor	Marine Fill Committee Guidelines. DASO permit		Y		✓

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EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status *
						D	C	O	
					conditions.				
6.1	5.2	Silt curtain shall have proved effectiveness from the producer and shall be fully maintained throughout the works by the contractor.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.1	-	The daily maximum production rates shall not exceed those assumed in the water quality assessment.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.1	-	The dredging and filling works shall be scheduled to spread the works evenly over a working day.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
<i>Land Works</i>									
6.1	-	Wastewater from temporary site facilities should be controlled to prevent direct discharge to surface or marine waters.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.1	-	Sewage effluent and discharges from on- site kitchen facilities shall be directed to Government sewer in accordance with the requirements of the WPCO or collected for disposal offsite. The use of soakaways shall be avoided.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.1	-	Storm drainage shall be directed to storm drains via adequately designed sand/silt removal facilities such as sand traps, silt traps and sediment basins. Channels, earth bunds or sand bag barriers should be provided on site to properly direct stormwater to such silt removal facilities. Catchpits and perimeter channels should be constructed in advance of site formation works and earthworks.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.1	-	Silt removal facilities, channels and manholes shall be maintained and any deposited silt and grit shall be removed regularly, including specifically at the onset of and after each rainstorm.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.1	-	Temporary access roads should be surfaced with crushed stone or gravel.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.1	-	Rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓

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EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status *
						D	C	O	
6.1	-	Measures should be taken to prevent the washout of construction materials, soil, silt or debris into any drainage system.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.1	-	Open stockpiles of construction materials (e.g. aggregates and sand) on site should be covered with tarpaulin or similar fabric during rainstorms.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.1	5.8	Manholes (including any newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul sewers.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.1	-	Discharges of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.1	-	All vehicles and plant should be cleaned before they leave the construction site to ensure that no earth, mud or debris is deposited by them on roads. A wheel washing bay should be provided at every site exit.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.1	-	Wheel wash overflow shall be directed to silt removal facilities before being discharged to the storm drain.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.1	-	Section of construction road between the wheel washing bay and the public road should be surfaced with crushed stone or coarse gravel.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.1	-	Wastewater generated from concreting, plastering, internal decoration, cleaning work and other similar activities, shall be screened to remove large objects.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.1	-	Vehicle and plant servicing areas, vehicle wash bays and lubrication facilities shall be located under roofed areas. The drainage in these covered areas shall be connected to foul sewers via a petrol interceptor in accordance with the requirements of the WPCO or collected for off site disposal.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		N/A
6.1	-	The Contractor shall prepare an oil / chemical cleanup plan and ensure that leakages or spillages are contained and cleaned up immediately.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓

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EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status *
						D	C	O	
6.1	-	Waste oil should be collected and stored for recycling or disposal, in accordance with the Waste Disposal Ordinance.	All areas/ throughout construction period	Contractor	TM-EIAO Waste Disposal Ordinance		Y		✓
6.1	-	All fuel tanks and chemical storage areas should be provided with locks and be sited on sealed areas. The storage areas should be surrounded by bunds with a capacity equal to 110% of the storage capacity of the largest tank.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.1	-	Surface run-off from bunded areas should pass through oil/grease traps prior to discharge to the stormwater system.	All areas/ throughout construction period	Contractor	TM-EIAO		Y		✓
6.1	-	Roadside gullies to trap silt and grit shall be provided prior to discharging the stormwater into the marine environment. The sumps will be maintained and cleaned at regular intervals.	Roadside/design and operation	Design Consultant/ Contractor	TM-EIAO	Y		Y	✓
6.1	Section 5	All construction works shall be subject to routine audit to ensure implementation of all EIA recommendations and good working practice.	All areas/ throughout construction period	Contractor	EM&A Manual		Y		✓
<i>Water Quality Monitoring</i>									
6.1	Section 5	Water quality monitoring shall be undertaken for suspended solids, turbidity, and dissolved oxygen. Nutrients and metal parameters shall also be measured for Mf sediment operations (only HKBCF and HKLR required handling of Mf sediment) during baseline, backfilling and post construction period.  One year operation phase water quality monitoring at designated stations.	Designated monitoring stations as defined in EM&A Manual, Section 5/ Before, through-out marine construction period, post construction and monthly operational phase water quality monitoring for a year.	Contractor	EM&A Manual		Y	Y	✓
<b>ECOLOGY</b>									
8.14	6.3	Specification for and implement pre, during and post construction dolphin abundance monitoring.	All Areas/Detailed Design/ during construction works/post construction	Design Consultant/ Contractor	TMEIA	Y	Y	Y	✓
8.14	6.3,6.5	Specification and implementation of 250m dolphin exclusion zone.	All dredging and reclamation areas/Detailed Design/ during all reclamation and dredging works	Design Consultant/ Contractor	TMEIA	Y	Y		✓

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EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status *
						D	C	O	
8.15	6.3, 6.5	Specification and deployment of an artificial reef of an area of 3,600m <sup>2</sup> in an area where fishing activities are prohibited.	Area of prohibited fishing activities/Detailed Design/towards end of construction period	TM-CLKL/ HKBCF Design Consultant/TM-CLKL/ HKBCF Contractor	TMEIA	Y		Y	N/A. To be implemented by AFCD.
8.14	6.3, 6.5	Specification and implementation of marine vessel control specifications	All areas/Detailed Design/during construction works	Design Consultant/ Contractor	TMEIA	Y	Y		✓
8.14	6.3, 6.5	Design and implementation of acoustic decoupling methods for dredging and reclamation works	All areas/ Detailed Design/during dredging and reclamation works	Design Consultant/ Contractor	TMEIA	Y	Y		✓
8.15	6.3, 6.4	Pre-construction phase survey and coral translocation	Detailed Design/Prior to construction	Design Consultant/ Contractor	TMEIA	Y	Y		✓
8.15	6.5	Audit coral translocation success	Post translocation	Contractor	TMEIA		Y		✓
7.13	6.5	The loss of habitat shall be supplemented by enhancement planting in accordance with the landscape mitigation schedule.	All areas / As soon as accessible	Contractor	TMEIA		Y		N/A
7.13	6.5	Spoil heaps shall be covered at all times.	All areas / Throughout construction period	Contractor	TMEIA		Y		✓
7.13	6.5	Avoid damage and disturbance to the remaining and surrounding natural habitat	All areas / Throughout construction period	Contractor	TMEIA		Y		✓
7.13	6.5	Placement of equipment in designated areas within the existing disturbed land	All areas / Throughout construction period	Contractor	TMEIA		Y		✓
7.13	6.5	Disturbed areas to be reinstated immediately after completion of the works.	All areas / Throughout construction period	Contractor	TMEIA		Y		✓
7.13	6.5	Construction activities should be restricted to the proposed works boundary.	All areas / Throughout construction period	Contractor	TMEIA		Y		✓
<b>LANDSCAPE AND VISUAL</b>									
10.9	7.6	The colour and shape of the toll control buildings, ventilation building and administration building shall adopt a design which could blend it into the vicinity elements, and the details will be developed in detailed design stage (DM2)	All areas/detailed design	Design Consultant	TMEIA	Y			N/A

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**Northern Connection Sub-sea Tunnel Section**  
**Environmental Mitigation and Enhancement Measure Implementation Schedule**

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status *
						D	C	O	
10.9	7.6	Aesthetic design of the viaduct, retaining wall and other structures will be developed under ACABAS submission (DM5)	All areas/detailed design	Design Consultant	TMEIA	Y			N/A
10.9	7.6	Screening of construction works by hoardings around works area in visually unobtrusive colours, to screen works (CM5)	All areas/detailed design/ during construction/post construction	Design Consultant/ Contractor	TMEIA	Y	Y		✓
10.9	7.6	Control night-time lighting and glare by hooding all lights (CM6)	All areas/detailed design/ during construction	Design Consultant/ Contractor	TMEIA	Y	Y		N/A
10.9	7.6	Ensure no run-off into water body adjacent to the Project Area (CM7)	All areas/detailed design/ during construction	Design Consultant/ Contractor	TMEIA	Y	Y		✓
10.9	7.6	Avoidance of excessive height and bulk of buildings and structures (CM8)	All areas/detailed design/ during construction	Design Consultant/ Contractor	TMEIA	Y	Y		✓
10.9	7.6	Aesthetically pleasing design (visually unobtrusive and non-reflective) as regard to the form, material and finishes shall be incorporated to all buildings, engineering structures and associated infrastructure facilities (OM5)	All areas/detailed design/ during construction / during operation	Design Consultant/ Contractor	TMEIA	Y	Y	Y	N/A
10.9	7.6	Avoidance of excessive height and bulk of buildings and structures (OM6)	All areas/detailed design/ during construction / during operation	Design Consultant/ Contractor	TMEIA	Y	Y	Y	N/A
<b>WASTE</b>									
12.6		The Contractor shall identify a coordinator for the management of waste.	Contract mobilisation	Contractor	TMEIA		Y		✓
12.6		The Contractor shall prepare and implement a Waste Management Plan which specifies procedures such as a ticketing system, to facilitate tracking of loads and to ensure that illegal disposal of wastes does not occur, and protocols for the maintenance of records of the quantities of wastes generated, recycled and disposed. A recording system for the amount of waste generated, recycled and disposed (locations) should be established.	Contract mobilisation	Contractor	TMEIA, Works Branch Technical Circular No. 5/99 for the Trip-ticket System for Disposal of Construction and Demolition Material		Y		✓
12.6		The Contractor shall apply for and obtain the appropriate licenses for the disposal of public fill, chemical waste and effluent discharges.	Contract mobilisation	Contractor	TMEIA, Land (Miscellaneous		Y		✓

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Environmental Mitigation and Enhancement Measure Implementation Schedule*

EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status *
						D	C	O	
					Provisions) Ordinance (Cap 28); Waste Disposal Ordinance (Cap 354); Dumping at Sea Ordinance (Cap 466); Water Pollution Control Ordinance.				
12.6	8.1	Training shall be provided to workers about the concepts of site cleanliness and appropriate waste management procedures including waste reduction, reuse and recycling.	Contract Mobilisation	Contractor	TMEIA		Y		✓
12.6	8.1	The extent of cutting operation should be optimised where possible. Earth retaining structures and bored pile walls should be proposed to minimise the extent of cutting.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	The surplus surcharge should be transferred to a fill bank	Reclamation areas / after surcharge works	Contractor	TMEIA		Y		N/A
12.6	8.1	Rock armour from the existing seawall should be reused on the new sloping seawall as far as possible	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	The site and surroundings shall be kept tidy and litter free.	All areas / throughout construction period	Contractor	TMEIA		Y		<>
12.6	8.1	No waste shall be burnt on site.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	Provisions to be made in contract documents to allow and promote the use of recycled aggregates where appropriate.	Detailed Design	Design Consultant	TMEIA	Y			✓
12.6	8.1	The Contractor shall be prohibited from disposing of C&D materials at any sensitive locations. The Contractor should propose the final disposal sites in the EMP and WMP for approval before implementation.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	Stockpiled material shall be covered by tarpaulin and /or watered as appropriate to prevent windblown dust/ surface run off.	All areas / throughout construction period	Contractor	TMEIA		Y		✓

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EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status *
						D	C	O	
12.6	8.1	Excavated material in trucks shall be covered by tarpaulins to reduce the potential for spillage and dust generation.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	Wheel washing facilities shall be used by all trucks leaving the site to prevent transfer of mud onto public roads.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	Dredged marine mud shall be disposed of in a gazetted marine disposal ground under the requirements of the Dumping at Seas Ordinance.	Reclamation areas / throughout dredging works	Contractor	TMEIA		Y		✓
12.6	8.1	Standard formwork or pre-fabrication should be used as far as practicable so as to minimise the C&D materials arising. The use of more durable formwork/plastic facing for construction works should be considered. The use of wooden hoardings should be avoided and metal hoarding should be used to facilitate recycling. Purchasing of construction materials should avoid over-ordering and wastage.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	The Contractor should recycle as many C&D materials (this is a waste section) as possible on-site. The public fill and C&D waste should be segregated and stored in separate containers or skips to facilitate the reuse or recycling of materials and proper disposal. Where practicable, the concrete and masonry should be crushed and used as fill materials. Steel reinforcement bar should be collected for use by scrap steel mills. Different areas of the sites should be considered for segregation and storage activities.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	All falsework will be steel instead of wood.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	Chemical waste producers should register with the EPD. Chemical waste should be handled in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Wastes as follows:  f suitable for the substance to be held, resistant to corrosion, maintained in good conditions and securely closed;	All areas / throughout construction period	Contractor	TMEIA		Y		<>

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EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status *
						D	C	O	
		<p><i>f</i> Having a capacity of &lt;450L unless the specifications have been approved by the EPD; and</p> <p>w Chinese according to the instructions prescribed in Schedule 2 of the Regulations.</p> <p><i>f</i> Clearly labelled and used solely for the storage of chemical wastes;</p> <p><i>f</i> Enclosed with at least 3 sides;</p> <p><i>f</i> Impermeable floor and bund with capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in the area, whichever is greatest;</p> <p><i>f</i> Adequate ventilation;</p> <p><i>f</i> Sufficiently covered to prevent rainfall entering (water collected within the bund must be tested and disposed of as chemical waste, if necessary); and</p> <p><i>f</i> Incompatible materials are adequately separated.</p>							
12.6	8.1	Waste oils, chemicals or solvents shall not be disposed of to drain,	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	Adequate numbers of portable toilets should be provided for on-site workers. Portable toilets should be maintained in reasonable states, which will not deter the workers from utilising them.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	Night soil should be regularly collected by licensed collectors.	All areas / throughout construction period	Contractor	TMEIA		Y		N/A

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EIA Reference	EM&A Manual Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Stages			Status *
						D	C	O	
12.6	8.1	General refuse arising on-site should be stored in enclosed bins or compaction units separately from C&D and chemical wastes. Sufficient dustbins shall be provided for storage of waste as required under the Public Cleansing and Prevention of Nuisances By-laws. In addition, general refuse shall be cleared daily and shall be disposed of to the nearest licensed landfill or refuse transfer station. Burning of refuse on construction sites is prohibited.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	All waste containers shall be in a secure area on hardstanding;	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	Training shall be provided to workers about the concepts of site cleanliness and appropriate waste management procedure, including waste reduction, reuse and recycling.	All areas / throughout construction period	Contractor	TMEIA		Y		✓
12.6	8.1	Office wastes can be reduced by recycling of paper if such volume is sufficiently large to warrant collection. Participation in a local collection scheme by the Contractor should be advocated. Waste separation facilities for paper, aluminium cans, plastic bottles, etc should be provided on-site.	Site Offices/ throughout construction period	Contractor	TMEIA		Y		✓
12.6	Section 8	EM&A of waste handling, storage, transportation, disposal procedures and documentation through the site audit programme shall be undertaken.	All areas / throughout construction period	Contractor	EM&A Manual		Y		✓
<b>CULTURAL HERITAGE</b>									
11.8	Section 9	EM&A in the form of audit of the mitigation measures	All areas / throughout construction period	Highways Department	EIAO-TM		Y		N/A

**\* Remarks:**

- ✓ Compliance of Mitigation Measures
- <> Compliance of Mitigation but need improvement
- x Non-compliance of Mitigation Measures
- ▲ Non-compliance of Mitigation Measures but rectified by Contractor
- Δ Deficiency of Mitigation Measures but rectified by Contractor
- N/A Not Applicable in Reporting Period

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Appendix D

## Summary of Action and Limit Levels

**Table D1** *Action and Limit Levels for 1-hour and 24-hour TSP*

<b>Parameters</b>	<b>Action</b>	<b>Limit</b>
24 Hour TSP Level in $\mu\text{g}/\text{m}^3$	ASR1 = 213 ASR5 = 238 AQMS1 = 213 ASR6 = 238 ASR10 = 214	260
1 Hour TSP Level in $\mu\text{g}/\text{m}^3$	ASR1 = 331 ASR5 = 340 AQMS1 = 335 ASR6 = 338 ASR10 = 337	500

**Table D2** *Action and Limit Levels for Water Quality*

<b>Parameter</b>	<b>Action Level#</b>	<b>Limit Level#</b>
DO in mg/L <sup>(a)</sup>	<u>Surface and Middle</u> <b>5.0 mg/L</b>	<u>Surface and Middle</u> <b>4.2 mg/L</b>
	<u>Bottom</u> <b>4.7 mg/L</b>	<u>Bottom</u> <b>3.6 mg/L</b>
Turbidity in NTU (Depth-averaged <sup>(b), (c)</sup> )	120% of upstream control station at the same tide of the same day and 95%-ile of baseline data, i.e., <b>27.5 NTU</b>	130% of upstream control station at the same tide of the same day and 99%-ile of baseline data, i.e., <b>47.0 NTU</b>
SS in mg/L (Depth-averaged <sup>(b), (c)</sup> )	120% of upstream control station at the same tide of the same day and 95%-ile of baseline data, i.e., <b>23.5 mg/L</b>	130% of upstream control station at the same tide of the same day and 10mg/L for WSD Seawater Intakes at Tuen Mun and 99%-ile of baseline data, i.e., <b>34.4 mg/L</b>

**Notes:**

# Baseline data: data from HKZMB Baseline Water Quality Monitoring between 6 and 31 October 2011.

- (a) For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
- (b) "Depth-averaged" is calculated by taking the arithmetic means of reading of all three depths
- (c) For turbidity and SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
- (d) All figures given in the table are used for reference only, and EPD may amend the figures whenever it is considered as necessary
- (e) The 1%-ile of baseline data for surface and middle DO is 4.2 mg/L, whilst for bottom DO is 3.6 mg/L.
- (f) The AL/LL for WQM stations, IS(Mf)11, IS17 and SR7, are adopted from HZMB HKBCF project.

**Table D3** *Action and Limit Levels for Impact Dolphin Monitoring*

	North Lantau Social Cluster	
	NEL	NWL
Action Level	STG < 70% of baseline & ANI < 70% of baseline	STG < 70% of baseline & ANI < 70% of baseline
Limit Level	[STG < 40% of baseline & ANI < 40% of baseline] and STG < 40% of baseline & ANI < 40% of baseline	

**Notes:**

1. STG means quarterly encounter rate of number of dolphin sightings, which is **6.00 in NEL** and **9.85 in NWL** during the baseline monitoring period
2. ANI means quarterly encounter rate of total number of dolphins, which is **22.19 in NEL** and **44.66 in NWL** during the baseline monitoring period
3. For North Lantau Social Cluster, AL will be trigger if NEL or NWL fall below the criteria; LL will be triggered if both NEL and NWL fall below the criteria.

**Table D4** *Derived Value of Action Level (AL) and Limit Level (LL)*

	North Lantau Social Cluster	
	NEL	NWL
Action Level	STG < 4.2 & ANI < 15.5	STG < 6.9 & ANI < 31.3
Limit Level	NEL = [STG < 2.4 & ANI < 8.9] and NWL = [STG < 3.9 & ANI < 17.9]	

Appendix E

Copies of  
Calibration  
Certificates for Air  
and Water Quality  
Monitoring

High-Volume TSP Sampler  
5-Point Calibration Record

Location : ASR 5  
 Calibrated by : P.F. Yeung  
 Date : 08/06/2019

Sampler

Model : TE-5170  
 Serial Number : S/N 0816

Calibration Orifice and Standard Calibration Relationship

Serial Number : 2454  
 Service Date : 25 February 2019  
 Slope (m) : 2.07076  
 Intercept (b) : -0.02917  
 Correlation Coefficient(r) : 1.00000

Standard Condition

Pstd (hpa) : 1013  
 Tstd (K) : 298.18

Calibration Condition

Pa (hpa) : 1008  
 Ta(K) : 304

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1	18 holes	12.2	3.450	1.680	56	55.31
2	13 holes	9.2	2.996	1.461	50	49.38
3	10 holes	7.0	2.613	1.276	45	44.44
4	7 holes	4.8	2.164	1.059	38	37.53
5	5 holes	2.5	1.562	0.768	28	27.65

Notes:  $Z = \sqrt{dH(Pa/Pstd)(Tstd/Ta)}$ ,  $X = Z/m - b$ ,  $Y(\text{Corrected Flow}) = IC * \{\sqrt{Pa/Pstd}(Tstd/Ta)\}$

Sampler Calibration Relationship (Linear Regression)

Slope(m): 28.547                      Intercept(b): 8.230                      Correlation Coefficient(r): 0.9952

Checked by: Magnum Fan

Date: 12/06/2019

High-Volume TSP Sampler  
5-Point Calibration Record

Location : ASR10  
 Calibrated by : P.F. Yeung  
 Date : 08/06/2019

Sampler

Model : TE-5170  
 Serial Number : S/N 8162

Calibration Orifice and Standard Calibration Relationship

Serial Number : 2454  
 Service Date : 25 February 2019  
 Slope (m) : 2.07076  
 Intercept (b) : -0.02917  
 Correlation Coefficient(r) : 1.00000

Standard Condition

Pstd (hpa) : 1013  
 Tstd (K) : 298.18

Calibration Condition

Pa (hpa) : 1008  
 Ta(K) : 304

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1	18 holes	11.2	3.305	1.610	55	54.32
2	13 holes	9.4	3.028	1.476	50	49.38
3	10 holes	6.6	2.537	1.239	45	44.44
4	7 holes	4.2	2.024	0.992	38	37.53
5	5 holes	2.6	1.593	0.783	30	29.63

Notes:  $Z = \sqrt{dH(Pa/Pstd)(Tstd/Ta)}$ ,  $X = Z/m - b$ ,  $Y(\text{Corrected Flow}) = IC * \{\sqrt{Pa/Pstd}(Tstd/Ta)\}$

Sampler Calibration Relationship (Linear Regression)

Slope(m): 28.547                      Intercept(b): 8.230                      Correlation Coefficient(r): 0.9952

Checked by: Magnum Fan

Date: 12/06/2019

High-Volume TSP Sampler  
5-Point Calibration Record

Location : AQMS1  
 Calibrated by : P.F. Yeung  
 Date : 08/06/2019

Sampler

Model : TE-5170  
 Serial Number : S/N 1253

Calibration Orifice and Standard Calibration Relationship

Serial Number : 2454  
 Service Date : 25 February 2019  
 Slope (m) : 2.07076  
 Intercept (b) : -0.02917  
 Correlation Coefficient(r) : 1.00000

Standard Condition

Pstd (hpa) : 1013  
 Tstd (K) : 298.18

Calibration Condition

Pa (hpa) : 1008  
 Ta(K) : 304

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1	18 holes	12.0	3.421	1.666	55	54.32
2	13 holes	9.2	2.996	1.461	50	49.38
3	10 holes	6.6	2.537	1.239	44	43.46
4	7 holes	4.5	2.095	1.026	37	36.54
5	5 holes	2.4	1.530	0.753	28	27.65

Notes:  $Z = \sqrt{dH(Pa/Pstd)(Tstd/Ta)}$ ,  $X = Z/m - b$ ,  $Y(\text{Corrected Flow}) = IC * \{\sqrt{Pa/Pstd}(Tstd/Ta)\}$

Sampler Calibration Relationship (Linear Regression)

Slope(m): 29.345

Intercept(b): 6.205

Correlation Coefficient(r): 0.9978

Checked by: Magnum Fan

Date: 12/06/2019



High-Volume TSP Sampler  
5-Point Calibration Record

Location : ASR 1  
 Calibrated by : P.F.Yeung  
 Date : 08/06/2019

Sampler

Model : TE-5170  
 Serial Number : S/N 0146

Calibration Orifice and Standard Calibration Relationship

Serial Number : 2454  
 Service Date : 25 February 2019  
 Slope (m) : 2.07076  
 Intercept (b) : -0.02917  
 Correlation Coefficient(r) : 1.00000

Standard Condition

Pstd (hpa) : 1013  
 Tstd (K) : 298.18

Calibration Condition

Pa (hpa) : 1008  
 Ta(K) : 304

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1   18 holes	11.0	3.276	1.596	54	53.33
2   13 holes	9.0	2.963	1.445	49	48.39
3   10 holes	6.8	2.575	1.258	43	42.47
4   7 holes	4.2	2.024	0.992	36	35.55
5   5 holes	2.8	1.653	0.812	28	27.65

Notes:  $Z = \sqrt{dH(Pa/Pstd)(Tstd/Ta)}$ ,  $X = Z/m - b$ ,  $Y(\text{Corrected Flow}) = IC * \{\sqrt{Pa/Pstd}(Tstd/Ta)\}$

Sampler Calibration Relationship (Linear Regression)

Slope(m): 31.662                      Intercept(b): 2.838                      Correlation Coefficient(r): 0.9969

Checked by: Magnum Fan

Date: 12/06/2019

High-Volume TSP Sampler  
5-Point Calibration Record

Location : ASR 6  
 Calibrated by : P.F. Yeung  
 Date : 08/06/2019

Sampler

Model : TE-5170  
 Serial Number : S/N 3957

Calibration Orifice and Standard Calibration Relationship

Serial Number : 2454  
 Service Date : 25 February 2019  
 Slope (m) : 2.07076  
 Intercept (b) : -0.02917  
 Correlation Coefficient(r) : 1.00000

Standard Condition

Pstd (hpa) : 1013  
 Tstd (K) : 298.18

Calibration Condition

Pa (hpa) : 1008  
 Ta(K) : 304

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1   18 holes	12.0	3.421	1.666	56	55.31
2   13 holes	9.2	2.996	1.461	51	50.37
3   10 holes	7.6	2.723	1.329	45	44.44
4   7 holes	4.5	2.095	1.026	37	36.54
5   5 holes	2.8	1.653	0.812	30	29.63

Notes:  $Z = \sqrt{dH(Pa/Pstd)(Tstd/Ta)}$ ,  $X = Z/m - b$ ,  $Y(\text{Corrected Flow}) = IC * \{\sqrt{Pa/Pstd}(Tstd/Ta)\}$

Sampler Calibration Relationship (Linear Regression)

Slope(m): 30.250                      Intercept(b): 5.181                      Correlation Coefficient(r): 0.9976

Checked by: Magnum Fan

Date: 12/06/2019

High-Volume TSP Sampler  
5-Point Calibration Record

Location : ASR 5  
 Calibrated by : P.F. Yeung  
 Date : 08/08/2019

Sampler

Model : TE-5170  
 Serial Number : S/N 0816

Calibration Orifice and Standard Calibration Relationship

Serial Number : 2454  
 Service Date : 25 February 2019  
 Slope (m) : 2.07076  
 Intercept (b) : -0.02917  
 Correlation Coefficient(r) : 1.00000

Standard Condition

Pstd (hpa) : 1013  
 Tstd (K) : 298.18

Calibration Condition

Pa (hpa) : 1004  
 Ta(K) : 303

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1	18 holes	12.2	3.448	1.679	56	55.29
2	13 holes	9.4	3.027	1.476	51	50.35
3	10 holes	7.2	2.649	1.293	46	45.42
4	7 holes	4.6	2.118	1.037	38	37.52
5	5 holes	2.5	1.561	0.768	30	29.62

Notes:  $Z = \sqrt{dH(Pa/Pstd)(Tstd/Ta)}$ ,  $X = Z/m - b$ ,  $Y(\text{Corrected Flow}) = IC * \{\sqrt{Pa/Pstd}(Tstd/Ta)\}$

Sampler Calibration Relationship (Linear Regression)

Slope(m): 28.457

Intercept(b): 8.049

Correlation Coefficient(r): 0.9991

Checked by: Magnum Fan

Date: 13/08/2019

High-Volume TSP Sampler  
5-Point Calibration Record

Location : ASR10  
 Calibrated by : P.F. Yeung  
 Date : 08/08/2019

Sampler

Model : TE-5170  
 Serial Number : S/N 8162

Calibration Orifice and Standard Calibration Relationship

Serial Number : 2454  
 Service Date : 25 February 2019  
 Slope (m) : 2.07076  
 Intercept (b) : -0.02917  
 Correlation Coefficient(r) : 1.00000

Standard Condition

Pstd (hpa) : 1013  
 Tstd (K) : 298.18

Calibration Condition

Pa (hpa) : 1004  
 Ta(K) : 303

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1	18 holes	11.4	3.334	1.624	54	53.31
2	13 holes	9.2	2.995	1.460	50	49.37
3	10 holes	6.5	2.517	1.230	45	44.43
4	7 holes	4.4	2.071	1.014	37	36.53
5	5 holes	2.5	1.561	0.768	30	29.62

Notes:  $Z = \sqrt{dH(Pa/Pstd)(Tstd/Ta)}$ ,  $X = Z/m - b$ ,  $Y(\text{Corrected Flow}) = IC * \{\sqrt{Pa/Pstd}(Tstd/Ta)\}$

Sampler Calibration Relationship (Linear Regression)

Slope(m): 27.987                      Intercept(b): 8.530                      Correlation Coefficient(r): 0.9920

Checked by: Magnum Fan

Date: 13/08/2019

High-Volume TSP Sampler  
5-Point Calibration Record

Location : AQMS1  
 Calibrated by : P.F.Yeung  
 Date : 08/08/2019

Sampler

Model : TE-5170  
 Serial Number : S/N 1253

Calibration Orifice and Standard Calibration Relationship

Serial Number : 2454  
 Service Date : 25 February 2019  
 Slope (m) : 2.07076  
 Intercept (b) : -0.02917  
 Correlation Coefficient(r) : 1.00000

Standard Condition

Pstd (hpa) : 1013  
 Tstd (K) : 298.18

Calibration Condition

Pa (hpa) : 1004  
 Ta(K) : 303

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1	18 holes	12.0	3.420	1.666	56	55.29
2	13 holes	9.4	3.027	1.476	50	49.37
3	10 holes	6.5	2.517	1.230	45	44.43
4	7 holes	4.4	2.071	1.014	38	37.52
5	5 holes	2.6	1.592	0.783	30	29.62

Notes:  $Z = \sqrt{dH(Pa/Pstd)(Tstd/Ta)}$ ,  $X = Z/m - b$ ,  $Y(\text{Corrected Flow}) = IC * \{\sqrt{Pa/Pstd}(Tstd/Ta)\}$

Sampler Calibration Relationship (Linear Regression)

Slope(m): 29.118

Intercept(b): 8.273

Correlation Coefficient(r): 0.9959

Checked by: Magnum Fan

Date: 13/08/2019

High-Volume TSP Sampler  
5-Point Calibration Record

Location : ASR 1  
 Calibrated by : P.F.Yeung  
 Date : 08/08/2019

Sampler

Model : TE-5170  
 Serial Number : S/N 0146

Calibration Orifice and Standard Calibration Relationship

Serial Number : 2454  
 Service Date : 25 February 2019  
 Slope (m) : 2.07076  
 Intercept (b) : -0.02917  
 Correlation Coefficient(r) : 1.00000

Standard Condition

Pstd (hpa) : 1013  
 Tstd (K) : 298.18

Calibration Condition

Pa (hpa) : 1004  
 Ta(K) : 303

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1   18 holes	11.6	3.363	1.638	52	51.34
2   13 holes	9.0	2.962	1.444	48	47.39
3   10 holes	6.6	2.536	1.239	41	40.48
4   7 holes	4.4	2.071	1.014	35	34.56
5   5 holes	2.6	1.592	0.783	27	26.66

Notes:  $Z = \sqrt{dH(Pa/Pstd)(Tstd/Ta)}$ ,  $X = Z/m - b$ ,  $Y(\text{Corrected Flow}) = IC * \{\sqrt{Pa/Pstd}(Tstd/Ta)\}$

Sampler Calibration Relationship (Linear Regression)

Slope(m): 29.118                      Intercept(b): 4.454                      Correlation Coefficient(r): 0.9973

Checked by: Magnum Fan

Date: 13/08/2019

High-Volume TSP Sampler  
5-Point Calibration Record

Location : ASR 6  
 Calibrated by : P.F. Yeung  
 Date : 08/08/2019

Sampler

Model : TE-5170  
 Serial Number : S/N 3957

Calibration Orifice and Standard Calibration Relationship

Serial Number : 2454  
 Service Date : 25 February 2019  
 Slope (m) : 2.07076  
 Intercept (b) : -0.02917  
 Correlation Coefficient(r) : 1.00000

Standard Condition

Pstd (hpa) : 1013  
 Tstd (K) : 298.18

Calibration Condition

Pa (hpa) : 1004  
 Ta(K) : 303

Resistance Plate	dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC (chart)	Y (corrected)
1   18 holes	12.0	3.420	1.666	55	54.30
2   13 holes	9.2	2.995	1.460	50	49.37
3   10 holes	7.0	2.612	1.276	45	44.43
4   7 holes	4.6	2.118	1.037	38	37.52
5   5 holes	2.8	1.652	0.812	30	29.62

Notes:  $Z = \sqrt{dH(Pa/Pstd)(Tstd/Ta)}$ ,  $X = Z/m - b$ ,  $Y(\text{Corrected Flow}) = IC * \{\sqrt{Pa/Pstd}(Tstd/Ta)\}$

Sampler Calibration Relationship (Linear Regression)

Slope(m): 28.794                      Intercept(b): 7.053                      Correlation Coefficient(r): 0.9973

Checked by: Magnum Fan

Date: 13/08/2019



RECALIBRATION

DUE DATE:

February 25, 2020

# Certificate of Calibration

## Calibration Certification Information

Cal. Date: February 25, 2019      Rootsmeter S/N: 438320      Ta: 294      °K  
 Operator: Jim Tisch      Pa: 762.0      mm Hg  
 Calibration Model #: TE-5025A      Calibrator S/N: 2454

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.4400	3.2	2.00
2	3	4	1	1.0200	6.4	4.00
3	5	6	1	0.9120	7.9	5.00
4	7	8	1	0.8700	8.8	5.50
5	9	10	1	0.7180	12.8	8.00

## Data Tabulation

Vstd (m3)	Qstd (x-axis)	$\sqrt{\Delta H \left( \frac{Pa}{Pstd} \right) \left( \frac{Tstd}{Ta} \right)}$ (y-axis)	Va	Qa (x-axis)	$\sqrt{\Delta H \left( \frac{Ta}{Pa} \right)}$ (y-axis)
1.0120	0.7028	1.4257	0.9958	0.6915	0.8784
1.0077	0.9880	2.0162	0.9916	0.9722	1.2423
1.0057	1.1028	2.2542	0.9896	1.0851	1.3889
1.0045	1.1546	2.3642	0.9885	1.1362	1.4567
0.9992	1.3916	2.8513	0.9832	1.3694	1.7569
<b>QSTD</b>	<b>m= 2.07076</b>		<b>QA</b>	<b>m= 1.29667</b>	
	<b>b= -0.02917</b>			<b>b= -0.01797</b>	
	<b>r= 1.00000</b>			<b>r= 1.00000</b>	

## Calculations

$Vstd = \Delta Vol \left( \frac{Pa - \Delta P}{Pstd} \right) \left( \frac{Tstd}{Ta} \right)$	$Va = \Delta Vol \left( \frac{Pa - \Delta P}{Pa} \right)$
$Qstd = Vstd / \Delta Time$	$Qa = Va / \Delta Time$
For subsequent flow rate calculations:	
$Qstd = 1/m \left( \left( \sqrt{\Delta H \left( \frac{Pa}{Pstd} \right) \left( \frac{Tstd}{Ta} \right)} \right) - b \right)$	$Qa = 1/m \left( \left( \sqrt{\Delta H \left( \frac{Ta}{Pa} \right)} \right) - b \right)$

## Standard Conditions

Tstd:	298.15 °K
Pstd:	760 mm Hg
<b>Key</b>	
ΔH:	calibrator manometer reading (in H2O)
ΔP:	rootsmeter manometer reading (mm Hg)
Ta:	actual absolute temperature (°K)
Pa:	actual barometric pressure (mm Hg)
b:	intercept
m:	slope

## RECALIBRATION

US EPA recommends annual recalibration per 1998 40 Code of Federal Regulations Part 50 to 51, Appendix B to Part 50, Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere, 9.2.17, page 30





輝創工程有限公司

Sun Creation Engineering Limited

Calibration & Testing Laboratory

# Certificate of Calibration

## 校正證書

Certificate No. : C184960

證書編號

ITEM TESTED / 送檢項目 ( Job No. / 序引編號 : IC18-1761 )      Date of Receipt / 收件日期 : 23 August 2018

Description / 儀器名稱 : Anemometer  
Manufacturer / 製造商 : Lutron  
Model No. / 型號 : AM-4201  
Serial No. / 編號 : AF.27513  
Supplied By / 委託者 : Envirotech Services Co.  
Room 113, 1/F, My Loft, 9 Hoi Wing Road, Tuen Mun,  
New Territories, Hong Kong

### TEST CONDITIONS / 測試條件

Temperature / 溫度 :  $(23 \pm 2)^{\circ}\text{C}$       Relative Humidity / 相對濕度 :  $(50 \pm 25)\%$   
Line Voltage / 電壓 : ---

### TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 5 September 2018

### TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.  
The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via :  
- Testo Industrial Services GmbH, Germany

Tested By  
測試

:

T L Shek  
Assistant Engineer

Certified By  
核證

:

H C Chan  
Engineer

Date of Issue  
簽發日期

:

6 September 2018

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。

Sun Creation Engineering Limited – Calibration & Testing Laboratory

c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong

輝創工程有限公司 — 校正及檢測實驗室

c/o 香港新界屯門興安里一號四樓

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Fax/傳真: (852) 2744 8986

E-mail/電郵: callab@suncreation.com

Website/網址: www.suncreation.com



輝創工程有限公司

Sun Creation Engineering Limited

Calibration & Testing Laboratory

# Certificate of Calibration 校正證書

Certificate No. : C184960

證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours before the commencement of the test.
2. The results presented are the mean of 10 measurements at each calibration point.
3. Test equipment :

<u>Equipment ID</u>	<u>Description</u>	<u>Certificate No.</u>
CL386	Multi-function Measuring Instrument	S16493

4. Test procedure : MA130N.

5. Results :

### Air Velocity

Applied Value (m/s)	UUT Reading (m/s)	Measured Correction		
		Value (m/s)	Measurement Uncertainty	
			Expanded Uncertainty (m/s)	Coverage Factor
2.0	1.7	+0.3	0.2	2.0
4.0	3.8	+0.2	0.3	2.0
6.0	5.8	+0.2	0.3	2.0
8.0	7.9	+0.1	0.3	2.0
10.0	10.0	0.0	0.4	2.0

Remarks : - The Measured Corrections are defined as :  
Value = Applied Value - UUT Reading

- The expanded uncertainties are for a level of confidence of 95 %.

### Note :

Only the original copy or the laboratory's certified true copy is valid.

The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。

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E-mail/電郵: callab@suncreation.com

Website/網址: www.suncreation.com

**ENVIROTECH SERVICES CO.**

**Calibration Report of Wind Meter**

Date of Calibration : 19 February 2019

Brand of Test Meter: Davis

Model: Vantage Pro 2 ( s/n: AS160104014)

Location : Roof of Tuen Mun Firestation

Procedures :

- 1. Wind Still Test: The wind speed sensor was hold by hand until it keep still
- 2.Wind Speed Test: The wind meter was on-site calibrated against the Anemometer
- 3.Wind Direction Test : The wind meter was on-site calibrated against the marine compass at four directions

Results:

Wind Still Test

Wind Speed (m/s)
0.00

Wind Speed Test

Davis (m/s)	Anemometer (m/s)
1.5	1.3
2.6	2.9
3.3	3.5

Wind Direction Test

Davis (o)	Marine Compass (o)
271	270
0	0
91	90
180	180

Calibrated by: Ho  
Yeung Ping Fai  
(Technical Officer)

Checked by : Fat  
Ho Kam Fat  
(Senior Technical Officer)

**ENVIROTECH SERVICES CO.**

**Calibration Report of Wind Meter**

Date of Calibration : 15 August 2019

Brand of Test Meter: Davis

Model: Vantage Pro 2 ( s/n: AS160104014)

Location : Roof of Tuen Mun Firestation

Procedures :

- 1. Wind Still Test: The wind speed sensor was hold by hand until it keep still
- 2.Wind Speed Test: The wind meter was on-site calibrated against the Anemometer
- 3.Wind Direction Test : The wind meter was on-site calibrated against the marine compass at four directions

Results:

Wind Still Test

Wind Speed (m/s)
0.00

Wind Speed Test

Davis (m/s)	Anemometer (m/s)
3.3	3.7
2.8	2.4
1.1	1.2

Wind Direction Test

Davis (o)	Marine Compass (o)
270	270
0	0
89	90
181	180

Calibrated by: *Ho*  
Yeung Ping Fai  
(Technical Officer)

Checked by : *Fai*  
Ho Kam Fat  
(Senior Technical Officer)





專業化驗有限公司  
QUALITY PRO TEST-CONSULT LIMITED

Unit 10, 14/F, Wah Wai Centre, 38-40 Au Pui Wan St., Fotan, Hong Kong  
Email: info@qualityprotest.com; Website: www.qualityprotest.com  
Tel: (852) 3956 8717; Fax: (852) 3956 3928

## REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Report No. : AI060143  
Date of Issue : 25 June, 2019  
Page No. : 1 of 2

### PART A – CUSTOMER INFORMATION

Enovative Environmental Service Ltd.  
Flat 2207, Yu Fun House,  
Yu Chui Court, Shatin  
New Territories, Hong Kong  
Attn: Mr. Thomas WONG

### PART B – DESCRIPTION

Name of Equipment : YSI ProDSS (Multi-Parameters)  
Manufacturer : YSI (a xylem brand)  
Serial Number : 17E100747  
Date of Received : Jun 25, 2019  
Date of Calibration : Jun 25, 2019  
Date of Next Calibration<sup>(a)</sup> : Sep 25, 2019

### PART C – REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

Parameter	Reference Method
pH at 25°C	APHA 21e 4500-H <sup>+</sup> B
Dissolved Oxygen	APHA 21e 4500-O G
Conductivity at 25°C	APHA 21e 2510 B
Salinity	APHA 21e 2520 B
Turbidity	APHA 21e 2130 B
Temperature	Section 6 of international Accreditation New Zealand Technical Guide no. 3 Second edition March 2008: Working Thermometer Calibration Procedure.

### PART D – CALIBRATION RESULTS<sup>(b,c)</sup>

#### (1) pH at 25°C

Target (pH unit)	Displayed Reading <sup>(d)</sup> (pH Unit)	Tolerance <sup>(e)</sup> (pH Unit)	Results
4.00	4.01	0.01	Satisfactory
7.42	7.41	-0.01	Satisfactory
10.01	10.03	0.02	Satisfactory

Tolerance of pH should be less than ±0.20 (pH unit)

#### (2) Temperature

Reading of Ref. thermometer (°C)	Displayed Reading (°C)	Tolerance (°C)	Results
15.0	15.2	0.2	Satisfactory
30.0	30.0	0.0	Satisfactory
48.0	47.9	-0.1	Satisfactory

Tolerance limit of temperature should be less than ±2.0 (°C)

~ CONTINUED ON NEXT PAGE ~

#### Remark(s): -

- <sup>(a)</sup> The "Date of Next Calibration" is recommended according to best practice principals as practiced by QPT or quoted from relevant international standards.  
<sup>(b)</sup> The results relate only to the calibrated equipment as received  
<sup>(c)</sup> The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.  
<sup>(d)</sup> "Displayed Reading" denotes the figure shown on item under calibration/ checking regardless of equipment precision or significant figures.  
<sup>(e)</sup> The "Tolerance Limit" mentioned is referenced to YSI product specifications.

APPROVED SIGNATORY:

LAM Ho-ye, Emma  
Assistant Laboratory Manager



專業化驗有限公司  
QUALITY PRO TEST-CONSULT LIMITED

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Tel: (852) 3956 8717; Fax: (852) 3956 3928

## REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Report No. : AI060143  
Date of Issue : 25 June, 2019  
Page No. : 2 of 2

### PART D – CALIBRATION RESULTS (Cont'd)

#### (3) Dissolved Oxygen

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)	Results
0.45	0.03	-0.42	Satisfactory
2.84	3.26	0.42	Satisfactory
5.21	5.29	0.08	Satisfactory
8.03	7.64	-0.39	Satisfactory

Tolerance limit of dissolved oxygen should be less than  $\pm 0.50$  (mg/L)

#### (4) Conductivity at 25°C

Conc. of KCl (M)	Expected Reading ( $\mu\text{S}/\text{cm}$ )	Displayed Reading ( $\mu\text{S}/\text{cm}$ )	Tolerance (%)	Results
0.001	146.9	145.1	-1.2	Satisfactory
0.01	1412	1402	-0.7	Satisfactory
0.1	12890	12921	0.2	Satisfactory
0.5	58670	56719	-3.3	Satisfactory
1.0	111900	111688	-0.2	Satisfactory

Tolerance limit of conductivity should be less than  $\pm 10.0$  (%)

#### (5) Salinity

Expected Reading (g/L)	Displayed Reading (g/L)	Tolerance (%)	Results
10	9.96	-0.4	Satisfactory
20	20.13	0.6	Satisfactory
30	30.00	0.0	Satisfactory

Tolerance limit of salinity should be less than  $\pm 10.0$  (%)

#### (6) Turbidity

Expected Reading (NTU)	Displayed Reading <sup>(f)</sup> (NTU)	Tolerance <sup>(g)</sup> (%)	Results
0	0.01	--	Satisfactory
10	10.05	0.5	Satisfactory
20	20.12	0.6	Satisfactory
100	100.90	0.9	Satisfactory
800	805.40	0.7	Satisfactory

Tolerance limit of turbidity should be less than  $\pm 10.0$  (%)

~ END OF REPORT ~

**Remark(s): -**

<sup>(f)</sup> "Displayed Reading" presents the figures shown on item under calibration/ checking regardless of equipment precision or significant figures.

<sup>(g)</sup> The "Tolerance Limit" mentioned is the acceptance criteria applicable for similar equipment used by Quality Pro Test-Consult Ltd. or quoted from relevant international standards.



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# REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Report No. : AI060144  
Date of Issue : 25 June, 2019  
Page No. : 1 of 2

## PART A – CUSTOMER INFORMATION

Enovative Environmental Service Ltd.  
Flat 2207, Yu Fun House,  
Yu Chui Court, Shatin  
New Territories, Hong Kong  
Attn: Mr. Thomas WONG

## PART B – DESCRIPTION

Name of Equipment : YSI ProDSS (Multi-Parameters)  
Manufacturer : YSI (a xylem brand)  
Serial Number : 15M100005  
Date of Received : Jun 25, 2019  
Date of Calibration : Jun 25, 2019  
Date of Next Calibration<sup>(a)</sup> : Sep 25, 2019

## PART C – REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

Parameter	Reference Method
pH at 25°C	APHA 21e 4500-H <sup>+</sup> B
Dissolved Oxygen	APHA 21e 4500-O G
Conductivity at 25°C	APHA 21e 2510 B
Salinity	APHA 21e 2520 B
Turbidity	APHA 21e 2130 B
Temperature	Section 6 of international Accreditation New Zealand Technical Guide no. 3 Second edition March 2008: Working Thermometer Calibration Procedure.

## PART D – CALIBRATION RESULTS<sup>(b,c)</sup>

### (1) pH at 25°C

Target (pH unit)	Displayed Reading <sup>(d)</sup> (pH Unit)	Tolerance <sup>(e)</sup> (pH Unit)	Results
4.00	4.02	0.02	Satisfactory
7.42	7.40	-0.02	Satisfactory
10.01	10.01	0.00	Satisfactory

Tolerance of pH should be less than ±0.20 (pH unit)

### (2) Temperature

Reading of Ref. thermometer (°C)	Displayed Reading (°C)	Tolerance (°C)	Results
15.0	15.1	0.1	Satisfactory
30.0	29.8	-0.2	Satisfactory
48.0	48.1	0.1	Satisfactory

Tolerance limit of temperature should be less than ±2.0 (°C)

~ CONTINUED ON NEXT PAGE ~

#### Remark(s): -

- <sup>(a)</sup> The "Date of Next Calibration" is recommended according to best practice principals as practiced by QPT or quoted from relevant international standards.  
<sup>(b)</sup> The results relate only to the calibrated equipment as received  
<sup>(c)</sup> The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.  
<sup>(d)</sup> "Displayed Reading" denotes the figure shown on item under calibration/ checking regardless of equipment precision or significant figures.  
<sup>(e)</sup> The "Tolerance Limit" mentioned is referenced to YSI product specifications.

APPROVED SIGNATORY:

LAM Ho-ye, Emma  
Assistant Laboratory Manager





## REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Report No. : AI060144  
Date of Issue : 25 June, 2019  
Page No. : 2 of 2

### PART D – CALIBRATION RESULTS (Cont'd)

#### (3) Dissolved Oxygen

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)	Results
0.45	0.03	-0.42	Satisfactory
2.88	3.26	0.38	Satisfactory
5.23	5.29	0.06	Satisfactory
8.12	7.64	-0.48	Satisfactory

Tolerance limit of dissolved oxygen should be less than  $\pm 0.50$  (mg/L)

#### (4) Conductivity at 25°C

Conc. of KCl (M)	Expected Reading ( $\mu\text{S}/\text{cm}$ )	Displayed Reading ( $\mu\text{S}/\text{cm}$ )	Tolerance (%)	Results
0.001	146.9	142.8	-2.8	Satisfactory
0.01	1412	1398	-1.0	Satisfactory
0.1	12890	12934	0.3	Satisfactory
0.5	58670	56361	-3.9	Satisfactory
1.0	111900	111597	-0.3	Satisfactory

Tolerance limit of conductivity should be less than  $\pm 10.0$  (%)

#### (5) Salinity

Expected Reading (g/L)	Displayed Reading (g/L)	Tolerance (%)	Results
10	9.94	-0.6	Satisfactory
20	20.00	0.0	Satisfactory
30	30.14	0.5	Satisfactory

Tolerance limit of salinity should be less than  $\pm 10.0$  (%)

#### (6) Turbidity

Expected Reading (NTU)	Displayed Reading <sup>(f)</sup> (NTU)	Tolerance <sup>(g)</sup> (%)	Results
0	0.00	--	--
10	10.07	0.7	Satisfactory
20	20.11	0.5	Satisfactory
100	101.20	1.2	Satisfactory
800	804.30	0.5	Satisfactory

Tolerance limit of turbidity should be less than  $\pm 10.0$  (%)

~ END OF REPORT ~

#### Remark(s): -

<sup>(f)</sup> "Displayed Reading" presents the figures shown on item under calibration/ checking regardless of equipment precision or significant figures.

<sup>(g)</sup> The "Tolerance Limit" mentioned is the acceptance criteria applicable for similar equipment used by Quality Pro Test-Consult Ltd. or quoted from relevant international standards.





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## REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Report No. : AI070143  
Date of Issue : 25 July, 2019  
Page No. : 1 of 2

### PART A – CUSTOMER INFORMATION

Enovative Environmental Service Ltd.  
Flat 2207, Yu Fun House,  
Yu Chui Court, Shatin  
New Territories, Hong Kong  
Attn: Mr. Thomas WONG

### PART B – DESCRIPTION

Name of Equipment : YSI 6920V2 (Multi-Parameters)  
Manufacturer : YSI (a xylem brand)  
Serial Number : 0001C6A7  
Date of Received : Jul 24, 2019  
Date of Calibration : Jul 24, 2019  
Date of Next Calibration<sup>(a)</sup> : Oct 24, 2019

### PART C – REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

<u>Parameter</u>	<u>Reference Method</u>
pH at 25°C	APHA 21e 4500-H <sup>+</sup> B
Dissolved Oxygen	APHA 21e 4500-O G
Conductivity at 25°C	APHA 21e 2510 B
Salinity	APHA 21e 2520 B
Turbidity	APHA 21e 2130 B
Temperature	Section 6 of international Accreditation New Zealand Technical Guide no. 3 Second edition March 2008: Working Thermometer Calibration Procedure.

### PART D – CALIBRATION RESULTS<sup>(b,c)</sup>

#### (1) pH at 25°C

Target (pH unit)	Displayed Reading <sup>(d)</sup> (pH Unit)	Tolerance <sup>(e)</sup> (pH Unit)	Results
4.00	4.08	0.08	Satisfactory
7.42	7.38	-0.04	Satisfactory
10.01	10.05	0.04	Satisfactory

Tolerance of pH should be less than  $\pm 0.20$  (pH unit)

#### (2) Temperature


Reading of Ref. thermometer (°C)	Displayed Reading (°C)	Tolerance (°C)	Results
23.0	23.32	0.32	Satisfactory
28.0	27.65	-0.35	Satisfactory
48.0	49.6	1.6	Satisfactory

Tolerance limit of temperature should be less than  $\pm 2.0$  (°C)

~ CONTINUED ON NEXT PAGE ~

#### Remark(s): -

- <sup>(a)</sup> The "Date of Next Calibration" is recommended according to best practice principals as practiced by QPT or quoted from relevant international standards.  
<sup>(b)</sup> The results relate only to the calibrated equipment as received  
<sup>(c)</sup> The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.  
<sup>(d)</sup> "Displayed Reading" denotes the figure shown on item under calibration/ checking regardless of equipment precision or significant figures.  
<sup>(e)</sup> The "Tolerance Limit" mentioned is referenced to YSI product specifications.

  
LEE Chun-ning, Desmond  
Senior Chemist



## REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Report No. : AI070143  
Date of Issue : 25 July, 2019  
Page No. : 2 of 2

### PART D – CALIBRATION RESULTS (Cont'd)

#### (3) Dissolved Oxygen

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)	Results
0.02	0.48	0.46	Satisfactory
3.66	3.50	-0.16	Satisfactory
5.70	5.78	0.08	Satisfactory
7.64	7.49	-0.15	Satisfactory

Tolerance limit of dissolved oxygen should be less than  $\pm 0.50$  (mg/L)

#### (4) Conductivity at 25°C

Conc. of KCl (M)	Expected Reading ( $\mu\text{S/cm}$ )	Displayed Reading ( $\mu\text{S/cm}$ )	Tolerance (%)	Results
0.001	146.9	140.2	-4.56	Satisfactory
0.01	1412	1386	-1.84	Satisfactory
0.1	12890	12742	-1.15	Satisfactory
0.5	58670	56780	-3.22	Satisfactory
1.0	111900	107432	-3.99	Satisfactory

Tolerance limit of conductivity should be less than  $\pm 10.0$  (%)

#### (5) Salinity

Expected Reading (g/L)	Displayed Reading (g/L)	Tolerance (%)	Results
10	9.95	-0.50	Satisfactory
20	19.95	-0.25	Satisfactory
30	30.04	0.13	Satisfactory

Tolerance limit of salinity should be less than  $\pm 10.0$  (%)

#### (6) Turbidity

Expected Reading (NTU)	Displayed Reading <sup>(f)</sup> (NTU)	Tolerance <sup>(g)</sup> (%)	Results
0	0.1	--	Satisfactory
10	9.8	-2.0	Satisfactory
20	19.4	-3.0	Satisfactory
100	97.2	-2.8	Satisfactory
800	776.3	-3.0	Satisfactory

Tolerance limit of turbidity should be less than  $\pm 10.0$  (%)

~ END OF REPORT ~

#### Remark(s): -

<sup>(f)</sup> "Displayed Reading" presents the figures shown on item under calibration/ checking regardless of equipment precision or significant figures.

<sup>(g)</sup> The "Tolerance Limit" mentioned is the acceptance criteria applicable for similar equipment used by Quality Pro Test-Consult Ltd. or quoted from relevant international standards.



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## REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Report No. : AI080035  
Date of Issue : 06 Aug, 2019  
Page No. : 1 of 2

### PART A – CUSTOMER INFORMATION

Enovative Environmental Service Ltd.  
Flat 2207, Yu Fun House,  
Yu Chui Court, Shatin  
New Territories, Hong Kong  
Attn: Mr. Thomas WONG

### PART B – DESCRIPTION

Name of Equipment : YSI 6920V2 (Multi-Parameters)  
Manufacturer : YSI (a xylem brand)  
Serial Number : 18A104824  
Date of Received : Aug 02, 2019  
Date of Calibration : Aug 02, 2019  
Date of Next Calibration<sup>(a)</sup> : Nov 02, 2019

### PART C – REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

<u>Parameter</u>	<u>Reference Method</u>
pH at 25°C	APHA 21e 4500-H <sup>+</sup> B
Dissolved Oxygen	APHA 21e 4500-O G
Conductivity at 25°C	APHA 21e 2510 B
Salinity	APHA 21e 2520 B
Turbidity	APHA 21e 2130 B
Temperature	Section 6 of international Accreditation New Zealand Technical Guide no. 3 Second edition March 2008: Working Thermometer Calibration Procedure.

### PART D – CALIBRATION RESULTS<sup>(b,c)</sup>

#### (1) pH at 25°C

Target (pH unit)	Displayed Reading <sup>(d)</sup> (pH Unit)	Tolerance <sup>(e)</sup> (pH Unit)	Results
4.00	4.01	0.01	Satisfactory
7.42	7.44	0.02	Satisfactory
10.01	10.00	-0.01	Satisfactory

Tolerance of pH should be less than  $\pm 0.20$  (pH unit)

#### (2) Temperature


Reading of Ref. thermometer (°C)	Displayed Reading (°C)	Tolerance (°C)	Results
11.5	11.4	-0.1	Satisfactory
26.0	25.9	-0.1	Satisfactory
51.5	52.0	0.5	Satisfactory

Tolerance limit of temperature should be less than  $\pm 2.0$  (°C)

~ CONTINUED ON NEXT PAGE ~

#### Remark(s): -

- <sup>(a)</sup> The "Date of Next Calibration" is recommended according to best practice principals as practiced by QPT or quoted from relevant international standards.
- <sup>(b)</sup> The results relate only to the calibrated equipment as received
- <sup>(c)</sup> The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.
- <sup>(d)</sup> "Displayed Reading" denotes the figure shown on item under calibration/ checking regardless of equipment precision or significant figures.
- <sup>(e)</sup> The "Tolerance Limit" mentioned is referenced to YSI product specifications.

  
LEE Chun-ning, Desmond  
Senior Chemist





## REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Report No. : AI080035  
Date of Issue : 06 Aug, 2019  
Page No. : 2 of 2

### PART D – CALIBRATION RESULTS (Cont'd)

#### (3) Dissolved Oxygen

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)	Results
0.01	0.26	0.25	Satisfactory
1.68	1.82	0.14	Satisfactory
4.52	4.83	0.21	Satisfactory
7.84	8.04	0.20	Satisfactory

Tolerance limit of dissolved oxygen should be less than  $\pm 0.50$  (mg/L)

#### (4) Conductivity at 25°C

Conc. of KCl (M)	Expected Reading ( $\mu\text{S}/\text{cm}$ )	Displayed Reading ( $\mu\text{S}/\text{cm}$ )	Tolerance (%)	Results
0.001	146.9	144.3	-1.8	Satisfactory
0.01	1412	1394	-1.3	Satisfactory
0.1	12890	12677	-1.7	Satisfactory
0.5	58670	58642	0.0	Satisfactory
1.0	111900	112012	0.1	Satisfactory

Tolerance limit of conductivity should be less than  $\pm 10.0$  (%)

#### (5) Salinity

Expected Reading (g/L)	Displayed Reading (g/L)	Tolerance (%)	Results
10	10.06	0.6	Satisfactory
20	20.22	1.1	Satisfactory
30	30.17	0.6	Satisfactory

Tolerance limit of salinity should be less than  $\pm 10.0$  (%)

#### (6) Turbidity

Expected Reading (NTU)	Displayed Reading <sup>(1)</sup> (NTU)	Tolerance <sup>(2)</sup> (%)	Results
0	0.01	--	Satisfactory
10	10.04	0.4	Satisfactory
20	20.09	0.4	Satisfactory
100	100.19	0.2	Satisfactory
800	801.44	0.2	Satisfactory

Tolerance limit of turbidity should be less than  $\pm 10.0$  (%)

~ END OF REPORT ~

#### Remark(s): -

<sup>(1)</sup> "Displayed Reading" presents the figures shown on item under calibration/ checking regardless of equipment precision or significant figures.

<sup>(2)</sup> The "Tolerance Limit" mentioned is the acceptance criteria applicable for similar equipment used by Quality Pro Test-Consult Ltd. or quoted from relevant international standards.



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## REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Report No. : AI080036  
Date of Issue : 06 Aug, 2019  
Page No. : 1 of 2

### PART A – CUSTOMER INFORMATION

Enovative Environmental Service Ltd.  
Flat 2207, Yu Fun House,  
Yu Chui Court, Shatin  
New Territories, Hong Kong  
Attn: Mr. Thomas WONG

### PART B – DESCRIPTION

Name of Equipment : YSI 6920V2 (Multi-Parameters)  
Manufacturer : YSI (a xylem brand)  
Serial Number : 17H105557  
Date of Received : Aug 02, 2019  
Date of Calibration : Aug 02, 2019  
Date of Next Calibration<sup>(a)</sup> : Nov 02, 2019

### PART C – REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

Parameter	Reference Method
pH at 25°C	APHA 21e 4500-H <sup>+</sup> B
Dissolved Oxygen	APHA 21e 4500-O G
Conductivity at 25°C	APHA 21e 2510 B
Salinity	APHA 21e 2520 B
Turbidity	APHA 21e 2130 B
Temperature	Section 6 of international Accreditation New Zealand Technical Guide no. 3 Second edition March 2008: Working Thermometer Calibration Procedure.

### PART D – CALIBRATION RESULTS<sup>(b,c)</sup>

#### (1) pH at 25°C

Target (pH unit)	Displayed Reading <sup>(d)</sup> (pH Unit)	Tolerance <sup>(e)</sup> (pH Unit)	Results
4.00	3.98	-0.02	Satisfactory
7.42	7.40	-0.02	Satisfactory
10.01	10.01	0.00	Satisfactory

Tolerance of pH should be less than  $\pm 0.20$  (pH unit)

#### (2) Temperature


Reading of Ref. thermometer (°C)	Displayed Reading (°C)	Tolerance (°C)	Results
11.5	11.3	-0.2	Satisfactory
26.0	25.9	-0.1	Satisfactory
51.5	52.0	0.5	Satisfactory

Tolerance limit of temperature should be less than  $\pm 2.0$  (°C)

~ CONTINUED ON NEXT PAGE ~

#### Remark(s): -

- <sup>(a)</sup> The "Date of Next Calibration" is recommended according to best practice principals as practiced by QPT or quoted from relevant international standards.  
<sup>(b)</sup> The results relate only to the calibrated equipment as received  
<sup>(c)</sup> The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.  
<sup>(d)</sup> "Displayed Reading" denotes the figure shown on item under calibration/ checking regardless of equipment precision or significant figures.  
<sup>(e)</sup> The "Tolerance Limit" mentioned is referenced to YSI product specifications.

  
LEE Chun-ning, Desmond  
Senior Chemist



## REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Report No. : AI080036  
Date of Issue : 06 Aug, 2019  
Page No. : 2 of 2

### PART D – CALIBRATION RESULTS (Cont'd)

#### (3) Dissolved Oxygen

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)	Results
0.01	0.27	0.26	Satisfactory
1.68	1.75	0.07	Satisfactory
4.52	4.81	0.29	Satisfactory
7.84	8.00	0.16	Satisfactory

Tolerance limit of dissolved oxygen should be less than  $\pm 0.50$  (mg/L)

#### (4) Conductivity at 25°C

Conc. of KCl (M)	Expected Reading ( $\mu\text{S}/\text{cm}$ )	Displayed Reading ( $\mu\text{S}/\text{cm}$ )	Tolerance (%)	Results
0.001	146.9	152.6	3.9	Satisfactory
0.01	1412	1389	-1.6	Satisfactory
0.1	12890	12452	-3.4	Satisfactory
0.5	58670	58588	-0.1	Satisfactory
1.0	111900	111882	0.0	Satisfactory

Tolerance limit of conductivity should be less than  $\pm 10.0$  (%)

#### (5) Salinity

Expected Reading (g/L)	Displayed Reading (g/L)	Tolerance (%)	Results
10	10.08	0.8	Satisfactory
20	20.35	1.8	Satisfactory
30	30.00	0.0	Satisfactory

Tolerance limit of salinity should be less than  $\pm 10.0$  (%)

#### (6) Turbidity

Expected Reading (NTU)	Displayed Reading <sup>(f)</sup> (NTU)	Tolerance <sup>(g)</sup> (%)	Results
0	0.00	--	Satisfactory
10	10.03	0.3	Satisfactory
20	20.11	0.5	Satisfactory
100	100.07	0.1	Satisfactory
800	800.35	0.0	Satisfactory

Tolerance limit of turbidity should be less than  $\pm 10.0$  (%)

~ END OF REPORT ~

#### Remark(s): -

<sup>(f)</sup> "Displayed Reading" presents the figures shown on item under calibration/ checking regardless of equipment precision or significant figures.

<sup>(g)</sup> The "Tolerance Limit" mentioned is the acceptance criteria applicable for similar equipment used by Quality Pro Test-Consult Ltd. or quoted from relevant international standards.

Appendix F

## EM&A Monitoring Schedules

**HY/2012/08 - Tuen Mun - Chek Lap Kok Link  
Northern Connection Sub-sea Tunnel Section  
Air Quality Impact Monitoring Schedule - August 2019**

Air quality monitoring stations: ASR1, ASR5, ASR6, ASR10, AQMS1

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1-Aug	2-Aug	3-Aug
						1-hour TSP - 3 times 24-hour TSP - 1 time  Impact AQM
4-Aug	5-Aug	6-Aug	7-Aug	8-Aug	9-Aug	10-Aug
		1-hour TSP - 3 times 24-hour TSP - 1 time  Impact AQM			1-hour TSP - 3 times 24-hour TSP - 1 time  Impact AQM	
11-Aug	12-Aug	13-Aug	14-Aug	15-Aug	16-Aug	17-Aug
	1-hour TSP - 3 times 24-hour TSP - 1 time  Impact AQM			1-hour TSP - 3 times 24-hour TSP - 1 time  Impact AQM		
18-Aug	19-Aug	20-Aug	21-Aug	22-Aug	23-Aug	24-Aug
1-hour TSP - 3 times 24-hour TSP - 1 time  Impact AQM			1-hour TSP - 3 times 24-hour TSP - 1 time  Impact AQM			1-hour TSP - 3 times 24-hour TSP - 1 time  Impact AQM
25-Aug	26-Aug	27-Aug	28-Aug	29-Aug	30-Aug	31-Aug
		1-hour TSP - 3 times 24-hour TSP - 1 time  Impact AQM			1-hour TSP - 3 times 24-hour TSP - 1 time  Impact AQM	



**HY/2012/08 - Tuen Mun - Chek Lap Kok Link  
Northern Connection Sub-sea Tunnel Section  
Tentative Air Quality Impact Monitoring Schedule - September 2019**

Air quality monitoring stations: ASR1, ASR5, ASR6, ASR10, AQMS1

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1-Sep	2-Sep	3-Sep	4-Sep	5-Sep	6-Sep	7-Sep
1-hour TSP - 3 times 24-hour TSP - 1 time  Impact AQM				1-hour TSP - 3 times 24-hour TSP - 1 time  Impact AQM		
8-Sep	9-Sep	10-Sep	11-Sep	12-Sep	13-Sep	14-Sep
1-hour TSP - 3 times 24-hour TSP - 1 time  Impact AQM			1-hour TSP - 3 times 24-hour TSP - 1 time  Impact AQM			1-hour TSP - 3 times 24-hour TSP - 1 time  Impact AQM
15-Sep	16-Sep	17-Sep	18-Sep	19-Sep	20-Sep	21-Sep
		1-hour TSP - 3 times 24-hour TSP - 1 time  Impact AQM			1-hour TSP - 3 times 24-hour TSP - 1 time  Impact AQM	
22-Sep	23-Sep	24-Sep	25-Sep	26-Sep	27-Sep	28-Sep
1-hour TSP - 3 times 24-hour TSP - 1 time  Impact AQM				1-hour TSP - 3 times 24-hour TSP - 1 time  Impact AQM		
29-Sep	30-Sep					
1-hour TSP - 3 times 24-hour TSP - 1 time  Impact AQM						

The schedule is subject to agreement from the EPD on the monitoring times. The schedule will be revised after reviewing the progress of the construction works or due to adverse (safety, weather etc) conditions.

**HY/2012/08 - Tuen Mun - Chek Lap Kok Link - Northern Landfall  
Impact Marine Water Quality Monitoring (WQM) Schedule (August 2019)**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1/Aug	2/Aug	3/Aug
					ebb tide 12:12 - 15:42 flood tide 5:13 - 8:43	
4/Aug	5/Aug	6/Aug	7/Aug	8/Aug	9/Aug	10/Aug
	ebb tide 14:32 - 18:02 flood tide 7:51 - 11:21		ebb tide 16:21 - 19:51 flood tide 10:09 - 13:39		ebb tide 6:26 - 9:56 flood tide 13:20 - 16:50	
11/Aug	12/Aug	13/Aug	14/Aug	15/Aug	16/Aug	17/Aug
	ebb tide 9:27 - 12:57 flood tide 2:15 - 5:45		ebb tide 10:47 - 14:17 flood tide 3:47 - 7:17		ebb tide 11:58 - 15:28 flood tide 5:07 - 8:37	
18/Aug	19/Aug	20/Aug	21/Aug	22/Aug	23/Aug	24/Aug
	ebb tide 13:27 - 16:57 flood tide 7:00 - 10:30		ebb tide 14:31 - 18:01 flood tide 8:24 - 11:54		ebb tide 16:00 - 19:30 flood tide 10:31 - 14:01	
25/Aug	26/Aug	27/Aug	28/Aug	29/Aug	30/Aug	31/Aug
	ebb tide 7:38 - 11:08 flood tide 15:13 - 18:43		ebb tide 9:32 - 13:02 flood tide 16:47 - 20:17		ebb tide 11:09 - 14:39 flood tide 18:04 - 21:34	

**HY/2012/08 - Tuen Mun - Chek Lap Kok Link - Northern Landfall  
Impact Marine Water Quality Monitoring (WQM) Schedule (September 2019)**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1/Sep	2/Sep	3/Sep	4/Sep	5/Sep	6/Sep	7/Sep
	ebb tide 13:25 - 16:55 flood tide 5:13 - 8:43		ebb tide 14:57 - 18:27 flood tide 8:52 - 12:22		ebb tide 16:57 - 20:27 flood tide 11:32 - 15:02	
8/Sep	9/Sep	10/Sep	11/Sep	12/Sep	13/Sep	14/Sep
	ebb tide 8:14 - 11:44 flood tide 16:00 - 19:30		ebb tide 9:47 - 13:17 flood tide 16:59 - 20:29		ebb tide 11:00 - 14:30 flood tide 17:48 - 21:18	Public Holiday
15/Sep	16/Sep	17/Sep	18/Sep	19/Sep	20/Sep	21/Sep
	ebb tide 12:28 - 15:58 flood tide 6:12 - 9:42		ebb tide 13:28 - 16:58 flood tide 7:30 - 11:00		ebb tide 14:44 - 18:14 flood tide 9:11 - 12:41	
22/Sep	23/Sep	24/Sep	25/Sep	26/Sep	27/Sep	28/Sep
	ebb tide 5:25 - 8:55 flood tide 18:18 - 21:00		ebb tide 8:11 - 11:41 flood tide 15:40 - 19:10		ebb tide 10:02 - 13:32 flood tide 16:51 - 20:21	
29/Sep	30/Sep					
	ebb tide 12:19 - 15:49 flood tide 6:01 - 9:31					

**HY/2012/08 - Tuen Mun - Chek Lap Kok Link  
Northern Connection Sub-sea Tunnel Section  
Impact Dolphin Monitoring Survey Monitoring Schedule - August 2019**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1-Aug	2-Aug	3-Aug
4-Aug	5-Aug	6-Aug	7-Aug	8-Aug	9-Aug	10-Aug
11-Aug	12-Aug	13-Aug	14-Aug	15-Aug	16-Aug	17-Aug
		<b>Impact Dolphin Monitoring</b>	<b>Impact Dolphin Monitoring</b>			
18-Aug	19-Aug	20-Aug	21-Aug	22-Aug	23-Aug	24-Aug
		<b>Impact Dolphin Monitoring</b>				
25-Aug	26-Aug	27-Aug	28-Aug	29-Aug	30-Aug	31-Aug
	<b>Impact Dolphin Monitoring</b>			<b>Impact Dolphin Monitoring</b>		

**HY/2012/08 - Tuen Mun - Chek Lap Kok Link  
Northern Connection Sub-sea Tunnel Section  
Tentative Impact Dolphin Monitoring Survey Monitoring Schedule - September 2019**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1-Sep	2-Sep	3-Sep	4-Sep	5-Sep	6-Sep	7-Sep
			<b>Impact Dolphin Monitoring</b>			
8-Sep	9-Sep	10-Sep	11-Sep	12-Sep	13-Sep	14-Sep
			<b>Impact Dolphin Monitoring</b>			
15-Sep	16-Sep	17-Sep	18-Sep	19-Sep	20-Sep	21-Sep
	<b>Impact Dolphin Monitoring</b>					
22-Sep	23-Sep	24-Sep	25-Sep	26-Sep	27-Sep	28-Sep
			<b>Impact Dolphin Monitoring</b>			
29-Sep	30-Sep					

The schedule is subject to agreement from the EPD on the monitoring times. The schedule will be revised after reviewing the progress of the construction works or due to adverse(safety,weather etc) conditions.

Appendix G

## Impact Air Quality Monitoring Results

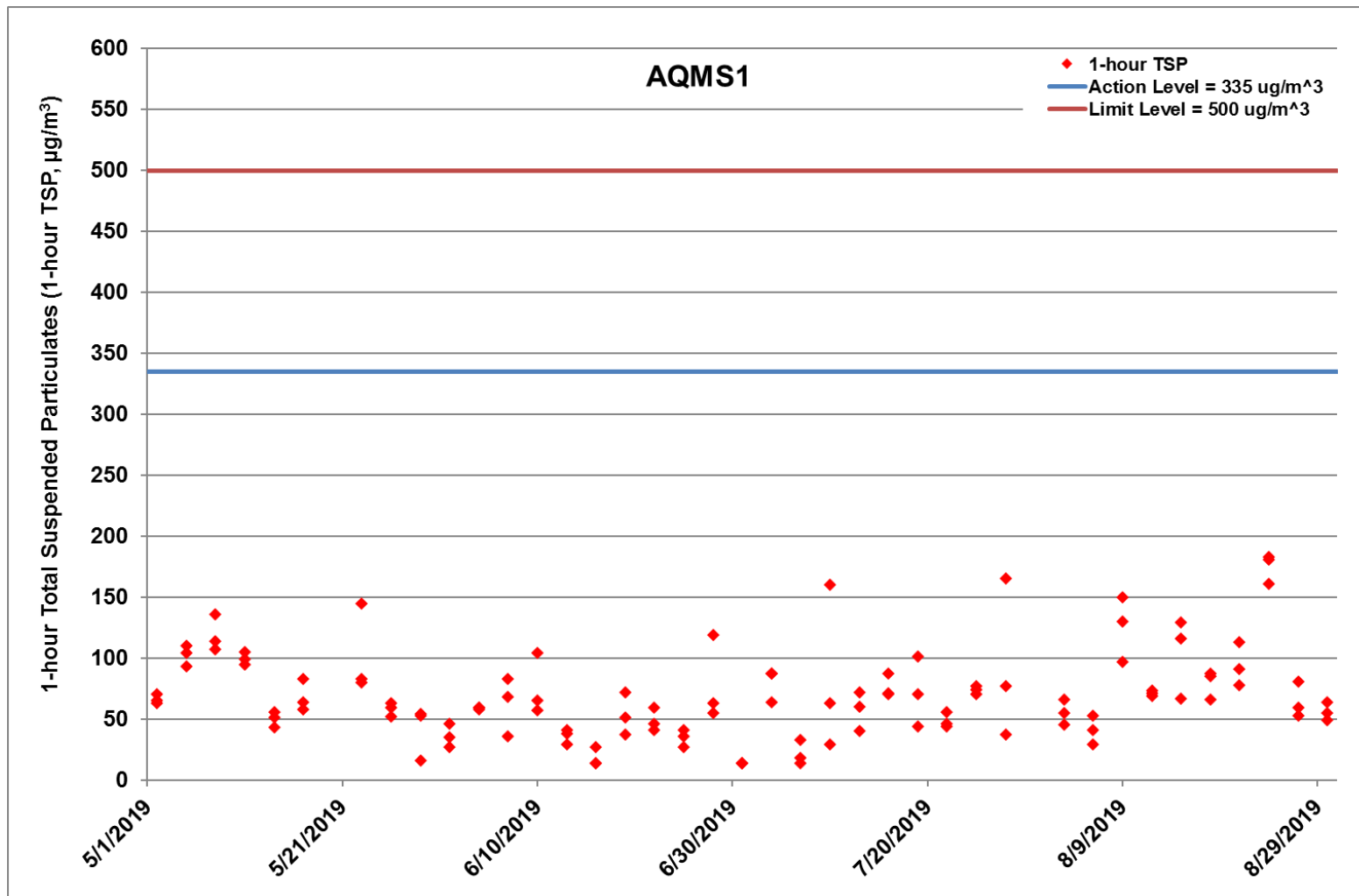


Figure G.1 Impact Monitoring – 1-hour Total Suspended Particulates ( $\mu\text{g}/\text{m}^3$ ) at AQMS1 between 1 May 2019 and 31 August 2019 during impact monitoring period. The weather conditions during the monitoring period varied from sunny to cloudy. Major land-based construction activities included: Backfilling, Road & Drainage Works (1/5/2019 – 31/8/2019)

Ref: 0212330\_Impact AQM graphs\_August 2019\_REV a.xlsx



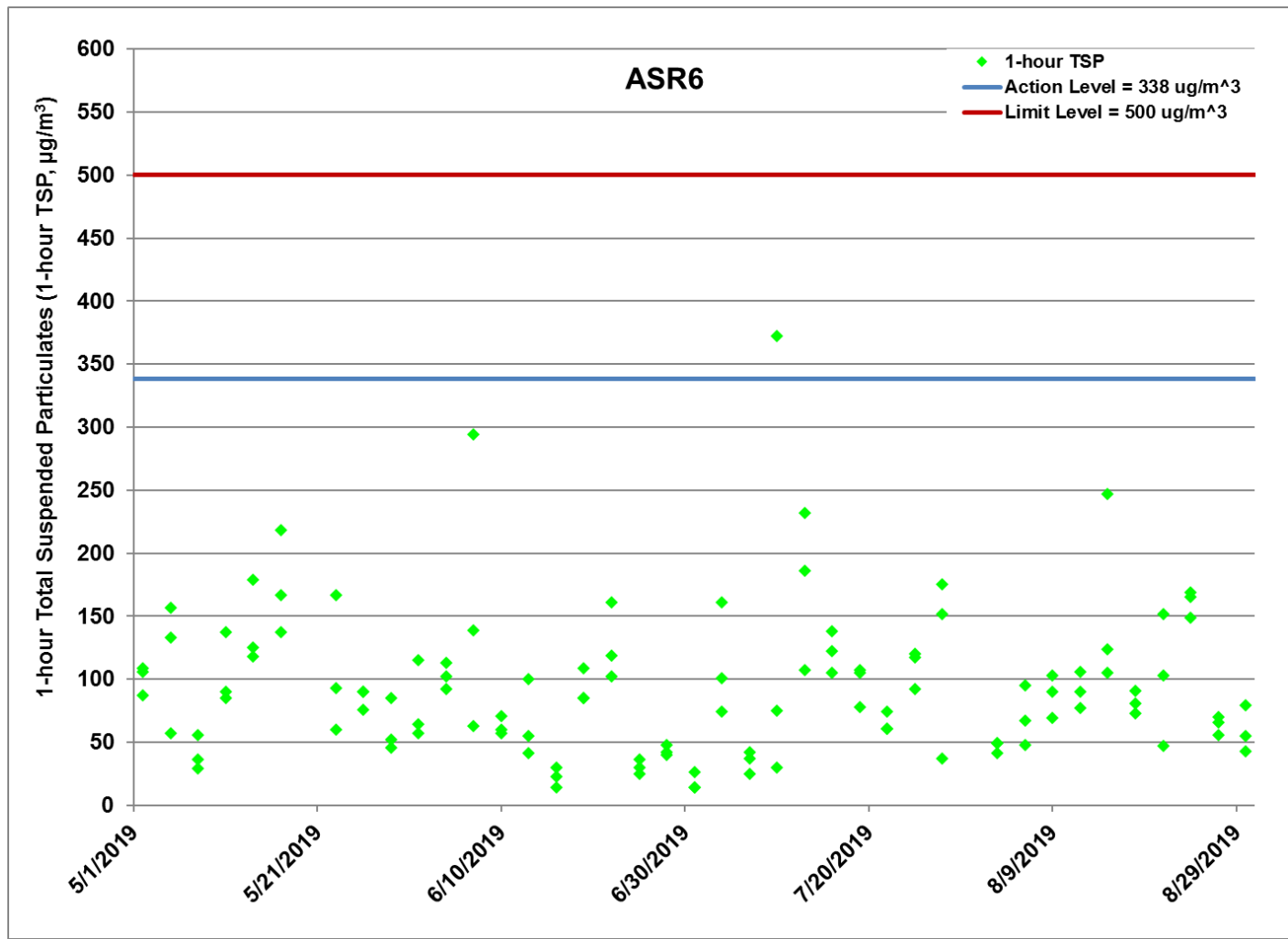


Figure G.2 Impact Monitoring - 1-hour Total Suspended Particulates ( $\mu\text{g}/\text{m}^3$ ) at ASR6 between 1 May 2019 and 31 August 2019 during impact monitoring period. The weather conditions during the monitoring period varied from sunny to cloudy. Major land-based construction activities included: Backfilling, Road & Drainage Works (1/5/2019 - 31/8/2019)

Ref: 0212330\_Impact AQM graphs\_August 2019\_REV a.xlsx





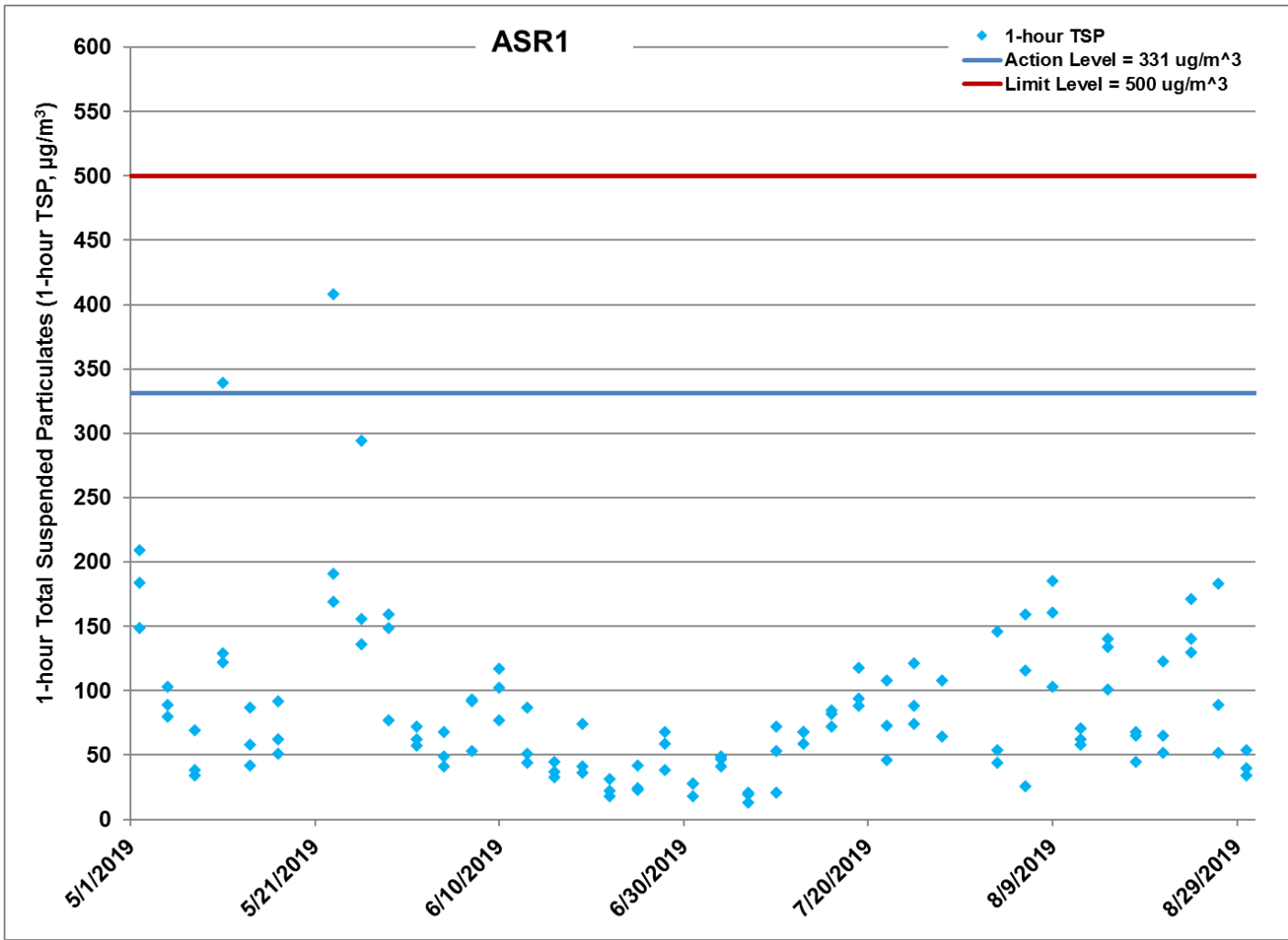


Figure G.3 Impact Monitoring - 1-hour Total Suspended Particulates ( $\mu\text{g}/\text{m}^3$ ) at ASR1 between 1 May 2019 and 31 August 2019 during impact monitoring period. The weather conditions during the monitoring period varied from sunny to cloudy. Major land-based construction activities included: Backfilling, Road & Drainage Works (1/5/2019 - 31/8/2019)

Ref: 0212330\_Impact AQM graphs\_August 2019\_REV a.xlsx





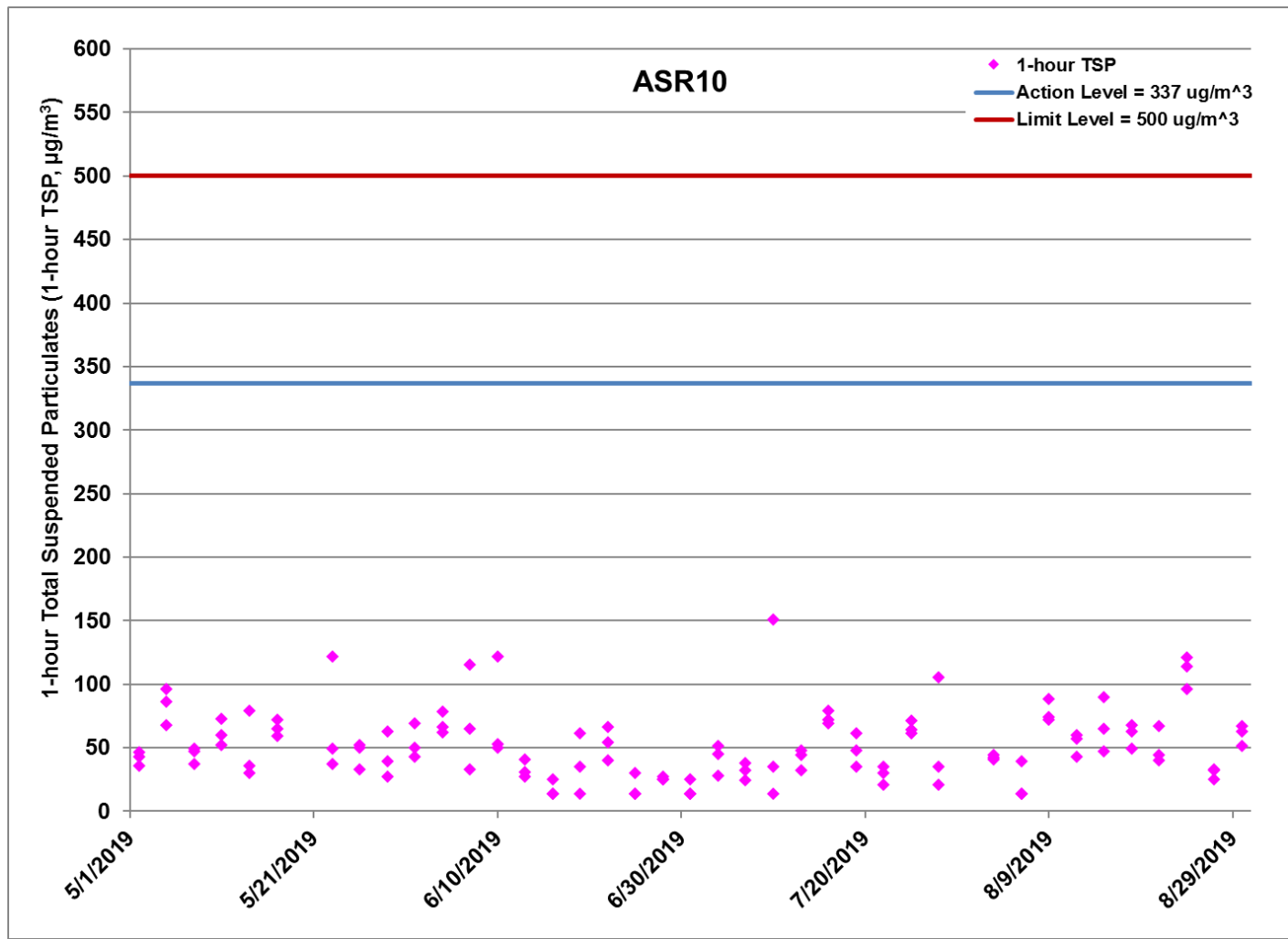


Figure G.5 Impact Monitoring - 1-hour Total Suspended Particulates ( $\mu\text{g}/\text{m}^3$ ) at ASR10 between 1 May 2019 and 31 August 2019 during impact monitoring period. The weather conditions during the monitoring period varied from sunny to cloudy. Major land-based construction activities included: Backfilling, Road & Drainage Works (1/5/2019 - 31/8/2019)

Ref: 0212330\_Impact AQM graphs\_August 2019\_REV a.xlsx



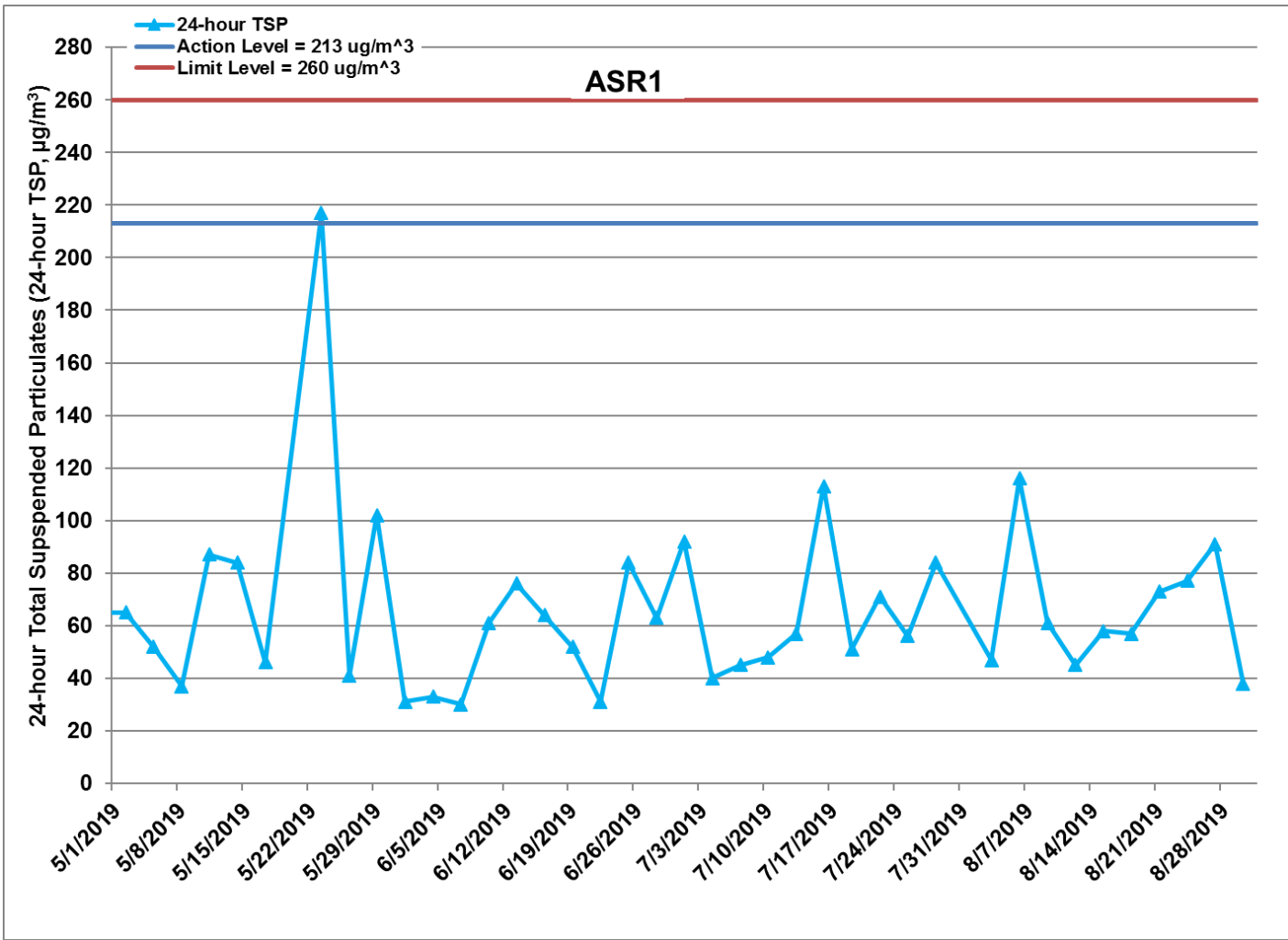


Figure G.6 Impact Monitoring - 24-hour Total Suspended Particulates ( $\mu\text{g}/\text{m}^3$ ) at ASR1 between 1 May 2019 and 31 August 2019 during impact monitoring period. The weather conditions during the monitoring period varied from sunny to cloudy. Major land-based construction activities included: Backfilling, Road & Drainage Works (1/5/2019 - 31/8/2019)

Ref: 0212330\_Impact AQM graphs\_August 2019\_REV a.xlsx



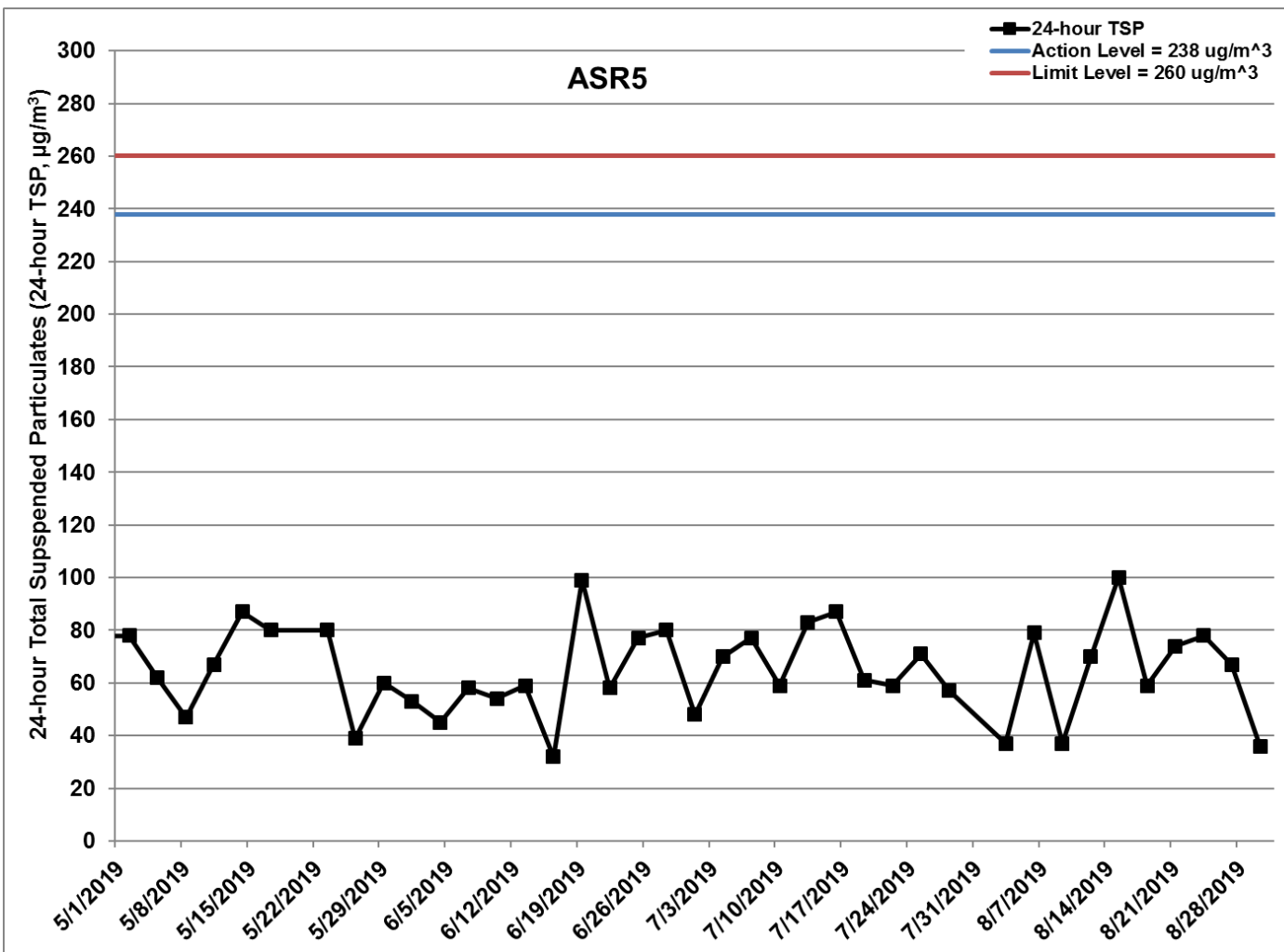
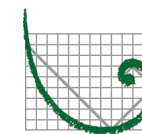


Figure G.7 Impact Monitoring - 24-hour Total Suspended Particulates ( $\mu\text{g}/\text{m}^3$ ) at ASR5 between 1 May 2019 and 31 August 2019 during impact monitoring period. The weather conditions during the monitoring period varied from sunny to cloudy. Major land-based construction activities included: Backfilling, Road & Drainage Works (1/5/2019 - 31/8/2019)

Ref: 0212330\_Impact AQM graphs\_August 2019\_REV a.xlsx



ERM

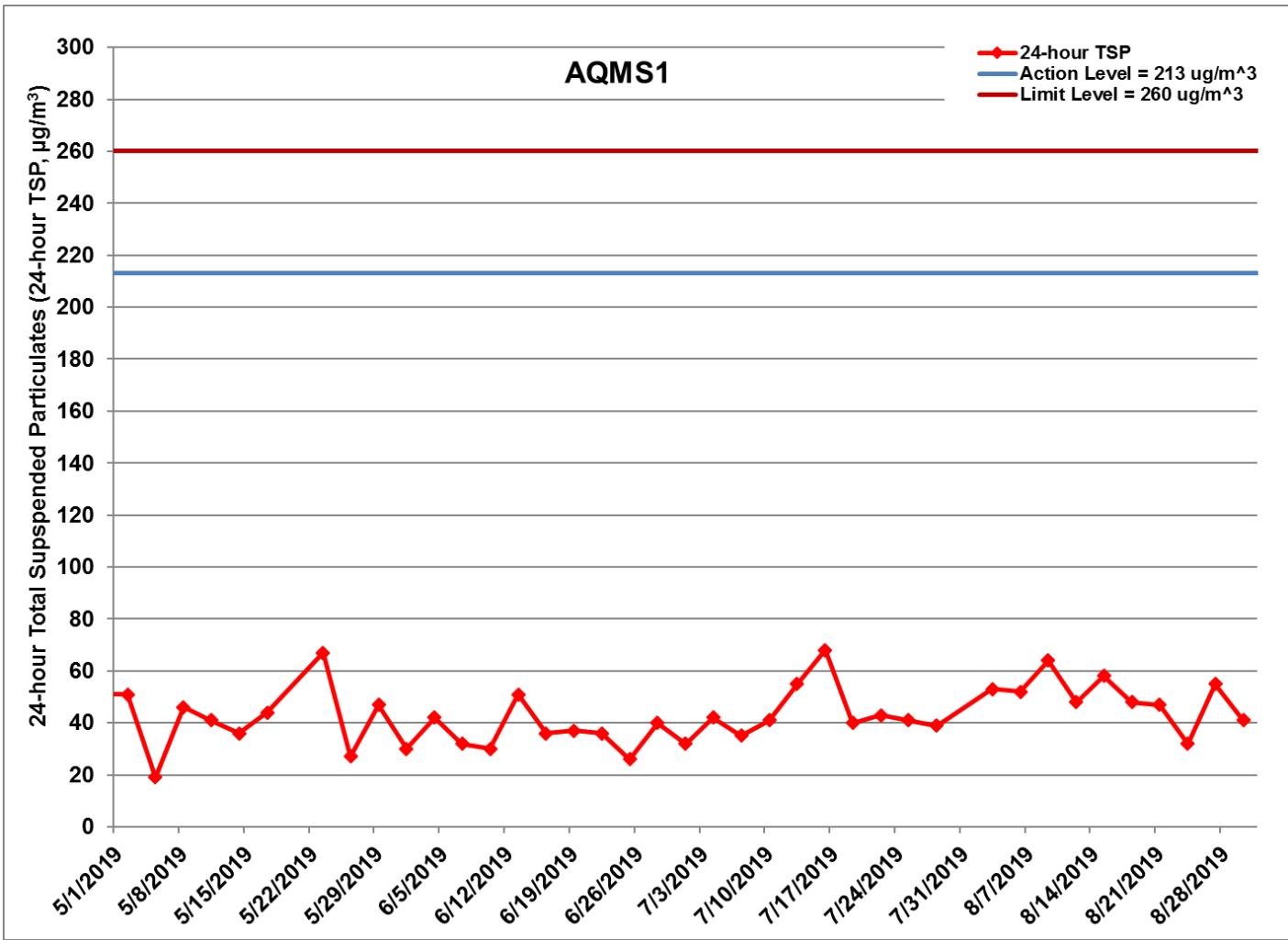


Figure G.8 Impact Monitoring - 24-hour Total Suspended Particulates ( $\mu\text{g}/\text{m}^3$ ) at AQMS1 between 1 May 2019 and 31 August 2019 during impact monitoring period. The weather conditions during the monitoring period varied from sunny to cloudy. Major land-based construction activities included: Backfilling, Road & Drainage Works (1/5/2019 - 31/8/2019)

Ref: 0212330\_Impact AQM graphs\_August 2019\_REV a.xlsx



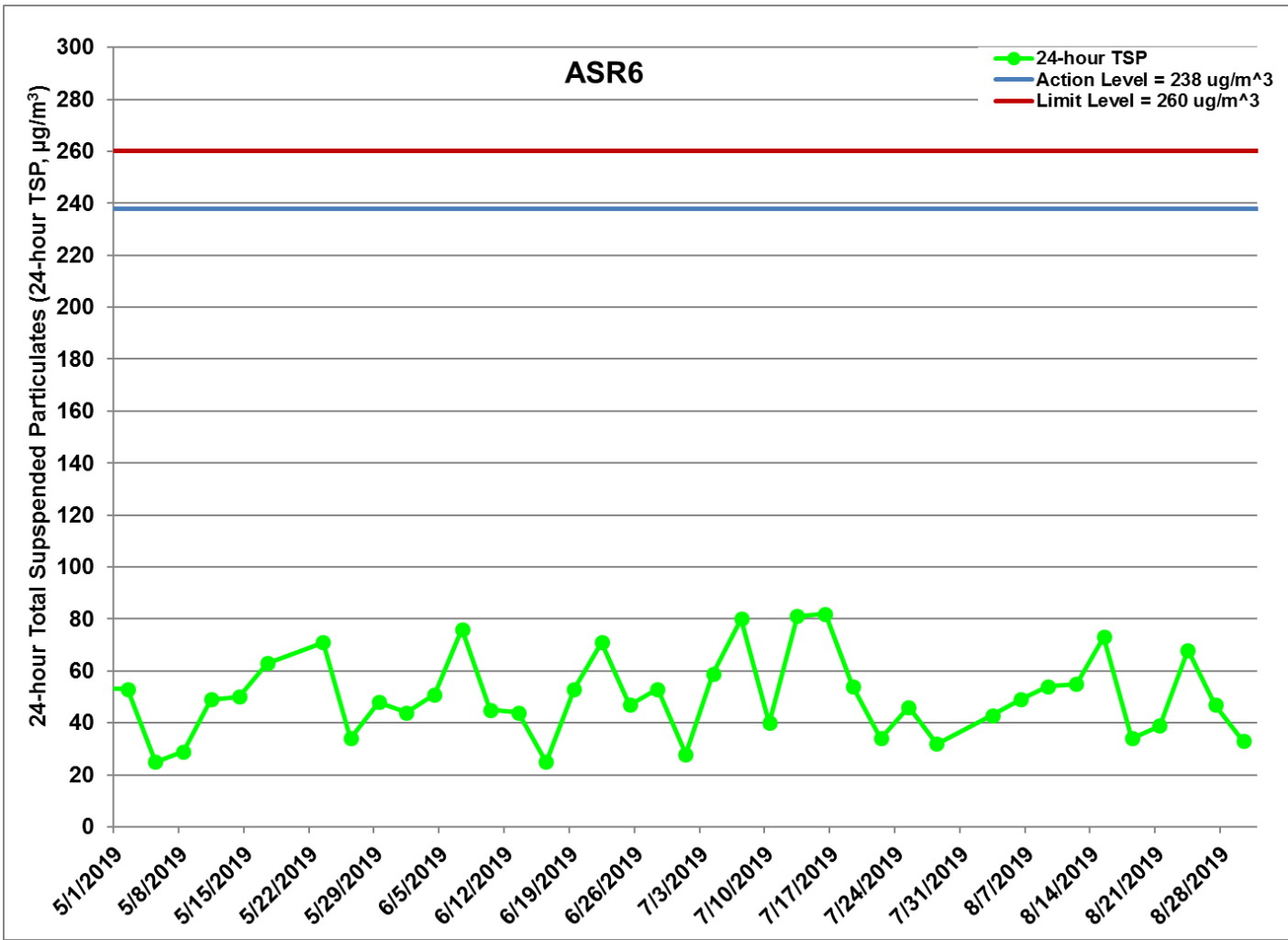


Figure G.9 Impact Monitoring - 24-hour Total Suspended Particulates ( $\mu\text{g}/\text{m}^3$ ) at ASR6 between 1 May 2019 and 31 August 2019 during impact monitoring period. The weather conditions during the monitoring period varied from sunny to cloudy. Major land-based construction activities included: Backfilling, Road & Drainage Works (1/5/2019 - 31/8/2019)

Ref: 0212330\_Impact AQM graphs\_August 2019\_REV a.xlsx



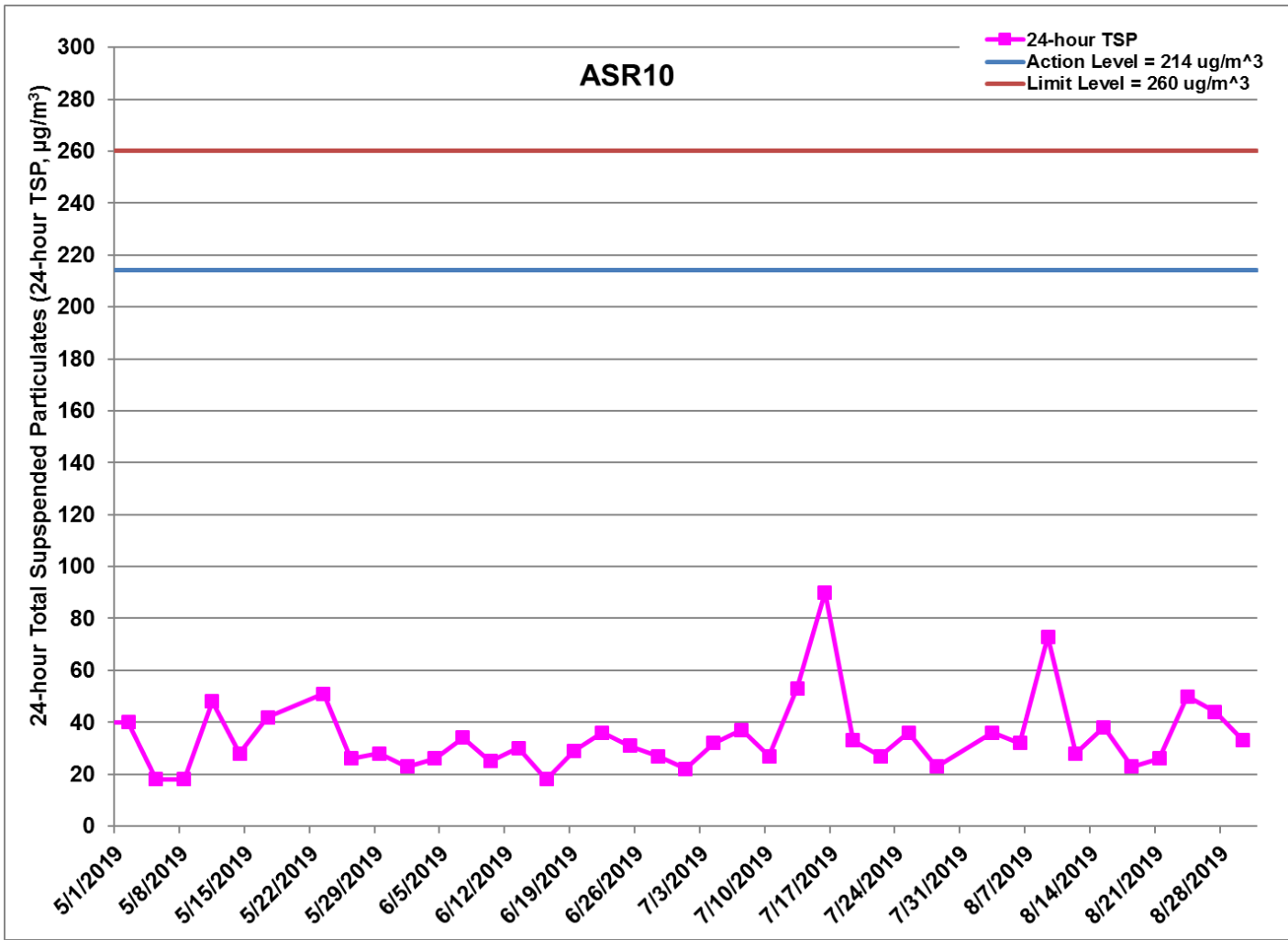


Figure G.10 Impact Monitoring - 24-hour Total Suspended Particulates (µg/m<sup>3</sup>) at ASR10 between 1 May 2019 and 31 August 2019 during impact monitoring period. The weather conditions during the monitoring period varied from sunny to cloudy. Major land-based construction activities included: Backfilling, Road & Drainage Works (1/5/2019 - 31/8/2019)

Ref: 0212330\_Impact AQM graphs\_August 2019\_REV a.xlsx





Project	Contract	Date	Station	Weather	Start time	Parameters	Results	units
TMCLKL	HY/2012/08	2019-08-03	AQMS1	Sunny	08:56	1-hour TSP	55	ug/m3
TMCLKL	HY/2012/08	2019-08-03	AQMS1	Sunny	09:58	1-hour TSP	45	ug/m3
TMCLKL	HY/2012/08	2019-08-03	AQMS1	Sunny	11:00	1-hour TSP	66	ug/m3
TMCLKL	HY/2012/08	2019-08-03	ASR1	Sunny	08:45	1-hour TSP	146	ug/m3
TMCLKL	HY/2012/08	2019-08-03	ASR1	Sunny	09:47	1-hour TSP	44	ug/m3
TMCLKL	HY/2012/08	2019-08-03	ASR1	Sunny	10:49	1-hour TSP	54	ug/m3
TMCLKL	HY/2012/08	2019-08-03	ASR10	Sunny	08:11	1-hour TSP	41	ug/m3
TMCLKL	HY/2012/08	2019-08-03	ASR10	Sunny	09:13	1-hour TSP	42	ug/m3
TMCLKL	HY/2012/08	2019-08-03	ASR10	Sunny	10:15	1-hour TSP	44	ug/m3
TMCLKL	HY/2012/08	2019-08-03	ASR5	Sunny	08:33	1-hour TSP	46	ug/m3
TMCLKL	HY/2012/08	2019-08-03	ASR5	Sunny	09:35	1-hour TSP	30	ug/m3
TMCLKL	HY/2012/08	2019-08-03	ASR5	Sunny	10:37	1-hour TSP	45	ug/m3
TMCLKL	HY/2012/08	2019-08-03	ASR6	Sunny	08:22	1-hour TSP	41	ug/m3
TMCLKL	HY/2012/08	2019-08-03	ASR6	Sunny	09:24	1-hour TSP	49	ug/m3
TMCLKL	HY/2012/08	2019-08-03	ASR6	Sunny	10:26	1-hour TSP	49	ug/m3
TMCLKL	HY/2012/08	2019-08-06	AQMS1	Sunny	14:03	1-hour TSP	53	ug/m3
TMCLKL	HY/2012/08	2019-08-06	AQMS1	Sunny	15:05	1-hour TSP	41	ug/m3
TMCLKL	HY/2012/08	2019-08-06	AQMS1	Sunny	16:07	1-hour TSP	29	ug/m3
TMCLKL	HY/2012/08	2019-08-06	ASR1	Sunny	13:52	1-hour TSP	116	ug/m3
TMCLKL	HY/2012/08	2019-08-06	ASR1	Sunny	14:54	1-hour TSP	26	ug/m3
TMCLKL	HY/2012/08	2019-08-06	ASR1	Sunny	15:56	1-hour TSP	159	ug/m3
TMCLKL	HY/2012/08	2019-08-06	ASR10	Sunny	13:18	1-hour TSP	39	ug/m3
TMCLKL	HY/2012/08	2019-08-06	ASR10	Sunny	14:20	1-hour TSP	14	ug/m3
TMCLKL	HY/2012/08	2019-08-06	ASR10	Sunny	15:22	1-hour TSP	14	ug/m3
TMCLKL	HY/2012/08	2019-08-06	ASR5	Sunny	13:40	1-hour TSP	174	ug/m3
TMCLKL	HY/2012/08	2019-08-06	ASR5	Sunny	14:42	1-hour TSP	45	ug/m3
TMCLKL	HY/2012/08	2019-08-06	ASR5	Sunny	15:44	1-hour TSP	59	ug/m3
TMCLKL	HY/2012/08	2019-08-06	ASR6	Sunny	13:29	1-hour TSP	95	ug/m3
TMCLKL	HY/2012/08	2019-08-06	ASR6	Sunny	14:31	1-hour TSP	48	ug/m3
TMCLKL	HY/2012/08	2019-08-06	ASR6	Sunny	15:33	1-hour TSP	67	ug/m3

Project	Contract	Date	Station	Weather	Start time	Parameters	Results	units
TMCLKL	HY/2012/08	2019-08-09	AQMS1	Sunny	09:04	1-hour TSP	97	ug/m3
TMCLKL	HY/2012/08	2019-08-09	AQMS1	Sunny	10:06	1-hour TSP	130	ug/m3
TMCLKL	HY/2012/08	2019-08-09	AQMS1	Sunny	11:08	1-hour TSP	150	ug/m3
TMCLKL	HY/2012/08	2019-08-09	ASR1	Sunny	08:52	1-hour TSP	161	ug/m3
TMCLKL	HY/2012/08	2019-08-09	ASR1	Sunny	09:54	1-hour TSP	185	ug/m3
TMCLKL	HY/2012/08	2019-08-09	ASR1	Sunny	10:56	1-hour TSP	103	ug/m3
TMCLKL	HY/2012/08	2019-08-09	ASR10	Sunny	08:20	1-hour TSP	88	ug/m3
TMCLKL	HY/2012/08	2019-08-09	ASR10	Sunny	09:22	1-hour TSP	72	ug/m3
TMCLKL	HY/2012/08	2019-08-09	ASR10	Sunny	10:24	1-hour TSP	74	ug/m3
TMCLKL	HY/2012/08	2019-08-09	ASR5	Sunny	08:41	1-hour TSP	140	ug/m3
TMCLKL	HY/2012/08	2019-08-09	ASR5	Sunny	09:43	1-hour TSP	140	ug/m3
TMCLKL	HY/2012/08	2019-08-09	ASR5	Sunny	10:45	1-hour TSP	108	ug/m3
TMCLKL	HY/2012/08	2019-08-09	ASR6	Sunny	08:30	1-hour TSP	90	ug/m3
TMCLKL	HY/2012/08	2019-08-09	ASR6	Sunny	09:32	1-hour TSP	69	ug/m3
TMCLKL	HY/2012/08	2019-08-09	ASR6	Sunny	10:34	1-hour TSP	103	ug/m3
TMCLKL	HY/2012/08	2019-08-12	AQMS1	Sunny	13:47	1-hour TSP	73	ug/m3
TMCLKL	HY/2012/08	2019-08-12	AQMS1	Sunny	14:49	1-hour TSP	69	ug/m3
TMCLKL	HY/2012/08	2019-08-12	AQMS1	Sunny	15:51	1-hour TSP	71	ug/m3
TMCLKL	HY/2012/08	2019-08-12	ASR1	Sunny	13:35	1-hour TSP	58	ug/m3
TMCLKL	HY/2012/08	2019-08-12	ASR1	Sunny	14:37	1-hour TSP	62	ug/m3
TMCLKL	HY/2012/08	2019-08-12	ASR1	Sunny	15:39	1-hour TSP	71	ug/m3
TMCLKL	HY/2012/08	2019-08-12	ASR10	Sunny	13:01	1-hour TSP	43	ug/m3
TMCLKL	HY/2012/08	2019-08-12	ASR10	Sunny	14:03	1-hour TSP	57	ug/m3
TMCLKL	HY/2012/08	2019-08-12	ASR10	Sunny	15:05	1-hour TSP	60	ug/m3
TMCLKL	HY/2012/08	2019-08-12	ASR5	Sunny	13:24	1-hour TSP	143	ug/m3
TMCLKL	HY/2012/08	2019-08-12	ASR5	Sunny	14:26	1-hour TSP	133	ug/m3
TMCLKL	HY/2012/08	2019-08-12	ASR5	Sunny	15:28	1-hour TSP	133	ug/m3
TMCLKL	HY/2012/08	2019-08-12	ASR6	Sunny	13:13	1-hour TSP	77	ug/m3
TMCLKL	HY/2012/08	2019-08-12	ASR6	Sunny	14:15	1-hour TSP	106	ug/m3
TMCLKL	HY/2012/08	2019-08-12	ASR6	Sunny	15:17	1-hour TSP	90	ug/m3

Project	Contract	Date	Station	Weather	Start time	Parameters	Results	units
TMCLKL	HY/2012/08	2019-08-15	AQMS1	Sunny	13:53	1-hour TSP	67	ug/m3
TMCLKL	HY/2012/08	2019-08-15	AQMS1	Sunny	14:55	1-hour TSP	116	ug/m3
TMCLKL	HY/2012/08	2019-08-15	AQMS1	Sunny	15:57	1-hour TSP	129	ug/m3
TMCLKL	HY/2012/08	2019-08-15	ASR1	Sunny	13:42	1-hour TSP	134	ug/m3
TMCLKL	HY/2012/08	2019-08-15	ASR1	Sunny	14:44	1-hour TSP	101	ug/m3
TMCLKL	HY/2012/08	2019-08-15	ASR1	Sunny	15:46	1-hour TSP	140	ug/m3
TMCLKL	HY/2012/08	2019-08-15	ASR10	Sunny	13:08	1-hour TSP	47	ug/m3
TMCLKL	HY/2012/08	2019-08-15	ASR10	Sunny	14:10	1-hour TSP	65	ug/m3
TMCLKL	HY/2012/08	2019-08-15	ASR10	Sunny	15:12	1-hour TSP	90	ug/m3
TMCLKL	HY/2012/08	2019-08-15	ASR5	Sunny	13:30	1-hour TSP	154	ug/m3
TMCLKL	HY/2012/08	2019-08-15	ASR5	Sunny	14:32	1-hour TSP	154	ug/m3
TMCLKL	HY/2012/08	2019-08-15	ASR5	Sunny	15:34	1-hour TSP	255	ug/m3
TMCLKL	HY/2012/08	2019-08-15	ASR6	Sunny	13:19	1-hour TSP	105	ug/m3
TMCLKL	HY/2012/08	2019-08-15	ASR6	Sunny	14:21	1-hour TSP	124	ug/m3
TMCLKL	HY/2012/08	2019-08-15	ASR6	Sunny	15:23	1-hour TSP	247	ug/m3
TMCLKL	HY/2012/08	2019-08-18	AQMS1	Rainy	08:55	1-hour TSP	66	ug/m3
TMCLKL	HY/2012/08	2019-08-18	AQMS1	Rainy	09:57	1-hour TSP	87	ug/m3
TMCLKL	HY/2012/08	2019-08-18	AQMS1	Rainy	10:59	1-hour TSP	85	ug/m3
TMCLKL	HY/2012/08	2019-08-18	ASR1	Rainy	08:43	1-hour TSP	45	ug/m3
TMCLKL	HY/2012/08	2019-08-18	ASR1	Rainy	09:45	1-hour TSP	68	ug/m3
TMCLKL	HY/2012/08	2019-08-18	ASR1	Rainy	10:47	1-hour TSP	65	ug/m3
TMCLKL	HY/2012/08	2019-08-18	ASR10	Rainy	08:10	1-hour TSP	49	ug/m3
TMCLKL	HY/2012/08	2019-08-18	ASR10	Rainy	09:12	1-hour TSP	68	ug/m3
TMCLKL	HY/2012/08	2019-08-18	ASR10	Rainy	10:14	1-hour TSP	63	ug/m3
TMCLKL	HY/2012/08	2019-08-18	ASR5	Rainy	08:32	1-hour TSP	119	ug/m3
TMCLKL	HY/2012/08	2019-08-18	ASR5	Rainy	09:34	1-hour TSP	164	ug/m3
TMCLKL	HY/2012/08	2019-08-18	ASR5	Rainy	10:36	1-hour TSP	88	ug/m3
TMCLKL	HY/2012/08	2019-08-18	ASR6	Rainy	08:20	1-hour TSP	81	ug/m3
TMCLKL	HY/2012/08	2019-08-18	ASR6	Rainy	09:22	1-hour TSP	91	ug/m3
TMCLKL	HY/2012/08	2019-08-18	ASR6	Rainy	10:24	1-hour TSP	73	ug/m3

Project	Contract	Date	Station	Weather	Start time	Parameters	Results	units
TMCLKL	HY/2012/08	2019-08-21	AQMS1	Sunny	13:49	1-hour TSP	113	ug/m3
TMCLKL	HY/2012/08	2019-08-21	AQMS1	Sunny	14:51	1-hour TSP	91	ug/m3
TMCLKL	HY/2012/08	2019-08-21	AQMS1	Sunny	15:53	1-hour TSP	78	ug/m3
TMCLKL	HY/2012/08	2019-08-21	ASR1	Sunny	13:37	1-hour TSP	52	ug/m3
TMCLKL	HY/2012/08	2019-08-21	ASR1	Sunny	14:39	1-hour TSP	65	ug/m3
TMCLKL	HY/2012/08	2019-08-21	ASR1	Sunny	15:41	1-hour TSP	123	ug/m3
TMCLKL	HY/2012/08	2019-08-21	ASR10	Sunny	13:04	1-hour TSP	67	ug/m3
TMCLKL	HY/2012/08	2019-08-21	ASR10	Sunny	14:06	1-hour TSP	40	ug/m3
TMCLKL	HY/2012/08	2019-08-21	ASR10	Sunny	15:08	1-hour TSP	44	ug/m3
TMCLKL	HY/2012/08	2019-08-21	ASR5	Sunny	13:26	1-hour TSP	111	ug/m3
TMCLKL	HY/2012/08	2019-08-21	ASR5	Sunny	14:26	1-hour TSP	171	ug/m3
TMCLKL	HY/2012/08	2019-08-21	ASR5	Sunny	15:30	1-hour TSP	64	ug/m3
TMCLKL	HY/2012/08	2019-08-21	ASR6	Sunny	13:14	1-hour TSP	152	ug/m3
TMCLKL	HY/2012/08	2019-08-21	ASR6	Sunny	14:16	1-hour TSP	103	ug/m3
TMCLKL	HY/2012/08	2019-08-21	ASR6	Sunny	15:18	1-hour TSP	47	ug/m3
TMCLKL	HY/2012/08	2019-08-24	AQMS1	Sunny	13:47	1-hour TSP	181	ug/m3
TMCLKL	HY/2012/08	2019-08-24	AQMS1	Sunny	14:49	1-hour TSP	161	ug/m3
TMCLKL	HY/2012/08	2019-08-24	AQMS1	Sunny	15:51	1-hour TSP	183	ug/m3
TMCLKL	HY/2012/08	2019-08-24	ASR1	Sunny	13:35	1-hour TSP	171	ug/m3
TMCLKL	HY/2012/08	2019-08-24	ASR1	Sunny	14:37	1-hour TSP	130	ug/m3
TMCLKL	HY/2012/08	2019-08-24	ASR1	Sunny	15:39	1-hour TSP	140	ug/m3
TMCLKL	HY/2012/08	2019-08-24	ASR10	Sunny	13:00	1-hour TSP	121	ug/m3
TMCLKL	HY/2012/08	2019-08-24	ASR10	Sunny	14:02	1-hour TSP	96	ug/m3
TMCLKL	HY/2012/08	2019-08-24	ASR10	Sunny	15:04	1-hour TSP	114	ug/m3
TMCLKL	HY/2012/08	2019-08-24	ASR5	Sunny	13:24	1-hour TSP	203	ug/m3
TMCLKL	HY/2012/08	2019-08-24	ASR5	Sunny	14:26	1-hour TSP	209	ug/m3
TMCLKL	HY/2012/08	2019-08-24	ASR5	Sunny	15:28	1-hour TSP	197	ug/m3
TMCLKL	HY/2012/08	2019-08-24	ASR6	Sunny	13:12	1-hour TSP	169	ug/m3
TMCLKL	HY/2012/08	2019-08-24	ASR6	Sunny	14:14	1-hour TSP	149	ug/m3
TMCLKL	HY/2012/08	2019-08-24	ASR6	Sunny	15:16	1-hour TSP	165	ug/m3

Project	Contract	Date	Station	Weather	Start time	Parameters	Results	units
TMCLKL	HY/2012/08	2019-08-27	AQMS1	Sunny	13:47	1-hour TSP	53	ug/m3
TMCLKL	HY/2012/08	2019-08-27	AQMS1	Sunny	14:49	1-hour TSP	59	ug/m3
TMCLKL	HY/2012/08	2019-08-27	AQMS1	Sunny	15:51	1-hour TSP	81	ug/m3
TMCLKL	HY/2012/08	2019-08-27	ASR1	Sunny	13:35	1-hour TSP	52	ug/m3
TMCLKL	HY/2012/08	2019-08-27	ASR1	Sunny	14:37	1-hour TSP	89	ug/m3
TMCLKL	HY/2012/08	2019-08-27	ASR1	Sunny	15:39	1-hour TSP	183	ug/m3
TMCLKL	HY/2012/08	2019-08-27	ASR10	Sunny	13:01	1-hour TSP	33	ug/m3
TMCLKL	HY/2012/08	2019-08-27	ASR10	Sunny	14:03	1-hour TSP	32	ug/m3
TMCLKL	HY/2012/08	2019-08-27	ASR10	Sunny	15:05	1-hour TSP	25	ug/m3
TMCLKL	HY/2012/08	2019-08-27	ASR5	Sunny	13:23	1-hour TSP	102	ug/m3
TMCLKL	HY/2012/08	2019-08-27	ASR5	Sunny	14:25	1-hour TSP	95	ug/m3
TMCLKL	HY/2012/08	2019-08-27	ASR5	Sunny	15:27	1-hour TSP	127	ug/m3
TMCLKL	HY/2012/08	2019-08-27	ASR6	Sunny	13:11	1-hour TSP	70	ug/m3
TMCLKL	HY/2012/08	2019-08-27	ASR6	Sunny	14:13	1-hour TSP	66	ug/m3
TMCLKL	HY/2012/08	2019-08-27	ASR6	Sunny	15:15	1-hour TSP	56	ug/m3
TMCLKL	HY/2012/08	2019-08-30	AQMS1	Sunny	09:05	1-hour TSP	49	ug/m3
TMCLKL	HY/2012/08	2019-08-30	AQMS1	Sunny	10:07	1-hour TSP	55	ug/m3
TMCLKL	HY/2012/08	2019-08-30	AQMS1	Sunny	11:09	1-hour TSP	64	ug/m3
TMCLKL	HY/2012/08	2019-08-30	ASR1	Sunny	08:54	1-hour TSP	40	ug/m3
TMCLKL	HY/2012/08	2019-08-30	ASR1	Sunny	09:56	1-hour TSP	54	ug/m3
TMCLKL	HY/2012/08	2019-08-30	ASR1	Sunny	10:58	1-hour TSP	34	ug/m3
TMCLKL	HY/2012/08	2019-08-30	ASR10	Sunny	08:20	1-hour TSP	51	ug/m3
TMCLKL	HY/2012/08	2019-08-30	ASR10	Sunny	09:22	1-hour TSP	63	ug/m3
TMCLKL	HY/2012/08	2019-08-30	ASR10	Sunny	10:24	1-hour TSP	67	ug/m3
TMCLKL	HY/2012/08	2019-08-30	ASR5	Sunny	08:43	1-hour TSP	167	ug/m3
TMCLKL	HY/2012/08	2019-08-30	ASR5	Sunny	09:45	1-hour TSP	153	ug/m3
TMCLKL	HY/2012/08	2019-08-30	ASR5	Sunny	10:47	1-hour TSP	123	ug/m3
TMCLKL	HY/2012/08	2019-08-30	ASR6	Sunny	08:32	1-hour TSP	43	ug/m3
TMCLKL	HY/2012/08	2019-08-30	ASR6	Sunny	09:34	1-hour TSP	55	ug/m3
TMCLKL	HY/2012/08	2019-08-30	ASR6	Sunny	10:36	1-hour TSP	79	ug/m3

Project	Contract	Date	Station	Weather	Start time	Parameters	Results	units
TMCLKL	HY/2012/08	2019-08-03	AQMS1	Sunny	12:02	24-hour TSP	53	ug/m3
TMCLKL	HY/2012/08	2019-08-03	ASR1	Sunny	11:51	24-hour TSP	47	ug/m3
TMCLKL	HY/2012/08	2019-08-03	ASR10	Sunny	11:17	24-hour TSP	36	ug/m3
TMCLKL	HY/2012/08	2019-08-03	ASR5	Sunny	11:39	24-hour TSP	37	ug/m3
TMCLKL	HY/2012/08	2019-08-03	ASR6	Sunny	11:28	24-hour TSP	43	ug/m3
TMCLKL	HY/2012/08	2019-08-06	AQMS1	Sunny	17:09	24-hour TSP	52	ug/m3
TMCLKL	HY/2012/08	2019-08-06	ASR1	Sunny	16:58	24-hour TSP	116	ug/m3
TMCLKL	HY/2012/08	2019-08-06	ASR10	Sunny	16:24	24-hour TSP	32	ug/m3
TMCLKL	HY/2012/08	2019-08-06	ASR5	Sunny	16:46	24-hour TSP	79	ug/m3
TMCLKL	HY/2012/08	2019-08-06	ASR6	Sunny	16:35	24-hour TSP	49	ug/m3
TMCLKL	HY/2012/08	2019-08-09	AQMS1	Sunny	12:10	24-hour TSP	64	ug/m3
TMCLKL	HY/2012/08	2019-08-09	ASR1	Sunny	11:58	24-hour TSP	61	ug/m3
TMCLKL	HY/2012/08	2019-08-09	ASR10	Sunny	11:47	24-hour TSP	73	ug/m3
TMCLKL	HY/2012/08	2019-08-09	ASR5	Sunny	11:26	24-hour TSP	37	ug/m3
TMCLKL	HY/2012/08	2019-08-09	ASR6	Sunny	11:36	24-hour TSP	54	ug/m3
TMCLKL	HY/2012/08	2019-08-12	AQMS1	Sunny	16:53	24-hour TSP	48	ug/m3
TMCLKL	HY/2012/08	2019-08-12	ASR1	Sunny	16:41	24-hour TSP	45	ug/m3
TMCLKL	HY/2012/08	2019-08-12	ASR10	Sunny	16:07	24-hour TSP	28	ug/m3
TMCLKL	HY/2012/08	2019-08-12	ASR5	Sunny	16:30	24-hour TSP	70	ug/m3
TMCLKL	HY/2012/08	2019-08-12	ASR6	Sunny	16:19	24-hour TSP	55	ug/m3
TMCLKL	HY/2012/08	2019-08-15	AQMS1	Sunny	16:59	24-hour TSP	58	ug/m3
TMCLKL	HY/2012/08	2019-08-15	ASR1	Sunny	16:48	24-hour TSP	58	ug/m3
TMCLKL	HY/2012/08	2019-08-15	ASR10	Sunny	16:14	24-hour TSP	38	ug/m3
TMCLKL	HY/2012/08	2019-08-15	ASR5	Sunny	16:36	24-hour TSP	100	ug/m3
TMCLKL	HY/2012/08	2019-08-15	ASR6	Sunny	16:25	24-hour TSP	73	ug/m3
TMCLKL	HY/2012/08	2019-08-18	AQMS1	Rainy	12:01	24-hour TSP	48	ug/m3
TMCLKL	HY/2012/08	2019-08-18	ASR1	Rainy	11:49	24-hour TSP	57	ug/m3
TMCLKL	HY/2012/08	2019-08-18	ASR10	Rainy	11:16	24-hour TSP	23	ug/m3
TMCLKL	HY/2012/08	2019-08-18	ASR5	Rainy	11:38	24-hour TSP	59	ug/m3
TMCLKL	HY/2012/08	2019-08-18	ASR6	Rainy	11:26	24-hour TSP	34	ug/m3

Project	Contract	Date	Station	Weather	Start time	Parameters	Results	units
TMCLKL	HY/2012/08	2019-08-21	AQMS1	Sunny	16:55	24-hour TSP	47	ug/m3
TMCLKL	HY/2012/08	2019-08-21	ASR1	Sunny	16:43	24-hour TSP	73	ug/m3
TMCLKL	HY/2012/08	2019-08-21	ASR10	Sunny	16:10	24-hour TSP	26	ug/m3
TMCLKL	HY/2012/08	2019-08-21	ASR5	Sunny	16:32	24-hour TSP	74	ug/m3
TMCLKL	HY/2012/08	2019-08-21	ASR6	Sunny	16:20	24-hour TSP	39	ug/m3
TMCLKL	HY/2012/08	2019-08-24	AQMS1	Sunny	16:53	24-hour TSP	32	ug/m3
TMCLKL	HY/2012/08	2019-08-24	ASR1	Sunny	16:41	24-hour TSP	77	ug/m3
TMCLKL	HY/2012/08	2019-08-24	ASR10	Sunny	16:06	24-hour TSP	50	ug/m3
TMCLKL	HY/2012/08	2019-08-24	ASR5	Sunny	16:30	24-hour TSP	78	ug/m3
TMCLKL	HY/2012/08	2019-08-24	ASR6	Sunny	16:18	24-hour TSP	68	ug/m3
TMCLKL	HY/2012/08	2019-08-27	AQMS1	Sunny	16:53	24-hour TSP	55	ug/m3
TMCLKL	HY/2012/08	2019-08-27	ASR1	Sunny	16:41	24-hour TSP	91	ug/m3
TMCLKL	HY/2012/08	2019-08-27	ASR10	Sunny	16:07	24-hour TSP	44	ug/m3
TMCLKL	HY/2012/08	2019-08-27	ASR5	Sunny	16:29	24-hour TSP	67	ug/m3
TMCLKL	HY/2012/08	2019-08-27	ASR6	Sunny	16:17	24-hour TSP	47	ug/m3
TMCLKL	HY/2012/08	2019-08-30	AQMS1	Sunny	12:11	24-hour TSP	41	ug/m3
TMCLKL	HY/2012/08	2019-08-30	ASR1	Sunny	12:00	24-hour TSP	38	ug/m3
TMCLKL	HY/2012/08	2019-08-30	ASR10	Sunny	11:26	24-hour TSP	33	ug/m3
TMCLKL	HY/2012/08	2019-08-30	ASR5	Sunny	11:49	24-hour TSP	36	ug/m3
TMCLKL	HY/2012/08	2019-08-30	ASR6	Sunny	11:38	24-hour TSP	33	ug/m3

Appendix H

## Meteorological Data



**Meteorological Data for Impact Monitoring in the reporting period**

<b>Date (yy-mm-dd)</b>	<b>Time (24hrs)</b>	<b>Average of Wind Speed (m/s)</b>	<b>Average of Wind Direction(degree)</b>
19/08/03	0:00	1.8	71
19/08/03	1:00	1.3	47
19/08/03	2:00	0.9	60
19/08/03	3:00	0.9	55
19/08/03	4:00	0.9	41
19/08/03	5:00	0.9	50
19/08/03	6:00	1.3	36
19/08/03	7:00	2.2	101
19/08/03	8:00	1.3	31
19/08/03	9:00	1.3	58
19/08/03	10:00	1.3	93
19/08/03	11:00	2.2	95
19/08/03	12:00	2.7	100
19/08/03	13:00	2.7	88
19/08/03	14:00	2.2	84
19/08/03	15:00	1.8	111
19/08/03	16:00	1.3	90
19/08/03	17:00	0.9	25
19/08/03	18:00	1.3	80
19/08/03	19:00	1.3	57
19/08/03	20:00	1.3	97
19/08/03	21:00	0.9	64
19/08/03	22:00	1.3	44
19/08/03	23:00	0.9	69
19/08/04	0:00	0.4	49
19/08/04	1:00	0.4	41
19/08/04	2:00	0.4	42
19/08/04	3:00	0	-
19/08/04	4:00	0.4	29
19/08/04	5:00	0.9	21
19/08/04	6:00	0.9	1
19/08/04	7:00	0.9	18
19/08/04	8:00	0.9	29
19/08/04	9:00	0.9	3
19/08/04	10:00	0.4	25
19/08/04	11:00	1.3	140
19/08/04	12:00	1.3	132
19/08/04	13:00	1.8	137
19/08/04	14:00	2.2	145
19/08/04	15:00	3.1	140
19/08/04	16:00	1.3	94
19/08/04	17:00	1.3	81
19/08/04	18:00	1.3	90
19/08/04	19:00	0.9	89
19/08/04	20:00	0.9	73
19/08/04	21:00	0.4	51
19/08/04	22:00	0.9	42
19/08/04	23:00	0.9	47
19/08/06	0:00	0	-
19/08/06	1:00	0	-
19/08/06	2:00	0	-
19/08/06	3:00	0	-
19/08/06	4:00	0	-
19/08/06	5:00	0.4	345
19/08/06	6:00	0	-

**Meteorological Data for Impact Monitoring in the reporting period**

<b>Date (yy-mm-dd)</b>	<b>Time (24hrs)</b>	<b>Average of Wind Speed (m/s)</b>	<b>Average of Wind Direction(degree)</b>
19/08/06	7:00	0	-
19/08/06	8:00	0.4	109
19/08/06	9:00	0	-
19/08/06	10:00	0	-
19/08/06	11:00	0	-
19/08/06	12:00	0.9	194
19/08/06	13:00	0.4	197
19/08/06	14:00	0.9	137
19/08/06	15:00	1.3	51
19/08/06	16:00	1.8	133
19/08/06	17:00	0.9	138
19/08/06	18:00	0.4	93
19/08/06	19:00	0.9	96
19/08/06	20:00	0.4	85
19/08/06	21:00	0	-
19/08/06	22:00	0	-
19/08/06	23:00	0	-
19/08/07	0:00	0.4	29
19/08/07	1:00	0.9	91
19/08/07	2:00	0.4	57
19/08/07	3:00	0	-
19/08/07	4:00	0	-
19/08/07	5:00	0.4	4
19/08/07	6:00	0	-
19/08/07	7:00	0	-
19/08/07	8:00	0.4	67
19/08/07	9:00	0.4	138
19/08/07	10:00	0.9	82
19/08/07	11:00	1.8	139
19/08/07	12:00	1.8	126
19/08/07	13:00	2.2	136
19/08/07	14:00	2.2	211
19/08/07	15:00	1.8	204
19/08/07	16:00	0.9	273
19/08/07	17:00	0.9	168
19/08/07	18:00	1.8	139
19/08/07	19:00	0.9	85
19/08/07	20:00	1.3	36
19/08/07	21:00	1.3	46
19/08/07	22:00	1.8	79
19/08/07	23:00	0.9	120
19/08/09	0:00	1.8	265
19/08/09	1:00	0.9	260
19/08/09	2:00	0.4	272
19/08/09	3:00	0.4	261
19/08/09	4:00	0.9	273
19/08/09	5:00	1.3	279
19/08/09	6:00	1.3	285
19/08/09	7:00	0.9	296
19/08/09	8:00	0.4	278
19/08/09	9:00	0.9	272
19/08/09	10:00	0.9	263
19/08/09	11:00	2.2	269
19/08/09	12:00	2.7	265
19/08/09	13:00	1.8	261

**Meteorological Data for Impact Monitoring in the reporting period**

<b>Date (yy-mm-dd)</b>	<b>Time (24hrs)</b>	<b>Average of Wind Speed (m/s)</b>	<b>Average of Wind Direction(degree)</b>
19/08/09	14:00	2.7	200
19/08/09	15:00	1.8	197
19/08/09	16:00	2.2	199
19/08/09	17:00	0.9	241
19/08/09	18:00	0.4	286
19/08/09	19:00	0.9	270
19/08/09	20:00	0.9	276
19/08/09	21:00	0.4	277
19/08/09	22:00	0.9	261
19/08/09	23:00	0.9	259
19/08/10	0:00	0.4	299
19/08/10	1:00	0.9	303
19/08/10	2:00	0.4	263
19/08/10	3:00	2.7	199
19/08/10	4:00	1.3	204
19/08/10	5:00	0.4	216
19/08/10	6:00	0.4	237
19/08/10	7:00	0.4	195
19/08/10	8:00	2.2	206
19/08/10	9:00	3.6	214
19/08/10	10:00	3.6	193
19/08/10	11:00	2.7	206
19/08/10	12:00	2.2	208
19/08/10	13:00	2.2	224
19/08/10	14:00	2.2	214
19/08/10	15:00	2.2	222
19/08/10	16:00	2.7	178
19/08/10	17:00	2.7	205
19/08/10	18:00	1.3	217
19/08/10	19:00	2.7	193
19/08/10	20:00	2.2	214
19/08/10	21:00	3.6	198
19/08/10	22:00	3.1	204
19/08/10	23:00	3.1	207
19/08/12	0:00	2.2	212
19/08/12	1:00	3.1	197
19/08/12	2:00	2.7	203
19/08/12	3:00	2.7	210
19/08/12	4:00	2.2	204
19/08/12	5:00	1.8	195
19/08/12	6:00	2.2	194
19/08/12	7:00	2.2	212
19/08/12	8:00	2.2	203
19/08/12	9:00	2.2	210
19/08/12	10:00	2.2	192
19/08/12	11:00	3.1	194
19/08/12	12:00	3.1	210
19/08/12	13:00	3.1	212
19/08/12	14:00	2.2	211
19/08/12	15:00	2.2	222
19/08/12	16:00	1.8	223
19/08/12	17:00	2.7	192
19/08/12	18:00	1.3	198
19/08/12	19:00	0.9	264
19/08/12	20:00	0.9	270

**Meteorological Data for Impact Monitoring in the reporting period**

<b>Date (yy-mm-dd)</b>	<b>Time (24hrs)</b>	<b>Average of Wind Speed (m/s)</b>	<b>Average of Wind Direction(degree)</b>
19/08/12	21:00	0.9	213
19/08/12	22:00	1.8	208
19/08/12	23:00	2.7	193
19/08/13	0:00	2.2	201
19/08/13	1:00	2.7	195
19/08/13	2:00	2.7	198
19/08/13	3:00	3.1	211
19/08/13	4:00	3.6	192
19/08/13	5:00	3.6	200
19/08/13	6:00	1.8	191
19/08/13	7:00	1.3	191
19/08/13	8:00	0.9	194
19/08/13	9:00	1.8	191
19/08/13	10:00	2.7	194
19/08/13	11:00	3.1	192
19/08/13	12:00	3.1	202
19/08/13	13:00	2.2	193
19/08/13	14:00	2.2	211
19/08/13	15:00	2.2	192
19/08/13	16:00	2.2	235
19/08/13	17:00	2.7	200
19/08/13	18:00	3.6	205
19/08/13	19:00	3.1	207
19/08/13	20:00	1.3	202
19/08/13	21:00	2.2	206
19/08/13	22:00	2.2	199
19/08/13	23:00	1.3	256
19/08/15	0:00	1.8	211
19/08/15	1:00	1.8	202
19/08/15	2:00	3.1	204
19/08/15	3:00	2.2	194
19/08/15	4:00	1.8	194
19/08/15	5:00	1.3	245
19/08/15	6:00	1.3	273
19/08/15	7:00	1.3	277
19/08/15	8:00	2.2	263
19/08/15	9:00	1.3	266
19/08/15	10:00	0.9	260
19/08/15	11:00	1.8	209
19/08/15	12:00	2.2	202
19/08/15	13:00	1.3	260
19/08/15	14:00	1.3	262
19/08/15	15:00	1.8	200
19/08/15	16:00	1.8	226
19/08/15	17:00	2.7	211
19/08/15	18:00	0.9	259
19/08/15	19:00	0.9	262
19/08/15	20:00	0.4	265
19/08/15	21:00	0.4	269
19/08/15	22:00	0.4	284
19/08/15	23:00	0.4	260
19/08/16	0:00	2.7	196
19/08/16	1:00	0.4	303
19/08/16	2:00	0.4	293
19/08/16	3:00	0.9	269

**Meteorological Data for Impact Monitoring in the reporting period**

<b>Date (yy-mm-dd)</b>	<b>Time (24hrs)</b>	<b>Average of Wind Speed (m/s)</b>	<b>Average of Wind Direction(degree)</b>
19/08/16	4:00	0	-
19/08/16	5:00	0.4	281
19/08/16	6:00	0.4	281
19/08/16	7:00	0.9	260
19/08/16	8:00	0.9	272
19/08/16	9:00	0.9	281
19/08/16	10:00	1.8	227
19/08/16	11:00	2.2	227
19/08/16	12:00	2.7	202
19/08/16	13:00	2.2	221
19/08/16	14:00	2.7	207
19/08/16	15:00	1.8	267
19/08/16	16:00	2.7	317
19/08/16	17:00	0.4	328
19/08/16	18:00	0.4	290
19/08/16	19:00	2.7	192
19/08/16	20:00	1.3	266
19/08/16	21:00	1.3	273
19/08/16	22:00	1.8	317
19/08/16	23:00	0	-
19/08/18	0:00	0	-
19/08/18	1:00	0	-
19/08/18	2:00	0	-
19/08/18	3:00	0	-
19/08/18	4:00	0	-
19/08/18	5:00	0	-
19/08/18	6:00	0	-
19/08/18	7:00	0	-
19/08/18	8:00	0.9	229
19/08/18	9:00	0.9	227
19/08/18	10:00	0.9	233
19/08/18	11:00	0.9	258
19/08/18	12:00	3.6	206
19/08/18	13:00	0.9	261
19/08/18	14:00	2.2	213
19/08/18	15:00	2.7	220
19/08/18	16:00	0.9	275
19/08/18	17:00	0.4	273
19/08/18	18:00	0	-
19/08/18	19:00	0	-
19/08/18	20:00	0	-
19/08/18	21:00	0.4	2
19/08/18	22:00	0.4	324
19/08/18	23:00	0.4	326
19/08/19	0:00	0.4	318
19/08/19	1:00	0	-
19/08/19	2:00	0	-
19/08/19	3:00	0	-
19/08/19	4:00	0	-
19/08/19	5:00	0	-
19/08/19	6:00	0	-
19/08/19	7:00	0	-
19/08/19	8:00	0.4	302
19/08/19	9:00	0.9	278
19/08/19	10:00	1.3	274
19/08/19	11:00	1.8	267

**Meteorological Data for Impact Monitoring in the reporting period**

<b>Date (yy-mm-dd)</b>	<b>Time (24hrs)</b>	<b>Average of Wind Speed (m/s)</b>	<b>Average of Wind Direction(degree)</b>
19/08/19	12:00	1.3	299
19/08/19	13:00	1.3	195
19/08/19	14:00	2.2	203
19/08/19	15:00	0.9	271
19/08/19	16:00	0.9	96
19/08/19	17:00	0.4	134
19/08/19	18:00	0.9	215
19/08/19	19:00	1.8	55
19/08/19	20:00	0.4	56
19/08/19	21:00	0.4	55
19/08/19	22:00	0	-
19/08/19	23:00	0	-
19/08/21	1:00	1.3	57
19/08/21	2:00	0.4	91
19/08/21	3:00	1.8	12
19/08/21	4:00	0.4	24
19/08/21	5:00	0	-
19/08/21	6:00	0	-
19/08/21	7:00	0	-
19/08/21	8:00	0	-
19/08/21	9:00	0.9	126
19/08/21	10:00	0.9	126
19/08/21	11:00	0.4	162
19/08/21	12:00	0.9	165
19/08/21	13:00	0.4	148
19/08/21	14:00	0.9	168
19/08/21	15:00	2.2	191
19/08/21	16:00	2.2	194
19/08/21	17:00	0.9	114
19/08/21	18:00	1.8	101
19/08/21	19:00	1.3	94
19/08/21	20:00	0.9	79
19/08/21	21:00	0.9	57
19/08/21	22:00	1.3	56
19/08/21	23:00	0.9	56
19/08/22	0:00	0.4	49
19/08/22	1:00	0	-
19/08/22	2:00	0.4	347
19/08/22	3:00	0.9	52
19/08/22	4:00	0.4	53
19/08/22	5:00	0.4	40
19/08/22	6:00	0.4	319
19/08/22	7:00	0	-
19/08/22	8:00	0	-
19/08/22	9:00	0.9	116
19/08/22	10:00	0.9	104
19/08/22	11:00	1.3	121
19/08/22	12:00	0.9	143
19/08/22	13:00	1.8	207
19/08/22	14:00	1.8	209
19/08/22	15:00	1.3	205
19/08/22	16:00	1.3	135
19/08/22	17:00	0.9	101
19/08/22	18:00	1.3	99
19/08/22	19:00	1.3	45
19/08/22	20:00	0.9	53
19/08/22	21:00	0.4	59

**Meteorological Data for Impact Monitoring in the reporting period**

<b>Date (yy-mm-dd)</b>	<b>Time (24hrs)</b>	<b>Average of Wind Speed (m/s)</b>	<b>Average of Wind Direction(degree)</b>
19/08/22	22:00	0	-
19/08/22	23:00	0	-
19/08/24	0:00	0	-
19/08/24	1:00	0	-
19/08/24	2:00	0.4	309
19/08/24	3:00	0	-
19/08/24	4:00	0	-
19/08/24	5:00	0	-
19/08/24	6:00	0	-
19/08/24	7:00	0.4	276
19/08/24	8:00	0.9	262
19/08/24	9:00	1.8	277
19/08/24	10:00	1.8	272
19/08/24	11:00	2.2	273
19/08/24	12:00	1.8	269
19/08/24	13:00	2.2	278
19/08/24	14:00	2.7	280
19/08/24	15:00	2.7	197
19/08/24	16:00	3.6	207
19/08/24	17:00	1.3	211
19/08/24	18:00	0.4	282
19/08/24	19:00	0.4	267
19/08/24	20:00	0.9	258
19/08/24	21:00	0.9	287
19/08/24	22:00	0.9	271
19/08/24	23:00	0.9	277
19/08/25	0:00	0.9	269
19/08/25	1:00	2.2	262
19/08/25	2:00	3.1	15
19/08/25	3:00	0.9	306
19/08/25	4:00	0	-
19/08/25	5:00	0.4	287
19/08/25	6:00	1.3	297
19/08/25	7:00	0.9	267
19/08/25	8:00	0.4	264
19/08/25	9:00	0	-
19/08/25	10:00	0.4	278
19/08/25	11:00	1.3	268
19/08/25	12:00	2.2	273
19/08/25	13:00	1.3	280
19/08/25	14:00	0.9	293
19/08/25	15:00	1.3	267
19/08/25	16:00	0	-
19/08/25	17:00	0	-
19/08/25	18:00	0	-
19/08/25	19:00	0	-
19/08/25	20:00	0	-
19/08/25	21:00	0	-
19/08/25	22:00	0	-
19/08/25	23:00	0	-
19/08/27	0:00	0	-
19/08/27	1:00	0	-
19/08/27	2:00	0	-
19/08/27	3:00	0	-
19/08/27	4:00	0	-
19/08/27	5:00	0	-
19/08/27	6:00	0	-



**Meteorological Data for Impact Monitoring in the reporting period**

<b>Date (yy-mm-dd)</b>	<b>Time (24hrs)</b>	<b>Average of Wind Speed (m/s)</b>	<b>Average of Wind Direction(degree)</b>
19/08/27	7:00	0.4	51
19/08/27	8:00	0.9	65
19/08/27	9:00	1.3	82
19/08/27	10:00	1.8	90
19/08/27	11:00	2.2	107
19/08/27	12:00	1.8	114
19/08/27	13:00	2.2	124
19/08/27	14:00	1.8	92
19/08/27	15:00	1.8	92
19/08/27	16:00	2.7	141
19/08/27	17:00	3.1	128
19/08/27	18:00	1.8	128
19/08/27	19:00	1.8	117
19/08/27	20:00	0.9	124
19/08/27	21:00	0.9	95
19/08/27	22:00	0.4	71
19/08/27	23:00	0	-
19/08/28	0:00	0	-
19/08/28	1:00	0	-
19/08/28	2:00	0	-
19/08/28	3:00	0.4	315
19/08/28	4:00	0	-
19/08/28	5:00	0	-
19/08/28	6:00	0	-
19/08/28	7:00	0	-
19/08/28	8:00	0.4	268
19/08/28	9:00	0.9	308
19/08/28	10:00	0.4	286
19/08/28	11:00	2.2	325
19/08/28	12:00	1.8	322
19/08/28	13:00	1.3	321
19/08/28	14:00	1.3	261
19/08/28	15:00	1.3	275
19/08/28	16:00	1.3	209
19/08/28	17:00	0.9	211
19/08/28	18:00	0.9	96
19/08/28	19:00	0.9	77
19/08/28	20:00	1.3	79
19/08/28	21:00	1.8	124
19/08/28	22:00	2.2	100
19/08/28	23:00	1.8	94
19/08/30	0:00	0	-
19/08/30	1:00	0	-
19/08/30	2:00	0	-
19/08/30	3:00	0	-
19/08/30	4:00	0.4	22
19/08/30	5:00	0.4	52
19/08/30	6:00	0.4	37
19/08/30	7:00	0.9	140
19/08/30	8:00	0.9	11
19/08/30	9:00	0.9	46
19/08/30	10:00	2.7	90
19/08/30	11:00	0.4	37
19/08/30	12:00	0.4	93
19/08/30	13:00	0.4	76
19/08/30	14:00	0.9	72
19/08/30	15:00	1.3	90

Meteorological Data for Impact Monitoring in the reporting period			
Date (yy-mm-dd)	Time (24hrs)	Average of Wind Speed (m/s)	Average of Wind Direction(degree)
19/08/30	16:00	0.4	64
19/08/30	17:00	0	-
19/08/30	18:00	0	-
19/08/30	19:00	0	-
19/08/30	20:00	0	-
19/08/30	21:00	0.4	60
19/08/30	22:00	0	-
19/08/30	23:00	0.4	100
19/08/31	0:00	0	-
19/08/31	1:00	0	-
19/08/31	2:00	0	-
19/08/31	3:00	1.8	145
19/08/31	4:00	0.9	43
19/08/31	5:00	1.3	22
19/08/31	6:00	1.3	26
19/08/31	7:00	0.9	44
19/08/31	8:00	0.4	88
19/08/31	9:00	0.4	101
19/08/31	10:00	0.4	133
19/08/31	11:00	1.3	134
19/08/31	12:00	1.3	125
19/08/31	13:00	1.8	128
19/08/31	14:00	1.8	135
19/08/31	15:00	2.2	145
19/08/31	16:00	2.7	129
19/08/31	17:00	0.4	25
19/08/31	18:00	0.9	23
19/08/31	19:00	1.3	45
19/08/31	20:00	1.3	30
19/08/31	21:00	0.4	24
19/08/31	22:00	0.4	18
19/08/31	23:00	0.4	50

Appendix I

# Impact Dolphin Monitoring Survey

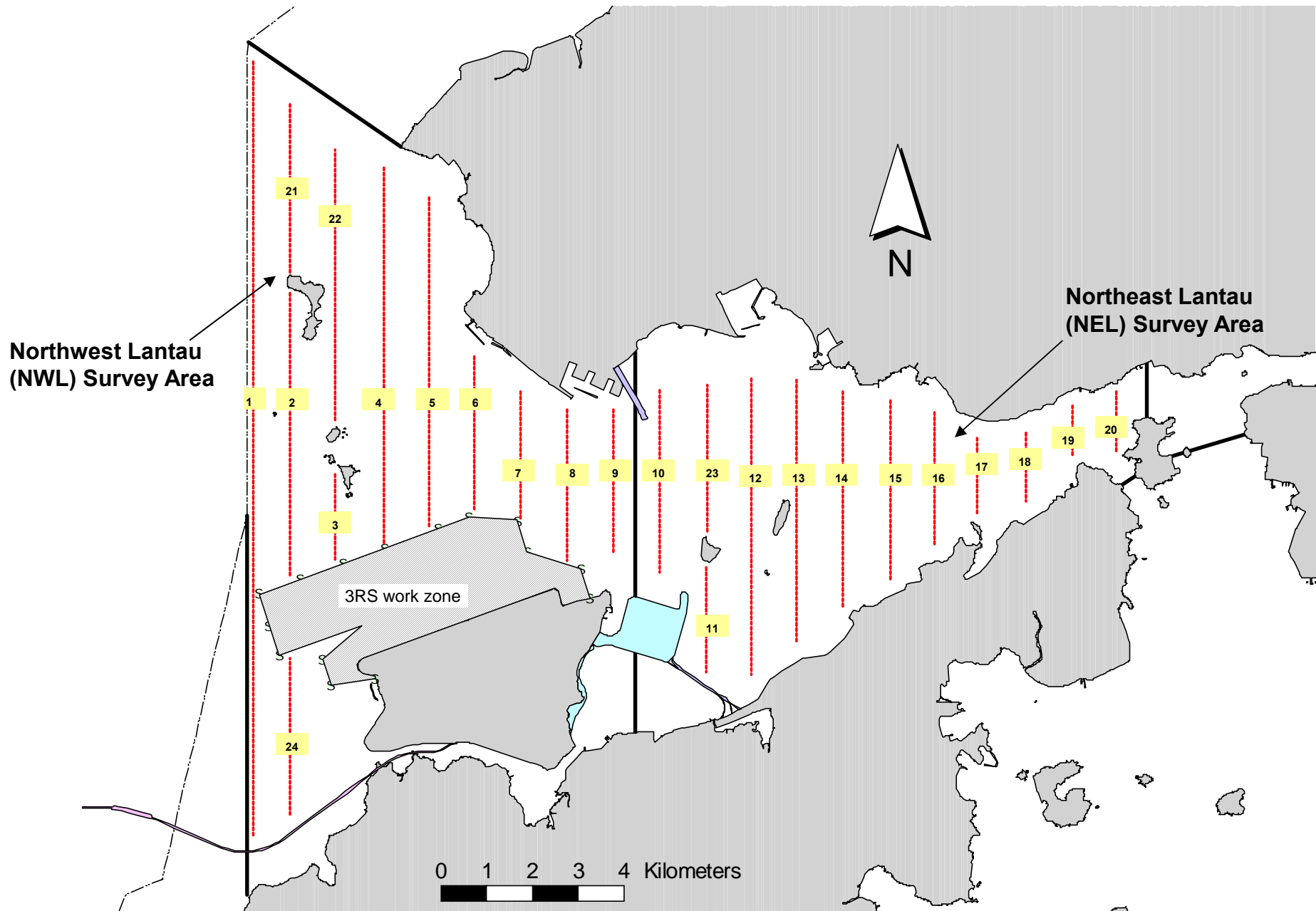


Figure 1. Transect Line Layout in Northwest and Northeast Lantau Survey Areas

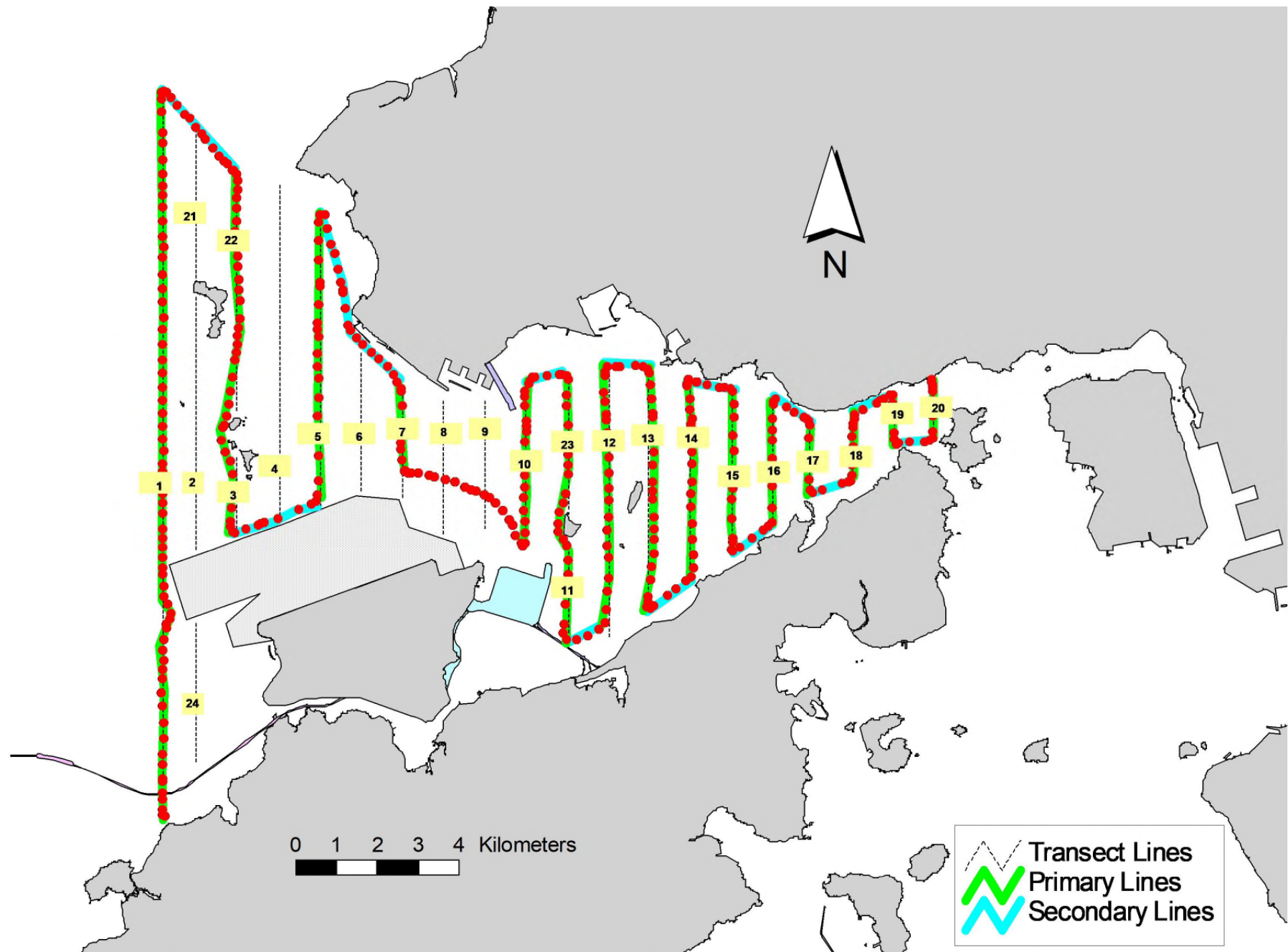


Figure 2. Survey Route on August 13<sup>th</sup>, 2019 (from HKLR03 project)



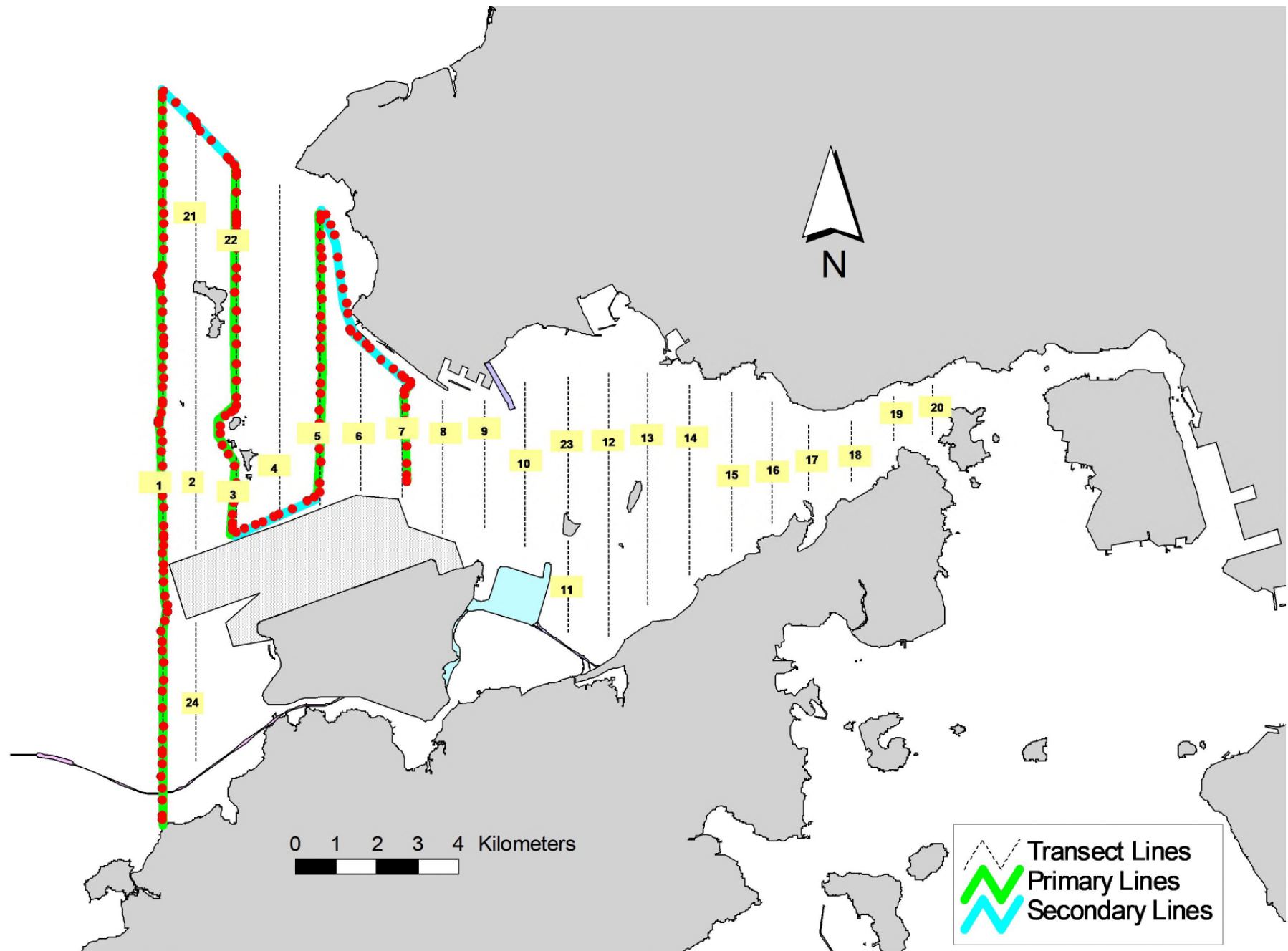


Figure 4. Survey Route on August 20<sup>th</sup>, 2019 (from HKLR03 project)



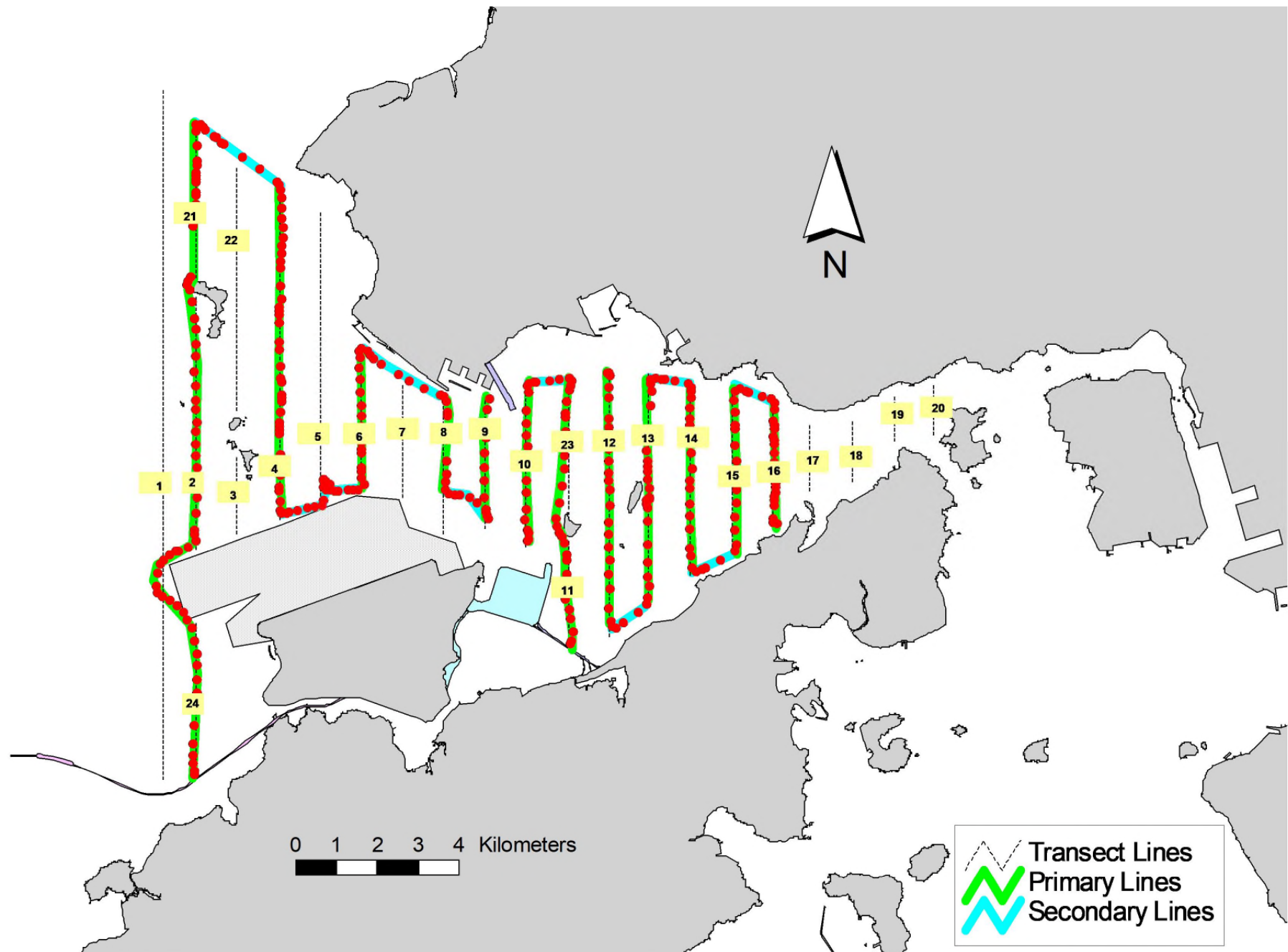


Figure 5. Survey Route on August 26<sup>th</sup>, 2019 (from HKLR03 project)



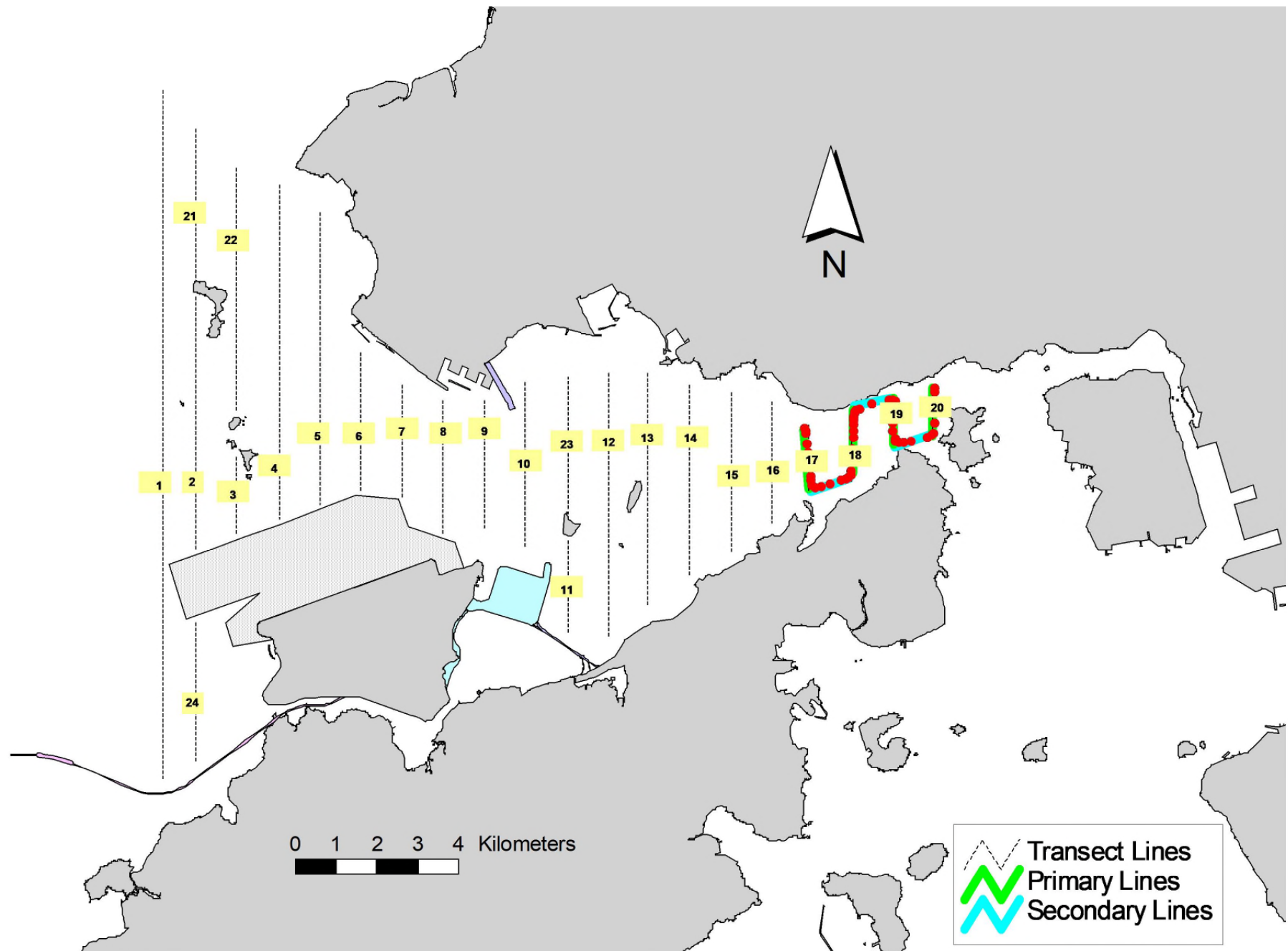


Figure 6. Survey Route on August 29<sup>th</sup>, 2019 (from HKLR03 project)

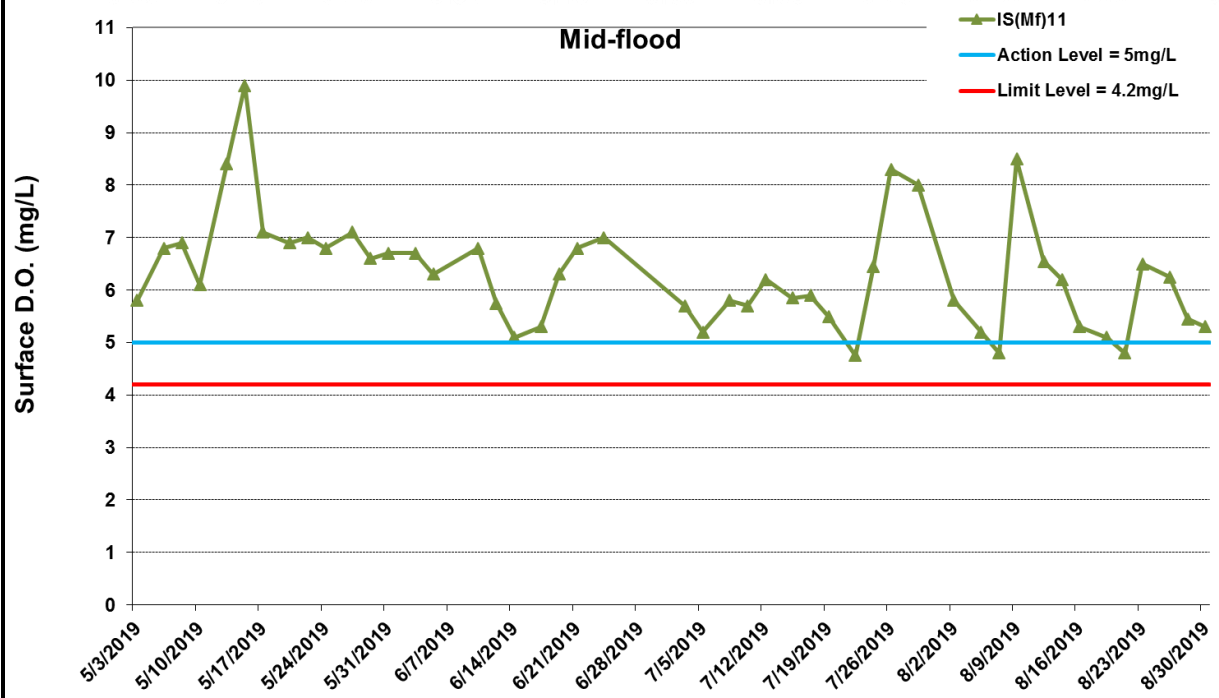
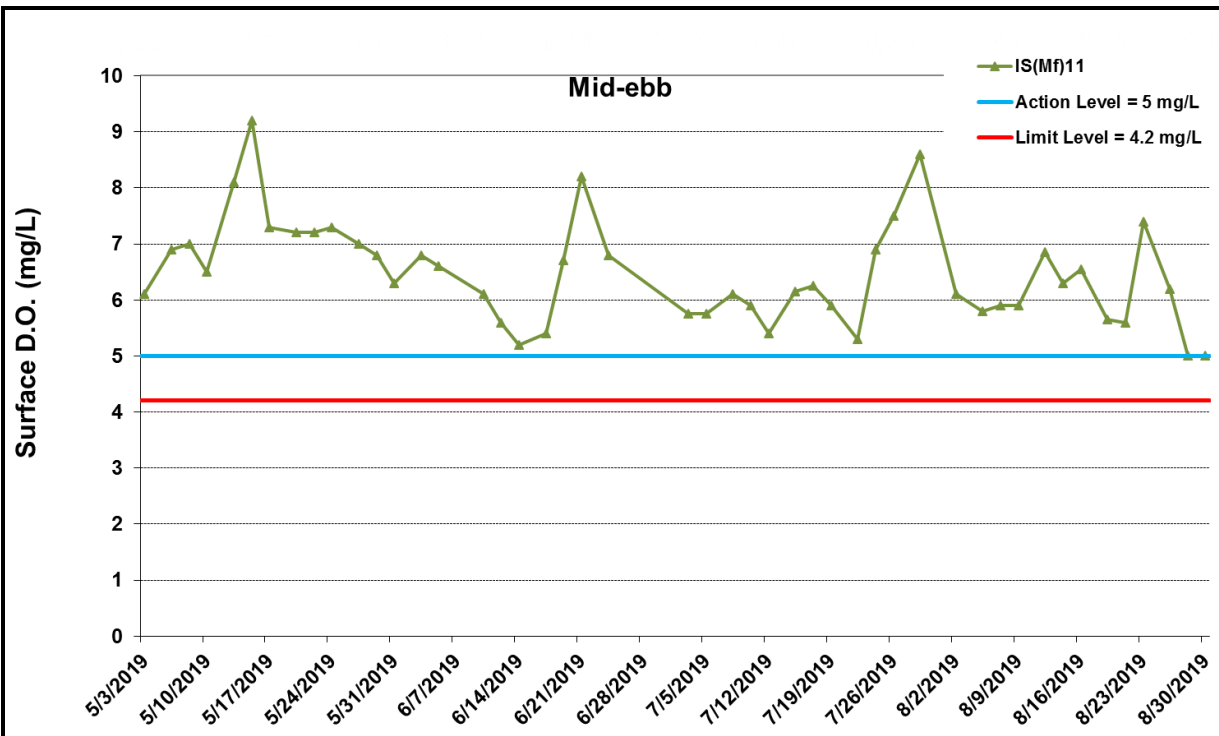
## Appendix I. HKLR03 Survey Effort Database (August 2019)

(Abbreviations: BEAU = Beaufort Sea State; P = Primary Line Effort; S = Secondary Line Effort)

DATE	AREA	BEAU	EFFORT	SEASON	VESSEL	TYPE	P/S
13-Aug-19	NE LANTAU	2	34.82	SUMMER	STANDARD36826	HKLR	P
13-Aug-19	NE LANTAU	3	2.90	SUMMER	STANDARD36826	HKLR	P
13-Aug-19	NE LANTAU	2	9.78	SUMMER	STANDARD36826	HKLR	S
13-Aug-19	NE LANTAU	3	1.90	SUMMER	STANDARD36826	HKLR	S
13-Aug-19	NW LANTAU	2	0.84	SUMMER	STANDARD36826	HKLR	P
13-Aug-19	NW LANTAU	3	24.00	SUMMER	STANDARD36826	HKLR	P
13-Aug-19	NW LANTAU	4	7.90	SUMMER	STANDARD36826	HKLR	P
13-Aug-19	NW LANTAU	2	0.90	SUMMER	STANDARD36826	HKLR	S
13-Aug-19	NW LANTAU	3	8.66	SUMMER	STANDARD36826	HKLR	S
13-Aug-19	NW LANTAU	4	1.40	SUMMER	STANDARD36826	HKLR	S
14-Aug-19	NW LANTAU	2	27.12	SUMMER	STANDARD36826	HKLR	P
14-Aug-19	NW LANTAU	2	14.88	SUMMER	STANDARD36826	HKLR	S
20-Aug-19	NW LANTAU	2	27.37	SUMMER	STANDARD36826	HKLR	P
20-Aug-19	NW LANTAU	3	5.80	SUMMER	STANDARD36826	HKLR	P
20-Aug-19	NW LANTAU	2	11.23	SUMMER	STANDARD36826	HKLR	S
26-Aug-19	NW LANTAU	2	17.21	SUMMER	STANDARD138716	HKLR	P
26-Aug-19	NW LANTAU	3	11.36	SUMMER	STANDARD138716	HKLR	P
26-Aug-19	NW LANTAU	2	6.10	SUMMER	STANDARD138716	HKLR	S
26-Aug-19	NW LANTAU	3	4.13	SUMMER	STANDARD138716	HKLR	S
26-Aug-19	NE LANTAU	1	4.21	SUMMER	STANDARD138716	HKLR	P
26-Aug-19	NE LANTAU	2	26.68	SUMMER	STANDARD138716	HKLR	P
26-Aug-19	NE LANTAU	3	0.27	SUMMER	STANDARD138716	HKLR	P
26-Aug-19	NE LANTAU	1	1.10	SUMMER	STANDARD138716	HKLR	S
26-Aug-19	NE LANTAU	2	4.11	SUMMER	STANDARD138716	HKLR	S
26-Aug-19	NE LANTAU	3	0.97	SUMMER	STANDARD138716	HKLR	S
29-Aug-19	NE LANTAU	2	2.61	SUMMER	STANDARD36826	HKLR	P
29-Aug-19	NE LANTAU	3	2.42	SUMMER	STANDARD36826	HKLR	P
29-Aug-19	NE LANTAU	2	1.90	SUMMER	STANDARD36826	HKLR	S
29-Aug-19	NE LANTAU	3	0.96	SUMMER	STANDARD36826	HKLR	S

Appendix J

## Impact Water Quality Monitoring Results

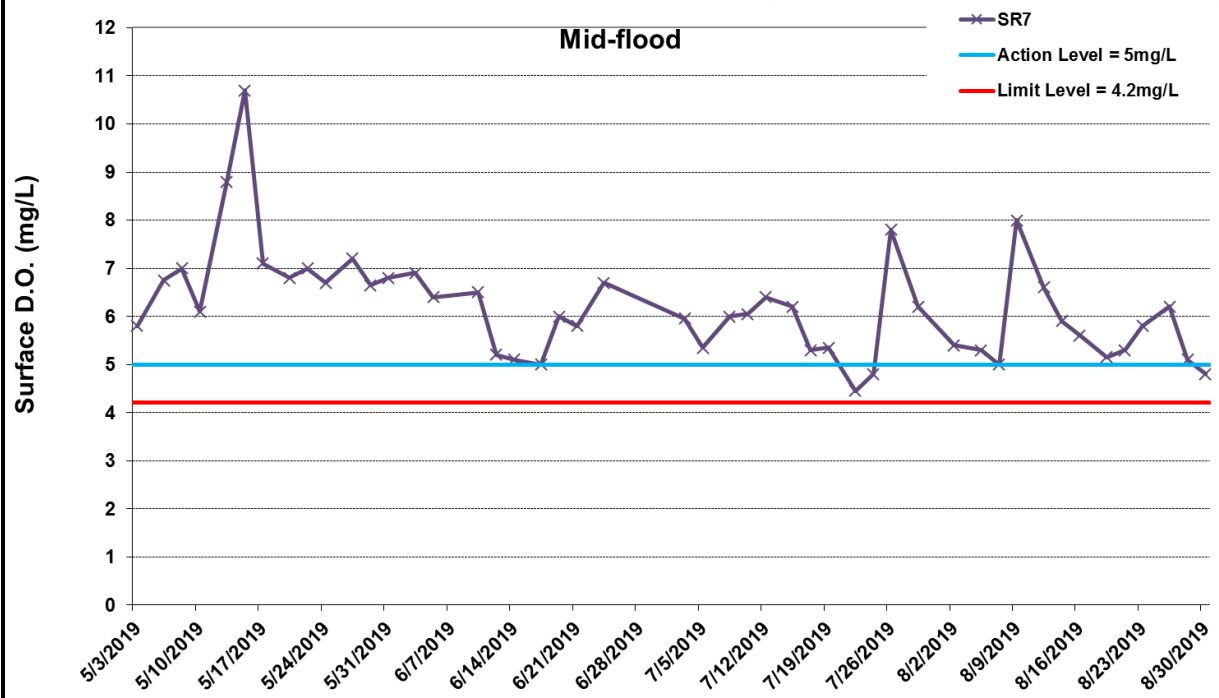
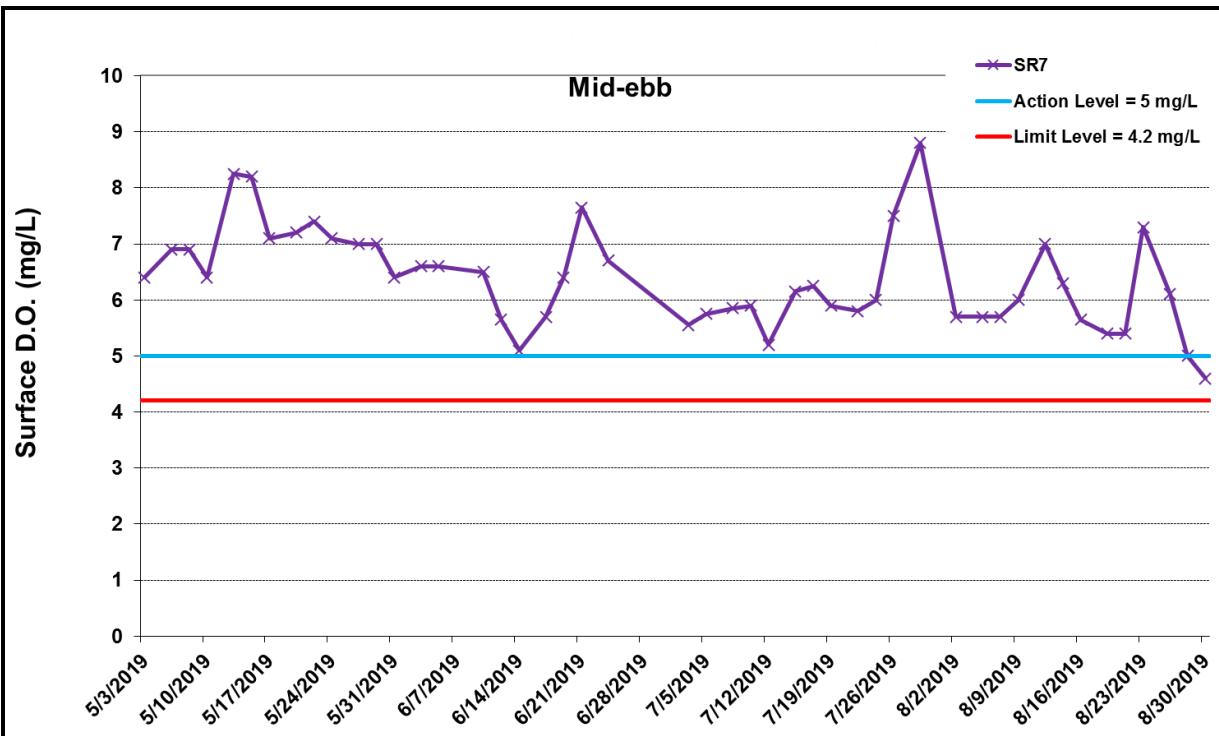


\* The AL/LL for WQM stations, IS(Mf)11, IS17 and SR7, are adopted from HZMB HKBCF project.  
 \*Exceedances of Dissolved oxygen level are calculated based on average value of data from both Surface and Middle level, and bottom level separately.

**Figure J1 Impact Monitoring - Mean Level of Dissolved Oxygen (mg/L) in surface waters between 1 May 2019 and 31 August 2019 at IS(Mf)11. The weather conditions during the monitoring period varied mostly from sunny to cloudy. Major marine works included: Jetty Removal at Portion S-C, Seawall Modification Works at Portion S-B (1/5/2019 - 31/8/2019).**



Ref: 0212330\_Impact-WQM\_August2019\_graphs\_Rev a.xls



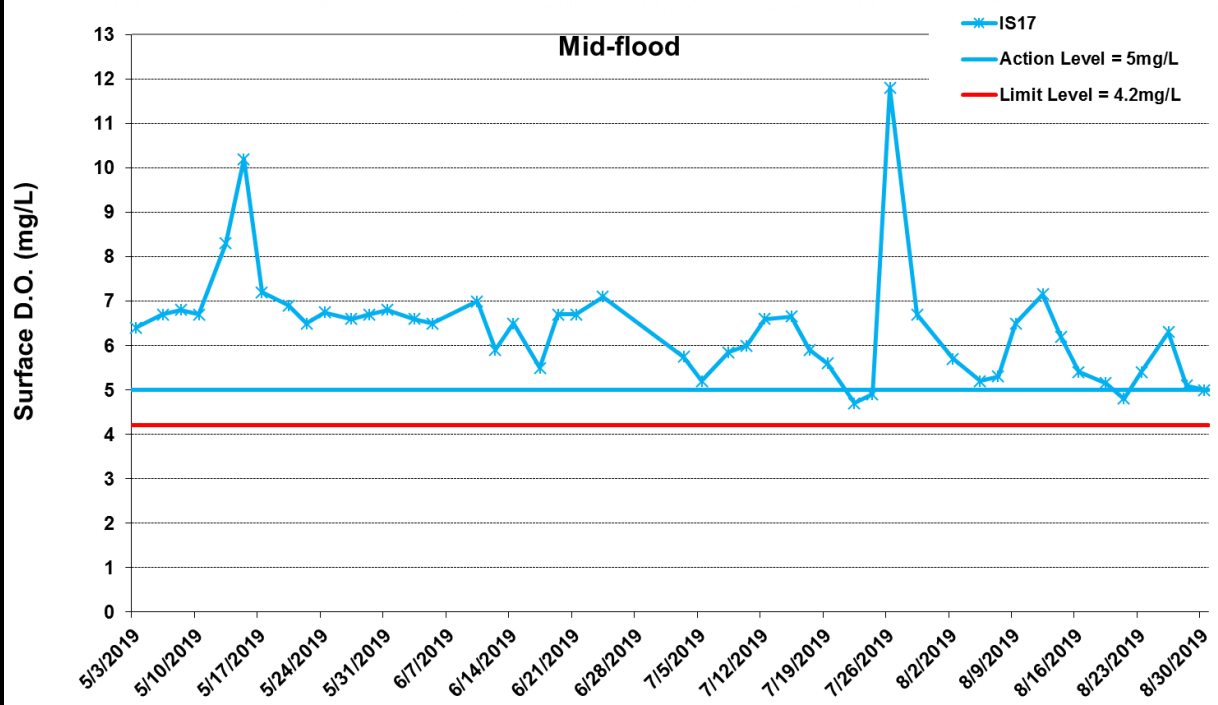
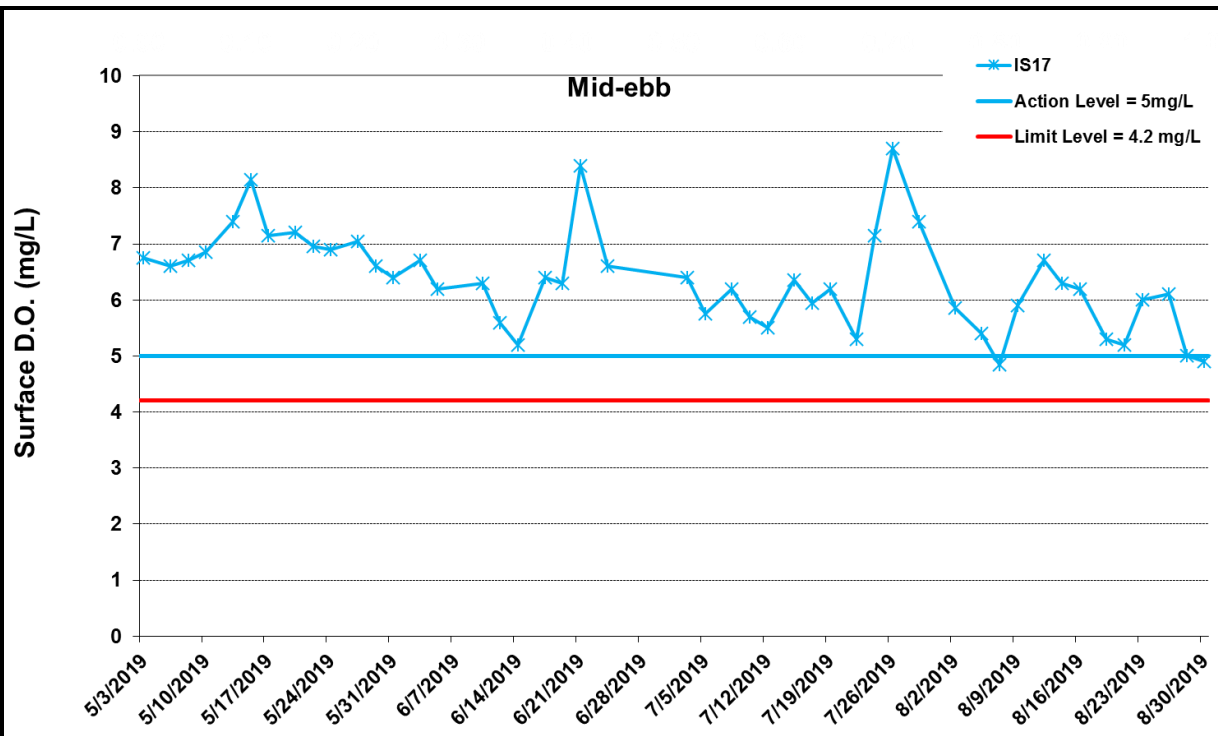
\* The AL/LL for WQM stations, IS(Mf)11, IS17 and SR7, are adopted from HZMB HKBCF project.

\*Exceedances of Dissolved oxygen level are calculated based on average value of data from both Surface and Middle level, and bottom level separately.

**Figure J2 Impact Monitoring - Mean Level of Dissolved Oxygen (mg/L) in surface waters between 1 May 2019 and 31 August 2019 at SR7. The weather conditions during the monitoring period varied mostly from sunny to cloudy. Major marine works included: Jetty Removal at Portion S-C, Seawall Modification Works at Portion S-B (1/5/2019 - 31/8/2019).**



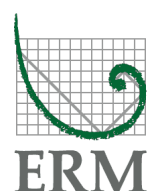
Ref: 0212330\_Impact-WQM\_August2019\_graphs\_Rev a.xls



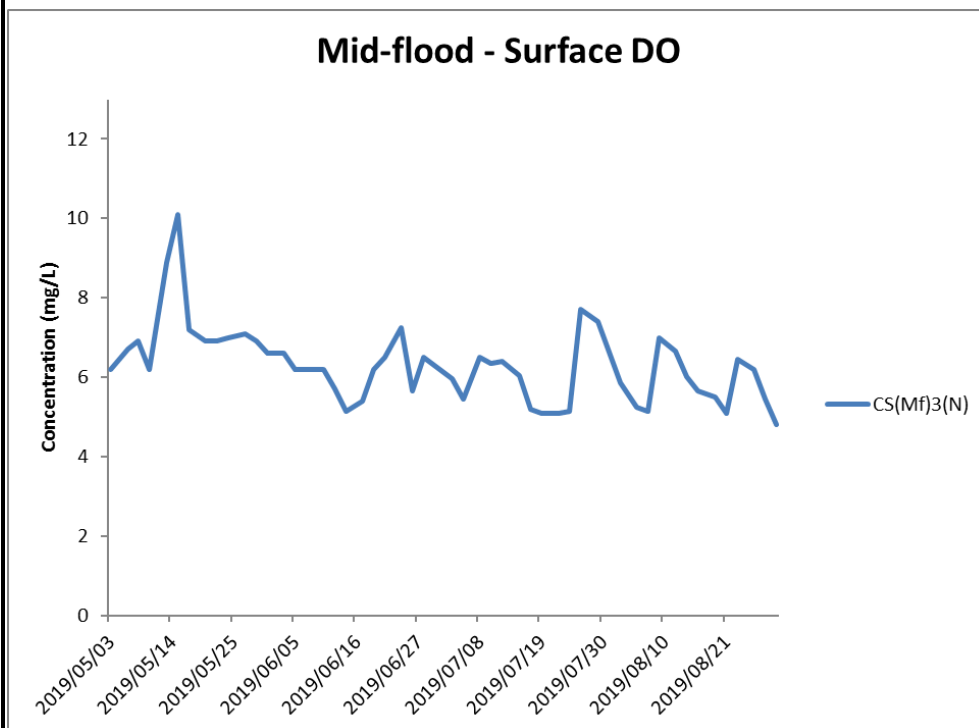
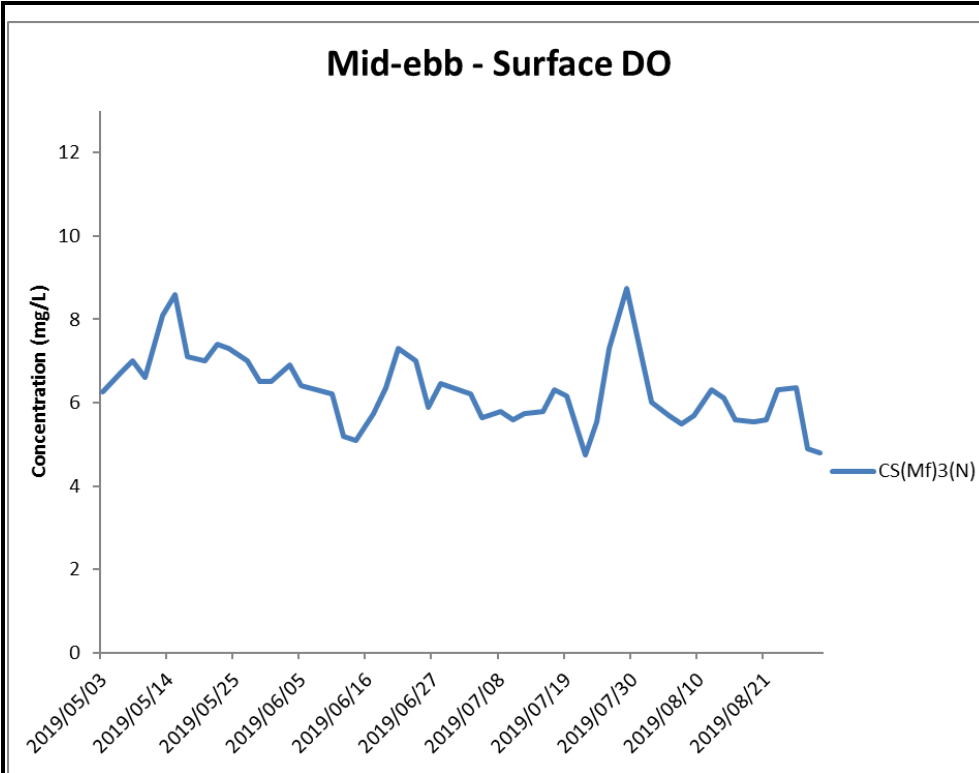
\* The AL/LL for WQM stations, IS(Mf)11, IS17 and SR7, are adopted from HZMB HKBCF project.

\*Exceedances of Dissolved oxygen level are calculated based on average value of data from both Surface and Middle level, and bottom level separately.

**Figure J3 Impact Monitoring - Mean Level of Dissolved Oxygen (mg/L) in surface waters between 1 May 2019 and 31 August 2019 at IS(Mf)11. The weather conditions during the monitoring period varied mostly from sunny to cloudy. Major marine works included: Jetty Removal at Portion S-C, Seawall Modification Works at Portion S-B (1/5/2019 - 31/8/2019).**



Ref: 0212330\_Impact-WQM\_August2019\_graphs\_Rev a.xls

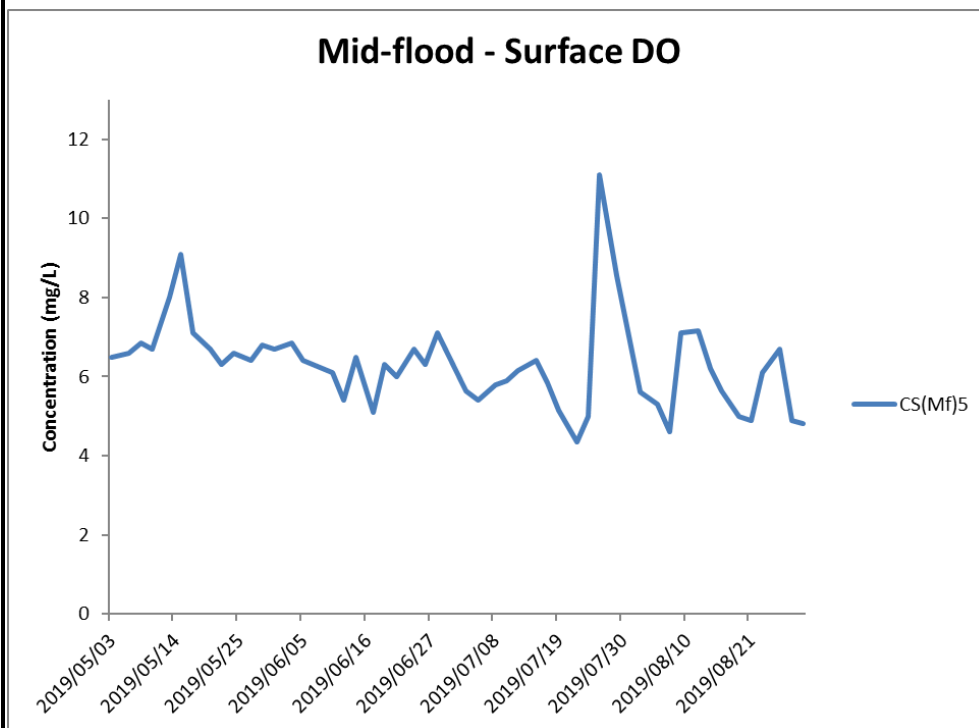
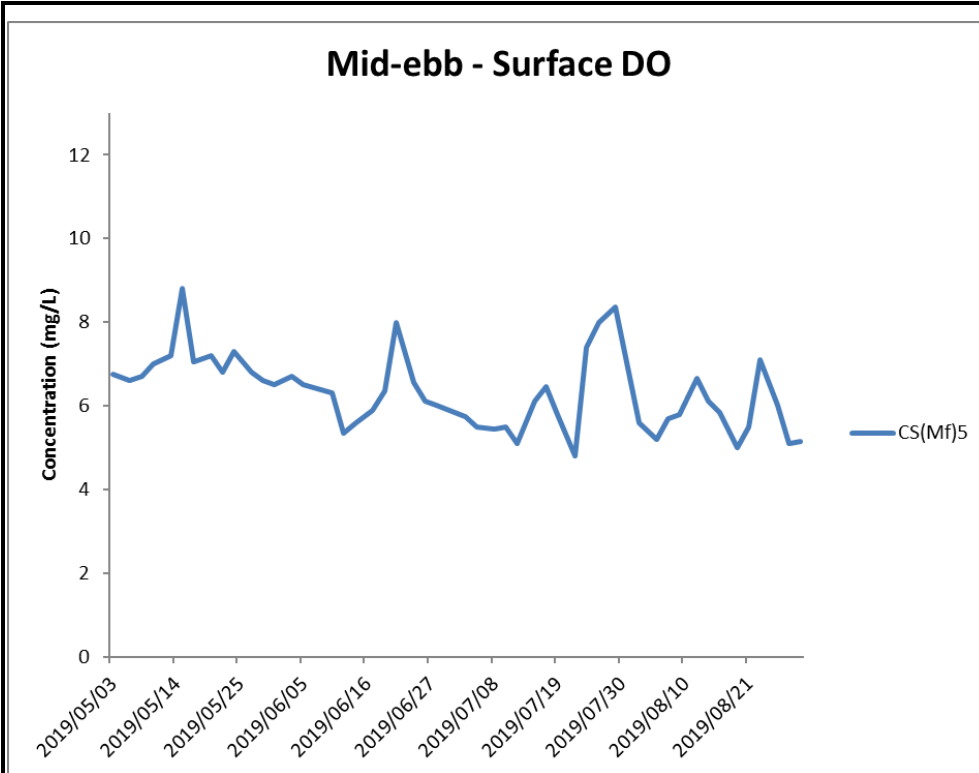


\*Exceedances of Dissolved oxygen level are calculated based on average value of data from both Surface and Middle level, and bottom level separately.

**Figure J4 Impact Monitoring - Mean Level of Dissolved Oxygen (mg/L) in surface waters between 1 May 2019 and 31 August 2019 at CS(Mf)3(N). The weather conditions during the monitoring period varied mostly from sunny to cloudy. Major marine works included: Jetty Removal at Portion S-C, Seawall Modification Works at Portion S-B (1/5/2019 - 31/8/2019).**



Ref: 0212330\_Impact-WQM\_August2019\_graphs\_Rev a.xls



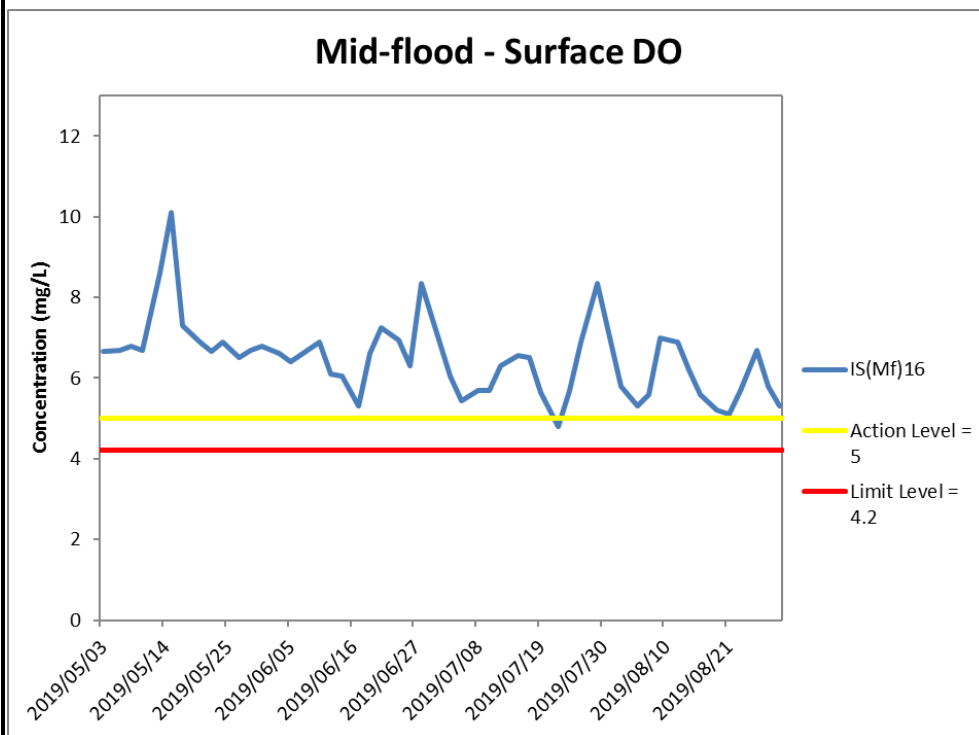
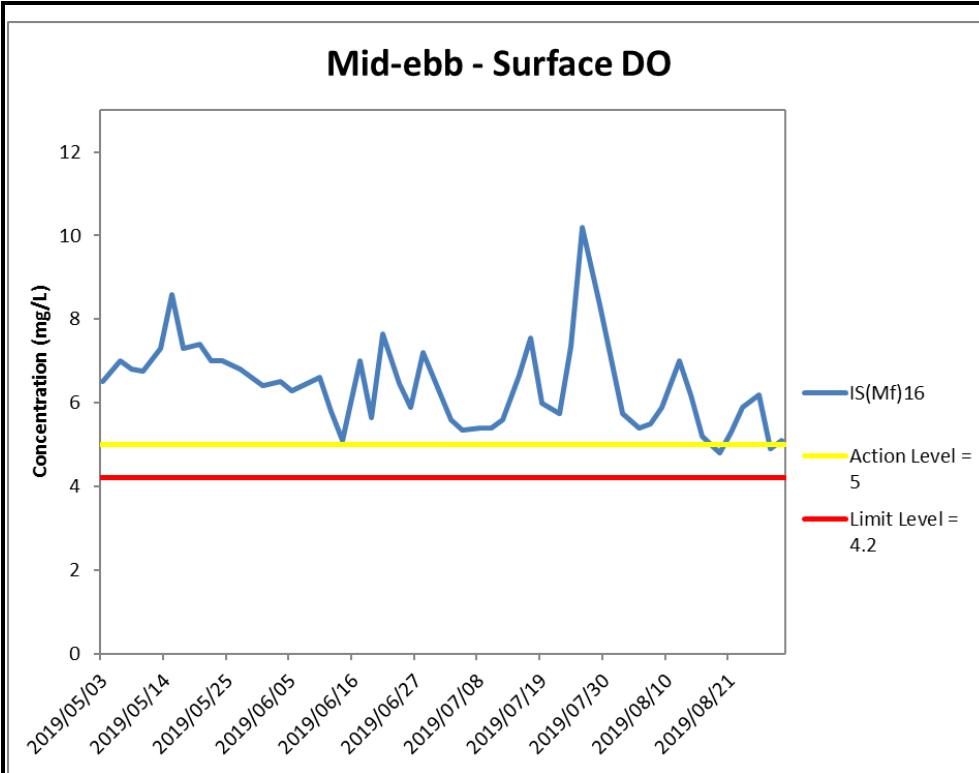
\*Exceedances of Dissolved oxygen level are calculated based on average value of data from both Surface and Middle level, and bottom level separately.

**Figure J5 Impact Monitoring - Mean Level of Dissolved Oxygen (mg/L) in surface waters between 1 May 2019 and 31 August 2019 at CS(Mf)5. The weather conditions during the monitoring period varied mostly from sunny to cloudy. Major marine works included: Jetty Removal at Portion S-C, Seawall Modification Works at Portion S-B (1/5/2019 - 31/8/2019).**



Ref: 0212330\_Impact-WQM\_August2019\_graphs\_Rev a.xls



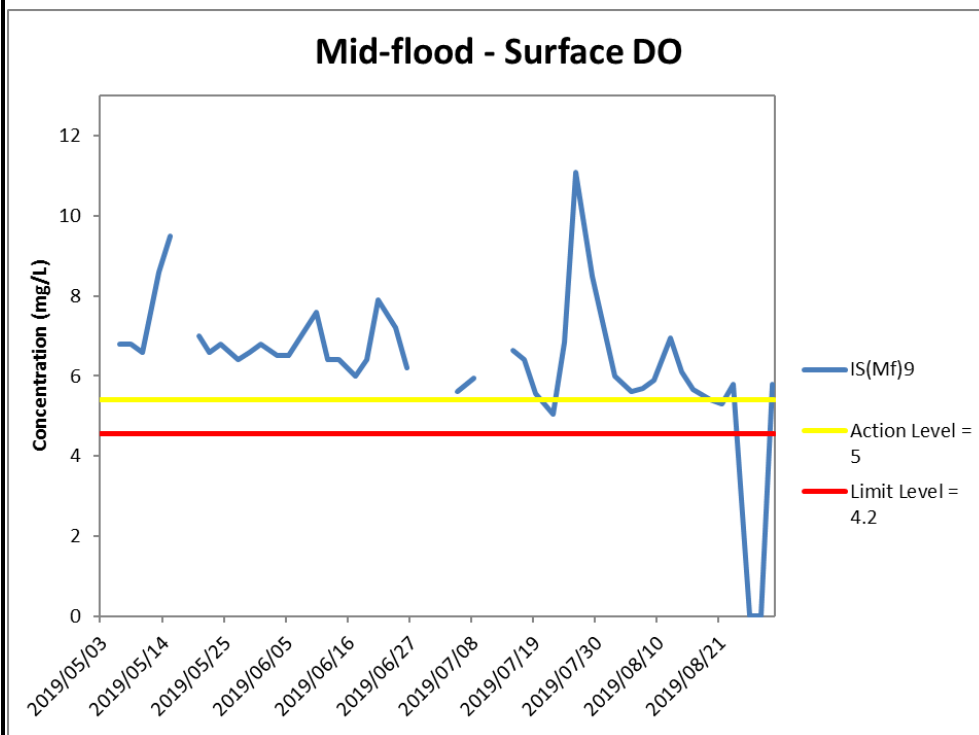
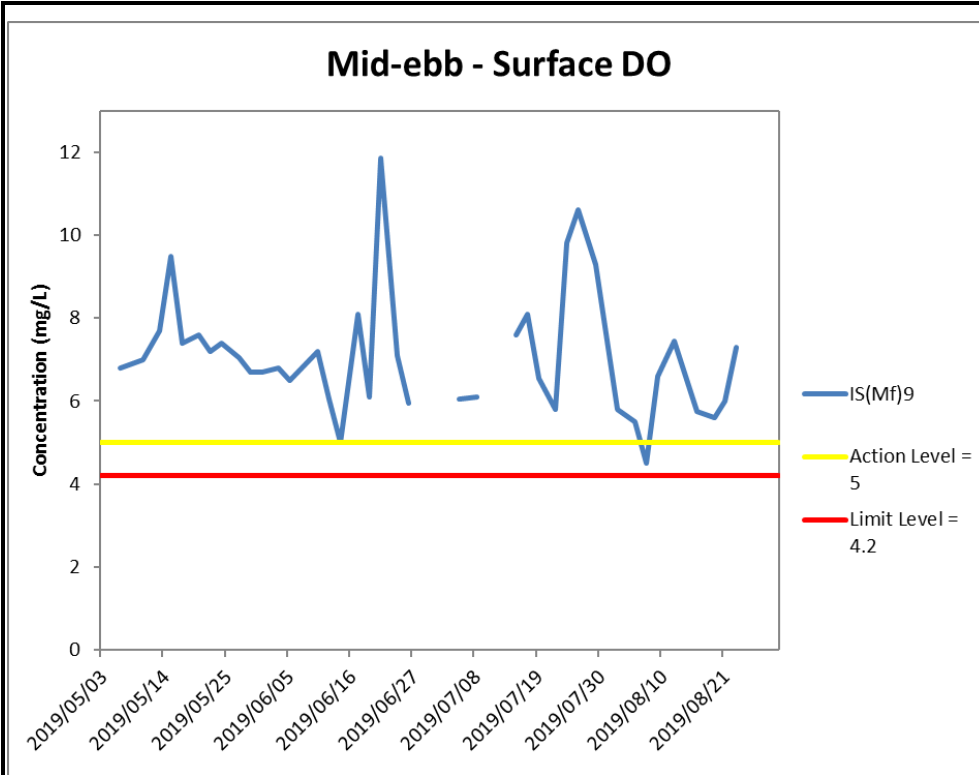


\*Exceedances of Dissolved oxygen level are calculated based on average value of data from both Surface and Middle level, and bottom level separately.

**Figure J6 Impact Monitoring - Mean Level of Dissolved Oxygen (mg/L) in surface waters between 1 May 2019 and 31 August 2019 at IS(Mf)16. The weather conditions during the monitoring period varied mostly from sunny to cloudy. Major marine works included: Jetty Removal at Portion S-C, Seawall Modification Works at Portion S-B (1/5/2019 - 31/8/2019).**

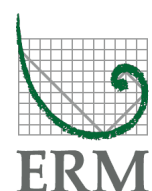


Ref: 0212330\_Impact-WQM\_August2019\_graphs\_Rev a.xls

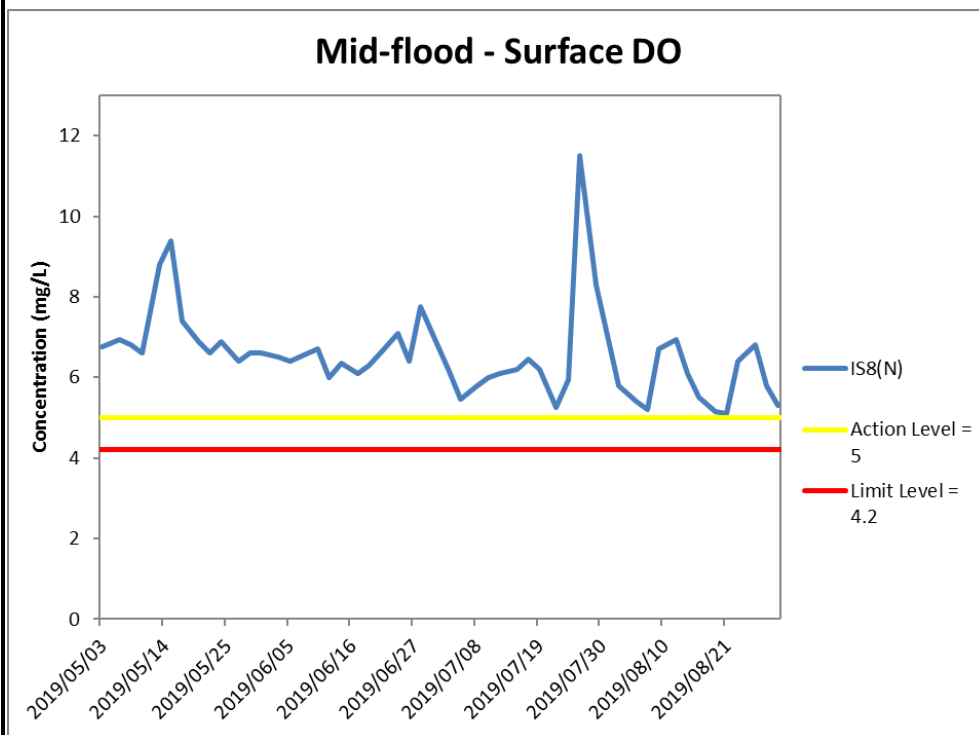
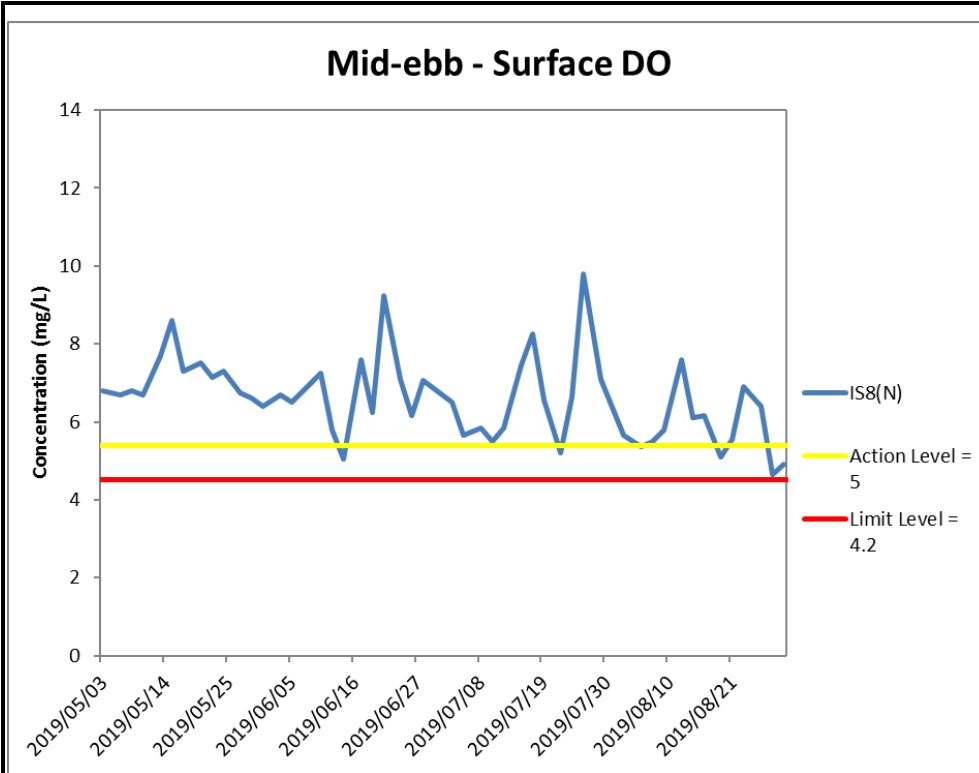


\*Exceedances of Dissolved oxygen level are calculated based on average value of data from both Surface and Middle level, and bottom level separately.

**Figure J7 Impact Monitoring - Mean Level of Dissolved Oxygen (mg/L) in surface waters between 1 May 2019 and 31 August 2019 at IS(Mf)9. The weather conditions during the monitoring period varied mostly from sunny to cloudy. Major marine works included: Jetty Removal at Portion S-C, Seawall Modification Works at Portion S-B (1/5/2019 - 31/8/2019).**



Ref: 0212330\_Impact-WQM\_August2019\_graphs\_Rev a.xls

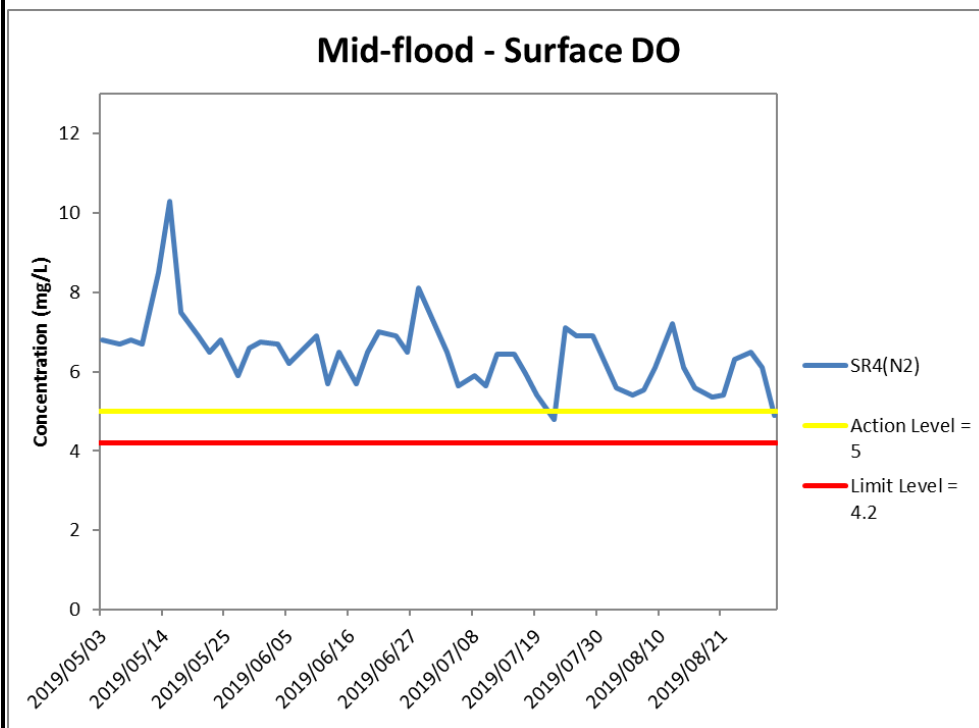
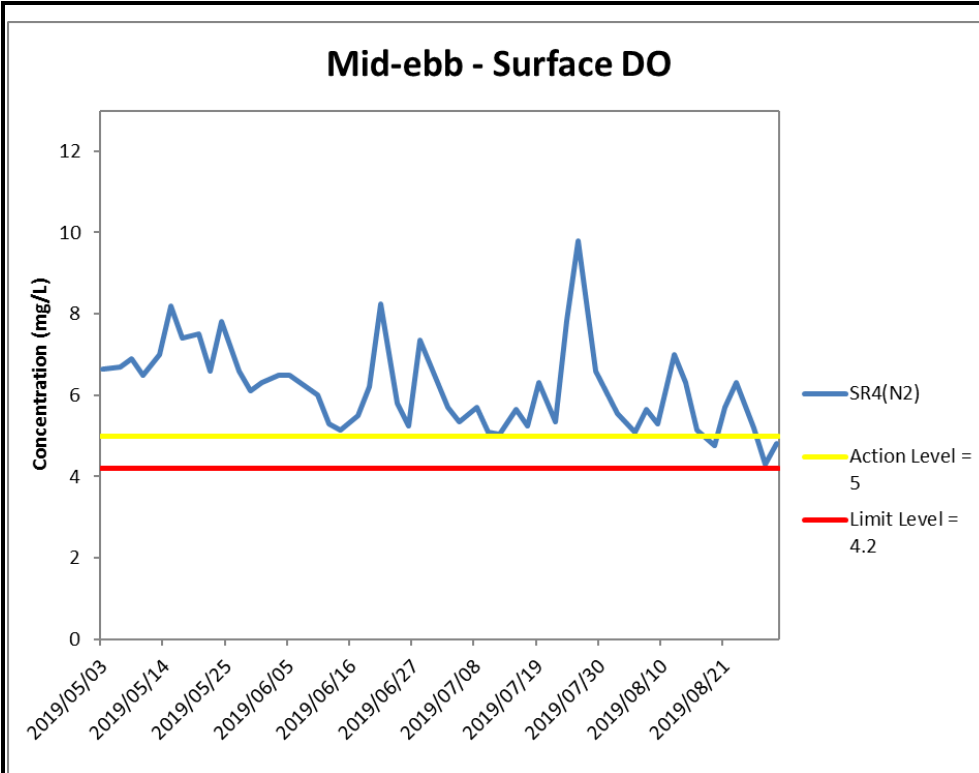


\*Exceedances of Dissolved oxygen level are calculated based on average value of data from both Surface and Middle level, and bottom level separately.

**Figure J8 Impact Monitoring - Mean Level of Dissolved Oxygen (mg/L) in surface waters between 1 May 2019 and 31 August 2019 at IS8(N). The weather conditions during the monitoring period varied mostly from sunny to cloudy. Major marine works included: Jetty Removal at Portion S-C, Seawall Modification Works at Portion S-B (1/5/2019 - 31/8/2019).**



Ref: 0212330\_Impact-WQM\_August2019\_graphs\_Rev a.xls

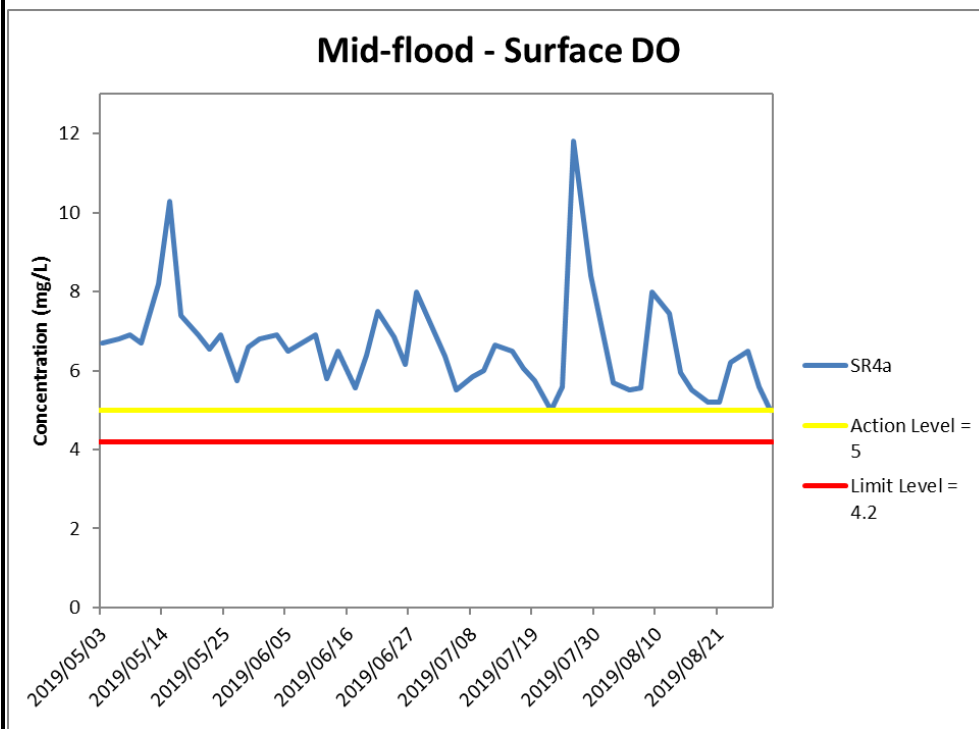
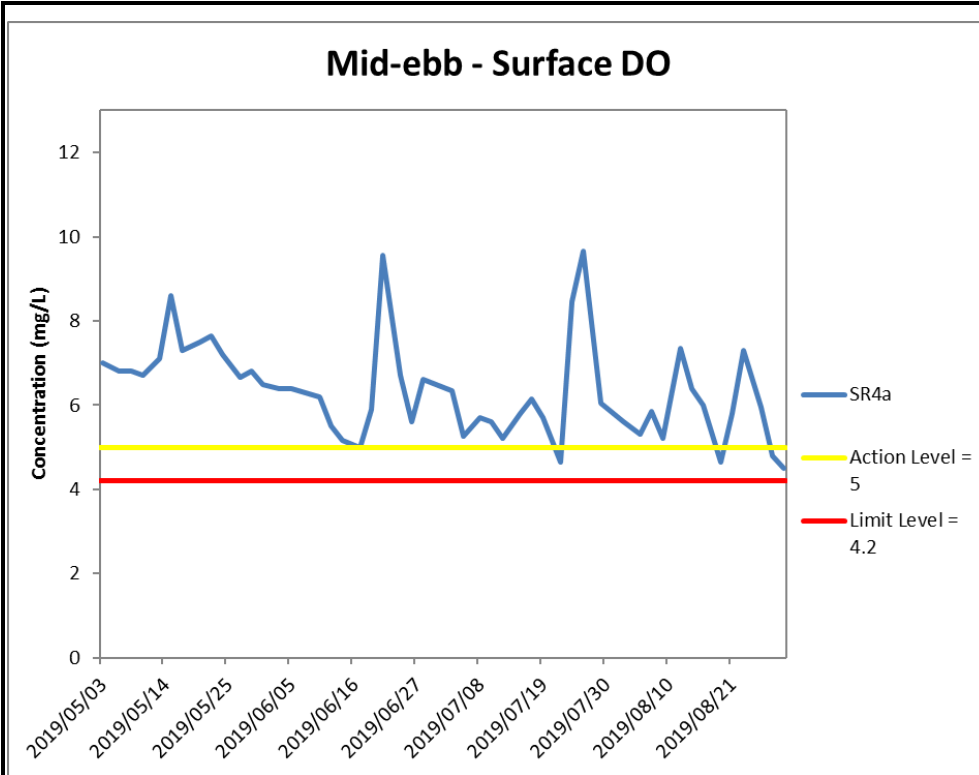


\*Exceedances of Dissolved oxygen level are calculated based on average value of data from both Surface and Middle level, and bottom level separately.

**Figure J9 Impact Monitoring - Mean Level of Dissolved Oxygen (mg/L) in surface waters between 1 May 2019 and 31 August 2019 at SR4(N2). The weather conditions during the monitoring period varied mostly from sunny to cloudy. Major marine works included: Jetty Removal at Portion S-C, Seawall Modification Works at Portion S-B (1/5/2019 - 31/8/2019).**



Ref: 0212330\_Impact-WQM\_August2019\_graphs\_Rev a.xls

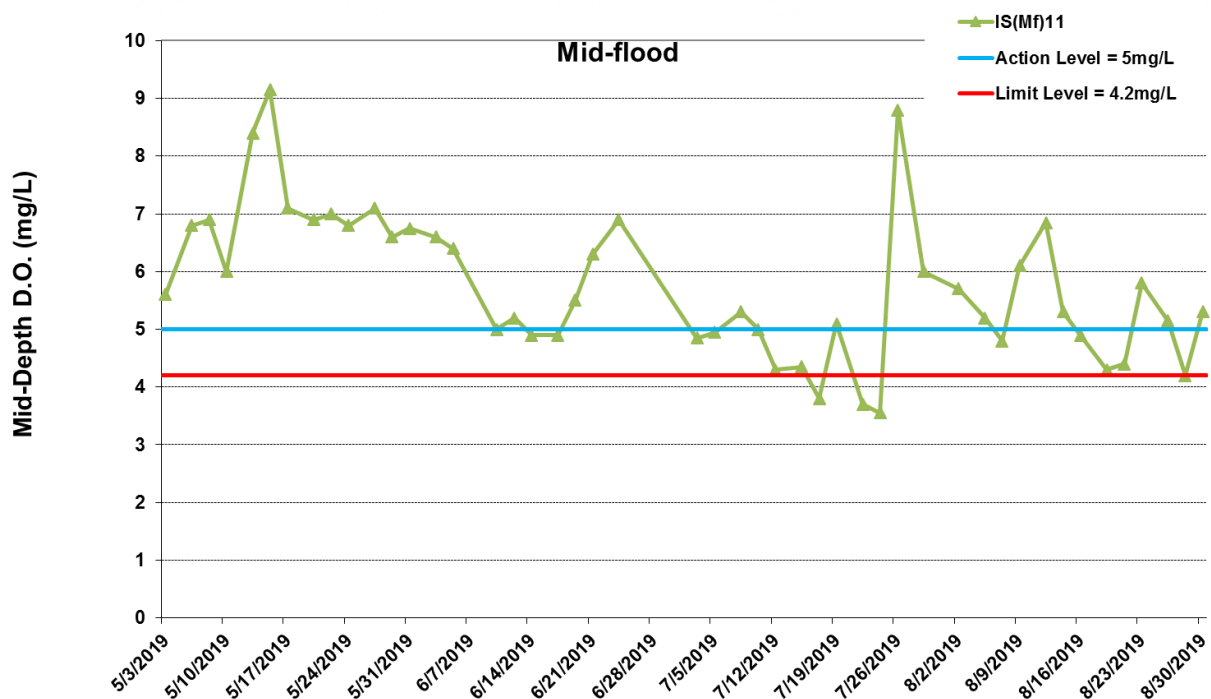
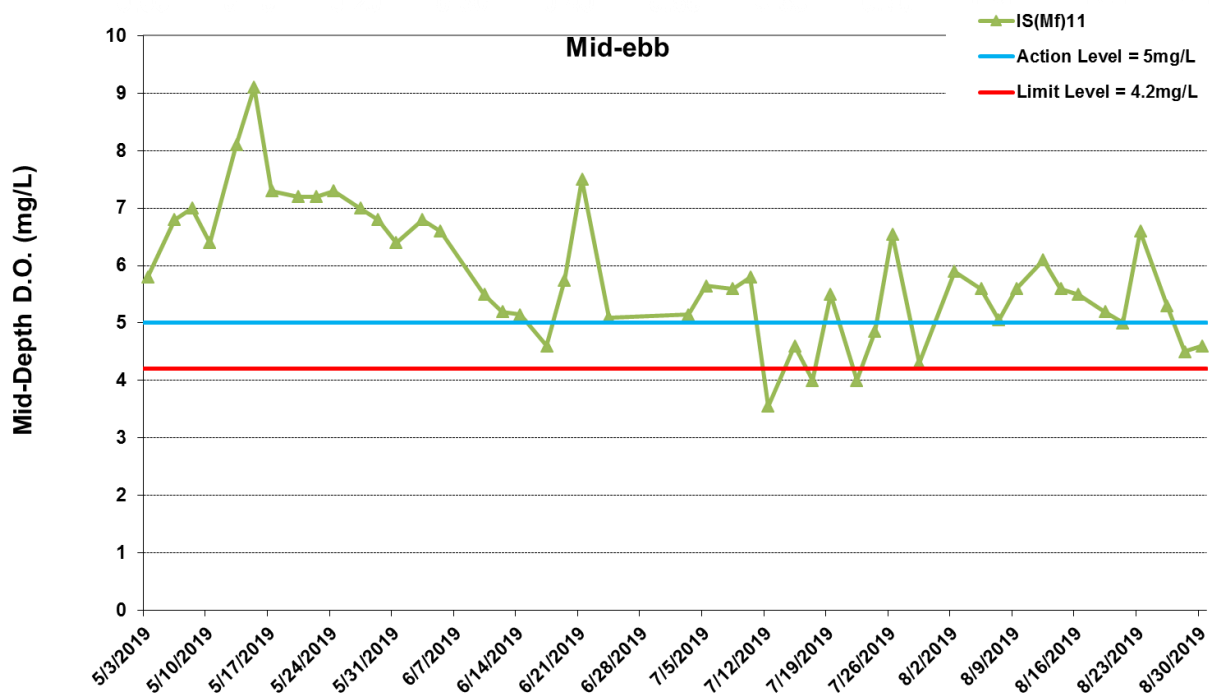


\*Exceedances of Dissolved oxygen level are calculated based on average value of data from both Surface and Middle level, and bottom level separately.

**Figure J10 Impact Monitoring - Mean Level of Dissolved Oxygen (mg/L) in surface waters between 1 May 2019 and 31 August 2019 at SR4a. The weather conditions during the monitoring period varied mostly from sunny to cloudy. Major marine works included: Jetty Removal at Portion S-C, Seawall Modification Works at Portion S-B (1/5/2019 - 31/8/2019).**



Ref: 0212330\_Impact-WQM\_August2019\_graphs\_Rev a.xls



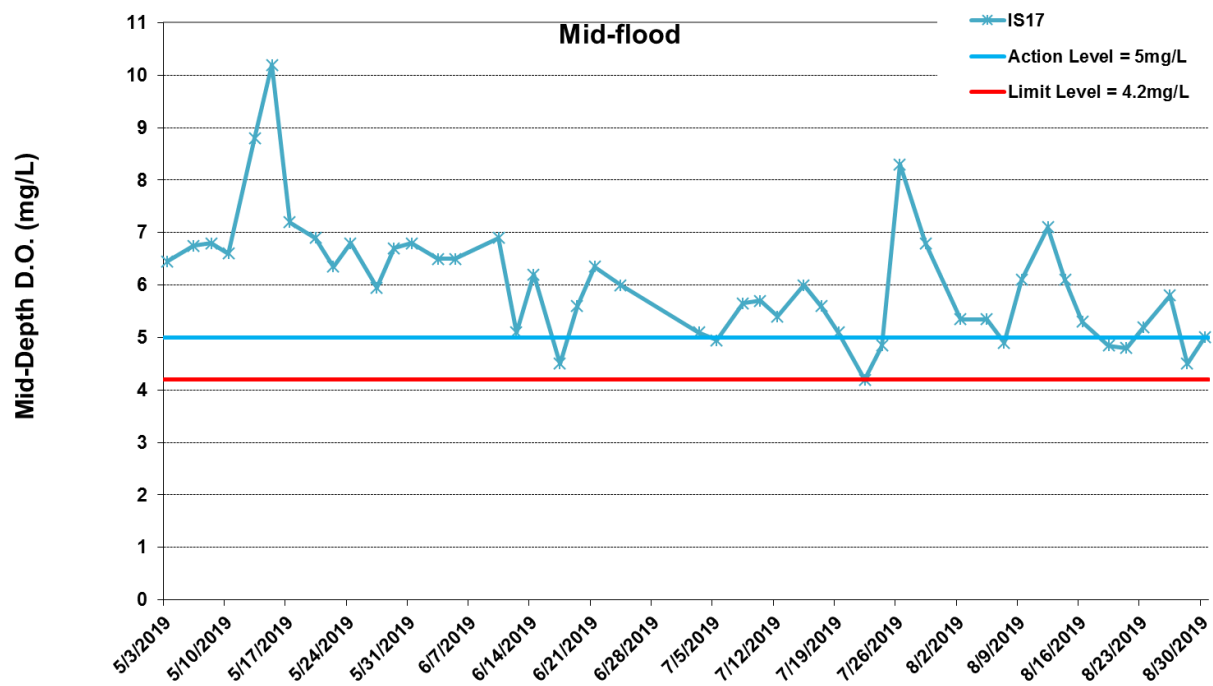
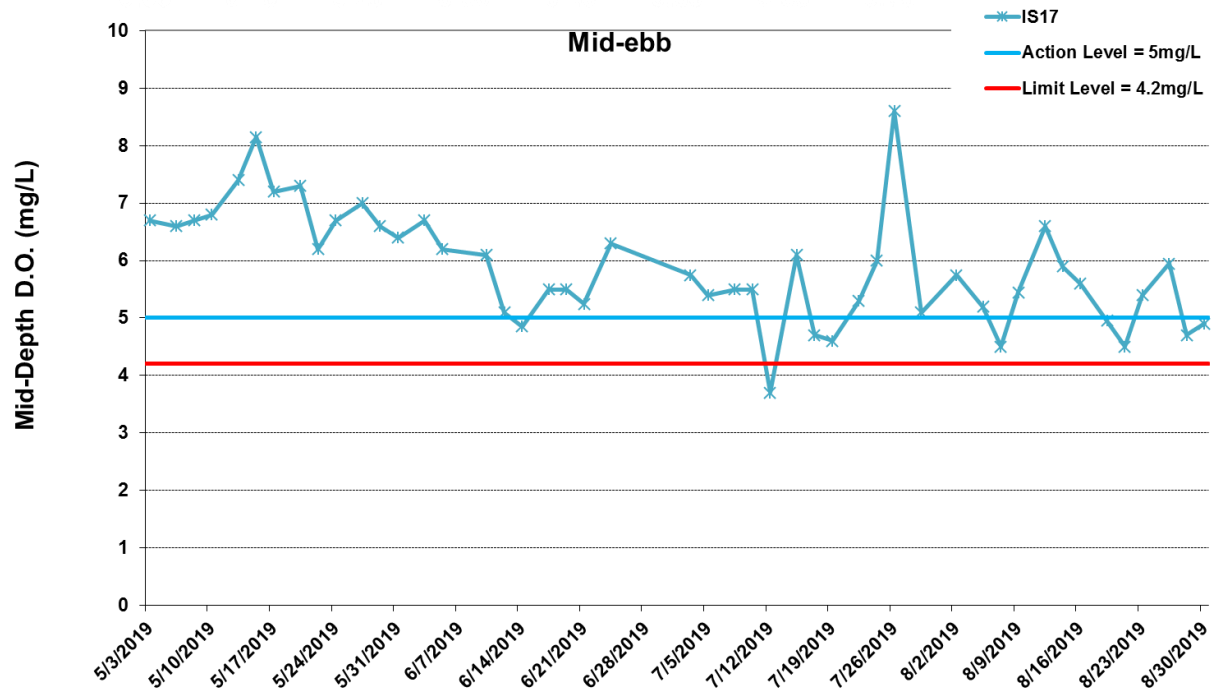
\* The AL/LL for WQM stations, IS(Mf)11, IS17 and SR7, are adopted from HZMB HKBCF project.

\*No data for Stations SR7 due to shallow water depth (< 6m).

\*Exceedances of Dissolved oxygen level are calculated based on average value of data from both Surface and Middle level, and bottom level separately.

**Figure J11 Impact Monitoring - Mean Level of Dissolved Oxygen (mg/L) in mid-depth waters between 1 May 2019 and 31 August 2019 at IS(Mf)11. The weather conditions during the monitoring period varied mostly from sunny to cloudy. Major marine works included: Jetty Removal at Portion S-C, Seawall Modification Works at Portion S-B (1/5/2019 - 31/8/2019).**



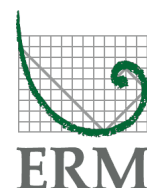


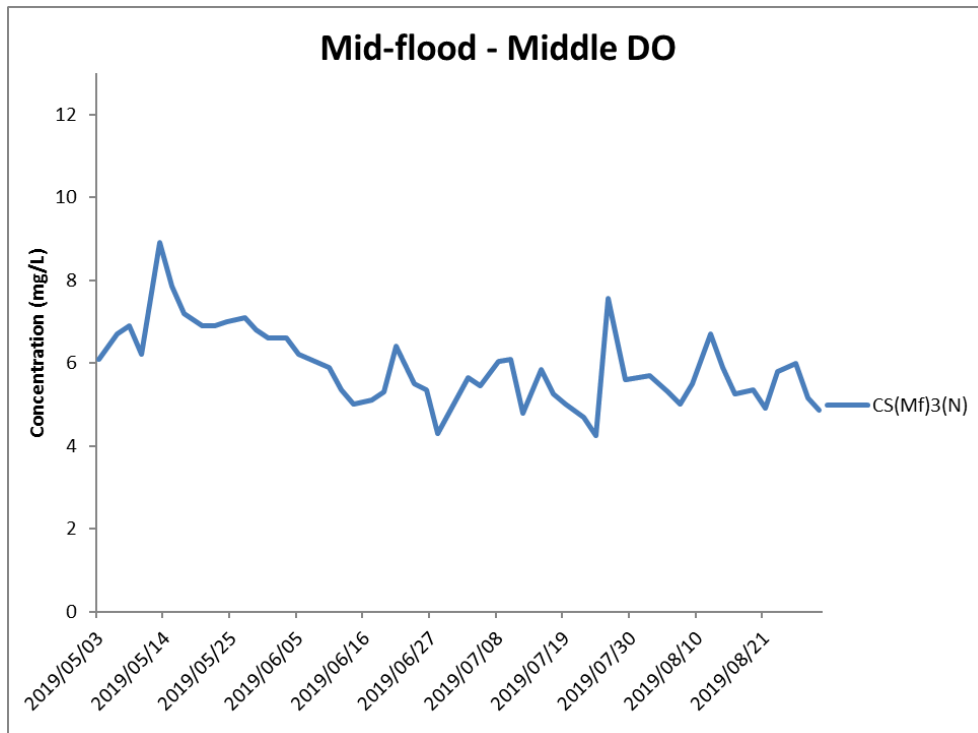
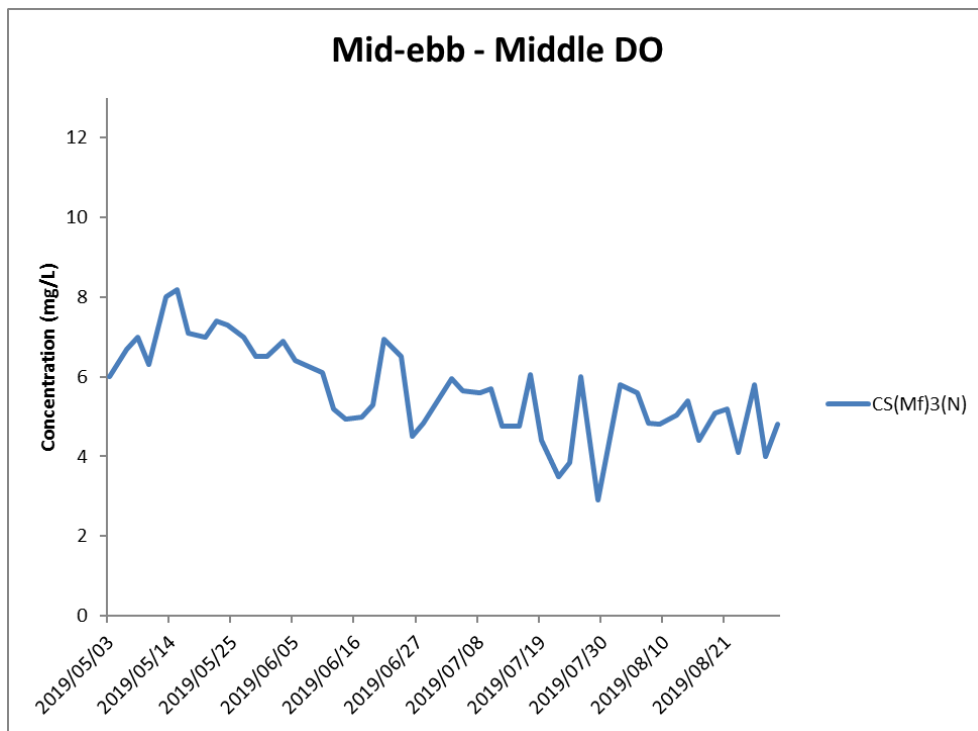
\* The AL/LL for WQM stations, IS(Mf)11, IS17 and SR7, are adopted from HZMB HKBCF project.

\*No data for Stations SR7 due to shallow water depth (< 6m).

\*Exceedances of Dissolved oxygen level are calculated based on average value of data from both Surface and Middle level, and bottom level separately.

**Figure J12 Impact Monitoring - Mean Level of Dissolved Oxygen (mg/L) in mid-depth waters between 1 May 2019 and 31 August 2019 at IS17. The weather conditions during the monitoring period varied mostly from sunny to cloudy. Major marine works included: Jetty Removal at Portion S-C, Seawall Modification Works at Portion S-B (1/5/2019 - 31/8/2019).**





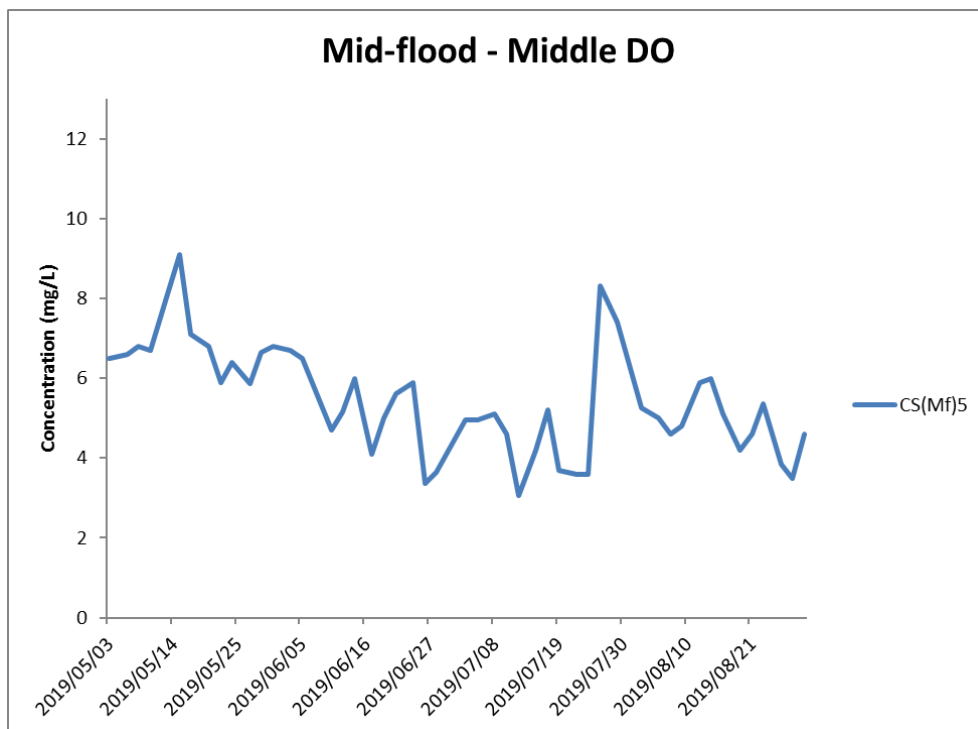
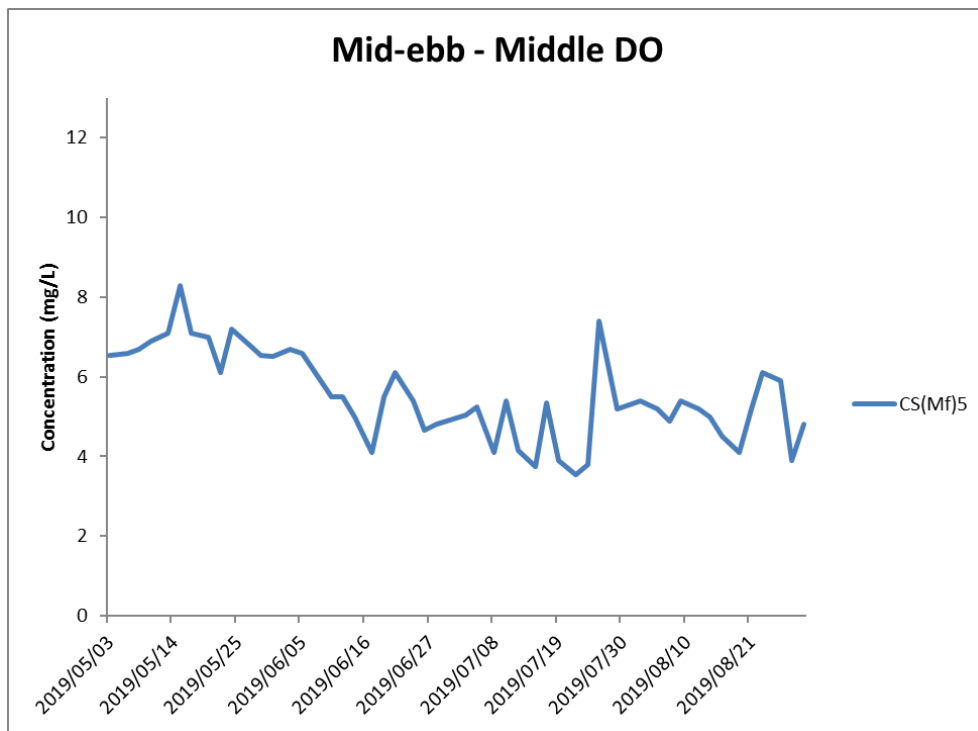
\*Exceedances of Dissolved oxygen level are calculated based on average value of data from both Surface and Middle level, and bottom level separately.

**Figure J13 Impact Monitoring - Mean Level of Dissolved Oxygen (mg/L) in mid-depth waters between 1 May 2019 and 31 August 2019 at CS(Mf)3(N).** The weather conditions during the monitoring period varied mostly from sunny to cloudy. Major marine works included: Jetty Removal at Portion S-C, Seawall Modification Works at Portion S-B (1/5/2019 - 31/8/2019).



Ref: 0212330\_Impact-WQM\_August2019\_graphs\_Rev a.xls



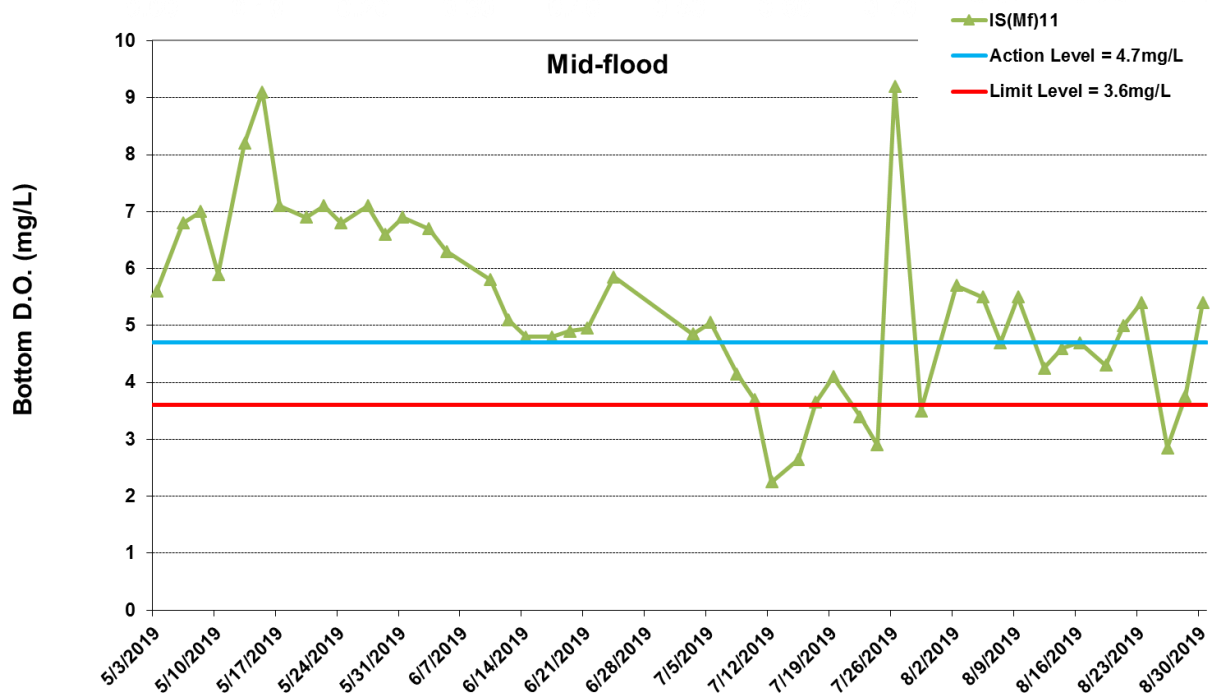
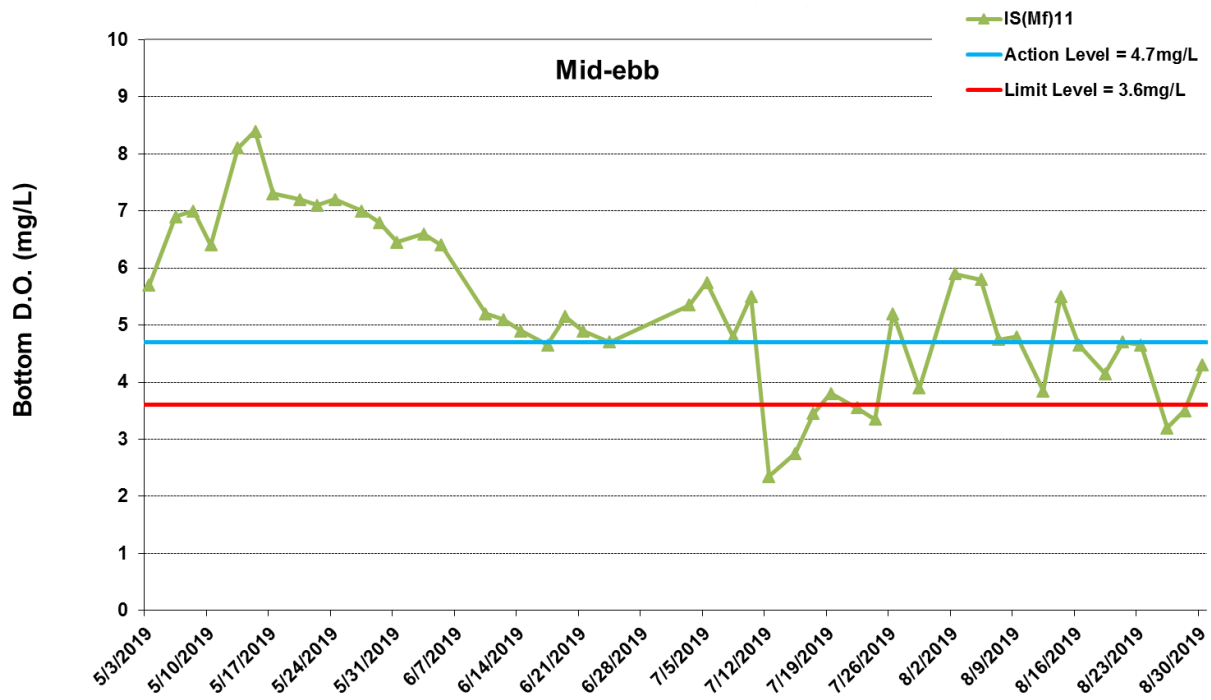


\*Exceedances of Dissolved oxygen level are calculated based on average value of data from both Surface and Middle level, and bottom level separately.

**Figure J14 Impact Monitoring - Mean Level of Dissolved Oxygen (mg/L) in mid-depth waters between 1 May 2019 and 31 August 2019 at CS(Mf)5. The weather conditions during the monitoring period varied mostly from sunny to cloudy. Major marine works included: Jetty Removal at Portion S-C, Seawall Modification Works at Portion S-B (1/5/2019 - 31/8/2019).**



Ref: 0212330\_Impact-WQM\_August2019\_graphs\_Rev a.xls



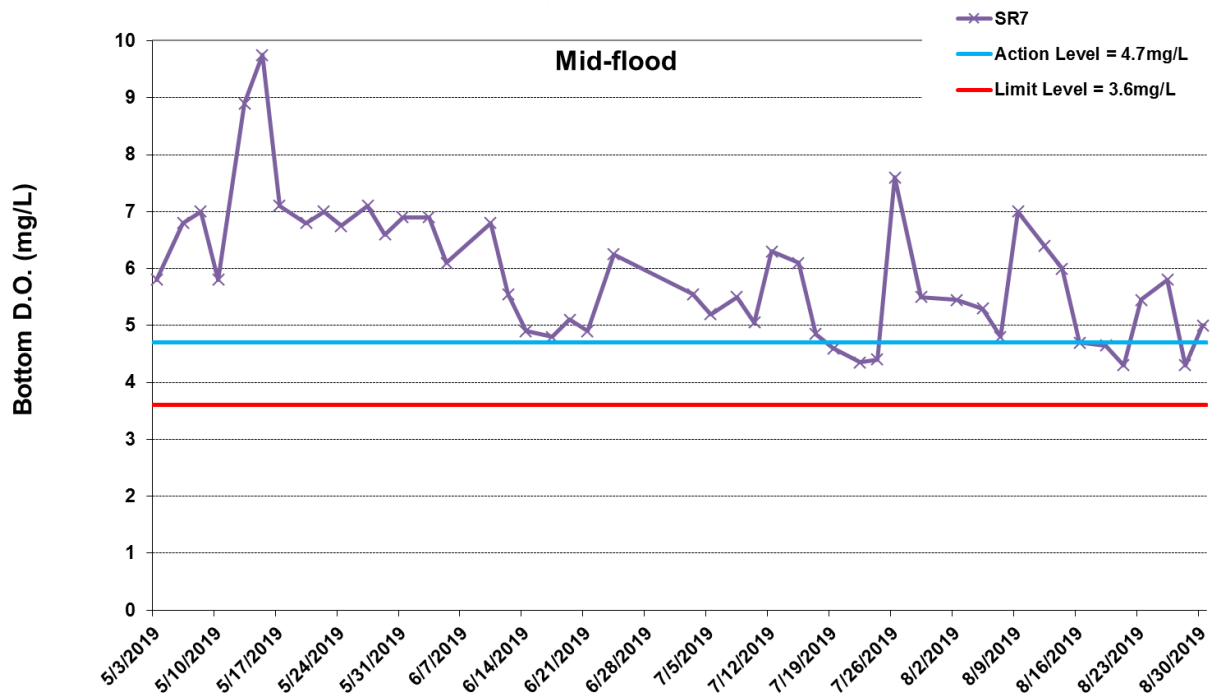
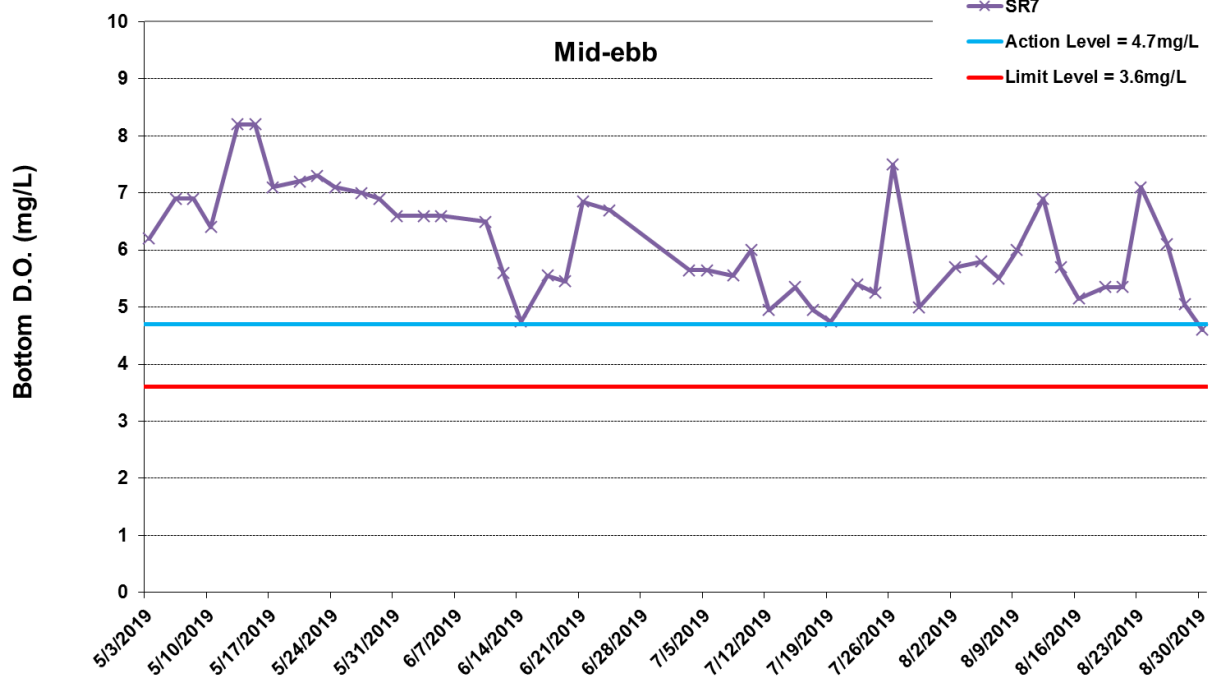
\* The AL/LL for WQM stations, IS(Mf)11, IS17 and SR7, are adopted from HZMB HKBCF project.

\*Exceedances of Dissolved oxygen level are calculated based on average value of data from both Surface and Middle level, and bottom level separately.

**Figure J15 Impact Monitoring - Mean Level of Dissolved Oxygen (mg/L) in bottom water between 1 May 2019 and 31 August 2019 at IS(Mf)11. The weather conditions during the monitoring period varied mostly from sunny to cloudy. Major marine works included: Jetty Removal at Portion S-C, Seawall Modification Works at Portion S-B (1/5/2019 - 31/8/2019).**



Ref: 0212330\_Impact-WQM\_August2019\_graphs\_Rev a.xls



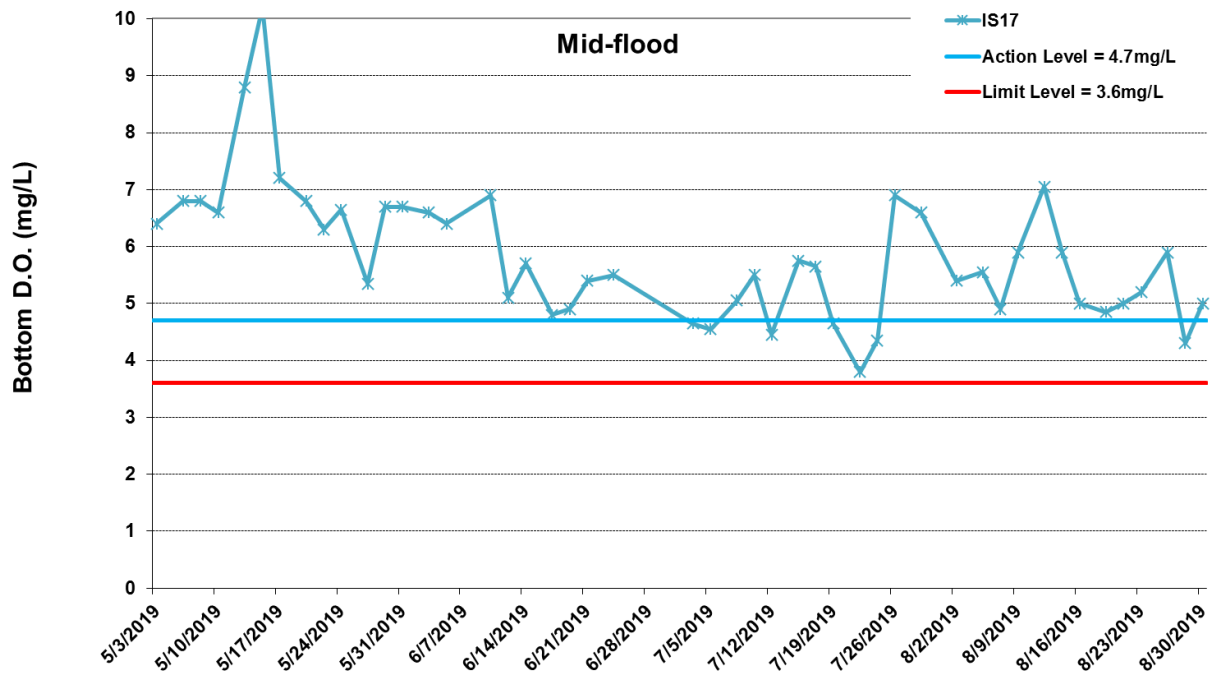
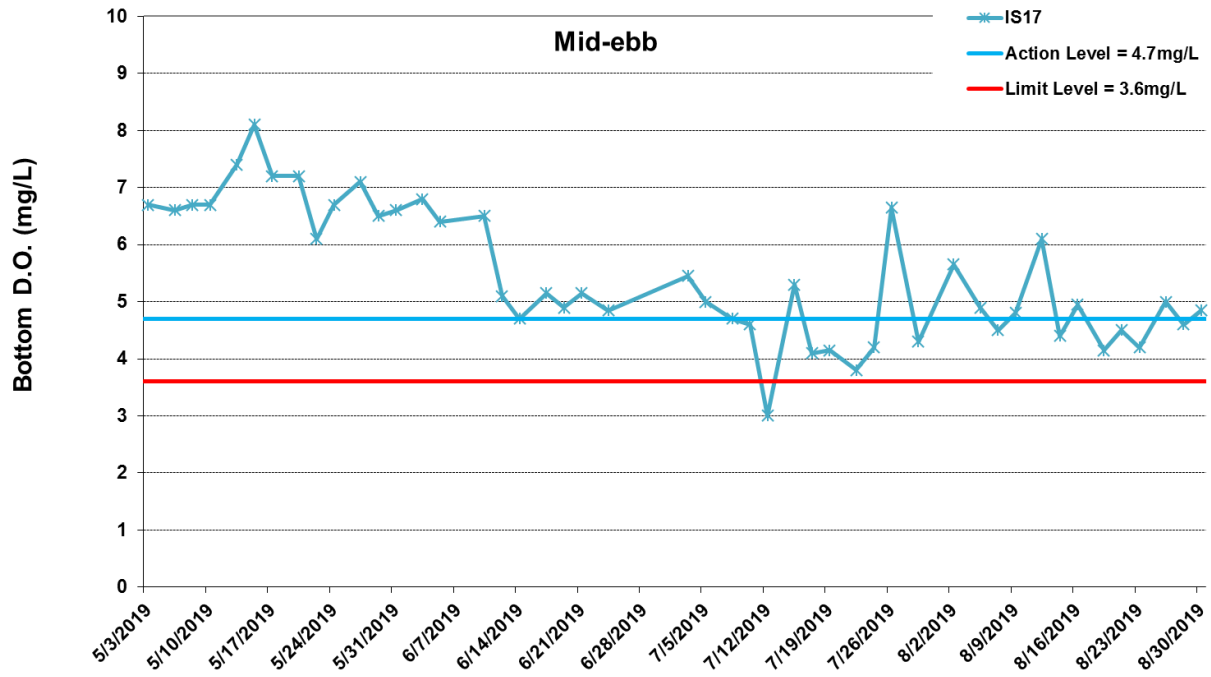
\* The AL/LL for WQM stations, IS(Mf)11, IS17 and SR7, are adopted from HZMB HKBCF project.

\*Exceedances of Dissolved oxygen level are calculated based on average value of data from both Surface and Middle level, and bottom level separately.

**Figure J16 Impact Monitoring - Mean Level of Dissolved Oxygen (mg/L) in bottom water between 1 May 2019 and 31 August 2019 at SR7. The weather conditions during the monitoring period varied mostly from sunny to cloudy. Major marine works included: Jetty Removal at Portion S-C, Seawall Modification Works at Portion S-B (1/5/2019 - 31/8/2019).**



Ref: 0212330\_Impact-WQM\_August2019\_graphs\_Rev a.xls

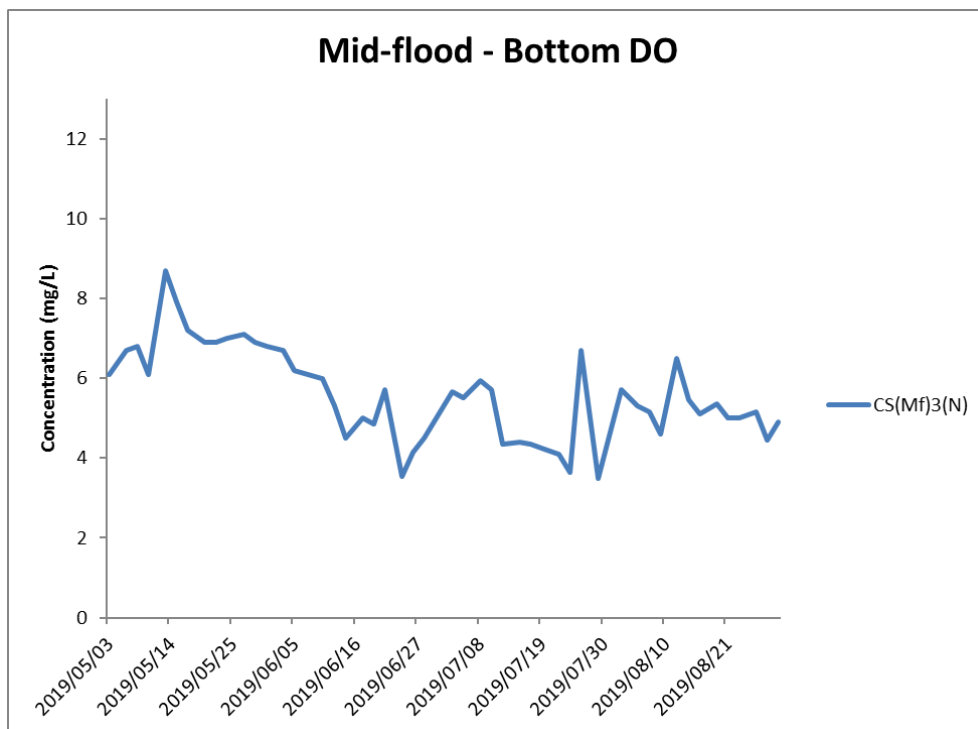
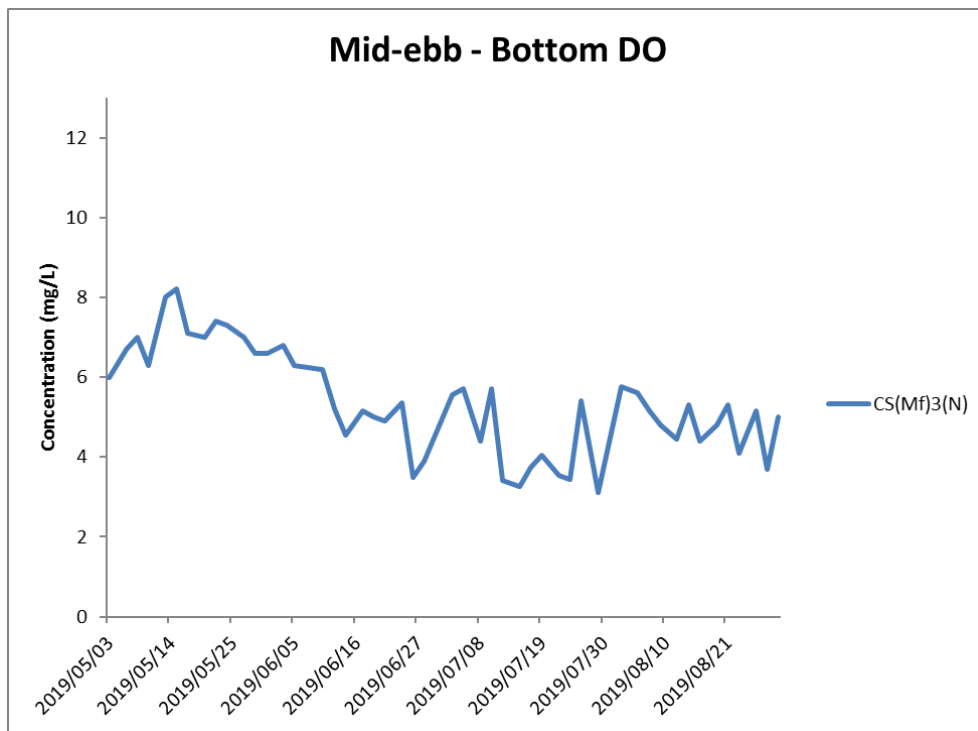


\* The AL/LL for WQM stations, IS(Mf)11, IS17 and SR7, are adopted from HZMB HKBCF project.

\*Exceedances of Dissolved oxygen level are calculated based on average value of data from both Surface and Middle level, and bottom level separately.

**Figure J17 Impact Monitoring - Mean Level of Dissolved Oxygen (mg/L) in bottom water between 1 May 2019 and 31 August 2019 at IS17. The weather conditions during the monitoring period varied mostly from sunny to cloudy. Major marine works included: Jetty Removal at Portion S-C, Seawall Modification Works at Portion S-B (1/5/2019 - 31/8/2019).**

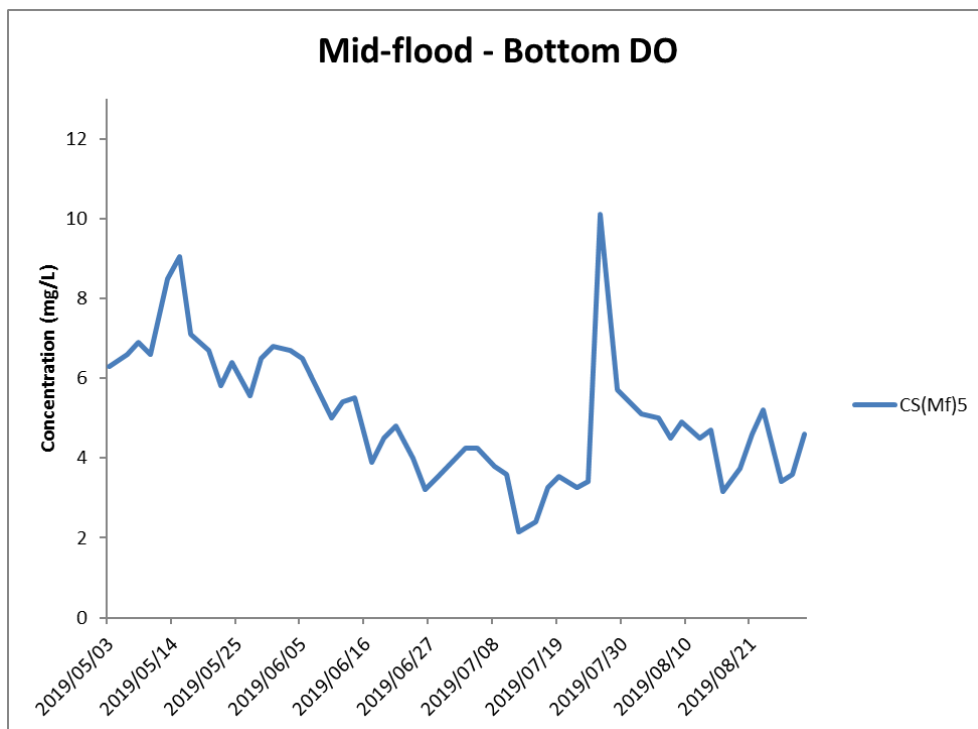
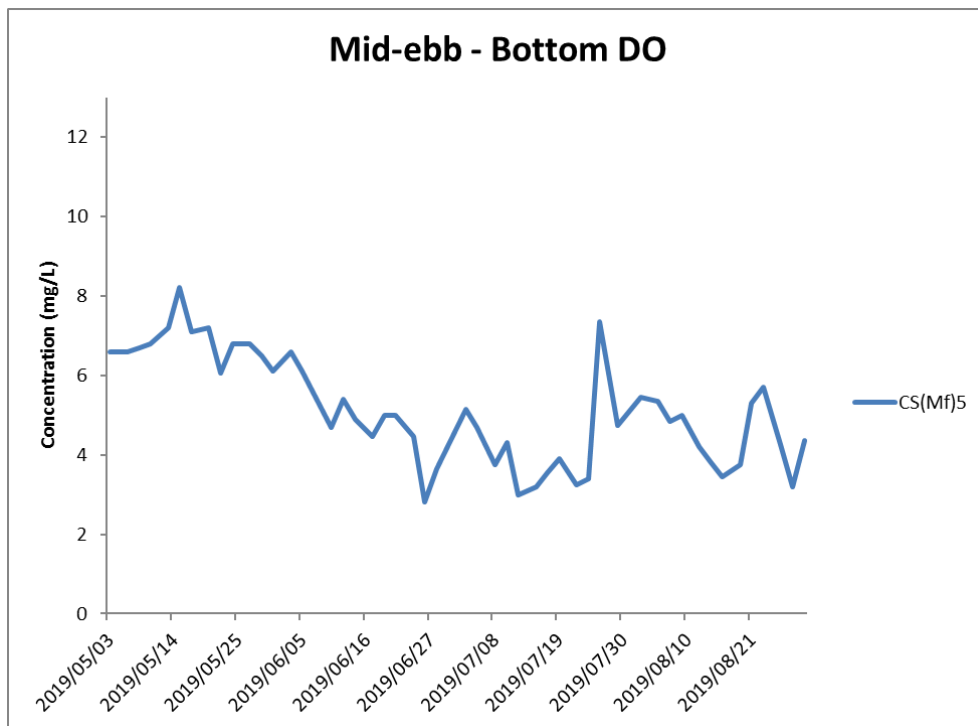




\*Exceedances of Dissolved oxygen level are calculated based on average value of data from both Surface and Middle level, and bottom level separately.

**Figure J18 Impact Monitoring - Mean Level of Dissolved Oxygen (mg/L) in bottom water between 1 May 2019 and 31 August 2019 at CS(Mf)3(N).** The weather conditions during the monitoring period varied mostly from sunny to cloudy. Major marine works included: Jetty Removal at Portion S-C, Seawall Modification Works at Portion S-B (1/5/2019 - 31/8/2019).

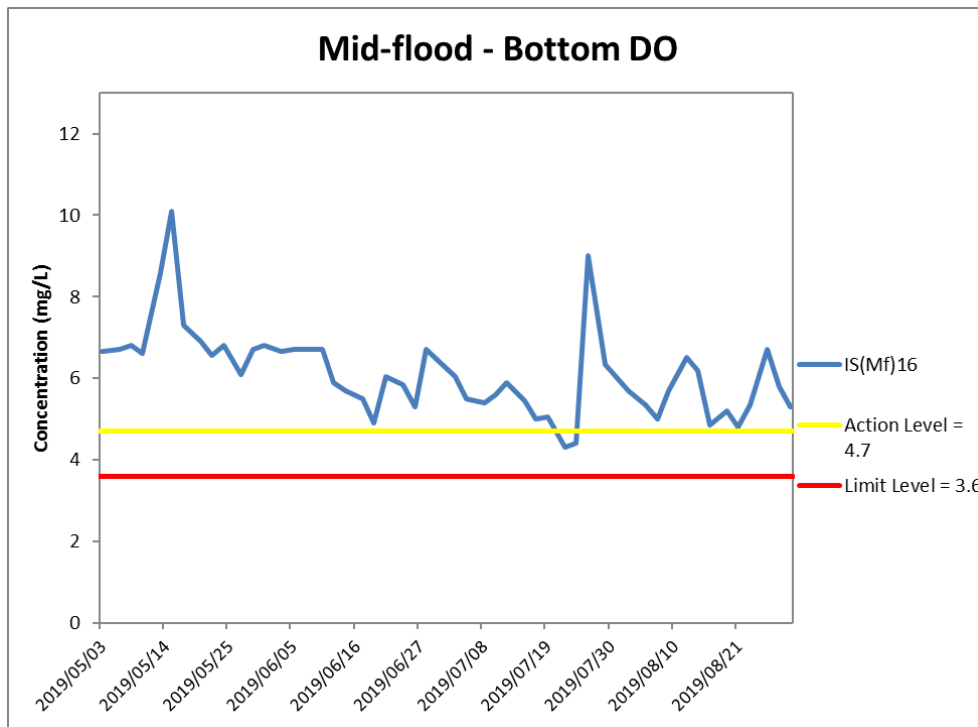
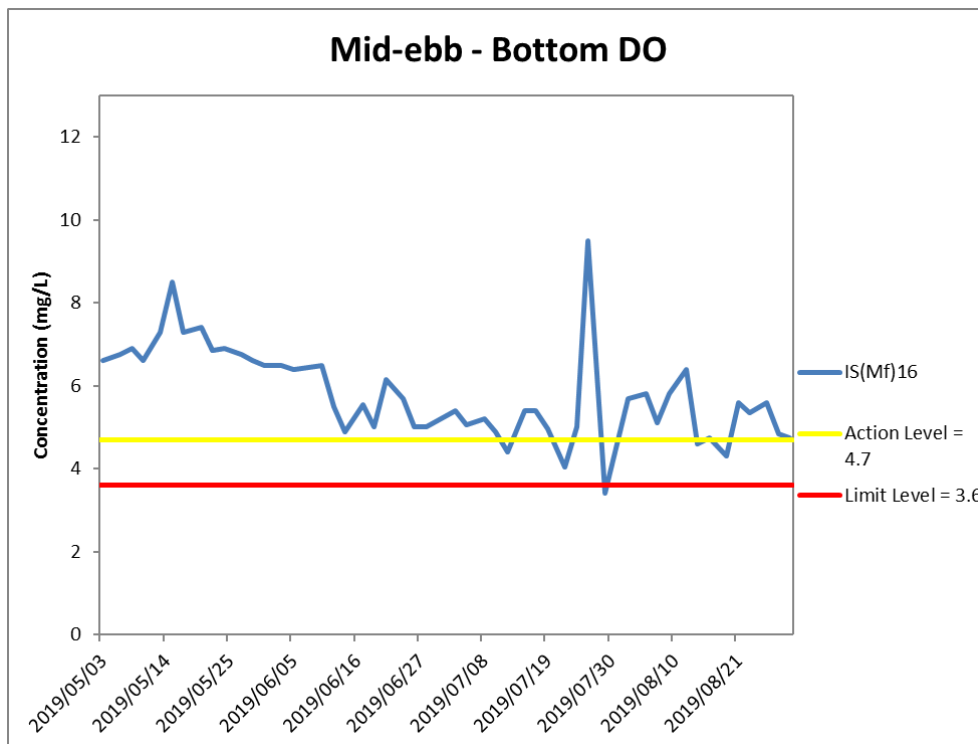




\*Exceedances of Dissolved oxygen level are calculated based on average value of data from both Surface and Middle level, and bottom level separately.

**Figure J19 Impact Monitoring - Mean Level of Dissolved Oxygen (mg/L) in bottom water between 1 May 2019 and 31 August 2019 at CS(Mf)5. The weather conditions during the monitoring period varied mostly from sunny to cloudy. Major marine works included: Jetty Removal at Portion S-C, Seawall Modification Works at Portion S-B (1/5/2019 - 31/8/2019).**



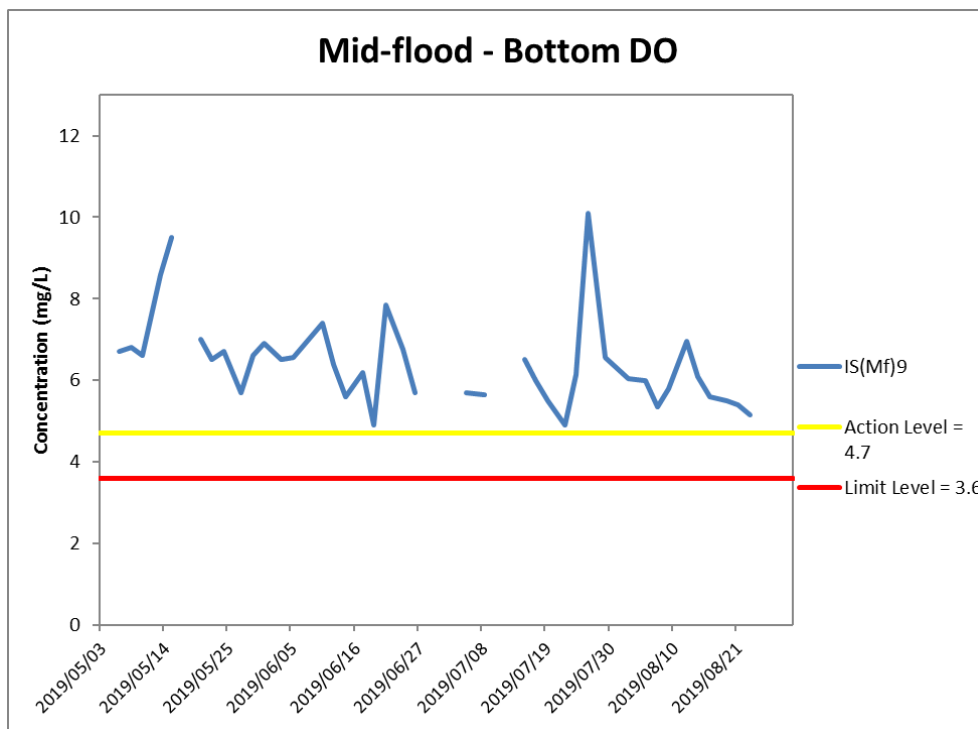
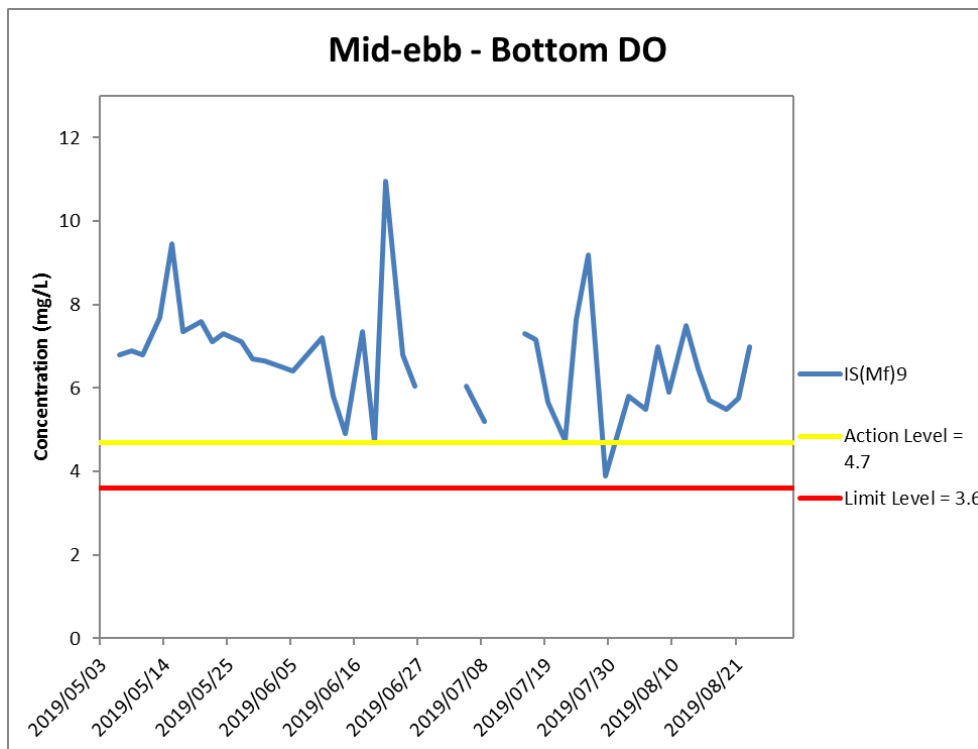


\*Exceedances of Dissolved oxygen level are calculated based on average value of data from both Surface and Middle level, and bottom level separately.

**Figure J20 Impact Monitoring - Mean Level of Dissolved Oxygen (mg/L) in bottom water between 1 May 2019 and 31 August 2019 at IS(Mf)16. The weather conditions during the monitoring period varied mostly from sunny to cloudy. Major marine works included: Jetty Removal at Portion S-C, Seawall Modification Works at Portion S-B (1/5/2019 - 31/8/2019).**



Ref: 0212330\_Impact-WQM\_August2019\_graphs\_Rev a.xls



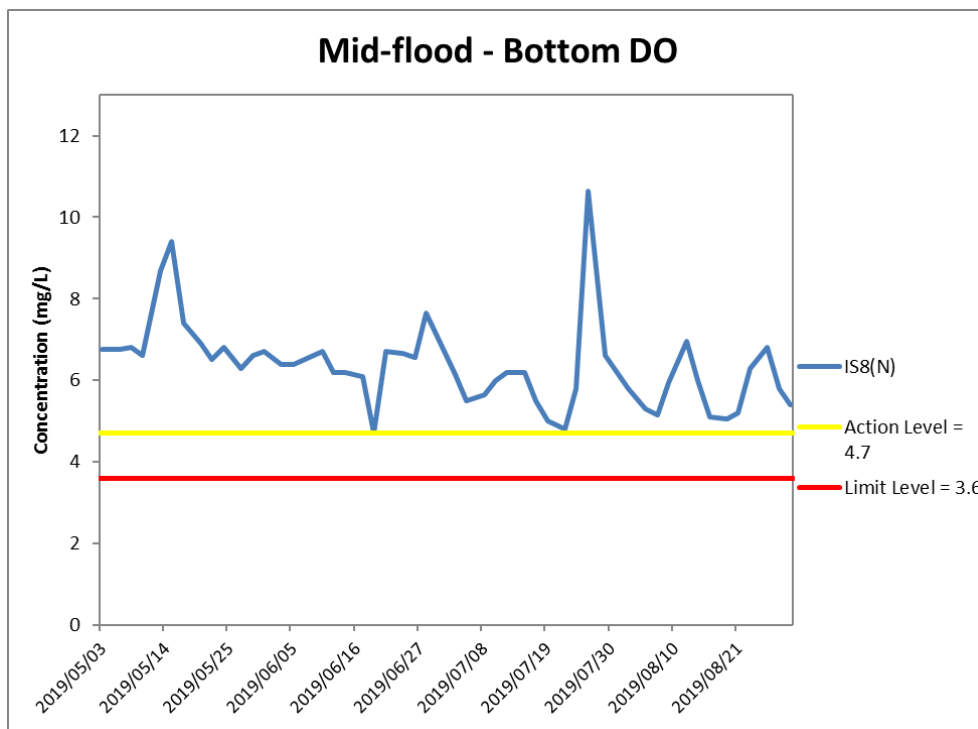
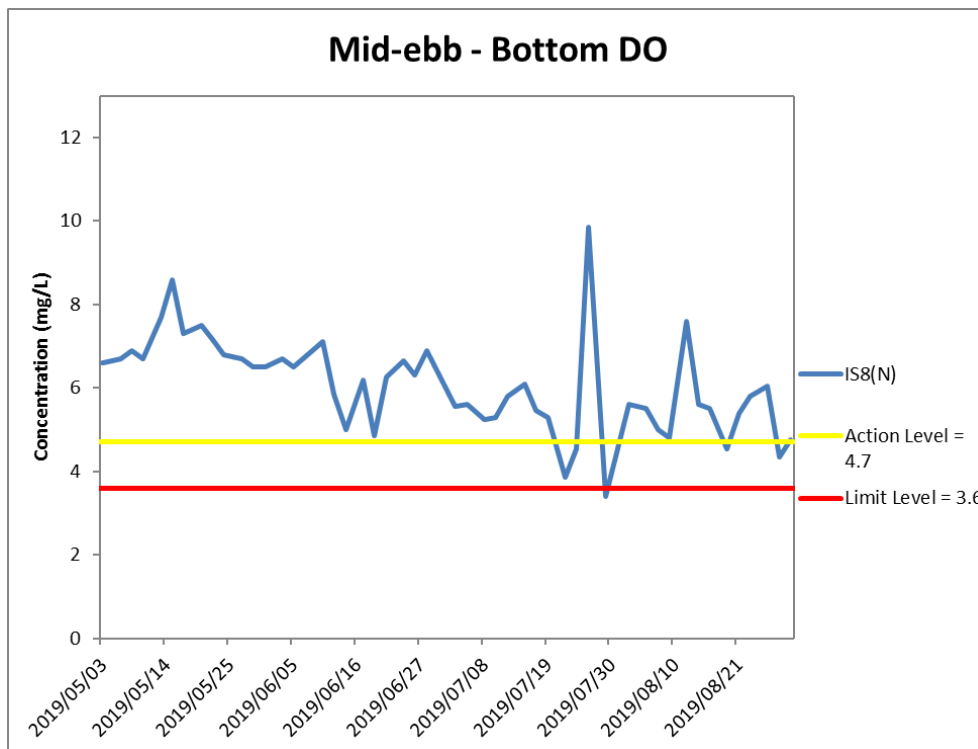
\*Exceedances of Dissolved oxygen level are calculated based on average value of data from both Surface and Middle level, and bottom level separately.

**Figure J21 Impact Monitoring - Mean Level of Dissolved Oxygen (mg/L) in bottom water between 1 May 2019 and 31 August 2019 at IS(Mf)9. The weather conditions during the monitoring period varied mostly from sunny to cloudy. Major marine works included: Jetty Removal at Portion S-C, Seawall Modification Works at Portion S-B (1/5/2019 - 31/8/2019).**



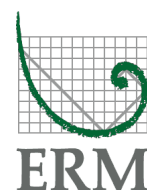
Ref: 0212330\_Impact-WQM\_August2019\_graphs\_Rev a.xls

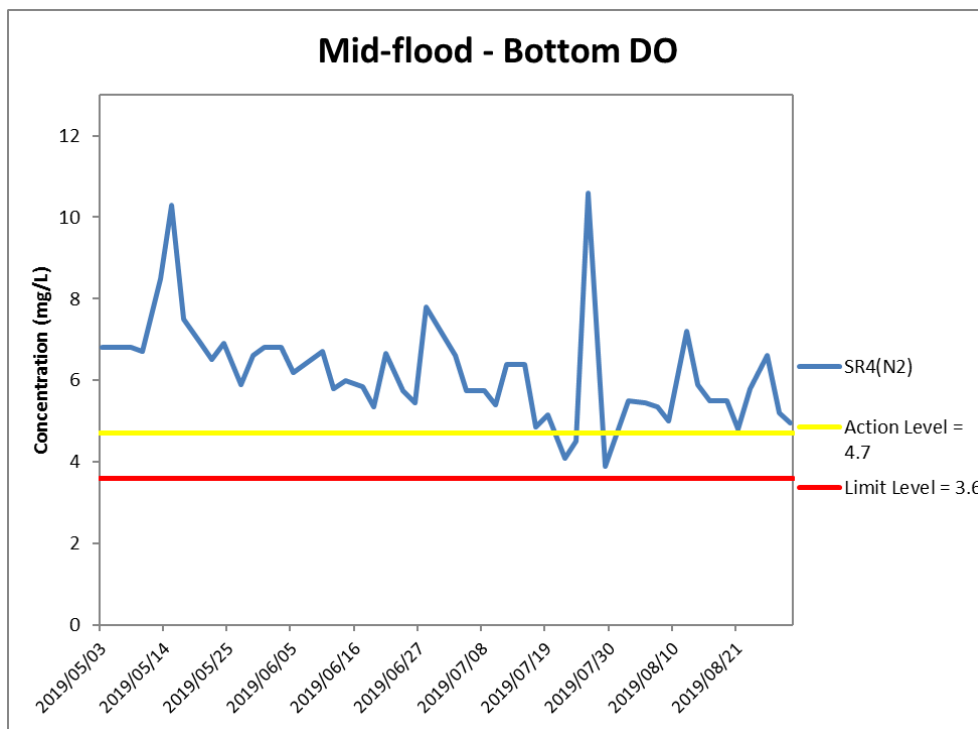
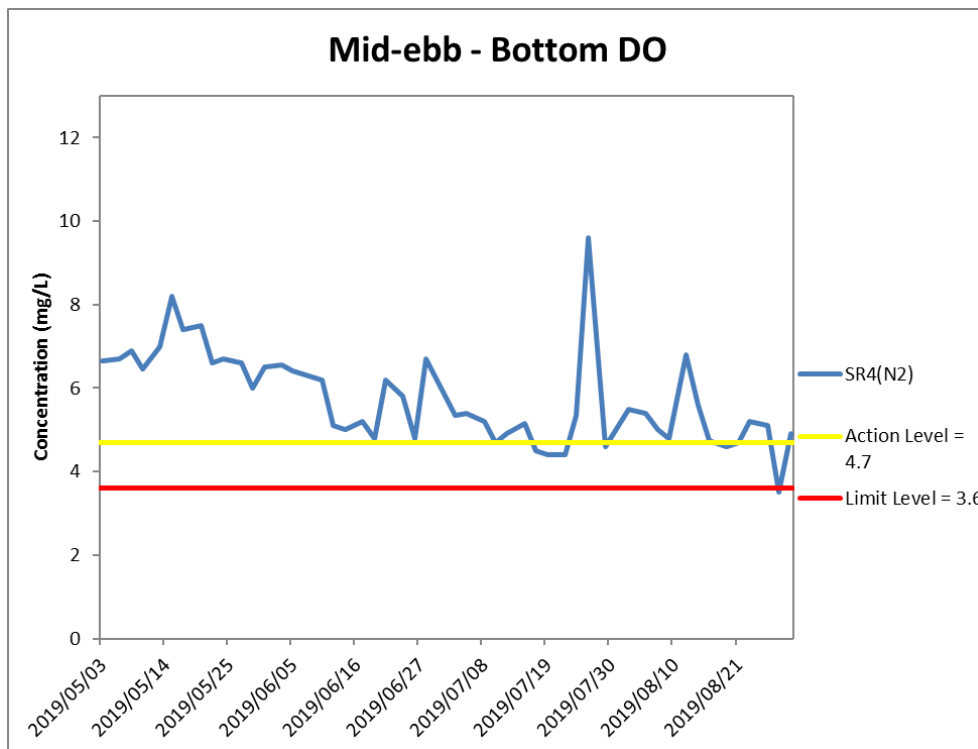




\*Exceedances of Dissolved oxygen level are calculated based on average value of data from both Surface and Middle level, and bottom level separately.

**Figure J22 Impact Monitoring - Mean Level of Dissolved Oxygen (mg/L) in bottom water between 1 May 2019 and 31 August 2019 at IS8(N). The weather conditions during the monitoring period varied mostly from sunny to cloudy. Major marine works included: Jetty Removal at Portion S-C, Seawall Modification Works at Portion S-B (1/5/2019 - 31/8/2019).**



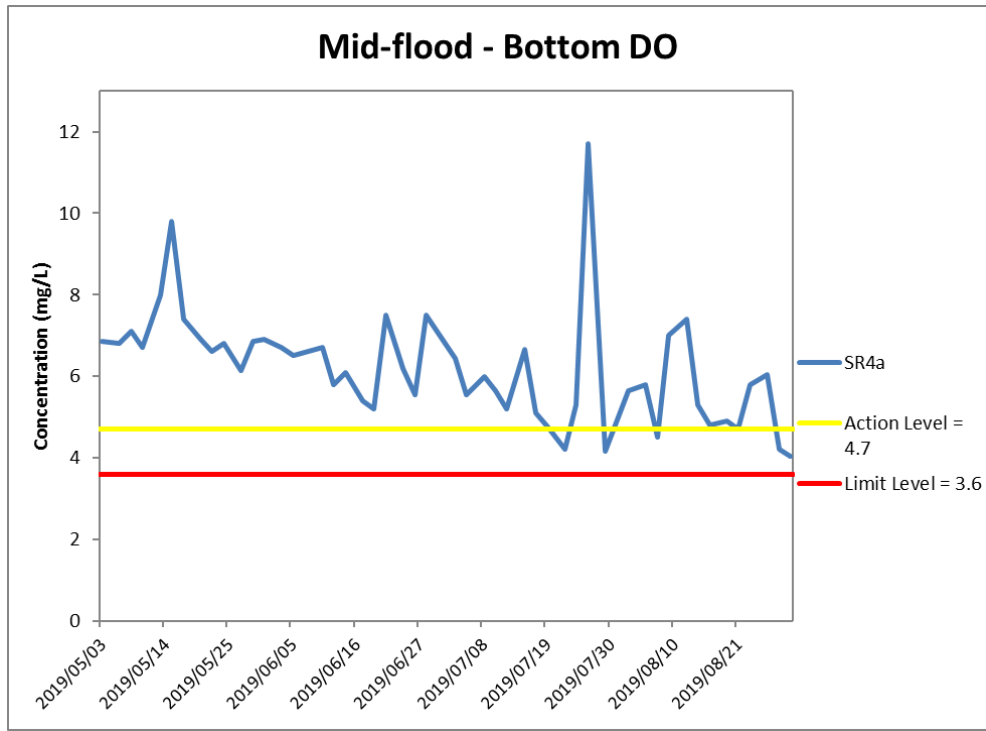
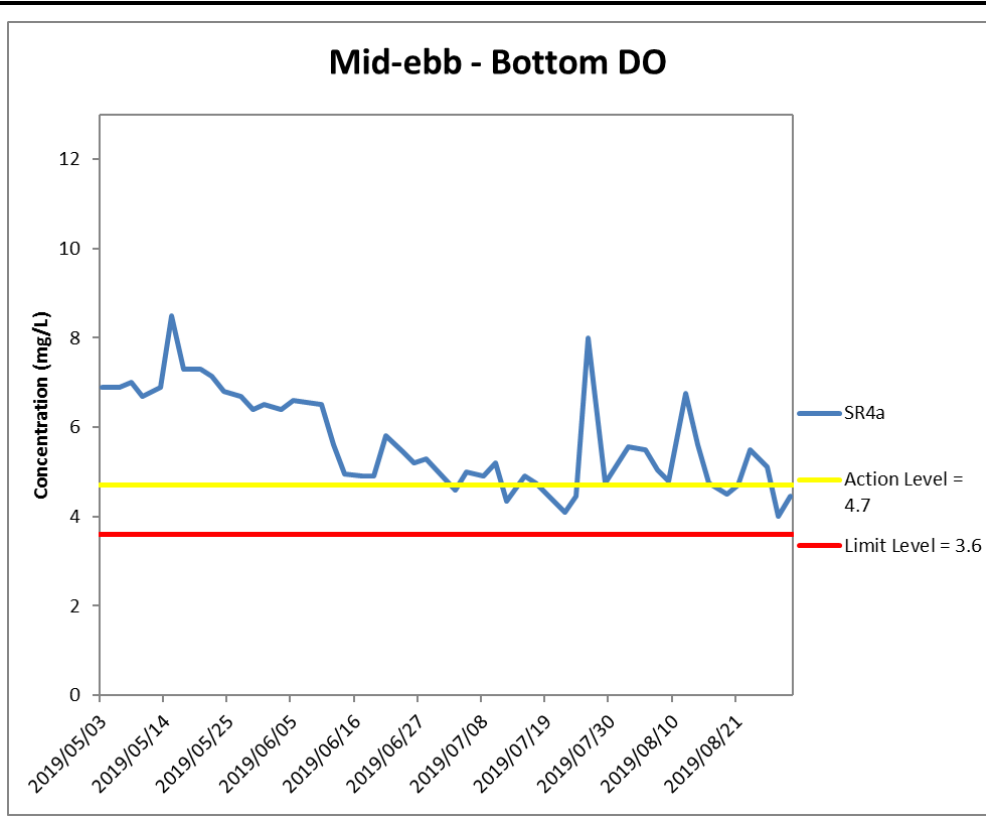


\*Exceedances of Dissolved oxygen level are calculated based on average value of data from both Surface and Middle level, and bottom level separately.

**Figure J23 Impact Monitoring - Mean Level of Dissolved Oxygen (mg/L) in bottom water between 1 May 2019 and 31 August 2019 at SR4(N2). The weather conditions during the monitoring period varied mostly from sunny to cloudy. Major marine works included: Jetty Removal at Portion S-C, Seawall Modification Works at Portion S-B (1/5/2019 - 31/8/2019).**



Ref: 0212330\_Impact-WQM\_August2019\_graphs\_Rev a.xls

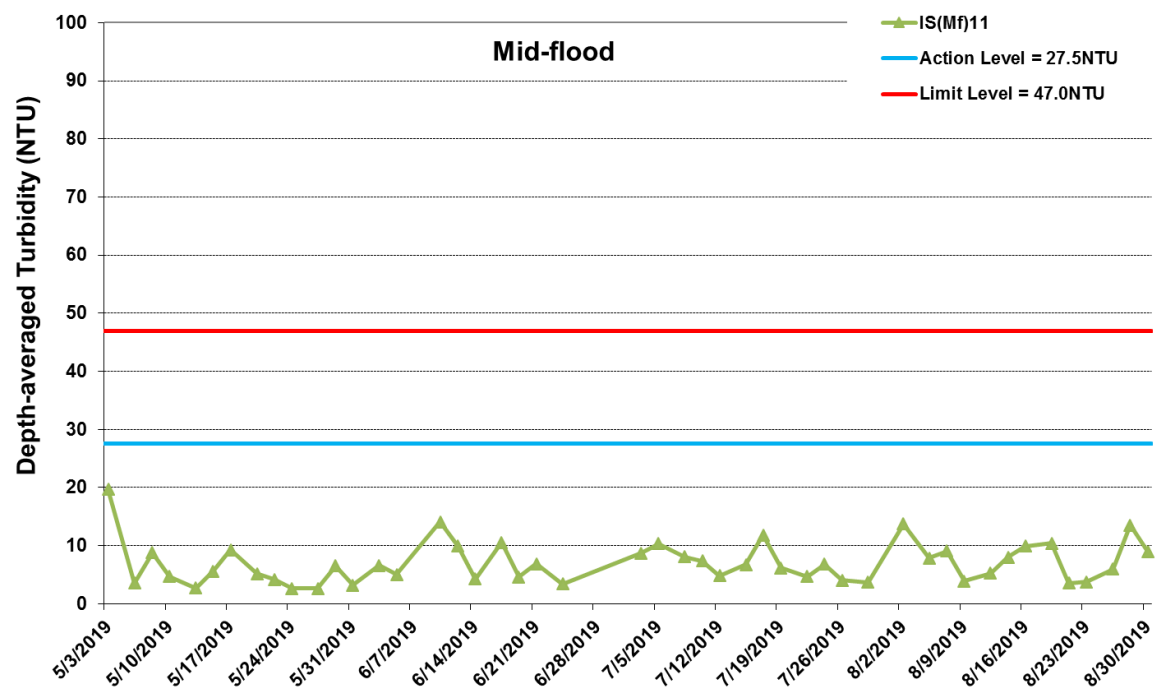
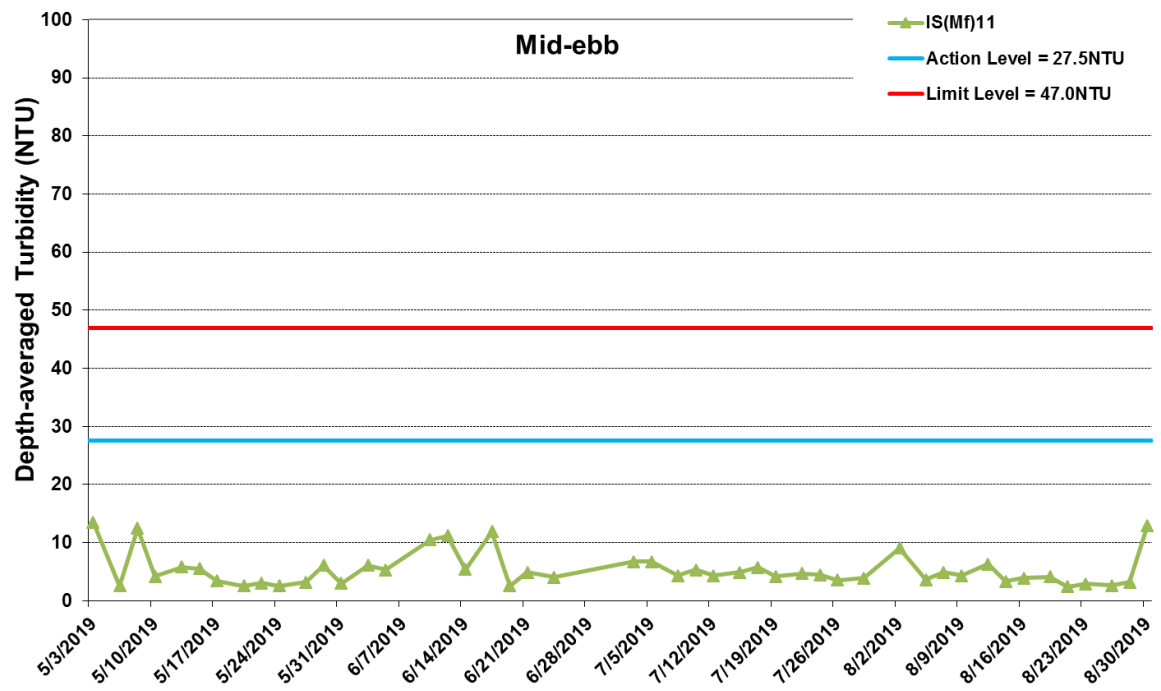


\*Exceedances of Dissolved oxygen level are calculated based on average value of data from both Surface and Middle level, and bottom level separately.

**Figure J24 Impact Monitoring - Mean Level of Dissolved Oxygen (mg/L) in bottom water between 1 May 2019 and 31 August 2019 at SR4a. The weather conditions during the monitoring period varied mostly from sunny to cloudy. Major marine works included: Jetty Removal at Portion S-C, Seawall Modification Works at Portion S-B (1/5/2019 - 31/8/2019).**



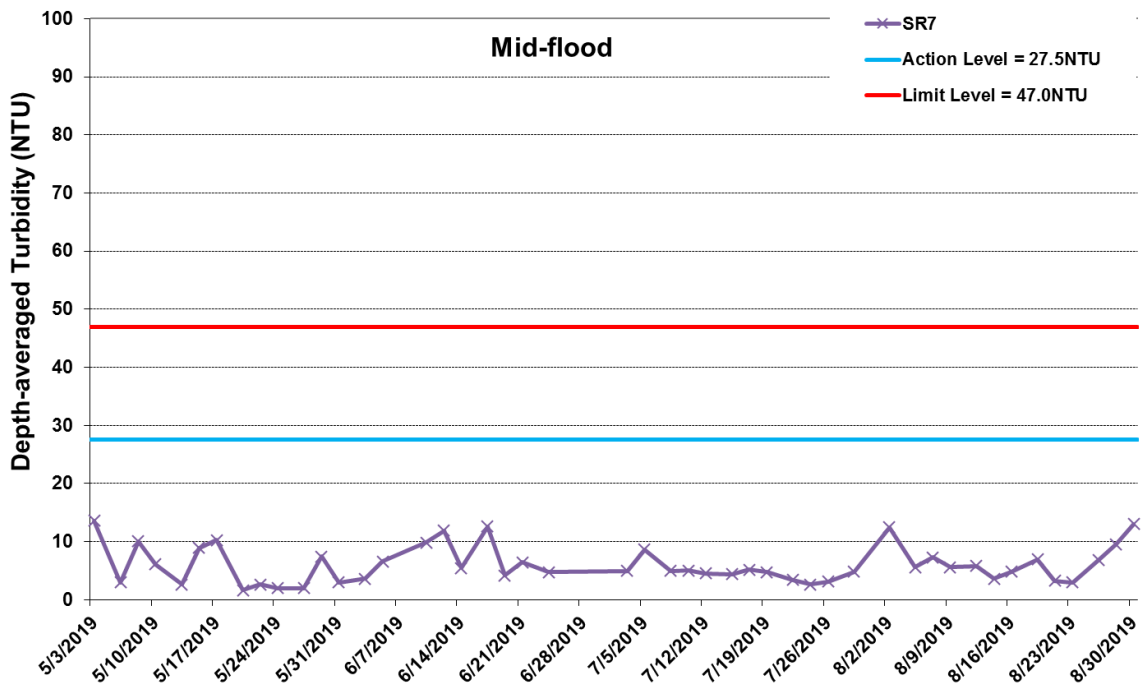
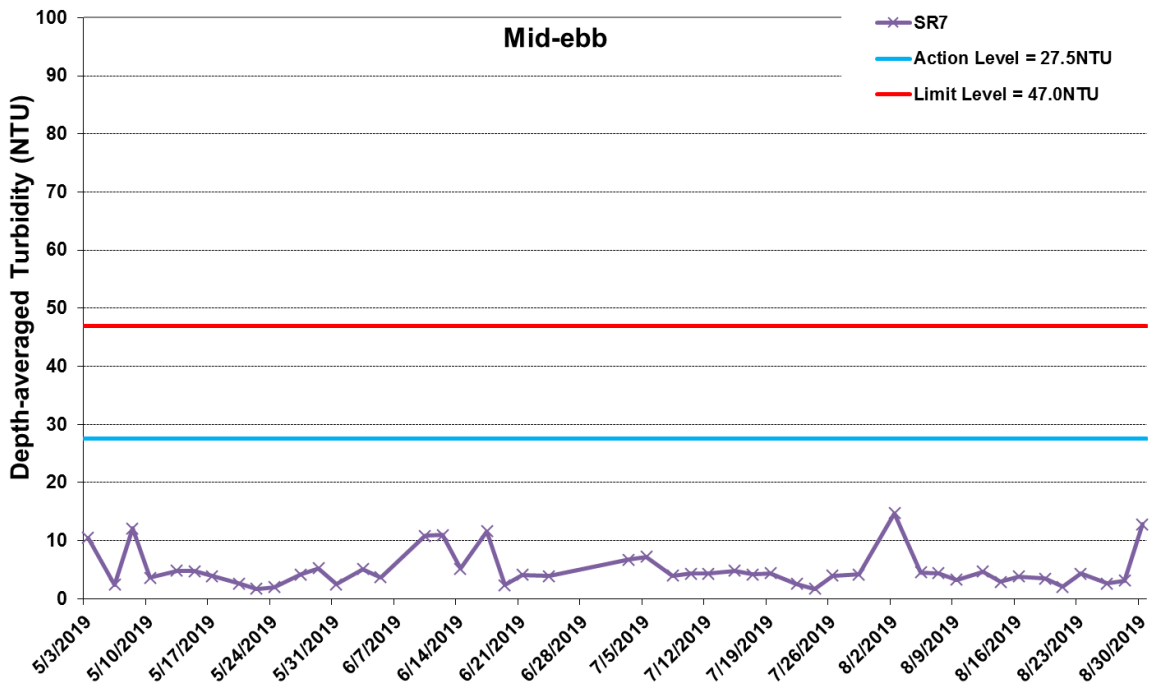
Ref: 0212330\_Impact-WQM\_August2019\_graphs\_Rev a.xls



\* The AL/LL for WQM stations, IS(Mf)11, IS17 and SR7, are adopted from HZMB HKBCF project.

Figure J25 Impact Monitoring - Mean Depth-averaged Level of Turbidity (NTU) between 1 May 2019 and 31 August 2019 at IS(Mf)11. The weather conditions during the monitoring period varied mostly from sunny to cloudy. Major marine works included: Jetty Removal at Portion S-C, Seawall Modification Works at Portion S-B (1/5/2019 - 31/8/2019).

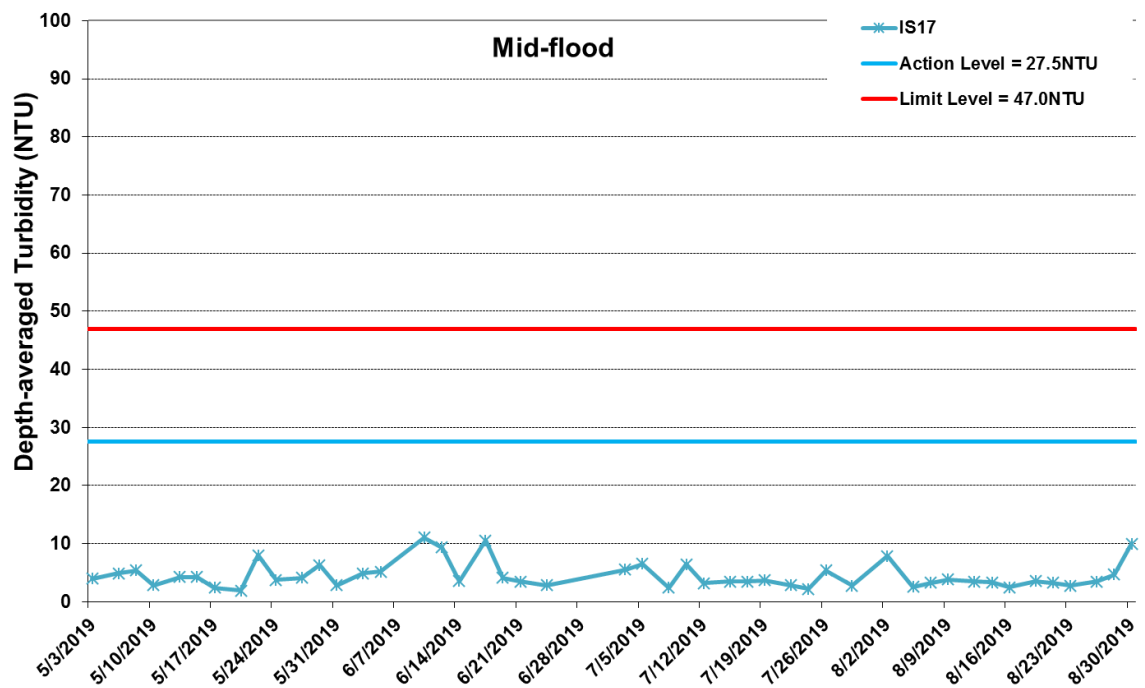
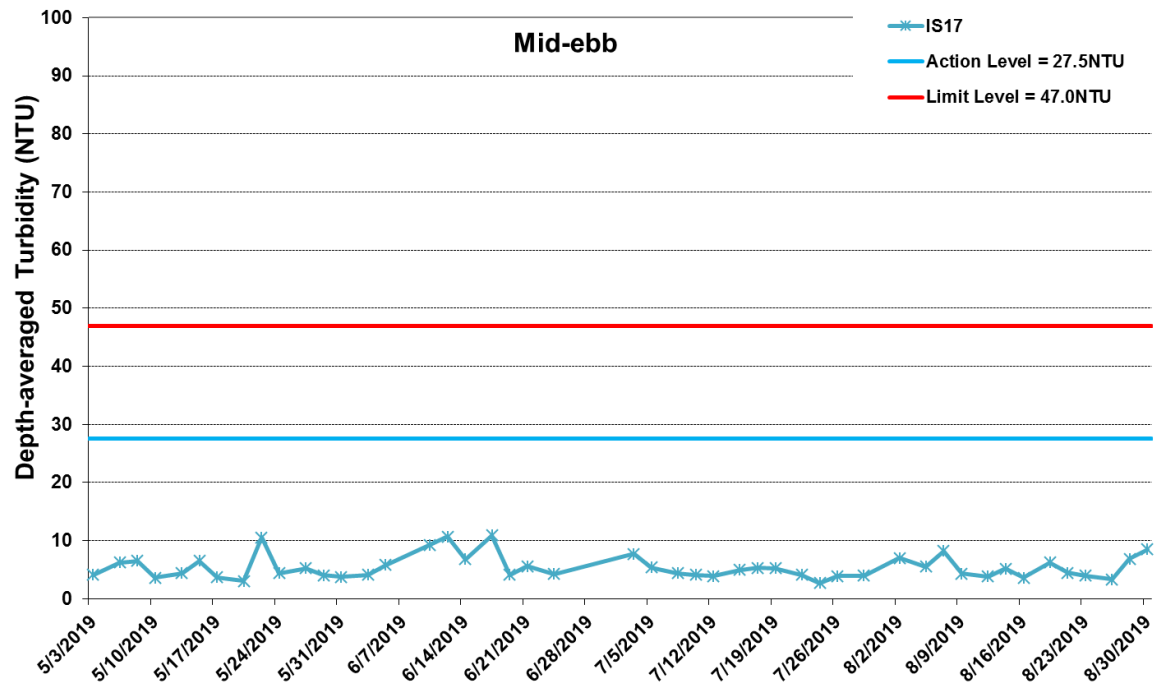




\* The AL/LL for WQM stations, IS(Mf)11, IS17 and SR7, are adopted from HZMB HKBCF project.

**Figure J26 Impact Monitoring - Mean Depth-averaged Level of Turbidity (NTU) between 1 May 2019 and 31 August 2019 at SR7. The weather conditions during the monitoring period varied mostly from sunny to cloudy. Major marine works included: Jetty Removal at Portion S-C, Seawall Modification Works at Portion S-B (1/5/2019 - 31/8/2019).**

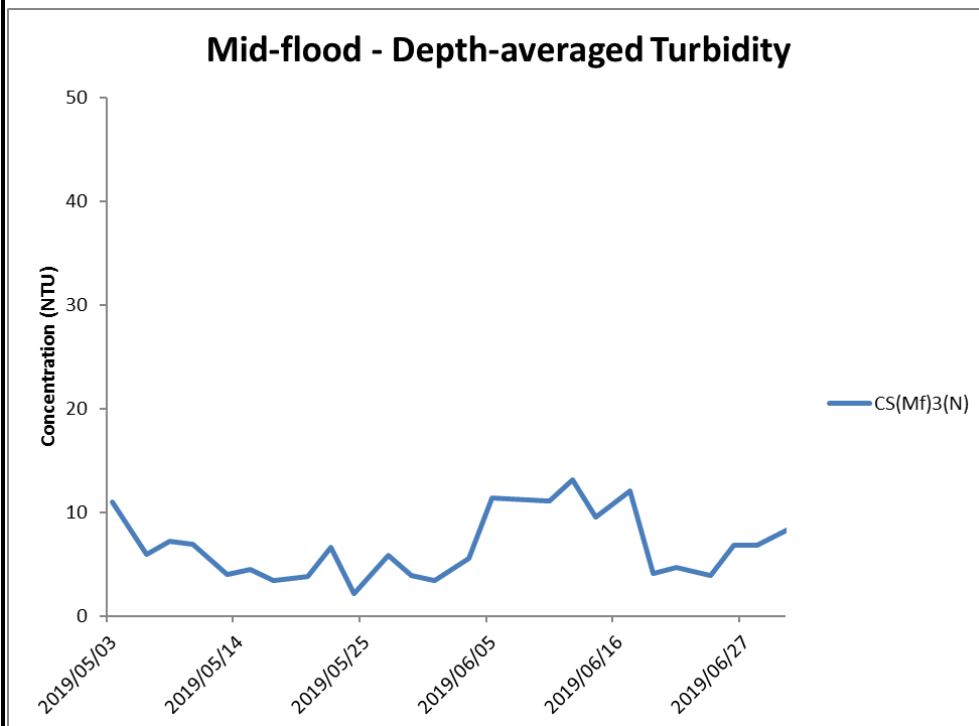
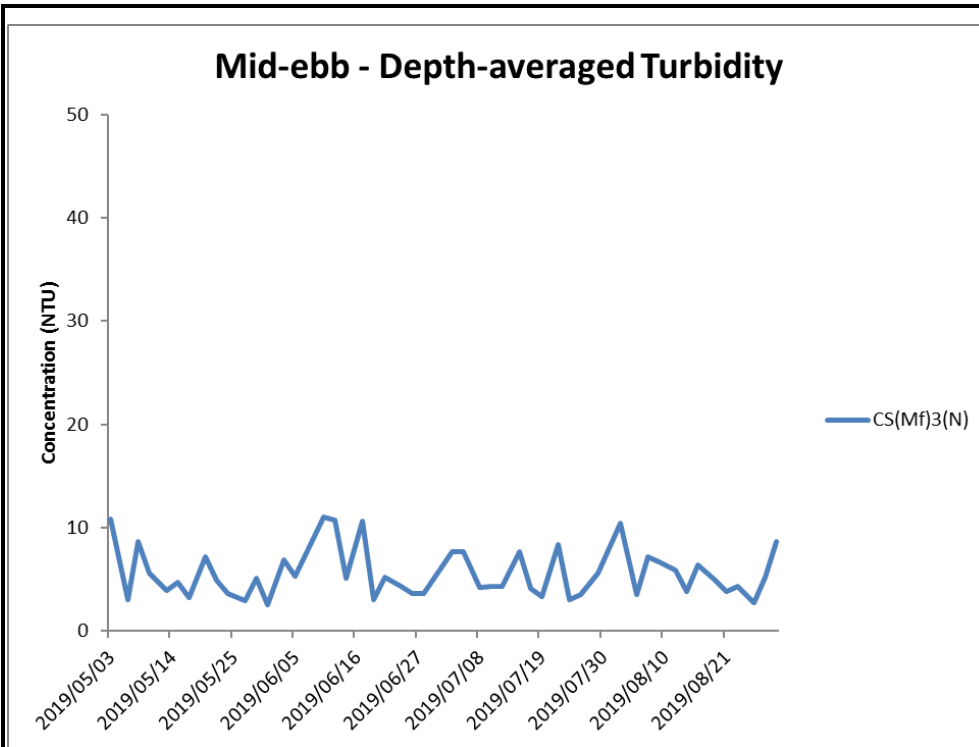




\* The AL/LL for WQM stations, IS(Mf)11, IS17 and SR7, are adopted from HZMB HKBCF project.

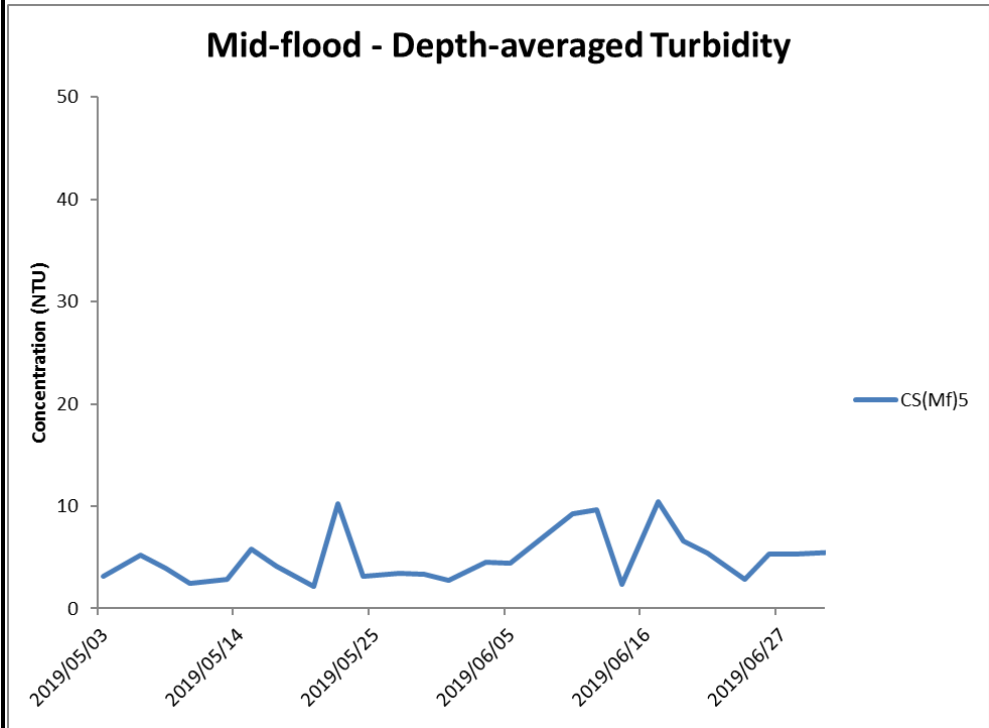
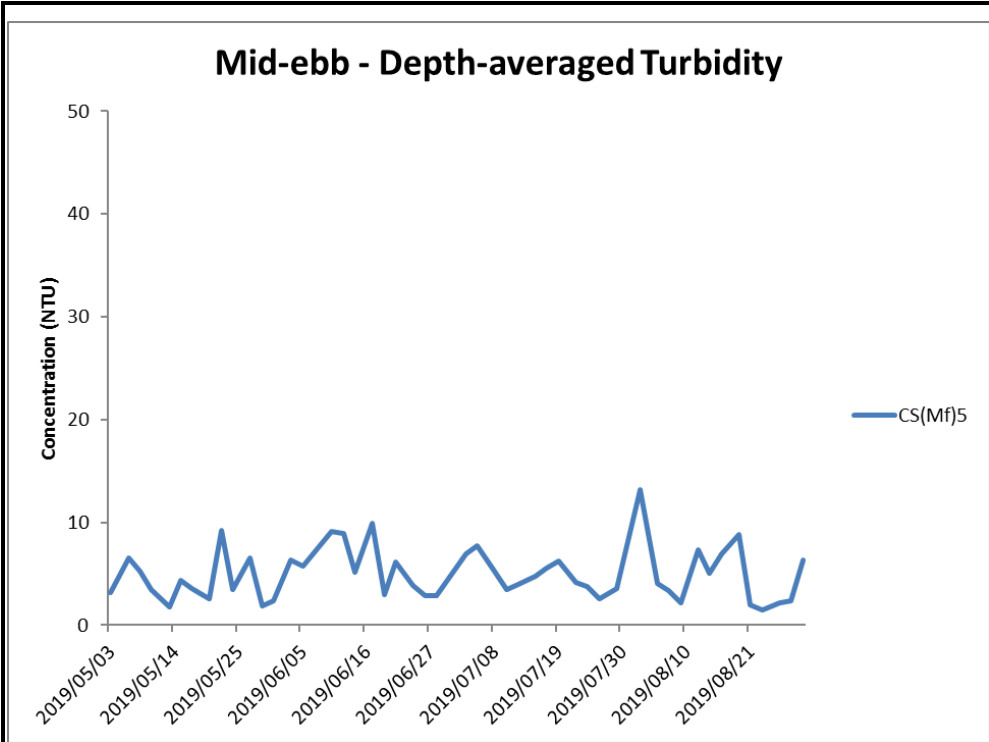
**Figure J27 Impact Monitoring - Mean Depth-averaged Level of Turbidity (NTU) between 1 May 2019 and 31 August 2019 at IS17. The weather conditions during the monitoring period varied mostly from sunny to cloudy. Major marine works included: Jetty Removal at Portion S-C, Seawall Modification Works at Portion S-B (1/5/2019 - 31/8/2019).**





**Figure J28 Impact Monitoring - Mean Depth-averaged Level of Turbidity (NTU) between 1 May 2019 and 31 August 2019 at CS(Mf)3(N).** The weather conditions during the monitoring period varied mostly from sunny to cloudy. Major marine works included: Jetty Removal at Portion S-C, Seawall Modification Works at Portion S-B (1/5/2019 - 31/8/2019).



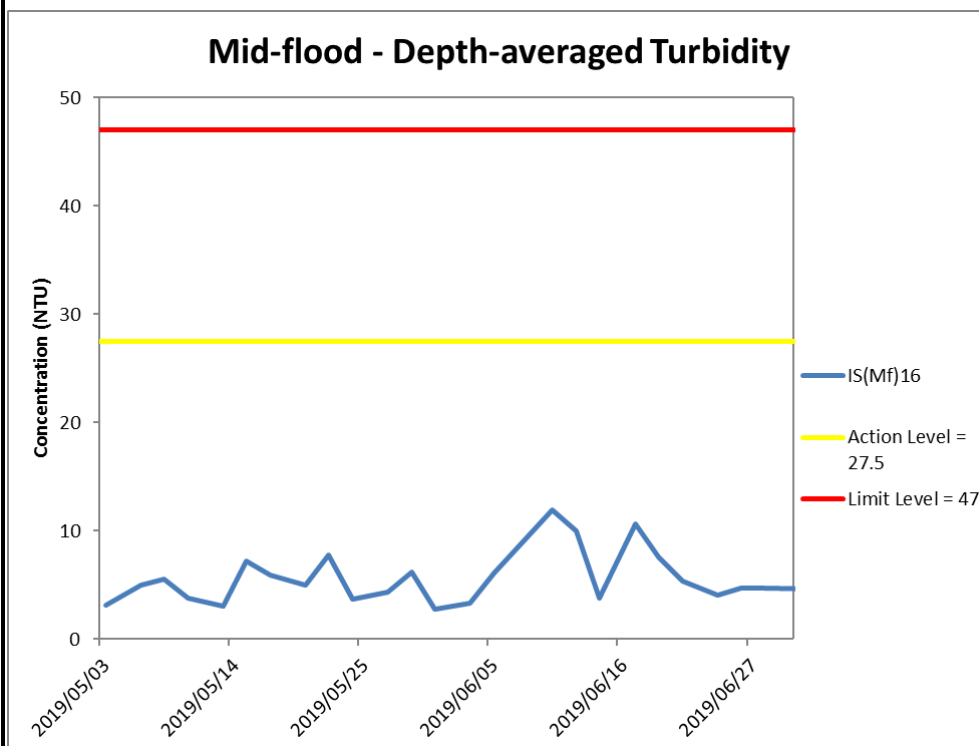
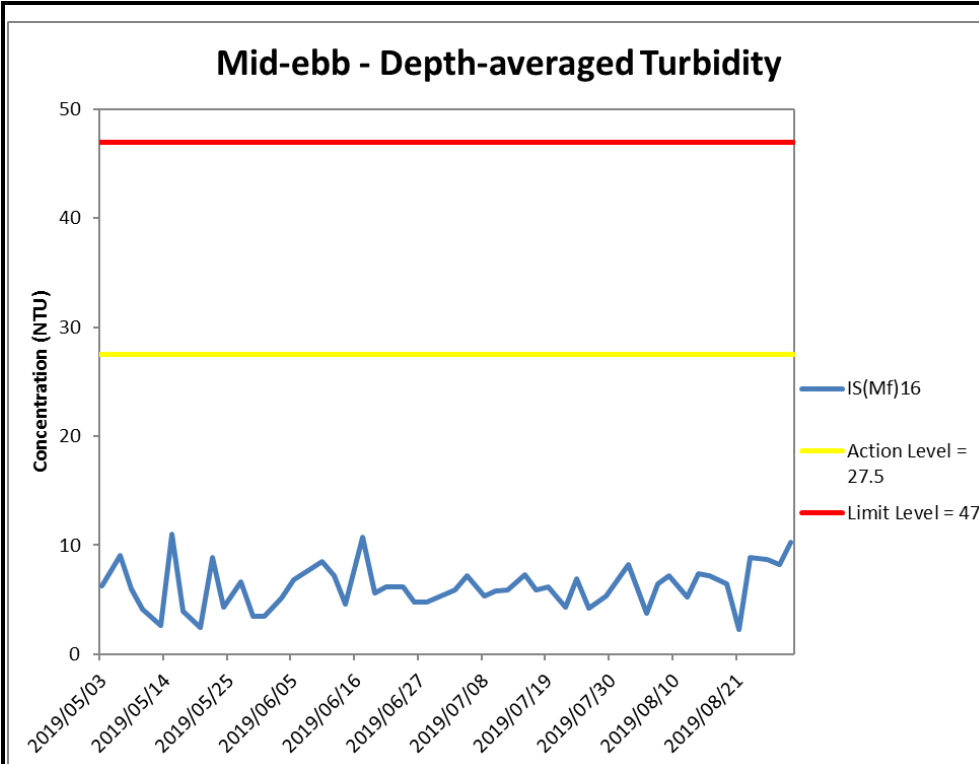


**Figure J29 Impact Monitoring - Mean Depth-averaged Level of Turbidity (NTU) between 1 May 2019 and 31 August 2019 at CS(Mf)5. The weather conditions during the monitoring period varied mostly from sunny to cloudy. Major marine works included: Jetty Removal at Portion S-C, Seawall Modification Works at Portion S-B (1/5/2019 - 31/8/2019).**



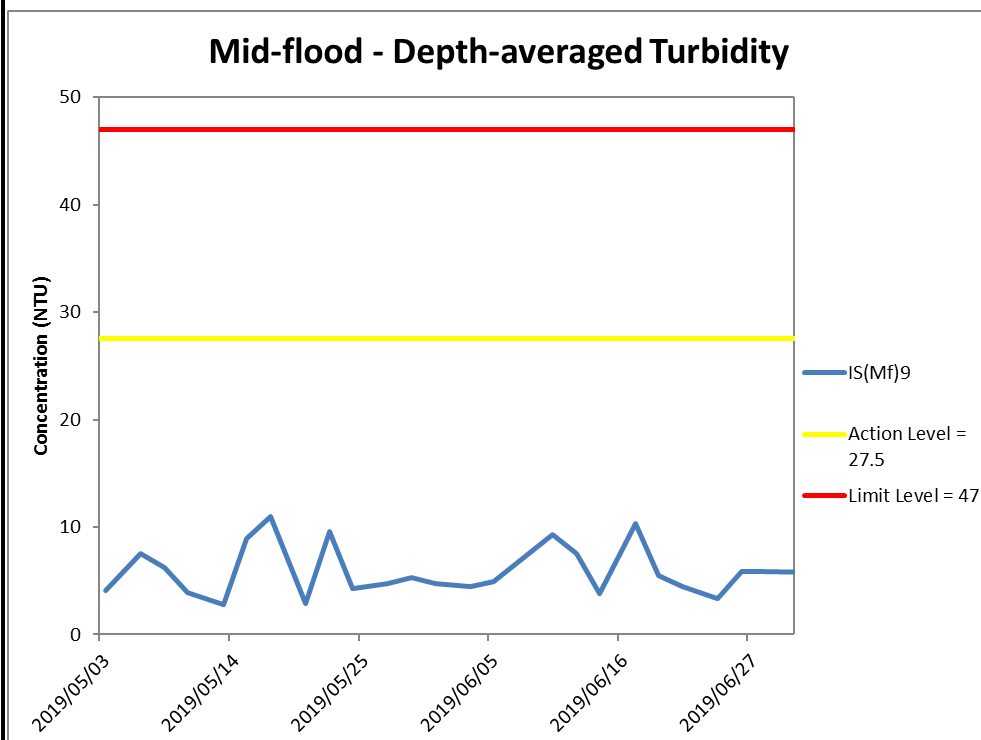
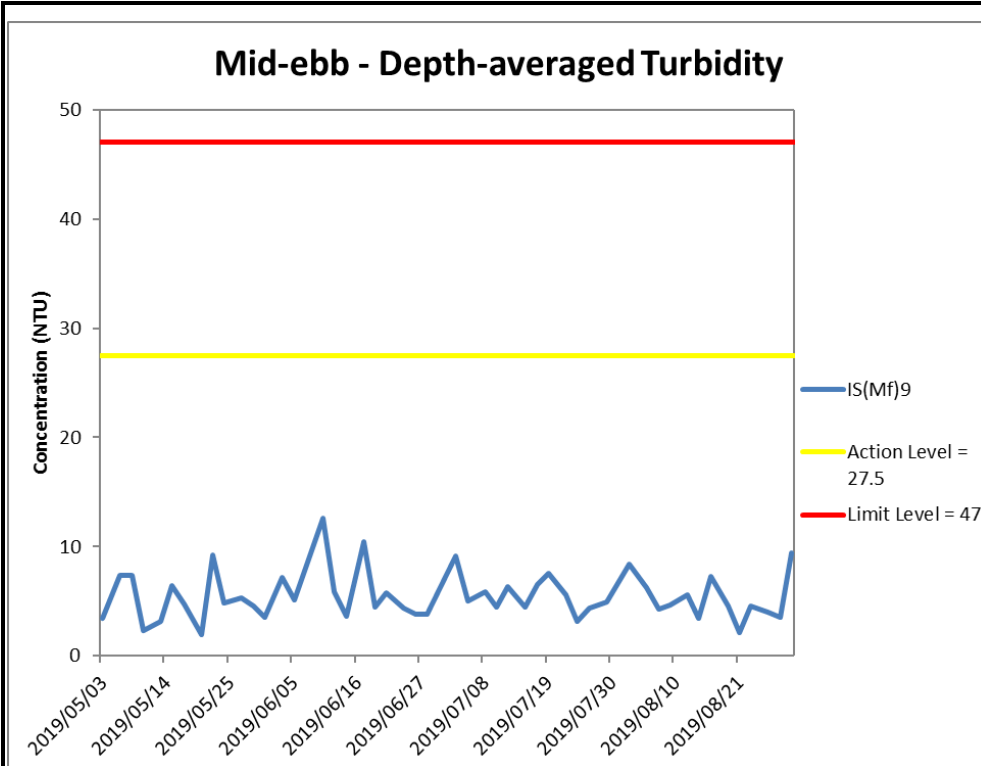
Ref: 0212330\_Impact-WQM\_August2019\_graphs\_Rev a.xls



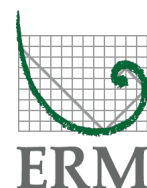


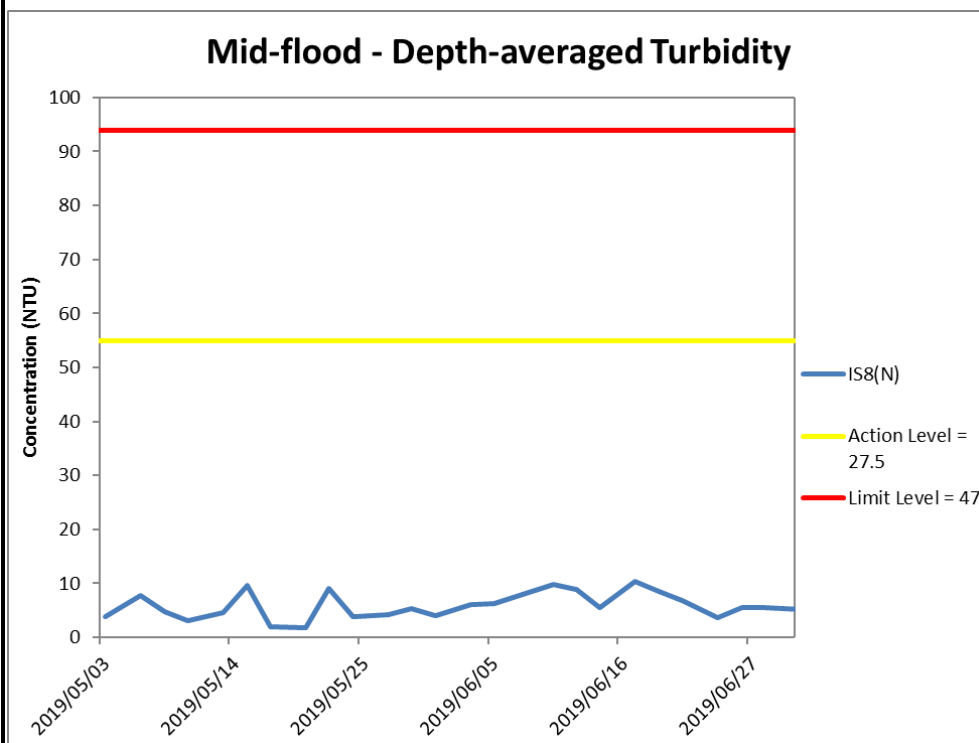
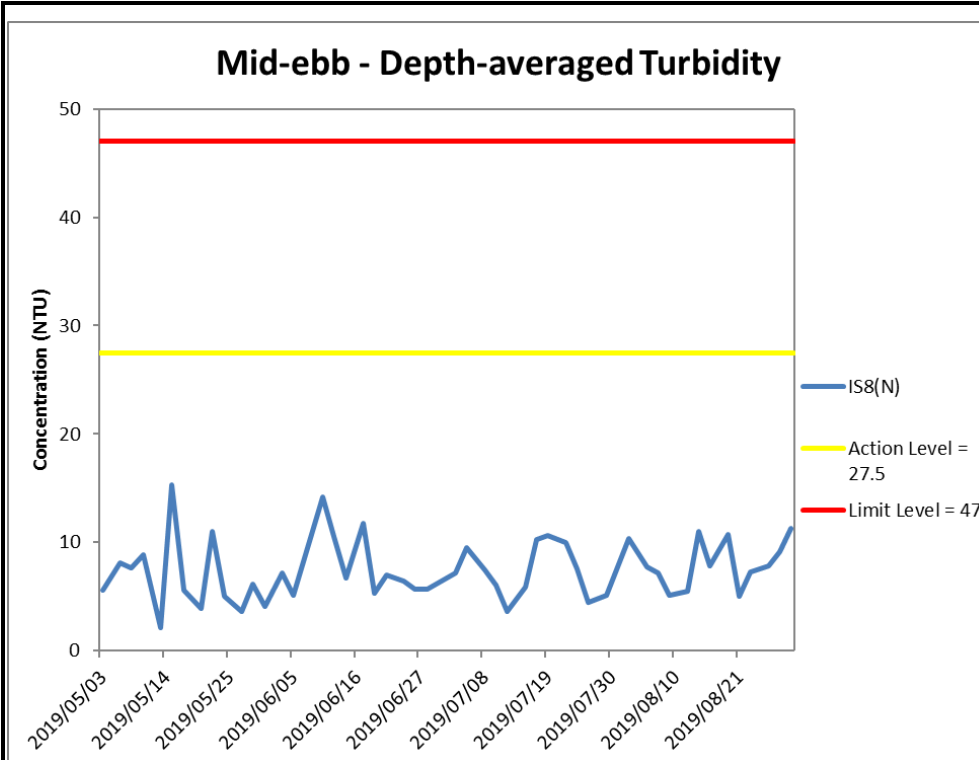
**Figure J30 Impact Monitoring - Mean Depth-averaged Level of Turbidity (NTU) between 1 May 2019 and 31 August 2019 at IS(Mf)16. The weather conditions during the monitoring period varied mostly from sunny to cloudy. Major marine works included: Jetty Removal at Portion S-C, Seawall Modification Works at Portion S-B (1/5/2019 - 31/8/2019).**



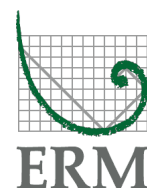


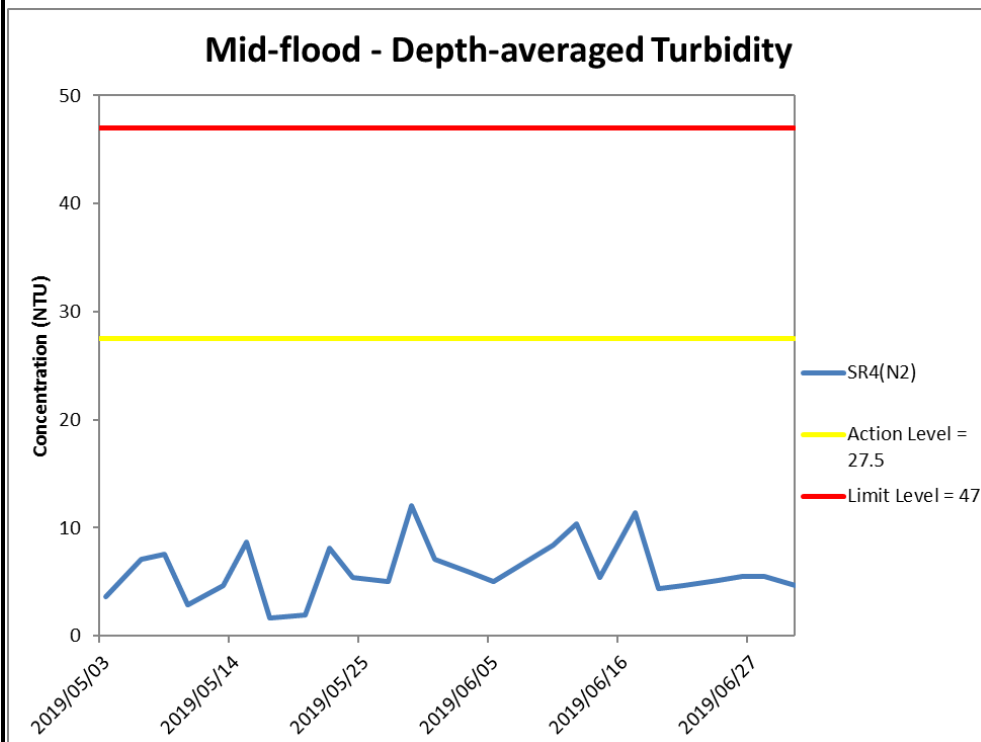
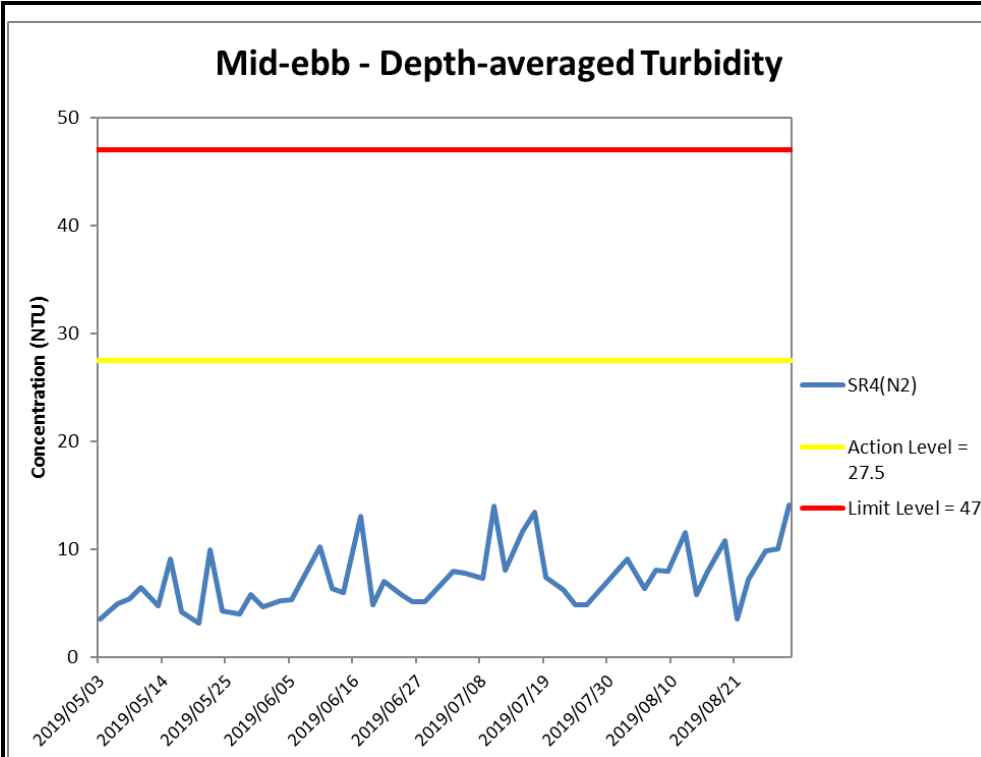
**Figure J31 Impact Monitoring - Mean Depth-averaged Level of Turbidity (NTU) between 1 May 2019 and 31 August 2019 at IS(Mf)9. The weather conditions during the monitoring period varied mostly from sunny to cloudy. Major marine works included: Jetty Removal at Portion S-C, Seawall Modification Works at Portion S-B (1/5/2019 - 31/8/2019).**





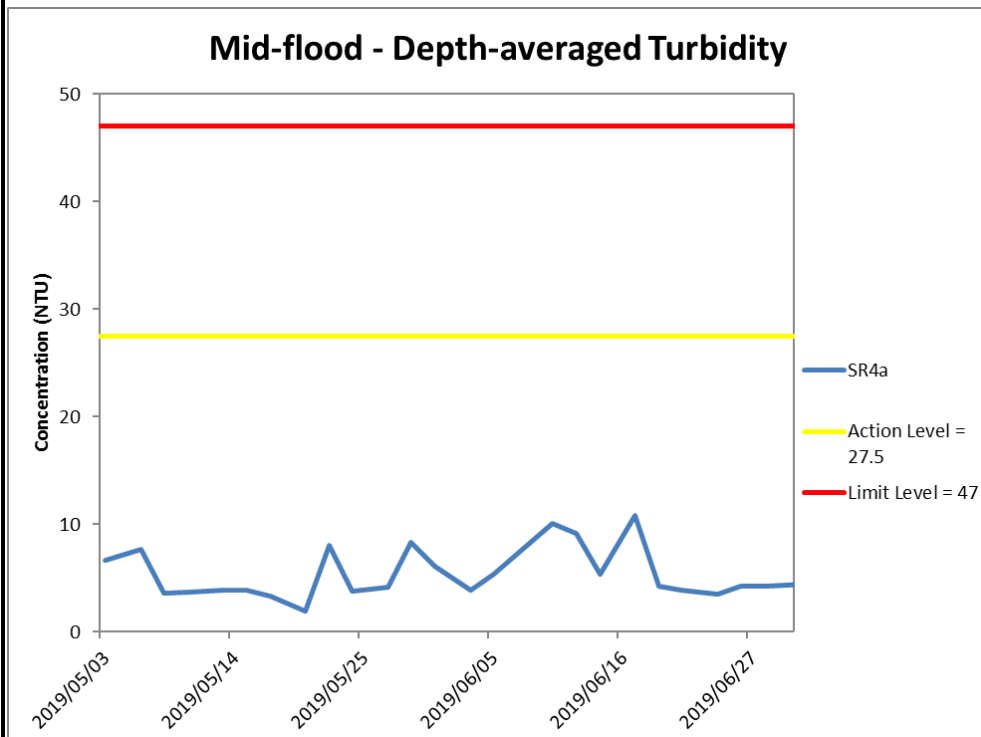
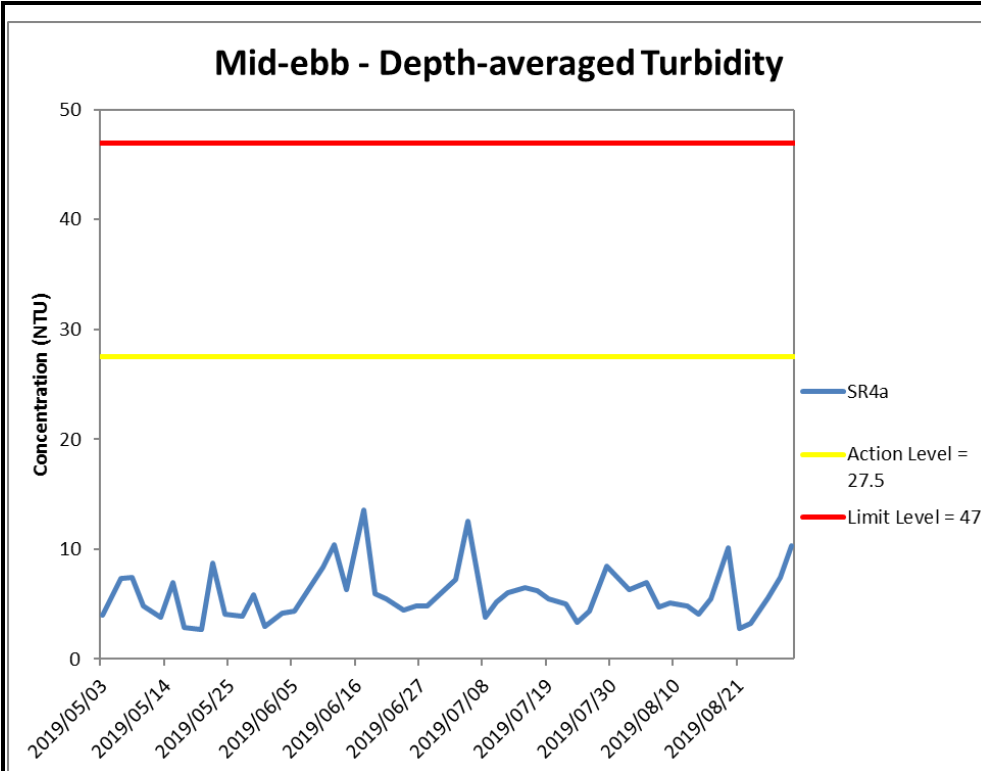
**Figure J32 Impact Monitoring - Mean Depth-averaged Level of Turbidity (NTU) between 1 May 2019 and 31 August 2019 at IS8(N).** The weather conditions during the monitoring period varied mostly from sunny to cloudy. Major marine works included: Jetty Removal at Portion S-C, Seawall Modification Works at Portion S-B (1/5/2019 - 31/8/2019).





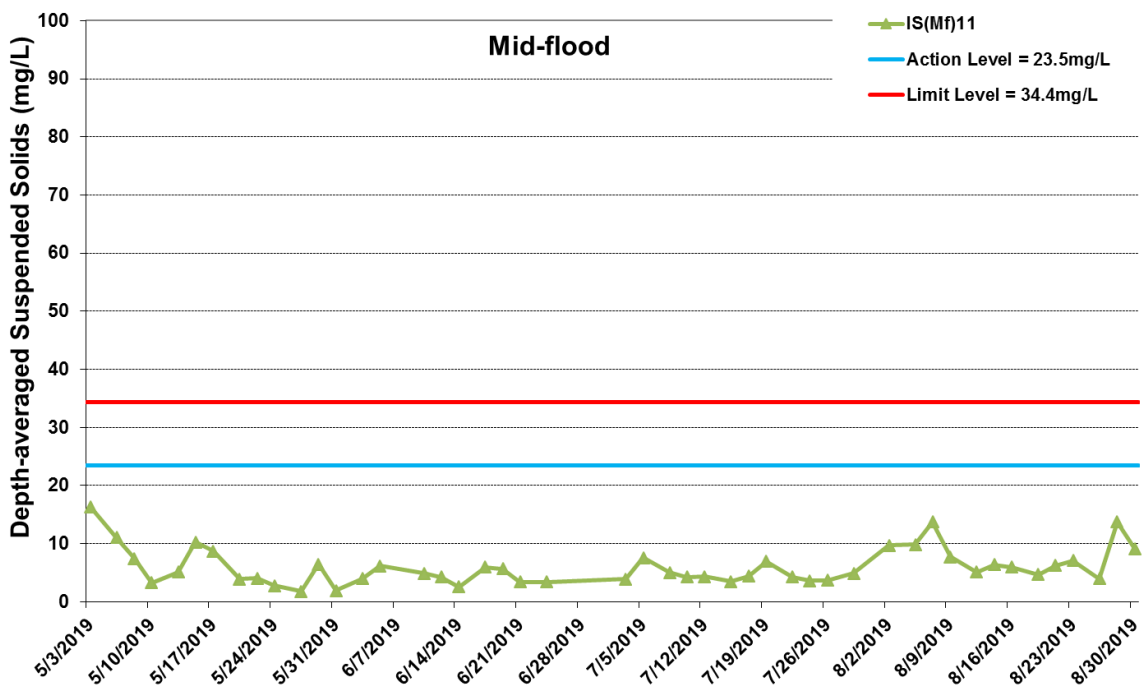
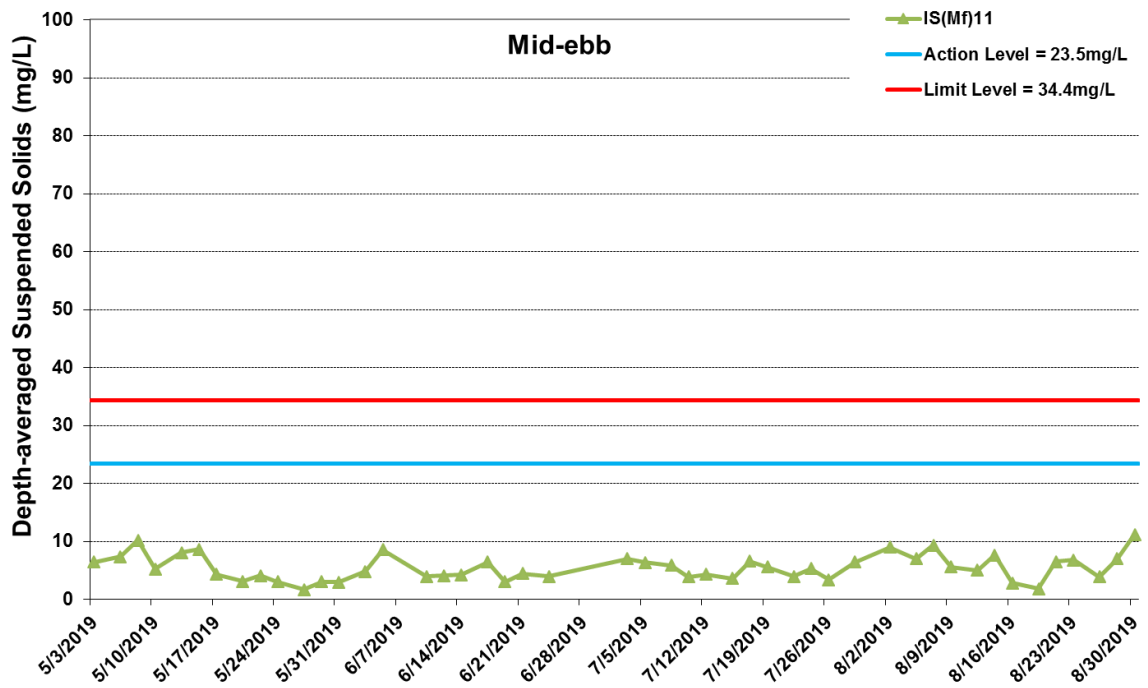
**Figure J33 Impact Monitoring - Mean Depth-averaged Level of Turbidity (NTU) between 1 May 2019 and 31 August 2019 at SR4(N2).** The weather conditions during the monitoring period varied mostly from sunny to cloudy. Major marine works included: Jetty Removal at Portion S-C, Seawall Modification Works at Portion S-B (1/5/2019 - 31/8/2019).





**Figure J34 Impact Monitoring - Mean Depth-averaged Level of Turbidity (NTU) between 1 May 2019 and 31 August 2019 at SR4a. The weather conditions during the monitoring period varied mostly from sunny to cloudy. Major marine works included: Jetty Removal at Portion S-C, Seawall Modification Works at Portion S-B (1/5/2019 - 31/8/2019).**



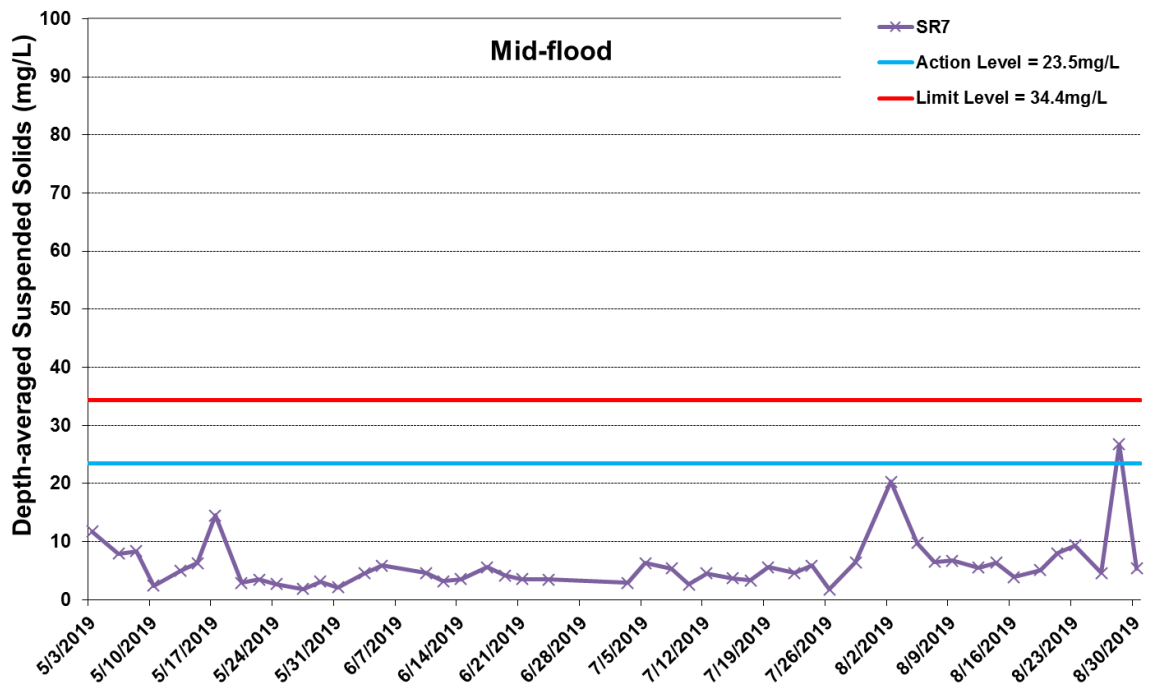
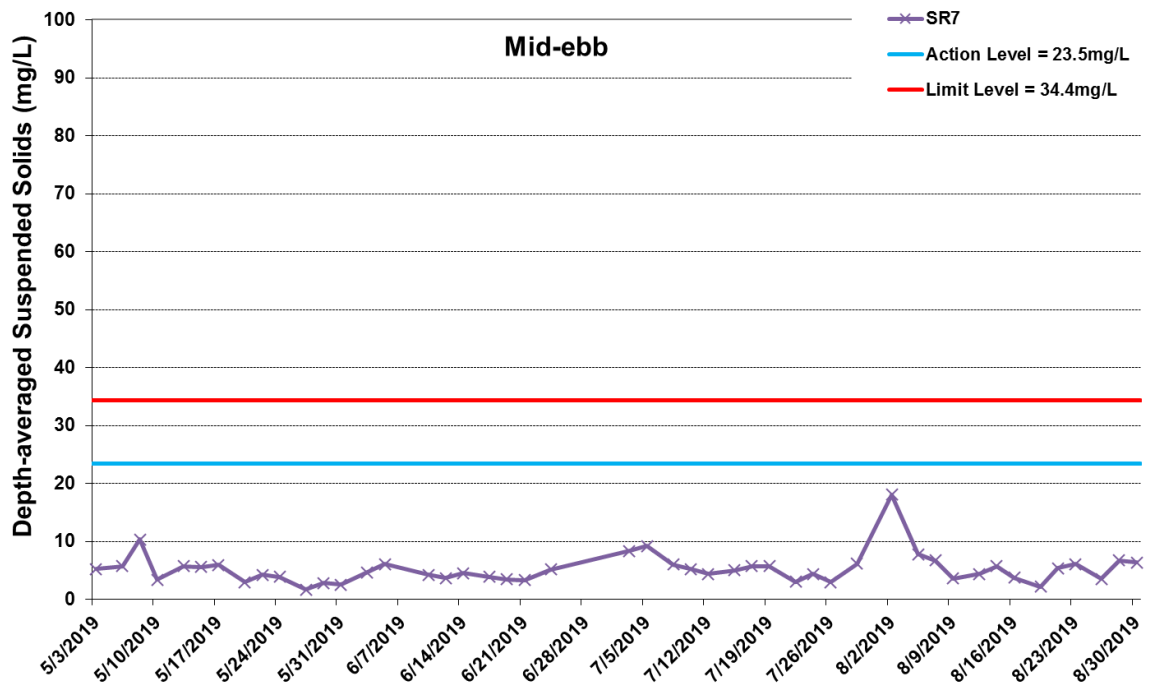


\* The AL/LL for WQM stations, IS(Mf)11, IS17 and SR7, are adopted from HZMB HKBCF project.

**Figure J35 Impact Monitoring - Mean Depth-averaged Level of Suspended Solids (mg/L) between 1 May 2019 and 31 August 2019 at IS(Mf)11. The weather conditions during the monitoring period varied mostly from sunny to cloudy. Major marine works included: Jetty Removal at Portion S-C, Seawall Modification Works at Portion S-B (1/5/2019 - 31/8/2019).**



Ref: 0212330\_Impact-WQM\_August2019\_graphs\_Rev a.xls

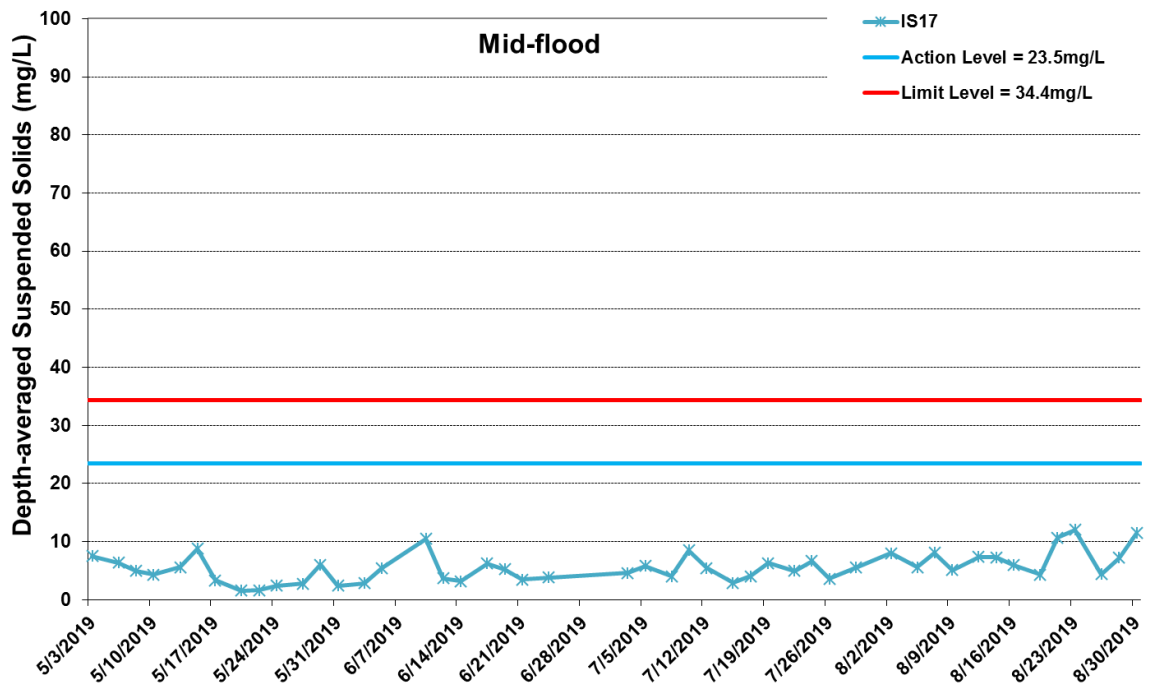
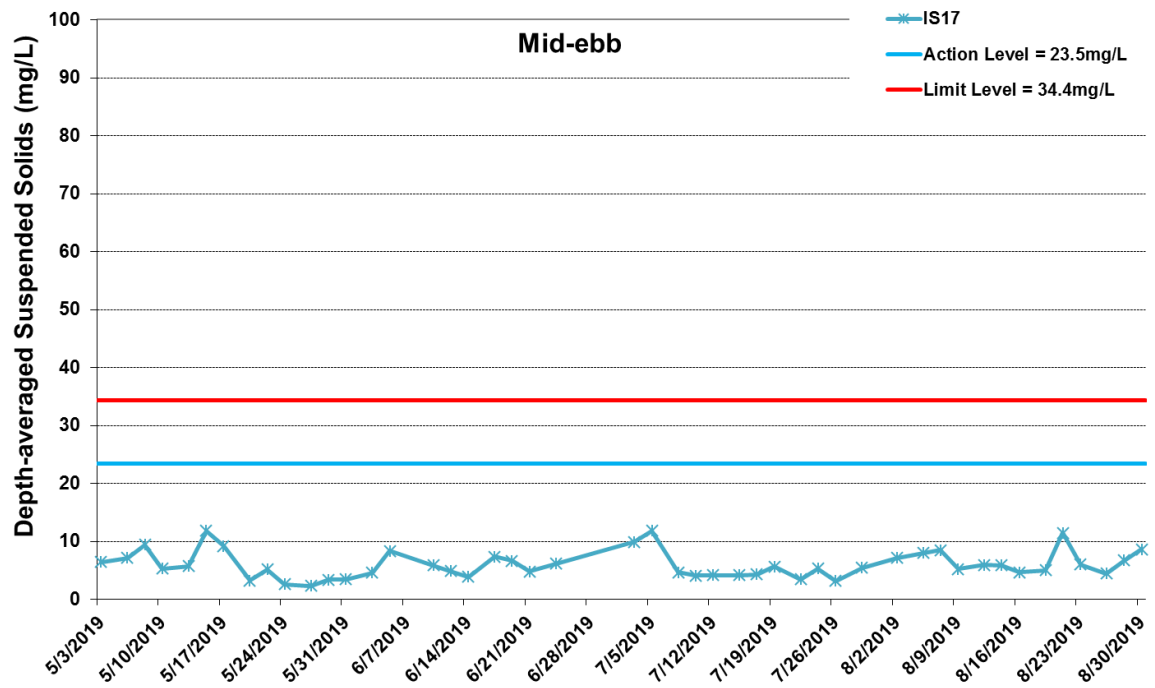


\* The AL/LL for WQM stations, IS(Mf)11, IS17 and SR7, are adopted from HZMB HKBCF project.

Figure J36 Impact Monitoring - Mean Depth-averaged Level of Suspended Solids (mg/L) between 1 May 2019 and 31 August 2019 at SR7. The weather conditions during the monitoring period varied mostly from sunny to cloudy. Major marine works included: Jetty Removal at Portion S-C, Seawall Modification Works at Portion S-B (1/5/2019 - 31/8/2019).



Ref: 0212330\_Impact-WQM\_August2019\_graphs\_Rev a.xls



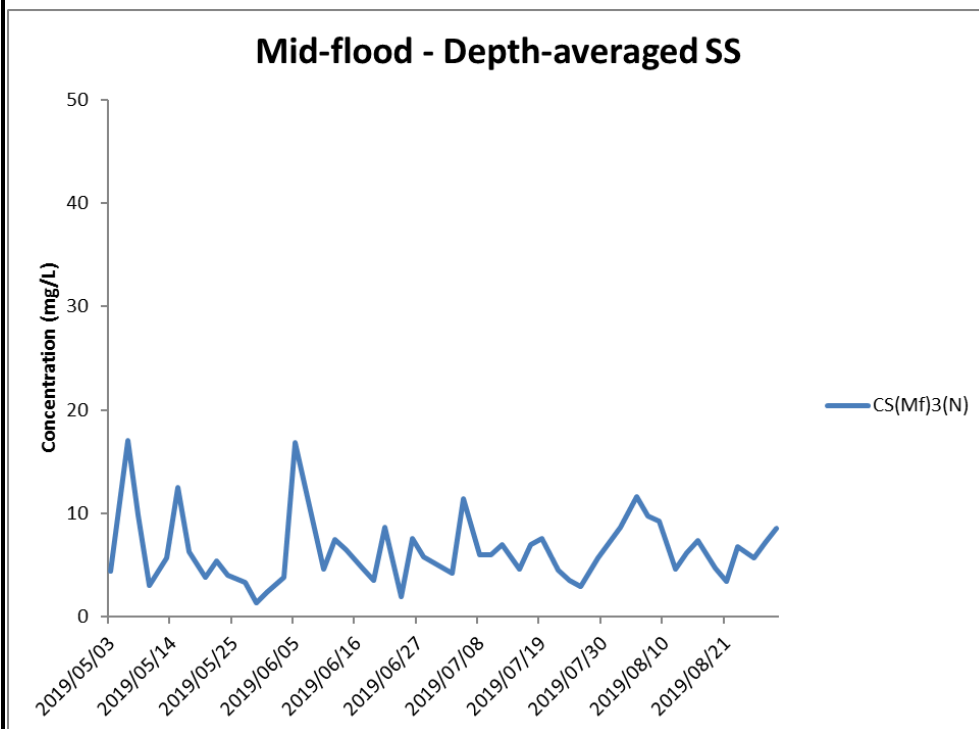
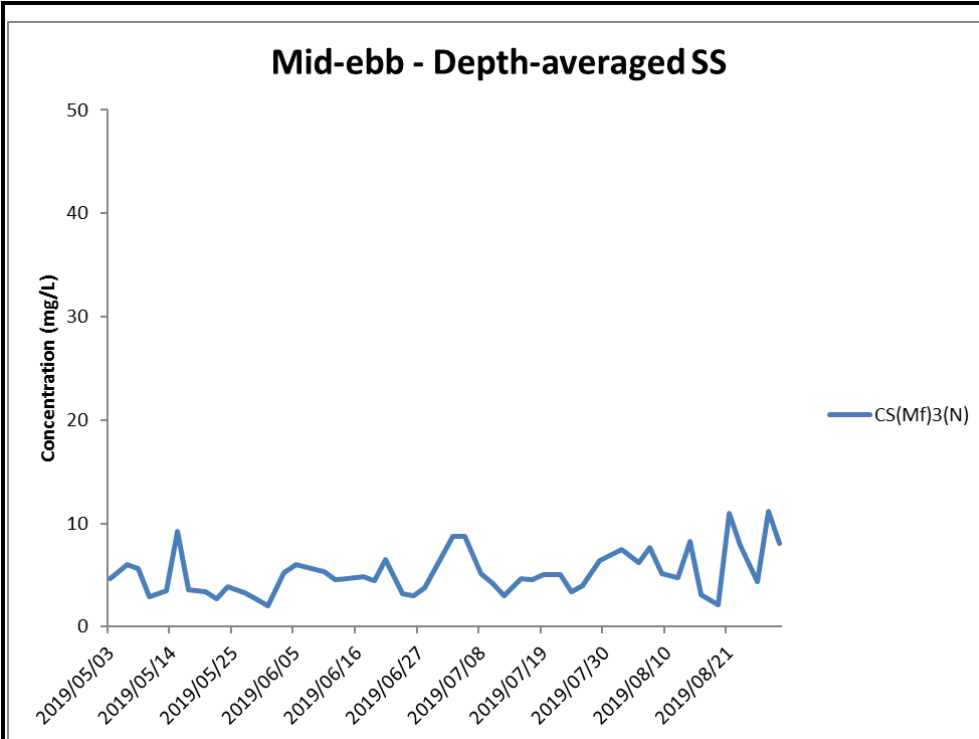
\* The AL/LL for WQM stations, IS(Mf)11, IS17 and SR7, are adopted from HZMB HKBCF project.

Figure J37 Impact Monitoring - Mean Depth-averaged Level of Suspended Solids (mg/L) between 1 May 2019 and 31 August 2019 at IS17. The weather conditions during the monitoring period varied mostly from sunny to cloudy. Major marine works included: Jetty Removal at Portion S-C, Seawall Modification Works at Portion S-B (1/5/2019 - 31/8/2019).



Ref: 0212330\_Impact-WQM\_August2019\_graphs\_Rev a.xls

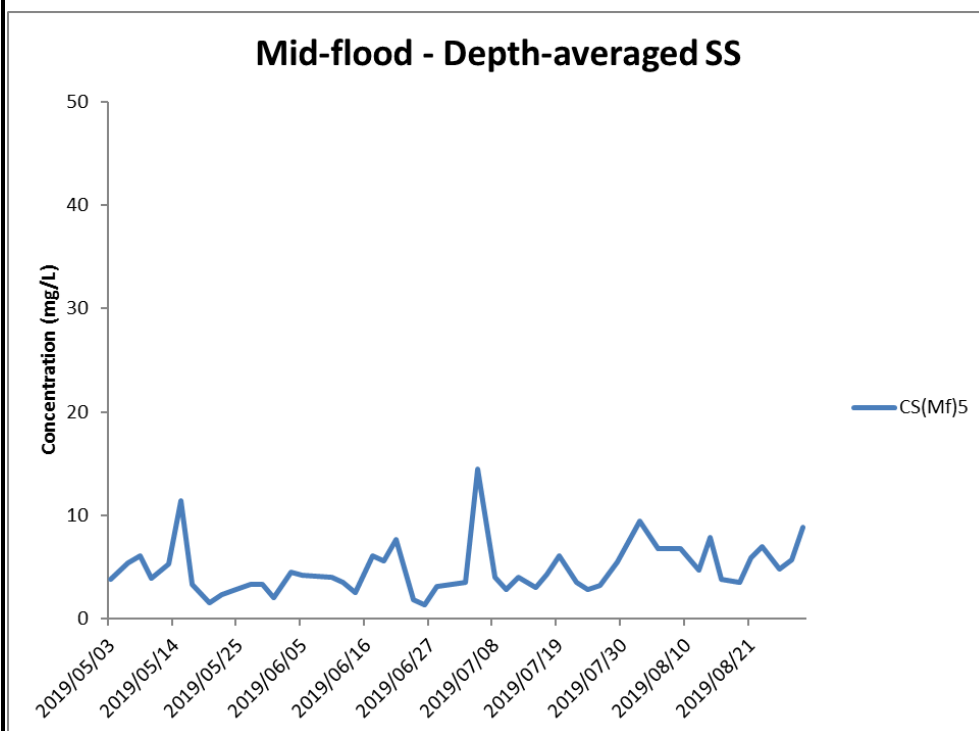
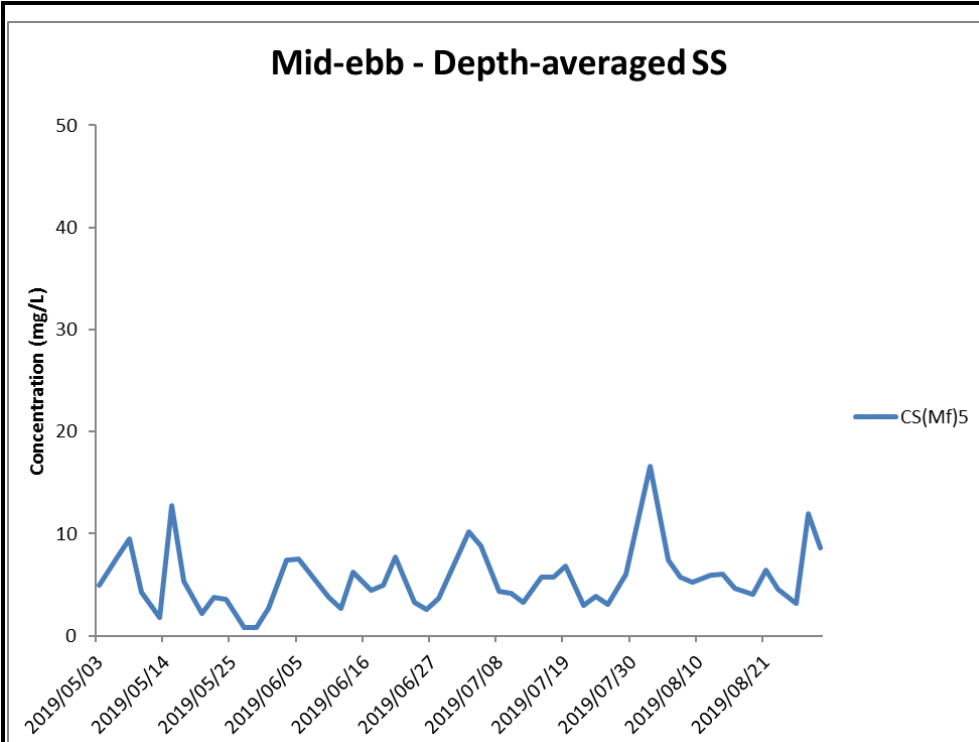




**Figure J38 Impact Monitoring - Mean Depth-averaged Level of Suspended Solids (mg/L) between 1 May 2019 and 31 August 2019 at CS(Mf)3(N). The weather conditions during the monitoring period varied mostly from sunny to cloudy. Major marine works included: Jetty Removal at Portion S-C, Seawall Modification Works at Portion S-B (1/5/2019 - 31/8/2019).**



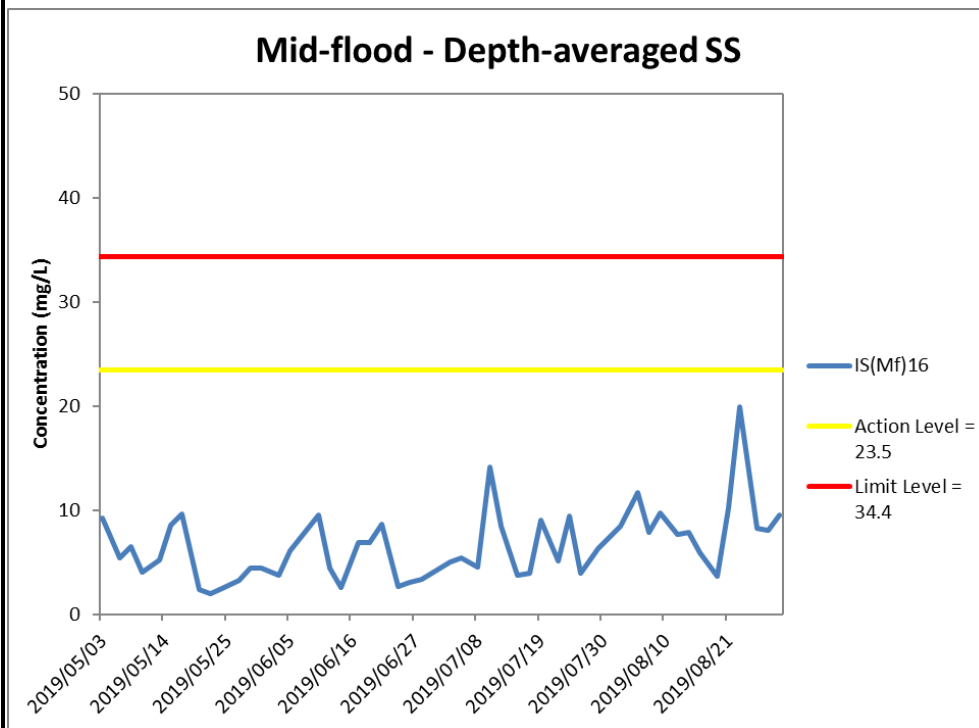
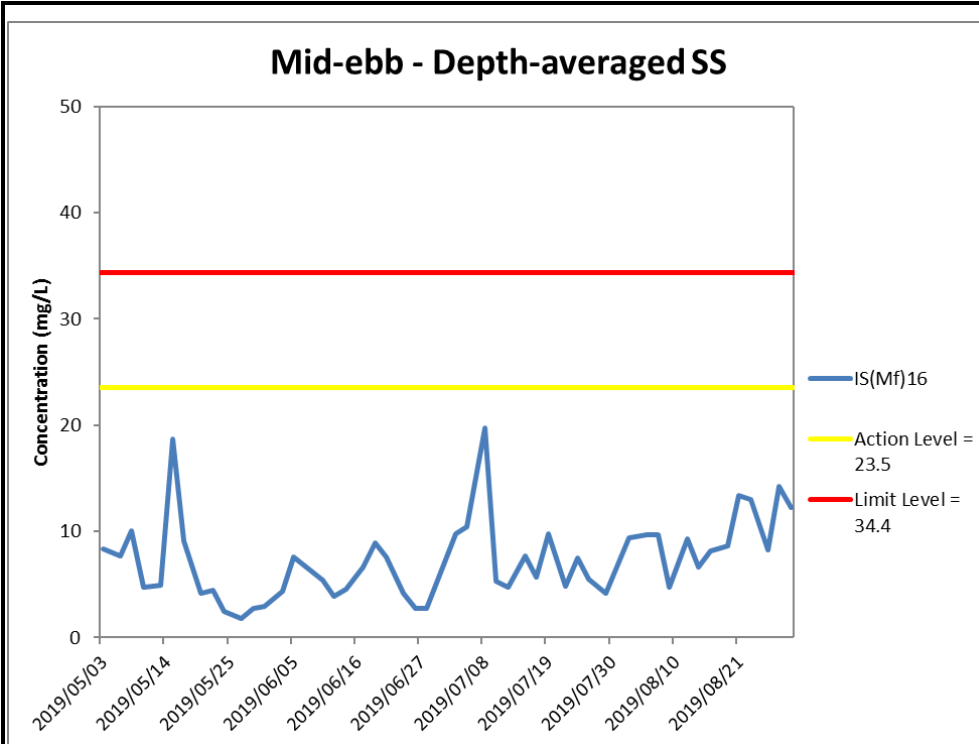
Ref: 0212330\_Impact-WQM\_August2019\_graphs\_Rev a.xls



**Figure J39 Impact Monitoring - Mean Depth-averaged Level of Suspended Solids (mg/L) between 1 May 2019 and 31 August 2019 at CS(Mf)5. The weather conditions during the monitoring period varied mostly from sunny to cloudy. Major marine works included: Jetty Removal at Portion S-C, Seawall Modification Works at Portion S-B (1/5/2019 - 31/8/2019).**



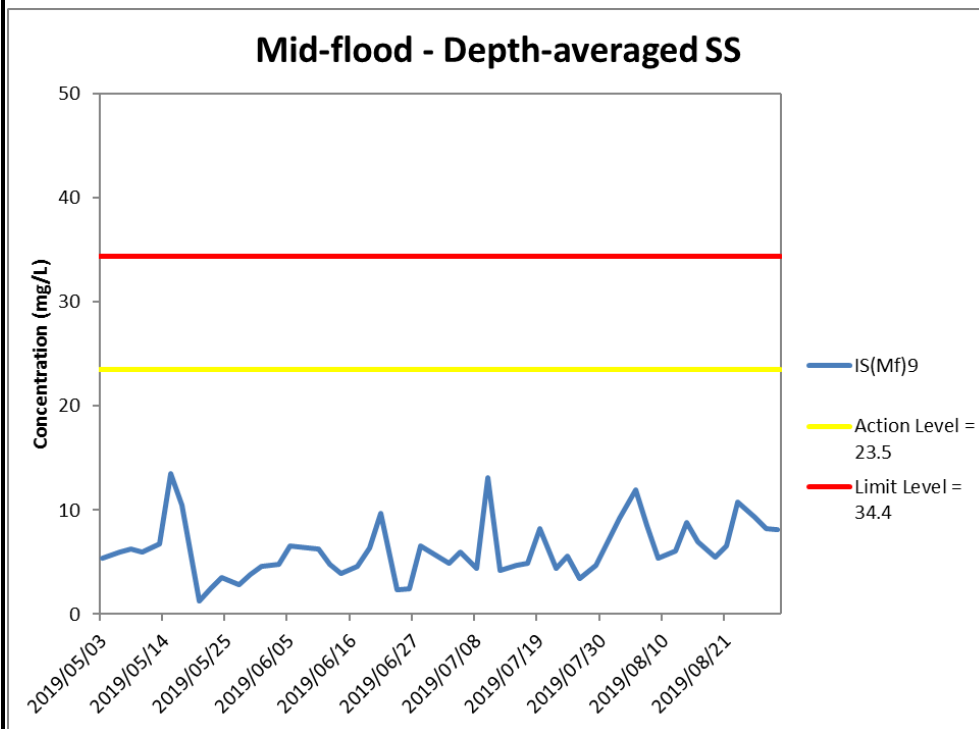
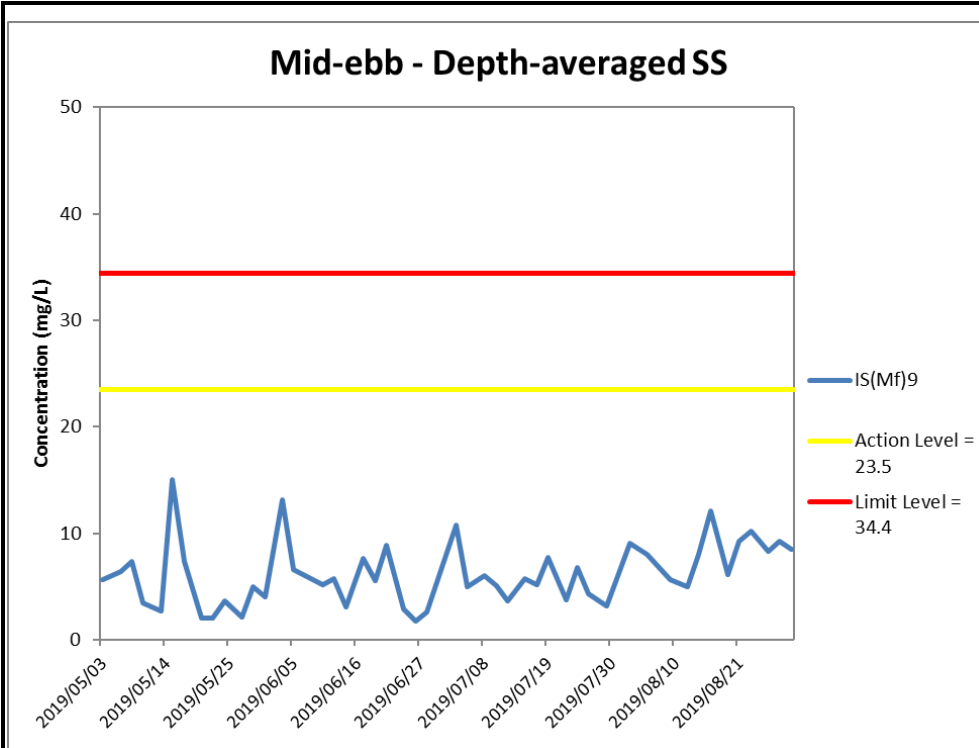
Ref: 0212330\_Impact-WQM\_August2019\_graphs\_Rev a.xls



**Figure J40 Impact Monitoring - Mean Depth-averaged Level of Suspended Solids (mg/L) between 1 May 2019 and 31 August 2019 at IS(Mf)16. The weather conditions during the monitoring period varied mostly from sunny to cloudy. Major marine works included: Jetty Removal at Portion S-C, Seawall Modification Works at Portion S-B (1/5/2019 - 31/8/2019).**



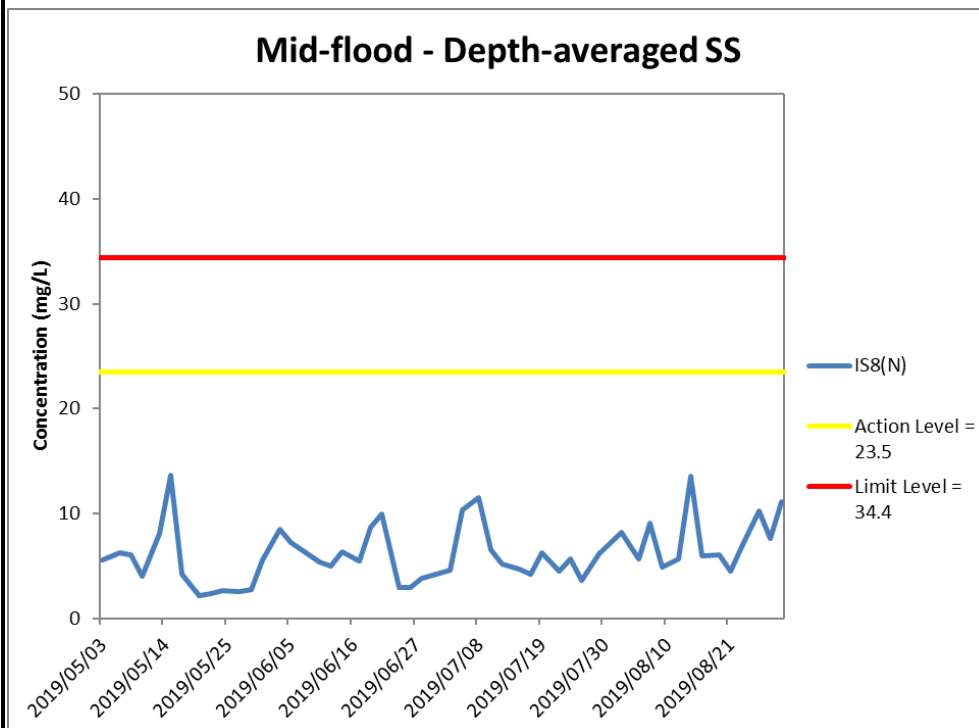
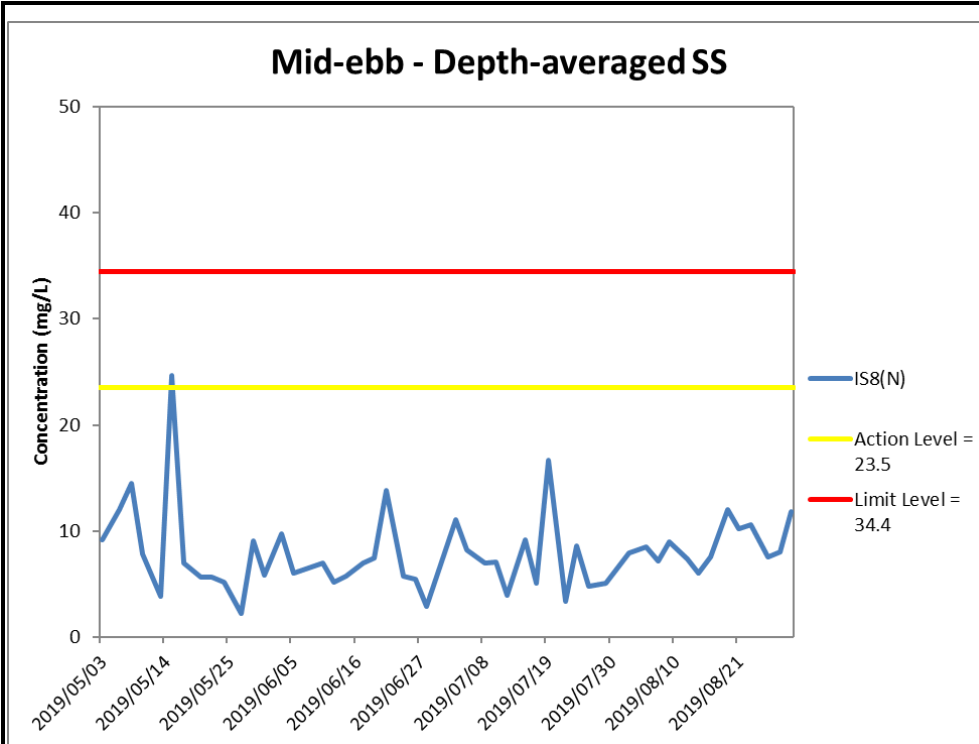
Ref: 0212330\_Impact-WQM\_August2019\_graphs\_Rev a.xls



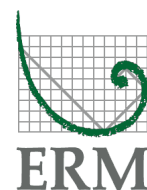
**Figure J41 Impact Monitoring - Mean Depth-averaged Level of Suspended Solids (mg/L) between 1 May 2019 and 31 August 2019 at IS(Mf)9. The weather conditions during the monitoring period varied mostly from sunny to cloudy. Major marine works included: Jetty Removal at Portion S-C, Seawall Modification Works at Portion S-B (1/5/2019 - 31/8/2019).**



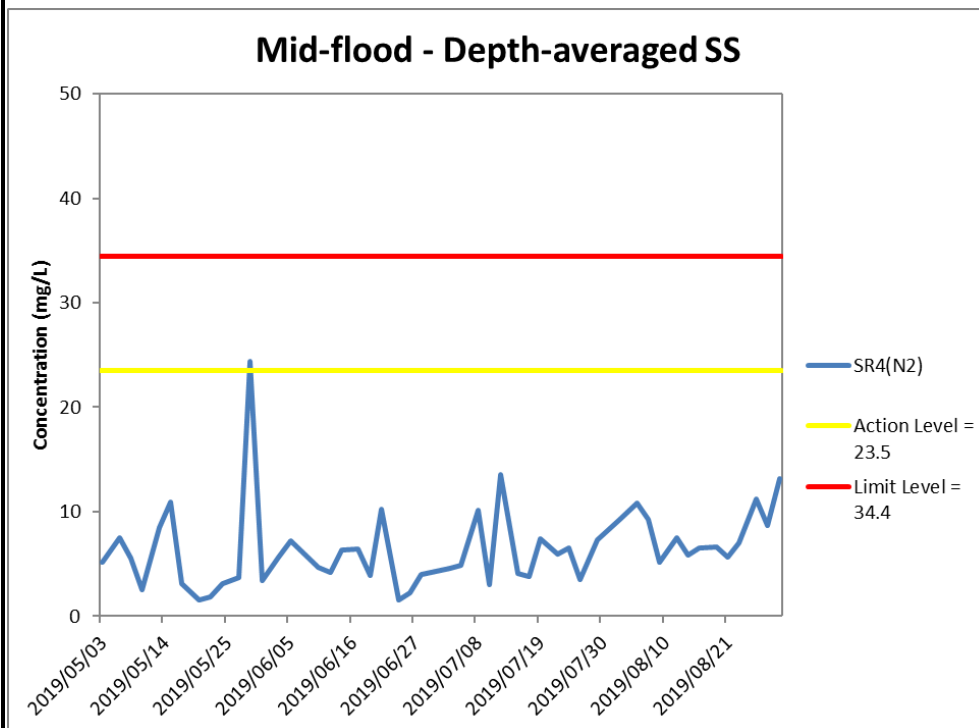
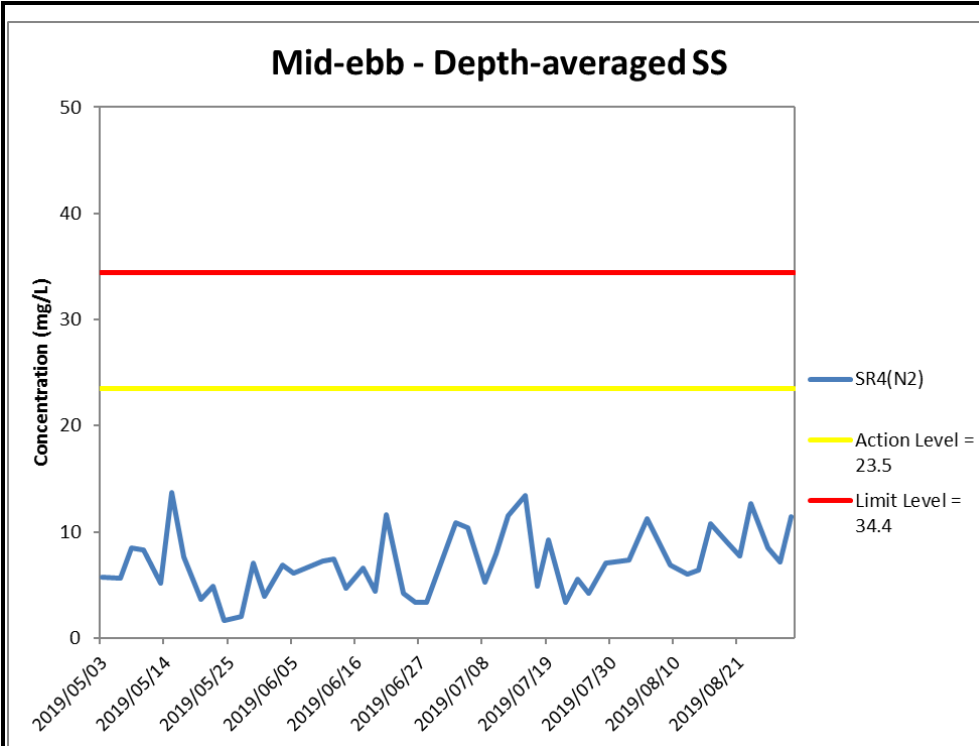
Ref: 0212330\_Impact-WQM\_August2019\_graphs\_Rev a.xls



**Figure J42 Impact Monitoring - Mean Depth-averaged Level of Suspended Solids (mg/L) between 1 May 2019 and 31 August 2019 at IS8(N). The weather conditions during the monitoring period varied mostly from sunny to cloudy. Major marine works included: Jetty Removal at Portion S-C, Seawall Modification Works at Portion S-B (1/5/2019 - 31/8/2019).**



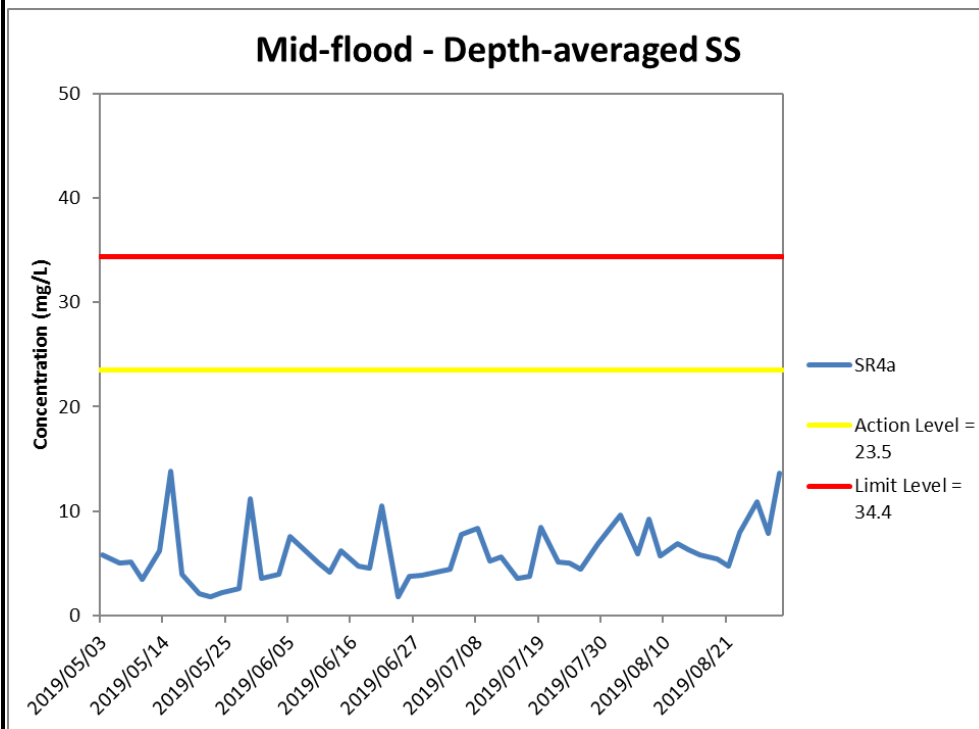
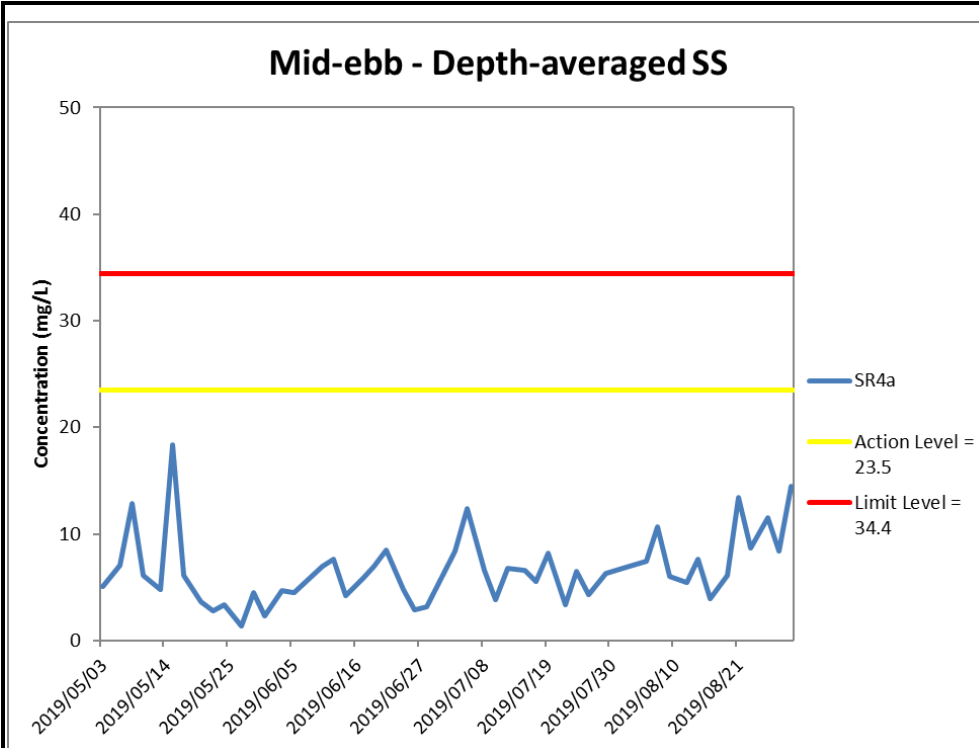
Ref: 0212330\_Impact-WQM\_August2019\_graphs\_Rev a.xls



**Figure J43 Impact Monitoring - Mean Depth-averaged Level of Suspended Solids (mg/L) between 1 May 2019 and 31 August 2019 at SR4(N2). The weather conditions during the monitoring period varied mostly from sunny to cloudy. Major marine works included: Jetty Removal at Portion S-C, Seawall Modification Works at Portion S-B (1/5/2019 - 31/8/2019).**

Ref: 0212330\_Impact-WQM\_August2019\_graphs\_Rev a.xls





**Figure J44 Impact Monitoring - Mean Depth-averaged Level of Suspended Solids (mg/L) between 1 May 2019 and 31 August 2019 at SR4a. The weather conditions during the monitoring period varied mostly from sunny to cloudy. Major marine works included: Jetty Removal at Portion S-C, Seawall Modification Works at Portion S-B (1/5/2019 - 31/8/2019).**

Ref: 0212330\_Impact-WQM\_August2019\_graphs\_Rev a.xls



Project	Contract	Date	Tide	Stat	Weather	Sea Condition	Time	Water Depth	Level	Lev_Cod	Replicate	Temp(°C)	pH	Salinity(ppt)	DO(mg/L)	Turbidity(NTU)	SS(mg/L)
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	CS(Mf)5	Cloudy	Moderate	14:17	12.5	Surface	1	1	26.9	7.9	23.3	5.6	10.1	15.4
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	CS(Mf)5	Cloudy	Moderate	14:17	12.5	Surface	1	2	26.9	7.9	23.3	5.6	9.9	15.4
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	CS(Mf)5	Cloudy	Moderate	14:17	12.5	Middle	2	1	26.6	7.8	24.1	5.4	14.2	17.7
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	CS(Mf)5	Cloudy	Moderate	14:17	12.5	Middle	2	2	26.6	7.9	24.1	5.4	13.8	17
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	CS(Mf)5	Cloudy	Moderate	14:17	12.5	Bottom	3	1	26.6	7.8	24.2	5.5	15.8	17
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	CS(Mf)5	Cloudy	Moderate	14:17	12.5	Bottom	3	2	26.6	7.9	24.2	5.4	15.5	17.3
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	CS(Mf)3(N)	Cloudy	Moderate	13:26	7.5	Surface	1	1	27.4	7.8	21.1	6	6.5	7.9
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	CS(Mf)3(N)	Cloudy	Moderate	13:26	7.5	Surface	1	2	27.4	7.8	21.1	6	6.5	7.9
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	CS(Mf)3(N)	Cloudy	Moderate	13:26	7.5	Middle	2	1	26.8	7.8	22.8	5.8	12.3	8
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	CS(Mf)3(N)	Cloudy	Moderate	13:26	7.5	Middle	2	2	26.8	7.9	22.6	5.8	12	7.1
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	CS(Mf)3(N)	Cloudy	Moderate	13:26	7.5	Bottom	3	1	26.6	7.8	23.7	5.7	12.4	6.6
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	CS(Mf)3(N)	Cloudy	Moderate	13:26	7.5	Bottom	3	2	26.6	7.8	23.6	5.8	12.6	7.6
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	IS(Mf)16	Cloudy	Moderate	12:42	5.8	Surface	1	1	26.6	7.8	22.4	5.7	8	8.7
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	IS(Mf)16	Cloudy	Moderate	12:42	5.8	Surface	1	2	26.7	7.9	22.1	5.8	7.9	9.6
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	IS(Mf)16	Cloudy	Moderate	12:42	5.8	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	IS(Mf)16	Cloudy	Moderate	12:42	5.8	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	IS(Mf)16	Cloudy	Moderate	12:42	5.8	Bottom	3	1	26.5	7.7	24.2	5.7	8.6	9.1
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	IS(Mf)16	Cloudy	Moderate	12:42	5.8	Bottom	3	2	26.6	7.8	23.7	5.7	8.5	10.1
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	SR4a	Cloudy	Calm	12:33	4.6	Surface	1	1	26.7	7.8	23.1	5.6	5.8	6.4
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	SR4a	Cloudy	Calm	12:33	4.6	Surface	1	2	26.7	7.8	22.9	5.6	5.6	6.7
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	SR4a	Cloudy	Calm	12:33	4.6	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	SR4a	Cloudy	Calm	12:33	4.6	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	SR4a	Cloudy	Calm	12:33	4.6	Bottom	3	1	26.6	7.7	23.6	5.6	6.9	7.9
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	SR4a	Cloudy	Calm	12:33	4.6	Bottom	3	2	26.6	7.8	23.6	5.5	6.9	6.9
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	SR4(N2)	Cloudy	Calm	12:27	4.7	Surface	1	1	26.5	7.8	19.6	5.5	8.8	6.3
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	SR4(N2)	Cloudy	Calm	12:27	4.7	Surface	1	2	26.5	7.8	20.1	5.6	8.8	7.4
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	SR4(N2)	Cloudy	Calm	12:27	4.7	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	SR4(N2)	Cloudy	Calm	12:27	4.7	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	SR4(N2)	Cloudy	Calm	12:27	4.7	Bottom	3	1	26.6	7.7	23.6	5.5	9.3	8.3
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	SR4(N2)	Cloudy	Calm	12:27	4.7	Bottom	3	2	26.5	7.8	23.5	5.5	9.3	7.3
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	IS8(N)	Cloudy	Calm	12:20	4.2	Surface	1	1	26.7	7.7	22.6	5.7	8.1	7.3
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	IS8(N)	Cloudy	Calm	12:20	4.2	Surface	1	2	26.7	7.8	22.4	5.6	8.2	8.3
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	IS8(N)	Cloudy	Calm	12:20	4.2	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	IS8(N)	Cloudy	Calm	12:20	4.2	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	IS8(N)	Cloudy	Calm	12:20	4.2	Bottom	3	1	26.6	7.7	22.9	5.6	12.5	7.5
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	IS8(N)	Cloudy	Calm	12:20	4.2	Bottom	3	2	26.6	7.8	23	5.6	12.5	8.7
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	IS(Mf)9	Cloudy	Calm	12:13	3.6	Surface	1	1	26.6	7.7	21.9	5.8	8.5	9.7
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	IS(Mf)9	Cloudy	Calm	12:13	3.6	Surface	1	2	26.6	7.8	21.8	5.8	8.3	10.1
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	IS(Mf)9	Cloudy	Calm	12:13	3.6	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	IS(Mf)9	Cloudy	Calm	12:13	3.6	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	IS(Mf)9	Cloudy	Calm	12:13	3.6	Bottom	3	1	26.5	7.6	22.2	5.8	8.6	8.1
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	IS(Mf)9	Cloudy	Calm	12:13	3.6	Bottom	3	2	26.6	7.7	22	5.8	8.3	8.4
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	IS(Mf)11	Rainy	Moderate	13:50	11	Surface	1	1	27.2	7.9	22.4	6.1	6.9	8.7
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	IS(Mf)11	Rainy	Moderate	13:50	11	Surface	1	2	27.2	7.9	22.4	6.1	7.1	8.8
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	IS(Mf)11	Rainy	Moderate	13:50	11	Middle	2	1	26.9	7.8	22.7	5.9	9.9	9
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	IS(Mf)11	Rainy	Moderate	13:50	11	Middle	2	2	26.8	7.9	22.7	5.9	10.1	9.2
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	IS(Mf)11	Rainy	Moderate	13:50	11	Bottom	3	1	26.8	7.8	22.8	5.9	10.1	8.7
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	IS(Mf)11	Rainy	Moderate	13:50	11	Bottom	3	2	26.8	7.9	22.8	5.9	10.3	9.7
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	SR7	Rainy	Moderate	13:58	4.3	Surface	1	1	26.8	7.9	23.2	5.7	13.8	18.6
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	SR7	Rainy	Moderate	13:58	4.3	Surface	1	2	26.8	7.9	23.2	5.7	13.2	17.7
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	SR7	Rainy	Moderate	13:58	4.3	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	SR7	Rainy	Moderate	13:58	4.3	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	SR7	Rainy	Moderate	13:58	4.3	Bottom	3	1	26.8	7.9	23.2	5.7	16.1	17.9
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	SR7	Rainy	Moderate	13:58	4.3	Bottom	3	2	26.8	7.9	23.2	5.7	15.8	18
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	IS17	Cloudy	Moderate	12:49	9.5	Surface	1	1	26.8	7.9	22.8	5.9	6.9	8.2
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	IS17	Cloudy	Moderate	12:49	9.5	Surface	1	2	26.8	7.9	22.9	5.8	6.7	8.1
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	IS17	Cloudy	Moderate	12:49	9.5	Middle	2	1	26.8	7.9	23	5.8	7.1	6.8
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	IS17	Cloudy	Moderate	12:49	9.5	Middle	2	2	26.8	7.9	22.9	5.7	6.7	6.8
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	IS17	Cloudy	Moderate	12:49	9.5	Bottom	3	1	26.6	7.8	24	5.6	7.4	7.1
TMCLKL	HY/2012/08	2019-08-02	Mid-Ebb	IS17	Cloudy	Moderate	12:49	9.5	Bottom	3	2	26.6	7.9	23.8	5.7	7.1	6.1
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	CS(Mf)5	Rainy	Moderate	06:08	12.2	Surface	1	1	26.6	7.9	23.5	5.7	7.1	10.5



Project	Contract	Date	Tide	Stat	Weather	Sea Condition	Time	Water Depth	Level	Lev_Cod	Replicate	Temp(°C)	pH	Salinity(ppt)	DO(mg/L)	Turbidity(NTU)	SS(mg/L)
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	CS(Mf)5	Rainy	Moderate	06:08	12.2	Surface	1	2	26.5	7.9	24.4	5.5	7.5	9.5
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	CS(Mf)5	Rainy	Moderate	06:08	12.2	Middle	2	1	26.5	7.9	24.8	5.3	8.3	9.7
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	CS(Mf)5	Rainy	Moderate	06:08	12.2	Middle	2	2	26.5	7.9	24.8	5.2	8.5	8.6
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	CS(Mf)5	Rainy	Moderate	06:08	12.2	Bottom	3	1	26.4	7.9	25.9	5.1	13	8.6
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	CS(Mf)5	Rainy	Moderate	06:08	12.2	Bottom	3	2	26.4	7.9	25.3	5.1	12.6	9.7
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	CS(Mf)3(N)	Cloudy	Moderate	07:05	7.3	Surface	1	1	26.7	7.8	21.3	5.9	7.5	8.5
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	CS(Mf)3(N)	Cloudy	Moderate	07:05	7.3	Surface	1	2	26.7	7.8	21.4	5.8	7.2	8.8
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	CS(Mf)3(N)	Cloudy	Moderate	07:05	7.3	Middle	2	1	26.7	7.8	22.1	5.7	7.1	7.7
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	CS(Mf)3(N)	Cloudy	Moderate	07:05	7.3	Middle	2	2	26.7	7.8	22.2	5.7	7.3	8.7
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	CS(Mf)3(N)	Cloudy	Moderate	07:05	7.3	Bottom	3	1	26.7	7.7	22.3	5.7	6.1	9.7
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	CS(Mf)3(N)	Cloudy	Moderate	07:05	7.3	Bottom	3	2	26.7	7.8	22.3	5.7	6.1	8.6
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	IS(Mf)16	Rainy	Moderate	07:57	5.7	Surface	1	1	26.6	7.8	23.2	5.8	6.9	8.2
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	IS(Mf)16	Rainy	Moderate	07:57	5.7	Surface	1	2	26.6	7.9	23.1	5.8	6.6	7.1
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	IS(Mf)16	Rainy	Moderate	07:57	5.7	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	IS(Mf)16	Rainy	Moderate	07:57	5.7	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	IS(Mf)16	Rainy	Moderate	07:57	5.7	Bottom	3	1	26.5	7.7	23.8	5.7	7.8	9.6
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	IS(Mf)16	Rainy	Moderate	07:57	5.7	Bottom	3	2	26.5	7.8	23.6	5.7	7.3	8.8
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	SR4a	Rainy	Calm	08:09	4.2	Surface	1	1	26.6	7.7	23.5	5.7	7.9	9.6
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	SR4a	Rainy	Calm	08:09	4.2	Surface	1	2	26.5	7.8	23.4	5.7	8.2	10.7
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	SR4a	Rainy	Calm	08:09	4.2	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	SR4a	Rainy	Calm	08:09	4.2	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	SR4a	Rainy	Calm	08:09	4.2	Bottom	3	1	26.6	7.7	23.5	5.7	7.8	9.3
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	SR4a	Rainy	Calm	08:09	4.2	Bottom	3	2	26.5	7.8	23.5	5.6	7.6	9.1
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	SR4(N2)	Rainy	Calm	08:15	4.7	Surface	1	1	26.5	7.8	22.7	5.6	6.7	9.5
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	SR4(N2)	Rainy	Calm	08:15	4.7	Surface	1	2	26.5	7.9	23.1	5.6	6.5	9.9
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	SR4(N2)	Rainy	Calm	08:15	4.7	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	SR4(N2)	Rainy	Calm	08:15	4.7	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	SR4(N2)	Rainy	Calm	08:15	4.7	Bottom	3	1	26.5	7.8	23.8	5.5	7.5	8.3
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	SR4(N2)	Rainy	Calm	08:15	4.7	Bottom	3	2	26.6	7.8	23.8	5.5	7.3	9.5
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	IS8(N)	Rainy	Calm	08:22	3.9	Surface	1	1	26.5	7.8	22.9	5.8	7.9	8.9
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	IS8(N)	Rainy	Calm	08:22	3.9	Surface	1	2	26.6	7.8	23.1	5.8	7.8	7.8
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	IS8(N)	Rainy	Calm	08:22	3.9	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	IS8(N)	Rainy	Calm	08:22	3.9	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	IS8(N)	Rainy	Calm	08:22	3.9	Bottom	3	1	26.6	7.8	23.4	5.8	7.6	8.4
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	IS8(N)	Rainy	Calm	08:22	3.9	Bottom	3	2	26.5	7.8	23.2	5.8	7.8	7.6
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	IS(Mf)9	Rainy	Calm	08:30	3.7	Surface	1	1	26.6	7.7	23	6	7.1	10.4
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	IS(Mf)9	Rainy	Calm	08:30	3.7	Surface	1	2	26.6	7.8	23	6	6.8	10.3
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	IS(Mf)9	Rainy	Calm	08:30	3.7	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	IS(Mf)9	Rainy	Calm	08:30	3.7	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	IS(Mf)9	Rainy	Calm	08:30	3.7	Bottom	3	1	26.5	7.7	23	6.1	7.5	8.7
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	IS(Mf)9	Rainy	Calm	08:30	3.7	Bottom	3	2	26.6	7.8	23	6	7.1	7.4
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	IS(Mf)11	Rainy	Rough	06:43	11.4	Surface	1	1	26.5	7.9	23	5.8	11.5	9.8
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	IS(Mf)11	Rainy	Rough	06:43	11.4	Surface	1	2	26.5	7.9	22.4	5.8	11.1	10.8
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	IS(Mf)11	Rainy	Rough	06:43	11.4	Middle	2	1	26.5	7.8	23.6	5.7	15.4	9.8
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	IS(Mf)11	Rainy	Rough	06:43	11.4	Middle	2	2	26.5	7.9	23.6	5.7	15.3	9
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	IS(Mf)11	Rainy	Rough	06:43	11.4	Bottom	3	1	26.5	7.8	23.8	5.7	14.4	9.4
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	IS(Mf)11	Rainy	Rough	06:43	11.4	Bottom	3	2	26.5	7.9	23.9	5.7	14.7	9.3
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	SR7	Rainy	Rough	06:31	4.2	Surface	1	1	26.6	7.7	23.5	5.4	10.8	32.5
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	SR7	Rainy	Rough	06:31	4.2	Surface	1	2	26.6	7.8	23.6	5.4	10.4	16.2
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	SR7	Rainy	Rough	06:31	4.2	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	SR7	Rainy	Rough	06:31	4.2	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	SR7	Rainy	Rough	06:31	4.2	Bottom	3	1	26.6	7.7	23.7	5.5	14.4	15.9
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	SR7	Rainy	Rough	06:31	4.2	Bottom	3	2	26.6	7.8	23.8	5.4	14.1	16.6
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	IS17	Rainy	Moderate	07:47	9.3	Surface	1	1	26.6	7.8	23	5.7	7	6.9
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	IS17	Rainy	Moderate	07:47	9.3	Surface	1	2	26.6	7.8	23	5.7	7.1	7.9
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	IS17	Rainy	Moderate	07:47	9.3	Middle	2	1	26.6	7.7	24.3	5.3	8.3	8.9
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	IS17	Rainy	Moderate	07:47	9.3	Middle	2	2	26.6	7.8	23.9	5.4	8.3	8
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	IS17	Rainy	Moderate	07:47	9.3	Bottom	3	1	26.5	7.6	24.6	5.4	8.2	7.5
TMCLKL	HY/2012/08	2019-08-02	Mid-Flood	IS17	Rainy	Moderate	07:47	9.3	Bottom	3	2	26.5	7.8	24.6	5.4	8.4	8.7
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	CS(Mf)5	Sunny	Calm	16:27	13.8	Surface	1	1	28.1	7.9	20.3	5.2	3.1	6.6
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	CS(Mf)5	Sunny	Calm	16:27	13.8	Surface	1	2	28.1	7.9	20.3	5.2	3.1	7.6

Project	Contract	Date	Tide	Stat	Weather	Sea Condition	Time	Water Depth	Level	Lev_Cod	Replicate	Temp(°C)	pH	Salinity(ppt)	DO(mg/L)	Turbidity(NTU)	SS(mg/L)
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	CS(Mf)5	Sunny	Calm	16:27	13.8	Middle	2	1	27.8	7.9	20.9	5.2	3.6	7.4
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	CS(Mf)5	Sunny	Calm	16:27	13.8	Middle	2	2	27.8	7.9	20.9	5.2	3.6	7.8
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	CS(Mf)5	Sunny	Calm	16:27	13.8	Bottom	3	1	27.6	8	22	5.4	5.5	7.6
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	CS(Mf)5	Sunny	Calm	16:27	13.8	Bottom	3	2	27.6	8	22.1	5.3	5.5	7.7
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	CS(Mf)3(N)	Sunny	Calm	15:43	7.3	Surface	1	1	28.7	8	18.1	5.7	2.3	5.7
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	CS(Mf)3(N)	Sunny	Calm	15:43	7.3	Surface	1	2	28.7	8	18.1	5.7	2.3	5.9
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	CS(Mf)3(N)	Sunny	Calm	15:43	7.3	Middle	2	1	28.1	8	18.8	5.6	2.9	4.7
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	CS(Mf)3(N)	Sunny	Calm	15:43	7.3	Middle	2	2	28.1	8	18.8	5.6	2.9	5.9
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	CS(Mf)3(N)	Sunny	Calm	15:43	7.3	Bottom	3	1	27.5	8.1	21.6	5.6	5.2	8.2
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	CS(Mf)3(N)	Sunny	Calm	15:43	7.3	Bottom	3	2	27.5	8.1	21.6	5.6	5.2	7
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	IS(Mf)16	Sunny	Calm	15:03	4.9	Surface	1	1	27.6	8.1	21	5.4	3.1	11.7
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	IS(Mf)16	Sunny	Calm	15:03	4.9	Surface	1	2	27.6	8.1	21	5.4	3.1	10.3
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	IS(Mf)16	Sunny	Calm	15:03	4.9	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	IS(Mf)16	Sunny	Calm	15:03	4.9	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	IS(Mf)16	Sunny	Calm	15:03	4.9	Bottom	3	1	27.4	8.1	21.9	5.8	4.3	7.8
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	IS(Mf)16	Sunny	Calm	15:03	4.9	Bottom	3	2	27.4	8.1	22	5.8	4.3	8.8
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	SR4a	Sunny	Calm	14:52	3.4	Surface	1	1	27.7	7.9	19.8	5.3	4.7	5.6
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	SR4a	Sunny	Calm	14:52	3.4	Surface	1	2	27.7	7.9	19.8	5.3	4.6	6.7
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	SR4a	Sunny	Calm	14:52	3.4	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	SR4a	Sunny	Calm	14:52	3.4	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	SR4a	Sunny	Calm	14:52	3.4	Bottom	3	1	27.4	7.9	21	5.5	9.3	8.9
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	SR4a	Sunny	Calm	14:52	3.4	Bottom	3	2	27.4	7.9	21	5.5	9.3	8.7
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	SR4(N2)	Sunny	Calm	14:47	3.9	Surface	1	1	27.7	7.9	19.9	5	4.6	15.5
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	SR4(N2)	Sunny	Calm	14:47	3.9	Surface	1	2	28.6	7.9	19.2	5.2	4.4	15.1
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	SR4(N2)	Sunny	Calm	14:47	3.9	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	SR4(N2)	Sunny	Calm	14:47	3.9	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	SR4(N2)	Sunny	Calm	14:47	3.9	Bottom	3	1	27.7	7.9	19.9	5.4	8.2	7.6
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	SR4(N2)	Sunny	Calm	14:47	3.9	Bottom	3	2	28.4	7.9	19.3	5.4	8.1	6.6
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	IS8(N)	Sunny	Calm	14:41	3.8	Surface	1	1	27.6	8	20.5	5.3	6.3	6.6
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	IS8(N)	Sunny	Calm	14:41	3.8	Surface	1	2	28	8	20	5.4	6.3	6.3
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	IS8(N)	Sunny	Calm	14:41	3.8	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	IS8(N)	Sunny	Calm	14:41	3.8	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	IS8(N)	Sunny	Calm	14:41	3.8	Bottom	3	1	27.6	8	20.6	5.6	9.1	10.8
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	IS8(N)	Sunny	Calm	14:41	3.8	Bottom	3	2	27.9	8	20.1	5.4	9.1	10.2
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	IS(Mf)9	Sunny	Calm	14:33	3.5	Surface	1	1	28.1	8.1	19.8	5.5	5.2	7.9
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	IS(Mf)9	Sunny	Calm	14:33	3.5	Surface	1	2	28.1	8.1	19.8	5.5	5.1	7.5
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	IS(Mf)9	Sunny	Calm	14:33	3.5	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	IS(Mf)9	Sunny	Calm	14:33	3.5	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	IS(Mf)9	Sunny	Calm	14:33	3.5	Bottom	3	1	27.9	8.2	20.2	5.5	7.4	8.8
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	IS(Mf)9	Sunny	Calm	14:33	3.5	Bottom	3	2	27.9	8.2	20.2	5.5	7.3	7.8
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	IS(Mf)11	Sunny	Calm	16:03	10.8	Surface	1	1	28.9	8	18.9	5.8	2.3	5.8
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	IS(Mf)11	Sunny	Calm	16:03	10.8	Surface	1	2	28.9	8	18.9	5.8	2.2	6.7
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	IS(Mf)11	Sunny	Calm	16:03	10.8	Middle	2	1	28.5	8.1	19.4	5.6	4	6.7
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	IS(Mf)11	Sunny	Calm	16:03	10.8	Middle	2	2	28.5	8.1	19.4	5.6	4	7.3
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	IS(Mf)11	Sunny	Calm	16:03	10.8	Bottom	3	1	28.2	8.1	19.8	5.8	4.5	7.3
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	IS(Mf)11	Sunny	Calm	16:03	10.8	Bottom	3	2	28.1	8.1	19.8	5.8	4.5	8.4
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	SR7	Sunny	Calm	16:10	3.6	Surface	1	1	28.8	7.9	18.5	5.7	3.2	7.4
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	SR7	Sunny	Calm	16:10	3.6	Surface	1	2	28.9	7.9	18.4	5.7	3.2	8.1
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	SR7	Sunny	Calm	16:10	3.6	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	SR7	Sunny	Calm	16:10	3.6	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	SR7	Sunny	Calm	16:10	3.6	Bottom	3	1	28.1	7.9	19.9	5.8	5.9	8.1
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	SR7	Sunny	Calm	16:10	3.6	Bottom	3	2	28.1	7.9	19.9	5.8	5.8	7.5
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	IS17	Sunny	Calm	15:09	10.6	Surface	1	1	28.2	7.9	19.7	5.4	4	8.1
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	IS17	Sunny	Calm	15:09	10.6	Surface	1	2	28.2	7.9	19.7	5.4	3.9	7.8
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	IS17	Sunny	Calm	15:09	10.6	Middle	2	1	28.1	7.9	20.2	5.2	4.9	7.2
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	IS17	Sunny	Calm	15:09	10.6	Middle	2	2	28.1	7.9	20.2	5.2	4.9	8.4
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	IS17	Sunny	Calm	15:09	10.6	Bottom	3	1	27.1	8	23.7	4.9	7.8	8.1
TMCLKL	HY/2012/08	2019-08-05	Mid-Ebb	IS17	Sunny	Calm	15:09	10.6	Bottom	3	2	27.1	8	23.7	4.9	7.8	8.5
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	CS(Mf)5	Sunny	Moderate	08:26	13.4	Surface	1	1	27.6	7.7	18.7	5.3	1.5	5.4
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	CS(Mf)5	Sunny	Moderate	08:26	13.4	Surface	1	2	27.6	7.7	18.7	5.3	1.5	5.3
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	CS(Mf)5	Sunny	Moderate	08:26	13.4	Middle	2	1	27.3	7.8	21.7	5	1.7	7.3

Project	Contract	Date	Tide	Stat	Weather	Sea Condition	Time	Water Depth	Level	Lev_Cod	Replicate	Temp(°C)	pH	Salinity(ppt)	DO(mg/L)	Turbidity(NTU)	SS(mg/L)
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	CS(Mf)5	Sunny	Moderate	08:26	13.4	Middle	2	2	27.3	7.8	21.7	5	1.7	7.5
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	CS(Mf)5	Sunny	Moderate	08:26	13.4	Bottom	3	1	27.1	7.9	23.8	5	2.1	7.9
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	CS(Mf)5	Sunny	Moderate	08:26	13.4	Bottom	3	2	27.1	7.9	23.8	5	2.1	6.9
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	CS(Mf)3(N)	Sunny	Moderate	09:16	7.1	Surface	1	1	27.7	7.9	18.3	5.2	5.2	11.7
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	CS(Mf)3(N)	Sunny	Moderate	09:16	7.1	Surface	1	2	27.8	7.9	17.9	5.3	5.2	13.8
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	CS(Mf)3(N)	Sunny	Moderate	09:16	7.1	Middle	2	1	27.7	8	18	5.3	6.3	10.2
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	CS(Mf)3(N)	Sunny	Moderate	09:16	7.1	Middle	2	2	27.7	8	18.4	5.3	6.3	11.6
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	CS(Mf)3(N)	Sunny	Moderate	09:16	7.1	Bottom	3	1	27.6	8.1	18.4	5.3	8.6	10.3
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	CS(Mf)3(N)	Sunny	Moderate	09:16	7.1	Bottom	3	2	27.7	8	18.3	5.3	8.5	11.8
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	IS(Mf)16	Sunny	Moderate	09:57	5.5	Surface	1	1	27.6	8	19.6	5.3	9.2	17
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	IS(Mf)16	Sunny	Moderate	09:57	5.5	Surface	1	2	27.6	8	19.6	5.3	9.2	18.9
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	IS(Mf)16	Sunny	Moderate	09:57	5.5	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	IS(Mf)16	Sunny	Moderate	09:57	5.5	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	IS(Mf)16	Sunny	Moderate	09:57	5.5	Bottom	3	1	27.4	8	20	5.4	14.7	5.6
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	IS(Mf)16	Sunny	Moderate	09:57	5.5	Bottom	3	2	27.4	8	20	5.3	14.6	5.1
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	SR4a	Sunny	Moderate	10:00	4.9	Surface	1	1	27.8	7.9	18.9	5.5	1.4	5.7
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	SR4a	Sunny	Moderate	10:00	4.9	Surface	1	2	27.8	7.9	18.9	5.5	1.3	5.2
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	SR4a	Sunny	Moderate	10:00	4.9	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	SR4a	Sunny	Moderate	10:00	4.9	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	SR4a	Sunny	Moderate	10:00	4.9	Bottom	3	1	27.6	7.9	19.2	5.8	2.6	5.9
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	SR4a	Sunny	Moderate	10:00	4.9	Bottom	3	2	27.6	7.9	19.2	5.8	2.6	6.8
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	SR4(N2)	Sunny	Moderate	10:16	4.5	Surface	1	1	27.8	7.8	19.1	5.4	4.4	10.4
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	SR4(N2)	Sunny	Moderate	10:16	4.5	Surface	1	2	27.8	7.8	19.1	5.4	4.4	9.7
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	SR4(N2)	Sunny	Moderate	10:16	4.5	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	SR4(N2)	Sunny	Moderate	10:16	4.5	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	SR4(N2)	Sunny	Moderate	10:16	4.5	Bottom	3	1	27.7	7.8	19.2	5.5	6.1	12
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	SR4(N2)	Sunny	Moderate	10:16	4.5	Bottom	3	2	27.7	7.8	19.2	5.4	6	11.1
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	IS8(N)	Sunny	Moderate	10:23	4.2	Surface	1	1	27.8	7.8	18.6	5.4	3.1	5.8
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	IS8(N)	Sunny	Moderate	10:23	4.2	Surface	1	2	27.8	7.8	18.6	5.4	3	5.3
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	IS8(N)	Sunny	Moderate	10:23	4.2	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	IS8(N)	Sunny	Moderate	10:23	4.2	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	IS8(N)	Sunny	Moderate	10:23	4.2	Bottom	3	1	27.7	7.8	18.7	5.3	4.2	5.2
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	IS8(N)	Sunny	Moderate	10:23	4.2	Bottom	3	2	27.8	7.8	18.7	5.3	4.2	6.2
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	IS(Mf)9	Sunny	Moderate	10:29	3.9	Surface	1	1	27.7	7.8	19	5.6	5.4	11.8
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	IS(Mf)9	Sunny	Moderate	10:29	3.9	Surface	1	2	27.7	7.8	19	5.6	5.4	13.3
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	IS(Mf)9	Sunny	Moderate	10:29	3.9	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	IS(Mf)9	Sunny	Moderate	10:29	3.9	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	IS(Mf)9	Sunny	Moderate	10:29	3.9	Bottom	3	1	27.6	7.8	19.3	6.1	6.3	12.1
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	IS(Mf)9	Sunny	Moderate	10:29	3.9	Bottom	3	2	27.6	7.8	19.2	5.9	6.1	10.6
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	IS(Mf)11	Sunny	Moderate	08:52	11.3	Surface	1	1	27.4	7.7	20.1	5.2	6.7	8
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	IS(Mf)11	Sunny	Moderate	08:52	11.3	Surface	1	2	27.4	7.7	20.1	5.2	6.7	8.7
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	IS(Mf)11	Sunny	Moderate	08:52	11.3	Middle	2	1	27.4	7.7	20	5.2	7.7	9.8
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	IS(Mf)11	Sunny	Moderate	08:52	11.3	Middle	2	2	27.4	7.7	20.1	5.2	7.7	10.5
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	IS(Mf)11	Sunny	Moderate	08:52	11.3	Bottom	3	1	27.3	7.8	21.2	5.5	9.2	11.1
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	IS(Mf)11	Sunny	Moderate	08:52	11.3	Bottom	3	2	27.3	7.8	21.2	5.5	9.2	10.9
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	SR7	Sunny	Moderate	08:45	4.2	Surface	1	1	27.7	7.7	19.1	5.3	3.3	8.6
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	SR7	Sunny	Moderate	08:45	4.2	Surface	1	2	27.7	7.7	19.1	5.3	3.2	8.8
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	SR7	Sunny	Moderate	08:45	4.2	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	SR7	Sunny	Moderate	08:45	4.2	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	SR7	Sunny	Moderate	08:45	4.2	Bottom	3	1	27.4	7.7	20.7	5.3	8	10.2
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	SR7	Sunny	Moderate	08:45	4.2	Bottom	3	2	27.4	7.7	20.7	5.3	8	11.6
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	IS17	Sunny	Moderate	09:52	11.2	Surface	1	1	27.4	7.9	21	5.2	1.3	6.6
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	IS17	Sunny	Moderate	09:52	11.2	Surface	1	2	27.5	7.9	20.3	5.2	1.3	5.7
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	IS17	Sunny	Moderate	09:52	11.2	Middle	2	1	27.4	8	20.6	5.4	2.1	5.6
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	IS17	Sunny	Moderate	09:52	11.2	Middle	2	2	27.6	8	19.9	5.3	2	5.8
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	IS17	Sunny	Moderate	09:52	11.2	Bottom	3	1	27.3	8	21.2	5.7	4.3	5.1
TMCLKL	HY/2012/08	2019-08-05	Mid-Flood	IS17	Sunny	Moderate	09:52	11.2	Bottom	3	2	27.4	8	20.7	5.4	4.2	4.8
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	CS(Mf)5	Sunny	Moderate	18:10	13.7	Surface	1	1	28.7	7.8	21.8	5.7	3.8	6.1
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	CS(Mf)5	Sunny	Moderate	18:10	13.7	Surface	1	2	28.7	7.9	21.4	5.7	3.8	5.5
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	CS(Mf)5	Sunny	Moderate	18:10	13.7	Middle	2	1	27.9	7.8	24.2	4.9	3.5	5.2
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	CS(Mf)5	Sunny	Moderate	18:10	13.7	Middle	2	2	27.9	7.9	23.7	4.9	3.5	5.9

Project	Contract	Date	Tide	Stat	Weather	Sea Condition	Time	Water Depth	Level	Lev_Cod	Replicate	Temp(°C)	pH	Salinity(ppt)	DO(mg/L)	Turbidity(NTU)	SS(mg/L)
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	CS(Mf)5	Sunny	Moderate	18:10	13.7	Bottom	3	1	27.7	7.8	25.7	4.8	2.8	5.6
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	CS(Mf)5	Sunny	Moderate	18:10	13.7	Bottom	3	2	27.7	7.9	25.1	4.9	2.7	6
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	CS(Mf)3(N)	Sunny	Moderate	17:25	7.3	Surface	1	1	28.9	7.7	18.3	5.5	3.9	7.8
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	CS(Mf)3(N)	Sunny	Moderate	17:25	7.3	Surface	1	2	28.9	7.8	18	5.5	3.8	8.1
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	CS(Mf)3(N)	Sunny	Moderate	17:25	7.3	Middle	2	1	28	7.8	21.7	4.8	6.2	8.7
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	CS(Mf)3(N)	Sunny	Moderate	17:25	7.3	Middle	2	2	28	7.8	21.4	4.9	6.2	8.9
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	CS(Mf)3(N)	Sunny	Moderate	17:25	7.3	Bottom	3	1	28	7.8	23.3	5.1	11.3	6.5
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	CS(Mf)3(N)	Sunny	Moderate	17:25	7.3	Bottom	3	2	28	7.9	22.9	5.2	11.3	6.2
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	IS(Mf)16	Sunny	Moderate	16:47	5	Surface	1	1	28.4	7.8	21.6	5.5	5.5	9.8
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	IS(Mf)16	Sunny	Moderate	16:47	5	Surface	1	2	28.4	7.9	21.6	5.5	5.5	10.6
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	IS(Mf)16	Sunny	Moderate	16:47	5	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	IS(Mf)16	Sunny	Moderate	16:47	5	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	IS(Mf)16	Sunny	Moderate	16:47	5	Bottom	3	1	28.1	7.8	22.3	5.1	7.4	9.7
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	IS(Mf)16	Sunny	Moderate	16:47	5	Bottom	3	2	28.1	7.8	21.9	5.1	7.5	8.7
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	SR4a	Sunny	Moderate	16:39	3.9	Surface	1	1	28.5	7.8	20.8	5.8	4.5	11.3
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	SR4a	Sunny	Moderate	16:39	3.9	Surface	1	2	28.5	7.9	20.4	5.9	4.6	10.6
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	SR4a	Sunny	Moderate	16:39	3.9	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	SR4a	Sunny	Moderate	16:39	3.9	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	SR4a	Sunny	Moderate	16:39	3.9	Bottom	3	1	28.1	7.8	21.6	4.9	4.8	10.2
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	SR4a	Sunny	Moderate	16:39	3.9	Bottom	3	2	28.2	7.8	21.2	5.2	4.9	10.5
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	SR4(N2)	Sunny	Moderate	16:35	3.6	Surface	1	1	28.5	7.8	20.9	5.6	6.5	9.8
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	SR4(N2)	Sunny	Moderate	16:35	3.6	Surface	1	2	28.5	7.8	20.6	5.7	6.4	10.7
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	SR4(N2)	Sunny	Moderate	16:35	3.6	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	SR4(N2)	Sunny	Moderate	16:35	3.6	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	SR4(N2)	Sunny	Moderate	16:35	3.6	Bottom	3	1	28.3	7.8	21.5	5	9.8	8.5
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	SR4(N2)	Sunny	Moderate	16:35	3.6	Bottom	3	2	28.3	7.8	21.1	5	9.7	7.5
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	IS8(N)	Sunny	Moderate	16:30	4.8	Surface	1	1	28.4	7.8	21.4	5.5	6.5	7.1
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	IS8(N)	Sunny	Moderate	16:30	4.8	Surface	1	2	28.4	7.9	21	5.5	6.5	6.1
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	IS8(N)	Sunny	Moderate	16:30	4.8	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	IS8(N)	Sunny	Moderate	16:30	4.8	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	IS8(N)	Sunny	Moderate	16:30	4.8	Bottom	3	1	28.1	7.8	22.2	5	7.9	7.4
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	IS8(N)	Sunny	Moderate	16:30	4.8	Bottom	3	2	28.1	7.9	21.8	5	7.9	8.1
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	IS(Mf)9	Sunny	Moderate	16:22	4.2	Surface	1	1	27.6	7.8	25.1	4.5	3.3	7.6
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	IS(Mf)9	Sunny	Moderate	16:22	4.2	Surface	1	2	27.6	7.8	25.1	4.5	3.3	6.7
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	IS(Mf)9	Sunny	Moderate	16:22	4.2	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	IS(Mf)9	Sunny	Moderate	16:22	4.2	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	IS(Mf)9	Sunny	Moderate	16:22	4.2	Bottom	3	1	28	7.8	21	7	5.3	6.7
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	IS(Mf)9	Sunny	Moderate	16:22	4.2	Bottom	3	2	28	7.8	21	7	5.3	6.6
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	IS(Mf)11	Sunny	Moderate	17:48	10.9	Surface	1	1	29.1	7.8	18.3	6	4.1	5.5
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	IS(Mf)11	Sunny	Moderate	17:48	10.9	Surface	1	2	29.1	7.8	18	5.8	4.1	5.9
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	IS(Mf)11	Sunny	Moderate	17:48	10.9	Middle	2	1	28.4	7.7	20.6	5	5.1	14.4
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	IS(Mf)11	Sunny	Moderate	17:48	10.9	Middle	2	2	28.4	7.8	20.3	5.1	5.1	12.6
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	IS(Mf)11	Sunny	Moderate	17:48	10.9	Bottom	3	1	27.9	7.8	23.4	4.7	5.5	8.3
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	IS(Mf)11	Sunny	Moderate	17:48	10.9	Bottom	3	2	27.9	7.8	23	4.8	5.5	9.6
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	SR7	Sunny	Moderate	17:54	4.4	Surface	1	1	28.7	7.8	20.5	5.7	4.1	5.5
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	SR7	Sunny	Moderate	17:54	4.4	Surface	1	2	28.7	7.9	20.1	5.7	4.2	4.8
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	SR7	Sunny	Moderate	17:54	4.4	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	SR7	Sunny	Moderate	17:54	4.4	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	SR7	Sunny	Moderate	17:54	4.4	Bottom	3	1	28.5	7.8	21	5.4	4.6	8.4
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	SR7	Sunny	Moderate	17:54	4.4	Bottom	3	2	28.5	7.9	20.8	5.6	4.6	8.2
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	IS17	Sunny	Moderate	16:52	10.5	Surface	1	1	28	7.8	22.8	4.8	4.8	9.3
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	IS17	Sunny	Moderate	16:52	10.5	Surface	1	2	28	7.8	22.4	4.9	4.9	8.3
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	IS17	Sunny	Moderate	16:52	10.5	Middle	2	1	27.6	7.8	25.1	4.5	8.4	9.6
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	IS17	Sunny	Moderate	16:52	10.5	Middle	2	2	27.6	7.8	24.6	4.5	8.4	9.2
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	IS17	Sunny	Moderate	16:52	10.5	Bottom	3	1	27.6	7.8	25.2	4.5	11.4	6.9
TMCLKL	HY/2012/08	2019-08-07	Mid-Ebb	IS17	Sunny	Moderate	16:52	10.5	Bottom	3	2	27.6	7.8	24.7	4.5	11.4	7.9
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	CS(Mf)5	Sunny	Moderate	10:29	14.6	Surface	1	1	28	7.8	21.3	4.6	4	6.5
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	CS(Mf)5	Sunny	Moderate	10:29	14.6	Surface	1	2	27.6	7.8	21.3	4.6	4	5.8
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	CS(Mf)5	Sunny	Moderate	10:29	14.6	Middle	2	1	27.6	7.8	24.6	4.6	4	6.7
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	CS(Mf)5	Sunny	Moderate	10:29	14.6	Middle	2	2	27.6	7.8	24.2	4.6	4	6.8
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	CS(Mf)5	Sunny	Moderate	10:29	14.6	Bottom	3	1	27.5	7.8	26.5	4.5	10.6	7



Project	Contract	Date	Tide	Stat	Weather	Sea Condition	Time	Water Depth	Level	Lev_Cod	Replicate	Temp(°C)	pH	Salinity(ppt)	DO(mg/L)	Turbidity(NTU)	SS(mg/L)
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	CS(Mf)5	Sunny	Moderate	10:29	14.6	Bottom	3	2	27.4	7.8	26	4.5	10.6	7.9
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	CS(Mf)3(N)	Sunny	Moderate	11:19	7.2	Surface	1	1	28.2	7.7	19.8	5	5.1	9.1
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	CS(Mf)3(N)	Sunny	Moderate	11:19	7.2	Surface	1	2	28.4	7.8	19.2	5.3	5.2	8.1
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	CS(Mf)3(N)	Sunny	Moderate	11:19	7.2	Middle	2	1	28.2	7.7	19.9	5	6	10.5
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	CS(Mf)3(N)	Sunny	Moderate	11:19	7.2	Middle	2	2	28.2	7.8	19.5	5	6.1	9.9
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	CS(Mf)3(N)	Sunny	Moderate	11:19	7.2	Bottom	3	1	28.3	7.7	20.1	5.2	6.2	10.7
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	CS(Mf)3(N)	Sunny	Moderate	11:19	7.2	Bottom	3	2	28.2	7.8	19.6	5.1	6.2	9.8
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	IS(Mf)16	Sunny	Moderate	12:23	5.6	Surface	1	1	28.5	7.8	20.7	5.6	5.9	8.7
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	IS(Mf)16	Sunny	Moderate	12:23	5.6	Surface	1	2	28.5	7.9	20.3	5.6	5.9	7.7
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	IS(Mf)16	Sunny	Moderate	12:23	5.6	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	IS(Mf)16	Sunny	Moderate	12:23	5.6	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	IS(Mf)16	Sunny	Moderate	12:23	5.6	Bottom	3	1	28	7.8	21.6	5	10.4	7.1
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	IS(Mf)16	Sunny	Moderate	12:23	5.6	Bottom	3	2	28	7.8	21.2	5	10.3	8
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	SR4a	Sunny	Moderate	12:32	3.8	Surface	1	1	28.6	7.7	20.4	5.5	3.6	9.2
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	SR4a	Sunny	Moderate	12:32	3.8	Surface	1	2	28.6	7.8	20.1	5.6	3.6	8.2
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	SR4a	Sunny	Moderate	12:32	3.8	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	SR4a	Sunny	Moderate	12:32	3.8	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	SR4a	Sunny	Moderate	12:32	3.8	Bottom	3	1	28	7.7	21.7	4.5	6.7	9.6
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	SR4a	Sunny	Moderate	12:32	3.8	Bottom	3	2	28	7.8	21.3	4.5	6.7	9.9
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	SR4(N2)	Sunny	Moderate	12:36	3.6	Surface	1	1	28.5	7.7	20.4	5.5	3.6	10.2
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	SR4(N2)	Sunny	Moderate	12:36	3.6	Surface	1	2	28.4	7.8	20	5.6	3.6	9.2
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	SR4(N2)	Sunny	Moderate	12:36	3.6	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	SR4(N2)	Sunny	Moderate	12:36	3.6	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	SR4(N2)	Sunny	Moderate	12:36	3.6	Bottom	3	1	28.2	7.7	20.7	5.3	4.1	8.4
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	SR4(N2)	Sunny	Moderate	12:36	3.6	Bottom	3	2	28.3	7.8	20.3	5.4	4.1	9.3
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	IS8(N)	Sunny	Moderate	12:41	4.3	Surface	1	1	28.3	7.7	20.8	5.2	5.6	9.7
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	IS8(N)	Sunny	Moderate	12:41	4.3	Surface	1	2	28.3	7.8	20.4	5.2	5.6	9.3
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	IS8(N)	Sunny	Moderate	12:41	4.3	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	IS8(N)	Sunny	Moderate	12:41	4.3	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	IS8(N)	Sunny	Moderate	12:41	4.3	Bottom	3	1	28.3	7.7	21	5.1	9.5	8.4
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	IS8(N)	Sunny	Moderate	12:41	4.3	Bottom	3	2	28.2	7.8	20.5	5.2	9.5	8.8
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	IS(Mf)9	Sunny	Moderate	12:49	3.8	Surface	1	1	28.4	7.7	20.7	5.7	7	8.6
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	IS(Mf)9	Sunny	Moderate	12:49	3.8	Surface	1	2	28.4	7.8	20.3	5.7	7	8.3
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	IS(Mf)9	Sunny	Moderate	12:49	3.8	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	IS(Mf)9	Sunny	Moderate	12:49	3.8	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	IS(Mf)9	Sunny	Moderate	12:49	3.8	Bottom	3	1	28.3	7.7	20.8	5.3	9.3	8.6
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	IS(Mf)9	Sunny	Moderate	12:49	3.8	Bottom	3	2	28.3	7.8	20.5	5.4	9.2	8.6
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	IS(Mf)11	Sunny	Moderate	10:55	11.2	Surface	1	1	28	7.8	21.9	4.8	8	8.6
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	IS(Mf)11	Sunny	Moderate	10:55	11.2	Surface	1	2	27.9	7.8	21.7	4.8	8	8.6
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	IS(Mf)11	Sunny	Moderate	10:55	11.2	Middle	2	1	27.9	7.8	22	4.8	7.3	9.4
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	IS(Mf)11	Sunny	Moderate	10:55	11.2	Middle	2	2	27.9	7.8	21.7	4.8	7.3	10.3
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	IS(Mf)11	Sunny	Moderate	10:55	11.2	Bottom	3	1	27.7	7.8	23.9	4.7	11.9	24.3
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	IS(Mf)11	Sunny	Moderate	10:55	11.2	Bottom	3	2	27.7	7.8	23.5	4.7	11.9	21
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	SR7	Sunny	Moderate	10:48	4.3	Surface	1	1	28.2	7.8	21.2	5	4.5	4
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	SR7	Sunny	Moderate	10:48	4.3	Surface	1	2	28.1	7.8	20.9	5	4.5	5
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	SR7	Sunny	Moderate	10:48	4.3	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	SR7	Sunny	Moderate	10:48	4.3	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	SR7	Sunny	Moderate	10:48	4.3	Bottom	3	1	27.9	7.8	22.7	4.8	10.1	8.1
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	SR7	Sunny	Moderate	10:48	4.3	Bottom	3	2	27.9	7.8	22.3	4.8	10.1	9
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	IS17	Sunny	Moderate	12:01	11.9	Surface	1	1	28.3	7.8	21.3	5.3	2.5	7.9
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	IS17	Sunny	Moderate	12:01	11.9	Surface	1	2	28.3	7.8	21	5.3	2.6	8.8
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	IS17	Sunny	Moderate	12:01	11.9	Middle	2	1	28	7.8	22.3	4.9	3.5	8.5
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	IS17	Sunny	Moderate	12:01	11.9	Middle	2	2	28	7.8	22	4.9	3.5	7.6
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	IS17	Sunny	Moderate	12:01	11.9	Bottom	3	1	27.9	7.8	22.8	4.9	3.7	8.3
TMCLKL	HY/2012/08	2019-08-07	Mid-Flood	IS17	Sunny	Moderate	12:01	11.9	Bottom	3	2	27.9	7.8	22.4	4.9	3.6	7.3
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	CS(Mf)5	Sunny	Moderate	07:16	15.2	Surface	1	1	28.8	7.9	18.5	5.8	2.7	6.7
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	CS(Mf)5	Sunny	Moderate	07:16	15.2	Surface	1	2	28.8	7.9	18.5	5.8	2.7	6.8
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	CS(Mf)5	Sunny	Moderate	07:16	15.2	Middle	2	1	28.1	7.9	24.1	5.4	1.8	6.2
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	CS(Mf)5	Sunny	Moderate	07:16	15.2	Middle	2	2	28.1	7.9	24.1	5.4	1.8	5.2
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	CS(Mf)5	Sunny	Moderate	07:16	15.2	Bottom	3	1	27.9	7.9	26.3	5	1.9	3.9
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	CS(Mf)5	Sunny	Moderate	07:16	15.2	Bottom	3	2	27.9	7.9	26.4	5	1.9	2.9

Project	Contract	Date	Tide	Stat	Weather	Sea Condition	Time	Water Depth	Level	Lev_Cod	Replicate	Temp(°C)	pH	Salinity(ppt)	DO(mg/L)	Turbidity(NTU)	SS(mg/L)
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	CS(Mf)3(N)	Sunny	Moderate	08:21	7.3	Surface	1	1	28.9	7.9	17.1	5.7	3.3	6.1
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	CS(Mf)3(N)	Sunny	Moderate	08:21	7.3	Surface	1	2	28.9	7.9	17.2	5.7	3.2	5.1
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	CS(Mf)3(N)	Sunny	Moderate	08:21	7.3	Middle	2	1	28.1	7.9	22.9	4.8	7.8	5
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	CS(Mf)3(N)	Sunny	Moderate	08:21	7.3	Middle	2	2	28.1	7.9	22.9	4.8	7.8	4.8
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	CS(Mf)3(N)	Sunny	Moderate	08:21	7.3	Bottom	3	1	28	7.9	23.8	4.8	9	5.4
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	CS(Mf)3(N)	Sunny	Moderate	08:21	7.3	Bottom	3	2	28	7.9	23.8	4.8	9	4.7
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	IS(Mf)16	Sunny	Moderate	08:55	5.6	Surface	1	1	29	7.9	20.2	5.9	5.7	4.9
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	IS(Mf)16	Sunny	Moderate	08:55	5.6	Surface	1	2	29	7.9	20.2	5.9	5.8	3.9
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	IS(Mf)16	Sunny	Moderate	08:55	5.6	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	IS(Mf)16	Sunny	Moderate	08:55	5.6	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	IS(Mf)16	Sunny	Moderate	08:55	5.6	Bottom	3	1	28.8	7.9	21.2	5.8	8.7	4.6
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	IS(Mf)16	Sunny	Moderate	08:55	5.6	Bottom	3	2	28.8	7.9	21.2	5.8	8.7	5.6
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	SR4a	Sunny	Moderate	09:04	5.2	Surface	1	1	28.8	7.8	19.8	5.2	4.3	5.6
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	SR4a	Sunny	Moderate	09:04	5.2	Surface	1	2	28.8	7.8	19.8	5.2	4.3	6.2
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	SR4a	Sunny	Moderate	09:04	5.2	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	SR4a	Sunny	Moderate	09:04	5.2	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	SR4a	Sunny	Moderate	09:04	5.2	Bottom	3	1	28.6	7.8	21	4.8	5.9	6.1
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	SR4a	Sunny	Moderate	09:04	5.2	Bottom	3	2	28.6	7.8	21	4.8	5.9	6.1
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	SR4(N2)	Sunny	Moderate	09:08	4.8	Surface	1	1	29.3	7.8	19.6	5.3	7.4	5.3
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	SR4(N2)	Sunny	Moderate	09:08	4.8	Surface	1	2	29.2	7.8	19.6	5.3	7.4	4.8
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	SR4(N2)	Sunny	Moderate	09:08	4.8	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	SR4(N2)	Sunny	Moderate	09:08	4.8	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	SR4(N2)	Sunny	Moderate	09:08	4.8	Bottom	3	1	28.7	7.8	21.2	4.8	8.5	8.2
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	SR4(N2)	Sunny	Moderate	09:08	4.8	Bottom	3	2	28.7	7.8	21.3	4.8	8.5	9.2
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	IS8(N)	Sunny	Moderate	09:14	4.6	Surface	1	1	29.1	7.9	19.2	5.8	3.8	9.8
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	IS8(N)	Sunny	Moderate	09:14	4.6	Surface	1	2	29.1	7.9	19.2	5.8	3.8	10.8
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	IS8(N)	Sunny	Moderate	09:14	4.6	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	IS8(N)	Sunny	Moderate	09:14	4.6	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	IS8(N)	Sunny	Moderate	09:14	4.6	Bottom	3	1	28.4	7.8	22.4	4.8	6.4	7.1
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	IS8(N)	Sunny	Moderate	09:14	4.6	Bottom	3	2	28.4	7.8	22.4	4.8	6.4	8.1
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	IS(Mf)9	Sunny	Moderate	09:23	4.2	Surface	1	1	29.2	7.9	18.9	6.6	2.9	9.3
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	IS(Mf)9	Sunny	Moderate	09:23	4.2	Surface	1	2	29.2	7.9	18.9	6.6	2.9	5.2
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	IS(Mf)9	Sunny	Moderate	09:23	4.2	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	IS(Mf)9	Sunny	Moderate	09:23	4.2	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	IS(Mf)9	Sunny	Moderate	09:23	4.2	Bottom	3	1	29.2	7.9	19.8	5.9	6.5	3.8
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	IS(Mf)9	Sunny	Moderate	09:23	4.2	Bottom	3	2	29.2	7.9	19.9	5.9	6.4	4.2
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	IS(Mf)11	Sunny	Moderate	07:53	11.3	Surface	1	1	29.1	7.8	14.1	5.9	4.2	4.9
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	IS(Mf)11	Sunny	Moderate	07:53	11.3	Surface	1	2	29.1	7.8	14.1	5.9	4.2	5.7
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	IS(Mf)11	Sunny	Moderate	07:53	11.3	Middle	2	1	28.9	7.8	16.2	5.6	4.6	5.5
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	IS(Mf)11	Sunny	Moderate	07:53	11.3	Middle	2	2	28.9	7.8	16.2	5.6	4.6	4.6
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	IS(Mf)11	Sunny	Moderate	07:53	11.3	Bottom	3	1	28.3	7.8	22.4	4.8	4.2	5.9
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	IS(Mf)11	Sunny	Moderate	07:53	11.3	Bottom	3	2	28.3	7.8	22.5	4.8	4.2	6.9
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	SR7	Sunny	Moderate	07:43	4.5	Surface	1	1	28.9	7.8	16.3	6	3.3	3.4
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	SR7	Sunny	Moderate	07:43	4.5	Surface	1	2	29	7.8	16.3	6	3.4	2.4
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	SR7	Sunny	Moderate	07:43	4.5	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	SR7	Sunny	Moderate	07:43	4.5	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	SR7	Sunny	Moderate	07:43	4.5	Bottom	3	1	28.9	7.9	17.2	6	3.2	4.7
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	SR7	Sunny	Moderate	07:43	4.5	Bottom	3	2	28.9	7.9	17.2	6	3.1	4.1
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	IS17	Sunny	Moderate	08:47	11.8	Surface	1	1	29	7.9	17.9	5.9	3.8	5.7
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	IS17	Sunny	Moderate	08:47	11.8	Surface	1	2	29	7.9	17.9	5.9	3.8	4.7
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	IS17	Sunny	Moderate	08:47	11.8	Middle	2	1	28.8	7.9	20.9	5.4	3.7	5.4
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	IS17	Sunny	Moderate	08:47	11.8	Middle	2	2	28.8	7.9	20.9	5.5	3.7	5.5
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	IS17	Sunny	Moderate	08:47	11.8	Bottom	3	1	28.1	7.9	23.9	4.8	5.4	5.4
TMCLKL	HY/2012/08	2019-08-09	Mid-Ebb	IS17	Sunny	Moderate	08:47	11.8	Bottom	3	2	28.1	7.9	24	4.8	5.4	4.9
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	CS(Mf)5	Sunny	Moderate	15:21	14.8	Surface	1	1	29.7	8	18.3	7.1	2.9	7.9
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	CS(Mf)5	Sunny	Moderate	15:21	14.8	Surface	1	2	29.7	8	18.3	7.1	2.9	7
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	CS(Mf)5	Sunny	Moderate	15:21	14.8	Middle	2	1	27.9	7.9	25.5	4.8	3.1	6.2
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	CS(Mf)5	Sunny	Moderate	15:21	14.8	Middle	2	2	28	7.9	25.5	4.8	3.1	7.1
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	CS(Mf)5	Sunny	Moderate	15:21	14.8	Bottom	3	1	27.7	7.9	27.4	4.9	2.8	6.2
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	CS(Mf)5	Sunny	Moderate	15:21	14.8	Bottom	3	2	27.7	7.9	27.4	4.9	2.7	5.9
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	CS(Mf)3(N)	Sunny	Rough	14:29	7.1	Surface	1	1	30.8	7.9	10.9	7	4.7	8.1

Project	Contract	Date	Tide	Stat	Weather	Sea Condition	Time	Water Depth	Level	Lev_Cod	Replicate	Temp(°C)	pH	Salinity(ppt)	DO(mg/L)	Turbidity(NTU)	SS(mg/L)
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	CS(Mf)3(N)	Sunny	Rough	14:29	7.1	Surface	1	2	30.8	7.9	10.9	7	4.7	9.1
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	CS(Mf)3(N)	Sunny	Rough	14:29	7.1	Middle	2	1	29.3	7.8	16.3	5.5	8.9	9.2
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	CS(Mf)3(N)	Sunny	Rough	14:29	7.1	Middle	2	2	29.3	7.8	16.3	5.5	8.8	9.9
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	CS(Mf)3(N)	Sunny	Rough	14:29	7.1	Bottom	3	1	28.2	7.8	22.4	4.6	11.1	9.7
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	CS(Mf)3(N)	Sunny	Rough	14:29	7.1	Bottom	3	2	28.2	7.8	22.5	4.6	11	9.5
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	IS(Mf)16	Sunny	Moderate	13:52	5.1	Surface	1	1	29.4	7.9	18.8	7	6	10.2
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	IS(Mf)16	Sunny	Moderate	13:52	5.1	Surface	1	2	29.4	7.9	18.8	7	5.9	9.2
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	IS(Mf)16	Sunny	Moderate	13:52	5.1	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	IS(Mf)16	Sunny	Moderate	13:52	5.1	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	IS(Mf)16	Sunny	Moderate	13:52	5.1	Bottom	3	1	28.8	7.9	20.4	5.7	6.1	9.8
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	IS(Mf)16	Sunny	Moderate	13:52	5.1	Bottom	3	2	28.8	7.9	20.4	5.7	6.1	9.6
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	SR4a	Sunny	Moderate	13:42	4.8	Surface	1	1	29.9	8	17.8	8	3.3	7.1
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	SR4a	Sunny	Moderate	13:42	4.8	Surface	1	2	30	8	17.8	8	3.3	6.1
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	SR4a	Sunny	Moderate	13:42	4.8	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	SR4a	Sunny	Moderate	13:42	4.8	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	SR4a	Sunny	Moderate	13:42	4.8	Bottom	3	1	29.3	7.9	18.8	7	3.7	4.4
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	SR4a	Sunny	Moderate	13:42	4.8	Bottom	3	2	29.3	7.9	18.8	7	3.7	5.3
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	SR4(N2)	Sunny	Moderate	13:37	4.5	Surface	1	1	29	7.9	19	6.1	6.5	3.9
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	SR4(N2)	Sunny	Moderate	13:37	4.5	Surface	1	2	29	7.9	19	6.1	6.5	4.9
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	SR4(N2)	Sunny	Moderate	13:37	4.5	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	SR4(N2)	Sunny	Moderate	13:37	4.5	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	SR4(N2)	Sunny	Moderate	13:37	4.5	Bottom	3	1	28.9	7.8	20.5	5	7	5.5
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	SR4(N2)	Sunny	Moderate	13:37	4.5	Bottom	3	2	28.9	7.8	20.5	5	7	6.4
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	IS8(N)	Sunny	Moderate	13:28	4.1	Surface	1	1	29.2	7.9	18.8	6.7	3.6	4.7
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	IS8(N)	Sunny	Moderate	13:28	4.1	Surface	1	2	29.2	7.9	18.8	6.7	3.6	3.7
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	IS8(N)	Sunny	Moderate	13:28	4.1	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	IS8(N)	Sunny	Moderate	13:28	4.1	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	IS8(N)	Sunny	Moderate	13:28	4.1	Bottom	3	1	29	7.8	19.6	5.9	4.8	5.3
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	IS8(N)	Sunny	Moderate	13:28	4.1	Bottom	3	2	29	7.8	19.6	6	4.8	5.7
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	IS(Mf)9	Sunny	Moderate	13:20	4	Surface	1	1	29	7.8	20.3	5.9	8.7	4.8
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	IS(Mf)9	Sunny	Moderate	13:20	4	Surface	1	2	29	7.8	20.2	5.9	8.7	5
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	IS(Mf)9	Sunny	Moderate	13:20	4	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	IS(Mf)9	Sunny	Moderate	13:20	4	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	IS(Mf)9	Sunny	Moderate	13:20	4	Bottom	3	1	29	7.8	20.5	5.8	10.2	5.4
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	IS(Mf)9	Sunny	Moderate	13:20	4	Bottom	3	2	29	7.8	20.5	5.8	10.2	6.2
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	IS(Mf)11	Sunny	Rough	14:53	10.9	Surface	1	1	30.4	8.1	14.3	8.5	2.6	9.5
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	IS(Mf)11	Sunny	Rough	14:53	10.9	Surface	1	2	30.4	8.1	14.3	8.5	2.6	8.9
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	IS(Mf)11	Sunny	Rough	14:53	10.9	Middle	2	1	29.1	7.9	20.4	6.1	3.6	7.4
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	IS(Mf)11	Sunny	Rough	14:53	10.9	Middle	2	2	29.1	7.9	20.4	6.1	3.6	6.3
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	IS(Mf)11	Sunny	Rough	14:53	10.9	Bottom	3	1	28.5	7.9	21.9	5.5	5.5	7.7
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	IS(Mf)11	Sunny	Rough	14:53	10.9	Bottom	3	2	28.6	7.9	21.8	5.5	5.5	6.5
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	SR7	Sunny	Moderate	15:00	4.2	Surface	1	1	30.2	8.1	14.8	8	3.7	6.9
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	SR7	Sunny	Moderate	15:00	4.2	Surface	1	2	30.2	8.1	14.8	8	3.7	6.7
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	SR7	Sunny	Moderate	15:00	4.2	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	SR7	Sunny	Moderate	15:00	4.2	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	SR7	Sunny	Moderate	15:00	4.2	Bottom	3	1	29.7	7.9	16.7	7	7.5	6.6
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	SR7	Sunny	Moderate	15:00	4.2	Bottom	3	2	29.7	7.9	16.7	7	7.4	6.8
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	IS17	Sunny	Moderate	13:58	10.4	Surface	1	1	29	7.9	19.9	6.5	2.8	4.1
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	IS17	Sunny	Moderate	13:58	10.4	Surface	1	2	29	7.9	19.9	6.5	2.8	5
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	IS17	Sunny	Moderate	13:58	10.4	Middle	2	1	29	7.9	20.2	6	3.4	5.5
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	IS17	Sunny	Moderate	13:58	10.4	Middle	2	2	29	7.9	20.2	6.2	3.4	4.5
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	IS17	Sunny	Moderate	13:58	10.4	Bottom	3	1	28.8	7.9	20.8	5.9	5.2	6.2
TMCLKL	HY/2012/08	2019-08-09	Mid-Flood	IS17	Sunny	Moderate	13:58	10.4	Bottom	3	2	28.9	7.9	20.7	5.9	5.2	5.2
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	CS(Mf)5	Cloudy	Moderate	11:20	12.4	Surface	1	1	29.9	8	16.6	6.7	5.2	5.5
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	CS(Mf)5	Cloudy	Moderate	11:20	12.4	Surface	1	2	29.9	7.9	16.9	6.6	5.3	5.5
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	CS(Mf)5	Cloudy	Moderate	11:20	12.4	Middle	2	1	28.6	7.9	20.7	5.2	6.1	6
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	CS(Mf)5	Cloudy	Moderate	11:20	12.4	Middle	2	2	28.6	7.8	21.1	5.2	6.2	5
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	CS(Mf)5	Cloudy	Moderate	11:20	12.4	Bottom	3	1	27.9	7.9	27.4	4.3	10.5	6.5
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	CS(Mf)5	Cloudy	Moderate	11:20	12.4	Bottom	3	2	27.9	7.8	28.4	4.1	10.5	7.1
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	CS(Mf)3(N)	Cloudy	Moderate	10:36	7.2	Surface	1	1	29.8	8	15.2	6.3	5.8	5.1
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	CS(Mf)3(N)	Cloudy	Moderate	10:36	7.2	Surface	1	2	29.8	7.9	15.4	6.3	5.5	5.2

Project	Contract	Date	Tide	Stat	Weather	Sea Condition	Time	Water Depth	Level	Lev_Cod	Replicate	Temp(°C)	pH	Salinity(ppt)	DO(mg/L)	Turbidity(NTU)	SS(mg/L)
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	CS(Mf)3(N)	Cloudy	Moderate	10:36	7.2	Middle	2	1	29.1	7.9	19.6	5.1	5.7	4.6
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	CS(Mf)3(N)	Cloudy	Moderate	10:36	7.2	Middle	2	2	29.1	7.8	20	5	5.7	3.7
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	CS(Mf)3(N)	Cloudy	Moderate	10:36	7.2	Bottom	3	1	28.7	7.9	23.3	4.5	6.5	4.5
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	CS(Mf)3(N)	Cloudy	Moderate	10:36	7.2	Bottom	3	2	28.7	7.8	23.7	4.4	6.3	5.1
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	IS(Mf)16	Cloudy	Moderate	09:57	5.6	Surface	1	1	30	8.1	17.5	7	6.7	10.4
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	IS(Mf)16	Cloudy	Moderate	09:57	5.6	Surface	1	2	30	8	17.8	7	6.9	11.2
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	IS(Mf)16	Cloudy	Moderate	09:57	5.6	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	IS(Mf)16	Cloudy	Moderate	09:57	5.6	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	IS(Mf)16	Cloudy	Moderate	09:57	5.6	Bottom	3	1	29.7	8	19.1	6.4	3.7	7.8
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	IS(Mf)16	Cloudy	Moderate	09:57	5.6	Bottom	3	2	29.7	7.9	19.5	6.4	3.5	7.7
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	SR4a	Cloudy	Moderate	09:47	4.6	Surface	1	1	30.1	8.1	16.1	7.4	3.2	5.1
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	SR4a	Cloudy	Moderate	09:47	4.6	Surface	1	2	30.1	8	16.4	7.3	3.4	5.3
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	SR4a	Cloudy	Moderate	09:47	4.6	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	SR4a	Cloudy	Moderate	09:47	4.6	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	SR4a	Cloudy	Moderate	09:47	4.6	Bottom	3	1	30	8.1	16.9	6.8	6.3	6.2
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	SR4a	Cloudy	Moderate	09:47	4.6	Bottom	3	2	30	8	17.2	6.7	6.3	5.1
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	SR4(N2)	Cloudy	Moderate	09:42	4.2	Surface	1	1	30.2	8.1	16.5	7	11	6.6
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	SR4(N2)	Cloudy	Moderate	09:42	4.2	Surface	1	2	30.2	8	16.8	7	10.2	6.3
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	SR4(N2)	Cloudy	Moderate	09:42	4.2	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	SR4(N2)	Cloudy	Moderate	09:42	4.2	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	SR4(N2)	Cloudy	Moderate	09:42	4.2	Bottom	3	1	30.2	8.1	16.6	6.8	12.1	6.4
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	SR4(N2)	Cloudy	Moderate	09:42	4.2	Bottom	3	2	30.2	8	16.9	6.8	12.7	4.9
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	IS8(N)	Cloudy	Moderate	09:37	3.6	Surface	1	1	30.2	8.1	16.6	7.6	5.7	9.4
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	IS8(N)	Cloudy	Moderate	09:37	3.6	Surface	1	2	30.2	8.1	16.9	7.6	5.7	8.4
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	IS8(N)	Cloudy	Moderate	09:37	3.6	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	IS8(N)	Cloudy	Moderate	09:37	3.6	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	IS8(N)	Cloudy	Moderate	09:37	3.6	Bottom	3	1	30.2	8.1	16.6	7.6	5.3	6
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	IS8(N)	Cloudy	Moderate	09:37	3.6	Bottom	3	2	30.2	8.1	16.9	7.6	5.2	5.8
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	IS(Mf)9	Cloudy	Moderate	09:28	3.1	Surface	1	1	30.2	8.1	16.8	7.5	4.2	5.5
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	IS(Mf)9	Cloudy	Moderate	09:28	3.1	Surface	1	2	30.2	8.1	17.1	7.4	4.4	6.2
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	IS(Mf)9	Cloudy	Moderate	09:28	3.1	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	IS(Mf)9	Cloudy	Moderate	09:28	3.1	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	IS(Mf)9	Cloudy	Moderate	09:28	3.1	Bottom	3	1	30.2	8.1	16.7	7.5	6.9	3.8
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	IS(Mf)9	Cloudy	Moderate	09:28	3.1	Bottom	3	2	30.2	8.1	17.1	7.5	6.9	4.5
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	IS(Mf)11	Cloudy	Moderate	10:57	12.6	Surface	1	1	30.1	8	15	6.9	4.7	4.2
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	IS(Mf)11	Cloudy	Moderate	10:57	12.6	Surface	1	2	30.1	7.9	15.3	6.8	4.7	4.8
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	IS(Mf)11	Cloudy	Moderate	10:57	12.6	Middle	2	1	29.9	8	15.7	6.1	5.8	5.9
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	IS(Mf)11	Cloudy	Moderate	10:57	12.6	Middle	2	2	29.9	7.9	16	6.1	5.9	4.7
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	IS(Mf)11	Cloudy	Moderate	10:57	12.6	Bottom	3	1	28	7.9	27	3.9	8.4	5.1
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	IS(Mf)11	Cloudy	Moderate	10:57	12.6	Bottom	3	2	28	7.8	27.6	3.8	8.4	5.7
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	SR7	Cloudy	Moderate	11:03	4.6	Surface	1	1	30.1	8	15.1	7	4.4	3.5
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	SR7	Cloudy	Moderate	11:03	4.6	Surface	1	2	30.1	7.9	15.3	7	4.5	4.7
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	SR7	Cloudy	Moderate	11:03	4.6	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	SR7	Cloudy	Moderate	11:03	4.6	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	SR7	Cloudy	Moderate	11:03	4.6	Bottom	3	1	30	8	15.2	6.9	4.8	4.5
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	SR7	Cloudy	Moderate	11:03	4.6	Bottom	3	2	30	7.9	15.5	6.9	4.9	5
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	IS17	Cloudy	Moderate	10:03	7	Surface	1	1	29.9	8	16.6	6.7	4.2	6.2
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	IS17	Cloudy	Moderate	10:03	7	Surface	1	2	29.9	7.9	16.9	6.7	4.9	6.1
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	IS17	Cloudy	Moderate	10:03	7	Middle	2	1	29.6	8	16.9	6.6	3.3	5.5
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	IS17	Cloudy	Moderate	10:03	7	Middle	2	2	29.6	7.9	17.2	6.6	3.9	5.8
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	IS17	Cloudy	Moderate	10:03	7	Bottom	3	1	29.5	8	19.7	6.1	3.1	5.3
TMCLKL	HY/2012/08	2019-08-12	Mid-Ebb	IS17	Cloudy	Moderate	10:03	7	Bottom	3	2	29.5	7.9	19.9	6.1	3.5	6.7
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	CS(Mf)5	Cloudy	Moderate	03:10	11.9	Surface	1	1	30	8	15.8	7.2	3	3.9
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	CS(Mf)5	Cloudy	Moderate	03:10	11.9	Surface	1	2	30	8	16.1	7.1	2.7	4.7
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	CS(Mf)5	Cloudy	Moderate	03:10	11.9	Middle	2	1	29.2	8	20.1	5.9	3.1	4.8
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	CS(Mf)5	Cloudy	Moderate	03:10	11.9	Middle	2	2	29.2	7.9	20.4	5.9	3.1	5.1
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	CS(Mf)5	Cloudy	Moderate	03:10	11.9	Bottom	3	1	28	7.8	27.7	4.5	8.7	5.4
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	CS(Mf)5	Cloudy	Moderate	03:10	11.9	Bottom	3	2	28	7.8	28.3	4.5	8.4	4.5
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	CS(Mf)3(N)	Cloudy	Moderate	04:03	6.5	Surface	1	1	29.9	8	14.7	6.7	5.7	6.1
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	CS(Mf)3(N)	Cloudy	Moderate	04:03	6.5	Surface	1	2	29.9	7.9	14.9	6.6	5.6	4.3
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	CS(Mf)3(N)	Cloudy	Moderate	04:03	6.5	Middle	2	1	29.9	8.1	15.2	6.7	7.1	5.5



Project	Contract	Date	Tide	Stat	Weather	Sea Condition	Time	Water Depth	Level	Lev_Cod	Replicate	Temp(°C)	pH	Salinity(ppt)	DO(mg/L)	Turbidity(NTU)	SS(mg/L)
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	CS(Mf)3(N)	Cloudy	Moderate	04:03	6.5	Middle	2	2	29.9	7.9	15.4	6.7	7.9	4.7
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	CS(Mf)3(N)	Cloudy	Moderate	04:03	6.5	Bottom	3	1	29.9	8	16.1	6.5	11.4	3.9
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	CS(Mf)3(N)	Cloudy	Moderate	04:03	6.5	Bottom	3	2	29.9	7.9	16.3	6.5	11.6	3.3
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	IS(Mf)16	Cloudy	Moderate	04:43	5.7	Surface	1	1	29.9	8.1	16.7	6.9	3.7	7.6
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	IS(Mf)16	Cloudy	Moderate	04:43	5.7	Surface	1	2	29.9	7.9	17	6.9	4.4	7
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	IS(Mf)16	Cloudy	Moderate	04:43	5.7	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	IS(Mf)16	Cloudy	Moderate	04:43	5.7	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	IS(Mf)16	Cloudy	Moderate	04:43	5.7	Bottom	3	1	29.8	8	17.6	6.5	3.4	7.7
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	IS(Mf)16	Cloudy	Moderate	04:43	5.7	Bottom	3	2	29.8	7.9	17.9	6.5	4.2	8.4
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	SR4a	Cloudy	Moderate	04:52	4.4	Surface	1	1	30.3	8.1	16.5	7.4	4.4	6.2
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	SR4a	Cloudy	Moderate	04:52	4.4	Surface	1	2	30.3	8	16.8	7.5	5.1	7.1
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	SR4a	Cloudy	Moderate	04:52	4.4	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	SR4a	Cloudy	Moderate	04:52	4.4	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	SR4a	Cloudy	Moderate	04:52	4.4	Bottom	3	1	30.3	8.1	16.8	7.4	5.3	7.6
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	SR4a	Cloudy	Moderate	04:52	4.4	Bottom	3	2	30.3	7.9	17.1	7.4	5.8	6.8
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	SR4(N2)	Cloudy	Moderate	04:57	4.2	Surface	1	1	30.1	8.1	16.3	7.2	4	7.7
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	SR4(N2)	Cloudy	Moderate	04:57	4.2	Surface	1	2	30.1	8	16.6	7.2	4	7.1
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	SR4(N2)	Cloudy	Moderate	04:57	4.2	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	SR4(N2)	Cloudy	Moderate	04:57	4.2	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	SR4(N2)	Cloudy	Moderate	04:57	4.2	Bottom	3	1	30.1	8.1	16.4	7.2	4.1	7.3
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	SR4(N2)	Cloudy	Moderate	04:57	4.2	Bottom	3	2	30.1	8	16.7	7.2	4.1	7.8
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	IS8(N)	Cloudy	Moderate	05:02	3.7	Surface	1	1	29.9	8.1	16	7	3.3	3.9
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	IS8(N)	Cloudy	Moderate	05:02	3.7	Surface	1	2	29.9	7.9	16.3	6.9	4.1	4.2
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	IS8(N)	Cloudy	Moderate	05:02	3.7	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	IS8(N)	Cloudy	Moderate	05:02	3.7	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	IS8(N)	Cloudy	Moderate	05:02	3.7	Bottom	3	1	29.9	8.1	16	7	11.4	7.4
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	IS8(N)	Cloudy	Moderate	05:02	3.7	Bottom	3	2	29.9	7.9	16.3	6.9	11.1	7.2
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	IS(Mf)9	Cloudy	Moderate	05:09	3.1	Surface	1	1	29.9	8.1	16.3	7	5.5	6.1
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	IS(Mf)9	Cloudy	Moderate	05:09	3.1	Surface	1	2	29.9	7.9	16.6	6.9	5.3	6.7
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	IS(Mf)9	Cloudy	Moderate	05:09	3.1	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	IS(Mf)9	Cloudy	Moderate	05:09	3.1	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	IS(Mf)9	Cloudy	Moderate	05:09	3.1	Bottom	3	1	29.9	8.1	16.4	7	6	5.4
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	IS(Mf)9	Cloudy	Moderate	05:09	3.1	Bottom	3	2	29.9	7.9	16.7	6.9	5.8	5.9
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	IS(Mf)11	Cloudy	Moderate	03:36	11.2	Surface	1	1	29.8	8	15	6.6	4.1	4.6
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	IS(Mf)11	Cloudy	Moderate	03:36	11.2	Surface	1	2	29.8	7.9	15.2	6.5	4.9	5.4
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	IS(Mf)11	Cloudy	Moderate	03:36	11.2	Middle	2	1	30	8.1	15.9	6.9	3.8	5.1
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	IS(Mf)11	Cloudy	Moderate	03:36	11.2	Middle	2	2	30	8	16.2	6.8	3.6	4.5
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	IS(Mf)11	Cloudy	Moderate	03:36	11.2	Bottom	3	1	28	7.9	22.7	4.3	7.4	4.9
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	IS(Mf)11	Cloudy	Moderate	03:36	11.2	Bottom	3	2	28	7.8	22.7	4.2	7.8	6.1
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	SR7	Cloudy	Moderate	03:30	4.6	Surface	1	1	29.9	8	14.6	6.6	3.9	6
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	SR7	Cloudy	Moderate	03:30	4.6	Surface	1	2	29.9	7.9	14.9	6.6	3.8	5.4
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	SR7	Cloudy	Moderate	03:30	4.6	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	SR7	Cloudy	Moderate	03:30	4.6	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	SR7	Cloudy	Moderate	03:30	4.6	Bottom	3	1	29.9	8	15.7	6.4	7.9	5
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	SR7	Cloudy	Moderate	03:30	4.6	Bottom	3	2	29.9	7.9	15.9	6.4	7.5	5.7
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	IS17	Cloudy	Moderate	04:36	7.5	Surface	1	1	30	8.1	16.3	7.1	3.5	7.5
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	IS17	Cloudy	Moderate	04:36	7.5	Surface	1	2	30	8	16.6	7.2	4.1	7.1
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	IS17	Cloudy	Moderate	04:36	7.5	Middle	2	1	30	8.1	16.3	7.1	3.2	7.9
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	IS17	Cloudy	Moderate	04:36	7.5	Middle	2	2	30	8	16.6	7.1	3.9	8.1
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	IS17	Cloudy	Moderate	04:36	7.5	Bottom	3	1	30	8.1	16.7	7.1	3	7.6
TMCLKL	HY/2012/08	2019-08-12	Mid-Flood	IS17	Cloudy	Moderate	04:36	7.5	Bottom	3	2	30	7.9	17	7	3.1	6.2
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	CS(Mf)5	Sunny	Moderate	12:46	14.5	Surface	1	1	30.1	8	18.4	6.1	3	4.2
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	CS(Mf)5	Sunny	Moderate	12:46	14.5	Surface	1	2	30	8	18.4	6.1	3	4.1
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	CS(Mf)5	Sunny	Moderate	12:46	14.5	Middle	2	1	29.3	7.9	21.1	5	4.5	4.5
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	CS(Mf)5	Sunny	Moderate	12:46	14.5	Middle	2	2	29.3	7.9	21.2	5	4.6	5.7
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	CS(Mf)5	Sunny	Moderate	12:46	14.5	Bottom	3	1	28	7.9	26.6	3.8	7.7	8.8
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	CS(Mf)5	Sunny	Moderate	12:46	14.5	Bottom	3	2	28	7.9	26.6	3.8	7.6	9.2
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	CS(Mf)3(N)	Sunny	Moderate	12:03	7.4	Surface	1	1	30.6	7.9	16.4	6.1	2.9	7
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	CS(Mf)3(N)	Sunny	Moderate	12:03	7.4	Surface	1	2	30.6	7.9	16.5	6.1	2.9	6.8
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	CS(Mf)3(N)	Sunny	Moderate	12:03	7.4	Middle	2	1	29.7	7.9	18.9	5.4	3.9	6.9
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	CS(Mf)3(N)	Sunny	Moderate	12:03	7.4	Middle	2	2	29.7	7.9	18.9	5.4	3.8	8.4

Project	Contract	Date	Tide	Stat	Weather	Sea Condition	Time	Water Depth	Level	Lev_Cod	Replicate	Temp(°C)	pH	Salinity(ppt)	DO(mg/L)	Turbidity(NTU)	SS(mg/L)
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	CS(Mf)3(N)	Sunny	Moderate	12:03	7.4	Bottom	3	1	29.6	7.9	19.7	5.3	4.5	10.5
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	CS(Mf)3(N)	Sunny	Moderate	12:03	7.4	Bottom	3	2	29.7	7.9	19.6	5.3	4.5	10.1
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	IS(Mf)16	Sunny	Moderate	11:16	5.1	Surface	1	1	30.1	8	18.5	6.2	4.8	5.1
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	IS(Mf)16	Sunny	Moderate	11:16	5.1	Surface	1	2	30.2	8	18.5	6.2	4.8	5.4
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	IS(Mf)16	Sunny	Moderate	11:16	5.1	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	IS(Mf)16	Sunny	Moderate	11:16	5.1	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	IS(Mf)16	Sunny	Moderate	11:16	5.1	Bottom	3	1	28.6	7.9	24.5	4.6	9.9	7.8
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	IS(Mf)16	Sunny	Moderate	11:16	5.1	Bottom	3	2	28.6	7.9	24.4	4.6	9.9	8.2
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	SR4a	Sunny	Moderate	11:05	3.9	Surface	1	1	30.4	8	17.4	6.4	3.2	6.6
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	SR4a	Sunny	Moderate	11:05	3.9	Surface	1	2	30.4	8	17.3	6.4	3.2	7.3
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	SR4a	Sunny	Moderate	11:05	3.9	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	SR4a	Sunny	Moderate	11:05	3.9	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	SR4a	Sunny	Moderate	11:05	3.9	Bottom	3	1	30	7.9	18.6	5.6	4.9	8.3
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	SR4a	Sunny	Moderate	11:05	3.9	Bottom	3	2	30	7.9	18.6	5.6	4.9	8.2
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	SR4(N2)	Sunny	Moderate	11:00	3.8	Surface	1	1	30.5	8	17.4	6.3	3.3	5.1
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	SR4(N2)	Sunny	Moderate	11:00	3.8	Surface	1	2	30.5	8	17.4	6.3	3.3	6.3
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	SR4(N2)	Sunny	Moderate	11:00	3.8	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	SR4(N2)	Sunny	Moderate	11:00	3.8	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	SR4(N2)	Sunny	Moderate	11:00	3.8	Bottom	3	1	30	7.9	18.8	5.6	8.2	7.2
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	SR4(N2)	Sunny	Moderate	11:00	3.8	Bottom	3	2	30	7.9	18.8	5.6	8.2	6.9
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	IS8(N)	Sunny	Moderate	10:55	4.3	Surface	1	1	30.4	8	18.2	6.1	9.9	4.3
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	IS8(N)	Sunny	Moderate	10:55	4.3	Surface	1	2	30.4	8	18.2	6.1	9.9	4.1
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	IS8(N)	Sunny	Moderate	10:55	4.3	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	IS8(N)	Sunny	Moderate	10:55	4.3	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	IS8(N)	Sunny	Moderate	10:55	4.3	Bottom	3	1	29.9	8	19	5.6	12.2	7.2
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	IS8(N)	Sunny	Moderate	10:55	4.3	Bottom	3	2	29.9	8	19	5.6	12.1	8.4
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	IS(Mf)9	Sunny	Moderate	10:48	4.4	Surface	1	1	30.6	8.1	17.7	6.6	3.3	7.5
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	IS(Mf)9	Sunny	Moderate	10:48	4.4	Surface	1	2	30.6	8.1	17.7	6.6	3.3	7.5
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	IS(Mf)9	Sunny	Moderate	10:48	4.4	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	IS(Mf)9	Sunny	Moderate	10:48	4.4	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	IS(Mf)9	Sunny	Moderate	10:48	4.4	Bottom	3	1	30.4	8.1	17.8	6.5	3.6	7.9
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	IS(Mf)9	Sunny	Moderate	10:48	4.4	Bottom	3	2	30.4	8.1	17.8	6.4	3.6	9
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	IS(Mf)11	Sunny	Moderate	11:31	11.2	Surface	1	1	30.2	8	16.9	6.3	2.7	4.6
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	IS(Mf)11	Sunny	Moderate	11:31	11.2	Surface	1	2	30.2	8	17	6.3	2.6	5.1
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	IS(Mf)11	Sunny	Moderate	11:31	11.2	Middle	2	1	29.7	7.9	18.4	5.6	3.3	7.2
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	IS(Mf)11	Sunny	Moderate	11:31	11.2	Middle	2	2	29.7	7.9	18.4	5.6	3.2	8.3
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	IS(Mf)11	Sunny	Moderate	11:31	11.2	Bottom	3	1	29.6	7.9	19	5.5	4.2	10.2
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	IS(Mf)11	Sunny	Moderate	11:31	11.2	Bottom	3	2	29.6	7.9	19	5.5	4.2	10.4
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	SR7	Sunny	Moderate	12:26	4	Surface	1	1	30.2	7.9	16.8	6.3	2.2	5.4
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	SR7	Sunny	Moderate	12:26	4	Surface	1	2	30.2	8	16.8	6.3	2.2	5.6
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	SR7	Sunny	Moderate	12:26	4	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	SR7	Sunny	Moderate	12:26	4	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	SR7	Sunny	Moderate	12:26	4	Bottom	3	1	29.8	7.9	18.7	5.7	3.6	5.8
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	SR7	Sunny	Moderate	12:26	4	Bottom	3	2	29.8	7.9	18.6	5.7	3.5	6.1
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	IS17	Sunny	Moderate	11:22	10.8	Surface	1	1	30.3	8	18.5	6.3	4.9	5
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	IS17	Sunny	Moderate	11:22	10.8	Surface	1	2	30.3	8	18.5	6.3	4.9	4.3
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	IS17	Sunny	Moderate	11:22	10.8	Middle	2	1	29.9	8	19.1	5.9	3.8	4.7
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	IS17	Sunny	Moderate	11:22	10.8	Middle	2	2	29.9	8	19	5.9	3.8	5.6
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	IS17	Sunny	Moderate	11:22	10.8	Bottom	3	1	28.5	7.9	25	4.4	6.8	7.7
TMCLKL	HY/2012/08	2019-08-14	Mid-Ebb	IS17	Sunny	Moderate	11:22	10.8	Bottom	3	2	28.5	7.9	25	4.4	6.8	7.9
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	CS(Mf)5	Rainy	Moderate	04:38	14.7	Surface	1	1	30.1	7.9	16.8	6.2	3.2	6.3
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	CS(Mf)5	Rainy	Moderate	04:38	14.7	Surface	1	2	30.1	7.9	16.8	6.2	3.2	7.3
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	CS(Mf)5	Rainy	Moderate	04:38	14.7	Middle	2	1	29.9	7.9	19.2	6	2	8.1
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	CS(Mf)5	Rainy	Moderate	04:38	14.7	Middle	2	2	29.9	7.9	19.2	6	2	7.5
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	CS(Mf)5	Rainy	Moderate	04:38	14.7	Bottom	3	1	28.5	7.9	25.3	4.7	2	9.7
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	CS(Mf)5	Rainy	Moderate	04:38	14.7	Bottom	3	2	28.5	7.9	25.3	4.7	2	8.3
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	CS(Mf)3(N)	Cloudy	Moderate	05:56	7.1	Surface	1	1	29.9	7.9	16.6	6	4.2	4.3
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	CS(Mf)3(N)	Cloudy	Moderate	05:56	7.1	Surface	1	2	29.9	7.9	16.6	6	4.2	5.1
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	CS(Mf)3(N)	Cloudy	Moderate	05:56	7.1	Middle	2	1	29.9	7.9	17.1	5.9	4	6.6
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	CS(Mf)3(N)	Cloudy	Moderate	05:56	7.1	Middle	2	2	29.9	7.9	17.1	5.9	4	6.1
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	CS(Mf)3(N)	Cloudy	Moderate	05:56	7.1	Bottom	3	1	29.7	7.9	18.9	5.5	9.4	7.5

Project	Contract	Date	Tide	Stat	Weather	Sea Condition	Time	Water Depth	Level	Lev_Cod	Replicate	Temp(°C)	pH	Salinity(ppt)	DO(mg/L)	Turbidity(NTU)	SS(mg/L)
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	CS(Mf)3(N)	Cloudy	Moderate	05:56	7.1	Bottom	3	2	29.7	7.9	18.9	5.4	9.3	7.6
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	IS(Mf)16	Cloudy	Moderate	06:18	5.8	Surface	1	1	30	8	18	6.2	3.5	6.9
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	IS(Mf)16	Cloudy	Moderate	06:18	5.8	Surface	1	2	30	8	18.1	6.2	3.5	7.5
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	IS(Mf)16	Cloudy	Moderate	06:18	5.8	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	IS(Mf)16	Cloudy	Moderate	06:18	5.8	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	IS(Mf)16	Cloudy	Moderate	06:18	5.8	Bottom	3	1	30	8	18	6.2	3.6	8
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	IS(Mf)16	Cloudy	Moderate	06:18	5.8	Bottom	3	2	30	8	18	6.2	3.5	9
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	SR4a	Cloudy	Moderate	06:27	5.2	Surface	1	1	30.2	8	17.5	5.9	4.1	5.5
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	SR4a	Cloudy	Moderate	06:27	5.2	Surface	1	2	30.2	8	17.5	6	4.1	6
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	SR4a	Cloudy	Moderate	06:27	5.2	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	SR4a	Cloudy	Moderate	06:27	5.2	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	SR4a	Cloudy	Moderate	06:27	5.2	Bottom	3	1	29.9	7.9	18.7	5.3	7.1	6.2
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	SR4a	Cloudy	Moderate	06:27	5.2	Bottom	3	2	29.9	7.9	18.7	5.3	7.1	7.7
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	SR4(N2)	Cloudy	Moderate	06:32	4.7	Surface	1	1	30.1	8	17.2	6.1	3.5	6.4
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	SR4(N2)	Cloudy	Moderate	06:32	4.7	Surface	1	2	30.1	8	17.2	6.1	3.4	5.6
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	SR4(N2)	Cloudy	Moderate	06:32	4.7	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	SR4(N2)	Cloudy	Moderate	06:32	4.7	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	SR4(N2)	Cloudy	Moderate	06:32	4.7	Bottom	3	1	30	8	18	5.9	5.4	6
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	SR4(N2)	Cloudy	Moderate	06:32	4.7	Bottom	3	2	30	8	18	5.9	5.3	5.2
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	IS8(N)	Cloudy	Moderate	06:38	4.3	Surface	1	1	30	8	17.3	6.1	4.1	10
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	IS8(N)	Cloudy	Moderate	06:38	4.3	Surface	1	2	30	8	17.3	6.1	4.2	10.2
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	IS8(N)	Cloudy	Moderate	06:38	4.3	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	IS8(N)	Cloudy	Moderate	06:38	4.3	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	IS8(N)	Cloudy	Moderate	06:38	4.3	Bottom	3	1	30	8	17.5	6	5.3	17.1
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	IS8(N)	Cloudy	Moderate	06:38	4.3	Bottom	3	2	30	8	17.5	6	5.3	16.9
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	IS(Mf)9	Cloudy	Moderate	06:45	4.2	Surface	1	1	29.9	8	17.3	6.1	4.8	6.3
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	IS(Mf)9	Cloudy	Moderate	06:45	4.2	Surface	1	2	29.9	8	17.3	6.1	4.9	6.1
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	IS(Mf)9	Cloudy	Moderate	06:45	4.2	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	IS(Mf)9	Cloudy	Moderate	06:45	4.2	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	IS(Mf)9	Cloudy	Moderate	06:45	4.2	Bottom	3	1	29.9	8	17.8	6.1	6.9	11.9
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	IS(Mf)9	Cloudy	Moderate	06:45	4.2	Bottom	3	2	29.9	8	17.8	6.1	7	11.1
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	IS(Mf)11	Cloudy	Moderate	06:00	11.4	Surface	1	1	30.1	8	17.2	6.2	3.6	4.4
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	IS(Mf)11	Cloudy	Moderate	06:00	11.4	Surface	1	2	30.1	8	17.2	6.2	3.6	4.2
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	IS(Mf)11	Cloudy	Moderate	06:00	11.4	Middle	2	1	29.5	8	20.6	5.3	4.8	7.3
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	IS(Mf)11	Cloudy	Moderate	06:00	11.4	Middle	2	2	29.5	8	20.7	5.3	4.8	6.5
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	IS(Mf)11	Cloudy	Moderate	06:00	11.4	Bottom	3	1	28.7	7.9	24.5	4.6	15.7	8.4
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	IS(Mf)11	Cloudy	Moderate	06:00	11.4	Bottom	3	2	28.7	7.9	24.5	4.6	15.7	7.3
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	SR7	Cloudy	Moderate	04:58	4.3	Surface	1	1	30	7.9	17.1	5.9	3.6	5.8
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	SR7	Cloudy	Moderate	04:58	4.3	Surface	1	2	30	7.9	17.1	5.9	3.6	5.4
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	SR7	Cloudy	Moderate	04:58	4.3	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	SR7	Cloudy	Moderate	04:58	4.3	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	SR7	Cloudy	Moderate	04:58	4.3	Bottom	3	1	29.9	7.9	17.4	6	3.6	6.9
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	SR7	Cloudy	Moderate	04:58	4.3	Bottom	3	2	29.9	7.9	17.4	6	3.6	7.4
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	IS17	Rainy	Moderate	06:11	11.8	Surface	1	1	30	8	18	6.2	3.4	7.1
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	IS17	Rainy	Moderate	06:11	11.8	Surface	1	2	30	8	18	6.2	3.4	6.4
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	IS17	Rainy	Moderate	06:11	11.8	Middle	2	1	30	8	18.1	6.1	3.4	6.2
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	IS17	Rainy	Moderate	06:11	11.8	Middle	2	2	30	8	18.2	6.1	3.4	6.7
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	IS17	Rainy	Moderate	06:11	11.8	Bottom	3	1	29.8	8	18.9	5.9	3.1	8.1
TMCLKL	HY/2012/08	2019-08-14	Mid-Flood	IS17	Rainy	Moderate	06:11	11.8	Bottom	3	2	29.8	8	18.9	5.9	3.1	9.2
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	CS(Mf)5	Fine	Moderate	13:57	12.2	Surface	1	1	30	7.8	20.3	5.8	3.9	5.7
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	CS(Mf)5	Fine	Moderate	13:57	12.2	Surface	1	2	30	8	20	5.9	4	5.2
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	CS(Mf)5	Fine	Moderate	13:57	12.2	Middle	2	1	28.7	7.8	23.8	4.5	5.1	5
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	CS(Mf)5	Fine	Moderate	13:57	12.2	Middle	2	2	28.7	7.9	23.4	4.5	5.2	4.4
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	CS(Mf)5	Fine	Moderate	13:57	12.2	Bottom	3	1	27.3	7.8	28.8	3.4	11.6	4.1
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	CS(Mf)5	Fine	Moderate	13:57	12.2	Bottom	3	2	27.3	7.9	28.2	3.5	11.9	3.8
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	CS(Mf)3(N)	Fine	Moderate	13:10	7.1	Surface	1	1	30.1	7.8	19.4	5.6	2.3	3.4
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	CS(Mf)3(N)	Fine	Moderate	13:10	7.1	Surface	1	2	30.1	7.9	19	5.6	2.3	2.4
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	CS(Mf)3(N)	Fine	Moderate	13:10	7.1	Middle	2	1	29.1	7.8	23	4.4	6.7	3
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	CS(Mf)3(N)	Fine	Moderate	13:10	7.1	Middle	2	2	29.1	7.9	22.6	4.4	6.6	3.3
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	CS(Mf)3(N)	Fine	Moderate	13:10	7.1	Bottom	3	1	28.9	7.8	24	4.4	10	3.2
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	CS(Mf)3(N)	Fine	Moderate	13:10	7.1	Bottom	3	2	28.9	7.9	23.5	4.4	10.1	3.5

Project	Contract	Date	Tide	Stat	Weather	Sea Condition	Time	Water Depth	Level	Lev_Cod	Replicate	Temp(°C)	pH	Salinity(ppt)	DO(mg/L)	Turbidity(NTU)	SS(mg/L)
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	IS(Mf)16	Fine	Moderate	12:28	5.4	Surface	1	1	29.3	7.8	22	5.2	6.7	10.5
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	IS(Mf)16	Fine	Moderate	12:28	5.4	Surface	1	2	29.2	7.9	21.7	5.2	6.9	10.6
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	IS(Mf)16	Fine	Moderate	12:28	5.4	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	IS(Mf)16	Fine	Moderate	12:28	5.4	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	IS(Mf)16	Fine	Moderate	12:28	5.4	Bottom	3	1	28.7	7.8	23.9	4.7	7.5	6
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	IS(Mf)16	Fine	Moderate	12:28	5.4	Bottom	3	2	28.7	7.9	23.5	4.8	7.5	5.6
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	SR4a	Fine	Calm	12:15	4.5	Surface	1	1	30.1	7.9	19.8	6	2.6	4.4
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	SR4a	Fine	Calm	12:15	4.5	Surface	1	2	30.1	8	19.4	6	2.7	4.3
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	SR4a	Fine	Calm	12:15	4.5	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	SR4a	Fine	Calm	12:15	4.5	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	SR4a	Fine	Calm	12:15	4.5	Bottom	3	1	29.3	7.8	21.7	4.7	8.4	3
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	SR4a	Fine	Calm	12:15	4.5	Bottom	3	2	29.3	7.9	21.3	4.8	8.4	3.9
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	SR4(N2)	Fine	Calm	12:10	4	Surface	1	1	29.8	7.9	20	5.1	6.7	9.4
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	SR4(N2)	Fine	Calm	12:10	4	Surface	1	2	29.8	7.9	19.6	5.2	7.1	11.2
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	SR4(N2)	Fine	Calm	12:10	4	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	SR4(N2)	Fine	Calm	12:10	4	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	SR4(N2)	Fine	Calm	12:10	4	Bottom	3	1	29.5	7.8	21.1	4.7	9.3	10.9
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	SR4(N2)	Fine	Calm	12:10	4	Bottom	3	2	29.5	7.9	20.7	4.8	8.9	11.4
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	IS8(N)	Fine	Calm	12:22	3.7	Surface	1	1	30.2	7.9	20	6.1	6.7	6
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	IS8(N)	Fine	Calm	12:22	3.7	Surface	1	2	30.2	8	19.7	6.2	6.8	7
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	IS8(N)	Fine	Calm	12:22	3.7	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	IS8(N)	Fine	Calm	12:22	3.7	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	IS8(N)	Fine	Calm	12:22	3.7	Bottom	3	1	29.7	7.9	21.2	5.5	8.9	8.1
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	IS8(N)	Fine	Calm	12:22	3.7	Bottom	3	2	29.6	8	20.8	5.5	8.9	9
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	IS(Mf)9	Fine	Calm	11:59	3.2	Surface	1	1	30	7.9	20.2	5.7	6.2	8.4
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	IS(Mf)9	Fine	Calm	11:59	3.2	Surface	1	2	30	7.9	19.8	5.8	7	9.5
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	IS(Mf)9	Fine	Calm	11:59	3.2	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	IS(Mf)9	Fine	Calm	11:59	3.2	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	IS(Mf)9	Fine	Calm	11:59	3.2	Bottom	3	1	30	8	20.3	5.7	7.9	14.3
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	IS(Mf)9	Fine	Calm	11:59	3.2	Bottom	3	2	30	7.9	19.9	5.7	8	16
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	IS(Mf)11	Fine	Moderate	12:40	10.8	Surface	1	1	30.1	7.9	18.6	6.5	1.5	2.7
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	IS(Mf)11	Fine	Moderate	12:40	10.8	Surface	1	2	30.1	8	18.3	6.6	1.9	2.4
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	IS(Mf)11	Fine	Moderate	12:40	10.8	Middle	2	1	29.7	7.8	20.5	5.5	3.5	3.2
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	IS(Mf)11	Fine	Moderate	12:40	10.8	Middle	2	2	29.7	7.9	20.1	5.5	3.9	2.4
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	IS(Mf)11	Fine	Moderate	12:40	10.8	Bottom	3	1	29	7.8	23.2	4.6	6.5	3.2
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	IS(Mf)11	Fine	Moderate	12:40	10.8	Bottom	3	2	29	7.9	22.8	4.7	6.3	2.9
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	SR7	Fine	Moderate	13:33	4.2	Surface	1	1	29.7	7.8	20.1	5.6	3	4.1
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	SR7	Fine	Moderate	13:33	4.2	Surface	1	2	29.7	7.9	19.7	5.7	3.2	3.1
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	SR7	Fine	Moderate	13:33	4.2	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	SR7	Fine	Moderate	13:33	4.2	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	SR7	Fine	Moderate	13:33	4.2	Bottom	3	1	29.3	7.8	21.6	5.1	4.3	3.7
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	SR7	Fine	Moderate	13:33	4.2	Bottom	3	2	29.3	7.9	21.2	5.2	4.9	4.1
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	IS17	Fine	Moderate	13:41	9.7	Surface	1	1	30.1	7.9	19.6	6.2	2.5	3.4
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	IS17	Fine	Moderate	13:41	9.7	Surface	1	2	30	8	19.2	6.2	2.6	3.6
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	IS17	Fine	Moderate	13:41	9.7	Middle	2	1	29.6	7.8	21.2	5.6	3.1	4.4
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	IS17	Fine	Moderate	13:41	9.7	Middle	2	2	29.6	7.9	20.8	5.6	3.4	5.5
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	IS17	Fine	Moderate	13:41	9.7	Bottom	3	1	28.4	7.8	25	4.9	5.2	5.8
TMCLKL	HY/2012/08	2019-08-16	Mid-Ebb	IS17	Fine	Moderate	13:41	9.7	Bottom	3	2	28.4	7.9	24.6	5	5.1	5.2
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	CS(Mf)5	Cloudy	Moderate	06:11	12.5	Surface	1	1	29.7	7.8	18.4	5.6	2.3	3.5
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	CS(Mf)5	Cloudy	Moderate	06:11	12.5	Surface	1	2	29.7	7.9	18	5.7	2.6	3.8
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	CS(Mf)5	Cloudy	Moderate	06:11	12.5	Middle	2	1	29.3	7.8	21.2	5.1	2.5	3.7
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	CS(Mf)5	Cloudy	Moderate	06:11	12.5	Middle	2	2	29.3	7.9	20.9	5.1	2.7	3.8
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	CS(Mf)5	Cloudy	Moderate	06:11	12.5	Bottom	3	1	27	7.8	30.1	3.1	7.6	3.5
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	CS(Mf)5	Cloudy	Moderate	06:11	12.5	Bottom	3	2	27	7.8	29.5	3.2	8.3	4.3
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	CS(Mf)3(N)	Fine	Moderate	07:00	7	Surface	1	1	29.7	7.9	17.7	5.7	2.7	9.4
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	CS(Mf)3(N)	Fine	Moderate	07:00	7	Surface	1	2	29.7	7.8	18	5.6	2.5	8.1
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	CS(Mf)3(N)	Fine	Moderate	07:00	7	Middle	2	1	29.6	7.9	19.4	5.3	5.9	6.8
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	CS(Mf)3(N)	Fine	Moderate	07:00	7	Middle	2	2	29.6	7.8	19.8	5.2	6.7	7.2
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	CS(Mf)3(N)	Fine	Moderate	07:00	7	Bottom	3	1	29.6	7.9	19.8	5.1	10.9	5.9
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	CS(Mf)3(N)	Fine	Moderate	07:00	7	Bottom	3	2	29.6	7.8	20.2	5.1	11.4	6.8
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	IS(Mf)16	Fine	Moderate	07:52	5.8	Surface	1	1	29.5	7.8	19.8	5.6	2.9	6.1



Project	Contract	Date	Tide	Stat	Weather	Sea Condition	Time	Water Depth	Level	Lev_Cod	Replicate	Temp(°C)	pH	Salinity(ppt)	DO(mg/L)	Turbidity(NTU)	SS(mg/L)
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	IS(Mf)16	Fine	Moderate	07:52	5.8	Surface	1	2	29.5	7.9	19.4	5.6	2.8	5.5
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	IS(Mf)16	Fine	Moderate	07:52	5.8	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	IS(Mf)16	Fine	Moderate	07:52	5.8	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	IS(Mf)16	Fine	Moderate	07:52	5.8	Bottom	3	1	29.2	7.8	21.8	4.8	7.1	6.1
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	IS(Mf)16	Fine	Moderate	07:52	5.8	Bottom	3	2	29.2	7.9	21.4	4.9	7.3	5.9
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	SR4a	Fine	Calm	08:02	4.4	Surface	1	1	29.7	7.8	19.4	5.5	3.1	6.3
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	SR4a	Fine	Calm	08:02	4.4	Surface	1	2	29.7	7.9	19.1	5.5	3.2	6.2
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	SR4a	Fine	Calm	08:02	4.4	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	SR4a	Fine	Calm	08:02	4.4	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	SR4a	Fine	Calm	08:02	4.4	Bottom	3	1	29.6	7.8	21.1	4.8	6.1	5.7
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	SR4a	Fine	Calm	08:02	4.4	Bottom	3	2	29.6	7.9	20.7	4.8	6	5.1
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	SR4(N2)	Fine	Calm	08:06	4.1	Surface	1	1	29.7	7.8	19.4	5.6	3.2	6.1
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	SR4(N2)	Fine	Calm	08:06	4.1	Surface	1	2	29.7	7.9	19	5.6	3.1	6.8
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	SR4(N2)	Fine	Calm	08:06	4.1	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	SR4(N2)	Fine	Calm	08:06	4.1	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	SR4(N2)	Fine	Calm	08:06	4.1	Bottom	3	1	29.7	7.8	19.5	5.5	3.4	6.9
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	SR4(N2)	Fine	Calm	08:06	4.1	Bottom	3	2	29.7	7.9	19.2	5.5	3.5	6.5
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	IS8(N)	Fine	Calm	08:12	3.9	Surface	1	1	29.7	7.8	19.4	5.5	4.3	4.8
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	IS8(N)	Fine	Calm	08:12	3.9	Surface	1	2	29.7	7.9	19.1	5.5	4.7	5.6
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	IS8(N)	Fine	Calm	08:12	3.9	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	IS8(N)	Fine	Calm	08:12	3.9	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	IS8(N)	Fine	Calm	08:12	3.9	Bottom	3	1	29.3	7.8	21.1	5.1	4.4	6.8
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	IS8(N)	Fine	Calm	08:12	3.9	Bottom	3	2	29.3	7.9	20.7	5.1	4.4	6.5
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	IS(Mf)9	Fine	Calm	08:21	3.5	Surface	1	1	29.6	7.8	19.7	5.6	3.2	6.1
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	IS(Mf)9	Fine	Calm	08:21	3.5	Surface	1	2	29.6	7.9	19.3	5.7	3.6	7.1
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	IS(Mf)9	Fine	Calm	08:21	3.5	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	IS(Mf)9	Fine	Calm	08:21	3.5	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	IS(Mf)9	Fine	Calm	08:21	3.5	Bottom	3	1	29.5	7.8	19.9	5.6	3.1	7.3
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	IS(Mf)9	Fine	Calm	08:21	3.5	Bottom	3	2	29.5	7.9	19.5	5.6	3.4	7.3
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	IS(Mf)11	Fine	Moderate	07:38	11.1	Surface	1	1	29.5	7.9	20.3	5.3	4.2	3.7
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	IS(Mf)11	Fine	Moderate	07:38	11.1	Surface	1	2	29.5	7.8	20.7	5.3	4.1	5.1
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	IS(Mf)11	Fine	Moderate	07:38	11.1	Middle	2	1	28.9	7.9	22.1	4.9	10.1	6.8
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	IS(Mf)11	Fine	Moderate	07:38	11.1	Middle	2	2	28.9	7.8	22.5	4.9	10.7	6.1
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	IS(Mf)11	Fine	Moderate	07:38	11.1	Bottom	3	1	28.6	7.9	23.8	4.7	15.3	6.9
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	IS(Mf)11	Fine	Moderate	07:38	11.1	Bottom	3	2	28.6	7.8	24.2	4.7	15	7.3
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	SR7	Fine	Moderate	06:34	4.4	Surface	1	1	29.6	7.9	18.2	5.6	2.2	4.8
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	SR7	Fine	Moderate	06:34	4.4	Surface	1	2	29.6	7.8	18.5	5.6	2.3	4.1
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	SR7	Fine	Moderate	06:34	4.4	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	SR7	Fine	Moderate	06:34	4.4	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	SR7	Fine	Moderate	06:34	4.4	Bottom	3	1	28.1	7.8	25.5	4.7	6.9	2.8
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	SR7	Fine	Moderate	06:34	4.4	Bottom	3	2	28.1	7.8	26	4.7	7.8	3.9
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	IS17	Fine	Moderate	07:44	10.4	Surface	1	1	29.4	7.8	20.5	5.4	2.4	5.5
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	IS17	Fine	Moderate	07:44	10.4	Surface	1	2	29.4	7.9	20.1	5.4	2.8	5.1
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	IS17	Fine	Moderate	07:44	10.4	Middle	2	1	29.4	7.8	20.7	5.3	2.5	6.1
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	IS17	Fine	Moderate	07:44	10.4	Middle	2	2	29.4	7.9	20.3	5.3	2.6	6.5
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	IS17	Fine	Moderate	07:44	10.4	Bottom	3	1	29.2	7.8	21.5	5	2.2	6.1
TMCLKL	HY/2012/08	2019-08-16	Mid-Flood	IS17	Fine	Moderate	07:44	10.4	Bottom	3	2	29.2	7.9	21.1	5	2.5	6.5
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	CS(Mf)5	Fine	Moderate	15:37	12.2	Surface	1	1	28.2	8	22.2	5	3.8	3.8
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	CS(Mf)5	Fine	Moderate	15:37	12.2	Surface	1	2	28.9	7.9	21.8	5	4.1	3.6
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	CS(Mf)5	Fine	Moderate	15:37	12.2	Middle	2	1	26.6	8	26.8	4.1	8.2	3.6
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	CS(Mf)5	Fine	Moderate	15:37	12.2	Middle	2	2	27.3	7.9	26.4	4.1	8	3.7
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	CS(Mf)5	Fine	Moderate	15:37	12.2	Bottom	3	1	25.8	8.1	30.1	3.8	14.4	4.7
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	CS(Mf)5	Fine	Moderate	15:37	12.2	Bottom	3	2	26.5	7.9	29.7	3.7	14.6	4.7
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	CS(Mf)3(N)	Cloudy	Moderate	14:43	7	Surface	1	1	28.9	8	19.6	5.6	3	1.9
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	CS(Mf)3(N)	Cloudy	Moderate	14:43	7	Surface	1	2	29.7	7.9	19.2	5.5	3.1	1.9
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	CS(Mf)3(N)	Cloudy	Moderate	14:43	7	Middle	2	1	28	8	22.9	5.1	4.8	2.1
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	CS(Mf)3(N)	Cloudy	Moderate	14:43	7	Middle	2	2	28.8	7.9	22.4	5.1	4.9	2.1
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	CS(Mf)3(N)	Cloudy	Moderate	14:43	7	Bottom	3	1	27.5	8	24.5	4.9	6.5	2.4
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	CS(Mf)3(N)	Cloudy	Moderate	14:43	7	Bottom	3	2	28.3	7.9	24	4.7	6.9	2.4
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	IS(Mf)16	Fine	Moderate	13:56	5.8	Surface	1	1	27.8	8.1	23.3	4.8	7.8	9.2
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	IS(Mf)16	Fine	Moderate	13:56	5.8	Surface	1	2	28.6	7.9	22.9	4.8	7.2	8.8

Project	Contract	Date	Tide	Stat	Weather	Sea Condition	Time	Water Depth	Level	Lev_Cod	Replicate	Temp(°C)	pH	Salinity(ppt)	DO(mg/L)	Turbidity(NTU)	SS(mg/L)
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	IS(Mf)16	Fine	Moderate	13:56	5.8	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	IS(Mf)16	Fine	Moderate	13:56	5.8	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	IS(Mf)16	Fine	Moderate	13:56	5.8	Bottom	3	1	26.2	8	28.5	4.4	5.2	8.5
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	IS(Mf)16	Fine	Moderate	13:56	5.8	Bottom	3	2	27	7.9	28.1	4.2	5.4	8.2
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	SR4a	Fine	Calm	13:47	4.8	Surface	1	1	27.8	8	22.9	4.6	8.6	8.9
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	SR4a	Fine	Calm	13:47	4.8	Surface	1	2	28.5	7.9	22.6	4.7	8.2	8.3
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	SR4a	Fine	Calm	13:47	4.8	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	SR4a	Fine	Calm	13:47	4.8	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	SR4a	Fine	Calm	13:47	4.8	Bottom	3	1	27.6	8	23.7	4.5	11.9	3.4
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	SR4a	Fine	Calm	13:47	4.8	Bottom	3	2	28.4	7.9	23.3	4.5	11.8	3.7
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	SR4(N2)	Fine	Calm	13:42	4.2	Surface	1	1	28	8	22.3	4.7	10	8.4
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	SR4(N2)	Fine	Calm	13:42	4.2	Surface	1	2	28.7	7.9	22	4.8	10	8.1
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	SR4(N2)	Fine	Calm	13:42	4.2	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	SR4(N2)	Fine	Calm	13:42	4.2	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	SR4(N2)	Fine	Calm	13:42	4.2	Bottom	3	1	27.8	8	22.8	4.6	11.7	9.7
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	SR4(N2)	Fine	Calm	13:42	4.2	Bottom	3	2	28.6	7.9	22.5	4.6	11.6	9.6
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	IS8(N)	Fine	Calm	13:36	3.8	Surface	1	1	27.9	8.1	22.9	5.1	10.6	14.4
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	IS8(N)	Fine	Calm	13:36	3.8	Surface	1	2	28.6	7.9	22.7	5.1	10.4	13.4
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	IS8(N)	Fine	Calm	13:36	3.8	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	IS8(N)	Fine	Calm	13:36	3.8	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	IS8(N)	Fine	Calm	13:36	3.8	Bottom	3	1	27.6	8.1	23.8	4.6	10.9	10.6
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	IS8(N)	Fine	Calm	13:36	3.8	Bottom	3	2	28.3	7.9	23.5	4.5	10.9	9.9
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	IS(Mf)9	Fine	Calm	13:30	3.2	Surface	1	1	28.7	8	21.4	5.6	3.9	8.1
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	IS(Mf)9	Fine	Calm	13:30	3.2	Surface	1	2	29.5	8	21.1	5.6	4.1	7.8
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	IS(Mf)9	Fine	Calm	13:30	3.2	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	IS(Mf)9	Fine	Calm	13:30	3.2	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	IS(Mf)9	Fine	Calm	13:30	3.2	Bottom	3	1	28.4	8	21.6	5.5	5.2	4.5
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	IS(Mf)9	Fine	Calm	13:30	3.2	Bottom	3	2	29.1	8	21.3	5.5	5.1	4
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	IS(Mf)11	Cloudy	Moderate	15:07	12.1	Surface	1	1	29.3	8.1	19.7	5.7	2.3	2.4
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	IS(Mf)11	Cloudy	Moderate	15:07	12.1	Surface	1	2	30.1	7.9	19.4	5.6	2.4	2.7
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	IS(Mf)11	Cloudy	Moderate	15:07	12.1	Middle	2	1	28.6	8.1	20.5	5.2	3.3	1.6
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	IS(Mf)11	Cloudy	Moderate	15:07	12.1	Middle	2	2	29.4	7.9	20.1	5.2	3.4	1.5
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	IS(Mf)11	Cloudy	Moderate	15:07	12.1	Bottom	3	1	26.3	8.1	28.6	4.2	6.4	1.5
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	IS(Mf)11	Cloudy	Moderate	15:07	12.1	Bottom	3	2	27.1	7.9	28	4.1	6.9	1.3
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	SR7	Cloudy	Moderate	15:16	5	Surface	1	1	28.5	8.1	20.9	5.4	2.9	1.9
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	SR7	Cloudy	Moderate	15:16	5	Surface	1	2	29.3	7.9	20.5	5.4	3	1.6
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	SR7	Cloudy	Moderate	15:16	5	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	SR7	Cloudy	Moderate	15:16	5	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	SR7	Cloudy	Moderate	15:16	5	Bottom	3	1	28.2	8.1	21.5	5.4	4	2.4
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	SR7	Cloudy	Moderate	15:16	5	Bottom	3	2	29	7.9	21.2	5.3	4	2.9
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	IS17	Fine	Moderate	14:03	7.2	Surface	1	1	28.8	8	20.2	5.3	3.8	2.7
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	IS17	Fine	Moderate	14:03	7.2	Surface	1	2	29.6	7.9	20	5.3	3.9	3.1
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	IS17	Fine	Moderate	14:03	7.2	Middle	2	1	27.8	8	22.4	5	6.2	4.7
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	IS17	Fine	Moderate	14:03	7.2	Middle	2	2	28.4	7.9	22.3	4.9	6.5	4.2
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	IS17	Fine	Moderate	14:03	7.2	Bottom	3	1	27	8.1	26.8	4.2	8.9	7.6
TMCLKL	HY/2012/08	2019-08-19	Mid-Ebb	IS17	Fine	Moderate	14:03	7.2	Bottom	3	2	27.9	7.9	26.6	4.1	8.3	7.8
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	CS(Mf)5	Cloudy	Moderate	07:56	12.4	Surface	1	1	28.8	7.8	20.1	5	3.3	3.1
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	CS(Mf)5	Cloudy	Moderate	07:56	12.4	Surface	1	2	28	8	20.4	5	3.3	2.7
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	CS(Mf)5	Cloudy	Moderate	07:56	12.4	Middle	2	1	27.6	7.8	25.7	4.2	4.9	3.6
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	CS(Mf)5	Cloudy	Moderate	07:56	12.4	Middle	2	2	26.8	8	26.2	4.2	4.9	3.7
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	CS(Mf)5	Cloudy	Moderate	07:56	12.4	Bottom	3	1	26.7	7.8	29.5	3.7	11.5	4.1
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	CS(Mf)5	Cloudy	Moderate	07:56	12.4	Bottom	3	2	25.9	8	29.9	3.8	11.5	4.1
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	CS(Mf)3(N)	Cloudy	Moderate	08:44	6.6	Surface	1	1	28.4	8	17	5.5	3.7	5.5
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	CS(Mf)3(N)	Cloudy	Moderate	08:44	6.6	Surface	1	2	29.2	7.9	16.7	5.5	3.7	5.2
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	CS(Mf)3(N)	Cloudy	Moderate	08:44	6.6	Middle	2	1	28.2	8	19.2	5.4	4.6	4.2
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	CS(Mf)3(N)	Cloudy	Moderate	08:44	6.6	Middle	2	2	29	7.8	18.9	5.3	4.7	4.7
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	CS(Mf)3(N)	Cloudy	Moderate	08:44	6.6	Bottom	3	1	28.2	8	19.4	5.4	4.6	4.4
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	CS(Mf)3(N)	Cloudy	Moderate	08:44	6.6	Bottom	3	2	29	7.9	19.1	5.3	4.7	4.4
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	IS(Mf)16	Cloudy	Moderate	09:28	5.3	Surface	1	1	28	8.1	21.6	5.2	4.5	2.6
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	IS(Mf)16	Cloudy	Moderate	09:28	5.3	Surface	1	2	28.7	7.9	21.3	5.2	4.9	2.7
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	IS(Mf)16	Cloudy	Moderate	09:28	5.3	Middle	2	1						

Project	Contract	Date	Tide	Stat	Weather	Sea Condition	Time	Water Depth	Level	Lev_Cod	Replicate	Temp(°C)	pH	Salinity(ppt)	DO(mg/L)	Turbidity(NTU)	SS(mg/L)
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	IS(Mf)16	Cloudy	Moderate	09:28	5.3	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	IS(Mf)16	Cloudy	Moderate	09:28	5.3	Bottom	3	1	27.8	8.1	22.2	5.3	7.4	4.4
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	IS(Mf)16	Cloudy	Moderate	09:28	5.3	Bottom	3	2	28.6	8	21.8	5.1	7.3	4.8
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	SR4a	Cloudy	Moderate	09:37	4.7	Surface	1	1	28	8.1	21.2	5.2	4.7	5.2
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	SR4a	Cloudy	Moderate	09:37	4.7	Surface	1	2	28.7	7.9	20.9	5.2	4.8	4.8
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	SR4a	Cloudy	Moderate	09:37	4.7	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	SR4a	Cloudy	Moderate	09:37	4.7	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	SR4a	Cloudy	Moderate	09:37	4.7	Bottom	3	1	27.9	8.1	21.9	4.9	8.2	5.8
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	SR4a	Cloudy	Moderate	09:37	4.7	Bottom	3	2	28.6	8	21.6	4.9	8.8	5.8
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	SR4(N2)	Cloudy	Moderate	09:42	4.1	Surface	1	1	28	8.1	21.1	5.4	4.4	8.6
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	SR4(N2)	Cloudy	Moderate	09:42	4.1	Surface	1	2	28.8	7.9	20.7	5.3	4.4	8.7
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	SR4(N2)	Cloudy	Moderate	09:42	4.1	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	SR4(N2)	Cloudy	Moderate	09:42	4.1	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	SR4(N2)	Cloudy	Moderate	09:42	4.1	Bottom	3	1	28	8.1	21.2	5.5	5.9	4.3
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	SR4(N2)	Cloudy	Moderate	09:42	4.1	Bottom	3	2	28.7	7.9	20.8	5.5	5	4.8
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	IS8(N)	Cloudy	Moderate	09:49	4.3	Surface	1	1	28	8.1	21.1	5.2	5.3	5
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	IS8(N)	Cloudy	Moderate	09:49	4.3	Surface	1	2	28.8	7.9	20.7	5.1	5.9	4.7
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	IS8(N)	Cloudy	Moderate	09:49	4.3	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	IS8(N)	Cloudy	Moderate	09:49	4.3	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	IS8(N)	Cloudy	Moderate	09:49	4.3	Bottom	3	1	27.8	8.1	22	5.1	8.5	7.4
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	IS8(N)	Cloudy	Moderate	09:49	4.3	Bottom	3	2	28.6	7.9	21.6	5	8.2	7.2
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	IS(Mf)9	Cloudy	Moderate	09:56	3.3	Surface	1	1	28.1	8.1	21.3	5.4	4.4	5.5
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	IS(Mf)9	Cloudy	Moderate	09:56	3.3	Surface	1	2	28.9	7.9	20.9	5.4	4.7	5.3
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	IS(Mf)9	Cloudy	Moderate	09:56	3.3	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	IS(Mf)9	Cloudy	Moderate	09:56	3.3	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	IS(Mf)9	Cloudy	Moderate	09:56	3.3	Bottom	3	1	28	8.1	21.6	5.5	8	5.7
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	IS(Mf)9	Cloudy	Moderate	09:56	3.3	Bottom	3	2	28.7	7.9	21.3	5.5	8.1	5.4
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	IS(Mf)11	Cloudy	Moderate	08:20	11.7	Surface	1	1	28.7	7.9	20.5	5.1	4.5	4.9
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	IS(Mf)11	Cloudy	Moderate	08:20	11.7	Surface	1	2	28.7	7.9	20.5	5.1	4.5	4.9
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	IS(Mf)11	Cloudy	Moderate	08:20	11.7	Middle	2	1	28	7.9	24.6	4.3	13.5	4.9
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	IS(Mf)11	Cloudy	Moderate	08:20	11.7	Middle	2	2	28	7.9	24.6	4.3	13.5	4.9
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	IS(Mf)11	Cloudy	Moderate	08:20	11.7	Bottom	3	1	27.9	7.9	24.9	4.3	13.2	4.3
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	IS(Mf)11	Cloudy	Moderate	08:20	11.7	Bottom	3	2	27.9	7.9	24.9	4.3	13.2	4.2
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	SR7	Cloudy	Moderate	08:13	4.3	Surface	1	1	28.6	7.9	19.8	5.2	5.3	4.8
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	SR7	Cloudy	Moderate	08:13	4.3	Surface	1	2	27.8	8	20.2	5.1	5	4.1
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	SR7	Cloudy	Moderate	08:13	4.3	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	SR7	Cloudy	Moderate	08:13	4.3	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	SR7	Cloudy	Moderate	08:13	4.3	Bottom	3	1	28.2	7.9	23	4.6	8.5	5.7
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	SR7	Cloudy	Moderate	08:13	4.3	Bottom	3	2	27.4	8	23.5	4.7	8.9	5.7
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	IS17	Cloudy	Moderate	09:21	7.6	Surface	1	1	28	8.1	21.7	5.2	3.6	3.2
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	IS17	Cloudy	Moderate	09:21	7.6	Surface	1	2	28.7	7.9	21.3	5.1	3.6	3.5
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	IS17	Cloudy	Moderate	09:21	7.6	Middle	2	1	27.7	8.1	22.7	4.9	3.5	4.2
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	IS17	Cloudy	Moderate	09:21	7.6	Middle	2	2	28.4	7.9	22.6	4.8	3.7	4.6
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	IS17	Cloudy	Moderate	09:21	7.6	Bottom	3	1	27.4	8.1	23.8	4.9	3.5	5.1
TMCLKL	HY/2012/08	2019-08-19	Mid-Flood	IS17	Cloudy	Moderate	09:21	7.6	Bottom	3	2	28.2	7.9	23.4	4.8	3.5	5.3
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	CS(Mf)5	Fine	Moderate	16:28	16.7	Surface	1	1	29.4	8	21.7	5.5	1.6	8.8
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	CS(Mf)5	Fine	Moderate	16:28	16.7	Surface	1	2	29.4	8	21.7	5.5	1.3	8.1
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	CS(Mf)5	Fine	Moderate	16:28	16.7	Middle	2	1	28.7	8	23.1	5.2	1.4	6.2
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	CS(Mf)5	Fine	Moderate	16:28	16.7	Middle	2	2	28.7	8	23.1	5.2	1.6	6.7
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	CS(Mf)5	Fine	Moderate	16:28	16.7	Bottom	3	1	28.6	8	23.5	5.3	2.9	4.6
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	CS(Mf)5	Fine	Moderate	16:28	16.7	Bottom	3	2	28.6	8	23.5	5.3	2.9	4.2
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	CS(Mf)3(N)	Sunny	Rough	15:44	7.5	Surface	1	1	29.6	8	21	5.6	3.5	9.9
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	CS(Mf)3(N)	Sunny	Rough	15:44	7.5	Surface	1	2	29.6	8	21	5.6	3.5	9.4
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	CS(Mf)3(N)	Sunny	Rough	15:44	7.5	Middle	2	1	28.7	8	23	5.2	3.2	9.6
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	CS(Mf)3(N)	Sunny	Rough	15:44	7.5	Middle	2	2	28.7	8	23.1	5.2	3.2	10.4
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	CS(Mf)3(N)	Sunny	Rough	15:44	7.5	Bottom	3	1	28.6	8	23.6	5.3	4.8	13.7
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	CS(Mf)3(N)	Sunny	Rough	15:44	7.5	Bottom	3	2	28.6	8	23.5	5.3	4.8	12.9
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	IS(Mf)16	Fine	Moderate	14:58	5.5	Surface	1	1	28.5	8	24.2	5.3	1.5	12
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	IS(Mf)16	Fine	Moderate	14:58	5.5	Surface	1	2	28.5	8	24.2	5.3	1.5	11.8
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	IS(Mf)16	Fine	Moderate	14:58	5.5	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	IS(Mf)16	Fine	Moderate	14:58	5.5	Middle	2	2						

Project	Contract	Date	Tide	Stat	Weather	Sea Condition	Time	Water Depth	Level	Lev_Cod	Replicate	Temp(°C)	pH	Salinity(ppt)	DO(mg/L)	Turbidity(NTU)	SS(mg/L)
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	IS(Mf)16	Fine	Moderate	14:58	5.5	Bottom	3	1	28.1	8	24.7	5.6	3	14.9
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	IS(Mf)16	Fine	Moderate	14:58	5.5	Bottom	3	2	28.1	8	24.7	5.6	2.9	14.7
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	SR4a	Fine	Moderate	14:49	5.2	Surface	1	1	29.1	8	23.1	5.8	1.5	17.1
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	SR4a	Fine	Moderate	14:49	5.2	Surface	1	2	29.1	8	23.1	5.8	1.5	17.8
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	SR4a	Fine	Moderate	14:49	5.2	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	SR4a	Fine	Moderate	14:49	5.2	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	SR4a	Fine	Moderate	14:49	5.2	Bottom	3	1	28.2	7.9	24.4	4.7	4.1	9.6
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	SR4a	Fine	Moderate	14:49	5.2	Bottom	3	2	28.2	7.9	24.4	4.7	4.2	9.1
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	SR4(N2)	Fine	Moderate	14:45	4.9	Surface	1	1	29.4	7.9	22.7	5.7	2.9	6.1
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	SR4(N2)	Fine	Moderate	14:45	4.9	Surface	1	2	29.4	7.9	22.7	5.7	2.9	5.5
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	SR4(N2)	Fine	Moderate	14:45	4.9	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	SR4(N2)	Fine	Moderate	14:45	4.9	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	SR4(N2)	Fine	Moderate	14:45	4.9	Bottom	3	1	28.2	7.9	24.3	4.7	4.2	9.4
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	SR4(N2)	Fine	Moderate	14:45	4.9	Bottom	3	2	28.2	7.9	24.3	4.7	4.2	9.8
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	IS8(N)	Fine	Moderate	14:39	4.7	Surface	1	1	29.1	7.9	23.2	5.5	4.3	11.7
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	IS8(N)	Fine	Moderate	14:39	4.7	Surface	1	2	29.1	7.9	23.2	5.6	4.2	11.3
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	IS8(N)	Fine	Moderate	14:39	4.7	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	IS8(N)	Fine	Moderate	14:39	4.7	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	IS8(N)	Fine	Moderate	14:39	4.7	Bottom	3	1	28.9	7.9	23.5	5.4	5.8	8.9
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	IS8(N)	Fine	Moderate	14:39	4.7	Bottom	3	2	28.9	7.9	23.5	5.4	5.8	9.1
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	IS(Mf)9	Fine	Moderate	14:33	4.4	Surface	1	1	29.3	8.1	23	6	2.3	9.6
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	IS(Mf)9	Fine	Moderate	14:33	4.4	Surface	1	2	29.3	8.1	23	6	2.4	8.9
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	IS(Mf)9	Fine	Moderate	14:33	4.4	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	IS(Mf)9	Fine	Moderate	14:33	4.4	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	IS(Mf)9	Fine	Moderate	14:33	4.4	Bottom	3	1	28.9	8.2	23.3	5.8	1.8	9.8
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	IS(Mf)9	Fine	Moderate	14:33	4.4	Bottom	3	2	28.9	8.1	23.3	5.7	1.9	8.5
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	IS(Mf)11	Fine	Moderate	15:12	12.1	Surface	1	1	29.9	8	20.7	5.6	1.2	4.4
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	IS(Mf)11	Fine	Moderate	15:12	12.1	Surface	1	2	29.9	8	20.7	5.6	1.2	4.7
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	IS(Mf)11	Fine	Moderate	15:12	12.1	Middle	2	1	28.7	7.9	23.3	5	2.8	5.5
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	IS(Mf)11	Fine	Moderate	15:12	12.1	Middle	2	2	28.7	7.9	23.3	5	2.8	5.6
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	IS(Mf)11	Fine	Moderate	15:12	12.1	Bottom	3	1	27.7	7.9	25.6	4.7	3.2	9.2
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	IS(Mf)11	Fine	Moderate	15:12	12.1	Bottom	3	2	27.7	7.9	25.6	4.7	3.2	9.8
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	SR7	Fine	Moderate	16:08	4.2	Surface	1	1	29.2	8.1	22	5.4	1.3	4.8
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	SR7	Fine	Moderate	16:08	4.2	Surface	1	2	29.2	8.1	22	5.4	1.3	4.9
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	SR7	Fine	Moderate	16:08	4.2	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	SR7	Fine	Moderate	16:08	4.2	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	SR7	Fine	Moderate	16:08	4.2	Bottom	3	1	28.4	8.1	23.8	5.4	2.8	5.6
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	SR7	Fine	Moderate	16:08	4.2	Bottom	3	2	28.4	8.1	23.8	5.3	2.8	6.2
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	IS17	Fine	Moderate	15:04	11.3	Surface	1	1	28.9	8	23.8	5.2	2.9	10.5
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	IS17	Fine	Moderate	15:04	11.3	Surface	1	2	28.9	8	23.7	5.2	2.8	9.7
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	IS17	Fine	Moderate	15:04	11.3	Middle	2	1	28	8	25.4	4.5	4.7	11.8
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	IS17	Fine	Moderate	15:04	11.3	Middle	2	2	28	8	25.4	4.5	4.7	11
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	IS17	Fine	Moderate	15:04	11.3	Bottom	3	1	27.1	7.9	27.1	4.5	5.9	13.3
TMCLKL	HY/2012/08	2019-08-21	Mid-Ebb	IS17	Fine	Moderate	15:04	11.3	Bottom	3	2	27.1	7.9	27.2	4.5	6	12.7
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	CS(Mf)5	Sunny	Moderate	09:19	15	Surface	1	1	28.4	8	23.2	4.9	1.1	3.6
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	CS(Mf)5	Sunny	Moderate	09:19	15	Surface	1	2	28.4	8	23.2	4.9	1.1	3.4
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	CS(Mf)5	Sunny	Moderate	09:19	15	Middle	2	1	27.9	8	24.6	4.6	1.3	5.9
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	CS(Mf)5	Sunny	Moderate	09:19	15	Middle	2	2	27.9	8	24.6	4.6	1.3	6.2
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	CS(Mf)5	Sunny	Moderate	09:19	15	Bottom	3	1	27.4	8	25.9	4.6	2.1	8.3
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	CS(Mf)5	Sunny	Moderate	09:19	15	Bottom	3	2	27.4	8	25.9	4.6	2.1	7.6
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	CS(Mf)3(N)	Sunny	Rough	10:07	7.1	Surface	1	1	29.2	8	20.5	5.1	1.6	2.6
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	CS(Mf)3(N)	Sunny	Rough	10:07	7.1	Surface	1	2	29.2	8	20.5	5.1	1.5	2.2
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	CS(Mf)3(N)	Sunny	Rough	10:07	7.1	Middle	2	1	28.5	8	22.6	4.9	4.3	3.7
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	CS(Mf)3(N)	Sunny	Rough	10:07	7.1	Middle	2	2	28.5	8	22.6	4.9	4.3	3.7
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	CS(Mf)3(N)	Sunny	Rough	10:07	7.1	Bottom	3	1	28.5	8	22.7	5	4.4	4.1
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	CS(Mf)3(N)	Sunny	Rough	10:07	7.1	Bottom	3	2	28.5	8	22.7	5	4.4	3.9
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	IS(Mf)16	Sunny	Moderate	10:54	5.8	Surface	1	1	28.5	8	23.2	5.1	2.1	13.1
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	IS(Mf)16	Sunny	Moderate	10:54	5.8	Surface	1	2	28.5	8	23.2	5.1	2.1	12.6
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	IS(Mf)16	Sunny	Moderate	10:54	5.8	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	IS(Mf)16	Sunny	Moderate	10:54	5.8	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	IS(Mf)16	Sunny	Moderate	10:54	5.8	Bottom	3	1	28	8	24	4.8	4.3	7.6



Project	Contract	Date	Tide	Stat	Weather	Sea Condition	Time	Water Depth	Level	Lev_Cod	Replicate	Temp(°C)	pH	Salinity(ppt)	DO(mg/L)	Turbidity(NTU)	SS(mg/L)
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	IS(Mf)16	Sunny	Moderate	10:54	5.8	Bottom	3	2	28	8	24.1	4.8	4.3	7.7
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	SR4a	Sunny	Moderate	11:04	4.8	Surface	1	1	29	8	22.6	5.2	1.2	4.7
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	SR4a	Sunny	Moderate	11:04	4.8	Surface	1	2	29	8	22.6	5.2	1.2	4.7
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	SR4a	Sunny	Moderate	11:04	4.8	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	SR4a	Sunny	Moderate	11:04	4.8	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	SR4a	Sunny	Moderate	11:04	4.8	Bottom	3	1	28.4	8	23.4	4.7	2.7	4.8
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	SR4a	Sunny	Moderate	11:04	4.8	Bottom	3	2	28.4	8	23.4	4.7	2.7	4.6
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	SR4(N2)	Sunny	Moderate	11:08	4.3	Surface	1	1	29.4	8	22.6	5.4	2.6	4
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	SR4(N2)	Sunny	Moderate	11:08	4.3	Surface	1	2	29.4	8	22.6	5.4	2.5	4.5
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	SR4(N2)	Sunny	Moderate	11:08	4.3	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	SR4(N2)	Sunny	Moderate	11:08	4.3	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	SR4(N2)	Sunny	Moderate	11:08	4.3	Bottom	3	1	28.4	8	23.5	4.8	3.6	6.7
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	SR4(N2)	Sunny	Moderate	11:08	4.3	Bottom	3	2	28.4	8	23.5	4.8	3.5	7.5
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	IS8(N)	Sunny	Moderate	11:13	4.3	Surface	1	1	29.1	8	22.8	5.1	2.8	5.4
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	IS8(N)	Sunny	Moderate	11:13	4.3	Surface	1	2	29.1	8	22.8	5.1	2.8	5.1
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	IS8(N)	Sunny	Moderate	11:13	4.3	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	IS8(N)	Sunny	Moderate	11:13	4.3	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	IS8(N)	Sunny	Moderate	11:13	4.3	Bottom	3	1	28.2	8	23.7	5.2	4.2	4.1
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	IS8(N)	Sunny	Moderate	11:13	4.3	Bottom	3	2	28.2	8	23.7	5.2	4.2	3.5
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	IS(Mf)9	Sunny	Moderate	11:20	3.8	Surface	1	1	28.4	8.1	23.1	5.3	1.7	5.7
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	IS(Mf)9	Sunny	Moderate	11:20	3.8	Surface	1	2	28.4	8.1	23.1	5.3	1.7	5.8
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	IS(Mf)9	Sunny	Moderate	11:20	3.8	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	IS(Mf)9	Sunny	Moderate	11:20	3.8	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	IS(Mf)9	Sunny	Moderate	11:20	3.8	Bottom	3	1	28.4	8.1	23.2	5.4	2.1	7.1
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	IS(Mf)9	Sunny	Moderate	11:20	3.8	Bottom	3	2	28.4	8.1	23.3	5.4	2.1	7.8
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	IS(Mf)11	Sunny	Moderate	10:40	11.4	Surface	1	1	28.3	8.1	23.6	4.8	2	4.6
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	IS(Mf)11	Sunny	Moderate	10:40	11.4	Surface	1	2	28.3	8.1	23.6	4.8	2	4.1
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	IS(Mf)11	Sunny	Moderate	10:40	11.4	Middle	2	1	27.7	8.2	25	4.4	4.1	5.7
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	IS(Mf)11	Sunny	Moderate	10:40	11.4	Middle	2	2	27.7	8.2	25	4.4	4.1	5.4
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	IS(Mf)11	Sunny	Moderate	10:40	11.4	Bottom	3	1	27.6	8.3	25.3	5	4.5	9.2
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	IS(Mf)11	Sunny	Moderate	10:40	11.4	Bottom	3	2	27.7	8.2	25.1	5	4.4	8.5
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	SR7	Sunny	Moderate	09:39	4	Surface	1	1	28.7	8	21.9	5.3	2.3	6.2
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	SR7	Sunny	Moderate	09:39	4	Surface	1	2	28.7	8	21.9	5.3	2.3	6.3
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	SR7	Sunny	Moderate	09:39	4	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	SR7	Sunny	Moderate	09:39	4	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	SR7	Sunny	Moderate	09:39	4	Bottom	3	1	27.5	8.1	25.9	4.3	4.2	10.1
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	SR7	Sunny	Moderate	09:39	4	Bottom	3	2	27.5	8.1	25.9	4.3	4.2	9.3
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	IS17	Sunny	Moderate	10:47	11.5	Surface	1	1	28	8.1	24.3	4.8	3.6	7.6
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	IS17	Sunny	Moderate	10:47	11.5	Surface	1	2	28	8.1	24.3	4.8	3.6	7.9
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	IS17	Sunny	Moderate	10:47	11.5	Middle	2	1	28	8.1	24.3	4.8	3.2	10.9
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	IS17	Sunny	Moderate	10:47	11.5	Middle	2	2	28	8.1	24.3	4.8	3.2	10.6
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	IS17	Sunny	Moderate	10:47	11.5	Bottom	3	1	28	8.1	24.4	5	3	14
TMCLKL	HY/2012/08	2019-08-21	Mid-Flood	IS17	Sunny	Moderate	10:47	11.5	Bottom	3	2	28	8.1	24.4	5	3.1	13
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	CS(Mf)5	Cloudy	Moderate	17:57	14.2	Surface	1	1	29	8.4	20.1	7.1	1.5	5.6
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	CS(Mf)5	Cloudy	Moderate	17:57	14.2	Surface	1	2	29	8.4	20.1	7.1	1.5	5.5
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	CS(Mf)5	Cloudy	Moderate	17:57	14.2	Middle	2	1	27.8	8.4	23.5	6.1	1.3	4.5
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	CS(Mf)5	Cloudy	Moderate	17:57	14.2	Middle	2	2	27.9	8.4	23.4	6.1	1.3	4.2
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	CS(Mf)5	Cloudy	Moderate	17:57	14.2	Bottom	3	1	27.1	8.4	26.5	5.7	1.7	3.4
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	CS(Mf)5	Cloudy	Moderate	17:57	14.2	Bottom	3	2	27.1	8.4	26.5	5.7	1.6	3.9
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	CS(Mf)3(N)	Cloudy	Moderate	17:12	7.2	Surface	1	1	29.4	8.4	16.4	6.3	3.2	6.5
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	CS(Mf)3(N)	Cloudy	Moderate	17:12	7.2	Surface	1	2	29.4	8.4	16.3	6.3	3.2	6.1
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	CS(Mf)3(N)	Cloudy	Moderate	17:12	7.2	Middle	2	1	27.4	8.4	25.6	4.1	4.2	7.8
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	CS(Mf)3(N)	Cloudy	Moderate	17:12	7.2	Middle	2	2	27.4	8.4	25.4	4.1	4.1	7.6
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	CS(Mf)3(N)	Cloudy	Moderate	17:12	7.2	Bottom	3	1	27.2	8.4	26.5	4.1	5.5	9.3
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	CS(Mf)3(N)	Cloudy	Moderate	17:12	7.2	Bottom	3	2	27.2	8.4	26.5	4.1	5.5	9.8
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	IS(Mf)16	Cloudy	Moderate	16:28	4.8	Surface	1	1	28.4	8.5	23.5	5.9	8.7	10.4
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	IS(Mf)16	Cloudy	Moderate	16:28	4.8	Surface	1	2	28.4	8.5	23.4	5.9	8.7	10
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	IS(Mf)16	Cloudy	Moderate	16:28	4.8	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	IS(Mf)16	Cloudy	Moderate	16:28	4.8	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	IS(Mf)16	Cloudy	Moderate	16:28	4.8	Bottom	3	1	28.1	8.5	24	5.4	9.1	15.2
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	IS(Mf)16	Cloudy	Moderate	16:28	4.8	Bottom	3	2	28	8.5	24.1	5.3	9.1	16.4

Project	Contract	Date	Tide	Stat	Weather	Sea Condition	Time	Water Depth	Level	Lev_Cod	Replicate	Temp(°C)	pH	Salinity(ppt)	DO(mg/L)	Turbidity(NTU)	SS(mg/L)
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	SR4a	Cloudy	Moderate	16:18	4.3	Surface	1	1	29.3	8.5	20.3	7.3	2.1	6.3
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	SR4a	Cloudy	Moderate	16:18	4.3	Surface	1	2	29.3	8.5	20.3	7.3	2.2	6.2
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	SR4a	Cloudy	Moderate	16:18	4.3	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	SR4a	Cloudy	Moderate	16:18	4.3	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	SR4a	Cloudy	Moderate	16:18	4.3	Bottom	3	1	28.3	8.4	23.1	5.5	4.4	11.1
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	SR4a	Cloudy	Moderate	16:18	4.3	Bottom	3	2	28.3	8.4	23.2	5.5	4.4	11.3
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	SR4(N2)	Cloudy	Moderate	16:15	3.9	Surface	1	1	29	8.5	21.6	6.3	5.2	7.9
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	SR4(N2)	Cloudy	Moderate	16:15	3.9	Surface	1	2	29	8.5	21.7	6.3	5.2	8.5
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	SR4(N2)	Cloudy	Moderate	16:15	3.9	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	SR4(N2)	Cloudy	Moderate	16:15	3.9	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	SR4(N2)	Cloudy	Moderate	16:15	3.9	Bottom	3	1	28.2	8.4	23.5	5.2	9.3	17
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	SR4(N2)	Cloudy	Moderate	16:15	3.9	Bottom	3	2	28.2	8.4	23.5	5.2	9.3	17.2
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	IS8(N)	Cloudy	Moderate	16:09	4.8	Surface	1	1	29.1	8.6	21.8	6.9	5.8	8.7
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	IS8(N)	Cloudy	Moderate	16:09	4.8	Surface	1	2	29.1	8.6	21.8	6.9	5.8	8.4
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	IS8(N)	Cloudy	Moderate	16:09	4.8	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	IS8(N)	Cloudy	Moderate	16:09	4.8	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	IS8(N)	Cloudy	Moderate	16:09	4.8	Bottom	3	1	28.3	8.5	23.4	5.8	8.8	12.3
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	IS8(N)	Cloudy	Moderate	16:09	4.8	Bottom	3	2	28.3	8.5	23.4	5.8	8.7	13.2
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	IS(Mf)9	Cloudy	Moderate	16:01	4.2	Surface	1	1	29	8.7	22.2	7.3	3.2	9.2
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	IS(Mf)9	Cloudy	Moderate	16:01	4.2	Surface	1	2	29	8.7	22.2	7.3	3.1	9.9
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	IS(Mf)9	Cloudy	Moderate	16:01	4.2	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	IS(Mf)9	Cloudy	Moderate	16:01	4.2	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	IS(Mf)9	Cloudy	Moderate	16:01	4.2	Bottom	3	1	28.8	8.6	22.6	7	5.9	10.5
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	IS(Mf)9	Cloudy	Moderate	16:01	4.2	Bottom	3	2	28.8	8.6	22.6	7	5.9	11
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	IS(Mf)11	Cloudy	Moderate	16:42	11.2	Surface	1	1	29.2	8.5	17.9	7.4	2.3	5.4
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	IS(Mf)11	Cloudy	Moderate	16:42	11.2	Surface	1	2	29.2	8.5	17.9	7.4	2.4	5.2
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	IS(Mf)11	Cloudy	Moderate	16:42	11.2	Middle	2	1	28.6	8.5	20.4	6.6	1.3	7.1
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	IS(Mf)11	Cloudy	Moderate	16:42	11.2	Middle	2	2	28.6	8.5	20.4	6.6	1.3	6.9
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	IS(Mf)11	Cloudy	Moderate	16:42	11.2	Bottom	3	1	26.5	8.4	28.6	4.7	5	8.2
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	IS(Mf)11	Cloudy	Moderate	16:42	11.2	Bottom	3	2	26.5	8.4	28.6	4.6	5	7.9
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	SR7	Cloudy	Moderate	17:38	4.3	Surface	1	1	29.4	8.5	16.1	7.3	2.9	5.7
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	SR7	Cloudy	Moderate	17:38	4.3	Surface	1	2	29.4	8.5	16.1	7.3	2.9	5.6
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	SR7	Cloudy	Moderate	17:38	4.3	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	SR7	Cloudy	Moderate	17:38	4.3	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	SR7	Cloudy	Moderate	17:38	4.3	Bottom	3	1	28.9	8.4	19	7.1	5.7	6.5
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	SR7	Cloudy	Moderate	17:38	4.3	Bottom	3	2	28.9	8.4	19.1	7.1	5.7	6.7
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	IS17	Cloudy	Moderate	16:34	11.4	Surface	1	1	28.3	8.5	21.7	6	2.1	4.5
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	IS17	Cloudy	Moderate	16:34	11.4	Surface	1	2	28.4	8.5	21.7	6	2.1	4.8
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	IS17	Cloudy	Moderate	16:34	11.4	Middle	2	1	28	8.5	23.3	5.4	3.3	5.5
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	IS17	Cloudy	Moderate	16:34	11.4	Middle	2	2	27.9	8.5	23.4	5.4	3.3	5.1
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	IS17	Cloudy	Moderate	16:34	11.4	Bottom	3	1	26.3	8.4	28.9	4.2	6.5	7.8
TMCLKL	HY/2012/08	2019-08-23	Mid-Ebb	IS17	Cloudy	Moderate	16:34	11.4	Bottom	3	2	26.3	8.5	28.9	4.2	6.4	8.5
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	CS(Mf)5	Rainy	Moderate	11:03	14.6	Surface	1	1	28.6	8.1	15.4	6.1	2.9	5.3
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	CS(Mf)5	Rainy	Moderate	11:03	14.6	Surface	1	2	28.6	8.1	15.4	6.1	2.9	5.8
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	CS(Mf)5	Rainy	Moderate	11:03	14.6	Middle	2	1	28.3	8.1	20.3	5.3	3.3	6.5
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	CS(Mf)5	Rainy	Moderate	11:03	14.6	Middle	2	2	28.4	8.1	20.3	5.4	3.3	6.1
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	CS(Mf)5	Rainy	Moderate	11:03	14.6	Bottom	3	1	28	8.1	23	5.2	4.7	8.9
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	CS(Mf)5	Rainy	Moderate	11:03	14.6	Bottom	3	2	28	8.1	23	5.2	4.7	9.1
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	CS(Mf)3(N)	Cloudy	Moderate	11:52	6.9	Surface	1	1	29.1	8.2	13	6.4	2.3	5.7
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	CS(Mf)3(N)	Cloudy	Moderate	11:52	6.9	Surface	1	2	29.1	8.2	13	6.5	2.3	5.5
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	CS(Mf)3(N)	Cloudy	Moderate	11:52	6.9	Middle	2	1	28.6	8.1	17	5.8	4	6.5
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	CS(Mf)3(N)	Cloudy	Moderate	11:52	6.9	Middle	2	2	28.7	8.2	17	5.8	3.9	6.2
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	CS(Mf)3(N)	Cloudy	Moderate	11:52	6.9	Bottom	3	1	27.9	8.1	23.8	5	6.1	8.7
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	CS(Mf)3(N)	Cloudy	Moderate	11:52	6.9	Bottom	3	2	27.9	8.1	23.8	5	6.2	8.1
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	IS(Mf)16	Cloudy	Moderate	12:35	5.8	Surface	1	1	28.4	8.3	21.7	5.7	3.6	14.2
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	IS(Mf)16	Cloudy	Moderate	12:35	5.8	Surface	1	2	28.4	8.3	21.7	5.7	3.6	13.9
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	IS(Mf)16	Cloudy	Moderate	12:35	5.8	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	IS(Mf)16	Cloudy	Moderate	12:35	5.8	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	IS(Mf)16	Cloudy	Moderate	12:35	5.8	Bottom	3	1	28.1	8.3	23.4	5.4	5.4	25
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	IS(Mf)16	Cloudy	Moderate	12:35	5.8	Bottom	3	2	28.1	8.3	23.4	5.3	5.3	26.8
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	SR4a	Cloudy	Moderate	12:44	4.6	Surface	1	1	28.7	8.3	20.2	6.2	2.2	7.7

Project	Contract	Date	Tide	Stat	Weather	Sea Condition	Time	Water Depth	Level	Lev_Cod	Replicate	Temp(°C)	pH	Salinity(ppt)	DO(mg/L)	Turbidity(NTU)	SS(mg/L)
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	SR4a	Cloudy	Moderate	12:44	4.6	Surface	1	2	28.7	8.3	20.2	6.2	2.1	7.9
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	SR4a	Cloudy	Moderate	12:44	4.6	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	SR4a	Cloudy	Moderate	12:44	4.6	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	SR4a	Cloudy	Moderate	12:44	4.6	Bottom	3	1	28.4	8.3	21.8	5.8	4.1	8.1
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	SR4a	Cloudy	Moderate	12:44	4.6	Bottom	3	2	28.3	8.3	21.8	5.8	4	8
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	SR4(N2)	Cloudy	Moderate	12:49	4.2	Surface	1	1	28.8	8.3	20.2	6.3	2.8	5.4
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	SR4(N2)	Cloudy	Moderate	12:49	4.2	Surface	1	2	28.8	8.3	20.2	6.3	2.8	5.7
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	SR4(N2)	Cloudy	Moderate	12:49	4.2	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	SR4(N2)	Cloudy	Moderate	12:49	4.2	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	SR4(N2)	Cloudy	Moderate	12:49	4.2	Bottom	3	1	28.4	8.3	21.3	5.8	3.7	8.2
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	SR4(N2)	Cloudy	Moderate	12:49	4.2	Bottom	3	2	28.4	8.3	21.3	5.8	3.7	8.7
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	IS8(N)	Cloudy	Moderate	12:54	3.8	Surface	1	1	28.8	8.3	20	6.4	2.2	3.7
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	IS8(N)	Cloudy	Moderate	12:54	3.8	Surface	1	2	28.8	8.3	20	6.4	2.2	4.3
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	IS8(N)	Cloudy	Moderate	12:54	3.8	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	IS8(N)	Cloudy	Moderate	12:54	3.8	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	IS8(N)	Cloudy	Moderate	12:54	3.8	Bottom	3	1	28.6	8.4	22.7	6.3	5.7	9.9
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	IS8(N)	Cloudy	Moderate	12:54	3.8	Bottom	3	2	28.6	8.4	22.7	6.3	5.6	9.3
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	IS(Mf)9	Cloudy	Moderate	13:01	3.2	Surface	1	1	28.6	8.3	21.5	5.8	4.4	9.1
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	IS(Mf)9	Cloudy	Moderate	13:01	3.2	Surface	1	2	28.7	8.3	21.5	5.8	4.4	8.8
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	IS(Mf)9	Cloudy	Moderate	13:01	3.2	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	IS(Mf)9	Cloudy	Moderate	13:01	3.2	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	IS(Mf)9	Cloudy	Moderate	13:01	3.2	Bottom	3	1	28.4	8.3	23.3	5.2	6.3	12.8
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	IS(Mf)9	Cloudy	Moderate	13:01	3.2	Bottom	3	2	28.4	8.3	23.4	5.1	6.3	12.3
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	IS(Mf)11	Cloudy	Moderate	12:20	11.3	Surface	1	1	28.8	8.3	16.9	6.5	2.9	5.3
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	IS(Mf)11	Cloudy	Moderate	12:20	11.3	Surface	1	2	28.8	8.3	16.9	6.5	2.9	5.5
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	IS(Mf)11	Cloudy	Moderate	12:20	11.3	Middle	2	1	28.3	8.3	20.4	5.8	3.5	6.3
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	IS(Mf)11	Cloudy	Moderate	12:20	11.3	Middle	2	2	28.4	8.3	20.3	5.8	3.4	6.3
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	IS(Mf)11	Cloudy	Moderate	12:20	11.3	Bottom	3	1	28	8.3	22.4	5.4	5	9.8
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	IS(Mf)11	Cloudy	Moderate	12:20	11.3	Bottom	3	2	28	8.3	22.3	5.4	5	9.2
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	SR7	Rainy	Moderate	11:24	4.4	Surface	1	1	28.5	8.1	18.4	5.8	2.8	7.7
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	SR7	Rainy	Moderate	11:24	4.4	Surface	1	2	28.5	8.1	18.4	5.8	2.8	7
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	SR7	Rainy	Moderate	11:24	4.4	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	SR7	Rainy	Moderate	11:24	4.4	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	SR7	Rainy	Moderate	11:24	4.4	Bottom	3	1	28.4	8.1	21	5.5	3.2	11.8
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	SR7	Rainy	Moderate	11:24	4.4	Bottom	3	2	28.3	8.1	21.2	5.4	3.2	10.9
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	IS17	Cloudy	Moderate	12:27	10.8	Surface	1	1	28.1	8.3	23.4	5.4	2.8	15.6
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	IS17	Cloudy	Moderate	12:27	10.8	Surface	1	2	28.1	8.3	23.4	5.4	2.8	14.8
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	IS17	Cloudy	Moderate	12:27	10.8	Middle	2	1	27.7	8.3	24.4	5.2	3.1	11.2
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	IS17	Cloudy	Moderate	12:27	10.8	Middle	2	2	27.7	8.3	24.4	5.2	3.1	11.4
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	IS17	Cloudy	Moderate	12:27	10.8	Bottom	3	1	27.6	8.3	25.2	5.2	2.5	9.6
TMCLKL	HY/2012/08	2019-08-23	Mid-Flood	IS17	Cloudy	Moderate	12:27	10.8	Bottom	3	2	27.6	8.3	25	5.2	2.5	9.7
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	CS(Mf)5	Cloudy	Moderate	08:10	12.7	Surface	1	1	28.3	7.9	19.8	6	1.6	3.6
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	CS(Mf)5	Cloudy	Moderate	08:10	12.7	Surface	1	2	28.3	7.9	20.2	6	1.7	3.7
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	CS(Mf)5	Cloudy	Moderate	08:10	12.7	Middle	2	1	28.3	7.9	20.3	5.9	1.6	4
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	CS(Mf)5	Cloudy	Moderate	08:10	12.7	Middle	2	2	28.3	7.9	20.7	5.9	1.6	3.9
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	CS(Mf)5	Cloudy	Moderate	08:10	12.7	Bottom	3	1	27	7.8	27.6	4.2	3.2	2.2
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	CS(Mf)5	Cloudy	Moderate	08:10	12.7	Bottom	3	2	27	7.8	28.3	4.3	3.3	1.8
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	CS(Mf)3(N)	Rainy	Moderate	09:13	7.3	Surface	1	1	28.5	7.9	14.2	6.3	2.6	4.8
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	CS(Mf)3(N)	Rainy	Moderate	09:13	7.3	Surface	1	2	28.5	7.8	14.5	6.4	2.5	4.5
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	CS(Mf)3(N)	Rainy	Moderate	09:13	7.3	Middle	2	1	28.4	7.9	16.6	5.8	2.5	3.9
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	CS(Mf)3(N)	Rainy	Moderate	09:13	7.3	Middle	2	2	28.5	7.8	16.8	5.8	2.5	4.7
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	CS(Mf)3(N)	Rainy	Moderate	09:13	7.3	Bottom	3	1	27.8	7.9	22.8	5.1	2.9	4.7
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	CS(Mf)3(N)	Rainy	Moderate	09:13	7.3	Bottom	3	2	27.8	7.8	23.6	5.2	3	3.7
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	IS(Mf)16	Rainy	Moderate	09:47	5.7	Surface	1	1	28.3	8	19.9	6.2	7.7	9
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	IS(Mf)16	Rainy	Moderate	09:47	5.7	Surface	1	2	28.3	7.9	20.3	6.2	7.5	8.2
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	IS(Mf)16	Rainy	Moderate	09:47	5.7	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	IS(Mf)16	Rainy	Moderate	09:47	5.7	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	IS(Mf)16	Rainy	Moderate	09:47	5.7	Bottom	3	1	28.3	8	22.3	5.6	9.5	8.4
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	IS(Mf)16	Rainy	Moderate	09:47	5.7	Bottom	3	2	28.3	7.9	23	5.6	10	7.4
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	SR4a	Rainy	Calm	09:58	4.5	Surface	1	1	28.2	8	18.2	5.9	5.1	13.6
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	SR4a	Rainy	Calm	09:58	4.5	Surface	1	2	28.2	7.9	18.6	6	5.2	12.4

Project	Contract	Date	Tide	Stat	Weather	Sea Condition	Time	Water Depth	Level	Lev_Cod	Replicate	Temp(°C)	pH	Salinity(ppt)	DO(mg/L)	Turbidity(NTU)	SS(mg/L)
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	SR4a	Rainy	Calm	09:58	4.5	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	SR4a	Rainy	Calm	09:58	4.5	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	SR4a	Rainy	Calm	09:58	4.5	Bottom	3	1	28.3	7.9	22.5	5.1	5.9	10.6
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	SR4a	Rainy	Calm	09:58	4.5	Bottom	3	2	28.3	7.8	23	5.1	6	9.6
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	SR4(N2)	Cloudy	Calm	10:04	3.6	Surface	1	1	28.4	7.9	16.3	5.2	11.1	7
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	SR4(N2)	Cloudy	Calm	10:04	3.6	Surface	1	2	28.4	7.8	16.6	5.2	11.1	8
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	SR4(N2)	Cloudy	Calm	10:04	3.6	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	SR4(N2)	Cloudy	Calm	10:04	3.6	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	SR4(N2)	Cloudy	Calm	10:04	3.6	Bottom	3	1	28.7	7.9	21.2	5.1	8.5	9.1
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	SR4(N2)	Cloudy	Calm	10:04	3.6	Bottom	3	2	28.8	7.8	21.5	5.1	8.7	10
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	IS8(N)	Cloudy	Calm	10:09	3.7	Surface	1	1	28.1	8	18.3	6.4	5.6	7.6
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	IS8(N)	Cloudy	Calm	10:09	3.7	Surface	1	2	28.1	7.9	18.7	6.4	5.5	7.2
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	IS8(N)	Cloudy	Calm	10:09	3.7	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	IS8(N)	Cloudy	Calm	10:09	3.7	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	IS8(N)	Cloudy	Calm	10:09	3.7	Bottom	3	1	28.4	8	20.8	6.1	10.1	8.2
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	IS8(N)	Cloudy	Calm	10:09	3.7	Bottom	3	2	28.4	7.9	21.2	6	10.1	7.2
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	IS(Mf)9	Cloudy	Calm	10:17	2.8	Surface	1	1						
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	IS(Mf)9	Cloudy	Calm	10:17	2.8	Surface	1	2						
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	IS(Mf)9	Cloudy	Calm	10:17	2.8	Middle	2	1	28.5	7.9	19.7	5.9	4.1	8.8
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	IS(Mf)9	Cloudy	Calm	10:17	2.8	Middle	2	2	28.5	7.8	19.9	5.9	4	7.8
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	IS(Mf)9	Cloudy	Calm	10:17	2.8	Bottom	3	1						
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	IS(Mf)9	Cloudy	Calm	10:17	2.8	Bottom	3	2						
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	IS(Mf)11	Rainy	Moderate	08:42	11.4	Surface	1	1	28.3	7.9	17.1	6.2	1.9	3.8
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	IS(Mf)11	Rainy	Moderate	08:42	11.4	Surface	1	2	28.3	7.9	17.4	6.2	1.9	4.8
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	IS(Mf)11	Rainy	Moderate	08:42	11.4	Middle	2	1	28.3	7.9	22.7	5.3	2.3	4.4
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	IS(Mf)11	Rainy	Moderate	08:42	11.4	Middle	2	2	28.3	7.8	23.7	5.3	2.1	4.3
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	IS(Mf)11	Rainy	Moderate	08:42	11.4	Bottom	3	1	25.9	7.8	30.1	3.2	3.9	3.6
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	IS(Mf)11	Rainy	Moderate	08:42	11.4	Bottom	3	2	25.9	7.8	30.7	3.2	3.6	2.6
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	SR7	Rainy	Moderate	08:34	4.2	Surface	1	1	28.4	7.9	17.1	6.1	2.2	2.9
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	SR7	Rainy	Moderate	08:34	4.2	Surface	1	2	28.4	7.8	17.4	6.1	2	3.8
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	SR7	Rainy	Moderate	08:34	4.2	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	SR7	Rainy	Moderate	08:34	4.2	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	SR7	Rainy	Moderate	08:34	4.2	Bottom	3	1	28.4	7.9	18.2	6.1	3.3	4.3
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	SR7	Rainy	Moderate	08:34	4.2	Bottom	3	2	28.4	7.8	19.1	6.1	3.1	3.3
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	IS17	Rainy	Moderate	09:41	7.3	Surface	1	1	28.3	8	18.5	6.1	2.9	5.2
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	IS17	Rainy	Moderate	09:41	7.3	Surface	1	2	28.3	7.9	18.9	6.1	3	4.3
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	IS17	Rainy	Moderate	09:41	7.3	Middle	2	1	28.3	7.9	19.6	5.9	3.2	5
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	IS17	Rainy	Moderate	09:41	7.3	Middle	2	2	28.3	7.9	20	6	3.3	5.7
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	IS17	Rainy	Moderate	09:41	7.3	Bottom	3	1	28.2	7.9	24.7	5.1	3.8	3.7
TMCLKL	HY/2012/08	2019-08-26	Mid-Ebb	IS17	Rainy	Moderate	09:41	7.3	Bottom	3	2	28.2	7.9	24.2	4.9	3.7	2.7
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	CS(Mf)5	Cloudy	Moderate	17:22	12.5	Surface	1	1	28.5	8	16.4	6.7	2	6.2
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	CS(Mf)5	Cloudy	Moderate	17:22	12.5	Surface	1	2	28.5	7.8	16.7	6.7	2.1	5.3
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	CS(Mf)5	Cloudy	Moderate	17:22	12.5	Middle	2	1	26.2	7.8	28.9	3.9	3.3	3.9
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	CS(Mf)5	Cloudy	Moderate	17:22	12.5	Middle	2	2	26.1	7.7	29.6	3.8	3	4.6
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	CS(Mf)5	Cloudy	Moderate	17:22	12.5	Bottom	3	1	25	7.8	31.4	3.4	9.3	3.8
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	CS(Mf)5	Cloudy	Moderate	17:22	12.5	Bottom	3	2	25	7.7	32	3.4	9.2	4.8
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	CS(Mf)3(N)	Fine	Moderate	16:29	7.5	Surface	1	1	28.7	7.8	14.9	6.2	3.2	6.2
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	CS(Mf)3(N)	Fine	Moderate	16:29	7.5	Surface	1	2	28.7	7.8	15.2	6.2	3.1	6.4
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	CS(Mf)3(N)	Fine	Moderate	16:29	7.5	Middle	2	1	28.6	7.8	16.1	6	5.2	6
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	CS(Mf)3(N)	Fine	Moderate	16:29	7.5	Middle	2	2	28.6	7.8	16.4	6	5.2	5.8
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	CS(Mf)3(N)	Fine	Moderate	16:29	7.5	Bottom	3	1	28.2	7.7	18.8	5.1	12.1	5.2
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	CS(Mf)3(N)	Fine	Moderate	16:29	7.5	Bottom	3	2	28.2	7.7	19.1	5.2	12	4.2
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	IS(Mf)16	Rainy	Moderate	15:53	5.6	Surface	1	1	28.5	7.9	17.2	6.7	3.4	8.9
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	IS(Mf)16	Rainy	Moderate	15:53	5.6	Surface	1	2	28.5	7.9	17.5	6.7	3.2	8.7
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	IS(Mf)16	Rainy	Moderate	15:53	5.6	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	IS(Mf)16	Rainy	Moderate	15:53	5.6	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	IS(Mf)16	Rainy	Moderate	15:53	5.6	Bottom	3	1	28.4	7.8	18.5	6.7	9.4	8.1
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	IS(Mf)16	Rainy	Moderate	15:53	5.6	Bottom	3	2	28.4	7.8	18.8	6.7	9.7	7.4
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	SR4a	Rainy	Calm	15:42	4.3	Surface	1	1	28.2	8	15.9	6.5	5.7	10.4
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	SR4a	Rainy	Calm	15:42	4.3	Surface	1	2	28.2	7.9	16.6	6.5	5.6	11.5
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	SR4a	Rainy	Calm	15:42	4.3	Middle	2	1						



Project	Contract	Date	Tide	Stat	Weather	Sea Condition	Time	Water Depth	Level	Lev_Cod	Replicate	Temp(°C)	pH	Salinity(ppt)	DO(mg/L)	Turbidity(NTU)	SS(mg/L)
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	SR4a	Rainy	Calm	15:42	4.3	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	SR4a	Rainy	Calm	15:42	4.3	Bottom	3	1	28.4	7.9	19.3	6	7.4	11
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	SR4a	Rainy	Calm	15:42	4.3	Bottom	3	2	28.5	7.9	19.5	6.1	7.6	10.7
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	SR4(N2)	Rainy	Calm	15:37	3.9	Surface	1	1	28.3	8	16.8	6.5	4.7	11
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	SR4(N2)	Rainy	Calm	15:37	3.9	Surface	1	2	28.3	7.9	17.2	6.5	4.6	10
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	SR4(N2)	Rainy	Calm	15:37	3.9	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	SR4(N2)	Rainy	Calm	15:37	3.9	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	SR4(N2)	Rainy	Calm	15:37	3.9	Bottom	3	1	28.4	7.9	18.5	6.6	5.6	12.3
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	SR4(N2)	Rainy	Calm	15:37	3.9	Bottom	3	2	28	7.9	19.1	6.6	5.3	11.4
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	IS8(N)	Rainy	Calm	15:31	3.2	Surface	1	1	28.5	8	16.8	6.8	8.6	9.2
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	IS8(N)	Rainy	Calm	15:31	3.2	Surface	1	2	28.5	7.9	17.1	6.8	8.8	10.1
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	IS8(N)	Rainy	Calm	15:31	3.2	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	IS8(N)	Rainy	Calm	15:31	3.2	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	IS8(N)	Rainy	Calm	15:31	3.2	Bottom	3	1	28.5	8	16.9	6.8	4.1	10.3
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	IS8(N)	Rainy	Calm	15:31	3.2	Bottom	3	2	28.5	7.9	17.3	6.8	4.1	11.3
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	IS(Mf)9	Rainy	Calm	15:21	2.7	Surface	1	1						
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	IS(Mf)9	Rainy	Calm	15:21	2.7	Surface	1	2						
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	IS(Mf)9	Rainy	Calm	15:21	2.7	Middle	2	1	28.5	7.8	18.1	6.9	5	9.8
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	IS(Mf)9	Rainy	Calm	15:21	2.7	Middle	2	2	28.5	7.9	18.4	6.8	5.2	8.8
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	IS(Mf)9	Rainy	Calm	15:21	2.7	Bottom	3	1						
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	IS(Mf)9	Rainy	Calm	15:21	2.7	Bottom	3	2						
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	IS(Mf)11	Cloudy	Moderate	16:54	10.8	Surface	1	1	28.5	7.9	17.4	6.2	3.2	3.2
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	IS(Mf)11	Cloudy	Moderate	16:54	10.8	Surface	1	2	28.5	7.8	17.8	6.3	3.1	4.2
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	IS(Mf)11	Cloudy	Moderate	16:54	10.8	Middle	2	1	28.1	7.9	22	5.2	3.9	3.9
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	IS(Mf)11	Cloudy	Moderate	16:54	10.8	Middle	2	2	28.1	7.8	22.4	5.1	3.6	4.9
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	IS(Mf)11	Cloudy	Moderate	16:54	10.8	Bottom	3	1	26.2	7.8	29.1	2.9	11.1	3.8
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	IS(Mf)11	Cloudy	Moderate	16:54	10.8	Bottom	3	2	26.2	7.7	29.8	2.8	11	3.8
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	SR7	Cloudy	Moderate	17:00	4.4	Surface	1	1	28.4	7.9	16.9	6.2	5.8	3.5
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	SR7	Cloudy	Moderate	17:00	4.4	Surface	1	2	28.4	7.8	17.2	6.2	5.8	4.3
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	SR7	Cloudy	Moderate	17:00	4.4	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	SR7	Cloudy	Moderate	17:00	4.4	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	SR7	Cloudy	Moderate	17:00	4.4	Bottom	3	1	28.3	7.9	19.4	5.9	8	5.8
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	SR7	Cloudy	Moderate	17:00	4.4	Bottom	3	2	28.3	7.8	20	5.7	7.8	4.8
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	IS17	Rainy	Moderate	15:59	7.4	Surface	1	1	28.4	7.9	17.9	6.3	3.2	4.1
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	IS17	Rainy	Moderate	15:59	7.4	Surface	1	2	28.4	7.8	18.2	6.3	2.9	3.3
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	IS17	Rainy	Moderate	15:59	7.4	Middle	2	1	28.2	7.9	19.9	5.8	3.7	3.8
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	IS17	Rainy	Moderate	15:59	7.4	Middle	2	2	28.2	7.8	20.3	5.8	3.7	3.3
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	IS17	Rainy	Moderate	15:59	7.4	Bottom	3	1	28.1	7.9	20.3	5.9	3.6	6.4
TMCLKL	HY/2012/08	2019-08-26	Mid-Flood	IS17	Rainy	Moderate	15:59	7.4	Bottom	3	2	28.2	7.8	20.8	5.9	3.6	5.6
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	CS(Mf)5	Cloudy	Moderate	09:55	11.6	Surface	1	1	27.7	7.8	23.3	5.1	2.1	16.9
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	CS(Mf)5	Cloudy	Moderate	09:55	11.6	Surface	1	2	27.7	7.9	22.9	5.1	1.9	16
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	CS(Mf)5	Cloudy	Moderate	09:55	11.6	Middle	2	1	25.9	7.8	28.8	3.9	1.5	12.9
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	CS(Mf)5	Cloudy	Moderate	09:55	11.6	Middle	2	2	25.9	7.8	28.2	3.9	1.6	12
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	CS(Mf)5	Cloudy	Moderate	09:55	11.6	Bottom	3	1	24.8	7.7	31.6	3.2	3.5	6.2
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	CS(Mf)5	Cloudy	Moderate	09:55	11.6	Bottom	3	2	24.8	7.7	30.9	3.2	3.4	7.9
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	CS(Mf)3(N)	Cloudy	Moderate	11:16	7.3	Surface	1	1	28.7	7.8	20.4	4.9	1.2	12.6
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	CS(Mf)3(N)	Cloudy	Moderate	11:16	7.3	Surface	1	2	28.7	7.8	20	4.9	1.2	11.6
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	CS(Mf)3(N)	Cloudy	Moderate	11:16	7.3	Middle	2	1	27.9	7.7	23.6	4	4.8	12.1
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	CS(Mf)3(N)	Cloudy	Moderate	11:16	7.3	Middle	2	2	27.9	7.7	23.1	4	4.9	11.1
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	CS(Mf)3(N)	Cloudy	Moderate	11:16	7.3	Bottom	3	1	27.2	7.7	26	3.7	9.3	10.2
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	CS(Mf)3(N)	Cloudy	Moderate	11:16	7.3	Bottom	3	2	27.2	7.6	25.5	3.7	9.8	9.5
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	IS(Mf)16	Cloudy	Moderate	11:51	5.5	Surface	1	1	28.3	7.8	22.7	4.9	7.8	19.2
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	IS(Mf)16	Cloudy	Moderate	11:51	5.5	Surface	1	2	28.3	7.8	22.1	4.9	7.9	18
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	IS(Mf)16	Cloudy	Moderate	11:51	5.5	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	IS(Mf)16	Cloudy	Moderate	11:51	5.5	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	IS(Mf)16	Cloudy	Moderate	11:51	5.5	Bottom	3	1	27.5	7.8	24.3	4.9	8.3	10.4
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	IS(Mf)16	Cloudy	Moderate	11:51	5.5	Bottom	3	2	27.8	7.8	24.3	4.8	8.9	9.4
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	SR4a	Cloudy	Moderate	12:01	4.2	Surface	1	1	28.1	7.7	21.5	4.8	6.5	8.1
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	SR4a	Cloudy	Moderate	12:01	4.2	Surface	1	2	28.1	7.8	21.1	4.8	6.1	7.1
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	SR4a	Cloudy	Moderate	12:01	4.2	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	SR4a	Cloudy	Moderate	12:01	4.2	Middle	2	2						

Project	Contract	Date	Tide	Stat	Weather	Sea Condition	Time	Water Depth	Level	Lev_Cod	Replicate	Temp(°C)	pH	Salinity(ppt)	DO(mg/L)	Turbidity(NTU)	SS(mg/L)
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	SR4a	Cloudy	Moderate	12:01	4.2	Bottom	3	1	27.4	7.7	24.7	4	8.9	9.5
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	SR4a	Cloudy	Moderate	12:01	4.2	Bottom	3	2	27.4	7.7	24.2	4	8.2	8.7
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	SR4(N2)	Cloudy	Moderate	12:09	3.6	Surface	1	1	28.2	7.7	21.9	4.3	9.4	7
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	SR4(N2)	Cloudy	Moderate	12:09	3.6	Surface	1	2	28.2	7.8	21.5	4.3	9.6	7.7
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	SR4(N2)	Cloudy	Moderate	12:09	3.6	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	SR4(N2)	Cloudy	Moderate	12:09	3.6	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	SR4(N2)	Cloudy	Moderate	12:09	3.6	Bottom	3	1	27.6	7.7	24	3.5	10.5	6.5
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	SR4(N2)	Cloudy	Moderate	12:09	3.6	Bottom	3	2	27.6	7.7	23.7	3.5	10.6	7.5
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	IS8(N)	Cloudy	Moderate	12:14	3.6	Surface	1	1	28	7.8	22.9	4.6	7.6	7.2
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	IS8(N)	Cloudy	Moderate	12:14	3.6	Surface	1	2	28	7.7	22.4	4.7	7.3	8.3
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	IS8(N)	Cloudy	Moderate	12:14	3.6	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	IS8(N)	Cloudy	Moderate	12:14	3.6	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	IS8(N)	Cloudy	Moderate	12:14	3.6	Bottom	3	1	27.5	7.7	24.4	4.2	10.7	8.2
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	IS8(N)	Cloudy	Moderate	12:14	3.6	Bottom	3	2	27.7	7.7	23.4	4.5	10.8	8.5
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	IS(Mf)9	Cloudy	Moderate	12:22	2.8	Surface	1	1						
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	IS(Mf)9	Cloudy	Moderate	12:22	2.8	Surface	1	2						
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	IS(Mf)9	Cloudy	Moderate	12:22	2.8	Middle	2	1	29	7.8	21.5	5.6	3.8	8.7
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	IS(Mf)9	Cloudy	Moderate	12:22	2.8	Middle	2	2	29	7.8	21.1	5.6	3.3	9.7
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	IS(Mf)9	Cloudy	Moderate	12:22	2.8	Bottom	3	1						
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	IS(Mf)9	Cloudy	Moderate	12:22	2.8	Bottom	3	2						
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	IS(Mf)11	Cloudy	Moderate	10:45	11.6	Surface	1	1	28.6	7.8	19.6	5	1.7	9.8
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	IS(Mf)11	Cloudy	Moderate	10:45	11.6	Surface	1	2	28.6	7.8	19.3	5	1.7	8.9
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	IS(Mf)11	Cloudy	Moderate	10:45	11.6	Middle	2	1	28.2	7.8	20.9	4.5	3.8	7.2
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	IS(Mf)11	Cloudy	Moderate	10:45	11.6	Middle	2	2	28.2	7.8	20.6	4.5	3.1	6.3
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	IS(Mf)11	Cloudy	Moderate	10:45	11.6	Bottom	3	1	26	7.8	28.7	3.5	4.4	5.6
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	IS(Mf)11	Cloudy	Moderate	10:45	11.6	Bottom	3	2	26	7.7	28.2	3.5	4.4	4.2
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	SR7	Cloudy	Moderate	10:37	4.3	Surface	1	1	28.4	7.7	20.9	5	2.8	8.1
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	SR7	Cloudy	Moderate	10:37	4.3	Surface	1	2	28.4	7.6	20.4	5	2.5	8.1
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	SR7	Cloudy	Moderate	10:37	4.3	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	SR7	Cloudy	Moderate	10:37	4.3	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	SR7	Cloudy	Moderate	10:37	4.3	Bottom	3	1	28.3	7.7	21.3	5.1	3.7	5.8
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	SR7	Cloudy	Moderate	10:37	4.3	Bottom	3	2	28.3	7.5	20.9	5	3.6	4.8
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	IS17	Cloudy	Moderate	11:42	7.2	Surface	1	1	28.3	7.8	21.1	5	4.8	8.3
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	IS17	Cloudy	Moderate	11:42	7.2	Surface	1	2	28.3	7.8	20.7	5	4.8	7.6
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	IS17	Cloudy	Moderate	11:42	7.2	Middle	2	1	27.9	7.8	22.4	4.7	7.2	6.5
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	IS17	Cloudy	Moderate	11:42	7.2	Middle	2	2	27.9	7.8	22.1	4.7	7.2	5.6
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	IS17	Cloudy	Moderate	11:42	7.2	Bottom	3	1	27.7	7.8	23.8	4.6	8.6	5.6
TMCLKL	HY/2012/08	2019-08-28	Mid-Ebb	IS17	Cloudy	Moderate	11:42	7.2	Bottom	3	2	27.7	7.7	23.5	4.6	8.8	6.6
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	CS(Mf)5	Cloudy	Moderate	18:53	12.1	Surface	1	1	27.8	7.8	24	4.9	2.5	5.8
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	CS(Mf)5	Cloudy	Moderate	18:53	12.1	Surface	1	2	27.8	7.9	23.5	4.9	2.4	5.4
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	CS(Mf)5	Cloudy	Moderate	18:53	12.1	Middle	2	1	25.4	7.8	30.1	3.5	10.9	5.3
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	CS(Mf)5	Cloudy	Moderate	18:53	12.1	Middle	2	2	25.4	7.8	29.5	3.5	10.7	5.6
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	CS(Mf)5	Cloudy	Moderate	18:53	12.1	Bottom	3	1	25.4	7.8	30.1	3.6	10.6	5.6
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	CS(Mf)5	Cloudy	Moderate	18:53	12.1	Bottom	3	2	25.4	7.8	29.5	3.6	11.3	6.6
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	CS(Mf)3(N)	Cloudy	Moderate	17:56	6.6	Surface	1	1	29.8	7.8	15.1	5.5	5.9	7.7
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	CS(Mf)3(N)	Cloudy	Moderate	17:56	6.6	Surface	1	2	29.8	7.8	14.9	5.4	5.1	7.8
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	CS(Mf)3(N)	Cloudy	Moderate	17:56	6.6	Middle	2	1	29.8	7.8	15.2	5.1	6	8.1
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	CS(Mf)3(N)	Cloudy	Moderate	17:56	6.6	Middle	2	2	29.8	7.7	14.9	5.2	5.9	7.7
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	CS(Mf)3(N)	Cloudy	Moderate	17:56	6.6	Bottom	3	1	28.2	7.7	19.9	4.5	6.2	5.4
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	CS(Mf)3(N)	Cloudy	Moderate	17:56	6.6	Bottom	3	2	28.4	7.7	20.3	4.4	6.3	6.4
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	IS(Mf)16	Cloudy	Moderate	17:22	5.3	Surface	1	1	28.7	7.9	22	5.8	9.1	8.4
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	IS(Mf)16	Cloudy	Moderate	17:22	5.3	Surface	1	2	28.7	7.9	21.6	5.8	9	8.8
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	IS(Mf)16	Cloudy	Moderate	17:22	5.3	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	IS(Mf)16	Cloudy	Moderate	17:22	5.3	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	IS(Mf)16	Cloudy	Moderate	17:22	5.3	Bottom	3	1	28.7	7.9	22.1	5.8	11.6	7
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	IS(Mf)16	Cloudy	Moderate	17:22	5.3	Bottom	3	2	28.6	7.8	21.7	5.8	11.9	8
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	SR4a	Cloudy	Moderate	17:12	4.1	Surface	1	1	28.5	7.9	22.2	5.6	5.9	7.1
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	SR4a	Cloudy	Moderate	17:12	4.1	Surface	1	2	28.5	7.9	21.7	5.6	5.7	7.7
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	SR4a	Cloudy	Moderate	17:12	4.1	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	SR4a	Cloudy	Moderate	17:12	4.1	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	SR4a	Cloudy	Moderate	17:12	4.1	Bottom	3	1	28.1	7.8	23	4.2	7.9	8.9

Project	Contract	Date	Tide	Stat	Weather	Sea Condition	Time	Water Depth	Level	Lev_Cod	Replicate	Temp(°C)	pH	Salinity(ppt)	DO(mg/L)	Turbidity(NTU)	SS(mg/L)
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	SR4a	Cloudy	Moderate	17:12	4.1	Bottom	3	2	28.1	7.8	22.5	4.2	7.4	7.9
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	SR4(N2)	Cloudy	Moderate	17:04	3.3	Surface	1	1	29.4	7.9	21.2	6.1	7.9	9.1
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	SR4(N2)	Cloudy	Moderate	17:04	3.3	Surface	1	2	29.4	7.9	20.8	6.1	7.9	8.9
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	SR4(N2)	Cloudy	Moderate	17:04	3.3	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	SR4(N2)	Cloudy	Moderate	17:04	3.3	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	SR4(N2)	Cloudy	Moderate	17:04	3.3	Bottom	3	1	28.8	7.9	22	5.2	13.4	8.8
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	SR4(N2)	Cloudy	Moderate	17:04	3.3	Bottom	3	2	28.8	7.8	21.7	5.2	13	7.8
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	IS8(N)	Cloudy	Moderate	16:58	3.2	Surface	1	1	28.9	7.9	21.5	5.8	8.5	7.4
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	IS8(N)	Cloudy	Moderate	16:58	3.2	Surface	1	2	28.9	7.9	21.1	5.8	8.5	6.4
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	IS8(N)	Cloudy	Moderate	16:58	3.2	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	IS8(N)	Cloudy	Moderate	16:58	3.2	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	IS8(N)	Cloudy	Moderate	16:58	3.2	Bottom	3	1	28.9	7.9	21.5	5.8	11	8.7
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	IS8(N)	Cloudy	Moderate	16:58	3.2	Bottom	3	2	28.9	7.8	21.1	5.8	10.2	7.9
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	IS(Mf)9	Cloudy	Moderate	16:49	2.1	Surface	1	1						
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	IS(Mf)9	Cloudy	Moderate	16:49	2.1	Surface	1	2						
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	IS(Mf)9	Cloudy	Moderate	16:49	2.1	Middle	2	1	28.8	8	21.9	6.1	8.4	8.7
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	IS(Mf)9	Cloudy	Moderate	16:49	2.1	Middle	2	2	28.8	7.9	21.5	6.2	8.9	7.7
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	IS(Mf)9	Cloudy	Moderate	16:49	2.1	Bottom	3	1						
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	IS(Mf)9	Cloudy	Moderate	16:49	2.1	Bottom	3	2						
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	IS(Mf)11	Cloudy	Moderate	18:21	11.6	Surface	1	1	29.1	7.8	18.7	5.5	4.7	7.5
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	IS(Mf)11	Cloudy	Moderate	18:21	11.6	Surface	1	2	29.1	7.8	18.3	5.4	4.6	6.5
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	IS(Mf)11	Cloudy	Moderate	18:21	11.6	Middle	2	1	27.4	7.8	24.3	4.1	11.1	5.4
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	IS(Mf)11	Cloudy	Moderate	18:21	11.6	Middle	2	2	27.4	7.8	23.9	4.3	11	6.2
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	IS(Mf)11	Cloudy	Moderate	18:21	11.6	Bottom	3	1	27	7.8	25.8	3.7	25	30.2
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	IS(Mf)11	Cloudy	Moderate	18:21	11.6	Bottom	3	2	27	7.8	25.3	3.8	24.9	26.4
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	SR7	Cloudy	Moderate	18:30	4.1	Surface	1	1	28.2	7.8	21.4	5.1	6.8	6.8
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	SR7	Cloudy	Moderate	18:30	4.1	Surface	1	2	28.2	7.8	20.9	5.1	6.7	7.7
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	SR7	Cloudy	Moderate	18:30	4.1	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	SR7	Cloudy	Moderate	18:30	4.1	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	SR7	Cloudy	Moderate	18:30	4.1	Bottom	3	1	27.7	7.8	24.2	4.3	12.5	44.1
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	SR7	Cloudy	Moderate	18:30	4.1	Bottom	3	2	27.6	7.8	23.8	4.3	12.1	48.5
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	IS17	Cloudy	Moderate	17:29	7	Surface	1	1	28.5	7.9	21.9	5.1	3.7	6.9
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	IS17	Cloudy	Moderate	17:29	7	Surface	1	2	28.5	7.8	21.5	5.1	3.8	6
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	IS17	Cloudy	Moderate	17:29	7	Middle	2	1	27.6	7.8	24.3	4.5	4.8	6.6
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	IS17	Cloudy	Moderate	17:29	7	Middle	2	2	27.5	7.8	23.9	4.5	4.8	6.2
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	IS17	Cloudy	Moderate	17:29	7	Bottom	3	1	27.5	7.8	24.6	4.3	6	9.2
TMCLKL	HY/2012/08	2019-08-28	Mid-Flood	IS17	Cloudy	Moderate	17:29	7	Bottom	3	2	27.4	7.7	24.3	4.3	5	8.3
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	CS(Mf)5	Rainy	Rough	11:23	10.3	Surface	1	1	27.4	7.8	24.4	5.1	4.7	7.4
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	CS(Mf)5	Rainy	Rough	11:23	10.3	Surface	1	2	27.4	7.8	24.3	5.2	4.7	8.3
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	CS(Mf)5	Rainy	Rough	11:23	10.3	Middle	2	1	27.1	7.8	25.4	4.8	6	8.8
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	CS(Mf)5	Rainy	Rough	11:23	10.3	Middle	2	2	27.1	7.8	25.4	4.8	6.1	8.3
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	CS(Mf)5	Rainy	Rough	11:23	10.3	Bottom	3	1	26.5	7.8	27.7	4.4	8.3	8.8
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	CS(Mf)5	Rainy	Rough	11:23	10.3	Bottom	3	2	26.5	7.8	27.7	4.3	8.2	9.8
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	CS(Mf)3(N)	Rainy	Moderate	12:35	7.3	Surface	1	1	27.8	7.8	23.5	4.8	7.1	8.4
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	CS(Mf)3(N)	Rainy	Moderate	12:35	7.3	Surface	1	2	27.8	7.8	23.5	4.8	7.1	8.6
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	CS(Mf)3(N)	Rainy	Moderate	12:35	7.3	Middle	2	1	27.7	7.8	24.2	4.8	9.2	9.2
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	CS(Mf)3(N)	Rainy	Moderate	12:35	7.3	Middle	2	2	27.7	7.8	24.2	4.8	9.3	9.5
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	CS(Mf)3(N)	Rainy	Moderate	12:35	7.3	Bottom	3	1	27.6	7.8	24.7	5	10	6.8
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	CS(Mf)3(N)	Rainy	Moderate	12:35	7.3	Bottom	3	2	27.6	7.8	24.7	5	9.3	5.8
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	IS(Mf)16	Cloudy	Moderate	13:07	5.5	Surface	1	1	27.2	7.8	24.9	5.1	9.7	11.8
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	IS(Mf)16	Cloudy	Moderate	13:07	5.5	Surface	1	2	27.4	7.8	24.7	5.1	9.4	12.1
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	IS(Mf)16	Cloudy	Moderate	13:07	5.5	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	IS(Mf)16	Cloudy	Moderate	13:07	5.5	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	IS(Mf)16	Cloudy	Moderate	13:07	5.5	Bottom	3	1	26.8	7.8	27.2	4.8	11	12.9
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	IS(Mf)16	Cloudy	Moderate	13:07	5.5	Bottom	3	2	26.8	7.8	27.2	4.7	10.9	12
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	SR4a	Cloudy	Moderate	13:16	5.2	Surface	1	1	27.4	7.8	24.7	4.5	10.2	12.7
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	SR4a	Cloudy	Moderate	13:16	5.2	Surface	1	2	27.4	7.8	24.5	4.5	9.9	14.6
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	SR4a	Cloudy	Moderate	13:16	5.2	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	SR4a	Cloudy	Moderate	13:16	5.2	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	SR4a	Cloudy	Moderate	13:16	5.2	Bottom	3	1	26.8	7.8	26.8	4.5	10.7	14.3
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	SR4a	Cloudy	Moderate	13:16	5.2	Bottom	3	2	26.8	7.8	26.8	4.4	10.4	16.4

Project	Contract	Date	Tide	Stat	Weather	Sea Condition	Time	Water Depth	Level	Lev_Cod	Replicate	Temp(°C)	pH	Salinity(ppt)	DO(mg/L)	Turbidity(NTU)	SS(mg/L)
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	SR4(N2)	Cloudy	Calm	13:21	3.2	Surface	1	1	27.6	7.8	23.5	4.8	12.2	9
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	SR4(N2)	Cloudy	Calm	13:21	3.2	Surface	1	2	27.6	7.8	23.5	4.8	11.9	10.2
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	SR4(N2)	Cloudy	Calm	13:21	3.2	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	SR4(N2)	Cloudy	Calm	13:21	3.2	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	SR4(N2)	Cloudy	Calm	13:21	3.2	Bottom	3	1	27.1	7.8	24.9	4.9	16.2	13.3
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	SR4(N2)	Cloudy	Calm	13:21	3.2	Bottom	3	2	27.2	7.8	24.9	4.9	16.2	13.1
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	IS8(N)	Cloudy	Calm	13:27	4	Surface	1	1	27.6	7.8	24	4.9	9.2	11.8
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	IS8(N)	Cloudy	Calm	13:27	4	Surface	1	2	27.6	7.8	24.1	4.9	8.3	11.2
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	IS8(N)	Cloudy	Calm	13:27	4	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	IS8(N)	Cloudy	Calm	13:27	4	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	IS8(N)	Cloudy	Calm	13:27	4	Bottom	3	1	27.1	7.8	24.4	4.7	13.8	12.4
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	IS8(N)	Cloudy	Calm	13:27	4	Bottom	3	2	27.2	7.8	24.6	4.8	13.8	11.8
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	IS(Mf)9	Cloudy	Calm	13:35	3.1	Surface	1	1	27.8	7.8	24.3	5.1	9.7	7.9
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	IS(Mf)9	Cloudy	Calm	13:35	3.1	Surface	1	2	27.8	7.8	24.3	5.1	9.9	8.9
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	IS(Mf)9	Cloudy	Calm	13:35	3.1	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	IS(Mf)9	Cloudy	Calm	13:35	3.1	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	IS(Mf)9	Cloudy	Calm	13:35	3.1	Bottom	3	1	27.8	7.8	24.2	5.2	9.2	8.4
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	IS(Mf)9	Cloudy	Calm	13:35	3.1	Bottom	3	2	27.8	7.8	24.2	5.1	9.1	8.9
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	IS(Mf)11	Rainy	Moderate	12:02	11.3	Surface	1	1	27.8	7.8	23.7	5	6.9	13.9
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	IS(Mf)11	Rainy	Moderate	12:02	11.3	Surface	1	2	27.8	7.8	23.7	5	7	12.1
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	IS(Mf)11	Rainy	Moderate	12:02	11.3	Middle	2	1	27.2	7.8	24.7	4.6	15.7	11.3
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	IS(Mf)11	Rainy	Moderate	12:02	11.3	Middle	2	2	27.4	7.8	24.6	4.6	15.5	10.3
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	IS(Mf)11	Rainy	Moderate	12:02	11.3	Bottom	3	1	26.5	7.8	27.8	4.3	16.4	10.6
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	IS(Mf)11	Rainy	Moderate	12:02	11.3	Bottom	3	2	26.5	7.8	27.8	4.3	16.3	9.2
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	SR7	Rainy	Moderate	11:54	4.4	Surface	1	1	27.4	7.8	25	4.6	10.5	6.2
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	SR7	Rainy	Moderate	11:54	4.4	Surface	1	2	27.4	7.8	24.8	4.6	10.2	6.4
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	SR7	Rainy	Moderate	11:54	4.4	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	SR7	Rainy	Moderate	11:54	4.4	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	SR7	Rainy	Moderate	11:54	4.4	Bottom	3	1	27.3	7.8	25.4	4.6	15.9	6.1
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	SR7	Rainy	Moderate	11:54	4.4	Bottom	3	2	27.3	7.8	25.4	4.6	14.7	6.7
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	IS17	Rainy	Moderate	13:00	10.1	Surface	1	1	27.6	7.8	24.1	4.9	8.3	8.8
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	IS17	Rainy	Moderate	13:00	10.1	Surface	1	2	27.6	7.8	24.1	4.9	8.1	9.6
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	IS17	Rainy	Moderate	13:00	10.1	Middle	2	1	27.5	7.8	24.6	4.9	8.6	8.8
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	IS17	Rainy	Moderate	13:00	10.1	Middle	2	2	27.5	7.8	24.6	4.9	8.5	7.9
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	IS17	Rainy	Moderate	13:00	10.1	Bottom	3	1	27.1	7.8	25.9	4.9	8.7	8
TMCLKL	HY/2012/08	2019-08-30	Mid-Ebb	IS17	Rainy	Moderate	13:00	10.1	Bottom	3	2	27.1	7.8	25.8	4.8	8.6	8.8
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	CS(Mf)5	Fine	Moderate	19:52	11.4	Surface	1	1	27.4	7.8	25	4.8	5.4	7.9
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	CS(Mf)5	Fine	Moderate	19:52	11.4	Surface	1	2	27.4	7.8	25.1	4.8	5.4	7.1
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	CS(Mf)5	Fine	Moderate	19:52	11.4	Middle	2	1	26.8	7.8	26.7	4.6	7	7.8
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	CS(Mf)5	Fine	Moderate	19:52	11.4	Middle	2	2	27	7.8	26.1	4.6	7	7.9
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	CS(Mf)5	Fine	Moderate	19:52	11.4	Bottom	3	1	26.6	7.8	27.3	4.6	8.6	11.7
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	CS(Mf)5	Fine	Moderate	19:52	11.4	Bottom	3	2	26.6	7.8	27.3	4.6	8.1	10.4
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	CS(Mf)3(N)	Fine	Moderate	19:01	7.2	Surface	1	1	28.7	7.7	18.4	4.8	11.1	8.9
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	CS(Mf)3(N)	Fine	Moderate	19:01	7.2	Surface	1	2	28.7	7.7	18.4	4.8	11.9	8
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	CS(Mf)3(N)	Fine	Moderate	19:01	7.2	Middle	2	1	28.6	7.7	18.7	4.9	13.9	9.2
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	CS(Mf)3(N)	Fine	Moderate	19:01	7.2	Middle	2	2	28.7	7.7	18.7	4.8	13.7	8.5
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	CS(Mf)3(N)	Fine	Moderate	19:01	7.2	Bottom	3	1	28.6	7.7	18.9	4.9	15.7	8.9
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	CS(Mf)3(N)	Fine	Moderate	19:01	7.2	Bottom	3	2	28.6	7.7	18.9	4.9	15.3	7.9
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	IS(Mf)16	Fine	Calm	18:27	5.2	Surface	1	1	27.7	7.9	24.2	5.3	17.1	8.9
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	IS(Mf)16	Fine	Calm	18:27	5.2	Surface	1	2	27.7	7.9	24.2	5.3	17.8	8.4
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	IS(Mf)16	Fine	Calm	18:27	5.2	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	IS(Mf)16	Fine	Calm	18:27	5.2	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	IS(Mf)16	Fine	Calm	18:27	5.2	Bottom	3	1	27.7	7.9	24.5	5.3	19.9	10.4
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	IS(Mf)16	Fine	Calm	18:27	5.2	Bottom	3	2	27.7	7.9	24.5	5.3	19.4	10.6
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	SR4a	Fine	Calm	18:20	4.3	Surface	1	1	27.6	7.9	24	5	10.4	14.5
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	SR4a	Fine	Calm	18:20	4.3	Surface	1	2	27.7	7.9	23.9	5	10.2	12.9
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	SR4a	Fine	Calm	18:20	4.3	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	SR4a	Fine	Calm	18:20	4.3	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	SR4a	Fine	Calm	18:20	4.3	Bottom	3	1	27.3	7.9	26.5	4.1	14.1	14
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	SR4a	Fine	Calm	18:20	4.3	Bottom	3	2	27.3	7.9	26.5	4	14.8	13.2
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	SR4(N2)	Fine	Calm	18:17	3.1	Surface	1	1	27.5	7.9	24.6	4.9	9.6	10.9



Project	Contract	Date	Tide	Stat	Weather	Sea Condition	Time	Water Depth	Level	Lev_Cod	Replicate	Temp(°C)	pH	Salinity(ppt)	DO(mg/L)	Turbidity(NTU)	SS(mg/L)
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	SR4(N2)	Fine	Calm	18:17	3.1	Surface	1	2	27.5	7.9	24.4	4.9	9.9	12.3
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	SR4(N2)	Fine	Calm	18:17	3.1	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	SR4(N2)	Fine	Calm	18:17	3.1	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	SR4(N2)	Fine	Calm	18:17	3.1	Bottom	3	1	27.4	7.9	24.8	5	9.9	13.9
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	SR4(N2)	Fine	Calm	18:17	3.1	Bottom	3	2	27.4	7.9	24.8	4.9	10	15.7
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	IS8(N)	Fine	Calm	18:13	3.9	Surface	1	1	27.7	7.9	24.3	5.3	10.3	10.4
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	IS8(N)	Fine	Calm	18:13	3.9	Surface	1	2	27.7	7.9	24.2	5.3	10.3	9.5
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	IS8(N)	Fine	Calm	18:13	3.9	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	IS8(N)	Fine	Calm	18:13	3.9	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	IS8(N)	Fine	Calm	18:13	3.9	Bottom	3	1	27.7	7.9	24.4	5.4	10.9	13
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	IS8(N)	Fine	Calm	18:13	3.9	Bottom	3	2	27.7	7.9	24.4	5.4	10.9	11.7
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	IS(Mf)9	Fine	Calm	18:05	3	Surface	1	1	27.7	8	24.5	5.8	16.8	8.9
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	IS(Mf)9	Fine	Calm	18:05	3	Surface	1	2	27.7	8	24.5	5.8	16.6	7.9
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	IS(Mf)9	Fine	Calm	18:05	3	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	IS(Mf)9	Fine	Calm	18:05	3	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	IS(Mf)9	Fine	Calm	18:05	3	Bottom	3	1	27.7	8	24.5	5.9	19.3	8.1
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	IS(Mf)9	Fine	Calm	18:05	3	Bottom	3	2	27.7	8	24.5	5.8	19.3	7.7
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	IS(Mf)11	Fine	Moderate	18:40	11	Surface	1	1	27.9	7.9	23.3	5.3	6.9	9
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	IS(Mf)11	Fine	Moderate	18:40	11	Surface	1	2	28	7.9	22.8	5.3	6.8	8.1
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	IS(Mf)11	Fine	Moderate	18:40	11	Middle	2	1	27.6	7.9	24.4	5.3	9.4	8.4
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	IS(Mf)11	Fine	Moderate	18:40	11	Middle	2	2	27.6	7.9	24.4	5.3	9.8	7.9
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	IS(Mf)11	Fine	Moderate	18:40	11	Bottom	3	1	27.6	7.9	24.5	5.4	10.6	10.7
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	IS(Mf)11	Fine	Moderate	18:40	11	Bottom	3	2	27.6	7.9	24.5	5.4	10.4	10.9
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	SR7	Fine	Calm	19:32	4.2	Surface	1	1	27.6	7.8	24.3	4.8	10.4	5
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	SR7	Fine	Calm	19:32	4.2	Surface	1	2	27.6	7.8	24.3	4.8	10.2	6.8
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	SR7	Fine	Calm	19:32	4.2	Middle	2	1						
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	SR7	Fine	Calm	19:32	4.2	Middle	2	2						
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	SR7	Fine	Calm	19:32	4.2	Bottom	3	1	27.6	7.8	24.3	5	15.5	4.4
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	SR7	Fine	Calm	19:32	4.2	Bottom	3	2	27.6	7.8	24.3	5	16	5.4
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	IS17	Fine	Moderate	18:35	10.5	Surface	1	1	27.9	7.8	23.2	5	6	12
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	IS17	Fine	Moderate	18:35	10.5	Surface	1	2	27.9	7.8	23	5	5.7	10.4
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	IS17	Fine	Moderate	18:35	10.5	Middle	2	1	27.7	7.9	24	5	7.3	11.8
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	IS17	Fine	Moderate	18:35	10.5	Middle	2	2	27.7	7.9	23.9	5	7.8	12.1
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	IS17	Fine	Moderate	18:35	10.5	Bottom	3	1	27.4	7.9	24.8	5	16.7	11.8
TMCLKL	HY/2012/08	2019-08-30	Mid-Flood	IS17	Fine	Moderate	18:35	10.5	Bottom	3	2	27.5	7.9	24.7	5	16.3	10.9

Appendix K

## Event and Action Plan

*Event and Action Plan for Impact Air Monitoring*

	<b>Action</b>			
	ET (a)	IEC (a)	SOR (a)	Contractor(s)
<b>Action Level Exceedance</b>				
	<ol style="list-style-type: none"> <li>1. Identify the source.</li> <li>2. Repeat measurement to confirm finding. If two consecutive measurements exceed Action Level, the exceedance is then confirmed.</li> <li>3. Inform the IEC and the SOR.</li> <li>4. Investigate the cause of exceedance and check Contractor's working procedures to determine possible mitigation to be implemented.</li> <li>5. If the exceedance is confirmed to be Project related after investigation, increase monitoring frequency to daily.</li> <li>6. Discuss with the IEC and the Contractor on remedial actions required.</li> <li>7. If exceedance continues, arrange meeting with the IEC and the SOR.</li> <li>8. If exceedance stops, cease additional monitoring.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by the ET.</li> <li>2. Check the Contractor's working method.</li> <li>3. If the exceedance is confirmed to be Project related after investigation, discuss with the ET and the Contractor on possible remedial measures.</li> <li>4. Advise the SOR on the effectiveness of the proposed remedial measures.</li> <li>5. Supervise implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing.</li> <li>2. Notify the Contractor.</li> <li>3. Ensure remedial measures properly implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Rectify any unacceptable practice</li> <li>2. Amend working methods if appropriate</li> <li>3. If the exceedance is confirmed to be Project related, submit proposals for remedial actions to IEC within 3 working days of notification</li> <li>4. Implement the agreed proposals</li> <li>5. Amend proposal if appropriate</li> </ol>

	Action			
	ET (a)	IEC (a)	SOR (a)	Contractor(s)
<b>Limit Level Exceedance</b>				
	<ol style="list-style-type: none"> <li>1. Identify the source.</li> <li>2. Repeat measurement to confirm finding. If two consecutive measurements exceed Limit Level, the exceedance is then confirmed.</li> <li>3. Inform the IEC, the SOR, the DEP and the Contractor.</li> <li>4. Investigate the cause of exceedance and check Contractor’s working procedures to determine possible mitigation to be implemented.</li> <li>5. If the exceedance is confirmed to be Project related after investigation, increase monitoring frequency to daily.</li> <li>6. Carry out analysis of the Contractor’s working procedures to determine possible mitigation to be implemented.</li> <li>7. Arrange meeting with the IEC and the SOR to discuss the remedial actions to be taken.</li> <li>8. Assess effectiveness of the Contractor’s remedial actions and keep the IEC, the DEP and the SOR informed of the results.</li> <li>9. If exceedance stops, cease additional monitoring.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by the ET.</li> <li>2. Check Contractor’s working method.</li> <li>3. If the exceedance is confirmed to be Project related after investigation, discuss with the ET and the Contractor on possible remedial measures.</li> <li>4. Advise the SOR on the effectiveness of the proposed remedial measures.</li> <li>5. Supervise implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing.</li> <li>2. Notify the Contractor.</li> <li>3. If the exceedance is confirmed to be Project related after investigation, in consultation with the IEC, agree with the Contractor on the remedial measures to be implemented.</li> <li>4. Ensure remedial measures are properly implemented.</li> <li>5. If exceedance continues, consider what activity of the work is responsible and instruct the Contractor to stop that activity of work until the exceedance is abated.</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance.</li> <li>2. If the exceedance is confirmed to be Project related after investigation, submit proposals for remedial actions to IEC within 3 working days of notification.</li> <li>3. Implement the agreed proposals.</li> <li>4. Amend proposal if appropriate.</li> <li>5. Stop the relevant activity of works as determined by the SOR until the exceedance is abated.</li> </ol>

Note: (a) ET – Environmental Team; IEC – Independent Environmental Checker; SOR – Supervising Officer’s Representative

**Event & Action Plan for Impact Water Quality Monitoring**

Event	ET Leader	IEC	SOR	Contractor
Action level being exceeded by one sampling day	<ol style="list-style-type: none"> <li>Repeat <i>in situ</i> measurement on next day of exceedance to confirm findings;</li> <li>Identify source(s) of impact;</li> <li>Inform IEC, contractor and SOR;</li> <li>Check monitoring data, all plant, equipment and Contractor's working methods.</li> </ol>	<ol style="list-style-type: none"> <li>Check monitoring data submitted by ET and Contractor's working methods.</li> </ol>	<ol style="list-style-type: none"> <li>Confirm receipt of notification of non-compliance in writing;</li> <li>Notify Contractor.</li> </ol>	<ol style="list-style-type: none"> <li>Inform the SOR and confirm notification of the non-compliance in writing;</li> <li>Rectify unacceptable practice;</li> <li>Amend working methods if appropriate.</li> </ol>
Action level being exceeded by two or more consecutive sampling days	<ol style="list-style-type: none"> <li>Repeat measurement on next day of exceedance to confirm findings;</li> <li>Identify source(s) of impact;</li> <li>Inform IEC, Contractor, SOR and EPD;</li> <li>Check monitoring data, all plant, equipment and Contractor's working methods;</li> <li>Discuss mitigation measures with IEC, SOR and Contractor;</li> <li>Ensure mitigation measures are implemented;</li> <li>Increase the monitoring frequency to daily until no exceedance of Action level;</li> </ol>	<ol style="list-style-type: none"> <li>Check monitoring data submitted by ET and Contractor's working method;</li> <li>Discuss with ET and Contractor on possible remedial actions;</li> <li>Review the proposed mitigation measures submitted by Contractor and advise the SOR accordingly;</li> <li>Supervise the implementation of mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>Discuss with IEC on the proposed mitigation measures;</li> <li>Ensure mitigation measures are properly implemented;</li> <li>Assess the effectiveness of the implemented mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>Inform the Supervising Officer and confirm notification of the non-compliance in writing;</li> <li>Rectify unacceptable practice;</li> <li>Check all plant and equipment and consider changes of working methods;</li> <li>Submit proposal of additional mitigation measures to SOR within 3 working days of notification and discuss with ET, IEC and SOR;</li> <li>Implement the agreed mitigation measures.</li> </ol>
Limit level being exceeded by one sampling day	<ol style="list-style-type: none"> <li>Repeat measurement on next day of exceedance to confirm findings;</li> </ol>	<ol style="list-style-type: none"> <li>Check monitoring data submitted by ET and</li> </ol>	<ol style="list-style-type: none"> <li>Confirm receipt of notification of failure in</li> </ol>	<ol style="list-style-type: none"> <li>Inform the SOR and confirm notification of the</li> </ol>

Event	ET Leader	IEC	SOR	Contractor
	<ol style="list-style-type: none"> <li>2. Identify source(s) of impact;</li> <li>3. Inform IEC, Contractor, SOR and EPD;</li> <li>4. Check monitoring data, all plant, equipment and Contractor's working methods;</li> <li>5. Discuss mitigation measures with IEC, SOR and Contractor;</li> </ol>	<ol style="list-style-type: none"> <li>Contractor's working method;</li> <li>2. Discuss with ET and Contractor on possible remedial actions;</li> <li>3. Review the proposed mitigation measures submitted by Contractor and advise the SOR accordingly.</li> </ol>	<ol style="list-style-type: none"> <li>writing;</li> <li>2. Discuss with IEC, ET and Contractor on the proposed mitigation measures;</li> <li>3. Request Contractor to review the working methods.</li> </ol>	<ol style="list-style-type: none"> <li>non-compliance in writing;</li> <li>2. Rectify unacceptable practice;</li> <li>3. Check all plant and equipment and consider changes of working methods;</li> <li>4. Submit proposal of mitigation measures to SOR within 3 working days of notification and discuss with ET, IEC and SOR.</li> </ol>
Limit level being exceeded by two or more consecutive sampling days	<ol style="list-style-type: none"> <li>1. Repeat measurement on next day of exceedance to confirm findings;</li> <li>2. Identify source(s) of impact;</li> <li>3. Inform IEC, contractor, SOR and EPD;</li> <li>4. Check monitoring data, all plant, equipment and Contractor's working methods;</li> <li>5. Discuss mitigation measures with IEC, SOR and Contractor;</li> <li>6. Ensure mitigation measures are implemented;</li> <li>7. Increase the monitoring frequency to daily until no exceedance of Limit level for two consecutive days;</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET and Contractor's working method;</li> <li>2. Discuss with ET and Contractor on possible remedial actions;</li> <li>3. Review the Contractor's mitigation measures whenever necessary to assure their effectiveness and advise the SOR accordingly;</li> <li>4. Supervise the implementation of mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss with IEC, ET and Contractor on the proposed mitigation measures;</li> <li>2. Request Contractor to critically review the working methods;</li> <li>3. Make agreement on the mitigation measures to be implemented;</li> <li>4. Ensure mitigation measures are properly implemented;</li> <li>5. Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the construction activities until no exceedance of Limit level.</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Submit proposal of mitigation measures to SOR within 3 working days of notification and discuss with ET, IEC and SOR;</li> <li>3. Implement the agreed mitigation measures;</li> <li>4. Resubmit proposals of mitigation measures if problem still not under control;</li> <li>5. As directed by the Supervising Officer, to slow down or to stop all or part of the construction activities until no exceedance of Limit level.</li> </ol>

Note: ET – Environmental Team, IEC – Independent Environmental Checker, SOR – Supervising Officer's Representative

*Event/Action Plan for Impact Dolphin Monitoring*

EVENT	ACTION			
	ET	IEC	SOR	Contractor
Action Level	<ol style="list-style-type: none"> <li>1. Repeat statistical data analysis to confirm findings;</li> <li>2. Review all available and relevant data, including raw data and statistical analysis results of other parameters covered in the EM&amp;A, to ascertain if differences are as a result of natural variation or previously observed seasonal differences;</li> <li>3. Identify source(s) of impact;</li> <li>4. Inform the IEC, SOR and Contractor;</li> <li>5. Check monitoring data.</li> <li>6. Review to ensure all the dolphin protective measures are fully and properly implemented and advise on additional measures if necessary.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET and Contractor;</li> <li>2. Discuss monitoring results and finding with the ET and the Contractor.</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss monitoring with the IEC and any other measures proposed by the ET;</li> <li>2. If SOR is satisfied with the proposal of any other measures, SOR to signify the agreement in writing on the measures to be implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Inform the SOR and confirm notification of the non-compliance in writing;</li> <li>2. Discuss with the ET and the IEC and propose measures to the IEC and the SOR;</li> <li>3. Implement the agreed measures.</li> </ol>
Limit Level	<ol style="list-style-type: none"> <li>1. Repeat statistical data analysis to confirm findings;</li> <li>2. Review all available and relevant data, including raw data and statistical analysis results of other parameters covered in the EM&amp;A, to ascertain if differences are as a result of natural variation or previously observed seasonal differences;</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET and Contractor;</li> <li>2. Discuss monitoring results and findings with the ET and the Contractor;</li> <li>3. Attend the meeting to discuss with ET, SOR and</li> </ol>	<ol style="list-style-type: none"> <li>1. Attend the meeting to discuss with ET, IEC and Contractor the necessity of additional dolphin monitoring and any other potential mitigation measures.</li> <li>2. If SOR is satisfied with the</li> </ol>	<ol style="list-style-type: none"> <li>1. Inform the SOR and confirm notification of the non-compliance in writing;</li> <li>2. Attend the meeting to discuss with ET, IEC and SOR the necessity of additional dolphin monitoring and any other</li> </ol>

EVENT	ACTION			
	ET	IEC	SOR	Contractor
	<ol style="list-style-type: none"> <li>3. Identify source(s) of impact;</li> <li>4. Inform the IEC, SOR and Contractor of findings;</li> <li>5. Check monitoring data;</li> <li>6. Repeat review to ensure all the dolphin protective measures are fully and properly implemented and advise on additional measures if necessary.</li> <li>7. If ET proves that the source of impact is caused by any of the construction activity by the works contract, ET to arrange a meeting to discuss with IEC, SOR and Contractor the necessity of additional dolphin monitoring and/or any other potential mitigation measures (e.g., consider to modify the perimeter silt curtain or consider to control/temporarily stop relevant construction activity etc.) and submit to IEC a proposal of additional dolphin monitoring and/or mitigation measures where necessary.</li> </ol>	<p>Contractor the necessity of additional dolphin monitoring and any other potential mitigation measures.</p> <ol style="list-style-type: none"> <li>4. Review proposals for additional monitoring and any other mitigation measures submitted by ET and Contractor and advise SOR of the results and findings accordingly.</li> <li>5. Supervise / Audit the implementation of additional monitoring and/or any other mitigation measures and advise SOR the results and findings accordingly.</li> </ol>	<p>proposals for additional dolphin monitoring and/or any other mitigation measures submitted by ET and Contractor and verified by IEC, SOR to signify the agreement in writing on such proposals and any other mitigation measures.</p> <ol style="list-style-type: none"> <li>3. Supervise the implementation of additional monitoring and/or any other mitigation measures.</li> </ol>	<p>potential mitigation measures.</p> <ol style="list-style-type: none"> <li>3. Jointly submit with ET to IEC a proposal of additional dolphin monitoring and/or any other mitigation measures when necessary.</li> <li>4. Implement the agreed additional dolphin monitoring and/or any other mitigation measures.</li> </ol>

Note: ET – Environmental Team, IEC – Independent Environmental Checker, SOR – Supervising Officer’s Representative



Appendix L

Cumulative Statistics on  
Exceedances, Complaints,  
Notifications of Summons  
and Successful Prosecutions

**Table L1** *Cumulative Statistics on Exceedances*

<b>Parameters</b>	<b>Level of Exceedance</b>	<b>Total No. recorded in this reporting month</b>	<b>Total No. recorded since Contract commencement</b>
1-hr TSP	Action	0	93
	Limit	0	7
24-hr TSP	Action	0	10
	Limit	0	4
Water Quality	Action	55	128
	Limit	4	19
Impact Dolphin Monitoring	Action	0	11
	Limit	1	16

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

<b>Reporting Period</b>	<b>Cumulative Statistics</b>		
	<b>Complaints</b>	<b>Notifications of Summons</b>	<b>Successful Prosecutions</b>
This Reporting Month (August 2019)	0	0	0
Total No. received since Contract commencement	17	1	0

Email  
message

Environmental  
Resources  
Management

**To** Ramboll Hong Kong Limited (ENPO)

**From** ERM- Hong Kong, Limited

**Ref/Project number** Contract No. HY/2012/08 Tuen Mun–Chek Lap  
Kok Link–Northern Connection Sub-sea Tunnel  
Section

**Subject** Notification of Exceedance for Water Quality  
Impact Monitoring

**Date** 14 August 2019

2507,  
25/F One Harbourfront,  
18 Tak Fung Street,  
Hung Hom, Hong Kong  
Telephone: (852) 2271 3113  
Facsimile: (852) 2723 5660  
E-mail: jasmine.ng@erm.com



**ERM**

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Dear Sir or Madam,

Please find the Notification of Exceedance (NOE) of the following Log no.:

Action Level Exceedance

0212330\_7 August 2019\_ Surface & Middle DO\_E\_Station IS(Mf)9

0212330\_7 August 2019\_ Surface & Middle DO\_E\_Station IS17

0212330\_7 August 2019\_ Bottom DO\_E\_Station IS17

0212330\_7 August 2019\_ Bottom DO\_F\_Station SR4a

0212330\_7 August 2019\_ Surface & Middle DO\_F\_Station IS(Mf)11

A total of five Action Level exceedances were recorded on 7 August 2019.

Regards,



Dr Jasmine Ng  
Environmental Team Leader

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ERM-Hong Kong, Limited

CONTRACT NO. HY/2012/08

TUEN MUN - CHEK LAP KOK LINK -  
NORTHERN CONNECTION SUB-SEA TUNNEL SECTION

**Marine Water Quality Impact Monitoring  
Notification of Exceedance**

<b>Log No.</b>	<b>Action Level Exceedance</b> 0212330_7 August 2019_ Surface & Middle DO_E_Station IS(Mf)9 0212330_7 August 2019_ Surface & Middle DO_E_Station IS17 0212330_7 August 2019_ Bottom DO_E_Station IS17 0212330_7 August 2019_ Bottom DO_F_Station SR4a 0212330_7 August 2019_ Surface & Middle DO_F_Station IS(Mf)11 [Total No. of Exceedances = 5]		
<b>Date</b>	7 August 2019 (Measured) 8 August 2019 ( <i>In situ</i> results received by ERM) 16 August 2019 (Laboratory results received by ERM)		
<b>Monitoring Station</b>	CS(Mf)5, SR4a, SR4(N2), IS8(N), IS(Mf)16, IS(Mf)9, CS(Mf)3(N), SR7, IS17, IS(Mf)11		
<b>Parameter(s) with Exceedance(s)</b>	Dissolved Oxygen (mg/L)		
<b>Action Levels</b>	DO	Surface and Middle 5.0 mg/L	Bottom 4.7 mg/L
<b>Limit Levels</b>	DO	Surface and Middle 4.2 mg/L	Bottom 3.6 mg/L
<b>Measured Levels</b>	Action Level Exceedance for DO (4.6 mg/L) is observed at IS(Mf)9 at Surface & Middle Level during mid-ebb tide. Action Level Exceedance for DO (4.7 mg/L) is observed at IS17 at Surface & Middle Level during mid-ebb tide. Action Level Exceedance for DO (4.5 mg/L) is observed at IS17 at Bottom Level during mid-ebb tide. Action Level Exceedance for DO (4.5 mg/L) is observed at SR4a at Bottom Level during mid-flood tide. Action Level Exceedance for DO (4.8 mg/L) is observed at IS(Mf)11 at Surface & Middle Level during mid-flood tide.		
<b>Works Undertaken (at the time of monitoring event)</b>	According to the information provided by the Contractor, no marine works was carried out on 7 August 2019.		

<b>Possible Reason for Action or Limit Level Exceedance(s)</b>	<p>The exceedances are unlikely to be due to the Contract, in view of the following:</p> <ul style="list-style-type: none"> <li>• No marine works was carried out on 7 August 2019.</li> <li>• All monitored parameters, except DO, at all monitoring stations were in compliance with the Action and Limit Levels during both mid-ebb and mid-flood tides on the same day.</li> <li>• IS(Mf)9, SR4a and IS(Mf)11 are far away (&gt;2 km) from the Seawall Modification Works Area (<i>Figure 1</i>), thus the observed exceedance should not be affected by the marine works under this Contract. Moreover, IS(Mf)16 is closer to the works area and no exceedance was recorded. Therefore, the exceedances are unlikely to be related to this Contract.</li> <li>• Surface &amp; Middle-depth DO levels at IS(Mf)11 was similar to the corresponding control stations, CS(Mf)5, during mid-flood tide, in which the recorded Surface &amp; Middle-depth DO levels at the corresponding control station were below Action Level.</li> <li>• Bottom DO levels at SR4a was similar to the corresponding control stations, CS(Mf)5, during mid-flood tide, in which the recorded Bottom DO levels at the corresponding control station were below Action Level.</li> <li>• As reported by the marine mammal observer, no discharge of organic matters into waters from landside works area was recorded. Moreover, no exceedance was recorded at IS(Mf)16 which is the closest station to the Seawall Modification Works Area during both mid-ebb and mid-flood tide. Therefore, exceedances recorded at IS(Mf)9 and IS17 during mid-ebb tide and SR4a and IS(Mf)11 during mid-flood tide are unlikely to be caused by the marine works of this Contract.</li> </ul>
<b>Actions Taken/ To Be Taken</b>	<p>No immediate action is considered necessary. The ET will monitor for future trends in exceedances.</p>
<b>Remarks</b>	<p>The monitoring results on 7 August 2019 and locations of water quality monitoring stations are attached.</p>

Project	Contract	Date (yyyy-mm-dd)	Tide	Station	Start Time	Level	Lev_Cod	Replicate	Temperature (°C)	pH	Salinity (ppt)	DO (mg/L)	Average DO (mg/L)	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS		
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	CS(Mf)5	18:10	Surface	1	1	28.7	7.8	21.8	5.7	5.3	3.8	3.4	6.1	5.7		
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	CS(Mf)5	18:10	Surface	1	2	28.7	7.9	21.4	5.7		3.8		5.5			
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	CS(Mf)5	18:10	Middle	2	1	27.9	7.8	24.2	4.9		3.5		5.2			
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	CS(Mf)5	18:10	Middle	2	2	27.9	7.9	23.7	4.9		3.5		5.9			
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	CS(Mf)5	18:10	Bottom	3	1	27.7	7.8	25.7	4.8	4.9	2.8	5.6				
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	CS(Mf)5	18:10	Bottom	3	2	27.7	7.9	25.1	4.9	4.9	2.7	6.0				
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	CS(Mf)3(N)	17:25	Surface	1	1	28.9	7.7	18.3	5.5	5.2	3.9	7.1	7.8	7.7		
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	CS(Mf)3(N)	17:25	Surface	1	2	28.9	7.8	18.0	5.5		3.8		8.1			
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	CS(Mf)3(N)	17:25	Middle	2	1	28.0	7.8	21.7	4.8		6.2		8.7			
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	CS(Mf)3(N)	17:25	Middle	2	2	28.0	7.8	21.4	4.9		6.2		8.9			
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	CS(Mf)3(N)	17:25	Bottom	3	1	28.0	7.8	23.3	5.1	5.2	11.3	6.5				
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	CS(Mf)3(N)	17:25	Bottom	3	2	28.0	7.9	22.9	5.2	5.2	11.3	6.2				
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	IS(Mf)16	16:47	Surface	1	1	28.4	7.8	21.6	5.5	5.5	5.5	6.5	9.8	9.7		
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	IS(Mf)16	16:47	Surface	1	2	28.4	7.9	21.6	5.5		5.5		10.6			
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	IS(Mf)16	16:47	Middle	2	1											
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	IS(Mf)16	16:47	Middle	2	2											
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	IS(Mf)16	16:47	Bottom	3	1	28.1	7.8	22.3	5.1	5.1	7.4	9.7				
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	IS(Mf)16	16:47	Bottom	3	2	28.1	7.8	21.9	5.1	5.1	7.5	8.7				
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	SR4a	16:39	Surface	1	1	28.5	7.8	20.8	5.8	5.9	4.5	4.7	11.3	10.7		
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	SR4a	16:39	Surface	1	2	28.5	7.9	20.4	5.9		4.6		10.6			
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	SR4a	16:39	Middle	2	1											
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	SR4a	16:39	Middle	2	2											
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	SR4a	16:39	Bottom	3	1	28.1	7.8	21.6	4.9	5.1	4.8	10.2				
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	SR4a	16:39	Bottom	3	2	28.2	7.8	21.2	5.2	5.1	4.9	10.5				
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	SR4(N2)	16:35	Surface	1	1	28.5	7.8	20.9	5.6	5.7	6.5	8.1	9.8	9.1		
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	SR4(N2)	16:35	Surface	1	2	28.5	7.8	20.6	5.7		6.4		10.7			
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	SR4(N2)	16:35	Middle	2	1											
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	SR4(N2)	16:35	Middle	2	2											
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	SR4(N2)	16:35	Bottom	3	1	28.3	7.8	21.5	5.0	5.0	9.8	8.5				
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	SR4(N2)	16:35	Bottom	3	2	28.3	7.8	21.1	5.0	5.0	9.7	7.5				
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	IS8(N)	16:30	Surface	1	1	28.4	7.8	21.4	5.5	5.5	6.5	7.2	7.1	7.2		
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	IS8(N)	16:30	Surface	1	2	28.4	7.9	21.0	5.5		6.5		6.1			
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	IS8(N)	16:30	Middle	2	1											
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	IS8(N)	16:30	Middle	2	2											
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	IS8(N)	16:30	Bottom	3	1	28.1	7.8	22.2	5.0	5.0	7.9	7.4				
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	IS8(N)	16:30	Bottom	3	2	28.1	7.9	21.8	5.0	5.0	7.9	8.1				
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	IS(Mf)9	16:22	Surface	1	1	27.6	7.8	25.1	4.5	4.5	3.3	4.3	7.6	6.9		
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	IS(Mf)9	16:22	Surface	1	2	27.6	7.8	25.1	4.5		3.3		6.7			
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	IS(Mf)9	16:22	Middle	2	1											
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	IS(Mf)9	16:22	Middle	2	2											
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	IS(Mf)9	16:22	Bottom	3	1	28.0	7.8	21.0	7.0	7.0	5.3	6.7				
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	IS(Mf)9	16:22	Bottom	3	2	28.0	7.8	21.0	7.0	7.0	5.3	6.6				
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	IS(Mf)11	17:48	Surface	1	1	29.1	7.8	18.3	6.0	5.5	4.1	4.9	5.5	9.4		
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	IS(Mf)11	17:48	Surface	1	2	29.1	7.8	18.0	5.8		4.1		5.9			
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	IS(Mf)11	17:48	Middle	2	1	28.4	7.7	20.6	5.0		5.1		14.4			
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	IS(Mf)11	17:48	Middle	2	2	28.4	7.8	20.3	5.1		5.1		12.6			
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	IS(Mf)11	17:48	Bottom	3	1	27.9	7.8	23.4	4.7	4.8	5.5	8.3				
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	IS(Mf)11	17:48	Bottom	3	2	27.9	7.8	23.0	4.8	4.8	5.5	9.6				
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	SR7	17:54	Surface	1	1	28.7	7.8	20.5	5.7	5.7	4.1	4.4	5.5	6.7		
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	SR7	17:54	Surface	1	2	28.7	7.9	20.1	5.7		4.2		4.8			
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	SR7	17:54	Middle	2	1											
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	SR7	17:54	Middle	2	2											
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	SR7	17:54	Bottom	3	1	28.5	7.8	21.0	5.4	5.5	4.6	8.4				
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	SR7	17:54	Bottom	3	2	28.5	7.9	20.8	5.6	5.5	4.6	8.2				
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	IS17	16:52	Surface	1	1	28.0	7.8	22.8	4.8	4.7	4.8	8.2	9.3	8.5		
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	IS17	16:52	Surface	1	2	28.0	7.8	22.4	4.9		4.9		8.3			
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	IS17	16:52	Middle	2	1	27.6	7.8	25.1	4.5		8.4		9.6			
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	IS17	16:52	Middle	2	2	27.6	7.8	24.6	4.5		8.4		9.2			

Project	Contract	Date (yyyy-mm-dd)	Tide	Station	Start Time	Level	Lev_Cod	Replicate	Temperature (°C)	pH	Salinity (ppt)	DO (mg/L)	Average DO (mg/L)	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	IS17	16:52	Bottom	3	1	27.6	7.8	25.2	4.5	4.5	11.4		6.9	
TMCLKL	HY/2012/08	2019/08/07	Mid-Ebb	IS17	16:52	Bottom	3	2	27.6	7.8	24.7	4.5		11.4		7.9	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	CS(Mf)5	10:29	Surface	1	1	28.0	7.8	21.3	4.6		4.0	6.2	6.5	6.8
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	CS(Mf)5	10:29	Surface	1	2	27.6	7.8	21.3	4.6	4.6	4.0		5.8	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	CS(Mf)5	10:29	Middle	2	1	27.6	7.8	24.6	4.6		4.0		6.7	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	CS(Mf)5	10:29	Middle	2	2	27.6	7.8	24.2	4.6		4.0		6.8	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	CS(Mf)5	10:29	Bottom	3	1	27.5	7.8	26.5	4.5	4.5	10.6		7.0	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	CS(Mf)5	10:29	Bottom	3	2	27.4	7.8	26.0	4.5		10.6		7.9	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	CS(Mf)3(N)	11:19	Surface	1	1	28.2	7.7	19.8	5.0		5.1	5.8	9.1	9.7
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	CS(Mf)3(N)	11:19	Surface	1	2	28.4	7.8	19.2	5.3	5.1	5.2		8.1	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	CS(Mf)3(N)	11:19	Middle	2	1	28.2	7.7	19.9	5.0		6.0		10.5	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	CS(Mf)3(N)	11:19	Middle	2	2	28.2	7.8	19.5	5.0		6.1		9.9	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	CS(Mf)3(N)	11:19	Bottom	3	1	28.3	7.7	20.1	5.2	5.2	6.2		10.7	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	CS(Mf)3(N)	11:19	Bottom	3	2	28.2	7.8	19.6	5.1		6.2		9.8	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	IS(Mf)16	12:23	Surface	1	1	28.5	7.8	20.7	5.6		5.9	8.1	8.7	7.9
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	IS(Mf)16	12:23	Surface	1	2	28.5	7.9	20.3	5.6	5.6	5.9		7.7	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	IS(Mf)16	12:23	Middle	2	1									
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	IS(Mf)16	12:23	Middle	2	2									
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	IS(Mf)16	12:23	Bottom	3	1	28.0	7.8	21.6	5.0	5.0	10.4		7.1	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	IS(Mf)16	12:23	Bottom	3	2	28.0	7.8	21.2	5.0		10.3		8.0	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	SR4a	12:32	Surface	1	1	28.6	7.7	20.4	5.5		3.6	5.2	9.2	9.2
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	SR4a	12:32	Surface	1	2	28.6	7.8	20.1	5.6	5.6	3.6		8.2	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	SR4a	12:32	Middle	2	1									
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	SR4a	12:32	Middle	2	2									
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	SR4a	12:32	Bottom	3	1	28.0	7.7	21.7	4.5	4.5	6.7		9.6	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	SR4a	12:32	Bottom	3	2	28.0	7.8	21.3	4.5		6.7		9.9	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	SR4(N2)	12:36	Surface	1	1	28.5	7.7	20.4	5.5		3.6	3.9	10.2	9.3
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	SR4(N2)	12:36	Surface	1	2	28.4	7.8	20.0	5.6	5.6	3.6		9.2	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	SR4(N2)	12:36	Middle	2	1									
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	SR4(N2)	12:36	Middle	2	2									
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	SR4(N2)	12:36	Bottom	3	1	28.2	7.7	20.7	5.3	5.4	4.1		8.4	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	SR4(N2)	12:36	Bottom	3	2	28.3	7.8	20.3	5.4		4.1		9.3	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	IS8(N)	12:41	Surface	1	1	28.3	7.7	20.8	5.2		5.6	7.6	9.7	9.1
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	IS8(N)	12:41	Surface	1	2	28.3	7.8	20.4	5.2	5.2	5.6		9.3	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	IS8(N)	12:41	Middle	2	1									
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	IS8(N)	12:41	Middle	2	2									
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	IS8(N)	12:41	Bottom	3	1	28.3	7.7	21.0	5.1	5.2	9.5		8.4	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	IS8(N)	12:41	Bottom	3	2	28.2	7.8	20.5	5.2		9.5		8.8	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	IS(Mf)9	12:49	Surface	1	1	28.4	7.7	20.7	5.7		7.0	8.1	8.6	8.5
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	IS(Mf)9	12:49	Surface	1	2	28.4	7.8	20.3	5.7	5.7	7.0		8.3	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	IS(Mf)9	12:49	Middle	2	1									
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	IS(Mf)9	12:49	Middle	2	2									
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	IS(Mf)9	12:49	Bottom	3	1	28.3	7.7	20.8	5.3	5.4	9.3		8.6	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	IS(Mf)9	12:49	Bottom	3	2	28.3	7.8	20.5	5.4		9.2		8.6	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	IS(Mf)11	10:55	Surface	1	1	28.0	7.8	21.9	4.8	4.8	8.0	9.1	8.6	13.7
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	IS(Mf)11	10:55	Surface	1	2	27.9	7.8	21.7	4.8	4.8	8.0		8.6	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	IS(Mf)11	10:55	Middle	2	1	27.9	7.8	22.0	4.8	4.8	7.3		9.4	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	IS(Mf)11	10:55	Middle	2	2	27.9	7.8	21.7	4.8		7.3		10.3	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	IS(Mf)11	10:55	Bottom	3	1	27.7	7.8	23.9	4.7	4.7	11.9		24.3	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	IS(Mf)11	10:55	Bottom	3	2	27.7	7.8	23.5	4.7		11.9		21.0	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	SR7	10:48	Surface	1	1	28.2	7.8	21.2	5.0		4.5	7.3	4.0	6.5
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	SR7	10:48	Surface	1	2	28.1	7.8	20.9	5.0	5.0	4.5		5.0	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	SR7	10:48	Middle	2	1									
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	SR7	10:48	Middle	2	2									
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	SR7	10:48	Bottom	3	1	27.9	7.8	22.7	4.8	4.8	10.1		8.1	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	SR7	10:48	Bottom	3	2	27.9	7.8	22.3	4.8		10.1		9.0	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	IS17	12:01	Surface	1	1	28.3	7.8	21.3	5.3		2.5	3.2	7.9	8.1
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	IS17	12:01	Surface	1	2	28.3	7.8	21.0	5.3	5.1	2.6		8.8	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	IS17	12:01	Middle	2	1	28.0	7.8	22.3	4.9		3.5		8.5	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	IS17	12:01	Middle	2	2	28.0	7.8	22.0	4.9		3.5		7.6	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	IS17	12:01	Bottom	3	1	27.9	7.8	22.8	4.9	4.9	3.7		8.3	
TMCLKL	HY/2012/08	2019/08/07	Mid-flood	IS17	12:01	Bottom	3	2	27.9	7.8	22.4	4.9		3.6		7.3	

Note: Indicates Exceedance of Action Level  
Indicates Exceedance of Limit Level



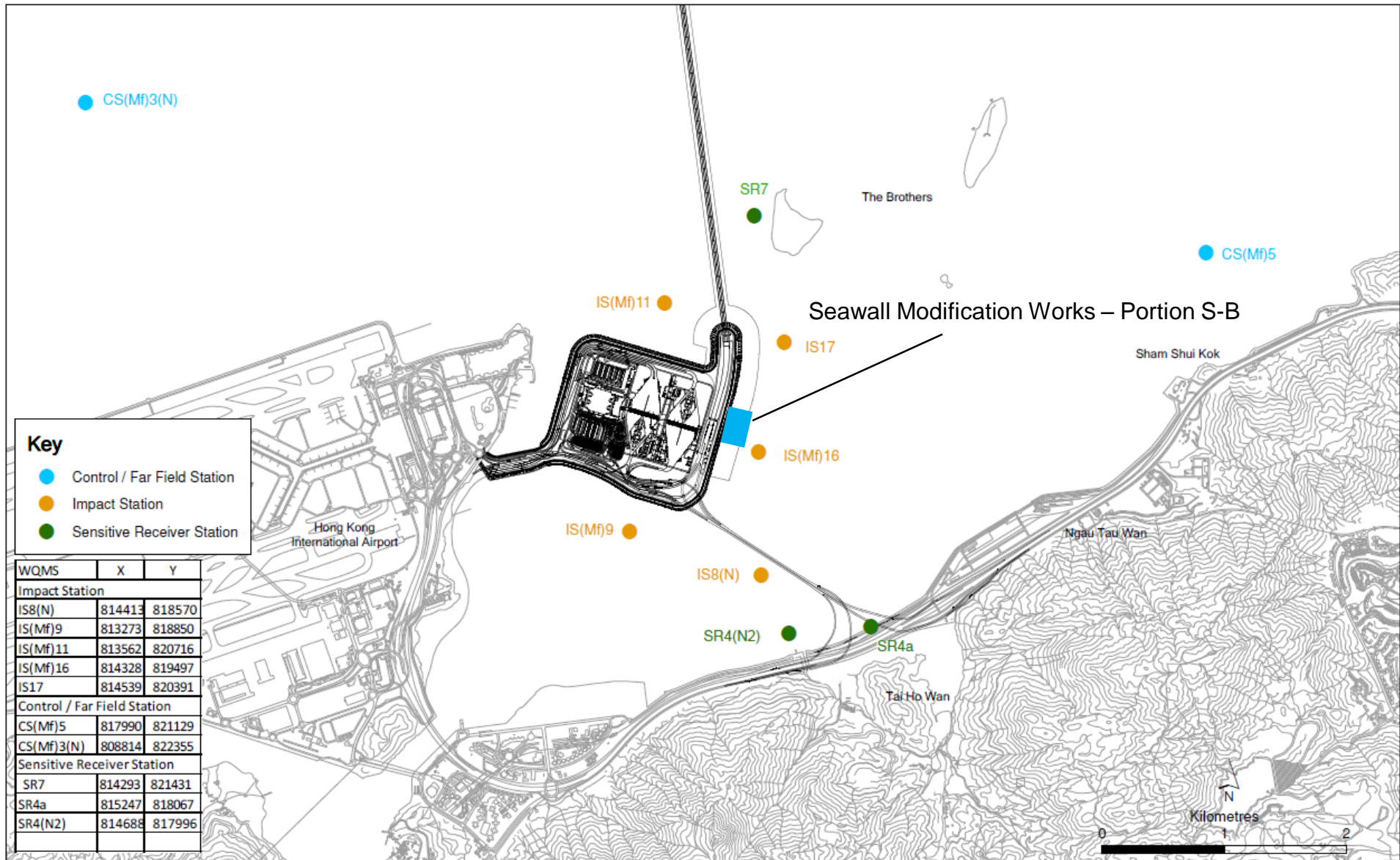


Figure 1



Email  
message

Environmental  
Resources  
Management

**To** Ramboll Hong Kong Limited (ENPO)

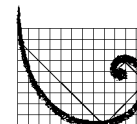
**From** ERM- Hong Kong, Limited

**Ref/Project number** Contract No. HY/2012/08 Tuen Mun–Chek Lap  
Kok Link–Northern Connection Sub-sea Tunnel  
Section

**Subject** Notification of Exceedance for Water Quality  
Impact Monitoring

**Date** 16 August 2019

2507,  
25/F One Harbourfront,  
18 Tak Fung Street,  
Hung Hom, Hong Kong  
Telephone: (852) 2271 3113  
Facsimile: (852) 2723 5660  
E-mail: jasmine.ng@erm.com



**ERM**

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Dear Sir or Madam,

Please find the Notification of Exceedance (NOE) of the following Log no.:

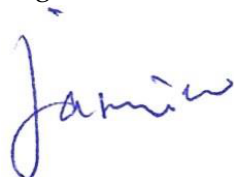
Action Level Exceedance

0212330\_12 August 2019\_ Bottom DO\_E\_Station IS(Mf)11

0212330\_12 August 2019\_ Bottom DO\_F\_Station IS(Mf)11

A total of two Action Level exceedances were recorded on 12 August 2019.

Regards,



Dr Jasmine Ng  
Environmental Team Leader

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ERM-Hong Kong, Limited

CONTRACT NO. HY/2012/08

TUEN MUN - CHEK LAP KOK LINK -  
NORTHERN CONNECTION SUB-SEA TUNNEL SECTION

Marine Water Quality Impact Monitoring  
Notification of Exceedance

Log No.	<b>Action Level Exceedance</b> 0212330_12 August 2019_ Bottom DO_E_Station IS(Mf)11 0212330_12 August 2019_ Bottom DO_F_Station IS(Mf)11 [Total No. of Exceedances = 2]		
Date	12 August 2019 (Measured) 15 August 2019 ( <i>In situ</i> results received by ERM) 21 August 2019 (Laboratory results received by ERM)		
Monitoring Station	CS(Mf)5, SR4a, SR4(N2), IS8(N), IS(Mf)16, IS(Mf)9, CS(Mf)3(N), SR7, IS17, IS(Mf)11		
Parameter(s) with Exceedance(s)	Dissolved Oxygen (mg/L)		
Action Levels	DO	Surface and Middle 5.0 mg/L	Bottom 4.7 mg/L
Limit Levels	DO	Surface and Middle 4.2 mg/L	Bottom 3.6 mg/L
Measured Levels	Action Level Exceedance for DO (3.9 mg/L) is observed at IS(Mf)11 at Bottom Level during mid-ebb tide. Action Level Exceedance for DO (4.3 mg/L) is observed at IS(Mf)11 at Bottom Level during mid-flood tide.		
Works Undertaken (at the time of monitoring event)	According to the information provided by the Contractor, Seawall Modification Works was carried out on 12 August 2019.		
Possible Reason for Action or Limit Level Exceedance(s)	<p>The exceedances are unlikely to be due to the Contract, in view of the following:</p> <ul style="list-style-type: none"> <li>• All monitored parameters, except DO, at all monitoring stations were in compliance with the Action and Limit Levels during both mid-ebb and mid-flood tides on the same day.</li> <li>• No discharge of organic matters into waters from landside works area was recorded.</li> <li>• IS(Mf)11 is far away (&gt;2 km) from the Seawall Modification Works Area (<i>Figure 1</i>), thus the observed exceedance should not be affected by the marine works under this Contract. Moreover, IS(Mf)16 is closer to the works area and no exceedance was recorded. Therefore, the exceedance is unlikely to be related to this Contract.</li> <li>• Bottom-depth DO levels at IS(Mf)11 was similar to the corresponding control stations, CS(Mf)5, during both mid-ebb and mid-flood tide, in which the recorded Bottom-depth DO levels at the corresponding control station were below Action Level.</li> </ul>		
Actions Taken/ To Be Taken	No immediate action is considered necessary. The ET will monitor for future trends in exceedances.		
Remarks	The monitoring results on 12 August 2019 and locations of water quality monitoring stations are attached.		

Project	Contract	Date (yyyy-mm-dd)	Tide	Station	Start Time	Level	Lev_Cod	Replicate	Temperature (°C)	pH	Salinity (ppt)	DO (mg/L)	Average DO (mg/L)	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS		
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	CS(Mf)5	11:20	Surface	1	1	29.9	8.0	16.6	6.7	5.9	5.2	7.3	5.5	5.9		
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	CS(Mf)5	11:20	Surface	1	2	29.9	7.9	16.9	6.6		5.3		5.5			
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	CS(Mf)5	11:20	Middle	2	1	28.6	7.9	20.7	5.2		6.1		6.0			
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	CS(Mf)5	11:20	Middle	2	2	28.6	7.8	21.1	5.2		6.2		5.0			
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	CS(Mf)5	11:20	Bottom	3	1	27.9	7.9	27.4	4.3	4.2	10.5	7.3	6.5	5.9		
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	CS(Mf)5	11:20	Bottom	3	2	27.9	7.8	28.4	4.1	10.5	7.1					
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	CS(Mf)3(N)	10:36	Surface	1	1	29.8	8.0	15.2	6.3	5.7	5.8		5.9		5.1	4.7
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	CS(Mf)3(N)	10:36	Surface	1	2	29.8	7.9	15.4	6.3		5.5				5.2	
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	CS(Mf)3(N)	10:36	Middle	2	1	29.1	7.9	19.6	5.1		5.7	4.6				
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	CS(Mf)3(N)	10:36	Middle	2	2	29.1	7.8	20.0	5.0		5.7	3.7				
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	CS(Mf)3(N)	10:36	Bottom	3	1	28.7	7.9	23.3	4.5	4.5	6.5	5.9	4.5	4.7		
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	CS(Mf)3(N)	10:36	Bottom	3	2	28.7	7.8	23.7	4.4	4.4	6.3		5.1			
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS(Mf)16	9:57	Surface	1	1	30.0	8.1	17.5	7.0	7.0	6.7		5.2		10.4	9.3
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS(Mf)16	9:57	Surface	1	2	30.0	8.0	17.8	7.0		6.9				11.2	
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS(Mf)16	9:57	Middle	2	1											
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS(Mf)16	9:57	Middle	2	2											
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS(Mf)16	9:57	Bottom	3	1	29.7	8.0	19.1	6.4	6.4	3.7	5.2	7.8	9.3		
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS(Mf)16	9:57	Bottom	3	2	29.7	7.9	19.5	6.4	6.4	3.5		7.7			
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	SR4a	9:47	Surface	1	1	30.1	8.1	16.1	7.4	7.4	3.2		4.8		5.1	5.4
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	SR4a	9:47	Surface	1	2	30.1	8.0	16.4	7.3		3.4				5.3	
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	SR4a	9:47	Middle	2	1											
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	SR4a	9:47	Middle	2	2											
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	SR4a	9:47	Bottom	3	1	30.0	8.1	16.9	6.8	6.8	6.3	5.2	6.2	9.3		
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	SR4a	9:47	Bottom	3	2	30.0	8.0	17.2	6.7	6.3	5.1					
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	SR4(N2)	9:42	Surface	1	1	30.2	8.1	16.5	7.0	7.0	11.0		11.5		6.6	6.1
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	SR4(N2)	9:42	Surface	1	2	30.2	8.0	16.8	7.0		10.2				6.3	
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	SR4(N2)	9:42	Middle	2	1											
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	SR4(N2)	9:42	Middle	2	2											
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	SR4(N2)	9:42	Bottom	3	1	30.2	8.1	16.6	6.8	6.8	12.1	5.5	6.4	7.4		
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	SR4(N2)	9:42	Bottom	3	2	30.2	8.0	16.9	6.8	6.8	12.7		4.9			
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS8(N)	9:37	Surface	1	1	30.2	8.1	16.6	7.6	7.6	5.7		6.3		9.4	5.1
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS8(N)	9:37	Surface	1	2	30.2	8.1	16.9	7.6		5.7				8.4	
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS8(N)	9:37	Middle	2	1											
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS8(N)	9:37	Middle	2	2											
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS8(N)	9:37	Bottom	3	1	30.2	8.1	16.6	7.6	7.6	5.3	5.5	6.0	7.4		
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS8(N)	9:37	Bottom	3	2	30.2	8.1	16.9	7.6	7.6	5.2		5.8			
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS(Mf)9	9:28	Surface	1	1	30.2	8.1	16.8	7.5	7.5	4.2		5.6		5.5	5.0
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS(Mf)9	9:28	Surface	1	2	30.2	8.1	17.1	7.4		4.4				6.2	
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS(Mf)9	9:28	Middle	2	1											
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS(Mf)9	9:28	Middle	2	2											
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS(Mf)9	9:28	Bottom	3	1	30.2	8.1	16.7	7.5	7.5	6.9	6.3	3.8	5.1		
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS(Mf)9	9:28	Bottom	3	2	30.2	8.1	17.1	7.5	7.5	6.9		4.5			
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS(Mf)11	10:57	Surface	1	1	30.1	8.0	15.0	6.9	6.5	4.7		6.3		4.2	5.1
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS(Mf)11	10:57	Surface	1	2	30.1	7.9	15.3	6.8		4.7				4.8	
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS(Mf)11	10:57	Middle	2	1	29.9	8.0	15.7	6.1		5.8	5.9				
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS(Mf)11	10:57	Middle	2	2	29.9	7.9	16.0	6.1		5.9	4.7				
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS(Mf)11	10:57	Bottom	3	1	28.0	7.9	27.0	3.9	3.9	8.4	6.3	5.1	5.9		
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS(Mf)11	10:57	Bottom	3	2	28.0	7.8	27.6	3.8	3.9	8.4		5.7			
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	SR7	11:03	Surface	1	1	30.1	8.0	15.1	7.0	7.0	4.4		4.7		3.5	4.4
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	SR7	11:03	Surface	1	2	30.1	7.9	15.3	7.0		4.5				4.7	
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	SR7	11:03	Middle	2	1											
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	SR7	11:03	Middle	2	2											
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	SR7	11:03	Bottom	3	1	30.0	8.0	15.2	6.9	6.9	4.8	6.7	4.5	5.9		
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	SR7	11:03	Bottom	3	2	30.0	7.9	15.5	6.9	6.9	4.9		5.0			
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS17	10:03	Surface	1	1	29.9	8.0	16.6	6.7	6.7	4.2		3.8		6.2	5.9
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS17	10:03	Surface	1	2	29.9	7.9	16.9	6.7		4.9				6.1	
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS17	10:03	Middle	2	1	29.6	8.0	16.9	6.6		3.3	5.5				
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS17	10:03	Middle	2	2	29.6	7.9	17.2	6.6		3.9	5.8				

Project	Contract	Date (yyyy-mm-dd)	Tide	Station	Start Time	Level	Lev_Cod	Replicate	Temperature (°C)	pH	Salinity (ppt)	DO (mg/L)	Average DO (mg/L)	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS17	10:03	Bottom	3	1	29.5	8.0	19.7	6.1	6.1	3.1		5.3	
TMCLKL	HY/2012/08	2019/08/12	Mid-Ebb	IS17	10:03	Bottom	3	2	29.5	7.9	19.9	6.1		3.5		6.7	
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	CS(Mf)5	3:10	Surface	1	1	30.0	8.0	15.8	7.2		3.0	4.8	3.9	4.7
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	CS(Mf)5	3:10	Surface	1	2	30.0	8.0	16.1	7.1	6.5	2.7		4.7	
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	CS(Mf)5	3:10	Middle	2	1	29.2	8.0	20.1	5.9		3.1		4.8	
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	CS(Mf)5	3:10	Middle	2	2	29.2	7.9	20.4	5.9		3.1		5.1	
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	CS(Mf)5	3:10	Bottom	3	1	28.0	7.8	27.7	4.5	4.5	8.7		5.4	
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	CS(Mf)5	3:10	Bottom	3	2	28.0	7.8	28.3	4.5		8.4		4.5	
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	CS(Mf)3(N)	4:03	Surface	1	1	29.9	8.0	14.7	6.7		5.7	8.2	6.1	4.6
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	CS(Mf)3(N)	4:03	Surface	1	2	29.9	7.9	14.9	6.6	6.7	5.6		4.3	
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	CS(Mf)3(N)	4:03	Middle	2	1	29.9	8.1	15.2	6.7		7.1		5.5	
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	CS(Mf)3(N)	4:03	Middle	2	2	29.9	7.9	15.4	6.7		7.9		4.7	
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	CS(Mf)3(N)	4:03	Bottom	3	1	29.9	8.0	16.1	6.5	6.5	11.4		3.9	
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	CS(Mf)3(N)	4:03	Bottom	3	2	29.9	7.9	16.3	6.5		11.6		3.3	
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	IS(Mf)16	4:43	Surface	1	1	29.9	8.1	16.7	6.9		3.7	3.9	7.6	7.7
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	IS(Mf)16	4:43	Surface	1	2	29.9	7.9	17.0	6.9	6.9	4.4		7.0	
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	IS(Mf)16	4:43	Middle	2	1									
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	IS(Mf)16	4:43	Middle	2	2									
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	IS(Mf)16	4:43	Bottom	3	1	29.8	8.0	17.6	6.5	6.5	3.4		7.7	
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	IS(Mf)16	4:43	Bottom	3	2	29.8	7.9	17.9	6.5		4.2		8.4	
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	SR4a	4:52	Surface	1	1	30.3	8.1	16.5	7.4		4.4	5.2	6.2	6.9
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	SR4a	4:52	Surface	1	2	30.3	8.0	16.8	7.5		5.1		7.1	
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	SR4a	4:52	Middle	2	1									
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	SR4a	4:52	Middle	2	2									
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	SR4a	4:52	Bottom	3	1	30.3	8.1	16.8	7.4	7.4	5.3		7.6	
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	SR4a	4:52	Bottom	3	2	30.3	7.9	17.1	7.4		5.8		6.8	
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	SR4(N2)	4:57	Surface	1	1	30.1	8.1	16.3	7.2		4.0	4.1	7.7	7.5
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	SR4(N2)	4:57	Surface	1	2	30.1	8.0	16.6	7.2		4.0		7.1	
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	SR4(N2)	4:57	Middle	2	1					7.2				
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	SR4(N2)	4:57	Middle	2	2									
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	SR4(N2)	4:57	Bottom	3	1	30.1	8.1	16.4	7.2		4.1		7.3	
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	SR4(N2)	4:57	Bottom	3	2	30.1	8.0	16.7	7.2		4.1		7.8	
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	IS8(N)	5:02	Surface	1	1	29.9	8.1	16.0	7.0		3.3	7.5	3.9	5.7
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	IS8(N)	5:02	Surface	1	2	29.9	7.9	16.3	6.9	7.0	4.1		4.2	
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	IS8(N)	5:02	Middle	2	1									
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	IS8(N)	5:02	Middle	2	2									
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	IS8(N)	5:02	Bottom	3	1	29.9	8.1	16.0	7.0	7.0	11.4		7.4	
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	IS8(N)	5:02	Bottom	3	2	29.9	7.9	16.3	6.9		11.1		7.2	
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	IS(Mf)9	5:09	Surface	1	1	29.9	8.1	16.3	7.0		5.5	5.7	6.1	6.0
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	IS(Mf)9	5:09	Surface	1	2	29.9	7.9	16.6	6.9	7.0	5.3		6.7	
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	IS(Mf)9	5:09	Middle	2	1									
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	IS(Mf)9	5:09	Middle	2	2									
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	IS(Mf)9	5:09	Bottom	3	1	29.9	8.1	16.4	7.0	7.0	6.0		5.4	
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	IS(Mf)9	5:09	Bottom	3	2	29.9	7.9	16.7	6.9		5.8		5.9	
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	IS(Mf)11	3:36	Surface	1	1	29.8	8.0	15.0	6.6		4.1	5.3	4.6	5.1
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	IS(Mf)11	3:36	Surface	1	2	29.8	7.9	15.2	6.5	6.7	4.9		5.4	
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	IS(Mf)11	3:36	Middle	2	1	30.0	8.1	15.9	6.9		3.8		5.1	
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	IS(Mf)11	3:36	Middle	2	2	30.0	8.0	16.2	6.8		3.6		4.5	
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	IS(Mf)11	3:36	Bottom	3	1	28.0	7.9	22.7	4.3	4.3	7.4		4.9	
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	IS(Mf)11	3:36	Bottom	3	2	28.0	7.8	22.7	4.2		7.8		6.1	
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	SR7	3:30	Surface	1	1	29.9	8.0	14.6	6.6		3.9	5.8	6.0	5.5
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	SR7	3:30	Surface	1	2	29.9	7.9	14.9	6.6	6.6	3.8		5.4	
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	SR7	3:30	Middle	2	1									
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	SR7	3:30	Middle	2	2									
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	SR7	3:30	Bottom	3	1	29.9	8.0	15.7	6.4	6.4	7.9		5.0	
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	SR7	3:30	Bottom	3	2	29.9	7.9	15.9	6.4		7.5		5.7	
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	IS17	4:36	Surface	1	1	30.0	8.1	16.3	7.1		3.5	3.5	7.5	7.4
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	IS17	4:36	Surface	1	2	30.0	8.0	16.6	7.2	7.1	4.1		7.1	
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	IS17	4:36	Middle	2	1	30.0	8.1	16.3	7.1		3.2		7.9	
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	IS17	4:36	Middle	2	2	30.0	8.0	16.6	7.1		3.9		8.1	
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	IS17	4:36	Bottom	3	1	30.0	8.1	16.7	7.1	7.1	3.0		7.6	
TMCLKL	HY/2012/08	2019/08/12	Mid-flood	IS17	4:36	Bottom	3	2	30.0	7.9	17.0	7.0		3.1		6.2	

Note: Indicates Exceedance of Action Level  
Indicates Exceedance of Limit Level



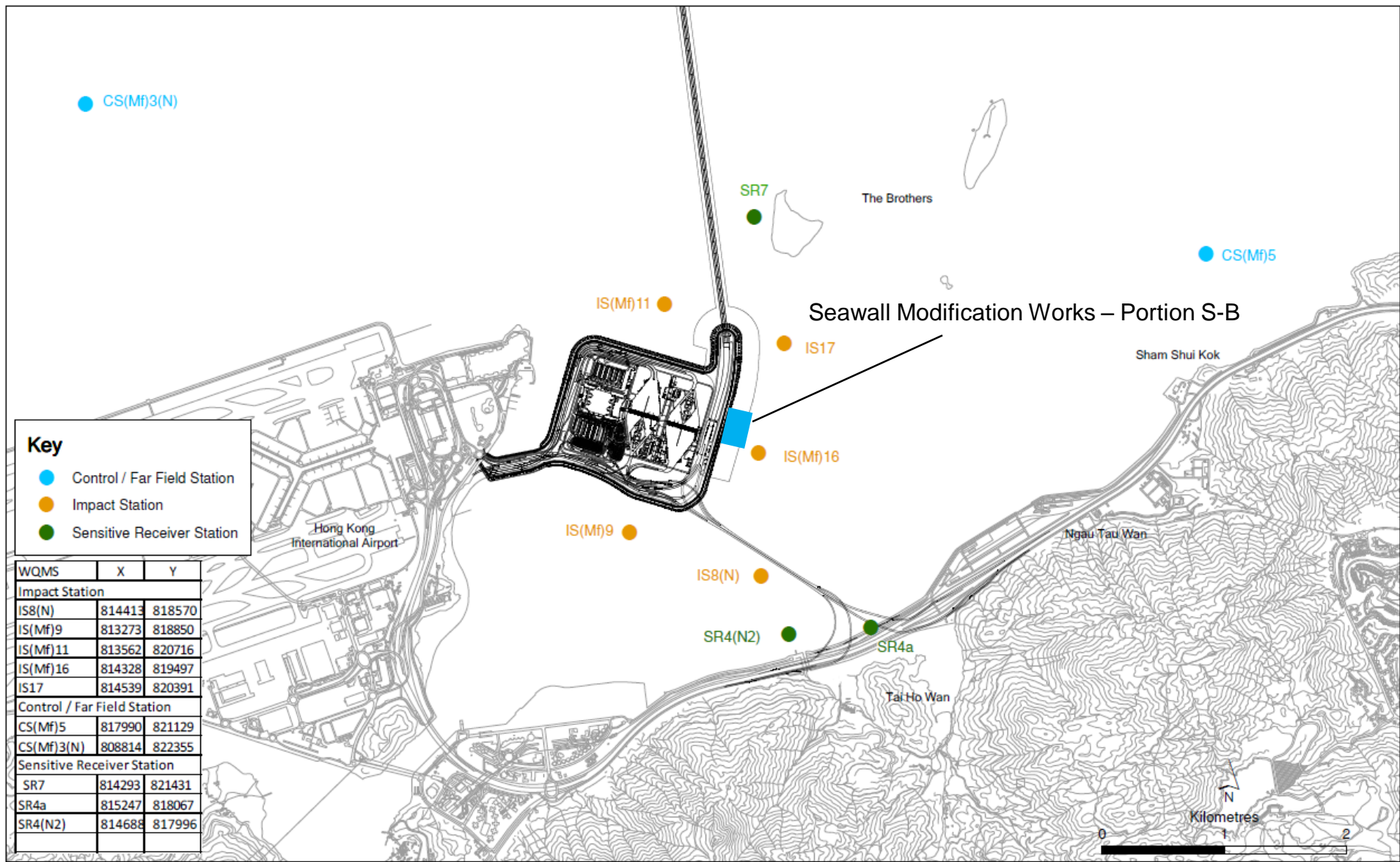


Figure 1

Email  
message

Environmental  
Resources  
Management

**To** Ramboll Hong Kong Limited (ENPO)

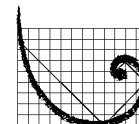
**From** ERM- Hong Kong, Limited

**Ref/Project number** Contract No. HY/2012/08 Tuen Mun–Chek Lap  
Kok Link–Northern Connection Sub-sea Tunnel  
Section

**Subject** Notification of Exceedance for Water Quality  
Impact Monitoring

**Date** 20 August 2019

2507,  
25/F One Harbourfront,  
18 Tak Fung Street,  
Hung Hom, Hong Kong  
Telephone: (852) 2271 3113  
Facsimile: (852) 2723 5660  
E-mail: jasmine.ng@erm.com



**ERM**

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Dear Sir or Madam,

Please find the Notification of Exceedance (NOE) of the following Log no.:

Action Level Exceedance

0212330\_14 August 2019\_ Bottom DO\_E\_Station IS(Mf)16

0212330\_14 August 2019\_ Bottom DO\_E\_Station IS17

0212330\_14 August 2019\_ Bottom DO\_F\_Station IS(Mf)11

A total of three Action Level exceedances were recorded on 14 August 2019.

Regards,



Dr Jasmine Ng  
Environmental Team Leader

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ERM-Hong Kong, Limited

CONTRACT NO. HY/2012/08

TUEN MUN - CHEK LAP KOK LINK -

NORTHERN CONNECTION SUB-SEA TUNNEL SECTION

Marine Water Quality Impact Monitoring  
Notification of Exceedance

Log No.	<b>Action Level Exceedance</b> 0212330_14 August 2019_ Bottom DO_E_Station IS(Mf)16 0212330_14 August 2019_ Bottom DO_E_Station IS17 0212330_14 August 2019_ Bottom DO_F_Station IS(Mf)11 [Total No. of Exceedances = 3]		
Date	14 August 2019 (Measured) 16 August 2019 ( <i>In situ</i> results received by ERM) 23 August 2019 (Laboratory results received by ERM)		
Monitoring Station	CS(Mf)5, SR4a, SR4(N2), IS8(N), IS(Mf)16, IS(Mf)9, CS(Mf)3(N), SR7, IS17, IS(Mf)11		
Parameter(s) with Exceedance(s)	Dissolved Oxygen (mg/L)		
Action Levels	DO	Surface and Middle 5.0 mg/L	Bottom 4.7 mg/L
Limit Levels	DO	Surface and Middle 4.2 mg/L	Bottom 3.6 mg/L
Measured Levels	Action Level Exceedance for DO (4.6 mg/L) is observed at IS(Mf)16 at Bottom Level during mid-ebb tide. Action Level Exceedance for DO (4.4 mg/L) is observed at IS17 at Bottom Level during mid-ebb tide. Action Level Exceedance for DO (4.6 mg/L) is observed at IS(Mf)11 at Bottom Level during mid-flood tide.		
Works Undertaken (at the time of monitoring event)	According to the information provided by the Contractor, Seawall Modification Works was carried out on 14 August 2019.		
Possible Reason for Action or Limit Level Exceedance(s)	<p>The exceedances are unlikely to be due to the Contract, in view of the following:</p> <ul style="list-style-type: none"> <li>All monitored parameters, except DO, at all monitoring stations were in compliance with the Action and Limit Levels during both mid-ebb and mid-flood tides on the same day.</li> <li>No discharge of organic matters into waters from landside works area was recorded.</li> <li>IS(Mf)11 is far away (&gt;2 km) from the Seawall Modification Works Area (<i>Figure 1</i>), thus the observed exceedance should not be affected by the marine works under this Contract. Therefore, the exceedance is unlikely to be related to this Contract.</li> <li>The DO pattern at IS(Mf)16 and IS17 during mid-ebb tide and IS(Mf)11 during mid-flood tide were similar to the their corresponding control station where the bottom-depth DO levels were generally lower. Lower bottom-depth DO levels may be possibly caused by the stratification of seawater during summer when the freshwater discharged from the Pearl River tended to form a surface layer of lower salinity water, which is probably responsible for the lower Salinity recorded at the surface and middle levels compared to the higher Salinity recorded at the bottom level of the monitoring stations. The stratification of seawater in the water column is likely a contributing factor to the results of lower levels of DO at the bottom level.</li> </ul>		
Actions Taken/ To Be Taken	No immediate action is considered necessary. The ET will monitor for future trends in exceedances.		
Remarks	The monitoring results on 14 August 2019 and locations of water quality monitoring stations are attached.		

Project	Contract	Date (yyyy-mm-dd)	Tide	Station	Start Time	Level	Lev_Cod	Replicate	Temperature (°C)	pH	Salinity (ppt)	DO (mg/L)	Average DO (mg/L)	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	CS(Mf)5	12:46	Surface	1	1	30.1	8.0	18.4	6.1	5.6	3.0	5.1	4.2	6.1
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	CS(Mf)5	12:46	Surface	1	2	30.0	8.0	18.4	6.1		3.0		4.1	
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	CS(Mf)5	12:46	Middle	2	1	29.3	7.9	21.1	5.0		4.5		4.5	
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	CS(Mf)5	12:46	Middle	2	2	29.3	7.9	21.2	5.0	3.8	4.6	5.1	5.7	6.1
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	CS(Mf)5	12:46	Bottom	3	1	28.0	7.9	26.6	3.8		7.7		8.8	
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	CS(Mf)5	12:46	Bottom	3	2	28.0	7.9	26.6	3.8	5.8	7.6	3.8	9.2	8.3
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	CS(Mf)3(N)	12:03	Surface	1	1	30.6	7.9	16.4	6.1		2.9		7.0	
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	CS(Mf)3(N)	12:03	Surface	1	2	30.6	7.9	16.5	6.1		2.9		6.8	
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	CS(Mf)3(N)	12:03	Middle	2	1	29.7	7.9	18.9	5.4	5.3	3.9	3.8	6.9	8.3
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	CS(Mf)3(N)	12:03	Middle	2	2	29.7	7.9	18.9	5.4		3.8		8.4	
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	CS(Mf)3(N)	12:03	Bottom	3	1	29.6	7.9	19.7	5.3	6.2	4.5	7.4	10.5	6.6
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	CS(Mf)3(N)	12:03	Bottom	3	2	29.7	7.9	19.6	5.3		4.5		10.1	
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	IS(Mf)16	11:16	Surface	1	1	30.1	8.0	18.5	6.2	4.6	4.8	4.1	5.1	7.6
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	IS(Mf)16	11:16	Surface	1	2	30.2	8.0	18.5	6.2		4.8		5.4	
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	IS(Mf)16	11:16	Middle	2	1									
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	IS(Mf)16	11:16	Middle	2	2					6.4		4.1		7.6
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	IS(Mf)16	11:16	Bottom	3	1	28.6	7.9	24.5	4.6		9.9		7.8	
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	IS(Mf)16	11:16	Bottom	3	2	28.6	7.9	24.4	4.6	5.6	9.9	5.8	8.2	6.0
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	SR4a	11:05	Surface	1	1	30.4	8.0	17.4	6.4		3.2		6.6	
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	SR4a	11:05	Surface	1	2	30.4	8.0	17.3	6.4		3.2		7.3	
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	SR4a	11:05	Middle	2	1					6.3		4.1		7.6
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	SR4a	11:05	Middle	2	2									
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	SR4a	11:05	Bottom	3	1	30.0	7.9	18.6	5.6	5.6	4.9	5.8	8.3	6.4
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	SR4a	11:05	Bottom	3	2	30.0	7.9	18.6	5.6		4.9		8.2	
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	SR4(N2)	11:00	Surface	1	1	30.5	8.0	17.4	6.3		3.3		5.1	
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	SR4(N2)	11:00	Surface	1	2	30.5	8.0	17.4	6.3	6.1	3.3	11.0	6.3	6.0
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	SR4(N2)	11:00	Middle	2	1									
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	SR4(N2)	11:00	Middle	2	2					5.6		3.4		7.6
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	SR4(N2)	11:00	Bottom	3	1	30.0	7.9	18.8	5.6		8.2		7.2	
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	SR4(N2)	11:00	Bottom	3	2	30.0	7.9	18.8	5.6		8.2		6.9	
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	IS8(N)	10:55	Surface	1	1	30.4	8.0	18.2	6.1	6.1	9.9	3.5	4.3	8.0
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	IS8(N)	10:55	Surface	1	2	30.4	8.0	18.2	6.1		9.9		4.1	
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	IS8(N)	10:55	Middle	2	1									
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	IS8(N)	10:55	Middle	2	2					6.6		3.4		7.6
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	IS8(N)	10:55	Bottom	3	1	29.9	8.0	19.0	5.6		12.2		7.2	
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	IS8(N)	10:55	Bottom	3	2	29.9	8.0	19.0	5.6	12.1	8.4			
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	IS(Mf)9	10:48	Surface	1	1	30.6	8.1	17.7	6.6	6.6	3.3	3.5	7.5	8.0
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	IS(Mf)9	10:48	Surface	1	2	30.6	8.1	17.7	6.6		3.3		7.5	
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	IS(Mf)9	10:48	Middle	2	1									
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	IS(Mf)9	10:48	Middle	2	2					6.5		3.4		7.6
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	IS(Mf)9	10:48	Bottom	3	1	30.4	8.1	17.8	6.5		3.6		7.9	
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	IS(Mf)9	10:48	Bottom	3	2	30.4	8.1	17.8	6.4	3.6	9.0			
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	IS(Mf)11	11:31	Surface	1	1	30.2	8.0	16.9	6.3	6.0	2.7	3.4	4.6	7.6
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	IS(Mf)11	11:31	Surface	1	2	30.2	8.0	17.0	6.3		2.6		5.1	
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	IS(Mf)11	11:31	Middle	2	1	29.7	7.9	18.4	5.6		3.3		7.2	
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	IS(Mf)11	11:31	Middle	2	2	29.7	7.9	18.4	5.6	5.5	3.2	3.4	8.3	7.6
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	IS(Mf)11	11:31	Bottom	3	1	29.6	7.9	19.0	5.5		4.2		10.2	
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	IS(Mf)11	11:31	Bottom	3	2	29.6	7.9	19.0	5.5	6.3	4.2	2.9	10.4	5.7
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	SR7	12:26	Surface	1	1	30.2	7.9	16.8	6.3		2.2		5.4	
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	SR7	12:26	Surface	1	2	30.2	8.0	16.8	6.3		2.2		5.6	
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	SR7	12:26	Middle	2	1					5.7		3.4		7.6
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	SR7	12:26	Middle	2	2									
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	SR7	12:26	Bottom	3	1	29.8	7.9	18.7	5.7	6.1	3.6	5.2	5.8	5.9
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	SR7	12:26	Bottom	3	2	29.8	7.9	18.6	5.7		3.5		6.1	
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	IS17	11:22	Surface	1	1	30.3	8.0	18.5	6.3		4.9		5.0	
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	IS17	11:22	Surface	1	2	30.3	8.0	18.5	6.3	6.1	4.9	5.2	4.3	5.9
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	IS17	11:22	Middle	2	1	29.9	8.0	19.1	5.9		3.8		4.7	
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	IS17	11:22	Middle	2	2	29.9	8.0	19.0	5.9	3.8	5.6			



Project	Contract	Date (yyyy-mm-dd)	Tide	Station	Start Time	Level	Lev_Cod	Replicate	Temperature (°C)	pH	Salinity (ppt)	DO (mg/L)	Average DO (mg/L)	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	IS17	11:22	Bottom	3	1	28.5	7.9	25.0	4.4	4.4	6.8		7.7	
TMCLKL	HY/2012/08	2019/08/14	Mid-Ebb	IS17	11:22	Bottom	3	2	28.5	7.9	25.0	4.4		6.8		7.9	
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	CS(Mf)5	4:38	Surface	1	1	30.1	7.9	16.8	6.2		3.2	2.4	6.3	7.9
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	CS(Mf)5	4:38	Surface	1	2	30.1	7.9	16.8	6.2	6.1	3.2		7.3	
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	CS(Mf)5	4:38	Middle	2	1	29.9	7.9	19.2	6.0		2.0		8.1	
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	CS(Mf)5	4:38	Middle	2	2	29.9	7.9	19.2	6.0		2.0		7.5	
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	CS(Mf)5	4:38	Bottom	3	1	28.5	7.9	25.3	4.7	4.7	2.0		9.7	
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	CS(Mf)5	4:38	Bottom	3	2	28.5	7.9	25.3	4.7		2.0		8.3	
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	CS(Mf)3(N)	5:56	Surface	1	1	29.9	7.9	16.6	6.0		4.2	5.9	4.3	6.2
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	CS(Mf)3(N)	5:56	Surface	1	2	29.9	7.9	16.6	6.0	6.0	4.2		5.1	
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	CS(Mf)3(N)	5:56	Middle	2	1	29.9	7.9	17.1	5.9		4.0		6.6	
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	CS(Mf)3(N)	5:56	Middle	2	2	29.9	7.9	17.1	5.9		4.0		6.1	
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	CS(Mf)3(N)	5:56	Bottom	3	1	29.7	7.9	18.9	5.5	5.5	9.4		7.5	
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	CS(Mf)3(N)	5:56	Bottom	3	2	29.7	7.9	18.9	5.4		9.3		7.6	
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	IS(Mf)16	6:18	Surface	1	1	30.0	8.0	18.0	6.2		3.5	3.5	6.9	7.9
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	IS(Mf)16	6:18	Surface	1	2	30.0	8.0	18.1	6.2	6.2	3.5		7.5	
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	IS(Mf)16	6:18	Middle	2	1									
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	IS(Mf)16	6:18	Middle	2	2									
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	IS(Mf)16	6:18	Bottom	3	1	30.0	8.0	18.0	6.2	6.2	3.6		8.0	
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	IS(Mf)16	6:18	Bottom	3	2	30.0	8.0	18.0	6.2		3.5		9.0	
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	SR4a	6:27	Surface	1	1	30.2	8.0	17.5	5.9		4.1	5.6	5.5	6.4
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	SR4a	6:27	Surface	1	2	30.2	8.0	17.5	6.0	6.0	4.1		6.0	
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	SR4a	6:27	Middle	2	1									
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	SR4a	6:27	Middle	2	2									
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	SR4a	6:27	Bottom	3	1	29.9	7.9	18.7	5.3	5.3	7.1		6.2	
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	SR4a	6:27	Bottom	3	2	29.9	7.9	18.7	5.3		7.1		7.7	
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	SR4(N2)	6:32	Surface	1	1	30.1	8.0	17.2	6.1		3.5	4.4	6.4	5.8
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	SR4(N2)	6:32	Surface	1	2	30.1	8.0	17.2	6.1	6.1	3.4		5.6	
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	SR4(N2)	6:32	Middle	2	1									
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	SR4(N2)	6:32	Middle	2	2									
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	SR4(N2)	6:32	Bottom	3	1	30.0	8.0	18.0	5.9	5.9	5.4		6.0	
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	SR4(N2)	6:32	Bottom	3	2	30.0	8.0	18.0	5.9		5.3		5.2	
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	IS8(N)	6:38	Surface	1	1	30.0	8.0	17.3	6.1		4.1	4.7	10.0	13.6
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	IS8(N)	6:38	Surface	1	2	30.0	8.0	17.3	6.1	6.1	4.2		10.2	
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	IS8(N)	6:38	Middle	2	1									
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	IS8(N)	6:38	Middle	2	2									
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	IS8(N)	6:38	Bottom	3	1	30.0	8.0	17.5	6.0	6.0	5.3		17.1	
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	IS8(N)	6:38	Bottom	3	2	30.0	8.0	17.5	6.0		5.3		16.9	
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	IS(Mf)9	6:45	Surface	1	1	29.9	8.0	17.3	6.1		4.8	5.9	6.3	8.9
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	IS(Mf)9	6:45	Surface	1	2	29.9	8.0	17.3	6.1	6.1	4.9		6.1	
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	IS(Mf)9	6:45	Middle	2	1									
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	IS(Mf)9	6:45	Middle	2	2									
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	IS(Mf)9	6:45	Bottom	3	1	29.9	8.0	17.8	6.1	6.1	6.9		11.9	
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	IS(Mf)9	6:45	Bottom	3	2	29.9	8.0	17.8	6.1		7.0		11.1	
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	IS(Mf)11	6:00	Surface	1	1	30.1	8.0	17.2	6.2		3.6	8.0	4.4	6.4
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	IS(Mf)11	6:00	Surface	1	2	30.1	8.0	17.2	6.2	5.8	3.6		4.2	
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	IS(Mf)11	6:00	Middle	2	1	29.5	8.0	20.6	5.3		4.8		7.3	
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	IS(Mf)11	6:00	Middle	2	2	29.5	8.0	20.7	5.3		4.8		6.5	
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	IS(Mf)11	6:00	Bottom	3	1	28.7	7.9	24.5	4.6	4.6	15.7		8.4	
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	IS(Mf)11	6:00	Bottom	3	2	28.7	7.9	24.5	4.6		15.7		7.3	
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	SR7	4:58	Surface	1	1	30.0	7.9	17.1	5.9		3.6	3.6	5.8	6.4
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	SR7	4:58	Surface	1	2	30.0	7.9	17.1	5.9	5.9	3.6		5.4	
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	SR7	4:58	Middle	2	1									
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	SR7	4:58	Middle	2	2									
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	SR7	4:58	Bottom	3	1	29.9	7.9	17.4	6.0	6.0	3.6		6.9	
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	SR7	4:58	Bottom	3	2	29.9	7.9	17.4	6.0		3.6		7.4	
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	IS17	6:11	Surface	1	1	30.0	8.0	18.0	6.2		3.4	3.3	7.1	7.3
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	IS17	6:11	Surface	1	2	30.0	8.0	18.0	6.2	6.2	3.4		6.4	
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	IS17	6:11	Middle	2	1	30.0	8.0	18.1	6.1		3.4		6.2	
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	IS17	6:11	Middle	2	2	30.0	8.0	18.2	6.1		3.4		6.7	
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	IS17	6:11	Bottom	3	1	29.8	8.0	18.9	5.9	5.9	3.1		8.1	
TMCLKL	HY/2012/08	2019/08/14	Mid-flood	IS17	6:11	Bottom	3	2	29.8	8.0	18.9	5.9		3.1		9.2	

Note: Indicates Exceedance of Action Level  
Indicates Exceedance of Limit Level

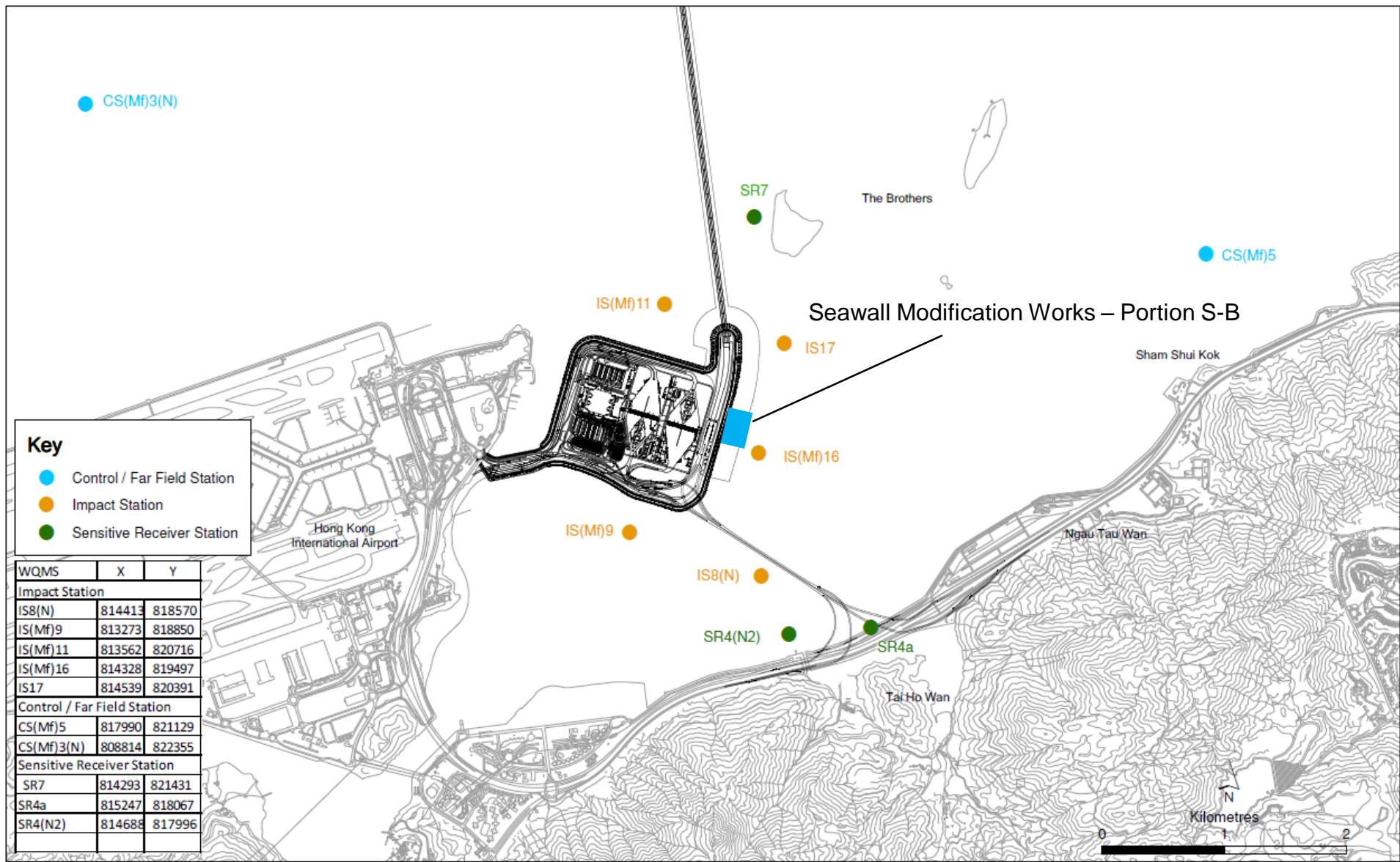


Figure 1

Email  
message

Environmental  
Resources  
Management

**To** Ramboll Hong Kong Limited (ENPO)

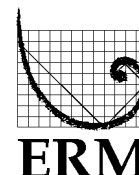
**From** ERM- Hong Kong, Limited

**Ref/Project number** Contract No. HY/2012/08 Tuen Mun–Chek Lap  
Kok Link–Northern Connection Sub-sea Tunnel  
Section

**Subject** Notification of Exceedance for Water Quality  
Impact Monitoring

**Date** 30 August 2019

2507,  
25/F One Harbourfront,  
18 Tak Fung Street,  
Hung Hom, Hong Kong  
Telephone: (852) 2271 3113  
Facsimile: (852) 2723 5660  
E-mail: jasmine.ng@erm.com



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Dear Sir or Madam,

Please find the Notification of Exceedance (NOE) of the following Log no.:

Action Level Exceedance

0212330\_19 August 2019\_ Surface & Middle DO\_E\_Station IS(Mf)16  
0212330\_19 August 2019\_ Bottom DO\_E\_Station IS(Mf)16  
0212330\_19 August 2019\_ Surface & Middle DO\_E\_Station SR4a  
0212330\_19 August 2019\_ Bottom DO\_E\_Station SR4a  
0212330\_19 August 2019\_ Surface & Middle DO\_E\_Station SR4(N2)  
0212330\_19 August 2019\_ Bottom DO\_E\_Station SR4(N2)  
0212330\_19 August 2019\_ Bottom DO\_E\_Station IS8(N)  
0212330\_19 August 2019\_ Bottom DO\_E\_Station IS(Mf)11  
0212330\_19 August 2019\_ Bottom DO\_E\_Station IS17  
0212330\_19 August 2019\_ Surface & Middle DO\_F\_Station IS(Mf)11  
0212330\_19 August 2019\_ Bottom DO\_F\_Station IS(Mf)11

A total of eleven Action Level exceedances were recorded on 19 August 2019.

Regards,

Dr Jasmine Ng  
Environmental Team Leader

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ERM-Hong Kong, Limited

CONTRACT NO. HY/2012/08

TUEN MUN – CHEK LAP KOK LINK –  
NORTHERN CONNECTION SUB-SEA TUNNEL SECTION

Marine Water Quality Impact Monitoring  
Notification of Exceedance

Log No.	<p align="center"><b>Action Level Exceedance</b></p> <p align="center">0212330_19 August 2019_ Surface &amp; Middle DO_E_Station IS(Mf)16          0212330_19 August 2019_ Bottom DO_E_Station IS(Mf)16          0212330_19 August 2019_ Surface &amp; Middle DO_E_Station SR4a          0212330_19 August 2019_ Bottom DO_E_Station SR4a          0212330_19 August 2019_ Surface &amp; Middle DO_E_Station SR4(N2)          0212330_19 August 2019_ Bottom DO_E_Station SR4(N2)          0212330_19 August 2019_ Bottom DO_E_Station IS8(N)          0212330_19 August 2019_ Bottom DO_E_Station IS(Mf)11          0212330_19 August 2019_ Bottom DO_E_Station IS17          0212330_19 August 2019_ Surface &amp; Middle DO_F_Station IS(Mf)11          0212330_19 August 2019_ Bottom DO_F_Station IS(Mf)11          [Total No. of Exceedances = 11]</p>		
Date	<p align="center">19 August 2019 (Measured)          21 August 2019 (<i>In situ</i> results received by ERM)          28 August 2019 (Laboratory results received by ERM)</p>		
Monitoring Station	<p align="center">CS(Mf)5, SR4a, SR4(N2), IS8(N), IS(Mf)16, IS(Mf)9, CS(Mf)3(N), SR7, IS17, IS(Mf)11</p>		
Parameter(s) with Exceedance(s)	<p align="center">Dissolved Oxygen (mg/L)</p>		
Action Levels	DO	Surface and Middle 5.0 mg/L	Bottom 4.7 mg/L
Limit Levels	DO	Surface and Middle 4.2 mg/L	Bottom 3.6 mg/L
Measured Levels	<p>Action Level Exceedance for DO (4.8 mg/L) is observed at IS(Mf)16 at Surface &amp; Middle Level during mid-ebb tide.</p> <p>Action Level Exceedance for DO (4.3 mg/L) is observed at IS(Mf)16 at Bottom Level during mid-ebb tide.</p> <p>Action Level Exceedance for DO (4.7 mg/L) is observed at SR4a at Surface &amp; Middle Level during mid-ebb tide.</p> <p>Action Level Exceedance for DO (4.5 mg/L) is observed at SR4a at Bottom Level during mid-ebb tide.</p> <p>Action Level Exceedance for DO (4.8 mg/L) is observed at SR4(N2) at Surface &amp; Middle Level during mid-ebb tide.</p> <p>Action Level Exceedance for DO (4.6 mg/L) is observed at SR4(N2) at Bottom Level during mid-ebb tide.</p> <p>Action Level Exceedance for DO (4.6 mg/L) is observed at IS8(N) at Bottom Level during mid-ebb tide.</p> <p>Action Level Exceedance for DO (4.2 mg/L) is observed at IS(Mf)11 at Bottom Level during mid-ebb tide.</p> <p>Action Level Exceedance for DO (4.2 mg/L) is observed at IS17 at Bottom Level during mid-ebb tide.</p> <p>Action Level Exceedance for DO (4.7 mg/L) is observed at IS(Mf)11 at Surface &amp; Middle Level during mid-flood tide.</p> <p>Action Level Exceedance for DO (4.3 mg/L) is observed at IS(Mf)11 at Bottom Level during mid-flood tide..</p>		
Works Undertaken (at the time of monitoring event)	<p>According to the information provided by the Contractor, Seawall Modification Works was carried out on 19 August 2019.</p>		



<b>Possible Reason for Action or Limit Level Exceedance(s)</b>	<p>The exceedances are unlikely to be due to the Contract, in view of the following:</p> <ul style="list-style-type: none"> <li>• All monitored parameters, except DO, at all monitoring stations were in compliance with the Action and Limit Levels during both mid-ebb and mid-flood tides on the same day.</li> <li>• No discharge of organic matters into waters from landside works area was recorded.</li> <li>• IS(Mf)11, SR4a, SR4(N2) and IS8(N) are far away (&gt;1.5 km) from the Seawall Modification Works Area (Figure 1), thus the observed exceedance should not be affected by the marine works under this Contract. Therefore, the exceedance is unlikely to be related to this Contract.</li> <li>• The DO pattern at IS(Mf)16, SR4a, SR4(N2), IS8(N), IS(Mf)11 and IS17 during mid-ebb tide and IS(Mf)11 during mid-flood tide were similar to the their corresponding control station where the bottom-depth DO levels were generally lower. Lower bottom-depth DO levels may be possibly caused by the stratification of seawater during summer when the freshwater discharged from the Pearl River tended to form a surface layer of lower salinity water, which is probably responsible for the lower Salinity recorded at the surface and middle levels compared to the higher Salinity recorded at the bottom level of the monitoring stations. The stratification of seawater in the water column is likely a contributing factor to the results of lower levels of DO at the bottom level.</li> <li>• Bottom-depth DO levels at IS(Mf)11 was similar to the corresponding control stations, CS(Mf)5, during mid-flood tide, in which the recorded Bottom-depth DO levels at the corresponding control station were below Action Level.</li> <li>• Surface &amp; Middle-depth DO levels at IS(Mf)11 were similar to the corresponding control stations, CS(Mf)5, during mid-flood tide, in which the recorded Surface &amp; Middle-depth DO levels at the corresponding control station were below Action Level.</li> <li>• As reported by the marine mammal observer, no discharge of organic matters into waters from landside works area was recorded. Therefore, the exceedance recorded at IS(Mf)16 during mid-ebb tide is likely to be due to natural fluctuation of water quality and is unlikely to be related to this Contract. Exceedances recorded at SR4a, SR4(N2), IS8(N), IS(Mf)11 and IS17 during mid-ebb tide and IS(Mf)11 during mid-flood tide are unlikely to be related to this Contract as these stations are further than IS(Mf)16.</li> </ul>
<b>Actions Taken / To Be Taken</b>	<p>No immediate action is considered necessary. The ET will monitor for future trends in exceedances.</p>
<b>Remarks</b>	<p>The monitoring results on 19 August 2019 and locations of water quality monitoring stations are attached.</p>

Project	Contract	Date (yyyy-mm-dd)	Tide	Station	Start Time	Level	Lev_Cod	Replicate	Temperature (°C)	pH	Salinity (ppt)	DO (mg/L)	Average DO (mg/L)	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS			
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	CS(Mf)5	15:37	Surface	1	1	28.2	8.0	22.2	5.0	4.6	3.8	8.9	3.8	4.0			
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	CS(Mf)5	15:37	Surface	1	2	28.9	7.9	21.8	5.0		4.1		3.6				
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	CS(Mf)5	15:37	Middle	2	1	26.6	8.0	26.8	4.1		8.2		3.6				
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	CS(Mf)5	15:37	Middle	2	2	27.3	7.9	26.4	4.1		8.0		3.7				
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	CS(Mf)5	15:37	Bottom	3	1	25.8	8.1	30.1	3.8	3.8	14.4	8.9	4.7	4.0			
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	CS(Mf)5	15:37	Bottom	3	2	26.5	7.9	29.7	3.7	3.8	14.6		4.7				
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	CS(Mf)3(N)	14:43	Surface	1	1	28.9	8.0	19.6	5.6	5.3	3.0	4.9	1.9	2.1			
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	CS(Mf)3(N)	14:43	Surface	1	2	29.7	7.9	19.2	5.5		3.1		1.9				
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	CS(Mf)3(N)	14:43	Middle	2	1	28.0	8.0	22.9	5.1		4.8		2.1				
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	CS(Mf)3(N)	14:43	Middle	2	2	28.8	7.9	22.4	5.1		4.9		2.1				
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	CS(Mf)3(N)	14:43	Bottom	3	1	27.5	8.0	24.5	4.9	4.8	6.5	4.9	2.4	2.1			
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	CS(Mf)3(N)	14:43	Bottom	3	2	28.3	7.9	24.0	4.7	4.8	6.9		2.4				
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	IS(Mf)16	13:56	Surface	1	1	27.8	8.1	23.3	4.8	4.8	7.8	6.4	9.2	8.7			
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	IS(Mf)16	13:56	Surface	1	2	28.6	7.9	22.9	4.8		7.2		8.8				
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	IS(Mf)16	13:56	Middle	2	1										6.4		8.7
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	IS(Mf)16	13:56	Middle	2	2												
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	IS(Mf)16	13:56	Bottom	3	1	26.2	8.0	28.5	4.4	4.3	5.2	10.1	8.5	6.1			
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	IS(Mf)16	13:56	Bottom	3	2	27.0	7.9	28.1	4.2	4.3	5.4		8.2				
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	SR4a	13:47	Surface	1	1	27.8	8.0	22.9	4.6	4.7	8.6	10.1	8.9	6.1			
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	SR4a	13:47	Surface	1	2	28.5	7.9	22.6	4.7		8.2		8.3				
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	SR4a	13:47	Middle	2	1										10.1		6.1
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	SR4a	13:47	Middle	2	2												
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	SR4a	13:47	Bottom	3	1	27.6	8.0	23.7	4.5	4.5	11.9	10.8	3.4	9.0			
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	SR4a	13:47	Bottom	3	2	28.4	7.9	23.3	4.5	4.5	11.8		3.7				
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	SR4(N2)	13:42	Surface	1	1	28.0	8.0	22.3	4.7	4.8	10.0	10.8	8.4	9.0			
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	SR4(N2)	13:42	Surface	1	2	28.7	7.9	22.0	4.8		10.0		8.1				
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	SR4(N2)	13:42	Middle	2	1										10.8		9.0
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	SR4(N2)	13:42	Middle	2	2												
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	SR4(N2)	13:42	Bottom	3	1	27.8	8.0	22.8	4.6	4.6	11.7	10.7	9.7	12.1			
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	SR4(N2)	13:42	Bottom	3	2	28.6	7.9	22.5	4.6	4.6	11.6		9.6				
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	IS8(N)	13:36	Surface	1	1	27.9	8.1	22.9	5.1	5.1	10.6	10.7	14.4	12.1			
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	IS8(N)	13:36	Surface	1	2	28.6	7.9	22.7	5.1		10.4		13.4				
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	IS8(N)	13:36	Middle	2	1										10.7		12.1
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	IS8(N)	13:36	Middle	2	2												
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	IS8(N)	13:36	Bottom	3	1	27.6	8.1	23.8	4.6	4.6	10.9	4.6	10.6	6.1			
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	IS8(N)	13:36	Bottom	3	2	28.3	7.9	23.5	4.5	4.6	10.9		9.9				
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	IS(Mf)9	13:30	Surface	1	1	28.7	8.0	21.4	5.6	5.6	3.9	4.6	8.1	6.1			
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	IS(Mf)9	13:30	Surface	1	2	29.5	8.0	21.1	5.6		4.1		7.8				
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	IS(Mf)9	13:30	Middle	2	1										4.6		6.1
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	IS(Mf)9	13:30	Middle	2	2												
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	IS(Mf)9	13:30	Bottom	3	1	28.4	8.0	21.6	5.5	5.5	5.2	4.1	4.5	1.8			
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	IS(Mf)9	13:30	Bottom	3	2	29.1	8.0	21.3	5.5	5.5	5.1		4.0				
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	IS(Mf)11	15:07	Surface	1	1	29.3	8.1	19.7	5.7	5.4	2.3	4.1	2.4	1.8			
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	IS(Mf)11	15:07	Surface	1	2	30.1	7.9	19.4	5.6		2.4		2.7				
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	IS(Mf)11	15:07	Middle	2	1	28.6	8.1	20.5	5.2		3.3		1.6				
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	IS(Mf)11	15:07	Middle	2	2	29.4	7.9	20.1	5.2		3.4		1.5				
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	IS(Mf)11	15:07	Bottom	3	1	26.3	8.1	28.6	4.2	4.2	6.4	4.1	1.5	5.0			
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	IS(Mf)11	15:07	Bottom	3	2	27.1	7.9	28.0	4.1	4.2	6.9		1.3				
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	SR7	15:16	Surface	1	1	28.5	8.1	20.9	5.4	5.4	2.9	3.5	1.9	2.2			
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	SR7	15:16	Surface	1	2	29.3	7.9	20.5	5.4		3.0		1.6				
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	SR7	15:16	Middle	2	1										3.5		2.2
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	SR7	15:16	Middle	2	2												
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	SR7	15:16	Bottom	3	1	28.2	8.1	21.5	5.4	5.4	4.0	4.1	2.4	5.0			
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	SR7	15:16	Bottom	3	2	29.0	7.9	21.2	5.3	5.4	4.0		2.9				
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	IS17	14:03	Surface	1	1	28.8	8.0	20.2	5.3	5.1	3.8	6.3	2.7	5.0			
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	IS17	14:03	Surface	1	2	29.6	7.9	20.0	5.3		3.9		3.1				
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	IS17	14:03	Middle	2	1	27.8	8.0	22.4	5.0		6.2		4.7				
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	IS17	14:03	Middle	2	2	28.4	7.9	22.3	4.9		6.5		4.2				

Project	Contract	Date (yyyy-mm-dd)	Tide	Station	Start Time	Level	Lev_Cod	Replicate	Temperature (°C)	pH	Salinity (ppt)	DO (mg/L)	Average DO (mg/L)	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	IS17	14:03	Bottom	3	1	27.0	8.1	26.8	4.2	4.2	8.9		7.6	
TMCLKL	HY/2012/08	2019/08/19	Mid-Ebb	IS17	14:03	Bottom	3	2	27.9	7.9	26.6	4.1		8.3		7.8	
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	CS(Mf)5	7:56	Surface	1	1	28.8	7.8	20.1	5.0		3.3	6.6	3.1	3.6
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	CS(Mf)5	7:56	Surface	1	2	28.0	8.0	20.4	5.0	4.6	3.3		2.7	
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	CS(Mf)5	7:56	Middle	2	1	27.6	7.8	25.7	4.2		4.9		3.6	
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	CS(Mf)5	7:56	Middle	2	2	26.8	8.0	26.2	4.2		4.9		3.7	
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	CS(Mf)5	7:56	Bottom	3	1	26.7	7.8	29.5	3.7	3.8	11.5		4.1	
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	CS(Mf)5	7:56	Bottom	3	2	25.9	8.0	29.9	3.8		11.5		4.1	
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	CS(Mf)3(N)	8:44	Surface	1	1	28.4	8.0	17.0	5.5		3.7	4.3	5.5	4.7
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	CS(Mf)3(N)	8:44	Surface	1	2	29.2	7.9	16.7	5.5	5.4	3.7		5.2	
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	CS(Mf)3(N)	8:44	Middle	2	1	28.2	8.0	19.2	5.4		4.6		4.2	
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	CS(Mf)3(N)	8:44	Middle	2	2	29.0	7.8	18.9	5.3		4.7		4.7	
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	CS(Mf)3(N)	8:44	Bottom	3	1	28.2	8.0	19.4	5.4	5.4	4.6		4.4	
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	CS(Mf)3(N)	8:44	Bottom	3	2	29.0	7.9	19.1	5.3		4.7		4.4	
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	IS(Mf)16	9:28	Surface	1	1	28.0	8.1	21.6	5.2		4.5	6.0	2.6	3.6
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	IS(Mf)16	9:28	Surface	1	2	28.7	7.9	21.3	5.2	5.2	4.9		2.7	
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	IS(Mf)16	9:28	Middle	2	1									
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	IS(Mf)16	9:28	Middle	2	2									
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	IS(Mf)16	9:28	Bottom	3	1	27.8	8.1	22.2	5.3	5.2	7.4		4.4	
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	IS(Mf)16	9:28	Bottom	3	2	28.6	8.0	21.8	5.1		7.3		4.8	
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	SR4a	9:37	Surface	1	1	28.0	8.1	21.2	5.2		4.7	6.6	5.2	5.4
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	SR4a	9:37	Surface	1	2	28.7	7.9	20.9	5.2	5.2	4.8		4.8	
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	SR4a	9:37	Middle	2	1									
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	SR4a	9:37	Middle	2	2									
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	SR4a	9:37	Bottom	3	1	27.9	8.1	21.9	4.9	4.9	8.2		5.8	
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	SR4a	9:37	Bottom	3	2	28.6	8.0	21.6	4.9		8.8		5.8	
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	SR4(N2)	9:42	Surface	1	1	28.0	8.1	21.1	5.4		4.4	4.9	8.6	6.6
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	SR4(N2)	9:42	Surface	1	2	28.8	7.9	20.7	5.3	5.4	4.4		8.7	
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	SR4(N2)	9:42	Middle	2	1									
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	SR4(N2)	9:42	Middle	2	2									
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	SR4(N2)	9:42	Bottom	3	1	28.0	8.1	21.2	5.5	5.5	5.9		4.3	
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	SR4(N2)	9:42	Bottom	3	2	28.7	7.9	20.8	5.5		5.0		4.8	
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	IS8(N)	9:49	Surface	1	1	28.0	8.1	21.1	5.2		5.3	7.0	5.0	6.1
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	IS8(N)	9:49	Surface	1	2	28.8	7.9	20.7	5.1	5.2	5.9		4.7	
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	IS8(N)	9:49	Middle	2	1									
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	IS8(N)	9:49	Middle	2	2									
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	IS8(N)	9:49	Bottom	3	1	27.8	8.1	22.0	5.1	5.1	8.5		7.4	
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	IS8(N)	9:49	Bottom	3	2	28.6	7.9	21.6	5.0		8.2		7.2	
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	IS(Mf)9	9:56	Surface	1	1	28.1	8.1	21.3	5.4		4.4	6.3	5.5	5.5
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	IS(Mf)9	9:56	Surface	1	2	28.9	7.9	20.9	5.4	5.4	4.7		5.3	
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	IS(Mf)9	9:56	Middle	2	1									
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	IS(Mf)9	9:56	Middle	2	2									
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	IS(Mf)9	9:56	Bottom	3	1	28.0	8.1	21.6	5.5	5.5	8.0		5.7	
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	IS(Mf)9	9:56	Bottom	3	2	28.7	7.9	21.3	5.5		8.1		5.4	
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	IS(Mf)11	8:20	Surface	1	1	28.7	7.9	20.5	5.1		4.5	10.4	4.9	4.7
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	IS(Mf)11	8:20	Surface	1	2	28.7	7.9	20.5	5.1	4.7	4.5		4.9	
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	IS(Mf)11	8:20	Middle	2	1	28.0	7.9	24.6	4.3		13.5		4.9	
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	IS(Mf)11	8:20	Middle	2	2	28.0	7.9	24.6	4.3		13.5		4.9	
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	IS(Mf)11	8:20	Bottom	3	1	27.9	7.9	24.9	4.3	4.3	13.2		4.3	
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	IS(Mf)11	8:20	Bottom	3	2	27.9	7.9	24.9	4.3		13.2		4.2	
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	SR7	8:13	Surface	1	1	28.6	7.9	19.8	5.2		5.3	6.9	4.8	5.1
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	SR7	8:13	Surface	1	2	27.8	8.0	20.2	5.1	5.2	5.0		4.1	
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	SR7	8:13	Middle	2	1									
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	SR7	8:13	Middle	2	2									
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	SR7	8:13	Bottom	3	1	28.2	7.9	23.0	4.6	4.7	8.5		5.7	
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	SR7	8:13	Bottom	3	2	27.4	8.0	23.5	4.7		8.9		5.7	
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	IS17	9:21	Surface	1	1	28.0	8.1	21.7	5.2		3.6	3.6	3.2	4.3
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	IS17	9:21	Surface	1	2	28.7	7.9	21.3	5.1	5.0	3.6		3.5	
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	IS17	9:21	Middle	2	1	27.7	8.1	22.7	4.9		3.5		4.2	
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	IS17	9:21	Middle	2	2	28.4	7.9	22.6	4.8		3.7		4.6	
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	IS17	9:21	Bottom	3	1	27.4	8.1	23.8	4.9	4.9	3.5		5.1	
TMCLKL	HY/2012/08	2019/08/19	Mid-flood	IS17	9:21	Bottom	3	2	28.2	7.9	23.4	4.8		3.5		5.3	

Note: Indicates Exceedance of Action Level  
Indicates Exceedance of Limit Level



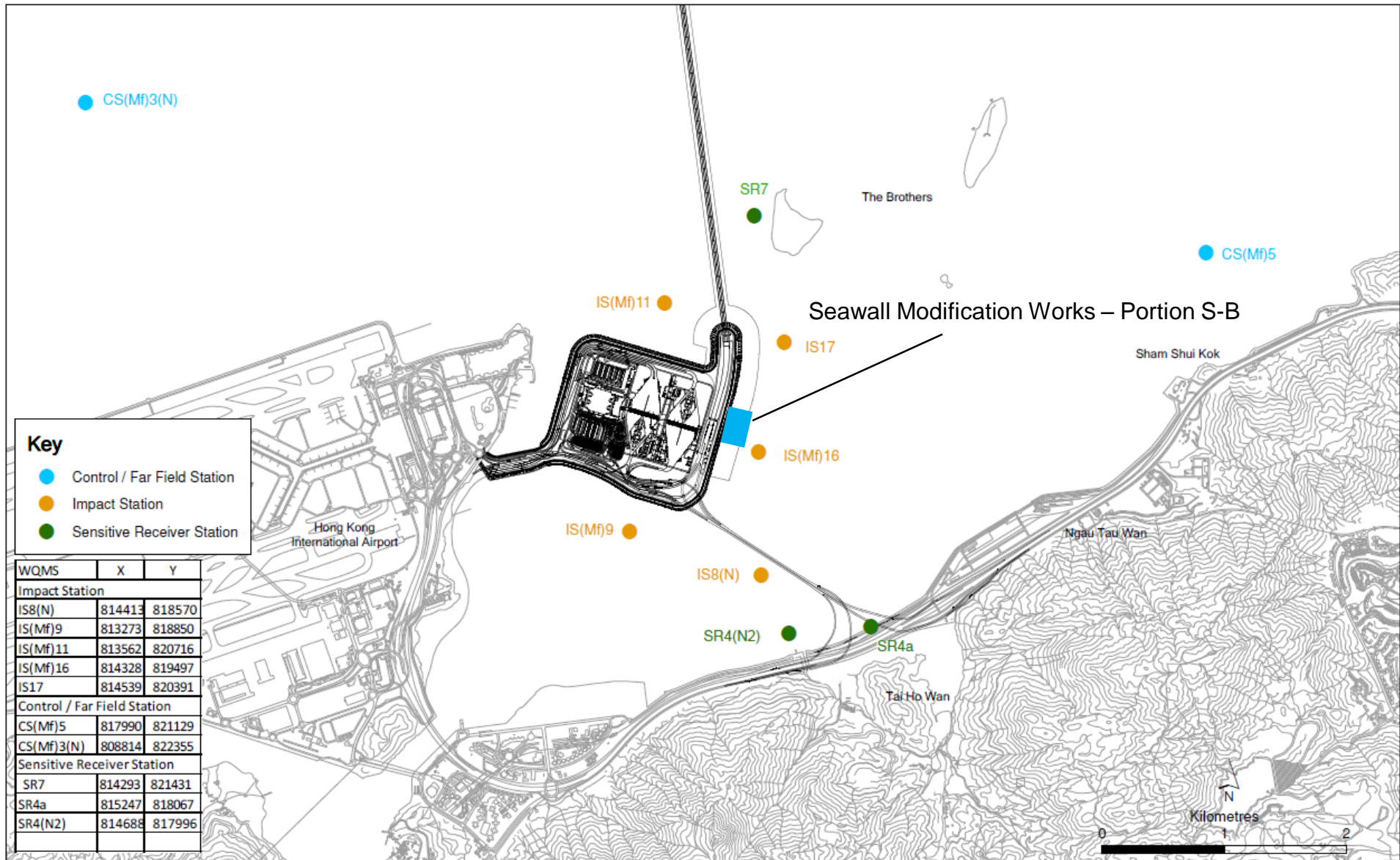


Figure 1

Email  
message

Environmental  
Resources  
Management

**To** Ramboll Hong Kong Limited (ENPO)

**From** ERM- Hong Kong, Limited

**Ref/Project number** Contract No. HY/2012/08 Tuen Mun–Chek Lap  
Kok Link–Northern Connection Sub-sea Tunnel  
Section

**Subject** Notification of Exceedance for Water Quality  
Impact Monitoring

**Date** 30 August 2019

2507,  
25/F One Harbourfront,  
18 Tak Fung Street,  
Hung Hom, Hong Kong  
Telephone: (852) 2271 3113  
Facsimile: (852) 2723 5660  
E-mail: jasmine.ng@erm.com



**ERM**

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Dear Sir or Madam,

Please find the Notification of Exceedance (NOE) of the following Log no.:

Action Level Exceedance

0212330\_21 August 2019\_ Surface & Middle DO\_E\_Station IS17

0212330\_21 August 2019\_ Bottom DO\_E\_Station IS17

0212330\_21 August 2019\_ Surface & Middle DO\_F\_Station IS(Mf)11

0212330\_21 August 2019\_ Bottom DO\_F\_Station SR7

0212330\_21 August 2019\_ Surface & Middle DO\_F\_Station IS17

A total of five Action Level exceedances were recorded on 21 August 2019.

Regards,



Dr Jasmine Ng  
Environmental Team Leader

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ERM-Hong Kong, Limited

CONTRACT NO. HY/2012/08

TUEN MUN – CHEK LAP KOK LINK –  
NORTHERN CONNECTION SUB-SEA TUNNEL SECTION

Marine Water Quality Impact Monitoring  
Notification of Exceedance

Log No.	<p align="center"><b>Action Level Exceedance</b></p> <p align="center">0212330_21 August 2019_ Surface &amp; Middle DO_E_Station IS17          0212330_21 August 2019_ Bottom DO_E_Station IS17          0212330_21 August 2019_ Surface &amp; Middle DO_F_Station IS(Mf)11          0212330_21 August 2019_ Bottom DO_F_Station SR7          0212330_21 August 2019_ Surface &amp; Middle DO_F_Station IS17          [Total No. of Exceedances = 5]</p>		
Date	<p align="center">21 August 2019 (Measured)          23 August 2019 (<i>In situ</i> results received by ERM)          30 August 2019 (Laboratory results received by ERM)</p>		
Monitoring Station	<p align="center">CS(Mf)5, SR4a, SR4(N2), IS8(N), IS(Mf)16, IS(Mf)9, CS(Mf)3(N), SR7, IS17, IS(Mf)11</p>		
Parameter(s) with Exceedance(s)	<p align="center">Dissolved Oxygen (mg/L)</p>		
Action Levels	<p align="center">DO</p>	<p align="center">Surface and Middle 5.0 mg/L</p>	<p align="center">Bottom 4.7 mg/L</p>
Limit Levels	<p align="center">DO</p>	<p align="center">Surface and Middle 4.2 mg/L</p>	<p align="center">Bottom 3.6 mg/L</p>
Measured Levels	<p>Action Level Exceedance for DO (4.9 mg/L) is observed at IS17 at Surface &amp; Middle Level during mid-ebb tide.          Action Level Exceedance for DO (4.5 mg/L) is observed at IS17 at Bottom Level during mid-ebb tide.          Action Level Exceedance for DO (4.6 mg/L) is observed at IS(Mf)11 at Surface &amp; Middle Level during mid-flood tide.          Action Level Exceedance for DO (4.3 mg/L) is observed at SR7 at Bottom Level during mid-flood tide.          Action Level Exceedance for DO (4.8 mg/L) is observed at IS17 at Surface &amp; Middle Level during mid-flood tide.</p>		
Works Undertaken (at the time of monitoring event)	<p>According to the information provided by the Contractor, Seawall Modification Works was carried out on 21 August 2019.</p>		

<b>Possible Reason for Action or Limit Level Exceedance(s)</b>	<p>The exceedances are unlikely to be due to the Contract, in view of the following:</p> <ul style="list-style-type: none"> <li>• All monitored parameters, except DO, at all monitoring stations were in compliance with the Action and Limit Levels during both mid-ebb and mid-flood tides on the same day.</li> <li>• IS(Mf)11, IS17 and SR7 are far away (&gt;1.5 km) from the Seawall Modification Works Area (<i>Figure 1</i>), thus the observed exceedance should not be affected by the marine works under this Contract. Moreover, IS(Mf)16 is closer to the works area and no exceedance was recorded. Therefore, the exceedance is unlikely to be related to this Contract.</li> <li>• Bottom-depth DO levels at SR7 was similar to the corresponding control stations, CS(Mf)5, during mid-flood tide, in which the recorded Bottom-depth DO levels at the corresponding control station were below Action Level.</li> <li>• Surface &amp; Middle-depth DO levels at IS17 and IS(Mf)11 were similar to the corresponding control stations, CS(Mf)5, during mid-flood tide, in which the recorded Surface &amp; Middle-depth DO levels at the corresponding control station were below Action Level.</li> <li>• As reported by the marine mammal observer, no discharge of organic matters into waters from landside works area was recorded. Moreover, no exceedance was recorded at IS(Mf)16 which is the closest station to the Seawall Modification Works Area during mid-ebb tide. Therefore, exceedances recorded at IS17 during mid-ebb tide are unlikely to be caused by the marine works of this Contract.</li> </ul>
<b>Actions Taken / To Be Taken</b>	<p>No immediate action is considered necessary. The ET will monitor for future trends in exceedances.</p>
<b>Remarks</b>	<p>The monitoring results on 21 August 2019 and locations of water quality monitoring stations are attached.</p>

Project	Contract	Date (yyyy-mm-dd)	Tide	Station	Start Time	Level	Lev_Cod	Replicate	Temperature (°C)	pH	Salinity (ppt)	DO (mg/L)	Average DO (mg/L)	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS		
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	CS(Mf)5	16:28	Surface	1	1	29.4	8.0	21.7	5.5	5.4	1.6	2.0	8.8	6.4		
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	CS(Mf)5	16:28	Surface	1	2	29.4	8.0	21.7	5.5		1.3		8.1			
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	CS(Mf)5	16:28	Middle	2	1	28.7	8.0	23.1	5.2		1.4		6.2			
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	CS(Mf)5	16:28	Middle	2	2	28.7	8.0	23.1	5.2		1.6		6.7			
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	CS(Mf)5	16:28	Bottom	3	1	28.6	8.0	23.5	5.3	5.3	2.9		4.6			
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	CS(Mf)5	16:28	Bottom	3	2	28.6	8.0	23.5	5.3		2.9		4.2			
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	CS(Mf)3(N)	15:44	Surface	1	1	29.6	8.0	21.0	5.6	5.4	3.5	3.8	9.9	11.0		
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	CS(Mf)3(N)	15:44	Surface	1	2	29.6	8.0	21.0	5.6		3.5		9.4			
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	CS(Mf)3(N)	15:44	Middle	2	1	28.7	8.0	23.0	5.2		3.2		9.6			
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	CS(Mf)3(N)	15:44	Middle	2	2	28.7	8.0	23.1	5.2		3.2		10.4			
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	CS(Mf)3(N)	15:44	Bottom	3	1	28.6	8.0	23.6	5.3	5.3	4.8		13.7			
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	CS(Mf)3(N)	15:44	Bottom	3	2	28.6	8.0	23.5	5.3		4.8		12.9			
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	IS(Mf)16	14:58	Surface	1	1	28.5	8.0	24.2	5.3	5.3	1.5	2.2	12.0	13.4		
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	IS(Mf)16	14:58	Surface	1	2	28.5	8.0	24.2	5.3		1.5		11.8			
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	IS(Mf)16	14:58	Middle	2	1											
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	IS(Mf)16	14:58	Middle	2	2											
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	IS(Mf)16	14:58	Bottom	3	1	28.1	8.0	24.7	5.6	5.6	3.0		14.9			
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	IS(Mf)16	14:58	Bottom	3	2	28.1	8.0	24.7	5.6		2.9		14.7			
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	SR4a	14:49	Surface	1	1	29.1	8.0	23.1	5.8	5.8	1.5	2.8	17.1	13.4		
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	SR4a	14:49	Surface	1	2	29.1	8.0	23.1	5.8		1.5		17.8			
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	SR4a	14:49	Middle	2	1											
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	SR4a	14:49	Middle	2	2											
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	SR4a	14:49	Bottom	3	1	28.2	7.9	24.4	4.7	4.7	4.1		9.6			
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	SR4a	14:49	Bottom	3	2	28.2	7.9	24.4	4.7		4.2		9.1			
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	SR4(N2)	14:45	Surface	1	1	29.4	7.9	22.7	5.7	5.7	2.9	3.6	6.1	7.7		
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	SR4(N2)	14:45	Surface	1	2	29.4	7.9	22.7	5.7		2.9		5.5			
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	SR4(N2)	14:45	Middle	2	1											
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	SR4(N2)	14:45	Middle	2	2											
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	SR4(N2)	14:45	Bottom	3	1	28.2	7.9	24.3	4.7	4.7	4.2		9.4			
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	SR4(N2)	14:45	Bottom	3	2	28.2	7.9	24.3	4.7		4.2		9.8			
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	IS8(N)	14:39	Surface	1	1	29.1	7.9	23.2	5.5	5.6	4.3	5.0	11.7	10.3		
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	IS8(N)	14:39	Surface	1	2	29.1	7.9	23.2	5.6		4.2		11.3			
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	IS8(N)	14:39	Middle	2	1											
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	IS8(N)	14:39	Middle	2	2											
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	IS8(N)	14:39	Bottom	3	1	28.9	7.9	23.5	5.4	5.4	5.8		8.9			
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	IS8(N)	14:39	Bottom	3	2	28.9	7.9	23.5	5.4		5.8		9.1			
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	IS(Mf)9	14:33	Surface	1	1	29.3	8.1	23.0	6.0	6.0	2.3	2.1	9.6	9.2		
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	IS(Mf)9	14:33	Surface	1	2	29.3	8.1	23.0	6.0		2.4		8.9			
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	IS(Mf)9	14:33	Middle	2	1											
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	IS(Mf)9	14:33	Middle	2	2											
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	IS(Mf)9	14:33	Bottom	3	1	28.9	8.2	23.3	5.8	5.8	1.8		9.8			
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	IS(Mf)9	14:33	Bottom	3	2	28.9	8.1	23.3	5.7		1.9		8.5			
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	IS(Mf)11	15:12	Surface	1	1	29.9	8.0	20.7	5.6	5.3	1.2	2.4	4.4	6.5		
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	IS(Mf)11	15:12	Surface	1	2	29.9	8.0	20.7	5.6		1.2		4.7			
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	IS(Mf)11	15:12	Middle	2	1	28.7	7.9	23.3	5.0		2.8		5.5			
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	IS(Mf)11	15:12	Middle	2	2	28.7	7.9	23.3	5.0		2.8		5.6			
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	IS(Mf)11	15:12	Bottom	3	1	27.7	7.9	25.6	4.7	4.7	3.2		9.2			
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	IS(Mf)11	15:12	Bottom	3	2	27.7	7.9	25.6	4.7		3.2		9.8			
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	SR7	16:08	Surface	1	1	29.2	8.1	22.0	5.4	5.4	1.3	2.1	4.8	5.4		
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	SR7	16:08	Surface	1	2	29.2	8.1	22.0	5.4		1.3		4.9			
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	SR7	16:08	Middle	2	1											
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	SR7	16:08	Middle	2	2											
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	SR7	16:08	Bottom	3	1	28.4	8.1	23.8	5.4	5.4	2.8		5.6			
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	SR7	16:08	Bottom	3	2	28.4	8.1	23.8	5.3		2.8		6.2			
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	IS17	15:04	Surface	1	1	28.9	8.0	23.8	5.2	4.9	2.9	4.5	10.5	11.5		
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	IS17	15:04	Surface	1	2	28.9	8.0	23.7	5.2		2.8		9.7			
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	IS17	15:04	Middle	2	1	28.0	8.0	25.4	4.5		4.7		11.8			
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	IS17	15:04	Middle	2	2	28.0	8.0	25.4	4.5		4.7		11.0			



Project	Contract	Date (yyyy-mm-dd)	Tide	Station	Start Time	Level	Lev_Cod	Replicate	Temperature (°C)	pH	Salinity (ppt)	DO (mg/L)	Average DO (mg/L)	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	IS17	15:04	Bottom	3	1	27.1	7.9	27.1	4.5	4.5	5.9		13.3	
TMCLKL	HY/2012/08	2019/08/21	Mid-Ebb	IS17	15:04	Bottom	3	2	27.1	7.9	27.2	4.5		6.0		12.7	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	CS(Mf)5	9:19	Surface	1	1	28.4	8.0	23.2	4.9		1.1	1.5	3.6	5.8
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	CS(Mf)5	9:19	Surface	1	2	28.4	8.0	23.2	4.9	4.8	1.1		3.4	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	CS(Mf)5	9:19	Middle	2	1	27.9	8.0	24.6	4.6		1.3		5.9	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	CS(Mf)5	9:19	Middle	2	2	27.9	8.0	24.6	4.6		1.3		6.2	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	CS(Mf)5	9:19	Bottom	3	1	27.4	8.0	25.9	4.6	4.6	2.1		8.3	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	CS(Mf)5	9:19	Bottom	3	2	27.4	8.0	25.9	4.6		2.1		7.6	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	CS(Mf)3(N)	10:07	Surface	1	1	29.2	8.0	20.5	5.1		1.6		2.6	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	CS(Mf)3(N)	10:07	Surface	1	2	29.2	8.0	20.5	5.1	5.0	1.5		2.2	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	CS(Mf)3(N)	10:07	Middle	2	1	28.5	8.0	22.6	4.9		4.3	3.4	3.7	3.4
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	CS(Mf)3(N)	10:07	Middle	2	2	28.5	8.0	22.6	4.9		4.3		3.7	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	CS(Mf)3(N)	10:07	Bottom	3	1	28.5	8.0	22.7	5.0	5.0	4.4		4.1	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	CS(Mf)3(N)	10:07	Bottom	3	2	28.5	8.0	22.7	5.0		4.4		3.9	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	IS(Mf)16	10:54	Surface	1	1	28.5	8.0	23.2	5.1		2.1		13.1	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	IS(Mf)16	10:54	Surface	1	2	28.5	8.0	23.2	5.1	5.1	2.1		12.6	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	IS(Mf)16	10:54	Middle	2	1									10.3
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	IS(Mf)16	10:54	Middle	2	2									
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	IS(Mf)16	10:54	Bottom	3	1	28.0	8.0	24.0	4.8	4.8	4.3		7.6	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	IS(Mf)16	10:54	Bottom	3	2	28.0	8.0	24.1	4.8		4.3		7.7	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	SR4a	11:04	Surface	1	1	29.0	8.0	22.6	5.2		1.2	2.0	4.7	4.7
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	SR4a	11:04	Surface	1	2	29.0	8.0	22.6	5.2	5.2	1.2		4.7	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	SR4a	11:04	Middle	2	1									
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	SR4a	11:04	Middle	2	2									
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	SR4a	11:04	Bottom	3	1	28.4	8.0	23.4	4.7	4.7	2.7		4.8	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	SR4a	11:04	Bottom	3	2	28.4	8.0	23.4	4.7		2.7		4.6	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	SR4(N2)	11:08	Surface	1	1	29.4	8.0	22.6	5.4		2.6		4.0	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	SR4(N2)	11:08	Surface	1	2	29.4	8.0	22.6	5.4	5.4	2.5		4.5	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	SR4(N2)	11:08	Middle	2	1									
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	SR4(N2)	11:08	Middle	2	2									
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	SR4(N2)	11:08	Bottom	3	1	28.4	8.0	23.5	4.8	4.8	3.6		6.7	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	SR4(N2)	11:08	Bottom	3	2	28.4	8.0	23.5	4.8		3.5		7.5	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	IS8(N)	11:13	Surface	1	1	29.1	8.0	22.8	5.1		2.8		5.4	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	IS8(N)	11:13	Surface	1	2	29.1	8.0	22.8	5.1	5.1	2.8		5.1	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	IS8(N)	11:13	Middle	2	1									
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	IS8(N)	11:13	Middle	2	2									
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	IS8(N)	11:13	Bottom	3	1	28.2	8.0	23.7	5.2	5.2	4.2		4.1	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	IS8(N)	11:13	Bottom	3	2	28.2	8.0	23.7	5.2		4.2		3.5	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	IS(Mf)9	11:20	Surface	1	1	28.4	8.1	23.1	5.3		1.7	1.9	5.7	6.6
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	IS(Mf)9	11:20	Surface	1	2	28.4	8.1	23.1	5.3	5.3	1.7		5.8	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	IS(Mf)9	11:20	Middle	2	1									
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	IS(Mf)9	11:20	Middle	2	2									
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	IS(Mf)9	11:20	Bottom	3	1	28.4	8.1	23.2	5.4	5.4	2.1		7.1	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	IS(Mf)9	11:20	Bottom	3	2	28.4	8.1	23.3	5.4		2.1		7.8	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	IS(Mf)11	10:40	Surface	1	1	28.3	8.1	23.6	4.8		2.0		4.6	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	IS(Mf)11	10:40	Surface	1	2	28.3	8.1	23.6	4.8	4.6	2.0		4.1	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	IS(Mf)11	10:40	Middle	2	1	27.7	8.2	25.0	4.4		4.1		5.7	6.3
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	IS(Mf)11	10:40	Middle	2	2	27.7	8.2	25.0	4.4		4.1		5.4	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	IS(Mf)11	10:40	Bottom	3	1	27.6	8.3	25.3	5.0	5.0	4.5		9.2	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	IS(Mf)11	10:40	Bottom	3	2	27.7	8.2	25.1	5.0		4.4		8.5	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	SR7	9:39	Surface	1	1	28.7	8.0	21.9	5.3		2.3	3.3	6.2	8.0
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	SR7	9:39	Surface	1	2	28.7	8.0	21.9	5.3	5.3	2.3		6.3	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	SR7	9:39	Middle	2	1									
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	SR7	9:39	Middle	2	2									
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	SR7	9:39	Bottom	3	1	27.5	8.1	25.9	4.3	4.3	4.2		10.1	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	SR7	9:39	Bottom	3	2	27.5	8.1	25.9	4.3		4.2		9.3	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	IS17	10:47	Surface	1	1	28.0	8.1	24.3	4.8		3.6		7.6	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	IS17	10:47	Surface	1	2	28.0	8.1	24.3	4.8	4.8	3.6		7.9	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	IS17	10:47	Middle	2	1	28.0	8.1	24.3	4.8		3.2		10.9	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	IS17	10:47	Middle	2	2	28.0	8.1	24.3	4.8	4.8	3.2		10.6	10.7
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	IS17	10:47	Bottom	3	1	28.0	8.1	24.4	5.0		3.0		14.0	
TMCLKL	HY/2012/08	2019/08/21	Mid-flood	IS17	10:47	Bottom	3	2	28.0	8.1	24.4	5.0	5.0	3.1		13.0	

Note: Indicates Exceedance of Action Level  
Indicates Exceedance of Limit Level

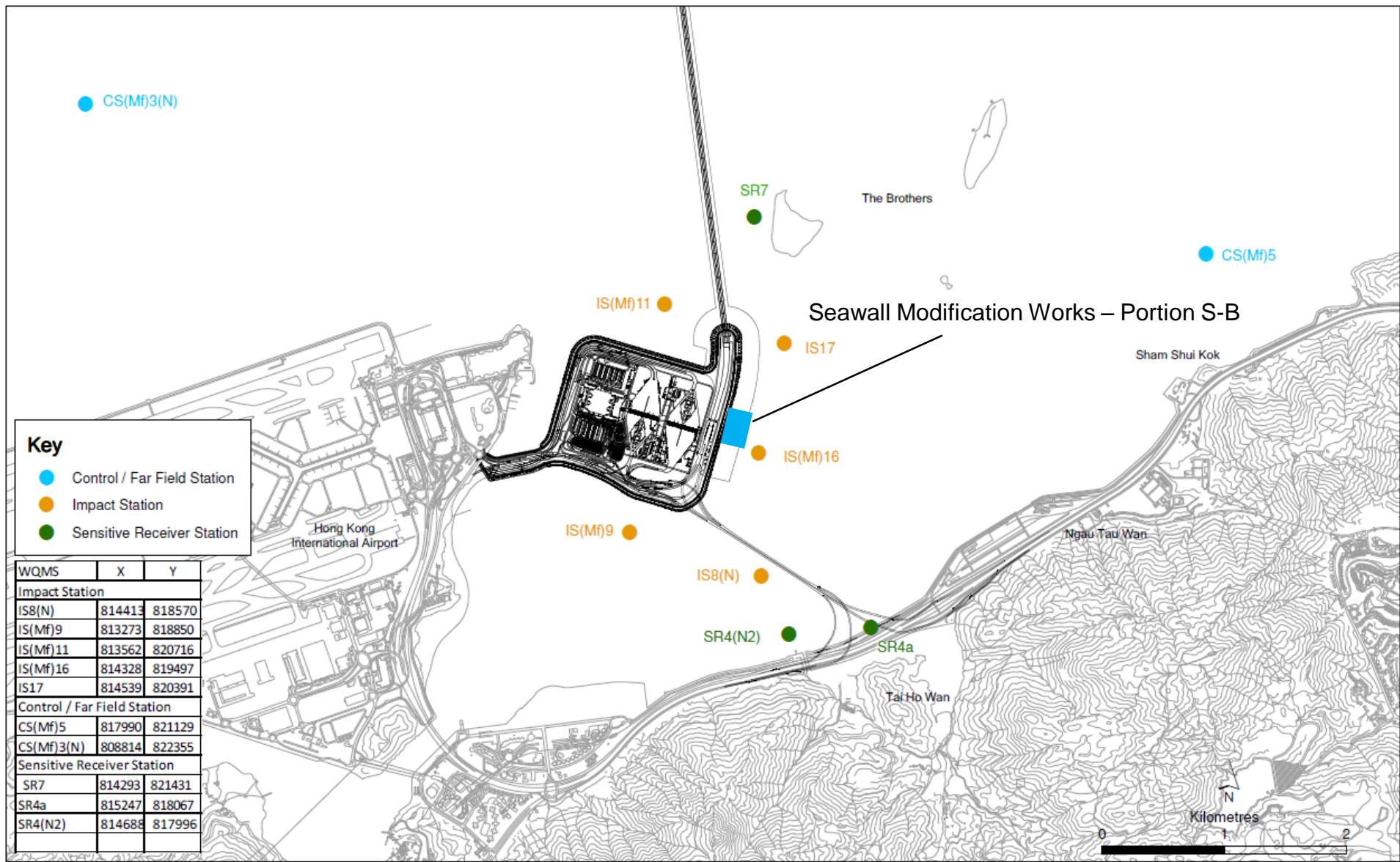


Figure 1



Email  
message

Environmental  
Resources  
Management

**To** Ramboll Hong Kong Limited (ENPO)

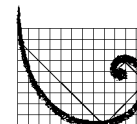
**From** ERM- Hong Kong, Limited

**Ref/Project number** Contract No. HY/2012/08 Tuen Mun–Chek Lap  
Kok Link–Northern Connection Sub-sea Tunnel  
Section

**Subject** Notification of Exceedance for Water Quality  
Impact Monitoring

**Date** 30 August 2019

2507,  
25/F One Harbourfront,  
18 Tak Fung Street,  
Hung Hom, Hong Kong  
Telephone: (852) 2271 3113  
Facsimile: (852) 2723 5660  
E-mail: jasmine.ng@erm.com



**ERM**

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Dear Sir or Madam,

Please find the Notification of Exceedance (NOE) of the following Log no.:

Action Level Exceedance  
0212330\_23 August 2019\_ Bottom DO\_E\_Station IS17

A total of one Action Level exceedance was recorded on 23 August 2019.

Regards,

A handwritten signature in blue ink that reads "Jasmine".

Dr Jasmine Ng  
Environmental Team Leader

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ERM-Hong Kong, Limited

CONTRACT NO. HY/2012/08

TUEN MUN - CHEK LAP KOK LINK -  
NORTHERN CONNECTION SUB-SEA TUNNEL SECTION

Marine Water Quality Impact Monitoring  
Notification of Exceedance

Log No.	<b>Action Level Exceedance</b> 0212330_23 August 2019_Bottom DO_E_Station IS17 [Total No. of Exceedances = 1]		
Date	23 August 2019 (Measured) 26 August 2019 ( <i>In situ</i> results received by ERM) 3 September 2019 (Laboratory results received by ERM)		
Monitoring Station	CS(Mf)5, SR4a, SR4(N2), IS8(N), IS(Mf)16, IS(Mf)9, CS(Mf)3(N), SR7, IS17, IS(Mf)11		
Parameter(s) with Exceedance(s)	Dissolved Oxygen (mg/L)		
Action Levels	DO	Surface and Middle 5.0 mg/L	Bottom 4.7 mg/L
Limit Levels	DO	Surface and Middle 4.2 mg/L	Bottom 3.6 mg/L
Measured Levels	Action Level Exceedance for DO (4.2 mg/L) is observed at IS17 at Bottom Level during mid-ebb tide.		
Works Undertaken (at the time of monitoring event)	According to the information provided by the Contractor, Seawall Modification Works was carried out on 23 August 2019.		
Possible Reason for Action or Limit Level Exceedance(s)	<p>The exceedances are unlikely to be due to the Contract, in view of the following:</p> <ul style="list-style-type: none"> <li>• All monitored parameters, except DO, at all monitoring stations were in compliance with the Action and Limit Levels during both mid-ebb and mid-flood tides on the same day.</li> <li>• No discharge of organic matters into waters from landside works area was recorded.</li> <li>• Bottom-depth DO levels at IS17 was similar to the corresponding control stations, CS(Mf)3(N), during mid-ebb tide, in which the recorded Bottom-depth DO levels at the corresponding control station were below Action Level.</li> </ul>		
Actions Taken/ To Be Taken	No immediate action is considered necessary. The ET will monitor for future trends in exceedances.		
Remarks	The monitoring results on 23 August 2019 and locations of water quality monitoring stations are attached.		

Project	Contract	Date (yyyy-mm-dd)	Tide	Station	Start Time	Level	Lev_Cod	Replicate	Temperature (°C)	pH	Salinity (ppt)	DO (mg/L)	Average DO (mg/L)	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS	
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	CS(Mf)5	17:57	Surface	1	1	29.0	8.4	20.1	7.1	6.6	1.5	1.5	5.6	4.5	
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	CS(Mf)5	17:57	Surface	1	2	29.0	8.4	20.1	7.1		1.5		5.5		
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	CS(Mf)5	17:57	Middle	2	1	27.8	8.4	23.5	6.1		1.3		4.5		
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	CS(Mf)5	17:57	Middle	2	2	27.9	8.4	23.4	6.1		1.3		4.2		
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	CS(Mf)5	17:57	Bottom	3	1	27.1	8.4	26.5	5.7	5.7	1.7	3.4			
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	CS(Mf)5	17:57	Bottom	3	2	27.1	8.4	26.5	5.7	5.7	1.6	3.9			
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	CS(Mf)3(N)	17:12	Surface	1	1	29.4	8.4	16.4	6.3	5.2	3.2	4.3	6.5	7.9	
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	CS(Mf)3(N)	17:12	Surface	1	2	29.4	8.4	16.3	6.3		3.2		6.1		
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	CS(Mf)3(N)	17:12	Middle	2	1	27.4	8.4	25.6	4.1		4.2		7.8		
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	CS(Mf)3(N)	17:12	Middle	2	2	27.4	8.4	25.4	4.1	4.1	4.1	7.6			
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	CS(Mf)3(N)	17:12	Bottom	3	1	27.2	8.4	26.5	4.1	4.1	5.5	9.3			
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	CS(Mf)3(N)	17:12	Bottom	3	2	27.2	8.4	26.5	4.1	4.1	5.5	9.8			
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	IS(Mf)16	16:28	Surface	1	1	28.4	8.5	23.5	5.9	5.9	8.7	8.9	10.4	13.0	
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	IS(Mf)16	16:28	Surface	1	2	28.4	8.5	23.4	5.9		8.7		10.0		
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	IS(Mf)16	16:28	Middle	2	1										
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	IS(Mf)16	16:28	Middle	2	2										
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	IS(Mf)16	16:28	Bottom	3	1	28.1	8.5	24.0	5.4	5.4	9.1	15.2			
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	IS(Mf)16	16:28	Bottom	3	2	28.0	8.5	24.1	5.3	5.4	9.1	16.4			
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	SR4a	16:18	Surface	1	1	29.3	8.5	20.3	7.3	7.3	2.1	3.3	6.3	8.7	
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	SR4a	16:18	Surface	1	2	29.3	8.5	20.3	7.3		2.2		6.2		
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	SR4a	16:18	Middle	2	1										
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	SR4a	16:18	Middle	2	2										
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	SR4a	16:18	Bottom	3	1	28.3	8.4	23.1	5.5	5.5	4.4	11.1			
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	SR4a	16:18	Bottom	3	2	28.3	8.4	23.2	5.5	5.5	4.4	11.3			
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	SR4(N2)	16:15	Surface	1	1	29.0	8.5	21.6	6.3	6.3	5.2	7.3	7.9	12.7	
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	SR4(N2)	16:15	Surface	1	2	29.0	8.5	21.7	6.3		5.2		8.5		
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	SR4(N2)	16:15	Middle	2	1										
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	SR4(N2)	16:15	Middle	2	2										
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	SR4(N2)	16:15	Bottom	3	1	28.2	8.4	23.5	5.2	5.2	9.3	17.0			
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	SR4(N2)	16:15	Bottom	3	2	28.2	8.4	23.5	5.2	5.2	9.3	17.2			
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	IS8(N)	16:09	Surface	1	1	29.1	8.6	21.8	6.9	6.9	5.8	7.3	8.7	10.7	
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	IS8(N)	16:09	Surface	1	2	29.1	8.6	21.8	6.9		5.8		8.4		
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	IS8(N)	16:09	Middle	2	1										
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	IS8(N)	16:09	Middle	2	2										
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	IS8(N)	16:09	Bottom	3	1	28.3	8.5	23.4	5.8	5.8	8.8	12.3			
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	IS8(N)	16:09	Bottom	3	2	28.3	8.5	23.4	5.8	5.8	8.7	13.2			
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	IS(Mf)9	16:01	Surface	1	1	29.0	8.7	22.2	7.3	7.3	3.2	4.5	9.2	10.2	
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	IS(Mf)9	16:01	Surface	1	2	29.0	8.7	22.2	7.3		3.1		9.9		
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	IS(Mf)9	16:01	Middle	2	1										
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	IS(Mf)9	16:01	Middle	2	2										
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	IS(Mf)9	16:01	Bottom	3	1	28.8	8.6	22.6	7.0	7.0	5.9	10.5			
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	IS(Mf)9	16:01	Bottom	3	2	28.8	8.6	22.6	7.0	7.0	5.9	11.0			
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	IS(Mf)11	16:42	Surface	1	1	29.2	8.5	17.9	7.4	7.0	2.3	2.9	5.4	6.8	
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	IS(Mf)11	16:42	Surface	1	2	29.2	8.5	17.9	7.4		2.4		5.2		
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	IS(Mf)11	16:42	Middle	2	1	28.6	8.5	20.4	6.6		1.3		7.1		
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	IS(Mf)11	16:42	Middle	2	2	28.6	8.5	20.4	6.6	6.6	1.3	6.9			
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	IS(Mf)11	16:42	Bottom	3	1	26.5	8.4	28.6	4.7	4.7	5.0	8.2			
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	IS(Mf)11	16:42	Bottom	3	2	26.5	8.4	28.6	4.6	4.7	5.0	7.9			
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	SR7	17:38	Surface	1	1	29.4	8.5	16.1	7.3	7.3	2.9	4.3	5.7	6.1	
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	SR7	17:38	Surface	1	2	29.4	8.5	16.1	7.3		2.9		5.6		
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	SR7	17:38	Middle	2	1										
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	SR7	17:38	Middle	2	2										
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	SR7	17:38	Bottom	3	1	28.9	8.4	19.0	7.1	7.1	5.7	6.5			
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	SR7	17:38	Bottom	3	2	28.9	8.4	19.1	7.1	7.1	5.7	6.7			
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	IS17	16:34	Surface	1	1	28.3	8.5	21.7	6.0	5.7	2.1	4.0	4.5	6.0	
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	IS17	16:34	Surface	1	2	28.4	8.5	21.7	6.0		2.1		4.8		
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	IS17	16:34	Middle	2	1	28.0	8.5	23.3	5.4		3.3		5.5		
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	IS17	16:34	Middle	2	2	27.9	8.5	23.4	5.4		3.3		5.1		

Project	Contract	Date (yyyy-mm-dd)	Tide	Station	Start Time	Level	Lev_Cod	Replicate	Temperature (°C)	pH	Salinity (ppt)	DO (mg/L)	Average DO (mg/L)	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	IS17	16:34	Bottom	3	1	26.3	8.4	28.9	4.2	4.2	6.5		7.8	
TMCLKL	HY/2012/08	2019/08/23	Mid-Ebb	IS17	16:34	Bottom	3	2	26.3	8.5	28.9	4.2		6.4		8.5	
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	CS(Mf)5	11:03	Surface	1	1	28.6	8.1	15.4	6.1		2.9	3.6	5.3	7.0
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	CS(Mf)5	11:03	Surface	1	2	28.6	8.1	15.4	6.1	5.7	2.9		5.8	
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	CS(Mf)5	11:03	Middle	2	1	28.3	8.1	20.3	5.3		3.3		6.5	
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	CS(Mf)5	11:03	Middle	2	2	28.4	8.1	20.3	5.4		3.3		6.1	
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	CS(Mf)5	11:03	Bottom	3	1	28.0	8.1	23.0	5.2	5.2	4.7		8.9	
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	CS(Mf)5	11:03	Bottom	3	2	28.0	8.1	23.0	5.2		4.7		9.1	
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	CS(Mf)3(N)	11:52	Surface	1	1	29.1	8.2	13.0	6.4		2.3	4.1	5.7	6.8
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	CS(Mf)3(N)	11:52	Surface	1	2	29.1	8.2	13.0	6.5	6.1	2.3		5.5	
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	CS(Mf)3(N)	11:52	Middle	2	1	28.6	8.1	17.0	5.8		4.0		6.5	
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	CS(Mf)3(N)	11:52	Middle	2	2	28.7	8.2	17.0	5.8		3.9		6.2	
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	CS(Mf)3(N)	11:52	Bottom	3	1	27.9	8.1	23.8	5.0	5.0	6.1		8.7	
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	CS(Mf)3(N)	11:52	Bottom	3	2	27.9	8.1	23.8	5.0		6.2		8.1	
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	IS(Mf)16	12:35	Surface	1	1	28.4	8.3	21.7	5.7		3.6	4.5	14.2	20.0
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	IS(Mf)16	12:35	Surface	1	2	28.4	8.3	21.7	5.7	5.7	3.6		13.9	
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	IS(Mf)16	12:35	Middle	2	1									
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	IS(Mf)16	12:35	Middle	2	2									
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	IS(Mf)16	12:35	Bottom	3	1	28.1	8.3	23.4	5.4	5.4	5.4		25.0	
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	IS(Mf)16	12:35	Bottom	3	2	28.1	8.3	23.4	5.3	5.4	5.3		26.8	
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	SR4a	12:44	Surface	1	1	28.7	8.3	20.2	6.2		2.2	3.1	7.7	7.9
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	SR4a	12:44	Surface	1	2	28.7	8.3	20.2	6.2	6.2	2.1		7.9	
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	SR4a	12:44	Middle	2	1									
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	SR4a	12:44	Middle	2	2									
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	SR4a	12:44	Bottom	3	1	28.4	8.3	21.8	5.8	5.8	4.1		8.1	
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	SR4a	12:44	Bottom	3	2	28.3	8.3	21.8	5.8		4.0		8.0	
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	SR4(N2)	12:49	Surface	1	1	28.8	8.3	20.2	6.3		2.8	3.3	5.4	7.0
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	SR4(N2)	12:49	Surface	1	2	28.8	8.3	20.2	6.3	6.3	2.8		5.7	
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	SR4(N2)	12:49	Middle	2	1									
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	SR4(N2)	12:49	Middle	2	2									
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	SR4(N2)	12:49	Bottom	3	1	28.4	8.3	21.3	5.8	5.8	3.7		8.2	
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	SR4(N2)	12:49	Bottom	3	2	28.4	8.3	21.3	5.8		3.7		8.7	
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	IS8(N)	12:54	Surface	1	1	28.8	8.3	20.0	6.4		2.2	3.9	3.7	6.8
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	IS8(N)	12:54	Surface	1	2	28.8	8.3	20.0	6.4	6.4	2.2		4.3	
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	IS8(N)	12:54	Middle	2	1									
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	IS8(N)	12:54	Middle	2	2									
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	IS8(N)	12:54	Bottom	3	1	28.6	8.4	22.7	6.3	6.3	5.7		9.9	
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	IS8(N)	12:54	Bottom	3	2	28.6	8.4	22.7	6.3		5.6		9.3	
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	IS(Mf)9	13:01	Surface	1	1	28.6	8.3	21.5	5.8		4.4	5.4	9.1	10.8
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	IS(Mf)9	13:01	Surface	1	2	28.7	8.3	21.5	5.8	5.8	4.4		8.8	
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	IS(Mf)9	13:01	Middle	2	1									
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	IS(Mf)9	13:01	Middle	2	2									
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	IS(Mf)9	13:01	Bottom	3	1	28.4	8.3	23.3	5.2	5.2	6.3		12.8	
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	IS(Mf)9	13:01	Bottom	3	2	28.4	8.3	23.4	5.1		6.3		12.3	
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	IS(Mf)11	12:20	Surface	1	1	28.8	8.3	16.9	6.5		2.9	3.8	5.3	7.1
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	IS(Mf)11	12:20	Surface	1	2	28.8	8.3	16.9	6.5	6.2	2.9		5.5	
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	IS(Mf)11	12:20	Middle	2	1	28.3	8.3	20.4	5.8		3.5		6.3	
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	IS(Mf)11	12:20	Middle	2	2	28.4	8.3	20.3	5.8		3.4		6.3	
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	IS(Mf)11	12:20	Bottom	3	1	28.0	8.3	22.4	5.4	5.4	5.0		9.8	
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	IS(Mf)11	12:20	Bottom	3	2	28.0	8.3	22.3	5.4		5.0		9.2	
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	SR7	11:24	Surface	1	1	28.5	8.1	18.4	5.8		2.8	3.0	7.7	9.4
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	SR7	11:24	Surface	1	2	28.5	8.1	18.4	5.8	5.8	2.8		7.0	
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	SR7	11:24	Middle	2	1									
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	SR7	11:24	Middle	2	2									
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	SR7	11:24	Bottom	3	1	28.4	8.1	21.0	5.5	5.5	3.2		11.8	
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	SR7	11:24	Bottom	3	2	28.3	8.1	21.2	5.4		3.2		10.9	
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	IS17	12:27	Surface	1	1	28.1	8.3	23.4	5.4		2.8	2.8	15.6	12.1
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	IS17	12:27	Surface	1	2	28.1	8.3	23.4	5.4	5.3	2.8		14.8	
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	IS17	12:27	Middle	2	1	27.7	8.3	24.4	5.2		3.1		11.2	
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	IS17	12:27	Middle	2	2	27.7	8.3	24.4	5.2		3.1		11.4	
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	IS17	12:27	Bottom	3	1	27.6	8.3	25.2	5.2	5.2	2.5		9.6	
TMCLKL	HY/2012/08	2019/08/23	Mid-flood	IS17	12:27	Bottom	3	2	27.6	8.3	25.0	5.2		2.5		9.7	

Note: Indicates Exceedance of Action Level  
Indicates Exceedance of Limit Level



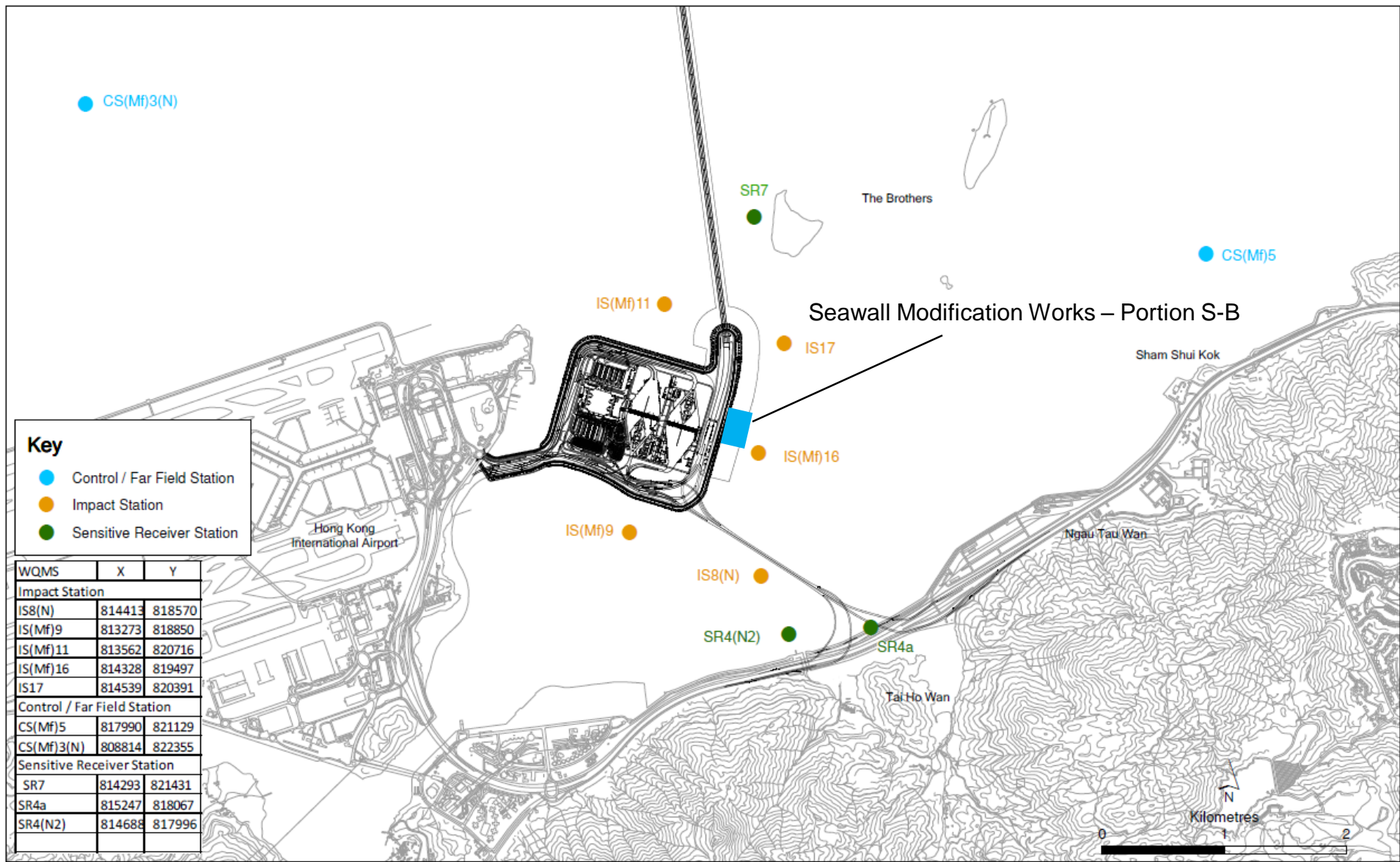


Figure 1

Email  
message

Environmental  
Resources  
Management

**To** Ramboll Hong Kong Limited (ENPO)

**From** ERM- Hong Kong, Limited

**Ref/Project number** Contract No. HY/2012/08 Tuen Mun–Chek Lap  
Kok Link–Northern Connection Sub-sea Tunnel  
Section

**Subject** Notification of Exceedance for Water Quality  
Impact Monitoring

**Date** 30 August 2019

2507,  
25/F One Harbourfront,  
18 Tak Fung Street,  
Hung Hom, Hong Kong  
Telephone: (852) 2271 3113  
Facsimile: (852) 2723 5660  
E-mail: jasmine.ng@erm.com



**ERM**

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Dear Sir or Madam,

Please find the Notification of Exceedance (NOE) of the following Log no.:

Limit Level Exceedance  
0212330\_26 August 2019\_ Bottom DO\_E\_Station IS(Mf)11  
0212330\_26 August 2019\_ Bottom DO\_F\_Station IS(Mf)11

A total of two Limit Level exceedances were recorded on 26 August 2019.

Regards,

A handwritten signature in blue ink that reads "Jasmine". The signature is written in a cursive, flowing style.

Dr Jasmine Ng  
Environmental Team Leader

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ERM-Hong Kong, Limited

CONTRACT NO. HY/2012/08

TUEN MUN – CHEK LAP KOK LINK –  
NORTHERN CONNECTION SUB-SEA TUNNEL SECTION

Marine Water Quality Impact Monitoring  
Notification of Exceedance

Log No.	<u>Limit Level Exceedance</u> 0212330_26 August 2019_ Bottom DO_E_Station IS(Mf)11 0212330_26 August 2019_ Bottom DO_F_Station IS(Mf)11 [Total No. of Exceedances = 2]		
Date	26 August 2019 (Measured) 28 August 2019 ( <i>In situ</i> results received by ERM) 4 September 2019 (Laboratory results received by ERM)		
Monitoring Station	CS(Mf)5, SR4a, SR4(N2), IS8(N), IS(Mf)16, IS(Mf)9, CS(Mf)3(N), SR7, IS17, IS(Mf)11		
Parameter(s) with Exceedance(s)	Dissolved Oxygen (mg/L)		
Action Levels	DO	Surface and Middle 5.0 mg/L	Bottom 4.7 mg/L
Limit Levels	DO	Surface and Middle 4.2 mg/L	Bottom 3.6 mg/L
Measured Levels	Limit Level Exceedance for DO (3.2 mg/L) is observed at IS(Mf)11 at Bottom Level during mid-ebb tide. Limit Level Exceedance for DO (2.9 mg/L) is observed at IS(Mf)11 at Bottom Level during mid-flood tide.		
Works Undertaken (at the time of monitoring event)	According to the information provided by the Contractor, Seawall Modification Works was carried out on 26 August 2019.		
Possible Reason for Action or Limit Level Exceedance(s)	<p>The exceedances are unlikely to be due to the Contract, in view of the following:</p> <ul style="list-style-type: none"> <li>• All monitored parameters, except DO, at all monitoring stations were in compliance with the Action and Limit Levels during both mid-ebb and mid-flood tides on the same day.</li> <li>• IS(Mf)11 is far away (&gt;2 km) from the Seawall Modification Works Area (<i>Figure 1</i>), thus the observed exceedance should not be affected by the marine works under this Contract. Therefore, the exceedance is unlikely to be related to this Contract.</li> <li>• Bottom-depth DO levels at IS(Mf)11 were similar to the corresponding control stations, CS(Mf)5, during mid-flood tide, in which the recorded Bottom-depth DO levels at the corresponding control station were below Limit Level.</li> <li>• The DO pattern at IS(Mf)11 was similar to the control station where the bottom-depth DO levels were generally lower. Lower bottom-depth DO levels may be possibly caused by the stratification of seawater during summer when the freshwater discharged from the Pearl River tended to form a surface layer of lower salinity water, which is probably responsible for the lower Salinity recorded at the surface and middle levels compared to the higher Salinity recorded at the bottom level of the monitoring stations. The stratification of seawater in the water column is likely a contributing factor to the results of lower levels of DO at the bottom level.</li> <li>• As reported by the marine mammal observer, no discharge of organic matters into waters from landside works area was recorded. Moreover, no exceedance was recorded at IS(Mf)16 which is the closest station to the Seawall Modification Works Area during both mid-ebb and mid-flood tide. Therefore, exceedances recorded at IS(Mf)11 during both mid-ebb and mid-flood tide are unlikely to be caused by the marine works of this Contract.</li> </ul>		



<b>Actions Taken/ To Be Taken</b>	No immediate action is considered necessary. The ET will monitor for future trends in exceedances.
<b>Remarks</b>	The monitoring results on 26 August 2019 and locations of water quality monitoring stations are attached.

Project	Contract	Date (yyyy-mm-dd)	Tide	Station	Start Time	Level	Lev_Cod	Replicate	Temperature (°C)	pH	Salinity (ppt)	DO (mg/L)	Average DO (mg/L)	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS		
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	CS(Mf)5	8:10	Surface	1	1	28.3	7.9	19.8	6.0	6.0	1.6	2.2	3.6	3.2		
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	CS(Mf)5	8:10	Surface	1	2	28.3	7.9	20.2	6.0		1.7		3.7			
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	CS(Mf)5	8:10	Middle	2	1	28.3	7.9	20.3	5.9		1.6		4.0			
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	CS(Mf)5	8:10	Middle	2	2	28.3	7.9	20.7	5.9		1.6		3.9			
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	CS(Mf)5	8:10	Bottom	3	1	27.0	7.8	27.6	4.2	4.3	3.2		2.2			
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	CS(Mf)5	8:10	Bottom	3	2	27.0	7.8	28.3	4.3		3.3		1.8			
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	CS(Mf)3(N)	9:13	Surface	1	1	28.5	7.9	14.2	6.3	6.1	2.6	2.7	4.8	4.4		
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	CS(Mf)3(N)	9:13	Surface	1	2	28.5	7.8	14.5	6.4		2.5		4.5			
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	CS(Mf)3(N)	9:13	Middle	2	1	28.4	7.9	16.6	5.8		2.5		3.9			
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	CS(Mf)3(N)	9:13	Middle	2	2	28.5	7.8	16.8	5.8		2.5		4.7			
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	CS(Mf)3(N)	9:13	Bottom	3	1	27.8	7.9	22.8	5.1	5.2	2.9		4.7			
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	CS(Mf)3(N)	9:13	Bottom	3	2	27.8	7.8	23.6	5.2		3.0		3.7			
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	IS(Mf)16	9:47	Surface	1	1	28.3	8.0	19.9	6.2	6.2	7.7	8.7	9.0	8.3		
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	IS(Mf)16	9:47	Surface	1	2	28.3	7.9	20.3	6.2		7.5		8.2			
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	IS(Mf)16	9:47	Middle	2	1											
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	IS(Mf)16	9:47	Middle	2	2											
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	IS(Mf)16	9:47	Bottom	3	1	28.3	8.0	22.3	5.6	5.6	9.5		8.4			
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	IS(Mf)16	9:47	Bottom	3	2	28.3	7.9	23.0	5.6		10.0		7.4			
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	SR4a	9:58	Surface	1	1	28.2	8.0	18.2	5.9	6.0	5.1	5.6	13.6	11.6		
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	SR4a	9:58	Surface	1	2	28.2	7.9	18.6	6.0		5.2		12.4			
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	SR4a	9:58	Middle	2	1											
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	SR4a	9:58	Middle	2	2											
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	SR4a	9:58	Bottom	3	1	28.3	7.9	22.5	5.1	5.1	5.9		10.6			
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	SR4a	9:58	Bottom	3	2	28.3	7.8	23.0	5.1		6.0		9.6			
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	SR4(N2)	10:04	Surface	1	1	28.4	7.9	16.3	5.2	5.2	11.1	9.9	7.0	8.5		
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	SR4(N2)	10:04	Surface	1	2	28.4	7.8	16.6	5.2		11.1		8.0			
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	SR4(N2)	10:04	Middle	2	1											
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	SR4(N2)	10:04	Middle	2	2											
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	SR4(N2)	10:04	Bottom	3	1	28.7	7.9	21.2	5.1	5.1	8.5		9.1			
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	SR4(N2)	10:04	Bottom	3	2	28.8	7.8	21.5	5.1		8.7		10.0			
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	IS8(N)	10:09	Surface	1	1	28.1	8.0	18.3	6.4	6.4	5.6	7.8	7.6	7.6		
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	IS8(N)	10:09	Surface	1	2	28.1	7.9	18.7	6.4		5.5		7.2			
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	IS8(N)	10:09	Middle	2	1											
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	IS8(N)	10:09	Middle	2	2											
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	IS8(N)	10:09	Bottom	3	1	28.4	8.0	20.8	6.1	6.1	10.1		8.2			
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	IS8(N)	10:09	Bottom	3	2	28.4	7.9	21.2	6.0		10.1		7.2			
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	IS(Mf)9	10:17	Surface	1	1					5.9		4.1		8.3		
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	IS(Mf)9	10:17	Surface	1	2											
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	IS(Mf)9	10:17	Middle	2	1	28.5	7.9	19.7	5.9		4.1		8.8			
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	IS(Mf)9	10:17	Middle	2	2	28.5	7.8	19.9	5.9		4.0		7.8			
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	IS(Mf)9	10:17	Bottom	3	1					#DIV/0!						
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	IS(Mf)9	10:17	Bottom	3	2											
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	IS(Mf)11	8:42	Surface	1	1	28.3	7.9	17.1	6.2	5.8	1.9	2.6	3.8	3.9		
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	IS(Mf)11	8:42	Surface	1	2	28.3	7.9	17.4	6.2		1.9		4.8			
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	IS(Mf)11	8:42	Middle	2	1	28.3	7.9	22.7	5.3		2.3		4.4			
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	IS(Mf)11	8:42	Middle	2	2	28.3	7.8	23.7	5.3		2.1		4.3			
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	IS(Mf)11	8:42	Bottom	3	1	25.9	7.8	30.1	3.2	3.2	3.9		3.6			
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	IS(Mf)11	8:42	Bottom	3	2	25.9	7.8	30.7	3.2		3.6		2.6			
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	SR7	8:34	Surface	1	1	28.4	7.9	17.1	6.1	6.1	2.2	2.7	2.9	3.6		
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	SR7	8:34	Surface	1	2	28.4	7.8	17.4	6.1		2.0		3.8			
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	SR7	8:34	Middle	2	1											
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	SR7	8:34	Middle	2	2											
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	SR7	8:34	Bottom	3	1	28.4	7.9	18.2	6.1	6.1	3.3		4.3			
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	SR7	8:34	Bottom	3	2	28.4	7.8	19.1	6.1		3.1		3.3			
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	IS17	9:41	Surface	1	1	28.3	8.0	18.5	6.1	6.0	2.9	3.3	5.2	4.4		
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	IS17	9:41	Surface	1	2	28.3	7.9	18.9	6.1		3.0		4.3			
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	IS17	9:41	Middle	2	1	28.3	7.9	19.6	5.9		3.2		5.0			
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	IS17	9:41	Middle	2	2	28.3	7.9	20.0	6.0		3.3		5.7			

Project	Contract	Date (yyyy-mm-dd)	Tide	Station	Start Time	Level	Lev_Cod	Replicate	Temperature (°C)	pH	Salinity (ppt)	DO (mg/L)	Average DO (mg/L)	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	IS17	9:41	Bottom	3	1	28.2	7.9	24.7	5.1	5.0	3.8		3.7	
TMCLKL	HY/2012/08	2019/08/26	Mid-Ebb	IS17	9:41	Bottom	3	2	28.2	7.9	24.2	4.9		3.7		2.7	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	CS(Mf)5	17:22	Surface	1	1	28.5	8.0	16.4	6.7		2.0		6.2	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	CS(Mf)5	17:22	Surface	1	2	28.5	7.8	16.7	6.7	5.3	2.1		5.3	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	CS(Mf)5	17:22	Middle	2	1	26.2	7.8	28.9	3.9		3.3	4.8	3.9	4.8
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	CS(Mf)5	17:22	Middle	2	2	26.1	7.7	29.6	3.8		3.0		4.6	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	CS(Mf)5	17:22	Bottom	3	1	25.0	7.8	31.4	3.4	3.4	9.3		3.8	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	CS(Mf)5	17:22	Bottom	3	2	25.0	7.7	32.0	3.4		9.2		4.8	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	CS(Mf)3(N)	16:29	Surface	1	1	28.7	7.8	14.9	6.2		3.2		6.2	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	CS(Mf)3(N)	16:29	Surface	1	2	28.7	7.8	15.2	6.2	6.1	3.1		6.4	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	CS(Mf)3(N)	16:29	Middle	2	1	28.6	7.8	16.1	6.0		5.2	6.8	6.0	5.6
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	CS(Mf)3(N)	16:29	Middle	2	2	28.6	7.8	16.4	6.0		5.2		5.8	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	CS(Mf)3(N)	16:29	Bottom	3	1	28.2	7.7	18.8	5.1	5.2	12.1		5.2	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	CS(Mf)3(N)	16:29	Bottom	3	2	28.2	7.7	19.1	5.2		12.0		4.2	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	IS(Mf)16	15:53	Surface	1	1	28.5	7.9	17.2	6.7		3.4		8.9	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	IS(Mf)16	15:53	Surface	1	2	28.5	7.9	17.5	6.7	6.7	3.2		8.7	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	IS(Mf)16	15:53	Middle	2	1							6.4		8.3
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	IS(Mf)16	15:53	Middle	2	2									
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	IS(Mf)16	15:53	Bottom	3	1	28.4	7.8	18.5	6.7	6.7	9.4		8.1	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	IS(Mf)16	15:53	Bottom	3	2	28.4	7.8	18.8	6.7		9.7		7.4	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	SR4a	15:42	Surface	1	1	28.2	8.0	15.9	6.5		5.7		10.4	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	SR4a	15:42	Surface	1	2	28.2	7.9	16.6	6.5	6.5	5.6		11.5	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	SR4a	15:42	Middle	2	1							6.6		10.9
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	SR4a	15:42	Middle	2	2									
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	SR4a	15:42	Bottom	3	1	28.4	7.9	19.3	6.0	6.1	7.4		11.0	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	SR4a	15:42	Bottom	3	2	28.5	7.9	19.5	6.1		7.6		10.7	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	SR4(N2)	15:37	Surface	1	1	28.3	8.0	16.8	6.5		4.7		11.0	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	SR4(N2)	15:37	Surface	1	2	28.3	7.9	17.2	6.5	6.5	4.6		10.0	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	SR4(N2)	15:37	Middle	2	1							5.1		11.2
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	SR4(N2)	15:37	Middle	2	2									
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	SR4(N2)	15:37	Bottom	3	1	28.4	7.9	18.5	6.6	6.6	5.6		12.3	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	SR4(N2)	15:37	Bottom	3	2	28.0	7.9	19.1	6.6		5.3		11.4	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	IS8(N)	15:31	Surface	1	1	28.5	8.0	16.8	6.8		8.6		9.2	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	IS8(N)	15:31	Surface	1	2	28.5	7.9	17.1	6.8	6.8	8.8		10.1	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	IS8(N)	15:31	Middle	2	1							6.4		10.2
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	IS8(N)	15:31	Middle	2	2									
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	IS8(N)	15:31	Bottom	3	1	28.5	8.0	16.9	6.8	6.8	4.1		10.3	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	IS8(N)	15:31	Bottom	3	2	28.5	7.9	17.3	6.8		4.1		11.3	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	IS(Mf)9	15:21	Surface	1	1									
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	IS(Mf)9	15:21	Surface	1	2					6.9				
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	IS(Mf)9	15:21	Middle	2	1	28.5	7.8	18.1	6.9		5.0	5.1	9.8	9.3
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	IS(Mf)9	15:21	Middle	2	2	28.5	7.9	18.4	6.8		5.2		8.8	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	IS(Mf)9	15:21	Bottom	3	1					#DIV/0!				
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	IS(Mf)9	15:21	Bottom	3	2									
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	IS(Mf)11	16:54	Surface	1	1	28.5	7.9	17.4	6.2		3.2		3.2	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	IS(Mf)11	16:54	Surface	1	2	28.5	7.8	17.8	6.3	5.7	3.1		4.2	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	IS(Mf)11	16:54	Middle	2	1	28.1	7.9	22.0	5.2		3.9		3.9	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	IS(Mf)11	16:54	Middle	2	2	28.1	7.8	22.4	5.1		3.6		4.9	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	IS(Mf)11	16:54	Middle	2	2	28.1	7.8	22.4	5.1		3.6		4.9	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	IS(Mf)11	16:54	Bottom	3	1	26.2	7.8	29.1	2.9	2.9	11.1		3.8	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	IS(Mf)11	16:54	Bottom	3	2	26.2	7.7	29.8	2.8	2.9	11.0		3.8	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	SR7	17:00	Surface	1	1	28.4	7.9	16.9	6.2		5.8		3.5	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	SR7	17:00	Surface	1	2	28.4	7.8	17.2	6.2	6.2	5.8		4.3	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	SR7	17:00	Middle	2	1							6.9		4.6
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	SR7	17:00	Middle	2	2									
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	SR7	17:00	Bottom	3	1	28.3	7.9	19.4	5.9	5.8	8.0		5.8	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	SR7	17:00	Bottom	3	2	28.3	7.8	20.0	5.7		7.8		4.8	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	IS17	15:59	Surface	1	1	28.4	7.9	17.9	6.3		3.2		4.1	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	IS17	15:59	Surface	1	2	28.4	7.8	18.2	6.3	6.1	2.9		3.3	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	IS17	15:59	Middle	2	1	28.2	7.9	19.9	5.8		3.7	3.5	3.8	4.4
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	IS17	15:59	Middle	2	2	28.2	7.8	20.3	5.8		3.7		3.3	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	IS17	15:59	Bottom	3	1	28.1	7.9	20.3	5.9	5.9	3.6		6.4	
TMCLKL	HY/2012/08	2019/08/26	Mid-flood	IS17	15:59	Bottom	3	2	28.2	7.8	20.8	5.9		3.6		5.6	

Note: Indicates Exceedance of Action Level  
Indicates Exceedance of Limit Level



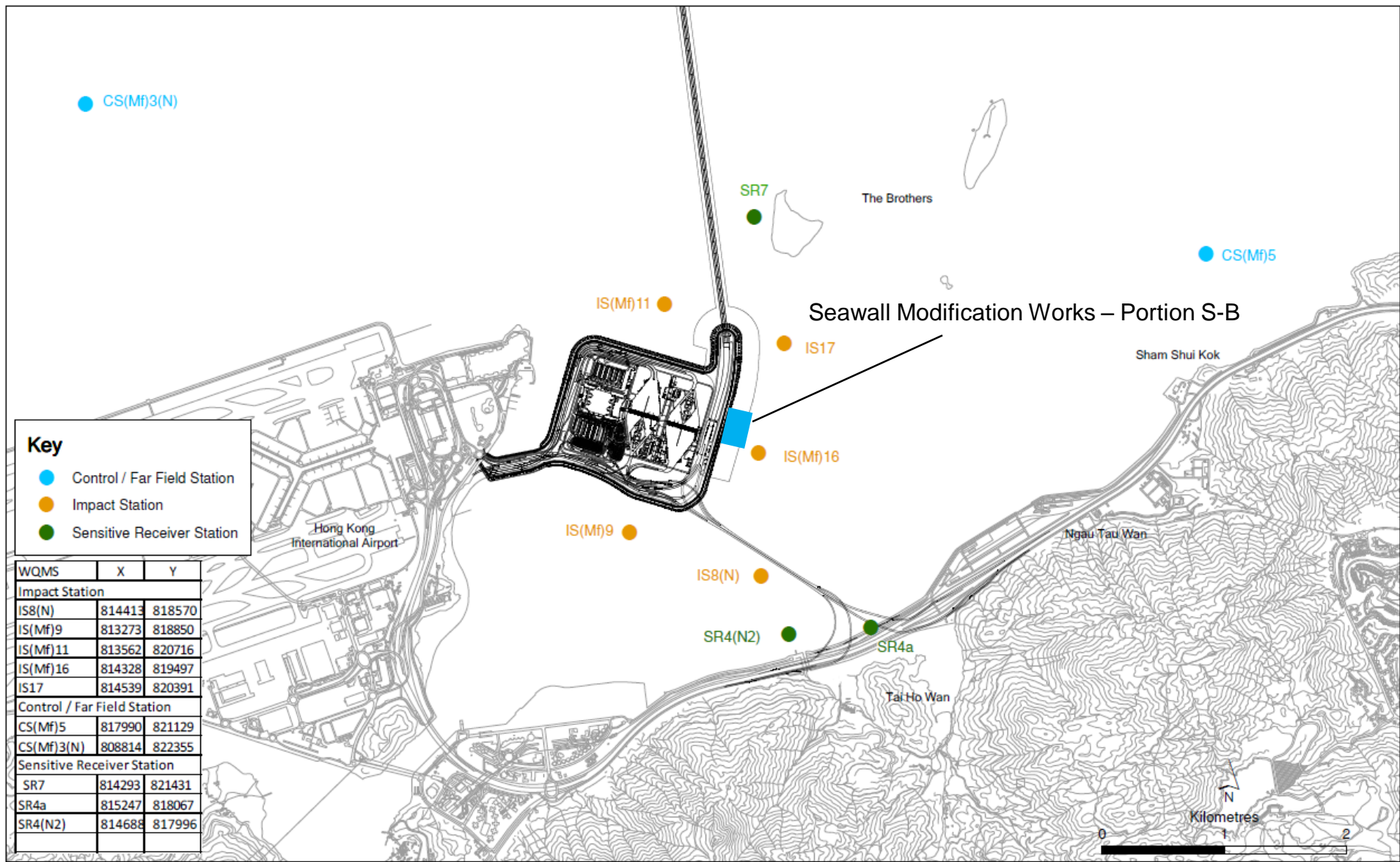


Figure 1

Email  
message

Environmental  
Resources  
Management

**To** Ramboll Hong Kong Limited (ENPO)

**From** ERM- Hong Kong, Limited

**Ref/Project number** Contract No. HY/2012/08 Tuen Mun–Chek Lap  
Kok Link–Northern Connection Sub-sea Tunnel  
Section

**Subject** Notification of Exceedance for Water Quality  
Impact Monitoring

**Date** 3 September 2019

2507,  
25/F One Harbourfront,  
18 Tak Fung Street,  
Hung Hom, Hong Kong  
Telephone: (852) 2271 3113  
Facsimile: (852) 2723 5660  
E-mail: jasmine.ng@erm.com



**ERM**

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Dear Sir or Madam,

Please find the Notification of Exceedance (NOE) of the following Log no.:

Action Level Exceedance

0212330\_28 August 2019\_ Surface & Middle DO\_E\_Station IS(Mf)16  
0212330\_28 August 2019\_ Surface & Middle DO\_E\_Station SR4a  
0212330\_28 August 2019\_ Bottom DO\_E\_Station SR4a  
0212330\_28 August 2019\_ Surface & Middle DO\_E\_Station SR4(N2)  
0212330\_28 August 2019\_ Surface & Middle DO\_E\_Station IS8(N)  
0212330\_28 August 2019\_ Bottom DO\_E\_Station IS8(N)  
0212330\_28 August 2019\_ Surface & Middle DO\_E\_Station IS(Mf)11  
0212330\_28 August 2019\_ Surface & Middle DO\_E\_Station IS17  
0212330\_28 August 2019\_ Bottom DO\_E\_Station IS17  
0212330\_28 August 2019\_ Bottom DO\_F\_Station SR4a  
0212330\_28 August 2019\_ Surface & Middle DO\_F\_Station IS(Mf)11  
0212330\_28 August 2019\_ Bottom DO\_F\_Station IS(Mf)11  
0212330\_28 August 2019\_ Bottom DO\_F\_Station SR7  
0212330\_28 August 2019\_ Surface & Middle DO\_F\_Station IS17  
0212330\_28 August 2019\_ Bottom DO\_F\_Station IS17  
0212330\_28 August 2019\_ Depth-averaged SS\_F\_Station SR7

Limit Level Exceedance

0212330\_28 August 2019\_ Bottom DO\_E\_Station SR4(N2)  
0212330\_28 August 2019\_ Bottom DO\_E\_Station IS(Mf)11

A total of sixteen Action Level and two Limit Level exceedances were recorded on 28 August 2019.

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Email  
message

Regards,

A handwritten signature in blue ink that reads "Jasmine". The signature is written in a cursive, flowing style.

Dr Jasmine Ng  
Environmental Team Leader



ERM-Hong Kong, Limited

CONTRACT NO. HY/2012/08

TUEN MUN – CHEK LAP KOK LINK –  
NORTHERN CONNECTION SUB-SEA TUNNEL SECTION

Marine Water Quality Impact Monitoring  
Notification of Exceedance

Log No.	<p style="text-align: center;"><u>Action Level Exceedance</u></p> <p>0212330_28 August 2019_ Surface &amp; Middle DO_E_Station IS(Mf)16          0212330_28 August 2019_ Surface &amp; Middle DO_E_Station SR4a          0212330_28 August 2019_ Bottom DO_E_Station SR4a          0212330_28 August 2019_ Surface &amp; Middle DO_E_Station SR4(N2)          0212330_28 August 2019_ Surface &amp; Middle DO_E_Station IS8(N)          0212330_28 August 2019_ Bottom DO_E_Station IS8(N)          0212330_28 August 2019_ Surface &amp; Middle DO_E_Station IS(Mf)11          0212330_28 August 2019_ Surface &amp; Middle DO_E_Station IS17          0212330_28 August 2019_ Bottom DO_E_Station IS17          0212330_28 August 2019_ Bottom DO_F_Station SR4a          0212330_28 August 2019_ Surface &amp; Middle DO_F_Station IS(Mf)11          0212330_28 August 2019_ Bottom DO_F_Station IS(Mf)11          0212330_28 August 2019_ Bottom DO_F_Station SR7          0212330_28 August 2019_ Surface &amp; Middle DO_F_Station IS17          0212330_28 August 2019_ Bottom DO_F_Station IS17          0212330_28 August 2019_ Depth-averaged SS_F_Station SR7</p> <p style="text-align: center;"><u>Limit Level Exceedance</u></p> <p>0212330_28 August 2019_ Bottom DO_E_Station SR4(N2)          0212330_28 August 2019_ Bottom DO_E_Station IS(Mf)11</p> <p style="text-align: center;">[Total No. of Exceedances = 18]</p>		
Date	<p style="text-align: center;">28 August 2019 (Measured)          30 August 2019 (<i>In situ</i> results received by ERM)          6 September 2019 (Laboratory results received by ERM)</p>		
Monitoring Station	<p style="text-align: center;">CS(Mf)5, SR4a, SR4(N2), IS8(N), IS(Mf)16, IS(Mf)9, CS(Mf)3(N), SR7, IS17, IS(Mf)11</p>		
Parameter(s) with Exceedance(s)	<p style="text-align: center;">Dissolved Oxygen (mg/L), Suspended Solids(mg/L)</p>		
Action Levels	DO	Surface and Middle 5.0 mg/L	Bottom 4.7 mg/L
	SS	120% of upstream control station at the same tide of the same day and 95%-ile of baseline data, i.e., 23.5 mg/L	
Limit Levels	DO	Surface and Middle 4.2 mg/L	Bottom 3.6 mg/L
	SS	130% of upstream control station at the same tide of the same day and 10mg/L for WSD Seawater Intakes at Tuen Mun and 99%-ile of baseline data, i.e., 34.4 mg/L	



<b>Measured Levels</b>	<p>Action Level Exceedance for DO (4.9 mg/L) is observed at IS(Mf)16 at Surface &amp; Middle Level during mid-ebb tide.</p> <p>Action Level Exceedance for DO (4.8 mg/L) is observed at SR4a at Surface &amp; Middle Level during mid-ebb tide.</p> <p>Action Level Exceedance for DO (4.0 mg/L) is observed at SR4a at Bottom Level during mid-ebb tide.</p> <p>Action Level Exceedance for DO (4.3 mg/L) is observed at SR4(N2) at Surface &amp; Middle Level during mid-ebb tide.</p> <p>Action Level Exceedance for DO (4.7 mg/L) is observed at IS8(N) at Surface &amp; Middle Level during mid-ebb tide.</p> <p>Action Level Exceedance for DO (4.4 mg/L) is observed at IS8(N) at Bottom Level during mid-ebb tide.</p> <p>Action Level Exceedance for DO (4.8 mg/L) is observed at IS(Mf)11 at Surface &amp; Middle Level during mid-ebb tide.</p> <p>Action Level Exceedance for DO (4.9 mg/L) is observed at IS17 at Surface &amp; Middle Level during mid-ebb tide.</p> <p>Action Level Exceedance for DO (4.6 mg/L) is observed at IS17 at Bottom Level during mid-ebb tide.</p> <p>Action Level Exceedance for DO (4.2 mg/L) is observed at SR4a at Bottom Level during mid-flood tide.</p> <p>Action Level Exceedance for DO (4.8 mg/L) is observed at IS(Mf)11at Surface &amp; Middle Level during mid-flood tide.</p> <p>Action Level Exceedance for DO (3.8 mg/L) is observed at IS(Mf)11 at Bottom Level during mid-flood tide.</p> <p>Action Level Exceedance for DO (4.3 mg/L) is observed at SR7 at Bottom Level during mid-flood tide.</p> <p>Action Level Exceedance for DO (4.8 mg/L) is observed at IS17 at Surface &amp; Middle Level during mid-flood tide.</p> <p>Action Level Exceedance for DO (4.3 mg/L) is observed at IS17 at Bottom Level during mid-flood tide.</p> <p>Action Level Exceedance for Depth-averaged SS (26.8 mg/L) is observed at SR7 during mid-flood tide.</p> <p>Limit Level Exceedance for DO (3.5 mg/L) is observed at SR4(N2) at Bottom Level during mid-ebb tide.</p> <p>Limit Level Exceedance for DO (3.5 mg/L) is observed at IS(Mf)11 at Bottom Level during mid-ebb tide.</p>
<b>Works Undertaken (at the time of monitoring event)</b>	<p>According to the information provided by the Contractor, Seawall Modification Works was carried out on 28 August 2019.</p>

<b>Possible Reason for Action or Limit Level Exceedance(s)</b>	<p>The exceedances are unlikely to be due to the Contract, in view of the following:</p> <ul style="list-style-type: none"> <li>• SR4a, SR4(N2), IS8(N), IS(Mf)11 and SR7 is far away (&gt;2 km) from the Seawall Modification Works Area (<i>Figure 1</i>), thus the observed exceedance should not be affected by the marine works under this Contract. Therefore, the exceedance is unlikely to be related to this Contract.</li> <li>• Bottom-depth DO levels at SR4a, IS8(N) and IS17 was similar to the corresponding control stations, CS(Mf)3(N), during mid-ebb tide, in which the recorded Bottom-depth DO levels at the corresponding control station were below Action Level.</li> <li>• Surface &amp; Middle-depth DO levels at IS(Mf)16, SR4a, SR4(N2), IS8(N), IS(Mf)11 and IS17 was similar to the corresponding control stations, CS(Mf)3(N), during mid-ebb tide, in which the recorded Surface &amp; Middle-depth DO levels at the corresponding control station were below Action Level.</li> <li>• The DO pattern at SR4(N2) and IS(Mf)11 during mid-ebb tide were similar to the their corresponding control station where the bottom-depth DO levels were generally lower. Lower bottom-depth DO levels may be possibly caused by the stratification of seawater during summer when the freshwater discharged from the Pearl River tended to form a surface layer of lower salinity water, which is probably responsible for the lower Salinity recorded at the surface and middle levels compared to the higher Salinity recorded at the bottom level of the monitoring stations. The stratification of seawater in the water column is likely a contributing factor to the results of lower levels of DO at the bottom level.</li> <li>• Bottom-depth DO levels at SR4a, IS(Mf)11, SR7 and IS17 was similar to the corresponding control stations, CS(Mf)5, during mid-flood tide, in which the recorded Bottom-depth DO levels at the corresponding control station were below Action Level.</li> <li>• Surface &amp; Middle-depth DO levels at IS(Mf)11 and IS17 was similar to the corresponding control stations, CS(Mf)5, during mid-flood tide, in which the recorded Surface &amp; Middle-depth DO levels at the corresponding control station were below Action Level.</li> <li>• For the exceedance of SS level at SR7 during mid-flood tide, SR7 is far away (&gt;2km) from the Seawall Modification Works Area (<i>Figure 1</i>), thus the observed exceedance should not be affected by the marine works under this Contract. Moreover, no exceedance of SS was recoded at IS(Mf)16 and IS17 during mid-flood tide, which are closer to the Seawall Modification Works Area than SR7. Therefore, the exceedance is unlikely to be related to this Contract.</li> <li>• As reported by the marine mammal observer, no discharge of organic matters into waters from landside works area was recorded. Therefore, the exceedance recorded at IS(Mf)16 is likely to be due to natural fluctuation of water quality and is unlikely to be related to this Contract. Exceedances recorded at IS(Mf)16, SR4a, SR4(N2), IS8(N), IS(Mf)11 and IS17 during mid-ebb tide and SR4a, IS(Mf)11, SR7 and IS17 during mid-flood tide are unlikely to be related to this Contract as these stations are further than IS(Mf)16.</li> </ul>
<b>Actions Taken / To Be Taken</b>	<p>No immediate action is considered necessary. The ET will monitor for future trends in exceedances.</p>
<b>Remarks</b>	<p>The monitoring results on 28 August 2019 and locations of water quality monitoring stations are attached.</p>

Project	Contract	Date (yyyy-mm-dd)	Tide	Station	Start Time	Level	Lev_Cod	Replicate	Temperature (°C)	pH	Salinity (ppt)	DO (mg/L)	Average DO (mg/L)	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS		
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	CS(Mf)5	9:55	Surface	1	1	27.7	7.8	23.3	5.1	4.5	2.1	2.3	16.9	12.0		
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	CS(Mf)5	9:55	Surface	1	2	27.7	7.9	22.9	5.1		1.9		16.0			
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	CS(Mf)5	9:55	Middle	2	1	25.9	7.8	28.8	3.9		1.5		12.9			
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	CS(Mf)5	9:55	Middle	2	2	25.9	7.8	28.2	3.9	3.2	1.6	2.3	12.0	12.0		
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	CS(Mf)5	9:55	Bottom	3	1	24.8	7.7	31.6	3.2		3.5		6.2			
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	CS(Mf)5	9:55	Bottom	3	2	24.8	7.7	30.9	3.2	4.5	3.4	5.2	7.9	11.2		
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	CS(Mf)3(N)	11:16	Surface	1	1	28.7	7.8	20.4	4.9		1.2		12.6			
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	CS(Mf)3(N)	11:16	Surface	1	2	28.7	7.8	20.0	4.9		1.2		11.6			
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	CS(Mf)3(N)	11:16	Middle	2	1	27.9	7.7	23.6	4.0	3.7	4.8	5.2	12.1	11.2		
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	CS(Mf)3(N)	11:16	Middle	2	2	27.9	7.7	23.1	4.0		4.9		11.1			
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	CS(Mf)3(N)	11:16	Bottom	3	1	27.2	7.7	26.0	3.7	4.9	9.3	8.2	10.2	14.3		
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	CS(Mf)3(N)	11:16	Bottom	3	2	27.2	7.6	25.5	3.7		9.8		9.5			
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS(Mf)16	11:51	Surface	1	1	28.3	7.8	22.7	4.9		7.8		19.2			
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS(Mf)16	11:51	Surface	1	2	28.3	7.8	22.1	4.9	4.9	7.9	8.2	18.0	14.3		
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS(Mf)16	11:51	Middle	2	1											
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS(Mf)16	11:51	Middle	2	2											
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS(Mf)16	11:51	Bottom	3	1	27.5	7.8	24.3	4.9	4.9	8.3	7.4	10.4	8.4		
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS(Mf)16	11:51	Bottom	3	2	27.8	7.8	24.3	4.8		8.9		9.4			
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	SR4a	12:01	Surface	1	1	28.1	7.7	21.5	4.8	4.8	6.5	7.4	8.1	8.4		
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	SR4a	12:01	Surface	1	2	28.1	7.8	21.1	4.8		6.1		7.1			
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	SR4a	12:01	Middle	2	1											
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	SR4a	12:01	Middle	2	2					4.0		10.0		7.2		
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	SR4a	12:01	Bottom	3	1	27.4	7.7	24.7	4.0		8.9		9.5			
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	SR4a	12:01	Bottom	3	2	27.4	7.7	24.2	4.0	4.3	8.2	10.0	8.7	7.2		
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	SR4(N2)	12:09	Surface	1	1	28.2	7.7	21.9	4.3		9.4		7.0			
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	SR4(N2)	12:09	Surface	1	2	28.2	7.8	21.5	4.3		9.6		7.7			
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	SR4(N2)	12:09	Middle	2	1					3.5		9.1		8.1		
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	SR4(N2)	12:09	Middle	2	2						9.6		7.7			
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	SR4(N2)	12:09	Middle	2	2					4.7		9.1		8.1		
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	SR4(N2)	12:09	Bottom	3	1	27.6	7.7	24.0	3.5		10.5		6.5			
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	SR4(N2)	12:09	Bottom	3	2	27.6	7.7	23.7	3.5		10.6		7.5			
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS8(N)	12:14	Surface	1	1	28.0	7.8	22.9	4.6	4.7	7.6	9.1	7.2	8.1		
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS8(N)	12:14	Surface	1	2	28.0	7.7	22.4	4.7		7.3		8.3			
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS8(N)	12:14	Middle	2	1											
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS8(N)	12:14	Middle	2	2					4.4		9.1		8.1		
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS8(N)	12:14	Middle	2	2						10.7		8.2			
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS8(N)	12:14	Bottom	3	1	27.5	7.7	24.4	4.2	5.6	10.8	3.6	8.5	9.2		
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS(Mf)9	12:22	Surface	1	1											
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS(Mf)9	12:22	Surface	1	2											
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS(Mf)9	12:22	Middle	2	1	29.0	7.8	21.5	5.6	5.6	3.8	3.6	8.7	9.2		
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS(Mf)9	12:22	Middle	2	2	29.0	7.8	21.1	5.6		3.3		9.7			
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS(Mf)9	12:22	Bottom	3	1					#DIV/0!		3.2		7.0		
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS(Mf)9	12:22	Bottom	3	2											
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS(Mf)11	10:45	Surface	1	1	28.6	7.8	19.6	5.0							
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS(Mf)11	10:45	Surface	1	2	28.6	7.8	19.3	5.0	4.8	1.7	3.2	9.8	7.0		
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS(Mf)11	10:45	Surface	1	2	28.6	7.8	19.3	5.0		1.7		8.9			
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS(Mf)11	10:45	Middle	2	1	28.2	7.8	20.9	4.5	3.5	3.8	3.2	7.2	7.0		
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS(Mf)11	10:45	Middle	2	2	28.2	7.8	20.6	4.5		3.1		6.3			
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS(Mf)11	10:45	Middle	2	1	26.0	7.8	28.7	3.5		4.4		5.6			
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS(Mf)11	10:45	Bottom	3	1	26.0	7.8	28.7	3.5	5.0	4.4	3.2	4.2	6.7		
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS(Mf)11	10:45	Bottom	3	2	26.0	7.7	28.2	3.5		4.4		4.2			
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	SR7	10:37	Surface	1	1	28.4	7.7	20.9	5.0	5.0	2.8	3.2	8.1	6.7		
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	SR7	10:37	Surface	1	2	28.4	7.6	20.4	5.0		2.5		8.1			
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	SR7	10:37	Surface	1	1											
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	SR7	10:37	Middle	2	1					5.1		3.2		6.7		
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	SR7	10:37	Middle	2	2											
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	SR7	10:37	Middle	2	2	28.3	7.7	21.3	5.1	4.9	3.7	6.9	5.8	6.7		
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	SR7	10:37	Bottom	3	1	28.3	7.5	20.9	5.0		3.6		4.8			
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS17	11:42	Surface	1	1	28.3	7.8	21.1	5.0				4.8			8.3
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS17	11:42	Surface	1	2	28.3	7.8	20.7	5.0	4.9	4.8	6.9	7.6	6.7		
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS17	11:42	Surface	1	2	28.3	7.8	20.7	5.0				4.8			7.6
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS17	11:42	Middle	2	1	27.9	7.8	22.4	4.7	4.9	7.2	6.9	6.5	6.7		
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS17	11:42	Middle	2	2	27.9	7.8	22.1	4.7				7.2			5.6

Project	Contract	Date (yyyy-mm-dd)	Tide	Station	Start Time	Level	Lev_Cod	Replicate	Temperature (°C)	pH	Salinity (ppt)	DO (mg/L)	Average DO (mg/L)	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS17	11:42	Bottom	3	1	27.7	7.8	23.8	4.6	4.6	8.6		5.6	
TMCLKL	HY/2012/08	2019/08/28	Mid-Ebb	IS17	11:42	Bottom	3	2	27.7	7.7	23.5	4.6		8.8		6.6	
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	CS(Mf)5	18:53	Surface	1	1	27.8	7.8	24.0	4.9		2.5	8.1	5.8	
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	CS(Mf)5	18:53	Surface	1	2	27.8	7.9	23.5	4.9	4.2	2.4		5.4	5.7
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	CS(Mf)5	18:53	Middle	2	1	25.4	7.8	30.1	3.5		10.9		5.3	
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	CS(Mf)5	18:53	Middle	2	2	25.4	7.8	29.5	3.5		10.7		5.6	
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	CS(Mf)5	18:53	Bottom	3	1	25.4	7.8	30.1	3.6	3.6	10.6		5.6	
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	CS(Mf)5	18:53	Bottom	3	2	25.4	7.8	29.5	3.6		11.3		6.6	
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	CS(Mf)3(N)	17:56	Surface	1	1	29.8	7.8	15.1	5.5		5.9	5.9	7.7	
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	CS(Mf)3(N)	17:56	Surface	1	2	29.8	7.8	14.9	5.4	5.3	5.1		7.8	
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	CS(Mf)3(N)	17:56	Middle	2	1	29.8	7.8	15.2	5.1		6.0	5.9	8.1	7.2
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	CS(Mf)3(N)	17:56	Middle	2	2	29.8	7.7	14.9	5.2		5.9		7.7	
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	CS(Mf)3(N)	17:56	Bottom	3	1	28.2	7.7	19.9	4.5	4.5	6.2		5.4	
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	CS(Mf)3(N)	17:56	Bottom	3	2	28.4	7.7	20.3	4.4		6.3		6.4	
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	IS(Mf)16	17:22	Surface	1	1	28.7	7.9	22.0	5.8		9.1	10.4	8.4	
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	IS(Mf)16	17:22	Surface	1	2	28.7	7.9	21.6	5.8	5.8	9.0		8.8	8.1
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	IS(Mf)16	17:22	Middle	2	1									
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	IS(Mf)16	17:22	Middle	2	2									
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	IS(Mf)16	17:22	Bottom	3	1	28.7	7.9	22.1	5.8	5.8	11.6		7.0	
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	IS(Mf)16	17:22	Bottom	3	2	28.6	7.8	21.7	5.8		11.9		8.0	
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	SR4a	17:12	Surface	1	1	28.5	7.9	22.2	5.6		5.9	6.7	7.1	
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	SR4a	17:12	Surface	1	2	28.5	7.9	21.7	5.6	5.6	5.7		7.7	7.9
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	SR4a	17:12	Middle	2	1									
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	SR4a	17:12	Middle	2	2									
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	SR4a	17:12	Bottom	3	1	28.1	7.8	23.0	4.2	4.2	7.9		8.9	
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	SR4a	17:12	Bottom	3	2	28.1	7.8	22.5	4.2		7.4		7.9	
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	SR4(N2)	17:04	Surface	1	1	29.4	7.9	21.2	6.1		7.9	10.6	9.1	
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	SR4(N2)	17:04	Surface	1	2	29.4	7.9	20.8	6.1	6.1	7.9		8.9	8.7
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	SR4(N2)	17:04	Middle	2	1									
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	SR4(N2)	17:04	Middle	2	2									
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	SR4(N2)	17:04	Bottom	3	1	28.8	7.9	22.0	5.2	5.2	13.4		8.8	
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	SR4(N2)	17:04	Bottom	3	2	28.8	7.8	21.7	5.2		13.0		7.8	
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	IS8(N)	16:58	Surface	1	1	28.9	7.9	21.5	5.8		8.5	9.6	7.4	
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	IS8(N)	16:58	Surface	1	2	28.9	7.9	21.1	5.8	5.8	8.5		6.4	7.6
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	IS8(N)	16:58	Middle	2	1									
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	IS8(N)	16:58	Middle	2	2									
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	IS8(N)	16:58	Bottom	3	1	28.9	7.9	21.5	5.8	5.8	11.0		8.7	
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	IS8(N)	16:58	Bottom	3	2	28.9	7.8	21.1	5.8		10.2		7.9	
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	IS(Mf)9	16:49	Surface	1	1									
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	IS(Mf)9	16:49	Surface	1	2									
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	IS(Mf)9	16:49	Middle	2	1	28.8	8.0	21.9	6.1	6.2	8.4	8.7	8.7	8.2
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	IS(Mf)9	16:49	Middle	2	2	28.8	7.9	21.5	6.2		8.9		7.7	
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	IS(Mf)9	16:49	Bottom	3	1					#DIV/0!				
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	IS(Mf)9	16:49	Bottom	3	2									
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	IS(Mf)11	18:21	Surface	1	1	29.1	7.8	18.7	5.5		4.7	13.6	7.5	
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	IS(Mf)11	18:21	Surface	1	2	29.1	7.8	18.3	5.4	4.8	4.6		6.5	13.7
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	IS(Mf)11	18:21	Middle	2	1	27.4	7.8	24.3	4.1		11.1		5.4	
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	IS(Mf)11	18:21	Middle	2	2	27.4	7.8	23.9	4.3		11.0		6.2	
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	IS(Mf)11	18:21	Bottom	3	1	27.0	7.8	25.8	3.7	3.8	25.0		30.2	
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	IS(Mf)11	18:21	Bottom	3	2	27.0	7.8	25.3	3.8		24.9		26.4	
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	SR7	18:30	Surface	1	1	28.2	7.8	21.4	5.1		6.8	9.5	6.8	26.8
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	SR7	18:30	Surface	1	2	28.2	7.8	20.9	5.1	5.1	6.7		7.7	
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	SR7	18:30	Middle	2	1									
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	SR7	18:30	Middle	2	2									
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	SR7	18:30	Bottom	3	1	27.7	7.8	24.2	4.3	4.3	12.5		44.1	
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	SR7	18:30	Bottom	3	2	27.6	7.8	23.8	4.3		12.1		48.5	
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	IS17	17:29	Surface	1	1	28.5	7.9	21.9	5.1		3.7	4.7	6.9	
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	IS17	17:29	Surface	1	2	28.5	7.8	21.5	5.1	4.8	3.8		6.0	7.2
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	IS17	17:29	Middle	2	1	27.6	7.8	24.3	4.5		4.8		6.6	
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	IS17	17:29	Middle	2	2	27.5	7.8	23.9	4.5		4.8		6.2	
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	IS17	17:29	Bottom	3	1	27.5	7.8	24.6	4.3	4.3	6.0		9.2	
TMCLKL	HY/2012/08	2019/08/28	Mid-flood	IS17	17:29	Bottom	3	2	27.4	7.7	24.3	4.3		5.0		8.3	

Note: Indicates Exceedance of Action Level  
Indicates Exceedance of Limit Level



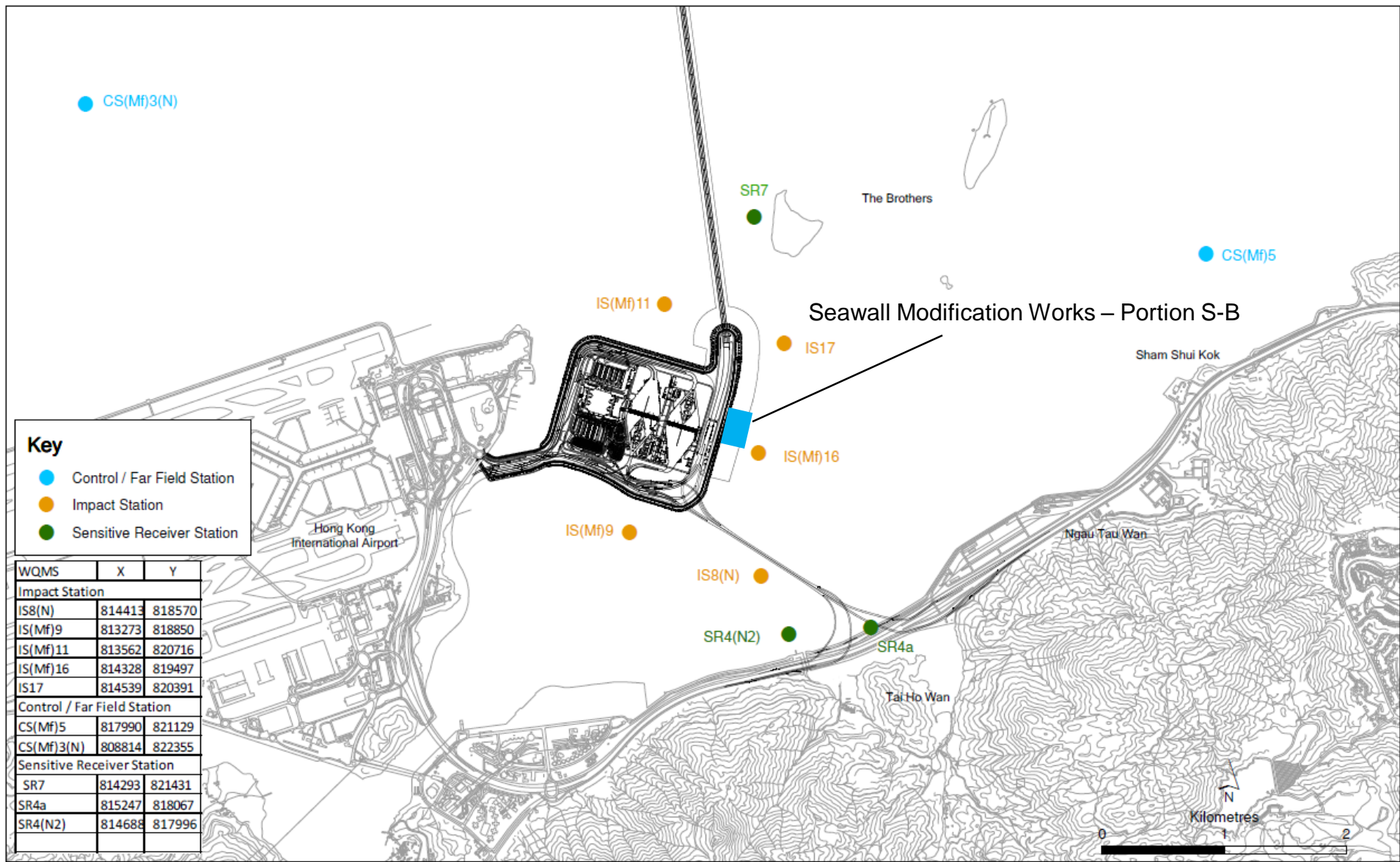


Figure 1

Email  
message

Environmental  
Resources  
Management

**To** Ramboll Hong Kong Limited (ENPO)

**From** ERM- Hong Kong, Limited

**Ref/Project number** Contract No. HY/2012/08 Tuen Mun–Chek Lap  
Kok Link–Northern Connection Sub-sea Tunnel  
Section

**Subject** Notification of Exceedance for Water Quality  
Impact Monitoring

**Date** 9 September 2019

2507,  
25/F One Harbourfront,  
18 Tak Fung Street,  
Hung Hom, Hong Kong  
Telephone: (852) 2271 3113  
Facsimile: (852) 2723 5660  
E-mail: jasmine.ng@erm.com



**ERM**

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Dear Sir or Madam,

Please find the Notification of Exceedance (NOE) of the following Log no.:

Action Level Exceedance

0212330\_30 August 2019\_ Surface & Middle DO\_E\_Station SR4a  
0212330\_30 August 2019\_ Bottom DO\_E\_Station SR4a  
0212330\_30 August 2019\_ Surface & Middle DO\_E\_Station SR4(N2)  
0212330\_30 August 2019\_ Surface & Middle DO\_E\_Station IS8(N)  
0212330\_30 August 2019\_ Surface & Middle DO\_E\_Station IS(Mf)11  
0212330\_30 August 2019\_ Bottom DO\_E\_Station IS(Mf)11  
0212330\_30 August 2019\_ Surface & Middle DO\_E\_Station SR7  
0212330\_30 August 2019\_ Bottom DO\_E\_Station SR7  
0212330\_30 August 2019\_ Surface & Middle DO\_E\_Station IS17  
0212330\_30 August 2019\_ Bottom DO\_F\_Station SR4a  
0212330\_30 August 2019\_ Surface & Middle DO\_F\_Station SR4(N2)  
0212330\_30 August 2019\_ Surface & Middle DO\_F\_Station SR7

A total of twelve Action Level exceedances were recorded on 30 August 2019.

Regards,



Dr Jasmine Ng  
Environmental Team Leader

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ERM-Hong Kong, Limited

CONTRACT NO. HY/2012/08

TUEN MUN – CHEK LAP KOK LINK –

NORTHERN CONNECTION SUB-SEA TUNNEL SECTION

Marine Water Quality Impact Monitoring  
Notification of Exceedance

<p>Log No.</p>	<p style="text-align: center;"><u>Action Level Exceedance</u></p> <p style="text-align: center;">0212330_30 August 2019_ Surface &amp; Middle DO_E_Station SR4a            0212330_30 August 2019_ Bottom DO_E_Station SR4a            0212330_30 August 2019_ Surface &amp; Middle DO_E_Station SR4(N2)            0212330_30 August 2019_ Surface &amp; Middle DO_E_Station IS8(N)            0212330_30 August 2019_ Surface &amp; Middle DO_E_Station IS(Mf)11            0212330_30 August 2019_ Bottom DO_E_Station IS(Mf)11            0212330_30 August 2019_ Surface &amp; Middle DO_E_Station SR7            0212330_30 August 2019_ Bottom DO_E_Station SR7            0212330_30 August 2019_ Surface &amp; Middle DO_E_Station IS17            0212330_30 August 2019_ Bottom DO_F_Station SR4a            0212330_30 August 2019_ Surface &amp; Middle DO_F_Station SR4(N2)            0212330_30 August 2019_ Surface &amp; Middle DO_F_Station SR7</p> <p style="text-align: center;">[Total No. of Exceedances = 12]</p>		
<p>Date</p>	<p style="text-align: center;">30 August 2019 (Measured)            3 September 2019 (<i>In situ</i> results received by ERM)            9 September 2019 (Laboratory results received by ERM)</p>		
<p>Monitoring Station</p>	<p style="text-align: center;">CS(Mf)5, SR4a, SR4(N2), IS8(N), IS(Mf)16, IS(Mf)9, CS(Mf)3(N), SR7, IS17, IS(Mf)11</p>		
<p>Parameter(s) with Exceedance(s)</p>	<p style="text-align: center;">Dissolved Oxygen (mg/L)</p>		
<p>Action Levels</p>	<p style="text-align: center;">DO</p>	<p style="text-align: center;">Surface and Middle 5.0 mg/L</p>	<p style="text-align: center;">Bottom 4.7 mg/L</p>
<p>Limit Levels</p>	<p style="text-align: center;">DO</p>	<p style="text-align: center;">Surface and Middle 4.2 mg/L</p>	<p style="text-align: center;">Bottom 3.6 mg/L</p>
<p>Measured Levels</p>	<p>Action Level Exceedance for DO (4.5 mg/L) is observed at SR4a at Surface &amp; Middle Level during mid-ebb tide.            Action Level Exceedance for DO (4.5 mg/L) is observed at SR4a at Bottom Level during mid-ebb tide.            Action Level Exceedance for DO (4.8 mg/L) is observed at SR4(N2) at Surface &amp; Middle Level during mid-ebb tide.            Action Level Exceedance for DO (4.9 mg/L) is observed at IS8(N) at Surface &amp; Middle Level during mid-ebb tide.            Action Level Exceedance for DO (4.8 mg/L) is observed at IS(Mf)11 at Surface &amp; Middle Level during mid-ebb tide.            Action Level Exceedance for DO (4.3 mg/L) is observed at IS(Mf)11 at Bottom Level during mid-ebb tide.            Action Level Exceedance for DO (4.6 mg/L) is observed at SR7 at Surface &amp; Middle Level during mid-ebb tide.            Action Level Exceedance for DO (4.6 mg/L) is observed at SR7 at Bottom Level during mid-ebb tide.            Action Level Exceedance for DO (4.9 mg/L) is observed at IS17 at Surface &amp; Middle Level during mid-ebb tide.            Action Level Exceedance for DO (4.1 mg/L) is observed at SR4a at Bottom Level during mid-flood tide.            Action Level Exceedance for DO (4.9 mg/L) is observed at SR4(N2) at Surface &amp; Middle Level during mid-flood tide.            Action Level Exceedance for DO (4.8 mg/L) is observed at SR7 at Surface &amp; Middle Level during mid-flood tide.</p>		
<p>Works Undertaken (at the time of monitoring event)</p>	<p>According to the information provided by the Contractor, Seawall Modification Works was carried out on 30 August 2019.</p>		



<b>Possible Reason for Action or Limit Level Exceedance(s)</b>	<p>The exceedances are unlikely to be due to the Contract, in view of the following:</p> <ul style="list-style-type: none"> <li>• All monitored parameters, except DO, at all monitoring stations were in compliance with the Action and Limit Levels during both mid-ebb and mid-flood tides on the same day.</li> <li>• SR4a, SR4(N2), IS8(N), IS(Mf)11 and SR7 are far away (&gt;2 km) from the Seawall Modification Works Area (<i>Figure 1</i>), thus the observed exceedance should not be affected by the marine works under this Contract. Therefore, the exceedance is unlikely to be related to this Contract.</li> <li>• Surface &amp; Middle-depth DO levels at SR4a, SR4(N2), IS8(N), IS(Mf)11, SR7 and IS17 were similar to the corresponding control stations, CS(Mf)3(N), during mid-ebb tide, in which the recorded Surface &amp; Middle-depth DO levels at the corresponding control station were below Action Level.</li> <li>• The DO pattern at SR4a, IS(Mf)11 and SR7 during mid-ebb tide were similar to the their corresponding control station where the bottom-depth DO levels were generally lower. Lower bottom-depth DO levels may be possibly caused by the stratification of seawater during summer when the freshwater discharged from the Pearl River tended to form a surface layer of lower salinity water, which is probably responsible for the lower Salinity recorded at the surface and middle levels compared to the higher Salinity recorded at the bottom level of the monitoring stations. The stratification of seawater in the water column is likely a contributing factor to the results of lower levels of DO at the bottom level.</li> <li>• Bottom-depth DO levels at SR4a was similar to the corresponding control stations, CS(Mf)5, during mid-flood tide, in which the recorded Bottom-depth DO levels at the corresponding control station were below Action Level.</li> <li>• Surface &amp; Middle-depth DO levels at SR4(N2) and SR7 were similar to the corresponding control stations, CS(Mf)5, during mid-flood tide, in which the recorded Surface &amp; Middle-depth DO levels at the corresponding control station were below Action Level.</li> <li>• As reported by the marine mammal observer, no discharge of organic matters into waters from landside works area was recorded. Moreover, no exceedance was recorded at IS(Mf)16 which is the closest station to the Seawall Modification Works Area during both mid-ebb and mid-flood tide. Therefore, exceedances recorded at SR4a, SR4(N2), IS8(N), IS(Mf)11, SR7 and IS17 during mid-ebb tide and SR4a, SR4(N2) and SR7 during mid-flood tide are unlikely to be caused by the marine works of this Contract.</li> </ul>
<b>Actions Taken / To Be Taken</b>	<p>No immediate action is considered necessary. The ET will monitor for future trends in exceedances.</p>
<b>Remarks</b>	<p>The monitoring results on 30 August 2019 and locations of water quality monitoring stations are attached.</p>

Project	Contract	Date (yyyy-mm-dd)	Tide	Station	Start Time	Level	Lev_Cod	Replicate	Temperature (°C)	pH	Salinity (ppt)	DO (mg/L)	Average DO (mg/L)	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS		
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	CS(Mf)5	11:23	Surface	1	1	27.4	7.8	24.4	5.1	5.0	4.7	6.3	7.4	8.6		
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	CS(Mf)5	11:23	Surface	1	2	27.4	7.8	24.3	5.2		4.7		8.3			
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	CS(Mf)5	11:23	Middle	2	1	27.1	7.8	25.4	4.8		6.0		8.8			
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	CS(Mf)5	11:23	Middle	2	2	27.1	7.8	25.4	4.8		6.1		8.3			
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	CS(Mf)5	11:23	Bottom	3	1	26.5	7.8	27.7	4.4	4.4	8.3		8.8			
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	CS(Mf)5	11:23	Bottom	3	2	26.5	7.8	27.7	4.3		8.2		9.8			
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	CS(Mf)3(N)	12:35	Surface	1	1	27.8	7.8	23.5	4.8	4.8	7.1	8.7	8.4	8.1		
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	CS(Mf)3(N)	12:35	Surface	1	2	27.8	7.8	23.5	4.8		7.1		8.6			
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	CS(Mf)3(N)	12:35	Middle	2	1	27.7	7.8	24.2	4.8		9.2		9.2			
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	CS(Mf)3(N)	12:35	Middle	2	2	27.7	7.8	24.2	4.8		9.3		9.5			
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	CS(Mf)3(N)	12:35	Bottom	3	1	27.6	7.8	24.7	5.0	5.0	10.0		6.8			
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	CS(Mf)3(N)	12:35	Bottom	3	2	27.6	7.8	24.7	5.0		9.3		5.8			
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS(Mf)16	13:07	Surface	1	1	27.2	7.8	24.9	5.1	5.1	9.7	10.3	11.8	12.2		
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS(Mf)16	13:07	Surface	1	2	27.4	7.8	24.7	5.1		9.4		12.1			
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS(Mf)16	13:07	Middle	2	1											
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS(Mf)16	13:07	Middle	2	2											
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS(Mf)16	13:07	Bottom	3	1	26.8	7.8	27.2	4.8	4.8	11.0		12.9			
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS(Mf)16	13:07	Bottom	3	2	26.8	7.8	27.2	4.7		10.9		12.0			
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	SR4a	13:16	Surface	1	1	27.4	7.8	24.7	4.5	4.5	10.2	10.3	12.7	14.5		
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	SR4a	13:16	Surface	1	2	27.4	7.8	24.5	4.5		9.9		14.6			
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	SR4a	13:16	Middle	2	1											
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	SR4a	13:16	Middle	2	2											
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	SR4a	13:16	Bottom	3	1	26.8	7.8	26.8	4.5	4.5	10.7		14.3			
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	SR4a	13:16	Bottom	3	2	26.8	7.8	26.8	4.4		10.4		16.4			
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	SR4(N2)	13:21	Surface	1	1	27.6	7.8	23.5	4.8	4.8	12.2	14.1	9.0	11.4		
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	SR4(N2)	13:21	Surface	1	2	27.6	7.8	23.5	4.8		11.9		10.2			
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	SR4(N2)	13:21	Middle	2	1											
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	SR4(N2)	13:21	Middle	2	2											
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	SR4(N2)	13:21	Bottom	3	1	27.1	7.8	24.9	4.9	4.9	16.2		13.3			
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	SR4(N2)	13:21	Bottom	3	2	27.2	7.8	24.9	4.9		16.2		13.1			
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS8(N)	13:27	Surface	1	1	27.6	7.8	24.0	4.9	4.9	9.2	11.3	11.8	11.8		
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS8(N)	13:27	Surface	1	2	27.6	7.8	24.1	4.9		8.3		11.2			
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS8(N)	13:27	Middle	2	1											
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS8(N)	13:27	Middle	2	2											
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS8(N)	13:27	Bottom	3	1	27.1	7.8	24.4	4.7	4.8	13.8		12.4			
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS8(N)	13:27	Bottom	3	2	27.2	7.8	24.6	4.8		13.8		11.8			
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS(Mf)9	13:35	Surface	1	1	27.8	7.8	24.3	5.1	5.1	9.7	9.5	7.9	8.5		
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS(Mf)9	13:35	Surface	1	2	27.8	7.8	24.3	5.1		9.9		8.9			
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS(Mf)9	13:35	Middle	2	1											
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS(Mf)9	13:35	Middle	2	2											
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS(Mf)9	13:35	Bottom	3	1	27.8	7.8	24.2	5.2	5.2	9.2		8.4			
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS(Mf)9	13:35	Bottom	3	2	27.8	7.8	24.2	5.1		9.1		8.9			
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS(Mf)11	12:02	Surface	1	1	27.8	7.8	23.7	5.0	4.8	6.9	13.0	13.9	11.2		
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS(Mf)11	12:02	Surface	1	2	27.8	7.8	23.7	5.0		7.0		12.1			
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS(Mf)11	12:02	Middle	2	1	27.2	7.8	24.7	4.6		15.7		11.3			
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS(Mf)11	12:02	Middle	2	2	27.4	7.8	24.6	4.6		15.5		10.3			
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS(Mf)11	12:02	Bottom	3	1	26.5	7.8	27.8	4.3	4.3	16.4		10.6			
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS(Mf)11	12:02	Bottom	3	2	26.5	7.8	27.8	4.3		16.3		9.2			
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	SR7	11:54	Surface	1	1	27.4	7.8	25.0	4.6	4.6	10.5	12.8	6.2	6.4		
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	SR7	11:54	Surface	1	2	27.4	7.8	24.8	4.6		10.2		6.4			
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	SR7	11:54	Middle	2	1											
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	SR7	11:54	Middle	2	2											
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	SR7	11:54	Bottom	3	1	27.3	7.8	25.4	4.6	4.6	15.9		6.1			
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	SR7	11:54	Bottom	3	2	27.3	7.8	25.4	4.6		14.7		6.7			
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS17	13:00	Surface	1	1	27.6	7.8	24.1	4.9	4.9	8.3	8.5	8.8	8.7		
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS17	13:00	Surface	1	2	27.6	7.8	24.1	4.9		8.1		9.6			
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS17	13:00	Middle	2	1	27.5	7.8	24.6	4.9		8.6		8.8			
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS17	13:00	Middle	2	2	27.5	7.8	24.6	4.9		8.5		7.9			

Project	Contract	Date (yyyy-mm-dd)	Tide	Station	Start Time	Level	Lev_Cod	Replicate	Temperature (°C)	pH	Salinity (ppt)	DO (mg/L)	Average DO (mg/L)	Turbidity (NTU)	Depth-Averaged Turbidity	SS (mg/L)	Depth-Averaged SS
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS17	13:00	Bottom	3	1	27.1	7.8	25.9	4.9	4.9	8.7		8.0	
TMCLKL	HY/2012/08	2019/08/30	Mid-Ebb	IS17	13:00	Bottom	3	2	27.1	7.8	25.8	4.8		8.6		8.8	
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	CS(Mf)5	19:52	Surface	1	1	27.4	7.8	25.0	4.8		5.4	6.9	7.9	8.8
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	CS(Mf)5	19:52	Surface	1	2	27.4	7.8	25.1	4.8		5.4		7.1	
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	CS(Mf)5	19:52	Middle	2	1	26.8	7.8	26.7	4.6		7.0		7.8	
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	CS(Mf)5	19:52	Middle	2	2	27.0	7.8	26.1	4.6		7.0		7.9	
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	CS(Mf)5	19:52	Bottom	3	1	26.6	7.8	27.3	4.6		8.6		11.7	
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	CS(Mf)5	19:52	Bottom	3	2	26.6	7.8	27.3	4.6		8.1		10.4	
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	CS(Mf)3(N)	19:01	Surface	1	1	28.7	7.7	18.4	4.8		11.1		8.9	
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	CS(Mf)3(N)	19:01	Surface	1	2	28.7	7.7	18.4	4.8		11.9		8.0	
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	CS(Mf)3(N)	19:01	Middle	2	1	28.6	7.7	18.7	4.9		13.9	13.6	9.2	8.6
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	CS(Mf)3(N)	19:01	Middle	2	2	28.7	7.7	18.7	4.8		13.7		8.5	
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	CS(Mf)3(N)	19:01	Bottom	3	1	28.6	7.7	18.9	4.9		15.7		8.9	
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	CS(Mf)3(N)	19:01	Bottom	3	2	28.6	7.7	18.9	4.9		15.3		7.9	
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	IS(Mf)16	18:27	Surface	1	1	27.7	7.9	24.2	5.3		17.1		8.9	
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	IS(Mf)16	18:27	Surface	1	2	27.7	7.9	24.2	5.3		17.8	18.6	8.4	9.6
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	IS(Mf)16	18:27	Middle	2	1									
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	IS(Mf)16	18:27	Middle	2	2									
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	IS(Mf)16	18:27	Bottom	3	1	27.7	7.9	24.5	5.3		19.9		10.4	
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	IS(Mf)16	18:27	Bottom	3	2	27.7	7.9	24.5	5.3		19.4		10.6	
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	SR4a	18:20	Surface	1	1	27.6	7.9	24.0	5.0		10.4		14.5	
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	SR4a	18:20	Surface	1	2	27.7	7.9	23.9	5.0		10.2		12.9	
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	SR4a	18:20	Middle	2	1									
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	SR4a	18:20	Middle	2	2									
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	SR4a	18:20	Bottom	3	1	27.3	7.9	26.5	4.1	4.1	14.1		14.0	
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	SR4a	18:20	Bottom	3	2	27.3	7.9	26.5	4.0		14.8		13.2	
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	SR4(N2)	18:17	Surface	1	1	27.5	7.9	24.6	4.9		9.6		10.9	
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	SR4(N2)	18:17	Surface	1	2	27.5	7.9	24.4	4.9		9.9		12.3	
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	SR4(N2)	18:17	Middle	2	1									
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	SR4(N2)	18:17	Middle	2	2									
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	SR4(N2)	18:17	Bottom	3	1	27.4	7.9	24.8	5.0		9.9		13.9	
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	SR4(N2)	18:17	Bottom	3	2	27.4	7.9	24.8	4.9		10.0		15.7	
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	IS8(N)	18:13	Surface	1	1	27.7	7.9	24.3	5.3		10.3		10.4	
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	IS8(N)	18:13	Surface	1	2	27.7	7.9	24.2	5.3		10.3		9.5	
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	IS8(N)	18:13	Middle	2	1									
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	IS8(N)	18:13	Middle	2	2									
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	IS8(N)	18:13	Bottom	3	1	27.7	7.9	24.4	5.4		10.9		13.0	
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	IS8(N)	18:13	Bottom	3	2	27.7	7.9	24.4	5.4		10.9		11.7	
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	IS(Mf)9	18:05	Surface	1	1	27.7	8.0	24.5	5.8		16.8		8.9	
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	IS(Mf)9	18:05	Surface	1	2	27.7	8.0	24.5	5.8		16.6		7.9	
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	IS(Mf)9	18:05	Middle	2	1									
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	IS(Mf)9	18:05	Middle	2	2									
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	IS(Mf)9	18:05	Bottom	3	1	27.7	8.0	24.5	5.9		19.3		8.1	
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	IS(Mf)9	18:05	Bottom	3	2	27.7	8.0	24.5	5.8		19.3		7.7	
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	IS(Mf)11	18:40	Surface	1	1	27.9	7.9	23.3	5.3		6.9		9.0	
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	IS(Mf)11	18:40	Surface	1	2	28.0	7.9	22.8	5.3		6.8		8.1	
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	IS(Mf)11	18:40	Middle	2	1	27.6	7.9	24.4	5.3		9.4		8.4	
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	IS(Mf)11	18:40	Middle	2	2	27.6	7.9	24.4	5.3		9.8		7.9	
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	IS(Mf)11	18:40	Bottom	3	1	27.6	7.9	24.5	5.4		10.6		10.7	
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	IS(Mf)11	18:40	Bottom	3	2	27.6	7.9	24.5	5.4		10.4		10.9	
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	SR7	19:32	Surface	1	1	27.6	7.8	24.3	4.8		10.4		5.0	
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	SR7	19:32	Surface	1	2	27.6	7.8	24.3	4.8		10.2		6.8	
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	SR7	19:32	Middle	2	1									
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	SR7	19:32	Middle	2	2									
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	SR7	19:32	Bottom	3	1	27.6	7.8	24.3	5.0		15.5		4.4	
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	SR7	19:32	Bottom	3	2	27.6	7.8	24.3	5.0		16.0		5.4	
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	IS17	18:35	Surface	1	1	27.9	7.8	23.2	5.0		6.0		12.0	
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	IS17	18:35	Surface	1	2	27.9	7.8	23.0	5.0		5.7		10.4	
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	IS17	18:35	Middle	2	1	27.7	7.9	24.0	5.0		7.3		11.8	
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	IS17	18:35	Middle	2	2	27.7	7.9	23.9	5.0		7.8		12.1	
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	IS17	18:35	Bottom	3	1	27.4	7.9	24.8	5.0		16.7		11.8	
TMCLKL	HY/2012/08	2019/08/30	Mid-flood	IS17	18:35	Bottom	3	2	27.5	7.9	24.7	5.0		16.3		10.9	

Note: Indicates Exceedance of Action Level  
Indicates Exceedance of Limit Level



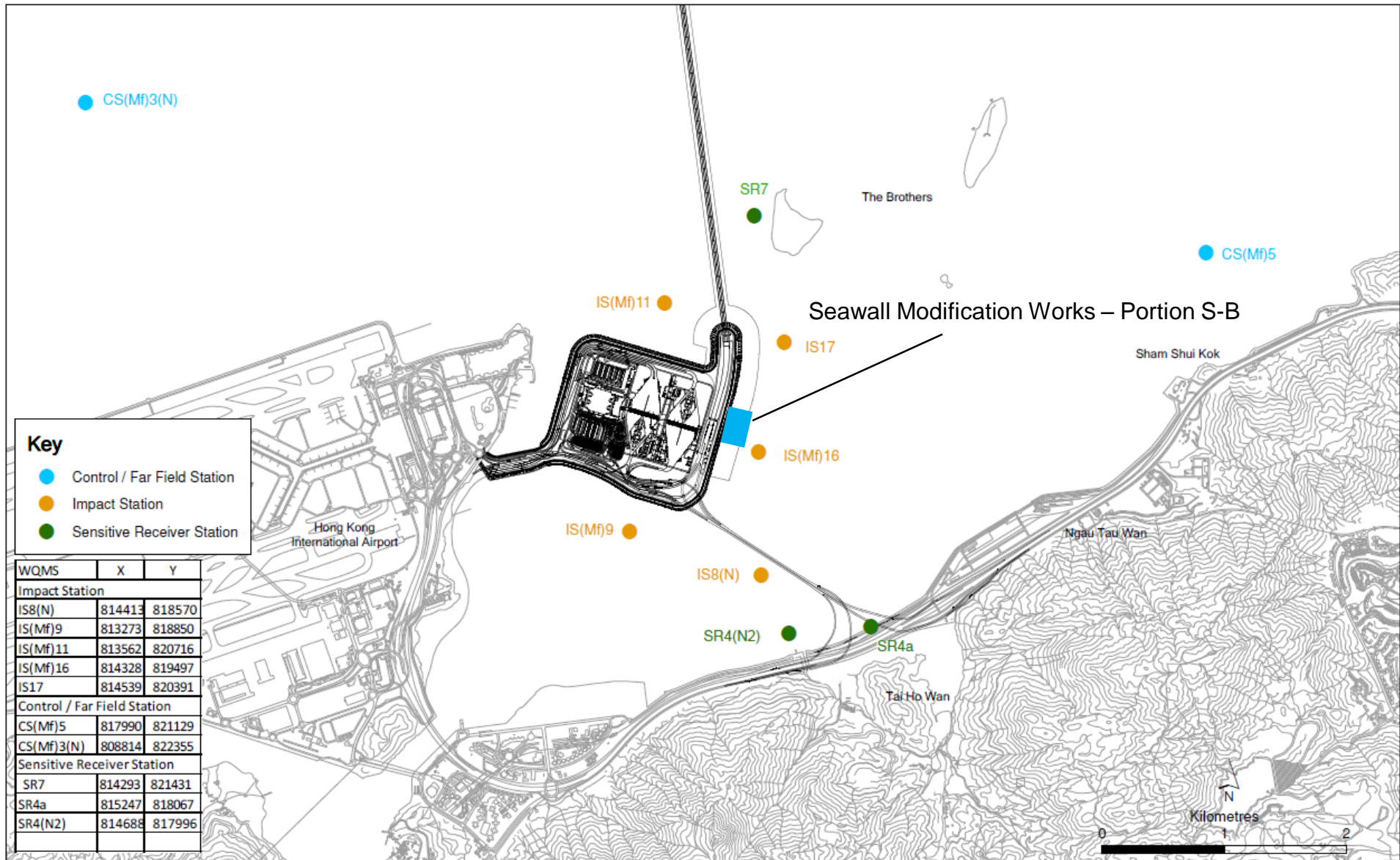


Figure 1

Appendix M

## Waste Flow Table

**Monthly Summary Waste Flow Table**

Name of Department: HyD

Contract No. / Works Order No.: HY/2012/08

Monthly Summary Waste Flow Table for August 2019 [to be submitted not later than the 15<sup>th</sup> day of each month following reporting month] (All quantities shall be rounded off to 3 decimal places.)

Month	Monthly Break-down of <u>Inert</u> Construction & Demolition Materials (i.e. Public Fill Materials)				
	(a)=(b)+(c)+(d)+(e) Total Quantity Generated	(b) Hard Rock and Large Broken Concrete	(c) Reused in the Contract	(d) Reused in other Projects	(e) Disposed of as Public Fill
	(in '000 ton)	(in '000 ton)	(in '000 ton)	(in '000 ton)	(in '000 ton)
Sub-total	2224.407	0.000	76.754	585.369	1562.284
Jan-2019	299.831	0.000	53.419	215.427	30.985
Feb-2019	133.335	0.000	46.021	67.707	19.607
Mar-2019	120.224	0.000	50.455	20.964	48.805
Apr-2019	130.329	0.000	58.956	0.000	71.373
May-2019	67.355	0.000	51.297	0.000	16.058
Jun-2019	4.134	0.000	0.000	0.000	4.134
Half Year Sub-total	755.208	0.000	260.148	304.098	190.962
Jul-2019	3.821	0.000	0.000	0.000	3.821
Aug-2019	2.322	0.000	0.000	0.000	2.322
Sep-2019					
Oct-2019					
Nov-2019					
Dec-2019					
Project Total Quantities	2985.758	0.000	336.902	889.467	1759.389

Month	Actual Quantities of <u>Non-inert</u> Construction Waste Generated Monthly								
	Metals		Paper/ cardboard packaging		Plastics (see Note 3)		Chemical Waste		Others, e.g. General Refuse disposed at Landfill
	(in '000kg)		(in '000kg)		(in '000kg)		(in '000kg)		(in '000ton)
	generated	recycled	generated	recycled	generated	recycled	generated	Disposed	generated
Sub-total	6763.82	6763.82	7.74	7.74	8.70	8.70	60.35	60.35	13.989
Jan-2019	394.55	394.55	0.00	0.00	0.00	0.00	0.00	0.00	0.538
Feb-2019	103.72	103.72	0.62	0.62	0.00	0.00	1.672	1.672	0.578
Mar-2019	88.20	88.20	0.46	0.46	0.00	0.00	0.00	0.00	0.692
Apr-2019	260.89	260.89	0.00	0.00	3.90	3.90	1.045	1.045	0.707
May-2019	0.66	0.66	0.66	0.66	0.00	0.00	0.00	0.00	0.798
Jun-2019	136.75	136.75	0.80	0.80	0.00	0.00	4.14	4.14	0.751
Half Year Sub-total	848.02	848.02	2.54	2.54	3.90	3.90	6.857	6.857	4.064
Jul-2019	444.37	444.37	1.20	1.20	0.00	0.00	0.00	0.00	0.730
Aug-2019	505.93	505.93	0.00	0.00	1.58	1.58	3.800	3.800	0.703
Sep-2019									
Oct-2019									
Nov-2019									
Dec-2019									
Project Total Quantities	8698.89	8698.89	11.48	11.48	14.18	14.18	71.007	71.007	19.486



Forecast of Total Quantities of Construction and Demolition Materials to be Generated from the Contract*				
Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed of as Public Fill
(in '000 ton)	(in '000 ton)	(in '000 ton)	(in '000 ton)	(in '000 ton)
3200.000	0.000	300.000	1000.000	2000.000

Forecast of Total Quantities of Construction and Demolition Materials to be Generated from the Contract*				
Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemical Waste	General Refuse disposed of at Landfill
(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000 ton)
8000.00	10.00	15.00	65.00	20.000

- Notes:
- (1) The performance targets are given in the **ER Appendix 8J Clause 14** and the EM & A Manual(s).
  - (2) The waste flow table shall also include C&D materials to be imported for use at the Site.
  - (3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material.
  - (4) The Contractor shall also submit the latest forecast of the total amount of C&D materials expected to be generated from the Works, together with a breakdown of the nature where the amount of C&D materials expected to be generated from the Works is equal to or exceeding 50,000 m<sup>3</sup>. (**ER Part 8 Clause 8.8.5 (d) (ii)** refers).