

MTR Corporation Limited

**Shatin to Central Link –  
Hung Hom to Admiralty Section**

Monthly EM&A Report No. 1

[Period from 2 to 31 May 2014]

(June 2014)

Verified by: Fredrick Leong 

Position: Independent Environmental Checker

Date: 13 June 2014

MTR Corporation Limited

**Shatin to Central Link –  
Hung Hom to Admiralty Section**

Monthly EM&A Report No. 1

[Period from 2 to 31 May 2014]

(June 2014)

Certified by: Richard Kwan 

Position: Environmental Team Leader

Date: 13 June 2013

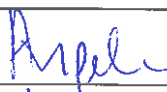

**MTR Corporation Limited**

Consultancy Agreements  
No. C11033B

**Shatin to Central Link - Hung Hom to  
Admiralty Section**

**Monthly EM&A Report No. 1**

[Period from 2 to 31 May 2014]

	Name	Signature
Prepared & Checked:	Angela Tong	
Reviewed & Approved:	Josh Lam	

Version: A

Date: 12 June 2014

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## 1 INTRODUCTION

### 1.1 Background

- 1.1.1 The Shatin to Central Link (SCL) is a 17km extension of the existing Ma On Shan Line (MOL) and East Rail Line (EAL) comprising (i) The East-West Corridor which extends the MOL from Tai Wai to Hung Hom via East Kowloon to connect with the West Rail Line (WRL) at Hung Hom Station (HUH) and Stabling Sidings at Hung Hom Freight Yard (HHS); and (ii) The North-South Corridor which is an extension of the East Rail Line (EAL) at Hung Hom across the harbour to Admiralty Station (ADM).
- 1.1.2 Shatin to Central Link – Hung Hom to Admiralty Section [SCL (HUH – ADM)] (hereafter referred to as “the Project”) is part of the SCL.
- 1.1.3 The Environmental Impact Assessment (EIA) Report for SCL (HUH-ADM) (Register No.: AEIAR-166/2012) was approved on 17 February 2012 under the Environmental Impact Assessment Ordinance (EIAO). Following the approval of the EIA Report, an Environmental Permit (EP) (EP No.: EP-436/2012) was granted on 22 March 2012 for construction and operation. Variations of environmental permit (VEP) was subsequently applied for EP-436/2012 and the latest Environmental Permit (EP No: EP-436/2012/A) was issued by Director of Environmental Protection (DEP) on 30 April 2014.

### 1.2 Project Programme

- 1.2.1 Two civil construction works contracts of the Project have been awarded since January 2014. The construction works under Works Contract 1129 commenced in May 2014. The Project will have to interface with other infrastructure projects, including Wan Chai Development Phase II and Central-Wan Chai Bypass, and is expected to be completed in 2020. **Table 1.1** summarises the information of the awarded Works Contracts.

**Table 1.1 Summary of Awarded Works Contracts**

Works Contract	Description	Construction Start Date	Contractor	Environmental Team
1126	Reprovisioning of Harbour Road Sports Centre and Wan Chai Swimming Pool	To be constructed	Kaden Leader JV	Cinotech Consultants Ltd. (Cinotech)
1129	SCL – Advance Works for NSL	May 2014	Hsin Chong Construction Co. Ltd.	AECOM Asia Co. Ltd.

- 1.2.2 Works Contract 11227 (Advance Works for Cross Harbour Tunnels) which comprises of trial trenching in Victoria Harbour and site levelling and rock filling in Shek O Casting Basin is scheduled for award in June 2014 and the works would commence in the third/fourth quarters tentatively.

### 1.3 Purpose of the Report

- 1.3.1 The Environmental Monitoring and Audit (EM&A) programme for the Project commenced in May 2014. This is the first EM&A Report for the Project which summarises the EM&A works undertaken by the respective Contractor’s ETs during the period from 2 to 31 May 2014.

## 2 ENVIRONMENTAL MONITORING AND AUDIT

### 2.1 EM&A Results

2.1.1 The EM&A Report for Works Contract 1129 prepared by the Contractor's ET is provided in **Appendices A**. The EM&A Report provide details of the project information, EM&A requirements, impact monitoring and audit results for the corresponding Contract.

2.1.2 A summary of the major construction activities undertaken by the respective Contractors of various Works Contracts during the reporting period are presented in **Table 2.1**.

**Table 2.1 Summary of Major Construction Activities in the Reporting Period**

Works Contract	Site	Construction Activities
1129	Area W1	<ul style="list-style-type: none"> <li>• Site Formation;</li> <li>• Hoarding and Entrance Access Erection;</li> <li>• Watermain Pipe Laying;</li> <li>• Watermain Diversion;</li> <li>• TCSS Diversion;</li> <li>• Instrumentation Installation;</li> <li>• HKE and High Mast Power Cable Diversion;</li> <li>and</li> <li>• Demolition of Existing Pile Cap.</li> </ul>
	Area W2	<ul style="list-style-type: none"> <li>• Road Excavation/ Formation;</li> <li>• Construct Additional U-channel along Road;</li> <li>• Modify Drain Pipe and Construct Gullies;</li> <li>• Lifting of Existing Manhole;</li> <li>• Remove Existing Concrete Barriers;</li> <li>• Road interface Connection (East);</li> <li>• Sheet Pipe Installation;</li> <li>• Hoarding Erection; and</li> <li>• Instrumentation Installation.</li> </ul>
	Area W3	No construction activity was carried out in the reporting month

2.1.3 During the reporting month, impact monitoring for construction noise was conducted in accordance with the EM&A Manual. No exceedance of the Action/Limit Levels of construction noise due to the Project construction was recorded. The construction noise results are summarised in **Table 2.2**. Details of the monitoring requirements, locations, equipment and methodology are presented in the EM&A Reports as provided in Appendix A.

**Table 2.2 Summary of Construction Noise Monitoring Results in the Reporting Period**

Monitoring Station ID	Location	Noise Level (L <sub>Aeq,30mins</sub> , dB(A))			Limit Level (dB(A))	Exceedance due to the Project Construction (Yes/No)
		Measured	Baseline	Corrected <sup>(1)</sup>		
<b>Works Contract 1129<sup>(2)</sup></b>						
NM1	Hoi Kung Court	71.0 – 71.3	71	Baseline – 59.5	75	No

Note:

(1) The measured noise levels are corrected against the corresponding baseline noise levels.

(2) As the major construction works under Works Contract 1129 are located at more than 300m away from NM2 Causeway Centre, and thus impact monitoring at NM2 was not required during the reporting period.

2.1.4 No environmental complaints, notification of summons and successful prosecutions were received in the reporting period. Cumulative log for environmental complaints, notification of summons and successful prosecutions is provided in **Table 2.3**.

**Table 2.3 Cumulative Log for Environmental Complaints, Notification of Summons and Successful Prosecutions**

Works Contract	Environmental Complaints		Notification of Summons		Successful Prosecutions	
	Reporting Month	Cumulative Number	Reporting Month	Cumulative Number	Reporting Month	Cumulative Number
1129	0	0	0	0	0	0

2.1.5 Regular site inspections were conducted by the Contractor’s ET on a weekly basis to check the implementation of environmental pollution control and mitigation measures for the Project. No non-conformance was identified in the reporting period.

**2.2 Future Key Activities and Associated EM&A Works**

2.2.1 As stated in **Section 1.2.2**, the trial trenching works at Victoria Harbour under Works Contract 11227 would commence after contract award in June 2014. Water quality monitoring programme was therefore proposed as a precautionary measure to monitor any potential water quality impact arising from the trenching works, and baseline water quality monitoring was conducted accordingly. The baseline water quality monitoring report appended with the respective water quality monitoring plan is provided in **Appendix B**. The proposed water quality monitoring requirement and arrangement under trial trenching works are solely for this piece of advanced works and should not prejudice on the full list of water quality monitoring stations and other requirements stipulated under the approved EIA Report and EM&A Manual for SCL (HUH-ADM) (Register No. AEIAR-166/2012).

2.2.2 Given the site levelling and rock filling in Shek O Casting Basin would be carried out under Works Contract 11227, additional water quality monitoring shall be conducted according to EP Condition 2.23.7. Baseline water quality monitoring at Shek O, following the requirements stipulated in EP Condition 2.23.7 and the approved EM&A Manual, therefore commenced in May and would be completed in early June 2014.

### 3 IMPLEMENTATION STATUS ON THE ENVIRONMENTAL PROTECTION REQUIREMENTS

3.1.1 The respective Contractors have implemented all mitigation measures and requirements as stated in the EIA Report, EM&A Manual and EP (EP-436/2012/A). The status of required submissions under the EP as of the reporting period are summarised in **Table 3.1**.

**Table 3.1 Summary of EP Submissions Status**

EP Condition (EP-436/2012/A)	Submission	Submission date
Condition 1.11	Notification of Commencement Date of Construction of the Project	19 Dec 2012
Condition 2.3	Notification of Information of Community Liaison Groups	17 Mar 2014
Condition 2.5	Management Organisation of Main Construction Companies	4 April 2014
Condition 2.6	Construction Programme and EP Submission Schedule	19 Dec 2012
Condition 2.9	Construction and Demolition Materials Management Plan (C&DMMP)	6 July 2012 (1 <sup>st</sup> Submission) 12 Sept 2012 (2 <sup>nd</sup> Submission) 15 Oct 2012 (approved)
Condition 2.12	Sediment Management Plan	6 July 2012 (1 <sup>st</sup> Submission) 12 Sept 2012 (2 <sup>nd</sup> Submission) 15 Oct 2012 (approved)
Condition 2.14	Visual, Landscape, Tree Planting & Tree Protection Plan	14 Nov 2012 (1 <sup>st</sup> Submission) 15 Feb 2013 (2 <sup>nd</sup> Submission) 3 Dec 2013 (3 <sup>rd</sup> Submission)
Condition 2.24	Contamination Assessment Plan (CAP) and Contamination Assessment Report (CAR) Remedial Action Plan (RAP) for the above-ground diesel tanks for Wan Chai Swimming Pool	CAP: 25 Sept 2012 (1 <sup>st</sup> Submission) 12 Nov 2012 (2 <sup>nd</sup> Submission)  CAR: 19 Mar 2013 (1 <sup>st</sup> Submission) 16 April 2013 (2 <sup>nd</sup> Submission) 21 May 2013 (3 <sup>rd</sup> Submission)
Condition 3.3	Baseline Monitoring Report (for noise and air quality)	4 Dec 2013 (1 <sup>st</sup> Submission) 5 Feb 2014 (2 <sup>nd</sup> Submission)



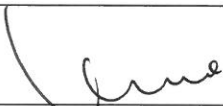
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**Appendix A**

**1<sup>st</sup> Monthly EM&A Report for Works Contract 1129 –  
SCL – Advance Works for NSL**

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**Hsin Chong Construction Co. Ltd.****Shatin to Central Link -  
Hung Hom to Admiralty Section****Works Contract 1129 -  
Advance Works for NSL****Monthly EM&A Report for  
May 2014****June 2014**

	Name	Signature
Prepared & Checked:	Lemon Lam	
Reviewed, Approved & Certified:	Y T Tang (Contractor's Environmental Team Leader)	

Version: 0

Date: 13 June 2014

**Disclaimer**

This Contract Specific Environmental Monitoring and Audit Manual is prepared for Hsin Chong Construction Co. Ltd and is given for its sole benefit in relation to and pursuant to SCL1129 and may not be disclosed to, quoted to or relied upon by any person other than Hsin Chong Construction Co. Ltd without our prior written consent. No person (other than Hsin Chong Construction Co. Ltd into whose possession a copy of this Manual comes may rely on this plan without our express written consent and Hsin Chong Construction Co. Ltd may not rely on it for any purpose other than as described above.

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## EXECUTIVE SUMMARY

Shatin to Central Link Contract 1129 – Advance Works for North South Link (NSL) (hereafter called “the Project”) covers part of the construction of the Shatin to Central Link (SCL) which aimed to comprises advance works for NSL – the extension of the existing East Rail Line (EAL) to Hong Kong Island.

The Project covers construction activities at Percival Street Footbridge, Causeway Flyover, Tunnel Approach Rest Garden (TARG) and demolition works at existing abandoned culvert near Wan Shing Street.

The EM&A programme commenced on 2 May 2014. The impact EM&A for the Project includes noise monitoring.

This report documents the findings of EM&A works conducted in the period between 2 and 31 May 2014. As informed by the Contractor, major activities in the reporting period were:

### Area W1

- Site Formation;
- Hoarding and Entrance Access Erection;
- Watermain Pipe Laying;
- Watermain Diversion;
- TCSS Diversion;
- Instrumentation Installation;
- HKE and High Mast Power Cable Diversion; and
- Demolition of Existing Pile Cap.

### Area W2

- Road Excavation / Formation;
- Construct Additional U-channel along Road;
- Modify Drain Pipe and Construct Gullies;
- Lifting of Existing Manhole;
- Remove Existing Concrete Barriers;
- Road Interface Connection (East);
- Sheet Pile Installation;
- Hoarding Erection; and
- Instrumentation Installation.

### Area W3

No construction activity was carried out in the reporting month.

### **Breaches of Action and Limit Levels for Noise**

No Action Level exceedance was recorded since no noise related complaint was received in the reporting month.

No exceedance of Limit Level of noise was recorded in the reporting month.

### **Complaint, Notification of Summons and Successful Prosecution**

No environmental complaint and no notification of summons and successful prosecution were received in the reporting month.

### **Reporting Changes**

There was no reporting change in the reporting month.

### **Future Key Issues**

Key issues to be considered in the coming month included:-

#### Area W1

- Covered Walkway Erection;
- Pedestrian Diversion;
- Removal of Existing Asbestos Pipe;
- Open Excavation for Underpinning Works;
- Testing of Existing H-piles;
- Extension of the Existing Piles to G.L.;
- Backfilling of Existing Pile Cap;
- Pre-drill;
- Hoarding Erection; and
- Pre-bored Socket H-piles.

#### Area W2

- Construct Additional U-channel along Road;
- Modify Drain Pipe and Construct Gullies;
- Lifting of Existing Manhole;
- Laying of Bitumen Road Base;
- Remove Existing Concrete Barriers;
- Road Interface Connection (West);
- Road Marking;
- Sheet Pile Installation;
- ELS Installation; and
- Excavation.

#### Area W3

No construction activity will be carried out in the coming month.

Potential environmental impacts arising from the above construction activities are mainly associated with construction dust, construction noise and waste management.

## **1 INTRODUCTION**

Hsin Chong Construction Co. Ltd (HC) was commissioned by MTR as the Civil Contractor for Works Contract 1129. AECOM Asia Company Limited (AECOM) was appointed by HC as the Environmental Team (ET) to undertake the Environmental Monitoring and Audit (EM&A) programme during construction phase of the Project.

### **1.1 Purpose of the Report**

1.1.1 This is the first monthly EM&A Report which summaries the impact monitoring results and audit findings for the Project during the reporting period from 2 to 31 May 2014.

### **1.2 Report Structure**

1.2.1 This monthly EM&A Report is organised as follows:

- Section 1: Introduction
- Section 2: Project Information
- Section 3: Environmental Monitoring Requirement
- Section 4: Implementation Status of Environmental Mitigation Measures
- Section 5: Monitoring Results
- Section 6: Environmental Site Inspection and Audit
- Section 7: Environmental Non-conformance
- Section 8: Future Key Issues
- Section 9: Conclusions and Recommendations

## 2 PROJECT INFORMATION

### 2.1 Background

- 2.1.1 The Shatin to Central Link (SCL) is a 17km extension of the existing Ma On Shan Line (MOL) and East Rail Line (EAL) comprising (i) The East-West Corridor which extends the MOL from Tai Wai via East Kowloon to connect with the West Rail Line (WRL) at Hung Hom Station (HUH); and (ii) The North-South Corridor which is an extension of the East Rail Line (EAL) at Hung Hom across the harbour to Admiralty Station (ADM).
- 2.1.2 The Environmental Impact Assessment (EIA) Reports for SCL – Hung Hom to Admiralty Section [SCL (HUH-ADM)] (Register No.: AEIAR-166/2012) was approved on 17 February 2012 under the Environmental Impact Assessment Ordinance (EIAO). Following the approval of the EIA Report, an Environmental Permit (EP) was granted on 22 March 2012, which covers SCL (HUH-ADM) EP No.: EP-436/2012), for the construction and operation. Variation of EP (VEP) (VEP-433/2014) was applied on 2 April 2014 and the latest EP (EP No. EP-436/2012/A) was issued by the Director of Environmental Protection (DEP) on 30 April 2014.
- 2.1.3 The construction of the SCL is divided into different civil construction works contracts and the Project covers construction activities at Percival Street Footbridge, Causeway Flyover, TARG and demolition works at existing abandoned culvert near Wan Shing Street under the EP. The works areas and site location of the Project is shown in **Figure 1.1**.

### 2.2 Site Description

- 2.2.1 The major construction activities under Works Contract 1129 include:
- (a) Removal of 10 nos. of abandoned steel H-piles, provision of temporary staircase and diversion of pedestrians at Percival Street Footbridge; (Works Area W1)
  - (b) Underpinning of Pier A5 of Causeway Flyover including installation of 6 nos. 600mm diameter concrete bored piles and construction of pile cap; (Works Area W1)
  - (c) Site clearance, temporary take-up, storage and handover of feature stone at existing TARG, tree removal and utility diversions. Construction of temporary box culvert (in dry/wet season) without breakthrough of existing culvert at TARG; (Area W2) and
  - (d) Diversion and temporary support of utilities to facilitate pile extraction works at existing abandoned culvert near Wan Shing Street. Demolition on part of the abandoned culvert and removal of 6 nos. of 18" concrete square driven piles. Construction of minor slip road to facilitate road diversion. (Works Area W3)

### 2.3 Construction Programme and Activities

- 2.3.1 The major construction activities undertaken in the reporting month are summarised below:

#### Area W1

- Site Formation;
- Hoarding and Entrance Access Erection;
- Watermain Pipe Laying;
- Watermain Diversion;
- TCSS Diversion;
- Instrumentation Installation;
- HKE and High Mast Power Cable Diversion; and
- Demolition of Existing Pile Cap.

#### Area W2

- Road Excavation / Formation;
- Construct Additional U-channel along Road;
- Modify Drain Pipe and Construct Gullies;
- Lifting of Existing Manhole;
- Remove Existing Concrete Barriers;



- Road Interface Connection (East);
- Sheet Pile Installation; Hoarding Erection; and
- Instrumentation Installation.

Area W3

No construction activity was carried out in the reporting month.

2.3.2 The construction programme is presented in **Appendix A**.

**2.4 Project Organisation**

2.4.1 The project organization structure is shown in **Appendix B**. The key personnel contact names and numbers for the Project are summarised in **Table 2.1**.

**Table 2.1 Contact Information of Key Personnel**

Party	Role	Position	Name	Telephone	Fax
MTR	Residential Engineer (ER)	Construction Manager	Mr. T.C. Lam	3143 9129	3127 6424
		SCL Project Environmental Team Leader	Mr. Richard Kwan	2688 1179	2993 7577
Meinhardt	Independent Environmental Checker	Independent Environmental Checker	Mr. Fredrick Leong	2859 1739	2540 1580
HC	Contractor	Project Manager	Mr. Alan Sit	2360 0720	2774 9322
		Assistant Environmental Manager	Mr. Andy Leung	9489 0035	
AECOM	Contractor's Environmental Team (ET)	ET Leader	Mr. Y T Tang	3922 9393	2317 7609

**2.5 Status of Environmental Licences, Notification and Permits**

2.5.1 Relevant environmental licenses, permits and/or notifications on environmental protection for this Project and valid in the reporting month are summarized in **Table 2.2**.

**Table 2.2 Status of Environmental Licenses, Notifications and Permits**

Permit / License No. / Notification/ Reference No.	Valid Period		Status	Remarks
	From	To		
<b>Environmental Permit</b>				
EP-436/2012	22 Mar 2012	-	Superseded by EP-436/2012/A on 30 Apr 2014	-
EP-436/2012/A	30 Apr 2014	-	Valid	-
<b>Construction Noise Permit</b>				
GW-RS0334-14	28 Apr 2014	27 Jul 2014	Superseded by GW-RS0540-14 on 29 May 2014	At a Section of Gloucester Road near Tunnel Approach Rest Garden
GW-RS0465-14	13 May 2014	30 Jun 2014	Valid	Applied for hammer tapping survey at night
GW-RS0527-14	31 May 2014	27 Jul 2014	Valid	Applied for road marking
GW-RS0540-14	29 May 2014	27 Jul 2014	Valid	Applied for temporary carriageway for W3

Permit / License No. / Notification/ Reference No.	Valid Period		Status	Remarks
	From	To		
<b>Wastewater Discharge License</b>				
WT00018771-2014	4 Apr 2014	30 Apr 2019	Valid	-
<b>Chemical Waste Producer Registration</b>				
WPN5213-135-H3 563-01	26 Feb 2014	End of Contract	Valid	For Hung Hing Flyover & Percival Street (Area W1)
WPN5213-135-H3 564-01	26 Feb 2014	End of Contract	Valid	For Canal Road Flyover & Tunnel Approach Rest Garden (Area W2)
WPN5213-134-H3 565-01	26 Feb 2014	End of Contract	Valid	For Tunnel Approach Road & Wan Shing Footbridge (Area W3)
<b>Billing Account for Construction Waste Disposal</b>				
7019335	13 Feb 2014	End of Contract	Valid	-
<b>Notification Under Air Pollution Control (Construction Dust) Regulation</b>				
370021	28 Jan 2014	End of Contract	Valid	-

### 3 ENVIRONMENTAL MONITORING REQUIREMENTS

#### 3.1 Construction Noise Monitoring

##### *Monitoring Requirements*

- 3.1.1 In accordance with the EM&A Manual, impact noise monitoring should be conducted for at least once a week during the construction phase of the Project. **Table 3.1** summarises the monitoring parameters, frequency and duration of impact noise monitoring. The Action and Limit level of the noise monitoring is provided in **Appendix D**.

**Table 3.1 Noise Monitoring Parameters, Frequency and Duration**

Parameter and Duration	Frequency
30-mins measurement at each monitoring station between 0700 and 1900 on normal weekdays. Leq, L <sub>10</sub> and L <sub>90</sub> would be recorded.	At least once per week

##### *Monitoring Equipment*

- 3.1.2 Noise monitoring was performed using sound level meter at each designated monitoring station. The sound level meters deployed comply with the International Electrotechnical Commission Publications (IEC) 651:1979 (Type 1) and 804:1985 (Type 1) specifications. Acoustic calibrator was deployed to check the sound level meters at a known sound pressure level. Brand and model of the equipment is given in **Table 3.2**.

**Table 3.2 Noise Monitoring Equipment for Regular Noise Monitoring**

Equipment	Brand and Model
Integrated Sound Level Meter	Rion (Model No. NL-31 (S/N: 00320528)) and B&K (Model No. 2238 (S/N: 2285692))
Acoustic Calibrator	Rion (Model No. NC-73 (S/N: 10307223))

##### *Monitoring Locations*

- 3.1.3 The monitoring station for construction noise monitoring pertinent to the Project has been identified based on the approved EM&A Manuals for SCL (HUH-ADM) of the Project. Location of the noise monitoring station is summarised in **Table 3.3** and shown in **Figure 3.1**.

**Table 3.3 Noise Monitoring Stations during Construction Phase**

Identification No.	Noise Sensitive Receiver (NSR) ID in EIA Report	Noise Monitoring Station
NM1	CH2	Hoi Kung Court

**Monitoring Methodology**

## 3.1.4 Monitoring Procedure

- (a) Façade measurement was made at NM1.
- (b) The battery condition was checked to ensure the correct functioning of the meter.
- (c) Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:
  - (i) frequency weighting: A
  - (ii) time weighting: Fast
  - (iii) time measurement:  $L_{eq(30\text{-minutes})}$  during non-restricted hours i.e. 0700 – 1900 on normal weekdays.
- (d) Prior to and after each noise measurement, the meter was calibrated using the acoustic calibrator for 94 dB(A) at 1000 Hz. If the difference in the calibration level before and after measurement was more than 1 dB(A), the measurement would be considered invalid and repeat of noise measurement would be required after re-calibration or repair of the equipment.
- (e) During the monitoring period, the  $L_{eq}$ ,  $L_{10}$  and  $L_{90}$  were recorded. In addition, site conditions and noise sources were recorded on a standard record sheet.
- (f) Noise measurement was paused during periods of high intrusive noise (e.g. dog barking, helicopter noise) if possible. Observations were recorded when intrusive noise was unavoidable.
- (g) Noise monitoring was cancelled in the presence of fog, rain, wind with a steady speed exceeding 5m/s, or wind with gusts exceeding 10m/s.

## 3.1.5 Maintenance and Calibration

- (a) The microphone head of the sound level meter was cleaned with soft cloth at regular intervals.
- (b) The meter and calibrator were sent to the supplier or HOKLAS laboratory to check and calibrate at yearly intervals.
- (c) Calibration certificates of the sound level meters and acoustic calibrators are provided in **Appendix E**.

**Monitoring Schedule for the Reporting Month**

- 3.1.6 The schedule for environmental monitoring in May 2014 is provided in **Appendix F**.

**3.2 Landscape and Visual**

- 3.2.1 As per the EM&A Manuals, the landscape and visual mitigation measures shall be implemented and site inspections should be undertaken once every two weeks during the construction period. A summary of the implementation status is presented in **Section 6**.

**4 IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURES**

The Contractor has implemented environmental mitigation measures and requirements as stated in the EIA Reports, the EP and EM&A Manuals. The implementation status of the environmental mitigation measures during the reporting period is summarized in **Appendix C**. Status of required submissions under the EP during the reporting period is summarised in **Table 4.1**.

**Table 4.1 Status of Required Submission under Environmental Permit**

<b>EP Condition</b>	<b>Submission</b>	<b>Submission Date</b>
N/A	N/A	N/A

**5 MONITORING RESULTS****5.1 Construction Noise Monitoring**

5.1.1 The monitoring results for noise are summarized in **Table 5.1** and the monitoring data is provided in **Appendix G**.

**Table 5.1 Summary of Construction Noise Monitoring Results in the Reporting Period**

ID	Range, dB(A), $L_{eq}$ (30 mins)	Limit Level, dB(A), $L_{eq}$ (30 mins)
NM1 (*)	Baseline – 59.5	75

(\*) Baseline correction will be made to the measured  $L_{eq}$  when the measured noise level exceeded the corresponding baseline noise level and presented in the table.

- 5.1.2 No noise complaint was received in the reporting month; hence, no Action Level exceedance was recorded.
- 5.1.3 No Limit Level exceedance of noise was recorded at all monitoring stations in the reporting month.
- 5.1.4 The event and action plan is annexed in **Appendix H**.
- 5.1.5 Major noise sources during the monitoring included construction noise from the Project site, nearby traffic noise and the community.

## 5.2 Waste Management

- 5.2.1 C&D materials and wastes sorting were carried out on site. Receptacles were available for C&D wastes and general refuse collection.
- 5.2.2 As advised by the Contractor, 1,266m<sup>3</sup> of inert C&D material was generated (1,258m<sup>3</sup> was disposed as public fills at CWPFB and 7m<sup>3</sup> was disposed as fill bank at TKO137) in the reporting month. 5m<sup>3</sup> of general refuse was generated in the reporting month. No paper/cardboard packaging material, plastics and metals were collected by recycling contractor in the reporting month. No inert C&D materials were reused on site. No chemical waste was collected by licensed contractor in the reporting period. The waste flow table is annexed in **Appendix J**.
- 5.2.3 The Contractor is advised to properly maintain on site C&D materials and wastes collection, sorting and recording system and maximize reuse / recycle of C&D materials and wastes. The Contractor is reminded to properly maintain the site tidiness and dispose of the wastes accumulated on site regularly and properly.
- 5.2.4 The Contractor is reminded that chemical waste containers should be properly treated and stored temporarily in designated chemical waste storage area on site in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.

## 5.3 Landscape and Visual

- 5.3.1 Bi-weekly inspection of the implementation of landscape and visual mitigation measures were conducted on 2, 15 and 29 May 2014. A summary of the site inspection is provided in **Appendix C**. The observations and recommendations made during the site inspections are presented in **Table 6.1**.

**6 ENVIRONMENTAL SITE INSPECTION AND AUDIT**

6.1.1 Site inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control and mitigation measures for the Project. A summary of the mitigation measures implementation schedule is provided in **Appendix C**.

6.1.2 In the reporting month, 5 site inspections were carried out on 2, 9, 15, 22 and 29 May 2014. The one held on 15 May 2014 was a joint inspection with the IEC, ER, the Contractor and the ET. No site inspection was conducted by EPD during the reporting month. No non-compliance was recorded during the site inspections. Details of observations recorded during the site inspections are presented in **Table 6.1**.

**Table 6.1 Observations and Recommendations of Site Audit**

Parameters	Date	Observations and Recommendations	Follow-up
Air Quality	15 May 2014	<ul style="list-style-type: none"> <li>Wheel washing facilities provided at Area W1 and W2 were observed ineffective. The Contractor was reminded to improve the facilities and review the capacity of the facilities as soon as possible.</li> </ul>	The item was rectified by the Contractor on 21 May 2014.
	29 May 2014	<ul style="list-style-type: none"> <li>Stockpile was observed not covered properly at Area W1. The Contractor was reminded to cover the stockpile entirely as dust suppression measure.</li> </ul>	The item to be followed up on 5 June 2014.
		<ul style="list-style-type: none"> <li>Visible smoke generated from the generator was observed at Area W2. The Contractor was reminded to keep well maintain of the machinery regularly.</li> </ul>	The item to be followed up on 5 June 2014.
Noise	2 May 2014	<ul style="list-style-type: none"> <li>The Contractor was reminded to provide appropriate noise insulating material to the breaker's breaking tips to minimize the noise impacts to the sensitive receivers nearby.</li> </ul>	The item was rectified by the Contractor on 8 May 2014.
Water Quality	2 May 2014	<ul style="list-style-type: none"> <li>Preventative measures to prevent runoff from entering to the public area had been provided at Area W1. However, the Contractor was reminded to improve/enhance the measures to ensure the effectiveness of the measures.</li> </ul>	The item was rectified by the Contractor on 8 May 2014.
	9 May 2014	<ul style="list-style-type: none"> <li>The Contractor was reminded to deploy and set up wastewater treatment and sedimentation facilities on site (at area W1 and W2) as soon as possible.</li> </ul>	The item was rectified by the Contractor on 21 and 27 May 2014.
	15 May 2014	<ul style="list-style-type: none"> <li>Wastewater treatment and sedimentation facilities still not yet provided at Area W1 and W2. The Contractor was reminded to set up the facility as soon as possible.</li> </ul>	The item was rectified by the Contractor on 21 and 27 May 2014.
	22 May 2014	<ul style="list-style-type: none"> <li>The Contractor was reminded to set up the wastewater treatment/ sedimentation facilities at Area W1 as soon as possible.</li> </ul>	The item was rectified by the Contractor on 27 May 2014.



Parameters	Date	Observations and Recommendations	Follow-up
<b>Waste/ Chemical Management</b>	2 May 2014	<ul style="list-style-type: none"> <li>Oil leakage from the sheet-pile machine was observed at Area W2. The Contractor was reminded to clear the oil stains and disposed of as chemical waste, and maintain the machinery in a good condition in order to prevent oil leakage.</li> </ul>	The item was rectified by the Contractor on 8 May 2014.
	15 May 2014	<ul style="list-style-type: none"> <li>Oily water overflowed from the drip tray was observed at Area W1. The Contractor was reminded to clean up the oil stain and remove the accumulated water properly.</li> </ul>	The item was rectified by the Contractor on 21 May 2014.
		<ul style="list-style-type: none"> <li>Chemical containers were placed on ground without provision of drip tray and open hold on drip tray was not covered at Area W2. The Contractor was reminded to provide and cover the drip tray on site properly.</li> </ul>	The item was rectified by the Contractor on 21 May 2014.
	22 May 2014	<ul style="list-style-type: none"> <li>Oil stain was observed next to the drip tray at Area W1. The Contractor was reminded to clean up the oil stain and disposal of as chemical waste properly.</li> </ul>	The item was rectified by the Contractor on 27 May 2014.
		<ul style="list-style-type: none"> <li>Chemical containers were found under the WetSep without the provision of drip tray at Area W2. The Contractor was reminded to provide drip trays or equivalent measures for storage chemical containers to prevent any leakage.</li> </ul>	The item was rectified by the Contractor on 27 May 2014.
29 May 2014	<ul style="list-style-type: none"> <li>Chemical containers were found under the WetSep without the provision of drip tray at Area W1. The Contractor was reminded to provide drip trays or equivalent measures for storage chemical containers to prevent any leakage.</li> </ul>	The item to be followed up on 5 June 2014.	
<b>Landscape &amp; Visual</b>	N/A	N/A	N/A
<b>Permits/ Licenses</b>	N/A	N/A	N/A

6.1.3 All the follow-up actions requested by Contractor's ET and IEC during the site inspection were undertaken as reported by the Contractor and confirmed into the following weekly site inspection conducted during the reporting period.

## **7 ENVIRONMENTAL NON-CONFORMANCE**

### **7.1 Summary of Monitoring Exceedances**

- 7.1.1 No noise complaint was received in the reporting month; hence, no Action Level exceedance was recorded.
- 7.1.2 No Limit Level exceedance for noise was recorded at all monitoring stations in the reporting month.

### **7.2 Summary of Environmental Non-Compliance**

- 7.2.1 No environmental non-compliance was recorded in the reporting month.

### **7.3 Summary of Environmental Complaints**

- 7.3.1 No environmental related complaint was received in the reporting month. Cumulative statistics on environmental complaints is provided in **Appendix I**.

### **7.4 Summary of Environmental Summon and Successful Prosecutions**

- 7.4.1 No environmental related prosecution or notification of summons was received in the reporting month. Cumulative statistics on notification of summons and successful prosecutions is provided in **Appendix I**.

## 8 FUTURE KEY ISSUES

### 8.1 Construction Programme for the Next Two Month

8.1.1 The major construction works in June and July 2014 will be:

#### Area W1

- Covered Walkway Erection;
- Pedestrian Diversion;
- Removal of Existing Asbestos Pipe;
- Open Excavation for Underpinning Works;
- Testing of Existing H-piles;
- Extension of the Existing Piles to G.L.;
- Backfilling of Existing Pile Cap;
- Pre-drill;
- Hoarding Erection;
- Pre-bored Socket H-piles.
- Extraction of Existing Pile; and
- Construction of Pile Cap.

#### Area W2

- Construct Additional U-channel along Road;
- Modify Drain Pipe and Construct Gullies;
- Lifting of Existing Manhole;
- Laying of Bitumen Road Base;
- Remove Existing Concrete Barriers;
- Road Interface Connection (West);
- Road Marking;
- ELS Installation;
- Sheet Pile Installation;
- Excavation;
- Install Concrete Blocks and
- Lagging Installation for Existing Drains.

#### Area W3

- Erection of View Blockage Panel;
- Tree Felling;
- Instrumentation Installation; and
- Dig Trial Trench to Explore Box Culvert.

### 8.2 Key Issues for the Coming Month

8.2.1 Potential environmental impacts arising from the above construction activities are mainly associated with construction dust, construction noise, water quality and waste management.

### 8.3 Monitoring Schedule for the Next Month

8.3.1 The tentative schedule for environmental monitoring in June 2014 is provided in **Appendix F**.

## **9 CONCLUSIONS AND RECOMMENDATIONS**

### **9.1 Conclusions**

- 9.1.1 Noise monitoring was carried out in the reporting month.
- 9.1.2 No noise complaint was received in the reporting month. Hence, no Action Level exceedance was recorded.
- 9.1.3 No Limit Level exceedance for noise was recorded at all monitoring stations in the reporting month.
- 9.1.4 5 nos. of environmental site inspections were carried out in May 2014. Recommendations on remedial actions were given to the Contractor for the deficiencies identified during the site audit.
- 9.1.5 Referring to the Contractor's information, no environmental complaint, notification of summons and successful prosecution was received in the reporting month.

### **9.2 Recommendations**

- 9.2.1 According to the environmental site inspections performed in the reporting month, the following recommendations were provided:-

#### Air Quality Impact

- Implement effective measures to avoid dust impact.

#### Construction Noise Impact

- Implement effective measures to avoid noise impact.

#### Water Quality Impact

- Implement effective measures to avoid surface runoff into the drainage system.

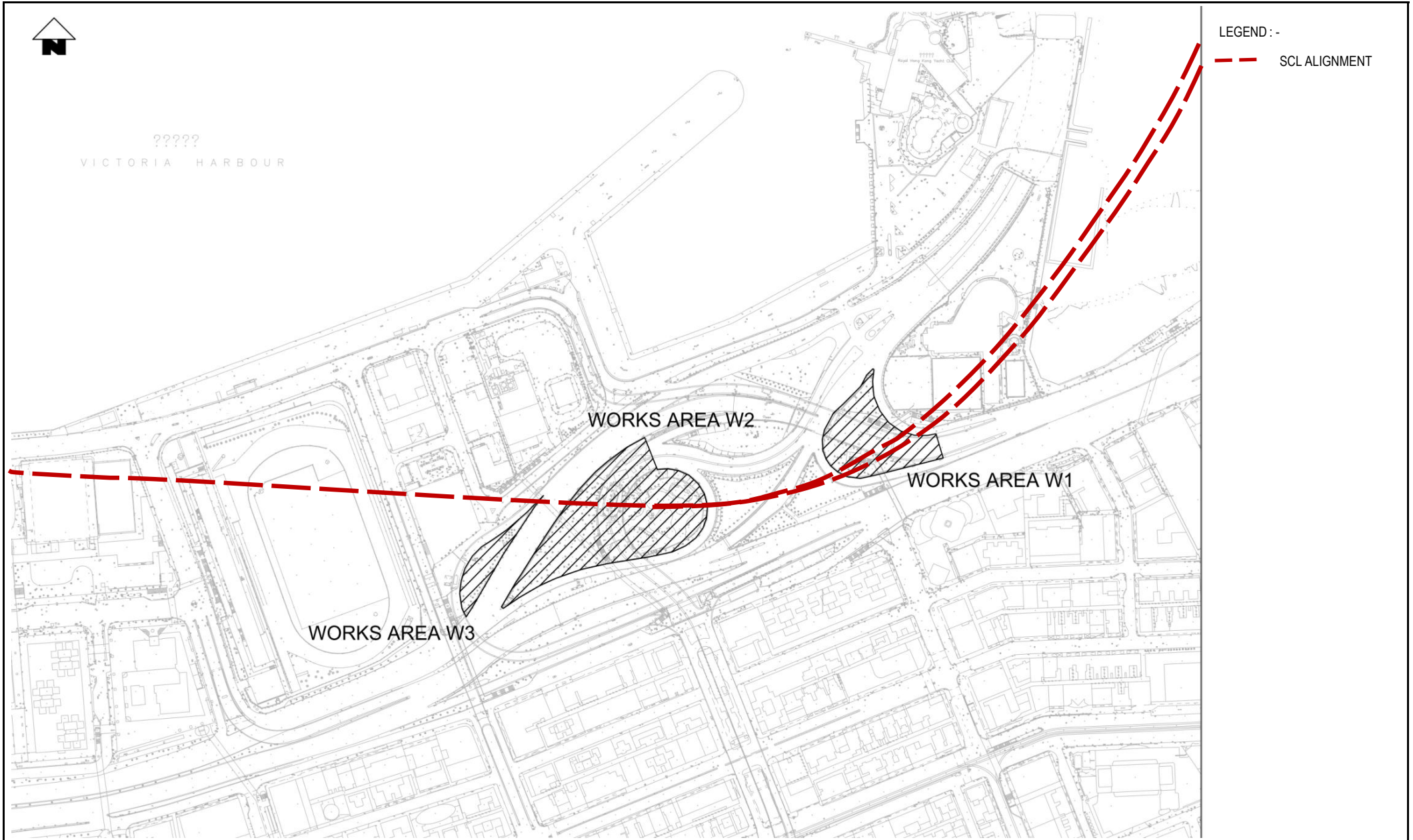
#### Chemical and Waste Management

- Provide proper chemical waste management.

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## FIGURES

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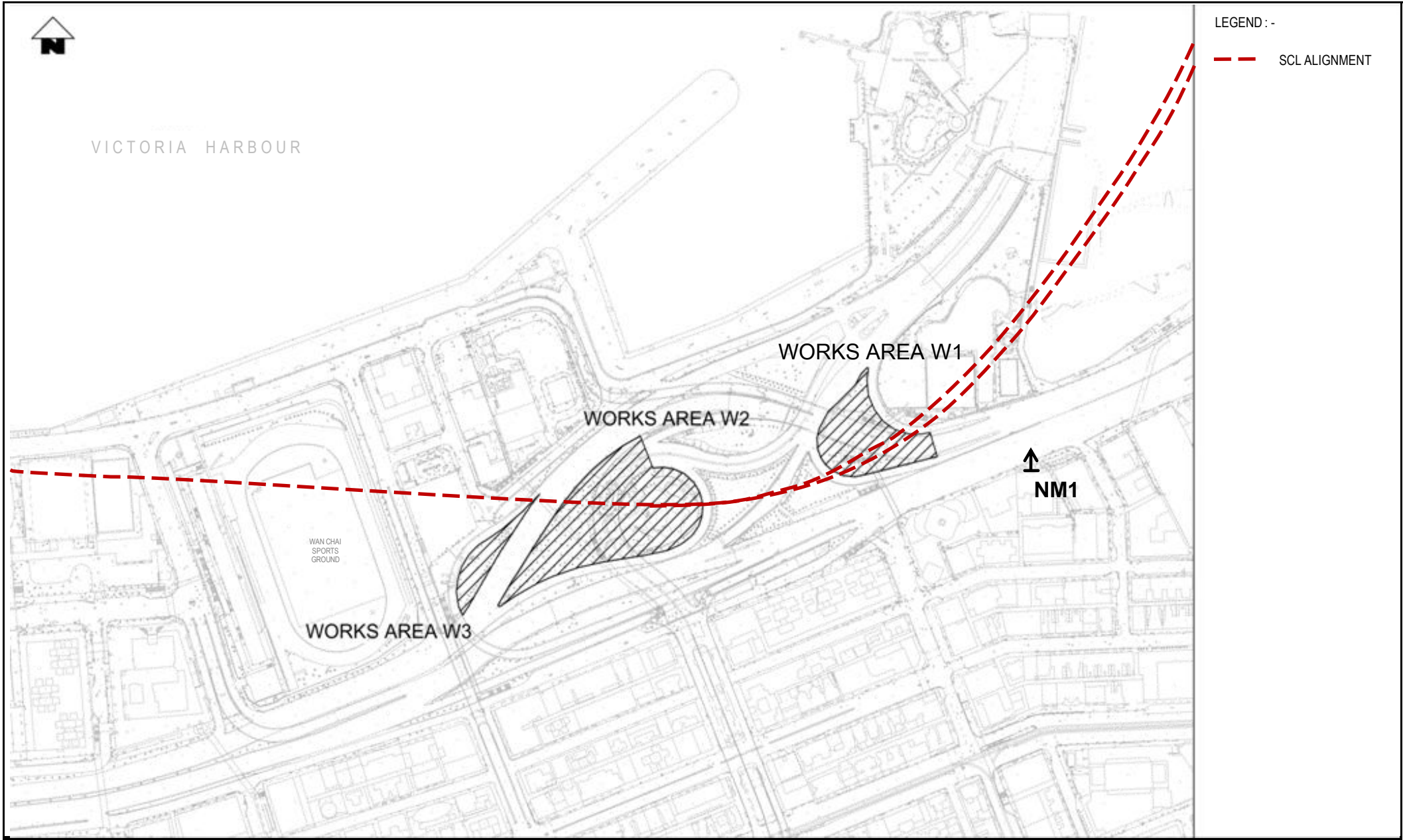
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**CONTRACT 1129**  
**ADVANCED WORKS FOR NSL**

**WORKS AREA AND SITE LOCATION OF SCL1129**

Project No.: -      Date: June 2014

Figure 1.1



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**CONTRACT 1129**  
**ADVANCED WORKS FOR NSL**

**LOCATION OF AIR-BORNE NOISE SENSITIVE RECEIVER NM1**

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**APPENDIX A**

**Construction Programme**

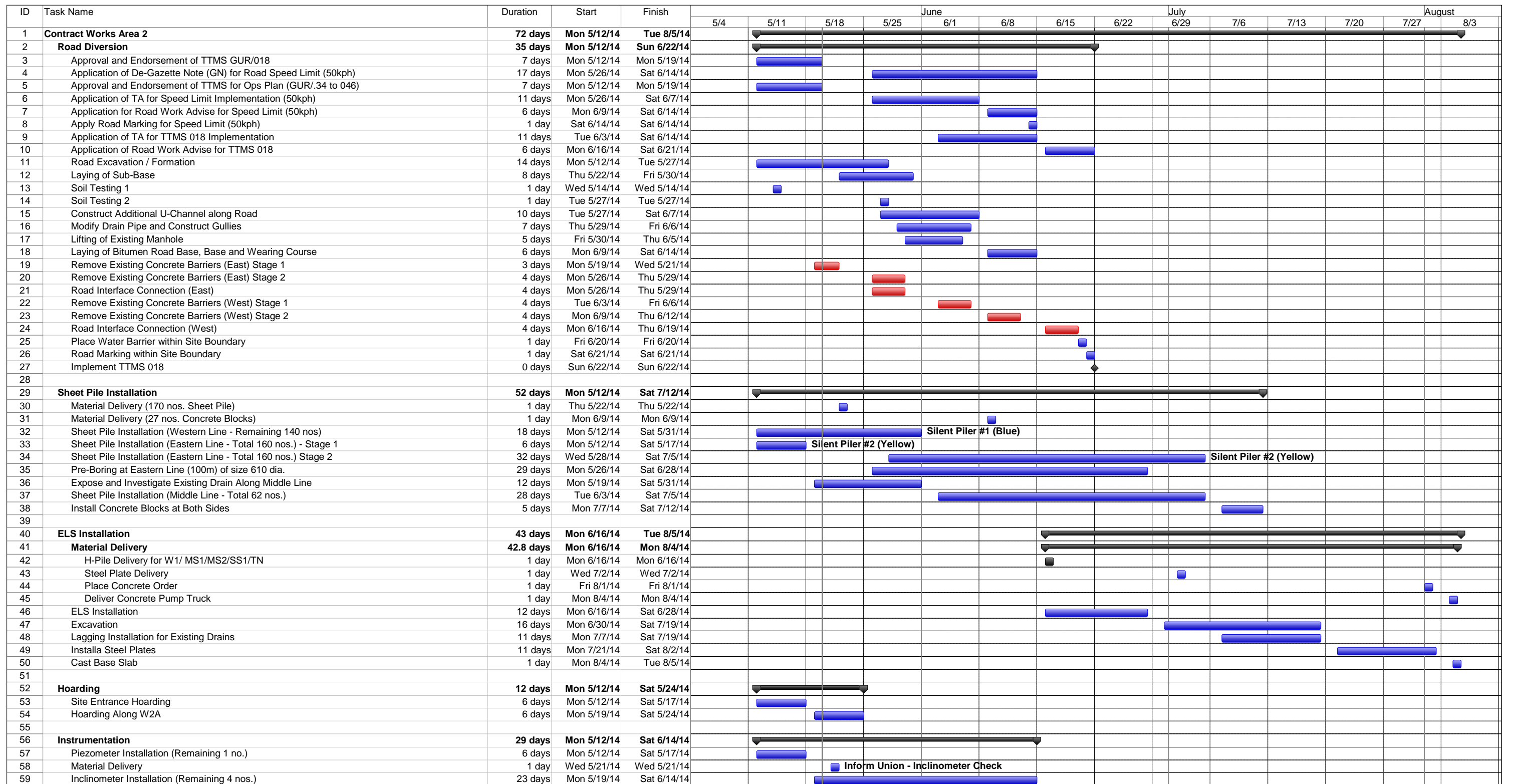
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ID	Task Name	Duration	Start	Finish	May		June				July				August				September				Oct									
					4/27	5/4	5/11	5/18	5/25	6/1	6/8	6/15	6/22	6/29	7/6	7/13	7/20	7/27	8/3	8/10	8/17	8/24	8/31	9/7	9/14	9/21	9/28					
1	<b>Contract Work 1 &amp; 2 - H-Pile Removal &amp; Percival Street Footbridge Modification</b>	<b>115 days</b>	<b>Mon 5/12/14</b>	<b>Thu 9/25/14</b>																												
2	<b>Area W1A</b>	<b>29 days</b>	<b>Mon 5/12/14</b>	<b>Sat 6/14/14</b>																												
3	Site Formation	6 days	Mon 5/12/14	Sat 5/17/14																												
4	Hoarding and Entrance Access Erection	12 days	Mon 5/19/14	Sat 5/31/14																												
5	Watermain Pipe Laying	6 days	Sat 5/17/14	Fri 5/23/14																												
6	Watermain Diversion	21 days	Wed 5/21/14	Sat 6/14/14																												
7	TCSS Diversion	6 days	Sat 5/17/14	Fri 5/23/14																												
8	Instrumentation Instatllation	18 days	Mon 5/12/14	Sat 5/31/14																												
9	Covered Walkway Erection	11 days	Tue 6/3/14	Sat 6/14/14																												
10																																
11	<b>Area W1B</b>	<b>115 days</b>	<b>Mon 5/12/14</b>	<b>Thu 9/25/14</b>																												
12	Watermain Pipe Laying	6 days	Mon 5/12/14	Sat 5/17/14																												
13	Hoarding Erection	12 days	Mon 5/19/14	Sat 5/31/14																												
14	Watermain Diversion	21 days	Wed 5/21/14	Sat 6/14/14																												
15	HKE and High Mast Power Cable Diversion	23 days	Mon 5/12/14	Sat 6/7/14																												
16	Pedestrian Diversion and Covered Walkway Erection	12 days	Mon 6/9/14	Sat 6/21/14																												
17	Removal of Existing Asbestos Pipe	4 days	Sat 6/21/14	Wed 6/25/14																												
18	TCSS Diversion	8 days	Thu 5/29/14	Sat 6/7/14																												
19	Open Excavation for Underpinning Works (Pier A5)	15 days	Wed 6/18/14	Sat 7/5/14																												
20	Pre-drill (2 nos.)	6 days	Mon 7/7/14	Sat 7/12/14																												
21	Delivery of H-p piles (21 nos.)	3 days	Thu 7/10/14	Sat 7/12/14																												
22	Pre-bored Socket H-pile (7 nos.)	63 days	Mon 7/14/14	Thu 9/25/14																												
23																																
24	<b>Area W1C</b>	<b>86 days</b>	<b>Mon 5/12/14</b>	<b>Thu 8/21/14</b>																												
25	<b>Removal of Existing Pile Cap and Piles</b>	<b>82 days</b>	<b>Fri 5/16/14</b>	<b>Thu 8/21/14</b>																												
26	Demolition of Existing Pile Cap	16 days	Fri 5/16/14	Wed 6/4/14																												
27	Testing of Existing H-Piles (Assume 10 nos.)	5 days	Thu 6/5/14	Tue 6/10/14																												
28	Extension of the Existing Piles to G.L.	10 days	Wed 6/11/14	Sat 6/21/14																												
29	Backfilling of Existing Pile Cap	3 days	Mon 6/23/14	Wed 6/25/14																												
30	Pre-drill (Assume 4 nos.)	8 days	Thu 6/26/14	Sat 7/5/14																												
31	Extraction of Existing Pile (10 nos.)	40 days	Mon 7/7/14	Thu 8/21/14																												
32																																
33	<b>New Pre-Bored H-Piles and Pile Cap</b>	<b>74 days</b>	<b>Mon 5/12/14</b>	<b>Thu 8/7/14</b>																												
34	PCCW 24 Way Cables Exploration	8 days	Mon 5/12/14	Tue 5/20/14																												
35	Watermain Diversion	21 days	Wed 5/21/14	Sat 6/14/14																												
36	Removal of Existing Asbestos Pipe	2 days	Wed 6/25/14	Thu 6/26/14																												
37	Instrumentation Installation (4 nos.)	16 days	Wed 5/21/14	Mon 6/9/14																												
38	Pre-drill (1 no.)	3 days	Tue 6/10/14	Thu 6/12/14																												
39	Hoarding Erection	16 days	Mon 6/9/14	Thu 6/26/14																												
40	Delivery of H-piles (15 nos.)	2 days	Fri 6/20/14	Sat 6/21/14																												
41	Pre-Bored Socket H-Pile (5 nos.)	30 days	Mon 6/23/14	Mon 7/28/14																												
42	Post-drill (1 no.)	2 days	Tue 7/29/14	Wed 7/30/14																												
43	Construction of Pile Cap	7 days	Thu 7/31/14	Thu 8/7/14																												

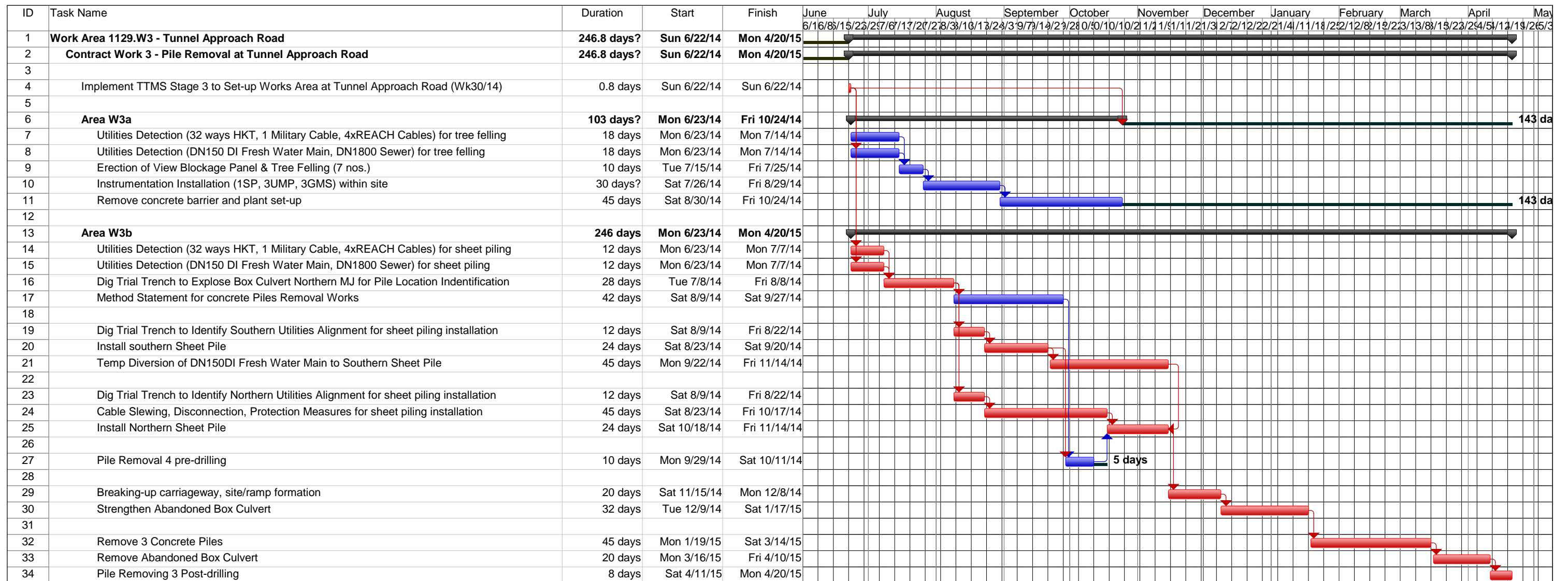
Project: With Holiday  
Date: Tue 5/20/14

Critical		Summary		External Milestone		Duration-only		Progress	
Critical Split		Project Summary		Inactive Task		Manual Summary Rollup		Deadline	
Task		Rolled Up Critical		Inactive Milestone		Manual Summary			
Split		Rolled Up Critical		Inactive Summary		Start-only			
Milestone		External Tasks		Manual Task		Finish-only			



Project: With Holiday  
Date: Tue 5/20/14

Critical		Milestone		Rolled Up Critical		Inactive Milestone		Manual Summary Rollup		Progress	
Critical Split		Summary		External Tasks		Inactive Summary		Manual Summary		Deadline	
Task		Project Summary		External Milestone		Manual Task		Start-only			
Split		Rolled Up Critical		Inactive Task		Duration-only		Finish-only			



Project: With Holiday Date: Mon 5/19/14	Critical		Slack		Rolled Up Critical		Inactive Summary		Start-only	
	Critical Split		Slippage		External Tasks		Manual Task		Finish-only	
	Task		Summary		External Milestone		Duration-only		Progress	
	Split		Project Summary		Inactive Task		Manual Summary Rollup		Deadline	
	Milestone		Rolled Up Critical		Inactive Milestone		Manual Summary			

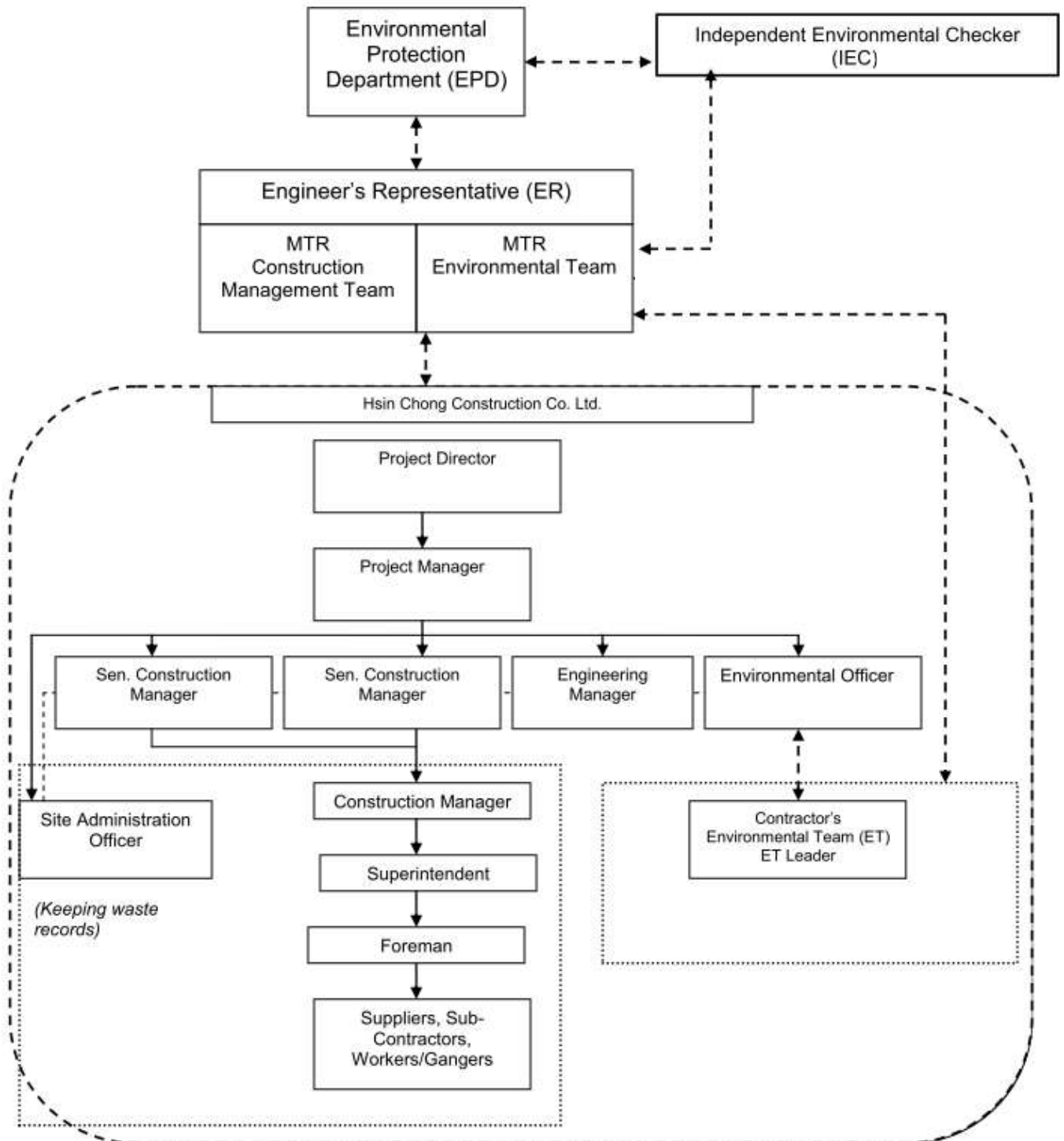
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**APPENDIX B**

**Project Organization Structure**

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## Appendix B Project Organisation Structure



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**APPENDIX C**

**Environmental Mitigation Measures Implementation Schedule**

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## Appendix C – Environmental Mitigation Implementation Schedule

EIA Ref. / EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	Implementation Status
<b>Cultural Heritage Impact</b>						
S4.93 & Table 4.2	Erection of decorative and sensibly designed hoarding along the boundary of the works area	To mitigate the temporary visual impact due to surface works.	Contractor	Works Areas in Causeway Bay and Wan Chai, and Works Shaft in Admiralty	Construction Phase	V
<b>Ecological Impact</b>						
S5.134	Accidental chemical spillage and construction site run-off to the receiving water bodies, mitigation measures such as removing the pollutants before discharge into storm drain and paving the section of construction road between the wheel washing bay and the public road as suggested in Sections 11.216 and 11.219 to 11.256 of the EIA Report shall be adopted.	To minimize the contamination of wastewater discharge	Contractor	All land based works areas	Construction Phase	V
<b>Landscape and Visual Impact</b>						
<b>Construction Phase</b>						
Table 7.9	CM1 - Trees unavoidably affected by the works shall be transplanted as far as possible in accordance with ETWB TC(W) 3/2006 – Tree Preservation.	Transplanting and reuse of affected trees.	MTR	Works Sites	Construction Phase	@
Table 7.9	CM2a - Compensatory tree planting shall be provided in accordance with ETWB TC(W) 3/2006 – Tree Preservation to compensate for felled trees and maintained until end of the establishment period.	Compensation for the removal of existing trees due to the Project.	MTR	Works Sites	Construction Phase	N/A
Table 7.9	CM2b - Compensatory shrub planting shall be provided to compensate for the loss of shrub planting in amenity areas.	Compensation for the removal of existing shrub planting due to the Project.	MTR	Works Sites	Construction Phase	N/A
Table 7.9	CM3 - Control of night-time lighting glare	Minimize the night time glare due to the Project during construction phase	MTR	Works Sites	Construction Phase	N/A
Table 7.9	CM4 - Erection of decorative screen hoarding compatible with the surrounding setting.	Minimize the visual impact of the Project during construction phase	MTR	Works Sites	Construction Phase	N/A
Table 7.9	CM5 - Management of facilities on work sites which give control on the height and disposition/arrangement of all facilities on the works site to minimize visual impact to adjacent VSRs	Control of height and disposition/ arrangement of temporary facilities in works areas	MTR	Works Sites	Construction Phase	N/A
Table 7.9	CM6 - All hard and soft landscape areas disturbed temporarily during construction shall be reinstated on like-to-like basis to the satisfaction of the relevant Government Departments.	Reinstatement of temporary works areas.	MTR	Works Sites	Construction Phase	N/A

Appendix C – Environmental Mitigation Implementation Schedule

EIA Ref. / EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	Implementation Status
<b>Air Quality</b>						
/	Emission from Vehicles and Plants <ul style="list-style-type: none"> <li>• All vehicles shall be shut down in intermittent use.</li> <li>• Only well-maintained plant should be operated on-site and plant should be serviced regularly to avoid emission of black smoke.</li> <li>• All diesel fuelled construction plant within the works areas shall be powered by ultra low sulphur diesel fuel (ULSD)</li> </ul>	Reduce air pollution emission from construction vehicles and plants	Contractor	Works areas	Construction phase	@
<b>Construction Dust Impact</b>						
S8.89	Watering once every working hour on active works areas, exposed areas and paved haul roads to reduce dust emission by 91.7%. This dust suppression efficiency is derived based on the average haul road traffic, average evaporation rate and an assumed application intensity of 1.7 L/m <sup>2</sup> for Kowloon side and 1.0 L/m <sup>2</sup> for Hong Kong side once every working hour. Any potential dust impact and watering mitigation would be subject to the actual site condition. For example, a construction activity that produces inherently wet conditions or in cases under rainy weather, the above water application intensity may not be unreservedly applied. While the above watering frequency is to be followed, the extent of watering may vary depending on actual site conditions but should be sufficient to maintain an equivalent intensity of no less than 1.7 L/m <sup>2</sup> for Kowloon side and 1.0 L/m <sup>2</sup> for Hong Kong side to achieve the removal efficiency. The dust levels would be monitored and managed under an EM&A programme as specified in the EM&A Manual.	To minimize dust impact	Contractor	Works areas	Construction Phase	V
S8.90	Dust suppression measures stipulated in the Air Pollution Control (Construction Dust) Regulation and good site practices: <ul style="list-style-type: none"> <li>• Use of regular watering to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather.</li> <li>• Use of frequent watering for particularly dusty construction areas and areas close to ASRs.</li> <li>• Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering shall be applied to aggregate fines.</li> <li>• Open stockpiles shall be avoided or covered. Where possible, prevent placing dusty material storage piles near ASRs.</li> <li>• Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations.</li> <li>• Establishment and use of vehicle wheel and body washing facilities at the exit points of the site.</li> <li>• Provision of wind shield and dust extraction units or similar dust mitigation measures at the loading area of barging point, and use of water sprinklers at the loading area where dust generation is likely during the loading process of loose material, particularly in dry seasons/ periods.</li> <li>• Provision of not less than 2.4m high hoarding from ground level along site</li> </ul>	To minimize dust impacts	Contractor	Works areas	Construction phase	@



Appendix C – Environmental Mitigation Implementation Schedule

EIA Ref. / EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	Implementation Status
	boundary where adjoins a road, streets or other accessible to the public except for a site entrance or exit. <ul style="list-style-type: none"> <li>• Imposition of speed controls for vehicles on site haul roads.</li> <li>• Where possible, routing of vehicles and positioning of construction plant shall be at the maximum possible distance from ASRs.</li> <li>• Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) shall be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides.</li> <li>• Instigation of an environmental monitoring and auditing program to monitor the construction process in order to enforce controls and modify method of work if dusty conditions arise</li> </ul>					
<b>Airborne Noise Impact</b>						
<b>Construction Phase</b>						
S9.55	The following good site practices shall be implemented: <ul style="list-style-type: none"> <li>• Only well-maintained plant shall be operated on-site and plant shall be serviced regularly during the construction program</li> <li>• Silencers or mufflers on construction equipment shall be utilized and shall be properly maintained during the construction program</li> <li>• Mobile plant, if any, shall be sited as far from NSRs as possible</li> <li>• Machines and plant (such as trucks) that may be in intermittent use shall be shut down between work periods or shall be throttled down to a minimum</li> <li>• Plant known to emit noise strongly in one direction shall, wherever possible, be orientated so that the noise is directed away from the nearby NSRs</li> <li>• Material stockpiles and other structures shall be effectively utilized, wherever practicable, in screening noise from on-site construction activities</li> </ul>	To minimize construction noise impact	Contractor	Works areas	Construction phase	V
S9.56 & Table 9.16	The following quiet PME shall be used: <ul style="list-style-type: none"> <li>• Crane lorry, mobile</li> <li>• Crane, mobile</li> <li>• Asphalt paver</li> <li>• Backhoe with hydraulic breaker</li> <li>• Breaker, excavator mounted (hydraulic)</li> <li>• Hydraulic breaker</li> <li>• Concrete lorry mixer</li> <li>• Poker, vibrator, hand-held</li> <li>• Concrete pump</li> <li>• Crawler crane, mobile</li> <li>• Mobile crane</li> <li>• Dump truck</li> <li>• Excavator</li> <li>• Truck</li> <li>• Rock drill</li> </ul>	To minimize construction noise impact	Contractor	Works areas at: <ul style="list-style-type: none"> <li>• Hung Hom</li> <li>• Cross Harbour section up to Breakwater of CBTS</li> <li>• Breakwater of CBTS to SOV</li> <li>• SOV to EXH</li> <li>• EXH</li> <li>• EXH to open space at the junction of Expo Drive and Convention Avenue</li> <li>• Open space at the junction of Expo Drive and Convention Avenue</li> </ul>	Construction phase	V

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EIA Ref. / EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	Implementation Status
	<ul style="list-style-type: none"> <li>• Lorry</li> <li>• Wheel loader</li> <li>• Roller vibratory</li> </ul>			to north of ADM • South of ADM to Overrun Tunnel		
S9.58 – S9.59 & Table 9.17	Movable noise barrier shall be used for the following PME: <ul style="list-style-type: none"> <li>• Air compressor</li> <li>• Asphalt paver</li> <li>• Backhoe with hydraulic breaker</li> <li>• Bar bender</li> <li>• Bar bender and cutter (electric)</li> <li>• Breaker, excavator mounted</li> <li>• Concrete pump</li> <li>• Concrete pump, stationary/lorry mounted</li> <li>• Excavator</li> <li>• Generator</li> <li>• Grout pump</li> <li>• Hand held breaker</li> <li>• Hydraulic breaker</li> <li>• Saw, concrete</li> </ul>	To minimize construction noise impact	Contractor	Works areas at: <ul style="list-style-type: none"> <li>• Cross Harbour section up to Breakwater of CBTS</li> <li>• Breakwater of CBTS to SOV</li> <li>• SOV to EXH</li> <li>• EXH</li> <li>• EXH to open space at the junction of Expo Drive and Convention Avenue</li> <li>• Open space at the junction of Expo Drive and Convention Avenue to north of ADM</li> <li>• South of ADM to Overrun Tunnel</li> </ul>	Construction phase	@
<b>Water Quality Impact</b>						
<b>Construction Phase</b>						
S11.222 to 11.245	The site practices outlined in ProPECC PN 1/94 “Construction Site Drainage” shall be followed where practicable. <u>Surface Run-off</u> <ul style="list-style-type: none"> <li>• Surface run-off from construction sites shall be discharged into storm drains via adequately designed sand/silt removal facilities such as sand traps, silt traps and sedimentation basins. Channels or earth bunds or sand bag barriers shall be provided on site to properly direct stormwater to such silt removal facilities. Perimeter channels at site boundaries shall be provided where necessary to intercept storm run-off from outside the site so that it will not wash across the site. Catchpits and perimeter channels shall be constructed in advance of site formation works and earthworks.</li> <li>• Silt removal facilities, channels and manholes shall be maintained and the deposited silt and grit shall be removed regularly, at the onset of and after each rainstorm to prevent local flooding. Any practical options for the diversion and re-alignment of drainage shall comply with both engineering and environmental requirements in order to provide adequate hydraulic capacity of all drains. Minimum distances of 100 m shall be maintained between the discharge points of construction site runoff and the existing saltwater intakes.</li> <li>• Construction works shall be programmed to minimize soil excavation works in rainy</li> </ul>	To minimize water quality impacts from construction site runoff and general construction activities	Contractor	Works areas	Construction Phase	@

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EIA Ref. / EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	Implementation Status
	<p>seasons (April to September). If excavation in soil cannot be avoided in these months or at any time of year when rainstorms are likely, for the purpose of preventing soil erosion, temporary exposed slope surfaces shall be covered e.g. by tarpaulin, and temporary access roads shall be protected by crushed stone or gravel, as excavation proceeds. Intercepting channels shall be provided (e.g. along the crest / edge of excavation) to prevent storm runoff from washing across exposed soil surfaces. Arrangements shall always be in place in such a way that adequate surface protection measures can be safely carried out well before the arrival of a rainstorm.</p> <ul style="list-style-type: none"> <li>• Earthworks final surfaces shall be well compacted and the subsequent permanent work or surface protection shall be carried out immediately after the final surfaces are formed to prevent erosion caused by rainstorms. Appropriate drainage like intercepting channels shall be provided where necessary.</li> <li>• Measures shall be taken to minimize the ingress of rainwater into trenches. If excavation of trenches in wet seasons is necessary, they shall be dug and backfilled in short sections. Rainwater pumped out from trenches or foundation excavations shall be discharged into storm drains via silt removal facilities.</li> <li>• Open stockpiles of construction materials (e.g. aggregates, sand and fill material) on sites shall be covered with tarpaulin or similar fabric during rainstorms.</li> <li>• Manholes (including newly constructed ones) shall 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. Discharge of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system.</li> <li>• Good site practices shall be adopted to remove rubbish and litter from construction sites so as to prevent the rubbish and litter from spreading from the site area. It is recommended to clean the construction sites on a regular basis.</li> </ul> <p><u>Boring and Drilling Water</u></p> <ul style="list-style-type: none"> <li>• Water used in ground boring and drilling for site investigation or rock / soil anchoring shall as far as practicable be re-circulated after sedimentation. When there is a need for final disposal, the wastewater shall be discharged into storm drains via silt removal facilities.</li> </ul> <p><u>Wheel Washing Water</u></p> <ul style="list-style-type: none"> <li>• All vehicles and plant shall be cleaned before they leave a construction site to minimize the deposition of earth, mud, debris on roads. A wheel washing bay shall be provided at every site exit if practicable and wash-water shall have sand and silt settled out or removed before discharging into storm drains. The section of construction road between the wheel washing bay and the public road shall be paved with backfall to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains.</li> </ul> <p><u>Bentonite Slurries</u></p> <ul style="list-style-type: none"> <li>• Bentonite slurries used in diaphragm wall and bore-pile construction shall be reconditioned and used again wherever practicable. If the disposal of a certain residual quantity cannot be avoided, the bentonite slurries shall either be dewatered or mixed with inert fill material for disposal to a public filling area.</li> <li>• If the used bentonite slurry is intended to be disposed of through the public</li> </ul>					

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	<p>drainage system, it shall be treated to the respective effluent standards applicable to foul sewer, storm drains or the receiving waters as set out in the TM-DSS.</p> <p><u>Water for Testing &amp; Sterilization of Water Retaining Structures and Water Pipes</u></p> <ul style="list-style-type: none"> <li>• Water used in water testing to check leakage of structures and pipes shall be used for other purposes as far as practicable. Surplus unpolluted water will be discharged into storm drains.</li> <li>• Sterilization is commonly accomplished by chlorination. Specific advice from EPD shall be sought during the design stage of the works with regard to the disposal of the sterilizing water. The sterilizing water shall be used again wherever practicable.</li> </ul> <p><u>Acid Cleaning, Etching and Pickling Wastewater</u></p> <ul style="list-style-type: none"> <li>• Acidic wastewater generated from acid cleaning, etching, pickling and similar activities shall be neutralized to within the pH range of 6 to 10 before discharging into foul sewers. If there is no public foul sewer in the vicinity, the neutralized wastewater shall be tankered off site for disposal into foul sewers or treated to a standard acceptable to storm drains and the receiving waters.</li> </ul> <p><u>Wastewater from Site Facilities</u></p> <ul style="list-style-type: none"> <li>• Wastewater collected from any temporary canteen kitchens, including that from basins, sinks and floor drains, shall be discharged into foul sewer via grease traps. In case connection to the public foul sewer is not feasible, wastewater generated from kitchens or canteen, if any, shall be collected in a temporary storage tank. A licensed waste collector shall be deployed to clean the temporary storage tank on a regular basis.</li> <li>• Drainage serving an open oil filling point shall be connected to storm drains via petrol interceptors with peak storm bypass.</li> <li>• Vehicle and plant servicing areas, vehicle wash bays and lubrication bays shall as far as possible be located within roofed areas. The drainage in these covered areas shall be connected to foul sewers via a petrol interceptor. Oil leakage or spillage shall be contained and cleaned up immediately. Waste oil shall be collected and stored for recycling or disposal in accordance with the Waste Disposal Ordinance.</li> </ul>					
S11.246 & 11.247	<p>Construction work force sewage discharges on site are expected to be discharged to the nearby existing trunk sewer or sewage treatment facilities. If disposal of sewage to public sewerage system is not feasible, appropriate numbers of portable toilets shall be provided by a licensed contractor to serve the construction workers over the construction site to prevent direct disposal of sewage into the water environment. The Contractor shall also be responsible for waste disposal and maintenance practices.</p> <p>Notices shall be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the nearby environment.</p>	To minimize water quality impacts due to sewage generated from construction workforce	Contractor	Works areas	Construction Phase	V
S11.248	<p>In case seepage of uncontaminated groundwater occurs, groundwater shall be pumped out from the works areas and discharged into the storm system via silt removal facilities. Uncontaminated groundwater from dewatering process shall also be discharged into the storm system via silt traps.</p>	To minimize impact from discharge of uncontaminated groundwater	Contractor	Works areas	Construction Phase	V
S11.249	<p>If land contaminated site is identified from the Stage 2 SI work (refer to Sections 11.188 to 11.191 of the EIA Report), the following mitigation measures shall be</p>	To control site run-off generated from any	Contractor	Any potential contaminated areas to	Construction Phase	N/A

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	<p>implemented for the identified contaminated area. Any transient pile of contaminated soil / material shall be minimized and shall be bottom-lined, bunded and covered with impervious membrane during rain event to avoid generation of contaminated runoff. Appropriate intercepting channels and partial shelters shall be provided where necessary to prevent rainwater from collecting within trenches or footing excavations. Any contaminated water and wastewater generated from the decontamination process shall not be directly discharged to public sewers or site drainage. They shall be treated or tanked away as necessary for proper disposal in compliance with the TM-DSS.</p>	<p>potential contaminated works areas.</p>		<p>be identified from the Stage 2 SI</p>		
<p>S11.250 &amp; S11.251</p>	<p>No direct discharge of groundwater from contaminated areas shall be adopted. If land contamination impact and generation of contaminated groundwater is identified from the Stage 2 SI works (refer to <b>Sections 11.189 to 11.192</b> of the EIA Report), the following mitigation measures shall be adopted. Any contaminated groundwater shall be either properly treated in compliance with the requirements of the TM-DSS or properly recharged into the ground. If wastewater treatment is deployed for treating the contaminated groundwater, the wastewater treatment unit shall deploy suitable treatment processes (e.g. oil interceptor / activated carbon) to reduce the pollution level to an acceptable standard and remove any prohibited substances (such as TPH) to an undetectable range. All treated effluent from the wastewater treatment plant shall meet the requirements as stated in TM-DSS and shall be discharged into the foul sewers. If groundwater recharging wells are deployed, the recharging wells shall be installed as appropriate for recharging the contaminated groundwater back into the ground. The recharging wells shall be selected at places where the groundwater quality will not be affected by the recharge operation as indicated in Section 2.3 of the TM-DSS. The baseline groundwater quality shall be determined prior to the selection of the recharge wells, and submit a working plan (including the laboratory analytical results showing the quality of groundwater at the proposed recharge location(s) as well as the pollutant levels of groundwater to be recharged) to EPD for agreement. Pollution levels of groundwater to be recharged shall not be higher than pollutant levels of ambient groundwater at the recharge well. Prior to recharge, any prohibited substance such as TPH products shall be removed as necessary by installing the petrol interceptor. The Contractor shall apply for a discharge licence under the WPCO through the Regional Office of EPD for groundwater recharge operation or discharge of treated groundwater.</p>	<p>To minimize potential water quality impact from discharge of contaminated groundwater</p>	<p>Contractor</p>	<p>Any potential contaminated areas to be identified from the Stage 2 SI</p>	<p>Construction Phase</p>	<p>N/A</p>
<p>S11.253</p>	<p>There is a need to apply to EPD for a discharge licence for discharge of effluent from the construction site under the WPCO. The discharge quality must meet the requirements specified in the discharge licence. All the runoff and wastewater generated from the works areas shall be treated so that it satisfies all the standards listed in the TM-DSS. Minimum distances of 100 m shall be maintained between the discharge points of construction site effluent and the existing seawater intakes. The beneficial uses of the treated effluent for other on-site activities such as dust suppression, wheel washing and general cleaning etc., can minimise water consumption and reduce the effluent discharge volume. If</p>	<p>To minimize water quality impact from effluent discharges from construction sites</p>	<p>Contractor</p>	<p>All construction works areas</p>	<p>Construction Phase</p>	<p>@</p>

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	monitoring of the treated effluent quality from the works areas is required during the construction phase of the Project, the monitoring shall be carried out in accordance with the WPCO license which is under the ambit of Regional Office (RO) of EPD.					
S11.254	Contractor must register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation shall be observed and complied with for control of chemical wastes.	To minimize water quality impact from accidental spillage of chemical	Contractor	All construction works areas	Construction Phase	V
S11.255	Any service shop and maintenance facilities shall be located on hard standings within a bunded area, and sumps and oil interceptors shall be provided. Maintenance of vehicles and equipment involving activities with potential for leakage and spillage shall only be undertaken within the areas appropriately equipped to control these discharges.	To minimize water quality impact from accidental spillage of chemical	Contractor	All construction works areas	Construction Phase	V
S11.256	Disposal of chemical wastes shall be carried out in compliance with the Waste Disposal Ordinance. The “Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes” published under the Waste Disposal Ordinance details the requirements to deal with chemical wastes. General requirements are given as follows: <ul style="list-style-type: none"> <li>• Suitable containers shall be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport.</li> <li>• Chemical waste containers shall be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents.</li> <li>• Storage area shall be selected at a safe location on site and adequate space shall be allocated to the storage area.</li> </ul>	To minimize water quality impact from accidental spillage of chemical	Contractor	All construction works areas	Construction Phase	V
<b>Waste Management Implications</b>						
<b>Construction Phase</b>						
S12.75	<b>Good Site Practices and Waste Reduction Measures</b> <ul style="list-style-type: none"> <li>• Prepare a Waste Management Plan (WMP) approved by the Engineer/Supervising Officer of the Project based on current practices on construction sites;</li> <li>• Training of site personnel in, site cleanliness, proper waste management and chemical handling procedures;</li> <li>• Provision of sufficient waste disposal points and regular collection of waste;</li> <li>• Appropriate measures to minimize windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers;</li> <li>• Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; and</li> <li>• Separation of chemical wastes for special handling and appropriate treatment.</li> </ul>	To reduce waste management impacts	Contractor	All Work Sites	Construction Phase	V

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S12.76	<p><b>Good Site Practices and Waste Reduction Measures (con't)</b></p> <ul style="list-style-type: none"> <li>• Sorting of demolition debris and excavated materials from demolition works to recover reusable/ recyclable portions (i.e. soil, broken concrete, metal etc.);</li> <li>• Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal;</li> <li>• Encourage collection of aluminum cans by providing separate labeled bins to enable this waste to be segregated from other general refuse generated by the workforce;</li> <li>• Proper storage and site practices to minimize the potential for damage or contamination of construction materials;</li> <li>• Plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste; and</li> <li>• Training shall be provided to workers about the concepts of site cleanliness and appropriate waste management procedures, including waste reduction, reuse and recycle.</li> </ul>	To achieve waste reduction	Contractor	All Work Sites	Construction Phase	V
S12.77	<p><b>Good Site Practices and Waste Reduction Measures (con't)</b></p> <p>The Contractor shall prepare and implement a WMP as part of the EMP in accordance with ETWB TCW No. 19/2005 which describes the arrangements for avoidance, reuse, recovery, recycling, storage, collection, treatment and disposal of different categories of waste to be generated from the construction activities. Such a management plan shall incorporate site specific factors, such as the designation of areas for segregation and temporary storage of reusable and recyclable materials. The EMP shall be submitted to the Engineer for approval. The Contractor shall implement the waste management practices in the EMP throughout the construction stage of the Project. The EMP shall be reviewed regularly and updated by the Contractor, preferably in a monthly basis.</p>	To achieve waste reduction	Contractor	All Work Sites	Construction Phase	V
S12.78	<p><b>Good Site Practices and Waste Reduction Measures (con't)</b></p> <p>C&amp;D materials would be reused in other local concurrent projects as far as possible. If all reuse outlets are exhausted during the construction phase, the C&amp;D materials would be disposed of at Taishan, China as a last resort.</p>	To achieve waste reduction	Contractor	All Work Sites	Construction Phase	N/A
S12.79	<p><b>Storage, Collection and Transportation of Waste</b></p> <p>Should any temporary storage or stockpiling of waste is required, recommendations to minimize the impacts include:</p> <ul style="list-style-type: none"> <li>• Waste, such as soil, shall be handled and stored well to ensure secure containment, thus minimizing the potential of pollution;</li> <li>• Maintain and clean storage areas routinely;</li> <li>• Stockpiling area shall be provided with covers and water spraying system to prevent materials from wind-blown or being washed away; and</li> <li>• Different locations shall be designated to stockpile each material to enhance reuse.</li> </ul>	To minimize potential adverse environmental impacts arising from waste storage	Contractor	Work Sites	Construction Phase	V
S12.80	<p><b>Storage, Collection and Transportation of Waste (con't)</b></p> <p>Waste haulier with appropriate permits shall be employed by the Contractor for the collection and transportation of waste from works areas to respective disposal</p>	To minimize potential adverse environmental	Contractor	Work Sites	Construction Phase	V

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	<p>outlets. The following suggestions shall be enforced to minimize the potential adverse impacts:</p> <ul style="list-style-type: none"> <li>Remove waste in timely manner</li> <li>Waste collectors shall only collect wastes prescribed by their permits</li> <li>Impacts during transportation, such as dust and odour, shall be mitigated by the use of covered trucks or in enclosed containers</li> <li>Obtain relevant waste disposal permits from the appropriate authorities, in accordance with the Waste Disposal Ordinance (Cap. 354), Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap. 345) and the Land (Miscellaneous Provisions) Ordinance (Cap. 28)</li> <li>Waste shall be disposed of at licensed waste disposal facilities</li> <li>Maintain records of quantities of waste generated, recycled and disposed</li> </ul>	impacts arising from waste collection and disposal				
S12.81	<p><b>Storage, Collection and Transportation of Waste (con't)</b></p> <ul style="list-style-type: none"> <li>Implementation of trip ticket system with reference to DevB TC(W) No.6/2010 to monitor disposal of waste and to control fly-tipping at PFRFs or landfills. A recording system for the amount of waste generated, recycled and disposed (including disposal sites) shall be proposed.</li> </ul>	To minimize potential adverse environmental impacts arising from waste collection and disposal	Contractor	Work Sites	Construction Phase	V
S12.83 – 12.86	<p><b>Sorting of C&amp;D Materials</b></p> <ul style="list-style-type: none"> <li>Sorting to be performed to recover the inert materials, reusable and recyclable materials before disposal off-site.</li> <li>Specific areas shall be provided by the Contractors for sorting and to provide temporary storage areas for the sorted materials.</li> <li>The C&amp;D materials shall at least be segregated into inert and non-inert materials, in which the inert portion could be reused and recycled as far as practicable before delivery to PFRFs as mentioned for beneficial use in other projects. While opportunities for reusing the non-inert portion shall be investigated before disposal of at designated landfills.</li> <li>Possibility of reusing the spoil in the Project will be continuously investigated in the detailed design and construction stages, it includes backfilling to cut and cover construction works for the Hung Hom south and north approach tunnels.</li> </ul>	To minimize potential adverse environmental impacts during the handling, transportation and disposal of C&D materials	Contractor	Work Sites	Construction Phase	V
S12.88	<p><b>Sediments</b></p> <ul style="list-style-type: none"> <li>The basic requirements and procedures for excavated / dredged sediment disposal specified under ETWB TC(W) No. 34/2002 shall be followed. MFC is managing the disposal facilities in Hong Kong for the dredged and excavated sediment, while EPD is the authority of issuing marine dumping permit under the Dumping at Sea Ordinance.</li> </ul>	To ensure the sediment to be disposed of in an authorized and least impacted way	Contractor	All works areas with sediments concern	Construction Phase	N/A
S12.89	<p><b>Sediments (con't)</b></p> <ul style="list-style-type: none"> <li>The contractor for the excavation / dredging works shall apply for the site allocations of marine sediment disposal based on the prior agreement with MFC/CEDD. A request for reservation of sediment disposal space have been submitted to MFC for onward discussions of disposal approach and feasible disposal sites and the letter is attached in Appendix 12.6. The Project</li> </ul>	To determine the best handling and disposal option of the sediments	MTR / Contractor	All works areas with sediments concern	Detailed Design Stage and Construction Phase	N/A



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	<p>proponent shall also be responsible for the application of all necessary permits from relevant authorities, including the dumping permit as required under DASO from EPD, for the disposal of dredged and excavated sediment prior to the commencement of the excavation works.</p>					
S12.91 – 12.94	<p><b>Sediments (con't)</b></p> <ul style="list-style-type: none"> <li>Stockpiling of contaminated sediments shall be avoided as far as possible. If temporary stockpiling of contaminated sediments is necessary, the excavated sediment shall be covered by tarpaulin and the area shall be placed within earth bunds or sand bags to prevent leachate from entering the ground, nearby drains and/or surrounding water bodies. The stockpiling areas shall be completely paved or covered by linings in order to avoid contamination to underlying soil or groundwater. Separate and clearly defined areas shall be provided for stockpiling of contaminated and uncontaminated materials. Leachate, if any, shall be collected and discharged according to the Water Pollution Control Ordinance (WPCO).</li> <li>In order to minimise the potential odour / dust emissions during excavation and transportation of the sediment, the excavated sediments shall be wetted during excavation / material handling and shall be properly covered when placed on trucks or barges. Loading of the excavated sediment to the barge shall be controlled to avoid splashing and overflowing of the sediment slurry to the surrounding water.</li> <li>The barge transporting the sediments to the designated disposal sites shall be equipped with tight fitting seals to prevent leakage and shall not be filled to a level that would cause overflow of materials or laden water during loading or transportation. In addition, monitoring of the barge loading shall be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels shall be equipped with automatic self-monitoring devices as specified by the DEP.</li> <li>In order to minimise the exposure to contaminated materials, workers shall, when necessary, wear appropriate personal protective equipments (PPE) when handling contaminated sediments. Adequate washing and cleaning facilities shall also be provided on site.</li> </ul>	<p>To ensure handling of sediments are in accordance to statutory requirements</p>	<p>Contractor</p>	<p>Work Sites, Sediment disposal sites</p>	<p>Construction Phase</p>	<p>N/A</p>
S12.95	<p><b>Sediments (con't)</b></p> <ul style="list-style-type: none"> <li>A possible arrangement for Type 3 disposal is by geosynthetic containment. A geosynthetic containment method is a method whereby the sediments are sealed in geosynthetic containers and, at the disposal site, the containers would be dropped into the designated contaminated mud pit where they would be covered by further mud disposal and later by the mud pit capping, thereby meeting the requirements for fully confined mud disposal. The technology is readily available for the manufacture of the geosynthetic containers to the project-specific requirements. Similar disposal methods have been used for projects in Europe, the USA and Japan and the issues of</li> </ul>	<p>To ensure handling of sediments are in accordance to statutory requirements</p>	<p>Contractor</p>	<p>Work Sites, Sediment disposal sites</p>	<p>Construction Phase</p>	<p>N/A</p>

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	fill retention by the geosynthetic fabrics, possible rupture of the containers and sediment loss due to impact of the container on the seabed have been addressed.					
/	<p><b>Accidental spillage</b> To prevent accidental spillage of chemicals, the following is recommended:</p> <ul style="list-style-type: none"> <li>• Proper storage and handling facilities will be provided.</li> <li>• All the tanks, containers, storage area will be bunded and the locations will be locked as far as possible from the sensitive watercourse and stormwater drains.</li> <li>• The contractor will register as a chemical waste producer if chemical wastes would be generated. Storage of chemical waste arising from the construction activities will be stored with suitable labels and warnings.</li> <li>• Disposal of chemical wastes will be conducted in compliance with the requirements as stated in the Waste disposal (Chemical Waste) (General) Regulation.</li> </ul>	To minimize potential adverse environmental impacts arising from accidental spillage	Contractor	Work Sites	Construction Phase	@
S12.97	<p><b>Containers for Storage of Chemical Waste</b> The Contractor shall register with EPD as a chemical waste producer and to follow the guidelines stated in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Containers used for storage of chemical waste shall:</p> <ul style="list-style-type: none"> <li>• Be compatible with the chemical wastes being stored, maintained in good condition and securely sealed;</li> <li>• Have a capacity of less than 450 litters unless the specifications have been approved by EPD; and</li> <li>• Display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Waste Disposal (Chemical Waste) (General) Regulation.</li> </ul>	To register with EPD as a Chemical waste producer and store chemical waste in appropriate containers	Contractor	Work Sites	Construction Phase	V
S12.98	<p><b>Chemical Waste Storage Area</b></p> <ul style="list-style-type: none"> <li>• Be clearly labeled to indicate corresponding chemical characteristics of the chemical waste and used for storage of chemical waste only;</li> <li>• Be enclosed on at least 3 sides;</li> <li>• Have an impermeable floor and bunding, of capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in that area, whichever is the greatest;</li> <li>• Have adequate ventilation;</li> <li>• Be covered to prevent rainfall from entering; and</li> <li>• Be properly arranged so that incompatible materials are adequately separated.</li> </ul>	To prepare appropriate storage areas for chemical waste at works areas	Contractor	Work Sites	Construction Phase	V
S12.99	<p><b>Chemical Waste</b></p> <ul style="list-style-type: none"> <li>• Lubricants, waste oils and other chemical wastes would be generated during the maintenance of vehicles and mechanical equipments. Used lubricants shall be collected and stored in individual containers which are fully labelled in English and Chinese and stored in a designated secure place.</li> </ul>	To clearly label the chemical waste at works areas	Contractor	Work Sites	Construction Phase	V

## Appendix C – Environmental Mitigation Implementation Schedule

EIA Ref. / EM&A Log Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	Implementation Status
S12.100	<b>Collection and Disposal of Chemical Waste</b> <b>A trip-ticket system shall be operated in accordance with the Waste Disposal (Chemical Waste) (General) Regulation</b> to monitor all movements of chemical waste. The Contractor shall employ a licensed collector to transport and dispose of the chemical wastes, to either the approved CWTC at Tsing Yi, or another licensed facility, in accordance with the <i>Waste Disposal (Chemical Waste) (General) Regulation</i> .	To monitor the generation, reuse and disposal of chemical waste	Contractor	Work Sites	Construction Phase	V
S12.101	<b>General Refuse</b> General refuse shall be stored in enclosed bins or compaction units separate from C&D materials and chemical waste. A reputable waste collector shall be employed by the contractor to remove general refuse from the site, separately from C&D materials and chemical wastes. Preferably, an enclosed and covered area shall be provided to reduce the occurrence of wind-blown light material.	To properly store and separate from other C&D materials for subsequent collection and disposal	Contractor	Work Sites	Construction Phase	V
S12.102	<b>General Refuse (con't)</b> The recyclable component of general refuse, such as aluminum cans, paper and cleansed plastic containers shall be separated from other waste. Provision and collection of recycling bins for different types of recyclable waste shall be set up by the Contractor. The Contractor shall also be responsible for arranging recycling companies to collect these materials.	To facilitate recycling of recyclable portions of refuse	Contractor	Work Sites	Construction Phase	V
S12.103	<b>General Refuse (con't)</b> The Contractor shall carry out an education programme for workers in avoiding, reducing, reusing and recycling of materials generation. Posters and leaflets advising on the use of the bins shall also be provided in the sites as reminders.	To raise workers' awareness on recycling issue	Contractor	Work Sites	Construction Phase	V

Legend: V = implemented;  
x = not implemented;  
@ = partially implemented;  
N/A = not applicable

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**APPENDIX D**

**Summary of Action and Limit Levels**

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**Appendix D – Summary of Action and Limit Levels****Action and Limit Levels for Construction Noise  
(0700 – 1900 hrs of normal weekdays)**

<b>ID</b>	<b>Location</b>	<b>Action Level</b>	<b>Limit Level</b>
NM1	Hoi Kung Court	When one documented complaint is received	75 dB(A)

---

**APPENDIX E**

**Calibration Certificates of Equipments**

---



## CERTIFICATE OF CALIBRATION

Certificate No.: 13CA1107 01-01 Page 1 of 2

### Item tested

Description:	Sound Level Meter (Type 1)	,	Microphone
Manufacturer:	Rion Co., Ltd.	,	Rion Co., Ltd.
Type/Model No.:	NL-31	,	UC-53A
Serial/Equipment No.:	00320528 / N.007.03A	,	90565
Adaptors used:	-	,	-

### Item submitted by

Customer Name: AECOM ASIA CO., LTD.  
Address of Customer: -  
Request No.: -  
Date of receipt: 07-Nov-2013

Date of test: 08-Nov-2013

### Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Multi function sound calibrator	B&K 4226	2288444	22-Jun-2014	CIGISMEC
Signal generator	DS 360	33873	15-Apr-2014	CEPREI
Signal generator	DS 360	61227	15-Apr-2014	CEPREI

### Ambient conditions

Temperature:  $22 \pm 1$  °C  
Relative humidity:  $60 \pm 10$  %  
Air pressure:  $1000 \pm 10$  hPa

### Test specifications

- 1, The Sound Level Meter has been calibrated in accordance with the requirements as specified in BS 7580: Part 1: 1997 and the lab calibration procedure SMTP004-CA-152.
- 2, The electrical tests were performed using an electrical signal substituted for the microphone which was removed and replaced by an equivalent capacitance within a tolerance of  $\pm 20\%$ .
- 3, The acoustic calibration was performed using an B&K 4226 sound calibrator and corrections was applied for the difference between the free-field and pressure responsiveness of the Sound Level Meter.

### Test results

This is to certify that the Sound Level Meter conforms to BS 7580: Part 1: 1997 for the conditions under which the test was performed.

Details of the performed measurements are presented on page 2 of this certificate.

Actual Measurement data are documented on worksheets.

Approved Signatory:

Huang Jian Min/Feng Jun Qi

Date: 11-Nov-2013

Company Chop:



Comments: The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.



## CERTIFICATE OF CALIBRATION

Certificate No.: 14CA0305 06-01 Page 1 of 2

### Item tested

Description:	Sound Level Meter (Type 1)	,	Microphone
Manufacturer:	B & K	,	B & K
Type/Model No.:	2238	,	4188
Serial/Equipment No.:	2285692	,	2250420
Adaptors used:	-	,	-

### Item submitted by

Customer Name: AECOM ASIA CO. LTD.  
Address of Customer: -  
Request No.: -  
Date of receipt: 05-Mar-2014

Date of test: 07-Mar-2014

### Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Multi function sound calibrator	B&K 4226	2288444	22-Jun-2014	CIGISMEC
Signal generator	DS 360	33873	15-Apr-2014	CEPREI
Signal generator	DS 360	61227	15-Apr-2014	CEPREI

### Ambient conditions

Temperature: 22 ± 1 °C  
Relative humidity: 60 ± 10 %  
Air pressure: 1000 ± 10 hPa

### Test specifications

- The Sound Level Meter has been calibrated in accordance with the requirements as specified in BS 7580: Part 1: 1997 and the lab calibration procedure SMTP004-CA-152.
- The electrical tests were performed using an electrical signal substituted for the microphone which was removed and replaced by an equivalent capacitance within a tolerance of ±20%.
- The acoustic calibration was performed using an B&K 4226 sound calibrator and corrections was applied for the difference between the free-field and pressure responsiveness of the Sound Level Meter.

### Test results

This is to certify that the Sound Level Meter conforms to BS 7580: Part 1: 1997 for the conditions under which the test was performed.

Details of the performed measurements are presented on page 2 of this certificate.

Actual Measurement data are documented on worksheets.

Approved Signatory:

Huang Jian Min/Feng Jun Qi

Date: 12-Mar-2014

Company Chop:



Comments: The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.





## CERTIFICATE OF CALIBRATION

Certificate No.: 13CA1107 01-02

Page: 1 of 2

### Item tested

Description: Acoustical Calibrator (Class 1)  
Manufacturer: Rion Co., Ltd.  
Type/Model No.: NC-73  
Serial/Equipment No.: 10307223 / N.004.08  
Adaptors used: -

### Item submitted by

Customer: AECOM ASIA CO., LTD.  
Address of Customer: -  
Request No.: -  
Date of receipt: 07-Nov-2013

Date of test: 08-Nov-2013

### Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Lab standard microphone	B&K 4180	2341427	17-Apr-2014	SCL
Preamplifier	B&K 2673	2239857	16-Apr-2014	CEPREI
Measuring amplifier	B&K 2610	2346941	24-Apr-2014	CEPREI
Signal generator	DS 360	61227	15-Apr-2014	CEPREI
Digital multi-meter	34401A	US36087050	10-Dec-2013	CEPREI
Audio analyzer	8903B	GB41300350	15-Apr-2014	CEPREI
Universal counter	53132A	MY40003662	15-Apr-2014	CEPREI

### Ambient conditions

Temperature:  $22 \pm 1$  °C  
Relative humidity:  $60 \pm 10$  %  
Air pressure:  $1000 \pm 10$  hPa

### Test specifications

- The Sound Calibrator has been calibrated in accordance with the requirements as specified in IEC 60942 1997 Annex B and the lab calibration procedure SMTP004-CA-156.
- The calibrator was tested with its axis vertical facing downwards at the specific frequency using insert voltage technique.
- The results are rounded to the nearest 0.01 dB and 0.1 Hz and have not been corrected for variations from a reference pressure of 1013.25 hectoPascals as the maker's information indicates that the instrument is insensitive to pressure changes.

### Test results

This is to certify that the sound calibrator conforms to the requirements of annex B of IEC 60942: 1997 for the conditions under which the test was performed. This does not imply that the sound calibrator meets IEC 60942 under any other conditions.

Details of the performed measurements are presented on page 2 of this certificate.

Approved Signatory:

Huang Jian Min/Feng Jun Qi

Date: 11-Nov-2013

Company Chop:



**Comments:** The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.

---

**APPENDIX F**

**EM&A Monitoring Schedules**

---

**Shatin to Central Link Contract 1129 - Advance Works for NSL  
Impact Environmental Monitoring Schedule for May 2014**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1-May	2-May	3-May
4-May	5-May	6-May	7-May	8-May	9-May	10-May
	Noise (NM1)					
11-May	12-May	13-May	14-May	15-May	16-May	17-May
		Noise (NM1)				
18-May	19-May	20-May	21-May	22-May	23-May	24-May
				Noise (NM1)		
25-May	26-May	27-May	28-May	29-May	30-May	31-May
					Noise (NM1)	

**Noise Monitoring Station**

NM1      Hoi Kung Court

**Monitoring Frequency**

Once per week

**Shatin to Central Link Contract 1129 - Advance Works for NSL  
Tentative Impact Environmental Monitoring Schedule for June 2014**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1-Jun	2-Jun	3-Jun	4-Jun	5-Jun	6-Jun	7-Jun
		Noise (NM1)				
8-Jun	9-Jun	10-Jun	11-Jun	12-Jun	13-Jun	14-Jun
		Noise (NM1)				
15-Jun	16-Jun	17-Jun	18-Jun	19-Jun	20-Jun	21-Jun
			Noise (NM1)			
22-Jun	23-Jun	24-Jun	25-Jun	26-Jun	27-Jun	28-Jun
			Noise (NM1)			
29-Jun	30-Jun					
	Noise (NM1)					

The schedule is subject to change due to unforeseeable circumstances (e.g. adverse weather, etc)

**Noise Monitoring Station**

NM1      Hoi Kung Court

**Monitoring Frequency**

Once per week

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**APPENDIX G**

**Noise Monitoring Results and  
their Graphical Presentations**

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**Appendix G - Impact Daytime Construction Noise Monitoring Results**

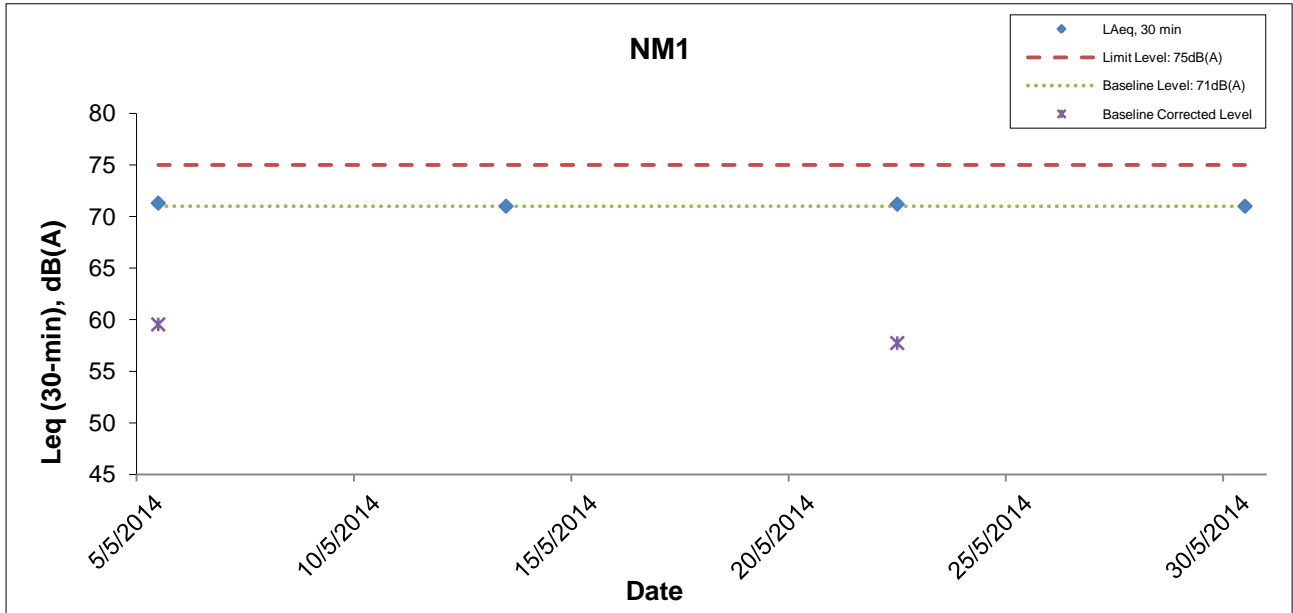
Daytime Noise Monitoring Results at Station NM1 - Hoi Kung Court, Rooftop-20/F

Date	Weather Condition	Noise Level for 30-min, dB(A) *				Baseline Corrected Level, dB(A) #	Baseline Noise Level, dB(A)	Limit Level, dB(A)	Exceedance (Y/N)
		Time	L90	L10	Leq				
5-May-14	Cloudy	13:30	69.6	72.1	71.3	59.5	71	75	N
13-May-14	Fine	15:00	69.6	72.7	71.0	=Baseline Level	71	75	N
22-May-14	Cloudy	15:29	69.0	72.5	71.2	57.7	71	75	N
30-May-14	Sunny	14:30	68.4	72.4	71.0	=Baseline Level	71	75	N

Remark:

\* Façade measurement.

# -The measured Leq is corrected against the corresponding Baseline Level.



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**APPENDIX H**

**Event Action Plan**

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**Appendix H Event Action Plan**  
**Event and Action Plan for Construction Noise Monitoring**

EVENT	ACTION			
	ET	IEC	ER	Contractor
Exceedance of Action Level	<ol style="list-style-type: none"> <li>1. Notify the Contractor, IEC and ER;</li> <li>2. Discuss with the ER, IEC and Contractor on the remedial measures required; and</li> <li>3. Increase monitoring frequency to check mitigation effectiveness.</li> </ol>	<ol style="list-style-type: none"> <li>1. Review the investigation results submitted by the contractor; and</li> <li>2. Review and advise the ET and ER on the effectiveness of the remedial measures proposed by the Contractor.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of complaint in writing;</li> <li>2. Review and agree on the remedial measures proposed by the Contractor; and</li> <li>3. Supervise implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Investigate the complaint and propose remedial measures;</li> <li>2. Report the results of investigation to the IEC, ET and ER;</li> <li>3. Submit noise mitigation proposals to the ER with copy to the IEC and ET within 3 working days of notification; and</li> <li>4. Implement noise mitigation proposals.</li> </ol>
Exceedance of Limit Level	<ol style="list-style-type: none"> <li>1. Notify the Contractor, IEC, EPD and ER ;</li> <li>2. Repeat measurement to confirm findings;</li> <li>3. Increase monitoring frequency;</li> <li>4. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented;</li> <li>5. Arrange meeting with the IEC and ER to discuss the remedial measures to be taken;</li> <li>6. Inform IEC, ER and EPD the causes and actions taken for the exceedances;</li> <li>7. Review the effectiveness of Contractor's remedial measures and keep IEC, EPD and ER informed of the results; and</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. Discuss with the ER, ET and Contractor on the potential remedial measures; and</li> <li>4. Review and advise the ET and ER on the effectiveness of the remedial measures proposed by the Contractor.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of exceedance in writing;</li> <li>2. In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented;</li> <li>3. Supervise the implementation of remedial measures; and</li> <li>4. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.</li> </ol>	<ol style="list-style-type: none"> <li>1. Identify source and investigate the causes of exceedance;</li> <li>2. Take immediate action to avoid further exceedance;</li> <li>3. Submit proposals for remedial measures to the ER with copy to the IEC and ET within 3 working days of notification;</li> <li>4. Implement the agreed proposals;</li> <li>5. Revise and resubmit proposals if problem still not under control; and</li> <li>6. Stop the relevant portion of works as determined by the ER until the exceedance is abated.</li> </ol>

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**APPENDIX I**

**Cumulative Statistics of Complaints, Notification of Summons  
and Successful Prosecutions**

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**Appendix I****Cumulative Statistics on Complaints, Notifications of Summons and Successful Prosecutions**

	<b>Date Received</b>	<b>Subject</b>	<b>Status</b>	<b>Total no. received in this month</b>	<b>Total no. received since project commencement</b>
<b>Environmental complaints</b>	-	-	-	0	0
<b>Notification of summons</b>	-	-	-	0	0
<b>Successful Prosecutions</b>	-	-	-	0	0

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**APPENDIX J**

**Waste Flow Table**

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**SCL Contract 1129 Advance Works For NSL**

**Monthly Summary C&D Material Flow Table for 2014**

updated to 31 May 2014

Latest Programme for Generation & Import of Materials in each Reporting Period	Quantity for off-site disposal of Inert C&D materials (m <sup>3</sup> )					Quantity for off-site disposal of Non-inert C&D materials					
	Inert C&D material (m <sup>3</sup> )					Metals (kg)	Paper / Cardboard (kg)	Plastics (kg)	Chemical Waste (kg)	General Waste (m <sup>3</sup> )	Sediment (m <sup>3</sup> )
	CWPFBP(1)	TKO137FB(2)	TKO137SF(3)	^Other Site	Total (m <sup>3</sup> )	Total	Total	Total	Total	Total	
2014/01 (Actual)	0	0	0	0	0	0	0	0	0	0	0
2014/02 (Actual)	0	0	0	0	0	0	0	0	0	0	0
2014/03 (Actual)	305	0	0	0	305	0	0	0	0	0	0
2014/04 (Actual)	308	75	0	0	382	0	0	0	0	0	0
2014/05 (Actual)	1,258	7	0	0	1,266	0	0	0	0	5	0
2014/06 (Actual)											
<b>Sub-total</b>	<b>1,871</b>	<b>82</b>	<b>0</b>	<b>0</b>	<b>1,953</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>0</b>
2014/07 (Actual)											
2014/08 (Actual)											
2014/09 (Actual)											
2014/10 (Actual)											
2014/11 (Actual)											
2014/12 (Actual)											
<b>Sub-total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Total</b>					<b>1,953</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>0</b>

- Remark:**
- \*Assume the density is 2 tonnes per cubic metre
  - ^Required to be approved by EPD and MTR
  - 1 CWPFBR Chai Wan Public Fill Barging Point
  - 2 TKO137FB Fill Bank at Tseung Kwan O Area 137
  - 3 TKO137SF Sorting Facilities at Tseung Kwan O Area 137



**Appendix B**

**Baseline Monitoring Report for Trial Trenching Works**



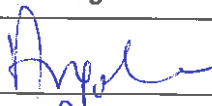

**MTR Corporation Limited**

Consultancy Agreement No. C11033B

**Shatin to Central Link–  
Mong Kok East to Hung Hom and Hung  
Hom to Admiralty Sections  
[SCL (MKK-HUH & HUH-ADM)]**

**Baseline Water Quality Monitoring  
Report for Trial Trenching Works**

June 2014

	Name	Signature
Prepared & Checked:	Angela Tong	
Reviewed & Approved:	Josh Lam	

Version:	A	Date: 12 Jun 2014
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## EXECUTIVE SUMMARY

Shatin to Central Link – Hung Hom to Admiralty Section [SCL (TAW-HUH)] (the Project) is an approximately 6 km long extension of the existing East Rail Line from Hung Hom Station (HUH) across the harbour to Admiralty Station (ADM). Construction and operation of SCL (HUH-ADM) is currently governed by an Environmental Permit No. EP-436/2012/A.

For facilitating the detailed design of the tunnels and construction method, as well as assessment of potential construction risk due to uncertain geological conditions, trial trenching is proposed to identify the extent of the corestone, boulders and/or bed rock, obtain further geological information at this concerned section and remove the corestone where feasible. The proposed trial trenching works is tentatively scheduled to commence in the 4<sup>th</sup> quarter of 2014 (dry season).

According to Water Quality Monitoring Plan (WQMP) for Trial Trenching Works, baseline monitoring for marine water quality should be conducted prior to the commencement of trial trenching works.

The baseline monitoring for marine water quality was carried out 3 days per week for 4 weeks between 13 March 2014 and 8 April 2014 (dry season) at four designated water quality monitoring locations prior to the commencement of trial trenching works. Data collected was reviewed and analysed to establish the Action and Limit Levels for water quality during impact monitoring period.

The baseline water quality is summarized in the following table:

Locations		Parameters				
		Salinity (ppt)	Dissolved Oxygen (mg/L)	pH	Turbidity (NTU)	Suspended Solids (mg/L)
A	Avg.	32.4	6.1	7.8	3.8	3.9
	Min.	30.9	5.0	7.3	1.8	<2.0
	Max.	33.1	7.4	8.3	5.8	6.0
WSD9	Avg.	32.5	6.7	7.8	1.9	3.3
	Min.	31.3	5.3	7.4	0.9	<2.0
	Max.	33.2	7.4	8.2	2.7	5.0
C1	Avg.	32.4	6.4 (Surface & Middle) 6.4 (Bottom)	7.75	3.00	4.00
	Min.	30.8	5.3 (Surface & Middle) 5.5 (Bottom)	7.26	1.30	<2.00
	Max.	33.2	7.6 (Surface & Middle) 7.3 (Bottom)	8.20	5.80	8.00
C2	Avg.	32.5	6.8 (Surface & Middle) 6.7 (Bottom)	7.83	2.38	3.69
	Min.	31.2	5.5 (Surface & Middle) 5.5 (Bottom)	7.30	0.70	<2.00
	Max.	33.5	8.0 (Surface & Middle) 7.9 (Bottom)	8.20	5.80	7.00

In the event that the proposed trial trenching works would be conducted in the 3<sup>rd</sup> quarter of 2014 (wet season), seasonal fluctuation should be taken into account for the derivation of Action and Limit Level in wet season.

## 1 INTRODUCTION

### 1.1 Background

- 1.1.1 The Shatin to Central Link (SCL) is a 17km extension of the existing Ma On Shan Line (MOL) and East Rail Line (EAL) comprising (i) The East-West Corridor which extends the MOL from Tai Wai to Hung Hom via East Kowloon to connect with the West Rail Line (WRL) at Hung Hom Station (HUH) and Stabling Sidings at Hung Hom Freight Yard (HHS); and (ii) The North-South Corridor which is an extension of the EAL at Hung Hom across the harbour to Admiralty Station (ADM).
- 1.1.2 SCL – Hung Hom to Admiralty Section [SCL (HUH-ADM)] is a designated project (DP) covering DP elements under items A.2, A.7, C.2 and C.12 in Schedule 2 Part 1 of the *Environmental Impact Assessment Ordinance* (EIAO). EIA Report for SCL (HUH-ADM) (Register No. AEIAR-166/2012) was approved on 17 February 2012 under the *Environmental Impact Assessment Ordinance* (EIAO). Following the approval of the EIA Report, the Environmental Permit (EP) (EP No: EP-436/2012), covering the construction and operation of SCL (HUH-ADM), was granted on 22 March 2012. Variations of Environmental Permit (VEP) were subsequently applied for the Project and the latest Environmental Permit (EP No: EP-436/2012/A) was issued by Director of Environmental Protection (DEP) on 30<sup>th</sup> April 2014.
- 1.1.3 Results of recent site investigation indicate that corestone, boulders and/or bed rock may exist along a section of the future Cross Harbour Tunnels. For facilitating the detailed design of the tunnels and construction method, as well as assessment of potential construction risk due to uncertain geological conditions, trial trenching is therefore required to identify the extent of the corestone, boulders and/or bed rock, obtain further geological information at this concerned section and remove the corestone where feasible. Location of the proposed trial trenching is provided in **Appendix 1.1**. Water quality impact arising from the proposed trial trenching was assessed with findings and associated water quality monitoring plan presented in Water Quality Monitoring Plan (WQMP) for Trial Trenching Works<sup>1</sup> (**Appendix 1.2**).
- 1.1.4 According to the WQMP for Trial Trenching Works, baseline monitoring for marine water quality should be conducted prior to the commencement of trial trenching works to review the baseline conditions and establish Action and Limit Levels. Baseline water quality monitoring was conducted between 13 March and 8 April 2014 at the designated monitoring stations.

### 1.2 Purpose of the Report

- 1.2.1 This Baseline Water Quality Report presents monitoring locations, equipment, period, methodology, results and observations during the baseline monitoring period.
- 1.2.2 The purposes of this Report are to:
- Summarise the findings of baseline monitoring for marine water quality; and
  - Establish the Action and Limit (A/L) levels in accordance with the EM&A Manual for the subsequent impact monitoring during construction stage.

### 1.3 Structure of the Report

- 1.3.1 This Report comprises the following sections:
- Section 1 introduces the background of the Project and purpose of this Report;
  - Section 2 presents the baseline monitoring requirements, methodologies and monitoring results of marine water quality; and
  - Section 3 concludes the findings of baseline monitoring.

<sup>1</sup> Water Quality Monitoring Plan for Trial Trenching Works (Mar 2014), AECOM Asia Company Limited.

## 2 WATER QUALITY MONITORING

### 2.1 Monitoring Requirements

- 2.1.1 According to the WQMP for Trial Trenching Works, baseline water quality monitoring was undertaken to establish the baseline water quality levels at four monitoring stations. The baseline monitoring was conducted 3 days per week for at least 4 weeks prior to the commencement of trial trenching works which is tentative scheduled to commence in the 4<sup>th</sup> quarter of 2014 (dry season).
- 2.1.2 Measurements at control stations were taken at mid-flood and mid-ebb tides at three water depths, namely, 1 m below water surface, mid-depth and 1 m above sea bed, except where the water depth was less than 6 m, in which case the mid-depth station was omitted. If the water depth was less than 3 m, only the mid-depth station would be monitored. For monitoring stations at seawater intakes, measurements were taken at the appropriate vertical levels of the abstraction points of these intakes (i.e. approx. mid depth level).

### 2.2 Monitoring Equipment

- 2.2.1 Equipment used in the baseline water quality monitoring programme is summarized in **Table 2.1**. A copy of the calibration certificates for the water quality monitoring equipment are attached in **Appendix 2.1**.

**Table 2.1 Water Quality Monitoring Equipment**

Equipment	Model
DO and Temperature Meter, Salinity Meter, pH meter and Turbidimeter	YSI Model 6820 V2
Positioning Equipment	JRC DGPS 224 Model JLR-4341 with J-NAV 500 Model NWZ4551
Water Depth Detector	Eagle cuda 168
Water Sampler	Kahlsico Water Sampler 2 L with messenger

### 2.3 Monitoring Parameters, Frequency and Duration

- 2.3.1 **Table 2.2** summarizes the monitoring parameters, frequency and duration of the baseline water quality monitoring. The monitoring schedule is provided in **Appendix 2.2**.

**Table 2.2 Water Quality Monitoring Parameters, Frequency and Duration**

Parameter, unit	Frequency and Duration
Turbidity, Suspended Solids, Dissolved Oxygen, pH, Temperature and Salinity	3 days per week at mid-flood and mid-ebb tides for four weeks (12 days)

### 2.4 Monitoring Locations

- 2.4.1 In accordance with WQMP for Trial Trenching Works, the monitoring was conducted at the designated monitoring stations (**Table 2.3**). The locations of the monitoring stations are shown in **Figure Nos. C11033B/C/SCL/ACM/M62/151 – 152**.

**Table 2.3 Locations of Water Quality Impact Stations**

Station	Description	Easting	Northing
A	Wan Chai WSD Flushing Water Intake (Reprovisioned)	836268 <sup>(1)</sup>	816045 <sup>(1)</sup>
WSD9	Tai Wan WSD Flushing Water Intake	837930 <sup>(2)</sup>	818357 <sup>(2)</sup>
C1	Control Station 1	833977	817442
C2	Control Station 2	841088	817223

Note:

- (1) The original coordinates of monitoring location A (Easting: 836286, Northing: 816024) is the exact location taken from the design of re-provisioned Wan Chai Salt Water Pumping Station and Salt Water Intake Culvert. Based on actual site condition for taking water sampling, minor adjustment was made on monitoring location.
- (2) The original coordinates of monitoring location WSD9 (Easting: 838133, Northing: 817790) as proposed in WQMP were minor moved closer to sensitive receiver according to the actual site condition.

## 2.5 Monitoring Methodology

2.5.1 The following procedures were adopted for DO, temperature, turbidity, pH, salinity and suspended solids measurement:

### **Instrumentation**

2.5.2 The in-situ water quality parameters, viz. dissolved oxygen, temperature, turbidity, pH and salinity were measured by a multi-parameter meter (YSI Model 6820 V2).

### **Operating/Analytical Procedures**

2.5.3 Given that all water monitoring stations had water depths over 6 m, all in-situ measurements and samplings were conducted at 3 water depths, namely 1 m below water surface, mid-depth and 1 m above sea bed.

2.5.4 At each sampling depth, at least duplicate readings of dissolved oxygen content and turbidity were taken. The probes were retrieved out of the water after the first measurement and then re-deployed for the second measurement.

2.5.5 Three replicates of water samples for suspended solids were collected by water samplers and stored in polyethylene bottles. Sampling bottles were pre-rinsed with the same water samples. The sample bottles were then packed into a cool-box kept at 4°C, and delivered to a HOKLAS accredited laboratory, ALS Technichem (HK) Pty Ltd. for the analysis of suspended solids following the standard methods "American Public Health Association (APHA) Standard Methods (APHA 2540 D). The results for laboratory analysis of suspended solids are presented in **Appendix 2.3**.

### **Maintenance and Calibration**

2.5.6 Before each round of monitoring, the dissolved oxygen probe of YSI 6820 was calibrated by the wet bulb method.

2.5.7 The monitoring instruments were checked, calibrated and certified by a laboratory accredited under HOKLAS before use and subsequently re-calibrated at 3-monthly intervals throughout baseline water quality monitoring.

## 2.6 Results and Observations

- 2.6.1 The baseline water quality monitoring for the designated monitoring stations was conducted between 13 March and 8 April 2014. The monitoring results are summarized in **Table 2.4**. Details of water quality monitoring results are presented in **Appendix 2.4**.
- 2.6.2 The weather conditions during the monitoring period were mainly sunny or cloudy. Sea conditions for the majority of monitoring days were either calm or moderate. No major pollution sources, which might affect the results, were observed being conducted in the vicinity during the baseline monitoring. It is considered that the baseline monitoring data collected between the period of 13 March and 8 April 2014 represent the baseline water quality condition.

**Table 2.4 Summary of Baseline Water Quality Monitoring Results**

Locations		Parameters				
		Salinity (ppt)	Dissolved Oxygen (mg/L)	pH	Turbidity (NTU)	Suspended Solids (mg/L)
A	Avg.	32.4	6.1	7.8	3.8	3.9
	Min.	30.9	5.0	7.3	1.8	<2.0
	Max.	33.1	7.4	8.3	5.8	6.0
WSD9	Avg.	32.5	6.7	7.8	1.9	3.3
	Min.	31.3	5.3	7.4	0.9	<2.0
	Max.	33.2	7.4	8.2	2.7	5.0
C1	Avg.	32.4	6.4 (Surface & Middle) 6.4 (Bottom)	7.8	3.0	4.0
	Min.	30.8	5.3 (Surface & Middle) 5.5 (Bottom)	7.3	1.3	<2.0
	Max.	33.2	7.6 (Surface & Middle) 7.3 (Bottom)	8.2	5.8	8.0
C2	Avg.	32.5	6.8 (Surface & Middle) 6.7 (Bottom)	7.8	2.4	3.7
	Min.	31.2	5.5 (Surface & Middle) 5.5 (Bottom)	7.3	0.7	<2.0
	Max.	33.5	8.0 (Surface & Middle) 7.9 (Bottom)	8.2	5.8	7.0

## 2.7 Action and Limit Levels

- 2.7.1 The Action and Limit Levels (AL levels) have been set in accordance with the derivation criteria specified in the EM&A Manual as shown in **Table 2.5**. The derived AL levels for the dry season impact monitoring are presented in **Table 2.6**.

**Table 2.5 Derivation of Action and Limit Levels for Water Quality**

Parameters	Action Level	Limit Level
DO in mg/L	5 percentile of baseline data or <2.1mg/L	1 percentile of baseline data or <2mg/L
SS in mg/L (depth-averaged)	95 percentile of baseline data or > 9.5 mg/L	99 percentile of baseline data or >10 mg/L
Turbidity in NTU (depth-averaged)	95 percentile of baseline data or > 9.5 NTU	99 percentile of baseline data or >10 NTU

- Notes:
1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
  2. For turbidity and SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

3. All the figures given in the table are used for reference only and the EPD may amend the figures whenever it is considered as necessary.

**Table 2.6 Derived Action and Limit Levels for Water Quality at Intakes A and WSD9 (Dry Season)**

Parameters	Action Level	Limit Level
DO in mg/L	<2.1	<2
SS in mg/L	5.0	5.5
Turbidity in NTU	5.3	5.6

## 2.8 Recommendation for Wet Season Impact Monitoring

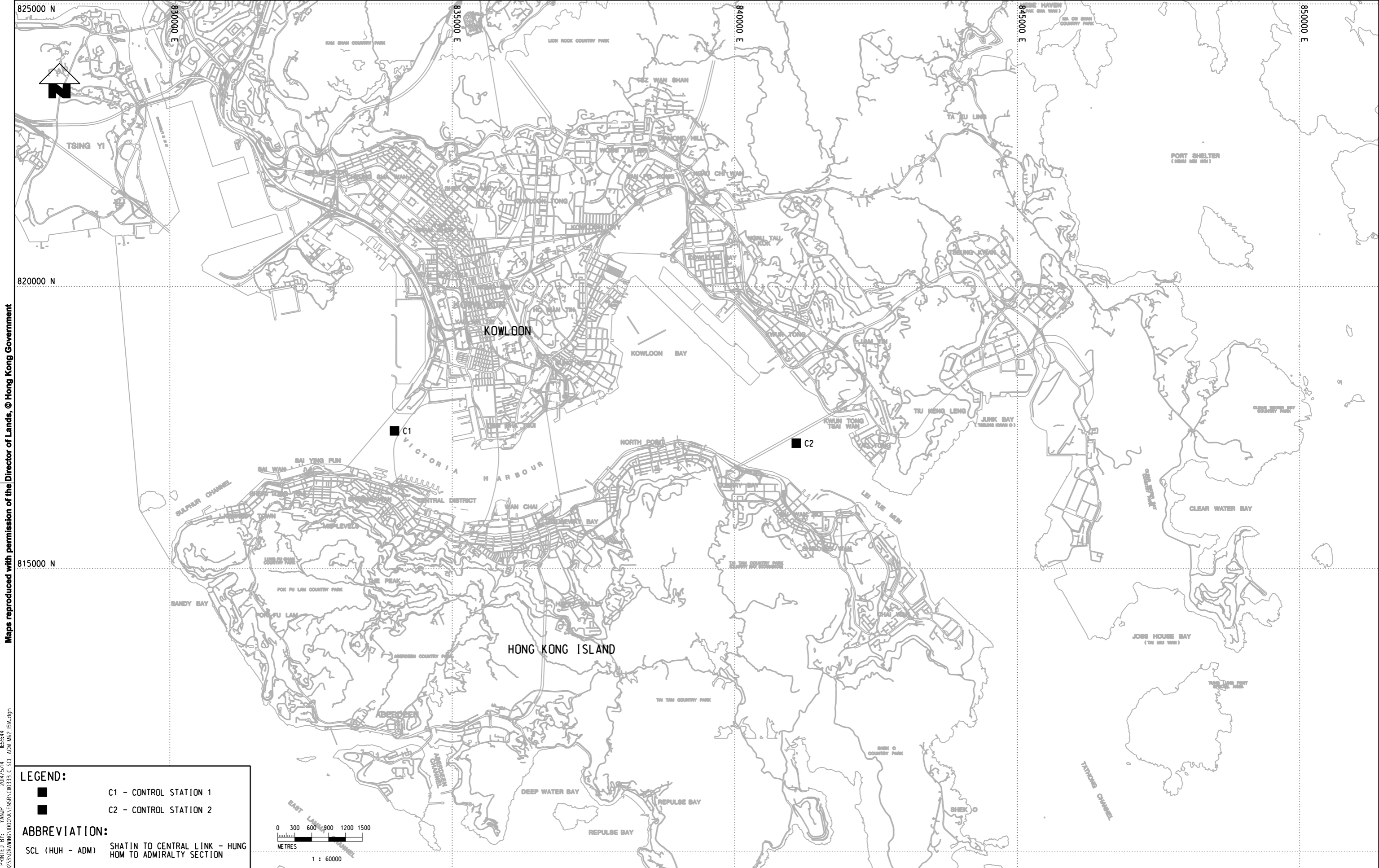
- 2.8.1 The proposed trial trenching works would be conducted in the 4<sup>th</sup> quarter of 2014 but there would be a chance in earlier approval for Temporary Government Land Allocation and trial trenching works could be taken in the 3<sup>rd</sup> quarter of 2014. In the event that the proposed trial trenching works would be conducted in the 3<sup>rd</sup> quarter of 2014 (wet season), silt screens will be installed at the flushing water intakes at Tai Wan (WSD9), Quarry Bay (WSD17), Wan Chai (Reprovisioned) (A) and Kowloon Station (14), following the recommendations as stated in Table 11.23 of the SCL(HUH-ADM) EIA Report. Monitoring will also be conducted at these locations to monitor any water quality impact during wet season (**Figure No. C11033B/C/SCL/ACM/M62/153** refers). Seasonal fluctuation will be taken into account for the derivation of Action and Limit Level in wet season.
- 2.8.2 With respect to the locations of impact monitoring stations (i.e. WSD9, WSD17, A and 14), the closest EPD routine monitoring stations are VM4, VM2, VM5, VM6 respectively. The monthly DO, SS and turbidity results between 2010 and 2012 obtained from the selected EPD routine monitoring stations were used to review the seasonal fluctuation. A summary of EPD monitoring data between 2010 and 2012 is provided in **Appendix 2.5** whilst the background conditions within this period during the wet season (April-September) and dry season (October-March) is presented in **Appendix 2.6**.
- 2.8.3 According to the EPD monitoring results, the DO, SS and Turbidity levels in the wet season were generally lower than those in the dry season. The variation percentage between two seasons is applied to the baseline monitoring data taken for the dry season to derive the AL levels for impact monitoring in the wet season as shown in **Table 2.7**.

**Table 2.7 Derived Action and Limit Levels for Water Quality at Intakes A, WSD9, 14 and WSD17 (Wet Season)**

Parameters	Action Level	Limit Level
DO in mg/L	<2.1	<2
SS in mg/L	4.4	4.8
Turbidity in NTU	5.3	5.6

### **3 CONCLUSION**

- 3.1.1 Baseline water quality monitoring was conducted between 13 March 2014 and 8 April 2014 at two monitoring and two control stations. Action and Limit Levels were derived based on the baseline monitoring results.
- 3.1.2 In the event that the proposed trial trenching works would be conducted in the 3<sup>rd</sup> quarter of 2014 (wet season), silt screen will be installed at the flushing water intakes at Tai Wan (WSD9), Quarry Bay (WSD17), Wan Chai (Reprovisioned) (A) and Kowloon Station (14), and impact monitoring will be conducted for compliance checking with the wet season Action and Limit Levels in which seasonal fluctuation has been considered.



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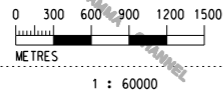
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**LEGEND:**

- C1 - CONTROL STATION 1
- C2 - CONTROL STATION 2

**ABBREVIATION:**

SCL (HUH - ADM) SHATIN TO CENTRAL LINK - HUNG  
 HOM TO ADMIRALTY SECTION



REV	DESCRIPTION	BY	DATE	APPROVED	REV	DESCRIPTION	BY	DATE	APPROVED

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CHECKED	LCR
APPROVED	---
DATE	24/FEB/2014
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**MTR**

**SHATIN TO CENTRAL LINK**

**AECOM**

CADD REF. C11033B\_C\_SCL\_ACM\_M62\_151A.dgn

**TITLE**

**C11033B**  
**BASELINE WATER QUALITY MONITORING REPORT**  
**LOCATIONS OF WATER QUALITY MONITORING STATIONS**

SCALE 1 : 60000 (A3)    FIGURE NO. C11033B/C/SCL/ACM/M62/151    REV. A





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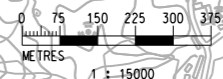
— RECLAMATION LIMIT FOR WDI & CWB

**WATER QUALITY MONITORING STATION FOR WSD FLUSHING WATER INTAKES:**

- A WAN CHAI
- WSD9 TAI WAN

**ABBREVIATION:**

SCL (HUH - ADM) SHATIN TO CENTRAL LINK - HUNG HOM TO ADMIRALTY SECTION



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**MTR**

**SHATIN TO CENTRAL LINK**

**AECOM**

ORIGINATOR

CADD REF. C11033B\_C\_SCL\_ACM\_M62\_152A.dgn

TITLE

**C11033B**

**BASELINE WATER QUALITY MONITORING REPORT**

**LOCATIONS OF WATER QUALITY MONITORING STATIONS (DRY SEASON)**

SCALE 1 : 15000 (A3)

FIGURE NO. C11033B/C/SCL/ACM/M62/152

REV. A

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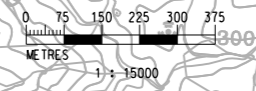
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- ← EXISTING SENSITIVE RECEIVER
- RECLAMATION LIMIT FOR WDII & CWB

**WATER QUALITY MONITORING STATION FOR FLUSHING WATER INTAKES:**

- 14 KOWLOON STATION
- WSD9 TAI WAN
- WSD17 QUARRY BAY
- A WAN CHAI

**ABBREVIATION:**

SCL (HUH - ADM) SHATIN TO CENTRAL LINK - HUNG HOM TO ADMIRALTY SECTION



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DATE	24/FEB/2014

**MTR**

SHATIN TO CENTRAL LINK

**AECOM**

ORIGINATOR

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TITLE

**C11033B**  
**BASELINE WATER QUALITY MONITORING REPORT**  
**LOCATIONS OF WATER QUALITY MONITORING STATIONS**  
**(WET SEASON)**

SCALE 1 : 15000 (A3)

FIGURE NO. C11033B/C/SCL/ACM/M62/153

REV. A

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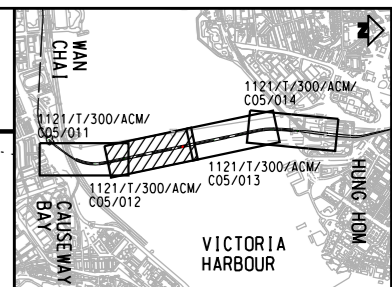
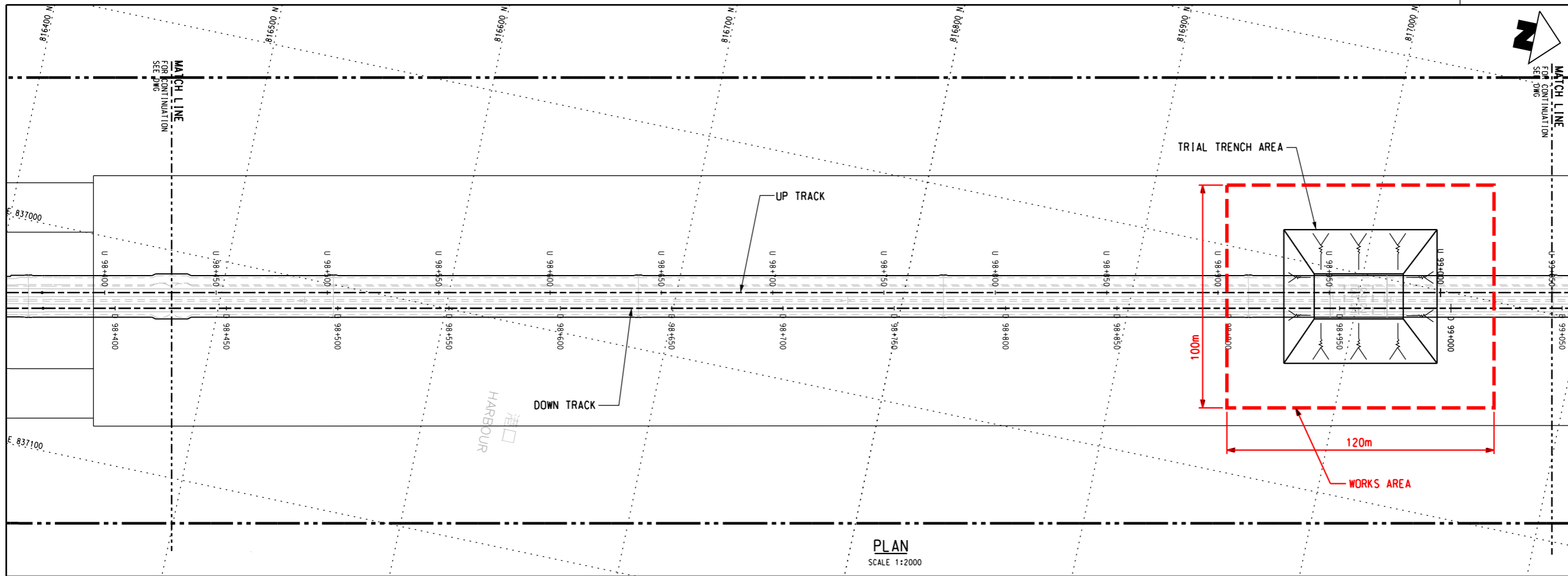
**APPENDIX 1.1**

**TRIAL TRENCHING WORKS AT VICTORIA HARBOUR**

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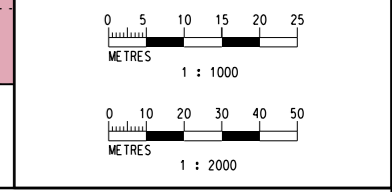
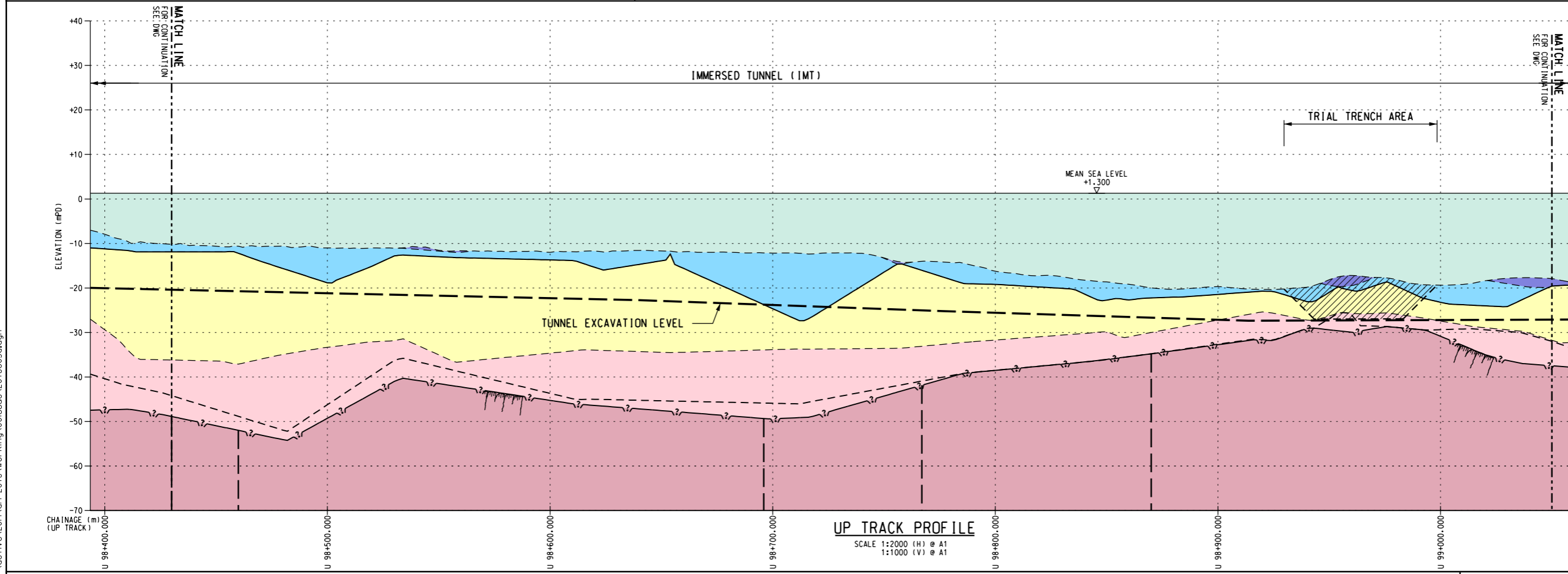
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**KEY PLAN**

**GROUND INVESTIGATION LEGEND:**

- INFERRED ROCKHEAD (R1) PROFILE
- INFERRED TOP OF CORESTONE ZONE
- INFERRED BASE OF MARINE DEPOSIT
- 1:2 CUT SLOPE
- TRIAL TRENCH AREA AT HIGH ROCKHEAD AREA



TRIAL TRENCHING WORKS AT HIGH ROCK HEAD AREA WITHIN VICTORIA HARBOUR



**MTR**  
 Shatin to Central Link  
 沙田至中環綫

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 ISSUE NO. : 00  
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 DATE : 07MAR2014  
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**APPENDIX 1.2**

**WATER QUALITY MONITORING PLAN FOR TRIAL  
TRENCHING WORKS**

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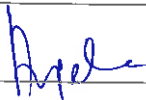

**MTR Corporation Limited**

Consultancy Agreement No. C11033B

**Shatin to Central Link–  
Mong Kok East to Hung Hom and Hung  
Hom to Admiralty Sections  
[SCL (MKK-HUH & HUH-ADM)]**

**Water Quality Monitoring Plan for Trial  
Trenching Works**

March 2014

	Name	Signature
Prepared & Checked:	Angela Tong	
Reviewed & Approved:	Josh Lam	

Version: - Date: 10 March 2014

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## 1. INTRODUCTION

### 1.1 Background

- 1.1.1 The Shatin to Central Link (SCL) is a 17km extension of the existing Ma On Shan Line (MOL) and East Rail Line (EAL) comprising (i) The East-West Corridor which extends the MOL from Tai Wai to Hung Hom via East Kowloon to connect with the West Rail Line (WRL) at Hung Hom Station (HUH) and Stabling Sidings at Hung Hom Freight Yard (HHS); and (ii) The North-South Corridor which is an extension of the EAL at Hung Hom across the harbour to Admiralty Station (ADM).
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- 1.1.3 Results of recent site investigation indicate that corestone, boulders and/or bed rock may exist along a section of the future Cross Harbour Tunnels. For facilitating the detailed design of the tunnels and construction method, as well as assessment of potential construction risk due to uncertain geological conditions, trial trenching is therefore required to identify the extent of the corestone, boulders and/or bed rock, obtain further geological information at this concerned section and remove the corestone where feasible. Location of the proposed trial trenching is provided in **Appendix 1.1**.
- 1.1.4 Pursuant to EP Conditions 2.10 and 2.11, silt curtain and silt screen deployment plan will be submitted by MTR Corporation Ltd (MTR) to Environmental Protection Department (EPD) at least two weeks before commencement of the marine works. For the submission of sediment management plan (SMP) under EP Condition 2.12, a project-wide SMP for SCL was approved by EPD on 15 Oct 2012.
- 1.1.5 Apart from the required submissions under EP, baseline water quality monitoring should be conducted prior to the commencement of marine works to review the baseline conditions and establish Action and Limit Levels according to the approved Environmental Monitoring and Audit (EM&A) Manual.
- 1.1.6 AECOM Asia Co. Ltd (AECOM) has been commissioned by the MTR to review the potential impact arising from the proposed advance marine works and to recommend water quality monitoring plan accordingly.

### 1.2 Purpose of this Monitoring Plan

- 1.2.1 According to Section 9.17 of approved EM&A Manual, alternative baseline water quality monitoring locations shall be agreed with the Independent Environmental Checker (IEC) and Environmental Protection Department (EPD). This Proposal presents the reason of proposing alternative water quality monitoring locations.



## 2. DESKTOP REVIEW

### 2.1 Potential Impacts

- 2.1.1 The proposed trial trenching with an area of approx. 0.4 ha would take about 1.5 months. The trenching works to be conducted at a section of the Cross Harbour Tunnels would involve removal of sediment and silt/sand materials above the corestone using dredger for exposing corestone, boulders and/or bed rock in order to obtain further geological information. If corestone, boulders and/or bed rock is encountered during trial trenching works, it shall be removed using grab where feasible.
- 2.1.2 In view of the nature and scope of the proposed trenching works as well as its location, it is anticipated that there would be potential water quality impact arising from the proposed advance works. As the two mariculture areas, Tung Lung Chau Fish Culture Zone (FCZ) and Ma Wan FCZ, are distantly located at more than 11 km and 14 km respectively from the proposed works area, potential fisheries impact is not anticipated due to this minor marine works and large separation distances.
- 2.1.3 Potential water quality impact arising from the proposed trial trenching work is discussed below.

### 2.2 Water Quality Impact Assessment

#### *EIA Assessment Findings*

- 2.2.1 The potential water quality impacts associated with the proposed dredging and filling works required for the immersed tube (IMT) construction (across the Victoria Harbour) as well as the temporary reclamation within the CBTS have been assessed in the EIA Report. According to the engineering programme during EIA stage, the bulk dredging and bulk filling activities associated with the construction of the tunnel section of the SCL (HUH-ADM) across the Victoria Harbour would commence in 2016 for completion in 2017. Cumulative water quality impact from the SCL (ADM-HUH) and other concurrent projects were also assessed. Based on the assessment findings, the recommended mitigation measures include the reduction of dredging rate from 6,667 m<sup>3</sup> per day to 2,500m<sup>3</sup> per day and the deployment of silt screens as detailed in **Table 2.1** (equivalent to Table 11.23 of EIA Report) below under the worst case scenario with other concurrent projects. With the implementation of recommended measures, there would be no unacceptable water quality impacts arising from the Project-related construction works and due to the cumulative effects from other concurrent marine construction activities. Locations of the intakes are shown in **Figure No. C11033B/C/SCL/ACM/M59/151**.

**Table 2.1 Application of Silt Screens Recommended under the Project**

SCL Activities	Deployment of Silt Screens
SCL tunnel construction within the CBTS	<b>Cooling Water Intakes</b> for Excelsior Hotel and World Trade Centre (namely Intake 8) and Windsor House (namely Intake 9)
IMT / SCL2 construction in the open harbour along the SCL alignment	<b>Flushing Water Intakes</b> at Kowloon Station, Tai Wan, Quarry Bay and Wan Chai (namely Intakes 14, WSD9, WSD17 and A respectively)
IMT construction in Victoria Harbour within 200 m from the Hung Hom Landfall	<b>Cooling Water Intakes</b> for East Rail Extension, Metropolis and Hong Kong Coliseum (namely Intakes 21, 34 and 35 respectively)

- 2.2.2 As a precautionary measure, deployment of frame type silt curtains will also be adopted to enclose the IMT dredging / filling operations area. During the EIA stage, as conservative approach, the effect of silt curtains was not considered in calculating the sediment loss rate under the mitigated scenario (Section 11.206 of EIA Report refers). Hence, the changes in

the sediment plume impacts from the IMT dredging under the mitigated scenario as compared to the unmitigated scenario are the sole effect of the reduced dredging rate. Excerpt of EIA Report showing water quality assessment findings is provided in **Appendix 2.1**.

**Evaluation of Impact from Trenching Works**

2.2.3 A summary table comparing the dredging works as assessed in the EIA Report and the proposed trenching works is given in **Table 2.2**.

**Table 2.2 Summary Table of Dredging Works as Assessed in EIA Report and Proposed Trenching Works**

Nature and Scope	Dredging Works as Assessed in EIA	Proposed Trenching Works
Construction Programme	<ul style="list-style-type: none"> <li>Bulk Dredging to be commenced in Year 2016</li> <li>Duration: approx. 1 year</li> </ul>	<ul style="list-style-type: none"> <li>Trenching to be commenced in Q4 of Year 2014</li> <li>Duration: approx. 1.5 months</li> </ul>
Scale and location	<ul style="list-style-type: none"> <li>Dredging for entire IMT (inside CBTS and in Victoria Harbour)</li> </ul>	<ul style="list-style-type: none"> <li>Trial trench for a small extent in Victoria Harbour (approx. 70m x 60m x 10m)</li> </ul>
Potential Concurrent projects	<ul style="list-style-type: none"> <li>Temporary reclamation in CBTS for construction of CWB</li> <li>Cruise Terminal dredging (Stage 2) under KTD</li> <li>Dredging for Central Kowloon Route</li> <li>Sand filling for Road T2</li> </ul>	<ul style="list-style-type: none"> <li>Temporary reclamation in CBTS for construction of CWB</li> <li>Cruise Terminal dredging (Stage 2) under KTD</li> <li>Dredging for Central Kowloon Route</li> </ul>
Dredging Rate	<ul style="list-style-type: none"> <li>Max. 2,500 m<sup>3</sup>/day (and 156m<sup>3</sup>/hour with a maximum working period of 16 hours per day)</li> </ul>	<ul style="list-style-type: none"> <li>Max. 2,500 m<sup>3</sup>/day (and 156m<sup>3</sup>/hour with a maximum working period of 16 hours per day)</li> </ul>

2.2.4 Based on the dredging rate and works period of the proposed trenching works, a desktop review is therefore focused on the potential water quality impact arising from maximum dredging rate of 2,500 m<sup>3</sup>/day during dry season. The sediment plume modelling results in dry season and the maximum extent of mixing zone for suspended solid (SS) elevation and due to the cumulative impact from the Project and other concurrent marine works as presented in the EIA Report is provided in **Appendix 2.1**. As shown in the contour plots, the mixing zone for SS elevation contributed from the SCL and other concurrent project was predicted to be localized around the works site under the mitigated scenarios, and no significant SS elevations were observed at the concerned sensitive receivers under mitigated scenario.

2.2.5 According to the predicted SS concentrations at seawater intakes in dry season for mitigated scenario as assessed in the EIA Report, the predicted SS concentrations at the concerned water quality sensitive receivers as shown in **Table 2.3**, where deployment of silt screen is recommended during the IMT/SCL construction in the open harbour along the SCL alignment in **Table 2.1**, comply with the water quality criterion.

**Table 2.3 Predicted Suspended Solids Concentrations at Seawater Intakes for Mitigated Scenario (with Dredging Rate of 2,500 m<sup>3</sup>/day and Deployment of Silt Screen)**

WQ Sensitive Receivers (ID)	SS concentration (absolute value) in mid-depth (mg/l)			
	Criterion	Dry Season		
		Mean	Maximum	% time in compliance
<b>Flushing Water Intakes</b>				
Tai Wan (WSD9) <sup>See Note (4)</sup>	< 10	1.85	3.00	100.00%

WQ Sensitive Receivers (ID)	SS concentration (absolute value) in mid-depth (mg/l)			
	Criterion	Dry Season		
		Mean	Maximum	% time in compliance
Quarry Bay (WSD17) <sup>See Note (4)</sup>	< 10	1.88	2.79	100.00%
Wan Chai (Reprovisioned) (A) <sup>See Note (4)</sup>	< 10	1.95	2.96	100.00%
Kowloon Station (14) <sup>See Note (5)</sup>	< 10	2.10	3.99	100.00%

Notes:

1. The water quality modelling results for 90 percentile SS predicted under the pre-construction scenario at the corresponding indicator points is adopted as the ambient SS levels.
2. Maximum dredging rate for IMT construction was reduced from 6,667m<sup>3</sup> per day to 2,500m<sup>3</sup> per day.
3. Other seawater intakes that are not shown in this table were found not be impacted by the proposed marine works for the Project according to **Table 2.1**.
4. The SS levels predicted at this specific intake has incorporated the effect from deployment of silt screen around the intake as recommended under the approved EIA for WDII and CWB and CT Dredging. Based on the values established under the Pak Shek Kok Reclamation, Public Dump EIA (1997), the implementation of silt screen at the intake would reduce the SS level by a factor of 2.5 (or about 60%) and thus this factor was applied to the results.
5. A reduction factor of 2.5 was applied to results at Intake 14 due to deployment of silt screen.

- 2.2.6 Prediction results also indicate that, even without the provision of silt screen (i.e. excluding a reduction factor of 2.5 in SS level) at intakes at Tai Wan, Quarry Bay, Wan Chai and Kowloon Station (namely intakes WSD9, WSD17, A and 14 respectively), these intakes would be subject to maximum SS concentration up to 9.98mg/L which complies with the water quality criterion.
- 2.2.7 Based on the findings of desktop review as discussed above, it is anticipated that the potential water quality impact arising from the proposed trenching works would be localised, in addition to the nature and scope of trenching works which is in small scale with short duration (approx.1.5 month), there would be no unacceptable water quality impacts due to trenching works with adoption of reduced dredging rate at 2,500 m<sup>3</sup>/day and the findings of EIA Report remain valid.
- 2.2.8 Given that the predicted SS concentrations during dry season at the flushing water intakes at Tai Wan, Quarry Bay, Wan Chai and Kowloon Station (namely intakes WSD9, WSD17, A and 14 respectively), complying with the water quality criterion, it is proposed that deployment of silt screen would not be required at these water quality sensitive receivers during the localised and transient trenching works. Nonetheless, as a precautionary measure, deployment of frame type silt curtains with typical configuration provided in **Appendix 2.1** will be adopted to enclose the trenching area. A water quality monitoring and audit programme has also been recommended in **Section 3** to monitor the water quality impact arising from the trenching works.

### **3. WATER QUALITY MONITORING**

#### **3.1 Water Quality Parameters**

- 3.1.1 As discussed in **Section 2**, marine water quality monitoring will be carried out during the trenching works to monitor the level of suspended solids / turbidity as well as dissolved oxygen, such that timely action could be taken to rectify any unacceptable situation.
- 3.1.2 Dissolved Oxygen (DO), turbidity and Suspended Solids (SS) levels should be monitored at designated marine water quality monitoring stations during the trenching works. DO and turbidity should be measured in situ whereas SS should be determined by laboratory.

#### **3.2 Monitoring Equipment**

##### ***pH Measurement Instrument***

- 3.2.1 The instrument should consist of a potentiometer, a glass electrode, a reference electrode and a temperature-compensating device. It should be readable to 0.1pH in a range of 0 to 14. Standard buffer solutions of at least pH 7 and pH 10 should be used for calibration of the instrument before and after use.

##### ***Dissolved Oxygen and Temperature Measuring Equipment***

- 3.2.2 The Dissolved Oxygen (DO) measuring equipment should be portable and weatherproof. It should complete with cable and sensor, and a DC power source. The equipment should be capable of measuring:
- a DO level in the range of 0 - 20 mg·L<sup>-1</sup> and 0 - 200% saturation; and
  - a temperature of 0 - 45 degree Celsius (°C).
- 3.2.3 It should have a membrane electrode with automatic temperature compensation complete with a cable.
- 3.2.4 Should salinity compensation not be built-in to the DO equipment, in-situ salinity should be measured to calibrate the DO measuring equipment prior to each DO measurement.

##### ***Turbidity Measurement Instrument***

- 3.2.5 The turbidity measuring instrument should be a portable and weatherproof using a DC power source. It should have a photoelectric sensor capable of measuring turbidity between 0 - 1000 NTU (for example, Hach model 2100P or an approved similar instrument).

##### ***Sampler***

- 3.2.6 A water sampler is required for SS monitoring. It should comprise a transparent PVC cylinder, with a capacity of not less than 2 litres, which can be effectively sealed with latex cups at both ends. The sampler should have a positive latching system to keep it open and prevent premature closure until released by a messenger when the sampler is at the selected water depth (for example, Kahlsico Water Sampler or an approved similar instrument).

##### ***Water Depth Detector***

- 3.2.7 A portable, battery-operated echo sounder should be used for the determination of water depth at each monitoring station. This unit can either be hand-held or affixed to the bottom of the work boat, if the same vessel is to be used throughout the monitoring programme.

##### ***Salinity***

- 3.2.8 A portable salinometer capable of measuring salinity in the range of 0 - 40 parts per thousand (ppt) should be provided for measuring salinity of the water at each monitoring station.

**Sample Containers and Storage**

- 3.2.9 Water samples for SS monitoring should be stored in high density polythene bottles with no preservative added, packed in ice (cooled to 4 °C without being frozen) and delivered to the laboratory and analyzed as soon as possible after collection

**Monitoring Position Equipment**

- 3.2.10 A hand-held or boat-fixed type digital Global Positioning System (GPS) with way point bearing indication and Radio Technical Commission for maritime (RTCM) Type 16 error message 'screen pop-up' facilities (for real-time auto-display of error messages and DGPS corrections from the Hong Kong Hydrographic Office), or other equipment instrument of similar accuracy, should be provided and used during marine water monitoring to ensure the monitoring vessel at the correct location before taking measurements.

**Calibration of In-Situ Instruments**

- 3.2.11 The pH meter, DO meter and turbidimeter shall be checked and calibrated before use. DO meter and turbidimeter shall be certified by a laboratory accredited under HOKLAS or any other international accreditation scheme, and subsequently re-calibrated at 3 monthly intervals throughout all stages of the water quality monitoring. Responses of sensors and electrodes should be checked with certified standard solutions before each use. Wet bulb calibration for a DO meter shall be carried out before measurement at each monitoring location.
- 3.2.12 Sufficient stocks of spare parts shall be maintained for replacements when necessary. Backup monitoring equipment shall also be made available so that monitoring can proceed uninterrupted even when some equipment are under maintenance, calibration, etc.

**3.3 Laboratory Measurement / Analysis for Marine Water**

- 3.3.1 Duplicate samples from each independent sampling event are required by EPD for all parameters. Analysis of suspended solids shall be carried out in a HOKLAS or other international accredited laboratory. Sufficient water samples shall be collected at the monitoring stations for carrying out the laboratory SS determinations, with detection limit shown in **Table 3.1**. The SS determination work shall start within 24 hours after collection of the water samples. The analyses shall follow the standard methods according to **Table 3.1** and as described in "American Public Health Association (APHA) Standard Methods for the Examination of Water and Wastewater", 19th edition, unless otherwise specified.

**Table 3.1 Analytical Methods to be applied to Marine Water Quality Samples**

Determinant	Standard Method	Suggested Detection Limit
Suspended Solids (mg/L)	APHA 2540 D	0.1 mg/L

**3.4 Marine Water Monitoring Locations**

- 3.4.1 Based on the conclusion of desktop review as discussed in **Section 2.2.8**, there would be no unacceptable water quality impact at identified water quality sensitive receivers. As a preventive control measure, water quality monitoring is proposed to be conducted during trenching works.
- 3.4.2 Considering that the works to be conducted are located in the open harbour along the SCL alignment (i.e 2<sup>nd</sup> condition of **Table 2.1** apply), there would be concerns on potential water quality impact at intakes at Kowloon Station, Tai Wan, Quarry Bay and Wan Chai (namely Intakes 14, WSD9, WSD17 and A respectively). The selection criteria of proposed monitoring location as specified in Section 9.18 of approved EM&A Manual have been considered and discussed below:

- a) at locations close to and preferably at the boundary of the mixing zone of the major site activities as indicated in the EIA Report, which are likely to have water quality impacts;
- b) close to the sensitive receptors which are directly or likely to be affected;
- c) for monitoring locations located in the vicinity of the sensitive receptors, care shall be taken to cause minimal disturbance during monitoring;
- d) two or more control stations which shall be at locations representative of the project site in its undisturbed condition. Control stations shall be located, as far as is practicable, both upstream and down stream of the works area.

3.4.3 With respect to the above selection criteria, water quality monitoring locations are proposed at the flushing water intake A (Reprovisioned) and flushing water intake at Tai Wan (WSD9), which are located in Hong Kong and Kowloon island respectively. Two control stations, C1 and C2, outside the area of influence of the works are selected at the east and the west of the Victoria Harbour. Locations of monitoring stations are summarised in **Table 3.2** and are shown in **Figure Nos. C11033B/C/SCL/ACM/M59/152 – 153**.

**Table 3.2 Marine Water Quality Stations for Baseline and Impact Monitoring**

Identification No./ WSR ID in EIA Report	Description	Coordinates	
		Easting	Northing
A	Wan Chai WSD Flushing Water Intake (Reprovisioned)	836286 <sup>(1)</sup>	816024 <sup>(1)</sup>
WSD9	Tai Wan WSD Flushing Water Intake	838133	817790
C1	Control Station 1	833977	817442
C2	Control Station 2	841088	817223

Notes:

1. The coordinates of monitoring location is reference from the design of re-provisioned Wan Chai Salt Water Pumping Station and Salt Water Intake Culvert.

3.4.4 For the avoidance of doubt and ambiguities, the proposed water quality monitoring requirement and arrangement in this report are solely for this piece of advanced works and should not prejudice on the full list of water quality monitoring stations and other requirements stipulated under the approved EIA Report and EM&A Manual for SCL (HUH-ADM) (Register No. AEIAR-166/2012).

### 3.5 Baseline Monitoring

3.5.1 Baseline conditions for marine water quality should be established and agreed with EPD prior to the commencement of dredging works or any major marine works. The purpose of the baseline monitoring is to establish ambient conditions prior to the commencement of the trenching works and to demonstrate the suitability of the proposed monitoring stations.

3.5.2 The baseline conditions should be established by measuring dissolved oxygen, turbidity and suspended solids levels at the selected monitoring stations as shown in **Figure Nos. C11033B/C/SCL/ACM/M59/152 - 153**. For monitoring station at seawater intake, samples should be taken at the appropriate vertical level of the abstraction point of the intake. For water quality monitoring at the control stations, the monitoring should be carried out at 3 water depths, namely, 1m below water surface, mid-depth and 1m above sea bed, except where the water depth less than 6m, the mid-depth station may be omitted. Should the water depth be less than 3m, only the mid-depth station will be monitored.

3.5.3 The baseline monitoring schedule would commence in March 2014 for completion in early April 2014 in order to capture the water quality condition in dry season. The proposed baseline monitoring schedule is presented in **Appendix 3.1**. EPD will be notified immediately for any changes in schedule.

3.5.4 The measurements should be taken at all designated monitoring stations, 3 days per week, at mid-flood and mid-ebb tides, for at least 4 weeks prior to the commencement of dredging

works. Any marine construction works should be avoided in the vicinity of the stations during the baseline monitoring as far as practicable. The interval between 2 sets of monitoring should not be less than 36 hours. Duplicate in-situ measurements and water sampling should be carried out in each sampling event. For selection of tides for in-situ measurement and water sampling, tidal range of individual flood and ebb tides should be not less than 0.5 m.

### 3.6 Impact Monitoring

3.6.1 During the period of trenching works, monitoring should be undertaken three days per week, at mid-flood and mid-ebb tides, with sampling/measurement at the designated monitoring stations as shown in **Table 3.2**. For monitoring station at seawater intake, samples should be taken at the appropriate vertical level of the abstraction point of the intake. For water quality monitoring at the control stations, the monitoring should be carried out at the surface, middle and bottom water level. The interval between two sets of monitoring should not be less than 36 hours except where there are exceedances of Action and/or Limit levels, in which case the monitoring frequency will be increased.

3.6.2 **Table 3.3** shows the proposed monitoring frequency and water quality parameters. Duplicate in-situ measurements and water sampling should be carried out in each sampling event. For selection of tides for in-situ measurement and water sampling, tidal range of individual flood and ebb tides should be not less than 0.5 m. The impact monitoring schedule for water quality should be submitted to EPD on or before the first day of the monitoring month. EPD should also be notified immediately for any changes in schedule.

**Table 3.3 Proposed Marine Water Quality Monitoring Frequency and Parameters**

Activities	Monitoring Period	Monitoring Frequency <sup>(1)</sup>	Key Parameters <sup>(2)</sup>
Baseline Monitoring	At least 4 weeks prior to the commencement of trial trenching works	Three days per week, at mid-flood and mid-ebb tides	Turbidity, SS, DO, pH, temperature, salinity
Impact Monitoring	During trial trenching works	Three days per week, at mid-flood and mid-ebb tides	Turbidity, SS, DO, pH, temperature, salinity

Notes:

- For selection of tides for *in-situ* measurement and water sampling, tidal range of individual flood and ebb tides should be not less than 0.5 m.
- Turbidity, DO, pH, temperature and salinity should be measured in situ whereas SS should be determined by laboratory.

### 3.7 Field Log

3.7.1 Other relevant data should also be recorded, including monitoring location / position, time, water depth, sampling depth, pH, salinity, DO saturation, DO, turbidity, water temperature, tidal stages, weather conditions and any special phenomena or work underway nearby.

3.7.2 A sample data record sheet is shown in **Appendix 3.2** for reference.

### 3.8 Event and Action Plan

3.8.1 The water quality monitoring criteria, namely Action and Limit levels are shown in **Table 3.4**. When exceedances of Action and Limit levels are detected at any designated monitoring stations, remedial actions should be taken in accordance with the Event and Action Plan in **Table 3.5**.

3.8.2 The ET Leader should assess the potential impacts caused by trenching works on the seawater intakes based on the monitoring data.

**Table 3.4 Action and Limit Levels for Marine Water Quality Monitoring Stations**

Parameters	Action	Limit
<b>WSD Salt Water Intake</b>		
SS in mg·L <sup>-1</sup>	95 percentile of baseline data or >9.5 mg/L	99 percentile of baseline data or >10 mg/L
Turbidity in NTU	95 percentile of baseline data or >9.5 NTU	99 percentile of baseline data or >10 NTU
DO in mg/L	5 percentile of baseline data or <2.1 mg/L	1 percentile of baseline data or <2 mg/L

Notes

1. It is recommended to conduct the monitoring at the appropriate vertical levels of the abstraction point of intake
2. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
3. For turbidity and SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.
4. All the figures given in the table are used for reference only and the EPD may amend the figures whenever it is considered as necessary.

3.8.3 If monitoring results indicate that the trenching works have caused an adverse impact on water quality at the Water Service Department (WSD) saltwater intake, it is recommended that the Contractor should inform WSD. The ER should inform WSD immediately if an adverse impact on water quality has been caused or the ET should notify WSD the monitoring results reach the Limit level at the WSD saltwater intakes. Remedial measures should be recommended to rectify the non-compliance or the construction programme should be carefully reviewed to slow down the rate of dredging.

### 3.9 Mitigation Measures

3.9.1 Mitigation measures for water quality control have been recommended in the EIA Report. The Contractor should be responsible for the design and implementation of these measures. Recommended mitigation measures applicable for the proposed trenching works are listed below to minimize the adverse impacts on water quality:

- Dredging works will be carried out by closed grab dredger to minimize release of sediment and other contaminants.
- No more than one closed grab dredger would be operated at the same time.
- Dredging rate should not be higher than 2,500 m<sup>3</sup>/day (and 156m<sup>3</sup>/hour with a maximum working period of 16 hours per day).
- As a precautionary measure, floating type or frame type silt curtains would be deployed around the trenching area. Regular maintenance of the silt curtains and refuse collection should be performed by the Contractor at regular intervals. The Contractor should be responsible for keeping the water behind the silt curtains free from floating rubbish and debris before the silt curtains are removed.



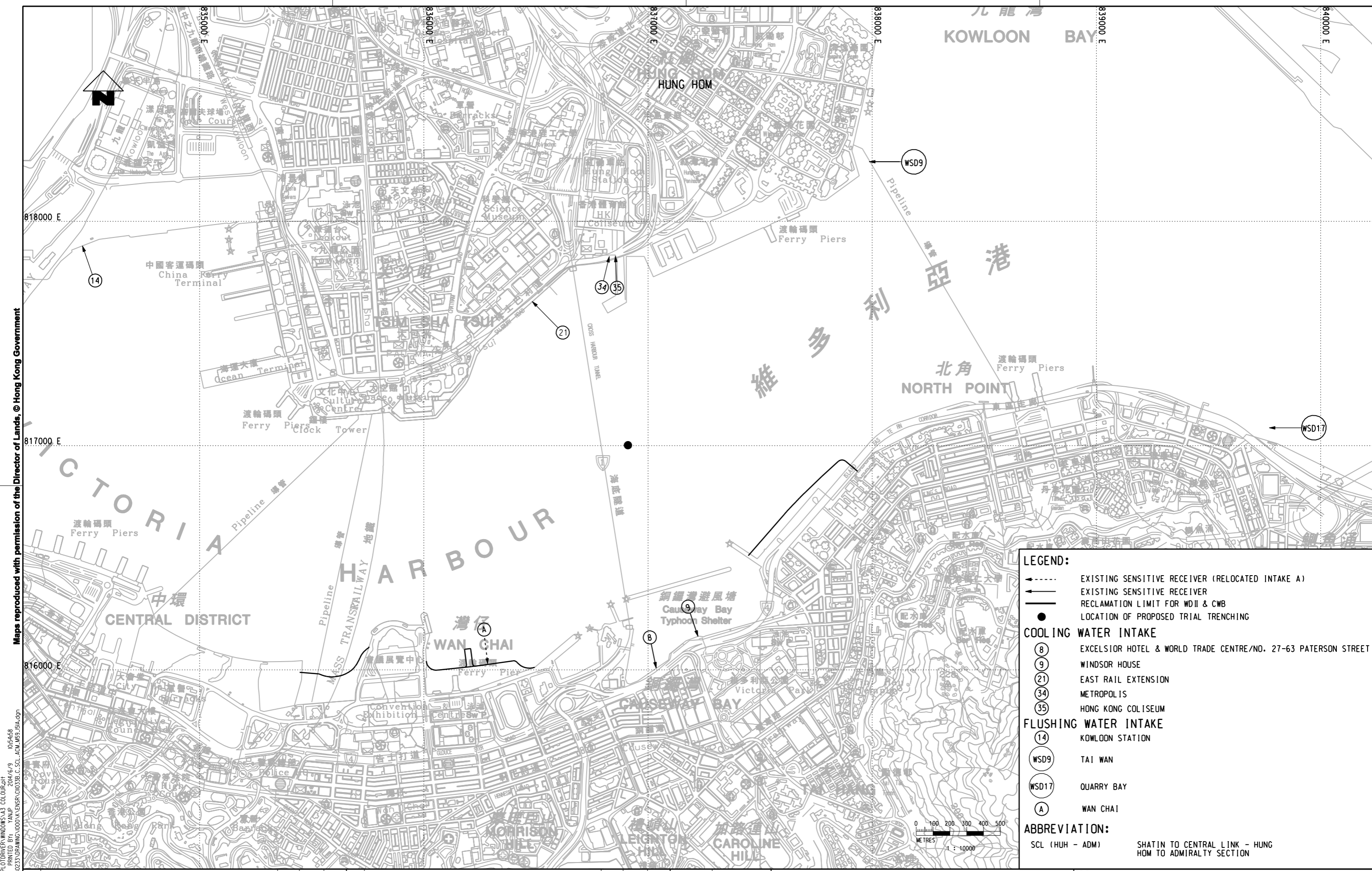
**Table 3.5 Event and Action Plan for Marine Water Quality Monitoring**

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action level being exceeded by one sampling day	<ol style="list-style-type: none"> <li>1. Inform the Contractor, IEC and ER;</li> <li>2. Check monitoring data, all plant, equipment and the Contractor's working methods; and</li> <li>3. Discuss remedial measures with the IEC and Contractor.</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss with the ET, ER and Contractor on the implemented mitigation measures;</li> <li>2. Review proposals on remedial measures submitted by the Contractor and advise the ER accordingly; and</li> <li>3. Review and advise the ET and ER the effectiveness of the implemented mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss with the ET, IEC and Contractor on the implemented mitigation measures;</li> <li>2. Make agreement on the remedial measures to be implemented; and</li> <li>3. Supervise the implementation of agreed remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Identify source(s) of impact;</li> <li>2. Inform the ER and confirm notification of the non-compliance in writing;</li> <li>3. Rectify unacceptable practice;</li> <li>4. Check all plant and equipment;</li> <li>5. Consider changes of working methods;</li> <li>6. Discuss with the ET, IEC and ER and propose remedial measures to IEC and ER; and</li> <li>7. Implement the agreed remedial measures.</li> </ol>
Action level being exceeded by more than one consecutive sampling days	<ol style="list-style-type: none"> <li>1. Repeat in-situ measurement to confirm findings;</li> <li>2. Inform the Contractor, IEC and ER;</li> <li>3. Check monitoring data, all plant, equipment and the Contractor's working methods;</li> <li>4. Discuss remedial measures with the IEC and Contractor; and</li> <li>5. Ensure remedial measures are implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss with the ET, ER and Contractor on the implemented mitigation measures;</li> <li>2. Review proposals on remedial measures submitted by the Contractor and advise the ER accordingly; and</li> <li>3. Review and advise the ET and ER the effectiveness of the implemented remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss with the ET, IEC and Contractor on the implemented mitigation measures;</li> <li>2. Make agreement on the remedial measures to be implemented; and</li> <li>3. Discuss with the ET and IEC on the effectiveness of the implemented remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Identify source(s) of impact;</li> <li>2. Inform the ER and confirm notification of the non-compliance in writing;</li> <li>3. Rectify unacceptable practice;</li> <li>4. Check all plant and equipment;</li> <li>5. Consider changes of working methods;</li> <li>6. Discuss with the ET, IEC and ER and propose remedial measures to IEC and ER within 3 working days of notification; and</li> <li>7. Implement the agreed remedial measures.</li> </ol>

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Limit level being exceeded by one sampling day	<ol style="list-style-type: none"> <li>Repeat in-situ measurement to confirm findings;</li> <li>Inform the Contractor, IEC, EPD and ER;</li> <li>Rectify unacceptable practice;</li> <li>Check monitoring data, all plant, equipment and the Contractor's working methods;</li> <li>Discuss with the ET and IEC and propose remedial measures to the IEC, EPD and ER; and</li> <li>Ensure the agreed remedial measures are implemented.</li> </ol>	<ol style="list-style-type: none"> <li>Discuss with the ET, ER and Contractor on the implemented mitigation measures;</li> <li>Review proposals on remedial measures submitted by Contractor and advise the ER accordingly; and</li> <li>Review and advise the ET and ER the effectiveness of the implemented remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>Discuss with the ET, IEC and Contractor on the implemented mitigation measures;</li> <li>Request the Contractor to critically review the working methods;</li> <li>Make agreement on the remedial measures to be implemented; and</li> <li>Assess the effectiveness of the implemented remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>Inform the ER and confirm notification of the non-compliance in writing;</li> <li>Rectify unacceptable practice;</li> <li>Check all plant and equipment;</li> <li>Consider changes of working methods;</li> <li>Discuss with ET, IEC and ER and propose remedial measures to IEC and ER within 3 working days of notification; and</li> <li>Implement the agreed remedial measures.</li> </ol>
Limit level being exceeded by more than one consecutive sampling days	<ol style="list-style-type: none"> <li>Inform the Contractor, IEC, EPD and ER;</li> <li>Check monitoring data, all plant, equipment and the Contractor's working methods;</li> <li>Discuss remedial measures with the the IEC, EPD, ER and Contractor;</li> <li>Ensure remedial measures are implemented; and</li> <li>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>Discuss with the ET, ER and Contractor on the implemented measures;</li> <li>Review proposals on remedial measures submitted by the Contractor and advise the ER accordingly; and</li> <li>Review and advise the ET and ER the effectiveness of the implemented remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>Discuss with the ET, IEC and Contractor on the implemented mitigation measures;</li> <li>Request the Contractor to critically review the working methods;</li> <li>Make agreement on the remedial measures to be implemented;</li> <li>Discuss with the the ET, IEC and Contractor on the effectiveness of the implemented remedial measures; and</li> <li>Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the marine work until no exceedance of Limit level.</li> </ol>	<ol style="list-style-type: none"> <li>Identify source(s) of impact;</li> <li>Inform the ER and confirm notification of the non-compliance in writing;</li> <li>Rectify unacceptable practice;</li> <li>Check all plant and equipment;</li> <li>Consider changes of working methods;</li> <li>Discuss with the ET, IEC and ER and propose remedial measures to IEC and ER within 3 working days of notification;</li> <li>Implement the agreed remedial measures; and</li> <li>As directed by the ER, to slow down or to stop all or part of the marine works or construction activities.</li> </ol>

#### **4. ENVIRONMENTAL AUDITING AND REPORTING**

- 4.1.1 The requirements of the environmental audit programme and reporting should follow Sections 13 and 14 of the approved SCL (HUH-ADM) EM&A Manual. The audit programme will verify the implementation status and evaluate the effectiveness of the mitigation measures.



**LEGEND:**

- ←--- EXISTING SENSITIVE RECEIVER (RELOCATED INTAKE A)
- ← EXISTING SENSITIVE RECEIVER
- RECLAMATION LIMIT FOR WDII & CWB
- LOCATION OF PROPOSED TRIAL TRENCHING

**COOLING WATER INTAKE**

- ⑧ EXCELSIOR HOTEL & WORLD TRADE CENTRE/NO. 27-63 PATERSON STREET
- ⑨ WINDSOR HOUSE
- ⑳ EAST RAIL EXTENSION
- ⑳ METROPOLIS
- ㉑ HONG KONG COLISEUM

**FLUSHING WATER INTAKE**

- ⑭ KOWLOON STATION
- WSD9 TAI WAN
- WSD17 QUARRY BAY
- A WAN CHAI

**ABBREVIATION:**

SCL (HUH - ADM) SHATIN TO CENTRAL LINK - HUNG  
 HOM TO ADMIRALTY SECTION

Maps reproduced with permission of the Director of Lands, © Hong Kong Government

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 Model Name: C:\Program Files\Autodesk\AutoCAD 2013\acad.dgn  
 Plot Name:

REV	DESCRIPTION	BY	DATE	APPROVED	REV	DESCRIPTION	BY	DATE	APPROVED

DRAWN	XLP		<b>SHATIN TO CENTRAL LINK</b>  
DESIGNED	---		
CHECKED	LCR		
APPROVED	---		
DATE	24/FEB/2014	ORIGINATOR	
<small>DO NOT SCALE DRAWINGS. ALL DIMENSIONS SHALL BE VERIFIED ON SITE.          © MTR CORPORATION LIMITED 2008 COPYRIGHT IN RESPECT OF THIS DRAWING / DOCUMENT IS OWNED BY THE MTR CORPORATION LIMITED OF HONG KONG. NO REPRODUCTION OF THE DRAWING / DOCUMENT OR ANY PART BY WHATEVER MEANS IS PERMITTED WITHOUT THE PRIOR WRITTEN CONSENT OF THE MTR CORPORATION LIMITED.</small>			
CADD REF.		C11033B_C_SCL_ACM_M59_151A.dgn	

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SCALE	FIGURE NO.	REV.	
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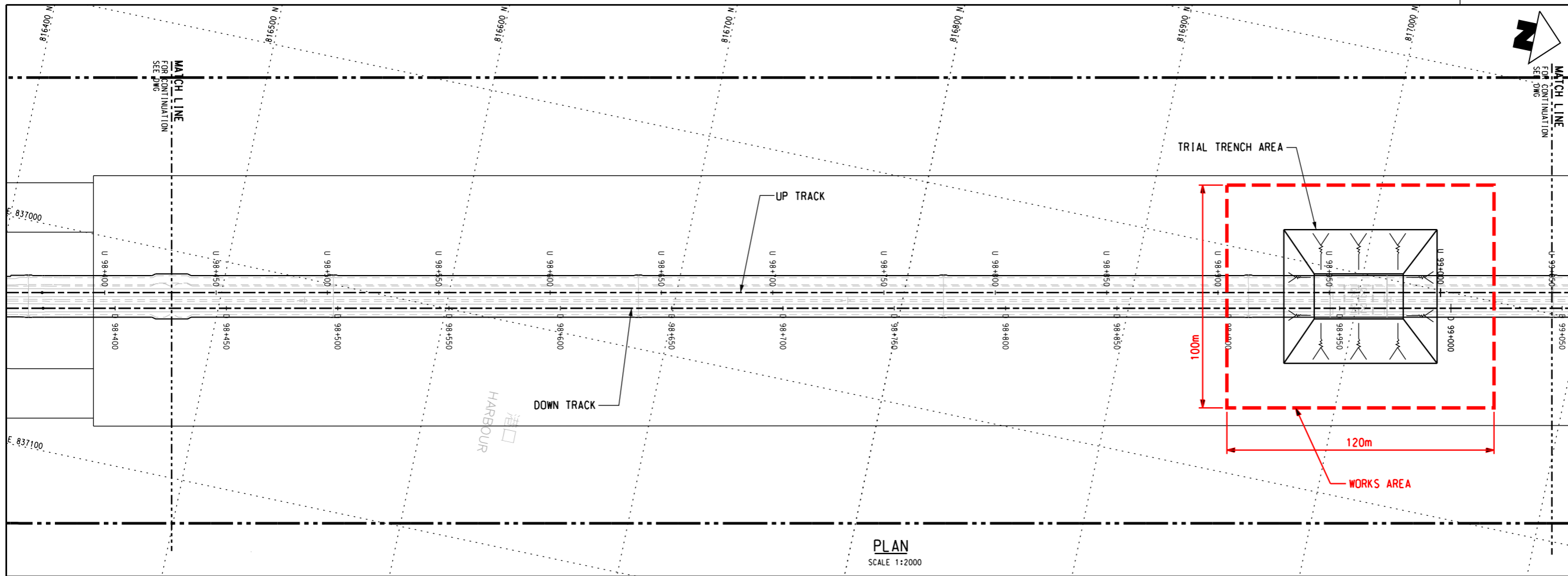
**APPENDIX 1.1**

**TRIAL TRENCHING WORKS AT VICTORIA HARBOUR**

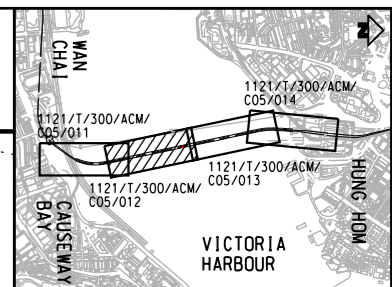
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Maps reproduced with permission of The Director of Lands, (C) Hong Kong Government.

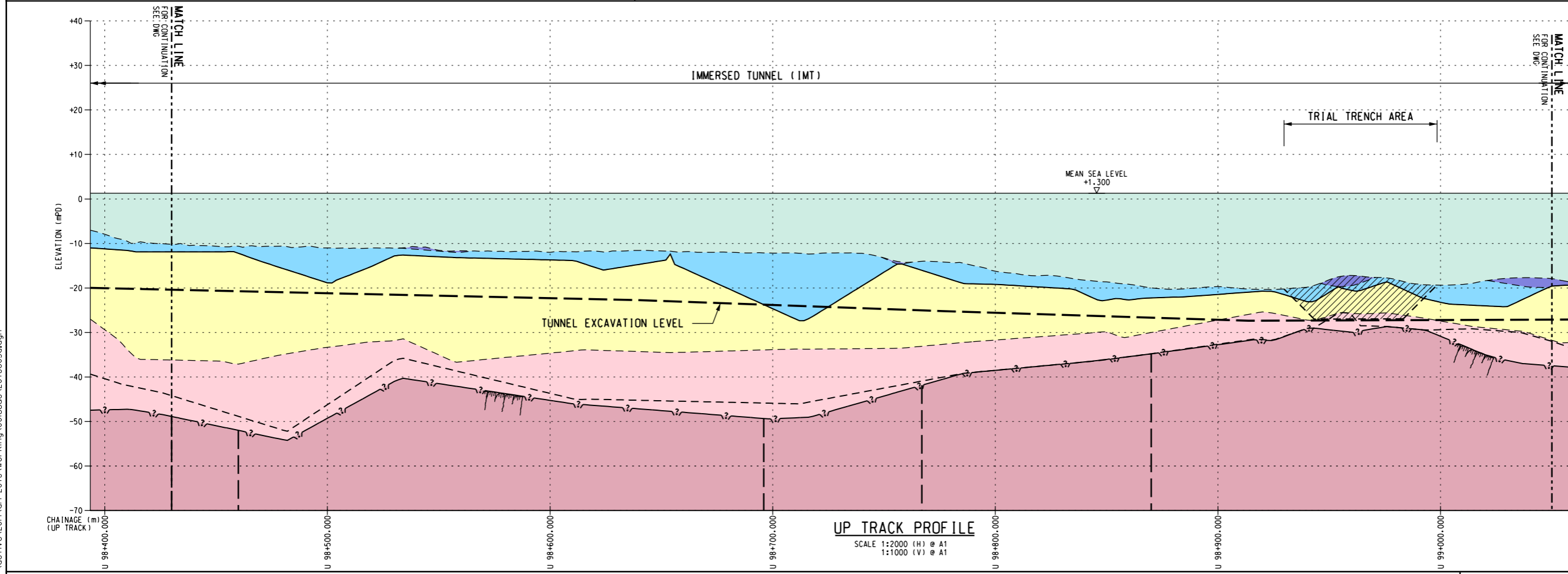
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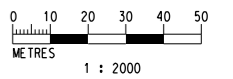
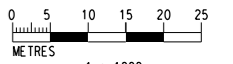
PLAN  
SCALE 1:2000



- KEY PLAN**
- GROUND INVESTIGATION LEGEND:**
- INFERRED ROCKHEAD (R1) PROFILE
  - INFERRED TOP OF CORESTONE ZONE
  - INFERRED BASE OF MARINE DEPOSIT
  - 1:2 CUT SLOPE
  - TRIAL TRENCH AREA AT HIGH ROCKHEAD AREA



UP TRACK PROFILE  
SCALE 1:2000 (H) @ A1  
1:1000 (V) @ A1



TRIAL TRENCHING WORKS AT HIGH ROCK HEAD AREA WITHIN VICTORIA HARBOUR



CN JOB REF. : J14-2078  
 DRAWING NO. : 2078C03  
 ISSUE NO. : 00  
 SCALE : AS SHOWN@A3  
 DATE : 07MAR2014  
 CADD FILENAME : 2078C03A.DGN  
 REVISION : A



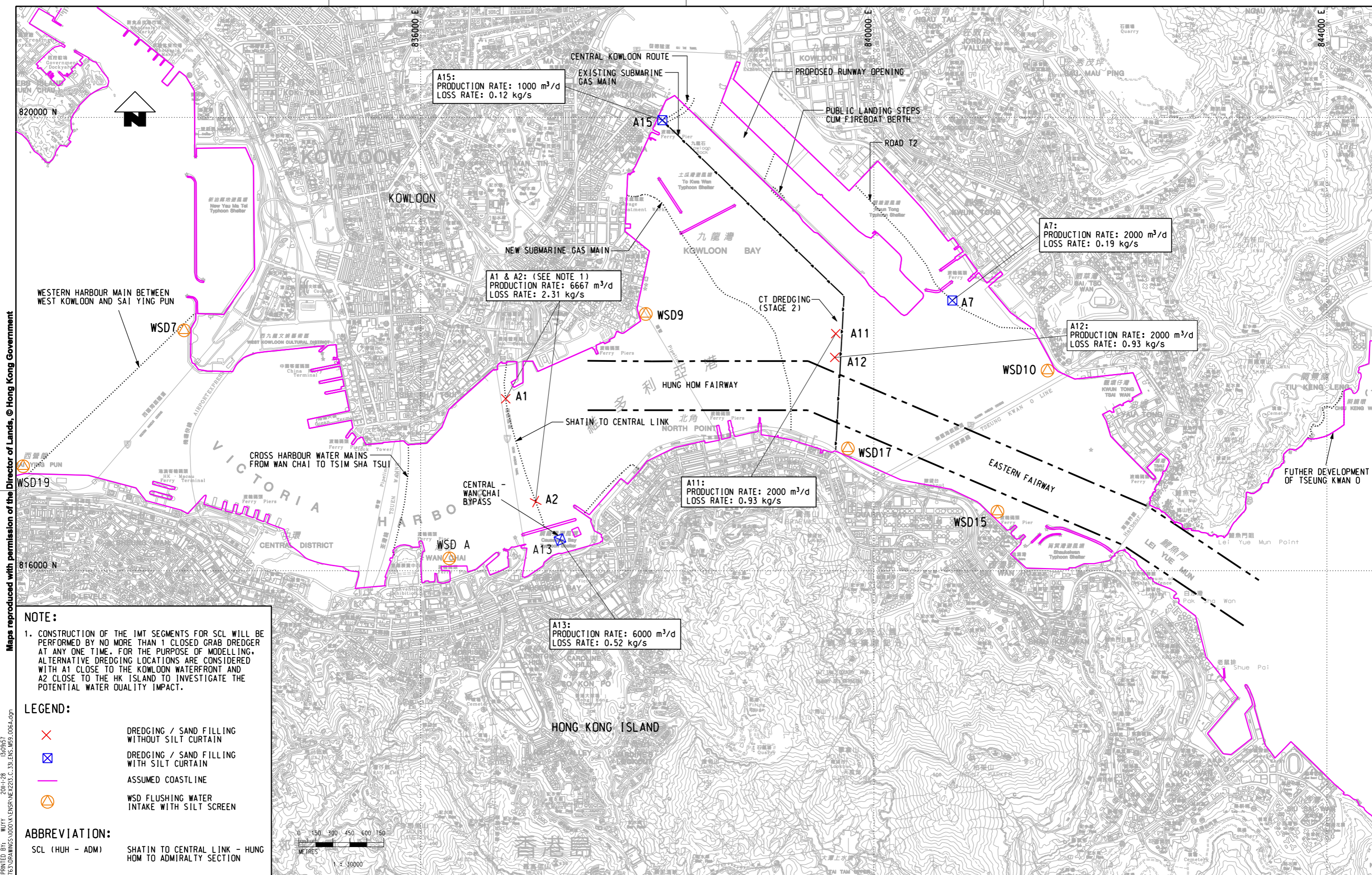
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**APPENDIX 2.1**  
**EXCERPT OF SCL(ADM-HUH) EIA REPORT**

---

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Plot Date: R:\us\msb\mtr\p\drawing\windows\33\_col\_019.dgn  
 Model Name: MEX2213\_C\_331\_ENS\_M59\_006A.dgn  
 File Name: MEX2213\_C\_331\_ENS\_M59\_006A.dgn



**NOTE:**  
 1. CONSTRUCTION OF THE IMT SEGMENTS FOR SCL WILL BE PERFORMED BY NO MORE THAN 1 CLOSED GRAB DREDGER AT ANY ONE TIME. FOR THE PURPOSE OF MODELLING, ALTERNATIVE DREDGING LOCATIONS ARE CONSIDERED WITH A1 CLOSE TO THE KOWLOON WATERFRONT AND A2 CLOSE TO THE HK ISLAND TO INVESTIGATE THE POTENTIAL WATER QUALITY IMPACT.

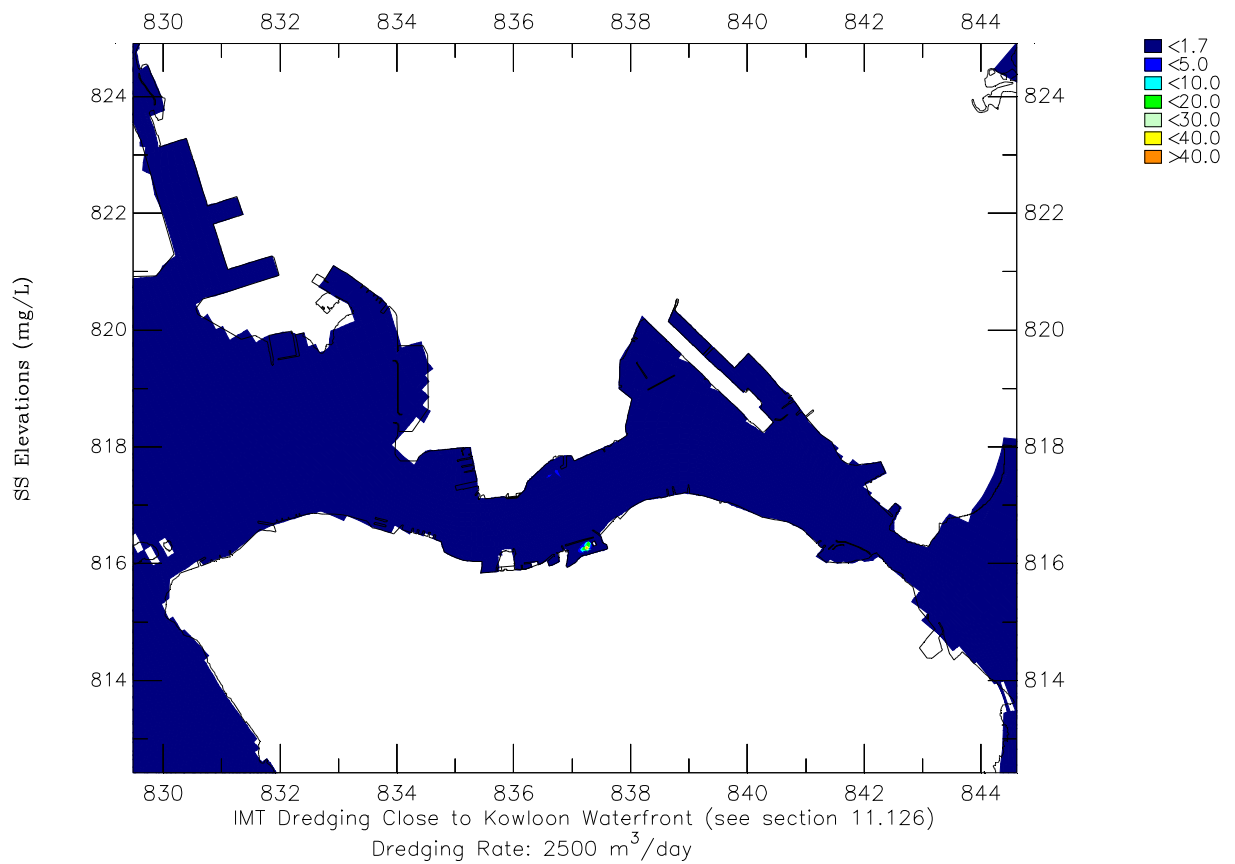
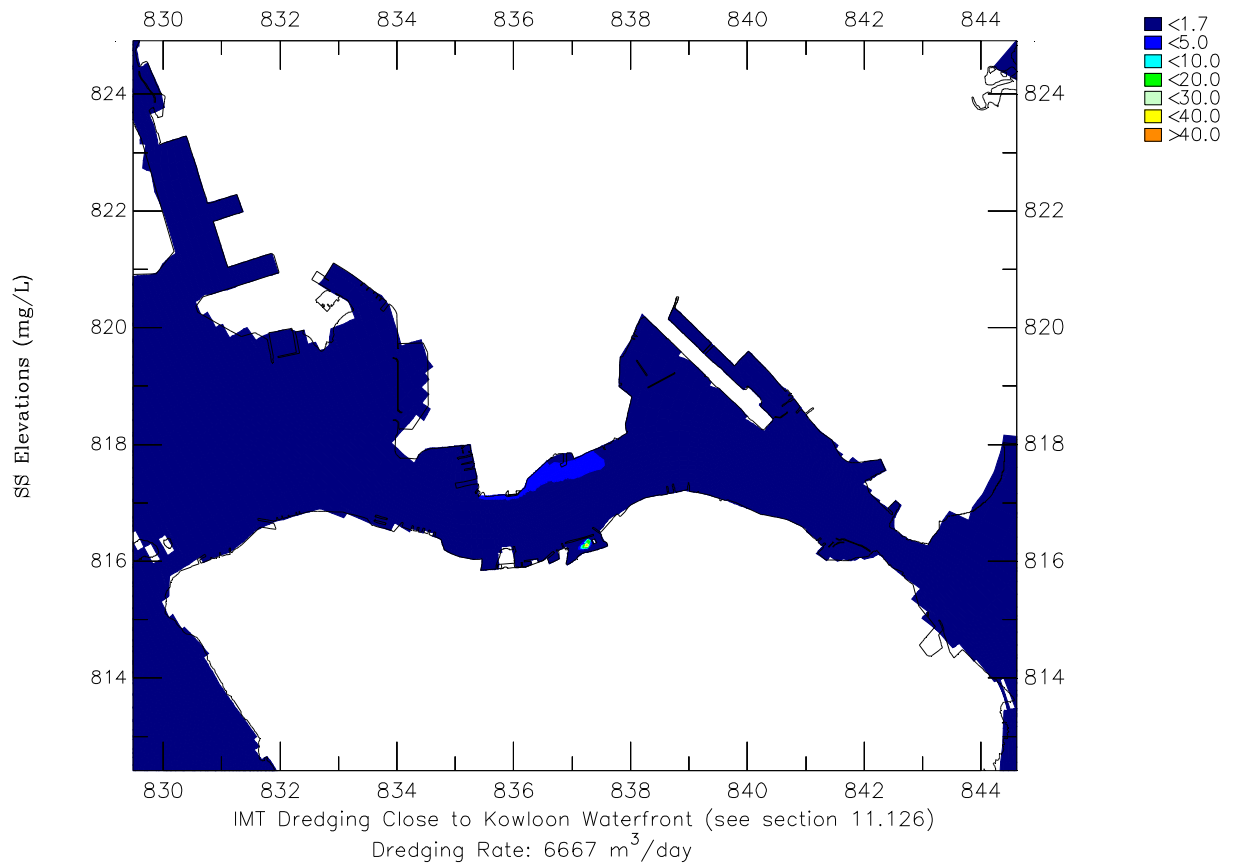
**LEGEND:**

- ✕ DREDGING / SAND FILLING WITHOUT SILT CURTAIN
- ⊠ DREDGING / SAND FILLING WITH SILT CURTAIN
- ASSUMED COASTLINE
- WSD FLUSHING WATER INTAKE WITH SILT SCREEN

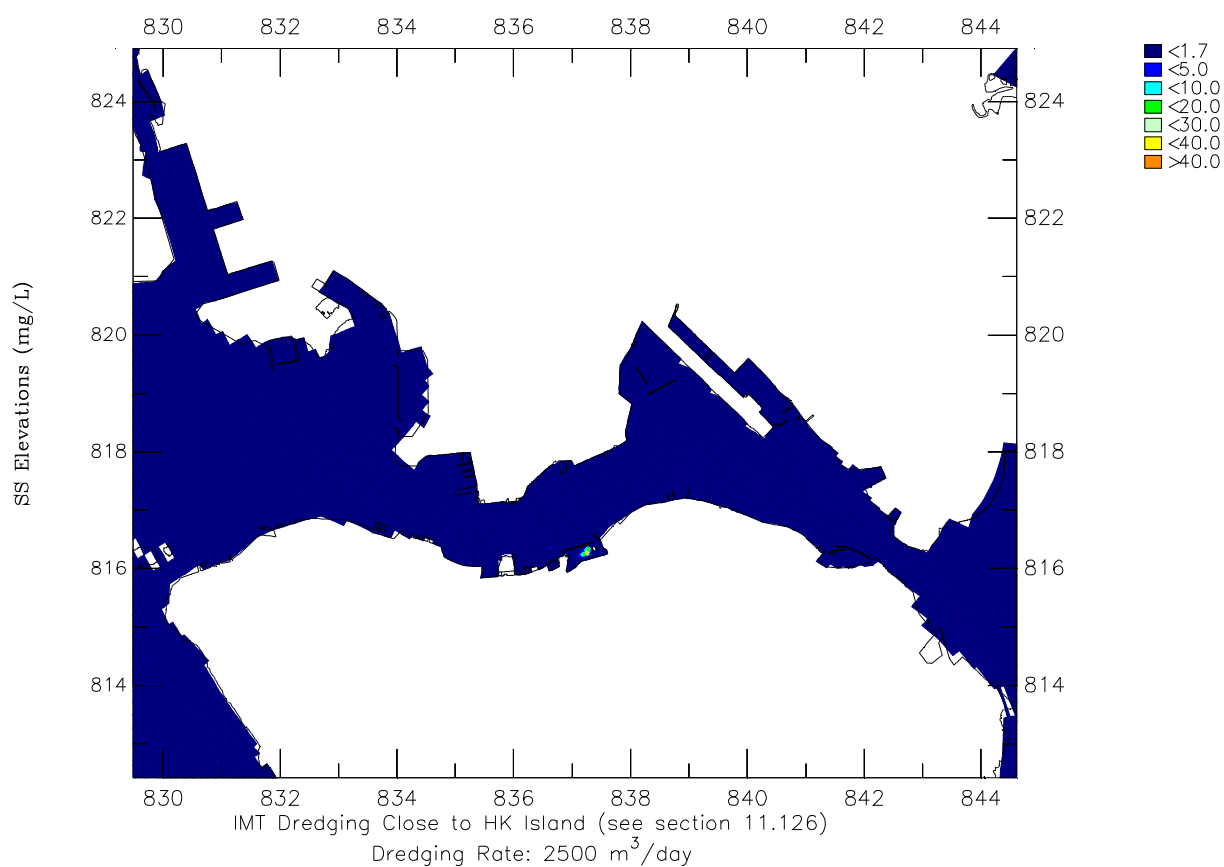
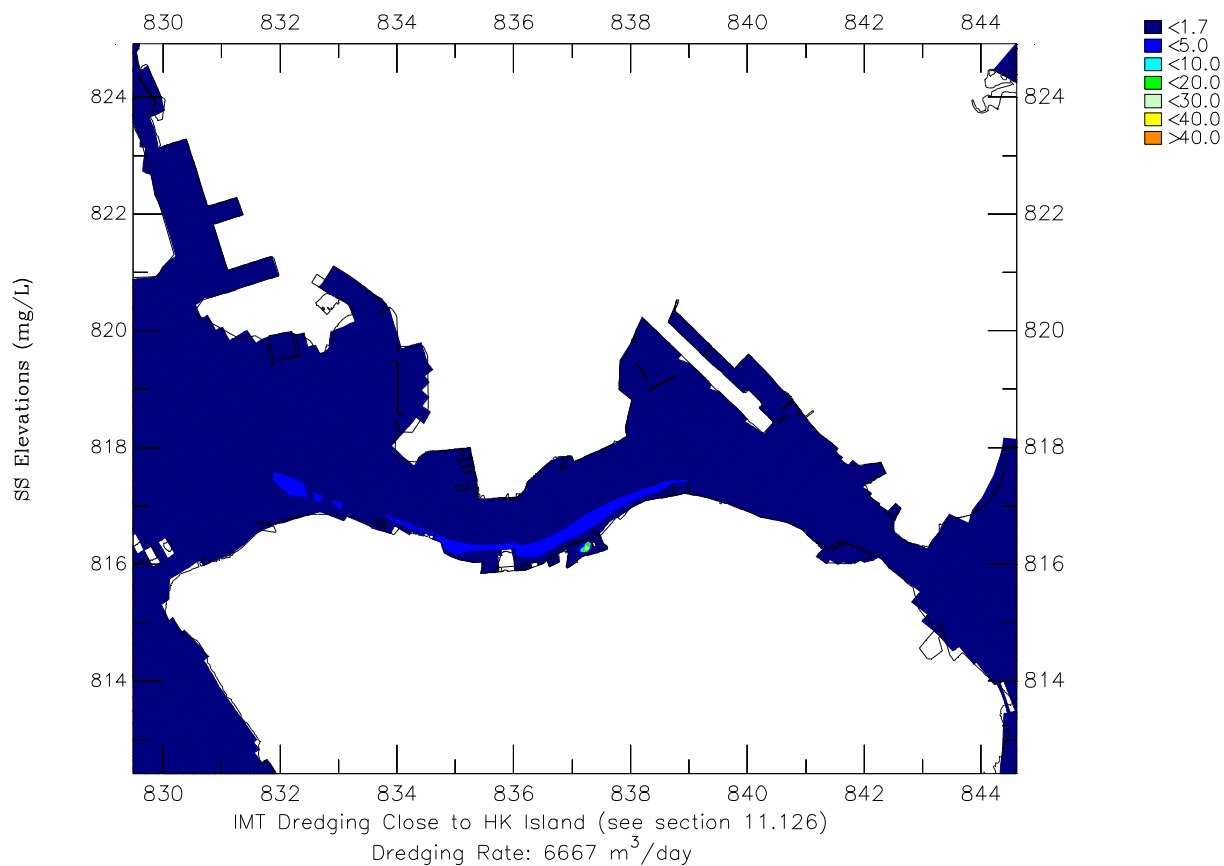
**ABBREVIATION:**  
 SCL (HUH - ADM) SHATIN TO CENTRAL LINK - HUNG HOM TO ADMIRALTY SECTION

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ORIGINATOR: AECOM								SCALE: 1 : 30000 (A3)						
CADD REF: NEX2213_C_331_ENS_M59_006A.dgn				FIGURE NO: NEX2213/C/331/ENS/M59/006				REV: A						
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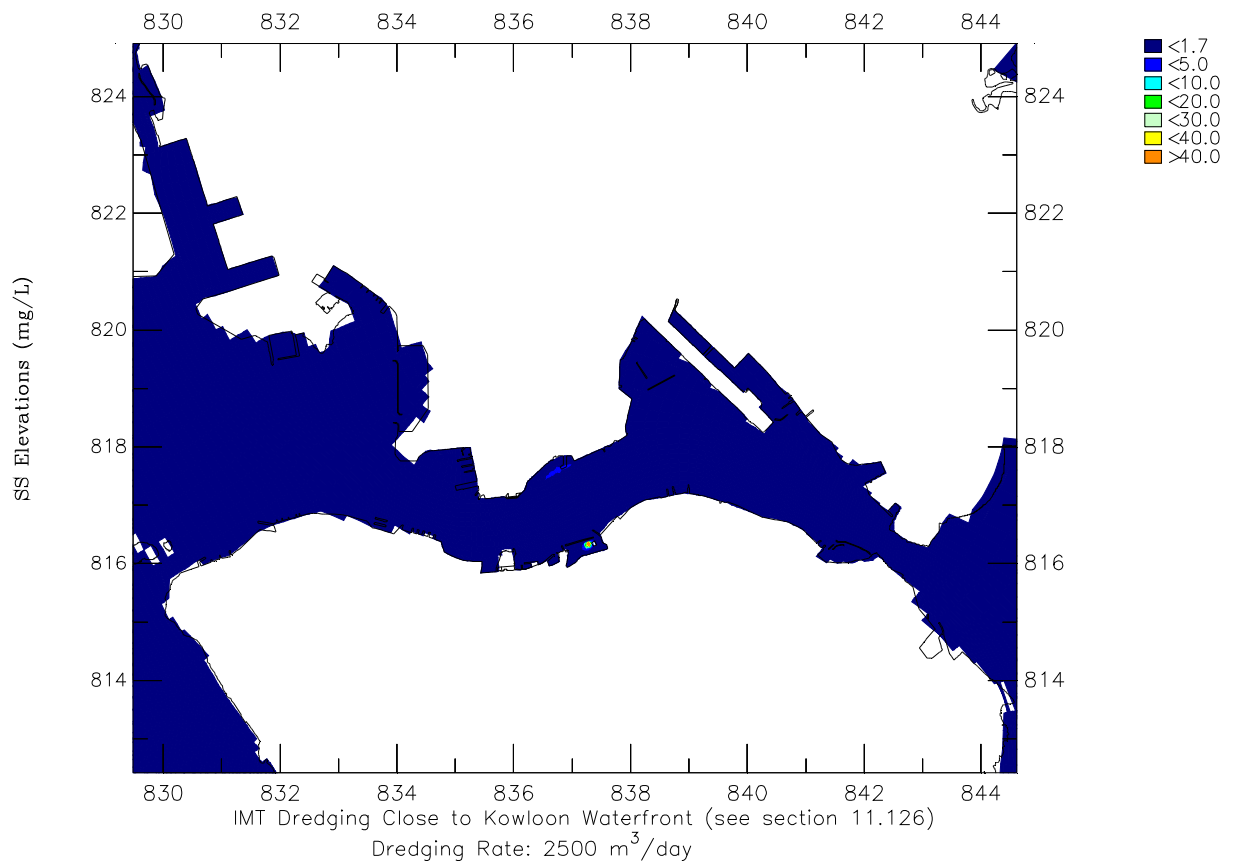
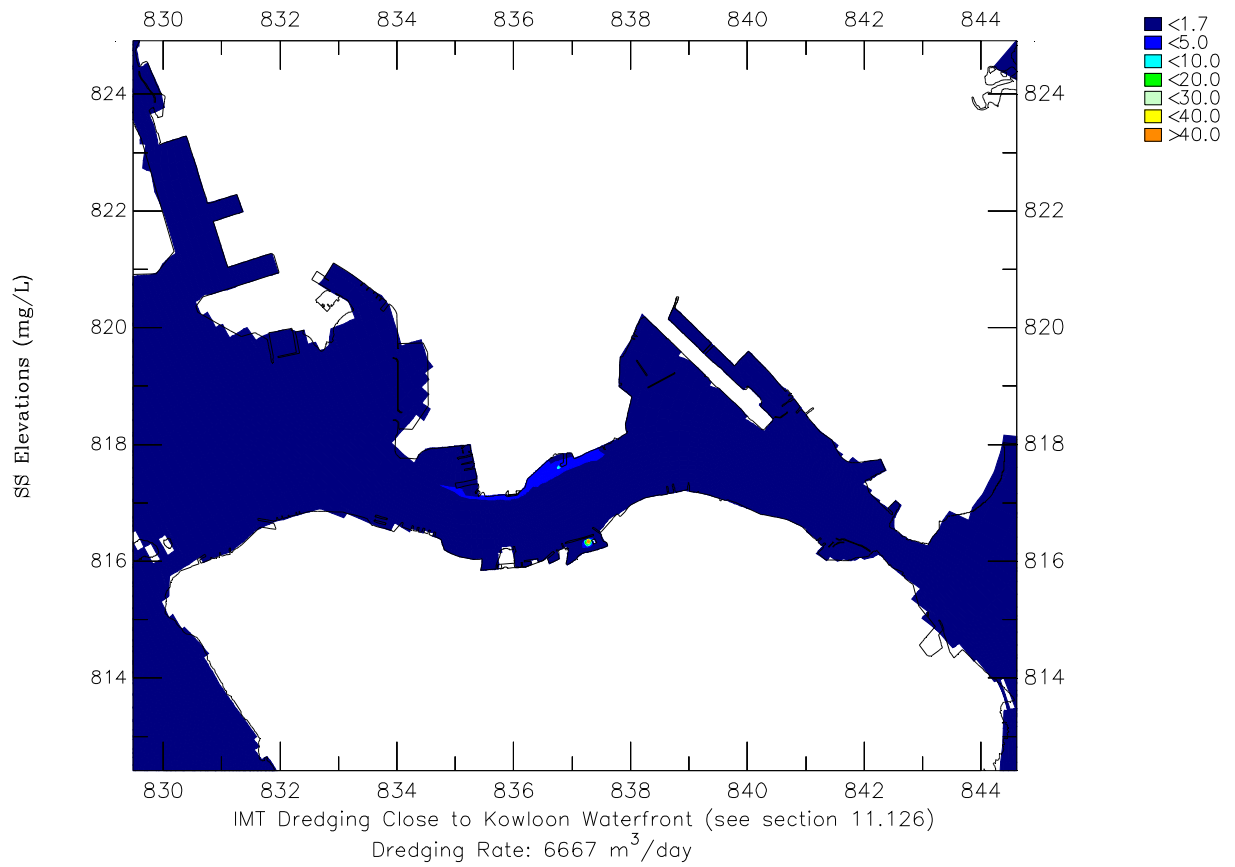
**Appendix 11.4 of EIA Report - Average Surface SS Elevations**



NEX/2213 Shatin to Central Link EIA Study for Cross Harbour Section Average Surface SS Elevations, Spring-Neap Cycle Upper: Unmitigated Scenario; Lower: Mitigated Scenario	Scenario 1	Dry Season
	Appendix 11.4-01	
AECOM Asia Company Limited	60050763/GPP	12D-Scn1.ssn



NEX/2213 Shatin to Central Link EIA Study for Cross Harbour Section Average Surface SS Elevations, Spring-Neap Cycle Upper: Unmitigated Scenario; Lower: Mitigated Scenario	Scenario 1	Dry Season
	Appendix 11.4-02	
AECOM Asia Company Limited	60050763/GPP	12D-Scn1.ssn



NEX/2213 Shatin to Central Link EIA Study for Cross Harbour Section  
Average Mid-Depth SS Elevations, Spring-Neap Cycle  
Upper: Unmitigated Scenario; Lower: Mitigated Scenario

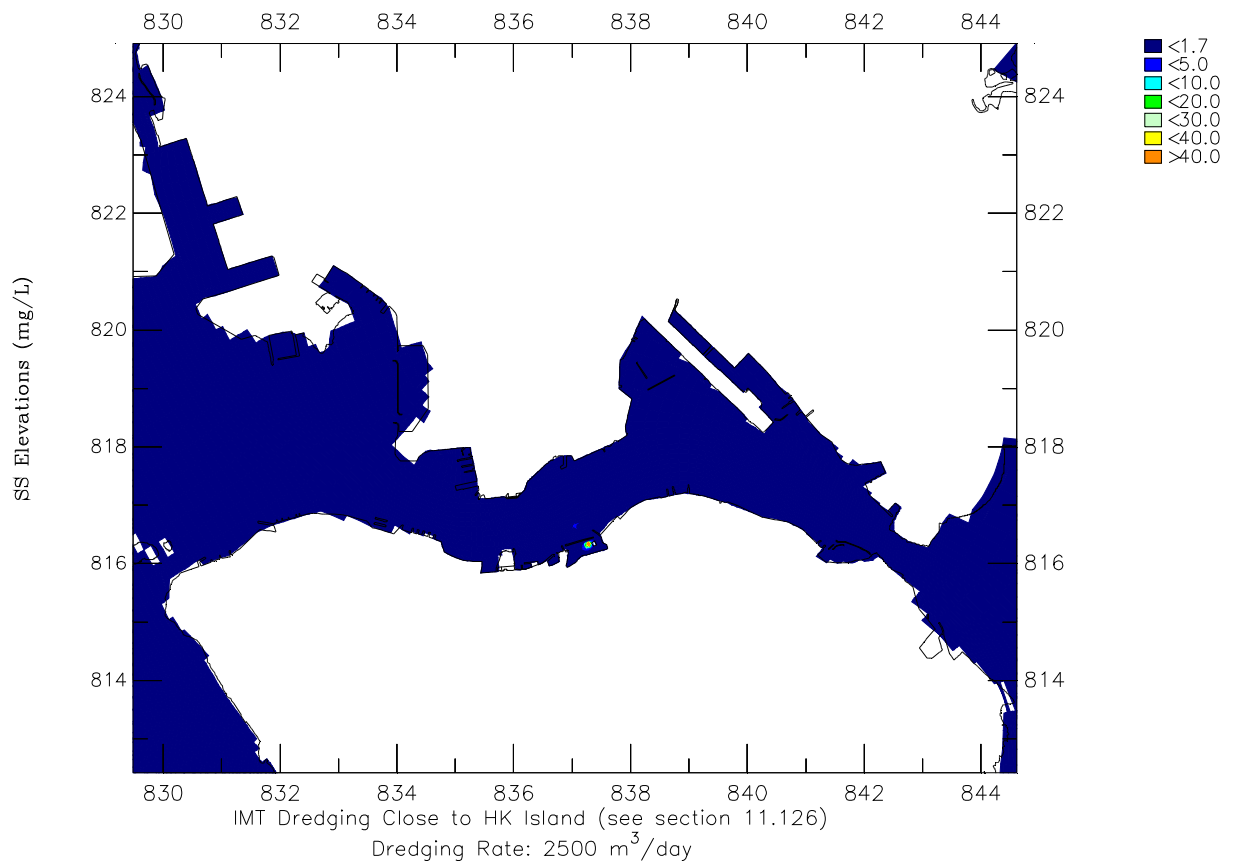
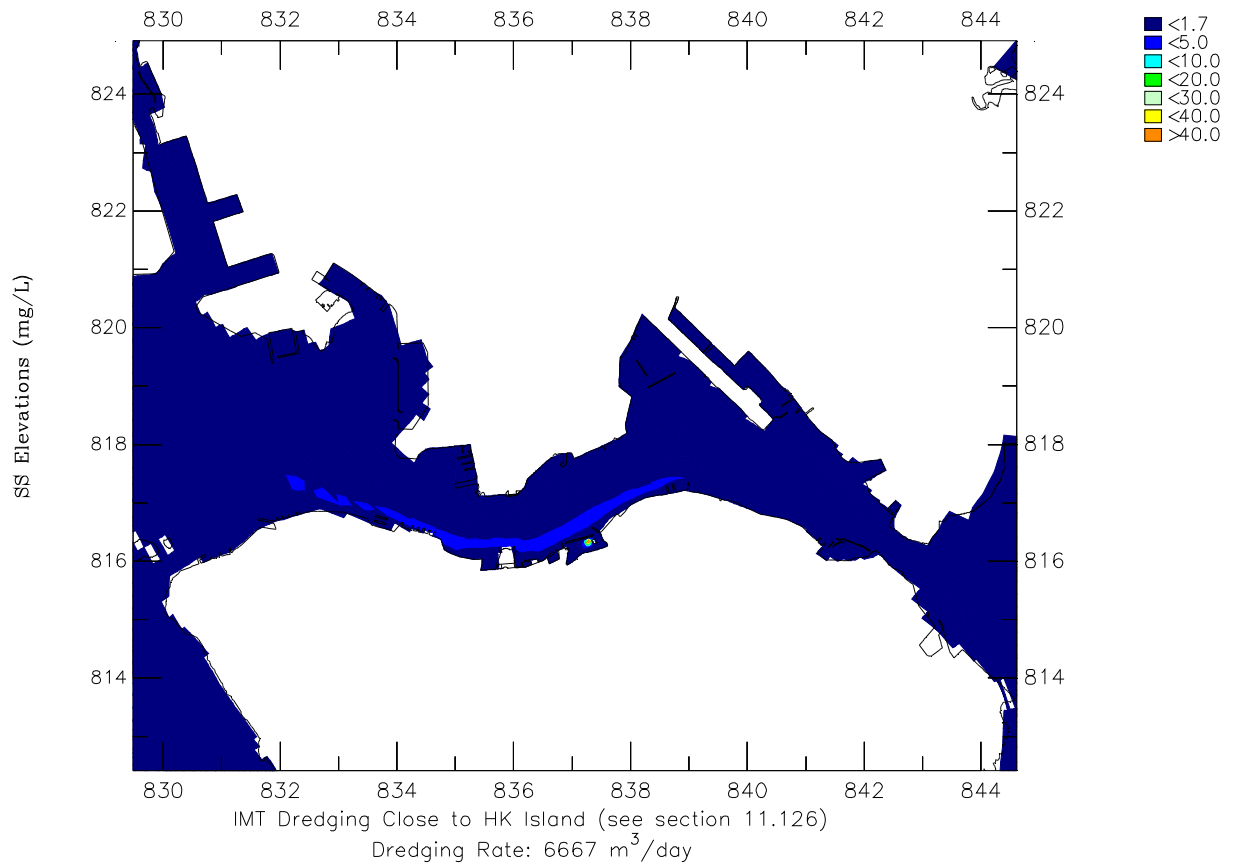
Scenario 1      Dry Season

Appendix 11.4-03

AECOM Asia Company Limited

60050763/GPP

12D-Scn1.ssn



NEX/2213 Shatin to Central Link EIA Study for Cross Harbour Section  
Average Mid-Depth SS Elevations, Spring-Neap Cycle  
Upper: Unmitigated Scenario; Lower: Mitigated Scenario

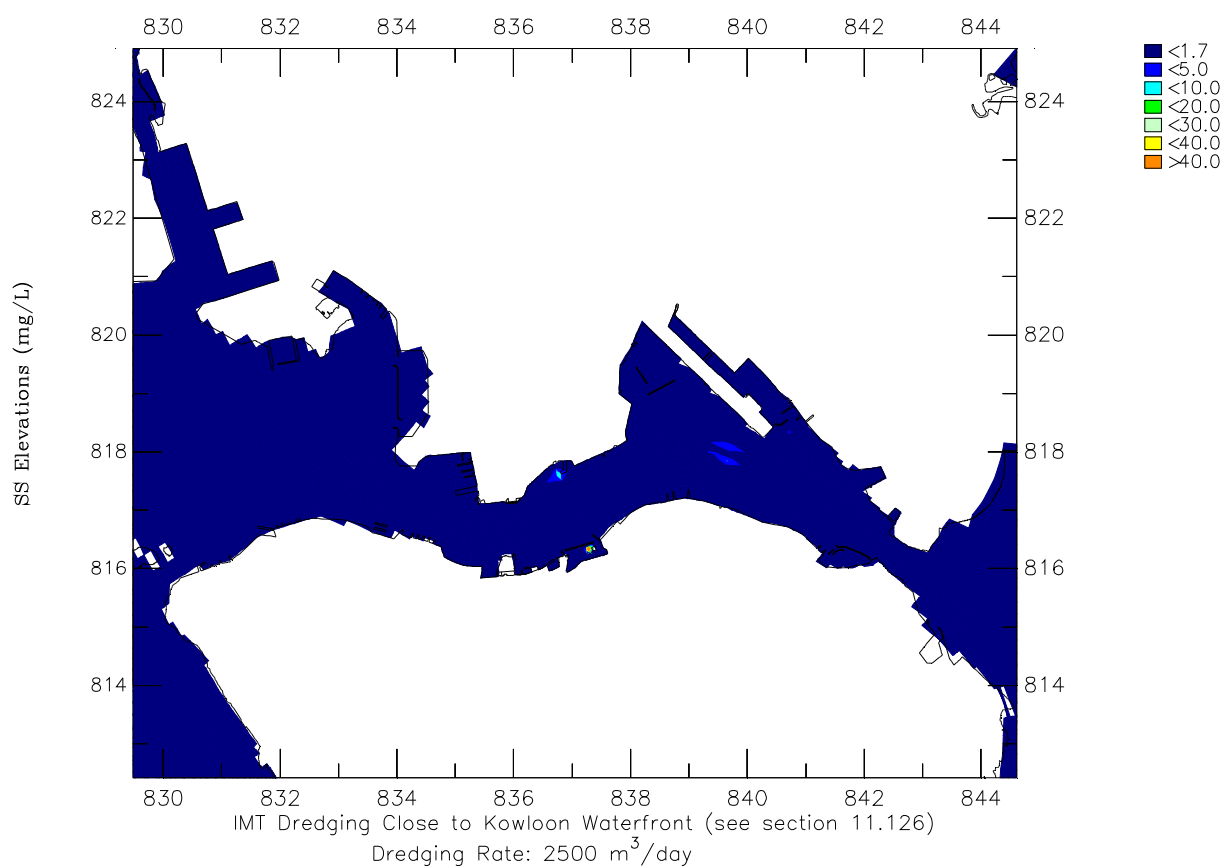
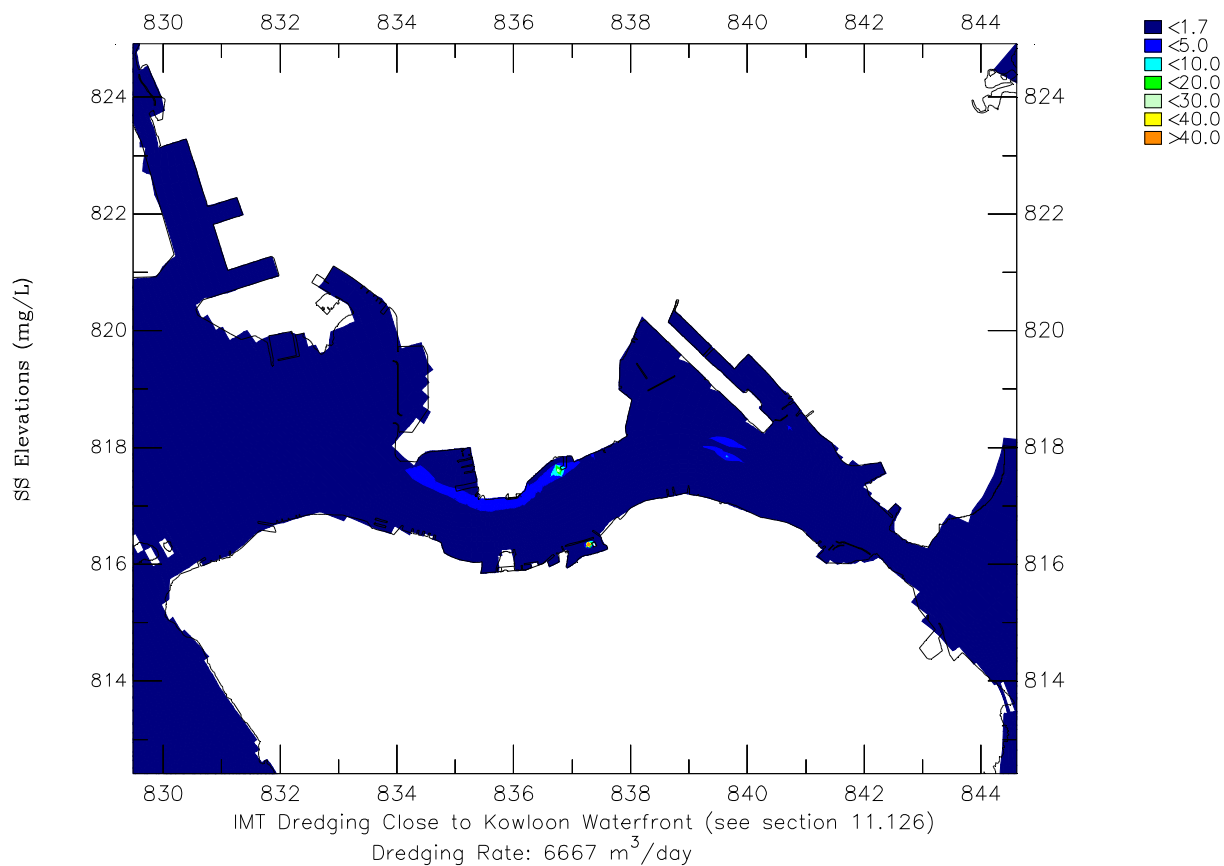
Scenario 1      Dry Season

Appendix 11.4-04

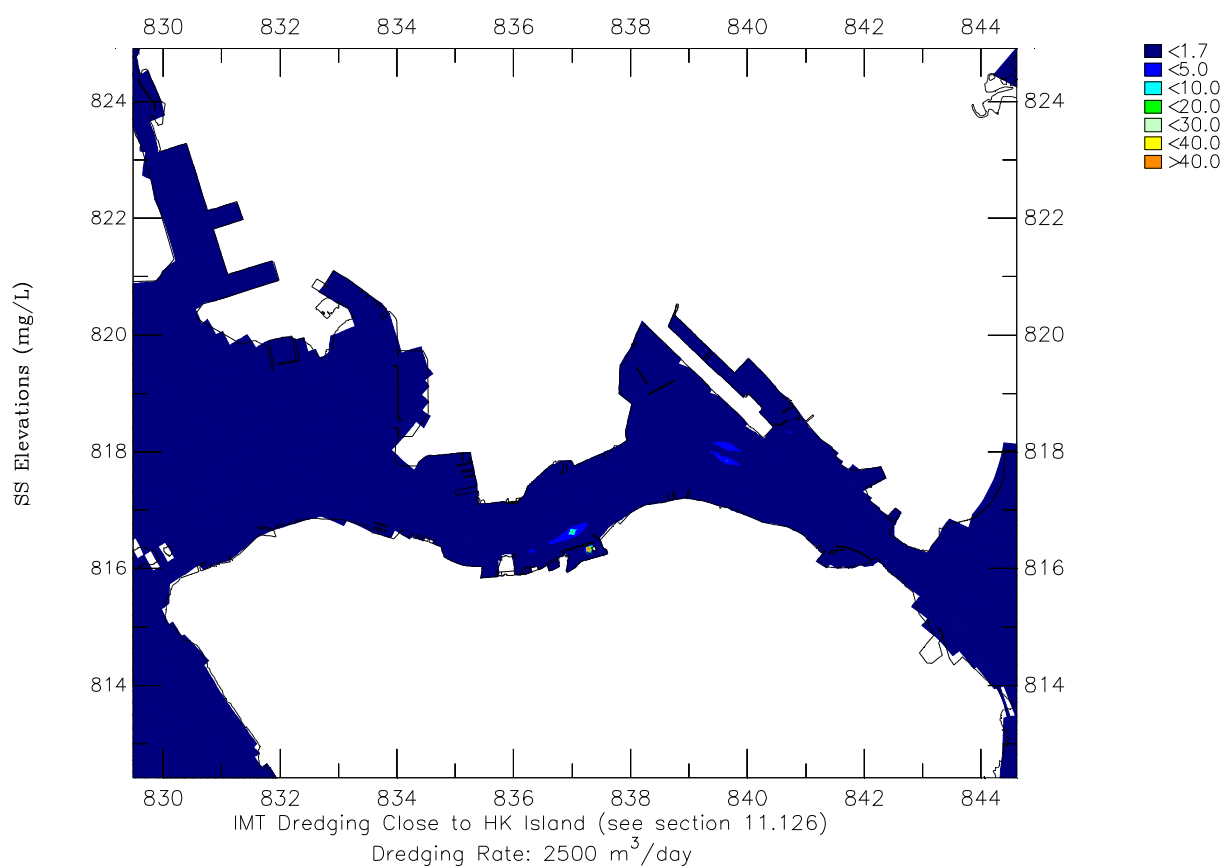
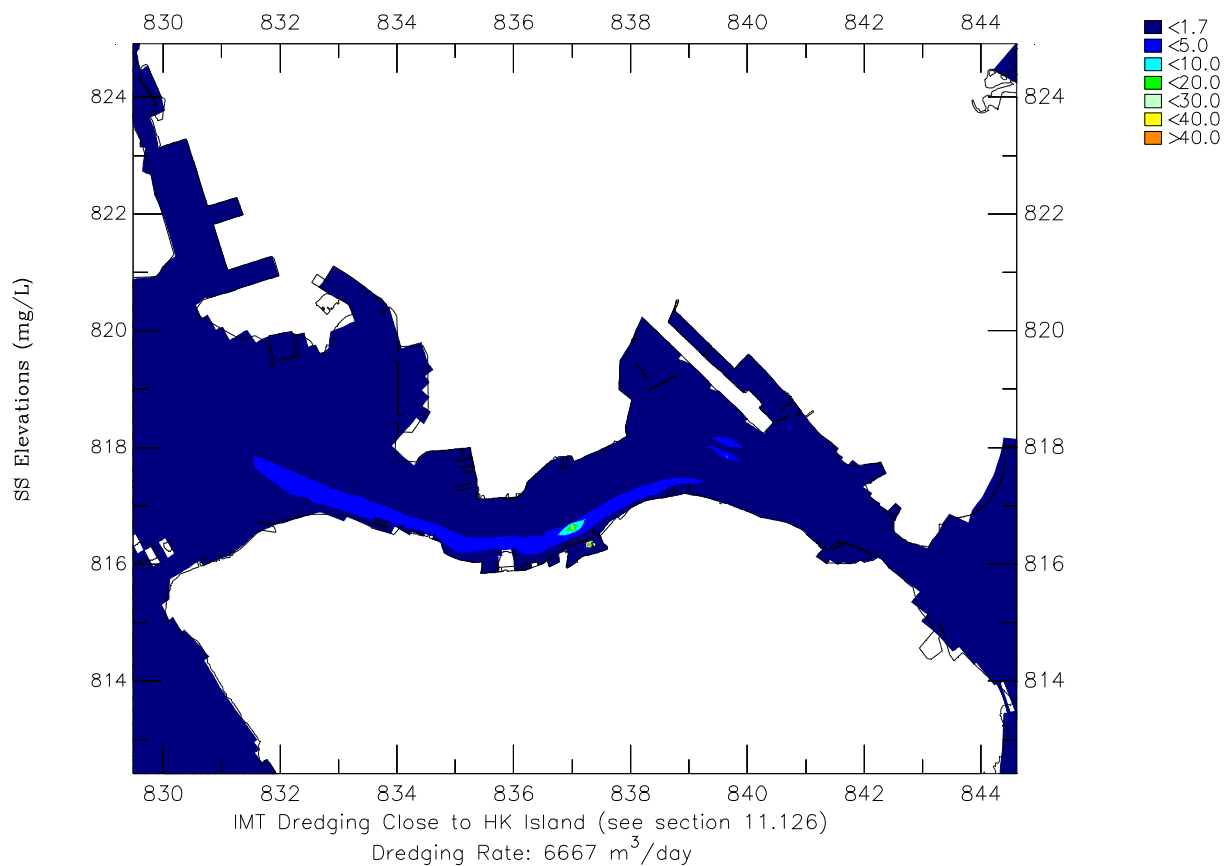
AECOM Asia Company Limited

60050763/GPP

12D-Scn1.ssn



NEX/2213 Shatin to Central Link EIA Study for Cross Harbour Section Average Bottom SS Elevations, Spring-Neap Cycle Upper: Unmitigated Scenario; Lower: Mitigated Scenario	Scenario 1	Dry Season
	Appendix 11.4-05	
AECOM Asia Company Limited	60050763/GPP	12D-Scn1.ssn



NEX/2213 Shatin to Central Link EIA Study for Cross Harbour Section  
Average Bottom SS Elevations, Spring-Neap Cycle  
Upper: Unmitigated Scenario; Lower: Mitigated Scenario

Scenario 1      Dry Season

Appendix 11.4-06

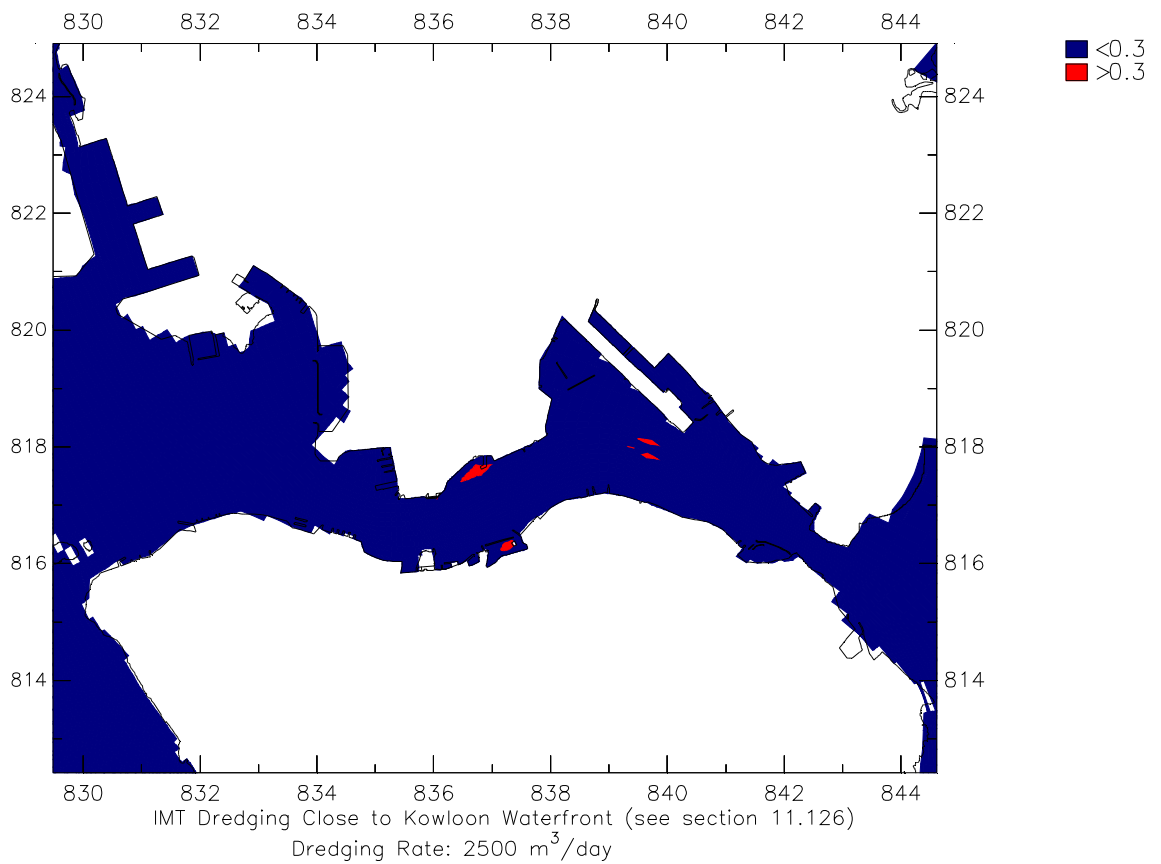
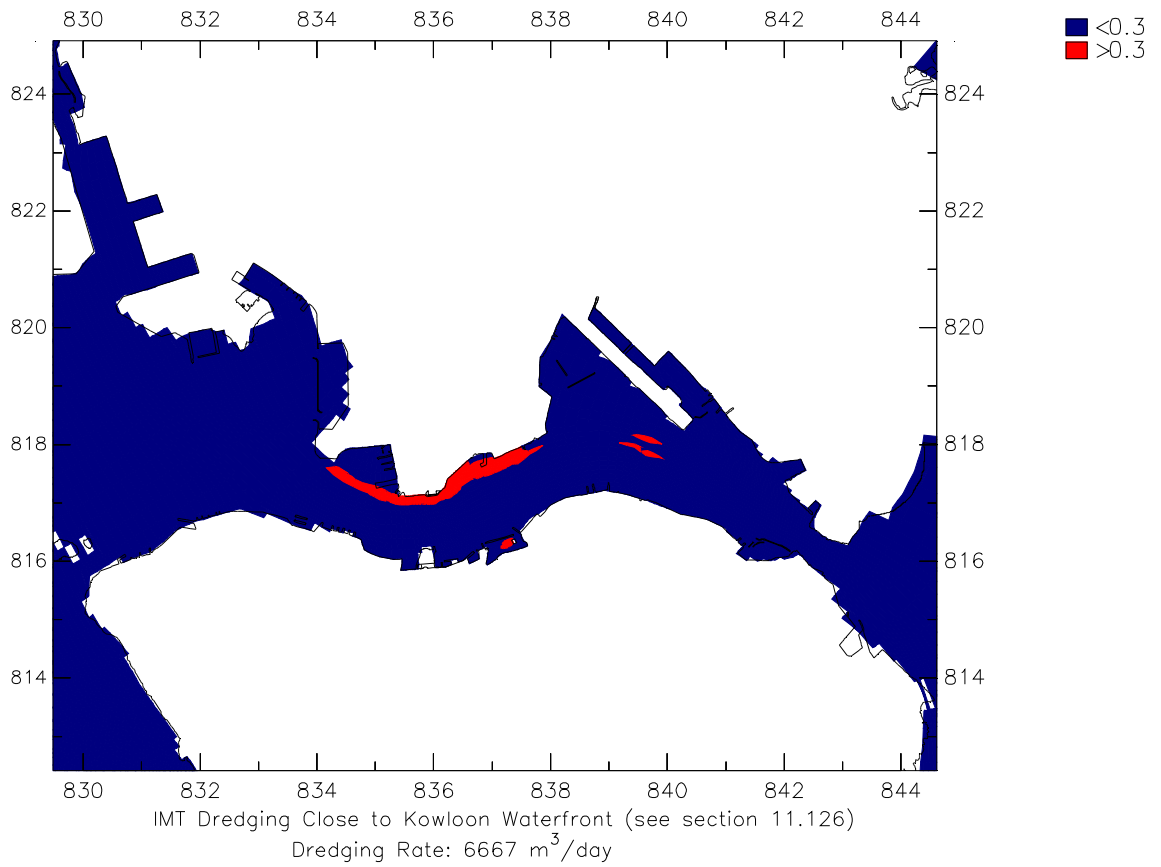
AECOM Asia Company Limited

60050763/GPP

12D-Scn1.ssn



**Appendix 11.8 of EIA Report - Maximum Mixing Zone for SS Elevations**



NEX/2213 Shatin to Central Link EIA Study for Cross Harbour Section  
Maximum Mixing Zone for SS Elevations (Contributed from SCL and other Concurrent Marine Works)  
Upper: Unmitigated Scenario; Lower: Mitigated Scenario; Red: value exceeded WQO for SS elevation

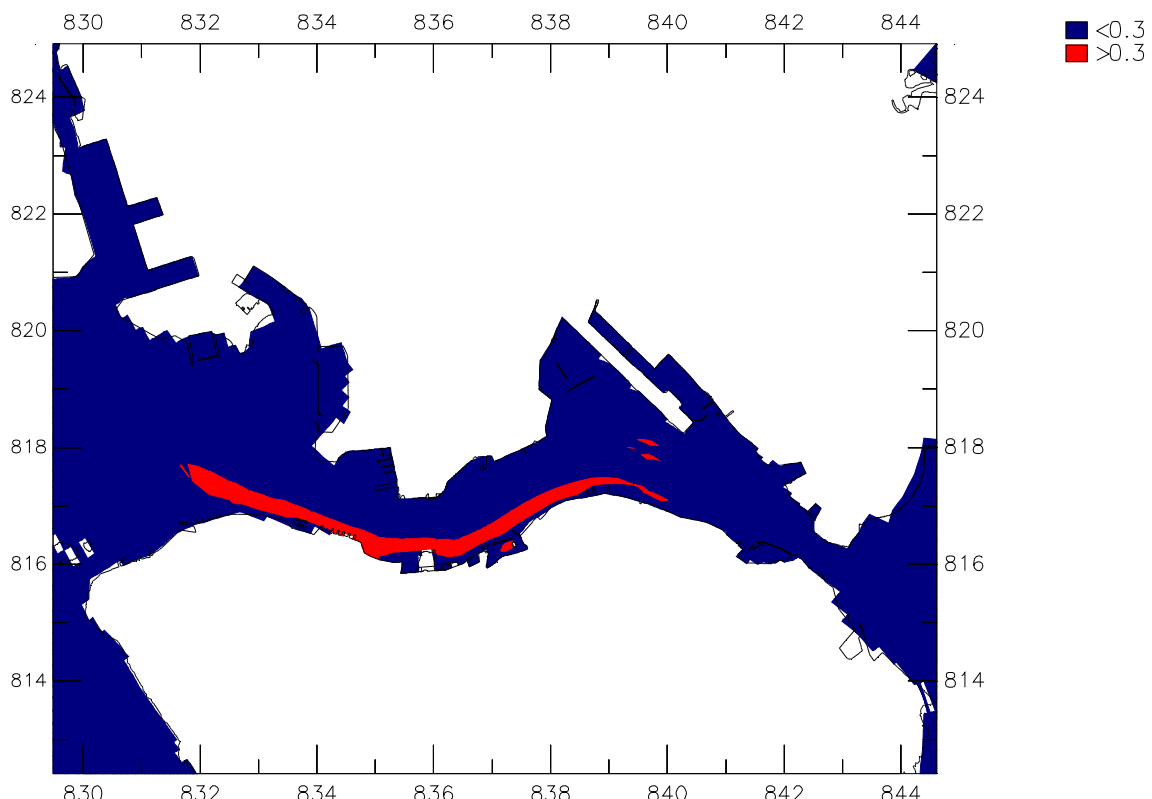
Scenario 1      Dry Season

Appendix 11.8-01

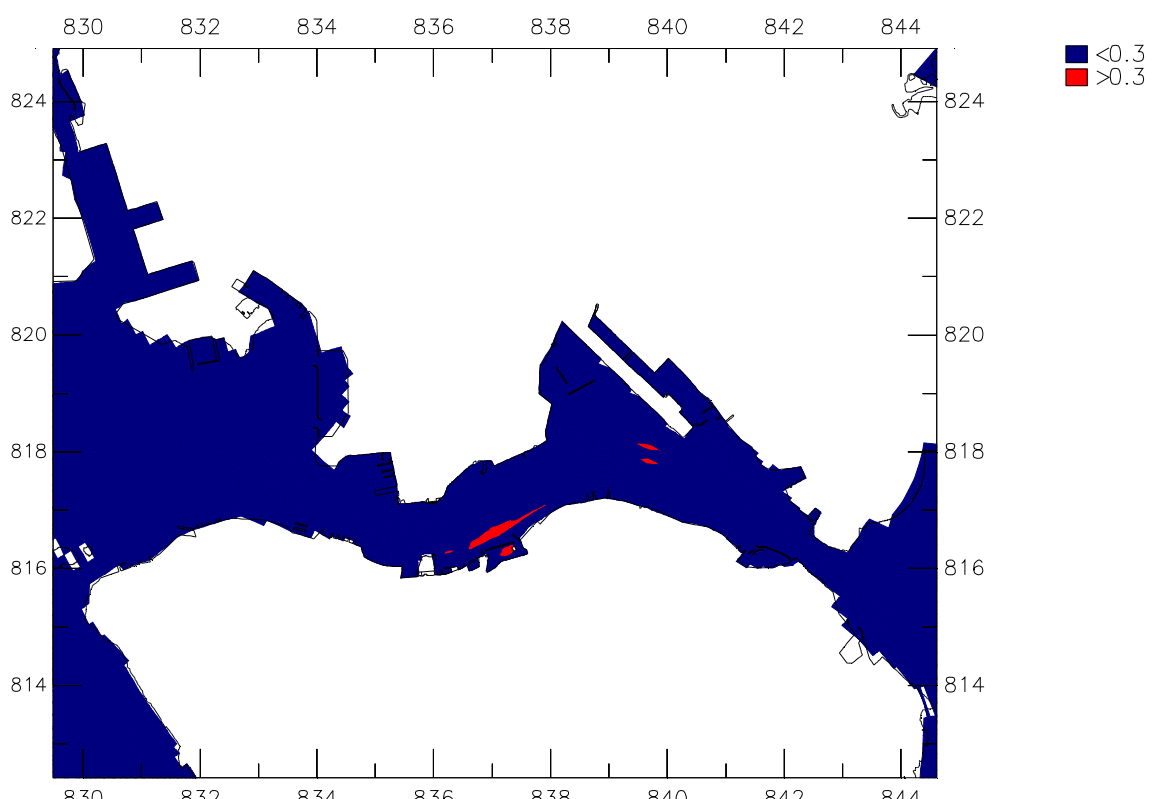
AECOM Asia Company Limited

60050763/GPP

PT-MZ.ssn

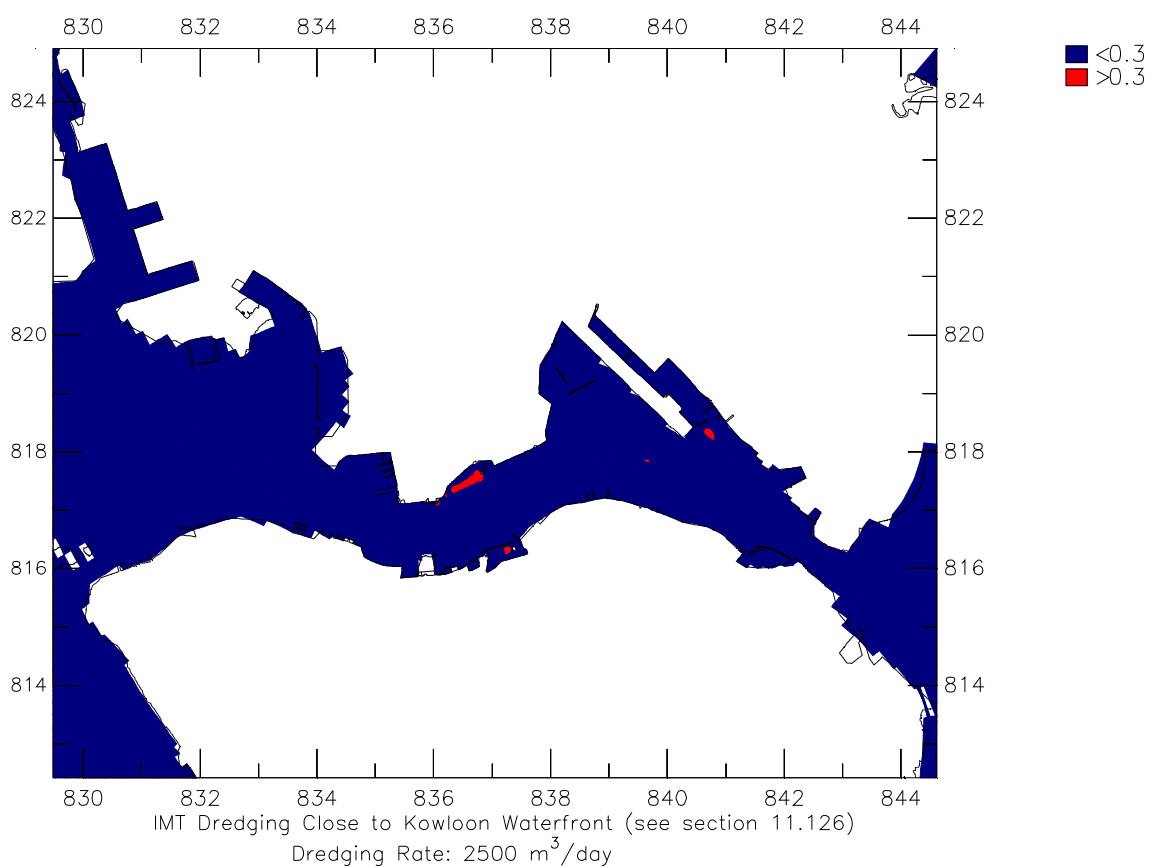
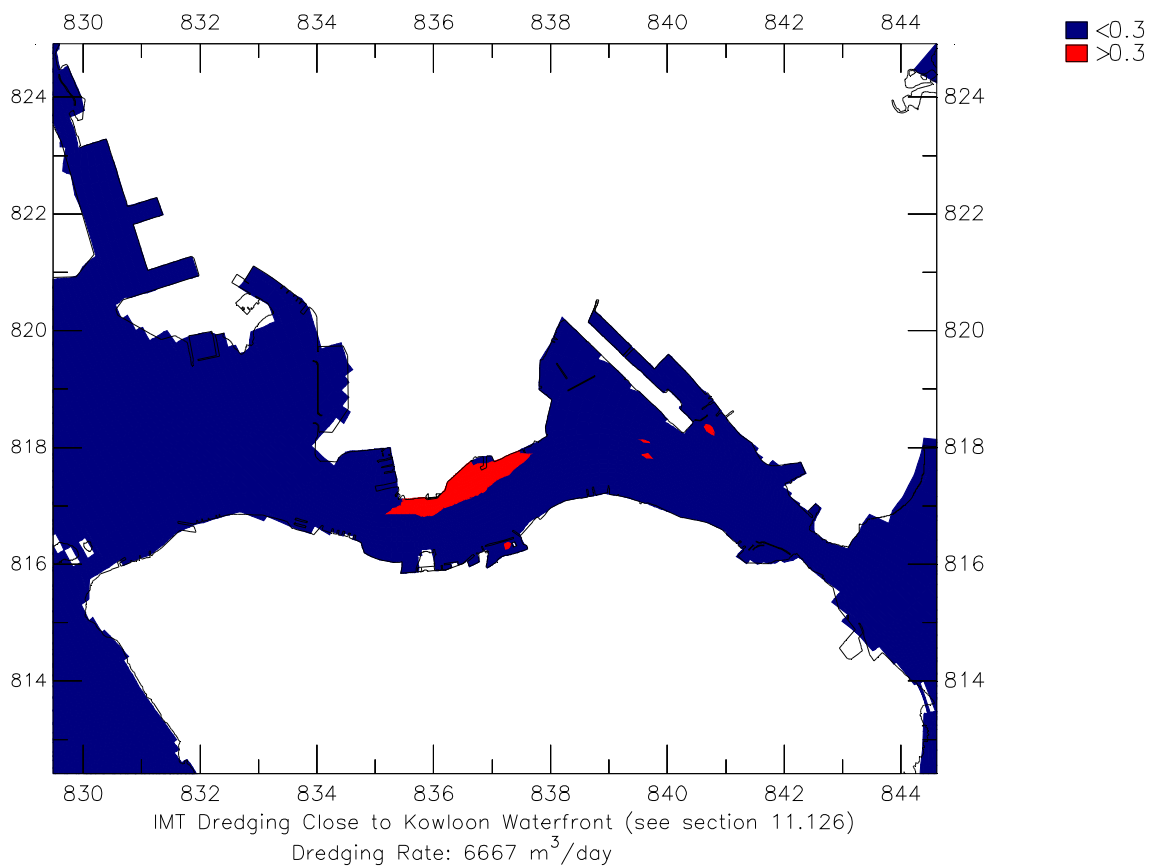


IMT Dredging Close to HK Island (see section 11.126)  
Dredging Rate: 6667 m<sup>3</sup>/day

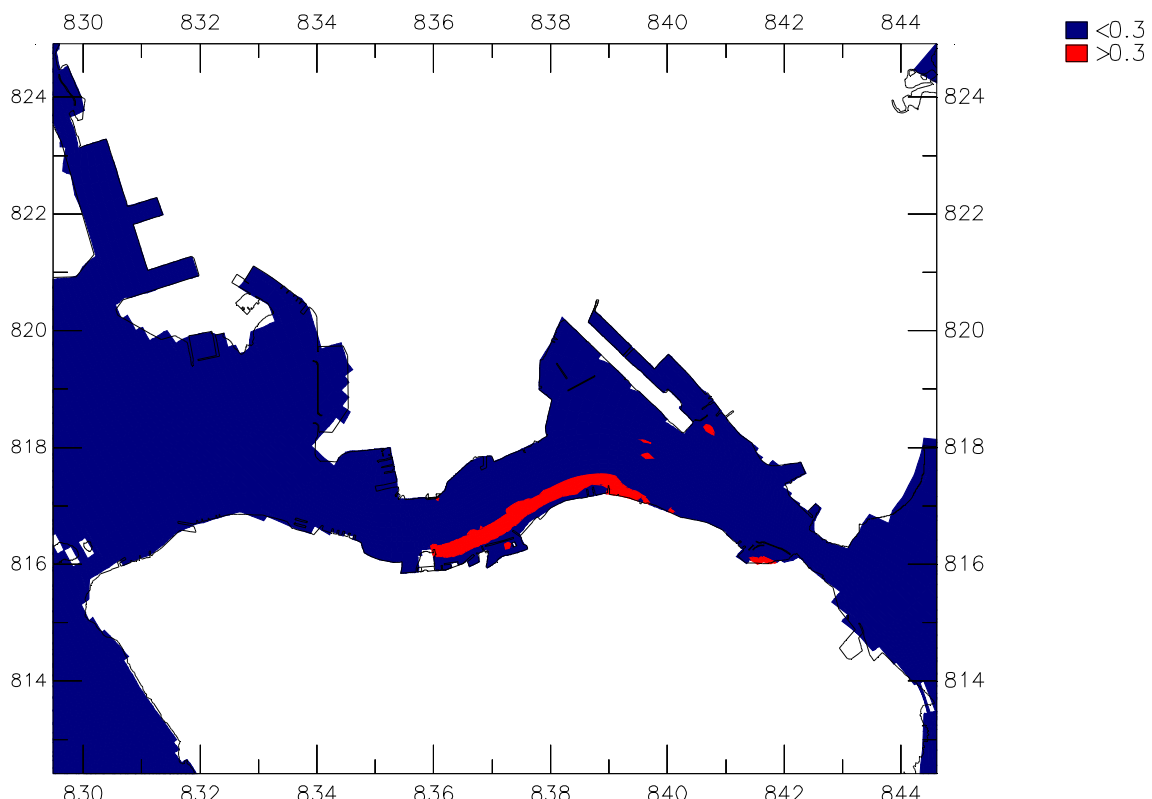


IMT Dredging Close to HK Island (see section 11.126)  
Dredging Rate: 2500 m<sup>3</sup>/day

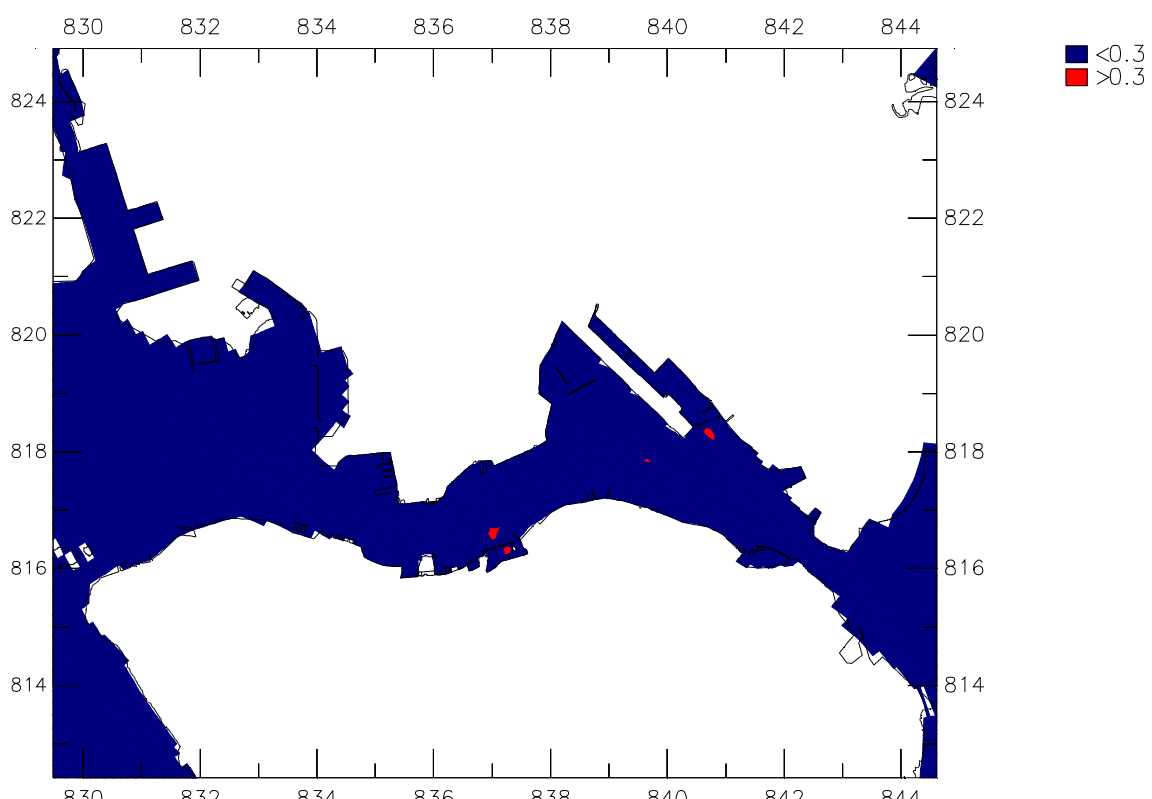
NEX/2213 Shatin to Central Link EIA Study for Cross Harbour Section Maximum Mixing Zone for SS Elevations (Contributed from SCL and other Concurrent Marine Works) Upper: Unmitigated Scenario; Lower: Mitigated Scenario; Red: value exceeded WQO for SS elevation	Scenario 1	Dry Season
	Appendix 11.8-02	
AECOM Asia Company Limited	60050763/GPP	PT-MZ.ssn



NEX/2213 Shatin to Central Link EIA Study for Cross Harbour Section Maximum Mixing Zone for SS Elevations (Contributed from SCL and other Concurrent Marine Works) Upper: Unmitigated Scenario; Lower: Mitigated Scenario; Red: value exceeded WQO for SS elevation	Scenario 1	Wet Season
	Appendix 11.8-03	
AECOM Asia Company Limited	60050763/GPP	PT-MZ.ssn

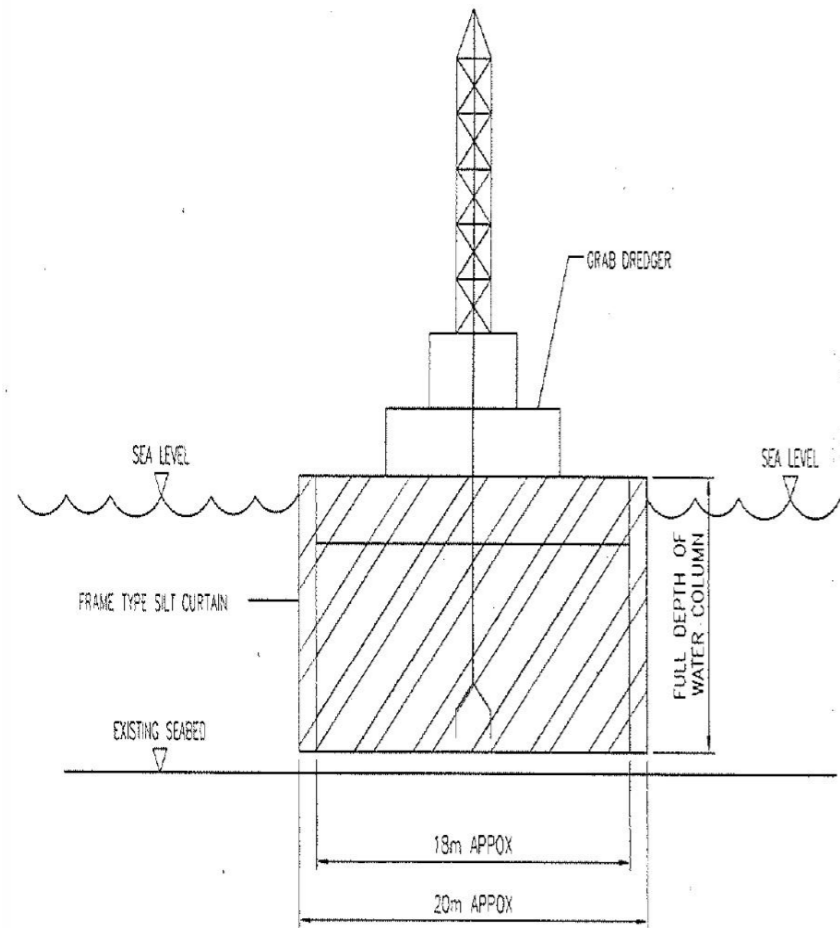


IMT Dredging Close to HK Island (see section 11.126)  
Dredging Rate: 6667 m<sup>3</sup>/day

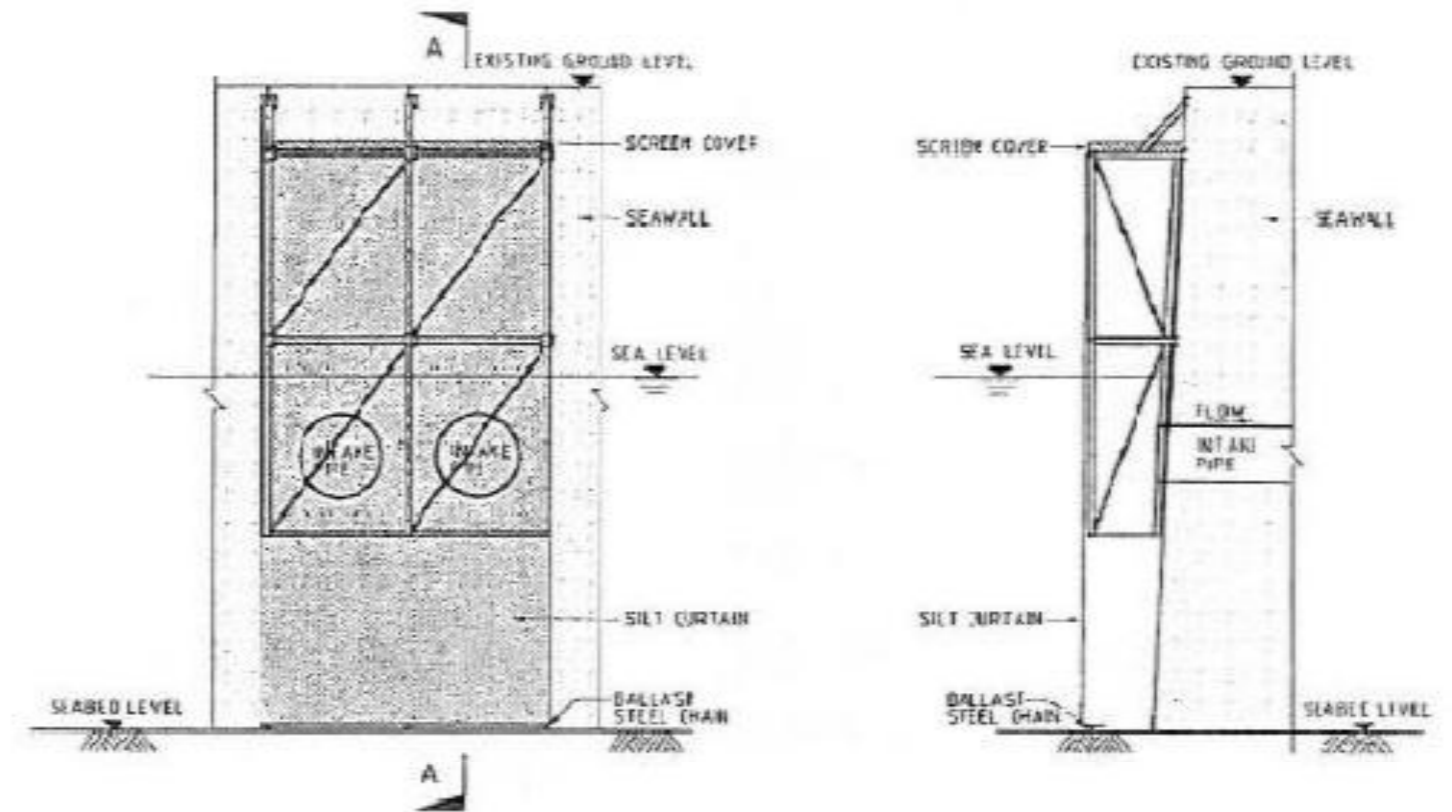


IMT Dredging Close to HK Island (see section 11.126)  
Dredging Rate: 2500 m<sup>3</sup>/day

NEX/2213 Shatin to Central Link EIA Study for Cross Harbour Section Maximum Mixing Zone for SS Elevations (Contributed from SCL and other Concurrent Marine Works) Upper: Unmitigated Scenario; Lower: Mitigated Scenario; Red: value exceeded WQO for SS elevation	Scenario 1	Wet Season
	Appendix 11.8-04	
AECOM Asia Company Limited	60050763/GPP	PT-MZ.ssn

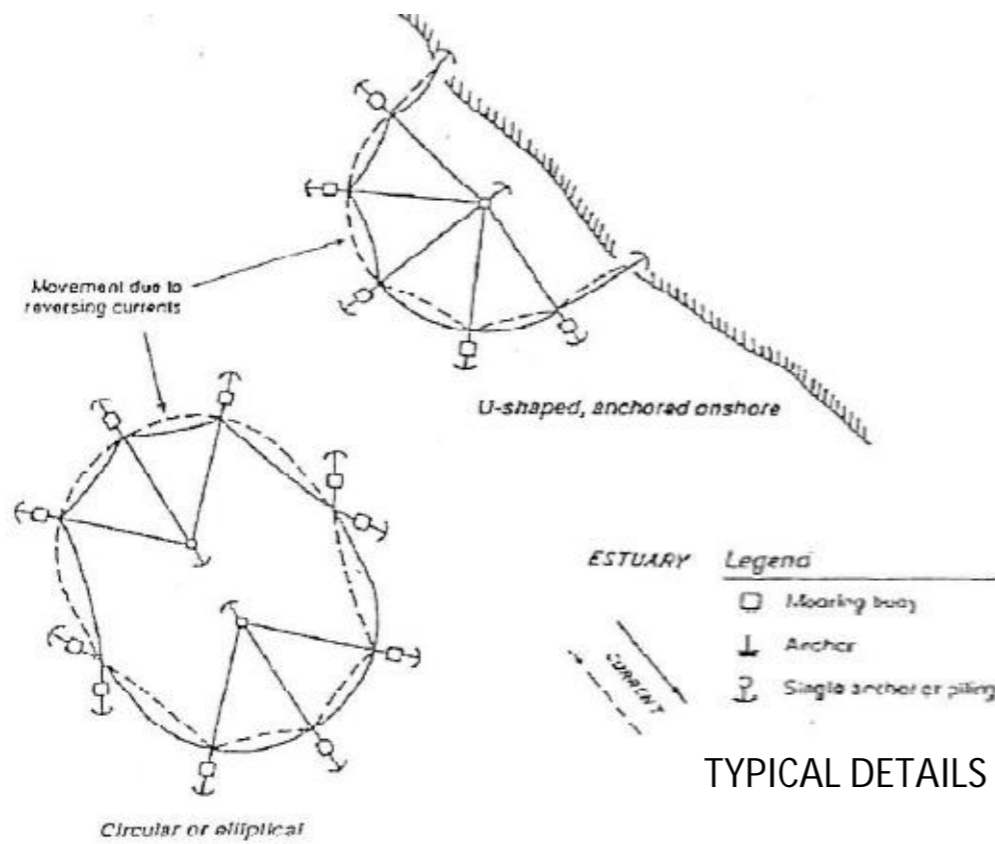


TYPICAL DETAILS FOR FRAME TYPE SILT CURTAIN DEPLOYMENT

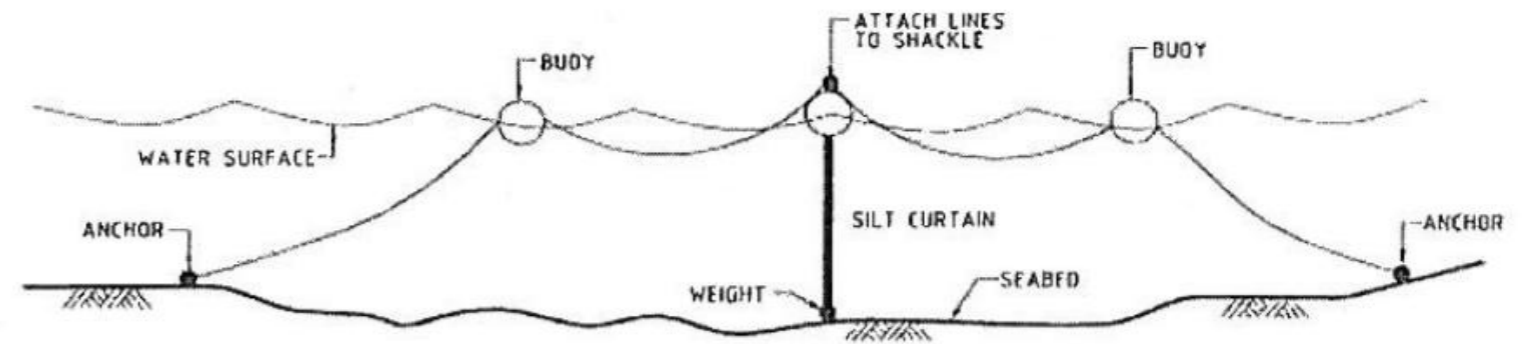


TYPICAL DETAILS FOR SILT SCREEN OVER INTAKE PIPES

SECTION A - A



TYPICAL DETAILS FOR FLOATING TYPE SILT CURTAIN DEPLOYMENT



---

**APPENDIX 3.1**  
**PROPOSED BASELINE WATER QUALITY MONITORING**  
**SCHEDULE**

---

**Consultancy Agreement No. C11033B SCL (MKK-HUH & HUH-ADM)  
 Trial Trenching Works - Proposed Baseline Water Quality Monitoring Schedule (Mar 2014)**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1-Mar
2-Mar	3-Mar	4-Mar	5-Mar	6-Mar	7-Mar	8-Mar
9-Mar	10-Mar	11-Mar	12-Mar	13-Mar	14-Mar	15-Mar
				Mid-Ebb 10:52 Mid-Flood 16:16		Mid-Ebb 11:48 Mid-Flood 17:41
16-Mar	17-Mar	18-Mar	19-Mar	20-Mar	21-Mar	22-Mar
		Mid-Ebb 13:21 Mid-Flood 19:40		Mid-Flood 8:18 Mid-Ebb 14:35		Mid-Flood 9:24 Mid-Ebb 16:03
23-Mar	24-Mar	25-Mar	26-Mar	27-Mar	28-Mar	29-Mar
		Mid-Flood 12:26 Mid-Ebb 19:55		Mid-Ebb 9:59 Mid-Flood 15:21		Mid-Ebb 11:29 Mid-Flood 17:19

Note:

Reference Tidal Station: Quarry Bay (Hong Kong Observatory)

**Consultancy Agreement No. C11033B SCL (MKK-HUH & HUH-ADM)  
 Trial Trenching Works - Proposed Baseline Water Quality Monitoring Schedule (Apr 2014)**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1-Apr	2-Apr	3-Apr	4-Apr	5-Apr
		Mid-Ebb 13:25 Mid-Flood 19:44		Mid-Flood 8:13 Mid-Ebb 14:43		Mid-Flood 9:12 Mid-Ebb 16:12
6-Apr	7-Apr	8-Apr	9-Apr	10-Apr	11-Apr	12-Apr
		Mid-Flood 7:00 Mid-Ebb 19:36				

Note:  
 Reference Tidal Station: Quarry Bay (Hong Kong Observatory)



---

**APPENDIX 3.2**

**SAMPLE OF FIELD LOG SHEET**

---

### Water Quality Monitoring Data Record Sheet

Monitoring Station	
Date	
Weather Condition	<b>Sunny / Fine / Cloudy / Rainy</b>
Sea Condition	<b>Calm / Moderate / Rough</b>
Tide Mode	<b>High Tide / Low Tide</b>
Start Time (hh:mm)	
Water Depth which sample is collected (m)	
pH	
Temperature (°C)	
Salinity (ppt)	
Turbidity (NTU)	
Sample Identification	
Suspended Solids (mg/l)	
DO (mg/l)	
DO Saturation (%)	
Remarks / Other Observations	

<u>Name &amp; Designation</u>	<u>Signature</u>	<u>Date</u>
Recorded by: _____	_____	_____
Checked by: _____	_____	_____
Laboratory Staff: _____	_____	_____

**Notes:**

- 1 The SS results are to be entered once they are available from the laboratory.
- 2 *In-situ* measurements shall be deployed at the designated location twice. The difference between the two consecutive measurements shall be within the range of 25%. If the difference is larger than 25%, the measurement shall be carried out again until the two consecutive readings agree to within 25%.

---

**APPENDIX 2.1**

**CALIBRATION CERTIFICATES OF MONITORING  
EQUIPMENTS**

---



ALS Technichem (HK) Pty Ltd  
11/F, Chung Shun Knitting Centre  
1-3 Wing Yip Street  
Kwai Chung, N.T., Hong Kong  
T: +852 2610 1044  
F: +852 2610 2021  
www.alsglobal.com

## REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

**CONTACT:** MR MIKE SHEK  
**CLIENT:** AECOM ASIA COMPANY LIMITED  
**ADDRESS:** 11/F, TOWER 2, GRAND CENTRAL PLAZA,  
138 SHATIN RURAL COMMITTEE ROAD,  
SHATIN, N.T.,  
HONG KONG.

**WORK ORDER:** HK1404435  
**LABORATORY:** HONG KONG  
**DATE RECEIVED:** 12/02/2014  
**DATE OF ISSUE:** 20/02/2014

**PROJECT:** --

### COMMENTS

It is certified that the item under calibration/checking has been calibrated/checked by corresponding calibrated equipment in the laboratory.

Maximum Tolerance and calibration frequency stated in the report, unless otherwise stated, the internal acceptance criteria of ALS will be followed.

Scope of Test: Conductivity, Dissolved Oxygen, pH, Salinity, Temperature and Turbidity  
Equipment Type: Sonde Environmental Monitoring System  
Brand Name: YSI  
Model No.: 6820 V2  
Serial No.: 12A101545  
Equipment No.: W.026.35  
Date of Calibration: 13 February, 2014

### NOTES

This is the Final Report and supersedes any preliminary report with this batch number.

Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

  
Mr. Fung Lim Chee, Richard  
General Manager -  
Greater China & Hong Kong

# REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION



**Work Order:** HK1404435  
**Date of Issue:** 20/02/2014  
**Client:** AECOM ASIA COMPANY LIMITED

**Equipment Type:** Sonde Environmental Monitoring System  
**Brand Name:** YSI  
**Model No.:** 6820 V2  
**Serial No.:** 12A101545  
**Equipment No.:** W.026.35  
**Date of Calibration:** 13 February, 2014      **Date of next Calibration:** 13 May, 2014

**Parameters:**

**Conductivity**

**Method Ref: APHA (21st edition), 2510B**

Expected Reading (uS/cm)	Displayed Reading (uS/cm )	Tolerance (%)
146.9	151.0	2.8
6667	6558	-1.6
12890	12670	-1.7
58670	58020	-1.1
Tolerance Limit (±%)		10.0

**Dissolved Oxygen**

**Method Ref: APHA (21st edition), 4500O: G**

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
3.40	3.42	0.02
5.50	5.54	0.04
7.65	7.60	-0.05
Tolerance Limit (±mg/L)		0.20

**pH Value**

**Method Ref: APHA 21st Ed. 4500H:B**

Expected Reading (pH Unit)	Displayed Reading (pH Unit)	Tolerance (pH unit)
4.0	4.02	0.02
7.0	7.05	0.05
10.0	9.97	-0.03
Tolerance Limit (±pH unit)		0.20

**Salinity**

**Method Ref: APHA (21st edition), 2520B**

Expected Reading (ppt)	Displayed Reading (ppt)	Tolerance (%)
0	0.03	--
10	9.88	-1.2
20	19.62	-1.9
30	29.50	-1.7
Tolerance Limit (±%)		10.0

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.

Mr. Fung Lim Chee, Richard  
 General Manager -  
 Greater China & Hong Kong

# REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION



**Work Order:** HK1404435  
**Date of Issue:** 20/02/2014  
**Client:** AECOM ASIA COMPANY LIMITED

**Equipment Type:** Sonde Environmental Monitoring System  
**Brand Name:** YSI  
**Model No.:** 6820 V2  
**Serial No.:** 12A101545  
**Equipment No.:** W.026.35  
**Date of Calibration:** 13 February, 2014      **Date of next Calibration:** 13 May, 2014

**Parameters:**

**Temperature**

**Method Ref: Section 6 of International Accreditation New Zealand Technical Guide No. 3 Second edition March 2008: Working Thermometer Calibration Procedure.**

Expected Reading (°C)	Displayed Reading (°C)	Tolerance (°C)
14.0	13.92	-0.1
26.0	25.91	-0.1
38.5	38.40	-0.1
Tolerance Limit (±°C)		2.0

**Turbidity**

**Method Ref: APHA (21st edition), 2130B**

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)
0	0.0	--
4	3.9	-2.5
10	9.7	-3.0
20	19.6	-2.0
50	49.3	-1.4
100	99.2	-0.8
Tolerance Limit (±%)		10.0

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.

---

**APPENDIX 2.2**

**BASELINE WATER QUALITY MONITORING SCHEDULES**

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**Consultancy Agreement No. C11033B SCL (MKK-HUH & HUH-ADM)  
 Trial Trenching Works - Proposed Baseline Water Quality Monitoring Schedule (Mar 2014)**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1-Mar
2-Mar	3-Mar	4-Mar	5-Mar	6-Mar	7-Mar	8-Mar
9-Mar	10-Mar	11-Mar	12-Mar	13-Mar	14-Mar	15-Mar
				Mid-Ebb 10:52 Mid-Flood 16:16		Mid-Ebb 11:48 Mid-Flood 17:41
16-Mar	17-Mar	18-Mar	19-Mar	20-Mar	21-Mar	22-Mar
		Mid-Ebb 13:21 Mid-Flood 19:40		Mid-Flood 8:18 Mid-Ebb 14:35		Mid-Flood 9:24 Mid-Ebb 16:03
23-Mar	24-Mar	25-Mar	26-Mar	27-Mar	28-Mar	29-Mar
		Mid-Flood 12:26 Mid-Ebb 19:55		Mid-Ebb 9:59 Mid-Flood 15:21		Mid-Ebb 11:29 Mid-Flood 17:19

Note:

Reference Tidal Station: Quarry Bay (Hong Kong Observatory)



**Consultancy Agreement No. C11033B SCL (MKK-HUH & HUH-ADM)  
 Trial Trenching Works - Proposed Baseline Water Quality Monitoring Schedule (Apr 2014)**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1-Apr	2-Apr	3-Apr	4-Apr	5-Apr
		Mid-Ebb 13:25 Mid-Flood 19:44		Mid-Flood 8:13 Mid-Ebb 14:43		Mid-Flood 9:12 Mid-Ebb 16:12
6-Apr	7-Apr	8-Apr	9-Apr	10-Apr	11-Apr	12-Apr
		Mid-Flood 7:00 Mid-Ebb 19:36				

Note:  
 Reference Tidal Station: Quarry Bay (Hong Kong Observatory)

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**APPENDIX 2.3**

**LABORATORY RESULTS**

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## CERTIFICATE OF ANALYSIS

<i>Client</i>	: AECOM ASIA COMPANY LIMITED	<i>Laboratory</i>	: ALS Technichem HK Pty Ltd	<i>Page</i>	: 1 of 4
<i>Contact</i>	: MS ANGELA TONG	<i>Contact</i>	: Fung Lim Chee, Richard	<i>Work Order</i>	: <b>HK1407442</b>
<i>Address</i>	: 11/F, TOWER 2, GRAND CENTRAL PLAZA, 138 SHATIN RURAL COMMITTEE ROAD, SHATIN, N.T. HONG KONG	<i>Address</i>	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
<i>E-mail</i>	: angela.tong@aecom.com	<i>E-mail</i>	: Richard.Fung@alsglobal.com		
<i>Telephone</i>	: +852 3922 9418	<i>Telephone</i>	: +852 2610 1044		
<i>Facsimile</i>	: ----	<i>Facsimile</i>	: +852 2610 2021		
<i>Project</i>	: SCL-BASELINE WQM	<i>Quote number</i>	: ----	<i>Date received</i>	: 14-MAR-2014
<i>Order number</i>	: 60280233			<i>Date of issue</i>	: 25-MAR-2014
<i>C-O-C number</i>	: ----			<i>No. of samples</i>	- Received : 48
<i>Site</i>	: ----				- Analysed : 48

### Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1407442 supersedes any previous reports with this reference. The completion date of analysis is 17-MAR-2014. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

Specific comments for Work Order HK1407442 : Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.  
Water sample(s) analysed and reported on an as received basis.

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This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in the 'Electronic Transactions Ordinance' of Hong Kong, Chapter 553, Section 6.

<i>Signatory</i>	<i>Position</i>	<i>Authorised results for:-</i>
Fung Lim Chee, Richard	General Manager	Inorganics



### Analytical Results

Sub-Matrix: WATER

			Compound	EA025: Suspended Solids (SS)			
			LOR Unit	2 mg/L			
Client sample ID	Client sampling date / time	Laboratory sample ID	EA/ED: Physical and Aggregate Properties				
A / SURFACE MID-EBB	[13-MAR-2014]	HK1407442-001	3				
A / SURFACE MID-EBB	[13-MAR-2014]	HK1407442-002	4				
A / MIDDLE MID-EBB	[13-MAR-2014]	HK1407442-003	5				
A / MIDDLE MID-EBB	[13-MAR-2014]	HK1407442-004	4				
A / BOTTOM MID-EBB	[13-MAR-2014]	HK1407442-005	6				
A / BOTTOM MID-EBB	[13-MAR-2014]	HK1407442-006	5				
WSD9 / SURFACE MID-EBB	[13-MAR-2014]	HK1407442-007	4				
WSD9 / SURFACE MID-EBB	[13-MAR-2014]	HK1407442-008	5				
WSD9 / MIDDLE MID-EBB	[13-MAR-2014]	HK1407442-009	5				
WSD9 / MIDDLE MID-EBB	[13-MAR-2014]	HK1407442-010	3				
WSD9 / BOTTOM MID-EBB	[13-MAR-2014]	HK1407442-011	6				
WSD9 / BOTTOM MID-EBB	[13-MAR-2014]	HK1407442-012	5				
C1 / SURFACE MID-EBB	[13-MAR-2014]	HK1407442-013	5				
C1 / SURFACE MID-EBB	[13-MAR-2014]	HK1407442-014	5				
C1 / MIDDLE MID-EBB	[13-MAR-2014]	HK1407442-015	5				
C1 / MIDDLE MID-EBB	[13-MAR-2014]	HK1407442-016	5				
C1 / BOTTOM MID-EBB	[13-MAR-2014]	HK1407442-017	5				
C1 / BOTTOM MID-EBB	[13-MAR-2014]	HK1407442-018	6				
C2 / SURFACE MID-EBB	[13-MAR-2014]	HK1407442-019	5				
C2 / SURFACE MID-EBB	[13-MAR-2014]	HK1407442-020	4				
C2 / MIDDLE MID-EBB	[13-MAR-2014]	HK1407442-021	5				
C2 / MIDDLE MID-EBB	[13-MAR-2014]	HK1407442-022	4				
C2 / BOTTOM MID-EBB	[13-MAR-2014]	HK1407442-023	6				
C2 / BOTTOM MID-EBB	[13-MAR-2014]	HK1407442-024	6				
A / SURFACE MID-FLOOD	[13-MAR-2014]	HK1407442-025	5				
A / SURFACE MID-FLOOD	[13-MAR-2014]	HK1407442-026	4				
A / MIDDLE MID-FLOOD	[13-MAR-2014]	HK1407442-027	6				
A / MIDDLE MID-FLOOD	[13-MAR-2014]	HK1407442-028	5				
A / BOTTOM MID-FLOOD	[13-MAR-2014]	HK1407442-029	6				
A / BOTTOM MID-FLOOD	[13-MAR-2014]	HK1407442-030	5				
WSD9 / SURFACE MID-FLOOD	[13-MAR-2014]	HK1407442-031	6				
WSD9 / SURFACE MID-FLOOD	[13-MAR-2014]	HK1407442-032	6				
WSD9 / MIDDLE MID-FLOOD	[13-MAR-2014]	HK1407442-033	4				
WSD9 / MIDDLE MID-FLOOD	[13-MAR-2014]	HK1407442-034	4				
WSD9 / BOTTOM MID-FLOOD	[13-MAR-2014]	HK1407442-035	5				



Sub-Matrix: WATER

			Compound				
			EA025: Suspended Solids (SS)				
			LOR Unit	2 mg/L			
Client sample ID	Client sampling date / time	Laboratory sample ID	EA/ED: Physical and Aggregate Properties				
WSD9 / BOTTOM MID-FLOOD	[13-MAR-2014]	HK1407442-036	4				
C1 / SURFACE MID-FLOOD	[13-MAR-2014]	HK1407442-037	4				
C1 / SURFACE MID-FLOOD	[13-MAR-2014]	HK1407442-038	2				
C1 / MIDDLE MID-FLOOD	[13-MAR-2014]	HK1407442-039	3				
C1 / MIDDLE MID-FLOOD	[13-MAR-2014]	HK1407442-040	2				
C1 / BOTTOM MID-FLOOD	[13-MAR-2014]	HK1407442-041	4				
C1 / BOTTOM MID-FLOOD	[13-MAR-2014]	HK1407442-042	3				
C2 / SURFACE MID-FLOOD	[13-MAR-2014]	HK1407442-043	2				
C2 / SURFACE MID-FLOOD	[13-MAR-2014]	HK1407442-044	2				
C2 / MIDDLE MID-FLOOD	[13-MAR-2014]	HK1407442-045	2				
C2 / MIDDLE MID-FLOOD	[13-MAR-2014]	HK1407442-046	3				
C2 / BOTTOM MID-FLOOD	[13-MAR-2014]	HK1407442-047	2				
C2 / BOTTOM MID-FLOOD	[13-MAR-2014]	HK1407442-048	3				



### Laboratory Duplicate (DUP) Report

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 3343473)</b>								
HK1407442-001	A / SURFACE MID-EBB	EA025: Suspended Solids (SS)	----	2	mg/L	3	3	0.0
HK1407442-011	WSD9 / BOTTOM MID-EBB	EA025: Suspended Solids (SS)	----	2	mg/L	6	6	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 3343474)</b>								
HK1407442-021	C2 / MIDDLE MID-EBB	EA025: Suspended Solids (SS)	----	2	mg/L	5	5	0.0
HK1407442-031	WSD9 / SURFACE MID-FLOOD	EA025: Suspended Solids (SS)	----	2	mg/L	6	5	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 3343475)</b>								
HK1407442-041	C1 / BOTTOM MID-FLOOD	EA025: Suspended Solids (SS)	----	2	mg/L	4	4	0.0

### Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						LCS	DCS	Low	High	Value	Control Limit
<b>EA/ED: Physical and Aggregate Properties (QCLot: 3343473)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	102	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 3343474)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	98.5	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 3343475)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	102	----	85	115	----	----

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.



## CERTIFICATE OF ANALYSIS

<i>Client</i>	: AECOM ASIA COMPANY LIMITED	<i>Laboratory</i>	: ALS Technichem HK Pty Ltd	<i>Page</i>	: 1 of 4
<i>Contact</i>	: MS ANGELA TONG	<i>Contact</i>	: Fung Lim Chee, Richard	<i>Work Order</i>	: <b>HK1407453</b>
<i>Address</i>	: 11/F, TOWER 2, GRAND CENTRAL PLAZA, 138 SHATIN RURAL COMMITTEE ROAD, SHATIN, N.T. HONG KONG	<i>Address</i>	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
<i>E-mail</i>	: angela.tong@aecom.com	<i>E-mail</i>	: Richard.Fung@alsglobal.com		
<i>Telephone</i>	: +852 3922 9418	<i>Telephone</i>	: +852 2610 1044		
<i>Facsimile</i>	: ----	<i>Facsimile</i>	: +852 2610 2021		
<i>Project</i>	: SCL-BASELINE WQM	<i>Quote number</i>	: ----	<i>Date received</i>	: 15-MAR-2014
<i>Order number</i>	: 60280233			<i>Date of issue</i>	: 25-MAR-2014
<i>C-O-C number</i>	: ----			<i>No. of samples</i>	- <i>Received</i> : 48
<i>Site</i>	: ----				- <i>Analysed</i> : 48

### Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1407453 supersedes any previous reports with this reference. The completion date of analysis is 17-MAR-2014. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

Specific comments for Work Order HK1407453 : Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.  
Water sample(s) analysed and reported on an as received basis.

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<i>Signatory</i>	<i>Position</i>	<i>Authorised results for:-</i>
Fung Lim Chee, Richard	General Manager	Inorganics



**Analytical Results**

Sub-Matrix: WATER

			Compound	EA025: Suspended Solids (SS)			
			LOR Unit	2 mg/L			
Client sample ID	Client sampling date / time	Laboratory sample ID	EA/ED: Physical and Aggregate Properties				
A / SURFACE MID-EBB	[15-MAR-2014]	HK1407453-001	3				
A / SURFACE MID-EBB	[15-MAR-2014]	HK1407453-002	5				
A / MIDDLE MID-EBB	[15-MAR-2014]	HK1407453-003	6				
A / MIDDLE MID-EBB	[15-MAR-2014]	HK1407453-004	5				
A / BOTTOM MID-EBB	[15-MAR-2014]	HK1407453-005	6				
A / BOTTOM MID-EBB	[15-MAR-2014]	HK1407453-006	5				
WSD9 / SURFACE MID-EBB	[15-MAR-2014]	HK1407453-007	4				
WSD9 / SURFACE MID-EBB	[15-MAR-2014]	HK1407453-008	3				
WSD9 / MIDDLE MID-EBB	[15-MAR-2014]	HK1407453-009	2				
WSD9 / MIDDLE MID-EBB	[15-MAR-2014]	HK1407453-010	3				
WSD9 / BOTTOM MID-EBB	[15-MAR-2014]	HK1407453-011	5				
WSD9 / BOTTOM MID-EBB	[15-MAR-2014]	HK1407453-012	6				
C1 / SURFACE MID-EBB	[15-MAR-2014]	HK1407453-013	3				
C1 / SURFACE MID-EBB	[15-MAR-2014]	HK1407453-014	4				
C1 / MIDDLE MID-EBB	[15-MAR-2014]	HK1407453-015	5				
C1 / MIDDLE MID-EBB	[15-MAR-2014]	HK1407453-016	4				
C1 / BOTTOM MID-EBB	[15-MAR-2014]	HK1407453-017	8				
C1 / BOTTOM MID-EBB	[15-MAR-2014]	HK1407453-018	5				
C2 / SURFACE MID-EBB	[15-MAR-2014]	HK1407453-019	4				
C2 / SURFACE MID-EBB	[15-MAR-2014]	HK1407453-020	2				
C2 / MIDDLE MID-EBB	[15-MAR-2014]	HK1407453-021	3				
C2 / MIDDLE MID-EBB	[15-MAR-2014]	HK1407453-022	3				
C2 / BOTTOM MID-EBB	[15-MAR-2014]	HK1407453-023	4				
C2 / BOTTOM MID-EBB	[15-MAR-2014]	HK1407453-024	4				
A / SURFACE MID-FLOOD	[15-MAR-2014]	HK1407453-025	4				
A / SURFACE MID-FLOOD	[15-MAR-2014]	HK1407453-026	4				
A / MIDDLE MID-FLOOD	[15-MAR-2014]	HK1407453-027	5				
A / MIDDLE MID-FLOOD	[15-MAR-2014]	HK1407453-028	4				
A / BOTTOM MID-FLOOD	[15-MAR-2014]	HK1407453-029	5				
A / BOTTOM MID-FLOOD	[15-MAR-2014]	HK1407453-030	5				
WSD9 / SURFACE MID-FLOOD	[15-MAR-2014]	HK1407453-031	4				
WSD9 / SURFACE MID-FLOOD	[15-MAR-2014]	HK1407453-032	5				
WSD9 / MIDDLE MID-FLOOD	[15-MAR-2014]	HK1407453-033	3				
WSD9 / MIDDLE MID-FLOOD	[15-MAR-2014]	HK1407453-034	4				
WSD9 / BOTTOM MID-FLOOD	[15-MAR-2014]	HK1407453-035	3				





Sub-Matrix: WATER

			Compound				
			EA025: Suspended Solids (SS)				
			LOR Unit				
Client sample ID	Client sampling date / time	Laboratory sample ID	EA/ED: Physical and Aggregate Properties				
WSD9 / BOTTOM MID-FLOOD	[15-MAR-2014]	HK1407453-036	5				
C1 / SURFACE MID-FLOOD	[15-MAR-2014]	HK1407453-037	6				
C1 / SURFACE MID-FLOOD	[15-MAR-2014]	HK1407453-038	6				
C1 / MIDDLE MID-FLOOD	[15-MAR-2014]	HK1407453-039	6				
C1 / MIDDLE MID-FLOOD	[15-MAR-2014]	HK1407453-040	6				
C1 / BOTTOM MID-FLOOD	[15-MAR-2014]	HK1407453-041	7				
C1 / BOTTOM MID-FLOOD	[15-MAR-2014]	HK1407453-042	8				
C2 / SURFACE MID-FLOOD	[15-MAR-2014]	HK1407453-043	5				
C2 / SURFACE MID-FLOOD	[15-MAR-2014]	HK1407453-044	5				
C2 / MIDDLE MID-FLOOD	[15-MAR-2014]	HK1407453-045	6				
C2 / MIDDLE MID-FLOOD	[15-MAR-2014]	HK1407453-046	5				
C2 / BOTTOM MID-FLOOD	[15-MAR-2014]	HK1407453-047	7				
C2 / BOTTOM MID-FLOOD	[15-MAR-2014]	HK1407453-048	5				



**Laboratory Duplicate (DUP) Report**

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 3343477)</b>								
HK1407453-001	A / SURFACE MID-EBB	EA025: Suspended Solids (SS)	----	2	mg/L	3	3	0.0
HK1407453-011	WSD9 / BOTTOM MID-EBB	EA025: Suspended Solids (SS)	----	2	mg/L	5	5	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 3343478)</b>								
HK1407453-021	C2 / MIDDLE MID-EBB	EA025: Suspended Solids (SS)	----	2	mg/L	3	3	0.0
HK1407453-031	WSD9 / SURFACE MID-FLOOD	EA025: Suspended Solids (SS)	----	2	mg/L	4	4	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 3343479)</b>								
HK1407453-041	C1 / BOTTOM MID-FLOOD	EA025: Suspended Solids (SS)	----	2	mg/L	7	7	0.0

**Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report**

Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						LCS	DCS	Low	High	Value	Control Limit
<b>EA/ED: Physical and Aggregate Properties (QCLot: 3343477)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	99.0	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 3343478)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	98.0	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 3343479)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	98.5	----	85	115	----	----

**Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report**

- No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.



## CERTIFICATE OF ANALYSIS

<i>Client</i>	: AECOM ASIA COMPANY LIMITED	<i>Laboratory</i>	: ALS Technichem HK Pty Ltd	<i>Page</i>	: 1 of 4
<i>Contact</i>	: MS ANGELA TONG	<i>Contact</i>	: Fung Lim Chee, Richard	<i>Work Order</i>	: <b>HK1407454</b>
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<i>Telephone</i>	: +852 3922 9418	<i>Telephone</i>	: +852 2610 1044		
<i>Facsimile</i>	: ----	<i>Facsimile</i>	: +852 2610 2021		
<i>Project</i>	: SCL-BASELINE WQM	<i>Quote number</i>	: ----	<i>Date received</i>	: 19-MAR-2014
<i>Order number</i>	: 60280233			<i>Date of issue</i>	: 28-MAR-2014
<i>C-O-C number</i>	: ----			<i>No. of samples</i>	- Received : 48
<i>Site</i>	: ----				- Analysed : 48

### Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1407454 supersedes any previous reports with this reference. The completion date of analysis is 20-MAR-2014. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

Specific comments for Work Order HK1407454 : Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.  
Water sample(s) analysed and reported on an as received basis.

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<i>Signatory</i>	<i>Position</i>	<i>Authorised results for:-</i>
<b>Fung Lim Chee, Richard</b>	<b>General Manager</b>	<b>Inorganics</b>



**Analytical Results**

Sub-Matrix: WATER

			Compound	EA025: Suspended Solids (SS)			
			LOR Unit	2 mg/L			
Client sample ID	Client sampling date / time	Laboratory sample ID	EA/ED: Physical and Aggregate Properties				
A / SURFACE MID-EBB	[18-MAR-2014]	HK1407454-001	3				
A / SURFACE MID-EBB	[18-MAR-2014]	HK1407454-002	3				
A / MIDDLE MID-EBB	[18-MAR-2014]	HK1407454-003	3				
A / MIDDLE MID-EBB	[18-MAR-2014]	HK1407454-004	4				
A / BOTTOM MID-EBB	[18-MAR-2014]	HK1407454-005	4				
A / BOTTOM MID-EBB	[18-MAR-2014]	HK1407454-006	3				
WSD9 / SURFACE MID-EBB	[18-MAR-2014]	HK1407454-007	3				
WSD9 / SURFACE MID-EBB	[18-MAR-2014]	HK1407454-008	4				
WSD9 / MIDDLE MID-EBB	[18-MAR-2014]	HK1407454-009	3				
WSD9 / MIDDLE MID-EBB	[18-MAR-2014]	HK1407454-010	2				
WSD9 / BOTTOM MID-EBB	[18-MAR-2014]	HK1407454-011	3				
WSD9 / BOTTOM MID-EBB	[18-MAR-2014]	HK1407454-012	4				
C1 / SURFACE MID-EBB	[18-MAR-2014]	HK1407454-013	2				
C1 / SURFACE MID-EBB	[18-MAR-2014]	HK1407454-014	2				
C1 / MIDDLE MID-EBB	[18-MAR-2014]	HK1407454-015	2				
C1 / MIDDLE MID-EBB	[18-MAR-2014]	HK1407454-016	2				
C1 / BOTTOM MID-EBB	[18-MAR-2014]	HK1407454-017	2				
C1 / BOTTOM MID-EBB	[18-MAR-2014]	HK1407454-018	3				
C2 / SURFACE MID-EBB	[18-MAR-2014]	HK1407454-019	4				
C2 / SURFACE MID-EBB	[18-MAR-2014]	HK1407454-020	4				
C2 / MIDDLE MID-EBB	[18-MAR-2014]	HK1407454-021	3				
C2 / MIDDLE MID-EBB	[18-MAR-2014]	HK1407454-022	4				
C2 / BOTTOM MID-EBB	[18-MAR-2014]	HK1407454-023	5				
C2 / BOTTOM MID-EBB	[18-MAR-2014]	HK1407454-024	4				
A / SURFACE MID-FLOOD	[18-MAR-2014]	HK1407454-025	3				
A / SURFACE MID-FLOOD	[18-MAR-2014]	HK1407454-026	3				
A / MIDDLE MID-FLOOD	[18-MAR-2014]	HK1407454-027	4				
A / MIDDLE MID-FLOOD	[18-MAR-2014]	HK1407454-028	3				
A / BOTTOM MID-FLOOD	[18-MAR-2014]	HK1407454-029	4				
A / BOTTOM MID-FLOOD	[18-MAR-2014]	HK1407454-030	3				
WSD9 / SURFACE MID-FLOOD	[18-MAR-2014]	HK1407454-031	4				
WSD9 / SURFACE MID-FLOOD	[18-MAR-2014]	HK1407454-032	4				
WSD9 / MIDDLE MID-FLOOD	[18-MAR-2014]	HK1407454-033	4				
WSD9 / MIDDLE MID-FLOOD	[18-MAR-2014]	HK1407454-034	5				
WSD9 / BOTTOM MID-FLOOD	[18-MAR-2014]	HK1407454-035	3				



Sub-Matrix: WATER

			Compound				
			EA025: Suspended Solids (SS)				
			LOR Unit				
Client sample ID	Client sampling date / time	Laboratory sample ID	EA/ED: Physical and Aggregate Properties				
WSD9 / BOTTOM MID-FLOOD	[18-MAR-2014]	HK1407454-036	5				
C1 / SURFACE MID-FLOOD	[18-MAR-2014]	HK1407454-037	5				
C1 / SURFACE MID-FLOOD	[18-MAR-2014]	HK1407454-038	5				
C1 / MIDDLE MID-FLOOD	[18-MAR-2014]	HK1407454-039	3				
C1 / MIDDLE MID-FLOOD	[18-MAR-2014]	HK1407454-040	5				
C1 / BOTTOM MID-FLOOD	[18-MAR-2014]	HK1407454-041	4				
C1 / BOTTOM MID-FLOOD	[18-MAR-2014]	HK1407454-042	6				
C2 / SURFACE MID-FLOOD	[18-MAR-2014]	HK1407454-043	5				
C2 / SURFACE MID-FLOOD	[18-MAR-2014]	HK1407454-044	6				
C2 / MIDDLE MID-FLOOD	[18-MAR-2014]	HK1407454-045	4				
C2 / MIDDLE MID-FLOOD	[18-MAR-2014]	HK1407454-046	4				
C2 / BOTTOM MID-FLOOD	[18-MAR-2014]	HK1407454-047	5				
C2 / BOTTOM MID-FLOOD	[18-MAR-2014]	HK1407454-048	6				



### Laboratory Duplicate (DUP) Report

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 3350867)</b>								
HK1407454-001	A / SURFACE MID-EBB	EA025: Suspended Solids (SS)	----	2	mg/L	3	3	0.0
HK1407454-011	WSD9 / BOTTOM MID-EBB	EA025: Suspended Solids (SS)	----	2	mg/L	3	3	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 3350868)</b>								
HK1407454-021	C2 / MIDDLE MID-EBB	EA025: Suspended Solids (SS)	----	2	mg/L	3	4	0.0
HK1407454-031	WSD9 / SURFACE MID-FLOOD	EA025: Suspended Solids (SS)	----	2	mg/L	4	4	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 3350869)</b>								
HK1407454-041	C1 / BOTTOM MID-FLOOD	EA025: Suspended Solids (SS)	----	2	mg/L	4	4	0.0

### Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						LCS	DCS	Low	High	Value	Control Limit
<b>EA/ED: Physical and Aggregate Properties (QCLot: 3350867)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	98.5	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 3350868)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	100	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 3350869)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	101	----	85	115	----	----

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.



## CERTIFICATE OF ANALYSIS

<i>Client</i>	: AECOM ASIA COMPANY LIMITED	<i>Laboratory</i>	: ALS Technichem HK Pty Ltd	<i>Page</i>	: 1 of 4
<i>Contact</i>	: MS ANGELA TONG	<i>Contact</i>	: Fung Lim Chee, Richard	<i>Work Order</i>	: <b>HK1408043</b>
<i>Address</i>	: 11/F, TOWER 2, GRAND CENTRAL PLAZA, 138 SHATIN RURAL COMMITTEE ROAD, SHATIN, N.T. HONG KONG	<i>Address</i>	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
<i>E-mail</i>	: angela.tong@aecom.com	<i>E-mail</i>	: Richard.Fung@alsglobal.com		
<i>Telephone</i>	: +852 3922 9418	<i>Telephone</i>	: +852 2610 1044		
<i>Facsimile</i>	: ----	<i>Facsimile</i>	: +852 2610 2021		
<i>Project</i>	: SCL-BASELINE WQM	<i>Quote number</i>	: ----	<i>Date received</i>	: 21-MAR-2014
<i>Order number</i>	: 60280233			<i>Date of issue</i>	: 01-APR-2014
<i>C-O-C number</i>	: ----			<i>No. of samples</i>	- Received : 48
<i>Site</i>	: ----				- Analysed : 48

### Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1408043 supersedes any previous reports with this reference. The completion date of analysis is 26-MAR-2014. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

Specific comments for Work Order HK1408043 :      Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.  
Water sample(s) analysed and reported on an as received basis.

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<i>Signatory</i>	<i>Position</i>	<i>Authorised results for:-</i>
<b>Fung Lim Chee, Richard</b>	<b>General Manager</b>	<b>Inorganics</b>



**Analytical Results**

Sub-Matrix: WATER

			Compound	EA025: Suspended Solids (SS)			
			LOR Unit	2 mg/L			
Client sample ID	Client sampling date / time	Laboratory sample ID	EA/ED: Physical and Aggregate Properties				
A / SURFACE MID-EBB	[20-MAR-2014]	HK1408043-001	3				
A / SURFACE MID-EBB	[20-MAR-2014]	HK1408043-002	3				
A / MIDDLE MID-EBB	[20-MAR-2014]	HK1408043-003	2				
A / MIDDLE MID-EBB	[20-MAR-2014]	HK1408043-004	3				
A / BOTTOM MID-EBB	[20-MAR-2014]	HK1408043-005	3				
A / BOTTOM MID-EBB	[20-MAR-2014]	HK1408043-006	3				
WSD9 / SURFACE MID-EBB	[20-MAR-2014]	HK1408043-007	<2				
WSD9 / SURFACE MID-EBB	[20-MAR-2014]	HK1408043-008	<2				
WSD9 / MIDDLE MID-EBB	[20-MAR-2014]	HK1408043-009	<2				
WSD9 / MIDDLE MID-EBB	[20-MAR-2014]	HK1408043-010	<2				
WSD9 / BOTTOM MID-EBB	[20-MAR-2014]	HK1408043-011	<2				
WSD9 / BOTTOM MID-EBB	[20-MAR-2014]	HK1408043-012	<2				
C1 / SURFACE MID-EBB	[20-MAR-2014]	HK1408043-013	4				
C1 / SURFACE MID-EBB	[20-MAR-2014]	HK1408043-014	4				
C1 / MIDDLE MID-EBB	[20-MAR-2014]	HK1408043-015	5				
C1 / MIDDLE MID-EBB	[20-MAR-2014]	HK1408043-016	3				
C1 / BOTTOM MID-EBB	[20-MAR-2014]	HK1408043-017	5				
C1 / BOTTOM MID-EBB	[20-MAR-2014]	HK1408043-018	4				
C2 / SURFACE MID-EBB	[20-MAR-2014]	HK1408043-019	3				
C2 / SURFACE MID-EBB	[20-MAR-2014]	HK1408043-020	2				
C2 / MIDDLE MID-EBB	[20-MAR-2014]	HK1408043-021	4				
C2 / MIDDLE MID-EBB	[20-MAR-2014]	HK1408043-022	4				
C2 / BOTTOM MID-EBB	[20-MAR-2014]	HK1408043-023	3				
C2 / BOTTOM MID-EBB	[20-MAR-2014]	HK1408043-024	4				
A / SURFACE MID-FLOOD	[20-MAR-2014]	HK1408043-025	2				
A / SURFACE MID-FLOOD	[20-MAR-2014]	HK1408043-026	2				
A / MIDDLE MID-FLOOD	[20-MAR-2014]	HK1408043-027	2				
A / MIDDLE MID-FLOOD	[20-MAR-2014]	HK1408043-028	4				
A / BOTTOM MID-FLOOD	[20-MAR-2014]	HK1408043-029	3				
A / BOTTOM MID-FLOOD	[20-MAR-2014]	HK1408043-030	3				
WSD9 / SURFACE MID-FLOOD	[20-MAR-2014]	HK1408043-031	4				
WSD9 / SURFACE MID-FLOOD	[20-MAR-2014]	HK1408043-032	4				
WSD9 / MIDDLE MID-FLOOD	[20-MAR-2014]	HK1408043-033	4				
WSD9 / MIDDLE MID-FLOOD	[20-MAR-2014]	HK1408043-034	4				
WSD9 / BOTTOM MID-FLOOD	[20-MAR-2014]	HK1408043-035	5				





Sub-Matrix: WATER

			Compound				
			EA025: Suspended Solids (SS)				
			LOR Unit	2 mg/L			
Client sample ID	Client sampling date / time	Laboratory sample ID	EA/ED: Physical and Aggregate Properties				
WSD9 / BOTTOM MID-FLOOD	[20-MAR-2014]	HK1408043-036	4				
C1 / SURFACE MID-FLOOD	[20-MAR-2014]	HK1408043-037	5				
C1 / SURFACE MID-FLOOD	[20-MAR-2014]	HK1408043-038	4				
C1 / MIDDLE MID-FLOOD	[20-MAR-2014]	HK1408043-039	5				
C1 / MIDDLE MID-FLOOD	[20-MAR-2014]	HK1408043-040	4				
C1 / BOTTOM MID-FLOOD	[20-MAR-2014]	HK1408043-041	6				
C1 / BOTTOM MID-FLOOD	[20-MAR-2014]	HK1408043-042	7				
C2 / SURFACE MID-FLOOD	[20-MAR-2014]	HK1408043-043	4				
C2 / SURFACE MID-FLOOD	[20-MAR-2014]	HK1408043-044	5				
C2 / MIDDLE MID-FLOOD	[20-MAR-2014]	HK1408043-045	4				
C2 / MIDDLE MID-FLOOD	[20-MAR-2014]	HK1408043-046	5				
C2 / BOTTOM MID-FLOOD	[20-MAR-2014]	HK1408043-047	3				
C2 / BOTTOM MID-FLOOD	[20-MAR-2014]	HK1408043-048	5				



**Laboratory Duplicate (DUP) Report**

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 3358208)</b>								
HK1408043-001	A / SURFACE MID-EBB	EA025: Suspended Solids (SS)	----	2	mg/L	3	3	0.0
HK1408043-011	WSD9 / BOTTOM MID-EBB	EA025: Suspended Solids (SS)	----	2	mg/L	<2	<2	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 3358209)</b>								
HK1408043-021	C2 / MIDDLE MID-EBB	EA025: Suspended Solids (SS)	----	2	mg/L	4	4	0.0
HK1408043-031	WSD9 / SURFACE MID-FLOOD	EA025: Suspended Solids (SS)	----	2	mg/L	4	4	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 3358210)</b>								
HK1408043-041	C1 / BOTTOM MID-FLOOD	EA025: Suspended Solids (SS)	----	2	mg/L	6	6	0.0

**Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report**

Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						LCS	DCS	Low	High	Value	Control Limit
<b>EA/ED: Physical and Aggregate Properties (QCLot: 3358208)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	102	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 3358209)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	100	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 3358210)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	101	----	85	115	----	----

**Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report**

- No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.



## CERTIFICATE OF ANALYSIS

<i>Client</i>	: AECOM ASIA COMPANY LIMITED	<i>Laboratory</i>	: ALS Technichem HK Pty Ltd	<i>Page</i>	: 1 of 4
<i>Contact</i>	: MS ANGELA TONG	<i>Contact</i>	: Fung Lim Chee, Richard	<i>Work Order</i>	: <b>HK1408044</b>
<i>Address</i>	: 11/F, TOWER 2, GRAND CENTRAL PLAZA, 138 SHATIN RURAL COMMITTEE ROAD, SHATIN, N.T. HONG KONG	<i>Address</i>	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
<i>E-mail</i>	: angela.tong@aecom.com	<i>E-mail</i>	: Richard.Fung@alsglobal.com		
<i>Telephone</i>	: +852 3922 9418	<i>Telephone</i>	: +852 2610 1044		
<i>Facsimile</i>	: ----	<i>Facsimile</i>	: +852 2610 2021		
<i>Project</i>	: SCL-BASELINE WQM	<i>Quote number</i>	: ----	<i>Date received</i>	: 22-MAR-2014
<i>Order number</i>	: 60280233			<i>Date of issue</i>	: 01-APR-2014
<i>C-O-C number</i>	: ----			<i>No. of samples</i>	- Received : 48
<i>Site</i>	: ----				- Analysed : 48

### Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1408044 supersedes any previous reports with this reference. The completion date of analysis is 26-MAR-2014. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

Specific comments for Work Order HK1408044 : Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.  
Water sample(s) analysed and reported on an as received basis.

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<i>Signatory</i>	<i>Position</i>	<i>Authorised results for:-</i>
Fung Lim Chee, Richard	General Manager	Inorganics



**Analytical Results**

Sub-Matrix: WATER

			Compound	EA025: Suspended Solids (SS)			
			LOR Unit	2 mg/L			
Client sample ID	Client sampling date / time	Laboratory sample ID	EA/ED: Physical and Aggregate Properties				
A / SURFACE MID-EBB	[22-MAR-2014]	HK1408044-001	4				
A / SURFACE MID-EBB	[22-MAR-2014]	HK1408044-002	4				
A / MIDDLE MID-EBB	[22-MAR-2014]	HK1408044-003	4				
A / MIDDLE MID-EBB	[22-MAR-2014]	HK1408044-004	4				
A / BOTTOM MID-EBB	[22-MAR-2014]	HK1408044-005	3				
A / BOTTOM MID-EBB	[22-MAR-2014]	HK1408044-006	5				
WSD9 / SURFACE MID-EBB	[22-MAR-2014]	HK1408044-007	4				
WSD9 / SURFACE MID-EBB	[22-MAR-2014]	HK1408044-008	5				
WSD9 / MIDDLE MID-EBB	[22-MAR-2014]	HK1408044-009	4				
WSD9 / MIDDLE MID-EBB	[22-MAR-2014]	HK1408044-010	5				
WSD9 / BOTTOM MID-EBB	[22-MAR-2014]	HK1408044-011	4				
WSD9 / BOTTOM MID-EBB	[22-MAR-2014]	HK1408044-012	4				
C1 / SURFACE MID-EBB	[22-MAR-2014]	HK1408044-013	5				
C1 / SURFACE MID-EBB	[22-MAR-2014]	HK1408044-014	5				
C1 / MIDDLE MID-EBB	[22-MAR-2014]	HK1408044-015	5				
C1 / MIDDLE MID-EBB	[22-MAR-2014]	HK1408044-016	4				
C1 / BOTTOM MID-EBB	[22-MAR-2014]	HK1408044-017	5				
C1 / BOTTOM MID-EBB	[22-MAR-2014]	HK1408044-018	6				
C2 / SURFACE MID-EBB	[22-MAR-2014]	HK1408044-019	5				
C2 / SURFACE MID-EBB	[22-MAR-2014]	HK1408044-020	6				
C2 / MIDDLE MID-EBB	[22-MAR-2014]	HK1408044-021	6				
C2 / MIDDLE MID-EBB	[22-MAR-2014]	HK1408044-022	6				
C2 / BOTTOM MID-EBB	[22-MAR-2014]	HK1408044-023	5				
C2 / BOTTOM MID-EBB	[22-MAR-2014]	HK1408044-024	6				
A / SURFACE MID-FLOOD	[22-MAR-2014]	HK1408044-025	4				
A / SURFACE MID-FLOOD	[22-MAR-2014]	HK1408044-026	6				
A / MIDDLE MID-FLOOD	[22-MAR-2014]	HK1408044-027	4				
A / MIDDLE MID-FLOOD	[22-MAR-2014]	HK1408044-028	5				
A / BOTTOM MID-FLOOD	[22-MAR-2014]	HK1408044-029	4				
A / BOTTOM MID-FLOOD	[22-MAR-2014]	HK1408044-030	5				
WSD9 / SURFACE MID-FLOOD	[22-MAR-2014]	HK1408044-031	4				
WSD9 / SURFACE MID-FLOOD	[22-MAR-2014]	HK1408044-032	5				
WSD9 / MIDDLE MID-FLOOD	[22-MAR-2014]	HK1408044-033	5				
WSD9 / MIDDLE MID-FLOOD	[22-MAR-2014]	HK1408044-034	5				
WSD9 / BOTTOM MID-FLOOD	[22-MAR-2014]	HK1408044-035	5				



Sub-Matrix: WATER

			Compound				
			EA025: Suspended Solids (SS)				
			LOR Unit	2 mg/L			
Client sample ID	Client sampling date / time	Laboratory sample ID	EA/ED: Physical and Aggregate Properties				
WSD9 / BOTTOM MID-FLOOD	[22-MAR-2014]	HK1408044-036	4				
C1 / SURFACE MID-FLOOD	[22-MAR-2014]	HK1408044-037	4				
C1 / SURFACE MID-FLOOD	[22-MAR-2014]	HK1408044-038	5				
C1 / MIDDLE MID-FLOOD	[22-MAR-2014]	HK1408044-039	4				
C1 / MIDDLE MID-FLOOD	[22-MAR-2014]	HK1408044-040	4				
C1 / BOTTOM MID-FLOOD	[22-MAR-2014]	HK1408044-041	4				
C1 / BOTTOM MID-FLOOD	[22-MAR-2014]	HK1408044-042	4				
C2 / SURFACE MID-FLOOD	[22-MAR-2014]	HK1408044-043	5				
C2 / SURFACE MID-FLOOD	[22-MAR-2014]	HK1408044-044	5				
C2 / MIDDLE MID-FLOOD	[22-MAR-2014]	HK1408044-045	5				
C2 / MIDDLE MID-FLOOD	[22-MAR-2014]	HK1408044-046	4				
C2 / BOTTOM MID-FLOOD	[22-MAR-2014]	HK1408044-047	5				
C2 / BOTTOM MID-FLOOD	[22-MAR-2014]	HK1408044-048	4				



### Laboratory Duplicate (DUP) Report

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 3358211)</b>								
HK1408044-001	A / SURFACE MID-EBB	EA025: Suspended Solids (SS)	----	2	mg/L	4	5	0.0
HK1408044-011	WSD9 / BOTTOM MID-EBB	EA025: Suspended Solids (SS)	----	2	mg/L	4	4	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 3358212)</b>								
HK1408044-021	C2 / MIDDLE MID-EBB	EA025: Suspended Solids (SS)	----	2	mg/L	6	6	0.0
HK1408044-031	WSD9 / SURFACE MID-FLOOD	EA025: Suspended Solids (SS)	----	2	mg/L	4	4	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 3358213)</b>								
HK1408044-041	C1 / BOTTOM MID-FLOOD	EA025: Suspended Solids (SS)	----	2	mg/L	4	4	0.0

### Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						LCS	DCS	Low	High	Value	Control Limit
<b>EA/ED: Physical and Aggregate Properties (QCLot: 3358211)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	98.5	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 3358212)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	100	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 3358213)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	97.5	----	85	115	----	----

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.



## CERTIFICATE OF ANALYSIS

<i>Client</i>	: AECOM ASIA COMPANY LIMITED	<i>Laboratory</i>	: ALS Technichem HK Pty Ltd	<i>Page</i>	: 1 of 4
<i>Contact</i>	: MS ANGELA TONG	<i>Contact</i>	: Fung Lim Chee, Richard	<i>Work Order</i>	: <b>HK1408819</b>
<i>Address</i>	: 11/F, TOWER 2, GRAND CENTRAL PLAZA, 138 SHATIN RURAL COMMITTEE ROAD, SHATIN, N.T. HONG KONG	<i>Address</i>	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
<i>E-mail</i>	: angela.tong@aecom.com	<i>E-mail</i>	: Richard.Fung@alsglobal.com		
<i>Telephone</i>	: +852 3922 9418	<i>Telephone</i>	: +852 2610 1044		
<i>Facsimile</i>	: ----	<i>Facsimile</i>	: +852 2610 2021		
<i>Project</i>	: SCL-BASELINE WQM	<i>Quote number</i>	: ----	<i>Date received</i>	: 26-MAR-2014
<i>Order number</i>	: 60280233			<i>Date of issue</i>	: 04-APR-2014
<i>C-O-C number</i>	: ----			<i>No. of samples</i>	- <i>Received</i> : 48
<i>Site</i>	: ----				- <i>Analysed</i> : 48

### Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1408819 supersedes any previous reports with this reference. The completion date of analysis is 28-MAR-2014. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

Specific comments for Work Order HK1408819 : Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.  
Water sample(s) analysed and reported on an as received basis.

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<i>Signatory</i>	<i>Position</i>	<i>Authorised results for:-</i>
Fung Lim Chee, Richard	General Manager	Inorganics



**Analytical Results**

Sub-Matrix: WATER

			Compound	EA025: Suspended Solids (SS)			
			LOR Unit	2 mg/L			
Client sample ID	Client sampling date / time	Laboratory sample ID	EA/ED: Physical and Aggregate Properties				
A / SURFACE MID-EBB	[25-MAR-2014]	HK1408819-001	2				
A / SURFACE MID-EBB	[25-MAR-2014]	HK1408819-002	2				
A / MIDDLE MID-EBB	[25-MAR-2014]	HK1408819-003	3				
A / MIDDLE MID-EBB	[25-MAR-2014]	HK1408819-004	3				
A / BOTTOM MID-EBB	[25-MAR-2014]	HK1408819-005	2				
A / BOTTOM MID-EBB	[25-MAR-2014]	HK1408819-006	2				
WSD9 / SURFACE MID-EBB	[25-MAR-2014]	HK1408819-007	2				
WSD9 / SURFACE MID-EBB	[25-MAR-2014]	HK1408819-008	3				
WSD9 / MIDDLE MID-EBB	[25-MAR-2014]	HK1408819-009	3				
WSD9 / MIDDLE MID-EBB	[25-MAR-2014]	HK1408819-010	2				
WSD9 / BOTTOM MID-EBB	[25-MAR-2014]	HK1408819-011	3				
WSD9 / BOTTOM MID-EBB	[25-MAR-2014]	HK1408819-012	3				
C1 / SURFACE MID-EBB	[25-MAR-2014]	HK1408819-013	3				
C1 / SURFACE MID-EBB	[25-MAR-2014]	HK1408819-014	2				
C1 / MIDDLE MID-EBB	[25-MAR-2014]	HK1408819-015	3				
C1 / MIDDLE MID-EBB	[25-MAR-2014]	HK1408819-016	2				
C1 / BOTTOM MID-EBB	[25-MAR-2014]	HK1408819-017	3				
C1 / BOTTOM MID-EBB	[25-MAR-2014]	HK1408819-018	3				
C2 / SURFACE MID-EBB	[25-MAR-2014]	HK1408819-019	4				
C2 / SURFACE MID-EBB	[25-MAR-2014]	HK1408819-020	2				
C2 / MIDDLE MID-EBB	[25-MAR-2014]	HK1408819-021	4				
C2 / MIDDLE MID-EBB	[25-MAR-2014]	HK1408819-022	2				
C2 / BOTTOM MID-EBB	[25-MAR-2014]	HK1408819-023	2				
C2 / BOTTOM MID-EBB	[25-MAR-2014]	HK1408819-024	4				
A / SURFACE MID-FLOOD	[25-MAR-2014]	HK1408819-025	4				
A / SURFACE MID-FLOOD	[25-MAR-2014]	HK1408819-026	4				
A / MIDDLE MID-FLOOD	[25-MAR-2014]	HK1408819-027	3				
A / MIDDLE MID-FLOOD	[25-MAR-2014]	HK1408819-028	4				
A / BOTTOM MID-FLOOD	[25-MAR-2014]	HK1408819-029	2				
A / BOTTOM MID-FLOOD	[25-MAR-2014]	HK1408819-030	4				
WSD9 / SURFACE MID-FLOOD	[25-MAR-2014]	HK1408819-031	2				
WSD9 / SURFACE MID-FLOOD	[25-MAR-2014]	HK1408819-032	3				
WSD9 / MIDDLE MID-FLOOD	[25-MAR-2014]	HK1408819-033	2				
WSD9 / MIDDLE MID-FLOOD	[25-MAR-2014]	HK1408819-034	3				
WSD9 / BOTTOM MID-FLOOD	[25-MAR-2014]	HK1408819-035	2				





Sub-Matrix: WATER

			Compound				
			EA025: Suspended Solids (SS)				
			LOR Unit	2 mg/L			
Client sample ID	Client sampling date / time	Laboratory sample ID	EA/ED: Physical and Aggregate Properties				
WSD9 / BOTTOM MID-FLOOD	[25-MAR-2014]	HK1408819-036	2				
C1 / SURFACE MID-FLOOD	[25-MAR-2014]	HK1408819-037	3				
C1 / SURFACE MID-FLOOD	[25-MAR-2014]	HK1408819-038	2				
C1 / MIDDLE MID-FLOOD	[25-MAR-2014]	HK1408819-039	3				
C1 / MIDDLE MID-FLOOD	[25-MAR-2014]	HK1408819-040	3				
C1 / BOTTOM MID-FLOOD	[25-MAR-2014]	HK1408819-041	4				
C1 / BOTTOM MID-FLOOD	[25-MAR-2014]	HK1408819-042	4				
C2 / SURFACE MID-FLOOD	[25-MAR-2014]	HK1408819-043	2				
C2 / SURFACE MID-FLOOD	[25-MAR-2014]	HK1408819-044	2				
C2 / MIDDLE MID-FLOOD	[25-MAR-2014]	HK1408819-045	2				
C2 / MIDDLE MID-FLOOD	[25-MAR-2014]	HK1408819-046	2				
C2 / BOTTOM MID-FLOOD	[25-MAR-2014]	HK1408819-047	2				
C2 / BOTTOM MID-FLOOD	[25-MAR-2014]	HK1408819-048	3				



**Laboratory Duplicate (DUP) Report**

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 3363466)</b>								
HK1408819-001	A / SURFACE MID-EBB	EA025: Suspended Solids (SS)	----	2	mg/L	2	2	0.0
HK1408819-011	WSD9 / BOTTOM MID-EBB	EA025: Suspended Solids (SS)	----	2	mg/L	3	3	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 3363467)</b>								
HK1408819-021	C2 / MIDDLE MID-EBB	EA025: Suspended Solids (SS)	----	2	mg/L	4	3	0.0
HK1408819-031	WSD9 / SURFACE MID-FLOOD	EA025: Suspended Solids (SS)	----	2	mg/L	2	2	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 3363468)</b>								
HK1408819-041	C1 / BOTTOM MID-FLOOD	EA025: Suspended Solids (SS)	----	2	mg/L	4	4	0.0

**Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report**

Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						LCS	DCS	Low	High	Value	Control Limit
<b>EA/ED: Physical and Aggregate Properties (QCLot: 3363466)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	101	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 3363467)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	102	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 3363468)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	102	----	85	115	----	----

**Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report**

- No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.



## CERTIFICATE OF ANALYSIS

<i>Client</i>	: AECOM ASIA COMPANY LIMITED	<i>Laboratory</i>	: ALS Technichem HK Pty Ltd	<i>Page</i>	: 1 of 4
<i>Contact</i>	: MS ANGELA TONG	<i>Contact</i>	: Fung Lim Chee, Richard	<i>Work Order</i>	: <b>HK1408824</b>
<i>Address</i>	: 11/F, TOWER 2, GRAND CENTRAL PLAZA, 138 SHATIN RURAL COMMITTEE ROAD, SHATIN, N.T. HONG KONG	<i>Address</i>	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
<i>E-mail</i>	: angela.tong@aecom.com	<i>E-mail</i>	: Richard.Fung@alsglobal.com		
<i>Telephone</i>	: +852 3922 9418	<i>Telephone</i>	: +852 2610 1044		
<i>Facsimile</i>	: ----	<i>Facsimile</i>	: +852 2610 2021		
<i>Project</i>	: SCL-BASELINE WQM	<i>Quote number</i>	: ----	<i>Date received</i>	: 28-MAR-2014
<i>Order number</i>	: 60280233			<i>Date of issue</i>	: 08-APR-2014
<i>C-O-C number</i>	: ----			<i>No. of samples</i>	- Received : 48
<i>Site</i>	: ----				- Analysed : 48

### Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1408824 supersedes any previous reports with this reference. The completion date of analysis is 01-APR-2014. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

Specific comments for Work Order HK1408824 : Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.  
Water sample(s) analysed and reported on an as received basis.

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<i>Signatory</i>	<i>Position</i>	<i>Authorised results for:-</i>
Fung Lim Chee, Richard	General Manager	Inorganics



**Analytical Results**

Sub-Matrix: WATER

			Compound	EA025: Suspended Solids (SS)			
			LOR Unit	2 mg/L			
Client sample ID	Client sampling date / time	Laboratory sample ID	EA/ED: Physical and Aggregate Properties				
A / SURFACE MID-EBB	[27-MAR-2014]	HK1408824-001	4				
A / SURFACE MID-EBB	[27-MAR-2014]	HK1408824-002	4				
A / MIDDLE MID-EBB	[27-MAR-2014]	HK1408824-003	5				
A / MIDDLE MID-EBB	[27-MAR-2014]	HK1408824-004	5				
A / BOTTOM MID-EBB	[27-MAR-2014]	HK1408824-005	5				
A / BOTTOM MID-EBB	[27-MAR-2014]	HK1408824-006	5				
WSD9 / SURFACE MID-EBB	[27-MAR-2014]	HK1408824-007	3				
WSD9 / SURFACE MID-EBB	[27-MAR-2014]	HK1408824-008	3				
WSD9 / MIDDLE MID-EBB	[27-MAR-2014]	HK1408824-009	4				
WSD9 / MIDDLE MID-EBB	[27-MAR-2014]	HK1408824-010	4				
WSD9 / BOTTOM MID-EBB	[27-MAR-2014]	HK1408824-011	4				
WSD9 / BOTTOM MID-EBB	[27-MAR-2014]	HK1408824-012	5				
C1 / SURFACE MID-EBB	[27-MAR-2014]	HK1408824-013	<2				
C1 / SURFACE MID-EBB	[27-MAR-2014]	HK1408824-014	<2				
C1 / MIDDLE MID-EBB	[27-MAR-2014]	HK1408824-015	5				
C1 / MIDDLE MID-EBB	[27-MAR-2014]	HK1408824-016	4				
C1 / BOTTOM MID-EBB	[27-MAR-2014]	HK1408824-017	7				
C1 / BOTTOM MID-EBB	[27-MAR-2014]	HK1408824-018	8				
C2 / SURFACE MID-EBB	[27-MAR-2014]	HK1408824-019	2				
C2 / SURFACE MID-EBB	[27-MAR-2014]	HK1408824-020	3				
C2 / MIDDLE MID-EBB	[27-MAR-2014]	HK1408824-021	3				
C2 / MIDDLE MID-EBB	[27-MAR-2014]	HK1408824-022	3				
C2 / BOTTOM MID-EBB	[27-MAR-2014]	HK1408824-023	3				
C2 / BOTTOM MID-EBB	[27-MAR-2014]	HK1408824-024	3				
A / SURFACE MID-FLOOD	[27-MAR-2014]	HK1408824-025	<2				
A / SURFACE MID-FLOOD	[27-MAR-2014]	HK1408824-026	<2				
A / MIDDLE MID-FLOOD	[27-MAR-2014]	HK1408824-027	<2				
A / MIDDLE MID-FLOOD	[27-MAR-2014]	HK1408824-028	2				
A / BOTTOM MID-FLOOD	[27-MAR-2014]	HK1408824-029	2				
A / BOTTOM MID-FLOOD	[27-MAR-2014]	HK1408824-030	2				
WSD9 / SURFACE MID-FLOOD	[27-MAR-2014]	HK1408824-031	2				
WSD9 / SURFACE MID-FLOOD	[27-MAR-2014]	HK1408824-032	3				
WSD9 / MIDDLE MID-FLOOD	[27-MAR-2014]	HK1408824-033	3				
WSD9 / MIDDLE MID-FLOOD	[27-MAR-2014]	HK1408824-034	3				
WSD9 / BOTTOM MID-FLOOD	[27-MAR-2014]	HK1408824-035	5				



Sub-Matrix: WATER

			Compound				
			EA025: Suspended Solids (SS)				
			LOR Unit				
Client sample ID	Client sampling date / time	Laboratory sample ID	EA/ED: Physical and Aggregate Properties				
WSD9 / BOTTOM MID-FLOOD	[27-MAR-2014]	HK1408824-036	5				
C1 / SURFACE MID-FLOOD	[27-MAR-2014]	HK1408824-037	2				
C1 / SURFACE MID-FLOOD	[27-MAR-2014]	HK1408824-038	2				
C1 / MIDDLE MID-FLOOD	[27-MAR-2014]	HK1408824-039	2				
C1 / MIDDLE MID-FLOOD	[27-MAR-2014]	HK1408824-040	3				
C1 / BOTTOM MID-FLOOD	[27-MAR-2014]	HK1408824-041	5				
C1 / BOTTOM MID-FLOOD	[27-MAR-2014]	HK1408824-042	4				
C2 / SURFACE MID-FLOOD	[27-MAR-2014]	HK1408824-043	3				
C2 / SURFACE MID-FLOOD	[27-MAR-2014]	HK1408824-044	3				
C2 / MIDDLE MID-FLOOD	[27-MAR-2014]	HK1408824-045	4				
C2 / MIDDLE MID-FLOOD	[27-MAR-2014]	HK1408824-046	3				
C2 / BOTTOM MID-FLOOD	[27-MAR-2014]	HK1408824-047	4				
C2 / BOTTOM MID-FLOOD	[27-MAR-2014]	HK1408824-048	4				



**Laboratory Duplicate (DUP) Report**

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 3368601)</b>								
HK1408824-001	A / SURFACE MID-EBB	EA025: Suspended Solids (SS)	----	2	mg/L	4	4	0.0
HK1408824-011	WSD9 / BOTTOM MID-EBB	EA025: Suspended Solids (SS)	----	2	mg/L	4	4	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 3368602)</b>								
HK1408824-021	C2 / MIDDLE MID-EBB	EA025: Suspended Solids (SS)	----	2	mg/L	3	3	0.0
HK1408824-031	WSD9 / SURFACE MID-FLOOD	EA025: Suspended Solids (SS)	----	2	mg/L	2	<2	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 3368603)</b>								
HK1408824-041	C1 / BOTTOM MID-FLOOD	EA025: Suspended Solids (SS)	----	2	mg/L	4	4	0.0

**Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report**

Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						LCS	DCS	Low	High	Value	Control Limit
<b>EA/ED: Physical and Aggregate Properties (QCLot: 3368601)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	99.0	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 3368602)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	100	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 3368603)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	102	----	85	115	----	----

**Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report**

- No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.



## CERTIFICATE OF ANALYSIS

<i>Client</i>	: AECOM ASIA COMPANY LIMITED	<i>Laboratory</i>	: ALS Technichem HK Pty Ltd	<i>Page</i>	: 1 of 4
<i>Contact</i>	: MS ANGELA TONG	<i>Contact</i>	: Fung Lim Chee, Richard	<i>Work Order</i>	: <b>HK1408826</b>
<i>Address</i>	: 11/F, TOWER 2, GRAND CENTRAL PLAZA, 138 SHATIN RURAL COMMITTEE ROAD, SHATIN, N.T. HONG KONG	<i>Address</i>	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
<i>E-mail</i>	: angela.tong@aecom.com	<i>E-mail</i>	: Richard.Fung@alsglobal.com		
<i>Telephone</i>	: +852 3922 9418	<i>Telephone</i>	: +852 2610 1044		
<i>Facsimile</i>	: ----	<i>Facsimile</i>	: +852 2610 2021		
<i>Project</i>	: SCL-BASELINE WQM	<i>Quote number</i>	: ----	<i>Date received</i>	: 29-MAR-2014
<i>Order number</i>	: 60280233			<i>Date of issue</i>	: 08-APR-2014
<i>C-O-C number</i>	: ----			<i>No. of samples</i>	- <i>Received</i> : 48
<i>Site</i>	: ----				- <i>Analysed</i> : 48

### Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1408826 supersedes any previous reports with this reference. The completion date of analysis is 01-APR-2014. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

Specific comments for Work Order HK1408826 :      Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.  
Water sample(s) analysed and reported on an as received basis.

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<i>Signatory</i>	<i>Position</i>	<i>Authorised results for:-</i>
Fung Lim Chee, Richard	General Manager	Inorganics



**Analytical Results**

Sub-Matrix: WATER

			Compound	EA025: Suspended Solids (SS)			
			LOR Unit	2 mg/L			
Client sample ID	Client sampling date / time	Laboratory sample ID	EA/ED: Physical and Aggregate Properties				
A / SURFACE MID-EBB	[29-MAR-2014]	HK1408826-001	3				
A / SURFACE MID-EBB	[29-MAR-2014]	HK1408826-002	4				
A / MIDDLE MID-EBB	[29-MAR-2014]	HK1408826-003	4				
A / MIDDLE MID-EBB	[29-MAR-2014]	HK1408826-004	5				
A / BOTTOM MID-EBB	[29-MAR-2014]	HK1408826-005	4				
A / BOTTOM MID-EBB	[29-MAR-2014]	HK1408826-006	3				
WSD9 / SURFACE MID-EBB	[29-MAR-2014]	HK1408826-007	4				
WSD9 / SURFACE MID-EBB	[29-MAR-2014]	HK1408826-008	2				
WSD9 / MIDDLE MID-EBB	[29-MAR-2014]	HK1408826-009	3				
WSD9 / MIDDLE MID-EBB	[29-MAR-2014]	HK1408826-010	3				
WSD9 / BOTTOM MID-EBB	[29-MAR-2014]	HK1408826-011	3				
WSD9 / BOTTOM MID-EBB	[29-MAR-2014]	HK1408826-012	5				
C1 / SURFACE MID-EBB	[29-MAR-2014]	HK1408826-013	3				
C1 / SURFACE MID-EBB	[29-MAR-2014]	HK1408826-014	5				
C1 / MIDDLE MID-EBB	[29-MAR-2014]	HK1408826-015	5				
C1 / MIDDLE MID-EBB	[29-MAR-2014]	HK1408826-016	6				
C1 / BOTTOM MID-EBB	[29-MAR-2014]	HK1408826-017	5				
C1 / BOTTOM MID-EBB	[29-MAR-2014]	HK1408826-018	7				
C2 / SURFACE MID-EBB	[29-MAR-2014]	HK1408826-019	4				
C2 / SURFACE MID-EBB	[29-MAR-2014]	HK1408826-020	6				
C2 / MIDDLE MID-EBB	[29-MAR-2014]	HK1408826-021	6				
C2 / MIDDLE MID-EBB	[29-MAR-2014]	HK1408826-022	4				
C2 / BOTTOM MID-EBB	[29-MAR-2014]	HK1408826-023	6				
C2 / BOTTOM MID-EBB	[29-MAR-2014]	HK1408826-024	6				
A / SURFACE MID-FLOOD	[29-MAR-2014]	HK1408826-025	6				
A / SURFACE MID-FLOOD	[29-MAR-2014]	HK1408826-026	4				
A / MIDDLE MID-FLOOD	[29-MAR-2014]	HK1408826-027	5				
A / MIDDLE MID-FLOOD	[29-MAR-2014]	HK1408826-028	5				
A / BOTTOM MID-FLOOD	[29-MAR-2014]	HK1408826-029	6				
A / BOTTOM MID-FLOOD	[29-MAR-2014]	HK1408826-030	7				
WSD9 / SURFACE MID-FLOOD	[29-MAR-2014]	HK1408826-031	4				
WSD9 / SURFACE MID-FLOOD	[29-MAR-2014]	HK1408826-032	3				
WSD9 / MIDDLE MID-FLOOD	[29-MAR-2014]	HK1408826-033	3				
WSD9 / MIDDLE MID-FLOOD	[29-MAR-2014]	HK1408826-034	3				
WSD9 / BOTTOM MID-FLOOD	[29-MAR-2014]	HK1408826-035	3				





Sub-Matrix: WATER

			Compound				
			EA025: Suspended Solids (SS)				
			LOR Unit	2 mg/L			
Client sample ID	Client sampling date / time	Laboratory sample ID	EA/ED: Physical and Aggregate Properties				
WSD9 / BOTTOM MID-FLOOD	[29-MAR-2014]	HK1408826-036	4				
C1 / SURFACE MID-FLOOD	[29-MAR-2014]	HK1408826-037	5				
C1 / SURFACE MID-FLOOD	[29-MAR-2014]	HK1408826-038	5				
C1 / MIDDLE MID-FLOOD	[29-MAR-2014]	HK1408826-039	4				
C1 / MIDDLE MID-FLOOD	[29-MAR-2014]	HK1408826-040	4				
C1 / BOTTOM MID-FLOOD	[29-MAR-2014]	HK1408826-041	4				
C1 / BOTTOM MID-FLOOD	[29-MAR-2014]	HK1408826-042	6				
C2 / SURFACE MID-FLOOD	[29-MAR-2014]	HK1408826-043	2				
C2 / SURFACE MID-FLOOD	[29-MAR-2014]	HK1408826-044	2				
C2 / MIDDLE MID-FLOOD	[29-MAR-2014]	HK1408826-045	4				
C2 / MIDDLE MID-FLOOD	[29-MAR-2014]	HK1408826-046	5				
C2 / BOTTOM MID-FLOOD	[29-MAR-2014]	HK1408826-047	4				
C2 / BOTTOM MID-FLOOD	[29-MAR-2014]	HK1408826-048	3				



### Laboratory Duplicate (DUP) Report

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 3368604)</b>								
HK1408826-001	A / SURFACE MID-EBB	EA025: Suspended Solids (SS)	----	2	mg/L	3	3	0.0
HK1408826-011	WSD9 / BOTTOM MID-EBB	EA025: Suspended Solids (SS)	----	2	mg/L	3	3	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 3368605)</b>								
HK1408826-021	C2 / MIDDLE MID-EBB	EA025: Suspended Solids (SS)	----	2	mg/L	6	5	0.0
HK1408826-031	WSD9 / SURFACE MID-FLOOD	EA025: Suspended Solids (SS)	----	2	mg/L	4	3	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 3368606)</b>								
HK1408826-041	C1 / BOTTOM MID-FLOOD	EA025: Suspended Solids (SS)	----	2	mg/L	4	4	0.0

### Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						LCS	DCS	Low	High	Value	Control Limit
<b>EA/ED: Physical and Aggregate Properties (QCLot: 3368604)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	100	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 3368605)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	98.5	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 3368606)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	99.0	----	85	115	----	----

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.





**Analytical Results**

Sub-Matrix: WATER

			Compound	EA025: Suspended Solids (SS)			
			LOR Unit	2 mg/L			
Client sample ID	Client sampling date / time	Laboratory sample ID	EA/ED: Physical and Aggregate Properties				
A / SURFACE MID-EBB	[01-APR-2014]	HK1409642-001	5				
A / SURFACE MID-EBB	[01-APR-2014]	HK1409642-002	5				
A / MIDDLE MID-EBB	[01-APR-2014]	HK1409642-003	5				
A / MIDDLE MID-EBB	[01-APR-2014]	HK1409642-004	5				
A / BOTTOM MID-EBB	[01-APR-2014]	HK1409642-005	6				
A / BOTTOM MID-EBB	[01-APR-2014]	HK1409642-006	6				
WSD9 / SURFACE MID-EBB	[01-APR-2014]	HK1409642-007	3				
WSD9 / SURFACE MID-EBB	[01-APR-2014]	HK1409642-008	3				
WSD9 / MIDDLE MID-EBB	[01-APR-2014]	HK1409642-009	4				
WSD9 / MIDDLE MID-EBB	[01-APR-2014]	HK1409642-010	3				
WSD9 / BOTTOM MID-EBB	[01-APR-2014]	HK1409642-011	3				
WSD9 / BOTTOM MID-EBB	[01-APR-2014]	HK1409642-012	4				
C1 / SURFACE MID-EBB	[01-APR-2014]	HK1409642-013	5				
C1 / SURFACE MID-EBB	[01-APR-2014]	HK1409642-014	4				
C1 / MIDDLE MID-EBB	[01-APR-2014]	HK1409642-015	4				
C1 / MIDDLE MID-EBB	[01-APR-2014]	HK1409642-016	6				
C1 / BOTTOM MID-EBB	[01-APR-2014]	HK1409642-017	4				
C1 / BOTTOM MID-EBB	[01-APR-2014]	HK1409642-018	4				
C2 / SURFACE MID-EBB	[01-APR-2014]	HK1409642-019	4				
C2 / SURFACE MID-EBB	[01-APR-2014]	HK1409642-020	4				
C2 / MIDDLE MID-EBB	[01-APR-2014]	HK1409642-021	4				
C2 / MIDDLE MID-EBB	[01-APR-2014]	HK1409642-022	4				
C2 / BOTTOM MID-EBB	[01-APR-2014]	HK1409642-023	4				
C2 / BOTTOM MID-EBB	[01-APR-2014]	HK1409642-024	6				
A / SURFACE MID-FLOOD	[01-APR-2014]	HK1409642-025	4				
A / SURFACE MID-FLOOD	[01-APR-2014]	HK1409642-026	5				
A / MIDDLE MID-FLOOD	[01-APR-2014]	HK1409642-027	4				
A / MIDDLE MID-FLOOD	[01-APR-2014]	HK1409642-028	5				
A / BOTTOM MID-FLOOD	[01-APR-2014]	HK1409642-029	5				
A / BOTTOM MID-FLOOD	[01-APR-2014]	HK1409642-030	4				
WSD9 / SURFACE MID-FLOOD	[01-APR-2014]	HK1409642-031	3				
WSD9 / SURFACE MID-FLOOD	[01-APR-2014]	HK1409642-032	3				
WSD9 / MIDDLE MID-FLOOD	[01-APR-2014]	HK1409642-033	3				
WSD9 / MIDDLE MID-FLOOD	[01-APR-2014]	HK1409642-034	2				
WSD9 / BOTTOM MID-FLOOD	[01-APR-2014]	HK1409642-035	3				



Sub-Matrix: WATER

			Compound				
			EA025: Suspended Solids (SS)				
			LOR Unit				
Client sample ID	Client sampling date / time	Laboratory sample ID	EA/ED: Physical and Aggregate Properties				
WSD9 / BOTTOM MID-FLOOD	[01-APR-2014]	HK1409642-036	3				
C1 / SURFACE MID-FLOOD	[01-APR-2014]	HK1409642-037	5				
C1 / SURFACE MID-FLOOD	[01-APR-2014]	HK1409642-038	3				
C1 / MIDDLE MID-FLOOD	[01-APR-2014]	HK1409642-039	4				
C1 / MIDDLE MID-FLOOD	[01-APR-2014]	HK1409642-040	4				
C1 / BOTTOM MID-FLOOD	[01-APR-2014]	HK1409642-041	5				
C1 / BOTTOM MID-FLOOD	[01-APR-2014]	HK1409642-042	6				
C2 / SURFACE MID-FLOOD	[01-APR-2014]	HK1409642-043	4				
C2 / SURFACE MID-FLOOD	[01-APR-2014]	HK1409642-044	5				
C2 / MIDDLE MID-FLOOD	[01-APR-2014]	HK1409642-045	3				
C2 / MIDDLE MID-FLOOD	[01-APR-2014]	HK1409642-046	4				
C2 / BOTTOM MID-FLOOD	[01-APR-2014]	HK1409642-047	4				
C2 / BOTTOM MID-FLOOD	[01-APR-2014]	HK1409642-048	5				



**Laboratory Duplicate (DUP) Report**

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 3374458)</b>								
HK1409642-001	A / SURFACE MID-EBB	EA025: Suspended Solids (SS)	----	2	mg/L	5	5	0.0
HK1409642-011	WSD9 / BOTTOM MID-EBB	EA025: Suspended Solids (SS)	----	2	mg/L	3	3	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 3374459)</b>								
HK1409642-021	C2 / MIDDLE MID-EBB	EA025: Suspended Solids (SS)	----	2	mg/L	4	4	0.0
HK1409642-031	WSD9 / SURFACE MID-FLOOD	EA025: Suspended Solids (SS)	----	2	mg/L	3	3	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 3374460)</b>								
HK1409642-041	C1 / BOTTOM MID-FLOOD	EA025: Suspended Solids (SS)	----	2	mg/L	5	5	0.0

**Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report**

Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						LCS	DCS	Low	High	Value	Control Limit
<b>EA/ED: Physical and Aggregate Properties (QCLot: 3374458)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	102	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 3374459)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	101	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 3374460)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	100	----	85	115	----	----

**Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report**

- No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.



## CERTIFICATE OF ANALYSIS

<i>Client</i>	: AECOM ASIA COMPANY LIMITED	<i>Laboratory</i>	: ALS Technichem HK Pty Ltd	<i>Page</i>	: 1 of 4
<i>Contact</i>	: MS ANGELA TONG	<i>Contact</i>	: Fung Lim Chee, Richard	<i>Work Order</i>	: <b>HK1409737</b>
<i>Address</i>	: 11/F, TOWER 2, GRAND CENTRAL PLAZA, 138 SHATIN RURAL COMMITTEE ROAD, SHATIN, N.T. HONG KONG	<i>Address</i>	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
<i>E-mail</i>	: angela.tong@aecom.com	<i>E-mail</i>	: Richard.Fung@alsglobal.com		
<i>Telephone</i>	: +852 3922 9418	<i>Telephone</i>	: +852 2610 1044		
<i>Facsimile</i>	: ----	<i>Facsimile</i>	: +852 2610 2021		
<i>Project</i>	: SCL-BASELINE WQM	<i>Quote number</i>	: ----	<i>Date received</i>	: 04-APR-2014
<i>Order number</i>	: 60280233			<i>Date of issue</i>	: 15-APR-2014
<i>C-O-C number</i>	: ----			<i>No. of samples</i>	- Received : 48
<i>Site</i>	: ----				- Analysed : 48

### Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1409737 supersedes any previous reports with this reference. The completion date of analysis is 08-APR-2014. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

Specific comments for Work Order HK1409737 :      Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.  
Water sample(s) analysed and reported on an as received basis.

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<i>Signatory</i>	<i>Position</i>	<i>Authorised results for:-</i>
<b>Fung Lim Chee, Richard</b>	<b>General Manager</b>	<b>Inorganics</b>



**Analytical Results**

Sub-Matrix: WATER

			Compound	EA025: Suspended Solids (SS)			
			LOR Unit	2 mg/L			
Client sample ID	Client sampling date / time	Laboratory sample ID	EA/ED: Physical and Aggregate Properties				
A / SURFACE MID-EBB	[03-APR-2014]	HK1409737-001	3				
A / SURFACE MID-EBB	[03-APR-2014]	HK1409737-002	3				
A / MIDDLE MID-EBB	[03-APR-2014]	HK1409737-003	4				
A / MIDDLE MID-EBB	[03-APR-2014]	HK1409737-004	4				
A / BOTTOM MID-EBB	[03-APR-2014]	HK1409737-005	4				
A / BOTTOM MID-EBB	[03-APR-2014]	HK1409737-006	4				
WSD9 / SURFACE MID-EBB	[03-APR-2014]	HK1409737-007	<2				
WSD9 / SURFACE MID-EBB	[03-APR-2014]	HK1409737-008	<2				
WSD9 / MIDDLE MID-EBB	[03-APR-2014]	HK1409737-009	<2				
WSD9 / MIDDLE MID-EBB	[03-APR-2014]	HK1409737-010	<2				
WSD9 / BOTTOM MID-EBB	[03-APR-2014]	HK1409737-011	4				
WSD9 / BOTTOM MID-EBB	[03-APR-2014]	HK1409737-012	4				
C1 / SURFACE MID-EBB	[03-APR-2014]	HK1409737-013	2				
C1 / SURFACE MID-EBB	[03-APR-2014]	HK1409737-014	2				
C1 / MIDDLE MID-EBB	[03-APR-2014]	HK1409737-015	4				
C1 / MIDDLE MID-EBB	[03-APR-2014]	HK1409737-016	3				
C1 / BOTTOM MID-EBB	[03-APR-2014]	HK1409737-017	5				
C1 / BOTTOM MID-EBB	[03-APR-2014]	HK1409737-018	4				
C2 / SURFACE MID-EBB	[03-APR-2014]	HK1409737-019	2				
C2 / SURFACE MID-EBB	[03-APR-2014]	HK1409737-020	2				
C2 / MIDDLE MID-EBB	[03-APR-2014]	HK1409737-021	2				
C2 / MIDDLE MID-EBB	[03-APR-2014]	HK1409737-022	2				
C2 / BOTTOM MID-EBB	[03-APR-2014]	HK1409737-023	2				
C2 / BOTTOM MID-EBB	[03-APR-2014]	HK1409737-024	2				
A / SURFACE MID-FLOOD	[03-APR-2014]	HK1409737-025	4				
A / SURFACE MID-FLOOD	[03-APR-2014]	HK1409737-026	4				
A / MIDDLE MID-FLOOD	[03-APR-2014]	HK1409737-027	4				
A / MIDDLE MID-FLOOD	[03-APR-2014]	HK1409737-028	4				
A / BOTTOM MID-FLOOD	[03-APR-2014]	HK1409737-029	5				
A / BOTTOM MID-FLOOD	[03-APR-2014]	HK1409737-030	5				
WSD9 / SURFACE MID-FLOOD	[03-APR-2014]	HK1409737-031	4				
WSD9 / SURFACE MID-FLOOD	[03-APR-2014]	HK1409737-032	4				
WSD9 / MIDDLE MID-FLOOD	[03-APR-2014]	HK1409737-033	4				
WSD9 / MIDDLE MID-FLOOD	[03-APR-2014]	HK1409737-034	4				
WSD9 / BOTTOM MID-FLOOD	[03-APR-2014]	HK1409737-035	5				





Sub-Matrix: WATER

			Compound				
			EA025: Suspended Solids (SS)				
			LOR Unit				
Client sample ID	Client sampling date / time	Laboratory sample ID	EA/ED: Physical and Aggregate Properties				
WSD9 / BOTTOM MID-FLOOD	[03-APR-2014]	HK1409737-036	5				
C1 / SURFACE MID-FLOOD	[03-APR-2014]	HK1409737-037	3				
C1 / SURFACE MID-FLOOD	[03-APR-2014]	HK1409737-038	3				
C1 / MIDDLE MID-FLOOD	[03-APR-2014]	HK1409737-039	3				
C1 / MIDDLE MID-FLOOD	[03-APR-2014]	HK1409737-040	3				
C1 / BOTTOM MID-FLOOD	[03-APR-2014]	HK1409737-041	4				
C1 / BOTTOM MID-FLOOD	[03-APR-2014]	HK1409737-042	4				
C2 / SURFACE MID-FLOOD	[03-APR-2014]	HK1409737-043	<2				
C2 / SURFACE MID-FLOOD	[03-APR-2014]	HK1409737-044	<2				
C2 / MIDDLE MID-FLOOD	[03-APR-2014]	HK1409737-045	2				
C2 / MIDDLE MID-FLOOD	[03-APR-2014]	HK1409737-046	3				
C2 / BOTTOM MID-FLOOD	[03-APR-2014]	HK1409737-047	4				
C2 / BOTTOM MID-FLOOD	[03-APR-2014]	HK1409737-048	4				



### Laboratory Duplicate (DUP) Report

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 3381500)</b>								
HK1409737-001	A / SURFACE MID-EBB	EA025: Suspended Solids (SS)	----	2	mg/L	3	3	0.0
HK1409737-011	WSD9 / BOTTOM MID-EBB	EA025: Suspended Solids (SS)	----	2	mg/L	4	4	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 3381501)</b>								
HK1409737-021	C2 / MIDDLE MID-EBB	EA025: Suspended Solids (SS)	----	2	mg/L	2	2	0.0
HK1409737-031	WSD9 / SURFACE MID-FLOOD	EA025: Suspended Solids (SS)	----	2	mg/L	4	4	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 3381502)</b>								
HK1409737-041	C1 / BOTTOM MID-FLOOD	EA025: Suspended Solids (SS)	----	2	mg/L	4	4	0.0

### Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						LCS	DCS	Low	High	Value	Control Limit
<b>EA/ED: Physical and Aggregate Properties (QCLot: 3381500)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	100	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 3381501)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	102	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 3381502)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	99.5	----	85	115	----	----

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.



## CERTIFICATE OF ANALYSIS

<i>Client</i>	: AECOM ASIA COMPANY LIMITED	<i>Laboratory</i>	: ALS Technichem HK Pty Ltd	<i>Page</i>	: 1 of 4
<i>Contact</i>	: MS ANGELA TONG	<i>Contact</i>	: Fung Lim Chee, Richard	<i>Work Order</i>	: <b>HK1409738</b>
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<i>Telephone</i>	: +852 3922 9418	<i>Telephone</i>	: +852 2610 1044		
<i>Facsimile</i>	: ----	<i>Facsimile</i>	: +852 2610 2021		
<i>Project</i>	: SCL-BASELINE WQM	<i>Quote number</i>	: ----	<i>Date received</i>	: 07-APR-2014
<i>Order number</i>	: 60280233			<i>Date of issue</i>	: 15-APR-2014
<i>C-O-C number</i>	: ----			<i>No. of samples</i>	- Received : 48
<i>Site</i>	: ----				- Analysed : 48

### Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1409738 supersedes any previous reports with this reference. The completion date of analysis is 08-APR-2014. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

Specific comments for Work Order HK1409738 : Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.  
Water sample(s) analysed and reported on an as received basis.

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<i>Signatory</i>	<i>Position</i>	<i>Authorised results for:-</i>
Fung Lim Chee, Richard	General Manager	Inorganics



**Analytical Results**

Sub-Matrix: WATER

			Compound	EA025: Suspended Solids (SS)			
			LOR Unit	2 mg/L			
Client sample ID	Client sampling date / time	Laboratory sample ID	EA/ED: Physical and Aggregate Properties				
A / SURFACE MID-EBB	[05-APR-2014]	HK1409738-001	4				
A / SURFACE MID-EBB	[05-APR-2014]	HK1409738-002	3				
A / MIDDLE MID-EBB	[05-APR-2014]	HK1409738-003	3				
A / MIDDLE MID-EBB	[05-APR-2014]	HK1409738-004	4				
A / BOTTOM MID-EBB	[05-APR-2014]	HK1409738-005	3				
A / BOTTOM MID-EBB	[05-APR-2014]	HK1409738-006	2				
WSD9 / SURFACE MID-EBB	[05-APR-2014]	HK1409738-007	4				
WSD9 / SURFACE MID-EBB	[05-APR-2014]	HK1409738-008	4				
WSD9 / MIDDLE MID-EBB	[05-APR-2014]	HK1409738-009	4				
WSD9 / MIDDLE MID-EBB	[05-APR-2014]	HK1409738-010	3				
WSD9 / BOTTOM MID-EBB	[05-APR-2014]	HK1409738-011	4				
WSD9 / BOTTOM MID-EBB	[05-APR-2014]	HK1409738-012	3				
C1 / SURFACE MID-EBB	[05-APR-2014]	HK1409738-013	3				
C1 / SURFACE MID-EBB	[05-APR-2014]	HK1409738-014	3				
C1 / MIDDLE MID-EBB	[05-APR-2014]	HK1409738-015	2				
C1 / MIDDLE MID-EBB	[05-APR-2014]	HK1409738-016	3				
C1 / BOTTOM MID-EBB	[05-APR-2014]	HK1409738-017	3				
C1 / BOTTOM MID-EBB	[05-APR-2014]	HK1409738-018	4				
C2 / SURFACE MID-EBB	[05-APR-2014]	HK1409738-019	3				
C2 / SURFACE MID-EBB	[05-APR-2014]	HK1409738-020	5				
C2 / MIDDLE MID-EBB	[05-APR-2014]	HK1409738-021	3				
C2 / MIDDLE MID-EBB	[05-APR-2014]	HK1409738-022	3				
C2 / BOTTOM MID-EBB	[05-APR-2014]	HK1409738-023	4				
C2 / BOTTOM MID-EBB	[05-APR-2014]	HK1409738-024	3				
A / SURFACE MID-FLOOD	[05-APR-2014]	HK1409738-025	4				
A / SURFACE MID-FLOOD	[05-APR-2014]	HK1409738-026	3				
A / MIDDLE MID-FLOOD	[05-APR-2014]	HK1409738-027	3				
A / MIDDLE MID-FLOOD	[05-APR-2014]	HK1409738-028	3				
A / BOTTOM MID-FLOOD	[05-APR-2014]	HK1409738-029	4				
A / BOTTOM MID-FLOOD	[05-APR-2014]	HK1409738-030	3				
WSD9 / SURFACE MID-FLOOD	[05-APR-2014]	HK1409738-031	3				
WSD9 / SURFACE MID-FLOOD	[05-APR-2014]	HK1409738-032	2				
WSD9 / MIDDLE MID-FLOOD	[05-APR-2014]	HK1409738-033	3				
WSD9 / MIDDLE MID-FLOOD	[05-APR-2014]	HK1409738-034	3				
WSD9 / BOTTOM MID-FLOOD	[05-APR-2014]	HK1409738-035	2				



Sub-Matrix: WATER

			Compound				
			EA025: Suspended Solids (SS)				
			LOR Unit	2 mg/L			
Client sample ID	Client sampling date / time	Laboratory sample ID	EA/ED: Physical and Aggregate Properties				
WSD9 / BOTTOM MID-FLOOD	[05-APR-2014]	HK1409738-036	2				
C1 / SURFACE MID-FLOOD	[05-APR-2014]	HK1409738-037	3				
C1 / SURFACE MID-FLOOD	[05-APR-2014]	HK1409738-038	4				
C1 / MIDDLE MID-FLOOD	[05-APR-2014]	HK1409738-039	4				
C1 / MIDDLE MID-FLOOD	[05-APR-2014]	HK1409738-040	4				
C1 / BOTTOM MID-FLOOD	[05-APR-2014]	HK1409738-041	3				
C1 / BOTTOM MID-FLOOD	[05-APR-2014]	HK1409738-042	3				
C2 / SURFACE MID-FLOOD	[05-APR-2014]	HK1409738-043	2				
C2 / SURFACE MID-FLOOD	[05-APR-2014]	HK1409738-044	4				
C2 / MIDDLE MID-FLOOD	[05-APR-2014]	HK1409738-045	4				
C2 / MIDDLE MID-FLOOD	[05-APR-2014]	HK1409738-046	4				
C2 / BOTTOM MID-FLOOD	[05-APR-2014]	HK1409738-047	4				
C2 / BOTTOM MID-FLOOD	[05-APR-2014]	HK1409738-048	3				



**Laboratory Duplicate (DUP) Report**

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 3381503)</b>								
HK1409738-001	A / SURFACE MID-EBB	EA025: Suspended Solids (SS)	----	2	mg/L	4	4	0.0
HK1409738-011	WSD9 / BOTTOM MID-EBB	EA025: Suspended Solids (SS)	----	2	mg/L	4	4	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 3381504)</b>								
HK1409738-021	C2 / MIDDLE MID-EBB	EA025: Suspended Solids (SS)	----	2	mg/L	3	3	0.0
HK1409738-031	WSD9 / SURFACE MID-FLOOD	EA025: Suspended Solids (SS)	----	2	mg/L	3	3	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 3381505)</b>								
HK1409738-041	C1 / BOTTOM MID-FLOOD	EA025: Suspended Solids (SS)	----	2	mg/L	3	3	0.0

**Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report**

Matrix: WATER		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						LCS	DCS	Low	High	Value	Control Limit
<b>EA/ED: Physical and Aggregate Properties (QCLot: 3381503)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	100	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 3381504)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	102	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 3381505)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	98.0	----	85	115	----	----

**Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report**

- No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.



## CERTIFICATE OF ANALYSIS

<i>Client</i>	: AECOM ASIA COMPANY LIMITED	<i>Laboratory</i>	: ALS Technichem HK Pty Ltd	<i>Page</i>	: 1 of 4
<i>Contact</i>	: MS ANGELA TONG	<i>Contact</i>	: Fung Lim Chee, Richard	<i>Work Order</i>	: <b>HK1409739</b>
<i>Address</i>	: 11/F, TOWER 2, GRAND CENTRAL PLAZA, 138 SHATIN RURAL COMMITTEE ROAD, SHATIN, N.T. HONG KONG	<i>Address</i>	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
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<i>Telephone</i>	: +852 3922 9418	<i>Telephone</i>	: +852 2610 1044		
<i>Facsimile</i>	: ----	<i>Facsimile</i>	: +852 2610 2021		
<i>Project</i>	: SCL-BASELINE WQM	<i>Quote number</i>	: ----	<i>Date received</i>	: 09-APR-2014
<i>Order number</i>	: 60280233			<i>Date of issue</i>	: 22-APR-2014
<i>C-O-C number</i>	: ----			<i>No. of samples</i>	- <i>Received</i> : 48
<i>Site</i>	: ----				- <i>Analysed</i> : 48

### Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1409739 supersedes any previous reports with this reference. The completion date of analysis is 14-APR-2014. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

Specific comments for Work Order HK1409739 : Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.  
Water sample(s) analysed and reported on an as received basis.

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This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in the 'Electronic Transactions Ordinance' of Hong Kong, Chapter 553, Section 6.

<i>Signatory</i>	<i>Position</i>	<i>Authorised results for:-</i>
Fung Lim Chee, Richard	General Manager	Inorganics



**Analytical Results**

Sub-Matrix: WATER

			Compound	EA025: Suspended Solids (SS)			
			LOR Unit	2 mg/L			
Client sample ID	Client sampling date / time	Laboratory sample ID	EA/ED: Physical and Aggregate Properties				
A / SURFACE MID-EBB	[08-APR-2014]	HK1409739-001	2				
A / SURFACE MID-EBB	[08-APR-2014]	HK1409739-002	3				
A / MIDDLE MID-EBB	[08-APR-2014]	HK1409739-003	3				
A / MIDDLE MID-EBB	[08-APR-2014]	HK1409739-004	2				
A / BOTTOM MID-EBB	[08-APR-2014]	HK1409739-005	2				
A / BOTTOM MID-EBB	[08-APR-2014]	HK1409739-006	3				
WSD9 / SURFACE MID-EBB	[08-APR-2014]	HK1409739-007	2				
WSD9 / SURFACE MID-EBB	[08-APR-2014]	HK1409739-008	2				
WSD9 / MIDDLE MID-EBB	[08-APR-2014]	HK1409739-009	2				
WSD9 / MIDDLE MID-EBB	[08-APR-2014]	HK1409739-010	3				
WSD9 / BOTTOM MID-EBB	[08-APR-2014]	HK1409739-011	2				
WSD9 / BOTTOM MID-EBB	[08-APR-2014]	HK1409739-012	2				
C1 / SURFACE MID-EBB	[08-APR-2014]	HK1409739-013	3				
C1 / SURFACE MID-EBB	[08-APR-2014]	HK1409739-014	2				
C1 / MIDDLE MID-EBB	[08-APR-2014]	HK1409739-015	4				
C1 / MIDDLE MID-EBB	[08-APR-2014]	HK1409739-016	3				
C1 / BOTTOM MID-EBB	[08-APR-2014]	HK1409739-017	2				
C1 / BOTTOM MID-EBB	[08-APR-2014]	HK1409739-018	4				
C2 / SURFACE MID-EBB	[08-APR-2014]	HK1409739-019	3				
C2 / SURFACE MID-EBB	[08-APR-2014]	HK1409739-020	3				
C2 / MIDDLE MID-EBB	[08-APR-2014]	HK1409739-021	3				
C2 / MIDDLE MID-EBB	[08-APR-2014]	HK1409739-022	2				
C2 / BOTTOM MID-EBB	[08-APR-2014]	HK1409739-023	3				
C2 / BOTTOM MID-EBB	[08-APR-2014]	HK1409739-024	2				
A / SURFACE MID-FLOOD	[08-APR-2014]	HK1409739-025	3				
A / SURFACE MID-FLOOD	[08-APR-2014]	HK1409739-026	2				
A / MIDDLE MID-FLOOD	[08-APR-2014]	HK1409739-027	2				
A / MIDDLE MID-FLOOD	[08-APR-2014]	HK1409739-028	3				
A / BOTTOM MID-FLOOD	[08-APR-2014]	HK1409739-029	2				
A / BOTTOM MID-FLOOD	[08-APR-2014]	HK1409739-030	4				
WSD9 / SURFACE MID-FLOOD	[08-APR-2014]	HK1409739-031	2				
WSD9 / SURFACE MID-FLOOD	[08-APR-2014]	HK1409739-032	2				
WSD9 / MIDDLE MID-FLOOD	[08-APR-2014]	HK1409739-033	4				
WSD9 / MIDDLE MID-FLOOD	[08-APR-2014]	HK1409739-034	3				
WSD9 / BOTTOM MID-FLOOD	[08-APR-2014]	HK1409739-035	3				





Sub-Matrix: WATER

			Compound				
			EA025: Suspended Solids (SS)				
			LOR Unit				
Client sample ID	Client sampling date / time	Laboratory sample ID	EA/ED: Physical and Aggregate Properties				
WSD9 / BOTTOM MID-FLOOD	[08-APR-2014]	HK1409739-036	3				
C1 / SURFACE MID-FLOOD	[08-APR-2014]	HK1409739-037	3				
C1 / SURFACE MID-FLOOD	[08-APR-2014]	HK1409739-038	3				
C1 / MIDDLE MID-FLOOD	[08-APR-2014]	HK1409739-039	2				
C1 / MIDDLE MID-FLOOD	[08-APR-2014]	HK1409739-040	2				
C1 / BOTTOM MID-FLOOD	[08-APR-2014]	HK1409739-041	3				
C1 / BOTTOM MID-FLOOD	[08-APR-2014]	HK1409739-042	3				
C2 / SURFACE MID-FLOOD	[08-APR-2014]	HK1409739-043	2				
C2 / SURFACE MID-FLOOD	[08-APR-2014]	HK1409739-044	3				
C2 / MIDDLE MID-FLOOD	[08-APR-2014]	HK1409739-045	2				
C2 / MIDDLE MID-FLOOD	[08-APR-2014]	HK1409739-046	2				
C2 / BOTTOM MID-FLOOD	[08-APR-2014]	HK1409739-047	3				
C2 / BOTTOM MID-FLOOD	[08-APR-2014]	HK1409739-048	2				



### Laboratory Duplicate (DUP) Report

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 3391553)</b>								
HK1409739-001	A / SURFACE MID-EBB	EA025: Suspended Solids (SS)	----	2	mg/L	2	2	0.0
HK1409739-011	WSD9 / BOTTOM MID-EBB	EA025: Suspended Solids (SS)	----	2	mg/L	2	2	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 3391554)</b>								
HK1409739-021	C2 / MIDDLE MID-EBB	EA025: Suspended Solids (SS)	----	2	mg/L	3	3	0.0
HK1409739-031	WSD9 / SURFACE MID-FLOOD	EA025: Suspended Solids (SS)	----	2	mg/L	2	2	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 3391555)</b>								
HK1409739-041	C1 / BOTTOM MID-FLOOD	EA025: Suspended Solids (SS)	----	2	mg/L	3	3	0.0

### Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER				Method Blank (MB) Report		Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						LCS	DCS	Low	High	Value	Control Limit
<b>EA/ED: Physical and Aggregate Properties (QCLot: 3391553)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	103	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 3391554)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	102	----	85	115	----	----
<b>EA/ED: Physical and Aggregate Properties (QCLot: 3391555)</b>											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	98.0	----	85	115	----	----

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

- No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.

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**APPENDIX 2.4**

**BASELINE WATER QUALITY MONITORING RESULTS**

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### Water Quality Monitoring Results at C1 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)	Temperature (°C)		Salinity (ppt)		pH		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)			
					Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	
13-Mar-14	Sunny	Moderate	10:40	Surface	1	16.6 16.6	16.6	33.0 33.0	33.0	7.9 8.0	7.9	85.2 83.8	84.5	6.8 6.7	6.8	6.8	1.9 1.9	1.9	1.9	5.0 5.0	5.0	5.2
				Middle	7.0	16.5 16.4	16.5	33.0 33.0	33.0	8.0 7.9	7.9	83.7 85.3	84.5	6.7 6.8	6.8		1.9 1.9	1.9		5.0 5.0	5.0	
				Bottom	13.1	16.4 16.4	16.4	33.0 33.0	33.0	8.0 7.9	7.9	83.5 85.7	84.6	6.7 6.9	6.8		6.8	1.9 1.9		1.9	5.0 6.0	
15-Mar-14	Cloudy	Moderate	11:11	Surface	1	16.4 16.4	16.4	32.9 32.8	32.9	7.6 7.6	7.6	80.8 81.8	81.3	6.5 6.6	6.5	6.5	1.9 1.9	1.9	2.1	3.0 4.0	3.5	4.8
				Middle	6.5	16.4 16.4	16.4	32.9 32.8	32.9	7.6 7.6	7.6	80.4 82.1	81.3	6.5 6.6	6.5		2.2 2.2	2.2		4.0 4.0	4.5	
				Bottom	12.0	16.4 16.4	16.4	32.9 32.8	32.9	7.6 7.6	7.6	80.7 84.4	82.6	6.5 6.8	6.6		6.6	2.3 2.3		2.3	8.0 5.0	
18-Mar-14	Sunny	Moderate	12:46	Surface	1	17.2 17.2	17.2	32.8 32.8	32.8	7.4 7.4	7.4	74.8 75.7	75.3	5.9 6.0	6.0	5.9	2.5 2.7	2.6	3.0	2.0 2.0	2.0	2.2
				Middle	6.6	16.9 16.9	16.9	32.8 32.8	32.8	7.4 7.4	7.4	73.8 75.2	74.5	5.9 5.9	5.9		3.3 3.1	3.2		2.0 2.0	2.0	
				Bottom	12.3	16.9 16.9	16.9	32.8 32.8	32.8	7.4 7.4	7.4	74.6 74.2	74.4	5.9 5.9	5.9		5.9	3.2 3.1		3.2	2.0 3.0	
20-Mar-14	Fine	Calm	14:53	Surface	1	17.7 17.2	17.5	32.7 32.7	32.7	7.5 7.5	7.5	76.9 77.0	77.0	5.4 5.5	5.5	5.5	3.4 3.4	3.4	3.3	4.0 4.0	4.0	4.2
				Middle	6.5	16.8 16.9	16.8	32.7 32.7	32.7	7.5 7.5	7.5	76.8 74.5	75.7	5.5 5.3	5.4		3.2 3.4	3.3		5.0 3.0	4.0	
				Bottom	12.1	16.8 17.0	16.9	32.8 32.7	32.7	7.5 7.5	7.5	80.4 76.3	78.4	5.8 5.5	5.6		5.6	3.3 3.2		3.3	5.0 4.0	
22-Mar-14	Fine	Moderate	16:23	Surface	1	18.1 18.1	18.1	32.5 32.5	32.5	7.8 7.8	7.8	77.3 77.3	77.3	6.0 6.0	6.0	6.0	4.5 4.5	4.5	4.5	5.0 5.0	5.0	5.0
				Middle	6.6	18.1 18.1	18.1	32.5 32.5	32.5	7.8 7.9	7.8	77.8 77.8	77.8	6.1 6.1	6.1		4.4 4.4	4.4		5.0 4.0	4.5	
				Bottom	12.1	18.0 18.0	18.0	32.5 32.5	32.5	7.8 7.8	7.8	77.2 77.5	77.4	6.0 6.0	6.0		6.0	4.5 4.5		4.5	5.0 6.0	
25-Mar-14	Sunny	Moderate	20:22	Surface	1	18.0 18.0	18.0	32.9 32.8	32.8	7.9 7.9	7.9	83.7 84.4	84.1	6.5 6.6	6.5	6.5	1.7 1.7	1.7	1.7	3.0 2.0	2.5	2.7
				Middle	6.6	17.6 17.6	17.6	32.9 32.9	32.9	7.9 7.9	7.9	82.2 83.4	82.8	6.4 6.5	6.5		1.7 1.6	1.7		3.0 2.0	2.5	
				Bottom	12.1	17.5 17.6	17.5	32.9 32.9	32.9	7.9 7.9	7.9	84.7 82.5	83.6	6.6 6.5	6.6		6.6	1.7 1.8		1.8	3.0 3.0	
27-Mar-14	Sunny	Moderate	9:38	Surface	1	19.1 18.7	18.9	32.6 32.6	32.6	7.8 7.8	7.8	86.3 82.5	84.4	6.7 6.4	6.5	6.4	1.3 1.3	1.3	1.5	<2 <2	<2	4.7
				Middle	6.9	18.6 18.6	18.6	32.6 32.6	32.6	7.8 7.8	7.8	82.0 84.4	83.2	6.3 6.5	6.4		1.5 1.5	1.5		5.0 4.0	4.5	
				Bottom	12.8	18.6 18.6	18.6	32.6 32.5	32.5	7.8 7.8	7.8	81.9 83.9	82.9	6.3 6.4	6.4		6.4	1.6 1.7		1.7	7.0 8.0	
29-Mar-14	Cloudy	Moderate	11:03	Surface	1	18.9 19.0	18.9	32.5 32.5	32.5	7.7 7.7	7.7	79.4 79.1	79.3	6.1 6.1	6.1	6.1	1.8 1.8	1.8	1.9	3.0 5.0	4.0	5.2
				Middle	6.9	18.9 18.9	18.9	32.6 32.5	32.6	7.8 7.7	7.7	78.6 79.2	78.9	6.0 6.1	6.0		1.8 1.9	1.9		5.0 6.0	5.5	
				Bottom	12.8	18.8 18.8	18.8	32.6 32.6	32.6	7.7 7.7	7.7	78.4 79.4	78.9	6.0 6.1	6.1		6.1	1.9 1.9		1.9	5.0 7.0	

Remark: \* DA: Depth-Averaged

\*\* Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher

### Water Quality Monitoring Results at C1 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		Salinity (ppt)		pH		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Apr-14	Fine	Moderate	12:35	Surface	1	17.9	17.9	31.5	31.5	7.5	7.5	79.9	80.1	5.9	5.9	5.9	4.4	4.3	4.9	5.0	4.5	4.5
						17.8	17.8	31.5	31.5	7.5	7.5	80.2	80.3	5.9	5.9		4.2	5.8		4.0	5.0	
				Middle	7.0	17.8	17.8	31.8	31.8	7.5	7.5	80.3	80.3	5.9	5.9		5.7	5.8		6.0	4.0	
				Bottom	13.1	17.8	17.8	32.0	32.0	7.5	7.5	79.1	79.3	5.8	5.8	5.8	4.7	4.7	4.0	4.0		
						17.8	17.8	32.0	32.0	7.5	7.5	79.4	79.3	5.8	5.8	5.8	4.6	4.7	4.0	4.0		
3-Apr-14	Cloudy	Moderate	15:15	Surface	1	19.4	19.4	30.9	30.9	8.0	8.0	84.1	86.1	6.4	6.6	6.5	1.7	1.7	1.8	2.0	2.0	3.3
						19.5	19.4	30.8	30.9	8.0	8.0	88.1	86.1	6.7	6.5		1.7	1.8		2.0	2.0	
				Middle	7.0	19.4	19.4	30.9	30.9	8.0	8.0	85.8	84.8	6.6	6.5		1.8	1.8		4.0	3.5	
				Bottom	13.1	19.4	19.4	31.0	30.9	8.0	8.0	85.1	84.4	6.5	6.5	6.5	2.0	1.9	5.0	4.5		
						19.4	19.4	30.9	30.9	8.0	8.0	83.6	84.4	6.4	6.5	6.5	1.8	1.9	4.0	4.5		
5-Apr-14	Sunny	Calm	17:00	Surface	1	18.6	18.6	31.1	31.1	7.9	8.0	95.6	94.4	7.5	7.4	7.4	4.7	4.6	4.7	3.0	3.0	3.0
						18.6	18.5	31.2	31.3	8.1	8.1	93.1	93.1	7.3	7.3		4.5	4.5		3.0	2.5	
				Middle	7.0	18.5	18.5	31.3	31.3	8.1	8.1	92.8	93.1	7.4	7.3		4.4	4.5		2.0	2.5	
				Bottom	13.1	18.5	18.5	31.4	31.5	8.1	8.1	92.9	92.7	7.3	7.3	7.3	5.0	5.1	3.0	3.5		
						18.5	18.5	31.5	31.5	8.2	8.1	92.5	92.7	7.3	7.3	7.3	5.1	5.1	4.0	3.5		
8-Apr-14	Cloudy	Moderate	19:59	Surface	1	18.3	18.3	31.6	31.6	7.8	7.8	93.8	93.7	7.2	7.2	7.2	2.3	2.4	2.4	3.0	2.5	3.0
						18.3	18.2	31.6	31.7	7.8	7.8	93.5	94.2	7.2	7.2		2.4	2.5		2.0	2.5	
				Middle	6.7	18.2	18.2	31.7	31.7	7.8	7.8	95.0	94.2	7.2	7.2		2.4	2.5		4.0	3.5	
				Bottom	12.4	18.2	18.2	31.7	31.8	7.7	7.8	93.9	94.3	7.3	7.2	7.2	2.4	2.5	2.0	3.0		
						18.2	18.2	31.8	31.8	7.8	7.8	94.6	94.3	7.2	7.2	7.2	2.5	2.5	4.0	3.0		

Remark: \* DA: Depth-Averaged

\*\* Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher

### Water Quality Monitoring Results at C1 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		Salinity (ppt)		pH		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
03/13/14	Sunny	Moderate	16:30	Surface	1	16.7 16.7	16.7	33.2 33.2	33.2	8.0 8.0	8.0	83.3 82.8	83.1	6.6 6.6	6.6	6.6	2.4 2.4	2.4	2.5	4.0 2.0	3.0	3.0
				Middle	7.2	16.6 16.6	16.6	33.2 33.2	33.2	8.0 8.0	8.0	82.6 83.1	82.9	6.6 6.6	6.6		2.6 2.5	2.6		3.0 2.0	2.5	
				Bottom	13.4	16.6 16.6	16.6	33.2 33.2	33.2	8.0 8.0	8.0	82.4 83.5	83.0	6.6 6.7	6.6		2.6 2.5	2.6		4.0 3.0	3.5	
03/15/14	Cloudy	Moderate	17:59	Surface	1	16.4 16.4	16.4	33.0 33.0	33.0	7.8 7.7	7.7	79.0 81.2	80.1	6.3 6.5	6.4	6.5	4.3 4.1	4.2	4.4	6.0 6.0	6.0	6.5
				Middle	6.6	16.4 16.5	16.4	33.0 33.0	33.0	7.7 7.7	7.7	83.0 79.0	81.0	6.6 6.3	6.5		4.6 4.6	4.6		6.0 6.0	6.0	
				Bottom	11.7	16.5 16.5	16.5	33.0 33.0	33.0	7.7 7.7	7.7	85.9 79.6	82.8	6.9 6.4	6.6		4.5 4.5	4.5		7.0 8.0	7.5	
03/18/14	Sunny	Moderate	20:19	Surface	1	17.9 17.5	17.7	32.8 32.9	32.9	7.5 7.5	7.5	77.5 77.6	77.6	6.0 6.1	6.1	6.1	4.7 4.7	4.7	5.3	5.0 5.0	5.0	4.7
				Middle	6.8	17.1 17.0	17.1	32.9 32.9	32.9	7.4 7.4	7.4	75.1 77.4	76.3	5.9 6.1	6.0		5.5 5.5	5.5		3.0 5.0	4.0	
				Bottom	12.9	17.1 17.2	17.1	32.9 32.9	32.9	7.4 7.4	7.4	81.0 76.9	79.0	6.4 6.1	6.2		5.7 5.8	5.8		4.0 6.0	5.0	
03/20/14	Fine	Calm	7:36	Surface	1	17.0 17.0	17.0	32.6 32.6	32.6	7.3 7.3	7.3	74.3 75.2	74.8	5.9 6.0	5.9	5.9	3.2 3.3	3.3	3.3	5.0 4.0	4.5	5.2
				Middle	6.5	16.7 16.7	16.7	32.6 32.5	32.6	7.3 7.3	7.3	73.3 74.7	74.0	5.8 5.9	5.9		3.0 3.4	3.2		5.0 4.0	4.5	
				Bottom	13.2	16.7 16.7	16.7	32.5 32.6	32.5	7.3 7.3	7.3	74.1 73.7	73.9	5.9 5.8	5.9		3.4 3.3	3.4		6.0 7.0	6.5	
03/22/14	Fine	Moderate	8:46	Surface	1	18.1 18.1	18.1	32.4 32.4	32.4	7.8 7.8	7.8	77.5 83.8	80.7	6.0 6.5	6.3	6.2	2.9 3.0	3.0	2.8	4.0 5.0	4.5	4.2
				Middle	6.5	18.1 18.0	18.0	32.5 32.5	32.5	7.8 7.8	7.8	78.3 79.4	78.9	6.1 6.2	6.2		3.1 2.9	3.0		4.0 4.0	4.0	
				Bottom	13.1	17.9 18.0	18.0	32.6 32.5	32.5	7.8 7.8	7.8	77.3 78.0	77.7	6.0 6.1	6.1		2.5 2.3	2.4		4.0 4.0	4.0	
03/25/14	Sunny	Moderate	12:04	Surface	1	18.3 18.0	18.1	32.8 32.7	32.7	7.9 7.9	7.9	84.6 83.2	83.9	6.6 6.5	6.5	6.5	2.4 2.3	2.4	2.4	3.0 2.0	2.5	3.2
				Middle	7.1	17.6 17.6	17.6	32.7 32.8	32.7	7.9 7.9	7.9	81.7 81.6	81.7	6.4 6.4	6.4		2.4 2.3	2.4		3.0 3.0	3.0	
				Bottom	13.0	17.6 17.6	17.6	32.8 32.7	32.7	7.9 7.8	7.9	81.4 81.2	81.3	6.4 6.4	6.4		2.5 2.5	2.5		4.0 4.0	4.0	
03/27/14	Sunny	Moderate	15:40	Surface	1	18.7 18.7	18.7	32.8 32.9	32.8	7.8 7.8	7.8	79.6 86.9	83.3	6.1 6.7	6.4	6.3	1.6 1.7	1.7	1.7	2.0 2.0	2.0	3.0
				Middle	7.1	18.5 18.5	18.5	32.8 32.8	32.8	7.8 7.8	7.8	83.4 79.0	81.2	6.4 6.1	6.2		1.7 1.6	1.7		2.0 3.0	2.5	
				Bottom	13.3	18.6 18.6	18.6	32.8 32.8	32.8	7.8 7.8	7.8	78.9 82.3	80.6	6.1 6.3	6.2		1.8 1.8	1.8		5.0 4.0	4.5	
03/29/14	Cloudy	Moderate	17:50	Surface	1	18.8 18.8	18.8	32.6 32.6	32.6	7.8 7.8	7.8	76.9 77.9	77.4	5.9 6.0	5.9	5.9	2.0 2.0	2.0	2.2	5.0 5.0	5.0	4.7
				Middle	7.1	18.8 18.8	18.8	32.7 32.7	32.7	7.8 7.8	7.8	76.8 78.4	77.6	5.9 6.0	5.9		2.2 2.2	2.2		4.0 4.0	4.0	
				Bottom	13.1	18.8 18.8	18.8	32.7 32.7	32.7	7.8 7.8	7.8	81.3 77.4	79.4	6.2 5.9	6.1		2.2 2.3	2.3		4.0 6.0	5.0	

Remark: \* DA: Depth-Averaged

\*\* Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher

### Water Quality Monitoring Results at C1 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		Salinity (ppt)		pH		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Apr-14	Fine	Moderate	20:00	Surface	1	17.8 17.8	17.8	32.2 32.4	32.3	7.3 7.4	7.3	81.3 78.9	80.1	5.9 5.7	5.8	5.8	5.1 5.2	5.2	5.0	5.0 3.0	4.0	4.5
				Middle	6.1	17.8 17.8	17.8	32.6 32.8	32.7	7.4 7.3	7.4	78.9 79.4	79.2	5.7 5.7	5.7		5.0 4.9	5.0		4.0 4.0	4.0	
				Bottom	12.1	17.8 17.8	17.8	33.0 33.0	33.0	7.3 7.4	7.4	77.7 77.5	77.6	5.6 5.6	5.6		4.8 5.0	4.9		5.0 6.0	5.5	
3-Apr-14	Cloudy	Moderate	7:43	Surface	1	19.4 19.4	19.4	30.8 30.8	30.8	7.9 7.8	7.9	81.9 84.8	83.4	6.3 6.5	6.4	6.4	1.8 1.8	1.8	1.9	3.0 3.0	3.0	3.3
				Middle	7.1	19.4 19.4	19.4	30.8 30.8	30.8	7.9 7.8	7.9	81.7 83.2	82.5	6.3 6.4	6.3		1.8 1.9	1.9		3.0 3.0	3.0	
				Bottom	13.1	19.4 19.4	19.4	30.8 30.8	30.8	7.8 7.9	7.8	82.9 81.7	82.3	6.4 6.3	6.3		1.9 1.9	1.9		4.0 4.0	4.0	
5-Apr-14	Sunny	Calm	9:09	Surface	1	18.7 18.7	18.7	31.5 31.7	31.6	8.2 8.2	8.2	96.3 93.9	95.1	7.6 7.4	7.5	7.4	4.6 4.6	4.6	4.8	3.0 4.0	3.5	3.5
				Middle	6.1	18.7 18.7	18.7	31.9 32.0	31.9	8.2 8.2	8.2	92.8 93.4	93.1	7.3 7.3	7.3		4.9 4.8	4.9		4.0 4.0	4.0	
				Bottom	12.0	18.7 18.7	18.7	32.4 32.4	32.4	8.2 8.2	8.2	91.5 91.8	91.7	7.2 7.2	7.2		5.0 5.0	5.0		3.0 3.0	3.0	
8-Apr-14	Cloudy	Moderate	6:31	Surface	1	18.1 18.1	18.1	30.9 30.9	30.9	7.8 7.7	7.8	91.8 90.8	91.3	7.1 7.1	7.1	7.1	2.2 2.2	2.2	2.2	3.0 3.0	3.0	2.7
				Middle	6.8	17.9 17.9	17.9	31.1 31.2	31.1	7.7 7.7	7.7	93.1 90.5	91.8	7.2 7.1	7.1		2.1 2.2	2.2		2.0 2.0	2.0	
				Bottom	12.7	17.7 17.8	17.8	31.9 31.6	31.7	7.7 7.7	7.7	90.5 90.6	90.6	7.1 7.0	7.0		2.1 2.3	2.2		3.0 3.0	3.0	

Remark: \* DA: Depth-Averaged

\*\* Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher

### Water Quality Monitoring Results at C2 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)	Temperature (°C)		Salinity (ppt)		pH		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)				
					Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*		
13-Mar-14	Sunny	Moderate	11:58	Surface	1	16.2 16.2	16.2	33.0 33.0	33.0	8.1 8.1	8.1	92.1 92.2	92.2	7.4 7.4	7.4	7.4	1.8 1.7	1.8	1.8	5.0 4.0	5.0	4.5	
				Middle	9.0	16.0 16.0	16.0	33.1 33.1	33.1	8.1 8.1	8.1	91.9 91.5	91.7	7.4 7.4	7.4		1.8 1.9			1.9			5.0 4.0
				Bottom	17.0	15.9 15.9	15.9	33.1 33.1	33.1	8.1 8.1	8.1	91.3 90.8	91.1	7.4 7.3	7.4		1.9 1.9			1.9			6.0 6.0
15-Mar-14	Cloudy	Moderate	12:12	Surface	1	16.1 16.1	16.1	33.1 33.1	33.1	7.8 7.8	7.8	92.2 91.8	92.0	7.4 7.4	7.4	7.4	1.8 1.9	1.9	2.0	4.0 2.0	3.3	3.0	
				Middle	8.3	16.1 16.1	16.1	33.1 33.1	33.1	7.8 7.8	7.8	91.7 91.3	91.5	7.4 7.4	7.4		2.0 2.0			2.0			3.0 3.0
				Bottom	15.5	16.1 16.1	16.1	33.1 33.1	33.1	7.8 7.8	7.8	91.6 91.3	91.5	7.4 7.4	7.4		2.2 2.2			2.2			4.0 4.0
18-Mar-14	Sunny	Moderate	13:42	Surface	1	17.0 17.0	17.0	32.9 32.9	32.9	7.3 7.3	7.3	80.6 80.9	80.8	6.4 6.4	6.4	6.4	2.1 2.2	2.2	2.1	4.0 4.0	4.0	4.0	
				Middle	8.3	16.9 16.9	16.9	32.9 32.9	32.9	7.3 7.3	7.3	81.4 80.4	80.9	6.5 6.4	6.4		2.0 2.1			2.1			3.0 4.0
				Bottom	15.6	16.9 16.8	16.9	32.9 32.9	32.9	7.4 7.3	7.3	82.6 79.4	81.0	6.6 6.3	6.4		2.0 2.1			2.1			5.0 4.0
20-Mar-14	Fine	Calm	13:42	Surface	1	16.8 16.8	16.8	32.7 32.7	32.7	7.3 7.3	7.3	79.9 79.9	79.9	5.7 5.7	5.7	5.7	3.2 3.2	3.2	3.2	3.0 2.0	3.3	2.5	
				Middle	8.5	16.6 16.6	16.6	32.7 32.7	32.7	7.4 7.4	7.4	79.9 79.4	79.7	5.7 5.7	5.7		3.3 3.2			3.3			4.0 4.0
				Bottom	16.0	16.5 16.6	16.6	32.7 32.7	32.7	7.4 7.4	7.4	79.2 78.0	78.6	5.7 5.6	5.6		3.3 3.2			3.3			3.0 4.0
22-Mar-14	Fine	Moderate	15:26	Surface	1	17.9 17.9	17.9	32.8 32.8	32.8	7.8 7.8	7.8	71.2 71.9	71.6	5.6 5.6	5.6	5.6	2.1 2.2	2.2	2.1	5.0 6.0	5.7	5.5	
				Middle	8.7	17.9 17.8	17.9	32.8 32.8	32.8	7.8 7.8	7.8	71.4 70.9	71.2	5.6 5.5	5.6		1.9 2.0			2.0			6.0 6.0
				Bottom	16.4	17.8 17.7	17.8	32.8 32.8	32.8	7.8 7.8	7.8	70.9 70.6	70.8	5.5 5.5	5.5		2.0 2.1			2.1			5.0 6.0
25-Mar-14	Sunny	Moderate	19:31	Surface	1	17.6 17.6	17.6	33.1 33.1	33.1	8.1 8.1	8.1	101.7 101.7	101.7	8.0 8.0	8.0	7.9	2.0 1.9	2.0	2.1	4.0 2.0	3.0	3.0	
				Middle	8.4	17.1 17.1	17.1	33.2 33.2	33.2	8.1 8.1	8.1	100.1 100.2	100.2	7.9 7.9	7.9		2.1 2.1			2.1			4.0 2.0
				Bottom	15.9	17.1 17.1	17.1	33.2 33.2	33.2	8.1 8.1	8.1	99.6 99.7	99.7	7.9 7.9	7.9		2.1 2.1			2.1			2.0 4.0
27-Mar-14	Sunny	Moderate	10:32	Surface	1	18.7 18.9	18.8	33.0 32.9	33.0	7.9 7.9	7.9	90.8 89.7	90.3	7.0 7.0	7.0	7.0	0.7 0.7	0.7	0.9	2.0 3.0	2.8	2.5	
				Middle	7.1	18.0 18.0	18.0	33.1 33.2	33.1	8.0 7.9	7.9	89.5 90.7	90.1	6.9 7.0	6.9		0.9 1.0			1.0			3.0 3.0
				Bottom	13.1	18.0 18.0	18.0	33.1 33.2	33.2	8.0 8.0	8.0	88.0 89.7	88.9	6.8 7.0	6.9		0.9 1.0			1.0			3.0 3.0
29-Mar-14	Cloudy	Moderate	11:51	Surface	1	18.5 18.6	18.5	33.1 33.1	33.1	8.0 8.0	8.0	94.0 94.0	94.0	7.2 7.2	7.2	7.3	1.5 1.5	1.5	1.5	4.0 6.0	5.3	5.0	
				Middle	8.9	18.5 18.5	18.5	33.2 33.2	33.2	8.0 8.0	8.0	95.0 94.1	94.6	7.3 7.2	7.3		1.5 1.5			1.5			6.0 4.0
				Bottom	16.8	18.4 18.4	18.4	33.3 33.2	33.3	8.0 8.0	8.0	94.3 92.8	93.6	7.3 7.1	7.2		1.5 1.5			1.5			6.0 6.0

Remark: \* DA: Depth-Averaged

\*\* Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher



### Water Quality Monitoring Results at C2 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)	Temperature (°C)		Salinity (ppt)		pH		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)			
					Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	
1-Apr-14	Fine	Moderate	13:35	Surface	1	17.8 17.8	17.8	31.2 31.2	31.2	7.5 7.5	7.5	79.7 79.0	79.4	5.8 5.8	5.8	5.8	3.5 3.3	3.4	4.5	4.0 4.0	4.0	4.3
				Middle	9.0	17.8 17.8	17.8	31.4 31.5	31.4	7.5 7.5	7.5	79.4 79.7	79.6	5.8 5.8	5.8		4.1 4.3	4.2		4.0 4.0	4.0	
				Bottom	17.1	17.8 17.8	17.8	31.5 31.5	31.5	7.5 7.5	7.5	78.5 78.4	78.5	5.7 5.7	5.7		5.8 5.7	5.8		4.0 6.0	5.0	
3-Apr-14	Cloudy	Moderate	14:14	Surface	1	19.3 19.2	19.2	31.8 31.9	31.8	8.0 8.0	8.0	86.6 86.7	86.7	6.6 6.6	6.6	6.6	1.2 1.3	1.3	1.3	2.0 2.0	2.0	2.0
				Middle	9.0	19.2 19.2	19.2	32.1 32.1	32.1	8.1 8.1	8.1	86.4 86.7	86.6	6.6 6.6	6.6		1.3 1.3	1.3		2.0 2.0	2.0	
				Bottom	17.1	19.2 19.2	19.2	32.3 32.2	32.2	8.1 8.0	8.1	86.3 86.1	86.2	6.6 6.6	6.6		1.3 1.3	1.3		2.0 2.0	2.0	
5-Apr-14	Sunny	Calm	16:12	Surface	1	18.7 18.7	18.7	31.4 31.4	31.4	8.2 8.2	8.2	93.6 93.7	93.7	7.4 7.4	7.4	7.4	5.2 5.3	5.3	5.2	3.0 5.0	4.0	3.5
				Middle	9.0	18.6 18.6	18.6	31.3 31.3	31.3	8.2 8.2	8.2	93.4 93.5	93.5	7.4 7.4	7.4		5.2 5.0	5.1		3.0 3.0	3.0	
				Bottom	17.1	18.6 18.6	18.6	31.4 31.4	31.4	8.2 8.2	8.2	93.0 92.9	93.0	7.3 7.3	7.3		5.3 5.2	5.3		4.0 3.0	3.5	
8-Apr-14	Cloudy	Moderate	19:02	Surface	1	18.6 18.6	18.6	31.3 31.3	31.3	7.9 7.9	7.9	90.2 90.2	90.2	7.0 7.0	7.0	7.0	2.2 2.1	2.2	2.3	3.0 3.0	3.0	2.7
				Middle	8.7	18.6 18.5	18.5	31.4 31.5	31.5	7.8 7.9	7.8	90.4 90.0	90.2	7.0 7.0	7.0		2.3 2.4	2.4		3.0 2.0	2.5	
				Bottom	16.3	18.5 18.5	18.5	31.7 31.6	31.6	7.8 7.9	7.8	90.3 90.3	90.3	7.0 7.0	7.0		2.4 2.4	2.4		3.0 2.0	2.5	

Remark: \* DA: Depth-Averaged

\*\* Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher

### Water Quality Monitoring Results at C2 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)	Temperature (°C)		Salinity (ppt)		pH		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)			
					Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	
03/13/14	Sunny	Moderate	15:46	Surface	1	16.6 16.6	16.6	33.2 33.2	33.2	8.1 8.1	8.1	91.9 90.8	91.4	7.3 7.2	7.3	7.3	1.7 1.8	1.8	1.9	2.0 2.0	2.0	2.3
				Middle	8.3	16.0 16.0	16.0	33.4 33.4	33.4	8.1 8.1	8.1	90.9 91.8	91.4	7.3 7.4	7.4		1.9 1.8	1.9		2.0 3.0	2.5	
				Bottom	15.6	16.0 16.0	16.0	33.4 33.5	33.4	8.1 8.1	8.1	89.8 91.1	90.5	7.2 7.4	7.3		1.9 2.0	2.0		2.0 3.0	2.5	
03/15/14	Cloudy	Moderate	17:02	Surface	1	16.1 16.1	16.1	33.1 33.1	33.1	7.9 7.9	7.9	91.8 91.9	91.9	7.4 7.4	7.4	7.4	1.9 1.8	1.9	2.0	5.0 5.0	5.0	5.5
				Middle	8.5	16.1 16.1	16.1	33.1 33.1	33.1	7.9 7.9	7.9	91.1 91.2	91.2	7.4 7.4	7.4		1.9 1.9	1.9		6.0 5.0	5.5	
				Bottom	16.0	16.1 16.1	16.1	33.1 33.1	33.1	7.8 7.9	7.9	91.0 91.0	91.0	7.3 7.3	7.3		2.1 2.1	2.1		7.0 5.0	6.0	
03/18/14	Sunny	Moderate	19:16	Surface	1	17.0 17.0	17.0	32.9 32.9	32.9	7.3 7.3	7.3	80.6 80.6	80.6	6.4 6.4	6.4	6.4	2.2 2.3	2.3	2.3	5.0 6.0	5.5	5.0
				Middle	9.1	16.9 16.8	16.8	32.9 32.9	32.9	7.3 7.3	7.3	80.6 80.1	80.4	6.4 6.4	6.4		2.2 2.1	2.2		4.0 4.0	4.0	
				Bottom	17.2	16.8 16.8	16.8	32.9 32.9	32.9	7.4 7.4	7.4	79.9 78.7	79.3	6.4 6.3	6.3		2.3 2.4	2.4		5.0 6.0	5.5	
03/20/14	Fine	Calm	8:50	Surface	1	16.8 16.8	16.8	32.7 32.7	32.7	7.3 7.3	7.3	79.8 80.1	80.0	5.6 5.6	5.6	5.6	2.5 2.4	2.5	2.4	4.0 5.0	4.5	4.3
				Middle	9.0	16.7 16.7	16.7	32.7 32.7	32.7	7.4 7.4	7.4	79.6 80.6	80.1	5.6 5.7	5.6		2.4 2.3	2.4		4.0 5.0	4.5	
				Bottom	17.0	16.6 16.7	16.7	32.7 32.7	32.7	7.4 7.4	7.4	78.6 81.8	80.2	5.5 5.8	5.6		2.4 2.5	2.5		3.0 5.0	4.0	
03/22/14	Fine	Moderate	9:40	Surface	1	17.9 17.9	17.9	32.8 32.8	32.8	7.8 7.8	7.8	80.6 72.8	76.7	6.3 5.7	6.0	5.9	1.8 1.9	1.9	1.9	5.0 5.0	5.0	4.7
				Middle	9.1	17.8 17.8	17.8	32.8 32.8	32.8	7.8 7.8	7.8	76.1 72.1	74.1	5.9 5.6	5.8		1.8 1.9	1.9		5.0 4.0	4.5	
				Bottom	17.1	17.8 17.8	17.8	32.8 32.8	32.8	7.8 7.8	7.8	74.1 71.8	73.0	5.8 5.6	5.7		2.0 1.9	2.0		5.0 4.0	4.5	
03/25/14	Sunny	Moderate	13:02	Surface	1	17.6 17.6	17.6	33.1 33.1	33.1	8.1 8.1	8.1	101.9 101.6	101.8	8.0 8.0	8.0	7.9	2.2 2.2	2.2	2.2	2.0 2.0	2.0	2.2
				Middle	9.1	17.2 17.1	17.1	33.2 33.2	33.2	8.1 8.1	8.1	99.9 100.1	100.0	7.9 7.9	7.9		2.2 2.2	2.2		2.0 2.0	2.0	
				Bottom	17.3	17.1 17.1	17.1	33.2 33.2	33.2	8.1 8.1	8.1	98.7 99.3	99.0	7.8 7.9	7.8		2.1 2.3	2.2		2.0 3.0	2.5	
03/27/14	Sunny	Moderate	14:50	Surface	1	18.6 18.6	18.6	33.0 33.1	33.1	7.9 7.9	7.9	90.9 89.9	90.4	7.0 6.9	7.0	7.0	1.0 1.0	1.0	1.0	3.0 3.0	3.0	3.5
				Middle	7.1	18.0 18.0	18.0	33.2 33.1	33.1	8.0 8.0	8.0	90.4 89.2	89.8	7.0 6.9	6.9		1.0 1.1	1.1		4.0 3.0	3.5	
				Bottom	13.1	17.9 18.1	18.0	33.2 33.1	33.2	8.0 8.0	8.0	87.5 87.8	87.7	6.8 6.8	6.8		1.0 1.1	1.1		4.0 4.0	4.0	
03/29/14	Cloudy	Moderate	16:51	Surface	1	18.6 18.5	18.5	33.1 33.1	33.1	8.0 8.0	8.0	94.5 95.1	94.8	7.3 7.3	7.3	7.3	1.6 1.7	1.7	1.7	2.0 2.0	2.0	3.3
				Middle	9.1	18.5 18.4	18.5	33.2 33.2	33.2	8.0 8.0	8.0	94.9 95.0	95.0	7.3 7.3	7.3		1.7 1.7	1.7		4.0 5.0	4.5	
				Bottom	17.1	18.4 18.3	18.3	33.3 33.4	33.3	8.0 8.0	8.0	93.1 94.5	93.8	7.2 7.3	7.2		1.7 1.8	1.8		4.0 3.0	3.5	

Remark: \* DA: Depth-Averaged

\*\* Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher

### Water Quality Monitoring Results at C2 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		Salinity (ppt)		pH		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Apr-14	Fine	Moderate	18:59	Surface	1	17.8 17.8	17.8	31.2 31.2	31.2	7.5 7.5	7.5	79.2 79.6	79.4	5.8 5.8	5.8	5.8	4.3 4.2	4.3	4.9	4.0 5.0	4.5	4.2
				Middle	8.5	17.8 17.8	17.8	31.5 31.5	31.5	7.5 7.5	7.5	79.4 79.4	79.4	5.8 5.8	5.8		4.7 4.8	4.8		3.0 4.0	3.5	
				Bottom	16.1	17.8 17.8	17.8	31.5 31.5	31.5	7.5 7.5	7.5	78.5 78.5	78.5	5.7 5.7	5.7		5.7 5.7	5.7		4.0 5.0	4.5	
3-Apr-14	Cloudy	Moderate	8:33	Surface	1	19.2 19.2	19.2	32.0 31.9	31.9	8.1 8.1	8.1	88.2 92.8	90.5	6.7 7.1	6.9	6.9	1.2 1.3	1.3	1.3	<2 <2	<2	2.8
				Middle	9.1	19.2 19.2	19.2	32.1 32.0	32.0	8.1 8.1	8.1	87.8 90.8	89.3	6.7 6.9	6.8		1.3 1.4	1.4		2.0 3.0	2.5	
				Bottom	17.2	19.2 19.2	19.2	32.2 32.0	32.1	8.1 8.1	8.1	89.7 87.7	88.7	6.9 6.7	6.8		6.8	1.4 1.3		1.4	4.0 4.0	
5-Apr-14	Sunny	Calm	10:00	Surface	1	18.7 18.7	18.7	31.4 31.4	31.4	8.0 8.2	8.1	95.8 94.5	95.2	7.5 7.4	7.5	7.5	4.5 4.4	4.5	4.5	2.0 4.0	3.0	3.5
				Middle	8.5	18.7 18.6	18.6	31.4 31.4	31.4	8.2 8.1	8.2	93.8 94.5	94.2	7.4 7.4	7.4		4.5 4.6	4.6		4.0 4.0	4.0	
				Bottom	16.0	18.6 18.6	18.6	31.4 31.4	31.4	8.2 8.2	8.2	93.1 93.1	93.1	7.3 7.3	7.3		7.3	4.4 4.5		4.5	4.0 3.0	
8-Apr-14	Cloudy	Moderate	7:27	Surface	1	18.1 18.1	18.1	31.6 31.6	31.6	7.9 7.9	7.9	90.4 90.4	90.4	7.0 7.0	7.0	7.0	2.2 2.2	2.2	2.2	2.0 3.0	2.5	2.3
				Middle	9.2	18.1 18.1	18.1	31.7 31.6	31.6	7.8 7.8	7.8	90.0 90.4	90.2	7.0 7.0	7.0		2.1 2.2	2.2		2.0 2.0	2.0	
				Bottom	17.4	18.1 18.1	18.1	31.8 31.6	31.7	7.9 7.8	7.8	89.7 90.3	90.0	7.0 7.0	7.0		7.0	2.1 2.1		2.1	3.0 2.0	

Remark: \* DA: Depth-Averaged

\*\* Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher

### Water Quality Monitoring Results at A - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		Salinity (ppt)		pH		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)		Suspended Solids (mg/L)	
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
13-Mar-14	Sunny	Moderate	10:56	Middle	6.0	16.4 16.4	16.4	33.0 33.0	33.0	8.0 8.0	8.0	79.5 78.7	79.1	6.4 6.3	6.3	5.8 5.3	5.6	5.0 4.0	4.5
15-Mar-14	Cloudy	Moderate	11:30	Middle	5.7	16.3 16.3	16.3	32.9 32.9	32.9	7.7 7.7	7.7	79.8 77.7	78.8	6.4 6.2	6.3	4.4 4.2	4.3	6.0 5.0	5.5
18-Mar-14	Sunny	Moderate	13:03	Middle	5.7	16.9 16.9	16.9	32.8 32.8	32.8	7.3 7.3	7.3	69.8 69.4	69.6	5.6 5.5	5.5	5.1 5.1	5.1	3.0 4.0	3.5
20-Mar-14	Fine	Calm	14:34	Middle	5.8	16.7 16.7	16.7	32.7 32.7	32.7	7.4 7.4	7.4	71.6 69.7	70.7	5.3 5.2	5.2	2.9 2.8	2.9	2.0 3.0	2.5
22-Mar-14	Fine	Moderate	15:55	Middle	5.5	18.0 18.0	18.0	32.7 32.6	32.7	7.8 7.8	7.8	63.8 65.2	64.5	5.0 5.1	5.0	4.3 4.1	4.2	4.0 4.0	4.0
25-Mar-14	Sunny	Moderate	20:06	Middle	6.1	17.6 17.6	17.6	32.8 32.8	32.8	7.9 7.9	7.9	79.2 80.3	79.8	6.2 6.3	6.3	5.1 5.2	5.2	3.0 3.0	3.0
27-Mar-14	Sunny	Moderate	9:56	Middle	6.1	18.4 18.5	18.5	32.9 32.8	32.9	7.7 7.7	7.7	75.9 73.5	74.7	5.8 5.7	5.7	2.1 2.0	2.1	5.0 5.0	5.0
29-Mar-14	Cloudy	Moderate	11:18	Middle	6.1	18.7 18.7	18.7	32.8 32.8	32.8	7.8 7.8	7.8	77.9 79.0	78.5	6.0 6.1	6.0	2.6 2.6	2.6	4.0 5.0	4.5
1-Apr-14	Fine	Moderate	12:51	Middle	6.0	17.9 17.9	17.9	32.0 31.7	31.8	7.5 7.5	7.5	68.2 68.6	68.4	5.5 5.5	5.5	4.8 4.8	4.8	5.0 5.0	5.0
3-Apr-14	Cloudy	Moderate	14:58	Middle	6.1	19.4 19.4	19.4	31.3 31.1	31.2	8.0 8.0	8.0	85.4 80.1	82.8	6.5 6.1	6.3	2.5 2.5	2.5	4.0 4.0	4.0
5-Apr-14	Sunny	Calm	16:44	Middle	6.0	18.7 18.7	18.7	31.4 31.4	31.4	8.2 8.3	8.2	93.2 92.6	92.9	7.3 7.2	7.2	4.3 4.4	4.4	3.0 4.0	3.5
8-Apr-14	Cloudy	Moderate	19:42	Middle	5.9	18.3 18.2	18.2	32.0 32.0	32.0	7.8 7.7	7.8	86.7 86.9	86.8	6.8 6.8	6.8	2.7 2.6	2.7	3.0 2.0	2.5

Remark: \* DA: Depth-Averaged

\*\* Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher

### Water Quality Monitoring Results at A - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		Salinity (ppt)		pH		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)		Suspended Solids (mg/L)	
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
13-Mar-14	Sunny	Moderate	16:16	Middle	5.9	16.6 16.6	16.6	33.1 33.1	33.1	8.0 8.0	8.0	80.1 78.6	79.4	6.4 6.3	6.33	3.2 3.4	3.3	6.0 5.0	5.5
15-Mar-14	Cloudy	Moderate	17:40	Middle	6.1	16.3 16.4	16.4	33.0 33.0	33.0	7.8 7.8	7.8	78.2 80.5	79.4	6.3 6.5	6.37	3.9 3.9	3.9	5.0 4.0	4.5
18-Mar-14	Sunny	Moderate	20:00	Middle	5.9	17.0 17.0	17.0	32.9 32.8	32.8	7.4 7.4	7.4	72.0 70.1	71.1	5.7 5.6	5.64	5.7 5.5	5.6	4.0 3.0	3.5
20-Mar-14	Fine	Calm	7:55	Middle	6.2	16.7 16.7	16.7	32.7 32.7	32.7	7.4 7.4	7.4	69.7 69.3	69.5	5.5 5.4	5.43	3.2 3.4	3.3	2.0 4.0	3.0
22-Mar-14	Fine	Moderate	9:00	Middle	6.0	17.9 17.9	17.9	32.7 32.7	32.7	7.7 7.8	7.7	69.4 67.0	68.2	5.4 5.2	5.33	4.4 4.3	4.4	4.0 5.0	4.5
25-Mar-14	Sunny	Moderate	12:24	Middle	6.1	17.7 17.7	17.7	32.8 32.8	32.8	7.9 7.9	7.9	78.6 79.9	79.3	6.2 6.3	6.20	5.4 5.3	5.4	3.0 4.0	3.5
27-Mar-14	Sunny	Moderate	15:25	Middle	5.9	18.8 18.8	18.8	32.7 32.8	32.7	7.8 7.8	7.8	78.4 82.3	80.4	6.0 6.3	6.16	1.9 1.8	1.9	<2 2.0	2.0
29-Mar-14	Cloudy	Moderate	17:29	Middle	6.2	18.8 18.7	18.7	32.8 32.8	32.8	7.8 7.8	7.8	77.0 78.6	77.8	5.9 6.0	5.97	4.7 4.5	4.6	5.0 5.0	5.0
1-Apr-14	Fine	Moderate	19:39	Middle	5.5	17.9 17.9	17.9	31.3 31.3	31.3	7.4 7.4	7.4	80.8 80.3	80.6	5.9 5.9	5.88	3.3 3.5	3.4	4.0 5.0	4.5
3-Apr-14	Cloudy	Moderate	7:57	Middle	6.0	19.4 19.4	19.4	31.3 31.3	31.3	7.9 7.9	7.9	91.7 81.4	86.6	7.0 6.2	6.62	2.6 2.8	2.7	4.0 4.0	4.0
5-Apr-14	Sunny	Calm	9:26	Middle	5.5	18.7 18.7	18.7	31.9 31.8	31.8	8.2 8.2	8.2	93.8 93.3	93.6	7.4 7.3	7.34	4.3 4.1	4.2	3.0 3.0	3.0
8-Apr-14	Cloudy	Moderate	6:51	Middle	5.8	18.1 18.1	18.1	31.0 30.9	30.9	7.8 7.8	7.8	88.0 87.6	87.8	6.9 6.8	6.85	2.5 2.5	2.5	2.0 3.0	2.5

Remark: \* DA: Depth-Averaged

\*\* Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher

### Water Quality Monitoring Results at WSD9 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		Salinity (ppt)		pH		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity (NTU)		Suspended Solids (mg/L)	
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
13-Mar-14	Sunny	Moderate	11:31	Middle	3.5	16.1 16.1	16.1	33.1 33.1	33.1	8.0 8.0	8.0	87.2 86.3	86.8	7.0 7.0	7.0	1.8 1.7	1.8	5.0 3.0	4.0
15-Mar-14	Cloudy	Moderate	11:48	Middle	3.4	16.2 16.2	16.2	33.0 33.0	33.0	7.8 7.8	7.8	87.5 90.6	89.1	7.0 7.3	7.2	1.8 1.8	1.8	2.0 3.0	2.5
18-Mar-14	Sunny	Moderate	13:19	Middle	3.6	16.9 16.9	16.9	32.9 32.9	32.9	7.4 7.4	7.4	81.3 82.9	82.1	6.5 6.6	6.5	2.3 2.3	2.3	3.0 2.0	2.5
20-Mar-14	Fine	Calm	14:14	Middle	3.5	16.8 16.7	16.7	32.7 32.7	32.7	7.4 7.4	7.4	76.1 78.7	77.4	5.3 5.5	5.4	1.8 1.9	1.9	<2 <2	<2
22-Mar-14	Fine	Moderate	15:41	Middle	3.5	17.9 17.9	17.9	32.8 32.8	32.8	7.9 7.9	7.9	74.6 74.8	74.7	5.8 5.8	5.8	2.5 2.4	2.5	4.0 5.0	4.5
25-Mar-14	Sunny	Moderate	19:48	Middle	3.6	18.1 18.0	18.1	32.8 32.8	32.8	8.0 8.0	8.0	95.8 95.7	95.8	7.4 7.4	7.4	1.9 1.9	1.9	3.0 2.0	2.5
27-Mar-14	Sunny	Moderate	10:13	Middle	3.3	18.0 18.2	18.1	33.2 33.2	33.2	8.0 8.0	8.0	90.2 91.4	90.8	7.0 7.0	7.0	1.9 1.8	1.9	4.0 4.0	4.0
29-Mar-14	Cloudy	Moderate	11:32	Middle	3.7	18.5 18.6	18.6	33.1 33.0	33.1	7.9 7.9	7.9	91.0 88.6	89.8	7.0 6.8	6.9	1.6 1.6	1.6	3.0 3.0	3.0
1-Apr-14	Fine	Moderate	13:07	Middle	3.5	17.9 17.9	17.9	31.6 31.7	31.6	7.5 7.5	7.5	76.2 75.3	75.8	5.7 5.6	5.6	1.9 1.9	1.9	4.0 3.0	3.5
3-Apr-14	Cloudy	Moderate	14:39	Middle	3.6	19.3 19.2	19.2	31.4 31.5	31.5	8.0 8.0	8.0	83.4 81.3	82.4	6.4 6.2	6.3	1.5 1.5	1.5	<2 <2	<2
5-Apr-14	Sunny	Calm	16:32	Middle	3.5	18.6 18.6	18.6	31.3 31.3	31.3	8.2 8.2	8.2	93.9 93.6	93.8	7.4 7.4	7.4	2.3 2.4	2.4	4.0 3.0	3.5
8-Apr-14	Cloudy	Moderate	19:22	Middle	3.5	18.2 18.3	18.3	31.3 31.3	31.3	7.8 7.8	7.8	87.2 87.5	87.4	6.8 6.8	6.8	1.9 1.9	1.9	2.0 3.0	2.5

Remark: \* DA: Depth-Averaged

\*\* Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher

### Water Quality Monitoring Results at WSD9 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		Salinity (ppt)		pH		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)		Suspended Solids (mg/L)	
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
13-Mar-14	Sunny	Moderate	16:01	Middle	3.6	16.2 16.2	16.2	33.2 33.2	33.2	8.1 8.1	8.1	90.0 88.3	89.2	7.2 7.1	7.2	2.5 2.3	2.4	4.0 4.0	4.0
15-Mar-14	Cloudy	Moderate	17:22	Middle	3.7	16.1 16.1	16.1	33.0 33.0	33.0	7.8 7.9	7.8	91.2 88.4	89.8	7.4 7.1	7.2	1.9 1.9	1.9	3.0 4.0	3.5
18-Mar-14	Sunny	Moderate	19:43	Middle	3.7	17.0 16.9	16.9	32.9 32.9	32.9	7.4 7.4	7.4	76.9 79.5	78.2	6.1 6.3	6.2	2.6 2.7	2.7	4.0 5.0	4.5
20-Mar-14	Fine	Calm	8:18	Middle	3.1	16.7 16.7	16.7	32.7 32.7	32.7	7.4 7.4	7.4	80.9 82.5	81.7	6.1 6.2	6.1	2.0 1.9	2.0	4.0 4.0	4.0
22-Mar-14	Fine	Moderate	9:18	Middle	3.0	17.8 17.9	17.8	32.8 32.8	32.8	7.8 7.9	7.8	79.5 74.8	77.2	6.2 5.8	6.0	2.1 2.1	2.1	5.0 5.0	5.0
25-Mar-14	Sunny	Moderate	12:42	Middle	3.7	18.0 18.0	18.0	32.9 32.8	32.8	8.0 8.0	8.0	94.8 94.6	94.7	7.4 7.4	7.4	1.9 1.9	1.9	2.0 3.0	2.5
27-Mar-14	Sunny	Moderate	15:09	Middle	3.5	18.4 18.2	18.3	33.1 33.1	33.1	8.0 8.0	8.0	91.8 91.4	91.6	7.1 7.1	7.1	0.9 0.9	0.9	3.0 3.0	3.0
29-Mar-14	Cloudy	Moderate	17:12	Middle	3.6	18.5 18.6	18.5	33.1 33.1	33.1	8.0 7.9	7.9	88.7 89.4	89.1	6.8 6.9	6.8	1.6 1.6	1.6	3.0 3.0	3.0
1-Apr-14	Fine	Moderate	19:25	Middle	3.0	17.8 17.8	17.8	31.5 31.4	31.4	7.4 7.4	7.4	81.7 80.0	80.9	6.0 5.8	5.9	1.9 1.9	1.9	3.0 2.0	2.5
3-Apr-14	Cloudy	Moderate	8:15	Middle	3.5	19.2 19.3	19.2	31.6 31.4	31.5	8.0 7.9	8.0	82.7 87.1	84.9	6.3 6.7	6.5	1.8 2.0	1.9	4.0 4.0	4.0
5-Apr-14	Sunny	Calm	9:40	Middle	3.1	18.7 18.7	18.7	31.6 31.6	31.6	8.2 8.2	8.2	93.6 93.6	93.6	7.4 7.4	7.4	2.2 2.1	2.2	3.0 3.0	3.0
8-Apr-14	Cloudy	Moderate	7:10	Middle	3.6	18.2 18.2	18.2	31.7 31.7	31.7	7.8 7.8	7.8	87.3 87.5	87.4	6.8 6.8	6.8	1.9 1.9	1.9	4.0 3.0	3.5

Remark: \* DA: Depth-Averaged

\*\* Calm: Small or no wave; Moderate: Between calm and rough; Rough: White capped or rougher

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**APPENDIX 2.5**

**SUMMARY OF EPD MONITORING DATA BETWEEN 2010 AND  
2012**

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Appendix 2.5 - Summary of EPD monitoring data between 2010 and 2012

Summary of EPD monitoring data for 2010 (Wet Season)

Water Control Zone	Station	Dates	Sample No	Depth	Suspended Solids (mg/L)	Dissolved Oxygen (mg/L)	Turbidity (NTU)
Victoria Harbour	VM2	4/9/2010	1	Surface Water	3.7	6.5	3.1
Victoria Harbour	VM2	5/26/2010	1	Surface Water	2.5	6.2	1.1
Victoria Harbour	VM2	6/10/2010	1	Surface Water	1.3	4	1.2
Victoria Harbour	VM2	7/7/2010	1	Surface Water	0.6	6	1.3
Victoria Harbour	VM2	8/4/2010	1	Surface Water	5.2	4.8	5
Victoria Harbour	VM2	9/1/2010	1	Surface Water	2.5	4.7	3.7
Victoria Harbour	VM4	4/9/2010	1	Surface Water	1.9	6.6	2.4
Victoria Harbour	VM4	5/26/2010	1	Surface Water	2.5	5.6	1.4
Victoria Harbour	VM4	6/10/2010	1	Surface Water	1.3	4.7	1.2
Victoria Harbour	VM4	7/7/2010	1	Surface Water	2	7.1	1.4
Victoria Harbour	VM4	8/4/2010	1	Surface Water	5.4	7.7	3.4
Victoria Harbour	VM4	9/1/2010	1	Surface Water	3.6	3.7	4.1
Victoria Harbour	VM5	4/9/2010	1	Surface Water	2.9	6.3	2.5
Victoria Harbour	VM5	5/26/2010	1	Surface Water	2.2	6.7	1.1
Victoria Harbour	VM5	6/10/2010	1	Surface Water	1.5	4.1	1.5
Victoria Harbour	VM5	7/7/2010	1	Surface Water	2.3	7.1	1.4
Victoria Harbour	VM5	8/4/2010	1	Surface Water	5.6	8.2	4.3
Victoria Harbour	VM5	9/1/2010	1	Surface Water	5.7	3.8	5.6
Victoria Harbour	VM6	4/9/2010	1	Surface Water	2.1	6.2	2.3
Victoria Harbour	VM6	5/26/2010	1	Surface Water	2	6.5	1.2
Victoria Harbour	VM6	6/10/2010	1	Surface Water	1.2	4.8	1.8
Victoria Harbour	VM6	7/7/2010	1	Surface Water	2.5	7	1.5
Victoria Harbour	VM6	8/4/2010	1	Surface Water	5	8.5	5.6
Victoria Harbour	VM6	9/1/2010	1	Surface Water	4.7	3.7	4.8
Victoria Harbour	VM2	4/9/2010	1	Middle Water	3.2	6.6	3
Victoria Harbour	VM2	5/26/2010	1	Middle Water	2.3	5.8	1.4
Victoria Harbour	VM2	6/10/2010	1	Middle Water	0.9	4.4	1
Victoria Harbour	VM2	7/7/2010	1	Middle Water	1.3	4.6	1.1
Victoria Harbour	VM2	8/4/2010	1	Middle Water	4.2	4.9	3.8
Victoria Harbour	VM2	9/1/2010	1	Middle Water	3.1	3.3	4.1
Victoria Harbour	VM4	4/9/2010	1	Middle Water	3.1	6.8	2.5
Victoria Harbour	VM4	5/26/2010	1	Middle Water	3.2	5.5	2.2
Victoria Harbour	VM4	6/10/2010	1	Middle Water	1	4.4	1.2
Victoria Harbour	VM4	7/7/2010	1	Middle Water	1.7	4.8	1.2
Victoria Harbour	VM4	8/4/2010	1	Middle Water	4.6	7.1	3.9
Victoria Harbour	VM4	9/1/2010	1	Middle Water	3.8	3.5	4.2
Victoria Harbour	VM5	4/9/2010	1	Middle Water	3.4	6.3	2.4
Victoria Harbour	VM5	5/26/2010	1	Middle Water	2.7	6.4	1.7
Victoria Harbour	VM5	6/10/2010	1	Middle Water	1.4	4.4	1.1
Victoria Harbour	VM5	7/7/2010	1	Middle Water	1.8	6.2	1.3
Victoria Harbour	VM5	8/4/2010	1	Middle Water	3.7	4.4	3.7
Victoria Harbour	VM5	9/1/2010	1	Middle Water	5.5	3.8	5.1
Victoria Harbour	VM6	4/9/2010	1	Middle Water	2.7	6.3	2.6
Victoria Harbour	VM6	5/26/2010	1	Middle Water	2.6	6.7	1.8
Victoria Harbour	VM6	6/10/2010	1	Middle Water	1.3	4.3	1.1
Victoria Harbour	VM6	7/7/2010	1	Middle Water	2.2	3.2	1.7
Victoria Harbour	VM6	8/4/2010	1	Middle Water	4.2	3	4
Victoria Harbour	VM6	9/1/2010	1	Middle Water	3.9	3.6	4.3

Summary of EPD monitoring data for 2010 (Dry Season)

Water Control Zone	Station	Dates	Sample No	Depth	Suspended Solids (mg/L)	Dissolved Oxygen (mg/L)	Turbidity (NTU)
Victoria Harbour	VM2	1/7/2010	1	Surface Water	2.3	6.4	2
Victoria Harbour	VM2	2/22/2010	1	Surface Water	1.5	6.4	4.4
Victoria Harbour	VM2	3/26/2010	1	Surface Water	1.4	6.6	2.2
Victoria Harbour	VM2	10/13/2010	1	Surface Water	6.1	4.5	3.7
Victoria Harbour	VM2	11/1/2010	1	Surface Water	6.3	4.8	4.7
Victoria Harbour	VM2	12/16/2010	1	Surface Water	2.8	6.5	2.5
Victoria Harbour	VM4	1/7/2010	1	Surface Water	3.6	6.2	2.4
Victoria Harbour	VM4	2/22/2010	1	Surface Water	1.5	5.8	4.4
Victoria Harbour	VM4	3/26/2010	1	Surface Water	0.7	6.7	1.5
Victoria Harbour	VM4	10/13/2010	1	Surface Water	6.6	3.9	5.1
Victoria Harbour	VM4	11/1/2010	1	Surface Water	5.8	4.9	7
Victoria Harbour	VM4	12/16/2010	1	Surface Water	3.1	6.2	3
Victoria Harbour	VM5	1/7/2010	1	Surface Water	4	6	4.1
Victoria Harbour	VM5	2/22/2010	1	Surface Water	2.1	5.9	5.6
Victoria Harbour	VM5	3/26/2010	1	Surface Water	<0.5	6	2.3
Victoria Harbour	VM5	10/13/2010	1	Surface Water	8	3.7	5.1
Victoria Harbour	VM5	11/1/2010	1	Surface Water	4.8	5	4.4
Victoria Harbour	VM5	12/16/2010	1	Surface Water	4.7	5.8	3.9
Victoria Harbour	VM6	1/7/2010	1	Surface Water	4.1	6.1	3
Victoria Harbour	VM6	2/22/2010	1	Surface Water	2.5	5.7	5.4
Victoria Harbour	VM6	3/26/2010	1	Surface Water	0.9	6.2	0.9
Victoria Harbour	VM6	10/13/2010	1	Surface Water	6	4	3.8
Victoria Harbour	VM6	11/1/2010	1	Surface Water	4.6	4.8	3.7
Victoria Harbour	VM6	12/16/2010	1	Surface Water	2.5	5.7	2.8
Victoria Harbour	VM2	1/7/2010	1	Middle Water	4	6.5	2.3
Victoria Harbour	VM2	2/22/2010	1	Middle Water	1.7	6.7	4.7
Victoria Harbour	VM2	3/26/2010	1	Middle Water	1.1	6.7	1.5
Victoria Harbour	VM2	10/13/2010	1	Middle Water	7.7	4.5	5
Victoria Harbour	VM2	11/1/2010	1	Middle Water	7.7	4.8	4.6
Victoria Harbour	VM2	12/16/2010	1	Middle Water	2.1	6.6	2.4
Victoria Harbour	VM4	1/7/2010	1	Middle Water	3.6	6.2	2.5
Victoria Harbour	VM4	2/22/2010	1	Middle Water	1.6	6.5	4.8
Victoria Harbour	VM4	3/26/2010	1	Middle Water	1	6.7	1.4
Victoria Harbour	VM4	10/13/2010	1	Middle Water	9.1	3.9	5.5
Victoria Harbour	VM4	11/1/2010	1	Middle Water	5.9	4.9	3.9
Victoria Harbour	VM4	12/16/2010	1	Middle Water	2.9	6.6	2.7
Victoria Harbour	VM5	1/7/2010	1	Middle Water	4.6	6.1	3.6
Victoria Harbour	VM5	2/22/2010	1	Middle Water	2.7	6.1	5.5
Victoria Harbour	VM5	3/26/2010	1	Middle Water	1.3	6.2	1.1
Victoria Harbour	VM5	10/13/2010	1	Middle Water	11	3.8	5.4
Victoria Harbour	VM5	11/1/2010	1	Middle Water	6.2	5.1	3.7
Victoria Harbour	VM5	12/16/2010	1	Middle Water	3.9	6.3	3.9
Victoria Harbour	VM6	1/7/2010	1	Middle Water	3.9	6.1	3.2
Victoria Harbour	VM6	2/22/2010	1	Middle Water	2.3	6	5.4
Victoria Harbour	VM6	3/26/2010	1	Middle Water	0.9	6.2	1
Victoria Harbour	VM6	10/13/2010	1	Middle Water	6.3	3.9	4.7
Victoria Harbour	VM6	11/1/2010	1	Middle Water	5.2	5	3.8
Victoria Harbour	VM6	12/16/2010	1	Middle Water	3.3	5.9	2.6

Appendix 2.5 - Summary of EPD monitoring data between 2010 and 2012

Victoria Harbour	VM2	4/9/2010	1 Bottom Water	2.3	6.6	2.9	Victoria Harbour	VM2	1/7/2010	1 Bottom Water	4.2	6.6	2.8
Victoria Harbour	VM2	5/26/2010	1 Bottom Water	2.3	5.9	1.5	Victoria Harbour	VM2	2/22/2010	1 Bottom Water	1.6	6.9	4.9
Victoria Harbour	VM2	6/10/2010	1 Bottom Water	1	4.3	0.9	Victoria Harbour	VM2	3/26/2010	1 Bottom Water	1.8	6.7	1.1
Victoria Harbour	VM2	7/7/2010	1 Bottom Water	0.9	1.7	1.8	Victoria Harbour	VM2	10/13/2010	1 Bottom Water	8.4	4.5	7.7
Victoria Harbour	VM2	8/4/2010	1 Bottom Water	5	2.9	5.5	Victoria Harbour	VM2	11/1/2010	1 Bottom Water	8.8	4.9	4.4
Victoria Harbour	VM2	9/1/2010	1 Bottom Water	14	2.5	10	Victoria Harbour	VM2	12/16/2010	1 Bottom Water	3.7	6.6	2.5
Victoria Harbour	VM4	4/9/2010	1 Bottom Water	3.2	6.9	2.8	Victoria Harbour	VM4	1/7/2010	1 Bottom Water	3.8	6.2	2.5
Victoria Harbour	VM4	5/26/2010	1 Bottom Water	2.9	5.4	1.7	Victoria Harbour	VM4	2/22/2010	1 Bottom Water	2.2	6.5	5.1
Victoria Harbour	VM4	6/10/2010	1 Bottom Water	3.8	4.4	1.1	Victoria Harbour	VM4	3/26/2010	1 Bottom Water	2.6	6.7	2.2
Victoria Harbour	VM4	7/7/2010	1 Bottom Water	1.3	1.3	1.4	Victoria Harbour	VM4	10/13/2010	1 Bottom Water	10	3.9	6.6
Victoria Harbour	VM4	8/4/2010	1 Bottom Water	4.9	6.4	4	Victoria Harbour	VM4	11/1/2010	1 Bottom Water	7	4.9	6.1
Victoria Harbour	VM4	9/1/2010	1 Bottom Water	7.9	3	6.8	Victoria Harbour	VM4	12/16/2010	1 Bottom Water	4.1	6.5	2.9
Victoria Harbour	VM5	4/9/2010	1 Bottom Water	3.9	6.3	2.9	Victoria Harbour	VM5	1/7/2010	1 Bottom Water	4.5	6.1	3.5
Victoria Harbour	VM5	5/26/2010	1 Bottom Water	3.2	6.1	2.7	Victoria Harbour	VM5	2/22/2010	1 Bottom Water	2.9	6.2	5.6
Victoria Harbour	VM5	6/10/2010	1 Bottom Water	1.5	4.6	1.1	Victoria Harbour	VM5	3/26/2010	1 Bottom Water	1.6	6.2	1.8
Victoria Harbour	VM5	7/7/2010	1 Bottom Water	3.7	1.3	4.4	Victoria Harbour	VM5	10/13/2010	1 Bottom Water	8.1	3.7	6
Victoria Harbour	VM5	8/4/2010	1 Bottom Water	7.8	2.8	3.7	Victoria Harbour	VM5	11/1/2010	1 Bottom Water	5.6	5	3.9
Victoria Harbour	VM5	9/1/2010	1 Bottom Water	6.1	3.3	5.4	Victoria Harbour	VM5	12/16/2010	1 Bottom Water	4.3	6.3	3.7
Victoria Harbour	VM6	4/9/2010	1 Bottom Water	2.7	6.3	2.5	Victoria Harbour	VM6	1/7/2010	1 Bottom Water	3.9	6.1	3
Victoria Harbour	VM6	5/26/2010	1 Bottom Water	3.5	6.4	2.8	Victoria Harbour	VM6	2/22/2010	1 Bottom Water	3.2	6	5.6
Victoria Harbour	VM6	6/10/2010	1 Bottom Water	1.9	4.4	1.3	Victoria Harbour	VM6	3/26/2010	1 Bottom Water	1.3	6.2	1
Victoria Harbour	VM6	7/7/2010	1 Bottom Water	1.5	1.2	1.8	Victoria Harbour	VM6	10/13/2010	1 Bottom Water	8.5	3.9	4.9
Victoria Harbour	VM6	8/4/2010	1 Bottom Water	6.5	2.5	4.5	Victoria Harbour	VM6	11/1/2010	1 Bottom Water	6.4	5.2	4.3
Victoria Harbour	VM6	9/1/2010	1 Bottom Water	6.4	3.4	5.6	Victoria Harbour	VM6	12/16/2010	1 Bottom Water	2.7	6.3	2.9

Appendix 2.5 - Summary of EPD monitoring data between 2010 and 2012

Summary of EPD monitoring data for 2011 (Wet Season)

Water Control Zone	Station	Dates	Sample No	Depth	Suspended Solids (mg/L)	Dissolved Oxygen (mg/L)	Turbidity (NTU)
Victoria Harbour	VM2	4/6/2011	1	Surface Water	4.2	6.7	2.3
Victoria Harbour	VM2	5/11/2011	1	Surface Water	2.9	4.6	1.9
Victoria Harbour	VM2	6/8/2011	1	Surface Water	0.6	4.7	0.7
Victoria Harbour	VM2	7/8/2011	1	Surface Water	4.1	3.6	2.6
Victoria Harbour	VM2	8/3/2011	1	Surface Water	2.2	4	1.8
Victoria Harbour	VM2	9/2/2011	1	Surface Water	5	3.9	3.7
Victoria Harbour	VM4	4/6/2011	1	Surface Water	4.8	6.4	4
Victoria Harbour	VM4	5/11/2011	1	Surface Water	2.4	4.9	1.7
Victoria Harbour	VM4	6/8/2011	1	Surface Water	<0.5	4.2	0.7
Victoria Harbour	VM4	7/8/2011	1	Surface Water	3.5	3.7	2.3
Victoria Harbour	VM4	8/3/2011	1	Surface Water	2.7	4.1	1.7
Victoria Harbour	VM4	9/2/2011	1	Surface Water	4.8	3.9	3.5
Victoria Harbour	VM5	4/6/2011	1	Surface Water	3.7	5.5	2.6
Victoria Harbour	VM5	5/11/2011	1	Surface Water	2.5	5.5	1.8
Victoria Harbour	VM5	6/8/2011	1	Surface Water	0.5	4.4	0.6
Victoria Harbour	VM5	7/8/2011	1	Surface Water	3.2	3.9	2.7
Victoria Harbour	VM5	8/3/2011	1	Surface Water	3.3	3.6	2.4
Victoria Harbour	VM5	9/2/2011	1	Surface Water	4.2	3.3	3
Victoria Harbour	VM6	4/6/2011	1	Surface Water	4	5.6	3.7
Victoria Harbour	VM6	5/11/2011	1	Surface Water	2	5.5	1.5
Victoria Harbour	VM6	6/8/2011	1	Surface Water	<0.5	4.2	5.1
Victoria Harbour	VM6	7/8/2011	1	Surface Water	2.4	4.2	2.4
Victoria Harbour	VM6	8/3/2011	1	Surface Water	4.2	3.6	3
Victoria Harbour	VM6	9/2/2011	1	Surface Water	4.7	2.9	3.2
Victoria Harbour	VM2	4/6/2011	1	Middle Water	4.1	6.7	2.3
Victoria Harbour	VM2	5/11/2011	1	Middle Water	2.9	4.6	1.6
Victoria Harbour	VM2	6/8/2011	1	Middle Water	0.9	4.4	1.2
Victoria Harbour	VM2	7/8/2011	1	Middle Water	3.6	4.3	2.8
Victoria Harbour	VM2	8/3/2011	1	Middle Water	2.1	4	1.6
Victoria Harbour	VM2	9/2/2011	1	Middle Water	4.9	3.8	4.8
Victoria Harbour	VM4	4/6/2011	1	Middle Water	5.3	6.4	3.1
Victoria Harbour	VM4	5/11/2011	1	Middle Water	2.8	4.9	1.6
Victoria Harbour	VM4	6/8/2011	1	Middle Water	<0.5	4.2	1
Victoria Harbour	VM4	7/8/2011	1	Middle Water	3.4	4.2	2.3
Victoria Harbour	VM4	8/3/2011	1	Middle Water	4	3.4	2.5
Victoria Harbour	VM4	9/2/2011	1	Middle Water	5.4	3.3	5
Victoria Harbour	VM5	4/6/2011	1	Middle Water	3.8	5.7	2.7
Victoria Harbour	VM5	5/11/2011	1	Middle Water	2.8	4.3	2
Victoria Harbour	VM5	6/8/2011	1	Middle Water	0.5	4.2	1
Victoria Harbour	VM5	7/8/2011	1	Middle Water	4.1	4	2.6
Victoria Harbour	VM5	8/3/2011	1	Middle Water	3.3	3.4	3
Victoria Harbour	VM5	9/2/2011	1	Middle Water	5.3	3.2	7
Victoria Harbour	VM6	4/6/2011	1	Middle Water	4.4	5.7	2.9
Victoria Harbour	VM6	5/11/2011	1	Middle Water	2.2	4.9	1.3
Victoria Harbour	VM6	6/8/2011	1	Middle Water	<0.5	4.2	0.7
Victoria Harbour	VM6	7/8/2011	1	Middle Water	3	4.1	2.6
Victoria Harbour	VM6	8/3/2011	1	Middle Water	4.2	3.5	2.8
Victoria Harbour	VM6	9/2/2011	1	Middle Water	4.5	3.2	4.1

Summary of EPD monitoring data for 2011 (Dry Season)

Water Control Zone	Station	Dates	Sample No	Depth	Suspended Solids (mg/L)	Dissolved Oxygen (mg/L)	Turbidity (NTU)
Victoria Harbour	VM2	1/12/2011	1	Surface Water	2	6.7	1.7
Victoria Harbour	VM2	2/9/2011	1	Surface Water	3.7	7.3	2
Victoria Harbour	VM2	3/16/2011	1	Surface Water	2.9	6.4	2.3
Victoria Harbour	VM2	10/6/2011	1	Surface Water	4.5	4.6	24.7
Victoria Harbour	VM2	11/2/2011	1	Surface Water	2.6	5.1	2.2
Victoria Harbour	VM2	12/5/2011	1	Surface Water	2.6	6.2	2.1
Victoria Harbour	VM4	1/12/2011	1	Surface Water	2.2	6.6	1.6
Victoria Harbour	VM4	2/9/2011	1	Surface Water	2.8	6.8	1.9
Victoria Harbour	VM4	3/16/2011	1	Surface Water	2.1	6.4	1.6
Victoria Harbour	VM4	10/6/2011	1	Surface Water	6.6	4.7	6.1
Victoria Harbour	VM4	11/2/2011	1	Surface Water	6.2	4.9	4.2
Victoria Harbour	VM4	12/5/2011	1	Surface Water	2.8	6.3	2.3
Victoria Harbour	VM5	1/12/2011	1	Surface Water	2.9	5.9	3.1
Victoria Harbour	VM5	2/9/2011	1	Surface Water	2.8	6.3	2.4
Victoria Harbour	VM5	3/16/2011	1	Surface Water	1.5	6.3	1.4
Victoria Harbour	VM5	10/6/2011	1	Surface Water	5.1	4.9	4.3
Victoria Harbour	VM5	11/2/2011	1	Surface Water	7	4.4	5.1
Victoria Harbour	VM5	12/5/2011	1	Surface Water	3.2	5.4	3
Victoria Harbour	VM6	1/12/2011	1	Surface Water	2.7	5.9	2.1
Victoria Harbour	VM6	2/9/2011	1	Surface Water	3.4	6.4	2.5
Victoria Harbour	VM6	3/16/2011	1	Surface Water	2	5.9	1.7
Victoria Harbour	VM6	10/6/2011	1	Surface Water	5.1	4.9	4.1
Victoria Harbour	VM6	11/2/2011	1	Surface Water	5.9	4.7	4
Victoria Harbour	VM6	12/5/2011	1	Surface Water	3.1	5.4	2.5
Victoria Harbour	VM2	1/12/2011	1	Middle Water	2.1	6.8	1.8
Victoria Harbour	VM2	2/9/2011	1	Middle Water	2.3	7.6	1.7
Victoria Harbour	VM2	3/16/2011	1	Middle Water	2.8	6.6	1.8
Victoria Harbour	VM2	10/6/2011	1	Middle Water	7.9	4.7	6.1
Victoria Harbour	VM2	11/2/2011	1	Middle Water	4.3	5.2	2.8
Victoria Harbour	VM2	12/5/2011	1	Middle Water	3.1	6.3	2.3
Victoria Harbour	VM4	1/12/2011	1	Middle Water	2.5	6.6	1.7
Victoria Harbour	VM4	2/9/2011	1	Middle Water	3.1	7.2	1.9
Victoria Harbour	VM4	3/16/2011	1	Middle Water	2.2	6.4	1.3
Victoria Harbour	VM4	10/6/2011	1	Middle Water	7.5	4.7	5.2
Victoria Harbour	VM4	11/2/2011	1	Middle Water	6.6	4.9	4.4
Victoria Harbour	VM4	12/5/2011	1	Middle Water	2.4	6.3	2.1
Victoria Harbour	VM5	1/12/2011	1	Middle Water	1.7	6	2.4
Victoria Harbour	VM5	2/9/2011	1	Middle Water	3.5	6.2	2.1
Victoria Harbour	VM5	3/16/2011	1	Middle Water	1.9	6.2	1.2
Victoria Harbour	VM5	10/6/2011	1	Middle Water	6	4.9	4.5
Victoria Harbour	VM5	11/2/2011	1	Middle Water	7.8	4.4	5.7
Victoria Harbour	VM5	12/5/2011	1	Middle Water	3.1	5.5	2.6
Victoria Harbour	VM6	1/12/2011	1	Middle Water	3.1	5.9	2.2
Victoria Harbour	VM6	2/9/2011	1	Middle Water	3.2	6.5	1.9
Victoria Harbour	VM6	3/16/2011	1	Middle Water	2.2	6.1	1.6
Victoria Harbour	VM6	10/6/2011	1	Middle Water	6.1	4.9	4.9
Victoria Harbour	VM6	11/2/2011	1	Middle Water	6.4	4.7	4.6
Victoria Harbour	VM6	12/5/2011	1	Middle Water	1.4	5.5	2.5

Appendix 2.5 - Summary of EPD monitoring data between 2010 and 2012

Victoria Harbour	VM2	4/6/2011	1 Bottom Water	3.9	6.7	2.8	Victoria Harbour	VM2	1/12/2011	1 Bottom Water	2.1	6.8	2.1
Victoria Harbour	VM2	5/11/2011	1 Bottom Water	2.8	4.8	1.7	Victoria Harbour	VM2	2/9/2011	1 Bottom Water	2.9	7.6	1.8
Victoria Harbour	VM2	6/8/2011	1 Bottom Water	8.3	4.7	5.8	Victoria Harbour	VM2	3/16/2011	1 Bottom Water	2.3	7.2	1.1
Victoria Harbour	VM2	7/8/2011	1 Bottom Water	4.8	3.5	4.1	Victoria Harbour	VM2	10/6/2011	1 Bottom Water	8.4	4.8	6.8
Victoria Harbour	VM2	8/3/2011	1 Bottom Water	2.8	3.7	1.8	Victoria Harbour	VM2	11/2/2011	1 Bottom Water	6.1	5.2	3.9
Victoria Harbour	VM2	9/2/2011	1 Bottom Water	5.6	3.7	3.3	Victoria Harbour	VM2	12/5/2011	1 Bottom Water	3.4	6.3	2.6
Victoria Harbour	VM4	4/6/2011	1 Bottom Water	5.5	6.5	3.2	Victoria Harbour	VM4	1/12/2011	1 Bottom Water	1.8	6.6	2
Victoria Harbour	VM4	5/11/2011	1 Bottom Water	3.7	3.7	2.4	Victoria Harbour	VM4	2/9/2011	1 Bottom Water	3.1	7.3	2
Victoria Harbour	VM4	6/8/2011	1 Bottom Water	7.1	4.1	5.1	Victoria Harbour	VM4	3/16/2011	1 Bottom Water	3	6.4	2.2
Victoria Harbour	VM4	7/8/2011	1 Bottom Water	6	3.8	3.6	Victoria Harbour	VM4	10/6/2011	1 Bottom Water	7.6	4.8	5.3
Victoria Harbour	VM4	8/3/2011	1 Bottom Water	4.5	3.3	3.4	Victoria Harbour	VM4	11/2/2011	1 Bottom Water	6.5	4.9	4.2
Victoria Harbour	VM4	9/2/2011	1 Bottom Water	6.7	3.4	4	Victoria Harbour	VM4	12/5/2011	1 Bottom Water	2.7	6.3	2.2
Victoria Harbour	VM5	4/6/2011	1 Bottom Water	4.2	5.9	2.6	Victoria Harbour	VM5	1/12/2011	1 Bottom Water	3.6	6.1	2.5
Victoria Harbour	VM5	5/11/2011	1 Bottom Water	2.5	4.7	1.8	Victoria Harbour	VM5	2/9/2011	1 Bottom Water	5.5	6.1	2.9
Victoria Harbour	VM5	6/8/2011	1 Bottom Water	2.9	4	2.2	Victoria Harbour	VM5	3/16/2011	1 Bottom Water	42	6.4	1.4
Victoria Harbour	VM5	7/8/2011	1 Bottom Water	3.5	3.8	2.5	Victoria Harbour	VM5	10/6/2011	1 Bottom Water	6.7	4.9	5.2
Victoria Harbour	VM5	8/3/2011	1 Bottom Water	2.7	3.6	2.2	Victoria Harbour	VM5	11/2/2011	1 Bottom Water	10	4.4	6.4
Victoria Harbour	VM5	9/2/2011	1 Bottom Water	5.1	3.3	3.7	Victoria Harbour	VM5	12/5/2011	1 Bottom Water	4.4	5.5	3.1
Victoria Harbour	VM6	4/6/2011	1 Bottom Water	4.1	5.8	2.5	Victoria Harbour	VM6	1/12/2011	1 Bottom Water	1.9	5.9	2
Victoria Harbour	VM6	5/11/2011	1 Bottom Water	6.2	4.5	2.1	Victoria Harbour	VM6	2/9/2011	1 Bottom Water	2.6	6.4	2
Victoria Harbour	VM6	6/8/2011	1 Bottom Water	1.1	4	1.8	Victoria Harbour	VM6	3/16/2011	1 Bottom Water	2.4	6.5	1.4
Victoria Harbour	VM6	7/8/2011	1 Bottom Water	5.3	2.8	3.8	Victoria Harbour	VM6	10/6/2011	1 Bottom Water	7.8	4.9	6.1
Victoria Harbour	VM6	8/3/2011	1 Bottom Water	3.8	3.4	2.6	Victoria Harbour	VM6	11/2/2011	1 Bottom Water	8	4.7	5.3
Victoria Harbour	VM6	9/2/2011	1 Bottom Water	4.4	3.2	2.9	Victoria Harbour	VM6	12/5/2011	1 Bottom Water	1.6	5.4	3.4

Appendix 2.5 - Summary of EPD monitoring data between 2010 and 2012

Summary of EPD monitoring data for 2012 (Wet Season)

Water Control Zone	Station	Dates	Sample No	Depth	Suspended Solids (mg/L)	Dissolved Oxygen (mg/L)	Turbidity (NTU)
Victoria Harbour	VM2	4/13/2012	1	Surface Water	1.7	7.4	2.3
Victoria Harbour	VM2	5/2/2012	1	Surface Water	1.6	6.2	5.5
Victoria Harbour	VM2	6/6/2012	1	Surface Water	2.9	6.4	2.4
Victoria Harbour	VM2	7/5/2012	1	Surface Water	2.1	5.3	11.1
Victoria Harbour	VM2	8/1/2012	1	Surface Water	1.5	4.4	1.5
Victoria Harbour	VM2	9/12/2012	1	Surface Water	8.2	5.2	3.4
Victoria Harbour	VM4	4/13/2012	1	Surface Water	2.2	7.1	4.1
Victoria Harbour	VM4	5/2/2012	1	Surface Water	0.9	7.4	3.1
Victoria Harbour	VM4	6/6/2012	1	Surface Water	2.6	6.1	2.1
Victoria Harbour	VM4	7/5/2012	1	Surface Water	1.7	5.8	8.7
Victoria Harbour	VM4	8/1/2012	1	Surface Water	1.2	4.5	1.6
Victoria Harbour	VM4	9/12/2012	1	Surface Water	7.1	4.7	3.9
Victoria Harbour	VM5	4/13/2012	1	Surface Water	2.6	6.9	2.4
Victoria Harbour	VM5	5/2/2012	1	Surface Water	1	7.8	2.3
Victoria Harbour	VM5	6/6/2012	1	Surface Water	4.5	5.9	3
Victoria Harbour	VM5	7/5/2012	1	Surface Water	2.3	6	11.1
Victoria Harbour	VM5	8/1/2012	1	Surface Water	1.2	5.2	1.5
Victoria Harbour	VM5	9/12/2012	1	Surface Water	4.9	6.3	2
Victoria Harbour	VM6	4/13/2012	1	Surface Water	3.1	7	2.6
Victoria Harbour	VM6	5/2/2012	1	Surface Water	0.7	7.8	1.5
Victoria Harbour	VM6	6/6/2012	1	Surface Water	2.6	6.3	2.3
Victoria Harbour	VM6	7/5/2012	1	Surface Water	2.6	6.5	13.5
Victoria Harbour	VM6	8/1/2012	1	Surface Water	1.6	4.4	1.8
Victoria Harbour	VM6	9/12/2012	1	Surface Water	5.9	6.1	3
Victoria Harbour	VM2	4/13/2012	1	Middle Water	2.5	7.6	2.3
Victoria Harbour	VM2	5/2/2012	1	Middle Water	2	5.6	5.2
Victoria Harbour	VM2	6/6/2012	1	Middle Water	3.3	6.5	2.3
Victoria Harbour	VM2	7/5/2012	1	Middle Water	2	5.9	7.9
Victoria Harbour	VM2	8/1/2012	1	Middle Water	2.3	4.3	2
Victoria Harbour	VM2	9/12/2012	1	Middle Water	7.6	4.5	4.5
Victoria Harbour	VM4	4/13/2012	1	Middle Water	2.7	7.1	3.6
Victoria Harbour	VM4	5/2/2012	1	Middle Water	1.8	6.2	3.3
Victoria Harbour	VM4	6/6/2012	1	Middle Water	2.3	6.4	1.8
Victoria Harbour	VM4	7/5/2012	1	Middle Water	2.1	5.4	8.9
Victoria Harbour	VM4	8/1/2012	1	Middle Water	2.4	4	2.6
Victoria Harbour	VM4	9/12/2012	1	Middle Water	6.9	4.9	3.2
Victoria Harbour	VM5	4/13/2012	1	Middle Water	2.2	6.9	2
Victoria Harbour	VM5	5/2/2012	1	Middle Water	0.8	7.4	1.8
Victoria Harbour	VM5	6/6/2012	1	Middle Water	4.6	5.9	3.1
Victoria Harbour	VM5	7/5/2012	1	Middle Water	3.5	5.9	11.3
Victoria Harbour	VM5	8/1/2012	1	Middle Water	2.1	5	1.7
Victoria Harbour	VM5	9/12/2012	1	Middle Water	7.9	4.8	3.4
Victoria Harbour	VM6	4/13/2012	1	Middle Water	2.9	6.9	2.7
Victoria Harbour	VM6	5/2/2012	1	Middle Water	1.1	7.6	1.4
Victoria Harbour	VM6	6/6/2012	1	Middle Water	3.4	6.3	2.3
Victoria Harbour	VM6	7/5/2012	1	Middle Water	2.3	6	12.8
Victoria Harbour	VM6	8/1/2012	1	Middle Water	2	4.6	1.6
Victoria Harbour	VM6	9/12/2012	1	Middle Water	8	4.9	4.3

Summary of EPD monitoring data for 2012 (Dry Season)

Water Control Zone	Station	Dates	Sample No	Depth	Suspended Solids (mg/L)	Dissolved Oxygen (mg/L)	Turbidity (NTU)
Victoria Harbour	VM2	1/4/2012	1	Surface Water	1.2	7.8	1.1
Victoria Harbour	VM2	2/1/2012	1	Surface Water	1	7.1	1.2
Victoria Harbour	VM2	3/8/2012	1	Surface Water	1.4	7.5	0.7
Victoria Harbour	VM2	10/3/2012	1	Surface Water	5.2	5.1	4.1
Victoria Harbour	VM2	11/1/2012	1	Surface Water	3.9	5.8	4.9
Victoria Harbour	VM2	12/3/2012	1	Surface Water	2.8	5.7	3.3
Victoria Harbour	VM4	1/4/2012	1	Surface Water	1.7	7.6	1.3
Victoria Harbour	VM4	2/1/2012	1	Surface Water	1	7	1.7
Victoria Harbour	VM4	3/8/2012	1	Surface Water	2.7	7	1.5
Victoria Harbour	VM4	10/3/2012	1	Surface Water	5.3	4.3	4.2
Victoria Harbour	VM4	11/1/2012	1	Surface Water	4.4	5	4
Victoria Harbour	VM4	12/3/2012	1	Surface Water	3.6	5.9	3.7
Victoria Harbour	VM5	1/4/2012	1	Surface Water	3.2	7	2.8
Victoria Harbour	VM5	2/1/2012	1	Surface Water	2.7	6.4	3
Victoria Harbour	VM5	3/8/2012	1	Surface Water	3.7	6.9	1.3
Victoria Harbour	VM5	10/3/2012	1	Surface Water	5.2	4.1	4.5
Victoria Harbour	VM5	11/1/2012	1	Surface Water	7.3	5	5.1
Victoria Harbour	VM5	12/3/2012	1	Surface Water	5.2	5	4.5
Victoria Harbour	VM6	1/4/2012	1	Surface Water	2	6.6	1.8
Victoria Harbour	VM6	2/1/2012	1	Surface Water	2.1	6.3	1.8
Victoria Harbour	VM6	3/8/2012	1	Surface Water	3.4	6.6	2.1
Victoria Harbour	VM6	10/3/2012	1	Surface Water	5.5	4.3	4.6
Victoria Harbour	VM6	11/1/2012	1	Surface Water	3.9	4.8	3.4
Victoria Harbour	VM6	12/3/2012	1	Surface Water	3	5.1	3.3
Victoria Harbour	VM2	1/4/2012	1	Middle Water	1.9	7.7	1
Victoria Harbour	VM2	2/1/2012	1	Middle Water	1.1	7.4	1.4
Victoria Harbour	VM2	3/8/2012	1	Middle Water	2.1	7.5	0.9
Victoria Harbour	VM2	10/3/2012	1	Middle Water	6.3	5.3	4.8
Victoria Harbour	VM2	11/1/2012	1	Middle Water	5.9	5.8	5.2
Victoria Harbour	VM2	12/3/2012	1	Middle Water	2.9	6	4
Victoria Harbour	VM4	1/4/2012	1	Middle Water	1.7	7.6	1.2
Victoria Harbour	VM4	2/1/2012	1	Middle Water	1.4	7.1	1.1
Victoria Harbour	VM4	3/8/2012	1	Middle Water	4.5	7	1.8
Victoria Harbour	VM4	10/3/2012	1	Middle Water	7.8	4.6	6.4
Victoria Harbour	VM4	11/1/2012	1	Middle Water	5.4	5.3	4.6
Victoria Harbour	VM4	12/3/2012	1	Middle Water	3.8	6	4
Victoria Harbour	VM5	1/4/2012	1	Middle Water	3.3	6.3	1.6
Victoria Harbour	VM5	2/1/2012	1	Middle Water	2	6.5	2
Victoria Harbour	VM5	3/8/2012	1	Middle Water	2.6	6.9	1.5
Victoria Harbour	VM5	10/3/2012	1	Middle Water	6.1	4.3	4.1
Victoria Harbour	VM5	11/1/2012	1	Middle Water	5.2	5.2	4
Victoria Harbour	VM5	12/3/2012	1	Middle Water	5.7	5.3	4.8
Victoria Harbour	VM6	1/4/2012	1	Middle Water	2	6.1	1.5
Victoria Harbour	VM6	2/1/2012	1	Middle Water	3.2	6.4	2.4
Victoria Harbour	VM6	3/8/2012	1	Middle Water	3.5	6.7	2.3
Victoria Harbour	VM6	10/3/2012	1	Middle Water	6.3	4.4	4.1
Victoria Harbour	VM6	11/1/2012	1	Middle Water	4.6	5	3.5
Victoria Harbour	VM6	12/3/2012	1	Middle Water	3	5.2	3.6

Appendix 2.5 - Summary of EPD monitoring data between 2010 and 2012

Victoria Harbour	VM2	4/13/2012	1 Bottom Water	4.9	7.9	4.2	Victoria Harbour	VM2	1/4/2012	1 Bottom Water	1.7	7.7	1.2
Victoria Harbour	VM2	5/2/2012	1 Bottom Water	2.1	6.4	2.4	Victoria Harbour	VM2	2/1/2012	1 Bottom Water	1.6	7.4	1.5
Victoria Harbour	VM2	6/6/2012	1 Bottom Water	4.2	6.6	2.6	Victoria Harbour	VM2	3/8/2012	1 Bottom Water	1.7	7.6	1
Victoria Harbour	VM2	7/5/2012	1 Bottom Water	4.3	5	9.6	Victoria Harbour	VM2	10/3/2012	1 Bottom Water	7.9	5.3	5.2
Victoria Harbour	VM2	8/1/2012	1 Bottom Water	3.5	4.4	2.8	Victoria Harbour	VM2	11/1/2012	1 Bottom Water	5.9	5.8	4.8
Victoria Harbour	VM2	9/12/2012	1 Bottom Water	7.5	3.2	4.1	Victoria Harbour	VM2	12/3/2012	1 Bottom Water	5.9	6	4
Victoria Harbour	VM4	4/13/2012	1 Bottom Water	4.2	6.9	4.1	Victoria Harbour	VM4	1/4/2012	1 Bottom Water	1.6	7.5	1.1
Victoria Harbour	VM4	5/2/2012	1 Bottom Water	2.6	5.4	4.2	Victoria Harbour	VM4	2/1/2012	1 Bottom Water	1.9	7.1	1.6
Victoria Harbour	VM4	6/6/2012	1 Bottom Water	2.7	6.7	2	Victoria Harbour	VM4	3/8/2012	1 Bottom Water	4.9	7.1	2.6
Victoria Harbour	VM4	7/5/2012	1 Bottom Water	2.8	5.5	9.1	Victoria Harbour	VM4	10/3/2012	1 Bottom Water	11	4.7	7
Victoria Harbour	VM4	8/1/2012	1 Bottom Water	2.1	4.2	2.4	Victoria Harbour	VM4	11/1/2012	1 Bottom Water	4.9	5.7	3.9
Victoria Harbour	VM4	9/12/2012	1 Bottom Water	5.9	3.1	3.2	Victoria Harbour	VM4	12/3/2012	1 Bottom Water	5	5.9	4.8
Victoria Harbour	VM5	4/13/2012	1 Bottom Water	3.5	6.8	2.7	Victoria Harbour	VM5	1/4/2012	1 Bottom Water	2.6	7	1.7
Victoria Harbour	VM5	5/2/2012	1 Bottom Water	1.6	5.4	3	Victoria Harbour	VM5	2/1/2012	1 Bottom Water	1.8	6.6	1.8
Victoria Harbour	VM5	6/6/2012	1 Bottom Water	5.3	5.9	3.3	Victoria Harbour	VM5	3/8/2012	1 Bottom Water	3.1	6.9	1.5
Victoria Harbour	VM5	7/5/2012	1 Bottom Water	4.7	5.3	11.4	Victoria Harbour	VM5	10/3/2012	1 Bottom Water	6.8	4.4	4.4
Victoria Harbour	VM5	8/1/2012	1 Bottom Water	2.1	4.7	2.6	Victoria Harbour	VM5	11/1/2012	1 Bottom Water	6.6	5.2	4.6
Victoria Harbour	VM5	9/12/2012	1 Bottom Water	10	4	5.7	Victoria Harbour	VM5	12/3/2012	1 Bottom Water	4.7	5.4	4.1
Victoria Harbour	VM6	4/13/2012	1 Bottom Water	6.4	6.6	4.2	Victoria Harbour	VM6	1/4/2012	1 Bottom Water	2.8	6.9	1.6
Victoria Harbour	VM6	5/2/2012	1 Bottom Water	4.6	5.4	3.9	Victoria Harbour	VM6	2/1/2012	1 Bottom Water	3.2	6.4	2.4
Victoria Harbour	VM6	6/6/2012	1 Bottom Water	5.6	5.8	5.5	Victoria Harbour	VM6	3/8/2012	1 Bottom Water	3.2	6.8	1.4
Victoria Harbour	VM6	7/5/2012	1 Bottom Water	2.5	5.7	12.3	Victoria Harbour	VM6	10/3/2012	1 Bottom Water	7	4.5	4.3
Victoria Harbour	VM6	8/1/2012	1 Bottom Water	4.5	4.2	4	Victoria Harbour	VM6	11/1/2012	1 Bottom Water	4.5	5.1	3.7
Victoria Harbour	VM6	9/12/2012	1 Bottom Water	15	3.7	8.5	Victoria Harbour	VM6	12/3/2012	1 Bottom Water	5	5.1	4.1

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**APPENDIX 2.6**

**BACKGROUND CONDITIONS IN WET AND DRY SEASONS  
(2010 - 2012)**

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Appendix 2.6 - Background Conditions in Wet and Dry Seasons (2010 - 2012)

Background SS conditions at EPD monitoring station VM2, 4, 5 and 6 – 2010 to 2012

SS (mg/L)	Middle		
	Avg.	Min.	Max.
Wet Season 2010	3.3	0.6	14.0
Dry Season 2010	4.1	0.5	11.0
Variation in Avg.	-20.6%	-	-
Wet Season 2011	3.6	0.5	8.3
Dry Season 2011	4.0	1.4	10.0
Variation in Avg.	-9.9%	-	-
Wet Season 2012	3.6	3.6	15.0
Dry Season 2012	3.9	1.0	11.0
Variation in Avg.	-7.5%	-	-
Mean Variation %	-12.7%	-	-

Note:

The measured SS level at VM5 on 16/3/2011 was abnormally high (42mg/L) and thus it was not considered in the calculation.

Background DO conditions at EPD monitoring station VM2, 4, 5 and 6 – 2010 to 2012

DO (mg/L)	Middle		
	Avg.	Min.	Max.
Wet Season 2010	5.0	1.2	8.5
Dry Season 2010	5.7	3.7	6.9
Variation in Avg.	-11.9%	-	-
Wet Season 2011	4.3	2.8	6.7
Dry Season 2011	5.8	4.4	7.6
Variation in Avg.	-25.6%	-	-
Wet Season 2012	5.8	5.8	7.9
Dry Season 2012	6.1	4.1	7.8
Variation in Avg.	-4.9%	-	-
Mean Variation %	-14.1%	-	-

Background Turbidity conditions at EPD monitoring station VM2, 4, 5 and 6 – 2010 to 2012

Turbidity (NTU)	Middle		
	Avg.	Min.	Max.
Wet Season 2010	2.8	0.9	10.0
Dry Season 2010	3.7	0.9	7.7
Variation in Avg.	-24.5%	-	-
Wet Season 2011	2.7	0.6	7.0
Dry Season 2011	3.3	1.1	24.7
Variation in Avg.	-18.1%	-	-
Wet Season 2012	4.3	4.3	13.5
Dry Season 2012	3.0	0.7	7.0
Variation in Avg.	43.8%	-	-
Mean Variation %	0.4%	-	-