CONTRACT NO: KL/2009/01

SITE FORMATION FOR KAI TAK CRUISE TERMINAL DEVELOPMENT

ENVIRONMENTAL MONITORING & AUDIT MONTHLY REPORT

- MAY 2013 -

CLIENT:

Penta-Ocean Construction Co., Ltd.

Unit 601, K. Wah Centre, 191 Java Road, North Point, Hong Kong

PREPARED BY:

Lam Environmental Services Limited

11/F Centre Point 181-185 Gloucester Road, Wanchai, H.K.

Telephone: (852) 2882-3939
Facsimile: (852) 2882-3331
E-mail: info@lamenviro.com
Website: http://www.lamenviro.com

CERTIFIED BY:

Raymond Dai

Environmental Team Leader

DATE:

13 June 2013

FUGRO (HONG KONG) LIMITED CONSULTING ENGINEERS

7/F., Guardian House, 32 Oi Kwan Road, Wanchai, Hong Kong Tel: +852 2577 9023 Fax: +852 2895 2379

Email: fugro@fugro.com.hk



FAX MESSAGE

Priority	□ normal / □ urgent		
То	Lam Environmental Services Limited	Ref. No.	MCLF3222
Country		Email	raymonddai@lamenviro.com
Attn.	Mr. Raymond Dai	Date	13 June 2013
From	Joseph Poon	No. of Pages	1 (Incl. this page)
C.c. To	Mr. Brad Chan (URS)	Email	brad.chan@urs.com
	Mr. K. Y. Shin (Civil Engineering and Development Department)	Email	kyshin@cedd.gov.hk
	Mr. Stephen Cheng (URS)	Email	stephen.cheng@urs.com
	Mr. Andrew Tam (URS)	Email	andrew.tam@urs.com
	Mr. Perry Yam (Penta-Ocean Construction Company Limited)	Email	perry.yam@pentaocean.com.hk
Subject	Agreement No. CE 19/2009 (EP) Dredging Works for Proposed Cruise Terminal a Monthly Environmental Monitoring & Audit Rep		k –

We refer to the revised Monthly EM&A Report for May 2013 that we received through email on 13 June 2013 and are pleased to confirm we have no further comment on the report.

Should you require further information, please feel free to contact us.

Best regards,

Joseph Poon

Independent Environmental Checker

JP/CY/by

CONFIDENTIALITY NOTICE

This facsimile transmission is intended only for the use of the addressee and is confidential. If you are not the addressee it may be unlawful for you to read, copy, disclose or otherwise use the information in this facsimile. If you are not the intended recipient, please telephone or fax us immediately.



CONTENTS

Ex	ecutive	Summary	1
1	Introd	uction	4
	1.1	Scope of the Report	4
	1.2	Structure of the Report	4
2	Projec	t Background	6
	2.1	Background	6
	2.2	Scope of the Project and Site Description	6
	2.3	Project Organization and Contact Personnel	7
	2.4	Construction Programme and Works	7
3	Impler	nentation Requirements	7
	3.1	Status of Regulatory Compliance	8
4	Monito	oring Requirements	9
	4.1	Noise Monitoring	9
	4.2	Water Quality Monitoring	9
	4.3	Water Quality Parameters	10
	4.4	Sampling Procedures and Monitoring Equipment	11
5	Monito	oring Results	14
	5.1	Water Monitoring Results	14
	5.2	Waste Monitoring Results	14
6	Comp	liance Audit	15
	6.1	Noise Monitoring	15
	6.2	Water Quality Monitoring	15
	6.3	Dredging and Disposal	17
7	Site In	spectionspection	19
8	Comp	laints, Notification of Summons and Prosecution	20
9	Conclu	usion	21

LIST OF TABLES

Table I	Summary of the Exceedances Recorded in Reporting Month
Table 2.2	Contact Details of Key Personnel
Table 3.1	Summary of Valid Licences and Permits
Table 4.1	Planned Noise Monitoring Stations
Table 4.2	Water Quality Monitoring Stations for Baseline and Impact Monitoring
Table 4.3	Water Quality Monitoring Frequency and Parameters
Table 4.4	Equipment Used in Water Quality Monitoring in the Reporting Month
Table 6.2	Summary of Exceedances recorded in the Reporting Month
Table 6.4.1	Compliance with EP Conditions in the Reporting Month
Table 6.4.2	Waste Quantities Related To Dredging Works
Table 8.1	Environmental Complaints Log
Table 8.2	Cumulative Statistics on Complaints
Table 8.3	Cumulative Statistics on Successful Prosecutions
Table 9.0	Construction Activities and Recommended Mitigation Measures in Coming
	Report Month

LIST OF FIGURES

<u>Figure 2.1</u>	General Layout
Figure 2.2	Project Organisation Chart
Figure 4.1	Layout of Environmental Monitoring Stations
Figure 6.1	Layout of Monitoring Stations for Water Quality Surveillance System

LIST OF APPENDICES

<u>Appendix 3.1</u>	Implementation Schedule of Environmental Mitigation Measures
Appendix 4.1	Action and Limit Levels
Appendix 4.2	Copies of Calibration Certificates
Appendix 5.1	Monitoring Schedule for the Reporting Month and Coming Three Months
Appendix 5.2	Water Quality Monitoring Results and Graphical Presentation
Appendix 5.3	Event and Action Plan
Appendix 5.4	Graphic Presentation of SS Results against to Tidal Movement along
	Victoria Harbour
Appendix 5.5	Graphic Presentation of Water Quality Result with respect to Local
	Variation
Appendix 5.6	Graphical Presentation of Water Quality Surveillance System
Appendix 5.7	Details of Notification of Exceedances
Appendix 9.0	Construction Programme

EXECUTIVE SUMMARY

i. This is the Environmental Monitoring and Audit (EM&A) Monthly Report – May 2013 for Site Formation for Kai Tak Cruise Terminal Development under Contract No. KL/2009/01. Dredging of marine sediment has been commenced since 28 June 2010 while removal and reconstruction of existing seawall has been commenced since 22 November 2010. This report presents the environmental monitoring findings and information recorded from 1st to 31st May 2013.

Construction Activities for the Reporting Period

- ii. During this reporting period, the principal work activities included:
 - Dredging of Marine Sediment;
 - Maintain silt curtain for seawall removal;
 - Maintenance of Silt Curtain and Silt Screens;
 - Sorting of inert C&D material from existing seawall; and
 - Reconstruction of New Seawall

Water Quality Monitoring

- iii. Due to hoisting of Amber Rainstorm Signal, the following water quality monitoring was cancelled:
 - 20 May 2013 (Ebb tide)
- iv. Supplementary to Baseline Water Quality Monitoring Report Review of Action and Limit Levels (Revision 1.2) was submitted to EPD on 13 October 2011. With respect to the EPD's no comment on the new Action and Limit Levels for water monitoring on 19 October 2011, the new set Action and Limit Levels for turbidity and SS was started to use from 19 October 2011.
- v. Water quality monitoring at 6 designated monitoring stations namely WSD9, WSD10, WSD15, WSD17, WSD19 and WSD21 were conducted during the reporting period. As per the EM&A Manual, water quality impact monitoring was conducted during the dredging works, which commenced on 28 June 2010. Suspended solid (SS) and turbidity exceedances of water quality at various monitoring stations are summarized in *Table I*. The SS exceedance on 6 and 9 May 2013 were due to upstream of the Project site. No turbidity exceedance was record in this reporting month.

Lam Environmental Services Limited

Table I Summary of the Exceedances Recorded in Reporting Month

Date	Tide	Station	Parameter	Exceedance	Value	Possible Cause of Exceedance
6/5/2013	Mid-ebb	WSD19	SS (mg/L)	AL	15.0	Upstream of the Project.
9/5/2013	Mid-flood	WSD17	SS (mg/L)	AL	15.5	Upstream of the Project.

- vi. For the exceedance, further investigations were conducted to determine the cause of impact in terms of Water Quality against the Tidal Movement along Victoria Harbour, Natural Variation Comparison and Water Quality Surveillance System.
- vii. Investigations were also conducted to present the water quality along Victoria Harbour in terms of Natural Variation Comparison and Water Quality Surveillance System.

Water Quality against the Tidal Movement along Victoria Harbour

- viii. In the recorded exceedance(SS) on 6 May 2013, WSD19(Mid-ebb) was upstream from project location, no rising of SS was observed at downstream stations. It is concluded that no water quality impact was arising from the Project works.
- ix. In the recorded exceedance(SS) on 9 May 2013, WSD17(Mid-flood) was upstream from project location, no rising of SS was observed at downstream stations. It is concluded that no water quality impact was arising from the Project works.

Natural Variation Comparison

- x. Based on the determination of upper bound of the natural variation levels from the Supplementary to Baseline Water Quality Monitoring Report, most SS results in reporting month were well within the upper bound of natural variation levels.
- xi. Investigations on the recorded exceedance(SS) on 6 and 9 May 2013 were upstream from project location, no rising of SS was observed at downstream stations. It is concluded that no water quality impact was arising from the Project works.

Water Quality Surveillance System

xii. With reference to the upper bound of natural variation levels and self water quality surveillance system conducting in reporting month, it shows no fluctuation over the upper bound.

Noise Monitoring

xiii. Due to the non-existence of planned NSRs during the reporting period, no noise monitoring was required to be conducted at the planned noise monitoring locations NM1 and NM2.

Waste Management

xiv. There was 1,035m³ marine sediment (Type 1 – Open Sea Disposal) disposed to South Cheung Chau Spoil Disposal Area denoted "KTCT-1" and "KTCT -2" in this reporting month. The disposal of the sediment (Type 1 – Open Sea Disposal (Dedicate Sites) and Type 2 – Confined Marine Disposal) to East Sha Chau Contaminated Mud Disposal Site – Pit IVc was completed. 5m³ non-inert C&D material related to dredging works were also disposed off site in the reporting month.

Complaints, Notifications of Summons and Successful Prosecutions

xv. No complaint, notification of prosecutions or summons was received in the reporting period.

Site Inspections and Audit

xvi. The Environmental Team (ET) conducted site inspections on 3, 10, 16, 21 and 30 May 2013. Observation and/or recommendation related to the dredging work during the audit sessions can be referred to Section 7.

Compliance with Specific EP Conditions

xvii. Implementation of contractor's mitigation for dredging work and the associated dredging records were checked. It was concluded that the dredging is conducted orderly in compliance with the EP requirements on site mitigation measures.

Construction Activities for the Coming Reporting Period

- xviii. In the coming reporting period, the principal work activities included:
 - Dredging of Marine Sediment;
 - Maintain silt curtain for seawall removal;
 - Maintenance of Silt Curtain and Silt Screens;
 - Sorting of inert C&D material from existing seawall; and
 - Reconstruction of New Seawall

1 INTRODUCTION

1.1 SCOPE OF THE REPORT

- 1.1.1. Lam Environmental Services Limited (LES) has been appointed to work as the Environmental Team (ET) for dredging works to implement the Environmental Monitoring and Audit (EM&A) programme for Site Formation for Kai Tak Cruise Terminal Development under Contract No. KL/2009/01. Dredging of marine sediment has been commenced since 28 June 2010 while removal and reconstruction of existing seawall has been commenced since 22 November 2010.
- 1.1.2. This report presents the environmental monitoring and auditing work carried out in accordance to the Section 10.4 under Environmental Monitoring and Audit (EM&A) Manual.
- 1.1.3. This report documents the finding of EM&A works from 1st to 31st May 2013. The cut-off date of reporting is at the end of each reporting month.

1.2 STRUCTURE OF THE REPORT

Section 1 Introduction – details of the scope and structure of the report.

Section 2 Project Background – summarizes background and scope of the project, site description, project organization and contact details of key personnel during the reporting period.

Section 3 *Implementation Status* – summarizes the status of valid Environmental Permits / Licenses during the reporting period.

Section 4 Monitoring Requirements – summarizes all monitoring parameters, monitoring methodology and equipment, monitoring locations, monitoring frequency, criteria and respective event and action plan and monitoring programmes.

Section 5 *Monitoring Results* – summarizes the monitoring results obtained in the reporting period.

Section 6 Compliance Audit – summarizes the auditing of monitoring results and all exceedances environmental parameters.

Section 7 Site Inspection – summarizes the findings of weekly site inspections undertaken within the reporting period, with a review of any relevant follow-up actions within the reporting period.

Section 8 Complaints, Notification of Summons and Prosecution – summarizes the complaints, notification of summons and successful prosecution for breaches of environmental legislation

and the actions taken within the reporting period.

Section 9 Conclusion

2 PROJECT BACKGROUND

2.1 BACKGROUND

- 2.1.1. The former Kai Tak Airport located in the south-eastern part of Kowloon Peninsula was the international airport of Hong Kong. The Kai Tak Airport had come into operations since 1920s. The operation of the Kai Tak Airport was ceased and replaced by the new airport at Chek Lap Kok in July 1998. After closure, the disused airport site has been occupied by various temporary uses, including a golf driving range on the runway area.
- 2.1.2. In 2002, the Chief Executive in Council approved the Kai Tak Outline Zoning Plans (No. S/K19/3 and S/K21/3) to provide the statutory framework to proceed with the South East Kowloon Development at the former Kai Tak Airport. However, following the judgment of the Court of Final Appeal in January 2004 regarding the Harbour reclamation, the originally proposed development which involves reclamation has to be reviewed. The Kai Tak Planning Review (KTPR) has resulted with a Preliminary Outline Development Plan (PODP) for Kai Tak in October 2006. Subsequently, the Administration announced in October 2006 a plan to implement a cruise terminal at Kai Tak, as part of the development.
- 2.1.3. Development of the cruise terminal at Kai Tak would require dredging at the existing seawall at the southern tip of the former Kai Tak Airport runway for construction of a quay deck structure for two berths, and dredging the seabed fronting the new quay to provide necessary manoeuvring basin. The general layout of the proposed cruise terminal construction is shown in *Figure 2.1*.
- 2.1.4. The current Project involves a dredging operation exceeding 500,000m³ for construction and operation of the proposed cruise terminal at Kai Tak and is therefore classified as a Designated Project under Item C.12, Part I, Schedule 2 of the Environmental Impact Assessment Ordinance (EIAO). An Environmental Impact Assessment (EIA) Study for the Project has been undertaken in accordance with the EIA Study Brief (No. ESB-159/2006) and the Technical Memorandum on Environmental Impact Assessment Process (EIAO-TM).

2.2 SCOPE OF THE PROJECT AND SITE DESCRIPTION

- 2.2.1. The scope of the Project comprises:
 - Dredging of marine sediment of about 700,000 m³ from the existing seabed (Stage 1 dredging) in the Harbour area off the southern tip of the former Kai Tak Airport runway to provide the necessary water depth within the manoeuvring area for cruise vessels; and
 - Removal of existing seawall of about 322,300m³ by dredging at the southern tip of the former Kai Tak Airport runway for cruise berth construction.

2.3 PROJECT ORGANIZATION AND CONTACT PERSONNEL

- 2.3.1. Kowloon Development Office of Civil Engineering and Development Department is the overall project controller. For the construction phase of KL/2009/01, Project Engineer, Contractor, Environmental Team and Independent Environmental Checker are appointed to manage and control environmental issues.
- 2.3.2. The proposed project organization and lines of communication with respect to environmental protection works are shown in <u>Figure 2.2</u>. Key personnel and contact particulars are summarized in *Table 2.2*:

Table 2.2 Contact Details of Key Personnel

Party	Role	Name	Post	Contact No.	Contact Fax
Civil Engineering and Development Department (Kowloon Development Office)	Project Proponent	Ir. KY Shin	Senior Engineer	2301 1461	2301 1277
URS / Scott Wilson Limited	Engineer's Representative	Mr. Stephen Cheng	Chief Resident Engineer	2148 7638	2148 7277
Penta-Ocean Construction	Contractor	Mr. H. Taguchi	Project Manager	2148 7238 2148 7138	
Company Limited		Mr. Perry Yam	Environmental Officer		
Fugro (HK) Limited	Independent Environmental Checker (IEC)	Mr. Joseph Poon	Independent Environmental Checker (IEC)	2450 8238	2450 6138
Lam Environmental Services Limited	Environmental Team Leader	Mr. Raymond Dai	Environmental Team Leader (ETL)	2882 3939	2882 3331

2.4 CONSTRUCTION PROGRAMME AND WORKS

- 2.4.1. During this reporting period, the principal work activities included:
 - Dredging of marine sediment;
 - Maintain silt curtain for seawall removal;
 - Maintenance of Silt Curtain and Silt Screens;
 - Sorting of inert C&D material from existing seawall; and
 - Reconstruction of New Seawall

3 IMPLEMENTATION REQUIREMENTS

3.1 STATUS OF REGULATORY COMPLIANCE

3.1.1. A summary of the current status on licences and/or permits on environmental protection pertinent to the Project is shown in *Table 3.1*.

Table 3.1 Summary of Valid Licences and Permits

Permits and/or Licences	Reference No.	Issued Date	Valid Period	Status in Reporting Month
Environmental Permit	EP-328/2009/A	15 Jun 2009	N/A	Valid
Notification of Works Under APCO	KTCT/907/S/3.14/7. 00/L/0060 (POC's REF. number) dated 9 December 2009		N/A	Valid
Construction Noise Permit (CNP)	GW-RE0079-13	22 Jan 2013	16 Feb 2013 (19:00) to 15 Aug 2013 (07:00)	Valid
Discharge Licence	WT00005933-2010	18 Mar 2010	Until 31 March 2015	Valid
Registration of Waste Producer	5213-247-P2984- 01	14 Jan 2010	N/A	Valid
Dumping Permit (Type 1 – Open Sea Disposal)	EP/MD/13-084	1 Nov 2012	3 Nov 2012 to 2 May 2013	Valid
	EP/MD/13-143	30 Apr 2013	3 May 2013 to 2 Nov 2013	Valid

3.1.2. Implementation status of the recommended mitigation measures during this reporting period is presented in *Appendix 3.1*.

4 MONITORING REQUIREMENTS

4.1 NOISE MONITORING

4.1.1. In accordance with the EIA Report and the approved EM&A Manual, it is anticipated that construction activities, if unmitigated, would not cause any adverse noise impact to the nearest NSRs in the vicinity of the work site. The predicted noise levels at the NSRs would comply with construction noise criteria. These nearest NSRs are designated for construction noise monitoring as listed in *Table 4.1*.

Table 4.1 Planned Noise Monitoring Stations

Station	Description	
NM1	Planned Residential Development (R3 site)	
NM2	Planned Residential Development (R3 site)	

4.1.2. As per S.3.1.1 of the approved EM&A Manual states that "Noise levels shall be monitored to evaluate the construction noise impact if there is any planned noise sensitive receivers (NSRs) occupied within 300m from the works area of this Project during the proposed dredging works". Therefore, the impact monitoring for construction noise shall only be carried out when the planned residential development at the two identified monitoring stations are occupied at a later stage.

4.2 WATER QUALITY MONITORING

- 4.2.1. The EIA Report has identified that suspended solids (SS) would be the most critical water quality parameter during the dredging operations. Water quality monitoring for SS and turbidity is therefore recommended to be carried out at selected WSD flushing water intakes. The impact monitoring should be carried out during the proposed dredging works for cruise terminal construction to ensure the compliance with the water quality standards.
- 4.2.2. It is proposed to monitor the water quality at six WSD flushing water intakes along the seafront of the Victoria Harbour. The proposed water quality monitoring stations are shown in *Table 4.2* and *Figure 4.1*.

Table 4.2 Water Quality Monitoring Stations for Baseline and Impact Monitoring

Station Ref.	WSD Flushing Water Intake	Easting	Northing
WSD9	Tai Wan	837921.0	818330.0
WSD10	Cha Kwo Ling	841900.9	817700.1

Lam Environmental Services Limited

Station Ref.	WSD Flushing Water Intake	Easting	Northing
WSD15	Sai Wan Ho	841110.4	816450.1
WSD17	Quarry Bay	839790.3	817032.2
WSD21	Wan Chai	836220.8	815940.1
WSD19	Sheung Wan	833415.0	816771.0

4.3 WATER QUALITY PARAMETERS

- 4.3.1. During the period of dredging, 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 4.2*. 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. *Table 4.3* 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 not be less than 0.5m.
- 4.3.2. Silt screens in frame type or floating type shall be deployed at these intakes during the dredging period. It is recommended to conduct the monitoring behind the silt screens at the seawater intake culvert at each seawater pumping station to collect information on the water quality condition after passed the silt screen.

Table 4.3 Water Quality Monitoring Frequency and Parameters

Activities	Monitoring Frequency ¹	Parameters ²				
During the 4-week baseline monitoring period	Three days per week, at mid-flood and mid-ebb tides	Turbidity (in NTU), Suspended Solids (SS in mg/L)				
During dredging works for proposed cruise terminal at Kai Tak	Three days per week, at mid-flood and mid-ebb tides	Turbidity (in NTU), Suspended Solids (SS in mg/L)				

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 0.5m.
- 2. Turbidity should be measured in situ whereas SS should be determined by laboratory.
- 4.3.3. Supplementary to Baseline Water Quality Monitoring Report Review of Action and Limit Levels (Revision 1.2) was submitted to EPD on 13 October 2011. With respect to the EPD's no comment on the new Action and Limit Levels for water monitoring on 19 October 2011, the new set Action and Limit Levels for turbidity and SS was adopted from 19 Oct 2011 and can be referred to <u>Appendix 4.1</u>.
- 4.3.4. Current calibration certificates of equipment are presented in *Appendix 4.2.*

4.4 SAMPLING PROCEDURES AND MONITORING EQUIPMENT

4.4.1. In-situ measurements and water sampling shall be conducted at mid-depth. Duplicate in-situ measurements and water sampling have been conducted in each sampling event. Water samples for all monitoring parameters shall be collected, stored, preserved and analysed according to the Standard Methods, APHA 17 and/or agreed by IEC and EPD.

Dissolved Oxygen and Temperature Measuring Equipment

- 4.4.2. The instrument should be a portable, weatherproof dissolved oxygen measuring instrument complete with cable, sensor, comprehensive operation manuals, and use a DC power source. It should be capable of measuring:
 - a dissolved oxygen level in the range of 0-20 mg/l and 0-200% saturation
 - a temperature of 0-45 degree Celsius
- 4.4.3. It should have a membrane electrode with automatic temperature compensation complete with a cable. Sufficient stocks of spare electrodes and cables should be available for replacement where necessary. (e.g. YSI model 59 meter, YSI 5739 probe, YSI 5795A submersible stirrer with reel and cable or an approved similar instrument).
- 4.4.4. Should salinity compensation not be build-in in the DO equipment, in-situ salinity shall be measured to calibrate the DO equipment prior to each DO measurement.

Turbidity Measurement Instrument

4.4.5. The instrument should be a portable, weatherproof turbidity-measuring instrument complete with comprehensive operation manual. The equipment should use a DC power source. It should have a photoelectric sensor capable of measuring turbidity between 0-1000 NTU and be complete with a cable (e.g. Hach model 2100P or an approved similar instrument).

Suspended Solids

- 4.4.6. A water sampler comprises a transparent PVC cylinder, with a capacity of not less than 2 litres, and 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 (e.g. Kahlsico Water Sampler or an approved similar instrument).
- 4.4.7. Water samples for suspended solids measurement should be collected in highdensity polythene bottles, packed in ice (cooled to 4°C without being frozen), and

delivered to ALS Technichem (HK) Pty Ltd. as soon as possible after collection for analysis.

Water Depth Detector

4.4.8. A portable, battery-operated echo sounder shall be used for the determination of water depth at each designated monitoring station. This unit can either be handheld or affixed to the bottom of the workboat, if the same vessel is to be used throughout the monitoring programme.

Salinity

4.4.9. A portable salinometer capable of measuring salinity in the range of 0-40 ppt shall be provided for measuring salinity of the water at each of monitoring location.

Locating the Monitoring Site

4.4.10. A hand-held or boat-fixed type digital Global Positioning System (GPS) with way point bearing indication or other equivalent instrument of similar accuracy shall be provided and used during monitoring to ensure the monitoring vessel is at the correct location before taking measurements.

Calibration and Accuracy of Instrument

- 4.4.11. All in-situ monitoring instruments shall be checked, calibrated and certified by a laboratory accredited under HOKLAS or equivalent before use, 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.
- 4.4.12. For the on site calibration of field equipment by the ET, the BS 127:1993, "Guide to Field and on-site test methods for the analysis of waters" should be observed.
- 4.4.13. Sufficient stocks of spare parts should be maintained for replacements when necessary. Backup monitoring equipment shall also be made available so that monitoring can proceed uninterrupted even when some equipment is under maintenance, calibration, etc.
- 4.4.14. The equipment used in the water quality monitoring in the reporting month are summarized in *Table 4.4*. Current calibration certificates of the used equipment are presented in *Appendix 4.2*

Table 4.4 Equipment Used in Water Quality Monitoring in the Reporting Month

Equipment	Model	Qty.
Multi-meter	YSI Professional Plus YSI Sonde 600XL	1
Turbidimeter	WGZ-3B WTW 430T	2

5 MONITORING RESULTS

5.1 WATER MONITORING RESULTS

- 5.1.1. Due to hoisting Amber Rainstorm Signal, the following water quality monitoring was cancelled:
 - 20 May 2013 (Ebb tide)
- 5.1.2. The water monitoring schedule for the reporting month and coming three months are presented in <u>Appendix 5.1</u>. With respect to the completion of major marine works anticipated to happen by end June to early July 2013, it is considered that the impact water quality monitoring exercise is scheduled tentatively to allow temporary suspension under the circumstance that no marine work is confirmed from the project team. In such case, ET will base on advance notification from project team to confirm no marine work on site for proceeding to seek IEC's consent for temporary suspension of water quality monitoring for prolong period. Similarly, during the prolong period of temporary suspension of impact water quality monitoring, ET shall seek IEC's consent to resume the water quality monitoring on the tentative schedule date in case of any water quality impact concern is noted or prior to any re-commencement of the remaining marine works being notified by the project team at least 1 week in advance.
- 5.1.3. Water monitoring results measured in reporting month are reviewed and presented in <u>Appendix 5.2</u>. There were two SS exceedances recorded in this reporting month.
- 5.1.4. The details of Event and Action Plans and Notification of Exceedance can be referred to *Appendix 5.3* and *Appendix 5.7*.

5.2 WASTE MONITORING RESULTS

5.2.1. There were 5m³ non-inert C&D material related to dredging works were disposed off site in the reporting month.

6 COMPLIANCE AUDIT

6.1 NOISE MONITORING

6.1.1. Noise monitoring was not necessary in the reporting period due to non-presence of NSR.

6.2 WATER QUALITY MONITORING

6.2.1. SS exceedances were recorded on the 6 and 9 May 2013 in the reporting month.

Table 6.2 summarizes the details of SS and turbidity exceedances recorded. Investigation indicated the exceedances were not related to the Project works.

Table 6.2 Summary of Exceedances recorded in the Reporting Month

Date	Tide	Station	Parameter	Exceedance	Value	Possible Cause of Exceedance
6/5/2013	Mid-ebb	WSD19	SS (mg/L)	AL	15.0	Upstream of the Project.
9/5/2013	Mid-flood	WSD17	SS (mg/L)	AL	15.5	Upstream of the Project.

- xix. Total two SS exceedances were recorded in the reporting period. Silt curtain and silt screens were checked and confirmed in proper condition during the water monitoring. The SS exceedance on 6 and 9 May 2013 were upstream from project location, no rising of SS was observed at downstream stations. No turbidity exceedance was record in this reporting month, no rising of turbidity was observed at downstream stations.
- 6.2.2. For the exceedances, further investigations were conducted to determine the cause of impact in terms of the following areas:
 - Water Quality against the Tidal Movement along Victoria Harbour;
 - Natural Variation Comparison; and
 - Water Quality Surveillance System

6.3 WATER QUALITY AGAINST THE TIDAL MOVEMENT ALONG VICTORIA HARBOUR

- 6.3.1 In order to conclude the cause of an adverse water quality impact, the trend across the 6 monitoring stations is reviewed. Whether the adverse impact is due to project work will be evaluated from the trend of SS level in downstream across the Victoria Harbour after passing the project location. By observing this trend of SS, contribution of the adverse water quality impact from the dredging activities under the project can be evaluated by checking if there is a significant rising up trend in the SS level in the WSD intakes at project downstream.
- 6.3.2 Moreover, a comparison of the monitoring station at project downstream stations with the upstream monitoring stations can also indicate whether the extent of

exceedance in SS content recorded at the WSD intakes downstream to the project is likely to be caused by upstream source or not. If the SS values of the upstream and downstream show similar levels, the impact at the project downstream stations shall probably be due to the project upstream source and the contribution from project work can be eliminated. A review on the tidal movement across the Victoria Harbour is plotted against the SS results and graphical presentation is presented in *Appendix 5.4*.

6.3.3 Investigations on the recorded exceedance on 6 and 9 May 2013 were upstream from project location, no rising of SS was observed at downstream stations. It is concluded that no adverse water quality impact was arising from the Project works. It definitely concluded that the exceedance was not related to the Project works.

6.4 NATURAL VARIATION COMPARISON

- Referring to the ER Letter ref. CEDD/KL/2009/01/M45/130(369767) dated 14 February 2011, a Supplementary to Baseline Water Quality Monitoring Report Review Action and Limit Levels (Revision 1.0) has been provided to EPD by ER in February 2011 in according to Sections 4.92 and 10.7 of EM&A Manual. This report in Revision 1.1 has been provided on 26 April 2011 in response to EPD's comments dated 1 April 2011. This report presents the methodology for enlargement baseline database and the review and determination of the Action and Limit Levels in dry and wet seasons.
- On the basis of this Supplementary to Baseline Water Quality Monitoring Report, the maximum SS levels in the establishment of larger baseline database will be applied and acted as the upper bound of natural variation levels for the comparison with SS results in reporting quarter. The upper bound of natural variation levels are shown in **Table 6.4**. The graphic presentation of water quality results with respect to local variation is shown in **Appendix 5.5**.

Table 6.4 Upper Bound of Natural Variation Levels at Water Monitoring Stations

Upper Bound of Natural Variation Levels (mg/L)	WSD9	WSD10	WSD15	WSD17	WSD19	WSD21
Dry Season	12.0	19.0	14.0	16.0	18.0	15.0
Wet Season	15.1	21.2	22.7	17.9	17.1	18.8

6.4.3 According to the graphic presentation, most SS results were well within the upper bound of natural variation level.

6.5 WATER QUALITY SURVEILLANCE SYSTEM

- 6.5.1. 2 self water quality surveillance monitoring events for removal of existing seawall were conducted on 13 and 27 May 2013. Turbidity and SS monitoring were conducted at 12 locations as follows and shown in **Figure 6.1**.
 - One sampling point inside the silt curtain (SP1);
 - Four sampling points outside the first layer silt curtain (MP1-MP4);
 - Seven control points (C1-C7)
- 6.5.2. The trend of monitoring results from the location of dredging works to the nearest WSD pumping stations were projected for checking the water quality surveillance. The graphical presentation of the SS levels at SP1, sampling points outside the first layer silt curtain, control points and impact water quality monitoring stations against the distance are shown in **Appendix 5.6.**
- 6.5.3. Based on the graphic presentation and the trend description of the SS levels in *Appendix 5.6* conclusion of the water quality surveillance can be draw as follows:
 - SS levels at all monitoring stations were below the established trigger level, moreover, SS levels at all control points and downstream WSD intakes were below SP1 and well within the Action level;
 - When the WSD intakes were located at upstream of the Project, it found that SS level was occasionally higher than the control points or sampling points near dredging area. Thus, uncertain interference of water quality was apparently interfering in the vicinity of intakes frequently;
 - For WSD intakes located at downstream of the Project, SS levels were below the Action level, sampling points MP and control points were recorded. The trend in the projections indicated that no significant rising of SS in the projection from the dredging area to the control points and the WSD pumping stations.
- 6.5.4. With reference to the upper bound of natural variation levels and water quality surveillance conducting in reporting period, it shows mostly no fluctuation over the upper bound.

6.6 DREDGING AND DISPOSAL

6.6.1. Implementation of mitigation measures for dredging work and the associated dredging records were checked and the findings are summarized in *Table 6.4.1*.

Table 6.4.1 Compliance with EP Conditions in the Reporting Month

EP Condition	Compliance Status and/or Recommendation
2.6 Silt Curtain Deployment	In accordance with the EP requirement and Implementation Schedule for Water Quality Measure
2.6 For removal of the existing seawall and the seabed, Daily Dredging Rate ≤ 4,000m3/d Hourly Dredging Rate ≤ 334m3/hr	Completed
2.7 For removal of marine sediment from seabed, Daily Dredging Rate ≤ 4,000m3/d Hourly Dredging Rate ≤ 334m3/hr	Complied with the EP requirement in reporting month: Daily Dredging Rate maintained at 507m³/day and Hourly Dredging Rate maintained at 65m³/hr.
2.8 Silt Screen Deployment	In accordance with the Silt Screen Deployment Plan for all 6 intakes

- 6.6.2. The daily and hourly dredging rates were checked and reviewed that were below the EP requirements. It was concluded that the dredging was conducted in compliance with the specific EP requirements.
- 6.6.3. There was 1,035 marine sediment (Type 1 Open Sea Disposal) was disposed to South Cheung Chau Spoil Disposal Area denoted "KTCT-1" and "KTCT -2" in this reporting month. The disposal of the sediment (Type 1 Open Sea Disposal (Dedicate Sites) and Type 2 Confined Marine Disposal) to East Sha Chau Contaminated Mud Disposal Site Pit IVc was completed. 5m³ non-inert C&D material related to dredging works were disposed off site in the reporting month. The details can be referred to the *Table 6.4.2*.

Table 6.4.2 Waste Quantities Related To Dredging Works

Waste Type	Quantity this month, m³ (Bulk volume)	Cumulative-to- Date. m ³ (Bulk volume)	Disposal / Dumping Ground
Marine Sediment (Type 1 – Open Sea Disposal)(1,035	559,027	South Cheung Chau Spoil Disposal Area denoted "KTCT-1" and "KTCT -2"
Marine Sediment (Type 1 – Open Sea Disposal (Dedicated Sites) and Type 2 – Confined Marine Disposal) *	NIL	Completed	East Sha Chau Contaminated Mud Disposal Site – Pit IVc

^{*} Remarks: The disposal of marine sediment (Type 1 – Open Sea Disposal (Dedicated Sites) and Type 2 – Confined Marine Disposal) was completed.

7 ENVIRONMENTAL SITE AUDIT

- 7.0.1. Site audits were carried out by ET on weekly basis to monitor the implementation of proper environmental management practices and mitigation measures in the Project site.
- 7.0.2. The joint site audits were conducted on 3, 10, 16, 21 and 30 May 2013 by the representatives of IEC, ER, the Contractor and the ET. No particular finding was obtained on the dredging works during the site inspections.

8 COMPLAINTS, NOTIFICATION OF SUMMONS AND PROSECUTION

8.0.1. In this reporting period, no complaint, inspection notice, notification of summons or prosecution was received. Cumulative complaint log, summaries of complaints, notification of summons and successful prosecutions are presented in *Tables 8.1*, 8.2 and 8.3 respectively.

Table 8.1 Environmental Complaints Log

Complaint Log No.		Received From and Received By			Outcome	Date of Reply
NIL	-	-	-	-	-	-

Table 8.2 Cumulative Statistics on Complaints

Environmental Parameters	Cumulative No. Brought Forward	No. of Complaints This Month	Cumulative No. Project-to-Date
Air	0	0	0
Noise	0	0	0
Water	0	0	0
Waste	0	0	0
Total	0	0	0

Table 8.3 Cumulative Statistics on Successful Prosecutions

Environmental Parameters	Cumulative No. Brought Forward	No. of Successful Prosecutions this month (Offence Date)	Cumulative No. Project-to-Date
Air	0	0	0
Noise	0	0	0
Water	0	0	0
Waste	0	0	0
Total	0	0	0

9 CONCLUSION

- 9.0.1. Dredging of marine sediment and removal and reconstruction of existing seawall were commenced on 28 June and 22 November 2010 respectively. The EM&A programme was carried out in accordance with the EM&A Manual requirements. As per the EM&A Manual, water quality impact monitoring was conducted during the dredging work, which was commenced on 28 June 2010.
- 9.0.2. SS exceedances were recorded on 6 and 9 May 2013. Investigations indicated the exceedances were not related to the Project.
- 9.0.3. Supplementary to Baseline Water Quality Monitoring Report Review of Action and Limit Levels (Revision 1.2) was submitted to EPD on 13 October 2011. With respect to the EPD's no comment on the new Action and Limit Levels for water monitoring on 19 October 2011, the new set Action and Limit Levels for turbidity and SS was started to use from 19 October 2011.
- 9.0.4. The scheduled construction activities and the recommended mitigation measures for the coming month are listed in *Table 9.0*. The construction programme of the Project is provided in *Appendix 9.0*.

Table 9.0 Construction Activities and Recommended Mitigation Measures in Coming Report Month

Location	Construction Works	Recommended Mitigation Measures
Marine work	 Dredging of Marine Sediment; Maintain silt curtain for seawall removal; Maintenance of Silt Curtain and Silt Screens; Sorting of inert C&D material from existing seawall; and Reconstruction of New Seawall 	 Collection and removal of floating refuse at regular intervals; Regular inspection and maintenance of the silt screens and silt curtain; Covering the stockpile and watering the dust surface to suppress dust emission; 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; Opening of the silt curtain should be closed except for vessel movement.

Figure 2.1

General Layout

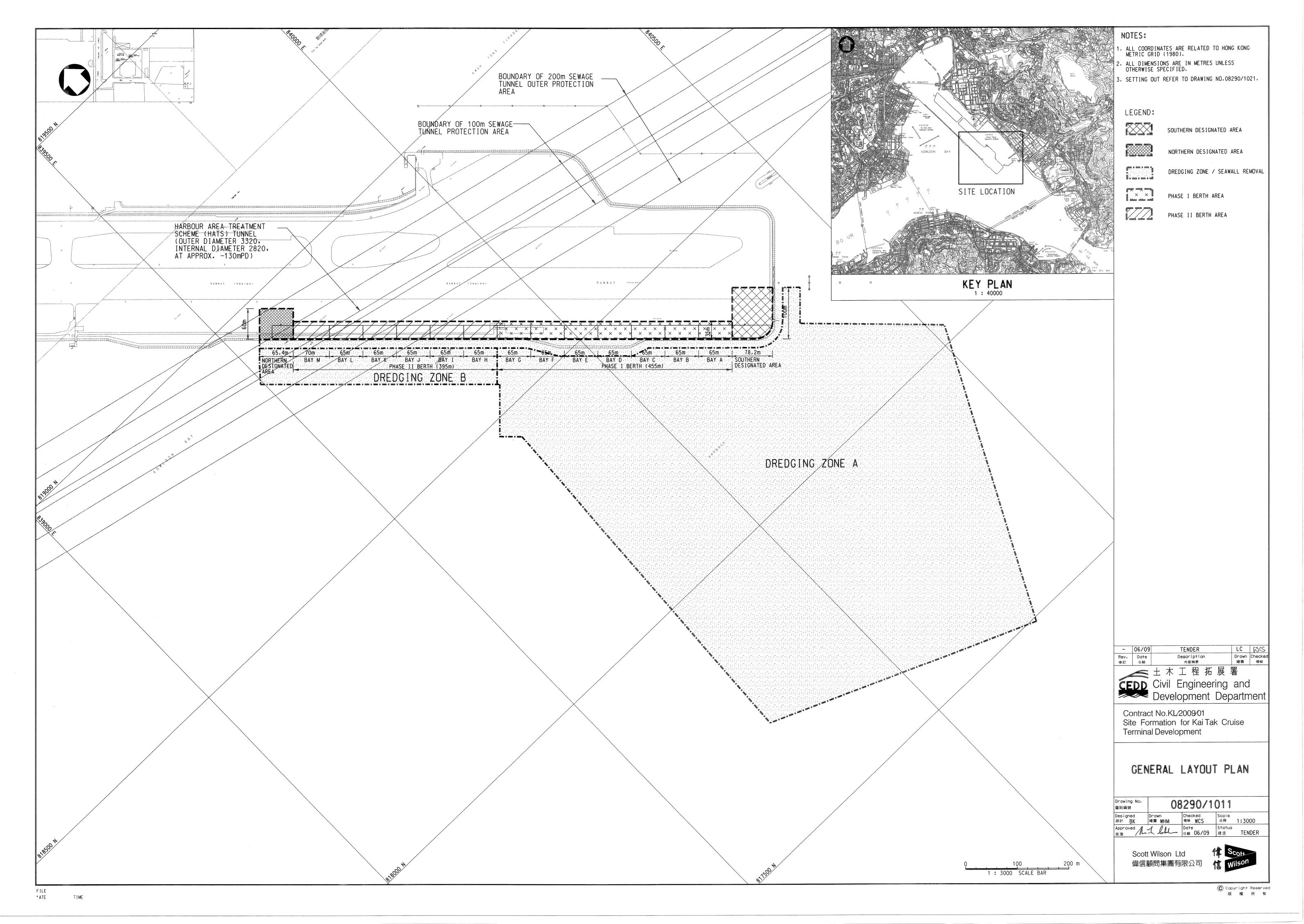


Figure 2.2

Project Organization Chart

Project Organization Chart

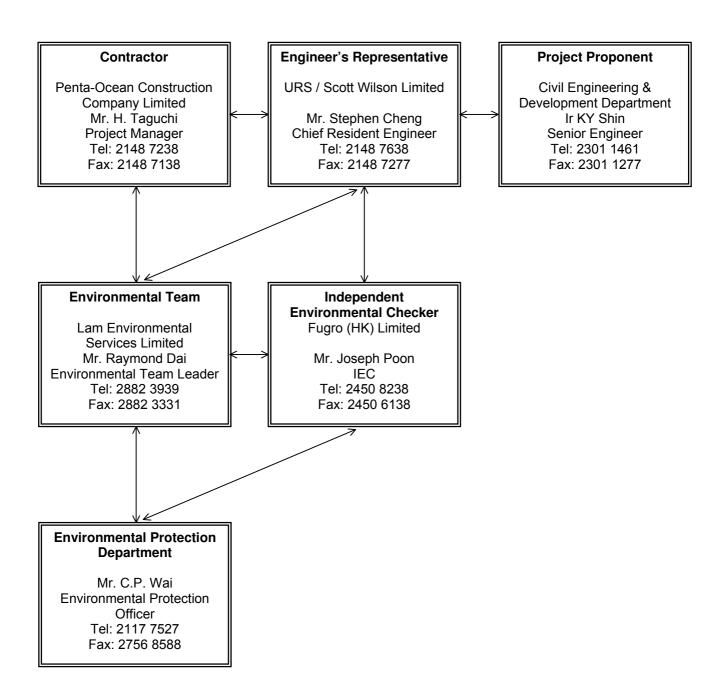
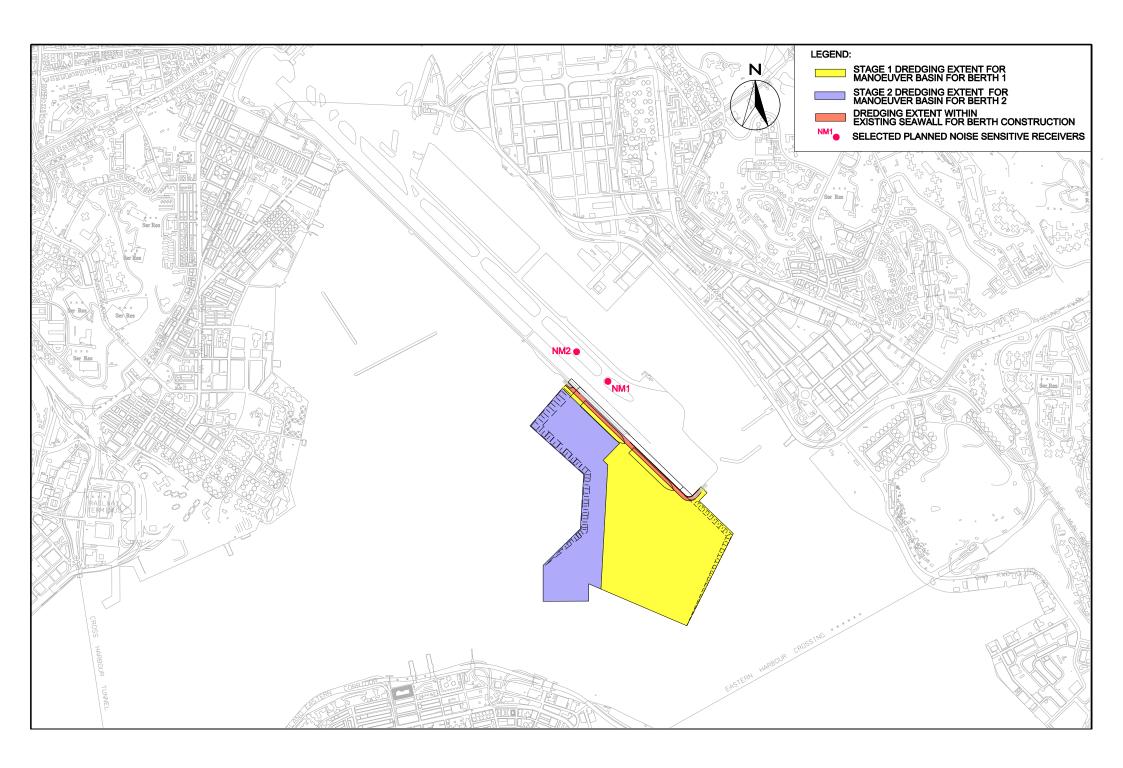


Figure 4.1

Layout of Environmental Monitoring Stations



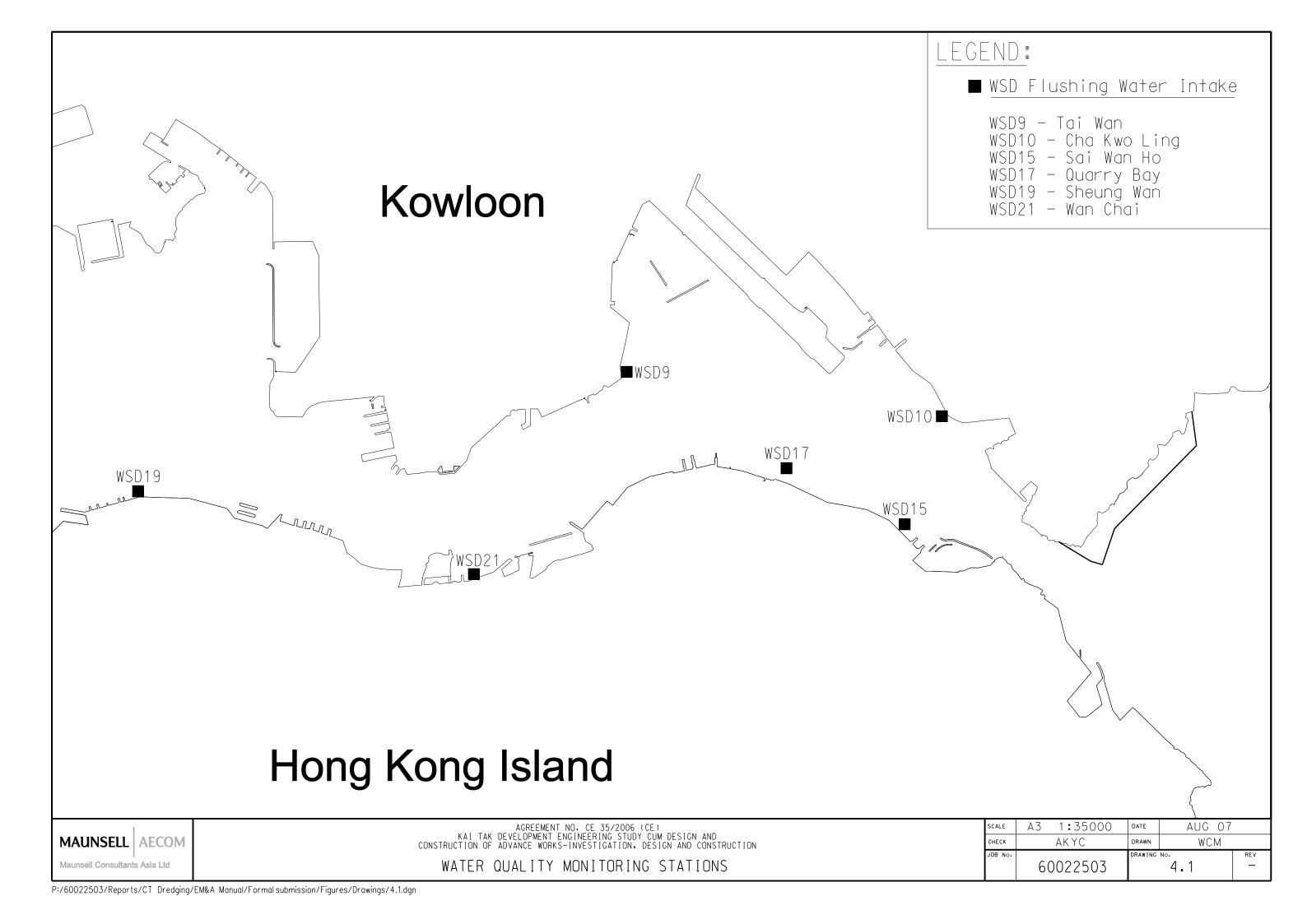


Figure 6.1

Layout of Monitoring Stations for Water Quality Surveillance System





FLOOD TIDE DIRECTION

C2

EASTERN FAIRWAY

EBB TIDE

DIRECTION

OF DREDGING

ESTIMATED LIMIT

2. Set A (4 sampling stations), the water quality monitoring works shall be taken at the Control Points (i.e. C1 to C4). Set B (3 sampling stations), the water quality monitoring works shall be taken at approximate 100m outside the silt curtain (i.e. C5 to C7) which the locations shall be changed from time to time to follow the movement of silt curtain.

- The water quality monitoring works shall be carried out during the dredging period.
- 4. The water quality monitoring works shall be carried out at a frequency to be agreed by the Engineer. The date and time of monitoring should be in line with the impact water quality monitoring shedule under the EM&A manual. Each sampling event shall be carried out at 3 depth (i.e. Im below the surface, mid depth, and Im above the seabed) of the water column at each location. Duplicate in-situ measurements and water sampling shall 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 shall not less than 0.5m. The schedule of water quality monitoring shall be reviewed by the Engineer and the Independent Environmental Checker (IEC) depending on whether the water quality monitoring results could indicate any trend of water quality for determination of trigger/action level or whether there is a ad-hoc requirement (e.g., change of working methods, compilatins, etc.). The Contractor shall carry out the works according to the revised schedule if instructed by the Engineer.
- 5. As the key parameters, turbidity shall be measured in situ whereas Suspended Solids (SS) shall be determined by laboratory. Analysis of SS level shall be carried out in a HOKALS or other international accredited laboratory. Sufficient water samples of not less than 1 liter shall be collected at the monitoring stations for carrying out the laboratory SS determinations.
- 6. Requirements on the monitoring equipments and calibration shall be referred to Paragraph 4.7 "Monitoring Equipment" of the Environmental Monitoring and Audit Manual for the Dredging Works for Proposed Cruise Terminal at Kal Tak.
- 7. Laboratory analysis of the sampling data shall be carried out in a HOKLAS or other international accredited laboratory and follow the requirements as stated in Paragraph 4.8 "Laboratory Measurement/Analysis" of the Environmental Monitoring and Audit Manual for the Dredging Works for Proposed Cruise Terminal at Kal Tak. Monitoring data together with the report shall be reported to the Engineer and the IEC on monthly basis.
- Other relevant data shall also be recorded including monitoring location/position, time, water depth, sampling depth, water temperature, tidal stages, weather conditions and any special phenomena or work underway nearby.

LEGEND:

- (| SILT CURTAIN (20m x 20m)
 - SAMPLING POINT
 INSIDE SILT CURTAIN
 (CONTRACTOR'S PROPOSED SAMPLING
 POINT TO MONITOR EFFECTIVENESS
 OF SILT CURTAINS)
- SAMPLING POINT AT ABOUT 10m
 OUTSIDE SILT CURTAIN
 (CONTRACTOR'S PROPOSED SAMPLING
 POINT TO MONITOR EFFECTIVENESS
 OF SILT CURTAINS)
- SAMPLING POINT
 AS CONTROL POINT (CI TO C4)
- SAMPLING POINT AS CONTROL POINT (C5 TO C7) AT ABOUT 100m AWAY FROM SILT CURTAIN (ADDITIONAL)

ADDITIONAL WATER QUALITY

COORDINATE	NORTH	EAST
CI -	818867.763	839495.740
C2	818152.875	839775.604
C3	817702.158	839931.601
C4	817780.765	840334.093
C5	CONTION	o olimior
C6		S CHANGE
C7	WITH SIL	T CURTAIN

SITE BOUNDARY

Control Copy

No. 35



BY: 00/967 (34/879) Y.O. \$5

8	09/10	REVISION AS SHOWN	EW	K.
A	07/10	REVISION AS SHOWN	JY	SC
Selfa	Dale	Revision	Broza	Crecked

CEDD CONTRACT KL/2009/01 SITE FORMATION FOR KAITAK CRUISE TERNINAL DEVELOPMENT

WATER QUALITY SURVEILLANCE SYSYEM

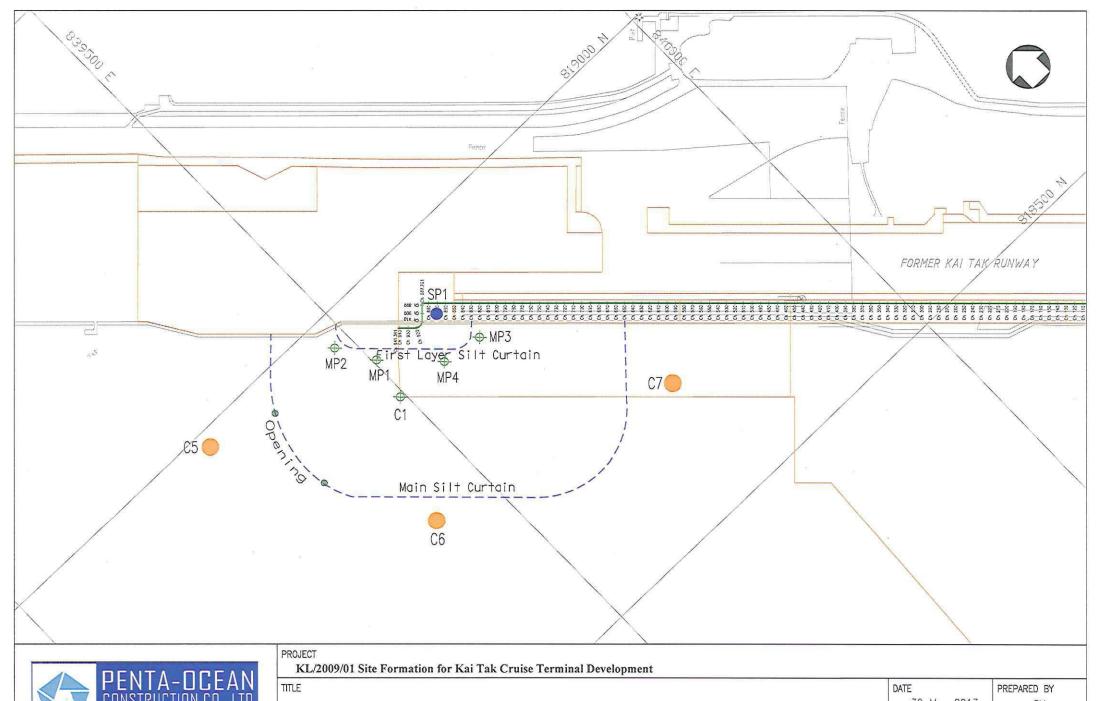
SKETCH	NO.	(CEDDKL/200901)SK0067B			
DATE	0640	DRAWN	JY	SCALE	
CHECKEO	AT	APPROVED	SC	Time	NTS
HITTIE	096 10				

URS SCOTT WILSON LTD

Engine for the Contest

ENGINEERS REPRESENTATIVES OFFICE

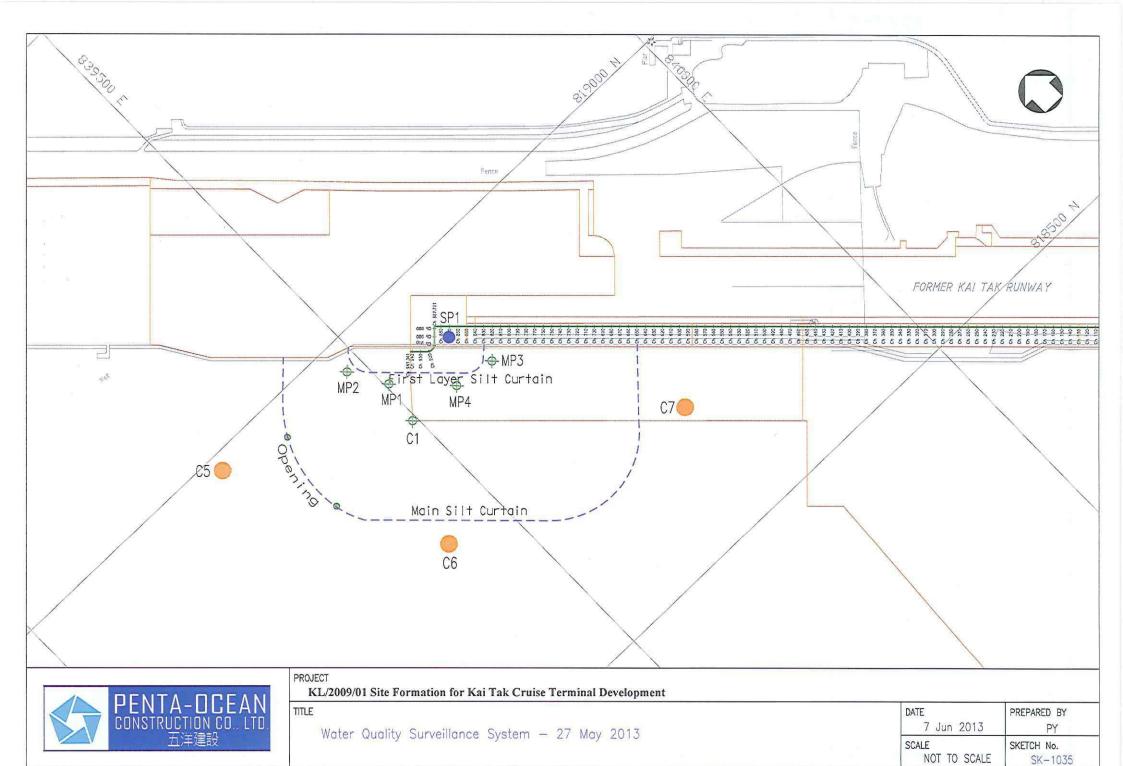






Water Quality Surveillance System - 13 May 2013

DATE	PREPARED BY
30 May 2013	PY
SCALE	SKETCH No.
NOT TO SCALE	SK-1031



Appendix 3.1

Implementation Schedule of Environmental Mitigation Measures



EIA Ref#	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Status	Relevant Legislation and Guidelines
S3.6	Requirements of the Air Pollution Control (Construction Dust) Regulation shall be adhered to during the construction period.	Work site / During dredging in construction stage	Contractor for capital dredging	Implemented	Air Pollution Control (Construction Dust) Regulation
S3.6	In order to minimize the potential odour emissions, if any, the dredged sediment placed on barge should be properly covered as far as practicable to minimise the exposed area and hence the potential odour emissions during the transportation of the dredged sediment.	Work site / During dredging in construction stage	Contractor for capital dredging	Implemented	EIAO-TM
S4.8	 Good Site Practices: Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program. Mobile plant, if any, should be sited as far away from NSRs as possible. Machines and plant (such as trucks) that may be in intermittent use should be shut down between works periods or should be throttled down to a minimum. Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs. Material stockpiles and other structures should be effectively utilised, wherever practicable, in screening noise from on-site construction activities. 	Work site / During dredging in construction stage	Contractor for capital dredging	Implemented	NCO EIAO-TM



EIA Ref#	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Status	Relevant Legislation and Guidelines
S4.9	If there is any planned NSRs within 300m from the work area occupied during the dredging period, an EM&A programme is recommended to be established according to the predicted occurrence of noisy activities. All the recommended mitigation measures for daytime normal working activities should be incorporated into the EM&A programme for implementation during dredging.	Representative NSRs at the former Kai Tak Airport runway / Upon formal occupation	N/A	Not applicable	NCO EIAO-TM
S5.9	 Dredging will be carried out by closed grab dredger to minimize release of sediment and other contaminants during both capital and maintenance dredging. The maximum production rate for dredging 	Work site / During dredging in construction stage	Contractor for capital dredging	Implemented	EIAO-TM WPCO
	from the seabed to provide necessary manoeuvring area would not be more than 4,000m³ per day (and no more than 2 closed grab dredgers) during capital dredging and 2,000m³ per day (and no more than 1 closed grab dredger) during maintenance dredging.				
	The maximum production rate for dredging at or near the seawall area would not be more than 4,000m³ per day for berth construction. No more than two closed grab dredger would be operated at the same time at or near the seawall for berth construction.				
S5.9	Silt curtains should be deployed around the closed grab dredgers used for dredging at and near the existing seawall of the former Kai Tak Airport runway for construction of the cruise berth structures.	Work site / During dredging in construction stage	Contractor for capital dredging	Implemented	EIAO-TM, WPCO



EIA Ref#	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Status	Relevant Legislation and Guidelines
S5.9	Silt screens should be installed at the WSD flushing water intakes at Cha Kwo Ling, Sai Wan Ho, Quarry Bay, Sheung Wan, Wan Chai and Tai Wan for dredging in the manoeuvring basin of the first berth during the capital dredging.	Seawater intakes in Victoria Harbour/ During the construction of cruise terminal	Contractor for capital dredging	Implemented	EIAO-TM, WPCO
S5.9	Silt screens should be installed at the WSD flushing water intakes at Cha Kwo Ling, Quarry Bay and Tai Wan for dredging in the manoeuvring basin of the second berth during the capital dredging.	Seawater intakes in Victoria Harbour / During the construction of cruise terminal	Contractor for capital dredging	Implemented	EIAO-TM, WPCO
S5.9	If the opening has been introduced at the northern runway, silt screens should also be installed at the WSD flushing water intake at Sai Wan Ho, Sheung Wan and Wan Chai for dredging in the manoeuvring basin of the second berth during the capital dredging.	Seawater intake at Sai Wan Ho, Sheung Wan and Wan Chai / During the construction of cruise terminal	Contractor for capital dredging	Implemented	EIAO-TM, WPCO

prevent leakage of material;



IMPLEMENTATION SCHEDULE OF ENVIRONMENTAL MITIGATION MEASURES **Environmental Protection Measures / Mitigation Relevant Legislation** EIA Ref# **Location / Timing Implementation Agent Implementation Status** and Guidelines Measures S5.9 Other good site practices that should be Contractor for capital Work site and Implemented EIAO. EIAO-TM. undertaken during dredging include: adjacent waters / dredaina WPCO. WDO During dredging • all vessels should be sized so that adequate in construction clearance is maintained between vessels and stage the seabed in all tide conditions, to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash; all barges / dredgers should be fitted with tight fitting seals to their bottom openings to



EIA Ref#	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Status	Relevant Legislation and Guidelines
S5.9	Collection and removal of floating refuse should be performed at regular intervals on a daily basis. The contractor should be responsible for keeping the water within the site boundary and the neighbouring water free from rubbish during the dredging works.	Work site and adjacent waters / During dredging in construction stage	Contractor for capital dredging	Implemented	EIAO-TM, WPCO, WDO
S5.9	An environmental monitoring and audit programme should be implemented to verify whether or not impact predictions are representative, and to ensure that all the recommended mitigation measures are implemented properly. If the water quality monitoring data indicate that the proposed dredging works result in unacceptable water quality impacts in the receiving water, appropriate actions should be taken to review the dredging operation and additional measures such as use of frame-type silt curtain, deployment of double silt curtains, slowing down, or rescheduling of works should be implemented as necessary.	6 selected WSD flushing water intakes in Victoria Harbour/ During dredging in construction stage	Environmental Team and verified by Independent Environmental Checker	Implemented	EIAO-TM, WPCO



EIA Ref#	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Status	Relevant Legislation and Guidelines
S5.9	Silt screens are recommended to be deployed at 6 selected WSD flushing water intakes during the capital dredging. The contractor for capital dredging shall demonstrate and ensure that the design of the silt screen will not affect the normal operation of flushing water intake. The contractor shall obtain consensus from all relevant parties, including WSD and Marine Department on the design of the silt screen at each of the six selected flushing water intake points before installation of the silt screen and commencement of the proposed dredging works. As a mitigation measure to avoid the pollutant and refuse entrapment problems and to ensure that the impact monitoring results are representative, regular maintenance of the silt screens and refuse collection should be performed at the monitoring stations at regular intervals on a daily basis. The Contractor should be responsible for keeping the water behind the silt screen free from floating rubbish and debris during the impact monitoring period.	6 selected WSD flushing water intakes in Victoria Harbour/ During dredging in construction stage	Contractor for capital dredging	Implemented	EIAO-TM, WPCO



EIA Ref#	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Status	Relevant Legislation and Guidelines
S6.7	Good Site Practices It is not anticipated that adverse waste management related impacts would arise, provided that good site practices are adhered to. Recommendations for good site practices during the dredging activities include:	Work site / During dredging in construction stage	Contractor for capital dredging	Implemented	EIAO-TM
	Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site.				
	 Training of site personnel in proper waste management and chemical waste handling procedures. 				
	Provision of sufficient waste disposal points and regular collection for disposal.				
	Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers.				
	A recording system for the amount of wastes generated, recycled and disposed of (including the disposal sites).				
	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.				



EIA Ref#	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Status	Relevant Legislation and Guidelines
S6.7 (cont.)	 Encourage collection of aluminium cans, PET bottles and paper by providing separate labelled bins to enable these wastes to be segregated from other general refuse generated by the workforce. Any unused chemicals or those with remaining functional capacity shall be recycled. 	Work site / During dredging in construction stage	Contractor for capital dredging	Implemented	EIAO-TM
S6.7	Marine Sediments The dredged marine sediments would be loaded onto barges and transported to the designated disposal sites allocated by the MFC depending on their level of contamination. Sediment classified as Category L would be suitable for Type 1 – Open Sea Disposal. Contaminated sediment would require either Type 1 – Open Sea Disposal (Dedicated Sites) or Type 2 - Confined Marine Disposal and must be dredged and transported with great care in accordance with ETWB TCW No. 34/2002. Subject to the final allocation of the disposal sites by MFC, the dredged contaminated sediment must be effectively isolated from the environment upon final disposal and shall be disposed of at the East Sha Chau Contaminated Mud Pits that are designated for the disposal of contaminated mud in Hong Kong.	Work site / During dredging in construction stage	Contractor for capital dredging	Implemented	ETWB TCW No. 34/2002



EIA Ref#	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Status	Relevant Legislation and Guidelines
S6.7	It will be the responsibility of the Contractor to satisfy the appropriate authorities that the contamination levels of the marine sediment to be dredged have been analysed and recorded. According to the ETWB TCW No. 34/2002, this will involve the submission of a formal Sediment Quality Report to the DEP, prior to the dredging contract being tendered. The contractor for the dredging works shall apply for the allocation of marine sediment disposal sites from all relevant authorities.	Work site / During dredging in construction stage	Contractor for capital dredging	Dumping Permits were issued by EPD	ETWB TCW No. 34/2002
S6.7	 During transportation and disposal of the dredged marine sediments requiring Type 1 and Type 2 disposal, the following measures shall be taken to minimise potential impacts on water quality: Bottom opening of barges shall be fitted with tight fitting seals to prevent leakage of material. Excess material shall be cleaned from the decks and exposed fittings of barges and hopper dredgers before the vessel is moved. 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. Barges or hopper barges shall not be filled to a level that would cause the overflow of materials or sediment laden water during loading or transportation. 	Work site / During dredging in construction stage	Contractor for capital dredging	Implemented	WDO; WPCO



EIA Ref#	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Status	Relevant Legislation and Guidelines
S6.7	Chemical Wastes After use, chemical wastes (for example, cleaning fluids, solvents, lubrication oil and fuel) should be handled according to the Code of	Work site / During dredging in construction stage	Contractor for capital dredging	Implemented	Waste Disposal (Chemical Waste) (General) Regulation;
	Practice on the Packaging, Labelling and Storage of Chemical Wastes. Spent chemicals should be collected by a licensed collector for disposal at the CWTF or other licensed facility in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.				Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes
S6.7	General Refuse General refuse should be stored in enclosed bins or compaction units separate from C&D material. A reputable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material. An enclosed and covered area is preferred to reduce the occurrence of 'wind blown' light material.	Work site / During dredging in construction stage	Contractor for capital dredging	Implemented	WDO, WPCO



EIA Ref#	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Status	Relevant Legislation and Guidelines
S6.7	Construction and Demolition Material It is recommended that the extent of dredging of the existing seawall should be kept to a minimum in the detailed design of the new cruise terminal to minimize generation of C&D material. Mitigation measures and good site practices should be incorporated in the contract document to control potential environmental impact from handling and transportation of C&D material. The mitigation measures include: • Where it is unavoidable to have transient stockpiles of C&D material within the Project work site pending collection for disposal, the transient stockpiles shall be located away from waterfront or storm drains as far as possible. • Open stockpiles of construction materials or construction wastes on-site should be covered with tarpaulin or similar fabric. • Skip hoist for material transport should be totally enclosed by impervious sheeting. • Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving a construction site.	Work site / During the construction period	Contractor for capital dredging	Implemented	ETWB TCW No. 33/2002, 31/2004, 19/2005
	• The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores.				



EIA Ref#	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Status	Relevant Legislation and Guidelines
S6.7 (cont.)	 The load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure dust materials do not leak from the vehicle. All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet. The height from which excavated materials are dropped should be controlled to a minimum practical height to limit fugitive dust generation from unloading. 	Work site / During the construction period	Contractor for capital dredging	Implemented	ETWB TCW No. 33/2002, 31/2004, 19/2005
\$6.7	When delivering inert C&D material to public fill reception facilities, the material shall consist entirely of inert construction waste and of size less than 250mm or other sizes as agreed with the Secretary of the Public Fill Committee. In order to monitor the disposal of the surplus C&D material at the designed public fill reception facility and to control fly tipping, a trip-ticket system should be included as one of the contractual requirements and implemented by the Contractor under the Waste Management Plan certified by the Environmental Team and verified by the Independent Environmental Checker who should be responsible for auditing the results of the system.	Work site / During the construction period	Contractor for capital dredging, Engineer, Environmental Team and Independent Environmental Checker	Not applicable	ETWB TCW No. 31/2004



EIA Ref#	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Status	Relevant Legislation and Guidelines
S7.8	The dredging activities of the proposed cruise terminal should ensure that disturbance to the existing seawall masonry outside the Project boundary should be avoided as far as	Work site/ During construction of cruise terminal	Contractor for capital dredging as per CEDD's advice	Implemented	Antiquities and Monuments Ordinance EIAO, EIAO-TM
	practicable.				Guidance Notes on Assessment of Impact on Sites of Cultural Heritage in Environmental Impact Assessment Studies (GN-CH)
					Hong Kong Planning Standards and Guidelines (HKPSG)
S7.10, App. 7.1	It is recommended that the dredged spoil should be monitored for the presence of archaeological material. Guidelines for the monitoring brief have been prepared in consultation with the AMO. A qualified marine archaeologist needs to be on standby to provide specialist advice, if required, but the monitoring can be carried out by a member of staff on the dredging barge.	Work site / during dredging in construction stage	Contractor for capital dredging, Environmental Team	Implemented	Antiquities and Monuments Ordinance EIAO, EIAO-TM GN-CH HKPSG Marine Archaeological Investigation Guidelines



EIA Ref#	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Status	Relevant Legislation and Guidelines
8.7	Translocate those existing coral colonies attached on boulders that are manually movable by a diver underwater (possibly longest dimension of less than 50cm) located within the hard substrata sea area within the dredging site as far as practicable prior to the commencement of the capital dredging activities. The entire translocation exercise include the preparation of a detailed translocation plan, the pretranslocation coral survey, the coral translocation, and the quarterly post-translocation monitoring for one year. Pre-translocation survey would be focused on identifying and mapping of coral colonies that would be directly impacted by the proposed dredging and investigating the translocation feasibility of these coral colonies. A detailed translocation plan (including pre-translocation coral survey, translocation methodology and monitoring of transplanted corals) should be prepared during the detailed design stage of the Project which, together with the ecologist involved in coral translocation, should be approved by AFCD prior to commencement of the translocation exercises. The proposed relocation of the coral colonies should not affect any private/public marine rights at the recipient site.	Along the section of the former Kai Tak Airport runway that will be directed affected by the cruise terminal construction / During detailed design stage	Other ET specifically employed for coral translocation works	Final Detailed Coral Translocation Plan was approved by EPD in letter ref. (18) in EP2/K19/C/19 Pt.5 dated 5 June 2009. Form 5 was submitted under CEDD's memo ref. (6) in KD 2/31/4 Pt.3 dated 10 June 2009 regarding minor alteration of the position of the coral recipient site. Coral Translocation Report was submitted in Scott Wilson letter ref. 08290/325723 dated 2 July 2009. Post-translocation report shall be referred to the submissions by another ET specifically employed for coral translocation works.	EIAO-TM



EIA Ref#	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Status	Relevant Legislation and Guidelines
S8.7	New seawalls at the berth structure of the cruise terminal shall be constructed in order to provide large area of hard substrata for settlement and recruitment of intertidal and subtidal assemblages similar to those previously recorded from existing habitats.	The section of the former Kai Tak Airport runway that will be directed affected by the cruise terminal construction / During detailed design stage	To be confirmed at later stage	To be confirmed at later stage	EIAO-TM
9.6	No fisheries-specific mitigation measures would be required.	-	Not applicable	Not applicable	-

Appendix 4.1

Action and Limit Levels

Action and Limit Levels

Action and Limit Levels for Noise Monitoring

Time Period	Action Level	Limit Level
07:00 – 19:00 hours on normal weekdays	When one documented complaint is received from any one of the sensitive receivers	75 dB(A)

Remarks: No noise monitoring was conducted due to no planned noise sensitive receivers (NSRs) occupied within 300m from the works area of this Project during the dredging works.

Action and Limit Levels for Water Monitoring

Parameters	Action L	evel		Limit Le	vel	
Turbidity in NTU		All Seaso	on_		All Seaso	on_
	WSD9	5.67	•	WSD9	12.27	
	WSD10	6.26	i	WSD10	10.47	
	WSD15	8.15	i	WSD15	14.41	
	WSD17	11.60		WSD17	16.91	
	WSD21	9.11		WSD21	15.38	
	WSD19	13.09	1	WSD19	15.34	
Suspended Solids		Dry Season	Wet Season		Dry Season	Wet Season
(SS) in mg/L	WSD9	6.9	9.7	WSD9	7.8	10.9
	WSD10	7.7	9.1	WSD10	10.3	12.2
	WSD15	7.8	13.5	WSD15	8.4	14.5
	WSD17	9.5	11.2	WSD17	13.7	16.2
	WSD21	13.3	17.1	WSD21	13.9	17.8
	WSD19	16.3	15.1	WSD19	17.0	15.7

Remarks:

Wet season is the period from April to September.

Dry season is the period from October to March.

Revised Action and Limit Levels for Water Monitoring

Station	Turbidity (N	NTU)			Suspended	Solid (mg/L)		
	Action Leve		Limit Level individual s		Action Leve		Limit Level individual s	. • .
	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season
WSD9	5.6	7.0	10.6	13.4	10.2	12.8	10.8	13.5
WSD10	6.3	8.1	9.4	12.1	10.0	11.2	11.8	13.2
WSD15	7.5	11.9	12.5	19.6	10.8	17.5	11.8	19.1



Lam Environmental Services Limited

Station	Turbidity (N	NTU)			Suspended	Solid (mg/L)		
	Action Leve		Limit Level individual s		Action Leve		Limit Level individual s	-
	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season	Dry Season	Wet Season
WSD17	10.0	12.9	15.3	19.7	13.2	14.7	15.3	17.0
WSD19	10.9	13.7	14.7	18.4	14.0	13.3	17.0	16.2
WSD21	8.9	11.6	13.4	17.6	13.3	16.7	14.0	17.5

Remarks

Revised Action and Limit Levels for water monitoring was approved on 19 October 2011.

Appendix 4.2

Copies of Calibration Certificates



ALS Technichem (HK) Pty Ltd

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

CONTACT:

MS EMILY KONG

CLIENT:

LAM GEOTECHNICS LIMITED

ADDRESS:

11/F., CENTRE POINT,

181-185 GLOUCESTER ROAD,

WAN CHAI, HONG KONG

PROJECT:

...

WORK ORDER:

HK1308206

LABORATORY:

HONG KONG

DATE RECEIVED:

27/03/2013

DATE OF ISSUE:

08/04/2013

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 aceptance criteria of ALS will be followed.

Scope of Test:

Dissolved Oxygen, pH, Salinity and Temperature

Equipment Type:

Multimeter

Brand Name:

YSI

Model No.:

Professional plus

Serial No.:

11F100597

Equipment No.:

*

Date of Calibration: 08 April, 2013

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.

ISSUING LABORATORY: HONG KONG

Address

ALS Technichem (HK) Pty Ltd

11/F Chung Shun Knitting Centre

1-3 Wing Yip Street

Kwai Chung HONG KONG Phone:

852-2610 1044

Fax:

852-2610 2021

Email:

hongkong@alsglobal.com

Mr. Fung Lim Thee, Richard

General Manager -

Greater China & Hong Kong

This report may not be reproduced except with prior written approval from ALS Technichem (HK) Pty Ltd.

Page 1 of 2

Work Order: Date of Issue: HK1308206 08/04/2013

Client:

LAM GEOTECHNICS LIMITED



Equipment Type:

Multimeter

Brand Name:

YSI

Model No.:

Professional plus

Serial No.:

11F100597

Equipment No.: Date of Calibration:

08 April, 2013

Date of next Calibration:

08 July, 2013

Parameters:

Dissolved Oxygen

Method Ref: APHA (21st edition), 45000: G

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
2.66	2.62	0.04
3.66 7.39	3.62	-0.04 -0.13
8.74	7.26 8.65	-0.13
6.74	8.03	0.03
	Tolerance Limit (±mg/L)	0.20

pH Value

Method Ref: APHA (21st edition), 4500H:B

Expected Reading (pH Unit)	Displayed Reading (pH Unit)	Tolerance (pH unit)
4.0	4.11	0.11
7.0	7.14	0.14
10.0	9.92	-0.08
	Tolerance Limit (±pH unit)	0.20

Salinity

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

Expected Reading (ppt)	Displayed Reading (ppt)	Tolerance (%)
0	0	22
10	10.09	0.9
20	20.78	3.9
30	29.83	-0.6
	Tolerance Limit (±%)	10.0

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)
11.0	10.3	-0.7
22.0	21.6	-0.4
39.5	39.9	0.4
	Tolerance Limit (±°C)	2.0

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



ALS Technichem (HK) Pty Ltd

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

CONTACT:

MS EMILY KONG

CLIENT:

LAM GEOTECHNICS LIMITED

ADDRESS:

11/F., CENTRE POINT,

181-185 GLOUCESTER ROAD,

WAN CHAI, HONG KONG

PROIECT:

WORK ORDER:

HK1309329

LABORATORY:

HONG KONG

DATE RECEIVED:

09/04/2013

DATE OF ISSUE:

17/04/2013

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 aceptance criteria of ALS will be followed.

Scope of Test:

Dissolved Oxygen, pH, Salinity and Temperature

Equipment Type:

Multimeter

Brand Name:

YSI

Model No . Serial No.:

600XI 05C1607

Equipment No.:

Date of Calibration: 16 April, 2013

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.

ISSUING LABORATORY: HONG KONG

Address

ALS Technichem (HK) Pty Ltd

11/F Chung Shun Knitting Centre

1-3 Wing Yip Street

Kwai Chung HONG KONG Phone:

852-2610 1044

Fax:

852-2610 2021

Email:

hongkong@alsglobal.com

Mr. Fung Lim Chee Richard General Manager -

Greater China & Hong Kong

This report may not be reproduced except with prior written approval from ALS Technichem (HK) Pty Ltd.

Page 1 of 2

Work Order: Date of Issue: HK1309329 17/04/2013

Client:

LAM GEOTECHNICS LIMITED



Equipment Type:

Multimeter

Brand Name:

YSI

Model No.: Serial No.: 600XL 05C1607

Equipment No.:

Date of Calibration:

16 April, 2013

Date of next Calibration:

16 July, 2013

Parameters:

Dissolved Oxygen

Method Ref: APHA (21st edition), 45000: G

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
3.19	3.06	-0.13
6.01	5.93	-0.08
8.29	8.20	-0.09
	Tolerance Limit (±mg/L)	0.20

pH Value

Method Ref: APHA (21st edition), 4500H:B

Expected Reading (pH Unit)	Displayed Reading (pH Unit)	Tolerance (pH unit)
4.0	4.15	0.15
7.0	7.16	0.16
10.0	10.03	0.03
	Tolerance Limit (±pH unit)	0.20

Salinity

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

Expected Reading (ppt)	Displayed Reading (ppt)	Tolerance (%)
0	0	122
10	10.11	1.1
20	21.03	5.2
30	31.57	5.2
	Tolerance Limit (±%)	10.0

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)
13.0	12.20	-0.8
22.0	21.78	-0.2
43.5	43.47	0.0
	Tolerance Limit (±°C)	2.0

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

ALS Technichem (HK) Pty Ltd

ALS Environmental



CONTACT:

MS EMILY KONG

CLIENT:

LAM GEOTECHNICS LIMITED

ADDRESS:

11/F., CENTRE POINT,

181-185 GLOUCESTER ROAD.

WAN CHAI, HONG KONG

PROJECT:

WORK ORDER:

HK1309326

LABORATORY:

HONG KONG

DATE RECEIVED:

09/04/2013

DATE OF ISSUE:

17/04/2013

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 aceptance criteria of ALS will be followed.

Scope of Test:

Turbidity

Equipment Type:

Turbidimeter

Brand Name:

XIN RUI

Model No.:

WGZ-3B 1203010

Serial No.: Equipment No.:

Date of Calibration: 15 April, 2013

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.

ISSUING LABORATORY: HONG KONG

Address

ALS Technichem (HK) Pty Ltd

11/F Chung Shun Knitting Centre

1-3 Wing Yip Street

Kwai Chung HONG KONG Phone:

852-2610 1044

Fax:

852-2610 2021

Email:

hongkong@alsglobal.com

Mr. Fung Lim Chee, Richard

General Manager -

Greater China & Hong Kong

This report may not be reproduced except with prior written approval from ALS Technichem (HK) Pty Ltd.

Page 1 of 2

Work Order: Date of Issue: HK1309326 17/04/2013

Client:

LAM GEOTECHNICS LIMITED



Equipment Type:

Turbidimeter

Brand Name:

XIN RUI

Model No.: Serial No.: WGZ-3B 1203010

Equipment No.:

--

Date of Calibration:

15 April, 2013

Date of next Calibration:

15 July, 2013

Parameters:

Turbidity

Method Ref: APHA 21st Ed. 2130B

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)		
0	0.07			
4	4.03	0.8		
40	40.93	2.3		
80	77.03	-3.7		
400	378.9	-5.3		
800	773.9	-3.3		
	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



CONTACT:

MS EMILY KONG

CLIENT:

LAM GEOTECHNICS LIMITED

ADDRESS:

11/F., CENTRE POINT.

181-185 GLOUCESTER ROAD,

WAN CHAI, HONG KONG

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 aceptance criteria of ALS will be followed.

Scope of Test:

Equipment Type:

Turbidity Turbidimeter

Brand Name:

XIN RUI

Model No.: Serial No.:

WGZ-3B 1203016

Equipment No.:

Date of Calibration: 29 April, 2013

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.

ISSUING LABORATORY: HONG KONG

Address

ALS Technichem (HK) Pty Ltd

11/F Chung Shun Knitting Centre

1-3 Wing Yip Street

Kwai Chung HONG KONG Phone:

852-2610 1044

Fax:

852-2610 2021

Email:

hongkong@alsglobal.com

Mr. Fung Lim Chee richard

General Manager

WORK ORDER:

LABORATORY:

DATE RECEIVED:

DATE OF ISSUE:

HK1310783

HONG KONG

22/04/2013

02/05/2013

Greater China & Hong Kong

This report may not be reproduced except with prior written approval from ALS Technichem (HK) Pty Ltd.

Page 1 of 2

ADDRESS 11/F, Chung Shun Knitting Centre, 1-3 Wing Yip Street, Kwai Chung, N.T., Hong Kong PHONE +852 2610 1044 FAX +852 2610 2021 ALS TECHNICHEM (HK) PTY LTD An ALS Limited Company

Work Order: Date of Issue: HK1310783 02/05/2013

Client:

LAM GEOTECHNICS LIMITED



Equipment Type:

Turbidimeter

Brand Name:

XIN RUI

Model No.: Serial No.: WGZ-3B 1203016

Equipment No.:

--

Date of Calibration:

29 April, 2013

Date of next Calibration:

29 July, 2013

Parameters:

Turbidity

Method Ref: APHA 21st Ed. 2130B

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)
0	-0.43	**
4	3.99	-0.2
40	40.63	1.6
80	78.50	-1.9
400	401.9	0.5
800	836.9	4.6
	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



CONTACT:

MS EMILY KONG

CLIENT:

LAM GEOTECHNICS LIMITED

ADDRESS:

11/F., CENTRE POINT.

181-185 GLOUCESTER ROAD.

WAN CHAI, HONG KONG

PROJECT:

WORK ORDER:

HK1305626

LABORATORY:

HONG KONG

DATE RECEIVED:

01/03/2013

DATE OF ISSUE:

08/03/2013

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 aceptance criteria of ALS will be followed.

Scope of Test:

Turbidity

Description:

Turbidimeter

Brand Name:

WTW

Model No.:

TURB 430T

Serial No.:

12110692

Equipment No.:

Date of Calibration: 08 March, 2013

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.

ISSUING LABORATORY: HONG KONG

Address

ALS Technichem (HK) Pty Ltd

11/F Chung Shun Knitting Centre

1-3 Wing Yip Street

Kwai Chung HONG KONG Phone:

852-2610 1044

Fax:

852-2610 2021

Email:

hongkong@alsglobal.com

Mr. Fung Lim General Manager

Greater China & Hong Kong

This report may not be reproduced except with prior written approval from ALS Technichem (HK) Pty Ltd.

Page 1 of 2

Work Order: Date of Issue: HK1305626

Client:

08/03/2013

LAM GEOTECHNICS LIMITED



Description:

Turbidimeter

Brand Name:

WTW

Model No.:

TURB 430T 12110692

Serial No.: Equipment No.:

--

Date of Calibration:

08 March, 2013

Date of next Calibration:

08 June, 2013

Parameters:

Turbidity

Method Ref: APHA 21st Ed. 2130B

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)		
0	0.06			
4	4.20	5.0		
40	38.00	-5.0		
80	78.90	-1.4		
400	379	-5.3		
800	756	-5.5		
	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

Appendix 5.1

Monitoring Schedule for the Reporting Month and Coming Three Months

Water Quality Monitoring Schedule

May 2013

Sunday	Monda	ay	Tuesda	ау	Wednes	day	Thursd	ay	Friday	/	Satur	day
28-Apr		29-Apr		30-Apr		1-May		2-May		3-May		4-May
6.00-	Impact WQM Mid-flood: Mid-ebb:	8:06 14:51		7.140		0.145	Impact WQM Mid-flood: Mid-ebb:	10:47 18:01		10 May	Impact WC Mid-flood: Mid-ebb:	13:52 20:23
5-May		6-May		7-May		8-May		9-May		10-May		11-May
	Impact WQM Mid-ebb: Mid-flood:	10:11 16:09					Impact WQM Mid-ebb Mid-flood:	12:04 18:34			Impact WC Mid-ebb Mid-flood:	QM 13:11 19:52
12-May		13-May		14-May		15-May		16-May		17-May		18-May
	Impact WQM Mid-flood: Mid-ebb	21:11 14:16			Impact WQM Mid-ebb Mid-flood:	15:05 22:52					Impact WC Mid-flood: Mid-ebb	QM 0:50 17:49
19-May	1	20-May		21-May		22-May		23-May	-	24-May		25-May
			Impact WQM Mid-flood:	2:58	Impact WQM Mid-ebb Mid-flood:	16:32 22:24			Impact WQM Mid-ebb Mid-flood:	11:29 18:20		
26-May		27-May		28-May		29-May		30-May		31-May		1-Jun
	Impact WQM Mid-flood: Mid-ebb	7:03 13:52			Impact WQM Mid-flood: Mid-ebb	8:40 15:36			Impact WQM Mid-flood: Mid-ebb	10:38 17:31		

Notes:

- 1. Water Quality Monitoring for 6 water quality monitoring stations: WSD9, WSD10, WSD15, WSD17, WSD21, WSD19
- 2. Actual monitoring will be subjected to change due to any safety concern or adverse weather condition.
- 3. Cut-off day is the end of day of each month.
- 4. Contain scheduled monitoring date(s) is/are subject to temporary suspension upon ET confirmation with project on no marine work on site.
- $5. \ Due\ to\ hoisting\ of\ Amber\ Rainstorm\ Signal,\ the\ water\ quality\ monitoring\ on\ 20\ May\ 2013\ was\ cancelled\ for\ the\ ebb\ tide.$

Tentative Water Quality Monitoring Schedule

June 2013

Sunday	Sunday Monday		Tuesday		Wednes	day	Thursda	ay	Friday		Satur	day
26-May		27-May		28-May		29-May		30-May		31-May		1-Jun
	Impact WQM Mid-flood: Mid-ebb	7:03 13:52			Impact WQM Mid-flood: Mid-ebb	8:40 15:36			Impact WQN Mid-flood: Mid-ebb	/I 10:38 17:31		
2-Jun		3-Jun		4-Jun		5-Jun		6-Jun		7-Jun		8-Jun
			Impact WQM Mid-ebb: Mid-flood:	9:50 16:01			Impact WQM Mid-ebb Mid-flood:	11:11 17:48			Impact WC Mid-ebb Mid-flood:	QM 12:19 19:11
9-Jun		10-Jun		11-Jun		12-Jun		13-Jun		14-Jun		15-Jun
	Impact WQM Mid-ebb Mid-flood:	13:26 20:22					Impact WQM Mid-ebb Mid-flood:	14:54 22:19			Impact WC Mid-ebb Mid-flood	QM 16:13 23:49
16-Jun		17-Jun		18-Jun		19-Jun		20-Jun		21-Jun		22-Jun
			Impact WQM Mid-flood: Mid-ebb	1:19 7:47			Impact WQM Mid-ebb Mid-flood:	9:35 16:22			Impact WC Mid-ebb Mid-flood:	QM 11:12 18:20
23-Jun		24-Jun		25-Jun		26-Jun		27-Jun		28-Jun		29-Jun
	Impact WQM Mid-ebb Mid-flood:	12:53 20:01			Impact WQM Mid-ebb Mid-flood:	14:30 21:35			Impact WQN Mid-ebb: Mid-Flood	/I 16:03 23:05		

Notes

- 1. Water Quality Monitoring for 6 water quality monitoring stations: WSD9, WSD10, WSD15, WSD17, WSD21, WSD19
- 2. Actual monitoring will be subjected to change due to any safety concern or adverse weather condition.
- 3. Cut-off day is the end of day of each month.
- 4. Contain scheduled monitoring date(s) is/are subject to temporary suspension upon ET confirmation with project on no marine work on site.

Tentative Water Quality Monitoring Schedule

July 2013

Sunday	Monda	y	Tuesday	/	Wedneso	lay	Thursda	ıy	Friday	,	Saturd	ay
30-Jun		1-Jul		2-Jul		3-Jul		4-Jul		5-Jul		6-Jul
			Impact WQM Mid-flood: Mid-ebb	1:23 8:31			Impact WQM Mid-ebb Mid-flood	10:16 17:04			Impact WQI Mid-ebb Mid-flood	M 11:29 18:32
7-Jul		8-Jul		9-Jul		10-Jul		11-Jul		12-Jul		13-Jul
	Impact WQM Mid-ebb Mid-flood	12:35 19:35			Impact WQM Mid-ebb Mid-flood	13:39 20:30			Impact WQM Mid-ebb Mid-flood	14:45 21:35		
14-Jul		15-Jul		16-Jul		17-Jul		18-Jul		19-Jul		20-Jul
	Impact WQM Mid-flood Mid-ebb	10:19 16:38			Impact WQM Mid-ebb	7:08	Impact WQM Mid-flood	1:08			Impact WQI Mid-ebb Mid-flood	M 10:09 17:27
21-Jul		22-Jul		23-Jul		24-Jul		25-Jul		26-Jul		27-Jul
	Impact WQM Mid-ebb Mid-flood	11:52 19:01			Impact WQM Mid-ebb Mid-flood	13:27 20:23			Impact WQM Mid-ebb Mid-flood	14:51 21:40		
28-Jul		29-Jul		30-Jul		31-Jul		1-Aug		2-Aug		3-Aug
	Impact WQM Mid-ebb Mid-flood	16:56 23:41					Impact WQM Mid-ebb Mid-flood	9:05 21:28			Impact WQI Mid-ebb Mid-flood	M 10:32 17:48

Notes:

- $1.\ Water\ Quality\ Monitoring\ for\ 6\ water\ quality\ monitoring\ stations:\ WSD9,\ WSD10,\ WSD15,\ WSD17,\ WSD21,\ WSD19$
- 2. Actual monitoring will be subjected to change due to any safety concern or adverse weather condition.
- 3. Cut-off day is the end of day of each month.
- 4. Contain scheduled monitoring date(s) is/are subject to temporary suspension upon ET confirmation with project on no marine work on site.

Tentative Water Quality Monitoring Schedule

August 2013

Sunday	Monda	ıy	Tuesday	Wedneso	day	Thursd	ay	Frida	у	Satur	day
28-Jul		29-Jul	30-Jul		31-Jul		1-Aug		2-Aug		3-Aug
	Impact WQM Mid-ebb Mid-flood	16:56 23:41				Impact WQM Mid-ebb Mid-flood	9:05 21:28			Impact WC Mid-ebb Mid-flood	10:32 17:48
4-Aug		5-Aug	6-Aug		7-Aug		8-Aug		9-Aug		10-Aug
	Impact WQM Mid-ebb Mid-flood	11:40 18:41		Impact WQM Mid-ebb Mid-flood	12:45 19:25			Impact WQN Mid-ebb Mid-flood	1 13:52 20:19		
11-Aug		12-Aug	13-Aug		14-Aug		15-Aug		16-Aug		17-Aug
	Impact WQM Mid-flood Mid-ebb	9:31 15:43		Impact WQM Mid-flood	23:30	Impact WQM Mid-ebb	6:35			Impact WC Mid-ebb Mid-flood	QM 9:01 16:29
18-Aug		19-Aug	20-Aug		21-Aug		22-Aug		23-Aug		24-Aug
	Impact WQM Mid-ebb Mid-flood	10:49 17:58		Impact WQM Mid-ebb Mid-flood	12:23 19:10			Impact WQN Mid-ebb Mid-flood	1 13:47 20:17		
25-Aug		26-Aug	27-Aug		28-Aug		29-Aug		30-Aug		31-Aug
	Impact WQM Mid-flood Mid-ebb	9:42 15:38		Impact WQM Mid-flood	23:05	Impact WQM Mid-ebb	6:59			Impact WC Mid-ebb Mid-flood	QM 9:10 21:35

Notes:

- $1.\ Water\ Quality\ Monitoring\ for\ 6\ water\ quality\ monitoring\ stations:\ WSD9,\ WSD10,\ WSD15,\ WSD17,\ WSD21,\ WSD19$
- 2. Actual monitoring will be subjected to change due to any safety concern or adverse weather condition.
- 3. Cut-off day is the end of day of each month.
- 4. Contain scheduled monitoring date(s) is/are subject to temporary suspension upon ET confirmation with project on no marine work on site.

Appendix 5.2

Water Quality Monitoring Results and Graphical Presentation



Water Monitoring Result at WSD9 - Tai Wan Mid-Flood Tide

Date	Time	Weater Condition	Samplin	•	Wat	er Temp	erature		pН			Salini	ty	D	O Satur	ation		DO mg/L			Turbid		Suspende	
		Condition	r	n	Va	lue	Average	Va	lue	Average	Va		Average	Va	lue	Average	Va	lue	Average	Va	alue	Average		Average
2/5/2013	09:12	Fine	Middle	3	19.70	19.70	19.70	8.18	8.18	8.18	33.42	33.42	33.43	75.4	75.6	75.5	5.68	5.70	5.69	3.47	3.62	3.57	2	2.0
2/0/2010	09:14	1 1110	Middle	3	19.70	19.70	10.70	8.18	8.18	0.10	33.44	33.44	00.40	75.1	75.8	70.0	5.66	5.72	0.00	3.60	3.60	0.07	2	2.0
4/5/2013	12:59	Fine	Middle	3	21.60	21.60	21.60	8.32	8.32	8.31	33.17	33.17	33.17	81.5	81.0	81.3	5.92	5.89	5.90	2.62	2.65	2.66	2	3.0
	13:01		Middle	3	21.60	21.60		8.30	8.30		33.17	33.17		81.0	81.5		5.88	5.92		2.67	2.68		4	
6/5/2013	17:13	Cloudy	Middle	3	22.52	22.52	22.53	8.04	8.04	8.05	34.67	34.67	34.69	73.8	71.5	70.6	5.27	5.11	5.04	4.76	4.72	4.74	6	6.0
	17:15		Middle	3	22.53	22.53		8.05	8.05		34.70	34.70		69.4	67.8		4.95	4.84		4.73	4.73		6	
9/5/2013	19:00	Sunny	Middle	3	23.90	23.90	24.00	8.05	8.05	8.05	32.44	32.44	32.44	83.8	82.9	81.9	5.86	5.79	5.72	3.87	3.79	3.81	6	5.5
	19:01		Middle	3	24.10	24.10		8.05	8.05		32.44	32.44		80.6	80.3		5.63	5.61		3.77	3.82		5	
11/5/2013	19:15	Fine	Middle	2	24.70	24.70	24.70	7.99	7.99	7.99	32.01	32.01	32.01	82.9	83.2	84.0	5.74	5.79	5.82	4.08	3.58	3.76	4	3.5
	19:16		Middle	2	24.70	24.70		7.99	7.99		32.01	32.01		84.6	85.1		5.85	5.88		3.66	3.71		3	
13/5/2013	20:15	Fine	Middle	2	26.40	26.40	26.40	7.96	7.96	7.96	31.72	31.72	31.72	87.2	85.7	85.2	5.84	5.77	5.72	2.18	2.20	2.16	7	7.0
10/0/2010	20:16	0	Middle	2	26.40	26.40	20.10	7.96	7.96	7.00	31.72	31.72	02	84.4	83.5	00.2	5.66	5.62	02	2.11	2.15	2.10	7	1.0
15/5/2013	22:05	Fine	Middle	3	25.80	25.80	25.80	8.00	8.00	8.00	31.28	31.28	31.28	86.8	87.2	86.2	5.92	5.94	5.87	2.73	2.77	2.74	8	8.5
	22:06		Middle	3	25.80	25.80		8.00	8.00		31.28	31.28		85.3	85.5		5.81	5.82		2.75	2.70		9	
18/5/2013	00:12	Cloudy	Middle	3	25.00	25.00	25.00	8.01	8.01	8.01	31.05	31.05	31.05	84.5	85.0	84.9	5.85	5.88	5.88	2.17	2.20	2.24	3	3.5
	00:13		Middle	3	25.00	25.00		8.01	8.01		31.05	31.05		85.3	84.9		5.90	5.87		2.29	2.30		4	
21/5/2013	02:20	Cloudy	Middle	3	26.00	26.00	26.00	8.11	8.11	8.11	28.79	28.79	28.79	89.4	91.8	90.3	6.17	6.33	6.23	2.52	2.28	2.34	4	4.0
	02:21	,	Middle	3	26.00	26.00		8.11	8.11		28.78	28.78		90.9	89.2		6.27	6.15		2.21	2.33	-	4	
22/5/2013	15:01	Cloudy	Middle	3	24.81	24.81	24.81	8.13	8.13	8.13	29.46	29.46	29.47	81.8	81.3	81.2	5.74	5.70	5.70	2.72	2.70	2.65	7	6.5
	15:03	,	Middle	3	24.81	24.81		8.13	8.13		29.47	29.47		81.0	80.7		5.68	5.66		2.60	2.59		6	
24/5/2013	17:38	Cloudy	Middle	2	25.90	25.90	25.95	8.18	8.18	8.18	30.27	30.27	30.28	94.7	95.3	95.1	6.48	6.52	6.50	2.84	2.89	2.88	5	5.5
	17:39	,	Middle	2	26.00	26.00		8.18	8.18		30.28	30.28		95.3	94.9		6.52	6.49		2.86	2.92		6	
27/5/2013	06:07	Cloudy	Middle	3	26.20	26.20	26.25	8.11	8.11	8.11	28.99	28.99	29.00	86.2	86.9	86.1	5.92	5.98	5.91	1.28	1.30	1.23	3	3.0
	06:08	,	Middle	3	26.30	26.30		8.11	8.11		29.00	29.00		85.2	85.9		5.84	5.89		1.10	1.23		3	
29/5/2013	07:35	Fine	Middle	3	25.74	25.74	25.79	7.93	7.93	7.92	32.19	32.19	32.17	86.5	86.3	86.1	5.87	5.86	5.84	2.29	2.30	2.30	3	3.5
	07:37	-	Middle	3	25.83	25.83		7.90	7.90		32.15	32.15		85.8	85.6		5.82	5.82	-	2.31	2.31		4	
31/5/2013	09:10	Fine	Middle	3	27.92	27.92	21.23	7.78	7.78	7.81	31.41	31.41	31.44	102.2	103.0	102.9	6.02	6.65	6.50	2.14	2.23	2.14	4	3.5
	09:12		Middle	3	27.04	2.04		7.83	7.83		31.47	31.47		103.1	103.2		6.66	6.67		2.14	2.03		3	



Water Monitoring Result at WSD10 - Cha Kwo Ling Mid-Flood Tide

Date	Time	Weater Condition		g Depth	Wat	er Temp	erature		pH			Salini	ty	D	O Satur	ation		DO ma/L			Turbidi NTU	ty	Suspende	
		Condition	r	n	Va	•	Average	Va	lue	Average	Va	lue	Average	Va	lue	Average	Va	lue	Average	Va		Average		Average
2/5/2042	09:36	Fine	Middle	2	20.70	20.70	20.70	8.23	8.23	0.00	33.86	33.86	22.06	80.8	80.5	90.6	5.97	5.94	E 0E	3.11	3.13	2.42	4	2.5
2/5/2013	09:38	Fine	Middle	2	20.70	20.70	20.70	8.23	8.23	8.23	33.86	33.86	33.86	80.4	80.6	80.6	5.93	5.95	5.95	3.11	3.11	3.12	3	3.5
4/5/2013	13:35	Fine	Middle	2	21.80	21.80	21.80	8.25	8.25	8.25	33.42	33.42	33.42	83.2	82.9	82.6	6.01	5.99	5.97	5.03	5.01	5.01	4	4.0
47.072.010	13:37	1 1110	Middle	2	21.80	21.80	21.00	8.25	8.25	0.20	33.42	33.42	00.42	82.2	82.0	02.0	5.94	5.92	0.07	5.00	5.00	0.01	4	4.0
6/5/2013	16:58	Cloudy	Middle	3	21.90	21.90	21.85	8.25	8.25	8.25	33.83	33.83	33.85	79.8	79.7	80.0	5.76	5.75	5.77	3.69	3.69	3.69	2	2.0
0/0/2010	16:59	Oloddy	Middle	3	21.80	21.80	21.00	8.25	8.25	0.20	33.86	33.86	00.00	80.1	80.4	00.0	5.78	5.80	0.77	3.68	3.70	0.00	2	2.0
9/5/2013	19:34	Sunny	Middle	3	23.70	23.70	23.85	8.12	8.12	8.12	32.74	32.74	32.74	83.6	87.0	87.1	5.85	6.08	6.09	3.83	3.84	3.81	5	5.5
	19:35	,	Middle	3	24.00	24.00		8.12	8.12	•	32.73	32.73		89.3	88.3		6.24	6.17		3.78	3.80		6	
11/5/2013	18:52	Fine	Middle	2	25.10	25.10	25.10	8.02	8.02	8.02	31.74	31.74	31.74	84.3	85.0	85.5	5.80	5.85	5.88	4.24	4.26	4.17	7	6.5
11/0/2010	18:53	1 1110	Middle	2	25.10	25.10	20.10	8.02	8.02	0.02	31.74	31.74	01.14	87.4	85.3	00.0	6.01	5.87	0.00	4.07	4.10	7.17	6	0.0
13/5/2013	19:50	Fine	Middle	2	26.70	26.70	26.70	8.02	8.02	8.02	31.92	31.92	31.92	83.6	85.6	84.1	5.60	5.73	5.63	2.73	2.53	2.51	8	7.5
10/0/2010	19:51		Middle	2	26.70	26.70	200	8.02	8.02	0.02	31.92	31.92	01.02	84.0	83.2	0	5.62	5.58	0.00	2.37	2.39	2.01	7	7.0
15/5/2013	21:38	Fine	Middle	2	25.70	25.70	25.70	7.96	7.96	7.98	31.63	31.63	31.63	83.6	82.4	83.8	5.69	5.61	5.70	2.06	2.02	2.18	4	3.5
10/0/2010	21:39		Middle	2	25.70	25.70	200	7.99	7.99	7.00	31.63	31.63	01.00	84.5	84.6	00.0	5.75	5.76	00	2.12	2.53	20	3	0.0
18/5/2013	23:45	Cloudy	Middle	2	25.00	25.00	25.00	8.04	8.04	8.04	31.59	31.60	31.60	84.9	85.6	85.8	5.89	5.92	5.93	1.49	1.34	1.40	3	3.0
	23:46	3.022,	Middle	2	25.00	25.00		8.04	8.04		31.60	31.61		85.9	86.6		5.94	5.98		1.37	1.40		3	
21/5/2013	01:49	Cloudy	Middle	3	26.00	26.00	26.05	8.13	8.13	8.13	29.70	29.70	29.70	94.1	94.0	93.6	6.45	6.45	6.42	1.76	1.73	1.67	4	3.5
	01:50	,	Middle	3	26.10	26.10		8.13	8.13		29.70	29.70		93.6	92.8		6.42	6.36		1.61	1.59		3	
22/5/2013	15:35	Cloudy	Middle	3	24.96	24.96	24.96	8.07	8.07	8.07	29.47	29.47	29.48	76.0	75.8	75.8	5.31	5.30	5.30	4.37	4.40	4.39	8	8.0
	15:37		Middle	3	24.96	24.96		8.06	8.06		29.48	29.48		75.6	75.6		5.29	5.28		4.38	4.40		8	
24/5/2013	17:05	Cloudy	Middle	2	26.10	26.10	26.20	8.11	8.11	8.12	31.03	31.03	31.01	96.2	98.2	96.9	6.50	6.64	6.56	3.88	3.96	3.90	6	6.5
	17:06		Middle	2	26.30	26.30		8.13	8.13		31.00	30.99		96.5	96.8		6.53	6.57		4.00	3.77		7	
27/5/2013	06:36	Cloudy	Middle	2	26.30	26.30	26.30	8.11	8.11	8.11	28.81	28.81	28.81	89.6	92.3	91.1	6.18	6.32	6.25	2.34	2.22	2.35	4	4.0
	06:37	-	Middle	2	26.30	26.30		8.11	8.11		28.81	28.81		90.5	92.0		6.20	6.30		2.31	2.54		4	
29/5/2013	08:02	Fine	Middle	2	25.65	25.65	25.65	7.88	7.88	7.88	30.42	30.42	30.41	96.5	95.7	95.0	6.63	6.57	6.53	2.59	2.58	2.56	3	3.0
	08:03		Middle	2	25.65	25.65		7.88	7.88		30.40	30.40		94.2	93.6		6.47	6.43		2.54	2.51		3	
31/5/2013	09:48	Fine	Middle	3	27.74	27.74	27.68	7.65	7.65	7.65	31.98	31.98	31.98	93.6	93.6	93.6	6.18	6.18	6.18	1.90	1.85	1.86	3	2.5
	09:50		Middle	2.5	27.61	27.61		7.64	7.64		31.97	31.97		93.6	93.7		6.17	6.19		1.83	1.85		2	_



Water Monitoring Result at WSD15 - Sai Wan Ho Mid-Flood Tide

2/5/2013	Midd Midd Midd Midd Midd Midd Midd Midd	e 3 e 2 e 2 e 3 e 3 e 3 e 3 e 3	20.20 20.20 22.10 22.10	20.20 22.10 22.10 21.70 21.80 23.40	20.20 22.10 21.75	8.24 8.24 8.23 8.23 8.24 8.24	8.24 8.24 8.23 8.23 8.23 8.24	8.24 8.23	33.87 33.87 33.68 33.67	33.87 33.87 33.68 33.67	33.87 33.68	79.4 79.4 79.5	79.3 79.2 79.6	79.3 79.1	5.89 5.90 5.71	5.88 5.88 5.71	5.89	2.14 2.17 6.66	2.13 2.11 6.65	2.14 6.58	3 3 4	3.0
2/5/2013 Fine 10:13 10:13 14:11 14:11 14:13 6/5/2013 16:34 16:35 17:32 9/5/2013 17:32 20:31 11/5/2013 20:31 20:32 Fine	Fine Midd Midd	e 3 e 2 e 2 e 3 e 3 e 3 e 3 e 3	20.20 22.10 22.10 21.70 21.80 23.40	20.20 22.10 22.10 21.70 21.80 23.40	22.10	8.24 8.23 8.23 8.24	8.24 8.23 8.23 8.24	8.23	33.87 33.68	33.87		79.4	79.2		5.90	5.88		2.17	2.11		3	
4/5/2013	ine Midd	e 2 e 2 e 3 e 3 e 3 e 3	22.10 22.10 21.70 21.80 23.40	22.10 22.10 21.70 21.80 23.40		8.23 8.23 8.24	8.23 8.23 8.24		33.68	33.68	33.68		1	70.4					6.65	6.58	4	4.0
4/5/2013 Fine 14:13 6/5/2013 16:34 16:35 17:32 9/5/2013 17:33 11/5/2013 20:31 20:32 13/5/2013 Fine	ine Midd oudy Midd unny Midd Midd Midd Midd Midd Midd Midd	e 2 e 3 e 3 e 3 e 3 e 3	22.10 21.70 21.80 23.40	22.10 21.70 21.80 23.40		8.23 8.24	8.23				33.68	79.5	79.6	70.4	5.71	5.71		6.66		6.58		4.0
6/5/2013	Midd Midd Midd Midd Midd Midd Midd Midd	e 3 e 3 e 3 e 3	21.70 21.80 23.40	21.70 21.80 23.40	21.75	8.24	8.24		33.67	33.67		- 0.4	70.0	79.1	5.00	5.04	5.68	0.54	0.50			1
6/5/2013 Cloud 16:35 Cloud 16:35 9/5/2013 17:32 17:33 Sunn 11/5/2013 20:31 20:32 Fine 13/5/2013 Fine	oudy Midd unny Midd Midd Fine Midd	e 3 e 3 e 3	21.80	21.80	21.75							79.1	78.2		5.68	5.61		6.51	6.50		4	<u> </u>
9/5/2013	unny Midd Midd Midd Midd Midd	e 3 e 3 e 3	23.40	23.40		8.24	1 8 24 1	8.24	33.97	33.97	33.98	81.1	81.6	81.5	5.84	5.88	5.87	5.92	5.92	5.92	6	5.5
9/5/2013 Sunn 17:33 Sunn 17:33 20:31 20:32 Fine 21:42 13/5/2013 Fine	Midd Midd Fine Midd	e 3 e 3							33.98	33.98		81.6	81.6		5.88	5.88		5.92	5.91		5	<u> </u>
11/5/2013	Midd -ine -ine	e 3	23.40		23.40	8.12	8.12	8.12	32.90	32.90	32.90	90.5	90.9	89.5	6.36	6.38	6.28	4.22	4.19	4.18	7	6.5
11/5/2013 Fine 20:32 Fine 21:42 Fine	Fine Midd		1	23.40		8.12	8.12		32.90	32.90		88.1	88.4		6.19	6.20		4.15	4.17		6	
21:42 13/5/2013 Fine			23.90	23.90	24.00	8.00	8.00	8.00	31.92	31.92	31.93	81.4	83.8	82.6	5.69	5.85	5.77	3.23	3.00	3.10	3	3.5
13/5/2013 Fine	Mida		24.10	24.10		8.00	8.00		31.93	31.93		83.1	81.9		5.80	5.72		3.03	3.12		4	<u> </u>
	-		25.80	25.80	25.85	8.06	8.06	8.06	32.57	32.57	32.57	85.2	88.6	86.6	5.76	5.99	5.86	3.98	3.96	3.82	9	9.0
21:43	Midd		25.90	25.90		8.06	8.06		32.57	32.57		88.6	84.1		5.99	5.69		3.78	3.55		9	<u> </u>
15/5/2013 = 23:34 Fine			24.70	24.70	24.75	8.06	8.06	8.06	32.33	32.33	32.33	78.9	81.4	80.6	5.45	5.62	5.57	2.67	2.81	2.91	5	4.5
23:35	Midd		24.80	24.80		8.06	8.06		32.32	32.32		81.0	81.0		5.59	5.60		3.11	3.05		4	<u> </u>
18/5/2013 01:07 Cloud	,		23.90	23.90	23.95	8.08	8.08	8.09	32.71	32.71	32.71	84.9	86.9	85.6	5.87	6.06	5.96	2.32	2.21	2.27	3	3.0
01:08	Midd		24.00	24.00		8.09	8.09		32.70	32.70		85.3	85.4		5.94	5.95		2.24	2.31		3	
21/5/2013 03:05 Cloud	,		25.20	25.20	25.25	8.11	8.11	8.11	30.19	30.19	30.19	89.0	89.0	87.2	6.15	6.15	6.02	1.44	1.54	1.50	4	4.0
03:06	Midd		25.30	25.30 24.86		8.11	8.11		30.18 26.86	30.18 26.86		93.2	84.4		5.96 6.63	5.83		1.56 4.10	1.47 4.13		4	<u> </u>
22/5/2013 16:08 Cloud			24.86	24.86	24.86	8.07	8.07	8.07	26.85	26.85	26.86	93.2	92.1	91.9	6.52	6.55	6.54	4.10	4.13	4.11	7	7.5
18:35	Midd		24.60	24.60		8.15	8.15		31.84	31.84		91.8	93.6		6.35	6.47		3.23	3.30		9	
24/5/2013 Cloud			24.70	24.70	24.65	8.15	8.15	8.15	31.81	31.81	31.83	94.3	91.0	92.7	6.53	6.29	6.41	3.45	3.36	3.34	9	9.0
07:06	Midd		25.60	25.60		8.14	8.14		29.50	29.50		87.5	89.2		6.05	6.14		1.81	1.83		4	
27/5/2013 Cloud			25.80	25.80	25.70	8.14	8.14	8.14	29.48	29.48	29.49	87.1	87.6	87.9	6.00	6.03	6.06	2.01	1.92	1.89	3	3.5
08:28	Midd		25.45	25.45		7.84	7.84		32.30	32.30		90.0	89.9		6.14	6.13		2.18	2.14		4	
29/5/2013 Fine 08:30			25.48	25.48	25.47	7.83	7.83	7.84	32.35	32.35	32.33	89.6	89.5	89.8	6.10	6.10	6.12	2.12	2.10	2.14	3	3.5
10:27	Midd		27.19	27.19		7.63	7.63		32.63	32.63		102.3	101.5		6.76	6.70		3.58	3.59		3	
31/5/2013 Fine				27.19	27.19	7.63	7.63	7.63	32.64	32.64	32.64	100.1	99.6	100.9	6.01	6.57	6.51	3.35	3.30	3.46	4	3.5



Water Monitoring Result at WSD17 - Quarry Bay Mid-Flood Tide

Date	Time	Weater Condition	Samplin	g Depth	Wat	er Temp	erature		рН			Salini	ty	D	O Satur	ation		DO mg/L			Turbid NTU		Suspende	
		Condition	n	n	Va	lue	Average	Va	lue	Average	Va	lue	Average	Va	lue	Average	Va	lue	Average	Va		Average		Average
2/5/2013	10:48	Fine	Middle	4	21.50	21.50	21.50	8.23	8.23	8.23	34.06	34.06	34.06	82.8	82.8	82.4	6.00	6.01	5.98	6.88	6.88	6.87	6	6.0
2/0/2010	10:50	Tille	Middle	4	21.50	21.50	21.00	8.23	8.23	0.20	34.06	34.06	04.00	82.3	81.7	0 2 .4	5.96	5.93	0.00	6.86	6.85	0.01	6	0.0
4/5/2013	14:32	Fine	Middle	4	21.80	21.80	21.80	8.22	8.22	8.22	33.70	33.70	33.70	74.1	73.7	73.0	5.34	5.30	5.26	5.42	5.42	5.45	4	4.0
4/0/2010	14:34	Tille	Middle	4	21.80	21.80	21.00	8.22	8.22	U.LL	33.70	33.70	00.70	72.5	71.5	70.0	5.23	5.16	0.20	5.47	5.49	0.40	4	4.0
6/5/2013	16:01	Cloudy	Middle	3	22.40	22.40	22.40	8.06	8.06	8.07	35.13	35.13	35.13	73.9	73.2	73.4	5.22	5.16	5.18	6.42	6.38	6.38	7	7.5
0/0/2010	16:02	Cloudy	Middle	3	22.40	22.40	22.40	8.07	8.07	0.07	35.13	35.13	00.10	74.0	72.4	70.4	5.22	5.10	0.10	6.34	6.36	0.00	8	7.0
9/5/2013	17:05	Sunny	Middle	3	24.40	24.40	24.40	8.06	8.06	8.06	31.28	31.28	31.38	77.3	78.2	77.6	5.42	5.48	5.44	8.73	8.63	8.70	16	15.5
0/0/2010	17:06	Guilly	Middle	3	24.40	24.40	24.40	8.06	8.06	0.00	31.47	31.47	01.00	77.6	77.4	77.0	5.43	5.41	0.44	8.61	8.82	0.10	15	10.0
11/5/2013	20:04	Fine	Middle	3	24.60	24.60	24.60	8.01	8.01	8.01	31.98	31.98	31.98	78.9	76.6	76.0	5.48	5.32	5.28	8.64	8.79	8.68	9	9.0
11/3/2013	20:05	TINC	Middle	3	24.60	24.60	24.00	8.01	8.01	0.01	31.98	31.98	31.30	75.0	73.3	70.0	5.21	5.09	5.20	8.70	8.60	0.00	9	3.0
13/5/2013	21:08	Fine	Middle	3	26.30	26.30	26.35	8.02	8.02	8.02	32.20	32.20	32.20	79.0	83.3	81.5	5.31	5.60	5.48	7.47	7.35	7.24	10	9.5
13/3/2013	21:09	Tille	Middle	3	26.40	26.40	20.33	8.02	8.02	0.02	32.20	32.20	32.20	82.4	81.4	01.5	5.54	5.47	3.40	7.00	7.12	7.24	9	9.5
15/5/2013	23:01	Fine	Middle	3	24.90	24.90	24.90	8.04	8.04	8.04	31.99	31.99	31.99	78.9	80.0	79.8	5.45	5.50	5.50	2.78	2.72	2.70	4	4.0
13/3/2013	23:02	TINC	Middle	3	24.90	24.90	24.30	8.04	8.04	0.04	31.99	31.99	31.33	79.3	80.9	75.0	5.47	5.58	5.50	2.69	2.62	2.70	4	4.0
18/5/2013	00:35	Cloudy	Middle	3	24.50	24.50	24.55	8.06	8.06	8.06	32.07	32.07	32.07	83.3	84.6	84.1	5.78	5.87	5.83	2.81	2.84	2.89	3	3.0
10/0/2010	00:36	Cloudy	Middle	3	24.60	24.60	24.00	8.06	8.06	0.00	32.07	32.07	02.01	84.4	84.1	04.1	5.85	5.83	0.00	2.94	2.97	2.00	3	0.0
21/5/2013	02:43	Cloudy	Middle	3	25.70	25.70	25.70	8.16	8.17	8.16	28.17	28.17	28.17	95.5	94.9	94.8	6.64	6.60	6.59	2.62	2.78	2.70	3	4.0
21/0/2010	02:44	Cloudy	Middle	3	25.70	25.70	20.70	8.16	8.16	0.10	28.17	28.17	20.17	95.1	93.6	04.0	6.61	6.51	0.00	2.72	2.68	2.70	5	4.0
22/5/2013	16:44	Cloudy	Middle	4	25.01	25.01	25.00	8.07	8.07	8.07	27.32	27.32	27.33	97.8	96.3	96.1	6.92	6.81	6.80	4.96	4.96	4.96	7	6.5
22/0/2010	16:46	oloudy	Middle	4	24.99	24.99	20.00	8.07	8.07	0.07	27.34	27.34	27.00	95.6	94.5	00.1	6.77	6.68	0.00	4.96	4.96		6	0.0
24/5/2013	18:04	Cloudy	Middle	3	24.70	24.70	24.75	8.16	8.16	8.16	32.23	32.24	32.24	90.6	90.4	90.7	6.26	6.24	6.24	3.53	3.21	3.26	8	8.5
2 110/2010	18:05	oloudy	Middle	3	24.80	24.80	20	8.16	8.16	0.10	32.24	32.24	02.2	91.4	90.3		6.23	6.23	0.2.	3.16	3.14	0.20	9	0.0
27/5/2013	07:28	Cloudy	Middle	3	25.70	25.70	25.75	8.11	8.11	8.11	29.06	29.06	29.08	85.0	87.6	78.6	5.85	6.03	5.93	1.88	1.90	1.84	2	2.0
2170/2010	07:29	Cloudy	Middle	3	25.80	25.80	20.70	8.11	8.11	0.11	29.10	29.10	20.00	85.4	56.5	70.0	5.88	5.95	0.00	1.81	1.76	1.01	2	2.0
29/5/2013	08:55	Fine	Middle	5	26.25	26.25	26.28	7.85	7.85	7.84	31.83	31.83	31.83	93.1	92.7	92.4	6.28	6.27	6.24	2.11	2.12	2.12	3	3.0
25/5/25 15	08:56		Middle	5	26.31	26.31	20.20	7.83	7.83		31.82	31.82	000	92.0	91.7	<u></u>	6.21	6.19	0.2.	2.12	2.12		3	0.0
31/5/2013	10:43	Fine	Middle	3	27.40	27.40	27.49	7.65	7.65	7.63	31.75	31.75	31.74	98.9	98.1	97.5	6.55	6.49	6.45	2.27	2.20	2.25	4	4.0
011012010	10:45	1 1110	Middle	3	27.57	27.57	21.40	7.61	7.61	7.00	31.73	31.73	01.74	96.8	96.2	07.0	6.40	6.36	0.40	2.22	2.32	2.20	4	7.0



Water Monitoring Result at WSD21 - Wan Chai Mid-Flood Tide

Date	Time	Weater Condition	Samplin		Wat	er Temp °C	erature		pH			Salinit	у	D	O Satur	ation		DO mg/L			Turbid NTU			led Solids
		Condition	n	n	Va		Average	Va	lue	Average	Va	lue	Average	Va	lue	Average	Va		Average	Va	lue	Average	Value	Average
2/5/2013	11:02	Fine	Middle	2	21.60	21.60	21.50	8.24	8.24	8.24	35.05	35.05	35.03	61.4	60.9	61.4	4.43	4.39	4.43	2.65	2.60	2.48	6	5.5
2/0/2010	11:03	Tillo	Middle	2	21.40	21.40	21.00	8.23	8.23	0.24	35.01	35.01	00.00	61.5	61.9	01.4	4.43	4.47	4.40	2.40	2.25	2.40	5	0.0
4/5/2013	15:01	Fine	Middle	2	21.90	21.90	21.90	8.29	8.29	8.29	34.98	34.98	34.98	62.1	62.8	62.4	4.44	4.49	4.46	1.41	1.28	1.32	6	6.0
4/3/2013	15:02	TINC	Middle	2	21.90	21.90	21.30	8.29	8.29	0.23	34.98	34.98	34.30	62.6	62.0	02.4	4.47	4.43	4.40	1.41	1.19	1.02	6	0.0
6/5/2013	15:29	Cloudy	Middle	2	22.20	22.20	22.20	8.09	8.09	8.09	33.33	33.32	33.32	50.8	50.5	50.4	3.68	3.62	3.62	3.23	3.48	3.30	4	4.0
0/0/2010	15:31	Oloudy	Middle	2	22.20	22.20	22.20	8.09	8.09	0.00	33.32	33.32	00.02	50.1	50.0	00.4	3.59	3.58	0.02	3.19	3.28	0.00	4	4.0
9/5/2013	18:00	Sunny	Middle	2	24.40	24.40	24.35	8.03	8.03	8.03	32.99	32.99	33.00	52.8	52.6	52.6	3.64	3.63	3.63	2.34	2.33	2.31	7	7.5
9/3/2013	18:01	Guilly	Middle	2	24.30	24.30	24.00	8.02	8.02	0.00	33.00	33.00	33.00	52.5	52.3	32.0	3.63	3.61	3.03	2.31	2.26	2.01	8	7.5
11/5/2013	19:32	Fine	Middle	2	24.10	24.10	24.05	7.99	7.99	7.99	32.21	32.21	32.21	46.9	46.5	46.5	3.28	3.25	3.25	2.06	2.04	2.02	4	4.0
11/3/2013	19:34	TINC	Middle	2	24.00	24.00	24.00	7.99	7.99	7.55	32.21	32.21	32.21	46.3	46.1	40.5	3.24	3.23	5.25	2.00	1.99	2.02	4	4.0
13/5/2013	22:00	Fine	Middle	2	24.40	24.40	24.40	8.01	8.01	8.01	32.21	32.21	32.21	54.1	53.9	54.7	3.76	3.74	3.80	2.67	3.01	2.66	14	14.0
13/3/2013	22:01	Tille	Middle	2	24.40	24.40	24.40	8.01	8.01	0.01	32.21	32.21	32.21	55.3	55.4	54.7	3.84	3.85	3.00	2.46	2.48	2.00	14	14.0
15/5/2013	22:33	Fine	Middle	2	25.20	25.20	25.25	7.98	7.98	7.98	32.07	32.07	32.07	51.7	51.4	52.8	3.37	3.35	3.34	3.51	3.68	3.65	8	8.5
10/0/2010	22:34	Tillo	Middle	2	25.30	25.30	20.20	7.97	7.97	7.00	32.07	32.07	02.07	51.1	56.8	02.0	3.33	3.31	0.04	3.64	3.76	0.00	9	0.0
18/5/2013	01:21	Cloudy	Middle	2	24.60	24.60	24.65	7.98	7.98	7.97	31.48	31.48	31.49	50.5	51.1	51.0	3.40	3.45	3.42	2.87	2.86	2.87	5	4.5
10/0/2010	01:22	oloudy	Middle	2	24.70	24.70	21.00	7.95	7.95	7.101	31.49	31.49	01.10	51.6	50.7	01.0	3.42	3.41	02	2.86	2.88	2.01	4	
21/5/2013	03:21	Cloudy	Middle	1	26.30	26.30	26.30	8.02	8.02	8.02	27.16	27.16	27.16	50.9	50.6	51.1	3.47	3.49	3.52	3.68	3.60	3.61	6	6.5
2 11 01 20 10	03:23	Oloudy	Middle	1	26.30	26.30	20.00	8.02	8.02	0.02	27.16	27.16	27.10	51.2	51.8	• • • • • • • • • • • • • • • • • • • •	3.53	3.58	0.02	3.57	3.58	0.01	7	0.0
22/5/2013	17:02	Cloudy	Middle	1	26.30	26.30	26.30	8.07	8.07	8.07	27.66	27.66	27.66	50.2	50.1	50.3	3.50	3.49	3.50	6.23	6.25	6.36	5	5.0
	17:04	5.0005	Middle	1	26.30	26.30		8.07	8.07		27.66	27.66		50.3	50.5		3.49	3.52		6.43	6.51		5	
24/5/2013	18:59	Cloudy	Middle	2	26.20	26.20	26.20	8.10	8.10	8.10	30.66	30.66	30.66	58.7	59.2	59.1	3.88	4.02	3.99	2.77	2.79	2.72	4	3.0
	19:00	,	Middle	2	26.20	26.20		8.10	8.10		30.66	30.66		59.2	59.2		4.02	4.02		2.67	2.64		2	
27/5/2013	07:47	Cloudy	Middle	2	25.00	25.00	25.00	8.15	8.15	8.15	29.33	29.33	29.33	61.3	61.5	61.8	4.27	4.29	4.31	2.69	2.71	2.73	4	3.5
	07:48	5.000	Middle	2	25.00	25.00		8.15	8.15		29.33	29.33		61.9	62.4		4.32	4.34		2.73	2.78		3	
29/5/2013	09:11	Fine	Middle	2	25.30	25.30	25.40	8.06	8.06	8.11	29.43	29.43	29.43	67.1	67.4	66.9	4.65	4.67	4.63	2.44	2.43	2.41	3	3.5
	09:12		Middle	2	25.50	25.50		8.16	8.16	±	29.43	29.43		67.2	65.7		4.66	4.55		2.38	2.37	=	4	
31/5/2013	11:13	Fine	Middle	2	25.50	25.50	25.55	8.02	8.02	8.02	30.19	30.19	30.19	54.4	54.1	54.2	3.75	3.73	3.73	1.94	1.94	1.93	9	9.0
33/2010	11:15		Middle	2	25.60	25.60	20.00	8.01	8.01	5.5 <u>L</u>	30.19	30.19	55.10	53.9	54.2	J2	3.71	3.73	5.70	1.92	1.93	50	9	0.0



Water Monitoring Result at WSD19 - Sheung Wan Mid-Flood Tide

Date	Time	Weater Condition	Samplin	g Depth	Wat	er Temp	erature		pН			Salini	ty	D	O Satur	ation		DO mg/L			Turbid		Suspend	led Solids
		Ooridition	n	n	Va	lue	Average	Va	lue	Average	Va		Average	Va	lue	Average	Va	lue	Average	Va	alue	Average		Average
2/5/2013	11:44	Fine	Middle	3	20.70	20.70	20.60	8.15	8.15	8.15	33.44	33.44	33.45	75.5	75.7	75.1	5.57	5.60	5.55	9.50	9.47	9.47	7	7.0
210/2010	11:46	1 1110	Middle	3	20.50	20.50	20.00	8.15	8.15	0.10	33.45	33.45	00.40	74.0	75.2	70.1	5.47	5.56	0.00	9.46	9.46	0.47	7	7.0
4/5/2013	15:28	Fine	Middle	3	22.00	22.00	21.95	8.15	8.15	8.14	32.87	32.87	32.88	74.7	74.5	74.5	5.40	5.38	5.39	7.78	7.74	7.67	8	8.5
	15:30		Middle	3	21.90	21.90		8.12	8.12		32.88	32.88		74.6	74.3		5.39	5.37		7.61	7.55		9	<u> </u>
6/5/2013	15:03	Cloudy	Middle	4	22.98	22.98	22.99	8.00	8.00	8.00	34.10	34.10	34.10	68.5	68.6	68.2	4.83	4.80	4.80	6.06	6.01	6.05	7	8.0
	15:05	,	Middle	4	22.99	22.99		7.99	7.99		34.10	34.10		67.9	67.8		4.79	4.78		6.06	6.08		9	
9/5/2013	18:11	Sunny	Middle	2	24.10	24.10	24.20	8.02	8.02	8.02	32.09	32.09	32.10	81.0	80.7	80.9	5.65	5.63	5.64	5.50	5.42	5.44	5	5.5
	18:12		Middle	2	24.30	24.30		8.01	8.01		32.11	32.11		81.0	80.8		5.65	5.64		5.38	5.46		6	<u> </u>
11/5/2013	21:05	Fine	Middle	2	24.70	24.70	24.70	8.00	8.00	8.00	31.49	31.49	31.49	78.2	80.4	78.9	5.44	5.59	5.49	5.93	5.87	5.88	9	8.5
	21:06		Middle	2	24.70	24.70		8.00	8.00		31.49	31.49		78.0	79.1		5.42	5.49		5.90	5.83		8	<u> </u>
13/5/2013	22:12	Fine	Middle	2	26.20	26.20	26.20	7.99	7.99	7.99	31.53	31.53	31.53	85.9	85.0	85.1	5.82	5.75	5.75	5.72	5.66	5.57	11	10.5
	22:13		Middle	2	26.20	26.20		7.99	7.99		31.53	31.53		84.2	85.2		5.65	5.77		5.49	5.42		10	<u> </u>
15/5/2013	23:57	Fine	Middle	2	25.30	25.30	25.35	8.01	8.01	8.01	30.93	30.93	30.93	82.5	82.9	82.6	5.69	5.71	5.70	3.73	3.68	3.69	4	4.5
	23:58		Middle	2	25.40	25.40		8.01	8.01		30.93	30.93		82.4	82.7		5.68	5.70		3.66	3.67		5	<u> </u>
18/5/2013	01:55	Cloudy	Middle	2	24.80	24.80	24.80	8.02	8.02	8.02	31.01	31.01	31.01	81.6	83.7	82.8	5.67	5.81	5.75	4.05	3.98	3.98	4	4.5
	01:56		Middle	2	24.80	24.80		8.02	8.02		31.01	31.01		83.3	82.7		5.79	5.74		3.93	3.96		5	
21/5/2013	03:51	Cloudy	Middle	2	25.70	25.70	25.75	8.17	8.17	8.17	26.99	26.99	26.99	94.2	93.9	93.6	6.59	6.57	6.55	1.91	1.95	1.97	2	3.0
	03:52		Middle	2	25.80	25.80		8.17	8.17		26.99	26.99		93.2	92.9		6.52	6.50		1.99	2.03		4	
22/5/2013	17:38 17:40	Cloudy	Middle Middle	4	25.13 25.15	25.13 25.15	25.14	8.05	8.05 8.05	8.05	28.76	28.76	28.76	98.9	98.5 97.2	98.1	6.93	6.89	6.86	4.72	4.69	4.69	7	6.5
	19:26		Middle	2	25.40	25.40		8.09	8.09		29.85	29.85		80.7	80.9		5.59	5.63		4.07	4.16		5	<u> </u>
24/5/2013	19:27	Cloudy	Middle	2	25.40	25.40	25.40	8.09	8.09	8.09	29.86	29.86	29.86	81.3	84.5	81.9	5.63	5.85	5.68	4.21	4.28	4.21	5	5.0
	08:09		Middle	2	26.10	26.10		8.06	8.06		26.22	26.22		83.8	81.1		5.84	5.66		2.72	2.74		6	1
27/5/2013	08:11	Cloudy	Middle	2	26.20	26.20	26.15	8.06	8.06	8.06	26.26	26.26	26.24	82.0	82.4	82.3	5.72	5.75	5.74	2.67	2.65	2.70	6	6.0
	09:38		Middle	4	26.54	26.54		7.76	7.76		30.80	30.80		95.4	94.8		6.45	6.41		2.53	2.52		3	
29/5/2013	09:39	Fine	Middle	4	26.73	26.73	26.64	7.74	7.74	7.75	30.67	30.67	30.74	93.8	93.3	94.3	6.33	6.29	6.37	2.55	2.50	2.53	3	3.0
	11:33		Middle	3	28.10	28.10		7.56	7.56		30.19	30.19		84.8	84.6		5.60	5.58		1.66	1.66		5	
31/5/2013	11:34	Fine	Middle	3	28.21	28.21	28.16	7.54	7.54	7.55	30.18	30.18	30.19	84.4	84.0	84.5	5.57	5.54	5.57	1.66	1.64	1.66	4	4.5

Date	Time	Weater Condition	Samplin	g Depth	Wate	er Tempe	erature		рН			Salinit	ty	D	O Satur	ation		DO mg/L			Turbid NTU		Suspende	
		Condition	n	n	Va	lue	Average	Va	lue	Average	Va	ppt lue	Average	Va	lue	Average	Va	lue	Average	Va	lue	Average	mg Value	Average
2/5/2013	17:33	Cloudy	Middle	2	20.80	20.80	20.80	8.13	8.13	8.13	32.72	32.72	32.72	90.8	90.6	91.5	6.71	6.70	6.77	1.81	1.83	1.86	2	2.0
2/3/2013	17:35	Cloudy	Middle	2	20.80	20.80	20.00	8.14	8.13	0.13	32.72	32.72	32.72	92.7	92.0	91.5	6.85	6.80	0.77	1.92	1.88	1.00	2	2.0
4/5/2013	19:35	Cloudy	Middle	3	21.90	21.90	21.95	8.14	8.14	8.14	32.46	32.46	32.47	89.2	89.6	89.2	6.46	6.49	6.47	2.38	2.41	2.37	3	3.0
	19:36	o.ouu,	Middle	3	22.00	22.00	21.00	8.14	8.14	0.11	32.47	32.47	02	89.0	89.1	00.2	6.48	6.46	0	2.33	2.34	2.01	3	0.0
6/5/2013	09:02	Cloudy	Middle	2	21.90	21.90	21.90	8.24	8.24	8.24	33.91	33.91	33.91	78.0	78.2	78.1	5.60	5.62	5.61	3.21	3.21	3.22	4	3.5
0/0/2010	09:03	Cloudy	Middle	2	21.90	21.90	21.00	8.24	8.24	0.24	33.91	33.91	00.01	78.0	78.2	70.1	5.60	5.62	0.01	3.21	3.23	0.22	3	0.0
9/5/2013	10:55	Fine	Middle	3	23.72	23.72	23.79	7.92	7.92	7.92	34.59	34.59	34.62	78.1	76.0	76.6	5.41	5.26	5.29	2.40	2.15	2.19	4	3.5
0,0,2010	10:57	0	Middle	3	23.85	23.85	20.70	7.91	7.91	7.02	34.64	34.64	01.02	75.8	76.3	7 0.0	5.20	5.28	0.20	2.11	2.10	20	3	0.0
11/5/2013	12:00	Fine	Middle	4	24.78	24.78	24.82	7.86	7.86	7.86	34.61	34.61	34.60	67.7	67.0	67.4	4.61	4.60	4.60	1.66	1.66	1.66	5	5.5
	12:02		Middle	4	24.85	24.85		7.86	7.86		34.59	34.59		67.5	67.4		4.60	4.59		1.65	1.66		6	
13/5/2013	12:50	Fine	Middle	4	24.97	24.97	24.97	7.95	7.95	7.95	34.38	34.38	34.39	88.9	88.1	87.6	6.05	6.00	5.96	1.63	1.56	1.54	8	8.0
	12:52		Middle	4	24.96	24.96		7.94	7.94		34.39	34.39		87.4	86.0		5.95	5.83		1.49	1.49		8	
15/5/2013	14:03	Fine	Middle	3	25.24	25.24	25.24	7.99	7.99	7.99	34.42	34.42	34.42	90.1	89.0	88.7	6.05	6.01	5.99	3.55	3.56	3.57	6	5.5
	14:04		Middle	3	25.24	25.24		7.99	7.99		34.41	34.41		88.1	87.7		5.95	5.93		3.57	3.61		5	
18/5/2013	16:38	Fine	Middle	3	27.00	27.00	27.10	7.83	7.83	7.82	33.96	33.96	33.96	84.3	83.9	83.6	5.54	5.55	5.51	1.65	1.63	1.63	3	3.0
	16:39		Middle	3	27.19	27.19		7.81	7.81		33.95	33.95		83.3	83.0		5.48	5.46		1.62	1.61		3	
20/5/2013	-	Amber Rainstorm	Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	Rainstonn	Middle	-	-	-		-	-		-	-		-	-		-	-		-	-		-	
22/5/2013	21:34	Cloudy	Middle	2	25.20	25.20	25.20	8.10	8.10	8.10	27.81	27.81	27.81	84.6	85.6	84.7	5.97	6.02	5.95	1.71	1.81	1.80	6	6.0
	21:35		Middle	2	25.20	25.20		8.10	8.10		27.81	27.81		85.0	83.5		5.95	5.87		1.85	1.83		6	
24/5/2013	09:58	Fine	Middle	4	27.10	27.10	27.10	7.98	7.98	7.91	33.24	33.24	33.24	75.0	73.4	73.9	4.92	4.81	4.85	0.98	0.99	1.03	4	4.5
	10:00		Middle	4	27.10	27.10		7.83	7.83		33.24	33.24		73.3	73.9		4.81	4.84		1.06	1.07		5	l
27/5/2013	12:43	Fine	Middle	3	26.47	26.47	26.70	7.93	7.93	7.93	32.33	32.33	32.43	95.6	95.1	95.1	6.36	6.32	6.34	1.59	1.61	1.61	3	3.5
	12:45		Middle	3	26.92	26.92		7.92	7.92		32.53	32.53		94.9	94.7		6.31	6.36		1.61	1.61		4	
29/5/2013	14:32	Fine	Middle	3	25.64	25.64	25.65	7.78	7.78	7.78	31.64	31.64	31.64	85.9	85.7	85.5	5.86	5.85	5.84	2.27	2.20	2.21	5	5.5
	14:33		Middle	3	25.65	25.65		7.77	7.77	<u> </u>	31.63	31.63		85.0	85.3		5.83	5.82		2.19	2.17		6	
31/5/2013	18:04	Fine	Middle	3	26.63	26.63	26.68	8.05	8.05	8.04	31.62	31.62	31.59	99.8	98.9	99.0	6.70	6.64	6.64	3.56	3.71	3.68	8	8.5
	18:06		Middle	3	26.73	26.73		8.03	8.03		31.56	31.56		98.8	98.3		6.63	6.60		3.72	3.71		9	

Water Monitoring Result at WSD10 - Cha Kwo Ling Mid-Ebb Tide

Date	Time	Weater Condition	Samplin		Wat	er Temp °C	erature		pH -			Salini ppt	ty	D	O Satur	ation		DO mg/L			Turbid NTU		Suspende	
			n	11	Va	lue	Average	Va	lue	Average	Va	alue	Average	Va	lue	Average	Va	lue	Average	Va	alue	Average	Value	Average
2/5/2013	17:09	Cloudy	Middle	3	21.10	21.10	21.05	8.11	8.11	8.13	32.58	32.58	32.63	91.6	94.1	93.6	6.74	6.93	6.89	4.25	4.10	4.14	4	4.0
	17:10		Middle	3	21.00	21.00		8.15	8.15		32.68	32.68		94.2	94.5		6.93	6.95		4.06	4.15		4	
4/5/2013	19:06	Cloudy	Middle	3	22.10	22.10	22.08	8.09	8.09	8.10	32.57	32.57	32.67	97.5	98.2	95.7	7.07	7.09	6.92	4.06	4.18	4.07	4	4.5
	19:07		Middle	3	22.00	22.10		8.10	8.10		32.76	32.76		94.1	93.1		6.79	6.74		4.03	4.01		5	
6/5/2013	09:26	Cloudy	Middle	2	21.70	21.70	21.75	8.25	8.25	8.25	33.87	33.87	33.88	81.5	81.3	81.3	5.87	5.86	5.86	3.93	3.95	3.93	3	3.5
	09:28		Middle	2	21.80	21.80		8.24	8.24		33.88	33.88		81.2	81.1		5.85	5.85		3.92	3.92		4	<u> </u>
9/5/2013	11:23	Fine	Middle	3	23.31	23.31	23.35	7.85	7.85	7.85	35.06	35.06	35.04	86.5	86.3	86.3	6.03	6.02	5.91	5.85	5.78	5.75	7	6.5
	11:24		Middle	3	23.38	23.38		7.85	7.85		35.01	35.01		86.0	86.2		5.59	6.01		5.69	5.66		6	<u> </u>
11/5/2013	12:31	Fine	Middle	3	23.75	23.75	23.81	7.89	7.89	7.88	34.66	34.66	34.65	81.6	80.3	80.1	5.65	5.56	5.55	3.28	3.20	3.20	3	3.0
	12:33		Middle	3	23.86	23.86		7.86	7.86		34.64	34.64		79.7	78.7		5.53	5.45		3.17	3.14		3	<u> </u>
13/5/2013	13:11	Fine	Middle	3	23.68	23.68	23.67	7.97	7.97	7.96	34.68	34.68	34.69	93.1	91.4	91.2	6.47	6.35	6.33	3.81	3.79	3.82	9	8.5
	13:13		Middle	3	23.65	23.65		7.94	7.94		34.69	34.69		90.7	89.4		6.30	6.21		3.79	3.89		8	<u> </u>
15/5/2013	14:29	Fine	Middle	2	24.37	24.37	24.38	7.95	7.95	7.94	34.39	34.39	34.40	94.1	93.4	92.7	6.47	6.42	6.37	3.63	3.64	3.71	5	5.5
	14:31		Middle	2	24.39	24.39		7.93	7.93		34.40	34.40		92.2	91.1		6.33	6.26		3.65	3.90		6	
18/5/2013	17:09	Fine	Middle	2	25.32	25.32	25.43	7.86	7.86	7.85	33.45	33.45	33.45	94.2	92.7	92.7	6.40	6.29	6.29	2.57	2.58	2.57	4	3.0
	17:10		Middle	2	25.53	25.53		7.83	7.83		33.45	33.45		92.2	91.5		6.26	6.20		2.57	2.56		2	
20/5/2013	-	Amber	Middle	-	-	-	_	-	-	_	-	-	_	-	-	_	-	-	-	-	-	_	-	_
	-	Rainstorm	Middle	-	-	-		-	-		-	-		-	-		-	-		-	-		-	
22/5/2013	21:06	Cloudy	Middle	2	25.10	25.10	25.10	8.14	8.14	8.15	26.89	26.89	26.89	90.3	90.6	90.4	6.40	6.43	6.41	2.87	2.94	2.96	4	4.5
	21:07		Middle	2	25.10	25.10		8.15	8.15		26.88	26.88		91.2	89.5		6.46	6.34		3.00	3.04		5	
24/5/2013	10:33	Fine	Middle	3	24.88	24.88	24.57	7.87	7.87	7.86	33.35	33.35	33.29	95.0	93.6	93.4	6.49	6.39	6.38	2.10	2.12	2.11	5	5.0
2410/2010	10:35	7 1110	Middle	3	24.25	24.25	24.01	7.84	7.84	7.00	33.22	33.22	00.20	93.0	92.0	00.4	6.35	6.28	0.00	2.11	2.10	2.11	5	0.0
27/5/2013	13:19	Fine	Middle	3	25.63	25.63	25.80	7.92	7.92	7.91	31.71	31.71	31.69	97.8	95.7	96.2	6.65	6.57	6.55	2.49	2.53	2.52	2	2.5
2170/2010	13:20	1 1/10	Middle	3	25.97	25.97	20.00	7.90	7.90	7.01	31.66	31.66	01.00	96.1	95.2		6.50	6.47	0.00	2.55	2.49	2.02	3	2.5
29/5/2013	14:59	Fine	Middle	3	25.89	25.89	25.88	7.85	7.85	7.85	30.38	30.38	30.40	87.7	87.5	87.3	6.01	5.99	5.98	2.58	2.59	2.61	3	3.0
20/0/2010	15:00	1 1110	Middle	3	25.87	25.87	20.00	7.84	7.84	7.00	30.42	30.42	30.40	87.1	86.9	01.0	5.97	5.94	3.30	2.62	2.66	2.01	3	3.0
31/5/2013	17:32	Fine	Middle	2	27.34	27.34	27.36	8.15	8.15	8.15	30.23	30.23	30.24	92.7	92.7	92.7	6.11	6.11	6.11	0.78	0.78	0.91	3	3.5
31/3/2013	17:34	i iile	Middle	2	27.38	27.38	21.30	8.14	8.14	0.10	30.25	30.25	30.24	92.6	92.6	34.1	6.11	6.10	0.11	1.08	0.98	0.31	4	3.5



Water Monitoring Result at WSD15 - Sai Wan Ho Mid-Ebb Tide

Date	Time	Weater Condition		g Depth	Wat	er Temp °C	erature		pH -			Salini	ty	D	O Satur %	ation		DO mg/L			Turbidi		Suspend	
		o o n a la o n	r	n	Va	lue	Average	Va	lue	Average	Va		Average	Va	lue	Average	Va		Average	Va		Average	Value	Average
2/5/2013	18:43	Cloudy	Middle	3	21.10	21.10	21.05	8.13	8.13	8.14	32.81	32.81	32.83	88.2	88.7	87.9	6.48	6.51	6.45	2.92	2.95	2.95	3	2.5
27072010	18:44	Cloudy	Middle	3	21.00	21.00	21.00	8.14	8.14	0.14	32.85	32.85	02.00	87.0	87.8	07.0	6.37	6.45	0.40	2.93	2.99	2.00	2	2.0
4/5/2013	20:55	Cloudy	Middle	3	22.00	22.00	22.00	8.14	8.14	8.14	32.46	32.46	32.46	89.7	89.7	89.5	6.50	6.50	6.48	2.66	2.53	2.55	3	3.0
4/3/2013	20:56	Cloudy	Middle	3	22.00	22.00	22.00	8.14	8.14	0.14	32.46	32.46	02.40	89.3	89.3	00.0	6.46	6.46	0.40	2.51	2.48	2.55	3	0.0
6/5/2013	09:58	Cloudy	Middle	3	21.80	21.80	21.80	8.25	8.25	8.25	33.86	33.86	33.92	79.5	81.1	80.6	5.72	5.84	5.80	6.20	6.20	6.19	5	6.0
0/3/2013	09:59	Cloudy	Middle	3	21.80	21.80	21.00	8.24	8.24	0.25	33.98	33.98	33.92	81.0	80.7	60.0	5.83	5.81	5.60	6.18	6.16	0.19	7	0.0
9/5/2013	11:51	Fine	Middle	3	23.12	23.12	23.15	7.85	7.85	7.85	34.87	34.87	34.87	86.0	85.8	85.7	6.02	6.00	5.99	2.11	2.13	2.09	3	3.0
9/5/2013	11:52	Fille	Middle	3	23.17	23.17	23.13	7.84	7.84	7.00	34.86	34.86	34.07	85.5	85.3	65.7	5.97	5.96	5.99	2.08	2.05	2.09	3	3.0
11/5/2013	12:45	Fine	Middle	3	24.08	24.08	24.09	7.89	7.89	7.00	34.43	34.43	34.42	79.1	77.2	77.0	5.46	5.33	5.32	2.84	2.70	2.70	2	2.5
11/5/2013	12:47	Fine	Middle	3	24.09	24.09	24.09	7.86	7.86	7.88	34.41	34.41	34.42	76.3	75.5	77.0	5.27	5.22	5.32	2.65	2.62	2.70	3	2.5
13/5/2013	13:35	Fino	Middle	3	23.83	23.83	23.84	7.96	7.96	7.95	34.66	34.66	24.66	92.3	91.5	90.9	6.39	6.34	6.29	3.80	3.78	3.86	9	9.0
13/3/2013	13:37	Fine	Middle	3	23.84	23.84	23.04	7.94	7.94	7.95	34.66	34.66	34.66	89.6	90.2	90.9	6.20	6.23	0.29	3.91	3.95	3.00	9	9.0
15/5/2013	14:57	Fine	Middle	3	24.10	24.10	24.12	7.97	7.97	7.06	34.91	34.91	34.89	96.0	95.4	94.9	6.61	6.57	6.53	3.66	3.58	3.54	4	4.0
15/5/2013	14:59	rine	Middle	3	24.13	24.13	24.12	7.95	7.95	7.96	34.86	34.86	34.69	94.3	93.8	94.9	6.49	6.43	0.53	3.37	3.56	3.54	4	4.0
18/5/2013	17:36	Fine	Middle	4	25.17	25.17	25,27	7.85	7.85	7.83	32.91	32.91	32.90	93.1	92.4	92.1	6.35	6.30	6.28	2.10	2.08	2.05	5	5.0
16/5/2013	17:38	rine	Middle	4	25.36	25.36	25.21	7.81	7.81	7.03	32.88	32.88	32.90	91.9	90.9	92.1	6.27	6.20	0.20	2.05	1.96	2.05	5	5.0
20/5/2013	-	Amber	Middle	-	-	-		-	-		-	-		-	-		-	-		-	-		-	_
20/3/2013	-	Rainstorm	Middle	-	-	-	_	-	1	,	-	-	-	1	-	,	-	-		-	-	,	•	-
22/5/2013	22:58	Cloudy	Middle	3	24.90	24.90	24.93	8.05	8.05	8.07	26.57	26.57	26.55	89.2	88.6	87.4	6.33	6.29	6.20	2.17	2.12	2.09	5	5.0
22/3/2013	22:59	Cloudy	Middle	3	25.00	24.90	24.93	8.08	8.08	6.07	26.52	26.52	20.55	86.4	85.3	07.4	6.13	6.05	0.20	2.02	2.05	2.09	5	5.0
24/5/2013	10:58	Fine	Middle	3	25.30	25.30	25.41	7.93	7.93	7.89	32.84	32.84	32.81	104.2	102.1	100.5	7.10	6.96	6.86	0.39	0.43	0.43	3	2.5
24/5/2013	11:00	Fine	Middle	3	25.51	25.51	25.41	7.84	7.84	7.09	32.78	32.78	32.01	98.6	97.2	100.5	6.72	6.64	0.00	0.44	0.45	0.43	2	2.5
27/5/2013	13:41	Fine	Middle	3	25.39	25.39	25.47	7.92	7.92	7.04	32.17	32.17	22.14	97.5	96.7	06.0	6.66	6.60	6.57	1.47	1.45	4.47	3	3.0
27/5/2013	13:43	Fine	Middle	3	25.54	25.54	25.47	7.90	7.90	7.91	32.10	32.10	32.14	95.9	94.7	96.2	6.55	6.47	6.57	1.46	1.50	1.47	3	3.0
20/5/2012	15:21	Fine	Middle	3	26.09	26.09	25.75	7.86	7.86	7.85	32.38	32.38	32.84	96.7	96.0	95.4	6.62	6.57	6.53	2.37	2.25	2.24	4	4.0
29/5/2013	15:23	Fine	Middle	3	25.41	25.41	25./5	7.84	7.84	7.65	33.29	33.29	3∠.84	94.9	94.0	95.4	6.49	6.43	0.03	2.17	2.15	2.24	4	4.0
21/F/2012	17:06	Ei	Middle	3	27.46	27.46	27.46	7.58	7.58	7.50	32.57	32.57	22.56	94.1	94.0	02.0	6.20	6.19	6.10	3.35	3.43	2.44	3	2.0
31/5/2013	17:08	Fine	Middle	3	27.46	27.46	27.46	7.57	7.57	7.58	32.54	32.54	32.56	93.8	93.6	93.9	6.17	6.16	6.18	3.43	3.43	3.41	3	3.0

Water Monitoring Result at WSD17 - Quarry Bay Mid-Ebb Tide

Date	Time	Weater Condition	Samplin		Wat	er Temp °C	erature		pH -			Salini ppt	ty	D	O Satur	ation		DO mg/L			Turbidi NTU		Suspend	ed Solids g/L
			r	T1	Va	lue	Average	Va	lue	Average	Va	lue	Average	Va	llue	Average	Va	lue	Average	Va	lue	Average	Value	Average
2/5/2013	18:05 18:06	Cloudy	Middle Middle	3	20.80	20.80	20.75	8.12 8.12	8.12 8.12	8.12	32.45 32.45	32.45 32.45	32.45	87.0 86.3	86.0 85.5	86.2	6.44	6.37	6.38	5.79 5.84	5.81 5.71	5.79	4	4.0
	20:28		Middle	3	21.60	21.60		8.17	8.17		32.75	32.75		89.8	89.8		6.53	6.53		3.26	3.14		3	
4/5/2013	20:29	Cloudy	Middle	3	21.70	21.70	21.65	8.17	8.17	8.17	32.76	32.76	32.76	89.1	89.9	89.7	6.48	6.49	6.51	3.09	3.03	3.13	3	3.0
0/5/0040	10:12	Oleverto	Middle	3	21.90	21.90	04.00	8.20	8.20	0.00	33.04	33.04	20.04	78.8	78.6	70.5	5.69	5.68	5.07	5.16	5.20	5.07	3	0.5
6/5/2013	10:14	Cloudy	Middle	3	21.90	21.90	21.90	8.20	8.20	8.20	33.03	33.03	33.04	78.1	78.5	78.5	5.64	5.67	5.67	5.36	5.35	5.27	4	3.5
9/5/2013	12:18	Fine	Middle	3	22.99	22.99	23.02	7.77	7.77	7.77	34.45	34.45	34.44	82.6	82.3	82.2	5.81	5.79	5.78	5.53	5.58	5.57	6	6.5
0.0.2010	12:20	0	Middle	3	23.04	23.04	20.02	7.76	7.76		34.43	34.43	0	82.4	81.5	02.2	5.79	5.72	0.70	5.60	5.55	0.07	7	0.0
11/5/2013	13:11	Fine	Middle	4	23.94	23.94	23.94	7.91	7.91	7.68	34.18	34.18	34.18	81.9	81.1	80.6	5.67	5.61	5.58	4.24	4.23	4.24	4	4.0
	13:12		Middle	4	23.94	23.94		7.00	7.90		34.17	34.17		80.3	79.0		5.56	5.47		4.23	4.24		4	
13/5/2013	14:05	Fine	Middle	4	24.39	24.39	24.40	7.95	7.95	7.96	34.27	34.27	34.27	101.3	100.0	99.1	6.96	6.87	6.81	4.47	4.46	4.47	8	8.5
	14:07		Middle	4	24.40	24.40		7.96	7.96		34.27	34.27		97.9	97.0		6.73	6.67		4.48	4.48		9	
15/5/2013	15:26	Fine	Middle	4	25.69	25.69	25.81	7.79	7.79	7.78	34.14	34.14	34.08	93.6	90.9	90.5	6.29	6.10	6.09	3.54	3.55	3.52	4	4.5
	15:27 17:53		Middle Middle	3	25.92	25.92		7.77	7.77		34.01	34.01		89.0 97.5	88.5 96.6		6.01	5.94 6.42		3.55 1.88	3.44 1.88		5 5	
18/5/2013	17:55	Fine	Middle	3	26.80	26.80	26.80	7.86	7.86	7.86	32.81	32.81	32.81	95.2	94.6	96.0	6.33	6.30	6.38	1.90	1.92	1.90	6	5.5
	-	Ambor	Middle	-	-	-		-	-		-	-		-	-		-	-		-	-		-	
20/5/2013	-	Amber Rainstorm	Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	22:25		Middle	3	24.90	24.90		8.12	8.12		27.29	27.29		85.5	86.1		6.07	6.11		2.40	2.31		6	
22/5/2013	22:26	Cloudy	Middle	3	24.90	24.90	24.90	8.12	8.12	8.12	27.29	27.29	27.29	82.4	80.9	83.7	5.85	5.74	5.94	2.31	2.24	2.32	6	6.0
24/5/2013	11:23	Fine	Middle	4	25.52	25.52	25.62	7.85	7.85	7.83	31.49	31.49	31.44	94.2	93.1	92.1	6.44	6.36	6.30	0.88	0.93	0.94	5	5.0
241012010	11:25	TINC	Middle	4	25.72	25.72	20.02	7.80	7.80	1.00	31.38	31.38	01.77	91.0	90.1	9£.1	6.22	6.16	0.50	0.97	0.98	0.54	5	5.0
27/5/2013	14:09	Fine	Middle	4	25.96	25.96	25.99	7.93	7.93	7.91	31.09	31.09	31.09	97.4	95.3	95.0	6.63	6.49	6.48	2.48	2.51	2.45	3	2.5
	14:10		Middle	4	26.01	26.01		7.89	7.89		31.09	31.09		94.4	92.9		6.47	6.32		2.41	2.40		2	
29/5/2013	15:45	Fine	Middle	4	27.41	27.41	27.41	7.72	7.72	7.72	31.97	31.97	32.00	86.7	86.6	86.6	5.73	5.73	5.73	1.62	1.60	1.59	3	3.5
	15:47		Middle	4	27.41	27.41		7.71	7.71		32.02	32.02		86.6	86.5		5.73	5.72		1.58	1.57		4	<u> </u>
31/5/2013	16:36	Fine	Middle	3	27.04	27.04	27.05	7.69	7.69	7.69	31.86	31.86	31.85	86.1	86.1	86.2	5.74	5.73	5.74	2.96	2.89	2.86	3	4.0
	16:38		Middle	3	27.05	27.05		7.68	7.68		31.84	31.84		86.2	86.2		5.74	5.74		2.72	2.88		5	

Water Monitoring Result at WSD21 - Wan Chai Mid-Ebb Tide

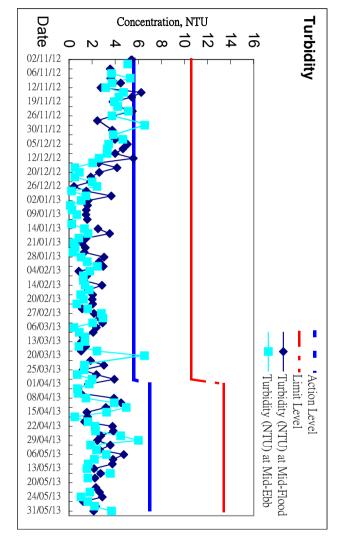
Date	Time	Weater Condition	Samplin	•	Wat	er Temp °C	erature		pH -			Salini	ty	D	O Satura	ation		DO ma/L			Turbid NTU		Suspende	
		Condition	n	n	Va	lue	Average	Va	lue	Average	Va	alue	Average	Va		Average	Val		Average	Va		Average		Average
2/5/2013	19:02	Cloudy	Middle	2	21.40	21.40	21.35	8.18	8.18	8.18	33.80	33.80	33.78	58.8	58.7	58.5	4.28	4.28	4.27	2.67	2.64	2.62	3	3.0
	19:04		Middle	2	21.30	21.30		8.18	8.18		33.76	33.76		58.4	58.2		4.26	4.25		2.60	2.58		3	
4/5/2013	20:03	Cloudy	Middle	2	21.90	21.90	21.80	7.74	7.74	7.73	35.02	35.02	35.01	66.5	66.3	66.2	4.77	4.76	4.76	1.92	1.88	1.87	8	7.5
	20:04		Middle	2	21.70	21.70		7.72	7.72		34.99	34.99		66.1	65.9		4.75	4.74		1.84	1.84		7	
6/5/2013	10:41	Cloudy	Middle	2	22.20	22.20	22.25	8.06	8.06	8.06	33.15	33.15	33.15	52.6	52.7	52.5	3.77	3.78	3.77	2.66	2.19	2.16	3	3.0
	10:42		Middle	2	22.30	22.30	-	8.06	8.06		33.14	33.14		52.9	51.9		3.80	3.73		1.91	1.88		3	
9/5/2013	12:31	Fine	Middle	2	23.40	23.40	23.40	8.06	8.06	8.06	33.04	33.04	33.04	56.6	56.9	56.6	3.98	4.01	3.98	3.11	3.25	3.18	3	3.0
	12:32		Middle	2	23.40	23.40		8.05	8.05		33.04	33.04		56.7	56.1		3.99	3.94		3.24	3.13		3	
11/5/2013	13:39	Fine	Middle	2	23.50	23.50	23.55	8.05	8.05	8.05	32.74	32.74	32.74	52.7	52.6	52.1	3.71	3.70	3.66	2.36	2.24	2.29	3	3.0
	13:40		Middle	2	23.60	23.60		8.05	8.05		32.74	32.74		51.7	51.3		3.63	3.61		2.29	2.28		3	
13/5/2013	14:31	Fine	Middle	2	24.90	24.90	24.90	8.03	8.03	8.03	32.37	32.37	32.35	50.0	50.4	50.7	3.42	3.46	3.48	3.32	3.58	3.54	9	9.0
	14:32		Middle	2	24.90	24.90		8.02	8.02		32.33	32.33		51.4	51.1		3.53	3.50		3.58	3.68		9	<u> </u>
15/5/2013	15:54	Fine	Middle	2	26.50	26.50	26.60	7.99	7.99	7.99	32.02	32.02	32.02	58.5	58.1	58.1	3.92	3.89	3.89	3.02	3.03	3.04	10	10.5
	15:55		Middle	2	26.70	26.70		7.99	7.99		32.01	32.01		58.1	57.6		3.89	3.86		3.05	3.05		11	
18/5/2013	18:12	Fine	Middle	2	26.00	26.00	26.00	8.00	8.00	8.00	31.48	31.48	31.48	53.7	54.1	53.7	3.64	3.63	3.63	5.20	5.16	5.19	5	4.5
	18:14		Middle	2	26.00	26.00		8.00	8.00		31.48	31.48		53.3	53.5		3.62	3.63		5.18	5.23		4	
20/5/2013	-	Amber Rainstorm	Middle	-	-	-	-	-	-	-	-	-	-	-	-	_	-	-	_	-	-	-	-	- '
	-	Rainstorm	Middle	-	-	-		-	-		-	-		-	-		-	-		-	-		-	
22/5/2013	22:05	Cloudy	Middle	2	24.60	24.60	24.60	8.09	8.09	8.10	30.61	30.61	30.62	56.9	57.7	60.1	3.97	4.03	4.19	3.56	3.57	3.45	8	7.5
	22:07		Middle	2	24.60	24.60		8.10	8.10		30.63	30.63		62.7	62.9		4.38	4.39		3.36	3.31		7	
24/5/2013	11:57	Fine	Middle	2	26.10	26.10	26.10	8.08	8.08	8.08	30.53	30.57	30.55	56.4	57.4	57.0	3.85	3.91	3.88	2.84	3.85	3.61	5	5.5
	11:58		Middle	2	26.10	26.10		8.08	8.08		30.53	30.57		57.0	57.1		3.88	3.89		3.87	3.86		6	
27/5/2013	14:32	Fine	Middle	2	26.40	26.40	26.45	8.04	8.04	8.04	27.48	27.48	27.48	60.3	60.5	60.5	4.16	4.17	4.17	2.37	2.36	2.34	9	8.5
	14:33		Middle	2	26.50	26.50		8.04	8.04		27.47	27.47		60.6	60.5		4.18	4.17		2.33	2.31		8	<u> </u>
29/5/2013	16:13	Fine	Middle	2	27.60	27.60	27.65	8.01	8.01	8.01	28.57	28.57	28.57	53.3	51.8	52.7	3.58	3.48	3.54	3.50	3.48	3.45	5	5.0
	16:14		Middle	2	27.70	27.70		8.01	8.01		28.57	28.57		52.7	52.9		3.54	3.55		3.47	3.35	<u> </u>	5	<u> </u>
31/5/2013	16:21	Fine	Middle	2	28.00	28.00	28.00	8.08	8.08	8.08	29.64	29.64	29.64	71.2	71.1	71.1	4.72	4.71	4.72	2.73	2.72	2.75	3	3.5
	16:23		Middle	2	28.00	28.00		8.08	8.08		29.64	29.64		71.4	70.8		4.74	4.69		2.77	2.79		4	

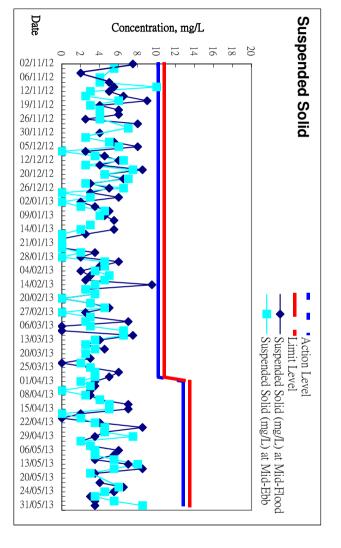
Water Monitoring Result at WSD19 - Sheung Wan Mid-Ebb Tide

Date	Time	Weater Condition	Samplin	•	Wat	er Temp °C	erature		pH -			Salinit	у	D	O Satura	ation		DO mg/L			Turbid NTU		Suspende	
			n	n	Va	lue	Average	Va	lue	Average	Va	lue	Average	Va	lue	Average	Val	lue	Average	Va	lue	Average	Value	Average
2/5/2013	19:29	Cloudy	Middle	2	20.00	20.90	20.68	8.07	8.07	8.07	32.12	32.12	32.12	87.1	87.4	87.1	6.44	6.47	6.44	6.25	5.93	6.05	6	6.0
	19:30		Middle	2	20.90	20.90		8.07	8.07		32.12	32.12		86.0	87.7		6.36	6.49		6.12	5.91		6	<u> </u>
4/5/2013	21:33	Cloudy	Middle	2	21.90	21.90	21.90	8.11	8.11	8.11	32.41	32.41	32.41	87.5	88.9	87.6	6.35	6.45	6.35	7.48	7.42	7.31	8	7.5
	21:34		Middle	2	21.90	21.90		8.11	8.11		32.41	32.41		87.0	86.8		6.31	6.30		7.14	7.18		7	
6/5/2013	11:05	Cloudy	Middle	4	22.48	22.48	22.48	8.05	8.05	8.05	33.56	33.56	33.56	67.5	66.3	64.5	4.77	4.69	4.38	9.45	9.41	9.42	15	15.0
	11:07		Middle	4	22.48	22.48		8.05	8.05		33.56	33.56		62.5	61.5		4.42	3.64		9.41	9.40		15	
9/5/2013	12:50	Fine	Middle	2	23.78	23.78	23.83	7.69	7.69	7.69	34.31	34.31	34.30	83.7	83.5	83.6	5.82	5.81	5.81	8.29	8.41	8.35	10	10.5
0.0.2010	12:52	10	Middle	2	23.88	23.88	20.00	7.69	7.69	1.00	34.29	34.29	01.00	83.7	83.6	00.0	5.80	5.79	0.01	8.33	8.37	0.00	11	10.0
44/5/0040	13:52	Fin -	Middle	3	24.69	24.69	04.00	7.93	7.93	7.00	32.81	32.81	20.04	90.3	89.3	00.7	6.23	6.16	0.40	4.99	4.90	4.00	6	
11/5/2013	13:54	Fine	Middle	3	24.69	24.69	24.69	7.92	7.92	7.93	32.81	32.81	32.81	88.4	86.8	88.7	6.09	5.98	6.12	4.95	4.99	4.96	5	5.5
12/5/2012	15:00	Fine	Middle	3	25.02	25.02	25.04	7.96	7.96	7.06	33.24	33.24	22.26	94.4	93.8	02.5	6.46	6.42	6.40	5.91	5.94	F 0F	8	0.0
13/5/2013	15:02	Fine	Middle	3	25.00	25.00	25.01	7.95	7.95	7.96	33.28	33.28	33.26	93.4	92.5	93.5	6.39	6.33	6.40	5.97	5.97	5.95	8	8.0
45/5/0040	16:13	<u>-</u> .	Middle	3	25.88	25.88	05.05	7.78	7.78	7.70	33.15	33.15	00.11	73.3	73.0	70.0	4.94	4.92	4.00	2.96	2.92	224	6	
15/5/2013	16:14	Fine	Middle	3	26.02	26.02	25.95	7.77	7.77	7.78	33.12	33.12	33.14	72.9	72.8	73.0	4.91	4.90	4.92	2.93	2.95	2.94	6	6.0
40/5/0040	18:40	Fin-	Middle	4	26.91	26.91	00.00	7.79	7.79	7.70	32.29	32.29	20.00	87.7	87.5	07.4	5.84	5.82	5.00	1.40	1.30	4.04	5	5.0
18/5/2013	18:41	Fine	Middle	4	27.00	27.00	26.96	7.78	7.78	7.79	32.29	32.29	32.29	87.3	87.2	87.4	5.81	5.80	5.82	1.27	1.26	1.31	5	5.0
20/5/2013	-	Amber	Middle	-	-	-		-	-		-	-		-	-		-	-		-	-		-	
20/5/2013	-	Rainstorm	Middle	-1	-	-	,	-	-	,	-	-	,	-	-	-	-	-	-	-	-	-	-	
22/5/2013	23:22	Cloudy	Middle	2	24.80	24.80	24.80	8.09	8.09	8.09	28.06	28.06	28.06	79.6	84.7	82.5	5.62	5.98	5.82	2.24	2.12	2.17	7	6.5
22/3/2013	23:23	Cloudy	Middle	2	24.80	24.80	24.60	8.09	8.09	6.09	28.06	28.06	26.00	83.1	82.4	62.5	5.87	5.82	5.62	2.17	2.13	2.17	6	0.5
24/5/2013	12:16	Fine	Middle	4	26.48	26.48	26.48	7.83	7.83	7.83	31.05	31.05	31.10	84.8	84.3	84.3	5.73	5.70	5.69	2.99	2.93	2.96	9	9.0
24/3/2013	12:18	Tille	Middle	4	26.48	26.48	20.40	7.82	7.82	7.05	31.15	31.15	31.10	84.1	83.8	04.3	5.68	5.66	3.09	2.97	2.95	2.90	9	9.0
27/5/2013	14:57	Fine	Middle	4	26.89	26.89	26.92	7.85	7.85	7.85	28.37	28.37	28.41	85.8	85.5	85.3	5.84	5.82	5.81	3.58	3.59	3.58	3	2.5
21/3/2013	14:58	FIIIE	Middle	4	26.94	26.94	20.92	7.84	7.84	7.00	28.44	28.44	20.41	85.1	84.9	00.0	5.79	5.78	J.01	3.58	3.57	3.00	2	2.5
29/5/2013	16:41	Fine	Middle	4	27.72	27.72	27.78	7.69	7.69	7.68	29.13	29.13	29.12	89.4	89.0	88.6	5.97	5.95	5.92	2.58	2.57	2.58	3	3.5
29/3/2013	16:43	I IIIC	Middle	4	27.84	27.83	21.10	7.66	7.66	7.00	29.11	29.11	23.12	88.4	87.6	00.0	5.90	5.85	J.32	2.59	2.58	2.50	4	3.3
31/5/2013	16:02	Fine	Middle	3	28.06	28.06	28.07	8.08	8.08	8.09	30.28	30.28	30.27	90.3	90.1	90.0	5.96	5.94	5.93	2.60	2.58	2.62	3	3.0
31/3/2013	16:04	rine	Middle	3	28.07	28.07	20.07	8.09	8.09	0.09	30.25	30.25	30.27	89.8	89.6	90.0	5.91	5.91	ე.ყა	2.62	2.67	2.02	3	3.0



Graphic Presentation of Water Quality Result of WSD9 - Tai Wan

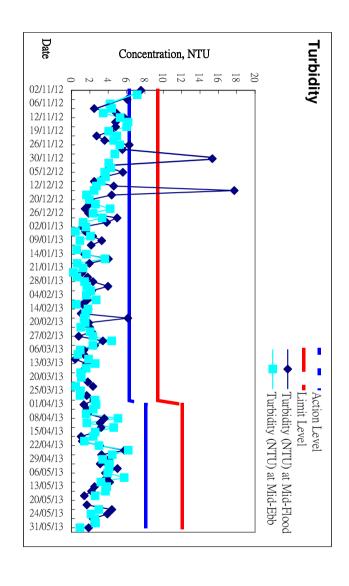


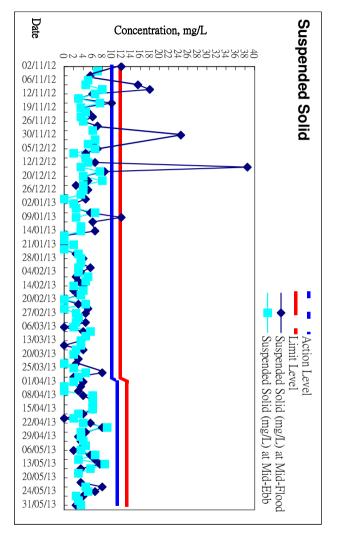


- October to March) Two sets of Suspended Solid Action and Limit levels ο̈́ the dry season (the period from
- approved by EPD on 19 Oct 2011 and wet season (the period from April to September). New sets Turbidity and SS Action Level and Limit Level for dry and wet season were
- 2013 was cancelled - Due to hoisting of amber rainstorm warning, the water quality monitoring for ebb tide 20 May



Graphic Presentation of Water Quality Result of WSD10 - Cha Kwo Ling

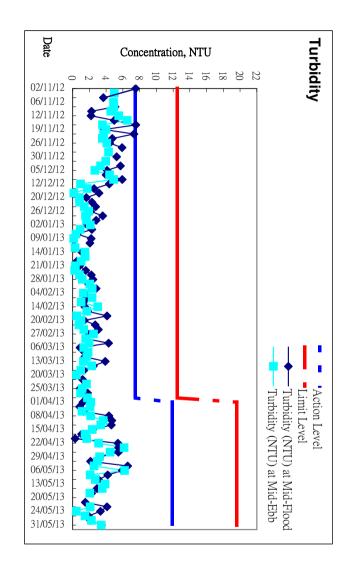


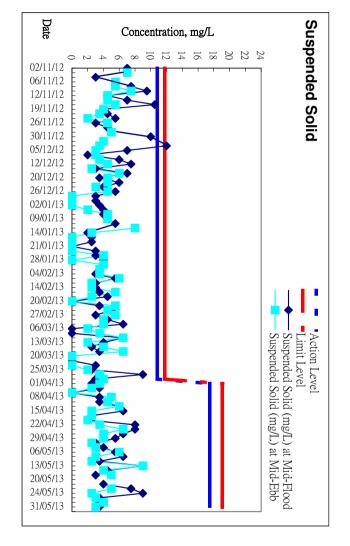


- October to March) Two sets of Suspended Solid Action and Limit levels for the dry season (the period from
- and wet season (the period from April to September).
- New sets Turbidity and SS Action Level and Limit Level for dry and wet season were approved by EPD on 19 Oct 2011
- 2013 was cancelled Due to hoisting of amber rainstorm warning, the water quality monitoring for ebb tide 20 May



Graphic Presentation of Water Quality Result of WSD15 - Sai Wan Ho

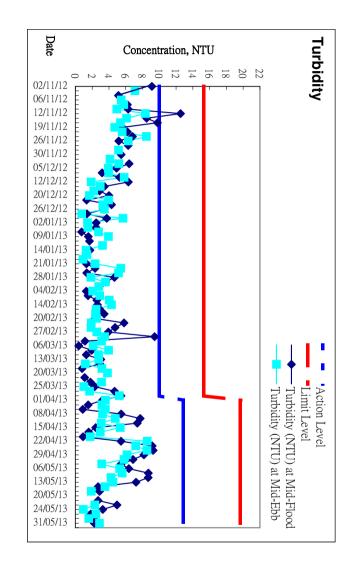


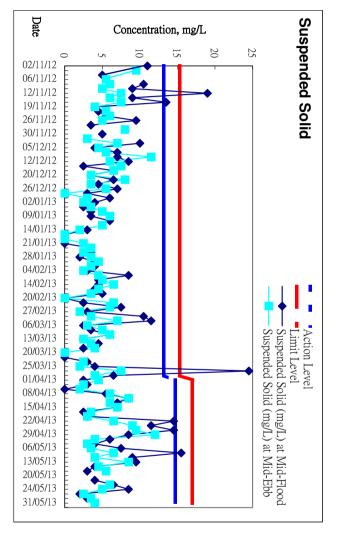


- October to March) Two sets of Suspended Solid Action and Limit levels for the dry season (the period from
- approved by EPD on 19 Oct 2011 and wet season (the period from April to September).
 - New sets Turbidity and SS Action Level and Limit Level for dry and wet season were
- 2013 was cancelled Due to hoisting of amber rainstorm warning, the water quality monitoring for ebb tide 20 May



Graphic Presentation of Water Quality Result of WSD17 - Quarry Bay

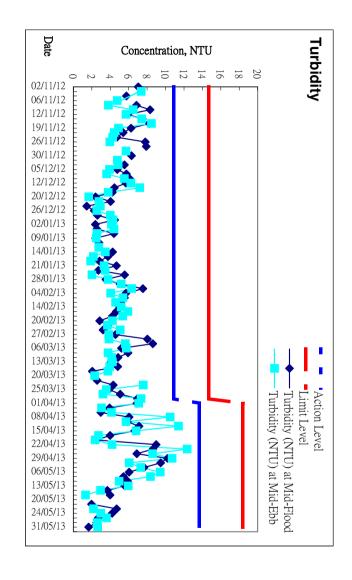


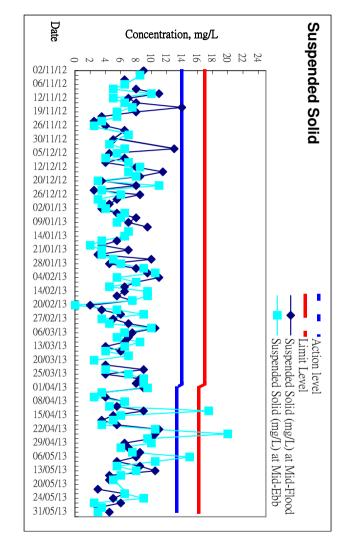


- October to March) Two sets of Suspended Solid Action and Limit levels for the dry season (the period from
- approved by EPD on 19 Oct 2011 and wet season (the period from April to September).
 - New sets Turbidity and SS Action Level and Limit Level for dry and wet season were
- 2013 was cancelled Due to hoisting of amber rainstorm warning, the water quality monitoring for ebb tide 20 May



Graphic Presentation of Water Quality Result of WSD19 - Sheung Wan

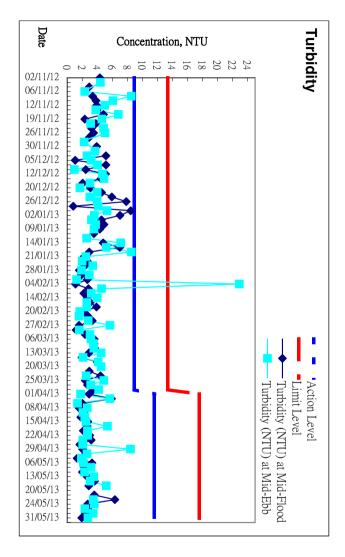


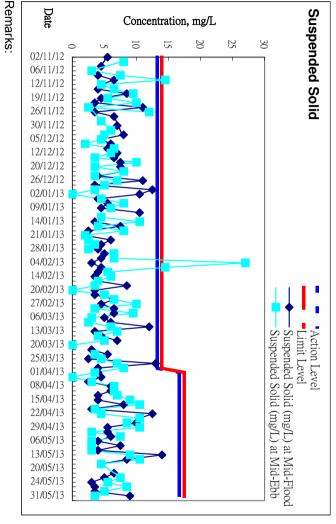


- October to March) Two sets of Suspended Solid Action and Limit levels for the dry season (the period from
- approved by EPD on 19 Oct 2011 and wet season (the period from April to September).
 - New sets Turbidity and SS Action Level and Limit Level for dry and wet season were
- 2013 was cancelled Due to hoisting of amber rainstorm warning, the water quality monitoring for ebb tide 20 May



Graphic Presentation of Water Quality Result of WSD21 - Wan Chai





- October to March Two sets of Suspended Solid Action and Limit levels for the dry season (the period from
- approved by EPD on 19 Oct 2011 and wet season (the period from April to September).
 - New sets Turbidity and SS Action Level and Limit Lev Limit Level for dry and wet season were
- 2013 was cancelled Due to hoisting of amber rainstorm warning, the water quality monitoring for ebb tide 20 May

Appendix 5.3

Event and Action Plan



Lam Environmental Services Limited

Event and Action Plan for Construction Noise

EVENT	ACTION			
	ET	IC(E)	ER	CONTRACTOR
Action Level	 Notify IEC and Contractor; Carry out investigation; Report the results of investigation to the IEC, ER and Contractor; Discuss with the Contractor and formulate remedial measures; Increase monitoring frequency to check mitigation effectiveness. 	1. Review the analysed results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly; 3. Supervise the implementation of remedial measures.	Confirm receipt of notification of failure in writing; Notify Contractor; Require Contractor to propose remedial measures for the analysed noise problem; Ensure remedial measures are properly implemented.	Submit noise mitigation proposals to IEC; Implement noise mitigation proposals.
Limit Level	 Identify source; Inform IEC, ER, EPD and Contractor; Repeat measurements to confirm findings; Increase monitoring frequency; Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; Inform IEC, ER and EPD the causes and actions taken for the exceedances; Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; If exceedance stops, cease additional monitoring. 	Discuss amongst ER, ET, and Contractor on the potential remedial actions; Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; Supervise the implementation of remedial measures.	Confirm receipt of notification of failure in writing; Notify Contractor; Require Contractor to propose remedial measures for the analysed noise problem; Ensure remedial measures properly implemented; 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.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Submit further proposal if problem still not under control; 5. Stop the relevant portion of works as instructed by the ER until the exceedance is abated.

EVENT AND ACTION PLAN



Lam Environmental Services Limited

Event and Action Plan for Marine Water Quality

EVENT	ACTION					
	ET	IEC	ER	CONTRACTOR		
Action level being exceeded by one sampling day	1. Repeat in-situ measurement to confirm findings; 2. Identify source(s) of impact; 3. Inform IEC and Contractor; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC and Contractor; 6. (The above actions should be taken within 1 working day after the exceedance is identified) 7. Repeat measurement on next day of exceedance.	Discuss with ET and Contractor on the mitigation measures; Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly; Assess the effectiveness of the implemented mitigation measures. (The above actions should be taken within 1 working day after the exceedance is identified)	Discuss with IEC on the proposed mitigation measures; Make agreement on the mitigation measures to be implemented. The above actions should be taken within 1 working day after the exceedance is identified)	Inform the ER and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment; Review the working methods and consider additional measures such as use of frame-type silt curtain, deployment of double silt curtains, slowing down, or rescheduling of works; Discuss with ET and IEC and propose mitigation measures to IEC and ER; Implement the agreed mitigation measures. The above actions should be taken within 1 working day after the exceedance is identified)		
Action level being exceeded by more than one consecutive sampling days	Identify source(s) of impact; Inform IEC and Contractor; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measures with IEC and Contractor;	Discuss with ET and Contractor on the mitigation measures; Review proposals on mitigation measures submitted by Contractor and advise the ER	Discuss with IEC on the proposed mitigation measures; Make agreement on the mitigation measures to be implemented; Assess the effectiveness	Inform the Engineer and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and		

EVENT AND ACTION PLAN



Lam Environmental Services Limited

EVENT		ACTION					
	ET	IEC	ER	CONTRACTOR			
	5. Ensure mitigation measures are implemented; 6. Prepare to increase the monitoring frequency to daily; 7. (The above actions should be taken within 1 working day after the exceedance is identified) 8. Repeat measurement on next working day of exceedance.	accordingly; 3. Assess the effectiveness of the implemented mitigation measures. 4. (The above actions should be taken within 1 working day after the exceedance is identified)	of the implemented mitigation measures. 4. (The above actions should be taken within 1 working day after the exceedance is identified)	equipment; 4. Review the working methods and consider additional measures such as use of frametype silt curtain, deployment of double silt curtains, slowing down, or rescheduling of works; 5. Discuss with ET and IEC and propose mitigation measures to IEC and ER within 3 working days; 6. Implement the agreed mitigation measures. 7. (The above actions should be taken within working day after the exceedance is identified)			



Lam Environmental Services Limited

EVENT	ACTION					
83	ET	IEC	ER	CONTRACTOR		
Limit level being exceeded by one sampling day	1. Repeat in-situ measurement to confirm findings; 2. Identify source(s) of impact; 3. Inform IEC, Contractor and EPD; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC, ER and Contractor; 6. Ensure mitigation measures are implemented; 7. Increase the monitoring frequency to daily until no exceedance of Limit Level. 8. (The above actions should be taken within 1 working day after the exceedance is identified)	Discuss with ET and Contractor on the mitigation measures; Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly; Assess the effectiveness of the implemented mitigation measures. (The above actions should be taken within 1 working day after the exceedance is identified)	Discuss with IEC, ET and Contractor on the proposed mitigation measures; Request Contractor to critically review the working methods; Make agreement on the mitigation measures to be implemented; Assess the effectiveness of the implemented mitigation measures. (The above actions should be taken within 1 working day after the exceedance is identified)	Inform the Engineer and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment; Review the working methods and consider additional measures such as use of frametype silt curtain, deployment of double silt curtains, slowing down, or rescheduling of works; Discuss with ET, IEC and ER and propose mitigation measures to IEC and ER within 3 working days; Implement the agreed mitigation measures. The above actions should be taken within 1 working day after the exceedance is identified)		



Lam Environmental Services Limited

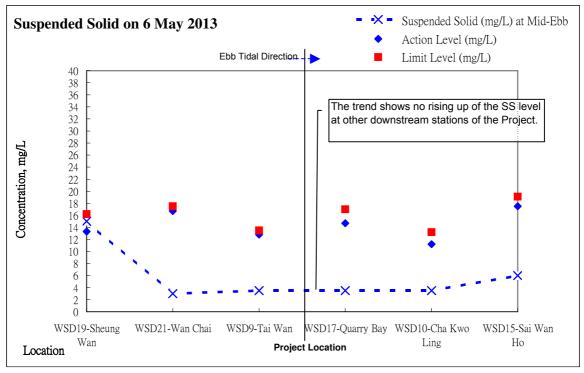
EVENT		ACTION		
	ET	IEC	ER	CONTRACTOR
Limit level being exceeded by more than one consecutive sampling days	 Identify source(s) of impact; Inform IEC, Contractor and EPD; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measures with IEC, ER and Contractor; Ensure mitigation measures are implemented; Increase the monitoring frequency to daily until no exceedance of Limit level for two consecutive days. (The above actions should be taken within 1 working day after the exceedance is identified) 	Discuss with ET and Contractor on the mitigation measures; Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly; Assess the effectiveness of the implemented mitigation measures. (The above actions should be taken within 1 working day after the exceedance is identified)	Discuss with IEC, ET and Contractor on the proposed mitigation measures; Request Contractor to critically review the working methods; Make agreement on the mitigation measures to be implemented; Assess the effectiveness of the implemented mitigation measures; 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. (The above actions should be taken within 1 working day after the exceedance is identified)	1. Inform the ER and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment; 4. Review the working methods and consider additional measures such as use of frametype silt curtain, deployment of double silt curtains, slowing down, or rescheduling of works; 5. Discuss with ET, IEC and ER and propose mitigation measures to IEC and ER within 3 working days; 6. Implement the agreed mitigation measures; 7. As directed by the Engineer, to slow down or to stop all or part of the marine work or construction activities. 8. (The above actions should be taken within 1 working day after the exceedance is identified)

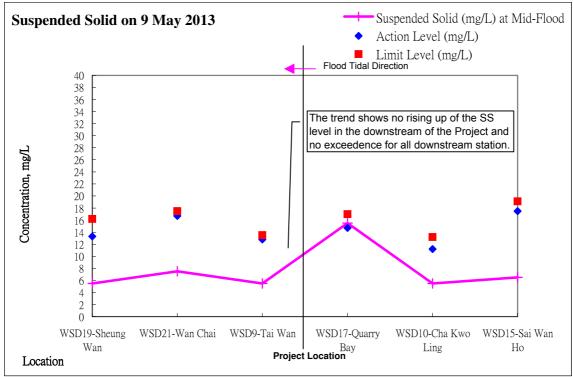
Appendix 5.4

Graphic Presentation of SS Results against to Tidal Movement along Victoria Harbour



Graphic Presentation of SS Results Against the Tidal Movement along Victoria Harbour



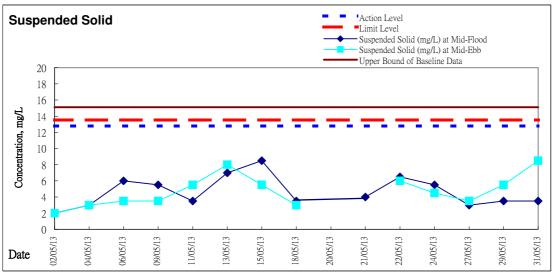


Appendix 5.5

Graphic Presentation of Water Quality Result with respect to Local Variation

am

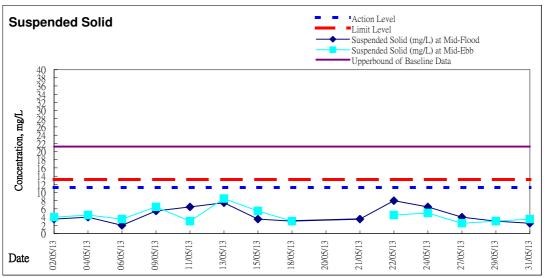
Graphic Presentation of Water Quality Result of WSD9 - Tai Wan with respect to Local Variation



Remarks: WSD9 is located at upstream during the ebb tides while at downstream during flood tides.

am

Graphic Presentation of Water Quality Result of WSD10 - Cha Kwo Ling with respect to Local Variation

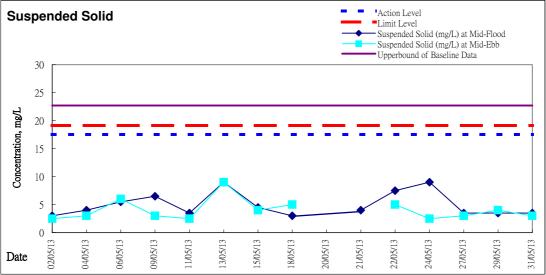


Remarks: WSD10 is located at upstream during the flood tides while at downstream during ebb tides.

Remarks: Due to hoisting of Amber Rainstorm Signal, the water quality monitoring for ebb tide on 20 May 2013 was cancelled.

am

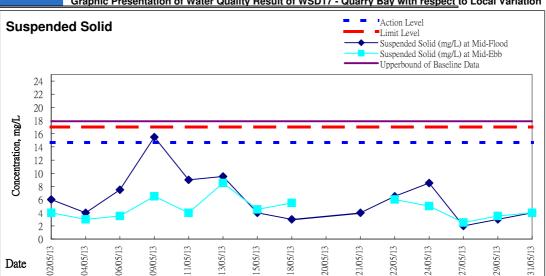
Graphic Presentation of Water Quality Result of WSD15 - Sai Wan Ho with respect to Local Variation



Remarks: WSD15 is located at upstream during the flood tides while at downstream during ebb tides.

am

Graphic Presentation of Water Quality Result of WSD17 - Quarry Bay with respect to Local Variation

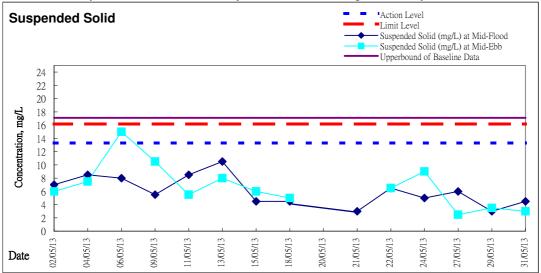


Remarks: WSD17 is located at upstream during the flood tides while at downstream during ebb tides.

Remarks: Due to hoisting of Amber Rainstorm Signal, the water quality monitoring for ebb tide on 20 May 2013 was cancelled.

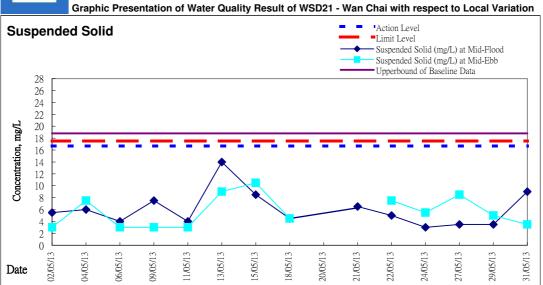


Graphic Presentation of Water Quality Result of WSD19 - Sheung Wan with respect to Local Variation



Remarks: WSD19 is located at upstream during the ebb tides while at downstream during flood tides.





Remarks: WSD21 is located at upstream during the ebb tides while at downstream during flood tides.

Remarks: Due to hoisting of Amber Rainstorm Signal, the water quality monitoring for ebb tide on 20 May 2013 was cancelled.

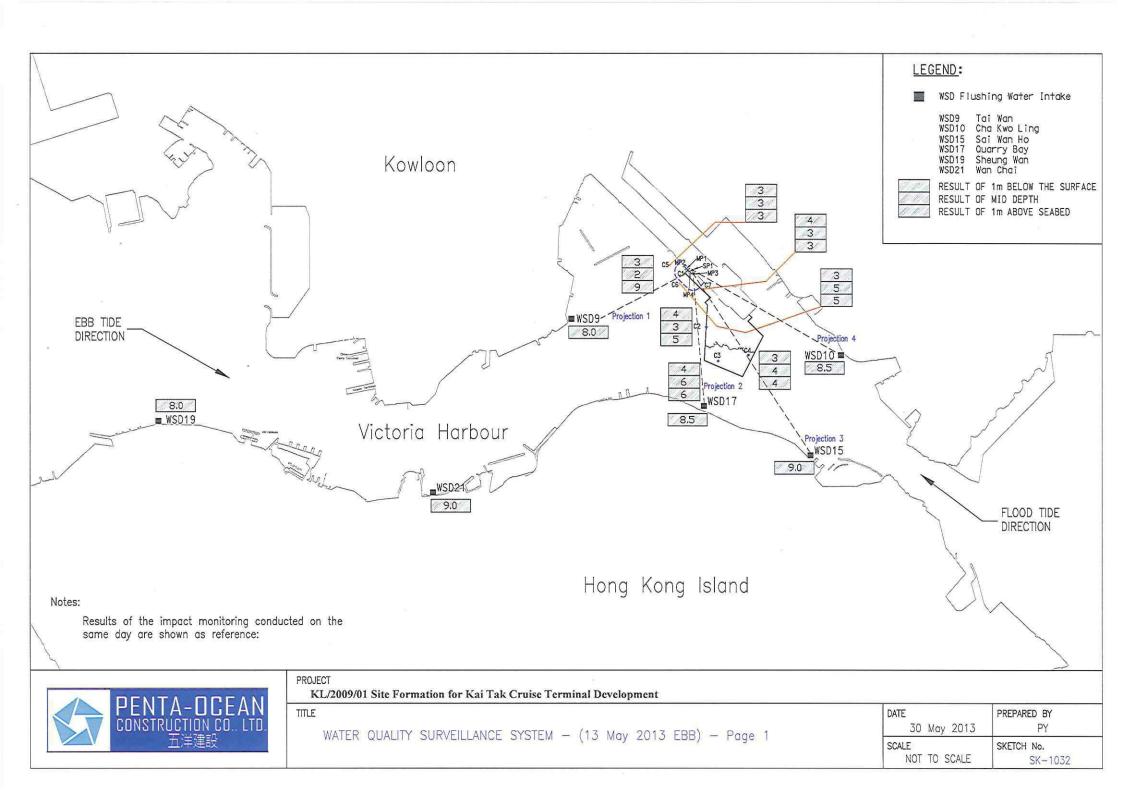
Appendix 5.6

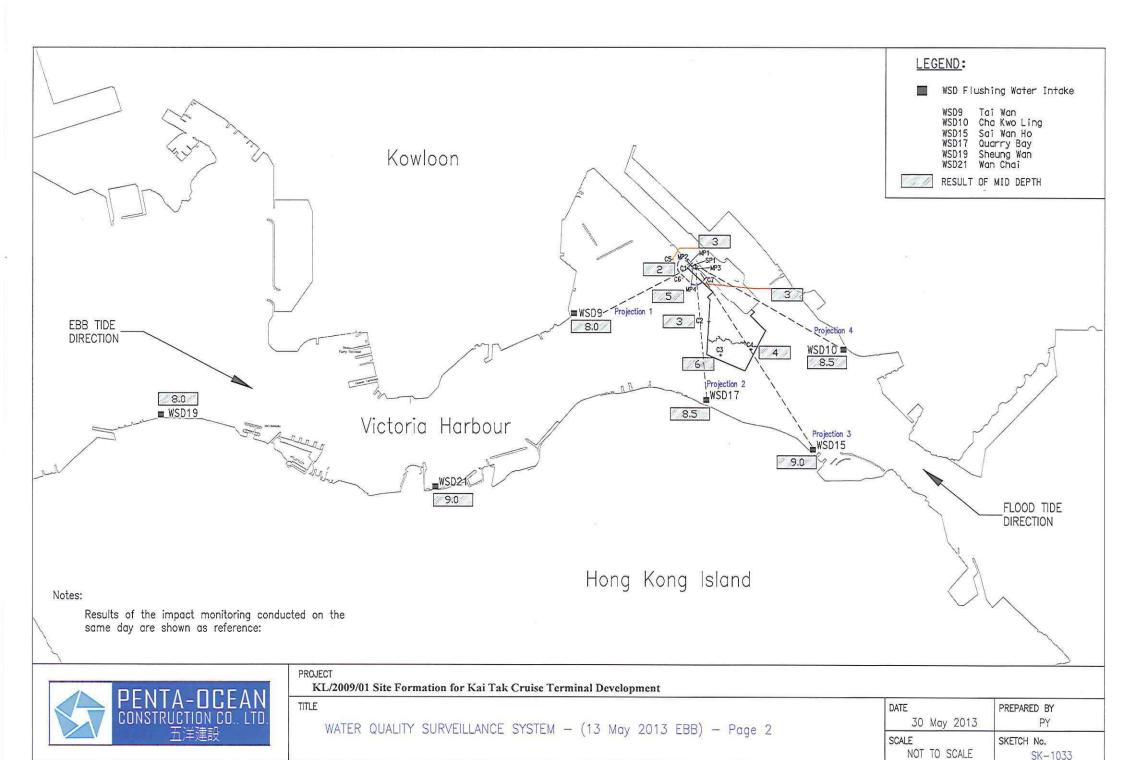
Graphical Presentation of Water Quality Surveillance System

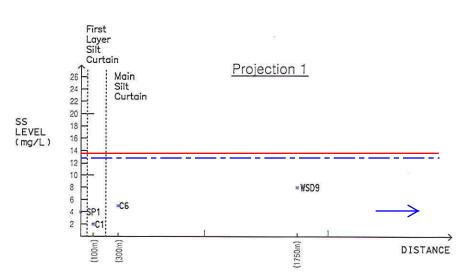
Water Quality Surveillance System Monitoring Results - 13 May 2013 (Ebb Tide)

Ma	uitaulua I aastian	Turbidity in	Compare to	Suspended	Compare to
IVIO	nitoring Location	NTU	Trigger Level	Solids in mg/L	Trigger Level
	1m below the surface	1.74	N/A	4	N/A
SP1	mid depth	1.51	N/A	4	N/A
	1m above the seabed	1.60	N/A	3	N/A
	1m below the surface	1.69	N/A	3	N/A
MP1	mid depth	1.55	N/A	3	N/A
	1m above the seabed	1.41	N/A	7	N/A
11	1m below the surface	2.23	N/A	2	N/A
MP2	mid depth	1.10	N/A	4	N/A
	1m above the seabed	1.31	N/A	3	N/A
	1m below the surface	1.61	N/A	2	N/A
MP3	mid depth	1.83	N/A	3	N/A
	1m above the seabed	1.74	N/A	3	N/A
	1m below the surface	1.89	N/A	4	N/A
MP4	mid depth	1.78	N/A	4	N/A
	Im above the seabed	1.78	N/A	4	N/A
	1m below the surface	1.48	Lower	3	Lower
C1	mid depth	1.69	Lower	2	Lower
	Im above the seabed	1.47	Lower	9	Lower
	1m below the surface	2.20	Lower	4	Lower
C2	mid depth	2.58	Lower	3	Lower
	Im above the seabed	2.37	Lower	5	Lower
	1m below the surface	3.42	Lower	4	Lower
C3	mid depth	3.64	Lower	6	Lower
	Im above the seabed	3.35	Lower	6	Lower
	1m below the surface	2.60	Lower	3	Lower
C4	mid depth	3.91	Lower	4	Lower
	1m above the seabed	3.19	Lower	4	Lower
	1m below the surface	1.86	N/A	3	N/A
C5	mid depth	1.82	N/A	3	N/A
	Im above the seabed	2.89	N/A	3	N/A
	1m below the surface	2.82	N/A	3	N/A
C6	mid depth	2.80	N/A	5	N/A
	Im above the seabed	2.77	N/A	5	N/A
	1m below the surface	2.98	N/A	4	N/A
C7	mid depth	2.20	N/A	3	N/A
955 N	1m above the seabed	2.18	N/A	3	N/A

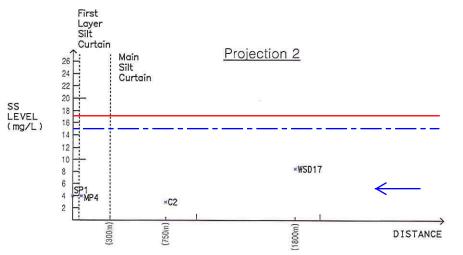
Control Point	Trigger Level for Turbidity in NTU for All Season	Trigger Level for SS in mg/L for Wet Season (April - November)
C1	12.3 for Flood Tide	
C2	12.3 for Flood Tide	18.5
C3	16.9	18.5
C4	10.5 for Ebb Tide	



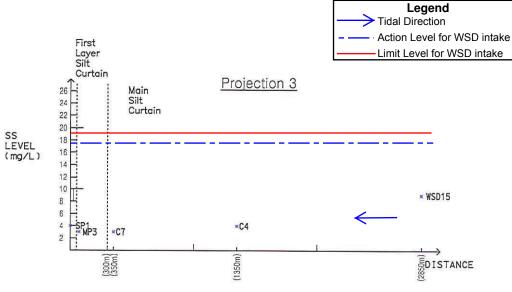




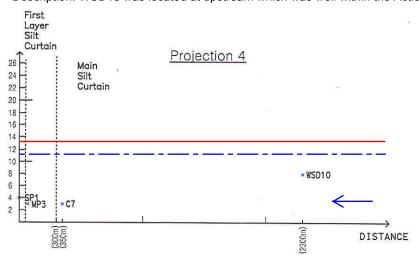
Description: WSD9 was located at downstream which was well within the Action Level.



Description: WSD17 was located at upstream which was well within the Action Level.



Description: WSD15 was located at upstream which was well within the Action Level.



Description: WSD10 was located at upstream which was well within the Action Level.



PROJECT

KL/2009/01 Site Formation for Kai Tak Cruise Terminal Development

SS LEVEL (mg/L)

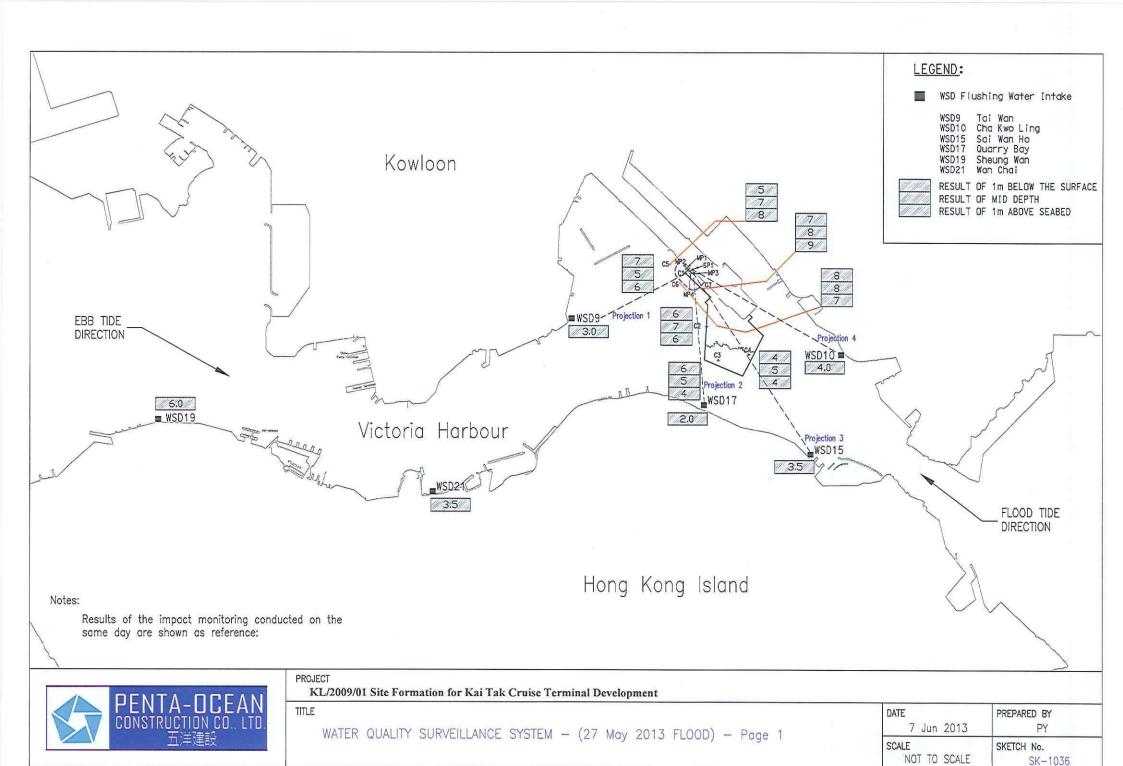
TITLE	GRAPHICAL PRESENTATION OF THE WATER QUALITY SURVEILLANCE SYSTEM MONITORING
	RESULTS AT MID DEPTH — (13 May 2013 EBB

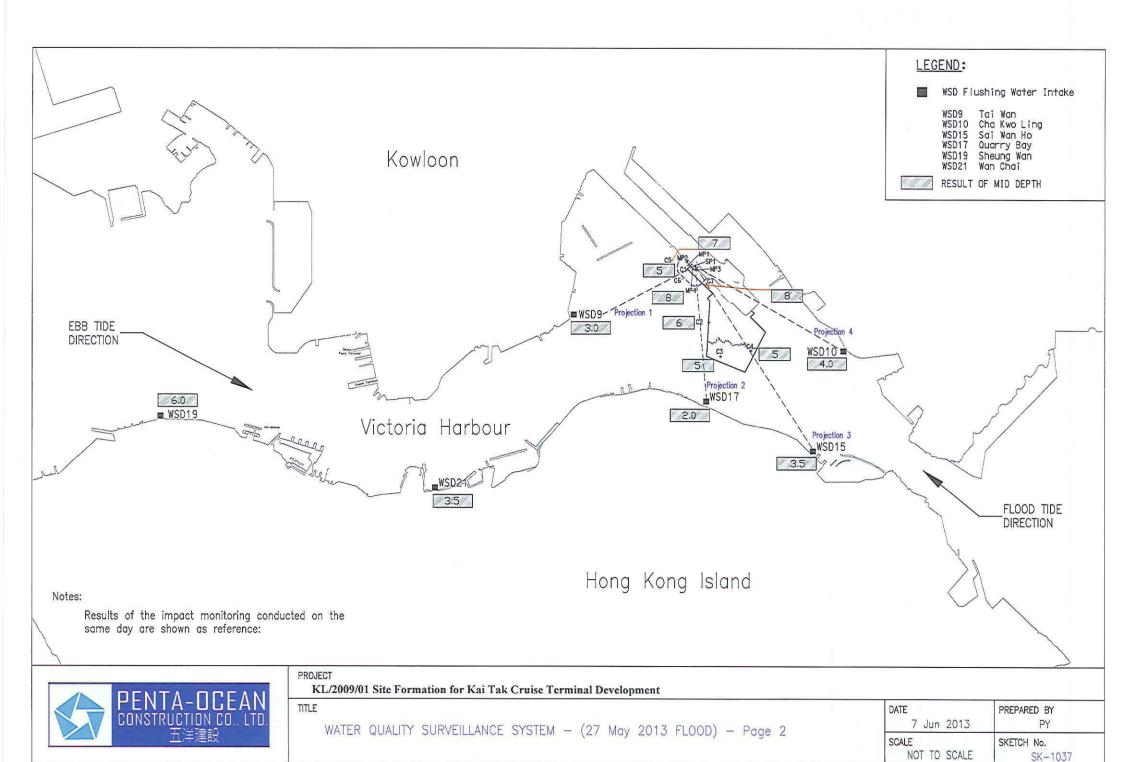
DATE	PREPARED BY
30 May 2013	PY
SCALE	SKETCH No.
NOT TO SCALE	SK-1034

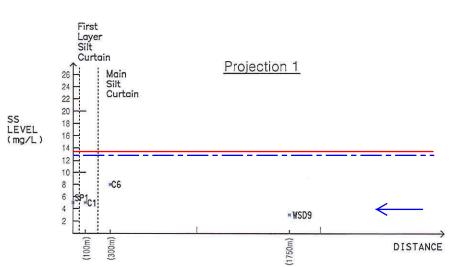
Water Quality Surveillance System Monitoring Results - 27 May 2013 (Flood Tide)

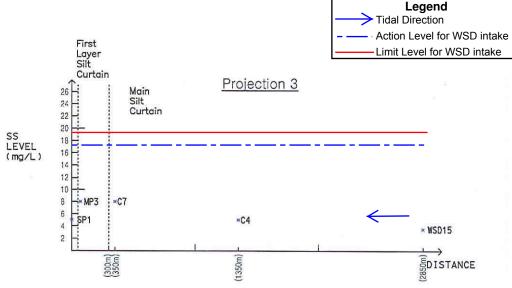
Mo	nitoring Location	Turbidity in	Compare to	Suspended	Compare to
	1m below the surface	NTU 2.07	Trigger Level N/A	Solids in mg/L	Trigger Leve N/A
SP1	mid depth	1.70	N/A	5	N/A
	Im above the seabed	1.44	N/A	8	
	1m below the surface	1.19	N/A N/A	8	N/A N/A
MP1		The second second	W WARREN	8	
IVII ⁻ I	mid depth 1m above the seabed	1.01	N/A N/A		N/A
	1m above the seabed	1.29		8	N/A
MP2		1.63	N/A	6 5	N/A
WIP Z	mid depth	2.16	N/A		N/A
	1m above the seabed	1.85	N/A	6	N/A
MD2	1m below the surface	2.31	N/A	7	N/A
MP3	mid depth	1.40	N/A	8	N/A
	1m above the seabed	1.74	N/A	9	N/A
	1m below the surface	1.31	N/A	6	N/A
MP4	mid depth	1.10	N/A	6	N/A
	1m above the seabed	1.14	N/A	6	N/A
	1m below the surface	1.80	Lower	7	Lower
C1	mid depth	1.53	Lower	5	Lower
	1m above the seabed	1.39	Lower	6	Lower
	1m below the surface	1.48	Lower	6	Lower
C2	mid depth	1.53	Lower	7	Lower
	1m above the seabed	1.45	Lower	6	Lower
	1m below the surface	1.74	Lower	6	Lower
C3	mid depth	1.43	Lower	5	Lower
	1m above the seabed	1.45	Lower	4	Lower
	Im below the surface	1.47	Lower	4	Lower
C4	mid depth	1.44	Lower	5	Lower
	1m above the seabed	1.70	Lower	4	Lower
	Im below the surface	1.48	N/A	5	N/A
C5	mid depth	1.87	N/A	7	N/A
	1m above the seabed	1.80	N/A	8	N/A
	1m below the surface	1.56	N/A	8	N/A
C6	mid depth	1.52	N/A	8	N/A
	1m above the seabed	1.79	N/A	7	N/A
	1m below the surface	1.49	N/A	7	N/A
C7	mid depth	1.07	N/A	8	N/A
501	Im above the seabed	1.92	N/A	9	N/A

Control	Trigger Level for Turbidity in	Trigger Level for SS in mg/L for Wet Season
Point	NTU for All Season	(April - November)
C1	12.3 for Flood Tide	
C2	12.3 for Flood Tide	10.5
C3	16.9	18.5
C4	10.5 for Ebb Tide	



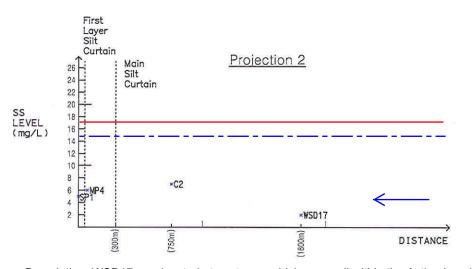


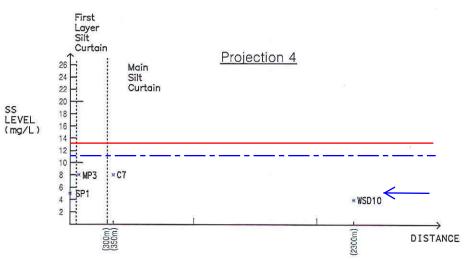




Description: WSD9 was located at downstream which was well within the Action Level.

Description: WSD15 was located at upstream which was well within the Action Level.





Description: WSD17 was located at upstream which was well within the Action Level.

Description: WSD10 was located at upstream which was well within the Action Level.



PROJECT

KL/2009/01 Site Formation for Kai Tak Cruise Terminal Development

TITLE	GRAPHICAL PRESENTATION OF THE WATER
	QUALITY SURVEILLANCE SYSTEM MONITORING
	RESULTS AT MID DEPTH - (27 May 2013 FLOOD)

DATE	PREPARED BY			
7 Jun 2013	PY			
SCALE	SKETCH No.			
NOT TO SCALE	SK-1038			

Appendix 5.7

Details of Notification of Exceedances

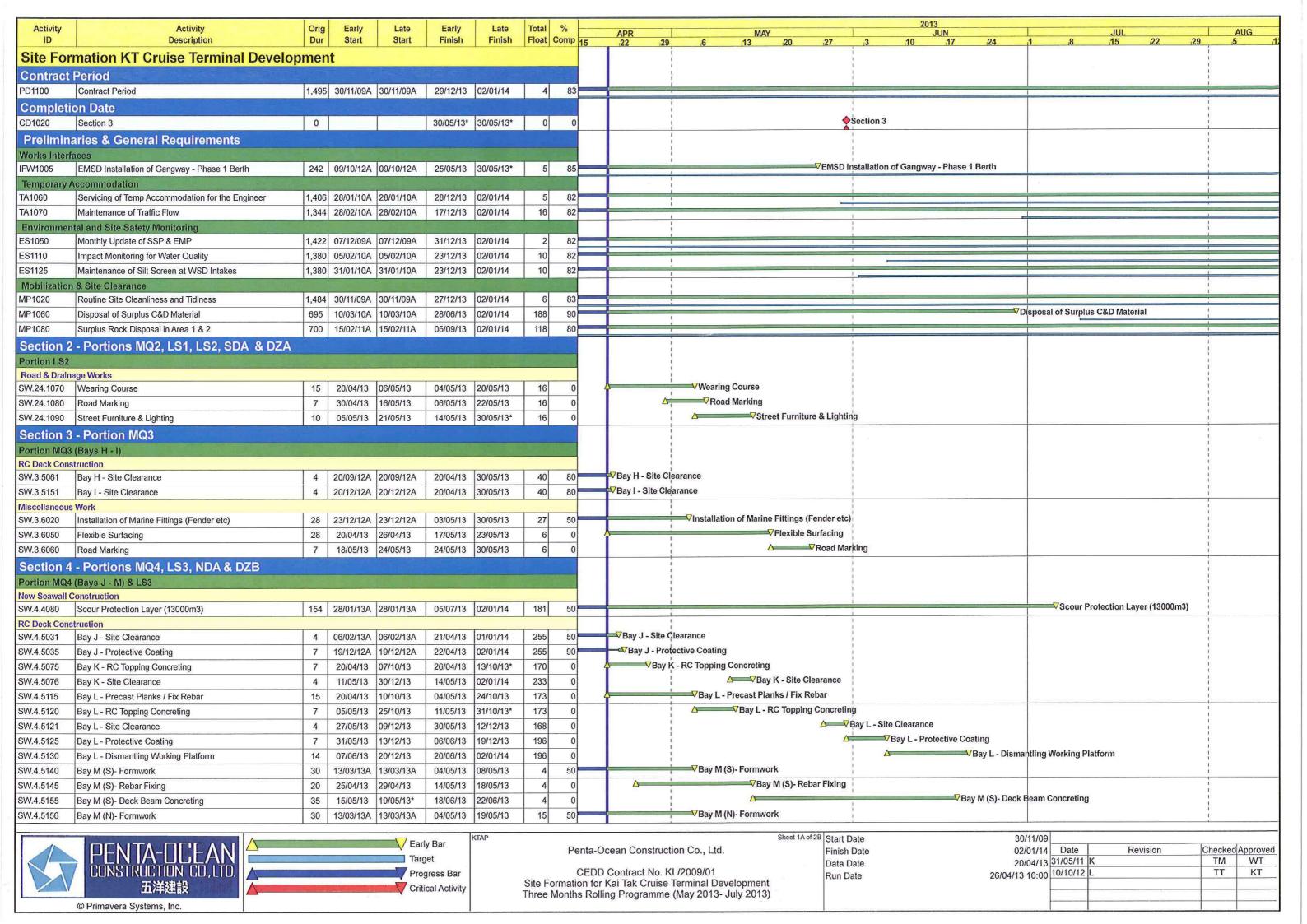
am

Summary for Notification of Exceedance

Ref no.	Date	Tidal	Location	Parameters (Unit)	Average	Action Level	Limit Level	Level of Exceedance	Follow-up action	
X289	6-May-13	Mid-ebb	WSD19	SS (mg/L)	15.0	13.3	16.2	Action Level	Action taken / to be taken:	Silt screen was inspected and confirmed in a proper condition during the water monitoring. Any abnormal observation should be recorded, but no sign of traceable source was visualized and identified during monitoring.
									Possible reason: Remarks / Other Obs:	Localized impact or changes in ambient conditions Since WSD19 was located at the upstream of the Project, it is definitely not caused by the Project works and may be caused by influences in the vicinity of the station, discharge from nearby nullah or changes in ambient conditions. It is concluded that the source of impact was due to variation or change around WSD19 and not related to the project work, and hence no further mitigation nor repeated measurement under the EAP is required.
X290	9-May-13	Mid-flood	WSD17	SS (mg/L)	15.5	14.7	17	Action Level	Action taken / to be taken: Possible reason: Remarks / Other Obs:	Sit screen was inspected and confirmed in a proper condition during the water monitoring. Any abnormal observation should be recorded, but no sign of traceable source was visualized and identified during monitoring. Localized impact or changes in ambient conditions Since WSD17 was located at the upstream of the Project, it is definitely not caused by the Project works and may be caused by influences in the vicinity of the station, discharge from nearby nullah or changes in ambient conditions. It is concluded that the source of impact was due to variation or change around WSD17 and not related to the project work, and hence no further mitigation nor repeated measurement under the EAP is required.

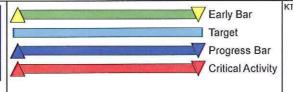
Appendix 9.0

Construction Programme



									2042
Activity	Activity	Orig	Early	Late	Early	Late	Total	%	APR MAY JUN JUL AUG
ID	Description	Dur	Start	Start	Finish	Finish	Float C	omp 15	22 29 6 13 20 27 3 10 17 24 1 8 15 22 29 5
SW.4.5157	Bay M (N)- Rebar Fixing	20	20/04/13A	20/04/13A	08/05/13	18/05/13	10	5	V Bay M (N)- Rebar Fixing
SW.4.5158	Bay M (N)- Deck Beam Concreting	35	09/05/13	19/05/13*	12/06/13	22/06/13	10	0	△ VBay M (N)- Deck Beam Concreting
SW.4.5160	Bay M - Precast Planks	15	19/06/13	10/10/13	03/07/13	24/10/13	113	0	△ ∇Bay M - Precast Planks
SW.4.5165	Bay M - RC Topping Concreting	7	04/07/13	25/10/13	10/07/13	31/10/13*	113	0	△ Bay M - RC Topping Concreting
SW.4.5166	Bay M - Site Clearance	4	25/07/13	09/12/13	29/07/13	12/12/13	117	0	∆ Bạy M - Site Cle
SW.4.5170	Bay M - Protective Coating	7	30/07/13	13/12/13	05/08/13	19/12/13	136	0	∆ V Bay
SW.4.5175	Bay M - Dismantling Working Platform	14	06/08/13	20/12/13	19/08/13	02/01/14	136	0	
Miscellaneous	Work								
SW.4.6014	Bay L- Utilities Trough/Sewerage Inside Deck	35	20/04/13	29/11/13	24/05/13	02/01/14	223	0	VBay L- Utilities Trough/Sewerage Inside Deck
SW.4.6016	Bay M- Utilities Trough/Sewerage Inside Deck	35	19/06/13	29/11/13	23/07/13	02/01/14	163	0	∆ VBay M- Utilities Trough/S
SW.4.6020	Installation of Marine Fittings (Fender etc)	56	11/07/13	08/11/13	04/09/13	02/01/14	120	0	
SW.4.6030	T&C of Corrision Monitoring System	28	11/07/13	06/12/13	07/08/13	02/01/14	148	0	∆ VT
SW.4.6040	Installation of Navigation Light Post	56	11/07/13	08/11/13	04/09/13	02/01/14	120	0	
SW.4.6050	Flexible Surfacing	35	11/07/13	23/11/13	14/08/13	27/12/13	135	0	
Portion NDA	(Bay NDA)						10		
New Seawall C	onstruction								
SW.41.4040	Scour Protection Layer (3250m3)	42	20/04/13	22/11/13	31/05/13	02/01/14	216	0	Scour Protection Layer (3250m3)
RC Deck Cons	truction								
SW.41.5000	Erection of Suspension Soffit Platform	28	12/05/13	03/06/13	08/06/13	30/06/13	22	0	△ VErection of Suspension Soffit Platform
SW.41.5010	Formwork	30	27/06/13	01/07/13	26/07/13	30/07/13	4	0	✓Formwork
SW.41.5020	Rebar Fixing	30	27/07/13	31/07/13	25/08/13	29/08/13	4	0	
Concrete Block	Seawall							8	
SW.41.7050	Insitu Copping	28	20/04/13	06/12/13	17/05/13	02/01/14	230	0	Vinsitu Copping
Portion DZB	一种,这种种种种种种种种种种种种种种种种种种种种种种种种种种种种种种种种种种种								
Dredging Work									
SW.42.1030	Dredging Remaning Area (65400m3)	120	03/01/13A	03/01/13A	01/08/13	02/01/14	154	99	□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □
Section 5	- Portion CA3, CA5B & WA1A								
Transplanting	and Tree Preservation					THE STATE OF THE S			
LS1030	Preservation & Protection of Existing Trees	1,300	03/05/10A	03/05/10A	31/10/13	23/11/13	23	85	





Penta-Ocean Construction Co., Ltd.

CEDD Contract No. KL/2009/01 Site Formation for Kai Tak Cruise Terminal Development Three Months Rolling Programme (May 2013- July 2013)

Sheet 2A of 2B Start Date Finish Date Data Date Run Date 30/11/09
02/01/14
20/04/13
26/04/13 16:00

Date Revision Checked Approved
31/05/11 K TM WT
10/10/12 L TT KT