ARUP

<u>By Hand</u>



Level 5, Festival Walk 80 Tat Chee Avenue Kowloon Tong, Kowloon Hong Kong

> t +852 3767 5800 f +852 3767 5922

> > www.arup.com

The Environmental Impact Assessment Ordinance Register Office Environmental Protection Department 27/F., Southorn Centre 130 Hennessy Road Wan Chai Hong Kong

For the attention of Ms HO Yuen Han, Marlene

25 November 2013

Dear Madam

HyD Contract No. HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Section between HKSAR Boundary and Scenic Hill Submission under Environmental Permit (EP-352/2009/C - Condition 4.4) Monthly EM&A Report – October 2013

On behalf of HyD/HZMB Project Management Office (the Permit Holder) of the captioned Environmental Permit (EP), I submit herewith three hard copies and one electronic copy of Monthly EM&A Report for October 2013 as per Condition 4.4 of EP-352/2009/C.

I confirm that this submission package has been certified by Environmental Team Leader and verified by Independent Environmental Checker.

Yours faithfully

Colin Meadows CRE / Supervising Officer's Representative

ce HyD/HZMBHKPMC EPD AFCD ENPO IEC Arup	 Mr Y K Lam Ms Connie Wong Mr C P Lam Mr Y H Hui Mr Antony Wong Mr Eric Chan 	w/e – CE w/e – one w/e – one w/e – one w/o – By w/e – CE
Response required Date required Attachments	: No : - : Yes	

w/e - CD only
w/e - one hard copy
w/e - one hard copy
w/e - one hard copy and one electronic copy
w/o - By fax only
w/e - CD only

MC/BS/KY/et #03544



Ref.: HYDHZMBEEM00_0_1484L.13

26 November 2013

By Fax (3767 5922) and By Post

ARUP Level 5, Festival Walk 80 Tat Chee Avenue Kowloon Tong, Kowloon

Attention: Mr. Colin Meadows / Mr. Michael Chan

Dear Sirs,

Re: Agreement No. CE 48/2011 (EP) Environmental Project Office for the HZMB Hong Kong Link Road, HZMB Hong Kong Boundary Crossing Facilities, and Tuen Mun-Chek Lap Kok Link – Investigation

Contract No. HY/2011/09 HZMB Hong Kong Link Road – Section between HKSAR Boundary and Scenic Hill Revised Monthly EM&A Report for October 2013 (EP-352/2009/C)

Reference is made to the revised Monthly EM&A Report No. 9 (October 2013) Version 3.0 certified by the Environmental Team Leader (ETL) received by us on 26 November 2013.

We are pleased to inform you that we have no adverse comments and hereby verify the captioned Revised Monthly EM&A Report No. 9 (October 2013) in accordance with Condition 4.4 of EP-352/2009/C.

We would also like to remind the ETL that he is responsible to ensure the EM&A works are properly carried out in accordance with the EP, EM&A Manual and all other documents relevant to EM&A for HY/2011/09 approved by, or with no comments from, the relevant authorities. The ETL is also responsible to ensure all environmental monitoring results shall be true, valid and correct. For monitoring works required to monitor the potential impacts of a particular type of work, it is ETL's responsibility to ensure the relevance of the reporting.

The ETL should be made aware that our verification to this report does not release the ETL any of his obligations to comply with the EM&A Manual and approved monitoring methodologies.

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

Yours sincerely,

Antony Wong Independent Environmental Checker Hong Kong Link Road

c.c. HyD – Mr. Matthew Fung (By Fax: 3188 6614) HyD – Mr. Y K Lam (By Fax: 3188 6614) ARUP – Mr. Eric Chan (By Fax: 2268 3970) Cinotech – Dr. H F Chan (By Fax: 3107 1388) DCVJV – Mr. Chu Chung Sing (By Fax: 3121 6688)

Internal: DY, YH, ENPO Site

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Dragages -China Harbour-VSL JV

Contract HY/2011/09

Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between

HKSAR Boundary and Scenic Hill

Monthly EM&A Report

October 2013 (Version 3.0)

Certified By	May
	Dr. H.F. Chan Environmental Team Leader (Date: 26 November 2013)

REMARKS:

The information supplied and contained within this report is, to the best of our knowledge, correct at the time of printing.

CINOTECH accepts no responsibility for changes made to this report by third parties

CINOTECH CONSULTANTS LTD Room 1710, Technology Park, 18 On Lai Street, Shatin, NT, Hong Kong Tel: (852) 2151 2083 Fax: (852) 3107 1388 Email: <u>info@cinotech.com.hk</u>

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EXECUTIVE SUMMARY

Introduction

1. This is the 9th monthly Environmental Monitoring and Audit (EM&A) Report prepared by Cinotech Consultants Limited for the project "Contract No. HY/2011/09 – Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Section between HKSAR Boundary and Scenic Hill" (hereinafter called the "Contract"). This report documents the findings of EM&A Works conducted in October 2013.

Environmental Monitoring and Audit Progress

2. A summary of the monitoring activities in this reporting month is listed in **Table I** below:

Parameter(s)	Date(s)
1-hr TSP Monitoring	3 rd , 9 th , 15 th , 21 st , 25 th and 31 st October 2013
24-hr TSP Monitoring	3 rd , 9 th , 15 th , 21 st , 25 th and 31 st October 2013
Noise Monitoring	$10^{\text{th}}, 16^{\text{th}}, 22^{\text{nd}}$ and 28^{th} October 2013
Water Quality Monitoring	2 nd , 4 th , 7 th , 9 th , 11 th , 15 th , 17 th , 19 th , 21 st , 23 rd , 25 th , 28 th and 30 th October 2013
Dolphin Monitoring (Line-transect Vessel Surveys)	9 th and 18 th October 2013
Additional Land-based Dolphin Behaviour and Movement Monitoring	⁽¹⁾ N/A
Environmental Site Inspection	2^{nd} , 7 th , 16 th , 22 nd and 29 th October 2013
Archaeological Site Inspection	⁽²⁾ N/A

Table I Summary Table for Monitoring Activities in the Reporting Month

Remark: ⁽¹⁾ The additional land-based dolphin behavior and movement monitoring tentatively scheduled on 30 and 31 October 2013 were not conducted in the reporting month. In view of the construction activities have no significant change in the two months, the monitoring in October and November 2013 will be considered/reviewed in the monthly EM&A report for November 2013.

⁽²⁾No archaeological site inspection was conducted in the reporting month.

Breaches of Action and Limit Levels

3. Summary of the environmental exceedances of the reporting month is tabulated in **Table II**.

Environmental Monitoring	Parameter	No. of Exceedance		No. of Exceedance related to the Construction Activities of this Contract	
		Action Level	Limit Level	Action Level	Limit Level
Air Quality	1-hr TSP	0	0	0	0
All Quality	24-hr TSP	0	0	0	0
Noise	L _{eq(30min)}	0	0	0	0
	Dissolved Oxygen (DO) (Surface & Middle)	0	0	0	0
Water Quality	Dissolved Oxygen (DO) (Bottom)	0	0	0	0
	Turbidity	1	0	0	0
	Suspended Solids (SS)	5	3	0	0

Table IISummary Table for Events Recorded in the Reporting Month

1-hour TSP Monitoring

4. All 1-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

24-hour TSP Monitoring

5. All 24-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

Construction Noise

6. All construction noise monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

Water Quality

- 7. All water quality monitoring was conducted as scheduled in the reporting month. There are five Action Level and three Limit Level exceedances for suspended solids were recorded. One Action Level exceedance for turbidity was recorded.
- 8. According to the investigation, no pollution discharge was observed from the site. In addition, no marine construction works were conducted in vicinity of monitoring station in which exceedances were recorded. Therefore, the exceedances are considered not due to the Contract.

Complaint Log

9. No environmental complaint was received in the reporting month.

Notification of Summons and Successful Prosecutions

10. No notification of summons and successful prosecution was received in the reporting month.

Reporting Changes

11. This report has been developed in compliance with the reporting requirements for the subsequent monthly EM&A Report as required by the EM&A Manual for Hong Kong Link Road (EM&A Manual).

Future Key Issues

12. Major site activities for the coming reporting month will include:

<u>WA4</u>

- Fabrication of rebar cages
- Fabrication of temporary piling platforms

<u>WA7</u>

- Fabrication of rebar cages
- Loading and Unloading

Marine Viaduct (P0 to P84)

- Piling works for the temporary jetty
- Beams and deck installation for jetty
- Installation of temporary casings
- Pile excavation by Reverse Circulation Drilling (RCD) method
- Pile excavation by Kelly method
- Sonic Test
- Installation of permanent casing
- Installation of temporary piles for piling platform
- Predrilling works

Land Viaduct (P85 to P114)

- Land piling and concreting works
- Formation of piling platform along seawall
- Kicker pour for column
- Formation of site access along the top of the existing seawall
- Marine landing access establishment work
- Drainage and water main diversion
- Predrilling works
- Concrete surrounding works for slewed telecommunication cables
- Trench excavation for slewing of AAHK's COM cable
- Tree felling/transplant work

- Pile head excavation / trimming
- Pile cap and column construction

1 INTRODUCTION

1.1 Cinotech Consultants Limited (Cinotech) was appointed by Dragages -China Harbour-VSL JV (hereinafter called "the Contractor") as the Environmental Team (ET) to undertake the Environmental Monitoring and Audit (EM&A) programme during construction phase of the Contract No. HY/2011/09 – Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Section between HKSAR Boundary and Scenic Hill" (hereinafter called the "Contract") in accordance with EP Conditions 2.1.

Purpose of the report

1.2 This is the 9th EM&A report which summarises the impact monitoring results and audit findings for the EM&A programme in October2013.

Structure of the report

1.3 The structure of the report is as follows:

Section 1: Introduction - purpose and structure of the report.

Section 2: **Contract Information** - summarises background and scope of the Contract, site description, project organization and contact details, construction programme, the construction works undertaken and the status of Environmental Permits/Licenses during the reporting month.

Section 3: Air Quality Monitoring - summarises the monitoring parameters, monitoring programmes, monitoring methodologies, monitoring frequency, monitoring locations, Action and Limit Levels, monitoring results and Event / Action Plans.

Section 4: **Noise Monitoring -** summarises the monitoring parameters, monitoring programmes, monitoring methodologies, monitoring frequency, monitoring locations, Action and Limit Levels, monitoring results and Event / Action Plans.

Section 5: Water Quality Monitoring - summarises the monitoring parameters, monitoring programmes, monitoring methodologies, monitoring frequency, monitoring locations, Action and Limit Levels, monitoring results and Event / Action Plans.

Section 6: **Dolphin-Related Monitoring -** summarises the monitoring parameters, monitoring programmes, monitoring methodologies, monitoring frequency, monitoring locations and monitoring results.

Section 7: **Environmental Site Inspection -** summarises the audit findings of the weekly site inspections undertaken within the reporting month.

Section 8: **Environmental Non-conformance** - summarises any monitoring exceedance, environmental complaints, environmental summons and successful prosecutions within the reporting month.

Section 9: **Future Key Issues -** summarises the impact forecast and monitoring schedule for the next three months.

Section 10: Conclusions and Recommendation

2 CONTRACT INFORMATION

Background

- 2.1 The proposed Hong Kong Zhuhai Macao Bridge Hong Kong Link Road (HKLR) is 12km long connecting the Hong Kong-Zhuhai-Macao Bridge (HZMB) at the HKSAR Boundary with the Hong Kong Boundary Crossing Facilities (HKBCF) situated at the north eastern waters of the Hong Kong International Airport, opening a new and direct connection route between Hong Kong, Macao and the Western Pearl River Delta.
- 2.2 The HKLR comprises a 9.4km long viaduct section from the HKSAR boundary to Scenic Hill on the Airport Island; a 1km tunnel section to the reclamation formed along the east coast of the Airport Island and a 1.6km long at-grade road section on the reclamation connecting to the HKBCF. The tunnel section of HKLR will pass under Scenic Hill, Airport Road and Airport Railway to minimize the environmental and visual impacts to Tung Chung residents.
- 2.3 An application (No ESB-110/2003) for an Environmental Impact Assessment (EIA) Study Brief under Section 5(1) of the Environmental Impact Assessment Ordinance (EIAO) was submitted by Highways Department (the Project Proponent) on 8 October 2003 with a Project Profile (No. No. PP-201/2003) for the Hong Kong Zhuhai Macao Bridge Hong Kong Section and North Lantau Highway Connection. The Hong Kong Zhuhai Macao Bridge Hong Kong Section and North Lantau Highway Connection has subsequently been renamed as HKLR. EPD issued an EIA Study Brief (No: ESB-110/2003) in November 2003 to the Project Proponent to carry out an EIA study.
- 2.4 An EIA Study (Reg. No. AEIAR-144/2009) has been undertaken to provide information on nature and extent of environmental impacts arising from the construction and operation of HKLR. The Environmental Permit was issued on 4 November 2009 (Permit No. EP-352/2009). Pursuant to Section 13 of the EIAO, the Director of Environmental Protection amends the Environmental Permit (No. EP-352/2009) based on the Application No. VEP-339/2011 and the environmental Permit (Permit No. EP-352/2009/A) was issued on 9 November 2011 for HKLR to the Highways Department as the Permit Holder. Subsequently, the Director of Environmental Protection amends the Environmental Protection amends the Environmental Permit (No. EP-352/2009/B) based on the Application No. VEP-409/2013 and VEP-411/2013 respectively. The environmental Permit (Permit No. EP-352/2009/C) was then issued on 5 September 2013.
- 2.5 **Figure 1a-d** shows the layout of the Contract and the scope of the Contract works comprises the following major items:
 - a dual 3-lane carriageway in the form of viaduct from the HKSAR boundary (connecting with the HZMB Main Bridge) to the Scenic Hill (connecting with the tunnel under separate Contract No. HY/2011/03), of approximately 9.4km in length with a hard shoulder for each bound of carriageway and a utilities trough on the outer edge of each bound of viaducts;
 - a grade-separated turnaround facility located near San Shek Wan, composed of sliproads in the form of viaduct with single-lane carriageway bifurcated from the HKLR mainline with an elevated junction above the mainline;
 - provision of ancillary facilities including, but not limited to, meteorological enhancement measures including the provisioning of anemometers and

modification of the wind profiler station at hillside of Sha Lo Wan, provisioning of a compensatory marine radar, and provisioning of security systems; and

• associated civil, structural, geotechnical, marine, environmental protection, landscaping, drainage and highways electrical and mechanical (E&M) works, street lightings, traffic aids and sign gantries, marine navigational aids, ship impact protection system, water mains and fire hydrants, lightning protection system, structural health monitoring and maintenance management system (SHM&MMS), supervisory control and data acquisition (SCADA) system, as well as operation and maintenance provisions of viaducts, provisioning of facilities for installation of traffic control and surveillance system (TCSS), provisioning of facilities for installation of telecommunication cables/equipments and reprovisioning works of affected existing facilities/utilities.

Contract Organisation

- 2.6 Different parties with different levels of involvement in the Contract organization include:
 - Supervising Officer's Representative (SOR) Ove Arup & Partners Hong Kong Limited (ARUP)
 - Contractor Dragages China Harbour-VSL JV (DCVJV)
 - Environmental Team (ET) Cinotech Consultants Ltd. (Cinotech)
- 2.7 The proposed project organization and lines of communication with respect to the onsite environmental management structure are shown in **Figure 2**. The key personnel contact names and numbers are summarized in **Table 2.1**.

Party	Position	Position	Phone No.	Fax No.	
SOR	CRE	Mr. Michael Chan	3767 5803	3767 5922	
(ARUP)		Mr. Colin Meadows	3767 5801	5707 5922	
ENPO/IEC	Environmental Project Office Leader	Mr. Y. H Hui	3465 2888	3465 2899	
(Environ) Independent Environmental Checker		Mr. Antony Wong	3465 2888	3465 2899	
	Deputy Project Director	Mr. W.K Poon	3121 6638	2121 ((00	
Contractor (DCVJV)	Environmental Officer	Mr. CHU Chung Sing	3121 6672	3121 6688	
24-hour Hotline			6898 6161		
ET (Cinotech)	Environmental Team Leader	Dr. H.F Chan	2151 2088	3107 1388	

2.8 ENVIRON Hong Kong Ltd. (Environ) is employed by the Highways Department as the Independent Environmental Checker (IEC) and Environmental Project Office (ENPO) for the Project.

8

Construction Programme

2.9 A copy of Contractor's construction programme is provided in **Appendix A**.

Summary of Construction Works Undertaken During Reporting Month

2.10 The major site activities undertaken in the reporting month included:

Land Viaduct (P84 to Eastern Abutment at SHT) and Preparation Works

- (a) Land piling works are in progress with total 15 and 6 no. of pile concreted in Portion C and Portion A respectively. 4 piles were concreted in this reporting period. All land piling machines are now carrying out piling works at Portion A due to existing drainage/watermain diversion and the COM cable of AA inside Portion C still to be diverted;
- (b) Formation of piling platform along seawall continues in progress. 6 nos. of platform (in between P92 to P107) were completed in this reporting period. Four other platforms (in between P84 to P91) were being filled up to level of +3mPD;
- (c) Three kickers at column P108L, P110L & P110R were poured and two column stem sections (P109L & P109R) were poured in this reporting period;
- (d) Rebar threading for coupler started on site in Portion C;
- (e) Tree felling in Portion A & C and continues in progress;
- (f) Tracing of AA COM cables alignment and terminals was completed with report submitted. Cable terminals were also checked in the survey and now slewing works pending for AAHK's works permit. Revised method statement was submitted;
- (g) Marine landing access near P82 commenced operation on 10 October followed a joint inspection with AA on 3 October;
- (h) Drainage diversion work permit was received and excavation works and ELS installation started in this reporting period;
- (i) Construction of ingresses & egresses along Portion A are in progress;
- (j) Trial trenches for pile cap construction at P111 started but disrupted due to uncharted cable was found obstructing the pile cap.

Marine Viaduct (P0 to P84)

- (k) Beams and deck installation for jetty at P69-P70 in progress (100% of piling completed, 60% of beams & 45% of deck installed);
- (l) Installation of temporary casings, jackets and permanent casings carried outat P51L&R, P54L & P65 carried out in this reporting period;
- (m) Dismantling of jacket at P47 was finished;
- (n) Pile excavation by RCD method at P46, P51, P53, P54, P65 and P73 carried out in this reporting period with 17 piles concreted;

- (o) The remaining visas requested by Sambo were granted this month. A 5th working front will start in November 2013;
- (p) Installation of temporary piles, platforms and permanent casings for Kelly method carried out at P18, P38, P39, P40, P41, P42 and P44 in this reporting period;
- (q) Piling platform at P43 and P45 were removed in this reporting period;
- (r) Pile excavation by Kelly method at P19, P20, P40, P43, P44 and P45 carried out in this reporting period with 20 piles concreted;
- (s) Progress at P0 was affected by the interface concrete issues at exceptional depth;
- (t) Inter-face Coring Test and Sonic Testing were carried out to completed piles at P0, P43, P47 and P53 in this reporting period.

Status of Environmental Licences, Notification and Permits

2.11 A summary of the relevant permits, licences, and/or notifications on environmental protection for this Contract is presented in **Table 2.2**.

Table 2.2	Status of Environmental Licences, Notification and Permits
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Denneit / Lie en en Nie	Valid	Period	S 4 = 4 == =
Permit / License No.	From	То	Status
Environmental Permit (EP)	•		
EP-352/2009/C	05/09/2013	N/A	Valid
Consruction Noise Permit (CNP)	•		
Pier 0: GW-RS0353-13	07/04/2013(07:00)	06/10/2013(23:00)	Expired
P19-P20: GW-RS0370-13	17/04/2013(23:00)	16/10/2013(23:00)	Expired
WA3B: GW-RS0499-13	15/05/2013 (00:00)	14/11/2013 (24:00)	Valid
<u>P71-P73:</u> GW-RS0636-13	17/06/2013(19:00)	16/12/2013(23:00)	Valid
WA7: GW-RW0484-13	15/07/2013(23:00)	14/01/2014(07:00)	Valid
WA4: GW-RW0496-13	19/07/2013(19:00)	18/01/2014(23:00)	Valid
P65-P66: GW-RS0865-13	02/08/2013(23:00)	01/02/2014(07:00)	Valid
P76-P80: GW-RS0868-13	02/08/2013(23:00)	01/02/2014(07:00)	Valid
P69-P70: GW-RS0869-13	02/08/2013(23:00)	01/02/2014(07:00)	Valid
WA7:GW-RW0524-13	27/08/2013(19:00)	27/02/2014(23:00)	Valid
WA4B:GW-RW0550-13	12/08/2013(23:00)	11/02/2014(07:00)	Valid
Waters in works area Portion A: GW-RS0895-13	13/08/2013(07:00)	21/10/2013(23:00)	Expired
P16-P18 and P21-P25: GW-RS0975-13	28/08/2013(19:00)	26/02/2014(23:00)	Cancelled
<u>P69-P70:</u> GW-RS0976-13	16/09/2013(19:00)	15/03/2014(23:00)	Valid
P76-P80: GW-RS0981-13	30/08/2013(19:00)	28/02/2014(23:00)	Valid
<u>P0-P21:</u> GW-RS0940-13	23/08/2013(23:00)	22/02/2014(07:00)	Superseded by GW-RS1108-13
<u>P83:</u> GW-RS0956-13	24/08/2013(19:00)	23/02/2014(24:00)	Valid
P46-P64: GW-RS0970-13	27/08/2013(23:00)	26/02/2014(07:00)	Valid
P65-P66: GW-RS0967-13	27/08/2013(19:00)	26/02/2014(23:00)	Valid
P38-P54: GW-RS0986-13	02/09/2013(19:00)	01/03/2014(23:00)	Valid

Valid Period				
Permit / License No.	From To		Status	
P85-P87 and P103-P113:	02/09/2013(19:00)	01/03/2014(23:00)	Valid	
GW-RS0994-13	02/03/2015(15.00)	01/03/2011(25:00)	, und	
P0 – P21: GW-RS1108-13	07/10/2013 (23:00)	06/04/2014 (07:00)	Valid	
P88 – P102: GW-RS1116-13	08/10/2013 (19:00)	06/04/2014 (23:00)	Valid	
<u>P81 – P82:</u> GW-RS1143-13	11/10/2013 (19:00)	10/04/2014 (24:00)	Valid	
Waters in Works Area Portion A:	22/10/2013 (19:00)	23/12/2013 (23:00)	Valid	
GW-RS1164-13				
<u>P0 – P25:</u> GW-RS1166-13	17/10/2013 (19:00)	16/04/2014 (23:00)	Valid	
Notification pursuant to Air Pollut				
345773	04/06/2012	N/A	Receipt acknowledged by	
			EPD	
Billing Account for Construction V	<u> </u>	/ ·		
A/C# 7015341	13/06/2012	N/A	Valid	
(Construction Site)	01/00/2012	20/11/2012	X7 1' 1	
A/C# 7016948 (Vessel Disposal)	01/09/2013	30/11/2013	Valid	
	1			
Registration of Chemical Waste Pr			X7 1' 1	
WPN 5213-951-D2499-01	18/07/2012	N/A	Valid	
Effluent Discharge License under	· · · · · · · · · · · · · · · · · · ·		T T 1' 1	
WA6A(DCVJV site office): WT00014053-2012	12/09/2012	30/09/2017	Valid	
W100014053-2012 WA6B (SOR site office):	30/10/2012	31/10/2017	Valid	
WT00014447-2012	50/10/2012	51/10/2017	v allu	
WA3: WT00015118-2013	30/01/2013	31/01/2018	Valid	
Portion C: WT00015356-2013	22/02/2013	28/02/2018	Valid	
Portion A: WT00016076-2013	21/05/2013	31/05/2018	Valid	
WA4B: WT00014750-2012	12/08/2013	31/08/2018	Valid	
Marine Dumping Permit				
	05/08/2013	04/02/2014	Valid	
Dumping of Phase 1, 2a, 2b, 2c and 2d (Type 1-Open Sea	03/08/2013	04/02/2014	vand	
Disposal) marine sediment				
EP/MD/14-043				
Dumping of Phase Phase 1, 2a,	07/09/2013	06/10/2013	Expired	
<u>2b, 2c and 2d</u>			Ĩ	
(Type 1D and Type 2) marine				
sediment				
EP/MD/14-054	07/10/2012	06/11/2012	T 7 1' 1	
Dumping of Phase Phase 1, 2a, 2b 2c and 2d	07/10/2013	06/11/2013	Valid	
<u>2b, 2c and 2d</u> (Type 1D and Type 2) marine				
sediment				
EP/MD/14-070				

3 AIR QUALITY MONITORING

Monitoring Requirements

- 3.1 In accordance with the EM&A Manual, impact 1-hour TSP and 24-hour TSP monitoring were conducted to monitor the air quality for the Contract. **Appendix B** shows the established Action/Limit Levels for the air quality monitoring works.
- 3.2 Impact 1-hour TSP monitoring was conducted for at least three times every 6 days, while impact 24-hour TSP monitoring was conducted for at least once every 6 days at 2 air quality monitoring stations.

Monitoring Location

3.3 Impact air quality monitoring was conducted at the 2 monitoring stations under the Contract, as shown in Figure 3. Table 3.1 describes the locations of the air quality monitoring stations.

Table 3.1Location for Air Quality Monitoring Locations

Monitoring Stations	Location
AMS1	Sha Lo Wan
AMS4	San Tau

Monitoring Equipment

3.4 **Table 3.2** summarizes the equipment used in the impact air monitoring programme. Copies of calibration certificates are attached in **Appendix C**.

Equipment	Model and Make	Quantity
HVS Sampler	TISCH Model: TE-5170	2
Calibrator	TISCH Model: TE-5025A	2
Wind Anemometer	DAVIS Model: Vantage PRO2 6152CUK	1

Monitoring Parameters, Frequency and Duration

3.5 **Table 3.3** summarizes the monitoring parameters and frequencies of impact dust monitoring during the course of the Contract activities. The air quality monitoring schedule for the reporting month is shown in **Appendix D**.

Table 3.3Impact Dust Monitoring Parameters, Frequency and
Duration

Parameters	Frequency
1-hr TSP	Three times / 6 days
24-hr TSP	Once / 6 days

Monitoring Methodology and QA/QC Procedure

<u>1-hour and 24-hour TSP Air Quality Monitoring</u>

Instrumentation

3.6 High Volume Samplers (HVS) completed with appropriate sampling inlets were employed for air quality monitoring. Each sampler was composed of a motor, a filter holder, a flow controller and a sampling inlet and its performance specification complies with that required by USEPA Standard Title 40, Code of Federation Regulations Chapter 1 (Part 50).

HVS Installation

- 3.7 The following guidelines were adopted during the installation of HVS:
 - Sufficient support was provided to secure the sampler against gusty wind.
 - No two samplers were placed less than 2 meters apart.
 - The distance between the sampler and an obstacle, such as buildings, was at least twice the height that the obstacle protrudes above the sampler.
 - A minimum of 2 meters of separation from walls, parapets and penthouses was required for rooftop samples.
 - A minimum of 2 meters separation from any supporting structure, measured horizontally was required.
 - No furnaces or incineration flues were nearby.
 - Airflow around the sampler was unrestricted.
 - The samplers were more than 20 meters from the drip line.
 - Any wire fence and gate, to protect the sampler, should not cause any obstruction during monitoring.
 - Permission must be obtained to set up the samples and to obtain access to the monitoring stations; and
 - A secured supply of electricity is needed to operate the samplers.

Filters Preparation

- 3.8 Filter paper of size 8" X 10" was used. A HOKLAS accredited laboratory, ETS Testconsult Limited (ETS), was responsible for the preparation of 24-hr conditioned and pre-weighed filter papers for Cinotech's monitoring team.
- 3.9 All filters, which were prepared by ETS, were equilibrated in the conditioning environment for 24 hours before weighing. The conditioning environment temperature was around 25 °C and not variable by more than \pm 3 °C; the relative humidity (RH) was < 50% and not variable by more than \pm 5%. A convenient working RH was 40%.
- 3.10 ETS has comprehensive quality assurance and quality control programmes.

Operating/Analytical Procedures

3.11 Operating/analytical procedures for the air quality monitoring were highlighted as follows:

- Prior to the commencement of the dust sampling, the flow rate of the HVS was properly set (between 1.1 m³/min. and 1.4 m³/min.) in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard Title 40, CFR Part 50.
- The power supply was checked to ensure the sampler worked properly.
- On sampling, the sampler was operated for 5 minutes to establish thermal equilibrium before placing any filter media at the designated air quality monitoring station.
- The filter holding frame was then removed by loosening the four nuts and carefully a weighted and conditioned filter was centered with the stamped number upwards, on a supporting screen.
- The filter was aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter. Then the filter holding frame was tightened to the filter holder with swing bolts. The applied pressure should be sufficient to avoid air leakage at the edges.
- The shelter lid was closed and secured with the aluminum strip.
- The timer was then programmed. Information was recorded on the record sheet, which included the starting time, the weather condition and the filter number (the initial weight of the filter paper can be found out by using the filter number).
- After sampling, the filter was removed and sent to the ETS for weighing. The elapsed time was also recorded.
- Before weighing, all filters were equilibrated in a conditioning environment for 24 hours. The conditioning environment temperature should be between 25°C and 30°C and not vary by more than ± 3 °C; the relative humidity (RH) should be < 50% and not vary by more than ± 5 %. A convenient working RH is 40%. Weighing results were returned to Cinotech for further analysis of TSP concentrations collected by each filter.

Maintenance/Calibration

- 3.12 The following maintenance/calibration was required for the HVS:
 - The high volume motors and their accessories were properly maintained. Appropriate maintenance such as routine motor brushes replacement and electrical wiring checking were made to ensure that the equipment and necessary power supply are in good working condition.
 - All HVS were calibrated (five point calibration) using Calibration Kit prior to the commencement of the baseline monitoring and thereafter at bi-monthly intervals.

Results and Observations

3.13 The monitoring results for 1-hour TSP and 24-hour TSP are summarized in **Table 3.4** and **3.5** respectively. Detailed monitoring results and graphical presentations of 1-hour and 24-hour TSP monitoring results are shown in **Appendices E and F** respectively. _ . .

Table 3.4Summary Table of 1-hour TSP Monitoring Results during the Reporting Month					
Monitoring		Concentration (µg/m3)		Limit Level,	
Station	Average	Range	Level, µg/m ³	μg/m ³	
AMS1	131	55 - 234	381	500	
AMS4	147	60 - 265	352	300	

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AMS4	147	60 - 265	352	500

Table 3.5	Summary Table of 24-hour TSP Monitoring Results during the
	Reporting Month

Monitoring Station	Concentration (µg/m3)		Action	Limit Level, µg/m ³	
Station	Average	Range	Level, µg/m ³	µg/m	
AMS1	96	40 - 156	170	260	
AMS4	91	20 - 130	171	260	

- 3.14 All 1-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.
- 3.15 All 24-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.
- 3.16 According to our field observations, the major dust source identified at the designated air quality monitoring stations in the reporting month are as follows:

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1 a	DIC	J.U	

Observation at Dust Monitoring Stations

Monitoring Station	Major Dust Source
AMS1	Exhaust from marine traffic
AMS4	N/A

- 3.17 The wind speed and wind direction were recorded by the installed Wind Anemometer set at AMS4. The location is shown in **Figure 3**.
- 3.18 The wind data for the reporting month is summarized in Appendix J.

Event and Action Plan

3.19 Should non-compliance of the criteria occur, action in accordance with the Action Plan in **Appendix K** shall be carried out.

4 NOISE MONITORING

Monitoring Requirements

4.1 In accordance with EM&A Manual, two noise monitoring stations, namely NMS1 and NMS4 were selected for impact monitoring for the Contract. Impact noise monitoring was conducted for at least once per week during the construction phase of the Contract. Appendix B shows the established Action and Limit Levels for the noise monitoring works.

Monitoring Location

4.2 Impact noise monitoring was conducted at the 2 monitoring stations under the Contract, as shown in **Figure 3**. **Table 4.1** describes the locations of the air quality monitoring stations.

Table 4.1Location for Air Quality Monitoring Locations

Monitoring Stations	Location
NMS1	Sha Lo Wan
NMS4	San Tau

Monitoring Equipment

4.3 **Table 4.2** summarizes the noise monitoring equipment. Copies of calibration certificates are provided in **Appendix C**.

Table 4.2Noise Monitoring Equipment

Equipment	Model and Make	Qty.
Integrating Sound Level Meter	SVAN 957	2
Calibrator	SV 30A	2

Monitoring Parameters, Frequency and Duration

4.4 **Table 4.3** summarizes the monitoring parameters, frequency and total duration of monitoring. The noise monitoring schedule is shown in **Appendix D**.

Monitoring Stations	Parameter	Period	Frequency
NMS1 NMS4	$\begin{array}{c} L_{10}(30 \text{ min.}) \text{ dB}(A) \\ L_{90}(30 \text{ min.}) \text{ dB}(A) \\ L_{eq}(30 \text{ min.}) \text{ dB}(A) \text{ (as six consecutive } L_{eq, 5min} \\ \text{ readings)} \end{array}$	0700-1900 hrs on normal weekdays	Once per week

_

Monitoring Methodology and QA/QC Procedures

- The microphone head of the sound level meter was positioned 1m exterior of the noise sensitive facade and lowered sufficiently so that the building's external wall acts as a reflecting surface.
- The battery condition was checked to ensure the correct functioning of the meter.
- Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:
 - frequency weighting : A
 - time weighting : Fast
 - time measurement : $L_{eq}(30 \text{ min.}) dB(A)$ (as six consecutive $L_{eq, 5min}$ readings) during non-restricted hours (i.e. 0700-1900 hrs on normal weekdays)
- Prior to and after each noise measurement, the meter was calibrated using a Calibrator for 94.0 dB at 1000 Hz. If the difference in the calibration level before and after measurement was more than 1.0 dB, the measurement would be considered invalid and repeat of noise measurement would be required after recalibration or repair of the equipment.
- During the monitoring period, the L_{eq} , L_{90} and L_{10} were recorded. In addition, site conditions and noise sources were recorded on a standard record sheet.
- Noise measurement was paused temporarily during periods of high intrusive noise (e.g. dog barking, helicopter noise) if possible and observation was recorded when intrusive noise was not avoided.
- Noise monitoring was cancelled in the presence of fog, rain, and wind with a steady speed exceeding 5 m/s, or wind with gusts exceeding 10 m/s. The wind speed shall be checked with a portable wind speed meter capable of measuring the wind speed in m/s.

Maintenance and Calibration

- 4.5 The microphone head of the sound level meter and calibrator were cleaned with a soft cloth at quarterly intervals.
- 4.6 The sound level meter and calibrator were checked and calibrated at yearly intervals.
- 4.7 Immediately prior to and following each noise measurement the accuracy of the sound level meter shall be checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements may be accepted as valid only if the calibration levels from before and after the noise measurement agree to within 1.0 dB.

Results and Observations

4.8 The noise monitoring results are summarized in **Table 4.4**. Detailed monitoring results and graphical presentations of noise monitoring are shown in **Appendices G**.

Table 4.4	Summar Month	y Table of	Nois	e Moni	toring Resu	llts during	g the Reportin	g
		NI	• т	1 Т				

Monitoring Station	Noise Level, I	Leq (30min) dB(A)	I imit I aval
Monitoring Station	Average	Range	Limit Level
NMS1	69	67 - 70	75 dB(A)
NMS4	55	52 - 58	75 uD(A)

Remark: +3dB(A) Façade correction included

- 4.9 All noise monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.
- 4.10 According to our field observations, the major noise source identified at the designated noise monitoring stations in the reporting month are as follows:

Table 4.5Observation at Noise Monitoring Stations				
Monitoring Station	Major Noise Source			
NMS1	Air traffic & marine traffic noise			
NMS4	Air traffic & marine traffic noise			

Event and Action Plan

4.11 Should non-compliance of the criteria occur, action in accordance with the Action Plan in **Appendix K** shall be carried out.

5 WATER QUALITY MONITORING

Monitoring Requirements

- 5.1 According to EM&A Manual, impact water quality monitoring shall be carried out three days per week during the construction period. The interval between two sets of monitoring will not be less than 36 hours.
- 5.2 Replicate in-situ measurements and samples collected from each independent sampling event shall be collected to ensure a robust statistically interpretable database.
- 5.3 Impact water quality monitoring was conducted two times per monitoring day during mid ebb (within + 1.75 hours of the predicted time) and mid flood tides (within + 1.75hours of the predicted time) at three depths (i.e. 1m below surface, mid-depth and 1m above seabed, except where the water depth less than 6m, mid-depth station may be omitted. Should the water depth be less than 3m, only the mid-depth station was monitored) Dissolved oxygen, Suspended solids (SS), turbidity, pH, salinity and temperature were monitored in accordance with the requirements set out in the EM&A Manual.
- 5.4 The proposal for changing Action and Limit Levels for water quality monitoring was submitted to EPD on 15 March 2013. No objection was received from EPD according to the letter (ref. (10) in Ax(3) to EP2/G/A/129pt.4) dated 25 March 2013. Therefore, the updated Action and Limit Levels for water quality monitoring was used for comparison starting from 25 March 2013.
- 5.5 Appendix B shows the established Action/Limit Levels for the water quality monitoring works.

Monitoring Locations

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Impact water quality monitoring was conducted at 14 monitoring stations under the 5.6 Contract which are summarized in **Table 5.1**. The monitoring station is also shown in Figure 4.

Table 5.1	Location for Marine Water Quality Monitoring Locations			
Manitaring Stations	Coordinates			
Monitoring Stations	Easting	Northing		
IS1	803474	815060		
IS2	804851	815715		
IS3	806502	815743		
IS4	807008	816986		
CS1	801784	812711		
CS2	805849	818780		
SR1	803126	812379		
SR2	807856	816953		
SR3	810525	816456		
SR6	805837	821818		
ST1	802677	816006		
ST2	804055	818840		

e 5.1 Location for Marine Water Quality Monitoring Locations
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Monitoring Stations	Coordinates		
Monitoring Stations	Easting	Northing	
ST3	800667	810126	
SRA	809872	817152	

Monitoring Equipment

Instrumentation

5.7 A multi-parameter meters (Model YSI 6820-C-M) were used to measure DO, turbidity, salinity, pH and temperature.

Dissolved Oxygen (DO) and Temperature Measuring Equipment

- 5.8 The instrument for measuring dissolved oxygen and temperature was portable and weatherproof complete with cable, sensor, comprehensive operation manuals and use DC power source. It was capable of measuring:
 - a dissolved oxygen level in the range of 0-20 mg/L and 0-200% saturation; and
 - a temperature of 0-45 degree Celsius.
- 5.9 It has a membrane electrode with automatic temperature compensation complete with a cable.
- 5.10 Sufficient stocks of spare electrodes and cables were available for replacement where necessary.
- 5.11 Salinity compensation was built-in in the DO equipment.

Turbidity

5.12 Turbidity was measured in situ by the nephelometric method. The instrument was portable and weatherproof using a DC power source complete with cable, sensor and comprehensive operation manuals. The equipment was capable of measuring turbidity between 0-1000 NTU. The probe cable was not less than 25m in length. The meter was calibrated in order to establish the relationship between NTU units and the levels of suspended solids. The turbidity measurement was carried out on split water sample collected from the same depths of suspended solids samples.

<u>Sampler</u>

5.13 A water sampler, consisting of a transparent PVC or glass cylinder of a capacity of not less than two litres which can be effectively sealed with cups at both ends was used. The water sampler has a positive latching system to keep it open and prevent premature closure until released by a messenger when the sampler was at the selected water depth.

Water Depth Detector

5.14 A portable, battery-operated echo sounder was used for the determination of water depth

at each designated monitoring station.

<u>рН</u>

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

<u>Salinity</u>

5.16 A portable salinometer capable of recording salinity within the range of 0-40 ppt was used for salinity measurements.

Monitoring Position Equipment

5.17 A hand held Differential Global Positioning System (DGPS) was used during water quality monitoring to ensure the monitoring vessel is at the correct location before taking measurements.

Sample Container and Storage

5.18 Following collection, water samples for laboratory analysis were stored in high density polythene bottles (250ml/1L) with no preservatives added, packed in ice (cooled to 4°C without being frozen) and kept in dark during both on-site temporary storage and shipment to the testing laboratory. The samples were delivered to the laboratory as soon as possible and the laboratory determination works were started within 24 hours after collection of the water samples. Sufficient volume of samples was collected to achieve the detection limit.

Calibration of In Situ Instruments

- 5.19 All in situ monitoring instruments were checked, calibrated and certified by a laboratory accredited under HOKLAS or other international accreditation scheme before use, and subsequently re-calibrated at 3 monthly intervals throughout all stages of the water quality monitoring programme. Responses of sensors and electrodes were checked with certified standard solutions before each use. Wet bulb calibration for a DO meter was carried out before measurement at each monitoring event.
- 5.20 For the on site calibration of field equipment (Multi-parameter Water Quality System), the BS 1427:2009, "Guide to on-site test methods for the analysis of waters" was observed.
- 5.21 Sufficient stocks of spare parts were maintained for replacements when necessary. Backup monitoring equipment was also being made available so that monitoring can proceed uninterrupted even when some equipment was under maintenance, calibration, etc.
- 5.22 The equipment used for impact water quality monitoring is shown in **Table 5.2** and copies of the calibration certificates are shown in **Appendix C**. All the monitoring

equipment complied with the requirements set out in the EM&A Manual.

Table 5.2 Water Quality Monitoring Equipment				
Equipment	Model and Make	Qty		
Sonar Water Depth Detector	Garmin Fishfinder 140	2		
Monitoring Position Equipment	KODEN DGPS (KGP913MKIID, GA-08 & BA-03)	2		
Multi-parameter Water Quality System	YSI 6820-C-M / YSI 6920-M	2		
Water Sampler	Kahlsico Water-Bottle Model 135DW 150	2		

Monitoring Parameters, Frequency

5.23 **Table 5.3** summarizes the monitoring parameters, monitoring period and frequencies of the water quality monitoring. The water quality monitoring schedule for the reporting month is shown in **Appendix D**.

Table 5.3	Water Quality Monitoring Parameters and Frequency			
Monitoring Stations	Parameters, unit	Depth	Frequency	
IS1, IS2, IS3 IS4, CS1, CS2, SR1, SR2, SR3, SR6, ST1, ST2, ST3, SRA	 Temperature(°C) pH(pH unit) turbidity (NTU) water depth (m) salinity (ppt) dissolved oxygen (DO) (mg/L and % of saturation) suspended solids (SS) (mg/L) 	 3 water depths: 1m below sea surface, mid-depth and 1m above sea bed. If the water depth is less than 3m, mid- depth sampling only. If water depth less than 6m, mid-depth may be omitted. 	• Impact monitoring: 3 days per week, at mid-flood and mid-ebb tides during the construction period of the Contract	

5.24 Monitoring location/position, time, water depth, sampling depth, pH, salinity, DO saturation, water temperature, tidal stages, weather conditions and any special phenomena or work underway nearby were recorded.

Monitoring Methodology

Instrumentation

5.25 A multi-parameter meters (Model YSI 6820-C-M) were used to measure DO, turbidity, salinity, pH and temperature.

Operating/Analytical Procedures

5.26 The monitoring stations were accessed by the guide of a hand-held Differential Global Positioning System (DGPS) during water quality monitoring in accordance with the EM&A Manual. The depth of the monitoring location was measured using depth meter in order to determine the sampling depths. Afterwards, the probes of the in-situ measurement equipment were lowered to the predetermined depths (1 m below water surface, mid-depth and 1 m above seabed) and the measurements were carried out accordingly.

- 5.27 At each measurement, two consecutive measurements of DO concentration, DO saturation, salinity, turbidity, pH and temperature were taken. The probes were retrieved out of the water after the first measurement and then re-deployed for the second measurement. Where the difference in the value between the first and second readings of each set was more than 25% of the value of the first reading, the reading was discarded and further readings were taken.
- 5.28 Water sampler was lowered into the water to the required depths of sampling. Upon reaching the pre-determined depth, a messenger to activate the sampler was then released to travel down the wire. The water sample was sealed within the sampler before retrieving. At each station, water samples at three depths (1 m below water surface, middepth and 1 m above seabed) were collected accordingly. Water samples were stored in a cool box and kept at less than 4°C but without frozen and sent to the laboratory as soon as possible. In addition, field information as described in Section 5.23 was also recorded.

Laboratory Analytical Methods

5.29 The testing of all parameters was conducted by CMA Testing and Certification Laboratories (HOKLAS Registration No.004) and comprehensive quality assurance and control procedures in place in order to ensure quality and consistency in results. The testing method, reporting limit and detection limit are provided in **Table 5.4**.

Determinant	Instrumentation	Analytical Method	Detection Limit
Suspended Solid (SS)	Weighing	APHA 21e 2540D	0.5 mg/L

QA/QC Requirements

Decontamination Procedures

5.30 Water sampling equipment used during the course of the monitoring programme was decontaminated by manual washing and rinsed clean seawater/distilled water after each sampling event. All disposal equipment was discarded after sampling.

Sampling Management and Supervision

5.31 All sampling bottles were labelled with the sample I.D (including the indication of sampling station and tidal stage e.g. IS1_me_a), laboratory number and sampling date. Water samples were dispatched to the testing laboratory for analysis as soon as possible after the sampling. All samples were stored in a cool box and kept at less than 4°C but without frozen. All water samples were handled under chain of custody protocols and relinquished to the laboratory representatives at locations specified by the laboratory.

5.32 The laboratory determination works were started within 24 hours after collection of the water samples.

Quality Control Measures for Sample Testing

- 5.33 The samples testing were performed by CMA Testing and Certification Laboratories.
- 5.34 The following quality control programme was performed by the CMA Testing and Certification Laboratories for every batch of 20 samples:
 - \diamond One set of quality control (QC) samples.

Maintenance and Calibration

5.35 All in situ monitoring instruments were checked, calibrated and certified by a laboratory accredited under HOKLAS or other international accreditation scheme before use, and subsequently re-calibrated at 3 monthly intervals throughout all stages of the water quality monitoring programme.

Results and Observations

- 5.36 The monitoring results and graphical presentation of water quality at the monitoring stations is shown in **Appendix H.**
- 5.37 The summary of exceedance record in reporting month is shown in **Appendix L** and summarized in the **Table 5.5**.

Table 5.5Summary of Water Quality Exceedances											
Station	Exceedance	DO		DO(Botto	m)	Turbidity		SS		Total N	lumber
	Level	(Surface	& Middle)			-				of Exceedances	
		Mid-	Mid-	Mid-	Mid-	Mid-	Mid-	Mid-	Mid-	Mid-	Mid-
		Ebb	Flood	Ebb	Flood	Ebb	Flood	Ebb	Flood	Ebb	Flood
IC1	Action Level								11/10/2013	0	1
IS1	Limit Level								09/10/2013	0	1
IS2	Action Level							07/10/2013	11/10/2013	1	1
152	Limit Level									0	0
IS3	Action Level									0	0
155	Limit Level									0	0
IS4	Action Level									0	0
154	Limit Level									0	0
SR1	Action Level									0	0
561	Limit Level									0	0
SR2	Action Level									0	0
5K2	Limit Level									0	0
SR3	Action Level									0	0
3K3	Limit Level									0	0
SR6	Action Level									0	0
SKO	Limit Level								04/10/2013	0	1
ST1	Action Level						23/10/2013			0	1
511	Limit Level								23/10/2013	0	1
ST2	Action Level								07/10/2013	0	1
512	Limit Level									0	0
ST3	Action Level									0	0
515	Limit Level									0	0
SRA	Action Level								02/10/2013	0	1
SKA	Limit Level									0	0
Total	Action Level	0	0	0	0	0	1	1	4		
Total	Limit Level	0	0	0	0	0	0	0	3		

- 5.38 All water quality monitoring was conducted as scheduled in the reporting month. There are five Action Level and three Limit Level exceedances for suspended solids were recorded. One Action Level exceedance for turbidity was recorded.
- 5.39 According to the investigation, no pollution discharge was observed from the site. In addition, no marine construction works were conducted in vicinity of monitoring station in which exceedances were recorded. Therefore, the exceedances are considered not due to the Contract.

Event and Action Plan

5.40 Should non-compliance of the criteria occur, action in accordance with the Action Plan in **Appendix K** shall be carried out.

6 **DOLPHIN-RELATED MONITORING**

Monitoring Requirements

- 6.1 According to Section 10 of the EM&A Manual, four kinds of ecological monitoring works are required during the construction phase, namely dolphin monitoring, construction-phase underwater noise monitoring, dolphin behavior monitoring and landbased dolphin behavior and movement monitoring. The 30 days of construction-phase underwater noise monitoring, dolphin behavior monitoring and land-based dolphin behavior and movement monitoring were completed in July 2013.
- 6.2 The monitoring work shall be undertaken by suitably qualified specialist(s), (i.e. dolphin specialist and bio-acoustician), who shall have sufficient (at least 5-10 years) relevant post-graduate experience and publication in the respective aspects. They should be approved by Agriculture, Fisheries and Conservation Department (AFCD) and Environmental Protection Department (EPD).

Dolphin Monitoring (Line-transect Vessel Survey)

Monitoring Requirements

- 6.3 According to EM&A Manual Section 10.3.2, a dolphin monitoring programme should be set up to verify the predictions of impacts and to ensure that there are no unforeseen impacts on the dolphin population during construction phase.
- 6.4 Following the requirement in the EM&A Manual Section 10.4.1, the dolphin monitoring should adopt line-transect vessel survey method, and cover the following line-transect survey areas as in AFCD annual marine mammal monitoring programme.

Monitoring Location

Table (1

6.5 For this contract, dolphin monitoring will be carried out in the West Lantau (WL) along the line transect as depicted in Figure 1 of Appendix I. The co-ordinates of all transect lines are shown in **Table 6.1**.

Table 6.1			Co-ordinates of transect lines in WL survey area					
Line No.		Easting	sting Northing		Line No.	Easting	Northing	
1	Start Point	803750	818500	7	Start Point	800200	810450	
1	End Point	803750	815500	7	End Point	801400	810450	
2	Start Point	803750	815500	8	Start Point	801300	809450	
2	End Point	802940	815500	8	End Point	799750	809450	
3	Start Point	802550	814500	9	Start Point	799400	808450	
3	End Point	803700	814500	9	End Point	801430	808450	
4	Start Point	803120	813600	10	Start Point	801500	807450	
4	End Point	801640	813600	10	End Point	799600	807450	

C	o-ordinates of	f transect lines in	WL survey area	

Line No.		Easting	Northing	Line No.		Easting	Northing
5	Start Point	801100	812450	11	Start Point	800300	806500
5	End Point	802900	812450	11	End Point	801750	806500
6	Start Point	802400	811500	12	Start Point	801760	805450
6	End Point	800660	811500	12	End Point	800700	805450

Monitoring Frequency

6.6 Dolphin transect survey was carried out at least twice a month (i.e. complete all the transect lines of West Lantau survey area twice per month) throughout the construction period.

Monitoring Day

6.7 Dolphin monitoring was carried out on 9th and 18th October 2013. The dolphin monitoring schedule for the reporting period is shown in **Appendix D**.

Monitoring Results

- 6.8 From these surveys, a total of 64.94 km of survey effort was collected, with 98.0% of the total survey effort being conducted under favourable weather conditions (i.e. Beaufort Sea State 3 or below with good visibility) Out of the 64.94 km of survey effort, the total survey effort conducted on primary lines (the vertical lines perpendicular to the coastlines) was 43.05 km.
- 6.9 7 groups of 21 Chinese White Dolphins were sighted from primary lines. These dolphin groups were mainly concentrated near Tai O Peninsula and Fan Lau, while no sighting was made in the middle portion of the survey area (i.e. between Tai O and Fan Lau). None of the sightings were made near the HKLR09 alignment.
- 6.10 Dolphin encounter rates deduced from the survey effort and on-effort sighting data made under favourable conditions (Beaufort 3 or below) are shown in **Table 6.2**.

Table 6.2Dolphin encounter rates (sightings per 100 km of survey effort)
in October's surveys

	III OCLOD		
		Encounter rate (STG)	Encounter rate (ANI)
		(no. of on-effort dolphin	(no. of dolphins from all on-
		sightings per 100 km of	effort sightings per 100 km of
		survey effort)	survey effort)
		Primary Lines Only	Primary Lines Only
WL	Set 1: Oct 9 th	14.1	28.2
VV L	Set 2: Oct 18 th	19.0	71.1

- 6.11 A total of 16 re-sightings of known individual Chinese White Dolphins were made during the October's surveys.
- 6.12 During this month of dolphin monitoring, marine construction activities have continued under this contract. However, no adverse impact on Chinese white dolphins was noticeable from general observations.

- 6.13 Evaluation of impacts on dolphins due to construction work will be conducted in the quarterly EM&A report.
- 6.14 Detailed monitoring methodology and results can be found in Appendix I.

7 ENVIRONMENTAL SITE INSPECTION

Site Audits

- 7.1 Site audits were carried out by ET on weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Contract site. The summaries of site audits are attached in **Appendix M**.
- 7.2 Site audits were conducted on 2nd, 7th, 16th, 22nd and 29th October 2013 by ET after the commencement of construction works for the Contract. A joint site audit with the representative with IEC, ER, the Contractor and the ET was carried out on 29th October 2013. The details of observations during site audit can refer to **Table 7.1**.
- 7.3 According to EP condition 4.7 and EM&A Manual, periodic monitoring (every three months) of construction works shall be conducted to ensure the avoidance of any impacts on Sha Lo Wan (West) Archaeological Site. Access to Sha Lo Wan (West) Archaeological site for works areas and storage of construction equipment is not allowed. The 3rd inspection to the Sha Lo Wan (West) Archaeological Site was conducted on 10th September 2013 and next inspection will be conducted in December 2013.

Implementation Status of Environmental Mitigation Measures

- 7.4 According to the EIA Study Report, Environmental Permit and the EM&A Manual, the mitigation measures detailed in the documents are recommended to be implemented during the construction phase. An updated summary of the EMIS is provided in **Appendix N**.
- 7.5 Regular marine travel route for marine vessels were implemented properly in accordance with the submitted plan and relevant records were kept properly.
- 7.6 Acoustic decoupling measures for the stationary equipment (generators, winch generators and air compressors) mounted on boards were adopted according to the approved Acoustic Decoupling Measures Plan.
- 7.7 Dolphin exclusion zone was implemented by ET's trained dolphin observer in accordance with EP Condition 3.4. In addition, dolphin exclusion zone and dolphin watching plan according to EM&A Manual, Section 10.2.12 and EP Condition 3.5 was implemented by DCVJV's trained dolphin watcher.
- 7.8 Spill kits and booms are ready on site for the event of accidental spillage of oil or other hazardous chemicals from construction activities including vessels operating for the Contract.
- 7.9 During site inspections in the reporting month, no non-conformance was identified. The observations and recommendations made during the audit sessions are summarized in **Table 7.1**.

Table 7.1	0	bservations and Recommendations	of Site Audit
Parameters	Date	Observations and Recommendations	Follow-up
	02/10/2013	Clear the water at wheel washing bay regularly at Portion C.	Rectification/improvement was observed during the follow-up audit session on 7 October 2013.
	16/10/2013	To repair the damage silt curtain at P20.	Rectification/improvement was observed during the follow-up audit session on 22 October 2013.
Water Quality	22/10/2013	To remove the piles which contact to the sea at Portion A. (near P104)	Rectification/improvement was observed during the follow-up audit session on 29 October 2013.
	29/10/2013	To repair the damage silt curtain at P73.	Rectification/improvement was observed during the follow-up audit session on 5 November 2013.
Ecology	$N/A^{(1)}$	N/A ⁽¹⁾	N/A ⁽¹⁾
Air Quality	07/10/2013	Provide water spray for the dry exposed area at WA4.	Rectification/improvement was observed during the follow-up audit session on 16 October 2013.
And Quanty	29/10/2013	To check and repair the air compressor at P73 to avoid emitting heavy smoke.	Rectification/improvement was observed during the follow-up audit session on 5 November 2013.
Noise	16/10/2013	Provide acoustic decoupling measures for the generator at P73.	Rectification/improvement was observed during the follow-up audit session on 22 October 2013.
	02/10/2013	To plug the drip tray for the generator at Portion C.	Rectification/improvement was observed during the follow-up audit session on 7 October 2013.
	02/10/2013	Clear the oil spillage as chemical waste at WA4.	Rectification/improvement was observed during the follow-up audit session on 7 October 2013.
Waste / Chemical	16/10/2013	Oil leakage was observed from the RCD at P73. The Contractor was reminded to check and repair the equipment, if necessary to avoid further leakage.	Rectification/improvement was observed during the follow-up audit session on 22 October 2013.
Management	22/10/2013	To remove the construction materials / wastes at near the trees at Portion C.	Rectification/improvement was observed during the follow-up audit session on 29 October 2013.
	22/10/2013	To clear the oil stains at near the threading machine.	Rectification/improvement was observed during the follow-up audit session on 29 October 2013.
	22/10/2013	To clear the packing wastes at near the threading machine.	Rectification/improvement was observed during the follow-up audit session on 29 October 2013.
Landscape & Visual Impact	N/A ⁽¹⁾	N/A ⁽¹⁾	N/A ⁽¹⁾
Permits/Licences	29/10/2013	To update the environmental permit which displayed at P65.	Rectification/improvement was observed during the

Parameters	Date	Observations and Recommendations	Follow-up
			follow-up audit session on 5 November 2013.
Cultural Heritage (Sha Lo Wan (West) Archaeological Site)	N/A ⁽²⁾	N/A ⁽²⁾	N/A ⁽²⁾

Remark: N/A⁽¹⁾ No major environmental deficiency was identified during the site inspection in the reporting month.

 $N/A^{(2)}$ No archaeological site inspection was conducted in the reporting month.

Advice on the Solid and Liquid Waste Management Status

- 7.10 According to the Contractor, 15,068m³ inert C&D materials were generated during the reporting month.
- 7.11 The Contractor was advised to minimize the wastes generated through the recycling or reusing. All mitigation measures stipulated in approved waste management plan shall be fully implemented.
- 7.12 The amount of wastes generated by the activities of the Contract during the reporting month is shown in **Appendix O**.

8 ENVIRONMENTAL NON-CONFORMANCE (EXCEEDANCES)

Summary of Exceedances

- 8.1 Summary of exceedance is provided in Appendix L.
- 8.2 No Action/Limit Level exceedance was recorded for air quality and construction noise.
- 8.3 All water quality monitoring was conducted as scheduled in the reporting month. There are five Action Level and three Limit Level exceedances for suspended solids were recorded. One Action Level exceedance for turbidity was recorded.
- 8.4 According to the investigation, no pollution discharge was observed from the site. In addition, no marine construction works were conducted in vicinity of monitoring station in which exceedances were recorded. Therefore, the exceedances are considered not due to the Contract.

Summary of Environmental Complaint

8.5 No environmental related complaint was received in the reporting month. The Complaint Log is attached in **Appendix P**.

Summary of Notification of Summons and Successful Prosecution

8.6 There was no prosecution or notification of summons received since the Contract commencement.

9 FUTURE KEY ISSUES

Key Issues in the Coming Month

9.1 Major site activities for the coming reporting month will include:

<u>WA4</u>

- Fabrication of rebar cages
- Fabrication of temporary piling platforms

<u>WA7</u>

- Fabrication of rebar cages
- Loading and Unloading

Marine Viaduct (P0 to P84)

- Piling works for the temporary jetty
- Beams and deck installation for jetty
- Installation of temporary casings
- Pile excavation by Reverse Circulation Drilling (RCD) method
- Pile excavation by Kelly method
- Sonic Test
- Installation of permanent casing
- Installation of temporary piles for piling platform
- Predrilling works

Land Viaduct (P85 to P114)

- Land piling and concreting works
- Formation of piling platform along seawall
- Kicker pour for column
- Formation of site access along the top of the existing seawall
- Marine landing access establishment work
- Drainage and water main diversion
- Predrilling works
- Concrete surrounding works for slewed telecommunication cables
- Trench excavation for slewing of AAHK's COM cable
- Tree felling/transplant work
- Pile head excavation / trimming
- Pile cap and column construction

Monitoring Schedule for the Next Month

9.2 The tentative environmental monitoring schedule for the next month is shown in **Appendix D**.

Construction Programme for the Next Month

9.3 A tentative construction programme is provided in **Appendix A**.

10 CONCLUSIONS AND RECOMMENDATIONS

Conclusions

- 10.1 The Environmental Monitoring and Audit (EM&A) Report presents the EM&A works undertaken in October 2013 in accordance with EM&A Manual.
- 10.2 No Action/Limit Level exceedance was recorded for air quality and construction noise.
- 10.3 For water quality monitoring, there are five Action Level and three Limit Level exceedances for suspended solids were recorded. One Action Level exceedance for turbidity was recorded.
- 10.4 According to the investigation, no pollution discharge was observed from the site. In addition, no marine construction works were conducted in vicinity of monitoring station in which exceedances were recorded. Therefore, the exceedances are considered not due to the Contract.
- 10.5 Dolphin transect survey was carried out on 9th and 18th October 2013. No adverse impact on Chinese White Dolphins was noticeable from general observations.
- 10.6 Environmental site inspection was conducted on 2nd, 7th, 16th, 22nd and 29th October 2013 by ET in the reporting month. All deficiencies identified during the site inspection have already rectified / improved during the follow-up audit session.
- 10.7 No inspection to the Sha Lo Wan (West) Archaeological Site was conducted in the reporting month.
- 10.8 There was no environmental complaint, no notification of summons and successful prosecution received.
- 10.9 The ET will keep track on the EM&A programme to ensure compliance of environmental requirements and the proper implementation of all necessary mitigation measures.

Recommendations

10.10 According to the environmental audit performed in the reporting month, the following recommendations were made:

Air Quality Impact

- To regularly maintain the quality of machinery and vehicles on site.
- To implement dust suppression measures on all haul roads, stockpiles, dry surfaces and excavation works.
- To provide hoarding along the entire length of that portion of the site boundary.

Noise Impact

- To inspect the noise sources inside the site.
- To space out noisy equipment and position the equipment as far away as possible from sensitive receivers.
- To provide temporary noise barriers for operations of noisy equipment near the noise sensitive receivers, if necessary.

Water Impact

- To prevent any surface runoff discharge into any stream course and sea.
- To review and implement temporary drainage system.
- To identify any wastewater discharges from site.
- To ensure properly maintenance for de-silting facilities.
- To clear the silt and sediment in the sedimentation tanks.
- To review the capacity of de-silting facilities for discharge.
- To divert all the water generated from construction site to de-silting facilities with enough handling capacity before discharge.
- To avoid accumulation of stagnant and ponding water on site.

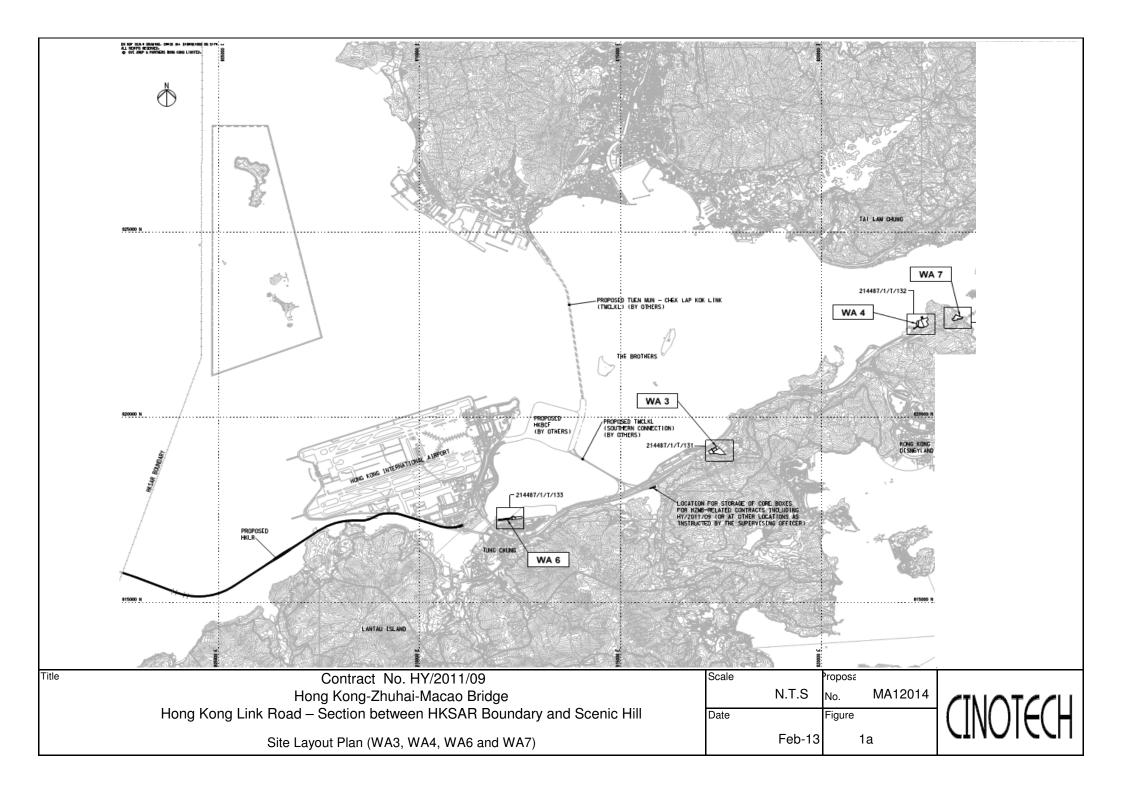
Ecology Impact

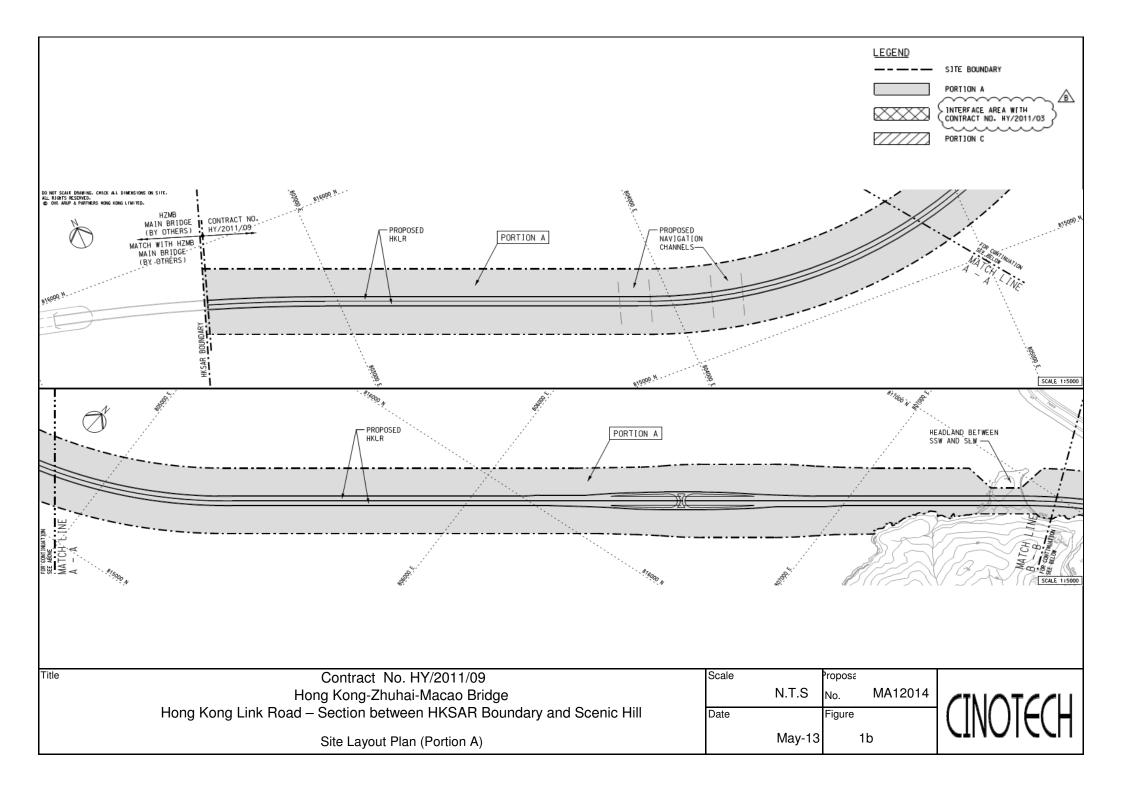
- To implement Spill Response Plan in the event of accidental spillage of or other hazardous chemicals.
- To implement Dolphin Exclusion Zone during the installation of bored pile casing located in the waters to the west of Airport.
- To implement Dolphin Watching Plan after the bored piling casing is installed.
- To ensure the acoustically-decoupled measures were implemented for air compressors and other noisy equipment mounted on construction vessels according to acoustic decoupling measures plan.

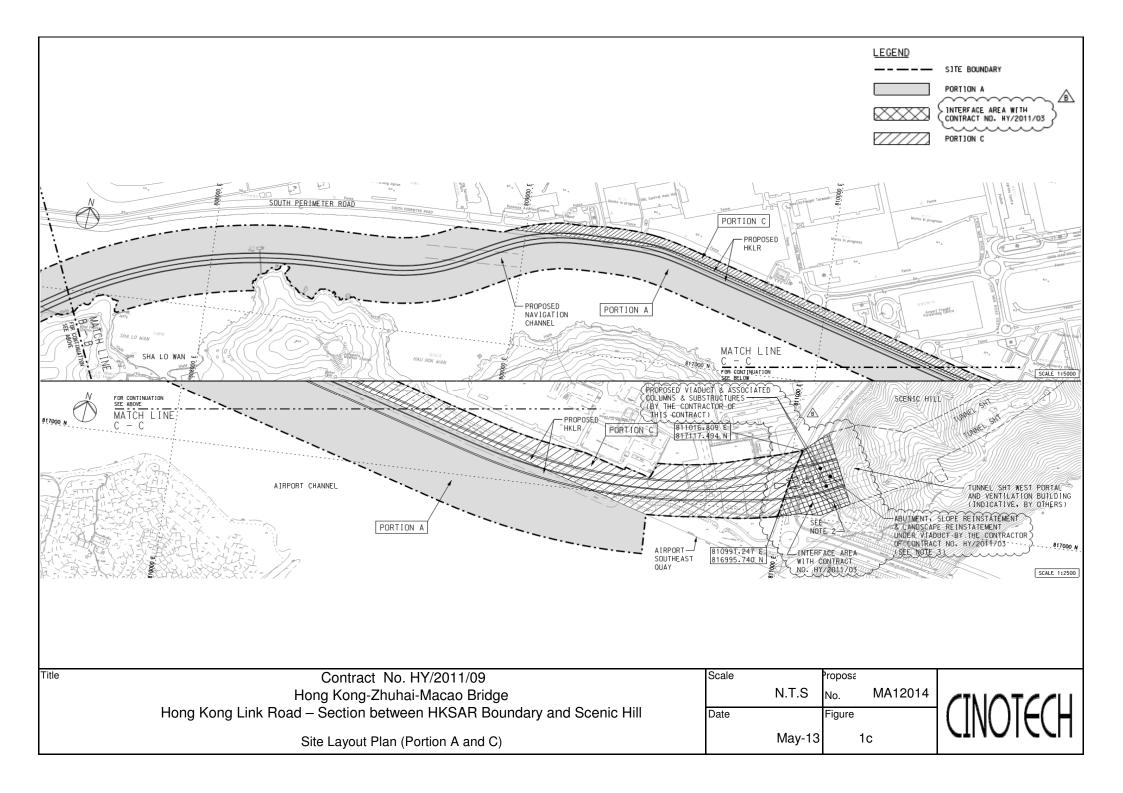
Waste/Chemical Management

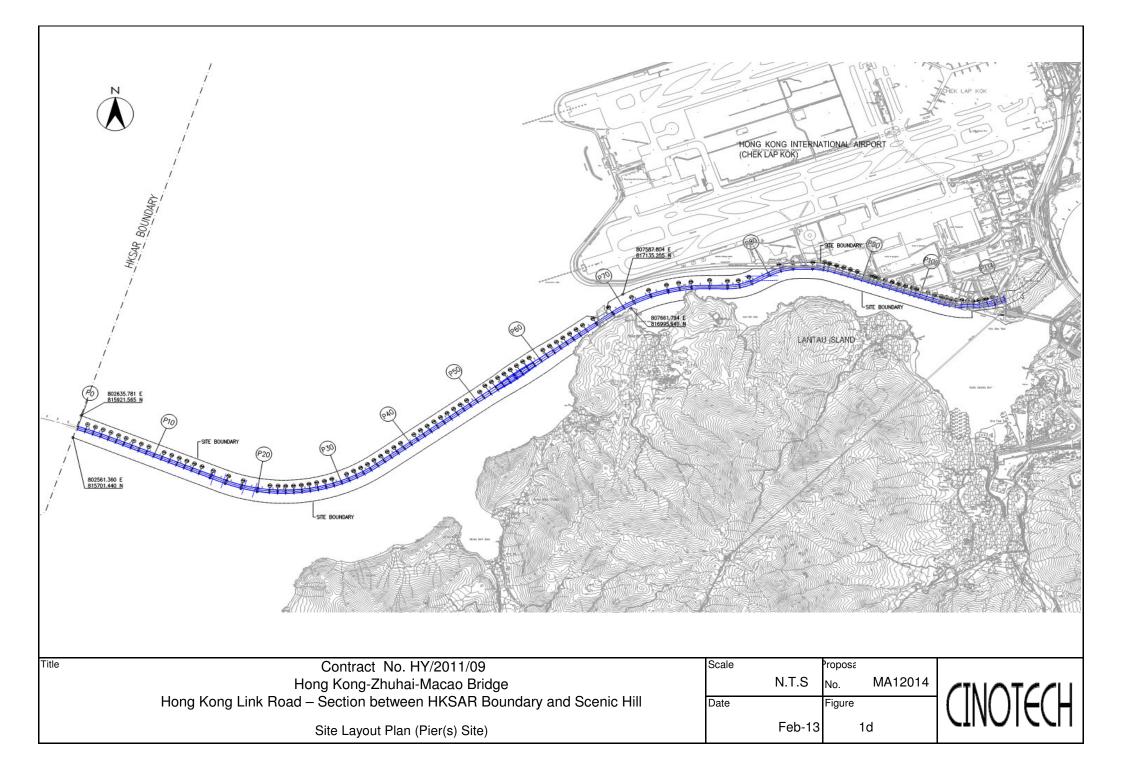
- To check for any accumulation of waste materials or rubbish on site.
- To ensure the performance of sorting of C&D materials at source (during generation);
- To carry out inspection of dump truck at site exit to ensure inert and non-inert C&D materials are properly segregated before removing off site.
- To avoid any discharge or accidental spillage of chemical waste or oil directly from the site.
- To avoid improper handling or storage of oil drum on site.

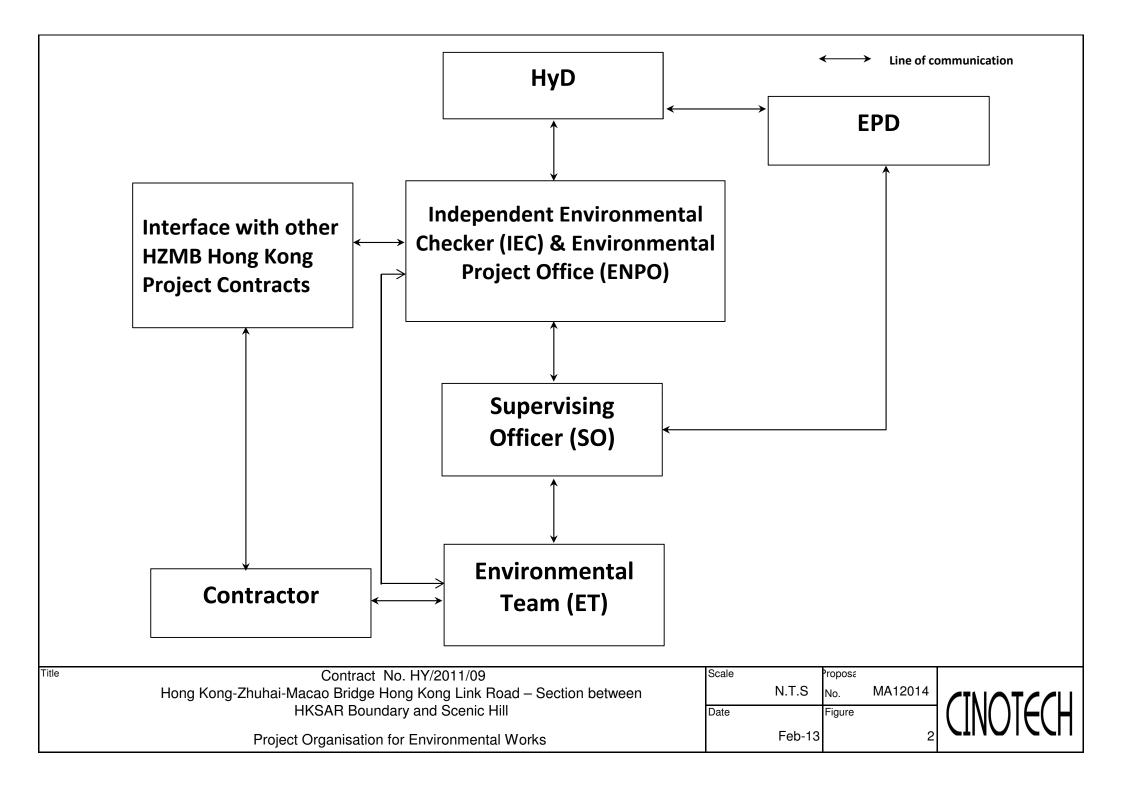
FIGURE(S)

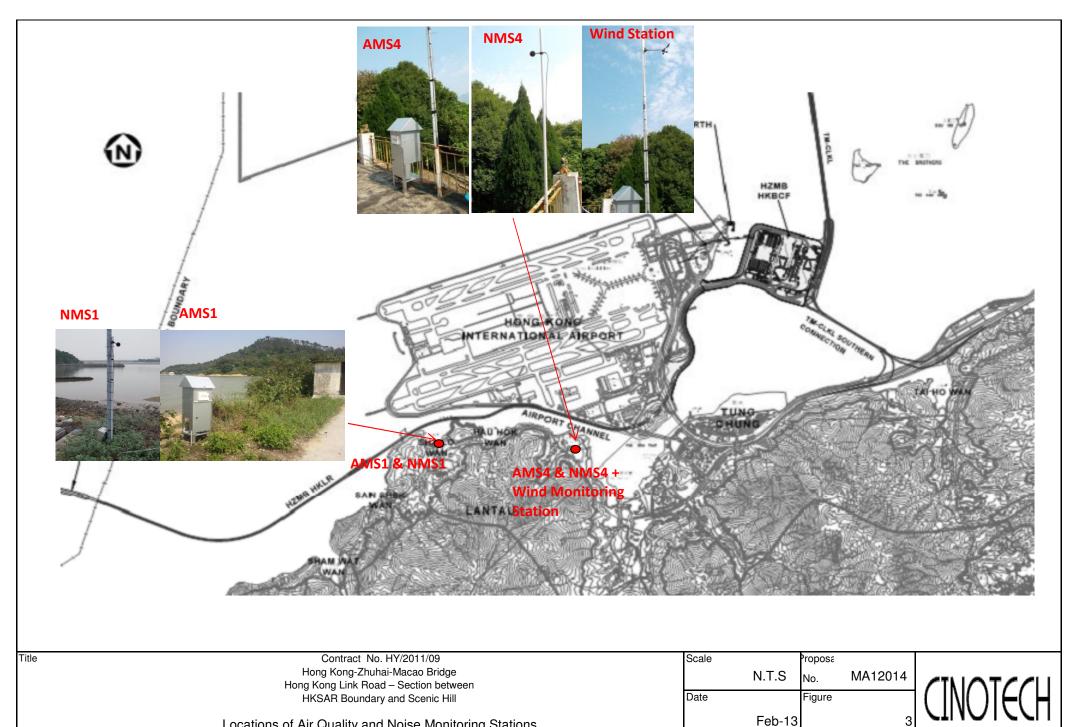




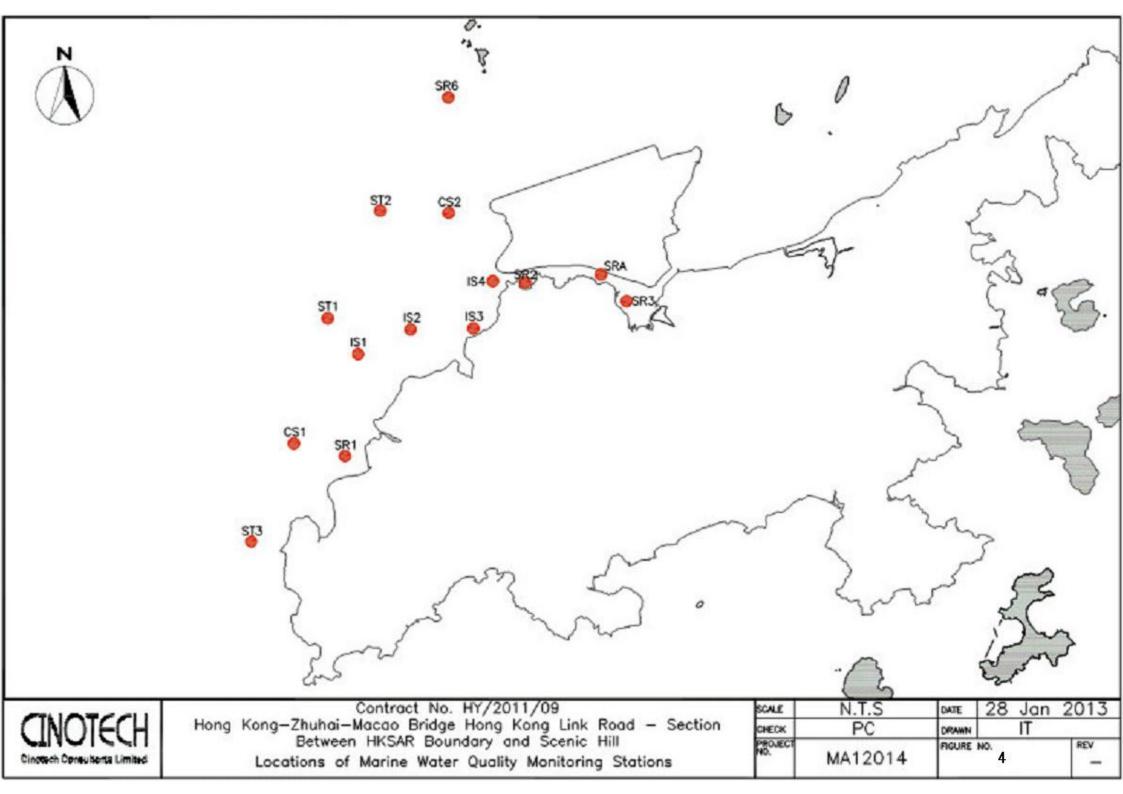








Locations of Air	Quality	and	Noise	Monitorina	Stations
Locations of Air	Quanty	anu	110136	wormoning	Jations



APPENDIX A CONSTRUCTION PROGRAMME

D	larbour - VSL Joint Venture 寶嘉 - 中國港灣 - 武勝利聯盟 Activity Name	Original Re Duration I	maining Start Duration	Finish	DWP01A Start	DWP01A Finish	DWP00B Start	DWP00B Finish		October				2013 Nover	nber		AL	Decemi	per			2014 January	
ZB Hong K	∣ ong Link Road - 3 Months Rolling Programme 1310 (B	ased on DWP	_01a)	_					29 06	13	20	27	03	10	17 2	1	01	08	15 2	2	29 0	35 12	2 1
oject Key Dat	es																						
01007	Completion of Stage 1 of Works (548d) Complete interface pier with HZMB	0	0	29/11/13*		29/11/13										♦ Com	letion of Stage	1 of Works (5	48d) Complete	interface pier	with HZMB		
01010	Forecast completion of Stage 1	0	0	22/01/14		05/12/13		29/11/13															•
sign and Des	ign Checking of the Works																						
etailed Design	Approval (DDA)																						
oundation																							
Vestern Water																							
	Approve Design DDA - ML02L/R	35	1 15/09/13	A 28/10/13	25/08/13	28/09/13						Appr	ove Design DDA	A ML02L/R									
DDA04.01-40	Approve Design DDA - ML04L/R	35	1 30/08/13	A 28/10/13	03/09/13	07/10/13						Appr	ove Design DD/	A-ML04L/R									
Airport Channe																							
DDA13.01-40	Approve Design DDA - ML13L/R	35	1 30/08/13	A 28/10/13	10/08/13	13/09/13						Appr	ove Design DD/	A ML13L/R									
	Comment Design DDA - ML14L/R	35	1 30/08/13	A 28/10/13	08/08/13	11/09/13						Com	ment Design DE	DA- ML14L/R									
DDA14.01-30	Resubmit Design DDA with DC Certificate - ML14L/R	25	25 29/10/13	22/11/13	12/09/13	06/10/13									Resubn	nit Design D	DA with DC Ce	rtificate ML1	4L/R				
DDA14.01-40	Approve Design DDA - ML14L/R	35	35 23/11/13	27/12/13	07/10/13	10/11/13								-						Approv	we Design DDA	A- ML14L/R	
irport Island																							
DDA15.01-30	Resubmit Design DDA with DC Certificate - ML15L/R	25	0 28/08/13	A 17/10/13 A	17/08/13	10/09/13				F	lesubmit Deerg	DA with	DC Certificate -	ML15L/R									
DDA15.01-40	Approve Design DDA - ML15L/R	35	23 17/10/13	A 19/11/13	11/09/13	15/10/13									Approve Desi	n DDA - M	15L/R						
DDA16.01-40	Approve Design DDA - ML16L/R	35	0 19/09/13	A 28/10/13	18/08/13	21/09/13						Appro	ve Design DDA	- ML16L/R									
bstructure																							
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DA01.02-40	Approve Design DDA - ML01L/R	35	1 07/09/13	A 28/10/13	10/08/13	13/09/13						Appr	ove Design DDA	A-ML01L/R									
DA02.02-10	Prepare and submit Design DDA - ML02L/R	30	0 26/08/13	A 30/09/13 A	02/11/13	01/12/13							_				repare and sub	mit Design DI	DA - ML02L/R				
DDA02.02-20	Comment Design DDA - ML02L/R	35	6 30/09/13	A 02/11/13	02/12/13	05/01/14										-					Cc	omment Design [DDA - ML02
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DDA06.02-30	Resubmit Design DDA with DC Certificate - ML06L/R	25	0 26/07/13	A 28/10/13	18/07/13	11/08/13						Resu	omil Design DD	A with DC Cert	ficate - ML06L/R								
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DA07.02-30	Resubmit Design DDA with DC Certificate - ML07L/R	25	0 14/06/13	A 28/10/13	14/06/13	08/07/13						Resu	omit Design DD	A with DC Cert	ficate - ML07L/R								
DA07.02-40	Approve Design DDA - ML07L/R	35	35 28/10/13	01/12/13	15/07/13	18/08/13										A	oprove Design	DDA - ML07L	/R				
DA08.02-30	Resubmit Design DDA with DC Certificate - ML08L/R (with trunaround)	25	0 26/07/13	A 28/10/13	15/07/13	08/08/13						Resu	omit Design DD	A with DC Cert	ficate - ML08L/R (with								
DA08.02-40	Approve Design DDA - ML08L/R (with trunaround)	35	35 28/10/13	01/12/13	09/08/13	12/09/13											oprove Design	DDA - MI 081	/R (with trunaro	und)			
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vigation Cha																					+		
DA03.02-30	Resubmit Design DDA with DC Certificate - ML03L/R (with Dolphin)	25	0 19/07/13	A 28/10/13	15/07/13	08/08/13						Reci	mil Design DD	A with DC Cort	ficate - ML03L/R (with	Dolphin)							
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rport Channe																*	pprove upsign	JJA - MILUJI	(with Dolpfill	7			
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ages - China Harbour - VSL Joint Venture 寶嘉 - 中國港湾 - 或勝利聯盟 Activity Name	Original Duration	Remaining Start	Finish	DWP01A Start	DWP01A Finish	DWP00B Stort	DWP00B Finish	October			2013 Now	omber			December		20	J14
A11.02-30 Resubmit Design DDA with DC Certificate - ML11L/R	25	0 27/06/13 A	28/10/12	15/07/13	Finish 08/08/13	Start	Finish	06 13 20						01	08 15 22	29	05	12
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All:02-40 Approve Design DDA - METTER All:02-30 Resubmit Design DDA with DC Certificate - ML12L/R	25	0 23/08/13 A		19/08/13	12/09/13								-	Approve D	Design DDA - ML11L/R			
					17/10/13				Res	ubmit Design D	DA with DC Cer	tificate - ML12	L/R					
A12.02-40 Approve Design DDA - ML12L/R A13.02-30 Resubmit Design DDA with DC Certificate - ML13L/R	35	35 28/10/13 0 12/09/13 A	01/12/13	13/09/13	04/10/13								:	Approve D	Design DDA - ML12L/R			
A13.02-30 Approve Design DDA - ML13L/R	35		01/12/13	05/10/13	08/11/13				Res	ubmit Design D	DA with DC Cer	tificate - ML13I	L/R					
A13.02-40 Approve Design DDA - ML13L/R A14.02-20 Comment Design DDA - ML14L/R	35	0 24/09/13 A		23/09/13	27/10/13								: 1	Approve D	Design DDA - ML13L/R			
A14.02-20 Comment Design DDA - WE14DR A14.02-30 Resubmit Design DDA with DC Certificate - ML14L/R	25		21/11/13	28/10/13	21/11/13				Con	ment Design D	DA - ML14L/R							
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A15.02-20 Comment Design DDA - ML15L/R	35	0 29/08/13 A	02/10/12 4	23/08/13	26/09/13													
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A15.02-40 Approve Design DDA - ML15L/H A16.02-30 Resubmit Design DDA with DC Certificate - ML16L/R	25	0 22/08/13 A		19/08/13	12/09/13									Approve D	Design DDA - ML15L/R			
A16.02-30 Approve Design DDA - ML16L/R A16.02-40 Approve Design DDA - ML16L/R	35		01/12/13	13/09/13	17/10/13				Res	upmit Design D	DA with DC Cer	titicate - ML16	L/H					
A15.02-40 Approve Design DDA - ML15L/H A17.02-30 Resubmit Design DDA with DC Certificate - ML17L/R	25	0 20/08/13 A		09/08/13	02/09/13					1 - E			: 1	Approve D	Design DDA - ML16L/R			
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DWP_01a Programme Critical Remaining Work HKZB Hong Kong Link Road - 3 Months Rolling Actual Work Milestone Programme 1310 (Based on DWP_01a)		- •			•			ΠK.							ig	29/10/13	3 131	0 rollin	g			Tim	n	



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Statuction Noise Permit S2445 Submit and S2455 Submit and S2455 Submit and S151840 Obtained p Inporary Piling Platform/ S1670 Design app S1680 Design app	nit and approve CNP for Bored Piles (P0 to P84) and approve CNP for LG2 al of Marine Sediment (if necessary) ed perimt for delivery material to Mainland	90											Subm	it and App
S2445 Submit and S2445 Submit and S152455 Submit and ses-boundary Disposal o Obtained p nporary Pitting Platform/ S1670 Design app S1680 Design app	and approve CNP for Bored Piles (P0 to P84) : and approve CNP for LG2 al of Marine Sediment (if necessary) ed perimt for delivery material to Mainland	90												
IS2455 Submit and IS2455 Submit and IS1840 Obtained p IS1840 Platform/ IS1670 Design ten IS1680 Design app	and approve CNP for LG2 al of Marine Sediment (if necessary) ed perimt for delivery material to Mainland	90												
IS1840 Obtained p IS1840 Obtained p Inporary Piling Platform/ IS1670 Design ten IS1680 Design api	al of Marine Sediment (if necessary) ed perimt for delivery material to Mainland		90 11/01/14	28/10/13	26/02/13	11/05/13	31/10/12	13/01/13	Submit and approve CNP for Bored Riles (P0 to	to P84)				
S1840 Obtained p nporary Piling Platform/ S1670 Design ten S1680 Design ap	ed perimt for delivery material to Mainland	14		10/04/14	11/01/14	10/04/14	07/09/13	05/12/13						<u> </u>
Apporary Piling Platform/ S1670 Design ten S1680 Design app		14												
iS1670 Design ten iS1680 Design ap	rm/Cofferdem	14	0 19/09/13 A	30/09/13 A	15/07/13	28/07/13	19/12/12	01/01/13	r material to Mainland					
S1680 Design ap														
• • •	temporary cofferdem	80	0 29/08/12 A	28/10/13	29/08/12	16/11/12	29/08/12	16/11/12	Design temporary cofferdem					
S1690 Deliver ma	approval of temporary cofferdem	21	21 28/10/13	17/11/13	16/07/13	05/08/13	17/11/12	07/12/12	Design	on approval of temporary	cofferdem			
	maternal for temporary cofferdem	45	45 18/11/13	01/01/14	06/08/13	19/09/13	08/12/12	21/01/13				Delive	r maternal for tempo	rary coffer
gment Casting Yard														
S2020 Formwork	rork design (Long span)	180	0 01/10/12 A	07/10/13 A	01/10/12	29/03/13	01/10/12	29/03/13	esign (Long;span)					
gment Moulds														
GS2305 Fabrication	ation & 3rd Deliver segment mould (Typical span)	175	32 29/06/13 A	28/11/13	16/07/13	06/01/14	23/08/13	13/02/14			-		-	
GS2315 Fabrication	ation & 1st Deliver segment mould (Long span)	200	31 30/12/12 A	27/11/13	23/02/13	10/09/13	30/12/12	16/08/13		Fabricatio	n & 1st Deliver segment mould (Long span)			
GS2325 Fabrication	ation & 2nd Deliver segment mould (Long span)	201	31 30/03/13 A	27/11/13	30/03/13	16/10/13	30/03/13	14/11/13			n & 2nd Deliver segment mould (Long span)			
GS2335 Fabrication	ation & 3rd Deliver segment mould (Long End span)	146	31 18/06/13 A	27/11/13	15/07/13	07/12/13	18/06/13	09/12/13			Fabrication & 3rd Deliver segm	ent mould (I ong End	snan)	
GS2345 Fabrication	ation & Deliver segment mould (Land Viaduct)	91	59 28/07/13 A	26/12/13	28/07/13	26/10/13	28/07/13	24/11/13			r abridation a ora boilion orgin		er segment mould (I	and Vladu
erface Contract													or beginnin includ (i	
	ete deck erection by Mainland section at P0	243	243 02/01/14*	02/09/14	02/01/14	02/09/14	02/01/14	02/09/14						
or Method Statement														-
	ve MS for Pile Cap	60	30 27/09/13 A	26/11/13	16/07/13	13/09/13	22/01/13	22/03/13						
	e MS for Column & Portal	60			02/02/13	02/04/13	01/01/13			Approve MS	S for Pile Cap			
	ve MS for Column & Portal	60		27/12/13	16/07/13	13/09/13	02/03/13		Prepare MS for Column & Portal					
	e MS for Column & Portal	60	0 15/07/13 A		15/07/13	12/09/13	11/03/13	09/05/13				Approve MS for	Column & Portal	
									Prepare MS for SOP Installation					
	ve MS for SOP Installation	60		26/12/13	13/09/13	11/11/13	10/05/13					Approve MS for \$	OP Installation	
	e MS for Segment Erection	60	15 13/09/13 A		13/09/13	11/11/13	10/05/13	08/07/13	Prepare MS for Se	egment Erection				
	ve MS for Segment Erection	60	60 12/11/13	10/01/14	12/11/13	10/01/14	09/07/13	06/09/13					Approve	e MS for Si
curement and Fabrica														
S2184 Deliver gar	gantry crane for LG1 & 2	90	90 11/01/14	10/04/14	11/01/14	10/04/14	07/09/13	05/12/13			-			
DWD				1.						Date	Revision		Checked	IdaA
	-		maining Worl	ĸ			H		ink Road - 3 Months Rolling		1310 rolling		Tim	1.1.1.
Actual	al Work 🔶 🔶 Mile	stone						Pro	0 (Based on DWP_01a)	23/10/13			1 11 11	
Domo	naining Work DW		3 Programme						age 4 of 17					

ragages - China	Harbour - VSL Joint Venture 寶嘉 - 中國港灣 - 武路利聯盟 Activity Name	Original	Remaining Start	Einish	DWP01A	DWP01A	DWP00B	DWP00B							2013							20	14	_
		Duration	Duration		Start	Finish	Start	Finish		06	October 13	20	27	03	Noven 10	nber 17 24	0	D 1 08	ecember 15	22	29	Janu 05	iary 12	_
62186	Deliver LG1 & LG2	120	37 29/04/13 A		31/05/13	27/09/13	06/08/13	03/12/13	:									Deliver LG1 & LG2						
2485	Fabrication & Deliver Lift Frames LFA	150	105 13/09/13 A	09/02/14	13/09/13	09/02/14									-								_	-
ment Castir																								
	egment (Total 12 set Moulds)																							
	Typical Spans (P0 to P15 & P22 to P66)		50 01 10 10					10/10/10											L					
C1390	Segment casting -P45	58	58 21/12/13																J			÷		_
C1400	Segment casting -P46	58	58 21/12/13		01/11/13	28/12/13		03/11/13			_									:				_
C1410 C1420	Segment casting -P47 (Learning)	84	54 28/09/13 A		09/08/13	31/10/13	23/08/13					5								Segment casti	ing -P47 (Lear			
C1420	Segment casting -P48 (Learning)	84	77 21/10/13 A 58 13/01/14		09/08/13	28/12/13		19/10/13							-				-		:	÷	Segment cas	stin
SC1430	Segment casting -P49 Segment casting -P50	58	58 13/01/14			28/12/13		06/09/13					1											_
C1460	Segment casting -P52	58	0 05/08/13 A			03/03/14		25/11/13								,								_
	ent (Total 5 set Moulds)	50	0 03/00/13/4	01/10/13 A	20/12/10	03/03/14	23/03/13	23/11/13																_
	(P85 to Easternmost Abutment)																							
C2080	Segment casting -P110 (Learning)	67	67 26/12/13	10/03/14	27/10/13	01/01/14	25/11/13	30/01/14														<u> </u>		_
C2090	Segment casting -P111 (Learning)	67	67 26/12/13					30/01/14																
C2120	Segment casting -P114 (Learning)	91	91 26/12/13																					
	ent (Total 1 set Mould)		01 20/12/10	00/04/14	2//10/10	20/01/14	2011/10	02/00/14													:			
rnaround																								_
C2140	Segment casting -P52N/S	60	60 05/08/14 A	03/05/14	30/04/14	28/06/14	19/06/14	28/07/14																
	nent (Total 12 set Moulds)																							
	216 to P21 & P67 to P84)																							
	Segment casting -P20 (Learning)	168	168 28/11/13	21/05/14	11/09/13	04/03/14	15/01/14	03/05/14																_
	en HKSAR Boundary and Landing Point on Airport Island															-								-
	8 - Stage 1 of Works																							
er POL/R																								
mporary Wo	rks											+			+									
VW1020	Remove the temporary working platform P0 (Learning)	8	8 28/10/13	06/11/13	17/08/13	27/08/13	29/04/13	08/05/13						Borr	onue the temp	prary working patform P0 (Lograina)							
oundation - E														Rei	ipve trie tempo	orary working platform P0 (Leanning)							
VW1040	Pile testing P0	28	0 17/09/13 A	28/10/13	16/08/13	12/09/13	28/04/13	25/05/13					. Pile testi	na P0										
e Cap Const													File test	ily ru										
/W1050	Construct pile cap P0 - 2 nos. (Learning)	45	45 06/11/13	31/12/13	14/09/13	14/11/13	30/07/13	09/09/13													Conet	ruct pile cap P0 - 2	nos (Learn	
olumn Const															:							bot pile cap t 0 - 2	nos. (Lealin	iiig)
/W1060	Construct column P0 - 2 nos. (in-situ)	18	18 31/12/13	22/01/14	15/11/13	05/12/13	05/10/13	21/10/13				_			-			-						
/W1065	Bearing Installation - P0	5	5 22/01/14	28/01/14	06/12/13	11/12/13	22/10/13	01/11/13													-		-	-
2L/R 75mx	8 - Stage 4 of Works																							
r P15L/R																								
e Investigati	ion																							
/W2210	Site investigation for bored pile P15	9	1 12/03/13 A	28/10/13	14/01/14	23/01/14	05/09/13	16/09/13															_	
3L/R 109.60	61m+150mx3+109.661m Navigation Channel - Stage 4 of Works												0											
r P16L/R (M																								
mporary Wo												+									<u> </u>	++		
C1000	Install temporary working platform for bored pile P16	12	0 16/08/13 A	30/09/13 A	10/10/13	26/10/13	04/09/13	05/10/13					notali temna	ary working r	patform for bo	red pile P16								
C1030	Remove the temporary working platform P16	4	4 18/01/14	23/01/14	02/12/13	05/12/13	06/01/14	16/01/14					a tan to tip				_	-					—	
te Investigati	ion									_													-	
C1010	Site investigation for bored pile P16	10	8 03/10/13 A	06/11/13	07/08/13	20/08/13	27/02/13	07/03/13						Site	investigation for	or bored pile P16								
						1				-					:				Povici	00		Chooker		
	DWP_01a Programme Cr	itical Rer	maining Wor	k			H	KZB ł	Hona	Kona	Link I	Road -	3 Mo	nths	Rollin				Revisi			Checked		лС
	Actual Work	lestone										ased o				29/10	/13	1310 rolling	g			Tim	<u> </u>	
																							1	

ages - China I	Harbour - VSL Joint Venture 寶嘉 - 中國港灣 - 或時利聯登 Activity Name	Original F Duration	Remaining Start Duration	Finish	DWP01A Start	DWP01A Finish	DWP00B Start	DWP00B Finish			October				2013 Nove	ember			Dec	ember			2 Ja	014 nuary	_
Indation - B	Sored Pile								29	06	13	20	27	03	10	17	24	01	08	15	22	29	05	12	-
1040	Construct bored piles P16 - 6 nos	21	21 21/12/13	18/01/14	07/11/13	30/11/13	16/11/13	07/12/13						_			_	-	-						Con
1060	Pile testing P16 (Bridge)	28	28 18/01/14	22/02/14	01/12/13	28/12/13	08/12/13	04/01/14					J												1
P17L/R																								I	1
porary Wor	rks																								
1120	Install temporary working platform for bored pile P17	30	30 08/11/13	13/12/13	15/10/13	19/11/13	24/07/13	03/09/13			-								lhs	tall temporary	working plat	form for borer	tpile P17		
Investigation	lon																								
1130	Site investigation for bored pile P17 (Bridge)	20	0 28/03/13 A	09/10/13 A	20/11/13	12/12/13	31/01/13	14/02/13								-			Site	investigation fo	or bored pile	P17 (Bridge)			
1140	Site investigation for bored pile P17 (Upstream Dolphin)	8	8 28/10/13	05/11/13	27/07/13	06/08/13	15/02/13	26/02/13						Site	investigation fo	or bored pile F	P17 (Upstream I	Dølphin)							
Indation - B	Sored Pile																								
1160	Construct bored piles P17 - 12 nos. (Bridge)	52	52 28/12/13	03/03/14	09/11/13	11/01/14	08/10/13	31/10/13		-															
P18L/R				1																					
porary Wor	rks																								
1240	Install temporary working platform for bored pile P18	30	30 21/12/13	29/01/14	07/11/13	11/12/13	11/06/13	23/07/13						-			_			_					
Investigation	ion																			T					Т
1260	Site investigation for bored pile P18 (Upstream Dolphin)	8	8 28/10/13	05/11/13	24/07/13	03/08/13	19/01/13	30/01/13						Site	investigation fo	or bored pile F	P18 (Upstream I	Dolphin)							
1670	Site investigation for bored pile P18 (Downstream Dolphin)	8	8 22/08/14 A	08/07/14	25/06/14	07/07/14																			T
ndation - B	Sored Pile																								
1280	Construct bored piles P18 - 12 nos. (Bridge)	45	45 18/01/14	15/03/14	02/12/13	25/01/14	20/08/13	14/09/13						_	1		-		-						-
P19L/R																									T
porary Wor	rks																								1
1390	Remove the temporary working platform P19	8	8 21/12/13	03/01/14	07/11/13	15/11/13	20/08/13	09/09/13						-								i la	Remove the tem	porary work	ing p
Investigation	ion																			1					
1370	Site investigation for bored pile P19 (Bridge)	20	0 12/03/13 A	02/10/13 A	03/09/13	02/10/13	12/12/12	22/12/12	Si	te Investigation	n før bored pile P	19 (Bridge)		_											
1700	Site investigation for bored pile P19 (Downstream Dolphin)	8	8 04/09/14 A	25/06/14	14/06/14	24/06/14																			
ndation - B	Bored Pile																								+
1400	Construct bored piles P19 - 12 nos. (Bridge)	48	40 19/09/13 A	12/12/13	17/08/13	25/10/13	02/07/13	29/07/13											Cons	struct bored pil	les P19 - 12	nos. (Bridge)			
1410	Construct bored piles P19 - 4 nos. (Upstream Dolphin)	10	8 11/10/13 A	21/12/13	26/10/13	06/11/13	30/07/13	19/08/13			1			<u> </u>						c	Construct bo	red piles P19	4 nos. (Upstre	am Dolphin)	/
1420	Pile testing P19 (Bridge)	28	28 12/12/13	09/01/14	26/10/13	22/11/13	30/07/13	26/08/13				<				-	•					<u>. </u>	Pile	testing P19	(Brid
1430	Pile testing P19 (Upstream Dolphin)	28	28 21/12/13	18/01/14	07/11/13	04/12/13	20/08/13	16/09/13						-	_			<u>+</u>							Pil
Cap Const	truction																								
1440	Construct pile cap P19 - 2 nos. (Learning)	100	100 09/01/14	19/05/14	23/11/13	26/03/14	10/09/13	16/11/13								-									-
P20L/R																									
porary Wor																									
1510	Remove the temporary working platform P20	8	8 08/11/13	18/11/13	15/10/13	24/10/13	06/04/13	30/04/13				<u> </u>				Remo	ove the tempora	ry working pla	tform P20						
ndation - B																									
1520	Construct bored piles P20 - 12 nos. (Bridge) (Learning)	51	9 20/07/13 A	06/11/13	20/07/13	30/09/13	25/02/13	16/03/13	_					Co	onstruct bored	piles P20 - 12	2 nos. (Bridge) (Learning)							
1530	Construct bored piles P20 - 4 nos. (Upstream Dolphin)	8	2 29/08/13 A		02/10/13	12/10/13	18/03/13				-			_	Construct bo	ored piles P20) - 4 nos. (Upstr	eam Dolphin							
1540	Pile testing P20 (Bridge)	28	28 06/11/13		01/10/13	28/10/13		13/04/13	\leq				+	_				P	e testing P20 (Brid	ge)					
1550	Pile testing P20 (Upstream Dolphin)	28	28 08/11/13	06/12/13	13/10/13	09/11/13	06/04/13	03/05/13							;				Pile testing P20 (Upstream Dolp	ohin)				_
Cap Const																									
1560	Construct pile cap P20 - 2 nos. (Learning)	100	100 04/12/13	08/04/14	28/10/13	28/02/14	02/05/13	30/07/13				>										—			1
	x8 - Stage 4 of Works									-															
P21L/R (M																									
porary Wor																									
/8570	Install temporary working platform for bored pile P21	12	12 18/11/13	30/11/13	16/09/13	03/10/13	07/10/13	02/11/13						_				Install ten	porary working plat	tform for boned	l pile P21				
	DWP_01a Programme	Critical Rem	aining Wo	rk				(70		Karr	1.1.1.1.1	D = = -!	0.17		Dell		Date	e		Revisio	n		Checke	ed Ap	pr
				IX.			HK					Road -				ıg	29/10/	13 13	10 rolling				Tim		
	Actual Work	Vilestone				I		Pro	aram	ıme 1:	310 (B:	ased o	n D\	ND 0 .	1a)										

	r - VSL Joint Venture 寶嘉 - 中國港灣 - 武勝利聯發 vity Name	Original Re Duration I	maining Start Duration	Finish	DWP01A Start	DWP01A Finish	DWP00B Start	DWP00B Finish		October				2013 Nover	nber			Decemb	ber			2014 January	-
1600 Remo	nove the temporary working platform P21	4		02/01/14			07/01/14		29	06 13	20	27	03	10	17	24	01	08	15 22	29	05	12	Ř
vestigation																							
580 Site in lation - Bored Pil	investigation for bored pile P21	10	10 06/11/13	16/11/13	05/08/13	17/08/13	18/03/13	26/03/13					-		Site investigation	or bored pile P	21						
	struct bored piles P21 - 6 nos.	21	21 02/12/13	27/12/13	15/10/13	08/11/13	16/11/13	07/12/13												Construct b	oored piles P21 -	6 nos.	
630 Pile te	testing P21 (Bridge)	28	28 28/12/13	24/01/14	09/11/13	06/12/13	08/12/13	04/01/14													-		
26L/R																							
vestigation	investigation for bored pile P26	9	9 23/01/14	05/02/14	11/01/14	21/01/14	06/08/13	15/08/13															
27L/R																							
vestigation																							
	investigation for bored pile P27	9	9 13/01/14	22/01/14	31/12/13	10/01/14	25/07/13	05/08/13												-			4
28L/R																							
	investigation for bored pile P28	9	9 02/01/14	11/01/14	18/12/13	30/12/13	15/07/13	24/07/13														Site invest	tigat
R 74.5mx8 - Sta	tage 4 of Works																					-	
29L/R (M.J.)																							
ivestigation	investigation for bored pile P29	9	9 19/12/13	31/12/13	07/12/13	17/12/13	03/07/13	13/07/13												Site	investigation fo	r borad pila P	220
30L/R																					investigation to	bored pile i i	20
vestigation																							
i650 Site in 31 L/R	investigation for bored pile P30	9	9 09/12/13	18/12/13	27/11/13	06/12/13	21/06/13	02/07/13									-		Site Investiga	tion for bored pile	/ P30		
vestigation																							
	investigation for bored pile P31	9	9 28/11/13	07/12/13	16/11/13	26/11/13	10/06/13	20/06/13									Site	investigation fo	or bored pile P31				-
32L/R																							
orary Works	all temporary working platform for bored pile P32	12	12 24/12/13	10/01/14	24/12/13	09/01/14	06/11/13	19/11/13					_						_				
nvestigation	ал (он разли) - со на да била се																					Install tempor	rary
5810 Site in	investigation for bored pile P32	9	9 18/11/13	27/11/13	06/11/13	15/11/13	30/05/13	08/06/13					—			Site invest	igation for bor	ed pile P32					
33L/R																							
orary Works	all temporary working platform for bored pile P33	12	12 15/01/14	28/01/14	17/12/13	02/01/14	15/10/13	29/10/13		_													
vestigation																						-	-
i890 Site in	investigation for bored pile P33	9	9 07/11/13	16/11/13	26/10/13	05/11/13	20/05/13	29/05/13	+		4		-	1	Site investigation	or bored pile P	33						
34L/R																							
orary Works	all temporary working platform for bored pile P34	12	12 23/01/14	10/02/14	06/12/13	19/12/13	15/10/13	29/10/13		_									_				
vestigation]											
	investigation for bored pile P34	9	9 17/10/13 A	06/11/13	15/10/13	25/10/13	08/05/13	18/05/13		<			Site	investigation I	or bored pile P34								
35L/R orary Works																							
	all temporary working platform for bored pile P35	12	12 07/11/13	21/11/13	29/11/13	12/12/13	16/09/13	03/10/13	+				_					Install te	mporary working	platform for bore	d pile P35		
nvestigation													-						,				
	investigation for bored pile P35	9	5 28/09/13 A	01/11/13	30/09/13	12/10/13	27/04/13	07/05/13					\$ite investigati	ion for bored p	ile P35								
36L/R																		-				<u> </u>	
DW	VP_01a Programme	Critical Rema	aining Woi	rk			НК	(ZB H	ong Ko	ng Link	Road -	3 Mo	onths	Rollin		Date	1010		evision			ked Ap	pp
Actu	ual Work 🔶 🔶 I	Milestone								1310 (E					- 29	/10/13	13101	olling			Tim		_

D	(HEF	VSL	
Dragages - China H	larbour - VSL Joint Venture 寶道	舊 - 中國港灣 - 威勝利聯營	

	lerbour - VSL Joint Venture 寶嘉 - 中國港灣 - 武器利聯號 Activity Name	Original Duration	Remaining Start Duration	Finish	DWP01A Start	DWP01A Finish	DWP00B DWP00B Start Finish	2013 2014 October November December January	
nporary Work	ks							06 13 20 27 03 10 17 24 01 08 15 22 29 05 12	19
W6120	Install temporary working platform for bored pile P36	12	12 19/12/13	04/01/14	23/11/13	06/12/13	16/09/13 03/10/13		ing platform
undation - Bo	ored Pile								
W6150	Construct bored piles P36 - 6 nos.	20	20 06/01/14	28/01/14	19/12/13	14/01/14	25/11/13 16/12/13		
6L/R 74.5mx	k8 - Stage 4 of Works								
P37L/R (M.	J.)								
porary Work	ks								
W6200	Install temporary working platform for bored pile P37	12	12 03/01/14	16/01/14	14/11/13	27/11/13	24/08/13 09/09/13		Install te
Investigatio	on								·
/6210	Site investigation for bored pile P37	9	0 26/09/13 A	16/10/13 A	A 03/09/13	14/09/13	08/04/13 16/04/13	Site investigation for pored pile P87	
idation - Bo	ored Pile								
6230	Construct bored piles P37 - 6 nos.	20	20 17/01/14	12/02/14	12/12/13	07/01/14	04/11/13 25/11/13		
88L/R							- I		
orary Work	ks								
6280	Install temporary working platform for bored pile P38	12	12 11/11/13	25/11/13	08/11/13	21/11/13	24/08/13 09/09/13	Instal temporary working platform for bored pile P38	
6300	Remove the temporary working platform P38	4		24/12/13	19/12/13	23/12/13	25/11/13 28/11/13	Remove the lemporary working platform P38	
dation - Bo									
6310	Construct bored piles P38 - 6 nos.	21	21 25/11/13	19/12/13	25/11/13	18/12/13	01/11/13 23/11/13	Construct bored piles P38 - 6 rps.	
6320	Pile testing P38	28					24/11/13 21/12/13		Dild too
9L/R									Pile tes
orary Work	ks								
6360	Install temporary working platform for bored pile P39	12	12 28/11/13	11/12/13	02/11/13	15/11/13	31/07/13 15/08/13		
6380	Remove the temporary working platform P39	4					04/11/13 07/11/13	Install temporary working platform for bored pile P39	
nvestigatio			4 10/01/14	1400714	101010	10/12/10	0411/10		Remove th
	Site investigation for bored pile P39	9	0 02/09/13 0	10/10/12 0	08/08/12	20/08/12	15/03/13 23/03/13		
		3	0 03/03/13/4	10/10/13/4	00/00/13	20/00/13	13/03/13	Ske investigation for bored pile P-19	
dation - Bo			00 44/40/40	00/04/44	10/11/10	44.4040	08/10/13 02/11/13		
	Construct bored piles P39 - 6 nos.	20						Construct be	ored piles
6400	Pile testing P39	28	28 10/01/14	13/02/14	12/12/13	08/01/14	03/11/13 30/11/13		_
0L/R									
orary Work					1	1			
	Remove the temporary working platform P40	4	4 02/11/13	07/11/13	25/11/13	28/11/13	01/11/13 05/11/13	Remove the temporary working platform P40	
dation - Bo									
	Construct bored piles P40 - 6 nos.	18					08/10/13 31/10/13	Construct bared piles P40 6 nos.	
6480	Pile testing P40	28	28 02/11/13	30/11/13	24/11/13	21/12/13	01/11/13 28/11/13	Pile testing P40	
1L/R									
orary Work									
6520	Install temporary working platform for bored pile P41	12					23/04/13 07/05/13	Instal temporary working platform for bored pile P41	
6540	Remove the temporary working platform P41	4	4 14/12/13	18/12/13	19/11/13	22/11/13	08/10/13 12/10/13	Remove the temporary working platform P41	
nvestigatio	on								
6530	Site investigation for bored pile P41	9	1 19/07/13 A	29/10/13	08/08/13	20/08/13	25/02/13 05/03/13	Site investigation for bored pile P41	
dation - Bo	ored Pile								
6550	Construct bored piles P41- 6 nos.	18	18 23/11/13	13/12/13	29/10/13	18/11/13	10/09/13 07/10/13	Construct bored piles P41- 6 nos.	
3560	Pile testing P41	28	28 14/12/13	10/01/14	19/11/13	16/12/13	08/10/13 04/11/13	Pile testing	g P4
2L/R	·								
orary Work	ks								
6600	Install temporary working platform for bored pile P42	12	6 25/09/13 A	02/11/13	21/08/13	05/09/13	23/04/13 07/05/13	Install temporary working platform for bored pile P42	
	· · · · · · · · · · · · · · · · · · ·					1			Annr
	DWP_01a Programme	Critical Re	emaining Wo	rk			HKZB I		hhi
	Actual Work	Milestone						29/10/13 1310 rolling Tim	
			Drogrammer	•					
	Remaining Work		3 Programme	3				Page 8 of 17	

agages - crima m	Harbour - VSL Joint Venture 寶嘉 - 中國池海 - 或語利聯盟 Activity Name	Original Rei Duration D	naining Start	Finish	DWP01A	DWP01A	DWP00B	DWP00B	October			2013	×			Dr	ecember		===		2014
WW6620	Remove the temporary working platform P42	Juration L	4 23/11/13	27/11/13	Start 29/10/13	Finish 01/11/13		Finish 12/10/13	29 06 13 20	27	03	10	17			08	15		29	05	12
oundation - Bo													-	Remo	ove trie tempo	ary working p	atform P42				
	Construct bored piles P42 - 6 nos.	17	17 04/11/13	22/11/13	05/10/13	28/10/13	10/09/13	07/10/13						construct bore	d piles P42 - 6	nos					
WW6640	Pile testing P42	28	28 23/11/13	20/12/13	29/10/13	25/11/13	08/10/13	04/11/13										Pile testing P4	12		
r 43L/R																					
mporary Work	ks																				
/W6700	Remove the temporary working platform P43	4	4 23/10/13 A	31/10/13	10/09/13	14/09/13	10/09/13	14/09/13			Remove the tempo	orary working p	latform P43				, 1				
undation - Bo	ored Pile																				
/W6710	Construct bored piles P43 - 6 nos.	18	0 15/08/13 A						Construct bored piles P43 - 6 nos.												
/W6720	Pile testing P43	28	0 10/10/13 A	23/10/13 A	10/09/13	07/10/13	10/09/13	07/10/13		Pile testing P43											
r 44L/R																	1				
mporary Work																					
	Remove the temporary working platform P44	4	4 06/11/13	11/11/13	04/11/13	07/11/13	10/09/13	14/09/13				Remove the	e temporary	vorking platfor	m P44		, T				1
undation - Bo				1	1	1	L														
	Construct bored piles P44 - 6 nos.	17	0 04/09/13 A								Construct bore	ed piles P44 6	8 nos.								
	Pile testing P44	28	28 06/11/13	04/12/13	03/11/13	30/11/13	10/09/13	u7/10/13							Pile to	sting P44	:				
e Cap Constr				05-04-14-4			054040										ļ				
	Construct pile cap P44 - 2 nos.	30	30 19/12/13	25/01/14	02/12/13	09/01/14	25/10/13	28/11/13											—		÷
	imx8 - Stage 4 of Works																1				
r P45L/R (M.																					
mporary Work		4	0 09/10/13 A	12/10/13 4	05/10/13	09/10/12	19/08/12	22/08/12													
undation - Bo	Remove the temporary working platform P45	-	0 00/10/10/1	12 To TO TO T	00,10,10	00/10/10	10/00/10		Remove the temporar	/ working platfo	m P45						ل				·
	Construct bored piles P45 - 6 nos.	16	0 26/08/13 A	08/10/13 A	10/09/13	03/10/13	25/07/13	17/08/13	Constituet hered pilot D45 6												
	Pile testing P45	28	28 28/10/13						Construct bored piles P45 - 6					Pile testing	P45						
le Cap Constr	ruction																				
/W6890	Construct pile cap P45 - 2 nos.	30	30 19/12/13	25/01/14	14/11/13	18/12/13	25/10/13	28/11/13									<u> </u>				
r P46L/R																	;				
mporary Work	ks																				
/W6940	Remove the temporary working platform P46	4	4 28/10/13	31/10/13	12/10/13	17/10/13	19/08/13	22/08/13	←		Remove the tempo	orary working p	latform P46				1				
undation - Bo	ored Pile																				
/W6950	Construct bored piles P46 - 6 nos.	19	0 26/08/13 A	12/10/13 A	12/09/13	10/10/13	25/07/13	17/08/13	Construct bored piles	P46 nos.											
W6960	Pile testing P46	28	13 13/10/13 A	09/11/13	11/10/13	07/11/13	18/08/13	14/09/13		$\langle -$		Pile testing P46	3								
e Cap Constr	ruction									X											
	Construct pile cap P46 - 2 nos.	30	30 31/12/13	08/02/14	15/11/13	19/12/13	16/09/13	29/10/13				-					—				
r P47L/R																					
undation - Bo					î.																
	Pile testing P47	28	0 02/10/13 A	28/10/13	09/09/13	07/10/13	25/07/13	21/08/13		Pile te	sting P47										
e Cap Constr		45	45 00/40/40	10/10/40	07/10/10	00/10/10	10/00/40	24/10/12													
W7050	Construct pile cap P47 - 2 nos. (Learning)	45	45 28/10/13	18/12/13	07/10/13	02/12/13	10/09/13	24/10/13				_			-		Con	struct pile cap	P47 - 2 nos	s. (Learning)	
W7060	Construct column P47 - 2 nos. (in-situ section)	12	12 06/01/14	18/01/14	02/12/12	16/19/19	25/10/12	15/11/12							_		_				
r P48L/R	Construct Column 1 47 - 2 mos. (m/Situ Section)	12	12 00/01/14	10/07/14	32/12/13	10/12/13	23/10/13			-							, -				
e Cap Constr	ruction																				
W7130	Construct pile cap P48 - 2 nos. (Learning)	45	45 28/10/13	18/12/13	12/09/13	13/11/13	10/09/13	24/10/13									0	etruct pilo o	Die hre	e (Loorning)	
lumn Constri																	Cons	struct pile cap	-48 - 2 nos	. (Learning)	
						1								Dit	-		Desist	<u> </u>	<u>: </u>	01-1-1	
	DWP_01a Programme	Critical Rema	ining Wor	k			HK		g Kong Link Road	I - 3 M	onths R	lolling	. -	Date	_		Revisio	on			ed App
												<u>.</u>		29/10/1	0 1404	0				Tim	1

n agages - China D	Harbour - VSL Joint Venture 寶嘉 - 中國港灣 - 或語利聯營 Activity Name	Original F Duration	Remaining Start Duration	Finish	DWP01A Start	DWP01A Finish	DWP00B Start	DWP00B Finish			October				2013 Nove	mber			Decen	nber			2014 Januar	y
WW7140	Construct column P48 - 2 nos. (in-situ section) (Learning)	12	12 19/12/13	04/01/14	14/11/13	27/11/13	25/10/13		29	06	13	20	27	03	10	17	24	01	08	15 2	2 2		truct column F	
WW9780	Install precast column at P48 - 2 nos.x2 (Learning)	6	6 14/01/14			12/12/13																COR		-40 - 2 1,05
WW9790	Prestress works & infill concrete at P48	6	6 21/01/14	27/01/14	13/12/13	19/12/13														_			-	
ier P49L/R																								
Pile Cap Cons	ruction																							
WW7210	Construct pile cap P49 - 2 nos.	30	30 28/10/13	30/11/13	10/10/13	16/11/13	28/05/13	29/07/13		4						-		Construct	ile cap P49 - 2 nos.					
Column Cons	ruction																	•						
WW7220	Construct column P49 - 2 nos. (in-situ section)	12	12 22/01/14	08/02/14	06/12/13	19/12/13	07/09/13	03/10/13				>						-		—				
ier P50L/R																								
oundation - I	Bored Pile																							
WW7280	Pile testing P50	29	0 07/08/13 A	28/10/13	07/08/13	05/09/13	24/02/13	24/03/13					Pile test	ng P50										
Pile Cap Cons									-															
WW7290	Construct pile cap P50 - 2 nos.	30	30 02/12/13	08/01/14	18/11/13	21/12/13	25/03/13	27/05/13				1											Construct	pile cap P5
Column Cons																								
WW7300	Construct column P50 - 2 nos. (in-situ section)	12	12 09/01/14	22/01/14	23/12/13	08/01/14	28/05/13	20/07/13												-			•	_
ier P51L/R									_															
		43	20 02/10/12 4	20/11/12	07/09/12	00/10/12	02/07/12	10/09/12																
WW7340 WW7350	Construct bored piles P51 - 8 nos. Pile testing P51	43	29 03/10/13 A 28 29/11/13												-	_	-	Construct bo	ed piles P51 - 8 nos					
Pile Cap Cons		20	20 23/11/13	21/12/13	03/10/13	00/11/13	20/00/13	10/03/13									-			-	Pile test	ting P51		
WW7360	Construct pile cap P51 - 2 nos.	30	30 27/12/13	05/02/14	18/11/13	21/12/13	16/09/13	30/10/13					_											
er P52L/R																								
oundation - I	Bored Pile																							
WW7420	Pile testing P52	28	0 07/08/13 A	28/10/13	07/08/13	04/09/13	04/09/13	01/10/13	-				Pile test	ida P52										
Pile Cap Cons	ruction												1 10 1000	groz										
WW7430	Construct pile cap P52 - 2 nos.	30	30 02/12/13	08/01/14	18/11/13	21/12/13	30/10/13	04/12/13					_										Construct	oile cap P5
.08L/R 70mx	6 - Stage 4 of Works													1										
ier P53L/R (N	.ل.)																							
oundation - I	Sored Pile																							
WW7480	Construct bored piles P53 - 10 nos.	44	0 11/07/13 A	11/10/13 A	05/08/13	08/10/13	08/07/13	07/09/13	_	Con	struct bored pil	es P53 - 10 - c	os.											
WW7490	Pile testing P53	28	12 12/10/13 A	08/11/13	08/10/13	05/11/13	08/09/13	05/10/13				-		-	Pile testing F	53								
Pile Cap Cons	ruction																							
WW7500	Construct pile cap P53 - 2 nos.	45	45 09/01/14	05/03/14	23/12/13	19/02/14	04/12/13	29/01/14				N								-				
ier P54L/R																								
Foundation - I																								
WW7560	Construct bored piles P54 - 10 nos.	64	13 05/08/13 A															Cons	ruct bored piles P54	4 - 10 nos				
WW7570	Pile testing P54	28	28 11/11/13	09/12/13	03/12/13	31/12/13	26/10/13	22/11/13											-			Pile testing P	54	
ier P55L/R oundation - I	tored Pile																							
WW7640	Construct bored piles P55 - 10 nos.	33	33 29/11/13	10/01/14	09/10/13	20/11/13	04/09/12	15/11/13																
WW7650	Pile testing P55	28	28 10/01/14							-										-		_	Constr	uct bored (
er P56L/R	· · · · · · · · · · · ·	23																						
oundation - I	Bored Pile																							
WW7720	Construct bored piles P56 - 12 nos.	57	57 28/10/13	04/01/14	08/10/13	17/12/13	09/09/13	08/11/13														Con	truct bored pil	es P56 1
WW7730	Pile testing P56	28	28 05/01/14												-	-								
er P57L/R																					T			
						<u> </u>						1		1		1	Date						nokod	Ann
	DWP_01a Programme	Critical Rem	naining Wor	ĸ			H	KZB H	ona k	Kong L	ink Ro	bad - 3	3 Mc	onths	Rollin	ng	Date			levision			necked	нрі
	Actual Work	Milestone				1				me 131						-	129/10/	13 113	0 rolling			Tir	n	1

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fragages - China Harbour - VSL Joint Venture 寶嘉 - 中國港湾 - 武勝利聯發							
D Activity Name	Original Remaining Start Finish Duration Duration	DWP01A DWP01A Start Finish	Start Finish	October	2013 November	December 17 24 01 08 15	2014 January 22 29 05 12 15
Foundation - Bored Pile				00 13 20			
WW7800 Construct bored piles P57- 10 nos.	35 35 10/01/14 24/02/14	20/11/13 03/01/14	26/10/13 16/12/13				
ier P58L/R							
Foundation - Bored Pile							
WW7880 Construct bored piles P58 - 10 nos.	45 45 11/11/13 06/01/14	03/12/13 28/01/14	09/11/13 04/01/14				
WW7890 Pile testing P58	28 28 06/01/14 10/02/14	28/01/14 04/03/14	05/01/14 08/02/14				
.09L/R 73.396Mx8 - Stage 4 of Works							
ier P59L/R (M.J.)							
Foundation - Bored Pile							
WW7960 Construct bored piles P59 - 10 nos.	43 43 06/01/14 27/02/14	17/12/13 12/02/14	16/11/13 08/01/14				
er P60L/R							
Site Investigation							
WW8010 Site investigation for bored pile P60	24 12 05/08/13 A 09/11/13	25/07/13 27/08/13	14/11/13 25/11/13			Site investigation for bored pile P60	
ier P61L/R							
Site Investigation							
WW8090 Site investigation for bored pile P61	24 9 19/08/13 A 06/11/13	28/08/13 02/10/13	28/11/13 09/12/13			Site investigation for t	ored pile P61
ier P62L/R							
Site Investigation							
WW8160 Site investigation for bored pile P62	24 24 07/11/13 04/12/13	03/10/13 04/11/13	05/12/13 13/12/13			Site investiga	on for bored pile P62
Foundation - Bored Pile							
WW8180 Construct bored piles P62 - 8 nos.	19 19 06/01/14 28/01/14	28/01/14 22/02/14	09/01/14 29/01/14				
er P63L/R							
Site Investigation							
WW8260 Site investigation for bored pile P63	24 24 05/12/13 04/01/14	05/11/13 02/12/13	08/01/14 16/01/14				Site invest
ier P64L/R							
Site Investigation							
WW8340 Site investigation for bored pile P64	24 24 06/01/14 05/02/14	03/12/13 02/01/14	24/01/14 05/02/14				
ier P66L/R							
Site Investigation							
WW8500 Site investigation for bored pile P66	24 0 13/07/13 A 12/10/13 A	15/07/13 15/08/13	26/02/14 06/03/14				
.10L/R 115m+180m+115m - Stage 4 of Works							
ier P69L/R				-			
Temporary Works							
AC1120 Install temporary jetty for pier P69 to P70	60 17 28/06/13 A 15/11/13	28/06/13 19/09/13	03/05/13 24/07/13		Install	Il temporary jetty for pier P69 to P70	
Foundation - Bored Pile							ļļļļ
AC2480 Construct bored piles P69 - 12 nos.	84 84 21/12/13 04/04/14	1 //10/13 27/01/14					
.11L/R 109m+165mx2+109m - Stage 4 of Works							
ier P70L/R (M.J.)							
Foundation - Bored Pile		00/00/40	244040				
AC1190 Construct bored piles P70 - 6 nos.	30 30 16/11/13 20/12/13						ļļļ
AC1200 Pile testing P70	28 28 21/12/13 17/01/14	13/11/13	26/01/14 01/03/14				
ier P71L/R							
femporary Works	00 00 00 00 00 00 00 00 00 00 00 00 00	22/00/12	25/07/12 20/20/10	-			
AC1240 Install cofferdem for pile cap construction - P71 - 2 nos.	80 80 02/01/14 09/04/14	23/09/13 03/01/14	25/0//13 26/09/13				
Foundation - Bored Pile AC1280 Pile testing P71	28 0 22/09/13 A 28/10/13	16/08/13 12/09/13	31/12/13 27/01/14				······
		<u> </u>		<u> </u>		Date Revis	on Checked Approv
DWP_01a Programme	Critical Remaining Work		HKZB Hong	g Kong Link Road -	3 Months Rolling	29/10/13 1310 rolling	ii
Actual Work	Milestone			mme 1310 (Based o		29/10/13 1310 rolling	Tim
	DWP_00B Programme			Page 11 of 17			
							1 1

	Activity Name	Original Re Duration	maining Start Duration	Finish	DWP01A Start	DWP01A Finish	DWP008 Start	B DWP00B Finish			October				2013 Novem	nber			December			2014 January	
er P72L/R									29	06	13	20	27	03	10	17	24	01	08 15	22	29	05 12	
emporary Wo																							
VC1320	Install cofferdem for pile cap construction - P72 - 2 nos.	80	80 08/01/14	16/04/14	30/09/13	09/01/14	30/04/13	17/07/13													+		<u> </u>
oundation - I	Construct bored piles P72 - 12 nos.	51	38 02/05/13 A	11/12/13	02/05/13	10/07/13	05/08/13	04/11/13						<u></u>					Our truth hand all				
C1370	Pile testing P72	28	28 11/12/13						-									-	Construct bored pi	35 P72 - 12 ngs		Pile testing P7	72
r P73L/R																							
mporary Wo	rks																						
C1410	Install cofferdem for pile cap construction - P73 - 2 nos.	80	80 02/01/14	09/04/14	23/09/13	03/01/14	20/03/13	20/05/13														ļ	
C1450	Construct bored piles P73 - 8 nos.	64	24 02/05/13 A	23/11/13	02/05/13	29/07/13	28/05/13	03/08/13															
C1460	Pile testing P73	28	28 23/11/13														Construct bo	red piles P73	8 nos.	Pile testing P7	3		
2L/R 109m	+165mx2+109m - Stage 4 of Works																						
r P74L/R (N	LJ.)																						
mporary Wo																							
C1500 undation - I	Install cofferdem for pile cap construction - P74 - 2 nos.	60	60 02/01/14	15/03/14	23/09/13	07/12/13	09/02/13	26/03/13													_		
C1550	Pile testing P74	28	0 26/07/13 A	28/10/13	26/07/13	22/08/13	28/05/13	24/06/13					. Pile test	D74									
r P76L/R													Pile test	ng P74									
undation - I	Bored Pile							_															
C1720	Construct bored piles P76 - 8 nos.	62	62 23/11/13	11/02/14	15/08/13	11/11/13	08/04/13	14/06/13							_								
r P77L/R																							
undation - I	Sored Pile Construct bored piles P77 - 12 nos.	65	65 28/10/13	14/01/14	17/08/13	14/11/12	28/12/12	14/02/14												_			
C1810	Pile testing P77	28	28 15/01/14												_								
3L/R 115m	+180m+115m - Stage 4 of Works																					-	
er P78L/R (N	I.J.)																						
oundation - I										_													
	Pile testing P78	28	0 17/08/13 A	28/10/13	01/08/13	28/08/13	08/10/13	04/11/13					l	Pile test	ing P78								
r P79L/R e Investigat	ion																						
	Site investigation for bored pile P79	30	0 27/08/13 A	21/10/13 A	A 29/07/13	07/09/13	22/05/13	29/06/13				Site invest	ation for bo	red pile P79									
undation - I	Sored Pile																						
01970	Construct bored piles P79 - 12 nos.	72	72 15/01/14	12/04/14	15/11/13	13/02/14	08/10/13	27/12/13		_					-						_		
P80L/R																							
e Investigat	Site investigation for bored pile P80	30	30 22/10/13 A	30/11/13	09/09/13	23/10/13	23/01/13	01/03/13															
	+180m+100.561m - Stage 4 of Works		00 2210101	00/11/10	00,00,10	20/10/10	20101110	01/00/10										Site investiga	tion for bored pile P80				
r P81L/R (N									-														
te Investigat	ion																						
	Site investigation for bored pile P81	15	15 02/12/13	18/12/13	24/10/13	09/11/13	29/04/13	18/05/13				>							Site	nvestigation fdr	bored pile P	31	
P82L/R																							
Ilities Divers	1200mm Drainage diversion for P82	60	60 28/10/13*	08/01/14	02/10/13	11/12/13	08/12/12	07/02/13														4000 D	
mporary Wo																						1200mm Drai	nage;dive
C2190	Remove existing seawall for pier P82	60	60 09/01/14	22/03/14	12/12/13	26/02/14	08/02/13	15/04/13															
_		Oritical Dam				1			<u> </u>							:	Date		Revisi	: on		Checked /	Appr
	DWP_01a Programme	Critical Rem	aming wor	К			н	KZB ł	lon	a Kona	1 Link	Road -	3 Mc	onths	Rollin	a			0 rolling			Tim	1-1-1

te Investigation	Activity Name																				
		Original Duration	Remaining Start Duration	Finish	DWP01A D Start F	WP01A inish	DWP00B DWP00 Start Finish	29 06	October	20	27	02	2013 November	17 24	01		December	22	20	2014 Janua 05	4 ary
C2210								29 06	13	20	21	03	10	17 24	01	00	13			05	12
	Site investigation for bored pile P82	30	30 21/01/13	A 25/01/14	17/12/13 2	3/01/14	19/03/13 27/04/1										÷				
r P83L/R																				ļ	
ilities Diversion																					
	300 & 450mm Drainage diversion for P83	45	45 28/10/13	18/12/13	02/10/13 2	3/11/13	08/12/12 01/02/1			•						-	300	0 & 450mm Drai	nage diversion	for P83	
C2290	Remove existing seawall for pier P83	45	45 19/12/12	15/02/14	25/11/12 11	8/01/14	16/04/13 14/06/1														
te Investigation		40	40 10/12/10	10/02/14		0.01/14															— <u>;</u>
	Site investigation for bored pile P83	30	30 30/01/13	A 05/03/14	24/01/14 03	3/03/14	15/06/13 27/07/1														
	Landing Point on Airport Island and Scenic Hill																				
	nx6+37m - Stage 5 of Works																				
r P84L/R (M.J.))																				
mporary Works																					
10999	Construct temporary piling platform for bored pile P84	40	40 15/01/14	05/03/14	14/04/14 0	9/06/14															
te Investigation																					
	Site investigation for bored pile P84	30	30 14/09/13	A 14/01/14	17/10/13 2	1/11/13	29/07/13 17/08/1							-		<u> </u>	<u> </u>		in the second se		Site investig
r P85L/R																					
le Investigation		10	5 08/05/12	A 06/12/12	26/09/12 0	0/00/12	13/07/13 26/07/1												ļ		
mporary Works	Site investigation for bored pile P85	10	5 00/03/13	00/12/13	20/00/13	lardar 13	13/0//13									Site investiga	tion for bored p	vile P85			
	Construct temporary piling platform for bored pile P85	40	40 15/01/14	05/03/14	14/04/14 0	9/06/14	08/03/14 29/04/1														
r P86L/R																					
te Investigation																					
11170	Site investigation for bored pile P86	10	5 15/05/13	A 30/11/13	24/08/13 0	5/09/13	27/06/13 12/07/1								Site inves	tigation for bore	d pile P86	1		[
r P87L/R															_						
mporary Works																					
	Construct temporary piling platform for bored pile P87	40	40 15/01/14	05/03/14	25/02/14 12	2/04/14	08/03/14 29/04/1														
r P88L/R																					
mporary Works		40	40 08/11/12	24/12/12	25/02/14 1	2/04/14	08/03/14 29/04/1														
r P89L/R	Construct temporary piling platform for bored pile P88	40	40 08/11/13	24/12/13	23/02/14	2/04/14	08/03/14 29/04/1					-					<u> </u>	<u> </u>			
mporary Works																					
	Construct temporary piling platform for bored pile P89	40	40 26/11/13	14/01/14	25/02/14 1	2/04/14	08/03/14 29/04/1														
r P90L/R																					a
mporary Works																					
.11440	Construct temporary piling platform for bored pile P90	40	40 09/01/14	27/02/14	25/02/14 1	2/04/14	08/03/14 29/04/1														
r P91L/R																					
mporary Works																				ļ	
	Construct temporary piling platform for bored pile P91	40	40 26/11/13	14/01/14	06/01/14 24	4/02/14	17/01/14 07/03/1			l III											
6L/R 37m+65m r P92L/R (M.J.)	1x5+43m - Stage 5 of Works															-					
mporary Works																					
	Construct temporary piling platform for bored pile P92	40	0 19/10/13	A 08/11/13	06/01/14 2	4/02/14	17/01/14 07/03/1														
r P93L/R								+	m										<u></u>		
te Investigation																					
11660	Site investigation for bored pile P93	10	5 02/04/13	A 25/11/13	29/06/13 1	5/07/13	25/03/13 09/04/1							Site	nvestigation for	bared pile P93					
						1	I							Da			Revis	ion	<u></u>	Checked	
		ritical Ren	maining Wo	ork				long Kong								10 rollir				Tim	1, 1010
A	Actual Work 🔶 🔶 M	lestone						gramme 13						29/10	13 13		9				+



)	Activity Name	Or Dur	iginal Remain ation Du	iration	FILIST	Start	Finish	Start	Finish		October			Novembe				December				nuary	
mporary Work	S									29 06	13	20 27	7 03	10	17	24	01	08 15	22	29	05	12	19
	Construct temporary piling platform for bored pile P93		40	0 19/10/13 A	26/11/13	06/01/14	24/02/14	17/01/14	07/03/14													_	_
r P94L/R																·l							
te Investigatio																							
AI1730	Site investigation for bored pile P94	-	10	5 23/03/13 A	19/11/13	15/06/13	29/06/13	13/03/13	3 23/03/13						Site in	vestigation for	bored pile P94						
emporary Work	is											1				-conganon ioi							
AI1720	Construct temporary piling platform for bored pile P94		40	40 19/10/13 A	08/01/14	06/01/14	24/02/14	17/01/14	07/03/14														_
er P95L/R																			1	;			
ite Investigatio	n																						
	Site investigation for bored pile P95	l l	10	5 02/04/13 A	13/11/13	17/06/13	29/06/13	13/03/13	3 23/03/13					0.4		- hourd alls D							
er P96L/R	· · · · · · · · · · · · · · · · · · ·		-											Site inv	vestigation i	or bored pile P	30						
ite Investigatio	n																						
	Site investigation for bored pile P96		10	5 11/03/13 A	07/11/12	01/06/12	15/06/12	01/02/12	12/02/12														
			10	3 11/03/13 A	0//11/13	01/00/13	13/00/13	01/03/13	12/03/13					Site investigation fo	r bored pile	P96							
oundation - Bo		ĺ	17	17 15/01/14	06/02/14	10/02/14	10/02/14	10/02/14	12/02/14														
	Construct bored piles P96 - 2 nos.		17	17 15/01/14	00/02/14	19/02/14	10/03/14	13/02/14	13/03/14													_	
er P97L/R																							
emporary Work			10		4.04												<u> </u>		<u></u>	<u></u>	<u></u>		
	Construct temporary piling platform for bored pile P97		40	0 20/08/13 A	10/10/13 A	16/11/13	04/01/14	28/11/13	16/01/14					+ +								Canst	struct t
oundation - Bo																							
	Construct bored piles P97 - 2 nos.		20	20 23/01/14	19/02/14	21/01/14	17/02/14	14/02/14	13/03/14														-
er P98L/R																							
te Investigatio																							
N2010	Site investigation for bored pile P98		10	5 28/02/13 A	01/11/13	03/06/13	15/06/13	18/02/13	8 28/02/13				Site investiga	ation for bored pile	P98								
oundation - Bo	Pile																						
AI2020	Construct bored piles P98 - 2 nos.		20	20 19/12/13	14/01/14	23/01/14	18/02/14	17/01/14	18/02/14													-	_
AI2030	Pile testing P98		28	28 15/01/14	18/02/14	19/02/14	18/03/14	19/02/14	18/03/14														
17L/R 43m+65	5mx3+47m - Stage 5 of Works																						
ier P99L/R (M.J	J.)																						
oundation - Bo	pred Pile																						
AI2090	Construct bored piles P99 - 2 nos.	ĺ	18	18 02/01/14	23/01/14	30/12/13	21/01/14	17/01/14	13/02/14														_
Al2100	Pile testing P99		28	28 23/01/14	27/02/14	21/01/14	25/02/14	14/02/14	13/03/14														-
er P100L/R																							
oundation - Bo	ored Pile																						
AI2160	Construct bored piles P100 - 2 nos.		21	21 25/11/13	18/12/13	28/12/13	22/01/14	13/12/13	3 14/01/14													_	
	Pile testing P100		28	28 19/12/13	15/01/14	23/01/14	26/02/14	15/01/14	18/02/14														
er P101L/R																							
oundation - Bo	pred Pile																						
	Construct bored piles P101 - 2 nos.		23	23 03/12/13	02/01/14	30/11/13	30/12/13	28/11/13	31/12/13	+				-+							Construct bored pil	os P101 - 2 poo	
	Pile testing P101		28	28 02/01/14																7 -	Construct bored pl	001 101 - 2 10S	<u>.</u>
er P102L/R	-																						
oundation - Bo	pred Pile																						
	Construct bored piles P102 - 2 nos.		24	24 15/10/13 A	23/11/12	28/11/12	27/12/12	15/11/12	12/12/12														
AI2300	Pile testing P102		24																	Construct	bored piles P102 - 2	nos.	
= D1021 /D			20	28 24/11/13	21/12/13	20/12/13	24/01/14	10/12/13	00/01/14										-				
er PTUSL/K																							
oundation - Bo			22	0 17/09/10 4	22/10/10 4	01/11/10	27/14/14 2	00/10/10	15/11/12														
AI2370	Construct bored piles P103 - 2 nos.		23	0 17/08/13 A	23/10/13 A	01/11/13	2//11/13	09/10/13	15/11/13							:		es P103 - 2 nos.					
	DWP_01a Programme	Critical	Remai	ining Woi	'k			μ	K70 I	long Kong	I link Po	ad - 2	Monthe	Rolling	, 1	Date		Revi	sion		Checke	d Appr	rov
	-							п							ן י	29/10/1	3 131	0 rolling			Tim		
	Actual Work \blacklozenge	 Milesto 							Pro	ogramme 1	-		10_9770	ia)									
	Remaining Work 🛛 🗖		OB Pr	ogramme	د						Page 14 o	f 17										_	

ID .	Activity Name	Original Ren Duration D	naining Start	Finish	DWP01A	DWP01A	DWP00B	DWP00B			October				2013 November				December			2014	
AI2380	Pile testing P103	28	14 10/08/13 A	10/11/13	Start 28/11/13	Finish 25/12/13		Finish	29	06	13	20	27	03	10 17	24	01	08	15	22	29	05	12 19
	-55mx5+35m - Stage 5 of Works	20	14 10/00/13 A	10/11/13	20/11/13	23/12/13	10/11/13	13/12/13												Pile	e testing P103	+	
ier P104L/R																							
Foundation -																							
	Construct bored piles P104 - 2 nos.	20	10 27/08/13 A	07/11/13	05/10/13	31/10/13	17/10/13	14/11/13							Construct	bored piles P104	. 2005						
AI2450	Pile testing P104	28	28 08/11/13	05/12/13	01/11/13	28/11/13	15/11/13	12/12/13					5				21100.	_	Pile testing P1	04			
ier P105L/R																							
Foundation -	Bored Pile																						
Al2510	Construct bored piles P105 - 2 nos.	22	11 05/08/13 A	08/11/13	02/09/13	03/10/13	07/09/13	16/10/13						Const	ruct bored piles I	105 - 2 nos.							
AI2520	Pile testing P105	28	28 09/10/13 A	06/12/13	04/10/13	31/10/13	17/10/13	13/11/13			-				-			Pile testing	P105				
Pier P106L/R							J				-												
Foundation -	Bored Pile																						
AI2600	Pile testing P106R	28	0 05/10/13 A	11/10/13 A	01/09/13	28/09/13	06/09/13	03/10/13			Pile testing P1	Ø6R											
Column Cons	truction																						
AI2620	Construct column P106R - 1 nos.	19	19 21/01/14	14/02/14	30/10/13	21/11/13	06/11/13	27/11/13					-			•							_
ier P107L/R		· · ·																					
emporary Wo	orks																						
AI3280	Construct temporary piling platform for bored pile P107R	30	0 28/09/13 A	07/10/13 A	16/07/13	26/08/13	06/05/13	14/06/13		Constru	uct temporary p	ling platform fo	or bored pi	e P107R									
AI3500	Remove temporary platform P107R	7	7 20/01/14	27/01/14	13/11/13	21/11/13	28/10/13	05/11/13								•							_
- oundation	Bored Pile																						
AI2650	Construct bored piles P107R - 1 nos.	12	0 09/10/13 A										nstruct	xored piles P107R - 1 n	os.								
AI2660	Pile testing P107R	28	28 28/10/13	24/11/13	15/08/13	11/09/13	30/07/13	26/08/13								Pile test	ing P107R						
Column Cons																							
AI2680	Construct column P107R - 1 nos.	18	18 28/12/13	18/01/14	23/10/13	13/11/13	30/09/13	28/10/13				/			-					1	÷		Cons
	P108 to P114																						
Pier P108L/R	-55mx5+35m - Stage 5 of Works																						
Column Cons																							
AI2750	Construct column P108L - 1 nos.	19	19 28/12/13	20/01/14	03/10/13	30/10/13	31/08/13	27/09/13															
ier P109L/R																						+ + +	
Column Cons																							
AI2800	Construct column P109 - 2 nos.	38	19 27/08/13 A	18/11/13	27/08/13	23/10/13	14/08/13	07/09/13								notruot oolumn B	100 2 000						
	T-pier Construction									-				1 1		instruct column P	109 - 21105.						
	In-situ portal P109 - 1 nos. (Learning)	80	80 28/12/13	04/04/14	23/10/13	28/01/14	07/11/13	24/12/13												<u> </u>			
ier P110L/R																				1			-
Column Cons	truction																						
AI2860	Construct column P110 - 2 nos.	36	27 12/08/13 A	27/11/13	12/08/13	03/10/13	27/06/13	14/08/13								c	onstruct colu	mn P110 - 2 no	s.				
n-situ Portal/	T-pier Construction																						
AI2870	In-situ portal P110 - 1 nos. (Learning)	80	80 28/12/13	04/04/14	03/10/13	13/01/14	14/08/13	07/11/13									_				<u> </u>		
L19L/C/R 40r	n+65mx2 Stage 5 of Works																				-		
ier P111L/C/	R																						
oundation -	Bored Pile																						
Al2900	Pile testing P111	28	0 10/08/13 A	04/10/13 A	13/08/13	10/09/13	10/05/13	06/06/13		Pile testing P	111												
Pile Cap Cons	truction									-													
Al2910	Construct pile cap P111L/R - 2 nos.	50	40 05/10/13 A	12/12/13	10/09/13	18/11/13	07/06/13	15/08/13											Construct pile	cap P111L/R - 2	2 nos.		
Column Cons	truction																						
	DWP_01a Programme	Critical Domo		k				(75 · · ·								Dat	e		Revis	sion		Checked	Appro
	- •	Critical Rema	uning wor	n			H		ong	Kong	Link F	road -	3 M	onths Ro	lling			310 rollii				Tim	
	Actual Work	Milestone						Dro	aram	mo 13	10 /D	and a	nn D	WP_01a)					3			<u> </u>	+

Dragages - crima D	Harbour - VSL Joint Venture 算高 - 中國港灣 - 武勝利聯盟 Activity Name	Original I Duration	Remaining Start Duration	Finish	DWP01A Start	DWP01A Finish	DWP00B Start	DWP00B Finish		October				2013 Novem	ber			December			2014 January	
Al2920	Construct column P111L/R - 2 nos.	36	36 20/01/14	05/03/14		02/01/14			06	13	20	27	03	10	17 2	4	01 08	15	22	29	05 12	2 19
ier P112L/C/I	3																					-
oundation -	Sored Pile																					
AI2960	Pile testing P112	28	0 26/08/13 A	28/10/13	29/08/13	26/09/13	23/06/13	20/07/13				Pile testi	ng P112									
Pile Cap Cons																						
Al2970	Construct pile cap P112 - 2 nos.	50	50 27/11/13	27/01/14	26/09/13	30/11/13	22/07/13	30/09/13													<u> </u>	_
vier P113 L/C/ Utilities Divers																						
Al3570	Temporary slew Tel cable for P113	30	0 15/07/13 A	28/09/13 A	15/07/13	17/08/13	04/03/13	11/04/13	ry slew Tel cable for	D112												
Foundation - I									y siew rei cable fui	FIIS												
Al3010	Construct bored piles P113 - 3 nos.	57	19 12/09/13 A	19/11/13	29/08/13	16/11/13	24/06/13	14/09/13							Construct bor	ed piles P11	3 - 3 nos.				+	
AI3020	Pile testing P113	28	19 10/10/13 A	08/12/13	16/11/13	14/12/13	15/09/13	12/10/13										Pile testin	g P113			
Column Cons	ruction																					
AI3030	Construct column P113L/C/R - 3 nos.	34	34 28/12/13	10/02/14	14/12/13	27/01/14	13/12/13	21/01/14														
Pier P114 L/C/																						
Foundation - I		40	40 40/44/40	00/40/40	10/11/10	30/11/13	45/00/44	00/05/44														
Al3060 Al3070	Construct bored piles P114 - 2 nos. Pile testing P114	12	12 19/11/13 28 03/12/13														•					
lestones sch		20	20 00/12/13	51/12/13	30/11/13	20/12/13	03/03/14	03/00/14														
	ign Checking of the Works																					
C2-1170	Approve DDA for E&M works	0	0	19/11/13		05/11/13		14/07/13							Approve DDA	for E&M we	rks					
C2-1190	Approve DDA for landscaping design by the Supervising Officer	0	0	01/12/13		28/10/13	_	07/11/13									pprove DDA for lar	dscaping desig	n by the Superv	ising Officer		
terface Piers	at chainage 4+200.000 approximate																					
C31-1000	Piles	0	0	28/10/13		12/09/13		25/05/13				Piles										
C31-1010	Pile caps	0	0	31/12/13		14/11/13		09/09/13												Pile ca	aps	
C31-1020	Bridge piers	0	0	22/01/14		05/12/13		21/10/13														•
C31-1030	Completion of the whole of the activities under this Cost Centre to the satisfaction of the Supervising Officer	0	0	22/01/14		05/12/13		21/10/13														•
C33-1040	at chainage 4+260.000 to 11+800.000 approximate Piles	612	575 26/07/13 A	26/05/15	26/07/13	02/04/15	19/01/12	11/02/15														
C33-1040	Pile caps	618	618 28/10/13		12/09/13	18/05/15		21/03/15														
C33-1080	Bridge piers	613	613 21/01/14		13/12/13	12/08/15		18/04/15														
C33-1110	Precast bridge deck segments	719	689 05/08/13 A		09/08/13	31/07/15																
irnaround																						
C34-1000	Piles	148	148 12/10/13 A	24/03/14	08/10/13	04/03/14	08/07/13	08/02/14														
C34-1010	Pile caps	177	177 09/01/14	04/07/14	23/12/13	17/06/14	04/12/13	28/05/14														
aduct above	Geawall																					
C41-1010	Piles	429	376 05/08/13 A		30/07/13	01/10/14	02/07/13															
C41-1030	Bridge piers	502	502 28/12/13	13/05/15	23/10/13	25/03/15	30/09/13	10/12/14			-											
nd Viaduct	Dilon	000	070 00/05/40 1	01/00/44	08/05/40	20/05/4 1	04/00/40	14/00/4 1														
C42-1000 C42-1010	Piles Pile caps	368	278 06/05/13 A 92 05/10/13 A																			
C42-1010	Prie caps Bridge piers	288	304 12/08/13 A		12/08/13			12/04/14														
C42-1020	Precast bridge deck segments	182	182 26/12/13		27/10/13	26/04/14		29/01/15														
C42-1060	Bridge deck	428	428 28/12/13		03/10/13	06/12/14		14/10/14														
erface Span	with Contract No. HY/2011/03																					
C43-1000	Piles	0	0	31/12/13		28/12/13		05/06/14												Piles	+	
						T					:		:		Г)ate		Revi	sion		Checked	Appro
		ical Ren	naining Wor	К			HI		Kong L						a —		1310 rol				Tim	. יקקי
	Actual Work	stone						Dre	nme 131	IN (Bae	od o	n DV		a)	2.9/	10/10	101010	w vy			1.000	

Ð	HE	VSL
Dragages - China	Harbour - VSL Joint Venture 3	嘉 - 中國港灣 - 威勝利聯營

ctivity ID	Activity Name	Original	Remaining	Start	Finish	DWP01A	DWP01A	DWP00B	DWP00B							2013									2014	
		Duration	Duration			Start	Finish	Start	Finish			October				Novem	ber			C	December				January	
										29	06	13	20	27	03	10	17	24	01	08	15	22	29	05	12	19
CC43-1010	Pile caps	0	0		28/10/13		15/07/13		14/08/14					Pile c	aps											

DWP 01a Programme Critical Rer	maining Work HKZB Hong Kong Link F	Date	Revi	sion Checked	Approved
Actual Work Milestone	Programme 1310 (Ba	C 129/10/1	3 1310 rolling	Tim	
	Programme Page 1	_ /			

APPENDIX B ACTION AND LIMIT LEVELS

Appendix B - Action and Limit Levels

Location	Action Level, μg/m ³	Limit Level, µg/m ³	
AMS1	381	- 500	
AMS4	352		

Table B-1Action and Limit Levels for 1-Hour TSP

Table B-2Action and Limit Levels for 24-Hour TSP

Location	Action Level, μg/m ³	Limit Level, µg/m ³	
AMS1	170	260	
AMS4	171		

Table B-3 Action and Limit Levels for Construction Noise

Time Period	Action Level	Limit Level
0700-1900 hrs on normal weekdays	When one documented complaint is received	75 dB(A) *

Noted: If works are to be carried during restricted hours, the conditions stipulated in the construction noise permit issued by the Noise Control Authority have to be followed.

(*) reduce to 70 dB(A) for schools and 65 dB(A) during school examination periods.

Table B-4Action and Limit Levels for Water Quality

Parameter (unit)	Water Depth	Action Level	Limit Level
Dissolved Oxygen (mg/L) (surface, middle, bottom)	Surface and Middle	<u>5.0</u>	4.2 except 5 for FCZ
	Bottom	<u>4.7</u>	3.6
Turbidity (NTU)	Depth average	27.5 and 120% of upstream control station's turbidity at the same tide of the same day	<u>47.0</u> and 130% of turbidity at the upstream control station at the same tide of same day
Suspended Solids (mg/L)	Depth average	<u>23.5</u> and 120% of upstream control station's SS at the same tide of the same day	<u>34.4</u> and 130% of SS at the upstream control station at the same tide of same day and 10mg/L for WSD Seawater Intakes

Note:

(1) Depth-averaged is calculated by taking the arithmetic means of reading of all three depths

(2) For DO, non-compliance of the water quality limit occurs when monitoring result is lower that the limit.(3) For SS & turbidity non-compliance of the water quality limits occur when monitoring result is higher than the limits.

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

(5) The 1%-ile of baseline data for dissolved oxygen (surface and middle) and dissolved oxygen (bottom) are 4.2mg/L and 3.6mg/L respectively.

APPENDIX C COPIES OF CALIBRATION CERTIFCATES

File No. MA12014/67/0004

CINOTECH

Project No.	ject No. <u>AMS 1 - Sha Lo Wan</u>			Operator:	Hei		
Date:	16-Aug-13		1	Next Due Date:	15-Oct-	15-Oct-13	
Equipment No.:	A-01-67		Serial No.		3218	3218	
			Ambient	ondition			kanala kanalari Martin
Temperatu	re Ta(K)	299.7	Pressure, Pa			753.1	
Temperatu	io, ia (ix)						
	lenten er tellenten som	Ori	fice Transfer Sta	ndard Inform	ation		
Equipme	ent No.:	A-04-05	Slope, mc	0.0592	Intercept	t, bc	-0.0283
Last Calibra	ation Date:	26-Dec-12	1	mc x Qstd + b	e = [ΔH x (Pa/760)) x (298/Ta)] ^{1/}	2
Next Calibra	ation Date:	25-Dec-13		Qstd = {[∆H x	(Pa/760) x (298/	Га)] ^{1/2} -bc} / m	c
		•					
			Calibration of	TSP Sampler			
Calibration		Or	fice			HVS	(a) (a a a m) 2 ^{1/2}
Point	ΔH (orifice), in. of water	[ΔH x (Pa/76	0) x (298/Ta)] ^{1/2}	Qstd (CFM) X - axis	ΔW (HVS), in. of oil		50) x (298/Ta)] ^{1/2} -axis
1	11.9		3.42	58.32	6.9		2.61
2	9.5		3.06	52.16	5.5		2.33
3	7.2		2.66	45.47	4.3		2.06
4	4.6	2.13		36.44	2.9		1.69
5	2.8		1.66	28.54	1.8		1.33
By Linear Regr Slope , mw =	ression of Y on X 0.0423			Intercept, bw		3	
Correlation c	oefficient* =	0.9	998	_			
*If Correlation (Coefficient < 0.99	0, check and red	calibrate.	_			
			Set Point C	alculation			
From the TSP F	ield Calibration C	urve. take Ostd				<u></u>	
	ssion Equation, th						
			_				
		mw x Q	$std + bw = [\Delta W]$	x (Pa/760) x (2	98/Ta)] ^{1/2}		
Therefore, Se	et Point; W = (m	w x Qstd + bw)	² x (760 / Pa) x (Ta / 298) =	3.87	·	
					· · · · · · · · · · · · · · · · · · ·		
D 1							
Remarks:						······	
Conducted by:	hei	Signature:	he	τ. 1	~	Date: <u>/</u>	618/2013
Checked by:	W.K. Jan	Signature:	/www.'		-	Date: <u> </u>	6 18 /2013

CINOTECH

AMS / Son Ta					File No. <u>MA12014/74/0004</u>
AMS 4 - San Tau			Operator:	Hei	
16-Aug-13		۲ -	Next Due Date:	15-Oct-	-13
A-01-74			Serial No.	2202	
		Ambient C	Condition		
re, Ta (K)	300	Pressure, Pa	(mmHg)		752.8
· · · ·		· · · · · · · · · · · · · · · · · · ·			
가 있는 것 같은 가 가 가 다. 	Or	ifice Transfer Sta	ndard Inform	ation	
ent No.:	A-04-05	Slope, mc	0.0592	Intercept	, bc -0.0283
tion Date:	26-Dec-12		me x Qstd + b	c = [ΔH x (Pa/760) x (298/Ta)] ^{1/2}
ation Date:	25-Dec-13		$Qstd = \{ [\Delta H x] \}$	(Pa/760) x (298/]	Га)] ^{1/2} -bc} / mc
	•				
		Calibration of	TSP Sampler		
	01	fice			HVS
ΔH (orifice),	[AH x (Pa/7)	A H Y (Pa/760) Y (798/1a) "" `		ΔW	[∆W x (Pa/760) x (298/Ta)] ^{1/2}
in. of water				(HVS), in. of oil	Y-axis
11.3		3.33	56.80	7.8	2.77
9.3		3.02	51.58	6.5	2.53
7.0		2.62	44.81	5.3	2.28
4.6		2.13		3.4	1.83
2.8		1.66	28.52	2.3	1.50
Coefficient < 0.99	0, check and re Curve, take Qstd e "Y" value acc mw x Q	calibrate. Set Point C = 43 CFM cording to Qstd + bw = [ΔW 2	x (Pa/760) x (2	98/Ta)] ^{1/2}	
t Point; W = (m	w x Qstd + bw)	f x (760 / Pa) x (Ta / 298) =	4.72	
<u></u>					
	nt No.: ttion Date: ation Date: ation Date: ΔH (orifice), in. of water 11.3 9.3 7.0 4.6 2.8 ession of Y on X 0.0452 oefficient* = Coefficient < 0.99 eld Calibration C sion Equation, th	re, Ta (K) 300 Or ent No.: A-04-05 ation Date: 26-Dec-12 ation Date: 25-Dec-13 On Δ H (orifice), in. of water [Δ H x (Pa/70) 11.3 9.3 7.0 4.6 2.8 ession of Y on X 0.0452 oefficient* = 0.9 Coefficient < 0.990, check and re coefficient < 0.990, check and re Attribute account of the second s	Ambient Cre, Ta (K)300Pressure, PaOrifice Transfer Staent No.:A-04-05Slope, mcent No.:A-04-05Slope, mcent No.:26-Dec-121ation Date:25-Dec-13Calibration ofOrifice ΔH (orifice), in. of water $[\Delta H x (Pa/760) x (298/Ta)]^{1/2}$ 11.33.339.33.027.02.624.62.132.81.66ession of Y on X0.04520.9985Coefficient < 0.990, check and recalibrate.	Ambient Conditionre, Ta (K)300Pressure, Pa (mmHg)Orifice Transfer Standard Informent No.:A-04-05Slope, mc0.0592tion Date:26-Dec-12mc x Qstd + bCalibration of TSP SamplerOrfice ΔH (orifice), in. of water[$\Delta H x (Pa/760) x (298/Ta)$] ^{1/2} Qstd (CFM) X - axis11.33.3356.809.33.0251.587.02.6244.814.62.1336.412.81.6628.52ession of Y on X0.0452Intercept, bwoefficient* = 0.9985Coefficient < 0.990, check and recalibrate.Set Point Calculationeld Calibration Curve, take Qstd = 43 CFMsion Equation, the "Y" value according tomw x Qstd + bw = [$\Delta W x (Pa/760) x (2$	Ambient Conditionre, Ta (K)300Pressure, Pa (mmHg)Orifice Transfer Standard InformationinterceptinterceptinterceptinterceptCalibration of TSP SamplerCalibration of TSP SamplerCalibration of TSP SamplerOrficeAH (orifice), in. of water $[\Delta H x (Pa/760) x (298/Ta)]^{1/2}$ Qstd (CFM) X - axis ΔW (HVS), in. of oil11.33.3356.807.89.33.0251.586.57.02.6244.815.34.62.1336.413.42.81.6628.522.3ession of Y on X0.9985Coefficient * = 0.9985Coefficient < 0.990, check and recalibrate.Set Point Calculationeld Calibration Curve, take Qstd = 43 CFM

File No. MA12014/67/0005

CINOTECH

Project No.	AMS 1 - Sha Lo	Wan		Operator:	WK	The No. MA12014/07/0003
-	11-Oct-13	TT GIL	۸	-	10-Dec-	13
Equipment No.:			-		3218	
Equipment Ivo	71-01-07					
			Ambient C	Condition		
Temperatur	re, Ta (K)	303.3	Pressure, Pa	(mmHg)		759.6
			fice Transfer Star	1		
Equipme		A-04-05	Slope, mc	0.0592	Intercept	
Last Calibra		26-Dec-12			$\mathbf{c} = [\Delta \mathbf{H} \mathbf{x} (\mathbf{P}a/760)]$	
Next Calibra	ation Date:	25-Dec-13		$Qstd = \{ \Delta H x $	(Pa/760) x (298/]	[a)] -bc} / mc
		•	Calibration of	TSP Samplar		
		<u>iseren 1865,200 en 1</u> ∩n	fice	151 Sampler		HVS
Calibration	ΔH (orifice),			Qstd (CFM)	ΔW	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$
Point	in. of water	$[\Delta H x (Pa/760) x (298/Ta)]^{1/2}$		X - axis	(HVS), in. of oil	
1	11.9		3.42	58.22	6.9	2.60
2	9.7		3.09	52.61	5.5	2.32
3	7.4		2.70	46.01	4.3	2.05
4	4.6		2.13	36.38	2.8	1.66
5	2.9		1.69	28.98	1.7	1.29
By Linear Regr Slope , mw = Correlation c	0.0439 oefficient* =	- 0.9	9993	Intercept, bw -	. 0.033	5
*If Correlation (Coefficient < 0.99	90, check and re	calibrate.			
			Set Point C	alculation		
From the TSP F	ield Calibration (Curve, take Qstd	= 43 CFM			
From the Regres						
_	-			- (D- (T(A) (A	00/T->11/2	
		mw x Q	$b = [\Delta W]$	x (Pa/700) x (2	98/1a)]	
Therefore, So	et Point; W = (m	w x Qstd + bw)) ² x (760 / Pa) x (Ta / 298) =	3.77	
t						
Remarks:						
				1		
Conducted by: Checked by:		Signature: Signature:	Kiwa	<u>~</u>	-	Date: $\frac{11 \left 10 \right 1^3}{1000000000000000000000000000000000000$
Cincercu by.	·	Jigimurvi			_	



File No. MA12014/74/0005

D. 1				0	WK	File No. MA12014/74/0005
-	AMS 4 - San Ta	a <u>u</u>		Operator: Next Due Date:		
Date:	11-Oct-13		1		2202	
Equipment No.:	A-01-74			Serial INO.		
			Ambient (Condition		
Temperatu	re, Ta (K)	303.6	Pressure, Pa	(mmHg)		759.2
		Ori	fice Transfer Sta	ndard Inform	ation	
Equipme	ent No.:	A-04-05	Slope, mc	0.0592	Intercept	
Last Calibra	tion Date:	26-Dec-12			c = [ΔH x (Pa/760	
Next Calibra	ation Date:	25-Dec-13		$Qstd = \{ [\Delta H x] \}$	(Pa/760) x (298/1	[a)] ^{1/2} -bc} / mc
			Calibration of	TSP Sampler		
Calibration		Or	fice			HVS
Point	∆H (orifice), in. of water	[ΔH x (Pa/76	0) x (298/Ta)] ^{1/2}	Qstd (CFM) X - axis	∆W (HVS), in. of oil	[ΔW x (Pa/760) x (298/Ta)] ^{1/2} Y-axis
1	11.1		3.30	56.21	7.7	2.75
2	9.1	2	2.99	50.94	6.4	2.51
3	7.0	2	2.62	44.73	5.2	2.26
4	4.5		2.10		3.2	1.77
5	2.9	1	.69	28.96	2.1	1.43
By Linear Regr Slope , mw = Correlation c *If Correlation (0.0486 oefficient* =	_	987	Intercept, bw -	- 0.038 /	2
			Set Point C	alculation		
From the TSP F	ield Calibration	Curve, take Qstd	= 43 CFM			
From the Regres	sion Equation, t	he "Y" value acc	ording to			
		mw x Q	std + bw = $[\Delta W]$	x (Pa/760) x (2	98/Ta)] ^{1/2}	
Therefore, S	et Point; W = (n	nw x Qstd + bw)	² x (760 / Pa) x (Ta / 298) =	4.61	
Remarks:						
Conducted by: Checked by:	hik Tang	Signature: Signature:		m)	-	Date: <u>11 0 (13)</u> Date: <u>11 0 (tobec do</u> 12)



TISCH ENVIROMENTAL, INC. 145 SOUTH MIAMI AVE. VILLAGE OF CLEVES, OH 45002 513.467.9000 877.263.7610 TOLL FREE 513.467.9009 FAX WWW.TISCH-ENV.COM

AIR POLLUTION MONITORING EQUIPMENT

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - De Operator		Rootsmeter Orifice I.I	•	438320 2323	Ta (K) - Pa (mm) -	295 - 753.11
PLATE OR Run # 1 2 3 4 5	VOLUME START (m3) NA NA NA NA NA	VOLUME STOP (m3) NA NA NA NA NA	DIFF VOLUME (m3) 1.00 1.00 1.00 1.00 1.00	DIFF TIME (min) 1.4440 1.0240 0.9120 0.8720 0.7200	METER DIFF Hg (mm) 3.2 6.4 8.0 8.8 12.8	ORFICE DIFF H2O (in.) 2.00 4.00 5.00 5.50 8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)		Va	(x axis) Qa	(y axis)
0.9967 0.9925 0.9903 0.9893 0.9840	0.6902 0.9693 1.0858 1.1345 1.3666	$ \begin{array}{r} 1.4149\\ 2.0010\\ 2.2372\\ 2.3464\\ 2.8299\end{array} $		0.9957 0.9915 0.9893 0.9883 0.9830	0.6896 0.9683 1.0847 1.1334 1.3652	0.8851 1.2517 1.3995 1.4678 1.7702
Qstd slop intercept coefficie	(b) = ent (r) =	2.09107 -0.02838 0.99996		Qa slope intercept coefficie	t (b) = ent (r) =	1.30939 -0.01775 0.99996
y axis =	SQRT [H2O (H	298/260) (298/2	Га)∫	y axis =	SQRT [H2O (7	[a/Pa)]

CALCULATIONS

Vstd = Diff. Vol[(Pa-Diff. Hg)/760](298/Ta)
Qstd = Vstd/Time

Va = Diff Vol [(Pa-Diff Hg)/Pa] Qa = Va/Time

For subsequent flow rate calculations:

Qstd = $1/m\{ [SQRT(H2O(Pa/760)(298/Ta))] - b \}$ Qa = $1/m\{ [SQRT(H2O(Ta/Pa)] - b \}$



Calibration Certificate

Certificate No. 34537	Page 1	of 2 Pages
Customer : Dragages - China Habour	- VSL Joint Venture	· · · · · · · · · · · · · · · · · · ·
Address : 3/F., Island Place Tower, 8	510 King's Road, North Point, H. K.	
Order No.: Q30108	Date of receipt :	4-Jul-13
Item Tested		1
Description : Vantage Pro2 Weather Sta Manufacturer : Davis Model : 6152 CUK		AK130520006
Test Conditions		
Date of Test : 15-Jul-13 Ambient Temperature : (23 ± 3)°C	Supply Voltage : Relative Humidity :	 (50 ± 25) %
Test Specifications		
Calibration check. Ref. Document/Procedure : Z04.		
Test Results	and a bar and an	
The results are shown in the attached page	(s).	
Main Test equipment used:		
Equipment No.DescriptionS155Std. Anemometer	Cert. No. Trac NSC201331006 NIM-	<u>eable to</u> PRC
will not include allowance for the equipment long term.	ate to the values measured at the time of the test and any d drift, variations with environmental changes, vibration and r laboratory to repeat the measurement. Hong Kong Calib juipment.	shock during transportation
The test equipment used for calibration are traceable to The test results apply to the above Unit-Under-Test on	o International System of Units (SI). y	
Calibrated by : Dorothy Cheuk	Approved by : Steve Date: 6-Aug-13	Kwan

Hong Kong Calibration Ltd. Unit 8B, 24/F., Well Fung Indu≛trial Centre, No. 58-76, Ta Chuen Ping Street,Kwal Chung, NT,Hong Kong. Tel: 2425 6801 Fax: 2425 8646

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Calibration Certificate

Certificate No. 34537

Page 2 of 2 Pages

Results :

1. Wind Speed

Applied Value (m/s)	UUT Reading (m/s)
2.7	2.7
5.3	5.4
7.5	7.6
10.4	10.7
15.3	15.6
19.0	20.1

Uncertainty : $\pm (2 \% + 0.2 \text{ m/s})$

2. Wind Direction

Reference Value	UUT Indication		
N (0°)	N (0°)		
NE (45°)	NE (45°)		
<u> </u>	E (90°)		
SE (135°)	SE (135°)		
<u>S (180°)</u>	S (180°)		
SW (225°)	SW (225°)		
W (270°)	W (270°)		
NW (315°)	NW (315°)		

Remark : 1. UUT: Unit-Under-Test

- 2. Atmospheric Pressure : 1 003 hPa
- 3. Before the calibration of the Wind Direction function, the Arrow Head was adjusted to the magnetic NORTH direction while the monitor indicated N. The customer is reminded to do the alignment again after installation.

----- END -----

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Sun Creation Engineering Limited

Calibration and Testing Laboratory

Certificate of Calibration 校正證書

Certificate No.: C130600 證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號: IC13-022 Description / 儀器名稱 : Sound & Vibration Analyser Manufacturer / 製造商 : Svantek Model No. / 型號 : SVAN957 Serial No. / 編號 : 21460 Supplied By / 委託者 : Dragages - China Harbour - VSL 3/F, Island Place Tower, 510 King North Point, Hong Kong	Joint Venture
TEST CONDITIONS / 測試條件 Temperature / 溫度 : (23 ± 2)°C Line Voltage / 電壓 :	Relative Humidity / 相對濕度 : (55 ± 20)%
TEST SPECIFICATIONS / 測試規範 Calibration check	
DATE OF TEST / 測試日期 : 25 January 2013	
TEST RESULTS / 測試結果 The results apply to the particular unit-under-test only. All results are within manufacturer's specification. The results are detailed in the subsequent page(s).	
 The test equipment used for calibration are traceable to National The Government of The Hong Kong Special Administrative R Rohde & Schwarz Laboratory, Germany Fluke Everett Service Center, USA Agilent Technologies, USA 	
Tested By : <u>Chan than Chan</u> 測試 H C Chan	
Certified By : 核證 K Lee	Date of Issue : 28 January 2013 簽發日期

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

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



Sun Creation Engineering Limited

Calibration and Testing Laboratory

Certificate of Calibration 校正證書

Certificate No.: C130600 證書編號

- 1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours, and switched on to warm up for over 10 minutes before the commencement of the test.
- 2. Self-calibration using the Svantek acoustic calibrator SV30A, S/N : 24791 was performed before the test.
- 3. The results presented are the mean of 3 measurements at each calibration point.
- 4. Test equipment :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C130019
CL281	Multifunction Acoustic Calibrator	DC110233

- 5. Test procedure : MA101N.
- 6. Results :
- 6.1 Sound Pressure Level
- 6.1.1 Reference Sound Pressure Level

UUT Setting			Applied Value		UUT	IEC 61672	
Range	Mode	Frequency	Time	Level	Freq.	Reading	Class 1 Spec.
		Weighting	Weighting	(dB)	(kHz)	(dB)	(dB)
HIGH	SPL	A	Fast	114.00	1	114.2	± 1.1

6.1.2 Linearity

	UUT Setting				d Value	UUT
Range	Mode	Frequency	Time	Level	Freq.	Reading
		Weighting	Weighting	(dB)	(kHz)	(dB)
HIGH	SPL	A	Fast	114.00	1	114.2 (Ref.)
				104.00		104.2
				94,00		94.2

IEC 61672 Class 1 Spec. : \pm 0.6 dB per 10 dB step and \pm 1.1 dB for overall different.

6.2 Time Weighting

		Setting		Applie	d Value	UUT	IEC 61672
Range	Mode	Frequency	Time	Level	Freq.	Reading	Class 1 Spec.
		Weighting	Weighting	(dB)	(kHz)	(dB)	(dB)
HIGH	SPL	A	Fast	114.00	1	114.2	Ref.
			Slow			114.2	± 0.3

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

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



Sun Creation Engineering Limited

Calibration and Testing Laboratory

Certificate of Calibration 校正證書

Certificate No. : C130600 證書編號

6.3 Frequency Weighting

6.3.1 A-Weighting

A-weighti		JT Setting		Appl	ied Value	UUT	IEC 61672
Range	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq.	Reading (dB)	Class 1 Spec. (dB)
HIGH	SPL	A	Fast	114.00	63 Hz	88.0	$\frac{-26.2 \pm 1.5}{-16.1 \pm 1.5}$
					125 Hz 250 Hz	<u>98.0</u> 105.5	-10.1 ± 1.3 -8.6 ± 1.4
					500 Hz	110.9	-3.2 ± 1.4
					1 kHz	114.2	Ref.
					2 kHz	115.4	$+1.2 \pm 1.6$
					4 kHz	115.2	$+1.0 \pm 1.6$
					8 kHz	113.2	-1.1 (+2.1 ; -3.1)
					12.5 kHz	109.9	-4.3 (+3.0 ; -6.0)

6.3.2 C-Weighting

		JT Setting		Appli	ed Value	UUT	IEC 61672
Range	Mode	Frequency	Time	Level	Freq.	Reading (dB)	Class 1 Spec. (dB)
IUCU	CDI	Weighting	Weighting Fast	(dB) 114,00	63 Hz	113.4	-0.8 ± 1.5
HIGH	SPL	C	1.921	114.00	125 Hz	114.0	-0.2 ± 1.5
					250 Hz	114.2	0.0 ± 1.4
					500 Hz	114.2	0.0 ± 1.4
					1 kHz	114.2	Ref.
					2 kHz	114.0	-0.2 ± 1.6
					4 kHz	113.5	-0.8 ± 1.6
					8 kHz	111.3	-3.0 (+2.1 ; -3.1)
					12.5 kHz	108.0	-6.2 (+6.0 ; -∞)

Remarks : - UUT Microphone Model No. : AC07052H & S/N : 43679

- Mfr's Spec. : IEC 61672 Class 1

104 dB	250 Hz - 500 Hz 1 kHz 2 kHz - 4 kHz 8 kHz 12.5 kHz : 1 kHz	: $\pm 0.30 \text{ dB}$: $\pm 0.45 \text{ dB}$: $\pm 0.55 \text{ dB}$: $\pm 0.80 \text{ dB}$: $\pm 0.10 \text{ dB}$ (Ref. 94 dB)
114 dB	: 1 kHz	$\pm 0.10 \text{ dB}$ (Ref. 94 dB)

- The uncertainties are for a confidence probability of not less than 95 %.

Note :

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

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

本證書所戴按正用之測試器材均可溯源至國際標準。局部按印本證書需先獲本實驗所書面批准



Sun Creation Engineering Limited

Calibration and Testing Laboratory

Certificate of Calibration 校正證書

Certificate No.: C130601 證書編號

ITEM TESTED / 送檢項	目	(Job No. / 序引編號 :IC13-0227)
Description / 儀器名稱	;	Sound & Vibration Analyser
Manufacturer / 製造商	:	Svantek
Model No. / 型號	:	SVAN957
Serial No. / 編號	:	23851
Supplied By / 委託者	:	Dragages - China Harbour - VSL Joint Venture
		3/F, Island Place Tower, 510 King's Road,
		North Point, Hong Kong
TEST CONDITIONS / }	測記	《條件

Temperature / 溫度 : (23 ± 2)°C Line Voltage / 電壓 : --- Relative Humidity / 相對濕度 : (55 ± 20)%

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 25 January 2013

TEST RESULTS / 測試結果

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

The test equipment used for calibration are traceable to National Standards via :

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA
- Agilent Technologies, USA

Tested By 測試

Chan Km C H C Chan

Certified By 核證

Date of lssue 簽發日期 :

28 January 2013

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

本證書所載按正用之潤試器材均可溯源至國際標準。局部復印本證書需先獲本實驗所書面批准。

Lee



Sun Creation Engineering Limited

Calibration and Testing Laboratory

Certificate of Calibration 校正證書

Certificate No.: C130601 證書編號

- 1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours, and switched on to warm up for over 10 minutes before the commencement of the test.
- 2. Self-calibration using the Svantek acoustic calibrator SV30A, S/N : 24780 was performed before the test.
- 3. The results presented are the mean of 3 measurements at each calibration point.
- 4. Test equipment :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C130019
CL281	Multifunction Acoustic Calibrator	DC110233

- 5. Test procedure : MA101N.
- 6. Results :
- 6.1 Sound Pressure Level
- 6.1.1 Reference Sound Pressure Level

	UU	T Setting		Applied Value		UUT	IEC 61672
Range	Mode	Frequency	Time	Level	Freq.	Reading	Class 1 Spec.
Ũ		Weighting	Weighting	(dB)	(kHz)	(dB)	(dB)
HIGH	SPL	Α	Fast	114.00	1	113.8	± 1.1

6.1.2 Linearity

[U	UT Setting		Applie	d Value	UUT
Range	Mode	Frequency	Time	Level	Freq.	Reading
		Weighting	Weighting	(dB)	(kHz)	(dB)
HIGH	SPL	А	Fast	114.00	1	113.8 (Ref.)
				104.00		103.8
				94.00		93.8

IEC 61672 Class 1 Spec. : \pm 0.6 dB per 10 dB step and \pm 1.1 dB for overall different.

6.2 Time Weighting

	บบา	C Setting		Applied Value		UUT	IEC 61672
Range	Mode	Frequency	Time	Level	Freq.	Reading	Class 1 Spec.
_		Weighting	Weighting	(dB)	(kHz)	(dB)	(dB)
HIGH	SPL	Α	Fast	114.00	1	113.8	Ref.
			Slow			113.8	± 0.3

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

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Sun Creation Engineering Limited

Calibration and Testing Laboratory

Certificate of Calibration 校正證書

Certificate No.: C130601 證書編號

6.3 Frequency Weighting

6.3.1 A-Weighting

A-weightin		JT Setting		Appl	ied Value	UUT	IEC 61672
Range	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq.	Reading (dB)	Class I Spec. (dB)
HIGH	SPL	A	Fast	114.00	63 Hz	87.6	-26.2 ± 1.5
					125 Hz	97.6	-16.1 ± 1.5
					250 Hz	105.1	-8.6 ± 1.4
					500 Hz	110.5	-3.2 ± 1.4
					1 kHz	113.8	Ref.
					2 kHz	115.0	$+1.2 \pm 1.6$
					4 kHz	114.8	$+1.0 \pm 1.6$
					8 kHz	112.8	-1.1 (+2.1 ; -3.1)
					12.5 kHz	109.6	-4.3 (+3.0 ; -6.0)

6.3.2 C-Weighting

		JT Setting		Appli	ed Value	UUT	IEC 61672
Range	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq.	Reading (dB)	Class 1 Spec. (dB)
HIGH	SPL	C	Fast	114.00	63 Hz	113.0	-0.8 ± 1.5
					125 Hz	113.6	-0.2 ± 1.5
					250 Hz	113.8	0.0 ± 1.4
					500 Hz	113.8	0.0 ± 1.4
					l kHz	113.8	Ref.
					2 kHz	113.7	-0.2 ± 1.6
					4 kHz	113.1	-0.8 ± 1.6
					8 kHz	110.9	-3.0 (+2.1 ; -3.1)
					12.5 kHz	107.6	-6.2 (+6.0 ; -∞)

Remarks : - UUT Microphone Model No. : AC07502E & S/N : 48532

- Mfr's Spec. : IEC 61672 Class 1

04 dB	250 Hz - 500 Hz 1 kHz 2 kHz - 4 kHz 8 kHz 12.5 kHz : 1 kHz	: ± 0.30 dB : ± 0.45 dB : ± 0.55 dB : ± 0.80 dB : ± 0.10 dB (Ref. 94 dB)
	: 1 KHZ : 1 kHz	$\pm 0.10 \text{ dB} (\text{Ref. 94 dB})$ $\pm 0.10 \text{ dB} (\text{Ref. 94 dB})$

- The uncertainties are for a confidence probability of not less than 95 %.

Note :

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

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

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Sun Creation Engineering Limited

Calibration and Testing Laboratory

Certificate of Calibration 校正證書

Certificate No.: C130599 證書編號

ITEM TESTED / 送檢項目 Description / 儀器名稱 : Manufacturer / 製造商 : Model No. / 型號 : Serial No. / 編號 : Supplied By / 委託者 :	(Job No. / 序引編號 : IC13-0227 Acoustic Calibrator Svantek SV30A 24780 Dragages - China Harbour - VSL Jo 3/F, Island Place Tower, 510 King's North Point, Hong Kong	int Venture	
TEST CONDITIONS / 測誌 Temperature / 溫度 : (23 Line Voltage / 電壓 :		Relative Humidity / 相對濕度 :	(55 ± 20)%
TEST SPECIFICATIONS / Calibration check	/ 測試規範		·

DATE OF TEST / 測試日期 : 25 January 2013

TEST RESULTS / 測試結果

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

The test equipment used for calibration are traceable to National Standards via :

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA
- Agilent Technologies, USA

核證

Tested By 測試	; _	than then Chy H C Chan	
Certified By	:		Date of Issue

K [] Lee

28 January 2013

1

簽發日期

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

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Sun Creation Engineering Limited

Calibration and Testing Laboratory

Certificate of Calibration 校正證書

Certificate No.: C130599 證書編號

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

Equipment ID	Description	Certificate No.
CL130	Universal Counter	C123541
CL281	Multifunction Acoustic Calibrator	DC110233
TST150A	Measuring Amplifier	C120886

- 4. Test procedure : MA100N.
- 5. Results :
- 5.1 Sound Level Accuracy

UUT	Measured Value	Mfr's Spec.	Uncertainty of Measured Value
Nominal Value	(dB)	(dB)	(dB)
94 dB, 1 kHz	94.1	± 0.3	± 0.2
114 dB, 1 kHz	114.0		

5.2 Frequency Accuracy

UUT Nominal Value	Measured Value	Mfr's	Uncertainty of Measured Value
(kHz)	(kHz)	Spec.	(Hz)
1	0.999 99	1 kHz ± 0.02 %	± 0.01

Remark : - The uncertainties are for a confidence probability of not less than 95 %.

Note :

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

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

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Sun Creation Engineering Limited

Calibration and Testing Laboratory

Certificate of Calibration 校正證書

Certificate No.: C130598 證書編號

ITEM TESTED / 送檢項目	(Job No. / 序引編號 :IC13-0227)		
Description / 儀器名稱	Acoustic Calibrator		
Manufacturer / 製造商 :	Svantek		
Model No. / 型號 :	SV30A		
Serial No. / 編號 :	24791		
Supplied By / 委託者 :	Dragages - China Harbour - VSL Joint V	Venture	
	3/F, Island Place Tower, 510 King's Roa	ad,	
	North Point, Hong Kong		
TEST CONDITIONS / 測計	式條件		
Temperature / 溫度 : (2	3 ± 2)°C	Relative Humidity / 相對濕度 :	(55 ± 20)%
Line Voltage / 電壓 :			

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 25 January 2013

TEST RESULTS / 測試結果

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

The test equipment used for calibration are traceable to National Standards via :

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA
- Agilent Technologies, USA

Tested By 測試

than Um (H C Chan

Certified By Date of Issue 28 January 2013 : 核證 簽發日期 K C Lee

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



Sun Creation Engineering Limited

Calibration and Testing Laboratory

Certificate of Calibration 校正證書

Certificate No. : C130598 證書編號

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

Equipment ID	Description	Certificate No.
CL130	Universal Counter	C123541
CL281	Multifunction Acoustic Calibrator	DC110233
TST150A	Measuring Amplifier	C120886

- 4. Test procedure : MA100N.
- 5. Results :
- 5.1 Sound Level Accuracy

UUT	Measured Value	Mfr's Spec.	Uncertainty of Measured Value
Nominal Value	(dB)	(dB)	(dB)
94 dB, 1 kHz	93,9	± 0.3	± 0.2
114 dB, 1 kHz	113.9		

5.2 Frequency Accuracy

UUT Nominal Value	Measured Value	Mfr's	Uncertainty of Measured Value
(kHz)	(kHz)	Spec.	(Hz)
1	1.000 00	1 kHz ± 0.02 %	± 0.01

Remark : - The uncertainties are for a confidence probability of not less than 95 %.

Note :

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

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



佳力高試驗中心有限公司

CASTCO TESTING CENTRE LTD.

TEST REPORT

Chemical Analysis of Water

Accuracy check of YSI Sondes Environmental Monitoring System

Date of issue: 20-08-2013 Page 1 of 1 pages			Castco LRN: EN	J0130816-1
Sample details as supplied by	customer			
Customer : Dragages-China H		Cu	stomer Ref. No. :	
Address: Tung Chung Waterf		-		
Job Title : Hong Kong-Zhuhai-	Macao Bridge Hong Kong L	ink Road - Section be	tween HKSAR Boundary and	d Scenic Hill
Contract No.: HY/2011/09				
Laboratory Test Result				
Instrument Name: Sonde Envi	ironmental Monitoring Syste	m		
Manufacturer : YSI	C .		nt No. : W.03.02	
Model No.: YSI 6920		Date of C	Calibration : 16-08-2013	
Serial No.: 02D0293AA		Date of I	Next Calibration : 16-11-20	13
pH Value Check (pH Probe :	Model: 6589, L/N: 12C)			
Expected Reading	Cauda Deeding (nH Huit)	Talaranaa (mII Unit)	Tolorongo Limit (nH Unit)	Method Refrence
(pH Unit)	Sonde Reading (pH Unit)	Tolerance (pH Unit)	Tolerance Limit (pH Unit)	Mediou Refience
4.00	4.09	+0.09		
7.02	7.12	+0.10	± 0.2	APHA 21e, 4500-H ⁺ B
10.06	10.09	+0.03		
Turbidity Check (Turbidity Se	nsor : Model: 6136, S/N: 1	1J100475)		
Expected Reading (NTU)	Sonde Reading (NTU)	Tolerance (%)	Tolerance Limit (%)	Method Refrence
4.00	4.0	0.0		
10.00	9.7	-3.0		
20.00	18.9	-5.5	± 10	APHA 21e, 2130B
50.00	48.2	-3.6		
100.00	96.7	-3.3		
Conductivity Performance Che	ck (Conductivity Sensor:	Model: 6560, L/N: 12	B100106)	
Expected Reading (µS/cm)	Sonde Reading (µS/cm)	Tolerance (%)	Tolerance Limit (%)	Method Refrence
1412 at 25 °C	1481 at 25 °C	+4.9	± 10	APHA 21e, 2510B
		· · · · · · · · · · · · · · · · · · ·		,
Salinity Performance Check (S		Tolerance (%)	Tolerance Limit (%)	Method Refrence
Expected Reading (ppt)	Sonde Reading (ppt)			
35	35.12	+0.3	± 10	APHA 19e, 2520B
Dissolved Oxygen Check (Dis	solved Oxygen Sensor : Mo	del: 6562. L/N: 08C10	00810)	
DO from Winkler Titration				
(mg/L)	Sonde Reading (mg/L)	Tolerance (mg/L)	Tolerance Limit (mg/L)	Method Refrence
8.50	8.48	-0.02		
4.82	4.74	-0.08	± 0.20	APHA 21e, 4500-O C&G
		0100		
Water Level Meter Check	Sonde Reading (m)	Tolerance (m)	Tolerance Limit (m)	Method Refrence
Expected Reading (m)	0.97	-0.03	± 0.05	YSI Sondes Procedure Manual
1.00	0.97	-0.05	10.05	
Temperature Check		m 1 (%0)	T 1 I (%)	Made a Defense
Expected Reading (℃)	Sonde Reading (°C)	Tolerance (℃)	Tolerance Limit (℃)	Method Refrence
25.0	24.3	-0.7	± 2.0	Telarc Technical Guide No.3 1986
\frown			An Al	
Checked by:		Certified by	: Atople in	
· /	J WAH		LEE STEPHEN SHU HANC	
Senior		End of Report	Ph.D.)
Form No. ENV SONDE_T1 dd 22/02/2013			Technical Director	
-		n Kui Street, Fanling,		
香港粉。		n Chuen Street, Fanling		
	E-mail: castco@netvig	ator.com Website: ww	ww.casico.com.nk	



佳力高試驗中心有限公司

CASTCO TESTING CENTRE LTD.

TEST REPORT

Chemical Analysis of Water

Accuracy check of YSI Sondes Environmental Monitoring System

Page 1A of 1 pages			Castco LRN: El	N0130816-2
Sample details as supplied by	v customer			
Customer : Dragages-China	Harbour-VSL Joint Venture	Cu	ustomer Ref. No. :	
Address: Tung Chung Water	rfront Road, adjacent to Tung			
Job Title : Hong Kong-Zhuha	-			d Scenic Hill
Contract No.: HY/2011/09	0			
Laboratory Test Result				
Instrument Name: Sonde En	vironmental Monitoring Syste	em		
Manufacturer : YSI			nt No. : W.03.13	
Model No. : YSI 6820			Calibration : 16-08-2013	
Serial No. : 12B100804		Date of N	Next Calibration: 16-11-20	13
oH Value Check (pH Probe	: Model: 6589, L/N: 12C)			
Expected Reading (pH Unit)	Sonde Reading (pH Unit)	Tolerance (pH Unit)	Tolerance Limit (pH Unit)	Method Refrence
4.00	4.16	+0.16		
7.02 10.06	7.05	+0.03	± 0.2	APHA 21e, 4500-H ⁺ H
Turbidity Check (Turbidity Sector	9.98	-0.08		
Expected Reading (NTU)	Sonde Reading (NTU)	Tolerance (%)	Tolerance Limit (%)	Mathe 1 D. C
4.00	3.9	-2.5		Method Refrence
10.00	10.3	-3.0		APHA 21e, 2130B
20.00	19.1	-4.5	± 10	
50.00	49.1	-1.8		
100.00	99.7	-0.3		
Conductivity Performance Che	ck (Conductivity Sensor :	Model: 6560, L/N: 121	B100055)	
Expected Reading (µS/cm)	Sonde Reading (µS/cm)	Tolerance (%)	Tolerance Limit (%)	Method Refrence
<u>1412</u> at 25 °C	1522 at 25 °C	+7.8	± 10	APHA 21e, 2510B
alinity Performance Check (Salinity Sensor : Model: 656	0, L/N: 12B100055)		
Expected Reading (ppt)	Sonde Reading (ppt)	Tolerance (%)	Tolerance Limit (%)	Method Refrence
35	34.72	-0.8	± 10	APHA 19e, 2520B
issolved Oxygen Check (Di	ssolved Oxygen Sensor : Mod	lel: 6562, L/N: 12A10		
DO from Winkler Titration				
(mg/L)	Sonde Reading (mg/L)	Tolerance (mg/L)	Tolerance Limit (mg/L)	Method Refrence
8.47	8.36	-0.11		
4.87	4.73	-0.14	± 0.20	APHA 21e, 4500-O C&G
ater Level Meter Check				
Expected Reading (m)	Sonde Reading (m)	Tolerance (m)	Tolerance Limit (m)	Method Refrence
1.00	0.98	-0.02	± 0.05	YSI Sondes Procedure Manual
emperature Check				
Expected Reading (°C)	Sonde Reading (°C)	Tolerance (°C)	Tolerance Limit (℃)	Method Refrence
25.0	24.9	-0.1	± 2.0	Telarc Technical Guide

Remark: 1. This test report supersedes previous test report of Castco LRN: EN0130816-2 issued on 20-08-2013.

Checked by:

LI YIU WAH

Senior Chemist

香港粉嶺安全街29A號

Certified by:

End of Report

29A, On Chuen Street,

LEE STEPHEN SHU HANG

Form No. ENV SONDE_T1 dd 22/02/2013

^{2/2013} 香港粉嶺安居街33號 33, On Kui Street, F

E-mail: castco@netvigator.com Web

Ph.D. Technical Director

APPENDIX D ENVIRONMENTAL MONITORING SCHEDULES

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

Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Impact Air Quality and Noise Monitoring Schedule in October 2013

Air Quality Monitoring Stations

AMS1 - Sha Lo Wan AMS4 - San Tau Noise Monitoring Stations NMS1 - Sha Lo Wan

NMS1 - Sha Lo Wa NMS4 - San Tau

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

Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Tentative Impact Air Quality and Noise Monitoring Schedule in November 2013

The schedule may be changed due to unforeseen circumstances (adverse weather, etc)

Air Quality Monitoring Stations

Noise Monitoring Stations

AMS1 - Sha Lo Wan AMS4 - San Tau NMS1 - Sha Lo Wan NMS4 - San Tau

Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Impact Water Quality Monitoring Schedule in October 2013

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1-Oct	2-Oct	3-Oct	4-Oct	5-Oct
			Water Quality Monitoring		Water Quality Monitoring	
			Mid-Ebb 11:05 Mid-Flood 17:33		Mid-Ebb 12:23 Mid-Flood 18:28	
6-Oct	7-Oct	8-Oct	9-Oct	10-Oct	11-Oct	12-Oct
	<u>Water Quality Monitoring</u> Mid-Flood 08:22 Mid-Ebb 14:20		<u>Water Quality Monitoring</u> Mid-Flood 10:01 Mid-Ebb 15:48		<u>Water Quality Monitoring</u> Mid-Flood 12:24 Mid-Ebb 18:02	
13-Oct	14-Oct	15-Oct	16-Oct	17-Oct	18-Oct	19-Oct
		Water Quality Monitoring Mid-Ebb 09:43 Mid-Flood 16:40		Water Quality Monitoring Mid-Ebb 11:29 Mid-Flood 17:46		Water Quality Monitoring Mid-Ebb 12:55 Mid-Flood 18:46
20-Oct	21-Oct	22-Oct	23-Oct	24-Oct	25-Oct	26-Oct
	Water Quality Monitoring Mid-Ebb 14:06		Water Quality Monitoring Mid-Flood 09:43		Water Quality Monitoring Mid-Flood 11:28	
	Mid-Flood 19:40		Mid-Ebb 15:10		Mid-Ebb 16:27	
27-Oct	28-Oct	29-Oct	30-Oct	31-Oct		
	Water Quality Monitoring Mid-Ebb 06:53 Mid-Flood 15:06		Water Quality Monitoring Mid-Ebb 09:28 Mid-Flood 16:10			

Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill
Tentative Impact Water Quality Monitoring Schedule in November 2013

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1-Nov	/ 2-Nov
					Water Quality Monitoring	
					Mid-Ebb 11:10)
					Mid-Flood 17:13	
3-Nov	4-Nov	5-Nov	6-Nov	7-Nov	8-Nov	/ 9-Nov
	Water Quality Monitoring		Water Quality Monitoring		Water Quality Monitoring	
	Mid-Ebb 13:21		Mid-Flood 09:07		Mid-Flood 11:03	3
	Mid-Flood 18:50		Mid-Ebb 14:51		Mid-Ebb 16:44	ł
10-Nov	11-Nov	/ 12-Nov	13-Nov	14-Nov	15-Nov	/ 16-Nov
	Water Quality Monitoring		Water Quality Monitoring		Water Quality Monitoring	
	Mid-Flood 14:24		Mid-Ebb 09:17		Mid-Ebb 11:09	
	Mid-Ebb 20:37		Mid-Flood 16:00		Mid-Flood 17:07	
17-Nov	18-Nov	/ 19-Nov	20-Nov	21-Nov	22-Nov	23-Nov
	Water Quality Monitoring		Water Quality Monitoring		Water Quality Monitoring	
	Mid-Ebb 13:09		Mid-Flood 08:49		Mid-Flood 10:07	7
	Mid-Flood 18:37		Mid-Ebb 14:13		Mid-Ebb 15:19	
24-Nov	25-Nov	26-Nov	27-Nov	28-Nov	29-Nov	/ 30-Nov
		Water Quality Monitoring		Water Quality Monitoring		Water Quality Monitoring
		Mid-Flood 13:41		Mid-Ebb 08:21		Mid-Ebb 10:35
		Mid-Ebb 19:47		Mid-Flood 15:08		Mid-Flood 16:24
	dua ta unfarazzan airaumatana					

The schedule may be changed due to unforeseen circumstances (adverse weather, etc)

Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Construction-Phase Dolphin Monitoring in West Lantau (Line Transect Vessel Survey) in October 2013

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1-Oct	2-Oct	3-Oct	4-Oct	5-Oct
	-					
6-Oct	7-Oct	8-Oct	9-Oct	10-Oct	11-Oct	12-Oct
			Line Transect Vessel Survey			
13-Oct	14-Oct	15-Oct	16-Oct	17-Oct	18-Oct	19-Oct
15-00	14-001	15-001	10-000	17-000	10-000	19-000
					Line Transect Vessel Survey	
20-Oct	21-Oct	22-Oct	23-Oct	24-Oct	25-Oct	26-Oct
27-Oct	28-Oct	29-Oct	30-Oct	31-Oct		

Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Tentative Construction-Phase Dolphin Monitoring in West Lantau (Line Transect Vessel Survey) in November 2013

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1-Nov	2-Nov
3-Nov	4-Nov	5-Nov	6-Nov	7-Nov	8-Nov	9-Nov
			Line Transect Vessel Survey			
10-Nov	11-Nov	12-Nov	13-Nov	14-Nov	15-Nov	16-Nov
			Line Transect Vessel Survey			
17-Nov	18-Nov	19-Nov	20-Nov	21-Nov	22-Nov	23-Nov
24-Nov	25-Nov	26-Nov	27-Nov	28-Nov	29-Nov	30-Nov

The schedule may be changed due to unforeseen circumstances (adverse weather, etc)

APPENDIX E 1-HOUR TSP MONITORING RESULTS AND GRAPHICAL PRESENTATION

Appendix E - 1-hour TSP Monitoring Results

Location AMS1 - Sha Lo Wan

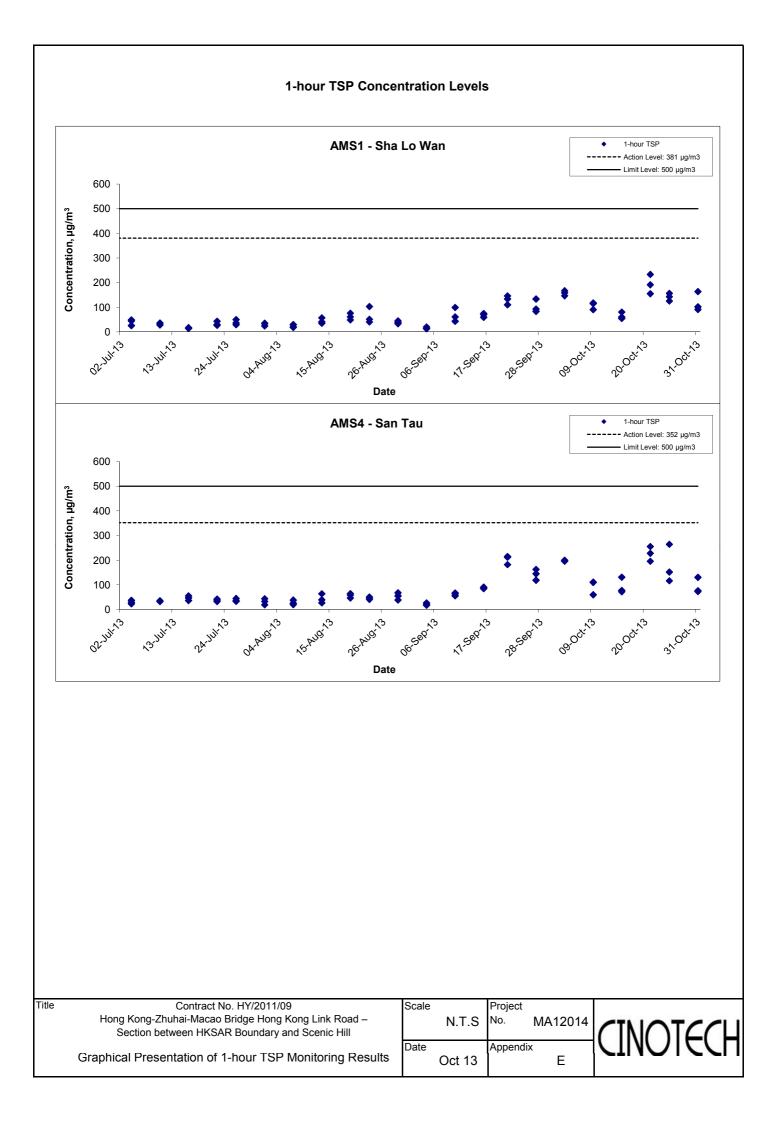
Sampling Data	Start Time	Weather	Air	Atmospheric	Filter W	eight (g)	Particulate	Elaps	e Time	Sampling	Flow Rate	e (m ³ /min.)	Av. flow	Total vol.	Conc.
Sampling Date	Start Time	Condition	Temp. (K)	Pressure, Pa (mmHg)	Initial	Final	weight (g)	Initial	Final	Time(hrs.)	Initial	Final	(m ³ /min)	(m ³)	(µg/m ³)
3-Oct-13	08:57	Sunny	298.4	763.2	2.7825	2.7934	0.0109	2320.9	2321.9	1.0	1.24	1.23	1.23	74.1	147
3-Oct-13	09:58	Sunny	298.6	763.0	2.7628	2.7746	0.0118	2321.9	2322.9	1.0	1.23	1.23	1.23	74.0	159
3-Oct-13	10:59	Sunny	298.8	762.8	2.7585	2.7709	0.0124	2322.9	2323.9	1.0	1.23	1.23	1.23	74.0	168
9-Oct-13	09:50	Sunny	300.1	759.7	2.7848	2.7935	0.0087	2347.9	2348.9	1.0	1.23	1.23	1.23	73.7	118
9-Oct-13	10:59	Sunny	300.3	759.5	2.7883	2.7968	0.0085	2348.9	2349.9	1.0	1.23	1.23	1.23	73.6	115
9-Oct-13	16:00	Sunny	300.4	759.0	2.7969	2.8036	0.0067	2349.9	2350.9	1.0	1.23	1.23	1.23	73.6	91
15-Oct-13	08:55	Cloudy	299.7	762.8	2.7608	2.7668	0.0060	2375.1	2376.1	1.0	1.23	1.23	1.23	74.0	81
15-Oct-13	09:57	Cloudy	299.9	762.7	2.7801	2.7842	0.0041	2376.1	2377.1	1.0	1.23	1.23	1.23	74.0	55
15-Oct-13	10:59	Cloudy	300.1	762.5	2.7738	2.7783	0.0045	2377.1	2378.1	1.0	1.23	1.23	1.23	74.0	61
21-Oct-13	09:00	Sunny	296.4	764.9	2.8019	2.8135	0.0116	2402.1	2403.1	1.0	1.24	1.24	1.24	74.5	156
21-Oct-13	10:01	Sunny	296.7	764.7	2.7950	2.8093	0.0143	2403.1	2404.1	1.0	1.24	1.24	1.24	74.5	192
21-Oct-13	14:06	Sunny	299.7	762.4	2.7921	2.8094	0.0173	2404.1	2405.1	1.0	1.23	1.23	1.23	74.0	234
25-Oct-13	09:50	Sunny	295.9	765.4	2.7714	2.7821	0.0107	2429.1	2430.1	1.0	1.24	1.24	1.24	74.6	143
25-Oct-13	10:51	Sunny	296.1	765.3	2.7816	2.7933	0.0117	2430.1	2431.1	1.0	1.24	1.24	1.24	74.6	157
25-Oct-13	13:00	Sunny	296.3	765.1	2.8031	2.8125	0.0094	2431.1	2432.1	1.0	1.24	1.24	1.24	74.6	126
31-Oct-13	08:57	Sunny	298.5	766.0	2.7972	2.8048	0.0076	2456.1	2457.1	1.0	1.24	1.24	1.24	74.3	102
31-Oct-13	09:58	Sunny	298.7	765.8	2.7985	2.8053	0.0068	2457.1	2458.1	1.0	1.24	1.24	1.24	74.3	92
31-Oct-13	10:59	Sunny	298.9	765.6	2.8024	2.8146	0.0122	2458.1	2459.1	1.0	1.24	1.24	1.24	74.3	164
														Min	55
														Mox	224

Max 234 Average 131

Location AMS4 - San Tau

Sampling Data	Start Time	Weather	Air	Atmospheric	Filter W	eight (g)	Particulate	Elapse	e Time	Sampling	Flow Rate	e (m ³ /min.)	Av. flow	Total vol.	Conc.
Sampling Date	Start Time	Condition	Temp. (K)	Pressure, Pa (mmHg)	Initial	Final	weight (g)	Initial	Final	Time(hrs.)	Initial	Final	(m ³ /min)	(m ³)	$(\mu g/m^3)$
3-Oct-13	13:01	Sunny	302.1	761.3	2.7897	2.8043	0.0146	1850.9	1851.9	1.0	1.22	1.22	1.22	72.9	200
3-Oct-13	14:03	Sunny	301.6	761.1	2.8117	2.8261	0.0144	1851.9	1852.9	1.0	1.22	1.22	1.22	73.0	197
3-Oct-13	15:05	Sunny	302.5	760.9	2.7981	2.8124	0.0143	1852.9	1853.9	1.0	1.21	1.21	1.21	72.9	196
9-Oct-13	10:20	Sunny	300.3	759.7	2.7787	2.7868	0.0081	1912.3	1913.3	1.0	1.22	1.22	1.22	73.1	111
9-Oct-13	13:00	Sunny	300.0	759.8	2.7548	2.7592	0.0044	1913.3	1914.3	1.0	1.22	1.22	1.22	73.1	60
9-Oct-13	14:01	Sunny	300.2	759.6	2.8063	2.8144	0.0081	1914.3	1915.3	1.0	1.22	1.22	1.22	73.1	111
15-Oct-13	13:05	Cloudy	301.9	761.2	2.7609	2.7666	0.0057	1939.3	1940.3	1.0	1.22	1.22	1.22	73.2	78
15-Oct-13	14:07	Cloudy	302.3	761.0	2.7536	2.7589	0.0053	1940.3	1941.3	1.0	1.22	1.22	1.22	73.1	72
15-Oct-13	15:09	Cloudy	302.5	760.8	2.7580	2.7676	0.0096	1941.3	1942.3	1.0	1.22	1.22	1.22	73.1	131
21-Oct-13	10:30	Sunny	296.6	764.7	2.7553	2.7722	0.0169	1966.3	1967.3	1.0	1.23	1.23	1.23	74.0	228
21-Oct-13	13:30	Sunny	299.5	762.5	2.7688	2.7876	0.0188	1967.3	1968.3	1.0	1.23	1.23	1.23	73.5	256
21-Oct-13	14:40	Sunny	299.7	762.3	2.7871	2.8015	0.0144	1968.3	1969.3	1.0	1.23	1.22	1.22	73.5	196
25-Oct-13	13:15	Sunny	298.9	763.0	2.7737	2.7932	0.0195	1993.3	1994.3	1.0	1.23	1.23	1.23	73.6	265
25-Oct-13	14:50	Sunny	299.1	762.8	2.7905	2.7991	0.0086	1994.3	1995.3	1.0	1.23	1.23	1.23	73.6	117
25-Oct-13	15:51	Sunny	299.2	762.6	2.7839	2.7951	0.0112	1995.3	1996.3	1.0	1.23	1.23	1.23	73.6	152
31-Oct-13	13:04	Sunny	300.4	763.3	2.7981	2.8077	0.0096	2020.3	2021.3	1.0	1.22	1.22	1.22	73.5	131
31-Oct-13	14:06	Sunny	300.6	763.0	2.7762	2.7816	0.0054	2021.3	2022.3	1.0	1.22	1.22	1.22	73.4	74
31-Oct-13	15:08	Sunny	300.8	762.8	2.7642	2.7698	0.0056	2022.3	2023.3	1.0	1.22	1.22	1.22	73.4	76
														Min	60

Min 60 Max 265 Average 147



APPENDIX F 24-HOUR TSP MONITORING RESULTS AND GRAPHICAL PRESENTATION

Appendix F - 24-hour TSP Monitoring Results

Location AMS1 - Sha Lo Wan

Sampling Date	Start Time	Weather	Air	Atmospheric	Filter W	/eight (g)	Particulate	Elapse	e Time	Sampling	Flow Rate	e (m ³ /min.)	Av. flow	Total vol.	Conc.
Sampling Date	Start Time	Condition	Temp. (K)	Pressure, Pa (mmHg)	Initial	Final	weight (g)	Initial	Final	Time(hrs.)	Initial	Final	(m ³ /min)	(m ³)	(µg/m ³)
3-Oct-13	12:50	Cloudy	301.7	761.8	2.7908	2.9939	0.2031	2323.9	2347.9	24.0	1.23	1.23	1.23	1765.6	115
9-Oct-13	17:06	Sunny	300.5	758.8	2.8103	2.8802	0.0699	2350.9	2374.9	24.0	1.23	1.23	1.23	1765.6	40
15-Oct-13	13:25	Cloudy	302.5	761.3	2.7607	2.9326	0.1719	2378.1	2402.1	24.0	1.23	1.23	1.23	1766.5	97
21-Oct-13	15:10	Sunny	299.9	762.2	2.7893	2.9988	0.2095	2405.1	2429.1	24.0	1.23	1.23	1.23	1775.3	118
25-Oct-13	14:01	Sunny	296.5	764.9	2.7876	3.0673	0.2797	2432.1	2456.1	24.0	1.24	1.24	1.24	1788.9	156
31-Oct-13	13:30	Sunny	300.7	762.7	2.8060	2.8959	0.0899	2459.1	2483.1	24.0	1.23	1.23	1.23	1773.5	51
														Min	40
														Max	156

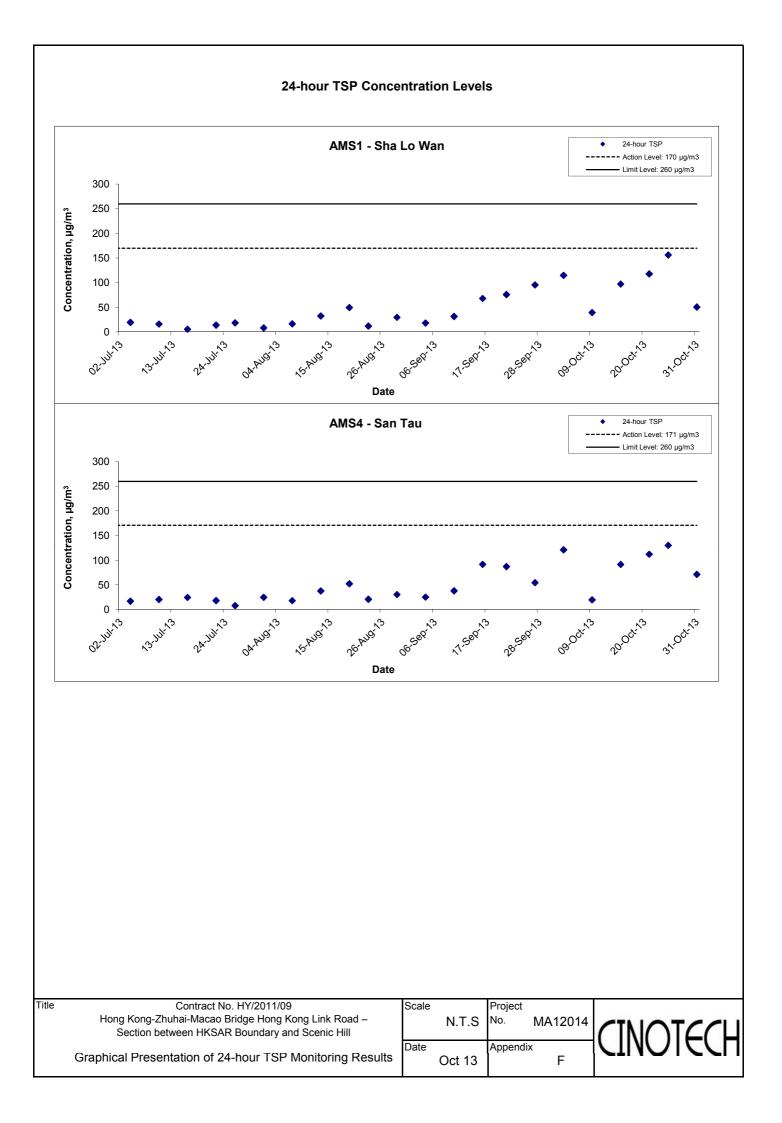
Location AMS4 - San Tau

Sampling Date	ng Date Start Time Weather		Air	Atmospheric	Filter W	Filter Weight (g)		Elapse Time		Sampling Flow Rate (m ³ /min.)		Av. flow	Total vol.	Conc.	
Sampling Date	Start Time	Condition	Temp. (K)	Pressure, Pa (mmHg)	Initial	Final	weight (g)	Initial	Final	Time(hrs.)	Initial	Final	(m ³ /min)	(m ³)	(µg/m ³)
3-Oct-13	16:30	Cloudy	302.7	760.7	2.7834	2.9952	0.2118	1853.9	1877.9	24.0	1.21	1.21	1.21	1747.9	121
9-Oct-13	15:05	Sunny	300.4	759.4	2.8196	2.8543	0.0347	1915.3	1939.3	24.0	1.22	1.22	1.22	1753.6	20
15-Oct-13	16:35	Cloudy	302.7	760.6	2.7635	2.9241	0.1606	1942.3	1966.3	24.0	1.22	1.22	1.22	1753.1	92
21-Oct-13	15:41	Sunny	300.0	762.0	2.8085	3.0064	0.1979	1969.3	1993.3	24.0	1.22	1.22	1.22	1762.9	112
25-Oct-13	16:52	Sunny	299.4	762.4	2.8016	3.0315	0.2299	1996.3	2020.3	24.0	1.23	1.23	1.23	1765.2	130
31-Oct-13	16:15	Sunny	301.0	762.6	2.7916	2.9172	0.1256	2023.3	2047.3	24.0	1.22	1.22	1.22	1760.5	71
														Min	20

Min20Max130Average91

Average

96



APPENDIX G NOISE MONITORING RESULTS AND GRAPHICAL PRESENTATION

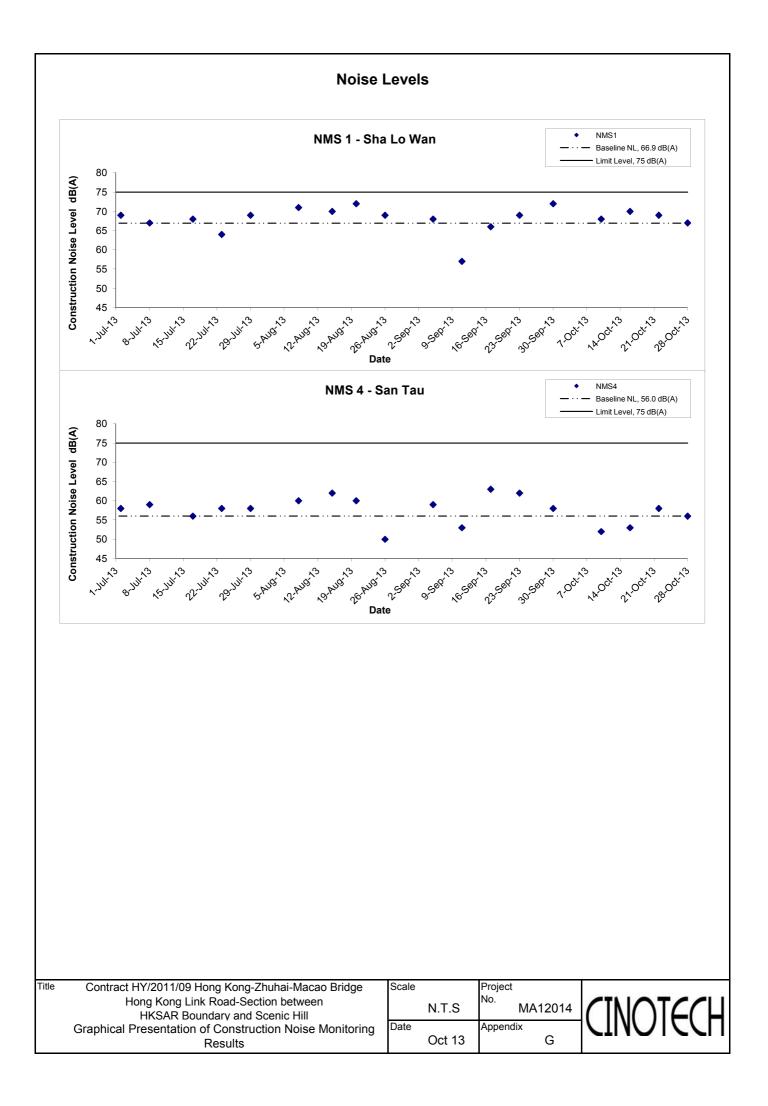
Appendix G - Noise Monitoring Results

	1 - Sha Lo W		Un	it: dB (A) (5-r	nin)	Average	Baseline Level	Construction Noise Level		
Date	Weather	Time	L _{eq}	L ₁₀	L 90	L _{eq}	L _{eq}	L _{eq}		
		15:49	68.9	74.8	46.8	·		·		
		15:54	66.2	71.4	46.4					
10 Oct 12	Cuppu	15:59	69.2	74.8	48.6	68		CO Management < Lingit Law		
10-Oct-13	Sunny	16:04	69.0	75.5	49.8	68		68 Measured \leq Limit Leve		
		16:09	67.7	73.6	48.6					
		16:14	67.8	73.9	48.3					
		13:09	62.7	65.6	58.5					
		13:14	72.0	77.6	60.6					
16-Oct-13	Cloudy	13:19	66.3	70.6	58.8	70		70 Massured < 1 imit Low		
10-001-13	Oct-13 Cloudy	13:24	60.8	62.6	58.5			70 Measured \leq Limit Leve		
		13:29	68.2	72.6	59.4					
		13:34	73.8	77.4	59.3		66.9			
		11:24	69.7	73.7	63.2		00.9			
		11:29	71.4	74.5	60.7					
22-Oct-13	Sunny	11:34	64.4	68.5	58.0	69		69 Measured \leq Limit Leve		
22-001-15	Sunny	11:39	64.9	65.4	59.1	03				
		11:44	69.0	71.5	59.5					
		11:49	69.2	74.4	58.4					
		13:49	56.6	58.6	51.1					
		13:54	58.6	61.4	51.0					
28-Oct-13	28-Oct-13 Sunny	13:59	69.7	74.1	51.4	67		67 Measured \leq Limit Leve		
20-001-10		14:04	69.0	72.6	52.4	07				
		14:14	66.9	70.8	51.2]				
		14:19	66.1	70.0	51.7					

Remark: * +3dB(A) Façade correction included

Location NMS	4 - San Tau							
Date	Weather	Time	Unit: dB (A) (5-min)			Average	Baseline Level	Construction Noise Level
			L _{eq}	L ₁₀	L ₉₀	L _{eq}	L _{eq}	L _{eq}
10-Oct-13	Sunny	14:10	51.4	53.7	48.2	52	56.0	52 Measured \leq Limit Level
		14:15	50.9	51.9	49.0			
		14:20	49.6	52.0	46.5			
		14:25	49.8	53.2	45.7			
		14:30	54.0	57.3	49.6			
		14:35	53.5	56.9	47.4			
16-Oct-13	Cloudy	15:07	52.2	53.9	49.4	53		53 Measured \leq Limit Level
		15:12	53.1	54.6	50.7			
		15:17	52.8	54.2	49.9			
		15:22	52.4	53.5	47.9			
		15:27	53.5	54.9	51.2			
		15:32	53.0	54.1	50.6			
22-Oct-13	Sunny	14:34	60.7	62.5	54.2	58		58 Measured \leq Limit Level
		14:39	57.1	59.7	56.6			
		14:44	55.9	57.4	51.6			
		14:49	58.2	60.5	51.3			
		14:54	56.9	59.3	51.6			
		14:59	54.9	57.3	51.5			
28-Oct-13	Sunny	11:07	55.7	58.0	47.0	56		56 Measured \leq Limit Level
		11:12	50.5	53.0	46.1			
		11:17	55.3	59.0	47.3			
		11:22	56.1	60.1	48.2			
		11:27	53.6	57.2	46.5			
		11:32	59.5	62.4	47.0			

Remark: * +3dB(A) Façade correction included



APPENDIX H WATER QUALITY MONITORING RESULTS AND GRAPHICAL PRESENTATION

Water Quality Monitoring Results at CS1 - Mid-Ebb Tide

Date	Weather	Sea	Sampling	Dent	h (m)	Tempera	ature (°C)	p	Η	Salin	ity ppt	DO Satu	ration (%)	Disso	lved Oxygen	(mg/L)	-	Turbidity(NT	U)	Suspe	ended Solids	(mg/L)
Date	Condition	Condition**	Time	Depu	II (III)	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
				Surface	1	28.0 28.0	28.0	8.3 8.3	8.3	28.1 28.1	28.1	73.9 73.7	73.8	5.6 5.6	5.6	5.5	4.4 4.3	4.4		3.8 3.2	3.5	
2-Oct-13	Sunny	Moderate	11:06	Middle	6.5	27.8 27.8	27.8	8.3 8.3	8.3	29.5 29.5	29.5	70.7 70.1	70.4	5.4 5.3	5.4	0.0	7.1 7.4	7.3	6.6	4.8 3.0	3.9	3.5
				Bottom	12	27.8 27.8	27.8	8.3 8.3	8.3	29.8 29.9	29.9	68.0 67.7	67.9	5.2 5.2	5.2	5.2	7.9 8.4	8.2		3.2 3.0	3.1	
				Surface	1	28.0 28.0	28.0	8.0 8.1	8.1	24.3 24.3	24.3	94.4 95.1	94.8	6.5 6.5	6.5		7.3 7.2	7.3		13.2 12.4	12.8	
4-Oct-13	Cloudy	Moderate	12:27	Middle	6.5	27.8 27.8	27.8	8.0 8.1	8.1	29.4 29.7	29.6	94.9 94.3	94.6	6.3 6.3	6.3	6.4	13.6 16.0	14.8	15.1	13.8	13.6	13.2
				Bottom	12	27.8	27.8	8.1	8.1	29.9	30.0	88.9	88.2	5.9	5.9	5.9	22.8	23.1		13.4	13.1	
				Surface	1	27.8	27.4	8.1 8.2	8.2	<u>30.1</u> 27.4	27.4	87.4 93.2	89.3	5.8 6.3	6.1		23.3	13.6		12.8	11.4	
7-Oct-13	Sunny	Moderate	14:57	Middle	6	27.4 27.4	27.4	8.2	8.2	27.4	27.4	85.4 87.9	91.7	5.8 5.9	6.2	6.2	12.9 13.9	13.4	14.6	11.0 15.3	13.8	13.4
				Bottom	11	27.4 27.4	27.4	8.2	8.2	27.4	27.5	95.4 84.8	84.3	6.4 5.7	5.7	5.7	12.8 17.2	16.9	-	12.3 15.0	14.9	
				Surface	1	27.4 27.4	27.4	8.2 8.1	8.2	27.5 28.9	29.0	83.8 98.1	97.5	5.7 7.2	7.2		16.5 4.2	4.3		14.7 7.6	6.2	
9-Oct-13	Cloudv	Moderate	15:30	Middle	6.5	27.4 27.2	27.3	8.2 8.1	8.2	29.0 28.7	29.0	96.9 95.1	93.8	7.1 6.9	6.9	7.1	4.4 5.6	5.6	5.6	4.7 4.9	5.4	5.5
5-001-15	Cloudy	woderate	10.00	Bottom	12	27.3 27.2	27.2	8.2 8.2	8.2	29.3 29.8	29.9	92.4 93.9	92.9	6.8 6.9	6.8	6.8	5.6 6.8	6.8	0.0	5.9 5.2	4.8	0.0
				Surface	1	27.2 28.2	28.2	8.2 8.1	8.1	29.9 26.2	26.2	91.9 106.7	106.7	6.7 7.2	7.2	0.0	6.7 3.3	3.3		4.3 3.4	2.7	
11-Oct-13	Fine	Moderate	17:10	Middle	3	28.2 27.5	27.5	8.1 8.1	8.1	26.2 27.1	20.2	106.7 102.0	100.7	7.2 6.9	6.9	7.1	3.3 4.3	4.7	6.3	2.0 3.6	3.1	3.0
11-00-13	Fille	wouerate	17.10		5	27.5 27.3	27.3	8.1 8.1		27.1 29.5	29.5	101.9 99.2	99.1	6.9 6.7	6.7	67	5.1 10.8	10.8	0.5	2.5 3.3	3.3	3.0
				Bottom	-	27.3 27.4		8.1 8.3	8.1	29.5 29.5		98.9 93.9		6.7 6.3		6.7	10.8 9.2			3.2 3.9		
				Surface	1	27.4 27.3	27.4	8.3 8.3	8.3	<u>29.7</u> 30.2	29.6	90.3 89.8	92.1	6.1 6.0	6.2	6.1	9.0 9.8	9.1		3.9 4.6	3.9	
15-Oct-13	Cloudy	Moderate	10:02	Middle	6.5	27.3 27.4	27.3	8.3 8.3	8.3	<u>30.1</u> 30.4	30.2	89.8 89.5	89.8	6.0 6.0	6.0		9.7 12.6	9.8	10.4	5.2 5.0	4.9	4.8
				Bottom	12	27.4	27.4	8.3	8.3	30.4	30.4	89.0	89.3	5.9	6.0	6.0	11.8	12.2		6.1	5.6	
				Surface	1	27.1 27.1	27.1	8.2 8.2	8.2	31.3 31.3	31.3	100.5 93.7	97.1	6.7 6.3	6.5	6.5	7.5 7.7	7.6		7.4 7.6	7.5	
17-Oct-13	Sunny	Calm	12:09	Middle	7	27.0 27.0	27.0	8.2 8.2	8.2	31.5 31.6	31.6	97.7 92.8	95.3	6.5 6.2	6.4		10.2 12.5	11.4	11.8	6.4 7.2	6.8	7.7
				Bottom	13	27.0 27.0	27.0	8.2 8.2	8.2	31.6 31.6	31.6	95.4 91.9	93.7	6.4 6.1	6.3	6.3	16.4 16.2	16.3		8.4 9.0	8.7	
				Surface	1	26.8 26.8	26.8	8.2 8.2	8.2	29.6 29.6	29.6	75.4 75.7	75.6	5.8 5.8	5.8	5.9	4.3 4.2	4.3		5.8 5.6	5.7	
19-Oct-13	Sunny	Calm	13:50	Middle	7	26.7 26.7	26.7	8.2 8.2	8.2	30.9 30.7	30.8	77.0 79.6	78.3	5.9 6.1	6.0	0.0	10.1 10.0	10.1	8.7	6.6 8.6	7.6	5.9
				Bottom	13	26.7 26.7	26.7	8.2 8.2	8.2	31.1 31.0	31.1	76.9 78.3	77.6	5.9 6.0	6.0	6.0	11.6 11.9	11.8		3.6 5.2	4.4	

Water Quality Monitoring Results at CS1 - Mid-Ebb Tide

Date	Weather	Sea	Sampling	Dent	h (m)	Tempera	ature (°C)	ŗ	Η	Salir	nity ppt	DO Satu	ration (%)	Dissol	ved Oxygen	(mg/L)	-	Turbidity(NT	J)	Suspe	ended Solids	(mg/L)
Date	Condition	Condition**	Time	Depi	()	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
				Surface	1	26.0 26.0	26.0	8.1 8.1	8.1	29.7 29.7	29.7	86.0 86.3	86.2	5.9 5.9	5.9	5.9	6.3 6.1	6.2		7.2 7.0	7.1	
21-Oct-13	Sunny	Rough	14:26	Middle	6.5	25.8 25.8	25.8	8.1 8.1	8.1	30.3 30.3	30.3	83.3 83.7	83.5	5.7 5.8	5.8	0.0	19.4 18.1	18.8	17.2	7.2 7.0	7.1	7.0
				Bottom	12	25.8 25.8	25.8	8.1 8.1	8.1	30.6 30.6	30.6	80.4 80.3	80.4	5.5 5.5	5.5	5.5	24.3 28.9	26.6		7.7 5.7	6.7	
				Surface	1	26.4 26.4	26.4	8.2 8.2	8.2	30.5 30.3	30.4	88.5 88.1	88.3	6.1 6.1	6.1	6.0	4.6 4.5	4.6		8.4 9.2	8.8	
23-Oct-13	Sunny	Calm	14:24	Middle	6.5	26.4 26.4	26.4	8.2 8.2	8.2	30.8 30.8	30.8	86.5 86.6	86.6	5.9 5.9	5.9	0.0	7.0 6.8	6.9	6.9	8.4 5.2	6.8	7.0
				Bottom	12	26.4 26.4	26.4	8.2 8.2	8.2	31.1 31.0	31.1	85.8 85.8	85.8	5.9 5.9	5.9	5.9	9.8 8.8	9.3		5.8 5.0	5.4	
				Surface	1	25.6 25.6	25.6	8.1 8.1	8.1	30.5 30.5	30.5	99.8 101.6	100.7	6.9 7.0	7.0	6.9	8.2 8.0	8.1		5.6 6.6	6.1	
25-Oct-13	Sunny	Moderate	16:08	Middle	6.5	25.5 25.5	25.5	8.1 8.1	8.1	30.7 30.6	30.7	98.0 97.5	97.8	6.7 6.7	6.7	0.9	9.6 8.7	9.2	9.0	6.7 5.6	6.2	6.4
				Bottom	12	25.5 25.5	25.5	8.1 8.1	8.1	30.8 30.8	30.8	95.8 95.7	95.8	6.6 6.6	6.6	6.6	9.7 9.8	9.8		8.2 5.8	7.0	
				Surface	1	24.9 25.0	25.0	8.2 8.4	8.3	32.2 32.3	32.3	91.0 89.8	90.4	6.3 6.2	6.3	6.3	7.1 7.0	7.1		5.6 6.0	5.8	
28-Oct-13	Cloudy	Moderate	07:40	Middle	5.5	25.0 25.0	25.0	8.3 8.4	8.4	32.2 32.3	32.3	88.3 90.1	89.2	6.1 6.2	6.2	0.5	5.7 6.6	6.2	8.5	7.0 5.0	6.0	6.2
				Bottom	10	25.0 25.0	25.0	8.4 8.4	8.4	32.3 32.3	32.3	88.6 88.7	88.7	6.1 6.1	6.1	6.1	12.1 12.5	12.3		6.8 6.6	6.7	
				Surface	1	24.9 24.9	24.9	8.2 8.2	8.2	30.1 30.1	30.1	101.4 102.7	102.1	7.1 7.2	7.2	7.2	3.0 3.2	3.1		3.7 1.0	2.4	
30-Oct-13	Sunny	Calm	09:40	Middle	6.5	24.9 24.9	24.9	8.2 8.2	8.2	30.2 30.2	30.2	102.5 101.1	101.8	7.2 7.1	7.2	1.2	13.3 13.7	13.5	11.0	2.7 3.0	2.9	3.5
				Bottom	12	25.1 25.1	25.1	8.2 8.2	8.2	30.7 30.6	30.7	91.8 91.5	91.7	6.4 6.4	6.4	6.4	16.3 16.7	16.5		5.1 5.0	5.1	

Water Quality Monitoring Results at CS1 - Mid-Flood Tide

Date	Weather	Sea	Sampling	D		Tempera	ature (°C)	p	ρΗ	Salir	nity ppt	DO Satu	ration (%)	Disso	lved Oxygen	(mg/L)		Turbidity(NT	U)	Suspe	ended Solids	(mg/L)
	Condition	Condition**	Time	Depti	h (m)	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
				Surface	1	28.3 28.3	28.3	8.2 8.2	8.2	26.8 26.1	26.5	77.6 76.8	77.2	5.9 5.8	5.9	5.9	5.6 5.6	5.6		6.8 6.0	6.4	
2-Oct-13	Fine	Moderate	17:05	Middle	5	28.3 28.3	28.3	8.2 8.2	8.2	26.5 27.1	26.8	77.3 77.3	77.3	5.9 5.8	5.9	5.9	6.2 6.4	6.3	6.4	5.4 4.6	5.0	5.6
				Bottom	9	28.3 28.3	28.3	8.2 8.2	8.2	26.6 27.3	27.0	76.8 76.8	76.8	5.8 5.8	5.8	5.8	7.4 7.0	7.2		6.6 4.4	5.5	
				Surface	1	28.0 28.1	28.1	7.6 8.0	7.8	25.3 25.3	25.3	93.0 92.6	92.8	6.3 6.4	6.4		14.8 13.9	14.4		4.9 5.3	5.1	
4-Oct-13	Cloudy	Moderate	17:17	Middle	7	27.9 28.0	28.0	7.8	8.0	25.9 25.9	25.9	89.1 89.2	89.2	6.1 6.1	6.1	6.3	15.4 16.8	16.1	18.3	3.7 3.6	3.7	4.3
				Bottom	13	27.7	27.7	7.9	8.0	28.3 28.4	28.4	85.4 83.9	84.7	5.7 5.6	5.7	5.7	23.9 24.9	24.4		4.2	4.2	
				Surface	1	27.2	27.2	8.1 8.1	8.1	27.7	27.6	95.4 95.1	95.3	6.4 6.4	6.4		8.8 8.7	8.8		22.7 25.3	24.0	
7-Oct-13	Sunny	Moderate	09:08	Middle	6	27.2	27.2	8.1 8.1	8.1	27.7	27.8	95.7 94.8	95.3	6.5 6.4	6.5	6.5	14.6 14.8	14.7	14.1	31.0 28.3	29.7	34.9
				Bottom	11	27.2	27.2	8.1 8.1	8.1	27.8	27.8	95.1 94.8	95.0	6.4 6.4	6.4	6.4	18.8	18.9		50.0 51.7	50.9	
				Surface	1	27.0 27.0 27.0	27.0	8.2 8.2	8.2	29.4 29.6	29.5	86.5 86.2	86.4	6.4 6.4	6.4		13.9 13.4	13.7		9.2 8.8	9.0	
9-Oct-13 0	Cloudy	Moderate	09:39	Middle	6	26.9 26.9	26.9	8.2 8.2	8.2	29.6 29.6	29.6	86.2 87.4	86.8	6.4 6.4	6.4	6.4	17.8	17.9	17.3	9.4 8.8	9.1	9.3
				Bottom	11	26.9 26.9	26.9	8.2 8.2	8.2	29.6 29.6	29.6	87.3 86.8	87.1	6.4 6.4	6.4	6.4	20.1 20.4	20.3		10.0 9.4	9.7	
				Surface	1	27.8 27.8	27.8	8.1 8.1	8.1	26.8 26.8	26.8	97.3 97.3	97.3	6.6 6.6	6.6		4.2	4.2		3.5 3.7	3.6	
11-Oct-13	Sunny	Moderate	11:59	Middle	3	27.5 27.5	27.5	8.1 8.1	8.1	27.1	27.1	96.2 96.2	96.2	6.5 6.5	6.5	6.6	7.6	7.7	8.8	3.5 2.6	3.1	3.5
				Bottom	5	27.4 27.4	27.4	8.1 8.1	8.1	27.2	27.2	95.6 95.3	95.5	6.5 6.5	6.5	6.5	13.8 15.3	14.6		3.8 3.5	3.7	
I				Surface	1	28.0	28.1	8.0 8.0	8.0	26.4 26.4	26.4	100.0 98.8	99.4	6.8 6.7	6.8		2.5 3.0	2.8		3.0 2.7	2.9	
15-Oct-13 0	Cloudy	Moderate	15:27	Middle	7.5	27.8	27.8	8.0 8.1	8.1	27.2	27.3	99.0 97.6	98.3	6.7 6.6	6.7	6.8	3.1 3.4	3.3	4.5	2.7	2.6	2.8
				Bottom	14	27.6 27.7	27.7	8.0 8.1	8.1	29.0 28.5	28.8	97.1 95.9	96.5	6.5 6.4	6.5	6.5	7.2 7.3	7.3		2.8 2.7	2.8	
				Surface	1	27.2 27.2 27.2	27.2	8.2 8.2	8.2	29.1 29.1	29.1	109.4 109.4	109.4	7.4 7.4	7.4		6.1	6.1		4.7 4.4	4.6	
17-Oct-13	Sunny	Calm	16:37	Middle	6.5	27.2 27.2 27.2	27.2	8.2 8.2 8.2	8.2	29.1 29.9 29.9	29.9	110.9 110.9 110.9	110.9	7.4 7.5 7.5	7.5	7.5	6.1 6.4 6.4	6.4	6.5	4.4 4.6 3.6	4.1	4.5
				Bottom	12	27.2 27.2 27.2	27.2	8.2 8.2 8.2	8.2	29.9 29.9 29.9	29.9	109.7 109.7 109.7	109.7	7.5 7.4 7.4	7.4	7.4	7.0 7.0	7.0		3.6 5.2 4.5	4.9	
				Surface	1	27.2 27.0 27.0	27.0	8.1	8.1	29.9 29.2 29.2	29.2	88.1	84.8	6.8	6.6		4.4	4.5		5.2	4.9	
19-Oct-13	Fine	Calm	17:52	Middle	6.5	27.0	27.0	8.1 8.1	8.1	29.4	29.4	81.5 67.8	68.9	6.3 5.4	5.5	6.1	4.5 11.4	11.5	12.3	4.6 4.8	9.7	6.1
				Bottom	12	27.0 27.0 27.0	27.0	8.1 8.1 8.1	8.1	29.4 29.4 29.4	29.4	70.0 69.1 68.8	69.0	5.5 5.5 5.5	5.5	5.5	11.5 20.9 20.6	20.8		14.6 3.6 4.0	3.8	

Water Quality Monitoring Results at CS1 - Mid-Flood Tide

Date	Weather	Sea	Sampling	Dent	h (m)	Tempera	ature (°C)	p	Н	Salir	nity ppt	DO Satu	ration (%)	Dissol	ved Oxygen	(mg/L)	-	Turbidity(NT	U)	Suspe	ended Solids	(mg/L)
Date	Condition	Condition**	Time	Depi	()	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
				Surface	1	26.1 26.1	26.1	8.1 8.1	8.1	28.9 29.1	29.0	98.8 98.4	98.6	6.8 6.7	6.8	6.5	4.7 4.5	4.6		3.7 3.7	3.7	
21-Oct-13	Fine	Rough	19:01	Middle	7	26.1 26.1	26.1	8.1 8.1	8.1	29.5 29.5	29.5	90.9 88.8	89.9	6.2 6.1	6.2	0.5	6.4 6.4	6.4	7.0	3.8 2.5	3.2	3.2
				Bottom	13	26.0 26.0	26.0	8.1 8.1	8.1	29.7 29.6	29.7	84.4 82.6	83.5	5.8 5.7	5.8	5.8	10.0 10.0	10.0		2.3 2.8	2.6	
				Surface	1	26.2 26.2	26.2	8.2 8.2	8.2	29.9 29.9	29.9	85.7 86.0	85.9	5.9 6.0	6.0	6.0	5.5 5.5	5.5		13.0 15.3	14.2	
23-Oct-13	Sunny	Calm	09:53	Middle	6.5	26.2 26.2	26.2	8.2 8.2	8.2	29.9 29.9	29.9	85.4 85.8	85.6	5.9 5.9	5.9	0.0	13.2 13.0	13.1	12.7	12.7 11.3	12.0	13.1
				Bottom	12	26.2 26.2	26.2	8.2 8.2	8.2	29.9 30.0	30.0	85.4 85.6	85.5	5.9 5.9	5.9	5.9	19.6 19.4	19.5		13.2 13.2	13.2	
				Surface	1	25.6 25.6	25.6	8.2 8.2	8.2	29.9 29.9	29.9	93.6 93.7	93.7	6.5 6.5	6.5	6.4	5.6 5.9	5.8		5.3 6.2	5.8	
25-Oct-13	Sunny	Moderate	11:43	Middle	7	25.4 25.4	25.4	8.2 8.2	8.2	30.3 30.3	30.3	89.5 89.3	89.4	6.2 6.2	6.2	0.4	7.8 7.8	7.8	7.9	6.3 7.0	6.7	6.3
				Bottom	13	25.3 25.3	25.3	8.2 8.2	8.2	30.5 30.5	30.5	89.0 89.2	89.1	6.2 6.2	6.2	6.2	10.0 10.1	10.1		6.3 6.7	6.5	
				Surface	1	25.1 25.0	25.1	8.2 8.2	8.2	32.0 28.9	30.5	99.7 100.3	100.0	6.9 7.0	7.0	7.1	10.0 8.4	9.2		4.8 6.6	5.7	
28-Oct-13	Cloudy	Moderate	15:42	Middle	5	24.9 25.0	25.0	8.2 8.2	8.2	32.0 32.0	32.0	100.7 102.5	101.6	7.0 7.1	7.1	7.1	8.9 8.4	8.7	9.9	7.0 7.0	7.0	5.7
				Bottom	9	24.9 24.9	24.9	8.2 8.2	8.2	32.0 32.0	32.0	100.4 101.1	100.8	6.9 7.0	7.0	7.0	11.8 11.6	11.7		4.0 5.0	4.5	
				Surface	1	25.8 25.8	25.8	8.2 8.2	8.2	26.1 26.4	26.3	103.0 104.9	104.0	7.2 7.4	7.3	7.3	2.8 2.4	2.6		1.8 3.2	2.5	
30-Oct-13	Sunny	Calm	15:20	Middle	6.5	25.7 25.7	25.7	8.2 8.2	8.2	27.1 27.1	27.1	103.0 103.6	103.3	7.2 7.3	7.3	1.3	6.3 6.1	6.2	5.8	1.6 2.7	2.2	2.6
				Bottom	12	25.7 25.8	25.8	8.2 8.2	8.2	27.1 27.1	27.1	102.2 102.1	102.2	7.1 7.1	7.1	7.1	8.8 8.6	8.7		2.8 3.4	3.1	

Water Quality Monitoring Results at CS2 - Mid-Ebb Tide

Date	Weather	Sea	Sampling	Dent	h (m)	Tempera	ature (°C)	p	Η	Salin	ity ppt	DO Satu	ration (%)	Disso	lved Oxygen	(mg/L)		Turbidity(NT	U)	Suspe	ended Solids	(mg/L)
Date	Condition	Condition**	Time	Depu	II (III)	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
				Surface	1	29.5 29.2	29.4	8.1 8.0	8.1	26.4 26.8	26.6	84.7 83.0	83.9	6.3 6.1	6.2	6.2	4.5 4.5	4.5		3.2 3.0	3.1	
2-Oct-13	Sunny	Moderate	10:46	Middle	3.5	28.5 28.5	28.5	7.9 7.9	7.9	29.6 29.6	29.6	82.6 83.3	83.0	6.1 6.1	6.1	0.2	8.7 8.8	8.8	10.4	8.6 7.4	8.0	6.7
				Bottom	6	28.3 28.3	28.3	7.8 7.9	7.9	30.0 30.0	30.0	81.4 81.0	81.2	6.0 5.9	6.0	6.0	17.7 18.0	17.9		12.2 5.5	8.9	
				Surface	1	27.7 27.7	27.7	8.2 8.2	8.2	27.2 27.2	27.2	94.3 95.2	94.8	6.3 6.4	6.4		4.4 4.1	4.3		4.2 3.8	4.0	
4-Oct-13	Cloudy	Moderate	11:23	Middle	3.5	27.7	27.7	8.2 8.2	8.2	29.5 29.5	29.5	76.2 77.0	76.6	6.3 6.4	6.4	6.4	13.9 14.5	14.2	11.6	4.1	5.2	4.8
				Bottom	6	27.7	27.7	8.2 8.2	8.2	29.5 29.5 29.5	29.5	74.0 75.5	74.8	6.1 6.2	6.2	6.2	16.6 16.0	16.3		4.6 5.5	5.1	
				Surface	1	27.3	27.4	8.1	8.1	27.9	27.9	84.1	83.9	5.6	5.6		15.7	15.1		16.3	16.5	
7-Oct-13	Sunny	Moderate	13:46	Middle	4	27.4 27.3	27.3	8.1 8.1	8.1	27.9	28.1	83.6 79.9	79.7	5.6 5.4	5.4	5.5	14.5 16.8	16.7	15.8	16.7 19.3	15.5	14.9
	·			Bottom	7	27.3 27.3	27.3	8.1	8.2	28.1 28.1	28.1	79.4 78.8	78.9	5.3 5.3	5.3	5.3	16.5 15.6	15.6	-	11.7 19.7	12.6	
				Surface	1	27.3 26.7	26.7	8.2 8.0	8.1	28.1 29.2	29.2	79.0 102.2	102.2	5.3 7.3	7.3		15.5 8.0	7.2		5.5 6.4	5.8	
9-Oct-13	Cloudv	Moderate	14:25	Middle	4	26.7 26.4	26.5	8.1 8.1	8.1	29.2 29.6	29.6	102.1 99.4	98.6	7.3 7.2	7.2	7.3	6.4 9.4	9.0	9.8	5.2 6.6	6.9	7.5
9-001-13	Cloudy	wouerate	14.25	Bottom	7	26.5 26.4	26.4	8.1 8.1	8.1	29.6 29.7	29.8	97.7 96.0	95.7	7.1 6.9	6.9	6.9	8.5 11.9	13.2	9.0	7.2 14.3	9.9	7.5
				Surface	1	26.4 27.9	28.0	<u>8.1</u> 8.0	8.0	29.8 26.2	29.0	95.3 108.2	107.5	6.9 7.3	7.3	0.9	14.4 2.6	2.6		5.5 3.2	2.6	
			10.10		-	28.0 27.6		8.0 8.0		26.0 26.3		106.8 107.2		7.2 7.3		7.3	2.5 5.8			2.0 13.6		0.5
11-Oct-13	Fine	Moderate	16:10	Middle	3.5	26.7 26.7	27.2	8.0 8.0	8.0	27.5 27.6	26.9	103.2 102.1	105.2	7.0 7.0	7.2	= 0	5.9 15.1	5.9	7.7	13.4 13.2	13.5	8.5
				Bottom	6	26.7 27.4	26.7	8.0 8.3	8.0	27.6 26.5	27.6	101.3 108.5	101.7	6.9 7.5	7.0	7.0	14.0 2.0	14.6		5.5 3.3	9.4	
				Surface	1	27.4	27.4	8.3 8.3	8.3	26.5 28.4	26.5	108.6 108.2	108.6	7.5	7.5	7.5	2.0 2.0 3.1	2.0		3.6 4.2	3.5	
15-Oct-13	Cloudy	Moderate	09:28	Middle	3.5	27.3	27.3	8.3	8.3	28.5	28.5	107.9	108.1	7.4 7.4 7.1	7.4		3.2	3.2	5.6	4.3	4.3	4.3
				Bottom	6	27.5 27.5	27.5	8.4 8.4	8.4	29.9 29.8	29.9	105.0 104.4	104.7	7.1	7.1	7.1	11.4 11.5	11.5		4.7 5.5	5.1	
				Surface	1	26.3 26.3	26.3	8.1 8.1	8.1	30.4 30.6	30.5	89.8 90.5	90.2	6.8 6.9	6.9	6.9	4.4 4.6	4.5		8.2 8.3	8.3	
17-Oct-13	Sunny	Calm	10:41	Middle	4	26.4 26.4	26.4	8.1 8.1	8.1	30.7 30.7	30.7	89.1 89.1	89.1	6.8 6.8	6.8		9.0 8.9	9.0	7.9	5.5 8.2	6.9	7.0
				Bottom	7	26.4 26.4	26.4	8.1 8.1	8.1	30.8 30.8	30.8	87.8 87.8	87.8	6.7 6.7	6.7	6.7	9.9 10.3	10.1		6.0 5.5	5.8	
				Surface	1	26.2 26.2	26.2	8.1 8.1	8.1	29.6 29.6	29.6	88.6 88.4	88.5	6.7 6.7	6.7	6.8	5.3 4.9	5.1		4.8 5.6	5.2	
19-Oct-13	Sunny	Calm	12:11	Middle	3.5	26.0 26.0	26.0	8.1 8.1	8.1	30.1 30.1	30.1	89.2 89.0	89.1	6.8 6.8	6.8	0.0	8.0 7.8	7.9	9.2	6.6 5.6	6.1	5.5
				Bottom	6	26.0 26.0	26.0	8.1 8.1	8.1	30.3 28.9	29.6	91.2 91.0	91.1	6.9 7.0	7.0	7.0	14.6 14.4	14.5		4.8	5.2	

Water Quality Monitoring Results at CS2 - Mid-Ebb Tide

Date	Weather	Sea	Sampling	Dent	h (m)	Tempera	ature (°C)	ŗ	Η	Salir	nity ppt	DO Satu	ration (%)	Disso	lved Oxygen	(mg/L)	-	Turbidity(NT	J)	Suspe	ended Solids	(mg/L)
Date	Condition	Condition**	Time	Depi	()	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
				Surface	1	27.0 27.0	27.0	8.2 8.2	8.2	28.8 28.8	28.8	90.6 90.3	90.5	6.2 6.2	6.2	6.2	5.3 5.2	5.3		4.0 4.2	4.1	
21-Oct-13	Sunny	Rough	13:47	Middle	3	26.9 26.9	26.9	8.2 8.2	8.2	29.4 29.4	29.4	88.8 89.0	88.9	6.1 6.1	6.1	0.4	5.9 5.9	5.9	7.4	11.0 11.6	11.3	7.6
				Bottom	5	26.6 26.6	26.6	8.2 8.2	8.2	30.1 30.1	30.1	86.1 85.9	86.0	5.9 5.9	5.9	5.9	11.0 10.8	10.9		9.4 5.5	7.5	
				Surface	1	26.3 26.3	26.3	8.2 8.2	8.2	29.8 29.8	29.8	93.6 91.2	92.4	6.5 6.3	6.4	6.4	8.3 8.6	8.5		14.0 12.0	13.0	
23-Oct-13	Sunny	Calm	13:58	Middle	4.5	26.3 26.3	26.3	8.2 8.2	8.2	29.8 29.8	29.8	91.5 90.3	90.9	6.3 6.2	6.3	0.4	11.7 11.0	11.4	12.0	12.3 9.3	10.8	10.4
				Bottom	8	26.3 26.3	26.3	8.2 8.2	8.2	29.8 29.8	29.8	91.4 90.2	90.8	6.3 6.2	6.3	6.3	16.0 16.1	16.1		9.0 5.5	7.3	
				Surface	1	25.6 25.6	25.6	8.2 8.2	8.2	29.6 29.6	29.6	96.5 97.0	96.8	6.7 6.8	6.8	6.8	13.2 10.9	12.1		5.3 6.0	5.7	
25-Oct-13	Sunny	Moderate	15:06	Middle	3.5	25.6 25.6	25.6	8.2 8.2	8.2	29.6 29.6	29.6	96.4 96.6	96.5	6.7 6.8	6.8	0.0	13.3 12.3	12.8	14.5	6.3 7.0	6.7	8.3
				Bottom	6	25.5 25.5	25.5	8.2 8.2	8.2	29.6 29.6	29.6	94.6 93.5	94.1	6.6 6.5	6.6	6.6	18.3 19.1	18.7		19.3 5.5	12.4	
				Surface	1	24.9 24.9	24.9	8.1 8.1	8.1	30.8 30.9	30.9	98.7 97.9	98.3	6.9 6.8	6.9	6.9	4.2 4.5	4.4		6.8 5.0	5.9	
28-Oct-13	Cloudy	Moderate	06:23	Middle	3.5	24.9 24.9	24.9	8.1 8.1	8.1	30.9 31.0	31.0	98.5 97.7	98.1	6.9 6.8	6.9	0.5	4.9 5.2	5.1	4.6	12.9 6.4	9.7	6.5
				Bottom	6	24.8 24.9	24.9	8.1 8.1	8.1	30.9 31.0	31.0	98.2 97.2	97.7	6.8 6.8	6.8	6.8	4.2 4.4	4.3		2.4 5.5	4.0	
				Surface	1	23.9 23.9	23.9	8.0 8.0	8.0	28.8 28.9	28.9	107.6 106.6	107.1	7.7 7.6	7.7	7.8	2.1 1.9	2.0		5.2 4.0	4.6	
30-Oct-13	Sunny	Calm	09:39	Middle	3.5	23.8 23.9	23.9	8.0 8.1	8.1	29.4 29.6	29.5	108.8 108.7	108.8	7.8 7.7	7.8	1.0	2.0 2.2	2.1	3.3	17.4 6.0	11.7	7.2
				Bottom	6	24.1 24.2	24.2	8.0 8.0	8.0	30.5 30.9	30.7	99.8 97.6	98.7	7.0 6.9	7.0	7.0	5.7 5.8	5.8		5.0 5.5	5.3	

Water Quality Monitoring Results at CS2 - Mid-Flood Tide

Dute	Weather	Sea	Sampling	D		Tempera	ature (°C)	ŗ	рН	Salir	nity ppt	DO Satu	ration (%)	Disso	lved Oxygen	(mg/L)	-	Turbidity(NT	U)	Suspe	ended Solids	(mg/L)
Date	Condition	Condition**	Time	Dept	h (m)	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
				Surface	1	28.6 28.6	28.6	8.2 8.2	8.2	25.5 25.6	25.6	78.2 79.4	78.8	5.8 5.9	5.9	5.0	7.7 7.6	7.7		10.8 9.4	10.1	
2-Oct-13	Fine	Moderate	16:00	Middle	3.5	28.5 28.5	28.5	8.0 8.1	8.1	26.7 26.7	26.7	77.1 77.1	77.1	5.7 5.7	5.7	5.8	9.5 9.6	9.6	10.4	9.2 9.6	9.4	9.3
				Bottom	6	28.3 28.3	28.3	8.0 8.0	8.0	28.6 28.6	28.6	78.0 79.1	78.6	5.7 5.8	5.8	5.8	13.9 14.1	14.0		8.2 8.8	8.5	
				Surface	1	28.1 28.2	28.2	8.1 8.1	8.1	27.1 27.1	27.1	98.0 97.1	97.6	6.8 6.7	6.8		10.0 10.1	10.1		5.2 5.0	5.1	
4-Oct-13	Cloudy	Moderate	17:03	Middle	3	28.1	28.1	8.1	8.2	27.3	27.4	93.2	93.4	6.4	6.4	6.6	12.2	12.7	12.7	7.4	6.3	6.5
	-			Bottom	5	28.1 28.1	28.1	8.2	8.2	27.4	27.5	93.6 94.3	94.3	6.4 6.5	6.5	6.5	13.1 15.1	15.3		5.1 6.9	8.0	
				Surface	1	28.1 27.5	27.5	8.2	8.0	27.5 26.6	27.0	94.2 102.5	102.2	6.4 6.9	6.9		15.4 12.1	12.1		9.0 16.0	13.1	<u> </u>
7-Oct-13	Sunny	Moderate	07:45	Middle	3.5	27.5 27.5	27.5	8.0 8.1	8.1	27.3 27.8	27.8	101.9 80.2	79.5	6.8 5.4	5.4	6.2	12.0 16.1	16.0	14.3	10.2 27.0	26.8	25.2
	,			Bottom	6	27.5 27.5	27.5	8.1 8.1	8.1	27.8 27.8	27.8	78.7 81.2	81.3	5.3 5.5	5.5	5.5	15.9 14.9	14.8		26.5 37.5	35.8	
				Surface	1	27.5 26.3	26.3	8.1 7.9	8.0	27.8 27.8	27.8	81.4 98.5	98.8	5.5 7.0	7.0	0.0	14.7 7.8	8.1		34.0 9.4	9.1	<u> </u>
9-Oct-13	Claudu	Moderate	09:33	Middle	3.5	26.3 26.3	26.3	8.0 8.0	8.0	27.8 27.8	27.8	99.1 95.8	95.2	7.0 6.8	6.8	6.9	8.4 8.0	7.9	9.2	8.8 9.6	9.7	9.5
9-001-13	Cloudy	woderale	09.33			26.3 26.2		8.0 8.0		27.8 28.3		94.6 83.9		6.7 5.8		5.0	7.8 12.5		9.2	9.8 10.4		9.5
				Bottom	6	26.2 26.9	26.2	8.0 7.9	8.0	28.3 25.5	28.3	83.6 104.7	83.8	5.8 7.2	5.8	5.8	10.4 4.3	11.5		9.2 5.5	9.8	
				Surface	1	27.1 26.8	27.0	7.9	7.9	25.4 26.2	25.5	102.6 104.0	103.7	7.0 7.1	7.1	7.1	4.3 4.9	4.3		5.9 6.4	5.7	
11-Oct-13	Sunny	Moderate	11:51	Middle	3.5	26.8 26.6	26.8	7.9	7.9	26.1 27.8	26.2	101.9 103.2	103.0	7.0	7.1		4.9 15.4	4.9	8.3	4.6 21.3	5.5	10.8
				Bottom	6	26.6 28.1	26.6	7.9	7.9	27.8	27.8	101.6	102.4	6.9 8.3	7.0	7.0	16.4 16.2 3.3	15.8		21.0	21.2	<u> </u>
				Surface	1	28.1	28.1	8.2	8.2	24.2	24.2	<u>118.9</u> 115.0	119.0	8.2	8.3	8.1	3.3 3.2 3.5	3.3		4.1	3.8	
15-Oct-13	Cloudy	Moderate	15:20	Middle	3	28.0 28.0	28.0	8.2 8.2	8.2	26.1 26.0	26.1	115.0	115.0	7.9 7.9	7.9		3.5	3.5	4.5	3.8 3.4	3.6	3.7
				Bottom	5	27.8 27.8	27.8	8.2 8.2	8.2	27.1 27.1	27.1	110.1 109.8	110.0	7.5 7.5	7.5	7.5	6.6 6.5	6.6		3.9 3.4	3.7	<u> </u>
				Surface	1	26.7 26.7	26.7	8.1 8.1	8.1	27.3 27.3	27.3	80.3 80.3	80.3	6.1 6.1	6.1	6.1	6.0 5.8	5.9		7.0 6.7	6.9	
17-Oct-13	Sunny	Calm	16:30	Middle	3.5	26.7 26.7	26.7	8.1 8.1	8.1	27.4 27.4	27.4	79.6 79.6	79.6	6.1 6.1	6.1		7.4 7.2	7.3	7.6	5.8 5.7	5.8	6.5
				Bottom	6	26.5 26.5	26.5	8.1 8.1	8.1	28.9 28.9	28.9	76.9 76.9	76.9	5.9 5.9	5.9	5.9	9.3 9.6	9.5		6.8 7.0	6.9	
				Surface	1	26.3 26.3	26.3	8.1 8.1	8.1	27.5 27.5	27.5	96.9 97.1	97.0	7.4 7.4	7.4	7.3	8.0 8.3	8.2		12.8 10.0	11.4	
19-Oct-13	Fine	Calm	17:29	Middle	3.5	26.3 26.3	26.3	8.1 8.1	8.1	26.5 27.5	27.0	94.5 94.7	94.6	7.2 7.2	7.2	1.5	10.0 10.4	10.2	9.9	11.0 13.2	12.1	11.3
				Bottom	6	26.3 26.3	26.3	8.1 8.1	8.1	27.7 27.7	27.7	94.2 94.1	94.2	7.2 7.2	7.2	7.2	11.2 11.2	11.2		12.4 8.6	10.5	

Water Quality Monitoring Results at CS2 - Mid-Flood Tide

Date	Weather	Sea	Sampling	Dent	th (m)	Tempera	ature (°C)	p	Н	Salir	nity ppt	DO Satu	ration (%)	Disso	lved Oxygen	(mg/L)	-	Furbidity(NTL	J)	Suspe	ended Solids	(mg/L)
Date	Condition	Condition**	Time	Depi	an (in)	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
				Surface	1	26.8 26.8	26.8	8.0 8.1	8.1	27.2 27.2	27.2	90.1 89.8	90.0	6.2 6.2	6.2	6.1	8.6 8.7	8.7		10.4 8.8	9.6	
21-Oct-13	Fine	Rough	18:23	Middle	3.5	26.8 26.8	26.8	8.1 8.1	8.1	27.6 27.7	27.7	88.0 88.1	88.1	6.0 6.0	6.0	0.1	8.8 9.3	9.1	8.9	7.2 11.2	9.2	8.7
				Bottom	6	26.8 26.8	26.8	8.1 8.1	8.1	28.2 28.2	28.2	86.4 86.4	86.4	5.9 5.9	5.9	5.9	9.0 8.9	9.0		7.4 7.0	7.2	
				Surface	1	26.2 26.2	26.2	8.1 8.1	8.1	29.3 29.0	29.2	95.2 93.0	94.1	6.6 6.5	6.6	6.6	8.1 8.2	8.2		10.0 9.0	9.5	
23-Oct-13	Sunny	Calm	08:58	Middle	4	26.2 26.2	26.2	8.1 8.1	8.1	29.3 29.3	29.3	93.4 92.8	93.1	6.5 6.5	6.5	0.0	10.0 10.3	10.2	9.5	7.6 6.0	6.8	7.8
				Bottom	7	26.2 26.2	26.2	8.1 8.2	8.2	29.5 29.5	29.5	92.5 92.6	92.6	6.4 6.4	6.4	6.4	10.6 9.6	10.1		5.6 8.4	7.0	
				Surface	1	25.7 25.7	25.7	8.1 8.1	8.1	29.2 29.2	29.2	98.4 98.1	98.3	6.9 6.9	6.9	6.8	7.3 7.3	7.3		5.0 4.7	4.9	
25-Oct-13	Sunny	Moderate	11:01	Middle	3.5	25.7 25.6	25.7	8.1 8.1	8.1	29.2 29.2	29.2	95.9 96.0	96.0	6.7 6.7	6.7	0.0	9.3 9.6	9.5	8.6	10.8 11.8	11.3	8.6
				Bottom	6	25.8 25.8	25.8	8.1 8.1	8.1	29.6 29.6	29.6	95.5 95.2	95.4	6.7 6.6	6.7	6.7	9.0 8.8	8.9		9.4 10.0	9.7	
				Surface	1	25.3 25.3	25.3	8.1 8.2	8.2	29.0 29.1	29.1	106.7 106.5	106.6	7.4 7.4	7.4	7.3	3.7 3.8	3.8		4.4 4.8	4.6	
28-Oct-13	Cloudy	Moderate	13:46	Middle	3.5	24.9 24.9	24.9	8.2 8.2	8.2	30.1 30.1	30.1	102.5 102.5	102.5	7.2 7.1	7.2	1.5	4.3 4.4	4.4	4.4	6.2 7.2	6.7	5.3
				Bottom	6	24.8 24.9	24.9	8.2 8.2	8.2	30.2 30.2	30.2	100.0 99.4	99.7	7.0 6.9	7.0	7.0	4.9 5.0	5.0		4.4 4.7	4.6	
				Surface	1	24.9 24.8	24.9	8.1 8.2	8.2	26.1 26.3	26.2	105.5 104.5	105.0	7.5 7.5	7.5	7.5	2.3 2.5	2.4		2.6 3.2	2.9	
30-Oct-13	Sunny	Calm	14:43	Middle	3.5	24.3 24.3	24.3	8.1 8.1	8.1	29.2 29.3	29.3	106.0 106.2	106.1	7.5 7.5	7.5	7.5	4.3 4.8	4.6	4.3	4.8 3.6	4.2	3.6
				Bottom	6	24.1 24.1	24.1	8.0 8.1	8.1	29.9 29.9	29.9	95.2 92.1	93.7	6.7 6.5	6.6	6.6	6.0 5.9	6.0		4.1 3.2	3.7	

Water Quality Monitoring Results at IS1 - Mid-Ebb Tide

Data	Weather	Sea	Sampling	Dent	h (m)	Tempera	ature (°C)	ŗ	рН	Salir	ity ppt	DO Satu	ration (%)	Disso	lved Oxygen	(mg/L)	1	Turbidity(NT	U)	Suspe	ended Solids	(mg/L)
Date	Condition	Condition**	Time	Depti	h (m)	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
				Surface	1	28.8 28.9	28.9	8.3 8.3	8.3	27.1 27.0	27.1	81.5 81.3	81.4	6.0 6.0	6.0	5.9	4.3 4.3	4.3		4.0 4.0	4.0	
2-Oct-13	Sunny	Moderate	11:48	Middle	4.5	28.1 28.0	28.1	8.3 8.3	8.3	29.7 29.7	29.7	76.9 76.5	76.7	5.7 5.6	5.7	5.9	8.0 7.9	8.0	9.1	6.8 7.4	7.1	10.9
				Bottom	8	27.9 27.9	27.9	8.3 8.3	8.3	30.4 30.4	30.4	75.4 75.2	75.3	5.5 5.5	5.5	5.5	14.7 15.5	15.1		20.3 22.7	21.5	
				Surface	1	27.8 27.8	27.8	8.3 8.3	8.3	28.0 28.0	28.0	95.7 95.5	95.6	6.6 6.6	6.6		4.0 4.0	4.0		6.1 4.5	5.3	
4-Oct-13	Cloudy	Moderate	12:10	Middle	4.5	27.7	27.7	8.3 8.3	8.3	29.4 29.5	29.5	93.1 93.7	93.4	6.4 6.4	6.4	6.5	7.1	7.2	6.4	3.2 4.9	4.1	4.7
				Bottom	8	27.7 27.8	27.8	8.3 8.3	8.3	30.6 30.6	30.6	91.9 91.5	91.7	6.3 6.2	6.3	6.3	8.1 8.1	8.1		4.9	4.7	
				Surface	1	27.3 27.3	27.3	8.2 8.2	8.2	28.7 28.7	28.7	81.2 81.2	81.2	5.5 5.5	5.5		9.1 9.1	9.1		14.3 14.0	14.2	
7-Oct-13	Sunny	Moderate	14:27	Middle	4.5	27.3 27.3	27.3	8.2 8.2	8.2	28.1	28.4	81.2 81.1	81.2	5.5 5.4	5.5	5.5	9.2 9.4	9.3	9.3	16.7 11.3	14.0	11.7
				Bottom	8	27.3 27.3	27.3	8.2 8.2	8.2	28.7	28.7	80.8 80.8	80.8	5.4 5.4	5.4	5.4	9.4 9.5	9.5		8.0 5.7	6.9	
				Surface	1	26.7 26.7	26.7	8.2 8.2	8.2	29.1 29.1	29.1	98.8 96.6	97.7	7.1 6.9	7.0		4.4	4.2		5.0 4.0	4.5	
9-Oct-13	Cloudy	Moderate	15:09	Middle	5	26.4 26.5	26.5	8.2 8.2	8.2	30.1 29.9	30.0	98.3 96.9	97.6	7.1 7.0	7.1	7.1	5.5 5.5	5.5	6.5	6.6 6.2	6.4	6.3
				Bottom	9	26.5 26.5	26.5	8.2 8.2	8.2	30.7 30.8	30.8	96.2 95.8	96.0	6.9 6.9	6.9	6.9	8.9 10.5	9.7		8.2 7.6	7.9	
				Surface	1	27.2 27.2	27.2	8.0 8.0	8.0	26.1 26.1	26.1	98.8 97.5	98.2	6.7 6.6	6.7		2.9 3.1	3.0		3.1 3.2	3.2	
11-Oct-13	Fine	Moderate	16:58	Middle	5	26.7 26.7	26.7	8.1 8.1	8.1	29.4 29.4	29.4	95.4 95.8	95.6	6.4 6.5	6.5	6.6	6.7 6.3	6.5	7.1	6.3 5.6	6.0	6.4
				Bottom	9	26.7 26.7	26.7	8.1 8.1	8.1	30.3 30.3	30.3	94.1 94.4	94.3	6.3 6.3	6.3	6.3	11.7 11.8	11.8		10.8 9.0	9.9	
				Surface	1	27.4 27.4	27.4	8.3 8.3	8.3	28.6 28.6	28.6	94.1 94.4	94.3	6.4 6.5	6.5	6.5	2.0 2.0	2.0		2.2 2.0	2.1	
15-Oct-13	Cloudy	Moderate	10:06	Middle	4.5	27.5 27.5	27.5	8.3 8.3	8.3	29.3 29.2	29.3	93.5 93.4	93.5	6.4 6.4	6.4	0.0	4.6 4.6	4.6	4.6	5.3 4.2	4.8	3.6
				Bottom	8	27.5 27.5	27.5	8.3 8.3	8.3	29.8 29.9	29.9	92.2 92.2	92.2	6.3 6.3	6.3	6.3	7.0 7.2	7.1		4.4 3.1	3.8	
				Surface	1	26.3 26.3	26.3	8.1 8.1	8.1	31.1 31.1	31.1	88.6 88.3	88.5	6.7 6.7	6.7	6.7	3.7 4.0	3.9		2.7 3.6	3.2	
17-Oct-13	Sunny	Calm	11:23	Middle	5	26.3 26.3	26.3	8.1 8.1	8.1	31.2 31.2	31.2	87.1 87.3	87.2	6.6 6.6	6.6	0.7	5.3 5.2	5.3	6.0	5.1 4.5	4.8	4.2
				Bottom	9	26.4 26.4	26.4	8.1 8.1	8.1	31.3 31.3	31.3	85.2 85.0	85.1	6.5 6.5	6.5	6.5	8.9 8.4	8.7		4.9 4.3	4.6	
				Surface	1	26.2 26.2	26.2	8.2 8.2	8.2	30.0 30.0	30.0	90.7 90.1	90.4	6.9 6.9	6.9	6.8	3.2 3.1	3.2		5.2 2.7	4.0	
19-Oct-13	Sunny	Calm	12:54	Middle	4	26.2 26.2	26.2	8.2 8.2	8.2	30.0 30.0	30.0	88.4 88.3	88.4	6.7 6.7	6.7	0.0	3.1 3.2	3.2	3.3	2.4 5.1	3.8	3.7
				Bottom	7	26.1 26.1	26.1	8.2 8.2	8.2	30.1 30.1	30.1	88.0 88.0	88.0	6.7 6.7	6.7	6.7	3.4 3.5	3.5		3.2 3.4	3.3	

Water Quality Monitoring Results at IS1 - Mid-Ebb Tide

Date	Weather	Sea	Sampling	Dent	h (m)	Tempera	ature (°C)	p	θH	Salir	nity ppt	DO Satu	ration (%)	Disso	ved Oxygen	(mg/L)	-	Furbidity(NTL	J)	Suspe	ended Solids	(mg/L)
Date	Condition	Condition**	Time	Depi	()	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
				Surface	1	26.9 26.9	26.9	8.2 8.2	8.2	29.9 29.9	29.9	88.5 88.4	88.5	6.1 6.0	6.1	6.1	6.5 6.3	6.4		5.2 5.0	5.1	
21-Oct-13	Sunny	Rough	14:36	Middle	4	26.9 26.9	26.9	8.2 8.2	8.2	30.0 30.0	30.0	88.4 88.2	88.3	6.0 6.0	6.0	0.1	6.2 6.2	6.2	6.1	4.7 3.8	4.3	5.0
				Bottom	7	26.8 26.8	26.8	8.2 8.2	8.2	30.4 30.4	30.4	88.0 87.8	87.9	6.0 6.0	6.0	6.0	5.9 5.7	5.8		5.2 6.0	5.6	
				Surface	1	26.4 26.4	26.4	8.3 8.3	8.3	30.7 30.7	30.7	86.6 82.7	84.7	6.0 5.7	5.9	5.9	7.7 6.5	7.1		5.5 5.7	5.6	
23-Oct-13	Sunny	Calm	14:42	Middle	5.5	26.3 26.3	26.3	8.3 8.3	8.3	31.1 31.1	31.1	82.5 83.0	82.8	5.7 5.8	5.8	5.5	7.7 7.1	7.4	8.8	6.0 6.0	6.0	5.6
				Bottom	10	26.3 26.3	26.3	8.3 8.3	8.3	31.3 31.3	31.3	81.7 81.2	81.5	5.7 5.6	5.7	5.7	11.9 12.1	12.0		5.6 5.0	5.3	
				Surface	1	25.8 25.8	25.8	8.2 8.2	8.2	30.5 30.5	30.5	92.9 92.1	92.5	6.3 6.3	6.3	6.2	5.8 5.7	5.8		8.2 7.2	7.7	
25-Oct-13	Sunny	Moderate	15:47	Middle	4	25.8 25.8	25.8	8.2 8.2	8.2	30.5 30.5	30.5	88.1 88.3	88.2	6.0 6.0	6.0	0.2	5.9 5.9	5.9	6.2	6.7 6.2	6.5	6.5
				Bottom	7	25.8 25.8	25.8	8.2 8.2	8.2	30.5 30.5	30.5	86.6 86.6	86.6	5.9 5.9	5.9	5.9	6.9 6.8	6.9		5.2 5.2	5.2	
				Surface	1	25.0 25.0	25.0	8.2 8.2	8.2	31.5 31.5	31.5	90.8 90.6	90.7	6.3 6.3	6.3	6.3	5.7 5.8	5.8		11.5 6.4	9.0	
28-Oct-13	Cloudy	Moderate	07:05	Middle	4.5	25.0 25.0	25.0	8.2 8.2	8.2	31.5 31.5	31.5	90.6 90.4	90.5	6.3 6.3	6.3	0.5	5.3 5.1	5.2	5.2	6.8 15.0	10.9	11.4
				Bottom	8	25.0 25.0	25.0	8.2 8.2	8.2	31.5 31.5	31.5	90.3 90.5	90.4	6.2 6.3	6.3	6.3	4.5 4.6	4.6		14.7 13.7	14.2	
				Surface	1	24.1 24.1	24.1	8.1 8.2	8.2	30.3 30.3	30.3	102.8 103.0	102.9	7.3 7.3	7.3	6.9	2.9 2.6	2.8		5.7 6.0	5.9	
30-Oct-13	Sunny	Calm	10:26	Middle	5	24.3 24.3	24.3	8.1 8.1	8.1	30.9 30.9	30.9	92.5 91.1	91.8	6.5 6.4	6.5	0.9	4.8 4.7	4.8	4.6	5.0 6.2	5.6	5.3
				Bottom	9	24.3 24.3	24.3	8.1 8.1	8.1	31.0 31.0	31.0	87.3 87.4	87.4	6.1 6.1	6.1	6.1	6.3 5.9	6.1		5.2 3.8	4.5	

Water Quality Monitoring Results at IS1 - Mid-Flood Tide

Dete	Weather	Sea	Sampling	Deat	h (m)	Tempera	ature (°C)	ŗ	рН	Salir	nity ppt	DO Satu	ration (%)	Disso	lved Oxygen	(mg/L)	1	Turbidity(NT	J)	Suspe	ended Solids	(mg/L)
Date	Condition	Condition**	Time	Dept	h (m)	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
				Surface	1	29.2 29.3	29.3	8.2 8.2	8.2	25.4 25.4	25.4	82.5 82.0	82.3	6.1 6.1	6.1	6.1	2.8 2.8	2.8		4.8 4.8	4.8	
2-Oct-13	Fine	Moderate	16:51	Middle	4.5	28.8 28.8	28.8	8.2 8.2	8.2	27.2 27.2	27.2	80.8 80.6	80.7	6.0 6.0	6.0	0.1	8.4 8.1	8.3	7.9	4.8 5.0	4.9	4.8
				Bottom	8	28.7 28.8	28.8	8.2 8.2	8.2	27.5 27.3	27.4	80.6 79.9	80.3	6.0 5.9	6.0	6.0	13.2 12.1	12.7		5.6 3.6	4.6	
				Surface	1	27.9 27.9	27.9	8.3 8.3	8.3	28.9 28.9	28.9	88.0 88.8	88.4	5.9 6.0	6.0		10.5 10.9	10.7		9.8 10.0	9.9	
4-Oct-13	Cloudy	Moderate	17:48	Middle	4	28.0	28.0	8.3 8.3	8.3	29.1 29.1	29.1	86.7 87.4	87.1	5.8 5.9	5.9	6.0	13.5 13.0	13.3	18.7	10.0 10.2 9.8	10.0	9.9
				Bottom	7	28.0 27.9	27.9	8.3	8.3	29.4	29.4	87.6	87.9	5.9	5.9	5.9	31.9	32.1		11.0	9.7	
				Surface	1	27.9 27.1	27.1	8.3 8.2	8.2	29.4 28.5	28.5	88.2 80.3	80.6	5.9 5.4	5.4		32.2 14.5	14.5		8.4 20.0	18.9	
7-Oct-13	Sunny	Moderate	09:07	Middle	5	27.1 27.1	27.1	8.2 8.2	8.2	28.4 28.4	28.4	80.8 79.9	79.7	5.4 5.4	5.4	5.4	14.5 17.5	17.5	16.5	17.7 17.3	16.3	16.9
				Bottom	9	27.1 27.1	27.1	8.2 8.2	8.2	28.4 28.4	28.4	79.4 78.7	78.7	5.3 5.3	5.3	5.3	17.5 17.5	17.5		15.3 16.2	15.6	
				Surface	1	27.1 26.3	26.3	8.2 8.1	8.1	28.4 28.7	28.8	78.7 95.4	95.4	5.3 6.7	6.7	0.0	17.5 13.2	13.3		15.0 8.2	7.6	
0.0+12	Olavidu	Madaata	10.00			26.3 26.3		8.1 8.1		28.8 28.4		95.4 92.9		6.7 6.5		6.6	13.4 23.6		05.0	7.0 19.3		
9-Oct-13	Cloudy	Moderate	10:20	Middle	5	26.3 26.3	26.3	8.1 8.1	8.1	29.5 29.6	29.0	92.2 85.9	92.6	6.5 6.0	6.5		21.5 37.9	22.6	25.2	20.0 92.7	19.7	41.1
				Bottom	9	26.2 27.1	26.3	<u>8.1</u> 8.0	8.1	29.6 26.3	29.6	86.7 96.6	86.3	5.9 6.6	6.0	6.0	41.4	39.7		99.3 4.2	96.0	<u> </u>
				Surface	1	27.0 26.6	27.1	8.0 8.0	8.0	26.3 27.9	26.3	96.2 94.9	96.4	6.6 6.5	6.6	6.6	5.1 11.8	4.7		5.0 22.7	4.6	
11-Oct-13	Sunny	Moderate	12:41	Middle	5	26.6 26.6	26.6	8.0 8.0	8.0	27.9	27.9	94.8 94.2	94.9	6.5 6.4	6.5		11.1 13.4	11.5	9.8	19.0 49.3	20.9	24.6
				Bottom	9	26.6	26.6	8.0	8.0	27.9	27.9	94.4	94.3	6.4	6.4	6.4	13.1	13.3		47.0	48.2	<u> </u>
				Surface	1	27.9 27.9	27.9	8.2 8.2	8.2	26.3 26.3	26.3	86.4 86.5	86.5	5.9 5.9	5.9	5.8	3.1 3.1	3.1		4.4 4.4	4.4	
15-Oct-13	Cloudy	Moderate	16:01	Middle	3.5	27.6 27.6	27.6	8.2 8.2	8.2	27.7 27.7	27.7	81.3 81.2	81.3	5.6 5.6	5.6		5.9 5.9	5.9	8.9	4.6 4.4	4.5	5.0
				Bottom	6	27.6 27.5	27.6	8.2 8.2	8.2	29.2 29.2	29.2	80.7 80.4	80.6	5.5 5.5	5.5	5.5	17.4 18.2	17.8		6.1 5.9	6.0	<u> </u>
				Surface	1	26.5 26.5	26.5	8.1 8.1	8.1	28.7 28.7	28.7	83.1 82.8	83.0	6.3 6.3	6.3	6.1	4.4 5.0	4.7		3.8 3.8	3.8	
17-Oct-13	Sunny	Calm	17:16	Middle	4	26.4 26.4	26.4	8.1 8.1	8.1	29.9 29.9	29.9	77.7 77.9	77.8	5.9 5.9	5.9	0.1	9.4 9.0	9.2	9.2	4.3 3.8	4.1	4.0
				Bottom	7	26.4 26.4	26.4	8.1 8.1	8.1	30.6 30.6	30.6	77.7 77.5	77.6	5.9 5.9	5.9	5.9	13.4 14.0	13.7		4.7 3.2	4.0	
				Surface	1	26.2 26.2	26.2	8.2 8.2	8.2	28.3 28.3	28.3	94.7 94.9	94.8	7.2 7.2	7.2	= 0	5.2 5.2	5.2		4.4 4.2	4.3	
19-Oct-13	Fine	Calm	18:22	Middle	4.5	26.3 26.3	26.3	8.2 8.2	8.2	28.7 28.7 28.7	28.7	94.6 94.5	94.6	7.2	7.2	7.2	6.9 6.7	6.8	6.9	4.6	4.6	5.2
				Bottom	8	26.3	26.3	8.2	8.2	29.0	29.1	94.2	94.2	7.2	7.2	7.2	8.5	8.6		5.4	6.6	
				Bottom	8	26.3	26.3	8.2	8.2	29.1	29.1	94.2	94.2	7.2	7.2	7.2	8.6	8.6		7.8	6.6	i

Water Quality Monitoring Results at IS1 - Mid-Flood Tide

Date	Weather	Sea	Sampling	Dent	th (m)	Tempera	ature (°C)	ķ	ЪН	Salin	ity ppt	DO Satu	ration (%)	Dissol	ved Oxygen	(mg/L)	-	Turbidity(NTL	J)	Suspe	ended Solids	(mg/L)
Date	Condition	Condition**	Time	Depi	an (in)	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
				Surface	1	26.8 26.8	26.8	8.2 8.2	8.2	28.9 28.9	28.9	90.7 91.0	90.9	6.2 6.2	6.2	6.2	5.5 5.3	5.4		5.8 5.8	5.8	
21-Oct-13	Fine	Rough	19:08	Middle	4.5	26.8 26.8	26.8	8.2 8.2	8.2	29.7 29.7	29.7	89.6 90.0	89.8	6.1 6.2	6.2	0.2	7.3 7.3	7.3	6.9	8.2 3.3	5.8	5.2
				Bottom	8	26.8 26.8	26.8	8.2 8.2	8.2	30.0 30.0	30.0	87.6 87.6	87.6	6.0 6.0	6.0	6.0	8.0 8.2	8.1		4.0 3.8	3.9	
				Surface	1	26.1 26.1	26.1	8.2 8.2	8.2	29.6 29.7	29.7	84.4 79.6	82.0	5.9 5.5	5.7	5.6	10.2 10.3	10.3		10.4 10.8	10.6	
23-Oct-13	Sunny	Calm	09:43	Middle	5	26.1 26.1	26.1	8.2 8.2	8.2	30.0 30.1	30.1	78.2 79.1	78.7	5.4 5.5	5.5	5.0	15.3 13.2	14.3	16.6	10.8 9.0	9.9	10.2
				Bottom	9	26.1 26.1	26.1	8.2 8.2	8.2	30.1 30.1	30.1	78.1 78.3	78.2	5.4 5.4	5.4	5.4	25.0 25.2	25.1		10.0 10.2	10.1	
				Surface	1	25.5 25.5	25.5	8.2 8.2	8.2	29.6 29.6	29.6	99.5 98.6	99.1	6.8 6.8	6.8	6.6	5.1 5.5	5.3		6.0 7.2	6.6	
25-Oct-13	Sunny	Moderate	11:47	Middle	5	25.5 25.5	25.5	8.2 8.2	8.2	29.8 29.8	29.8	92.4 93.5	93.0	6.3 6.4	6.4	0.0	8.9 8.3	8.6	9.0	5.7 6.7	6.2	9.0
				Bottom	9	25.5 25.5	25.5	8.2 8.2	8.2	29.9 29.9	29.9	91.0 90.4	90.7	6.2 6.2	6.2	6.2	13.6 12.8	13.2		14.4 13.8	14.1	
				Surface	1	25.2 25.3	25.3	8.2 8.3	8.3	31.4 31.4	31.4	91.1 91.4	91.3	6.3 6.3	6.3	6.2	7.2 7.5	7.4		5.2 5.0	5.1	
28-Oct-13	Cloudy	Moderate	14:38	Middle	4	24.9 24.9	24.9	8.2 8.2	8.2	31.4 31.4	31.4	87.7 87.6	87.7	6.1 6.1	6.1	0.2	11.2 11.1	11.2	10.6	6.1 7.0	6.6	6.0
				Bottom	7	24.9 24.9	24.9	8.2 8.2	8.2	31.4 31.4	31.4	86.7 86.6	86.7	6.0 6.0	6.0	6.0	12.7 13.9	13.3		6.2 6.4	6.3	
				Surface	1	24.9 24.7	24.8	8.3 8.3	8.3	26.0 26.6	26.3	98.5 95.4	97.0	6.9 6.8	6.9	6.9	3.1 2.9	3.0		4.3 5.3	4.8	
30-Oct-13	Sunny	Calm	15:29	Middle	5	24.3 24.2	24.3	8.2 8.2	8.2	30.3 30.2	30.3	97.6 97.0	97.3	6.9 6.8	6.9	0.9	4.9 4.4	4.7	5.1	5.3 8.7	7.0	7.1
				Bottom	9	24.2 24.2	24.2	8.2 8.2	8.2	30.7 30.7	30.7	94.8 95.7	95.3	6.7 6.7	6.7	6.7	7.7 7.4	7.6		10.0 8.7	9.4	

Water Quality Monitoring Results at IS2 - Mid-Ebb Tide

Data	Weather	Sea	Sampling	Deat	h (m)	Tempera	ature (°C)	ŗ	рН	Salir	nity ppt	DO Satu	ration (%)	Disso	lved Oxygen	(mg/L)	1	Turbidity(NT	U)	Suspe	ended Solids	(mg/L)
Date	Condition	Condition**	Time	Dept	h (m)	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
				Surface	1	29.1 28.9	29.0	8.2 8.2	8.2	26.8 27.1	27.0	79.2 78.3	78.8	5.8 5.8	5.8	5.8	5.7 5.4	5.6		4.2 4.2	4.2	
2-Oct-13	Sunny	Moderate	12:00	Middle	3.5	28.3 28.3	28.3	8.2 8.2	8.2	29.1 29.1	29.1	77.4 77.0	77.2	5.7 5.7	5.7	5.6	8.1 7.6	7.9	9.8	13.7 13.7	13.7	12.2
				Bottom	6	28.1 28.1	28.1	8.1 8.1	8.1	30.0 30.0	30.0	75.6 75.4	75.5	5.6 5.5	5.6	5.6	15.8 15.7	15.8		17.7 19.7	18.7	
				Surface	1	27.9 27.9	27.9	8.3 8.3	8.3	28.9 29.0	29.0	94.3 94.7	94.5	6.5 6.5	6.5		8.3 8.5	8.4		5.6 6.6	6.1	
4-Oct-13	Cloudy	Moderate	12:23	Middle	3.5	27.7	27.7	8.3 8.3	8.3	30.3 30.3	30.3	91.2 91.4	91.3	6.2 6.2	6.2	6.4	21.6 21.7	21.7	21.7	5.0 9.4	7.2	6.8
				Bottom	6	27.7	27.7	8.3 8.3	8.3	30.4 30.3	30.4	91.3 91.2	91.3	6.2 6.2	6.2	6.2	37.5 32.4	35.0		7.6	7.2	
				Surface	1	27.3 27.3	27.3	8.2 8.2	8.2	28.5 28.5	28.5	83.8 83.0	83.4	5.6 5.6	5.6		15.2 15.2	15.2		19.7 17.0	18.4	
7-Oct-13	Sunny	Moderate	14:45	Middle	3.5	27.3 27.3	27.3	8.2 8.2	8.2	28.5 28.5	28.5	81.5 81.4	81.5	5.5 5.5	5.5	5.6	13.3 13.6	13.5	15.4	24.0 26.7	25.4	23.8
				Bottom	6	27.3 27.3	27.3	8.2 8.2	8.2	28.6 28.6	28.6	80.9 80.2	80.6	5.4 5.4	5.4	5.4	17.4	17.4		28.0 27.0	27.5	
				Surface	1	26.8 26.7	26.8	8.2 8.2	8.2	29.3 27.9	28.6	98.3 97.1	97.7	7.1	7.1		4.5 4.3	4.4		4.1	4.1	
9-Oct-13	Cloudy	Moderate	15:18	Middle	3.5	26.6 26.6	26.6	8.2 8.2	8.2	29.8 29.8	29.8	96.6 96.1	96.4	7.0	7.0	7.1	4.9	5.1	5.7	5.2 5.4	5.3	5.1
				Bottom	6	26.4 26.4	26.4	8.2 8.2	8.2	30.0 30.0	30.0	95.4 95.1	95.3	6.9 6.9	6.9	6.9	7.8	7.6		6.5 5.5	6.0	
				Surface	1	27.4 27.3	27.4	8.0 8.0	8.0	26.4 26.4	26.4	97.2 96.0	96.6	6.6 6.5	6.6		2.9 3.6	3.3		4.3 2.4	3.4	
11-Oct-13	Fine	Moderate	17:10	Middle	3.5	26.7 26.7	26.7	8.1 8.1	8.1	28.2 28.2	28.2	94.0 93.4	93.7	6.4 6.3	6.4	6.5	5.8 6.2	6.0	6.4	5.2 5.3	5.3	4.7
				Bottom	6	26.6 26.6	26.6	8.1 8.1	8.1	29.5 29.6	29.6	92.1 92.2	92.2	6.2 6.2	6.2	6.2	10.3 9.3	9.8		3.7 7.2	5.5	
				Surface	1	27.6 27.6	27.6	8.2 8.2	8.2	27.4 27.4	27.4	91.2 91.2	91.2	6.3 6.3	6.3	6.3	1.7 1.7	1.7		1.5 1.7	1.6	
15-Oct-13	Cloudy	Moderate	10:15	Middle	4	27.4 27.4	27.4	8.2 8.2	8.2	28.8 28.8	28.8	91.8 91.9	91.9	6.3 6.3	6.3	0.3	2.2 2.2	2.2	6.5	2.9 2.7	2.8	2.4
				Bottom	7	27.5 27.5	27.5	8.2 8.2	8.2	30.1 30.0	30.1	89.4 89.2	89.3	6.1 6.0	6.1	6.1	15.6 15.8	15.7		3.9 1.9	2.9	
				Surface	1	26.4 26.4	26.4	8.1 8.1	8.1	30.9 30.9	30.9	86.3 86.2	86.3	6.6 6.6	6.6	6.6	4.3 4.5	4.4		7.9 4.0	6.0	
17-Oct-13	Sunny	Calm	11:33	Middle	4	26.4 26.4	26.4	8.1 8.1	8.1	31.1 31.1	31.1	85.4 85.4	85.4	6.5 6.5	6.5	0.0	4.5 4.3	4.4	6.3	4.6 3.4	4.0	5.1
				Bottom	7	26.3 26.3	26.3	8.1 8.1	8.1	31.2 31.2	31.2	84.5 84.5	84.5	6.4 6.4	6.4	6.4	10.3 9.9	10.1		5.5 5.1	5.3	
				Surface	1	26.1 26.1	26.1	8.2 8.2	8.2	29.6 28.4	29.0	88.4 88.3	88.4	6.7 6.7	6.7	6.7	3.9 4.0	4.0		5.2 3.3	4.3	
19-Oct-13	Sunny	Calm	13:02	Middle	3	25.9 25.9	25.9	8.2 8.2	8.2	28.8 30.0	29.4	87.8 87.8	87.8	6.7 6.7	6.7	0.7	6.7 6.8	6.8	9.8	5.4 7.2	6.3	5.2
				Bottom	5	25.9 25.9	25.9	8.2 8.2	8.2	30.5 29.3	29.9	87.7 87.8	87.8	6.7 6.7	6.7	6.7	18.6 18.6	18.6		5.1 4.8	5.0	

Water Quality Monitoring Results at IS2 - Mid-Ebb Tide

Date	Weather	Sea	Sampling	Dent	h (m)	Tempera	ature (°C)	p	θH	Salir	nity ppt	DO Satu	ration (%)	Disso	ved Oxygen	(mg/L)		Turbidity(NTU	J)	Suspe	nded Solids	(mg/L)
Date	Condition	Condition**	Time	Depi	()	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
				Surface	1	26.8 26.8	26.8	8.2 8.2	8.2	30.1 30.1	30.1	88.5 88.4	88.5	6.1 6.0	6.1	6.1	5.2 5.2	5.2		6.7 6.2	6.5	
21-Oct-13	Sunny	Rough	14:54	Middle	3	26.6 26.6	26.6	8.2 8.2	8.2	30.3 30.3	30.3	88.1 88.1	88.1	6.0 6.0	6.0	0.1	11.9 13.4	12.7	16.8	11.2 12.0	11.6	9.2
				Bottom	5	26.6 26.6	26.6	8.2 8.2	8.2	30.4 30.4	30.4	87.7 87.7	87.7	6.0 6.0	6.0	6.0	31.7 33.4	32.6		14.0 4.8	9.4	
				Surface	1	26.4 26.4	26.4	8.3 8.3	8.3	30.3 30.2	30.3	90.2 83.6	86.9	6.3 5.8	6.1	6.0	6.3 6.2	6.3		6.2 7.3	6.8	
23-Oct-13	Sunny	Calm	14:54	Middle	3	26.3 26.3	26.3	8.3 8.3	8.3	30.4 30.3	30.4	82.3 83.7	83.0	5.7 5.8	5.8	0.0	8.7 8.5	8.6	8.6	5.7 6.1	5.9	6.3
				Bottom	5	26.2 26.3	26.3	8.3 8.3	8.3	30.5 30.4	30.5	82.0 82.2	82.1	5.7 5.7	5.7	5.7	10.7 10.8	10.8		6.3 5.8	6.1	
				Surface	1	25.7 25.7	25.7	8.2 8.2	8.2	30.4 30.4	30.4	94.3 93.6	94.0	6.4 6.4	6.4	6.2	9.7 10.6	10.2		7.4 11.4	9.4	
25-Oct-13	Sunny	Moderate	15:57	Middle	3.5	25.8 25.8	25.8	8.2 8.2	8.2	30.4 30.4	30.4	87.7 88.8	88.3	6.0 6.0	6.0	0.2	13.8 13.5	13.7	12.2	16.2 17.8	17.0	12.4
				Bottom	6	25.8 25.8	25.8	8.2 8.2	8.2	30.4 30.4	30.4	86.1 85.6	85.9	5.9 5.8	5.9	5.9	13.2 12.3	12.8		10.7 10.8	10.8	
				Surface	1	24.9 24.9	24.9	8.2 8.2	8.2	31.5 31.5	31.5	87.4 87.3	87.4	6.1 6.0	6.1	6.1	5.1 4.9	5.0		7.3 7.7	7.5	
28-Oct-13	Cloudy	Moderate	07:16	Middle	3.5	24.9 24.9	24.9	8.2 8.2	8.2	31.5 31.5	31.5	87.1 87.5	87.3	6.0 6.1	6.1	0.1	4.3 4.2	4.3	4.8	17.7 14.0	15.9	10.9
				Bottom	6	24.9 24.9	24.9	8.2 8.2	8.2	31.5 31.5	31.5	87.2 87.3	87.3	6.0 6.0	6.0	6.0	5.1 5.0	5.1		9.7 8.7	9.2	
				Surface	1	24.1 24.1	24.1	8.2 8.2	8.2	30.1 30.2	30.2	110.2 106.9	108.6	7.8 7.6	7.7	7.4	3.3 3.1	3.2		4.7 5.3	5.0	
30-Oct-13	Sunny	Calm	10:36	Middle	3.5	24.2 24.2	24.2	8.1 8.1	8.1	30.7 30.6	30.7	101.2 99.7	100.5	7.1 7.0	7.1	7.4	4.8 4.2	4.5	4.7	7.0 5.0	6.0	5.8
				Bottom	6	24.3 24.3	24.3	8.1 8.1	8.1	30.9 30.9	30.9	92.6 93.7	93.2	6.5 6.6	6.6	6.6	7.0 5.9	6.5		7.3 5.3	6.3	

Water Quality Monitoring Results at IS2 - Mid-Flood Tide

Date	Weather	Sea	Sampling	Dent	h (m)	Tempera	ature (°C)	ŗ	ЪН	Salir	nity ppt	DO Satu	ration (%)	Disso	lved Oxygen	(mg/L)	-	Turbidity(NT	J)	Suspe	ended Solids	(mg/L)
Date	Condition	Condition**	Time	Dept	h (m)	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
				Surface	1	29.6 29.5	29.6	8.2 8.2	8.2	25.2 25.2	25.2	80.9 79.2	80.1	6.0 5.9	6.0		3.1 3.3	3.2		13.7 12.3	13.0	
2-Oct-13	Fine	Moderate	17:01	Middle	3.5	28.9 28.9	28.9	8.2 8.2	8.2	27.0 27.0	27.0	79.7 79.2	79.5	5.9 5.9	5.9	6.0	7.0 6.8	6.9	7.2	10.0 10.4	10.2	10.9
				Bottom	6	28.9 28.9	28.9	8.2 8.2	8.2	27.2 27.3	27.3	77.5 77.3	77.4	5.7 5.7	5.7	5.7	11.4 11.6	11.5		9.4 9.6	9.5	
				Surface	1	27.9	27.9	8.2	8.3	28.6	28.6	86.6	86.9	5.8	5.9		10.8	10.8		9.6	10.1	
4-Oct-13	Cloudy	Moderate	17:57	Middle	3.5	27.9 27.9	27.9	8.3 8.3	8.3	28.5 29.0	29.0	87.2 87.8	88.0	5.9 5.9	5.9	5.9	10.7 16.6	16.4	17.7	10.6 5.6	11.0	10.8
	,			Bottom	6	27.9 27.9	27.9	8.3 8.3	8.3	29.0 29.1	29.2	88.2 86.7	86.7	5.9 5.8	5.8	5.8	16.2 25.7	26.0		16.4 11.2	11.4	
				Surface	1	27.9 27.2	27.2	8.3 8.2	8.2	29.2 29.3	29.3	86.7 82.4	81.8	5.8 5.5	5.5	0.0	26.2 13.9	13.9		11.6 35.0	35.0	
7-Oct-13	Sunny	Moderate	09:17	Middle	3.5	27.2 27.2	27.2	8.2 8.2	8.2	29.3 29.3	29.3	81.2 80.0	79.6	5.5 5.4	5.4	5.5	13.9 18.1	18.3	19.8	35.0 25.0	25.5	29.6
7-061-13	Sunny	Moderate	09.17			27.2 27.2		8.2 8.2	-	29.3 29.2		79.1 78.7		5.3 5.3		5.0	18.4 27.3		19.0	26.0 27.7		29.0
				Bottom	6	27.2 26.3	27.2	8.2 8.1	8.2	29.2 27.8	29.2	78.7 103.0	78.7	5.3 7.3	5.3	5.3	27.2 13.0	27.3		28.7 15.0	28.2	<u> </u>
				Surface	1	26.3 26.3	26.3	8.1 8.1	8.1	29.0 29.0	28.4	100.7 100.8	101.9	7.1	7.2	7.2	16.2 17.4	14.6		15.7 21.0	15.4	
9-Oct-13	Cloudy	Moderate	10:31	Middle	3.5	26.3	26.3	8.1	8.1	27.8	28.4	99.5	100.2	7.0	7.1		19.5	18.5	22.1	25.0	23.0	19.6
				Bottom	6	26.2 26.3	26.3	8.1 <u>8.1</u>	8.1	29.0 27.9	28.5	99.2 98.1	98.7	7.0 6.9	7.0	7.0	33.1 33.0	33.1		22.0 19.0	20.5	<u> </u>
				Surface	1	27.1 27.1	27.1	8.0 8.0	8.0	26.7 26.7	26.7	95.9 96.2	96.1	6.5 6.5	6.5	6.5	5.3 5.4	5.4		5.0 6.3	5.7	
11-Oct-13	Sunny	Moderate	12:51	Middle	3.5	26.6 26.6	26.6	8.0 8.0	8.0	27.6 27.5	27.6	94.6 94.8	94.7	6.4 6.5	6.5		16.1 14.9	15.5	14.5	30.0 29.0	29.5	28.0
				Bottom	6	26.6 26.6	26.6	8.0 8.0	8.0	27.6 27.6	27.6	94.3 94.4	94.4	6.4 6.4	6.4	6.4	22.7 22.6	22.7		51.0 46.3	48.7	
				Surface	1	28.1 28.1	28.1	8.2 8.2	8.2	26.7 26.7	26.7	86.7 86.3	86.5	5.9 5.9	5.9	5.9	2.4 2.3	2.4		3.0 3.2	3.1	
15-Oct-13	Cloudy	Moderate	16:10	Middle	4	27.7 27.7	27.7	8.2 8.2	8.2	27.6 27.7	27.7	85.4 85.2	85.3	5.8 5.8	5.8	0.0	3.4 3.4	3.4	4.7	2.5 2.6	2.6	3.0
				Bottom	7	27.7 27.7	27.7	8.2 8.2	8.2	28.5 28.5	28.5	84.0 83.4	83.7	5.7 5.7	5.7	5.7	8.2 8.6	8.4		3.4 3.2	3.3	
				Surface	1	26.5 26.5	26.5	8.1 8.1	8.1	28.6 28.6	28.6	80.0 79.9	80.0	6.1 6.1	6.1		5.1 5.1	5.1		4.2 3.2	3.7	
17-Oct-13	Sunny	Calm	17:23	Middle	3	26.4 26.4	26.4	8.1 8.1	8.1	29.7 29.7	29.7	78.3	78.3	6.0 6.0	6.0	6.1	7.5	7.5	7.1	4.8	4.3	4.1
				Bottom	5	26.4 26.5	26.5	8.1 8.1	8.1	30.3 30.5	30.4	77.4	77.4	5.9 5.9	5.9	5.9	8.0 9.3	8.7		4.3 4.0	4.2	
				Surface	1	26.2	26.2	8.2	8.2	28.7	28.2	92.4	92.5	7.0	7.1		5.4	5.5	I	5.4	4.9	
19-Oct-13	Fine	Calm	18:31	Middle	3.5	26.2 26.3	26.3	8.2	8.2	27.6 29.0	29.0	92.6 92.6	92.6	7.1	7.1	7.1	5.6 10.1	10.1	12.5	4.4 5.6	4.6	4.8
				Bottom	6	26.3 26.3	26.3	8.2 8.2	8.2	29.0 29.3	29.3	92.6 91.7	91.7	7.1 7.0	7.0	7.0	10.1 20.5	21.8		3.6 4.6	4.9	
				50000	ÿ	26.3	20.0	8.2	0.2	29.3	20.0	91.6	0	7.0			23.1			5.2		<u>i </u>

Water Quality Monitoring Results at IS2 - Mid-Flood Tide

Date	Weather	Sea	Sampling	Den	th (m)	Tempera	ature (°C)	p	ЪН	Salir	ity ppt	DO Satu	ration (%)	Dissol	ved Oxygen	(mg/L)	-	Turbidity(NT	J)	Suspe	ended Solids	(mg/L)
Date	Condition	Condition**	Time	Бср	ui (iii)	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
				Surface	1	26.8 26.8	26.8	8.2 8.2	8.2	28.9 28.9	28.9	90.1 89.6	89.9	6.2 6.1	6.2	6.1	6.1 6.1	6.1		6.2 5.8	6.0	
21-Oct-13	Fine	Rough	19:17	Middle	3.5	26.8 26.8	26.8	8.2 8.2	8.2	29.5 29.5	29.5	87.2 87.7	87.5	6.0 6.0	6.0	0.1	6.3 6.3	6.3	8.6	4.5 5.2	4.9	5.2
				Bottom	6	26.8 26.8	26.8	8.2 8.2	8.2	28.3 30.0	29.2	86.5 86.3	86.4	5.9 5.9	5.9	5.9	13.8 13.0	13.4		4.7 4.8	4.8	
				Surface	1	26.1 26.1	26.1	8.2 8.2	8.2	29.6 29.6	29.6	85.7 79.3	82.5	5.9 5.5	5.7	5.6	11.4 13.5	12.5		8.8 8.6	8.7	
23-Oct-13	Sunny	Calm	09:52	Middle	3.5	26.1 26.1	26.1	8.2 8.2	8.2	29.7 29.7	29.7	78.5 77.8	78.2	5.4 5.4	5.4	5.0	19.7 21.3	20.5	20.4	10.0 12.2	11.1	10.1
				Bottom	6	26.1 26.1	26.1	8.2 8.2	8.2	29.7 29.7	29.7	78.2 77.8	78.0	5.4 5.4	5.4	5.4	28.3 28.2	28.3		12.0 9.0	10.5	
				Surface	1	25.6 25.6	25.6	8.2 8.2	8.2	28.8 28.8	28.8	95.6 94.7	95.2	6.6 6.5	6.6	6.5	5.0 5.1	5.1		5.3 5.8	5.6	
25-Oct-13	Sunny	Moderate	11:57	Middle	3.5	25.6 25.6	25.6	8.2 8.2	8.2	29.0 29.0	29.0	91.6 92.1	91.9	6.3 6.3	6.3	0.5	5.2 5.2	5.2	5.9	4.0 5.5	4.8	5.4
				Bottom	6	25.5 25.5	25.5	8.2 8.2	8.2	29.4 29.3	29.4	89.7 89.4	89.6	6.2 6.1	6.2	6.2	7.7 7.0	7.4		5.8 5.8	5.8	
				Surface	1	25.4 25.3	25.4	8.2 8.2	8.2	31.5 31.5	31.5	86.7 86.7	86.7	6.0 6.0	6.0	6.0	5.7 5.4	5.6		2.4 3.4	2.9	
28-Oct-13	Cloudy	Moderate	14:48	Middle	3.5	25.0 25.0	25.0	8.2 8.2	8.2	31.5 31.5	31.5	85.9 85.4	85.7	5.9 5.9	5.9	0.0	14.9 14.7	14.8	11.8	5.4 8.2	6.8	6.3
				Bottom	6	24.9 24.9	24.9	8.2 8.2	8.2	31.5 31.5	31.5	84.5 84.3	84.4	5.9 5.8	5.9	5.9	14.7 15.4	15.1		7.0 11.2	9.1	
				Surface	1	24.9 25.0	25.0	8.2 8.3	8.3	27.5 27.4	27.5	97.8 100.4	99.1	6.9 7.1	7.0	6.9	3.3 3.2	3.3		6.4 3.0	4.7	
30-Oct-13	Sunny	Calm	15:39	Middle	3.5	24.3 24.3	24.3	8.2 8.2	8.2	29.9 29.9	29.9	95.5 96.9	96.2	6.7 6.8	6.8	0.9	4.5 4.4	4.5	5.8	5.7 11.0	8.4	7.1
				Bottom	6	24.3 24.3	24.3	8.2 8.2	8.2	30.5 30.5	30.5	86.9 88.2	87.6	6.1 6.2	6.2	6.2	9.2 10.0	9.6		7.3 9.3	8.3	

Water Quality Monitoring Results at IS3 - Mid-Ebb Tide

Date	Weather	Sea	Sampling	Dont	h (m)	Tempera	ature (°C)	p	H	Salir	ity ppt	DO Satu	ration (%)	Disso	lved Oxygen	(mg/L)		Turbidity(NT	J)	Suspe	ended Solids	(mg/L)
Date	Condition	Condition**	Time	Dept	n (m)	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
				Surface	1	27.8 27.8	27.8	8.3 8.3	8.3	27.5 27.5	27.5	76.5 76.6	76.6	5.8 5.8	5.8	5.8	2.7 2.9	2.8		2.6 2.2	2.4	
2-Oct-13	Sunny	Moderate	10:45	Middle	-	-	-	-	-	-	-	-	-	-	-	5.0	-	-	7.0	-	-	2.9
				Bottom	4	27.8 27.8	27.8	8.3 8.3	8.3	28.5 28.5	28.5	74.5 73.9	74.2	5.7 5.6	5.7	5.7	11.2 11.2	11.2		3.4 3.4	3.4	
				Surface	1	27.8 27.8	27.8	7.9	8.0	27.6 27.6	27.6	92.8 94.0	93.4	6.3 6.3	6.3		6.6 7.2	6.9		8.7 10.7	9.7	
4-Oct-13	Cloudy	Moderate	12:04	Middle	-	-	-	-	-	-	-	- 94.0	-	-	-	6.3	-	-	12.4	-	-	9.9
	-			Bottom	4.5	27.6	27.6	8.0	8.0	28.4	28.4	90.9	91.5	6.1	6.2	6.2	18.4	17.9		10.2	10.1	
				Surface	1	27.6	27.5	8.0	8.2	28.4	27.7	92.1 81.4	85.0	6.2 5.5	5.8		17.3 13.4	13.1		10.0	13.7	<u> </u>
7-Oct-13	Sunny	Moderate	15:08	Middle	-	27.5	_	8.2	_	27.7	-	88.6 -	_	6.0 -	_	5.8	- 12.8	-	13.1	- 14.3	_	14.9
				Bottom	4.5	27.5	27.5	8.2	8.2	- 27.7	27.7	- 85.5	82.5	- 5.8	5.6	5.6	- 13.3	13.1		- 15.6	16.0	
				Surface	1.0	27.5 27.6	27.6	8.2 8.2	8.2	27.7 29.0	29.0	79.5 95.2	95.0	5.3 7.0	7.0	0.0	12.8 7.3	7.5		16.4 6.6	6.6	
0.0+12	Olevely	Madanata	10.00			27.6	27.0	8.2	-	29.0	-	94.8	33.0	6.9 -		7.0	7.6		7.0	6.6		
9-Oct-13	Cloudy	Moderate	16:26	Middle	-	- 27.1	-	- 8.2		- 29.4		- 90.6	-	- 6.6	-	0.7	- 8.1	-	7.8	- 6.9	-	6.8
				Bottom	4.9	27.1 27.5	27.1	8.2 8.1	8.2	29.4 27.3	29.4	<u>90.7</u> 110.4	90.7	6.7 7.5	6.7	6.7	8.1 7.6	8.1		6.9 5.3	6.9	
				Surface	1	27.5	27.5	8.1	8.1	27.3	27.3	109.4	109.9	7.4	7.5	7.5	7.8	7.7		5.8	5.6	
11-Oct-13	Fine	Moderate	17:35	Middle	-	27.4	-	- 8.1	-	27.7	-	105.7	-	7.2	-		- 13.5	-	10.4	- 8.3	-	6.0
				Bottom	3.1	27.4	27.4	8.1	8.1	27.6	27.7	105.6	105.7	7.2	7.2	7.2	12.5	13.0		4.5	6.4	<u> </u>
				Surface	1	27.4 27.4	27.4	8.3 8.3	8.3	29.1 29.2	29.2	94.1 93.2	93.7	6.3 6.3	6.3	6.3	3.1 3.1	3.1		2.1 2.3	2.2	
15-Oct-13	Cloudy	Moderate	09:42	Middle	-	-	-	-	-	-	-	-	-	-	-		-	-	4.6	-	-	3.2
				Bottom	4.7	27.3 27.3	27.3	8.3 8.3	8.3	29.7 29.7	29.7	91.7 91.0	91.4	6.2 6.1	6.2	6.2	5.8 6.1	6.0		4.0 4.2	4.1	
				Surface	1	27.1 27.1	27.1	8.2 8.2	8.2	30.4 30.4	30.4	84.0 82.4	83.2	5.6 5.5	5.6	5.6	5.9 6.9	6.4		6.6 7.8	7.2	
17-Oct-13	Sunny	Calm	11:16	Middle	-	-	-	-	-	-	-	-	-		-	5.0	-	-	8.3	-	-	6.9
				Bottom	4.1	27.1 27.1	27.1	8.2 8.2	8.2	30.8 31.0	30.9	83.2 82.2	82.7	5.6 5.5	5.6	5.6	9.7 10.7	10.2		5.8 7.2	6.5	
				Surface	1	26.9 26.9	26.9	8.2 8.2	8.2	29.3 29.3	29.3	83.4 87.2	85.3	6.3 6.6	6.5	0.5	6.2 6.2	6.2		4.6 3.8	4.2	
19-Oct-13	Sunny	Calm	12:54	Middle	-	-	-	-	-	-	-	-	-	-	-	6.5	-	-	7.3	-	-	4.1
				Bottom	4.1	26.8 26.7	26.8	8.2 8.2	8.2	29.4 29.4	29.4	86.0 87.4	86.7	6.5 6.6	6.6	6.6	8.3 8.5	8.4		5.0 2.8	3.9	

Water Quality Monitoring Results at IS3 - Mid-Ebb Tide

Date	Weather	Sea	Sampling	Dent	th (m)	Tempera	ature (°C)	ŗ	ЪН	Salir	nity ppt	DO Satu	ration (%)	Disso	ved Oxygen	(mg/L)	-	Turbidity(NTL	J)	Suspe	ended Solids	(mg/L)
Date	Condition	Condition**	Time	Dept	an (nn)	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
				Surface	1	26.3 26.3	26.3	8.1 8.1	8.1	29.4 29.4	29.4	91.1 90.7	90.9	6.2 6.2	6.2	6.2	6.1 6.4	6.3		9.0 6.4	7.7	
21-Oct-13	Sunny	Rough	14:08	Middle	-	-	-	-	-	-	-	-	-	-	-	0.2	-	-	7.1	-	-	7.9
				Bottom	4.7	26.2 26.2	26.2	8.1 8.1	8.1	29.5 29.5	29.5	89.4 88.9	89.2	6.1 6.1	6.1	6.1	7.9 7.9	7.9		8.3 7.8	8.1	
				Surface	1	26.4 26.4	26.4	8.2 8.2	8.2	30.0 29.7	29.9	89.9 89.0	89.5	6.2 6.1	6.2	6.2	8.8 10.6	9.7		8.3 8.7	8.5	
23-Oct-13	Sunny	Calm	14:54	Middle	-	-	-	-	-	-	-	-	-	-	-	0.2	-	-	16.1	-	-	19.4
				Bottom	4.6	26.3 26.3	26.3	8.2 8.2	8.2	30.0 29.9	30.0	85.7 85.5	85.6	5.9 5.9	5.9	5.9	22.6 22.1	22.4		28.7 31.7	30.2	
				Surface	1	25.7 25.7	25.7	8.2 8.2	8.2	30.1 30.1	30.1	95.6 95.4	95.5	6.6 6.6	6.6	6.6	8.0 7.8	7.9		9.3 8.6	9.0	
25-Oct-13	Sunny	Moderate	16:46	Middle	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	9.0	-	-	8.2
				Bottom	3.6	25.5 25.5	25.5	8.2 8.2	8.2	30.5 30.5	30.5	93.3 91.8	92.6	6.4 6.3	6.4	6.4	10.1 10.0	10.1		7.3 7.4	7.4	
				Surface	1	24.5 24.4	24.5	8.3 8.3	8.3	32.1 32.1	32.1	92.7 94.1	93.4	6.4 6.6	6.5	6.5	5.0 5.3	5.2		5.5 6.2	5.9	
28-Oct-13	Cloudy	Moderate	07:20	Middle	-	-	-	-	-	-	-	-	-	-	-	0.5	-	-	5.2	-	-	6.4
				Bottom	4.3	24.2 24.3	24.3	8.3 8.3	8.3	29.2 32.1	30.7	94.0 93.7	93.9	6.7 6.5	6.6	6.6	5.1 5.3	5.2		6.8 6.8	6.8	
				Surface	1	25.0 25.0	25.0	8.2 8.2	8.2	30.1 30.1	30.1	101.7 102.3	102.0	7.1 7.1	7.1	7.1	4.8 5.2	5.0		5.0 4.0	4.5	
30-Oct-13	Sunny	Calm	09:29	Middle	-	-	-	-	-	-	-	-	-	-	-	7.1	-	-	7.5	-	-	4.0
				Bottom	4.6	25.0 25.0	25.0	8.2 8.2	8.2	30.2 30.2	30.2	101.2 100.4	100.8	7.0 7.0	7.0	7.0	9.6 10.1	9.9		4.0 3.0	3.5	

Water Quality Monitoring Results at IS3 - Mid-Flood Tide

Data	Weather	Sea	Sampling	Deat	h (m)	Tempera	ature (°C)	p	θH	Salir	ity ppt	DO Satu	ration (%)	Disso	lved Oxygen	(mg/L)	1	Turbidity(NT	J)	Suspe	ended Solids	(mg/L)
Date	Condition	Condition**	Time	Dept	h (m)	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
				Surface	1	28.4 28.4	28.4	8.3 8.3	8.3	27.1 27.1	27.1	78.3 77.9	78.1	5.9 5.9	5.9		11.9 12.2	12.1		7.8 8.0	7.9	
2-Oct-13	Fine	Moderate	17:19	Middle	-	-	-	-	-	-	-	-	-		-	5.9	-	-	13.9	-	-	9.1
				Bottom	3.7	28.4 28.4	28.4	8.3 8.3	8.3	27.2 28.0	27.6	77.4 77.4	77.4	5.8 5.8	5.8	5.8	15.7 15.5	15.6		10.4 10.0	10.2	
				Surface	1	28.1	28.1	7.9	7.9	25.3	26.8	77.1	77.1	5.2	5.2		13.8	13.8		4.0	5.0	
4-Oct-13	Cloudy	Moderate	17:39	Middle	-	- 28.1	_	7.9	_	- 28.3	_	77.1	-	- 5.2	-	5.2	- 13.8	_	19.0	5.9	_	4.8
	,			Bottom	4.5	28.1	28.1	8.0	8.0	28.4	28.4	87.2	87.2	5.8	5.8	5.8	23.9	24.2		5.2	4.6	
				Surface	1	28.1 27.3	27.3	8.0 8.1	8.1	28.4 27.4	27.5	87.2 97.6	97.8	5.8 6.6	6.6		24.5 17.6	18.0		4.0 20.7	19.7	ļ
7-Oct-13	Sunny	Moderate	08:57	Middle	-	27.3	_	8.1 -	_	27.5	-	97.9	_	6.6 -	_	6.6	- 18.3	-	19.1	18.7	_	21.4
				Bottom	4.4	- 27.2	27.2	- 8.1	8.1	- 27.5	27.5	- 97.9	98.2	- 6.6	6.7	6.7	- 22.1	20.2		- 22.3	23.0	
				Surface	1	27.2 27.0	27.0	8.1 8.2	8.2	27.5 27.7	28.1	98.4 87.0	86.7	6.7 6.4	6.4		18.3 13.7	14.3		23.7 8.4	7.9	
9-Oct-13	Claudu	Moderate	09:26	Middle	-	27.0	21.0	8.2	-	- 28.4	-	- 86.4	00.7	6.4 -	-	6.4	14.9	-	15.9	7.4	-	8.9
9-001-13	Cloudy	Moderate	09.20			- 27.0	27.0	- 8.2	8.2	- 28.4		- 86.1	- 86.7	- 6.3			- 17.7		15.9	- 9.4	9.9	0.9
				Bottom	4.8	27.0 27.8		<u>8.2</u> 8.1	-	28.4 26.8	28.4	87.3 100.7		6.4 6.8	6.4	6.4	17.1 6.9	17.4		10.4 5.6		
44.0.1.40	0		44.50	Surface	1	27.8	27.8	8.1	8.1	26.8	26.8	- 100.4	100.6	6.8	6.8	6.8	6.8	6.9		5.6 -	5.6	5.0
11-Oct-13	Sunny	Moderate	11:52	Middle	-	- 27.8	-	- 8.1	-	- 26.8	-	- 100.0	-	- 6.8	-		- 7.8	-	7.4	- 6.3	-	5.9
				Bottom	4.1	27.8	27.8	8.1 8.1	8.1	26.8 27.5	26.8	99.7 98.2	99.9	6.8 6.6	6.8	6.8	7.8	7.8		6.1 10.2	6.2	
				Surface	1	28.1	28.1	8.2	8.2	27.5	27.5	95.8	97.0	6.4	6.5	6.5	2.4	2.3		9.7	10.0	
15-Oct-13	Cloudy	Moderate	15:51	Middle	-	-	-	8.2	-	27.8	-	95.5	-	-	-		-	-	3.6	3.8	-	6.7
				Bottom	4.4	28.0 28.0	28.0	8.2	8.2	27.8	27.8	95.2	95.4	6.4 6.4	6.4	6.4	4.8 4.8	4.8		3.0	3.4	
				Surface	1	27.0 27.2	27.1	8.1 8.2	8.2	29.3 29.2	29.3	117.7 117.4	117.6	7.9 7.9	7.9	7.9	5.1 5.1	5.1		5.4 4.2	4.8	
17-Oct-13	Sunny	Calm	17:34	Middle	-	-	-	-	-	-	-	-	-	-	-		-	-	5.3	-	-	4.8
				Bottom	4.1	27.2 27.2	27.2	8.1 8.2	8.2	29.8 29.6	29.7	115.4 115.7	115.6	7.8 7.8	7.8	7.8	5.3 5.4	5.4		4.4 5.2	4.8	l
				Surface	1	26.9 27.0	27.0	8.2 8.2	8.2	28.9 28.8	28.9	73.5 81.0	77.3	5.7 6.2	6.0	6.0	8.3 8.3	8.3		9.2 7.4	8.3	
19-Oct-13	Fine	Calm	18:49	Middle	-	-	-	-	-	-	-	-	-		-	0.0	-	-	9.0	-	-	7.8
				Bottom	4	27.0 27.0	27.0	8.2 8.2	8.2	28.9 28.9	28.9	79.4 82.2	80.8	6.1 6.3	6.2	6.2	10.0 9.4	9.7		6.6 7.8	7.2	

Water Quality Monitoring Results at IS3 - Mid-Flood Tide

Date	Weather	Sea	Sampling	Dent	h (m)	Tempera	ature (°C)	ŗ	bН	Salir	nity ppt	DO Satu	ration (%)	Disso	lved Oxygen	(mg/L)	-	Turbidity(NT	U)	Suspe	ended Solids	(mg/L)
Date	Condition	Condition**	Time	Dept	()	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
				Surface	1	26.1 26.1	26.1	8.1 8.1	8.1	29.6 29.5	29.6	88.6 88.1	88.4	6.1 6.0	6.1	6.1	10.4 10.5	10.5		7.4 8.2	7.8	
21-Oct-13	Fine	Rough	19:17	Middle	-	-	-	-	-	-	-	-	-		-	0.1	-	-	9.6	-	-	7.7
				Bottom	4.5	26.0 26.0	26.0	8.1 8.1	8.1	29.6 29.6	29.6	86.7 87.0	86.9	6.0 6.0	6.0	6.0	9.0 8.1	8.6		7.0 8.2	7.6	
				Surface	1	26.2 26.2	26.2	8.1 8.1	8.1	29.2 29.2	29.2	87.5 87.7	87.6	6.1 6.1	6.1	6.1	9.9 9.7	9.8		12.4 11.2	11.8	
23-Oct-13	Sunny	Calm	09:27	Middle	-	-	-	-	-	-	-	-	-		-	0.1	-	-	13.3	-	-	11.3
				Bottom	4.1	26.2 26.2	26.2	8.1 8.2	8.2	29.3 29.3	29.3	87.0 87.5	87.3	6.0 6.1	6.1	6.1	15.7 17.8	16.8		10.8 10.6	10.7	
				Surface	1	25.6 25.6	25.6	8.1 8.2	8.2	29.9 29.9	29.9	93.5 93.5	93.5	6.5 6.5	6.5	6.5	6.0 5.9	6.0		6.7 7.0	6.9	
25-Oct-13	Sunny	Moderate	11:33	Middle	-	-	-	-	-	-	-	-	-	-	-	0.5	-	-	7.3	-	-	7.1
				Bottom	3.1	25.6 25.6	25.6	8.2 8.2	8.2	30.3 30.3	30.3	94.4 94.3	94.4	6.5 6.5	6.5	6.5	8.2 9.0	8.6		8.2 6.2	7.2	
				Surface	1	25.3 25.2	25.3	8.3 8.2	8.3	32.2 32.1	32.2	101.1 106.6	103.9	6.9 7.3	7.1	7.1	6.2 7.2	6.7		9.6 7.8	8.7	
28-Oct-13	Cloudy	Moderate	16:06	Middle	-	-	-	-	-	-	-	-	-	-	-	7.1	-	-	7.0	-	-	7.4
				Bottom	4.3	25.1 25.2	25.2	8.2 8.2	8.2	29.3 32.2	30.8	106.1 107.2	106.7	7.4 7.4	7.4	7.4	7.3 7.1	7.2		5.6 6.6	6.1	
				Surface	1	25.5 25.5	25.5	8.3 8.3	8.3	29.0 29.0	29.0	110.0 110.7	110.4	7.6 7.7	7.7	7.7	5.1 5.9	5.5		7.8 8.0	7.9	
30-Oct-13	Sunny	Calm	15:51	Middle	-	-	-	-	-	-	-	-	-		-	1.1	-	-	7.2	-	-	7.3
				Bottom	3.7	25.5 25.5	25.5	8.3 8.3	8.3	29.1 29.1	29.1	112.3 111.9	112.1	7.8 7.8	7.8	7.8	8.4 9.1	8.8		6.7 6.4	6.6	

Water Quality Monitoring Results at IS4 - Mid-Ebb Tide

Data	Weather	Sea	Sampling	Dent	h (m)	Tempera	ature (°C)	ŗ	рН	Salir	nity ppt	DO Satu	ration (%)	Disso	lved Oxygen	(mg/L)	1	Furbidity(NT	U)	Suspe	ended Solids	(mg/L)
Date	Condition	Condition**	Time	Dept	h (m)	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
				Surface	1	28.9 28.9	28.9	8.3 8.3	8.3	27.8 27.6	27.7	81.8 80.8	81.3	6.0 6.0	6.0	6.0	5.8 5.9	5.9		12.0 11.4	11.7	
2-Oct-13	Sunny	Moderate	12:15	Middle	4	28.5 28.5	28.5	8.2 8.3	8.3	29.0 29.1	29.1	79.7 79.1	79.4	5.9 5.8	5.9	0.0	8.0 8.1	8.1	9.0	21.0 22.2	21.6	15.7
				Bottom	7	28.4 28.4	28.4	8.2 8.2	8.2	29.5 29.5	29.5	77.5 77.4	77.5	5.7 5.7	5.7	5.7	13.4 12.7	13.1		9.0 18.6	13.8	
				Surface	1	27.7 27.7	27.7	8.3 8.3	8.3	29.1 29.1	29.1	91.5 92.0	91.8	6.2 6.3	6.3		8.8 8.7	8.8		13.8 8.0	10.9	
4-Oct-13	Cloudy	Moderate	12:33	Middle	4	27.6 27.6	27.6	8.3 8.3	8.3	29.4 29.4	29.4	90.6 90.5	90.6	6.1 6.1	6.1	6.2	15.5 16.4	16.0	15.4	13.2 10.8	12.0	10.9
				Bottom	7	27.6 27.6 27.6	27.6	8.3 8.3	8.3	29.4 29.6 29.6	29.6	<u>90.5</u> 89.4 89.7	89.6	6.0 6.1	6.1	6.1	21.3 21.4	21.4		8.2 11.4	9.8	
				Surface	1	27.5	27.6	8.2	8.2	28.7	28.7	90.2	90.1	6.1	6.1		13.7	13.7		16.7	16.5	
7-Oct-13	Sunny	Moderate	14:58	Middle	3.5	27.6 27.5	27.5	8.2	8.2	28.7	28.7	90.0 86.3	85.9	6.0 5.8	5.8	6.0	13.7 14.4	14.4	14.3	16.3 13.3	13.5	15.6
				Bottom	6	27.5 27.5 27.5	27.5	8.2 8.2 8.2	8.2	28.7 28.7 28.7	28.7	85.5 86.3 86.6	86.5	5.7 5.8 5.8	5.8	5.8	14.4 14.8 14.6	14.7		13.7 15.3 18.3	16.8	
				Surface	1	26.6	26.6	8.1	8.1	28.7	28.8	93.0	93.3	6.8	6.8		7.4	8.2		22.0	20.7	
9-Oct-13	Cloudy	Moderate	15:28	Middle	3.5	26.6 26.4	26.4	8.1 8.1	8.1	28.9 29.0	28.5	93.6 97.1	97.2	6.8 7.0	7.0	6.9	9.0 8.2	9.1	11.1	19.3 28.3	24.8	22.6
	-			Bottom	6	26.4 26.4 26.4	26.4	8.1 8.1	8.1	27.9 29.7 29.6	29.7	97.3 96.4 96.2	96.3	7.0 6.9	6.9	6.9	9.9 16.9	16.0		21.3 24.0 20.7	22.4	
				Surface	1	27.7	27.7	<u>8.1</u> 8.0	8.0	26.6	26.6	96.5	96.5	6.9 6.5	6.5		<u>15.1</u> 3.4	3.5		5.2	4.8	
11-Oct-13	Fine	Moderate	17:27	Middle	3.5	27.7 26.9	27.0	8.0 8.0	8.0	26.5 26.9	26.9	96.5 95.1	94.3	6.5 6.5	6.4	6.5	3.6 5.4	5.5	7.7	4.4	3.7	5.2
				Bottom	6	27.1 26.7	26.7	8.0 8.0	8.0	26.9 27.4	27.4	93.4 90.7	91.0	6.3 6.2	6.2	6.2	5.5 13.9	14.0		3.4 7.3	7.2	
				Surface	1	26.7 27.6	27.6	8.0 8.3	8.3	27.4 29.1	29.1	91.2 88.2	88.1	6.2 6.0	6.0		14.1 3.6	3.6		7.0 4.1	4.0	
15-Oct-13	Cloudy	Moderate	10:25	Middle	4	27.6 27.5	27.5	8.2 8.2	8.2	29.1 29.6	29.7	87.9 87.9	87.9	6.0 6.0	6.0	6.0	3.5 4.3	4.8	6.5	3.9 7.5	5.3	4.4
10 000 10	Cloudy	moderate	10.20	Bottom	7	27.5 27.5	27.5	8.2 8.2	8.2	29.7 29.8	29.8	87.9 87.0	87.0	6.0 5.9	5.9	5.9	5.2 11.0	11.1	0.0	3.0 3.9	4.0	
				Surface	, 1	27.5 26.4	26.4	8.2 8.1	8.1	29.8 30.5	30.5	86.9 82.8	82.8	5.9 6.3	6.3	0.0	11.2 6.8	6.7		4.1 6.2	7.2	
17 Oct 12	Cuppy (Calm	11:42		5	26.4 26.4	26.4	8.1 8.1	8.1	30.5 30.5	30.5	82.7 82.3	82.3	6.3 6.3		6.3	6.5 9.0	8.5	10.0	8.2 6.6		7.0
17-Oct-13	Sunny	Calm	11.42	Middle	-	26.4 26.3	-	8.1 8.1		30.5 30.8		82.3 81.7		6.3 6.2	6.3		7.9 14.4		10.0	6.4 7.0	6.5	7.0
				Bottom	9	26.3 26.2	26.3	8.1 8.2	8.1	30.9 29.3	30.9	81.5 88.7	81.6	6.2 6.8	6.2	6.2	15.4 3.8	14.9		7.8	7.4	
	_			Surface	1	26.2 26.0	26.2	8.2	8.2	29.3 29.5	29.3	88.3 87.0	88.5	6.7 6.6	6.8	6.7	3.8 6.8	3.8		4.0	3.9	
19-Oct-13	Sunny	Calm	13:13	Middle	4	26.0 26.0 25.9	26.0	8.2 8.2	8.2	29.5 29.6	29.5	87.0 86.6	87.0	6.6 6.6	6.6		6.1 12.6	6.5	7.5	5.8 6.0	5.6	5.2
				Bottom	7	25.9 26.0	26.0	8.2 8.2	8.2	29.0	29.0	86.5	86.6	6.6	6.6	6.6	12.0	12.3		6.4	6.2	<u>i </u>

Water Quality Monitoring Results at IS4 - Mid-Ebb Tide

Date	Weather	Sea	Sampling	Dent	th (m)	Tempera	ature (°C)	ķ	Н	Salir	ity ppt	DO Satu	ration (%)	Dissol	ved Oxygen	(mg/L)	-	Furbidity(NTL	J)	Suspe	ended Solids	(mg/L)
Date	Condition	Condition**	Time	Depi	an (in)	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
				Surface	1	26.8 26.8	26.8	8.2 8.2	8.2	29.6 29.6	29.6	88.2 88.2	88.2	6.0 6.0	6.0	6.0	6.5 6.1	6.3		9.2 8.3	8.8	
21-Oct-13	Sunny	Rough	15:05	Middle	4.5	26.7 26.7	26.7	8.2 8.2	8.2	30.1 30.1	30.1	88.2 88.2	88.2	6.0 6.0	6.0	0.0	8.6 9.0	8.8	9.0	7.8 5.3	6.6	7.3
				Bottom	8	26.6 26.6	26.6	8.2 8.2	8.2	30.2 30.2	30.2	87.7 87.8	87.8	6.0 6.0	6.0	6.0	12.0 12.0	12.0		6.2 7.0	6.6	
				Surface	1	26.3 26.3	26.3	8.2 8.3	8.3	29.4 29.4	29.4	88.9 82.6	85.8	6.2 5.8	6.0	5.9	8.1 9.7	8.9		10.8 10.7	10.8	
23-Oct-13	Sunny	Calm	15:04	Middle	3.5	26.2 26.3	26.3	8.2 8.3	8.3	29.4 29.4	29.4	81.7 83.0	82.4	5.7 5.8	5.8	5.5	10.9 9.4	10.2	9.9	10.0 10.5	10.3	10.8
				Bottom	6	26.2 26.2	26.2	8.2 8.3	8.3	29.6 29.5	29.6	81.4 82.6	82.0	5.7 5.8	5.8	5.8	10.9 10.4	10.7		11.0 11.4	11.2	
				Surface	1	25.6 25.6	25.6	8.2 8.2	8.2	29.2 29.2	29.2	93.1 92.4	92.8	6.4 6.3	6.4	6.3	5.3 5.7	5.5		7.5 8.0	7.8	
25-Oct-13	Sunny	Moderate	16:08	Middle	4.5	25.6 25.6	25.6	8.2 8.2	8.2	29.3 29.3	29.3	89.1 89.5	89.3	6.1 6.1	6.1	0.5	7.0 6.9	7.0	7.2	14.2 7.4	10.8	8.7
				Bottom	8	25.6 25.7	25.7	8.2 8.2	8.2	30.0 30.1	30.1	87.1 86.8	87.0	5.9 5.9	5.9	5.9	8.9 9.0	9.0		8.4 6.8	7.6	
				Surface	1	24.7 24.7	24.7	8.2 8.2	8.2	31.6 31.6	31.6	85.2 85.0	85.1	5.9 5.9	5.9	5.9	4.7 4.9	4.8		11.4 10.0	10.7	
28-Oct-13	Cloudy	Moderate	07:25	Middle	4	24.7 24.7	24.7	8.2 8.2	8.2	31.6 31.6	31.6	84.9 85.0	85.0	5.9 5.9	5.9	5.5	5.1 5.1	5.1	5.0	10.2 9.0	9.6	10.0
				Bottom	7	24.7 24.7	24.7	8.2 8.2	8.2	31.6 31.6	31.6	84.9 84.8	84.9	5.9 5.9	5.9	5.9	5.0 5.1	5.1		9.3 10.3	9.8	
				Surface	1	24.0 24.0	24.0	8.2 8.2	8.2	29.9 29.9	29.9	110.5 109.1	109.8	7.8 7.7	7.8	7.6	2.3 2.6	2.5		7.0 4.7	5.9	
30-Oct-13	Sunny	Calm	10:46	Middle	4	24.2 24.2	24.2	8.2 8.2	8.2	30.4 30.4	30.4	104.8 101.2	103.0	7.4 7.1	7.3	7.0	2.8 3.4	3.1	4.0	6.3 5.1	5.7	5.5
				Bottom	7	24.2 24.2	24.2	8.1 8.1	8.1	30.7 30.7	30.7	97.1 94.3	95.7	6.8 6.6	6.7	6.7	6.1 6.9	6.5		4.7 5.3	5.0	

Water Quality Monitoring Results at IS4 - Mid-Flood Tide

Date	Weather	Sea	Sampling	Dont	h (m)	Tempera	ature (°C)	p	ЪН	Salin	ity ppt	DO Satu	ration (%)	Dissol	ved Oxygen	(mg/L)	-	Turbidity(NTL))	Suspe	ended Solids	(mg/L)
Date	Condition	Condition**	Time	Dept	n (m)	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
				Surface	1	28.7 28.7	28.7	8.2 8.2	8.2	27.7 27.7	27.7	76.7 74.4	75.6	5.7 5.5	5.6	5.6	7.7 7.6	7.7		25.3 22.3	23.8	
2-Oct-13	Fine	Moderate	17:13	Middle	4	28.6 28.7	28.7	8.2 8.2	8.2	28.2 28.2	28.2	74.4 73.1	73.8	5.5 5.4	5.5	5.0	10.4 10.2	10.3	10.9	21.3 21.0	21.2	21.5
				Bottom	7	28.6 28.7	28.7	8.2 8.2	8.2	28.2 28.2	28.2	73.3 73.1	73.2	5.4 5.4	5.4	5.4	14.3 14.9	14.6		21.0 18.0	19.5	
				Surface	1	28.0 28.0	28.0	8.2 8.2	8.2	28.4 28.4	28.4	86.0 86.1	86.1	5.8 5.8	5.8		14.2 14.3	14.3		11.4 14.4	12.9	i
4-Oct-13	Cloudy	Moderate	18:03	Middle	4	28.0 28.0	28.0	8.3 8.3	8.3	28.7	28.8	85.7 86.3	86.0	5.7 5.8	5.8	5.8	14.8	15.0	21.2	13.2 15.6	14.4	13.3
				Bottom	7	28.0 28.0 28.0	28.0	8.3 8.3	8.3	29.0 29.1	29.1	85.4 86.0	85.7	5.8	5.8	5.8	34.0 34.5	34.3		10.0 15.0	12.5	
				Surface	1	27.2	27.2	8.2	8.2	28.9	28.9	83.0	82.7	5.6	5.6		11.1	11.1		26.7	26.7	
7-Oct-13	Sunny	Moderate	09:35	Middle	3.5	27.2	27.2	8.2 8.2	8.2	28.9 28.9	28.9	82.3 80.2	80.2	5.5 5.4	5.4	5.5	11.1 19.1	19.0	17.9	26.7 25.7	24.4	23.3
				Bottom	6	27.2	27.2	8.2	8.2	28.9 28.9	28.9	80.2	80.7	5.4 5.4	5.4	5.4	18.9 23.6	23.7		23.0 20.7	18.9	
				Surface	1	27.2 26.4	26.5	8.2	8.1	28.9 28.3	28.3	80.2	103.3	5.4 7.4	7.3		23.8	16.4		17.0 5.8	5.7	
9-Oct-13	Cloudy	Moderate	10:41	Middle	3.5	26.5 26.3	26.3	8.1 8.1	8.1	28.3 28.4	28.4	102.2 100.8	99.6	7.2	7.0	7.2	15.0 20.8	19.2	18.9	5.6 6.4	6.0	6.5
	,			Bottom	6	26.3 26.3	26.3	8.1 8.1	8.1	28.4 28.4	28.4	98.3 79.8	79.0	6.9 5.4	5.4	5.4	17.6 22.2	21.2		5.6 7.2	7.7	
				Surface	1	26.3 27.6	27.6	8.1 7.9	7.9	28.4 25.5	25.7	<u>78.2</u> 93.4	94.0	5.3 6.3	6.4		<u>20.1</u> 4.3	4.5		8.2 3.7	3.9	
11-Oct-13	Sunny	Moderate	13:03	Middle	3.5	27.6 27.7	27.7	7.9 7.9	8.0	25.8 25.7	25.9	94.6 94.2	94.9	6.4 6.4	6.5	6.5	4.6	4.6	5.6	4.1 5.6	5.3	4.9
	,			Bottom	6	27.6 27.1	27.1	8.0 8.0	8.0	26.1 26.6	26.6	95.5 95.6	95.9	6.5 6.5	6.5	6.5	4.9 7.7	7.6		5.0 5.7	5.4	
				Surface	1	27.1 28.1	28.1	8.0	8.2	26.5 27.0	27.0	96.2 86.0	85.8	6.5 5.9	5.9		7.5 2.8	2.8		5.1 3.3	3.5]
15-Oct-13	Cloudy	Moderate	16:17	Middle	4	28.1 28.0	28.0	8.2 8.2	8.2	27.0 27.3	27.3	85.6 84.9	84.8	5.8 5.8	5.8	5.9	2.8 3.1	3.0	4.5	3.7 4.2	4.1	3.9
10-001-10	Cloudy	Woderate	10.17	Bottom	7	28.0 28.0	28.0	8.2 8.2	8.2	27.2 27.8	27.8	84.7 83.7	83.6	5.8 5.7	5.7	5.7	2.9 7.5	7.7	4.0	3.9 4.4	4.0	0.0
				Surface	,	28.0 26.5	26.5	8.2 8.1	8.1	27.8 28.7	28.7	83.5 80.4	80.4	5.7 6.1	6.1	5.7	7.8 4.9	5.0		3.5 5.2	5.0	<u> </u>
17 Oct 12	Cuppy (Calm	17.00			26.5 26.5		8.1 8.1		28.7 29.4		80.3 79.5	79.5	6.1 6.1		6.1	5.1 4.7	4.7	E C	4.8 4.2		4.5
17-Oct-13	Sunny	Calm	17:33	Middle	4	26.5 26.5	26.5	8.1 8.2	8.1	29.5 30.2	29.5	79.5 78.8		6.1 6.0	6.1		4.7 7.2		5.6	3.5 4.5	3.9	4.5
				Bottom	7	26.5 26.2	26.5	8.2 8.2	8.2	30.2 29.0	30.2	78.8 93.0	78.8	6.0 7.1	6.0	6.0	6.9 11.2	7.1		4.8 10.8	4.7	
	_			Surface	1	26.2 26.3	26.2	8.2 8.2	8.2	29.0 29.0	29.0	92.9 89.5	93.0	7.1 6.8	7.1	7.0	12.0 17.2	11.6		11.4 5.8	11.1	
19-Oct-13	Fine	Calm	18:44	Middle	4.5	26.2 26.3	26.3	8.2 8.2	8.2	29.0 29.0 29.0	29.0	89.6 87.7	89.6	6.8 6.7	6.8		16.2 20.5	16.7	16.4	9.0 4.8	7.4	8.2
				Bottom	8	26.3	26.3	8.2	8.2	29.0	29.0	87.8	87.8	6.7	6.7	6.7	20.5	20.9		7.2	6.0	

Water Quality Monitoring Results at IS4 - Mid-Flood Tide

Date	Weather	Sea	Sampling	Dent	h (m)	Tempera	ature (°C)	ŗ	Η	Salir	nity ppt	DO Satu	ration (%)	Disso	ved Oxygen	(mg/L)	-	Turbidity(NT	J)	Suspe	ended Solids	(mg/L)
Date	Condition	Condition**	Time	Dept		Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
				Surface	1	26.7 26.7	26.7	8.2 8.2	8.2	29.4 29.4	29.4	86.4 86.4	86.4	5.9 5.9	5.9	5.9	11.6 11.7	11.7		13.7 15.7	14.7	
21-Oct-13	Fine	Rough	19:27	Middle	4.5	26.7 26.7	26.7	8.2 8.2	8.2	29.5 29.5	29.5	86.3 86.3	86.3	5.9 5.9	5.9	0.0	11.1 11.0	11.1	12.1	11.3 12.0	11.7	12.6
				Bottom	8	26.7 26.7	26.7	8.2 8.2	8.2	29.8 29.8	29.8	86.1 86.0	86.1	5.9 5.9	5.9	5.9	13.6 13.6	13.6		11.0 11.5	11.3	
				Surface	1	26.3 26.3	26.3	8.2 8.2	8.2	29.1 29.3	29.2	84.7 78.4	81.6	5.9 5.4	5.7	5.6	9.6 8.5	9.1		8.6 10.4	9.5	
23-Oct-13	Sunny	Calm	10:00	Middle	4	26.2 26.2	26.2	8.2 8.2	8.2	29.3 29.3	29.3	78.9 78.1	78.5	5.5 5.4	5.5	5.0	9.3 10.2	9.8	10.2	9.2 9.8	9.5	9.2
				Bottom	7	26.2 26.1	26.2	8.2 8.2	8.2	29.3 29.4	29.4	78.5 77.2	77.9	5.5 5.4	5.5	5.5	10.6 12.8	11.7		8.4 8.6	8.5	
				Surface	1	25.7 25.7	25.7	8.2 8.1	8.2	28.5 28.5	28.5	96.0 96.3	96.2	6.6 6.6	6.6	6.5	5.4 5.6	5.5		7.0 6.5	6.8	
25-Oct-13	Sunny	Moderate	12:08	Middle	4.5	25.6 25.6	25.6	8.1 8.1	8.1	28.6 28.7	28.7	92.3 93.0	92.7	6.3 6.4	6.4	0.5	6.3 6.2	6.3	6.1	6.2 6.8	6.5	6.7
				Bottom	8	25.6 25.6	25.6	8.2 8.2	8.2	29.1 28.9	29.0	90.8 90.3	90.6	6.2 6.2	6.2	6.2	6.7 6.5	6.6		7.3 6.0	6.7	
				Surface	1	24.9 24.9	24.9	8.3 8.3	8.3	31.5 31.5	31.5	87.0 86.9	87.0	6.0 6.0	6.0	6.0	7.9 7.9	7.9		5.2 5.4	5.3	
28-Oct-13	Cloudy	Moderate	14:59	Middle	4	24.9 24.9	24.9	8.3 8.3	8.3	31.5 31.5	31.5	86.5 86.0	86.3	6.0 6.0	6.0	0.0	8.4 8.0	8.2	8.3	5.4 5.0	5.2	5.5
				Bottom	7	24.9 24.9	24.9	8.3 8.3	8.3	31.5 31.5	31.5	84.7 84.7	84.7	5.9 5.9	5.9	5.9	8.8 8.6	8.7		5.9 6.0	6.0	
				Surface	1	24.7 24.8	24.8	8.3 8.3	8.3	29.5 29.4	29.5	101.1 99.8	100.5	7.1 7.0	7.1	7.2	4.7 4.0	4.4		8.2 7.2	7.7	
30-Oct-13	Sunny	Calm	15:51	Middle	3.5	24.6 24.6	24.6	8.3 8.3	8.3	29.8 29.8	29.8	103.9 102.9	103.4	7.3 7.2	7.3	1.2	5.8 5.5	5.7	7.1	11.6 9.2	10.4	10.2
				Bottom	6	24.5 24.5	24.5	8.3 8.3	8.3	30.1 30.2	30.2	102.2 102.5	102.4	7.2 7.2	7.2	7.2	11.7 10.6	11.2		11.2 13.6	12.4	

Water Quality Monitoring Results at SR1 - Mid-Ebb Tide

Dete	Weather	Sea	Sampling	Dent	h (m)	Tempera	ature (°C)	p	ЪН	Salin	ity ppt	DO Satu	ration (%)	Disso	lved Oxygen	(mg/L)	-	Turbidity(NTL	J)	Suspe	nded Solids	(mg/L)
Date	Condition	Condition**	Time	Depti	h (m)	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
				Surface	-	- 28.0	-	- - 8.3	-	28.2	-	- - 71.9	-	- - 5.5	-	5.5	4.8	-		4.0	-	
2-Oct-13	Sunny	Moderate	11:54	Middle	1.2	28.0	28.0	8.3	8.3	28.3	28.3	72.1	72.0	5.5	5.5		5.1	5.0	5.0	3.6	3.8	3.8
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
				Surface	-	28.1	-	8.2	-		-	93.4	-	6.3	-	6.2	6.2	-		- 13.3	-	
4-Oct-13	Cloudy	Moderate	13:11	Middle	1.2	28.1	28.1	8.2	8.2	27.5	27.5	91.3 -	92.4	6.1 -	6.2		6.2	6.2	6.2	14.0	13.7	13.7
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
				Surface	-	27.4	-	- 8.1	-	27.1	-	- 90.2	-	6.1	-	6.0	- 12.6	-		- 12.7	-	
7-Oct-13	Sunny	Moderate	14:12	Middle	1.3	27.4	27.4	8.1	8.1	27.5	27.3	86.0	88.1	5.8	6.0		12.7	12.7	12.7	16.0	14.4	14.4
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
				Surface	-	- 27.4	-	- 8.1	-	- 28.8	-	- 99.3	-	- 7.2	-	7.2	- 4.0	-		- 4.2	-	ļ
9-Oct-13	Cloudy	Moderate	15:07	Middle	0.9	27.4	27.4	8.1	8.1	28.1	28.5	97.3	98.3	7.1	7.2		4.1	4.1	4.1	4.3	4.3	4.3
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
				Surface	-	- 28.2	-	- 8.1	-	- 26.2	-	- 106.5	-	- 7.2	-	7.2	- 3.2	-		- 4.4	-	
11-Oct-13	Fine	Moderate	16:54	Middle	1.1	28.2	28.2	8.1	8.1	26.2	26.2	106.7	106.6	7.2	7.2		3.3	3.3	3.3	3.8	4.1	4.1
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
				Surface	-	27.4	-	8.3	-	29.5	-	95.3	-	6.4	-	6.4	8.3	-		3.0	-	
15-Oct-13	Cloudy	Moderate	10:41	Middle	1.2	27.4	27.4	8.3	8.3	29.5	29.5	94.6	95.0	6.4 -	6.4		9.4	8.9	8.9	2.7	2.9	2.9
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
				Surface	-	27.1	-	8.2	-	31.2	-	- 116.2	-	7.8	-	7.5	4.7	-		7.4	-	
17-Oct-13	Sunny	Calm	11:40	Middle	1.1	27.1	27.1	8.2	8.2	31.2	31.2	107.1	111.7	7.0	7.5		4.7	4.7	4.7	6.6	7.0	7.0
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
				Surface	-	26.7	-	8.2	-	29.7	-	- - 73.4	-	- - 5.7	-	5.7	5.3	-			-	
19-Oct-13	Sunny	Calm	13:19	Middle	1	26.7	26.7	8.2	8.2	29.7	29.7	73.4 74.2	73.8	5.7 5.7	5.7		5.3 5.4	5.4	5.4	4.6 -	5.0	5.0
				Bottom	-	-	-		-		-	-	-	-	-	-	_	-		-	-	

Water Quality Monitoring Results at SR1 - Mid-Ebb Tide

Date	Weather	Sea	Sampling	Dent	h (m)	Tempera	ature (°C)	p	Н	Salin	nity ppt	DO Satu	ration (%)	Disso	lved Oxygen	(mg/L)	-	Turbidity(NT	J)	Suspe	ended Solids	(mg/L)
Dale	Condition	Condition**	Time	Depi	()	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
				Surface	-	-	-	-	-	-	-	-	-	-	-	5.9	-	-		-	-	
21-Oct-13	Sunny	Rough	15:12	Middle	1.3	26.1 26.1	26.1	8.1 8.1	8.1	29.8 29.8	29.8	85.2 85.6	85.4	5.8 5.9	5.9	5.5	6.7 6.1	6.4	6.4	6.8 6.5	6.7	6.7
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
				Surface	-	-	-	-	-	-	-	-	-	-	-	5.0	-	-		-	-	
23-Oct-13	Sunny	Calm	14:39	Middle	1.4	26.5 26.5	26.5	8.2 8.2	8.2	30.9 30.9	30.9	86.2 86.0	86.1	5.9 5.9	5.9	5.9	18.6 17.9	18.3	18.3	18.7 13.7	16.2	16.2
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
				Surface	-	-	-	-	-	-	-	-	-	-	-	7.0	-	-		-	-	
25-Oct-13	Sunny	Moderate	15:57	Middle	1	25.6 25.5	25.6	8.1 8.1	8.1	30.5 30.5	30.5	101.2 100.4	100.8	7.0 6.9	7.0	7.0	8.2 8.4	8.3	8.3	5.9 6.6	6.3	6.3
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
				Surface	-	-	-	-	-	-	-	-	-	-	-	6.3	-	-		-	-	
28-Oct-13	Cloudy	Moderate	08:22	Middle	1.4	24.9 24.9	24.9	8.3 8.3	8.3	32.3 32.3	32.3	90.1 90.7	90.4	6.2 6.3	6.3	0.3	6.2 5.9	6.1	6.1	6.6 5.0	5.8	5.8
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
				Surface	-	-	-	-	-	-	-	-	-	-	-	7.4	-	-		-	-	
30-Oct-13	Sunny	Calm	10:32	Middle	1.4	24.9 24.9	24.9	8.2 8.2	8.2	30.1 30.1	30.1	100.1 101.8	101.0	7.0 7.1	7.1	7.1	5.4 5.8	5.6	5.6	3.0 2.3	2.7	2.7
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	

Water Quality Monitoring Results at SR1 - Mid-Flood Tide

Date	Weather	Sea	Sampling	Dent	h (m)	Tempera	ature (°C)	ŗ	Η	Salir	nity ppt	DO Satu	ration (%)	Disso	lved Oxygen	(mg/L)	-	Turbidity(NTL	J)	Suspe	ended Solids	(mg/L)
Date	Condition	Condition**	Time	Dept	n (m)	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
2-Oct-13	Fine	Moderate	16:15	Surface Middle	- 0.7	- 	- 28.3		- 8.2	- 26.2	- 26.2	- - 76.8	- 76.8	- - 5.8	- 5.8	5.8	- - 5.5	- 5.7	5.7	4.6	- 5.3	5.3
2-001-13	Fille	Moderate	10.15	Bottom	-	- 28.3	-	8.2	-	- 26.2	-	76.8	-	5.8 -	-	<u> </u>	5.9 -	-	5.7	6.0 -	-	5.5
				Surface	-	-		-	_	-		-	_	-	-		-	_		-	_	<u> </u>
4-Oct-13	Cloudy	Moderate	17:05	Middle	1.3	- 28.1	28.1	- 7.2	7.3	- 27.5	26.0	93.8	92.5	- 6.3	6.3	6.3	- 9.3	9.4	9.4	4.6	4.7	4.7
	,			Bottom	-	- 28.1		7.3	_	- 24.5		91.1	-	6.2 -	-	-	9.4	-		4.8	-	
				Surface	-	-		-	_	-		-	_	-	-		-	_		-	_	<u> </u>
7-Oct-13	Sunny	Moderate	09:52	Middle	1.4	- 27.2	27.2	- 8.1	8.1	- 27.5	27.5	- 92.7	92.6	- 6.3	6.3	6.3	- 16.8	16.1	16.1	- 23.0	23.0	23.0
				Bottom	-	- 27.2	-	8.1	-	27.5	-	92.5	-	6.2 -	-	_	- 15.4	-	-	- 23.0	-	
				Surface	-	-	-	-	-	-	_	-	-	-	-		-	-		-	-	<u> </u>
9-Oct-13	Cloudy	Moderate	10:20	Middle	0.6	- 27.0 27.0	27.0	- 8.2 8.2	8.2	- 29.6 29.6	29.6	- 87.4 87.1	87.3	- 6.4 6.4	6.4	6.4	- 23.1 21.8	22.5	22.5	- 9.6 9.8	9.7	9.7
				Bottom	-	-	-	-	-		-	-	-	-	-	-	-	-		-	-	
				Surface	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-	
11-Oct-13	Sunny	Moderate	12:17	Middle	0.7	27.9 27.9	27.9	8.1 8.1	8.1	26.7 26.7	26.7	96.5 96.5	96.5	6.5 6.5	6.5	6.5	5.7 5.3	5.5	5.5	6.2 3.2	4.7	4.7
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
				Surface	-	-	-	-	-	-	-	-	-	-	-	= 0	-	-		-	-	
15-Oct-13	Cloudy	Moderate	15:02	Middle	1.2	28.0 28.0	28.0	7.9 8.0	8.0	26.1 26.2	26.2	105.9 106.2	106.1	7.2 7.2	7.2	7.2	2.4 2.1	2.3	2.3	2.8 1.9	2.4	2.4
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
				Surface	-	-	-	-	-	-	-	-	-	-	-	7.5	-	-		-	-	
17-Oct-13	Sunny	Calm	17:12	Middle	1.4	27.1 27.2	27.2	8.2 8.2	8.2	29.1 29.1	29.1	110.7 110.9	110.8	7.5 7.5	7.5	7.5	5.4 5.5	5.5	5.5	4.7 4.0	4.4	4.4
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
				Surface	-		-	-	-	-	-	-	-		-	5.4	-	-		-	-	
19-Oct-13	Fine	Calm	18:27	Middle	1.1	27.0 27.0	27.0	8.1 8.1	8.1	29.2 29.2	29.2	67.7 66.2	67.0	5.4 5.3	5.4		12.9 11.9	12.4	12.4	8.0 9.0	8.5	8.5
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	

Water Quality Monitoring Results at SR1 - Mid-Flood Tide

Date	Weather	Sea	Sampling	Dent	h (m)	Tempera	ature (°C)	ķ	Η	Salir	nity ppt	DO Satu	ration (%)	Disso	lved Oxygen	(mg/L)	-	Turbidity(NT	J)	Suspe	ended Solids	(mg/L)
Date	Condition	Condition**	Time	Depi	()	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
				Surface	-	-	-	-	-	-	-	-	-	-	-	6.9	-	-		-	-	
21-Oct-13	Fine	Rough	18:15	Middle	1.4	26.1 26.1	26.1	8.1 8.1	8.1	28.9 28.9	28.9	100.2 100.4	100.3	6.9 6.9	6.9	0.9	4.3 4.1	4.2	4.2	3.3 2.7	3.0	3.0
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
				Surface	-	-	-	-	-	-	-	-	-	-	-	5.0	-	-		-	-	
23-Oct-13	Sunny	Calm	10:48	Middle	0.7	26.2 26.2	26.2	8.2 8.2	8.2	30.0 30.0	30.0	85.9 85.9	85.9	5.9 5.9	5.9	5.9	14.6 13.9	14.3	14.3	16.7 16.3	16.5	16.5
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
				Surface	-	-	-	-	-	-	-	-	-	-	-	6.1	-	-		-	-	
25-Oct-13	Sunny	Moderate	12:15	Middle	0.9	25.5 25.5	25.5	8.1 8.2	8.2	30.1 30.1	30.1	88.3 88.5	88.4	6.1 6.1	6.1	0.1	8.2 7.9	8.1	8.1	5.8 6.7	6.3	6.3
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
				Surface	-	-	-	-	-	-	-	-	-	-	-	6.9	-	-		-	-	
28-Oct-13	Cloudy	Moderate	14:58	Middle	1.1	25.1 25.1	25.1	8.1 8.1	8.1	31.8 31.9	31.9	100.5 100.6	100.6	6.9 6.9	6.9	0.9	14.8 14.6	14.7	14.7	4.4 5.2	4.8	4.8
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
				Surface	-	-	-	-	-	-	-	-	-	-	-	7.4	-	-		-	-	
30-Oct-13	Sunny	Calm	15:36	Middle	0.7	25.8 25.8	25.8	8.2 8.2	8.2	26.1 26.2	26.2	104.1 104.8	104.5	7.3 7.4	7.4	7.4	12.5 12.6	12.6	12.6	5.8 2.6	4.2	4.2
				Bottom	-	-	-	-	-	-	-		-		-	-	-	-		-	-	

Water Quality Monitoring Results at SR2 - Mid-Ebb Tide

Data	Weather	Sea	Sampling	Dent	h (m)	Tempera	ature (°C)	p	ЪН	Salir	ity ppt	DO Satu	ration (%)	Disso	lved Oxygen	(mg/L)	-	Turbidity(NTL	J)	Suspe	nded Solids	(mg/L)
Date	Condition	Condition**	Time	Depti	h (m)	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
				Surface	-	- - 28.2	-	8.2	-		-	- - 77.7	-	- - 5.9	-	5.9	- - 4.6	-		5.0	-	
2-Oct-13	Sunny	Moderate	10:29	Middle	0.8	28.2	28.2	8.2	8.2	27.7	27.7	77.4	77.6	5.8	5.9		4.6	4.6	4.6	5.0	5.0	5.0
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
				Surface	-	-	-	-	-	-	-	-	-	-	-	7.0	-	-		-	-	
4-Oct-13	Cloudy	Moderate	11:59	Middle	0.8	27.9 27.9 -	27.9	8.2 8.2	8.2	28.2 28.3	28.3	102.2 102.3 -	102.3	7.0 6.9 -	7.0		14.2 13.4 -	13.8	13.8	9.0 7.6	8.3	8.3
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
7-Oct-13	Suppy	Modorato	15:27	Surface Middle	-	- 28.0	- 28.1	- 8.2	- 8.2	- 28.0	- 28.0	- 86.3	- 84.2	- 5.7	- 5.6	5.6	- 18.9	- 19.0	19.0	- 10.0	- 10.4	10.4
7-001-13	Sunny	Moderate	15.27			28.1 -	20.1	8.2	0.2	- 28.0	20.0	82.1 -	04.2	5.5 -	5.0		19.1 -	19.0	19.0	- 10.7	10.4	10.4
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
				Surface	-	- 27.2	-	- 8.2	-	- 28.7	-	- 89.2	-	- 6.6	-	6.6	- 11.1	-		- 10.8	-	
9-Oct-13	Cloudy	Moderate	16:40	Middle	0.7	27.2	27.2	8.2	8.2	28.7	28.7	88.6	88.9	6.5	6.6		11.9	11.5	11.5	9.6	10.2	10.2
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
				Surface	-	- 28.2	-	- 8.1	-	27.0	-	- 103.4	-	7.0	-	7.0	- 10.5	-		- 8.8	-	
11-Oct-13	Fine	Moderate	17:49	Middle	0.7	28.2	28.2	8.1	8.1	27.0	27.0	103.2	103.3	6.9	7.0		9.9	10.2	10.2	9.3	9.1	9.1
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
				Surface	-	27.5	-	8.2	-	28.4	-	97.5	-	6.6	-	6.6	6.7	-		4.7	-	
15-Oct-13	Cloudy	Moderate	09:35	Middle	0.9	27.5	27.5	8.2	8.2	28.4	28.4	96.7	97.1	6.5 -	6.6		6.0	6.4	6.4	4.7	4.7	4.7
				Bottom	-	-	-	-	-	-	-		-	-	-	-	-	-		-	-	
				Surface	-	-	-	-	-	-	-	-	-	-	-	6.2	-	-		-	-	
17-Oct-13	Sunny	Calm	10:57	Middle	1.1	26.9 26.9	26.9	8.2 8.2	8.2	29.5 29.5	29.5	91.4 91.7	91.6	6.2 6.2	6.2		5.2 5.2	5.2	5.2	5.0 4.2	4.6	4.6
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
				Surface	-	-	-	-	-	-	-	-	-	-	-	7.0	-	-		-	-	
19-Oct-13	Sunny	Calm	12:34	Middle	1.1	26.8 26.8	26.8	8.2 8.2	8.2	29.0 29.0	29.0	91.2 92.1	91.7	6.9 7.0	7.0		13.7 12.8	13.3	13.3	8.4 7.4	7.9	7.9
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	

Water Quality Monitoring Results at SR2 - Mid-Ebb Tide

Date	Weather	Sea	Sampling	Dent	th (m)	Tempera	ature (°C)	k	bН	Salir	nity ppt	DO Satu	iration (%)	Disso	lved Oxygen	(mg/L)	-	Turbidity(NTl	J)	Suspe	ended Solids	(mg/L)
Dale	Condition	Condition**	Time	Depi	()	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
				Surface	-	-	-	-	-	-	-	-	-	-	-	6.2	-	-		-	-	
21-Oct-13	Sunny	Rough	13:56	Middle	1	26.1 26.1	26.1	8.1 8.1	8.1	29.1 29.1	29.1	90.7 90.5	90.6	6.2 6.2	6.2	0.2	11.1 11.1	11.1	11.1	11.6 10.6	11.1	11.1
				Bottom	-	-	-	-	-	-	-		-		-	-	-	-		-	-	
				Surface	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-	
23-Oct-13	Sunny	Calm	15:08	Middle	0.9	26.6 26.7	26.7	8.2 8.2	8.2	29.3 29.2	29.3	88.0 88.3	88.2	6.1 6.1	6.1	6.1	13.8 13.5	13.7	13.7	17.0 15.7	16.4	16.4
				Bottom	-	-	-	-	-	-	-	-	-		-	-	-	-		-	-	
				Surface	-	-	-	-	-	-	-	-	-	-	-	7.4	-	-		-	-	
25-Oct-13	Sunny	Moderate	16:56	Middle	0.5	25.7 25.7	25.7	8.2 8.2	8.2	29.7 29.7	29.7	102.8 102.5	102.7	7.1 7.1	7.1	7.1	12.4 11.9	12.2	12.2	13.6 14.2	13.9	13.9
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
				Surface	-	-	-	-	-	-	-	-	-	-	-	6.4	-	-		-	-	
28-Oct-13	Cloudy	Moderate	07:14	Middle	1.1	24.3 24.3	24.3	8.3 8.3	8.3	29.2 32.0	30.6	91.7 90.7	91.2	6.5 6.3	6.4	0.4	9.3 9.7	9.5	9.5	4.2 1.5	2.9	2.9
				Bottom	-	-	-	-	-	-	-		-		-	-	-	-		-	-	
				Surface	-	-	-	-	-	-	-	-	-	-	-	7.2	-	-		-	-	
30-Oct-13	Sunny	Calm	09:23	Middle	0.9	24.8 24.8	24.8	8.2 8.2	8.2	29.9 29.9	29.9	102.9 103.2	103.1	7.2 7.2	7.2	1.2	15.1 15.4	15.3	15.3	9.0 7.7	8.4	8.4
				Bottom	-	-	-	-	-	-	-		-		-	-	-	-		-	-	

Water Quality Monitoring Results at SR2 - Mid-Flood Tide

Date	Weather	Sea	Sampling	Dent	h (m)	Tempera	ature (°C)	p	θH	Salin	ity ppt	DO Satu	ration (%)	Disso	lved Oxygen	(mg/L)	-	Turbidity(NTL	J)	Suspe	ended Solids	(mg/L)
Dale	Condition	Condition**	Time	Dept	II (III)	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
2-Oct-13	Fine	Moderate	17:32	Surface Middle	- 0.6	- - 28.9 28.9	- 28.9	- - 8.3 8.3	- 8.3	- 27.2 27.9	- 27.6	- - 86.2 86.2	- 86.2	- - 6.4 6.4	- 6.4	6.4	- - 22.1 22.0	- 22.1	22.1	- 	- 21.3	21.3
				Bottom	-		-		-		-		-		-	-		-			-	
				Surface	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-	
4-Oct-13	Cloudy	Moderate	18:04	Middle	0.9	28.2 28.2	28.2	8.1 8.2	8.2	24.8 27.8	26.3	82.4 91.8	87.1	5.6 6.1	5.9	5.9	18.6 19.8	19.2	19.2	4.6 4.8	4.7	4.7
				Bottom	-	-	-	-	-	-	-		-	-	-	-	-	-		-	-	
				Surface	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-	
7-Oct-13	Sunny	Moderate	08:49	Middle	0.7	27.3 27.3	27.3	8.1 8.1	8.1	27.5 27.5	27.5	97.3 96.3	96.8	6.6 6.5	6.6	6.6	16.3 17.8	17.1	17.1	21.0 21.3	21.2	21.2
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
				Surface	-	-	-	-	-	-	-	-	-	-	-	6.7	-	-		-	-	
9-Oct-13	Cloudy	Moderate	09:19	Middle	0.7	26.9 26.9	26.9	8.1 8.1	8.1	28.3 27.6	28.0	89.5 91.5	90.5	6.6 6.7	6.7	6.7	20.3 22.5	21.4	21.4	13.7 13.3	13.5	13.5
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
				Surface	-	-	-	-	-	-	-	-	-	-	-	6.6	-	-		-	-	
11-Oct-13	Sunny	Moderate	11:46	Middle	0.5	28.0 28.0	28.0	8.1 8.1	8.1	28.3 28.3	28.3	98.1 98.2	98.2	6.6 6.6	6.6	0.0	16.0 16.6	16.3	16.3	5.1 6.4	5.8	5.8
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
				Surface	-	-	-	-	-	-	-	-	-	-	-	5.8	-	-		-	-	
15-Oct-13	Cloudy	Moderate	16:10	Middle	0.9	28.1 28.1	28.1	8.2 8.2	8.2	28.2 28.2	28.2	86.2 86.1	86.2	5.8 5.8	5.8		14.0 13.5	13.8	13.8	3.2 2.5	2.9	2.9
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
				Surface	-	-	-	-	-	-	-	-	-	-	-	7.4	-	-		-	-	
17-Oct-13	Sunny	Calm	17:56	Middle	0.8	27.2 27.2	27.2	8.2 8.2	8.2	29.3 29.3	29.3	109.9 109.7	109.8	7.4 7.4	7.4		14.9 13.2	14.1	14.1	10.4 10.0	10.2	10.2
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
				Surface	-	-	-	-	-	-	-	-	-	-	-	5.6	-	-			-	
19-Oct-13	Fine	Calm	19:11	Middle	0.7	26.9 27.0	27.0	8.2 8.2	8.2	29.1 29.1	29.1	70.3 72.7	71.5	5.5 5.6	5.6		11.4 11.2	11.3	11.3	17.3 6.0	11.7	11.7
				Bottom	-	-	-	-	-		-		-		-	-	-	-		-	-	

Water Quality Monitoring Results at SR2 - Mid-Flood Tide

Date	Weather	Sea	Sampling	Dent	h (m)	Tempera	ature (°C)	ŗ	Η	Salin	ity ppt	DO Satu	ration (%)	Disso	lved Oxygen	(mg/L)	-	Turbidity(NTl	J)	Suspe	ended Solids	(mg/L)
Date	Condition	Condition**	Time	Depi	()	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
				Surface	-	-	-	-	-	-	-	-	-	-	-	5.8	-	-		-	-	
21-Oct-13	Fine	Rough	19:25	Middle	1	26.0 26.0	26.0	8.1 8.1	8.1	29.5 29.5	29.5	84.2 83.6	83.9	5.8 5.8	5.8	5.6	17.8 16.5	17.2	17.2	12.6 12.4	12.5	12.5
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
				Surface	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-	
23-Oct-13	Sunny	Calm	09:19	Middle	0.7	26.2 26.2	26.2	8.1 8.1	8.1	29.0 29.0	29.0	89.1 89.1	89.1	6.2 6.2	6.2	6.2	16.0 16.0	16.0	16.0	13.7 15.0	14.4	14.4
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
				Surface	-	-	-	-	-	-	-	-	-	-	-	6.4	-	-		-	-	
25-Oct-13	Sunny	Moderate	11:26	Middle	0.7	25.4 25.4	25.4	8.1 8.1	8.1	29.3 29.3	29.3	92.6 92.7	92.7	6.4 6.4	6.4	0.4	15.5 15.2	15.4	15.4	17.2 15.8	16.5	16.5
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
				Surface	-	-	-	-	-	-	-	-	-	-	-	7.5	-	-		-	-	
28-Oct-13	Cloudy	Moderate	16:13	Middle	0.8	25.4 25.4	25.4	8.2 8.2	8.2	31.8 31.8	31.8	109.5 109.7	109.6	7.5 7.5	7.5	7.5	11.4 12.7	12.1	12.1	12.3 11.7	12.0	12.0
				Bottom	-	-	-	-	-	-	-	-	-		-	-	-	-		-	-	
				Surface	-	-	-	-	-	-	-	-	-	-	-	7.2	-	-		-	-	
30-Oct-13	Sunny	Calm	16:06	Middle	0.7	25.5 25.6	25.6	8.3 8.3	8.3	30.1 30.0	30.1	103.1 104.8	104.0	7.1 7.2	7.2	1.2	13.0 13.3	13.2	13.2	7.3 7.7	7.5	7.5
				Bottom	-	-	-	-	-	-	-	-	-		-	-	-	-		-	-	

Water Quality Monitoring Results at SR3 - Mid-Ebb Tide

Dete	Weather	Sea	Sampling	Dent	h (m)	Tempera	ature (°C)	p	θH	Salir	nity ppt	DO Satu	ration (%)	Disso	lved Oxygen	(mg/L)	-	Turbidity(NTL	J)	Suspe	nded Solids	(mg/L)
Date	Condition	Condition**	Time	Depti	h (m)	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
				Surface	-	- - 28.1	-	- 8.2	-	- 27.3	-	- - 91.3	-	- - 6.8	-	6.8	- - 9.2	-		4.7	-	
2-Oct-13	Sunny	Moderate	10:15	Middle	1.3	28.1	28.1	8.2	8.2	27.3	27.3	91.6	91.5	6.8	6.8		8.9	9.1	9.1	3.7	4.2	4.2
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
				Surface	-	-	-	-	-	-	-	-	-	-	-	7.4	-	-		-	-	
4-Oct-13	Cloudy	Moderate	11:43	Middle	1.2	28.2 28.2	28.2	8.2 8.3	8.3	27.3 27.3 -	27.3	110.6 109.8 -	110.2	7.4 7.4 -	7.4		8.9 9.8 -	9.4	9.4	10.7 9.0 -	9.9	9.9
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
7-Oct-13	Sunny	Moderate	15:44	Surface Middle	-	- 28.0	- 28.0	- 8.2	- 8.2	- 27.4	- 27.0	- 82.4	- 81.7	- 5.5	- 5.5	5.5	- 12.1	- 12.0	12.0	- 15.3	- 14.7	14.7
7-001-13	Sunny	wouerate	13.44	Bottom	-	- 28.0	20.0	8.2	0.2	26.5	27.0	80.9	01.7	5.5 -	5.5		11.9 -	12.0	12.0	- 14.0	-	14.7
					-	-	-	-	-	-		-	-	-	-	-	-	-		-	-	
			17.00	Surface		- 27.3	_	- 8.1	_	- 28.2		- 88.8		- 6.5		6.5	- 12.3			- 9.8		
9-Oct-13	Cloudy	Moderate	17:03	Middle	0.7	27.3	27.3	8.1	8.1	28.2	28.2	88.3	88.6	6.5	6.5		12.3	12.3	12.3	9.6	9.7	9.7
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
44.0.1.40			10.00	Surface	-	- 28.3	-	- 8.1	-	- 28.0	-	- 96.5	-	- 6.4	-	6.4	- 6.6	-		- 5.7	-	
11-Oct-13	Fine	Moderate	18:03	Middle	1.2	28.3	28.3	8.1	8.1	28.0	28.0	96.5	96.5	6.4	6.4		6.6	6.6	6.6	4.5	5.1	5.1
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
				Surface	-	- 27.6	-	- 8.1	-	- 27.3	-	- 112.1	-	- 7.6	-	7.6	- 4.8	-		- 4.6	-	
15-Oct-13	Cloudy	Moderate	09:17	Middle	0.9	27.6	27.6	8.1	8.1	27.4	27.4	112.3	112.2	7.6	7.6		4.7	4.8	4.8	3.4	4.0	4.0
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
				Surface	-	-	-	-	-	-	-	-	-	-	-	8.0	-	-		-	-	
17-Oct-13	Sunny	Calm	10:28	Middle	1.1	27.0 27.0	27.0	8.0 8.0	8.0	27.4 27.5	27.5	118.0 115.8	116.9	8.1 7.9	8.0		5.0 4.9	5.0	5.0	6.8 6.0	6.4	6.4
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
				Surface	-	-	-	-	-	-	-	-	-	-	-	6.7	-	-		-	-	
19-Oct-13	Sunny	Calm	12:05	Middle	1.1	27.0 26.9	27.0	8.1 8.1	8.1	28.0 28.1	28.1	88.0 85.4	86.7	6.8 6.6	6.7		6.6 7.1	6.9	6.9	7.8 7.6	7.7	7.7
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	

Water Quality Monitoring Results at SR3 - Mid-Ebb Tide

Date	Weather	Sea	Sampling	Dent	h (m)	Tempera	ature (°C)	ķ	Η	Salir	nity ppt	DO Satu	ration (%)	Disso	lved Oxygen	(mg/L)	-	Turbidity(NTl	J)	Suspe	ended Solids	(mg/L)
Date	Condition	Condition**	Time	Depi	()	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
				Surface	-	-	-	-	-	-	-	-	-	-	-	6.3	-	-		-	-	
21-Oct-13	Sunny	Rough	13:36	Middle	1	26.5 26.5	26.5	8.1 8.1	8.1	28.6 28.6	28.6	91.1 92.4	91.8	6.2 6.3	6.3	0.5	6.8 6.9	6.9	6.9	9.8 7.4	8.6	8.6
				Bottom	-	-	-	-	-	-	-		-		-	-	-	-		-	-	
				Surface	-	-	-	-	-	-	-		-		-		-	-		-	-	
23-Oct-13	Sunny	Calm	15:30	Middle	0.7	26.9 26.9	26.9	8.2 8.2	8.2	28.9 28.9	28.9	91.8 91.6	91.7	6.3 6.3	6.3	6.3	13.7 13.5	13.6	13.6	17.7 21.7	19.7	19.7
				Bottom	-	-	-	-	-	-	-	-	-		-	-	-	-		-	-	
				Surface	-	-	-	-	-	-	-	-	-	-	-	6.3	-	-		-	-	
25-Oct-13	Sunny	Moderate	17:15	Middle	0.7	25.6 25.6	25.6	8.1 8.1	8.1	29.1 29.1	29.1	90.7 91.5	91.1	6.3 6.3	6.3	0.3	8.9 9.3	9.1	9.1	6.7 9.0	7.9	7.9
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
				Surface	-	-	-	-	-	-	-	-	-	-	-	7.1	-	-		-	-	
28-Oct-13	Cloudy	Moderate	07:00	Middle	0.9	24.1 24.1	24.1	8.2 8.2	8.2	30.2 30.2	30.2	100.7 99.7	100.2	7.1 7.0	7.1	7.1	10.6 8.6	9.6	9.6	5.5 6.0	5.8	5.8
				Bottom	-	-	-	-	-	-	-		-		-	-	-	-		-	-	
				Surface	-	-	-	-	-	-	-	-	-	-	-	7.4	-	-		-	-	
30-Oct-13	Sunny	Calm	09:04	Middle	0.6	24.8 24.8	24.8	8.1 8.1	8.1	29.6 29.6	29.6	105.5 104.5	105.0	7.4 7.3	7.4	7.4	13.8 13.6	13.7	13.7	5.3 5.0	5.2	5.2
				Bottom	-	-	-	-	-	-	-		-		-	-	-	-		-	-	

Water Quality Monitoring Results at SR3 - Mid-Flood Tide

Data	Weather	Sea	Sampling	Dent	h. (m)	Tempera	ature (°C)	p	Н	Salir	nity ppt	DO Satu	ration (%)	Disso	lved Oxygen	(mg/L)	-	Turbidity(NTl	J)	Suspe	ended Solids	(mg/L)
Date	Condition	Condition**	Time	Depti	h (m)	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
				Surface	-	- - 28.5	-	8.2	-	27.6	-	- - 102.5	-	- - 7.5	-	7.5	- - 9.1	-		- - 9.7	-	
2-Oct-13	Fine	Moderate	17:50	Middle	0.6	28.5	28.5	8.2	8.2	27.6	27.6	102.5	101.8	7.4	7.5		9.1	9.2	9.2	17.3	13.5	13.5
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	ļ
				Surface	-	-	-	-	-	-	-	-	-	-	-	6.0	-	-		-	-	
4-Oct-13	Cloudy	Moderate	18:26	Middle	0.8	28.3 28.3	28.3	8.4 8.4 -	8.4	27.4 27.4 -	27.4	89.1 86.3	87.7	6.0 5.9 -	6.0		11.7 11.8 -	11.8	11.8	5.5 9.3 -	7.4	7.4
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
7-Oct-13	Sunny	Moderate	08:32	Surface Middle	- 1.3	27.3	- 27.3	8.0	- 8.0	27.0	- 27.0	97.1	- 97.0	6.6	- 6.6	6.6	- 12.7	- 12.7	12.7	- 15.7	- 15.0	15.0
7-001-10	Ounny	woderate	00.02	Bottom	-	27.3	21.0	8.0	0.0	27.0	27.0	96.9	51.0	6.6 -	-		12.7	12.7	12.7	14.3 -	-	10.0
				Surface	_	-		-		-		-		-			-			-	_	
9-Oct-13	Cloudy	Moderate	09:01	Middle	0.7	- 27.0	27.0	- 8.1	8.1	- 27.6	27.3	- 95.8	95.4	- 7.0	7.0	7.0	- 17.4	17.1	17.1	- 15.3	16.3	16.3
0-000-10	Cloudy	woderate	00.01	Bottom	-	27.0	-	8.1 -	-	26.9	-	94.9	-	6.9 -	-		16.7 -	-		17.3 -	-	10.5
				Surface	-	-	_	-	_	-		-		-	-		-	_		-		<u> </u>
11-Oct-13	Sunny	Moderate	11:30	Middle	0.8	- 28.0	28.0	8.0	8.0	- 27.7	27.8	- 113.4	113.4	7.6	7.6	7.6	- 10.2	10.3	10.3	6.6	5.9	5.9
				Bottom	-	- 28.0	-	8.0	-	- 27.8	-	113.4 -	-	7.6	-	-	- 10.3	-		5.1 -	-	
				Surface	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-	<u> </u>
15-Oct-13	Cloudy	Moderate	16:27	Middle	0.7	28.1	28.1	8.3	8.3	27.8	27.8	77.4	78.2	5.2	5.3	5.3	- 5.9	5.8	5.8	6.2	6.1	6.1
				Bottom	-	- 28.1	-	8.3	-	27.8	-	79.0 -	-	5.3	-	-	5.6	-		<u>6.0</u> -	-	
				Surface	-	-	-	-	-	-	_	-	-	-	_		-	-		-	-	<u> </u>
17-Oct-13	Sunny	Calm	18:25	Middle	1.4	- 27.1 27.1	27.1	- 8.2 8.2	8.2	- 28.4 28.4	28.4	- 86.2 86.1	86.2	- 5.9 5.8	5.9	5.9	- 6.6 5.7	6.2	6.2	- 6.5 6.0	6.3	6.3
				Bottom	-		-		-		-		-		-	-	5.7	-		- - -	-	
				Surface	-	-	-	-	-	-	-	-	-	-	-	5.0	-	-		-	-	
19-Oct-13	Fine	Calm	19:40	Middle	0.8	27.0 27.0	27.0	8.2 8.2	8.2	28.8 28.8	28.8	66.8 68.5	67.7	5.2 5.3	5.3	5.3	11.2 11.0	11.1	11.1	9.6 9.8	9.7	9.7
				Bottom	-		-	-	-	-	-	-	-		-	-	-	-		-	-	

Water Quality Monitoring Results at SR3 - Mid-Flood Tide

Date	Weather	Sea	Sampling	Dent	th (m)	Tempera	ature (°C)	k	ъН	Salir	nity ppt	DO Satu	ration (%)	Disso	lved Oxygen	(mg/L)	-	Turbidity(NT	J)	Suspe	ended Solids	(mg/L)
Dale	Condition	Condition**	Time	Depi	()	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
				Surface	-	-	-	-	-	-	-	-	-	-	-	6.0	-	-		-	-	
21-Oct-13	Fine	Rough	19:40	Middle	0.8	26.0 26.0	26.0	8.1 8.1	8.1	28.8 28.8	28.8	86.5 85.2	85.9	6.0 5.9	6.0	0.0	10.2 10.7	10.5	10.5	5.6 5.4	5.5	5.5
				Bottom	-	-	-	-	-	-	-		-	-	-	-	-	-		-	-	
				Surface	-	-	-	-	-	-	-		-	-	-		-	-		-	-	
23-Oct-13	Sunny	Calm	09:03	Middle	0.8	26.3 26.3	26.3	8.1 8.1	8.1	28.3 28.3	28.3	86.1 86.1	86.1	6.0 6.0	6.0	6.0	14.9 16.6	15.8	15.8	19.0 18.0	18.5	18.5
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
				Surface	-	-	-	-	-	-	-	-	-	-	-	7.5	-	-		-	-	
25-Oct-13	Sunny	Moderate	11:09	Middle	0.8	25.5 25.5	25.5	8.0 8.0	8.0	28.8 28.7	28.8	108.5 108.4	108.5	7.5 7.5	7.5	7.5	13.5 11.9	12.7	12.7	8.2 9.2	8.7	8.7
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	
				Surface	-	-	-	-	-	-	-	-	-	-	-	7.6	-	-		-	-	
28-Oct-13	Cloudy	Moderate	16:30	Middle	1.4	25.0 25.0	25.0	8.2 8.2	8.2	30.9 30.9	30.9	109.4 109.6	109.5	7.6 7.6	7.6	7.0	8.7 7.9	8.3	8.3	4.0 3.9	4.0	4.0
				Bottom	-	-	-	-	-	-	-		-	-	-	-	-	-		-	-	
				Surface	-	-	-	-	-	-	-	-	-	-	-	7.3	-	-		-	-	
30-Oct-13	Sunny	Calm	16:30	Middle	0.7	25.3 25.3	25.3	8.3 8.3	8.3	30.4 30.4	30.4	104.9 105.5	105.2	7.3 7.3	7.3	1.3	7.1 6.8	7.0	7.0	8.4 10.7	9.6	9.6
				Bottom	-	-	-	-	-	-	-		-	-	-	-	-	-		-	-	

Water Quality Monitoring Results at SR6 - Mid-Ebb Tide

Date	Weather	Sea	Sampling	Dent	h (m)	Tempera	ature (°C)	p	ρΗ	Salir	iity ppt	DO Satu	ration (%)	Disso	ved Oxygen	(mg/L)		Turbidity(NTl	J)	Suspe	ended Solids	(mg/L)
Dale	Condition	Condition**	Time	Depi	n (m)	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
				Surface	1	29.1 29.2	29.2	8.1 8.1	8.1	26.4 26.3	26.4	81.4 80.7	81.1	6.0 6.0	6.0	6.0	4.8 4.6	4.7		3.2 1.7	2.5	
2-Oct-13	Sunny	Moderate	11:06	Middle	-	-	-	-	-	-	-	-	-	-	-	6.0	-	-	7.7	-	-	8.4
				Bottom	4.6	28.4 28.4	28.4	8.0 8.0	8.0	29.3 29.3	29.3	77.3 77.7	77.5	5.7 5.7	5.7	5.7	10.7 10.7	10.7		16.0 12.3	14.2	
				Surface	1	27.9 27.9	27.9	8.3 8.3	8.3	28.2 28.2	28.2	99.3 99.9	99.6	6.9 6.9	6.9		5.3 5.5	5.4		5.6 5.2	5.4	
4-Oct-13	Cloudy	Moderate	11:37	Middle	-	-	-	-	-	-	-	- 99.9	-	-	-	6.9	- 5.5	-	7.5	- 5.2	-	5.4
				Bottom	4.3	27.8	27.8	8.3	8.3	28.6	28.6	99.4	99.4	6.9	6.9	6.9	9.5	9.6		4.5	5.4	
				Surface	1	27.8 27.4	27.4	8.3 8.2	8.2	28.6 28.2	28.2	99.3 78.5	78.9	6.9 5.3	5.3		9.7 15.1	15.1		6.3 19.3	19.5	
7-Oct-13	Sunny	Moderate	13:58	Middle	-	- 27.4		- 8.2	-	- 28.2	20.2	79.3	-	5.3 -	-	5.3	15.1	-	16.2	19.7	-	20.5
1-001-10	Ouriny	Moderate	10.00	Bottom	3.2	- 27.3	27.3	- 8.2	8.2	- 28.2	28.2	- 78.4	78.6	- 5.3	5.3	5.3	- 17.2	17.3	10.2	- 22.7	21.5	20.0
						27.3 26.4		8.2 8.1		28.2 28.5		78.8 83.6		5.3 5.8		5.5	17.3 14.2			20.3 12.8		
				Surface	1	26.5	26.5	8.1	8.1	28.5	28.5	83.8	83.7	5.8	5.8	5.8	14.1	14.2		- 11.0	11.9	
9-Oct-13	Cloudy	Moderate	14:38	Middle	-	- 26.3	-	- 8.1	-	- 28.8	-	- 96.8	-	- 6.8	-		- 18.0	-	15.4	- 17.0	-	15.2
				Bottom	4.4	26.3	26.3	8.1	8.1	28.9	28.9	96.4	96.6	6.8	6.8	6.8	15.2	16.6		19.7	18.4	
				Surface	1	27.6 27.6	27.6	7.9 7.9	7.9	24.2 24.5	24.4	95.6 93.6	94.6	6.5 6.4	6.5	6.5	2.9 2.9	2.9		4.1 3.0	3.6	
11-Oct-13	Fine	Moderate	16:22	Middle	-	-	-	-	-	-	-	-	-	-	-		-	-	8.0	-	-	6.0
				Bottom	4	26.8 26.8	26.8	8.0 8.0	8.0	27.0 27.0	27.0	93.3 91.3	92.3	6.4 6.2	6.3	6.3	12.9 13.0	13.0		11.8 4.8	8.3	
				Surface	1	27.6 27.6	27.6	8.3 8.3	8.3	25.8 25.8	25.8	102.6 102.7	102.7	7.1 7.1	7.1	7.1	3.7 3.5	3.6		3.5 3.5	3.5	
15-Oct-13	Cloudy	Moderate	09:39	Middle	-		-	-	-	-	-	-	-	-	-		-	-	6.5	-	-	4.0
				Bottom	4.5	27.4 27.4	27.4	8.3 8.3	8.3	28.3 28.3	28.3	98.6 98.4	98.5	6.8 6.7	6.8	6.8	9.1 9.4	9.3		4.5 4.5	4.5	
				Surface	1	26.4 26.4	26.4	8.1 8.1	8.1	30.7 30.7	30.7	89.1 89.2	89.2	6.8 6.8	6.8		6.4 5.8	6.1		6.3 5.5	5.9	
17-Oct-13	Sunny	Calm	10:55	Middle	-	-	-	-	-	-	-	-	-	-	-	6.8	-	-	6.6	-	-	6.7
				Bottom	4.9	26.4 26.4	26.4	8.1 8.1	8.1	30.8 30.8	30.8	87.4 87.7	87.6	6.7 6.7	6.7	6.7	7.1 6.8	7.0		8.7 6.3	7.5	
				Surface	1	26.2 26.2	26.2	8.1 8.1	8.1	27.3 28.5	27.9	88.7 88.6	88.7	6.8 6.7	6.8		10.4 10.1	10.3		8.4 9.0	8.7	
19-Oct-13	Sunny	Calm	12:22	Middle	-	-	-	-	-	-	-	-	-	-	-	6.8	-	-	12.5	-	-	8.0
				Bottom	4.2	- 25.9 25.9	25.9	- 8.1 8.1	8.1	- 28.4 29.7	29.1	- 87.9 87.7	87.8	- 6.7 6.7	6.7	6.7	- 14.8 14.6	14.7		- 7.4 7.0	7.2	

Water Quality Monitoring Results at SR6 - Mid-Ebb Tide

Date	Weather	Sea	Sampling	Dent	h (m)	Tempera	ature (°C)	p	Н	Salir	ity ppt	DO Satu	ration (%)	Dissol	ved Oxygen	(mg/L)		Turbidity(NTU	J)	Suspe	nded Solids	(mg/L)
Date	Condition	Condition**	Time	Dept		Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
				Surface	1	26.7 26.7	26.7	8.2 8.2	8.2	28.2 28.2	28.2	87.1 87.1	87.1	5.9 5.9	5.9	5.9	12.0 12.3	12.2		5.0 4.8	4.9	
21-Oct-13	Sunny	Rough	14:02	Middle	-	-	-	-	-	-	-	-	-		-	0.0	-	-	14.9	-	-	5.2
				Bottom	4.3	26.5 26.5	26.5	8.2 8.2	8.2	29.0 29.0	29.0	86.0 86.1	86.1	5.9 5.9	5.9	5.9	17.4 17.7	17.6		6.0 5.0	5.5	
				Surface	1	26.4 26.4	26.4	8.1 8.2	8.2	28.9 28.9	28.9	96.5 93.5	95.0	6.7 6.5	6.6	6.6	13.5 15.0	14.3		13.0 11.3	12.2	
23-Oct-13	Sunny	Calm	14:10	Middle	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	17.8	-	-	13.5
				Bottom	4.3	26.4 26.4	26.4	8.2 8.2	8.2	28.9 28.8	28.9	93.1 93.4	93.3	6.5 6.5	6.5	6.5	23.0 19.3	21.2		11.0 18.3	14.7	
				Surface	1	25.8 25.9	25.9	8.2 8.2	8.2	28.8 28.8	28.8	95.8 94.5	95.2	6.7 6.6	6.7	6.7	5.0 5.9	5.5		4.0 5.8	4.9	
25-Oct-13	Sunny	Moderate	15:16	Middle	-	-	-	-	-	-	-	-	-		-	0.7	-	-	12.6	-	-	10.3
				Bottom	4.4	25.7 25.7	25.7	8.1 8.1	8.1	28.9 28.9	28.9	88.8 87.9	88.4	6.2 6.2	6.2	6.2	19.3 20.0	19.7		15.7 15.7	15.7	
				Surface	1	24.9 24.9	24.9	8.2 8.2	8.2	31.1 31.1	31.1	96.9 96.7	96.8	6.7 6.7	6.7	6.7	4.4 4.5	4.5		2.3 3.5	2.9	
28-Oct-13	Cloudy	Moderate	06:37	Middle	-	-	-	-	-	-	-	-	-		-	0.7	-	-	4.8	-	-	3.3
				Bottom	4.1	24.9 24.9	24.9	8.2 8.2	8.2	31.1 31.1	31.1	96.6 96.6	96.6	6.7 6.7	6.7	6.7	4.9 5.0	5.0		4.0 3.3	3.7	
				Surface	1	24.0 24.0	24.0	8.0 8.0	8.0	27.5 27.6	27.6	100.0 99.4	99.7	7.2 7.2	7.2	7.2	2.7 2.8	2.8		10.6 6.4	8.5	
30-Oct-13	Sunny	Calm	09:53	Middle	-	-	-	-	-	-	-	-	-		-	1.2	-	-	4.7	-	-	11.8
				Bottom	4.1	24.0 24.0	24.0	8.0 8.0	8.0	30.2 30.2	30.2	92.0 91.6	91.8	6.5 6.5	6.5	6.5	6.6 6.6	6.6		13.6 16.4	15.0	

Water Quality Monitoring Results at SR6 - Mid-Flood Tide

Data	Weather	Sea	Sampling	Deat	h (m)	Tempera	ature (°C)	p	ЪН	Salir	nity ppt	DO Satu	ration (%)	Disso	lved Oxygen	(mg/L)	1	Turbidity(NT	J)	Suspe	ended Solids	(mg/L)
Date	Condition	Condition**	Time	Dept	h (m)	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
				Surface	1	28.9 28.8	28.9	8.2 8.2	8.2	25.0 25.0	25.0	77.2 77.0	77.1	5.7 5.7	5.7		7.8 8.1	8.0		12.0 11.8	11.9	
2-Oct-13	Fine	Moderate	16:14	Middle	-	-	-	-	-	-	-	-	-	-	-	5.7	-	-	8.5	-	-	18.0
				Bottom	4.5	28.7 28.7	28.7	8.2 8.2	8.2	26.7 26.8	26.8	75.3 75.5	75.4	5.6 5.6	5.6	5.6	8.8 9.0	8.9		25.0 23.0	24.0	
				Surface	1	28.2	28.2	8.1	8.1	26.7	26.7	90.9	90.9	6.2	6.2		14.0	13.9		27.7	24.5	
4-Oct-13	Cloudy	Moderate	17:13	Middle	-	- 28.2	_	8.1	_	26.7	_	90.8	_	6.2	_	6.2	- 13.8	_	16.6	- 21.3	_	39.0
	,			Bottom	4	- 28.2	28.2	- 8.1	8.1	27.0	27.0	92.1	91.8	6.3	6.3	6.3	- 19.4	19.3		55.7	53.4	
				Surface	1	28.2 27.4	27.4	8.1 8.1	8.1	27.0 26.9	26.9	91.5 85.5	84.6	6.2 5.7	5.7		19.2 8.2	9.1		51.0 8.2	8.8	
7-Oct-13	Sunny	Moderate	08:11	Middle	-	- 27.4	_	8.1 -	_	26.9 -	_	83.6	-	5.6 -	-	5.7	9.9	-	10.9	9.3	_	9.6
	Culling	moderate		Bottom	2.8	- 27.4	27.4	- 8.1	8.1	- 27.1	27.1	- 80.9	80.8	- 5.4	5.4	5.4	- 12.9	12.7		- 10.0	10.4	0.0
				Surface	1	27.4 26.6	26.6	8.1 7.9	7.9	27.0 26.0	26.1	80.6 97.4	97.3	5.4 7.0	7.0		12.4 11.7	11.4		10.7 10.8	11.3	
0.0+10	Olevely	Madanata	00.45			26.6		7.9		26.1		97.1	37.5	7.0		7.0	- 11.1		45.7	- 11.8		44.0
9-Oct-13	Cloudy	Moderate	09:45	Middle	-	- 26.6	-	- 7.9	-	- 26.3	-	- 94.9	-	- 6.9	-		- 20.5	-	15.7	- 12.8	-	11.8
				Bottom	3.9	26.6 27.2	26.6	7.9 7.8	7.9	26.2 24.7	26.3	94.5 90.9	94.7	6.9 6.2	6.9	6.9	19.2 6.3	19.9		11.6 5.3	12.2	<u> </u>
	_			Surface	1	27.3	27.3	7.8	7.8	24.7	24.7	90.8	90.9	6.2	6.2	6.2	5.5	5.9		5.3	5.3	
11-Oct-13	Sunny	Moderate	12:04	Middle	-	- 26.9	-	- 7.8	-	- 25.0	-	- 90.1	-	- 6.2	-		- 13.6	-	9.7	- 9.3	-	7.8
				Bottom	3.9	26.9 27.8	26.9	7.8	7.8	25.0 25.8	25.0	89.9 87.8	90.0	6.2 6.1	6.2	6.2	13.2	13.4		11.2 5.0	10.3	<u> </u>
				Surface	1	27.8	27.8	8.2	8.2	25.8	25.8	87.5	87.7	6.0	6.1	6.1	5.0	5.0		4.6	4.8	
15-Oct-13	Cloudy	Moderate	15:31	Middle	-	-	-	-	-	-	-	-	-	-	-		-	-	8.2	-	-	5.9
				Bottom	4.2	27.6 27.6	27.6	8.2 8.2	8.2	26.8 26.8	26.8	84.6 84.3	84.5	5.8 5.8	5.8	5.8	11.2 11.4	11.3		7.3 6.4	6.9	<u> </u>
				Surface	1	26.7 26.7	26.7	8.1 8.1	8.1	27.4 27.3	27.4	78.8 78.6	78.7	6.0 6.0	6.0	6.0	6.1 6.3	6.2		6.0 6.3	6.2	
17-Oct-13	Sunny	Calm	16:43	Middle	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	7.5	-	-	6.9
				Bottom	4.1	26.7 26.7	26.7	8.0 8.0	8.0	27.5 27.5	27.5	76.0 76.1	76.1	5.8 5.8	5.8	5.8	8.7 8.9	8.8		7.2 7.7	7.5	<u> </u>
				Surface	1	26.4 26.4	26.4	8.0 8.0	8.0	27.6 27.7	27.7	96.9 96.9	96.9	7.4 7.4	7.4	7.4	9.2 9.7	9.5		9.0 6.8	7.9	
19-Oct-13	Fine	Calm	17:45	Middle	-	-	-	-	-	-	-	-	-		-	7.4	-	-	11.8	-	-	8.6
				Bottom	4.6	26.2 26.2	26.2	8.0 8.1	8.1	28.3 28.4	28.4	94.5 95.7	95.1	7.2 7.3	7.3	7.3	13.4 14.6	14.0		9.2 9.4	9.3	

Water Quality Monitoring Results at SR6 - Mid-Flood Tide

Date	Weather	Sea	Sampling	Dent	h (m)	Tempera	ature (°C)	p	θH	Salir	nity ppt	DO Satu	ration (%)	Disso	lved Oxygen	(mg/L)	-	Furbidity(NTL	J)	Suspe	nded Solids	(mg/L)
Date	Condition	Condition**	Time	Depi	()	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
				Surface	1	26.8 26.8	26.8	8.1 8.1	8.1	27.4 27.4	27.4	90.1 90.2	90.2	6.2 6.2	6.2	6.2	14.4 14.4	14.4		9.7 10.7	10.2	
21-Oct-13	Fine	Rough	18:35	Middle	-	-	-	-	-	-	-	-	-		-	0.2	-	-	13.9		-	9.9
				Bottom	4.7	26.7 26.7	26.7	8.2 8.2	8.2	28.2 28.3	28.3	88.8 88.6	88.7	6.1 6.1	6.1	6.1	13.4 13.4	13.4		8.7 10.3	9.5	
				Surface	1	26.2 26.2	26.2	8.0 8.1	8.1	27.0 27.0	27.0	79.9 78.4	79.2	5.6 5.5	5.6	5.6	17.9 20.1	19.0		24.7 22.7	23.7	
23-Oct-13	Sunny	Calm	09:09	Middle	-	-	-	-	-	-	-	-	-		-	5.0	-	-	22.1	-	-	22.1
				Bottom	4.1	26.1 26.1	26.1	8.1 8.1	8.1	27.3 27.3	27.3	78.3 78.5	78.4	5.5 5.5	5.5	5.5	24.6 25.5	25.1		20.3 20.7	20.5	
				Surface	1	25.9 25.9	25.9	8.0 8.0	8.0	27.0 27.0	27.0	101.8 101.4	101.6	7.0 7.0	7.0	7.0	12.7 12.5	12.6		14.2 13.0	13.6	
25-Oct-13	Sunny	Moderate	11:14	Middle	-	-	-	-	-	-	-	-	-		-	7.0	-	-	18.0	-	-	14.7
				Bottom	4.9	25.9 25.9	25.9	8.0 8.0	8.0	27.1 27.1	27.1	97.0 98.5	97.8	6.7 6.8	6.8	6.8	24.9 21.7	23.3		12.4 19.2	15.8	
				Surface	1	25.3 25.3	25.3	8.2 8.2	8.2	29.2 29.2	29.2	104.2 104.4	104.3	7.3 7.3	7.3	7.3	3.7 3.5	3.6		4.7 5.1	4.9	
28-Oct-13	Cloudy	Moderate	14:00	Middle	-	-	-	-	-	-	-	-	-		-	1.5	-	-	4.3	-	-	4.9
				Bottom	4.1	24.9 24.9	24.9	8.2 8.2	8.2	30.2 30.2	30.2	99.3 99.4	99.4	6.9 6.9	6.9	6.9	5.0 4.9	5.0		5.1 4.6	4.9	
				Surface	1	24.6 24.6	24.6	8.1 8.1	8.1	28.0 28.0	28.0	108.5 106.6	107.6	7.7 7.6	7.7	7.7	4.5 4.4	4.5		6.8 7.0	6.9	
30-Oct-13	Sunny	Calm	14:58	Middle	-	-	-	-	-	-	-	-	-	-	-	1.1	-	-	5.1	-	-	6.1
				Bottom	3.8	24.1 24.1	24.1	8.1 8.1	8.1	29.5 29.5	29.5	99.3 96.9	98.1	7.1 6.9	7.0	7.0	5.8 5.4	5.6		5.4 5.0	5.2	

Water Quality Monitoring Results at SRA - Mid-Ebb Tide

Date	Weather	Sea	Sampling	Dent	h (m)	Tempera	ature (°C)	F	рН	Salir	nity ppt	DO Satu	ration (%)	Disso	lved Oxygen	(mg/L)	-	Turbidity(NT	J)	Suspe	ended Solids	(mg/L)
Dale	Condition	Condition**	Time	Dept	n (m)	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
				Surface	1	27.9 27.9	27.9	8.2 8.2	8.2	27.7 27.7	27.7	82.3 82.7	82.5	6.2 6.2	6.2	6.0	6.7 6.7	6.7		9.2 7.3	8.3	
2-Oct-13	Sunny	Moderate	10:19	Middle	3.5	27.8 27.8	27.8	8.2 8.2	8.2	27.8 27.8	27.8	81.9 81.5	81.7	6.2 6.1	6.2	6.2	8.6 8.6	8.6	8.1	8.7 4.7	6.7	7.5
				Bottom	6	27.8 27.8	27.8	8.2 8.2	8.2	27.9 27.9	27.9	80.3 80.4	80.4	6.1 6.1	6.1	6.1	9.1 8.8	9.0		8.0 6.8	7.4	
				Surface	1	27.7	27.7	8.1	8.3	26.1	26.1	92.9	90.3	6.3	6.2		13.4	14.0		12.7	13.9	
4-Oct-13	Cloudy	Moderate	11:46	Middle	4	27.7 27.7	27.7	8.5 8.4	8.4	26.1 28.2	28.3	87.6 89.7	90.0	6.0 6.0	6.1	6.2	14.6 17.6	17.8	17.2	15.0 12.3	12.5	13.6
				Bottom	7	27.7 27.6	27.6	8.3 8.4	8.3	28.3 28.3	28.3	90.3 89.4	88.8	6.1 6.0	6.0	6.0	17.9 19.3	19.8		12.7 15.3	14.3	
				Surface	1	27.6 27.6	27.6	8.2 8.2	8.2	28.3 27.4	26.9	88.2 78.3	78.8	5.9 5.3	5.4		20.3 16.3	15.7		13.3 15.0	16.2	
7-Oct-13	Sunny	Moderate	15:37	Middle	3	27.6 27.5	27.5	8.2 8.2	8.2	26.4 26.4	27.0	79.3 83.9	82.4	5.4 5.7	5.6	5.5	15.1 16.5	16.7	18.4	17.3 15.0	16.5	17.2
7-001-13	Sunny	woderate	15.57		-	27.5 27.5		8.2 8.2	-	27.5 27.4		80.8 79.6		5.4 5.4	-	5.0	16.8 23.0		10.4	18.0 19.0		17.2
				Bottom	5	27.5 27.4	27.5	8.2 8.2	8.2	26.4 28.6	26.9	84.3 97.6	82.0	5.7 7.1	5.6	5.6	22.5 11.5	22.8		19.0 10.2	19.0	<u> </u>
				Surface	1	27.4	27.4	8.2	8.2	28.5 28.7	28.6	97.3 91.3	97.5	7.1 6.7	7.1	6.9	12.1 15.6	11.8		9.0	9.6	
9-Oct-13	Cloudy	Moderate	16:50	Middle	3.5	27.2	27.3	8.2	8.2	28.8	28.8	89.5	90.4	6.6	6.7		14.5	15.1	14.3	11.7	11.5	9.9
		-		Bottom	6	27.2 27.2	27.2	8.2 8.2	8.2	28.9 28.9	28.9	82.0 81.4	81.7	6.1 6.0	6.1	6.1	16.4 15.5	16.0		7.8 9.2	8.5	<u> </u>
				Surface	1	28.1 28.1	28.1	8.1 8.1	8.1	27.3 27.3	27.3	99.0 98.7	98.9	6.7 6.6	6.7	6.7	7.3 6.9	7.1		8.4 7.5	8.0	
11-Oct-13	Fine	Moderate	17:56	Middle	3	28.1 28.1	28.1	8.1 8.1	8.1	27.4 27.4	27.4	98.3 98.3	98.3	6.6 6.6	6.6	-	7.6 7.7	7.7	8.1	6.6 7.1	6.9	6.9
				Bottom	5	28.0 28.0	28.0	8.1 8.1	8.1	27.5 27.5	27.5	97.9 97.9	97.9	6.6 6.6	6.6	6.6	9.7 9.3	9.5		6.4 5.4	5.9	
				Surface	1	27.3 27.3	27.3	8.2 8.2	8.2	28.2 28.3	28.3	108.5 108.5	108.5	7.4 7.3	7.4	7.5	4.5 4.6	4.6		6.6 6.0	6.3	
15-Oct-13	Cloudy	Moderate	09:24	Middle	4	27.3 27.3	27.3	8.2 8.2	8.2	28.5 28.6	28.6	110.3 109.4	109.9	7.5 7.4	7.5	7.5	6.0 6.1	6.1	6.8	5.6 5.6	5.6	5.4
				Bottom	7	27.4 27.3	27.4	8.2 8.2	8.2	29.3 29.3	29.3	106.8 108.0	107.4	7.2 7.3	7.3	7.3	9.5 9.8	9.7		4.4 3.9	4.2	
				Surface	1	27.0 27.0	27.0	8.1 8.1	8.1	28.8 28.9	28.9	106.9 103.8	105.4	7.3	7.2		8.5 8.2	8.4		8.2 8.0	8.1	
17-Oct-13	Sunny	Calm	10:37	Middle	3.5	26.9 26.9	26.9	8.1 8.1	8.1	29.0 29.0 29.0	29.0	103.8 103.8	103.8	7.0	7.0	7.1	6.7 6.7	6.7	9.3	8.6 8.4	8.5	8.2
				Bottom	6	26.9 26.9 26.9	26.9	8.2 8.2	8.2	29.0 29.4 29.4	29.4	103.5 102.8	103.2	7.0	7.0	7.0	14.0 11.4	12.7		8.0 8.0	8.0	
				Surface	1	26.7	26.8	8.1	8.2	28.8	28.8	104.1	103.9	7.8	7.8		7.5	7.5		13.8	13.6	
19-Oct-13	Sunny	Calm	12:14	Middle	3.5	26.8 26.7	26.7	8.2 8.2	8.2	28.8 28.8	28.8	103.7 92.2	90.4	7.7	6.9	7.4	7.4	13.5	12.3	13.4 17.6	15.9	15.4
,	,			Bottom	6	26.7 26.7	26.7	8.2 8.2	8.2	28.8 28.9	29.0	88.6 73.7	72.5	6.7 5.7	5.6	5.6	14.9 14.2	15.9		14.2 17.4	16.6	
				Dottoin	Ŭ	26.7	20.1	8.2	0.2	29.0	20.0	71.2	12.0	5.5	0.0	0.0	17.5	10.0		15.8	10.0	L

Water Quality Monitoring Results at SRA - Mid-Ebb Tide

Date	Weather	Sea	Sampling	Dent	h (m)	Tempera	ature (°C)	ķ	ЪН	Salir	ity ppt	DO Satu	ration (%)	Disso	ved Oxygen	(mg/L)	-	Turbidity(NTl	J)	Suspe	ended Solids	(mg/L)
Date	Condition	Condition**	Time	Бсрі	()	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
				Surface	1	26.0 26.0	26.0	8.1 8.1	8.1	29.0 29.0	29.0	89.3 88.7	89.0	6.2 6.1	6.2	6.2	14.2 14.0	14.1		12.7 14.0	13.4	
21-Oct-13	Sunny	Rough	13:42	Middle	4	26.0 26.0	26.0	8.1 8.1	8.1	29.0 29.0	29.0	88.2 88.4	88.3	6.1 6.1	6.1	0.2	15.3 15.4	15.4	16.1	17.3 19.7	18.5	18.1
				Bottom	7	25.9 25.9	25.9	8.1 8.1	8.1	29.2 29.2	29.2	86.8 86.6	86.7	6.0 6.0	6.0	6.0	18.4 18.9	18.7		22.3 22.3	22.3	
				Surface	1	26.6 26.4	26.5	8.2 8.2	8.2	29.2 29.3	29.3	91.6 86.0	88.8	6.3 5.9	6.1	6.1	10.8 10.7	10.8		18.3 15.3	16.8	
23-Oct-13	Sunny	Calm	15:18	Middle	4	26.4 26.4	26.4	8.2 8.2	8.2	29.4 29.3	29.4	87.2 85.7	86.5	6.0 5.9	6.0	0.1	13.6 14.0	13.8	13.2	17.7 14.7	16.2	17.2
				Bottom	7	26.4 26.4	26.4	8.2 8.2	8.2	29.4 29.4	29.4	86.0 85.5	85.8	5.9 5.9	5.9	5.9	15.1 14.8	15.0		19.3 18.0	18.7	
				Surface	1	25.6 25.6	25.6	8.1 8.1	8.1	29.3 29.3	29.3	88.0 88.4	88.2	6.1 6.1	6.1	6.2	11.6 11.7	11.7		15.0 12.2	13.6	
25-Oct-13	Sunny	Moderate	17:07	Middle	3	25.6 25.6	25.6	8.1 8.1	8.1	29.3 29.3	29.3	91.0 91.4	91.2	6.3 6.3	6.3	0.2	13.0 13.2	13.1	13.3	12.0 11.2	11.6	12.7
				Bottom	5	25.6 25.6	25.6	8.1 8.1	8.1	29.3 29.4	29.4	92.1 92.2	92.2	6.4 6.4	6.4	6.4	15.6 14.5	15.1		12.6 12.9	12.8	
				Surface	1	23.9 24.2	24.1	8.3 8.3	8.3	28.2 31.3	29.8	97.9 101.5	99.7	7.0 7.1	7.1	7.1	5.6 5.9	5.8		3.4 3.3	3.4	
28-Oct-13	Cloudy	Moderate	07:04	Middle	3.5	24.4 24.4	24.4	8.3 8.3	8.3	31.6 31.7	31.7	101.9 97.8	99.9	7.1 6.8	7.0	7.1	4.8 5.1	5.0	5.9	3.3 3.3	3.3	3.7
				Bottom	6	24.6 24.6	24.6	8.3 8.3	8.3	31.9 32.0	32.0	103.0 95.4	99.2	7.2 6.6	6.9	6.9	7.0 6.5	6.8		4.0 4.8	4.4	
				Surface	1	25.0 25.0	25.0	8.1 8.1	8.1	29.9 30.0	30.0	98.4 100.7	99.6	6.9 7.0	7.0	7.0	15.4 15.8	15.6		8.6 9.0	8.8	
30-Oct-13	Sunny	Calm	09:13	Middle	4	24.9 24.9	24.9	8.1 8.1	8.1	30.0 30.0	30.0	101.0 100.8	100.9	7.0 7.0	7.0	7.0	15.8 16.2	16.0	16.3	8.3 9.0	8.7	9.0
				Bottom	7	25.0 25.0	25.0	8.1 8.1	8.1	30.1 30.1	30.1	100.2 100.0	100.1	7.0 7.0	7.0	7.0	17.5 17.0	17.3		9.7 9.0	9.4	

Water Quality Monitoring Results at SRA - Mid-Flood Tide

Date	Weather	Sea	Sampling	Dont	h (m)	Tempera	ature (°C)	þ	рН	Salir	nity ppt	DO Satu	ration (%)	Disso	lved Oxygen	(mg/L)	-	Turbidity(NT	U)	Suspe	ended Solids	(mg/L)
Date	Condition	Condition**	Time	Dept	n (m)	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
				Surface	1	28.3 28.3	28.3	8.2 8.2	8.2	27.8 27.7	27.8	87.6 87.0	87.3	6.5 6.5	6.5	6.4	16.4 17.0	16.7		19.0 35.7	27.4	
2-Oct-13	Fine	Moderate	17:40	Middle	3.5	28.3 28.3	28.3	8.2 8.2	8.2	27.9 27.3	27.6	85.0 84.3	84.7	6.3 6.3	6.3	0.4	16.1 17.1	16.6	17.2	23.3 23.0	23.2	25.8
				Bottom	6	28.3 28.3	28.3	8.2 8.2	8.2	27.9 27.9	27.9	85.0 85.2	85.1	6.3 6.4	6.4	6.4	18.0 18.3	18.2		22.7 31.0	26.9	
				Surface	1	28.3 28.3	28.3	8.2 8.3	8.3	27.4 27.4	27.4	80.7 81.7	81.2	5.4 5.6	5.5		16.2 19.2	17.7		16.0 17.2	16.6	
4-Oct-13	Cloudy	Moderate	18:15	Middle	3.5	28.3 28.3	28.3	8.3 8.4	8.4	27.5	27.5	93.5 97.0	95.3	6.3 6.5	6.4	6.0	20.1	20.4	19.4	16.8 14.4	15.6	14.7
				Bottom	6	28.3 28.3	28.3	8.3 8.4	8.4	27.5	27.5	91.8 93.2	92.5	6.1 6.2	6.2	6.2	18.7 21.7	20.2		13.0 10.6	11.8	
				Surface	1	27.3 27.4	27.4	8.0 8.0	8.0	27.1 27.2	27.2	97.1 94.9	96.0	6.6 6.4	6.5		13.3 14.4	13.9		19.7 19.3	19.5	
7-Oct-13	Sunny	Moderate	08:36	Middle	3.5	27.4	27.4	8.0 8.0	8.0	27.1 27.2	27.2	95.3 94.9	95.1	6.4 6.4	6.4	6.5	14.9	14.7	15.0	15.0 16.3	15.7	18.5
				Bottom	6	27.3 27.3	27.3	8.0 8.0	8.0	27.1	27.2	94.9 94.5	94.7	6.4 6.4	6.4	6.4	15.2 17.5	16.4		16.7 23.7	20.2	
				Surface	1	26.9 27.0	27.0	8.1 8.1	8.1	27.8 27.9	27.9	88.7 92.1	90.4	6.5 6.7	6.6		19.1 19.8	19.5		24.0 15.7	19.9	
9-Oct-13	Cloudy	Moderate	09:07	Middle	3.5	26.9 26.9	26.9	8.1 8.1 8.1	8.1	27.9 27.8 27.9	27.9	91.5 88.2	89.9	6.7 6.5	6.6	6.6	19.6 19.8	19.7	19.6	21.0 23.3	22.2	22.0
				Bottom	6	26.9 27.0	27.0	8.1 8.1	8.1	27.9	27.9	89.7 88.3	89.0	6.6 6.5	6.6	6.6	20.1	19.7		23.7 24.0	23.9	
				Surface	1	27.8 27.8	27.8	8.0 8.0	8.0	28.0 28.0	28.0	100.5 100.4	100.5	6.8 6.8	6.8		13.2 14.0	13.6		12.8 13.2	13.0	
11-Oct-13	Sunny	Moderate	11:36	Middle	6.5	27.9 27.9 27.9	27.9	8.0 8.0	8.0	28.0 28.0 28.0	28.0	99.9 99.9	99.9	6.7 6.7	6.7	6.8	13.8	13.4	13.4	13.2 12.4	12.8	12.7
				Bottom	12	27.8 27.8	27.8	8.0 8.0	8.0	28.0 28.0	28.0	99.8 99.7	99.8	6.7 6.7	6.7	6.7	13.3 13.3	13.3		12.4	12.4	
				Surface	1	28.0 27.9	28.0	8.2 8.2	8.2	27.8 27.9	27.9	85.2 83.4	84.3	5.7 5.6	5.7		7.2	7.9		8.2 9.5	8.9	
15-Oct-13	Cloudy	Moderate	16:18	Middle	4	27.9 27.9 27.8	27.9	8.2 8.2 8.2	8.2	27.9 27.8 27.9	27.9	84.2 82.8	83.5	5.0 5.7 5.6	5.7	5.7	9.8 9.3	9.6	9.1	9.5 7.2 7.5	7.4	8.2
				Bottom	7	27.8 27.8 27.8	27.8	8.2 8.2 8.2	8.2	27.9 27.9 28.0	28.0	83.0 81.1	82.1	5.6 5.5	5.6	5.6	9.3 9.8 9.5	9.7		8.2 8.3	8.3	
				Surface	1	27.1	27.1	8.2	8.2	28.4	28.4	96.8	96.0	6.6	6.6		11.1	10.7		13.0	11.5	
17-Oct-13	Sunny	Calm	18:12	Middle	3	27.1 27.1	27.1	8.2	8.2	28.4	28.4	95.1 96.1	95.3	6.5 6.5	6.5	6.6	10.2 11.4	10.7	10.6	10.0 11.6	9.6	10.1
				Bottom	5	27.1 27.1 27.1	27.1	8.2 8.2 8.2	8.2	28.4 28.4 28.4	28.4	94.5 95.4 93.6	94.5	6.4 6.5 6.4	6.5	6.5	10.0 9.7 11.1	10.4		7.6 9.0 9.2	9.1	
				Surface	1	27.0	27.0	8.2	8.2	28.8	28.8	65.1	70.6	5.1	5.5		8.3	8.2		18.7	17.4	
19-Oct-13	Fine	Calm	19:27	Middle	3.5	27.0 27.0	27.0	8.2	8.2	28.8	28.8	76.0	74.2	5.8 5.6	5.8	5.7	8.1 15.8	16.3	14.4	16.0 16.3	16.8	16.9
				Bottom	6	27.0 27.0 27.0	27.0	8.2 8.2 8.2	8.2	28.8 28.9 28.8	28.9	76.3 73.0 75.8	74.4	5.9 5.6 5.8	5.7	5.7	16.7 18.3 18.9	18.6		17.3 16.7 16.3	16.5	

Water Quality Monitoring Results at SRA - Mid-Flood Tide

Date	Weather	Sea	Sampling	Dent	h (m)	Tempera	ature (°C)	ŗ	ЪН	Salir	nity ppt	DO Satu	ration (%)	Disso	lved Oxygen	(mg/L)	-	Furbidity(NT	J)	Suspe	ended Solids	(mg/L)
Date	Condition	Condition**	Time	Dept	()	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
				Surface	1	26.1 26.1	26.1	8.1 8.1	8.1	29.0 29.0	29.0	87.5 86.9	87.2	6.0 6.0	6.0	6.0	9.4 9.4	9.4		16.8 12.2	14.5	
21-Oct-13	Fine	Rough	19:32	Middle	4	26.1 26.1	26.1	8.1 8.1	8.1	29.0 29.0	29.0	85.0 85.2	85.1	5.8 5.9	5.9	0.0	10.4 10.8	10.6	10.6	15.8 10.0	12.9	12.1
				Bottom	7	26.1 26.1	26.1	8.1 8.1	8.1	28.9 28.9	28.9	84.6 84.5	84.6	5.8 5.8	5.8	5.8	11.6 11.8	11.7		9.0 9.0	9.0	
				Surface	1	26.2 26.2	26.2	8.1 8.1	8.1	28.4 28.5	28.5	83.0 86.3	84.7	5.8 6.0	5.9	6.0	16.9 16.6	16.8		15.3 16.7	16.0	
23-Oct-13	Sunny	Calm	09:08	Middle	3.5	26.2 26.2	26.2	8.1 8.1	8.1	28.4 28.6	28.5	86.6 87.1	86.9	6.0 6.1	6.1	0.0	15.7 17.6	16.7	17.3	15.7 15.0	15.4	16.0
				Bottom	6	26.2 26.2	26.2	8.1 8.1	8.1	28.6 28.6	28.6	88.4 88.5	88.5	6.2 6.2	6.2	6.2	18.1 18.5	18.3		17.3 16.0	16.7	
				Surface	1	25.4 25.4	25.4	8.1 8.1	8.1	28.7 28.7	28.7	94.9 94.7	94.8	6.6 6.6	6.6	6.6	16.7 16.6	16.7		19.7 18.2	19.0	
25-Oct-13	Sunny	Moderate	11:15	Middle	3.5	25.4 25.4	25.4	8.1 8.1	8.1	28.7 28.7	28.7	94.5 94.6	94.6	6.6 6.6	6.6	0.0	17.2 17.8	17.5	17.7	14.8 19.0	16.9	18.7
				Bottom	6	25.4 25.4	25.4	8.1 8.1	8.1	28.7 28.7	28.7	95.1 95.1	95.1	6.6 6.6	6.6	6.6	19.0 18.5	18.8		15.2 25.2	20.2	
				Surface	1	24.9 24.9	24.9	8.2 8.1	8.2	31.1 31.0	31.1	107.7 104.5	106.1	7.5 7.3	7.4	7.4	7.7 9.2	8.5		10.8 10.3	10.6	
28-Oct-13	Cloudy	Moderate	16:24	Middle	3	24.9 24.9	24.9	8.2 8.1	8.2	31.1 31.1	31.1	104.3 105.6	105.0	7.2 7.3	7.3	7.4	9.6 9.1	9.4	9.0	8.3 10.3	9.3	9.8
				Bottom	5	24.8 24.9	24.9	8.1 8.1	8.1	31.1 28.0	29.6	104.2 105.7	105.0	7.2 7.5	7.4	7.4	9.2 9.1	9.2		9.2 9.6	9.4	
				Surface	1	25.3 25.3	25.3	8.2 8.2	8.2	30.4 30.4	30.4	100.2 100.5	100.4	6.9 7.0	7.0	7.0	8.8 8.1	8.5		18.5 19.7	19.1	
30-Oct-13	Sunny	Calm	16:17	Middle	3.5	25.3 25.3	25.3	8.2 8.2	8.2	30.4 30.4	30.4	101.1 101.0	101.1	7.0 7.0	7.0	7.0	9.4 10.1	9.8	10.0	32.7 29.3	31.0	20.4
				Bottom	6	25.3 25.3	25.3	8.2 8.2	8.2	30.4 30.4	30.4	100.5 100.3	100.4	7.0 6.9	7.0	7.0	11.2 12.2	11.7		10.7 11.7	11.2	

Water Quality Monitoring Results at ST1 - Mid-Ebb Tide

Date	Weather	Sea	Sampling	Dont	h (m)	Tempera	ature (°C)	þ	Η	Salir	nity ppt	DO Satu	ration (%)	Disso	lved Oxygen	(mg/L)	-	Turbidity(NT	J)	Suspe	ended Solids	(mg/L)
Dale	Condition	Condition**	Time	Depi	II (III)	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
				Surface	1	28.6 28.6	28.6	8.3 8.3	8.3	27.7 27.6	27.7	83.5 84.3	83.9	6.2 6.2	6.2	6.1	4.5 4.4	4.5		3.7 5.0	4.4	
2-Oct-13	Sunny	Moderate	11:31	Middle	5	28.0 28.0	28.0	8.2 8.2	8.2	29.8 29.8	29.8	79.9 79.7	79.8	5.9 5.9	5.9	0.1	9.6 9.6	9.6	11.1	9.2 9.0	9.1	16.8
				Bottom	9	28.0 28.0	28.0	8.2 8.2	8.2	30.2 30.2	30.2	78.8 78.4	78.6	5.8 5.8	5.8	5.8	18.9 19.3	19.1		35.7 38.3	37.0	
				Surface	1	27.8 27.8	27.8	8.3 8.3	8.3	29.7 29.7	29.7	92.4 92.3	92.4	6.3 6.3	6.3		9.6 9.9	9.8		20.2 5.0	12.6	
4-Oct-13	Cloudy	Moderate	11:54	Middle	5	27.7	27.7	8.3	8.3	30.3	30.3	90.6	90.9	6.1	6.2	6.3	18.6	18.6	16.8	16.0	12.5	11.6
				Bottom	9	27.7 27.7	27.7	8.3 8.3	8.3	<u>30.3</u> 30.3	30.3	<u>91.2</u> 90.8	91.0	6.2 6.2	6.2	6.2	18.6 22.2	22.1		9.0 9.0	9.7	
				Surface	1	27.7	27.4	8.3 8.2	8.2	<u>30.3</u> 29.0	29.0	91.1 80.6	81.0	6.2 5.4	5.5		21.9 16.3	16.4		10.4 15.7	10.4	
7-Oct-13	Sunny	Moderate	14:18	Middle	5	27.4 27.4	27.4	8.2 8.2	8.2	29.0 29.0	29.1	81.4 79.9	79.8	5.5 5.4	5.4	5.5	16.5 15.8	15.2	14.5	5.0 21.0	19.7	16.3
	,		-	Bottom	9	27.3 27.3	27.3	8.2 8.2	8.2	29.1 28.2	28.5	79.6 79.7	80.6	5.3 5.4	5.5	5.5	14.5 11.8	11.8		18.3 20.0	18.9	
				Surface	1	27.3 26.5	26.5	8.2 8.1	8.1	28.7 29.3	29.3	81.4 97.2	96.2	5.5 7.1	7.0	0.0	11.8 6.4	6.5		17.7 7.5	6.3	
0.0+42	Olavidu	Madanata	45:04			26.5 26.4		8.1 8.1		29.3 30.2		95.2 100.0		6.9 7.2		7.1	6.5 7.3			5.0 8.8		0.4
9-Oct-13	Cloudy	Moderate	15:01	Middle	5	26.4 26.5	26.4	8.1 8.2	8.1	29.9 30.4	30.1	98.0 99.0	99.0	7.1 7.1	7.2		8.9 9.4	8.1	8.0	7.2	8.0	8.1
				Bottom	9	26.5 26.7	26.5	<u>8.2</u> 8.1	8.2	<u>30.5</u> 28.1	30.5	97.6 96.7	98.3	7.0	7.1	7.1	9.6 4.1	9.5		8.7 4.7	10.0	<u> </u>
				Surface	1	26.8 26.7	26.8	8.1 8.1	8.1	27.9 28.7	28.0	96.4 95.6	96.6	6.5 6.5	6.6	6.6	3.8 6.0	4.0		5.0 10.4	4.9	
11-Oct-13	Fine	Moderate	16:48	Middle	5	26.7 26.7	26.7	8.1 8.1	8.1	28.7	28.7	95.7 94.4	95.7	6.5 6.4	6.5		5.9 12.5	6.0	7.7	8.6 10.8	9.5	7.9
				Bottom	9	26.7	26.7	8.1	8.1	29.4	29.4	94.2	94.3	6.3	6.4	6.4	13.4	13.0		7.6	9.2	<u> </u>
				Surface	1	27.3 27.3	27.3	8.2 8.2	8.2	27.8 27.8	27.8	96.3	96.3	6.6 6.6	6.6	6.5	1.6 1.6	1.6		4.4 5.0	4.7	
15-Oct-13	Cloudy	Moderate	09:58	Middle	5.5	27.5 27.5	27.5	8.3 8.3	8.3	29.1 29.1	29.1	93.9 93.6	93.8	6.4 6.4	6.4		4.4 4.3	4.4	4.1	3.9 3.3	3.6	3.7
				Bottom	10	27.5 27.5	27.5	8.3 8.3	8.3	29.6 29.8	29.7	93.7 93.6	93.7	6.4 6.4	6.4	6.4	5.8 6.5	6.2		3.6 2.2	2.9	<u> </u>
				Surface	1	26.4 26.4	26.4	8.1 8.1	8.1	30.5 30.5	30.5	88.3 88.6	88.5	6.7 6.7	6.7	6.7	4.4 4.9	4.7		2.8 5.0	3.9	
17-Oct-13	Sunny	Calm	11:17	Middle	5	26.3 26.4	26.4	8.1 8.1	8.1	31.0 31.0	31.0	86.9 87.0	87.0	6.6 6.6	6.6	0.1	10.3 10.2	10.3	8.0	5.7 5.8	5.8	5.1
				Bottom	9	26.3 26.3	26.3	8.1 8.1	8.1	31.0 31.0	31.0	86.7 86.9	86.8	6.6 6.6	6.6	6.6	9.1 8.8	9.0		5.7 5.7	5.7	
				Surface	1	26.2 26.2	26.2	8.2 8.2	8.2	29.8 29.8	29.8	88.2 88.2	88.2	6.7 6.7	6.7	6.7	5.5 5.2	5.4		5.4 5.0	5.2	
19-Oct-13	Sunny	Calm	12:47	Middle	4.5	26.0 26.0	26.0	8.2 8.2	8.2	30.3 30.3	30.3	87.9 87.9	87.9	6.7 6.7	6.7	6.7	8.6 8.7	8.7	7.8	5.8 7.1	6.5	6.3
				Bottom	8	26.0 26.0	26.0	8.2 8.2	8.2	30.5 30.4	30.5	86.3 86.3	86.3	6.6 6.6	6.6	6.6	9.1 9.5	9.3		7.3	7.2	

Water Quality Monitoring Results at ST1 - Mid-Ebb Tide

Date	Weather	Sea	Sampling	Dent	h (m)	Tempera	ature (°C)	ŗ	ЪН	Salir	nity ppt	DO Satu	ration (%)	Dissol	ved Oxygen	(mg/L)	-	Turbidity(NT	J)	Suspe	ended Solids	(mg/L)
Date	Condition	Condition**	Time	Dept	()	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
				Surface	1	26.9 26.9	26.9	8.3 8.3	8.3	30.1 30.2	30.2	88.8 88.8	88.8	6.1 6.1	6.1	6.1	6.1 6.0	6.1		6.3 5.0	5.7	
21-Oct-13	Sunny	Rough	14:30	Middle	4.5	26.7 26.7	26.7	8.2 8.2	8.2	30.2 30.2	30.2	88.4 88.4	88.4	6.0 6.0	6.0	0.1	6.6 6.6	6.6	9.0	4.3 4.0	4.2	4.2
				Bottom	8	26.5 26.5	26.5	8.2 8.2	8.2	30.7 30.8	30.8	87.6 87.6	87.6	6.0 6.0	6.0	6.0	13.7 14.9	14.3		2.7 2.5	2.6	
				Surface	1	26.3 26.4	26.4	8.2 8.3	8.3	30.0 30.5	30.3	86.9 83.4	85.2	6.1 5.8	6.0	5.9	8.5 8.6	8.6		4.4 5.0	4.7	
23-Oct-13	Sunny	Calm	14:34	Middle	5	26.3 26.3	26.3	8.3 8.3	8.3	30.8 31.0	30.9	83.1 82.4	82.8	5.8 5.7	5.8	5.9	9.1 9.0	9.1	9.9	5.5 5.6	5.6	5.5
				Bottom	9	26.3 26.3	26.3	8.3 8.3	8.3	30.9 31.0	31.0	82.8 82.0	82.4	5.8 5.7	5.8	5.8	11.8 12.3	12.1		6.8 5.5	6.2	
				Surface	1	25.6 25.6	25.6	8.2 8.2	8.2	29.8 29.8	29.8	92.3 90.6	91.5	6.3 6.2	6.3	6.2	8.7 8.9	8.8		11.4 5.0	8.2	
25-Oct-13	Sunny	Moderate	15:39	Middle	4.5	25.7 25.7	25.7	8.2 8.2	8.2	29.7 29.8	29.8	87.6 88.3	88.0	6.0 6.0	6.0	0.2	9.4 9.4	9.4	9.4	11.0 11.4	11.2	9.9
				Bottom	8	25.7 25.7	25.7	8.2 8.2	8.2	29.8 29.9	29.9	86.4 86.0	86.2	5.9 5.9	5.9	5.9	10.1 10.0	10.1		9.5 10.8	10.2	
				Surface	1	24.9 24.9	24.9	8.2 8.2	8.2	31.3 31.3	31.3	91.2 91.0	91.1	6.3 6.3	6.3	6.3	5.2 4.8	5.0		6.4 5.0	5.7	
28-Oct-13	Cloudy	Moderate	06:55	Middle	5	24.9 24.9	24.9	8.2 8.2	8.2	31.3 31.3	31.3	91.1 91.0	91.1	6.3 6.3	6.3	0.5	5.1 5.1	5.1	4.9	7.0 5.6	6.3	6.4
				Bottom	9	24.9 25.0	25.0	8.2 8.2	8.2	31.4 31.4	31.4	90.9 90.7	90.8	6.3 6.3	6.3	6.3	4.5 4.7	4.6		7.3 7.2	7.3	
				Surface	1	24.1 24.1	24.1	8.1 8.2	8.2	30.2 30.2	30.2	104.9 105.0	105.0	7.4 7.4	7.4	7.0	2.7 2.7	2.7		5.2 5.0	5.1	
30-Oct-13	Sunny	Calm	10:16	Middle	5	24.2 24.3	24.3	8.1 8.1	8.1	30.5 30.8	30.7	95.4 91.4	93.4	6.7 6.4	6.6	7.0	5.7 5.7	5.7	8.2	8.0 8.0	8.0	6.4
				Bottom	9	24.3 24.3	24.3	8.1 8.1	8.1	31.0 31.0	31.0	87.9 87.0	87.5	6.2 6.1	6.2	6.2	16.9 15.2	16.1		8.0 4.0	6.0	

Water Quality Monitoring Results at ST1 - Mid-Flood Tide

Date	Weather	Sea	Sampling	Dent	h (m)	Tempera	ature (°C)	p	Η	Salin	ity ppt	DO Satu	ration (%)	Dissol	lved Oxygen	(mg/L)	-	Turbidity(NTU))	Suspe	ended Solids	(mg/L)
Dale	Condition	Condition**	Time	Depi	II (III)	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
				Surface	1	28.7 28.7	28.7	8.2 8.2	8.2	25.5 25.5	25.5	79.1 78.7	78.9	5.9 5.9	5.9	5.9	5.6 5.6	5.6		7.0 7.2	7.1	
2-Oct-13	Fine	Moderate	16:41	Middle	5	28.6 28.6	28.6	8.2 8.2	8.2	26.5 26.5	26.5	79.4 79.1	79.3	5.9 5.9	5.9	5.5	5.6 6.5	6.1	8.4	9.6 9.8	9.7	11.3
				Bottom	9	28.6 28.6	28.6	8.2 8.2	8.2	27.5 27.5	27.5	77.5 78.3	77.9	5.7 5.8	5.8	5.8	13.9 13.1	13.5		17.0 17.0	17.0	
				Surface	1	28.0 28.0	28.0	8.2 8.2	8.2	28.3 28.2	28.3	88.6 88.4	88.5	6.0 6.0	6.0		12.2 11.6	11.9		11.4 18.2	14.8	1
4-Oct-13	Cloudy	Moderate	17:35	Middle	5	27.9 27.9	27.9	8.2 8.3	8.3	28.6	28.7	88.8 88.8	88.8	6.0 6.0	6.0	6.0	14.8 15.6	15.2	14.7	8.8 9.8	9.3	12.3
				Bottom	9	27.9 27.9 27.9	27.9	8.3 8.2	8.3	28.7 28.7 28.8	28.8	88.0 88.2	88.1	5.9 5.9	5.9	5.9	16.8 17.0	16.9		12.0 13.8	12.9	
				Surface	1	27.2	27.2	8.2	8.2	28.9	28.9	77.2	77.4	5.2	5.2		14.5	14.6		40.7	39.5	
7-Oct-13	Sunny	Moderate	08:55	Middle	6	27.2	27.2	8.2 8.2	8.2	28.9 29.0	29.0	77.6	78.9	5.2 5.3	5.3	5.3	14.6 24.7	24.7	21.1	38.3 23.7	22.9	33.3
	-			Bottom	11	27.2	27.2	8.2	8.2	29.0 28.9	28.9	78.7	79.5	5.3 5.3	5.4	5.4	24.6 24.1	24.1		22.0 39.0	37.5	
				Surface	1	27.2 26.3	26.3	<u>8.2</u> 8.1	8.1	28.9 28.4	28.4	79.9 98.0	97.2	5.4 6.9	6.9		24.1 16.9	17.1		36.0 25.0	17.2	
9-Oct-13	Cloudy	Moderate	10:09	Middle	5	26.3 26.3	26.3	8.1 8.1	8.1	28.4 28.4	28.5	96.3 95.9	95.4	6.8 6.8	6.8	6.9	17.2 19.4	20.5	26.3	9.3 24.7	23.7	23.0
	,			Bottom	9	26.3 26.3	26.3	8.1 8.1	8.1	28.5 28.7	28.8	94.9 83.1	82.6	6.7 5.7	5.7	5.7	21.5 39.6	41.3		22.7 30.2	28.0	
				Surface	1	26.3 27.1	27.1	<u>8.1</u> 8.0	8.0	28.8 26.5	26.5	82.1 97.3	97.3	5.7 6.6	6.6		42.9 5.4	6.1		25.8 4.4	5.5	
11-Oct-13	Sunny	Moderate	12:31	Middle	5	27.0 26.7	26.7	8.0 8.0	8.0	26.5 27.6	27.6	97.2 94.9	95.0	6.6 6.5	6.5	6.6	6.7 8.8	9.8	12.1	6.5 20.7	21.4	22.8
				Bottom	9	26.7 26.6	26.6	8.0 8.0	8.0	27.6 27.9	28.0	95.0 94.6	94.6	6.5 6.4	6.4	6.4	10.8 20.3	20.4		22.0 43.0	41.5	
				Surface	1	26.6 27.6	27.6	8.0 8.2	8.2	28.1 27.9	28.0	94.5 83.9	83.8	6.4 5.7	5.7		20.5 6.3	6.6		40.0 6.3	6.7	
15-Oct-13	Cloudy	Madarata	15:53	Middle	5	27.6 27.5	27.5	8.2 8.2	8.2	28.1 28.4	28.4	83.7 82.0	81.9	5.7 5.6	5.6	5.7	6.8 11.0	11.2	12.5	7.1 6.8	6.7	7.0
15-UCI-13	Cloudy	Moderate	15.55			27.5 27.5		8.2 8.2	-	28.4 28.8	-	81.7 80.4		5.6 5.5			11.4 19.6		12.5	6.5 7.9		7.0
				Bottom	9	27.5 26.5	27.5	8.2 8.1	8.2	28.9 28.2	28.9	80.1 83.3	80.3	5.5 6.3	5.5	5.5	19.5 6.3	19.6		7.5 6.8	7.7	
				Surface	1	26.5 26.5	26.5	8.1 8.1	8.1	28.2	28.2	83.3 83.3	83.3	6.3 6.3	6.3	6.4	6.5 6.6	6.4		7.7	7.3	
17-Oct-13	Sunny	Calm	17:04	Middle	4.5	26.5 26.4	26.5	8.1 8.1	8.1	28.5	28.5	83.4 79.6	83.4	6.4 6.1	6.4		6.3 10.3	6.5	7.8	8.0 7.8	8.4	8.0
				Bottom	8	26.4 26.2	26.4	8.1 8.2	8.1	29.8 28.8	29.8	79.5 95.0	79.6	6.1 7.2	6.1	6.1	10.3 10.4 5.2	10.4		8.5 5.2	8.2	
				Surface	1	26.2	26.2	8.2	8.2	28.9	28.9	95.3	95.2	7.2 7.3 7.2	7.3	7.3	5.2 5.1 5.9	5.2		3.8	4.5	
19-Oct-13	Fine	Calm	18:12	Middle	5	26.2 26.2	26.2	8.2 8.2	8.2	29.3 29.2	29.3	94.1 94.1	94.1	7.2	7.2		5.7	5.8	6.7	4.2 5.4	4.8	5.2
				Bottom	9	26.2 26.2	26.2	8.2 8.2	8.2	29.7 29.7	29.7	93.2 92.1	92.7	7.1 7.0	7.1	7.1	9.0 9.4	9.2		6.8 6.0	6.4	

Water Quality Monitoring Results at ST1 - Mid-Flood Tide

Date	Weather	Sea	Sampling	Dent	th (m)	Tempera	ature (°C)	p	Η	Salir	nity ppt	DO Satu	ration (%)	Disso	lved Oxygen	(mg/L)	-	Furbidity(NTL	J)	Suspe	ended Solids	(mg/L)
Date	Condition	Condition**	Time	Depi	an (m)	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
				Surface	1	26.8 26.8	26.8	8.2 8.2	8.2	28.3 28.3	28.3	90.1 89.8	90.0	6.2 6.2	6.2	6.1	6.0 5.8	5.9		9.7 9.0	9.4	
21-Oct-13	Fine	Rough	19:00	Middle	5	26.8 26.8	26.8	8.2 8.2	8.2	29.0 27.6	28.3	88.0 88.2	88.1	6.0 6.0	6.0	0.1	5.4 5.2	5.3	5.8	9.0 10.3	9.7	8.2
				Bottom	9	26.8 26.8	26.8	8.2 8.2	8.2	29.1 29.1	29.1	86.5 86.3	86.4	5.9 5.9	5.9	5.9	6.0 6.4	6.2		5.4 5.8	5.6	
				Surface	1	26.1 26.1	26.1	8.2 8.2	8.2	29.4 29.3	29.4	85.7 80.6	83.2	6.0 5.6	5.8	5.7	23.5 23.1	23.3		57.3 49.3	53.3	
23-Oct-13	Sunny	Calm	09:33	Middle	5	26.1 26.1	26.1	8.2 8.2	8.2	29.7 29.7	29.7	80.1 80.1	80.1	5.6 5.6	5.6	5.7	42.1 44.8	43.5	44.1	38.0 34.0	36.0	49.2
				Bottom	9	26.1 26.1	26.1	8.2 8.2	8.2	29.7 29.7	29.7	79.9 79.7	79.8	5.6 5.5	5.6	5.6	63.3 67.5	65.4		58.0 58.3	58.2	
				Surface	1	25.6 25.6	25.6	8.2 8.2	8.2	29.4 29.4	29.4	101.1 100.1	100.6	6.9 6.9	6.9	6.8	5.8 6.7	6.3		11.2 9.2	10.2	
25-Oct-13	Sunny	Moderate	11:38	Middle	5	25.6 25.6	25.6	8.2 8.2	8.2	29.5 29.5	29.5	94.7 96.0	95.4	6.5 6.6	6.6	0.0	8.2 8.2	8.2	8.4	11.8 11.0	11.4	11.2
				Bottom	9	25.6 25.6	25.6	8.2 8.2	8.2	29.7 29.7	29.7	92.7 92.0	92.4	6.3 6.3	6.3	6.3	10.7 10.8	10.8		12.6 11.6	12.1	
				Surface	1	24.9 25.0	25.0	8.2 8.3	8.3	31.1 31.1	31.1	92.4 92.6	92.5	6.4 6.4	6.4	6.4	5.7 4.8	5.3		5.6 4.6	5.1	
28-Oct-13	Cloudy	Moderate	14:29	Middle	5	24.9 24.9	24.9	8.2 8.2	8.2	31.2 31.2	31.2	91.4 91.6	91.5	6.3 6.4	6.4	0.4	5.2 5.2	5.2	6.1	4.4 4.2	4.3	4.8
				Bottom	9	24.9 24.8	24.9	8.2 8.2	8.2	31.2 31.2	31.2	89.3 88.9	89.1	6.2 6.2	6.2	6.2	7.8 7.7	7.8		5.6 4.6	5.1	
				Surface	1	25.0 25.0	25.0	8.3 8.4	8.4	24.0 23.8	23.9	94.5 92.0	93.3	6.8 6.6	6.7	6.7	4.8 4.9	4.9		6.2 5.2	5.7	
30-Oct-13	Sunny	Calm	15:20	Middle	5	24.3 24.2	24.3	8.2 8.1	8.2	29.3 30.4	29.9	95.6 92.3	94.0	6.8 6.5	6.7	0.7	8.4 8.9	8.7	8.9	8.3 6.0	7.2	11.0
				Bottom	9	24.2 24.2	24.2	8.1 8.1	8.1	30.6 30.7	30.7	86.9 87.0	87.0	6.1 6.1	6.1	6.1	13.5 12.7	13.1		20.0 20.3	20.2	

Water Quality Monitoring Results at ST2 - Mid-Ebb Tide

Dete	Weather	Sea	Sampling	Deat	h (m)	Tempera	ature (°C)	ŗ	θH	Salir	ity ppt	DO Satu	ration (%)	Disso	lved Oxygen	(mg/L)	-	Turbidity(NT	J)	Suspe	ended Solids	(mg/L)
Date	Condition	Condition**	Time	Dept	h (m)	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
				Surface	1	29.0 29.1	29.1	8.2 8.2	8.2	27.2 27.2	27.2	84.9 84.0	84.5	6.3 6.2	6.3		5.2 5.2	5.2		2.6 2.2	2.4	
2-Oct-13	Sunny	Moderate	11:21	Middle	4	28.4 28.4	28.4	8.2 8.2	8.2	29.7 29.7	29.7	82.9 82.7	82.8	6.1 6.1	6.1	6.2	8.8 9.1	9.0	11.6	9.6 8.4	9.0	9.4
				Bottom	7	28.2 28.1	28.2	8.3 8.3	8.3	30.1 30.2	30.2	82.1 82.0	82.1	6.0 6.0	6.0	6.0	20.5 20.4	20.5		14.7 19.0	16.9	1
				Surface	1	27.9 27.9	27.9	8.3 8.3	8.3	29.7 29.7	29.7	94.9 95.4	95.2	6.5 6.5	6.5		7.2 7.7	7.5		8.6 9.0	8.8	
4-Oct-13	Cloudy	Moderate	11:46	Middle	4.5	27.7	27.7	8.3	8.3	30.1	30.1	90.2	90.4	6.1	6.1	6.3	9.2	9.2	9.3	8.8	7.4	7.5
	-			Bottom	8	27.7 27.7	27.7	8.3 8.3	8.3	<u>30.1</u> 30.2	30.2	90.5 91.9	92.2	6.1 6.3	6.3	6.3	9.2 11.1	11.1		6.0 7.4	6.3	
				Surface	1	27.7 27.4	27.4	8.3 8.2	8.2	30.2 28.7	28.7	92.4 80.6	80.4	6.3 5.4	5.4		11.0 17.4	17.3		5.2 16.3	16.7	<u> </u>
7-Oct-13	Sunny	Moderate	14:05	Middle	4	27.4 27.4	27.4	8.2 8.2	8.2	28.7 28.7	28.7	80.2 79.6	79.6	5.4 5.3	5.3	5.4	17.2 17.3	17.4	17.6	17.0 20.3	20.5	18.3
	,			Bottom	7	27.4 27.4	27.4	8.2 8.2	8.2	28.7 28.6	28.6	79.6 79.0	79.5	5.3 5.3	5.4	5.4	17.5 18.0	18.0		20.7 17.3	17.7	
				Surface	1	27.4 26.4	26.4	8.2 8.1	8.1	28.6 28.9	28.9	80.0 102.5	102.1	5.4 7.3	7.3		17.9 18.2	18.1		18.0 18.7	17.9	<u> </u>
9-Oct-13	Claudy	Moderate	14:49	Middle	4	26.4 26.4	26.4	8.1 8.1	8.1	28.9 29.8	29.8	101.6 98.2	97.8	7.3 7.2	7.1	7.2	17.9 13.8	13.7	16.4	17.0 16.7	15.7	16.5
9-001-13	Cloudy	Moderate	14.49		4	26.4 26.4		8.1 8.1		29.7 30.2		97.4 95.1		7.0 6.9			13.6 17.9		10.4	14.7 15.3		10.5
				Bottom	-	26.4 27.2	26.4	<u>8.1</u> 8.0	8.1	28.9 27.3	29.6	94.8 98.3	95.0	6.8 6.6	6.9	6.9	16.9 3.4	17.4		16.7 3.8	16.0	<u> </u>
				Surface	1	27.3 26.6	27.3	8.0 8.1	8.0	27.3 28.8	27.3	98.5 95.6	98.4	6.6 6.5	6.6	6.6	3.7 10.5	3.6		3.2 9.7	3.5	
11-Oct-13	Fine	Moderate	16:36	Middle	3.5	26.6 26.6	26.6	8.1 8.1	8.1	28.8 29.4	28.8	96.7 95.6	96.2	6.5 6.5	6.5		10.8 20.1	10.7	12.1	6.5 25.3	8.1	12.0
				Bottom	6	26.6 27.5	26.6	8.1 8.2	8.1	29.3	29.4	96.3 98.2	96.0	6.5 6.8	6.5	6.5	23.9	22.0		23.7	24.5	<u> </u>
				Surface	1	27.5	27.5	8.2 8.3	8.2	26.0	26.0	98.3	98.3	6.8 6.6	6.8	6.7	2.1 2.0 6.8	2.1		2.3	2.6	
15-Oct-13	Cloudy	Moderate	09:48	Middle	5	27.4 27.4	27.4	8.3	8.3	28.4 28.4	28.4	97.0 96.7	96.9	6.6	6.6		7.0	6.9	6.5	3.5 4.4	4.0	3.9
				Bottom	9	27.4 27.4	27.4	8.3 8.3	8.3	29.4 29.3	29.4	95.5 95.2	95.4	6.5 6.5	6.5	6.5	10.8 10.3	10.6		5.6 4.7	5.2	<u> </u>
				Surface	1	26.4 26.4	26.4	8.1 8.1	8.1	30.1 30.1	30.1	86.7 86.5	86.6	6.6 6.6	6.6	6.5	5.8 5.8	5.8		9.6 9.0	9.3	
17-Oct-13	Sunny	Calm	11:07	Middle	5	26.3 26.3	26.3	8.1 8.1	8.1	30.7 30.7	30.7	82.7 82.9	82.8	6.3 6.3	6.3		10.9 10.5	10.7	11.4	9.8 8.4	9.1	8.7
				Bottom	9	26.3 26.3	26.3	8.1 8.1	8.1	30.8 30.8	30.8	80.4 80.0	80.2	6.1 6.1	6.1	6.1	17.7 17.6	17.7		8.4 7.2	7.8	
				Surface	1	26.3 26.3	26.3	8.2 8.2	8.2	29.3 29.3	29.3	89.1 89.1	89.1	6.8 6.8	6.8	6.8	6.1 6.0	6.1		4.8 4.2	4.5	
19-Oct-13	Sunny	Calm	12:36	Middle	4	25.9 25.9	25.9	8.2 8.2	8.2	30.1 30.1	30.1	88.6 88.6	88.6	6.7 6.7	6.7	0.0	17.0 16.7	16.9	12.8	9.4 10.8	10.1	8.0
				Bottom	7	26.0 26.0	26.0	8.2 8.2	8.2	30.5 30.5	30.5	87.5 87.8	87.7	6.7 6.7	6.7	6.7	15.6 15.2	15.4		10.4 8.2	9.3	

Water Quality Monitoring Results at ST2 - Mid-Ebb Tide

Date	Weather	Sea	Sampling	Dent	h (m)	Tempera	ature (°C)	ŗ	Н	Salir	nity ppt	DO Satu	ration (%)	Disso	ved Oxygen	(mg/L)	-	Turbidity(NT	J)	Suspe	ended Solids	(mg/L)
Date	Condition	Condition**	Time	Dept	()	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
				Surface	1	26.6 26.6	26.6	8.2 8.2	8.2	29.7 29.8	29.8	91.1 91.3	91.2	6.3 6.3	6.3	6.3	9.2 9.7	9.5		3.3 3.8	3.6	
21-Oct-13	Sunny	Rough	14:16	Middle	4	26.5 26.6	26.6	8.2 8.2	8.2	29.9 29.9	29.9	90.5 90.5	90.5	6.2 6.2	6.2	0.0	11.4 11.3	11.4	10.8	11.8 12.2	12.0	7.9
				Bottom	7	26.5 26.5	26.5	8.2 8.2	8.2	30.2 30.3	30.3	89.2 89.2	89.2	6.1 6.1	6.1	6.1	11.9 11.3	11.6		5.3 11.0	8.2	
				Surface	1	26.4 26.4	26.4	8.2 8.2	8.2	29.9 30.2	30.1	92.0 84.0	88.0	6.4 5.8	6.1	6.0	9.8 9.3	9.6		11.5 10.7	11.1	
23-Oct-13	Sunny	Calm	14:24	Middle	4.5	26.3 26.4	26.4	8.2 8.2	8.2	30.9 30.8	30.9	83.7 84.2	84.0	5.8 5.8	5.8	0.0	16.6 16.5	16.6	16.8	10.5 10.2	10.4	10.8
				Bottom	8	26.3 26.3	26.3	8.2 8.2	8.2	31.1 31.1	31.1	83.5 83.4	83.5	5.8 5.8	5.8	5.8	24.4 24.1	24.3		10.5 11.0	10.8	
				Surface	1	25.7 25.7	25.7	8.2 8.2	8.2	30.3 30.3	30.3	93.9 93.2	93.6	6.4 6.3	6.4	6.3	12.0 12.0	12.0		16.4 14.4	15.4	
25-Oct-13	Sunny	Moderate	15:29	Middle	4	25.8 25.8	25.8	8.2 8.2	8.2	30.3 30.3	30.3	90.8 91.2	91.0	6.2 6.2	6.2	0.0	12.8 12.8	12.8	13.3	13.2 12.2	12.7	13.7
				Bottom	7	25.9 25.9	25.9	8.2 8.2	8.2	30.5 30.5	30.5	91.0 90.9	91.0	6.2 6.2	6.2	6.2	15.7 14.7	15.2		13.2 12.6	12.9	
				Surface	1	24.8 24.8	24.8	8.2 8.2	8.2	31.2 31.2	31.2	97.1 96.9	97.0	6.8 6.7	6.8	6.9	5.3 4.9	5.1		6.0 5.4	5.7	
28-Oct-13	Cloudy	Moderate	06:45	Middle	4.5	24.8 24.8	24.8	8.2 8.2	8.2	31.2 31.2	31.2	99.2 99.4	99.3	6.9 6.9	6.9	0.5	4.7 4.8	4.8	4.8	4.8 5.4	5.1	6.0
				Bottom	8	24.8 24.8	24.8	8.2 8.2	8.2	31.2 31.2	31.2	95.3 95.2	95.3	6.6 6.6	6.6	6.6	4.6 4.6	4.6		8.2 6.2	7.2	
				Surface	1	24.0 24.0	24.0	8.1 8.1	8.1	28.7 28.7	28.7	104.2 103.4	103.8	7.4 7.4	7.4	7.2	2.5 2.6	2.6		3.0 3.4	3.2	
30-Oct-13	Sunny	Calm	10:05	Middle	4	24.2 24.1	24.2	8.1 8.1	8.1	30.2 30.1	30.2	97.4 97.5	97.5	6.9 6.9	6.9	1.2	3.5 3.5	3.5	4.7	4.4 4.2	4.3	4.2
				Bottom	7	24.1 24.1	24.1	8.0 8.0	8.0	30.9 30.9	30.9	89.3 88.8	89.1	6.3 6.3	6.3	6.3	8.1 8.0	8.1		6.8 3.6	5.2	

Water Quality Monitoring Results at ST2 - Mid-Flood Tide

Date	Weather	Sea	Sampling	Dont	h (m)	Tempera	ature (°C)	F	рН	Salir	nity ppt	DO Satu	ration (%)	Disso	lved Oxygen	(mg/L)	-	Turbidity(NT	U)	Suspe	ended Solids	(mg/L)
Dale	Condition	Condition**	Time	Dept	II (III)	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
				Surface	1	28.4 28.5	28.5	8.2 8.2	8.2	25.8 25.7	25.8	77.4 76.7	77.1	5.8 5.7	5.8	5.8	5.6 5.6	5.6		8.2 8.6	8.4	
2-Oct-13	Fine	Moderate	16:27	Middle	4	28.3 28.3	28.3	8.2 8.2	8.2	27.0 27.1	27.1	77.0 76.5	76.8	5.7 5.7	5.7	5.6	5.9 5.9	5.9	8.1	9.2 7.6	8.4	9.7
				Bottom	7	28.3 28.3	28.3	8.2 8.2	8.2	27.9 27.9	27.9	76.3 75.4	75.9	5.6 5.6	5.6	5.6	12.9 12.5	12.7		13.4 11.4	12.4	
				Surface	1	28.1 28.1	28.1	8.2 8.2	8.2	27.8 27.8	27.8	90.9 91.3	91.1	6.2 6.2	6.2		14.9 15.3	15.1		16.0 14.2	15.1	
4-Oct-13	Cloudy	Moderate	17:25	Middle	4.5	28.1	28.1	8.2 8.2	8.2	28.0	28.0	88.6	88.5	6.0	6.0	6.1	18.8	18.7	18.3	15.0	16.6	14.1
				Bottom	8	28.0 28.0	28.0	8.2	8.2	28.0 28.3	28.3	88.3 88.6	88.6	6.0 6.0	6.0	6.0	18.5 20.9	21.2		18.2 12.8	10.6	
				Surface	1	28.0 27.2	27.2	8.2 8.2	8.2	28.3 28.7	28.7	88.5 78.8	78.1	6.0 5.3	5.3		21.4 7.0	7.2		8.4 44.5	46.0	
7-Oct-13	Sunny	Moderate	08:33	Middle	4	27.2 27.2	27.2	8.2 8.2	8.2	28.7 28.7	28.7	77.3 80.2	79.5	5.2 5.4	5.4	5.4	7.3 13.1	13.5	12.4	47.5 59.0	57.8	44.9
				Bottom	7	27.2 27.2	27.2	8.2 8.2	8.2	28.7 28.0	28.5	78.8 80.3	80.3	5.3 5.4	5.4	5.4	13.8 16.8	16.4		56.5 31.5	30.8	
				Surface	1	27.2 26.6	26.6	8.2 8.0	8.0	28.9 26.1	26.7	80.2 98.8	98.6	5.4 7.0	7.0		15.9 13.1	13.0		30.0 8.6	8.2	
9-Oct-13	Cloudy	Madarata	09:56		4	26.6 26.5	26.5	8.0 8.0	8.0	27.3 27.5	27.0	98.4 98.3	98.0	6.9 6.9	6.9	7.0	12.8 10.9	10.4	14.1	7.8 8.4	8.0	12.2
9-001-13	Cloudy	Moderate	09.50	Middle		26.5 26.4		8.0 8.0		26.4 27.7		97.7 97.7		6.9 6.9			9.9 17.5	-	14.1	7.6 20.3		12.2
				Bottom	7	26.4 27.3	26.4	8.0 7.9	8.0	27.7 24.5	27.7	97.4 92.7	97.6	6.9 6.3	6.9	6.9	20.0 3.8	18.8		20.3 4.4	20.3	
				Surface	1	27.3 26.8	27.3	7.9 7.9	7.9	24.7 26.8	24.6	92.4 93.2	92.6	6.3 6.4	6.3	6.4	4.6 5.6	4.2		4.7 6.6	4.6	
11-Oct-13	Sunny	Moderate	12:18	Middle	3.5	26.9 26.7	26.9	7.9	7.9	26.5 27.3	26.7	93.3 93.9	93.3	6.4 6.4	6.4		5.2 21.7	5.4	10.6	7.5 7.7	7.1	6.4
				Bottom	6	26.7 28.1	26.7	8.0 8.2	8.0	27.3	27.3	93.7 95.1	93.8	6.4 6.6	6.4	6.4	22.6 3.1	22.2		7.0	7.4	
				Surface	1	28.1	28.1	8.2 8.2	8.2	24.7 24.7 25.0	24.7	95.2 94.2	95.2	6.6 6.5	6.6	6.6	3.0 3.3	3.1		4.1 3.9	4.0	
15-Oct-13	Cloudy	Moderate	15:41	Middle	4.5	28.0	28.0	8.2	8.2	25.0	25.0	94.1	94.2	6.5	6.5		3.5	3.4	8.4	3.5	3.7	4.1
				Bottom	8	27.8 27.8	27.8	8.2 8.2	8.2	26.2 26.1	26.2	88.7 88.4	88.6	6.1 6.1	6.1	6.1	18.9 18.4	18.7		4.5 4.5	4.5	
				Surface	1	26.6 26.6	26.6	8.0 8.0	8.0	27.7 27.7	27.7	83.6 83.4	83.5	6.4 6.4	6.4	6.4	6.3 6.3	6.3		6.7 6.5	6.6	
17-Oct-13	Sunny	Calm	16:55	Middle	4.5	26.6 26.6	26.6	8.0 8.0	8.0	28.0 28.1	28.1	83.8 82.9	83.4	6.4 6.3	6.4		7.2 7.2	7.2	9.6	9.0 7.8	8.4	7.1
				Bottom	8	26.5 26.5	26.5	8.1 8.1	8.1	28.4 28.4	28.4	82.0 81.7	81.9	6.2 6.2	6.2	6.2	15.2 15.1	15.2		6.2 6.5	6.4	
				Surface	1	26.2 26.2	26.2	8.1 8.1	8.1	27.9 27.9	27.9	96.7 96.6	96.7	7.4 7.4	7.4	7.4	6.1 6.0	6.1		7.6 7.8	7.7	
19-Oct-13	Fine	Calm	18:02	Middle	4.5	26.2 26.2	26.2	8.1 8.1	8.1	27.2 28.3	27.8	95.9 95.9	95.9	7.3 7.3	7.3	7.4	6.6 6.8	6.7	7.4	8.4 7.4	7.9	7.5
				Bottom	8	26.1 26.1	26.1	8.1 8.2	8.2	29.1 29.1	29.1	95.7 95.5	95.6	7.3 7.3	7.3	7.3	9.3 9.3	9.3		6.6 7.2	6.9	

Water Quality Monitoring Results at ST2 - Mid-Flood Tide

Date	Weather	Sea	Sampling	Dent	h (m)	Tempera	ature (°C)	p	ЪН	Salir	nity ppt	DO Satu	ration (%)	Disso	ved Oxygen	(mg/L)	-	Turbidity(NT	J)	Suspe	ended Solids	(mg/L)
Date	Condition	Condition**	Time	Depi	()	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
				Surface	1	26.7 26.7	26.7	8.1 8.1	8.1	27.1 27.2	27.2	89.7 89.7	89.7	6.1 6.1	6.1	6.1	8.0 8.0	8.0		6.8 7.6	7.2	
21-Oct-13	Fine	Rough	18:45	Middle	4.5	26.7 26.7	26.7	8.2 8.2	8.2	28.2 27.1	27.7	89.3 89.3	89.3	6.1 6.1	6.1	0.1	10.5 10.4	10.5	10.9	8.6 7.4	8.0	7.5
				Bottom	8	26.7 26.7	26.7	8.2 8.2	8.2	29.0 28.9	29.0	86.9 86.8	86.9	5.9 5.9	5.9	5.9	14.0 14.3	14.2		8.2 6.2	7.2	
				Surface	1	26.2 26.2	26.2	8.1 8.1	8.1	29.0 29.0	29.0	84.9 83.6	84.3	5.9 5.8	5.9	5.9	13.4 12.6	13.0		13.3 15.0	14.2	
23-Oct-13	Sunny	Calm	09:23	Middle	4	26.2 26.2	26.2	8.1 8.1	8.1	29.0 29.1	29.1	82.7 82.9	82.8	5.8 5.8	5.8	5.5	26.2 23.8	25.0	24.8	15.7 16.7	16.2	15.9
				Bottom	7	26.2 26.2	26.2	8.1 8.1	8.1	29.1 29.1	29.1	82.7 82.5	82.6	5.7 5.7	5.7	5.7	36.4 36.5	36.5		16.8 17.8	17.3	
				Surface	1	25.7 25.7	25.7	8.1 8.1	8.1	28.6 28.6	28.6	101.2 99.9	100.6	7.0 6.9	7.0	6.9	6.2 6.2	6.2		7.7 8.2	8.0	
25-Oct-13	Sunny	Moderate	11:27	Middle	4.5	25.7 25.7	25.7	8.1 8.1	8.1	28.6 28.6	28.6	96.5 96.8	96.7	6.6 6.7	6.7	0.5	6.9 6.8	6.9	8.0	7.2 8.0	7.6	7.6
				Bottom	8	25.6 25.6	25.6	8.1 8.1	8.1	28.6 28.6	28.6	94.7 94.3	94.5	6.5 6.5	6.5	6.5	10.7 10.9	10.8		7.7 6.5	7.1	
				Surface	1	25.2 25.2	25.2	8.2 8.2	8.2	29.4 29.5	29.5	103.1 103.3	103.2	7.2 7.2	7.2	7.2	4.2 4.1	4.2		10.8 4.0	7.4	
28-Oct-13	Cloudy	Moderate	14:09	Middle	4	24.9 24.9	24.9	8.2 8.2	8.2	30.1 30.1	30.1	101.6 101.5	101.6	7.1 7.1	7.1	1.2	4.6 4.5	4.6	5.0	3.8 3.4	3.6	4.9
				Bottom	7	24.7 24.7	24.7	8.2 8.2	8.2	30.8 30.8	30.8	98.1 97.5	97.8	6.8 6.8	6.8	6.8	6.0 6.5	6.3		3.4 4.0	3.7	
				Surface	1	24.9 24.9	24.9	8.2 8.2	8.2	25.7 25.7	25.7	103.6 102.5	103.1	7.4 7.3	7.4	7.1	3.5 3.6	3.6		5.0 4.2	4.6	
30-Oct-13	Sunny	Calm	15:09	Middle	4	24.2 24.2	24.2	8.2 8.2	8.2	28.1 28.2	28.2	94.8 95.3	95.1	6.8 6.8	6.8	1.1	3.1 3.4	3.3	5.6	5.2 5.0	5.1	5.1
				Bottom	7	24.1 24.1	24.1	8.1 8.1	8.1	30.6 30.6	30.6	78.6 76.0	77.3	5.6 5.4	5.5	5.5	9.7 10.2	10.0		3.6 7.8	5.7	

Water Quality Monitoring Results at ST3 - Mid-Ebb Tide

Date	Weather	Sea	Sampling	Dont	h (m)	Tempera	ature (°C)	þ	рН	Salir	nity ppt	DO Satu	ration (%)	Disso	lved Oxygen	(mg/L)	-	Turbidity(NT	J)	Suspe	ended Solids	(mg/L)
Date	Condition	Condition**	Time	Dept	n (m)	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
				Surface	1	28.0 28.0	28.0	8.3 8.3	8.3	27.9 27.9	27.9	72.2 71.4	71.8	5.5 5.5	5.5	5.4	4.4 4.3	4.4		5.2 4.2	4.7	
2-Oct-13	Sunny	Moderate	11:29	Middle	7	27.8 27.8	27.8	8.3 8.3	8.3	29.5 29.5	29.5	70.1 69.9	70.0	5.3 5.3	5.3	5.4	7.6 7.6	7.6	7.3	4.4 4.4	4.4	5.3
				Bottom	13	27.8 27.8	27.8	8.3 8.3	8.3	30.0 30.0	30.0	68.3 68.7	68.5	5.2 5.2	5.2	5.2	10.5 9.5	10.0		5.4 8.0	6.7	
				Surface	1	28.1 28.0	28.1	8.2 8.2	8.2	27.8 27.7	27.8	92.6 92.1	92.4	6.2 6.2	6.2		9.6 9.5	9.6		16.0 14.6	15.3	
4-Oct-13	Cloudy	Moderate	12:53	Middle	6	27.8	27.8	8.1	8.2	25.5	25.6	90.1	91.0	6.2	6.3	6.3	9.3	9.0	14.7	14.4	15.0	14.8
				Bottom	11	27.7 27.8	27.8	8.2 8.1	8.2	25.6 29.9	29.9	91.9 86.5	87.5	6.3 5.8	5.9	5.9	8.6 24.1	25.5		15.6 14.0	14.0	
				Surface	1	27.8 27.4	27.4	8.2 8.2	8.2	29.9 27.4	27.4	88.5 97.1	94.3	5.9 6.6	6.4		26.9 16.3	16.0		14.0 17.7	18.0	
7-Oct-13	Sunny	Moderate	14:34	Middle	6	27.4 27.4	27.4	8.2 8.2	8.2	27.4 27.4	27.4	91.5 92.5	92.5	6.2 6.3	6.3	6.4	15.6 17.3	17.2	17.8	18.3 16.3	16.8	17.2
	cumy	modorato	1 110 1	Bottom	11	27.4 27.4	27.4	8.2 8.2	8.2	27.4 27.4	27.4	92.5 81.0	85.5	6.3 5.5	5.8	5.8	17.1 21.5	20.3		17.3 18.7	16.9	
				Surface	1	27.4 27.4	27.4	8.2 8.2	8.2	27.4 29.0	29.1	89.9 96.9	96.6	6.1 7.1	7.1	0.0	19.0 4.3	4.3		15.0 5.2	4.9	
0.0.1.40	0		45.50			27.4 27.3		8.2 8.2		29.1 29.4		96.3 91.9		7.0 6.7		6.9	4.2 4.8			4.6 4.0		5.0
9-Oct-13	Cloudy	Moderate	15:58	Middle	6	27.3 27.2	27.3	8.2 8.2	8.2	29.3 29.9	29.4	91.8 85.6	91.9	6.7 6.3	6.7		4.6 6.9	4.7	5.3	5.1 5.5	4.6	5.0
				Bottom	11	27.2 28.2	27.2	8.2 8.1	8.2	<u>29.1</u> 26.1	29.5	87.7 107.2	86.7	6.5 7.2	6.4	6.4	7.0	7.0		5.5 4.2	5.5	
				Surface	1	28.2	28.2	8.1 8.1	8.1	<u>26.1</u> 27.0	26.1	107.2	107.2	7.2	7.2	7.2	3.5 5.4	3.6		2.2	3.2	
11-Oct-13	Fine	Moderate	16:37	Middle	3	27.6 27.3	27.6	8.1 8.1	8.1	27.0	27.0	105.4	105.6	7.2 7.2 6.8	7.2		5.5 10.7	5.5	6.6	3.5 2.6	3.1	3.2
				Bottom	5	27.3	27.3	8.1	8.1	29.3	29.3	100.5	100.5	6.8	6.8	6.8	10.7	10.7		3.7	3.2	
				Surface	1	27.4 27.5	27.5	8.3 8.3	8.3	29.6 29.6	29.6	90.1 88.7	89.4	6.0 5.9	6.0	6.0	8.3 8.0	8.2		7.8 5.3	6.6	
15-Oct-13	Cloudy	Moderate	10:25	Middle	6	27.4 27.4	27.4	8.3 8.3	8.3	30.2 30.3	30.3	89.2 88.2	88.7	6.0 5.9	6.0		10.4 11.8	11.1	11.6	5.2 6.0	5.6	5.9
				Bottom	11	27.4 27.4	27.4	8.3 8.3	8.3	30.4 30.4	30.4	88.0 87.8	87.9	5.9 5.9	5.9	5.9	15.9 15.3	15.6		4.3 6.7	5.5	
				Surface	1	27.1 27.2	27.2	8.2 7.9	8.1	31.3 28.6	30.0	116.6 119.2	117.9	7.8 8.1	8.0	7.0	4.5 4.9	4.7		7.4 6.8	7.1	
17-Oct-13	Sunny	Calm	12:24	Middle	7.5	27.0 27.2	27.1	8.2 8.1	8.2	31.6 29.6	30.6	90.4 90.0	90.2	6.0 6.0	6.0	1.0	10.2 10.3	10.3	10.7	8.2 7.6	7.9	7.6
				Bottom	14	27.0 27.2	27.1	8.2 8.1	8.2	31.6 29.8	30.7	87.5 88.1	87.8	5.8 5.9	5.9	5.9	17.7 16.4	17.1		7.6 8.0	7.8	
				Surface	1	26.8 26.8	26.8	8.2 8.2	8.2	29.6 29.6	29.6	79.8 80.7	80.3	6.1 6.2	6.2		9.5 8.5	9.0		4.4 5.0	4.7	
19-Oct-13	Sunny	Calm	14:16	Middle	7.5	26.7 26.7	26.7	8.2 8.2	8.2	30.6 30.2	30.4	80.4 82.6	81.5	6.1 6.3	6.2	6.2	11.1 9.8	10.5	10.0	5.0 4.6	4.8	4.7
				Bottom	14	26.7 26.7 26.7	26.7	8.2 8.2	8.2	30.6 30.2	30.4	80.5 80.8	80.7	6.1 6.2	6.2	6.2	10.2 10.6	10.4		3.8 5.2	4.5	

Water Quality Monitoring Results at ST3 - Mid-Ebb Tide

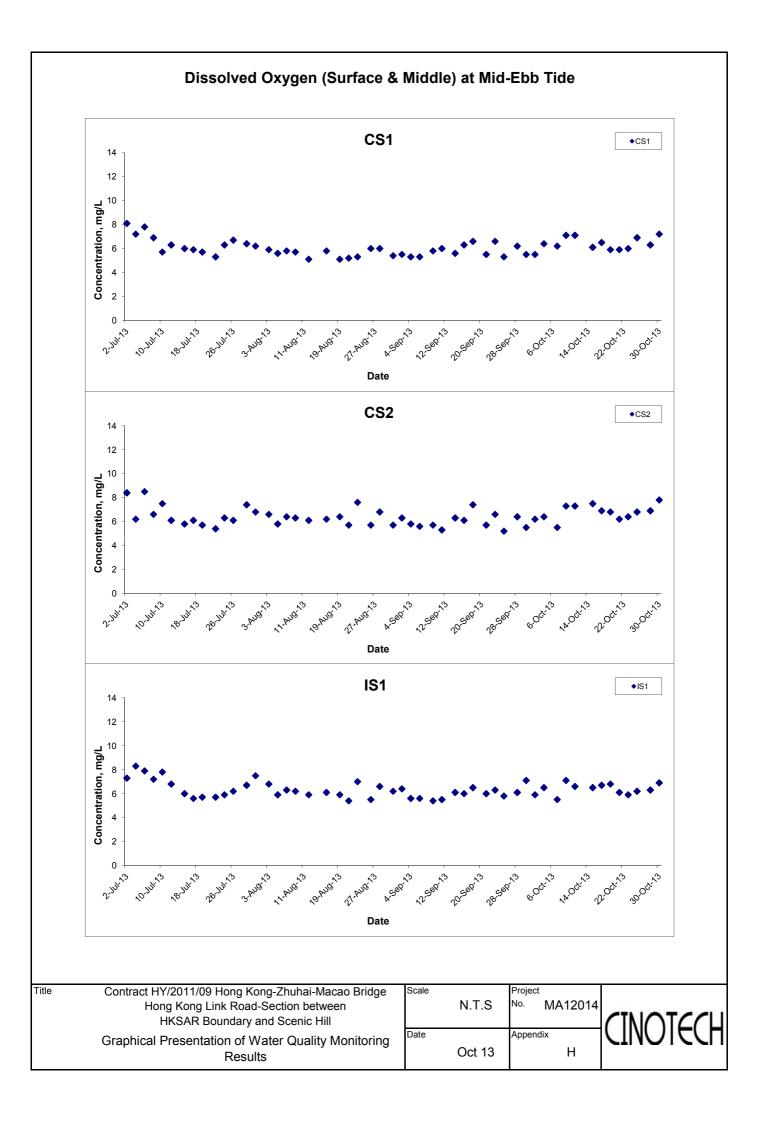
Date	Weather	Sea	Sampling	Dent	h (m)	Tempera	ature (°C)	ķ	рН	Salir	nity ppt	DO Satu	ration (%)	Dissol	ved Oxygen	(mg/L)	-	Turbidity(NTl	J)	Suspe	ended Solids	(mg/L)
Date	Condition	Condition**	Time	Бсрі	()	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
				Surface	1	26.0 26.0	26.0	8.1 8.1	8.1	29.8 29.8	29.8	86.2 86.0	86.1	5.9 5.9	5.9	5.8	5.4 5.4	5.4		6.7 6.3	6.5	
21-Oct-13	Sunny	Rough	14:50	Middle	6	25.8 25.8	25.8	8.1 8.1	8.1	30.5 30.5	30.5	82.6 83.3	83.0	5.7 5.7	5.7	0.0	20.4 18.5	19.5	17.4	6.8 5.5	6.2	6.7
				Bottom	11	25.8 25.8	25.8	8.1 8.1	8.1	30.6 30.6	30.6	80.4 80.1	80.3	5.5 5.5	5.5	5.5	27.2 27.5	27.4		7.8 6.7	7.3	
				Surface	1	26.4 26.4	26.4	8.1 8.2	8.2	29.6 29.9	29.8	92.3 89.8	91.1	6.4 6.2	6.3	6.2	3.9 4.4	4.2		5.3 5.4	5.4	
23-Oct-13	Sunny	Calm	14:05	Middle	7	26.4 26.4	26.4	8.2 8.2	8.2	30.2 30.3	30.3	89.2 88.6	88.9	6.1 6.1	6.1	0.2	6.3 5.6	6.0	6.1	4.5 5.6	5.1	6.3
				Bottom	13	26.3 26.3	26.3	8.2 8.2	8.2	30.4 30.6	30.5	88.4 87.6	88.0	6.1 6.0	6.1	6.1	8.1 8.2	8.2		7.0 9.7	8.4	
				Surface	1	25.6 25.6	25.6	8.1 8.1	8.1	30.5 30.5	30.5	103.8 103.4	103.6	7.2 7.1	7.2	7.0	7.9 7.9	7.9		6.2 6.7	6.5	
25-Oct-13	Sunny	Moderate	15:46	Middle	5.5	25.6 25.5	25.6	8.1 8.1	8.1	30.7 30.7	30.7	98.8 97.3	98.1	6.8 6.7	6.8	7.0	9.3 9.2	9.3	11.8	7.2 7.0	7.1	7.2
				Bottom	10	25.6 25.5	25.6	8.1 8.1	8.1	30.8 30.8	30.8	96.4 96.4	96.4	6.6 6.6	6.6	6.6	18.0 18.2	18.1		8.0 7.8	7.9	
				Surface	1	24.9 24.9	24.9	8.3 8.4	8.4	32.3 32.3	32.3	91.8 88.8	90.3	6.3 6.1	6.2	6.3	5.1 6.3	5.7		7.2 7.0	7.1	
28-Oct-13	Cloudy	Moderate	08:03	Middle	5.5	24.9 24.9	24.9	8.4 8.4	8.4	32.2 32.3	32.3	91.7 89.6	90.7	6.3 6.2	6.3	0.5	5.7 5.9	5.8	8.3	4.6 6.4	5.5	6.2
				Bottom	10	24.8 24.8	24.8	8.4 8.4	8.4	32.2 32.2	32.2	90.4 90.4	90.4	6.2 6.2	6.2	6.2	13.6 13.0	13.3		6.2 5.8	6.0	
				Surface	1	24.9 24.9	24.9	8.2 8.2	8.2	30.1 30.1	30.1	99.2 102.3	100.8	6.9 7.1	7.0	7.1	3.3 2.7	3.0		3.8 7.0	5.4	
30-Oct-13	Sunny	Calm	10:03	Middle	7	24.9 24.9	24.9	8.2 8.2	8.2	30.2 30.2	30.2	101.0 100.0	100.5	7.1 7.0	7.1	7.1	7.0 6.9	7.0	6.9	6.3 12.3	9.3	6.6
				Bottom	13	25.1 25.1	25.1	8.2 8.2	8.2	30.7 30.7	30.7	92.0 91.3	91.7	6.4 6.3	6.4	6.4	10.9 10.4	10.7		2.5 7.7	5.1	

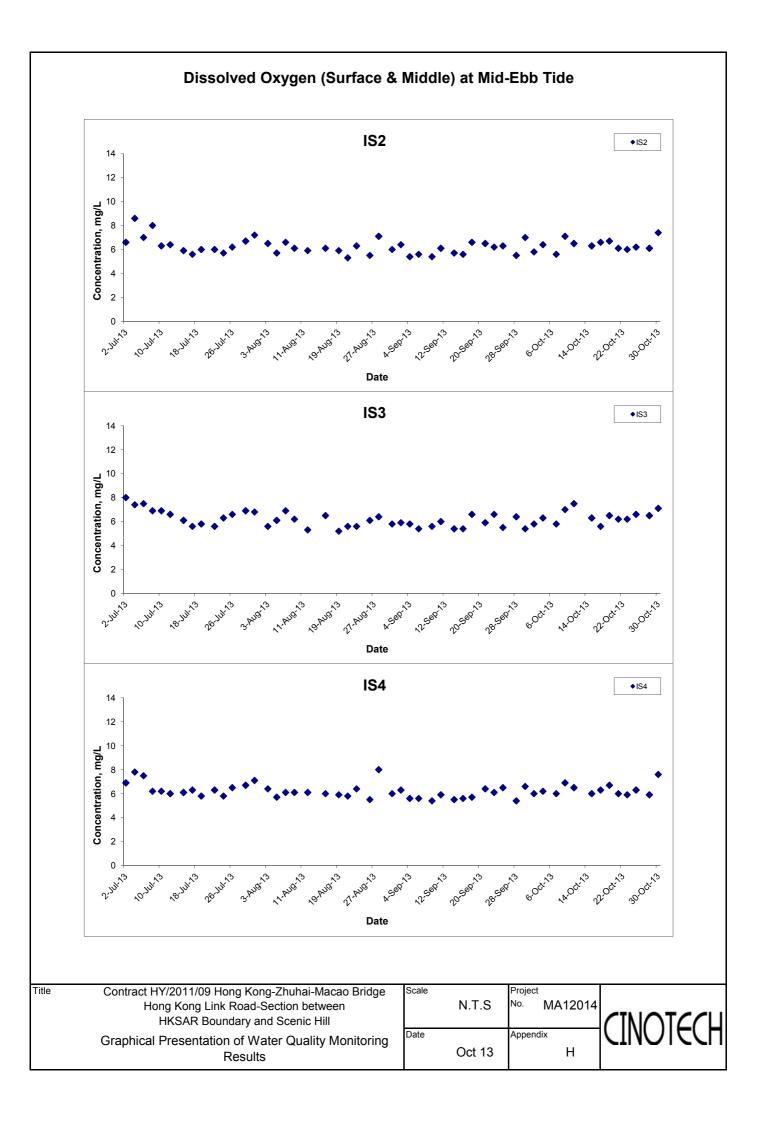
Water Quality Monitoring Results at ST3 - Mid-Flood Tide

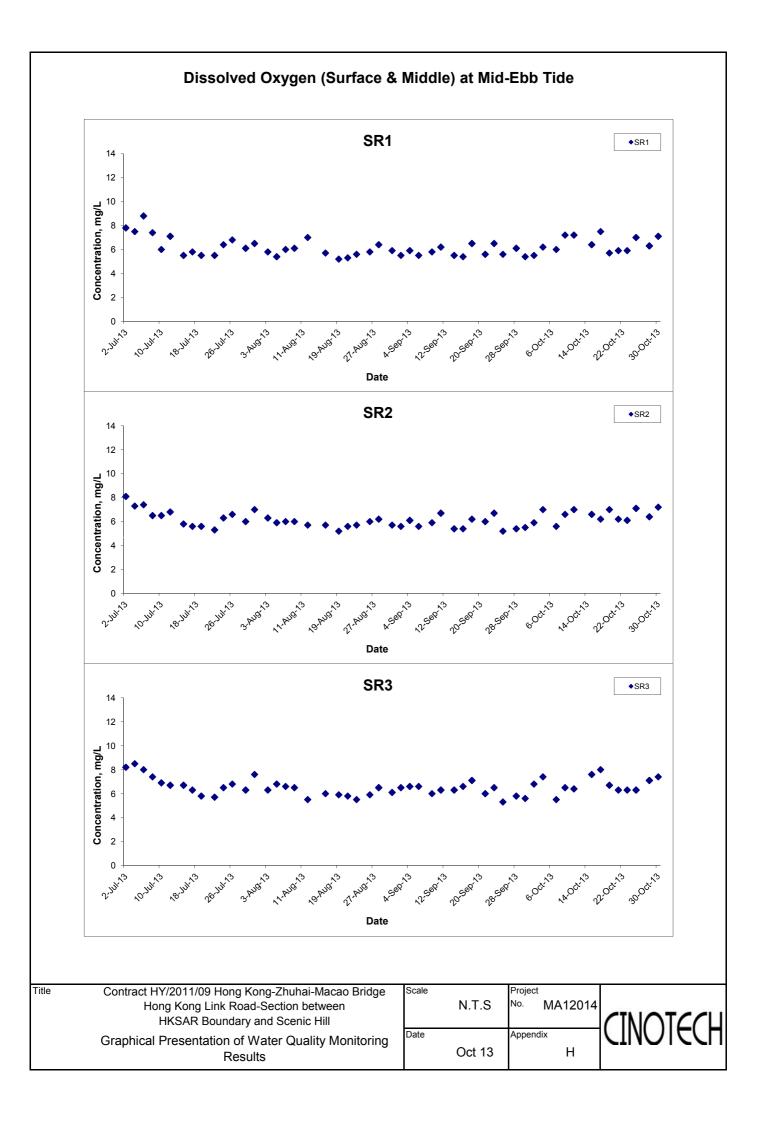
Date	Weather	Sea	Sampling	Dent	h (m)	Tempera	ature (°C)	p	ЪН	Salin	nity ppt	DO Satu	ration (%)	Disso	lved Oxygen	(mg/L)	-	Turbidity(NT	U)	Suspe	ended Solids	(mg/L)
Date	Condition	Condition**	Time	Dept	h (m)	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
				Surface	1	28.3 28.3	28.3	8.2 8.2	8.2	26.9 26.9	26.9	76.1 76.2	76.2	5.8 5.8	5.8	5.0	6.5 6.3	6.4		5.2 4.4	4.8	
2-Oct-13	Fine	Moderate	16:44	Middle	6.5	28.3 28.3	28.3	8.2 8.2	8.2	27.1 26.4	26.8	76.8 77.3	77.1	5.8 5.9	5.9	5.9	6.1 5.6	5.9	6.1	4.2 2.8	3.5	4.2
				Bottom	12	28.3 28.3	28.3	8.2 8.2	8.2	27.2 26.4	26.8	76.9 77.1	77.0	5.8 5.8	5.8	5.8	6.1 6.1	6.1		4.0 4.6	4.3	
				Surface	1	28.0 28.0	28.0	8.2 8.3	8.3	27.5 27.6	27.6	93.5 91.1	92.3	6.3 6.1	6.2		17.1 14.6	15.9		4.0 4.2	4.1	
4-Oct-13	Cloudy	Moderate	17:31	Middle	6.5	28.0	28.0	8.2	8.3	28.2	28.2	87.2	86.8	5.8	5.8	6.0	19.2	20.3	20.7	4.0	3.4	3.8
				Bottom	12	27.9 27.9	27.9	8.4 8.3	8.4	28.1 28.3	28.3	86.3 89.1	89.2	5.8 6.1	6.1	6.1	21.3 26.0	26.0	-	2.8 4.0	4.0	
				Surface	1	27.9 27.2	27.2	8.4 8.1	8.1	28.3 27.3	27.4	89.3 94.1	93.7	6.0 6.4	6.4		26.0 10.7	10.9		4.0 25.7	24.9	
7-Oct-13	Sunny	Moderate	09:30	Middle	5.5	27.2 27.2	27.2	8.1 8.1	8.1	27.4 27.7	27.7	93.2 93.8	93.5	6.3 6.3	6.3	6.4	11.1 19.5	18.7	16.6	24.0 24.0	24.5	27.7
7 000 10	Cunny	moderate	00.00	Bottom	10	27.2 27.2	27.2	8.1 8.1	8.1	27.6 27.8	27.7	93.2 93.7	93.4	6.3 6.3	6.3	6.3	17.8 20.3	20.2	10.0	25.0 33.7	33.7	21.1
				Surface	10	27.2 27.0	27.2	8.1 8.2	8.2	27.6 29.5	29.5	93.1 87.4	87.1	6.3 6.4	6.4	0.0	20.1	16.7		33.7 10.0	9.5	
			10.00			27.0 26.9	-	8.2 8.2		29.5 28.9		86.8 87.0		6.4 6.4	-	6.4	16.4 16.4	-		9.0 15.0		
9-Oct-13	Cloudy	Moderate	10:02	Middle	6.5	27.0 26.9	27.0	8.2 8.2	8.2	29.6 29.6	29.3	87.3 86.8	87.2	6.4 6.4	6.4		16.8 28.9	16.6	20.8	10.3 15.6	12.7	11.9
				Bottom	12	26.9 27.9	26.9	8.2 8.1	8.2	29.6 26.8	29.6	<u>86.7</u> 97.0	86.8	6.4 6.6	6.4	6.4	29.4 4.9	29.2		<u>11.6</u> 3.1	13.6	
				Surface	1	27.8	27.9	8.1 8.1	8.1	26.8 27.1	26.8	96.9 95.4	97.0	6.6 6.5	6.6	6.6	5.3	5.1	-	2.7 4.0	2.9	
11-Oct-13	Sunny	Moderate	12:29	Middle	3.5	27.4	27.4	8.1 8.1	8.1	27.1	27.1	95.1 94.3	95.3	6.5 6.4	6.5		21.3	20.0	17.9	2.7	3.4	3.6
				Bottom	6	27.4	27.4	8.1	8.1	27.2	27.2	94.3	94.3	6.4	6.4	6.4	29.0	28.6		3.9	4.5	
				Surface	1	28.1 28.0	28.1	8.0 8.0	8.0	26.1 26.4	26.3	104.6 102.4	103.5	7.1 6.9	7.0	7.0	3.4 3.3	3.4	-	3.4 3.5	3.5	
15-Oct-13	Cloudy	Moderate	15:14	Middle	6.5	27.8 27.8	27.8	8.0 8.0	8.0	26.9 27.0	27.0	104.2 102.0	103.1	7.0 6.9	7.0		3.0 3.1	3.1	5.0	3.3 2.9	3.1	3.0
				Bottom	12	27.6 27.6	27.6	8.0 8.0	8.0	28.5 28.8	28.7	101.2 100.9	101.1	6.8 6.8	6.8	6.8	8.1 8.8	8.5		2.3 2.3	2.3	
				Surface	1	27.2 27.2	27.2	8.1 8.1	8.1	29.0 29.0	29.0	111.6 111.6	111.6	7.5 7.5	7.5	7.5	6.1 6.1	6.1		5.2 5.3	5.3	
17-Oct-13	Sunny	Calm	16:22	Middle	5	27.2 27.2	27.2	8.1 8.1	8.1	29.8 29.8	29.8	112.2 112.2	112.2	7.5 7.5	7.5	1.0	6.9 6.9	6.9	6.8	5.5 4.8	5.2	5.0
				Bottom	9	27.2 27.2	27.2	8.2 8.2	8.2	29.9 29.9	29.9	109.9 109.9	109.9	7.4 7.4	7.4	7.4	7.3 7.3	7.3		4.3 4.5	4.4	
				Surface	1	27.1 27.1	27.1	8.0 8.1	8.1	28.0 28.5	28.3	99.5 100.0	99.8	7.5 7.6	7.6	7.2	6.5 6.6	6.6		11.0 10.8	10.9	
19-Oct-13	Fine	Calm	17:36	Middle	5	27.1 27.0	27.1	8.1 8.1	8.1	28.5 29.0	28.8	87.4 88.3	87.9	6.7 6.8	6.8	1.2	10.7 10.5	10.6	10.3	14.2 11.8	13.0	11.9
				Bottom	9	27.0 27.0	27.0	8.1 8.1	8.1	28.9 29.2	29.1	75.8 74.3	75.1	5.9 5.8	5.9	5.9	13.9 13.7	13.8	1	12.2	11.9	

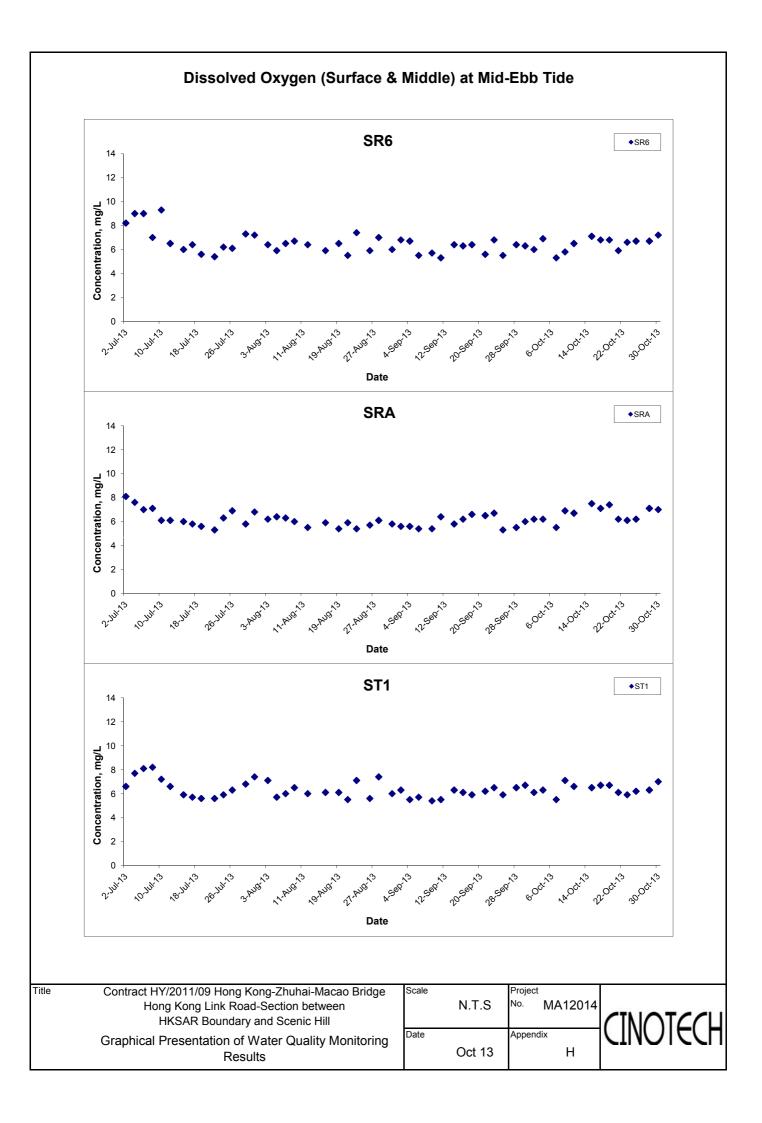
Water Quality Monitoring Results at ST3 - Mid-Flood Tide

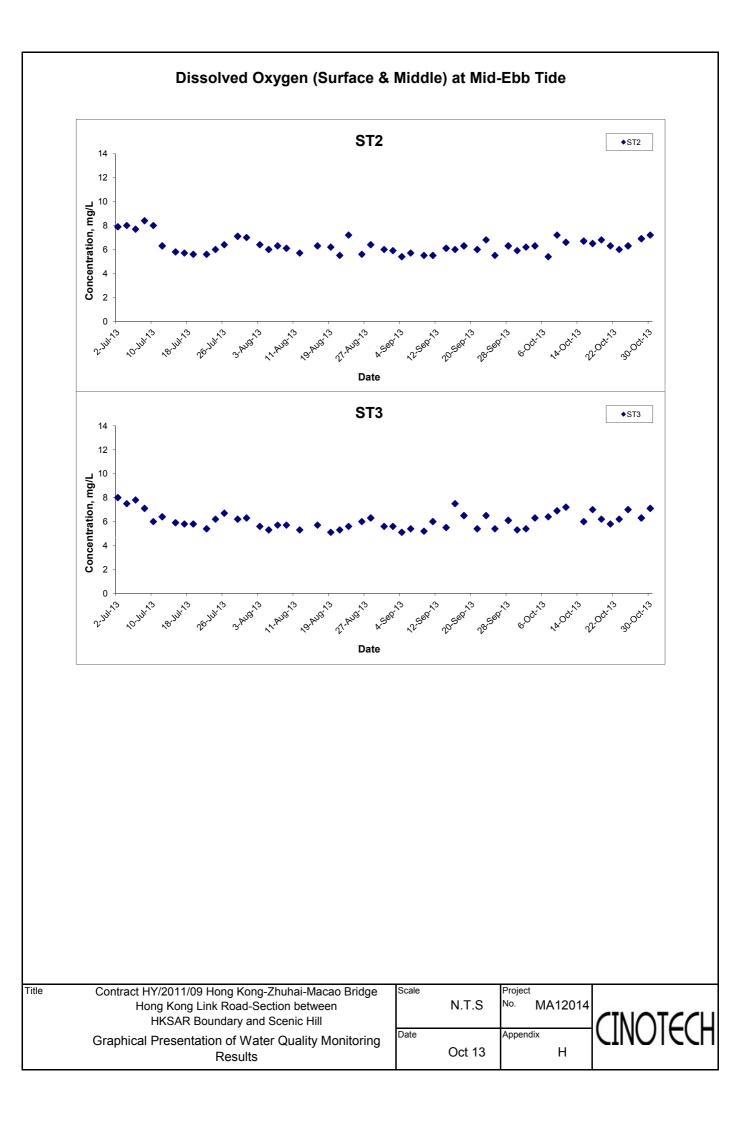
Date	Weather	Sea	Sampling	Dent	h (m)	Tempera	ature (°C)	ŗ	Η	Salir	nity ppt	DO Satu	ration (%)	Disso	lved Oxygen	(mg/L)	-	Turbidity(NT	J)	Suspe	ended Solids	(mg/L)
Date	Condition	Condition**	Time	Depi	()	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
				Surface	1	26.1 26.1	26.1	8.1 8.1	8.1	29.0 29.0	29.0	99.6 99.0	99.3	6.8 6.8	6.8	6.7	4.6 4.6	4.6		4.0 4.2	4.1	
21-Oct-13	Fine	Rough	18:35	Middle	6.5	26.1 26.1	26.1	8.1 8.1	8.1	29.6 29.6	29.6	96.1 96.8	96.5	6.6 6.6	6.6	0.1	7.9 7.5	7.7	7.6	3.3 3.5	3.4	4.1
				Bottom	12	26.0 26.0	26.0	8.1 8.1	8.1	29.7 29.7	29.7	92.3 92.0	92.2	6.3 6.3	6.3	6.3	10.6 10.4	10.5		6.1 3.6	4.9	
				Surface	1	26.2 26.2	26.2	8.2 8.2	8.2	29.9 29.9	29.9	86.4 86.3	86.4	6.0 6.0	6.0	6.0	10.3 10.0	10.2		21.0 22.3	21.7	
23-Oct-13	Sunny	Calm	10:18	Middle	7	26.2 26.2	26.2	8.2 8.2	8.2	29.9 29.9	29.9	85.7 85.5	85.6	5.9 5.9	5.9	0.0	14.7 14.4	14.6	13.3	22.7 16.0	19.4	18.8
				Bottom	13	26.2 26.2	26.2	8.2 8.2	8.2	29.9 29.9	29.9	85.7 85.5	85.6	5.9 5.9	5.9	5.9	15.9 14.5	15.2		15.6 15.2	15.4	
				Surface	1	25.5 25.5	25.5	8.2 8.2	8.2	30.1 30.1	30.1	89.0 89.8	89.4	6.2 6.2	6.2	6.4	6.3 6.0	6.2		6.3 6.0	6.2	
25-Oct-13	Sunny	Moderate	12:28	Middle	7.5	25.6 25.6	25.6	8.2 8.2	8.2	29.9 29.9	29.9	93.7 93.7	93.7	6.5 6.5	6.5	0.4	10.0 10.0	10.0	11.7	6.0 6.2	6.1	6.3
				Bottom	14	25.3 25.3	25.3	8.2 8.2	8.2	30.5 30.5	30.5	88.9 89.1	89.0	6.1 6.2	6.2	6.2	18.8 19.0	18.9		7.0 6.2	6.6	
				Surface	1	25.1 25.1	25.1	8.1 8.1	8.1	31.9 32.0	32.0	101.7 101.0	101.4	7.0 7.0	7.0	7.0	9.2 9.5	9.4		4.7 5.0	4.9	
28-Oct-13	Cloudy	Moderate	15:18	Middle	5.5	25.0 25.0	25.0	8.1 8.2	8.2	31.9 31.9	31.9	101.3 100.3	100.8	7.0 6.9	7.0	7.0	12.0 10.4	11.2	11.7	5.2 8.0	6.6	5.1
				Bottom	10	24.9 25.0	25.0	8.1 8.1	8.1	31.9 28.9	30.4	102.2 101.1	101.7	7.1 7.1	7.1	7.1	14.7 14.4	14.6		4.2 3.4	3.8	
				Surface	1	25.7 25.7	25.7	8.1 8.1	8.1	26.9 26.9	26.9	102.2 103.1	102.7	7.2 7.2	7.2	7.2	2.6 2.6	2.6		3.2 2.2	2.7	
30-Oct-13	Sunny	Calm	15:02	Middle	7	25.6 25.6	25.6	8.2 8.2	8.2	27.4 27.4	27.4	102.9 103.1	103.0	7.2 7.2	7.2	1.2	6.7 6.7	6.7	5.9	3.2 3.4	3.3	2.8
				Bottom	13	25.7 25.7	25.7	8.2 8.2	8.2	27.4 27.4	27.4	102.4 102.2	102.3	7.2 7.1	7.2	7.2	8.4 8.5	8.5		2.2 2.6	2.4	

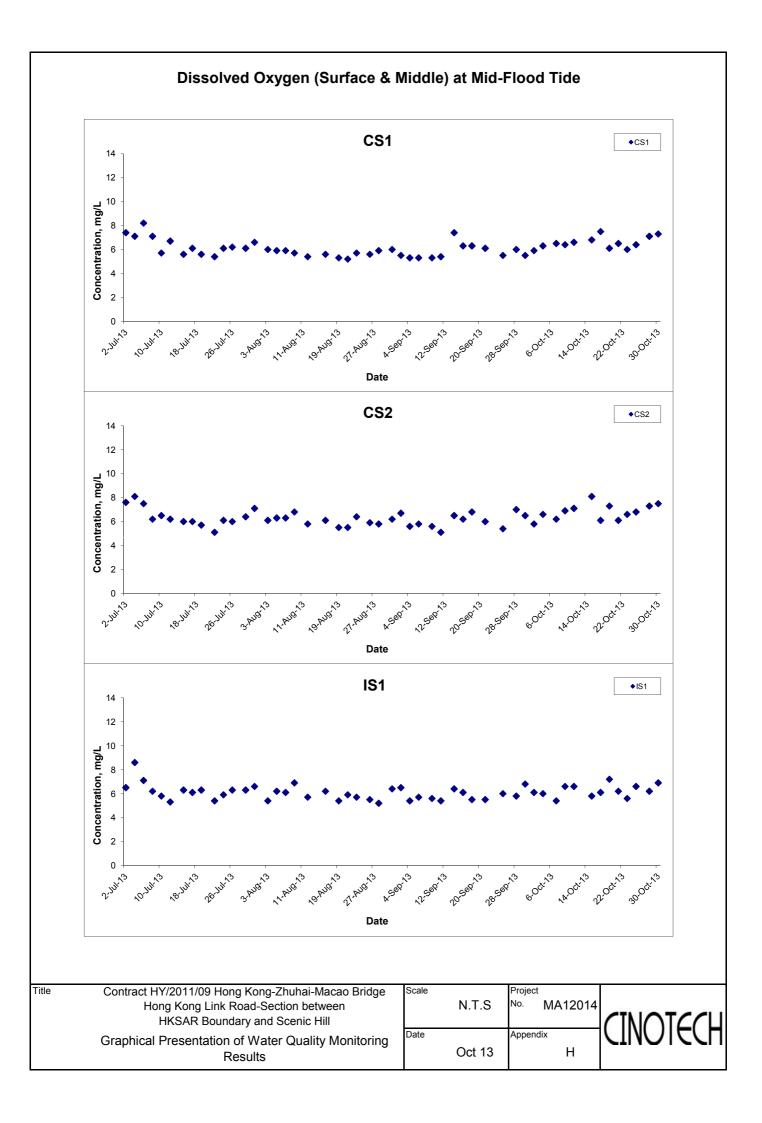


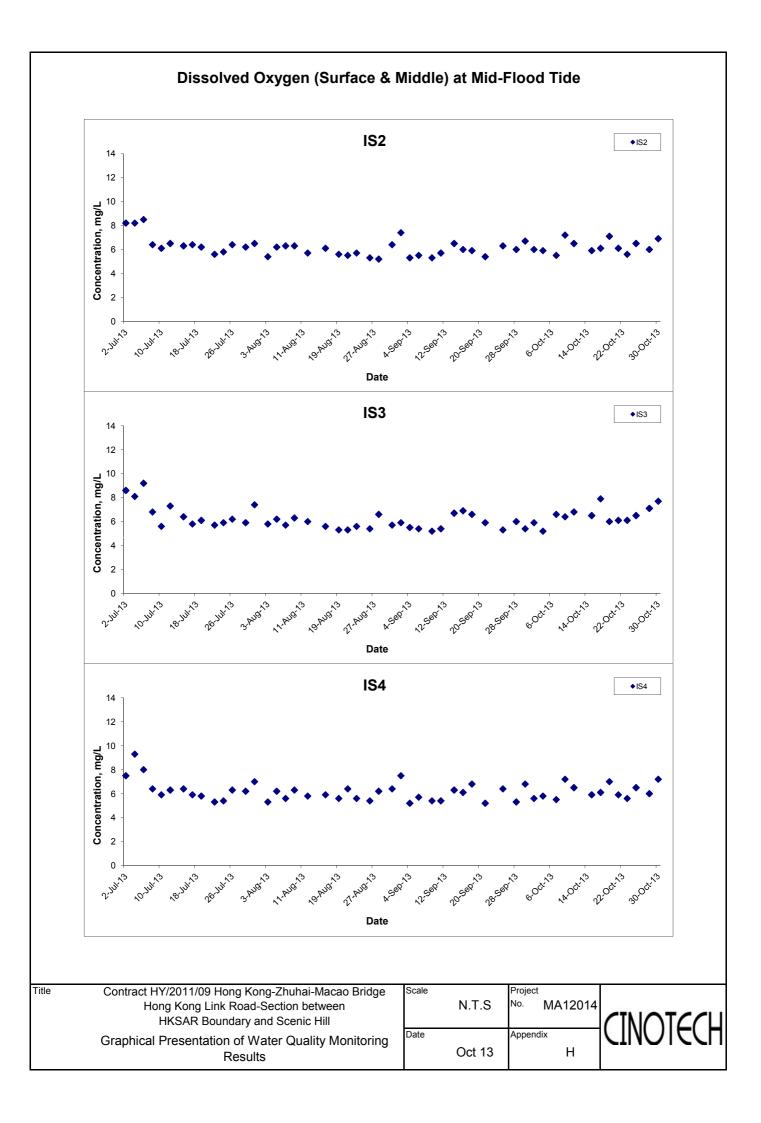


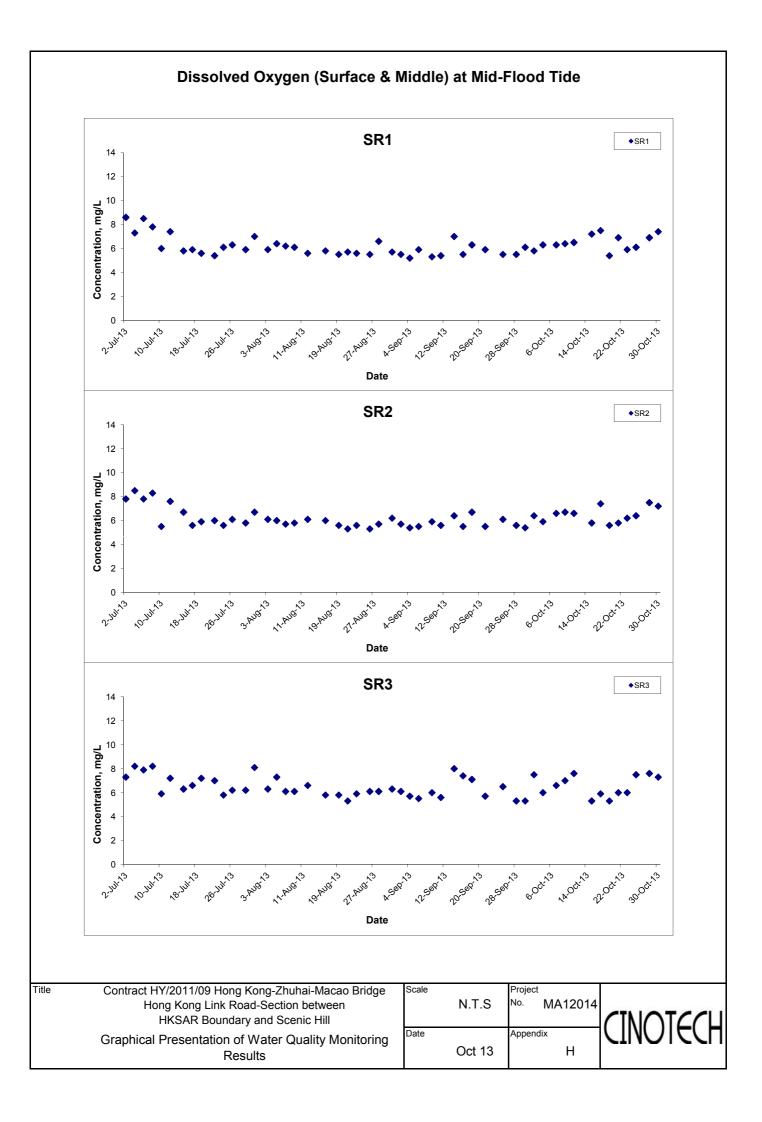


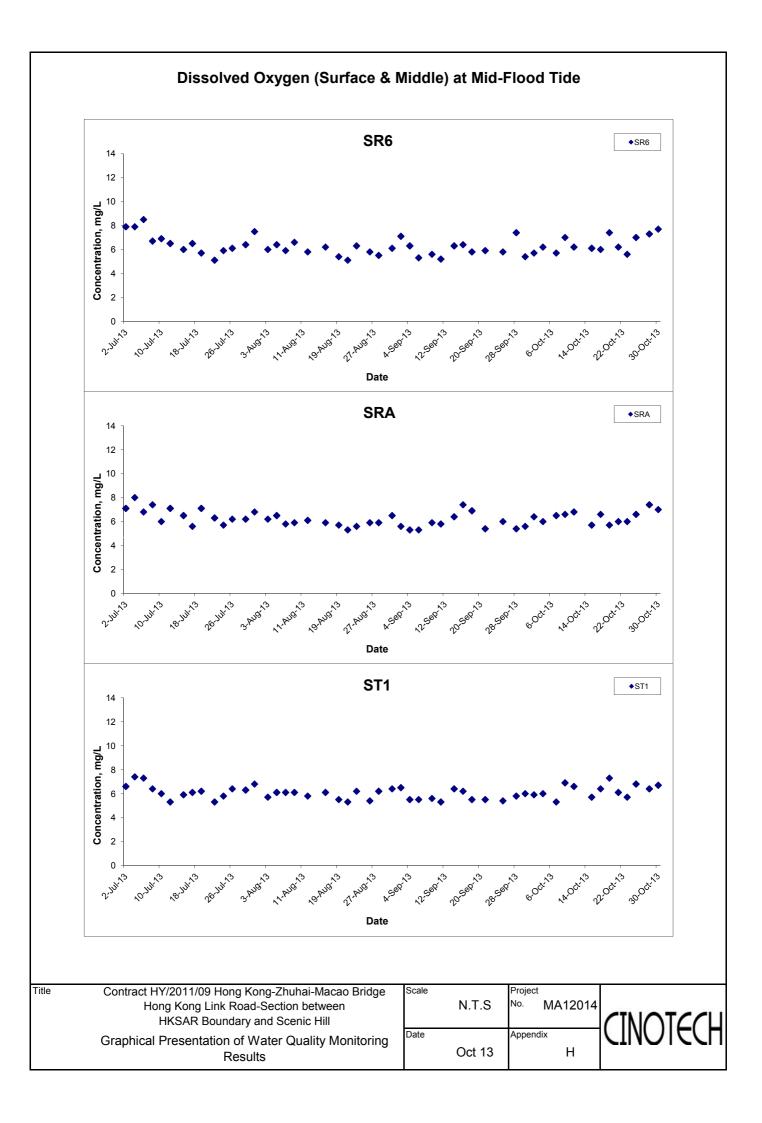


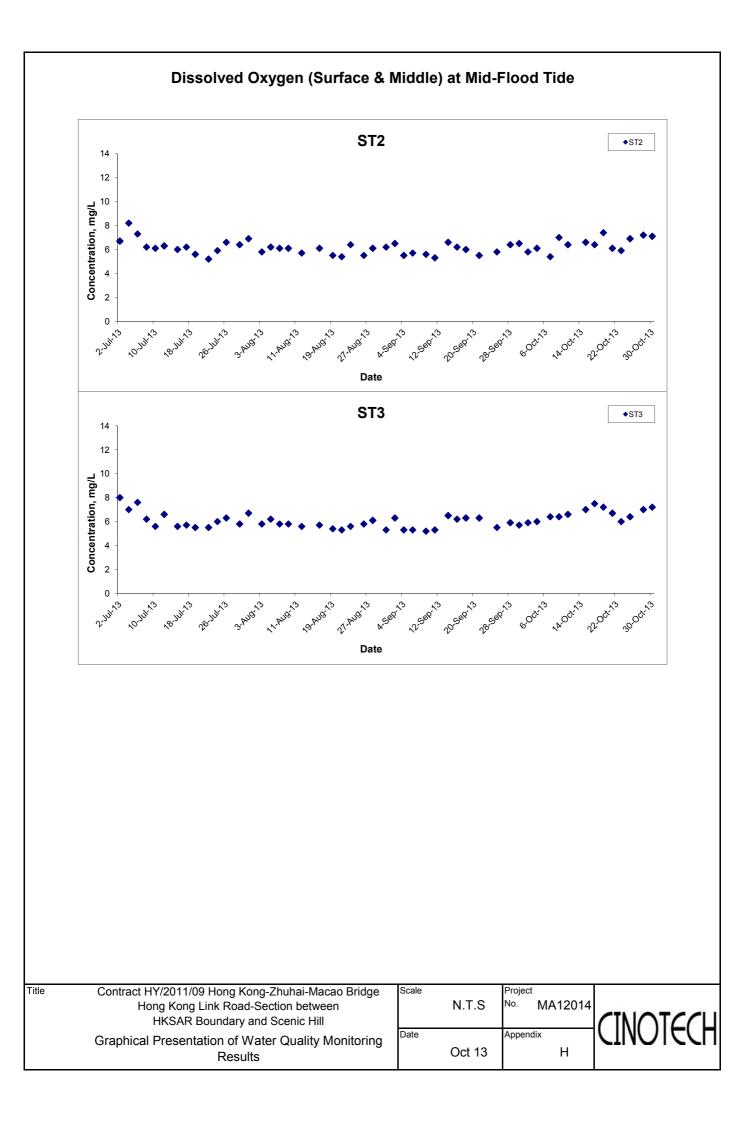


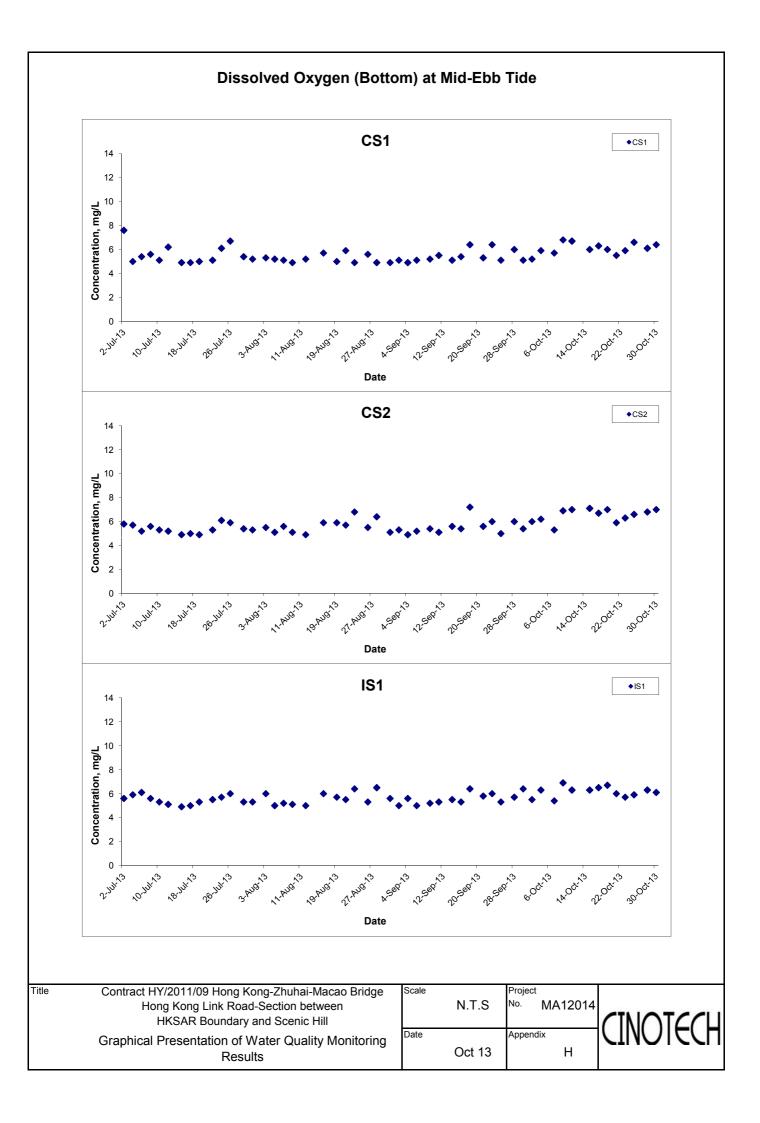


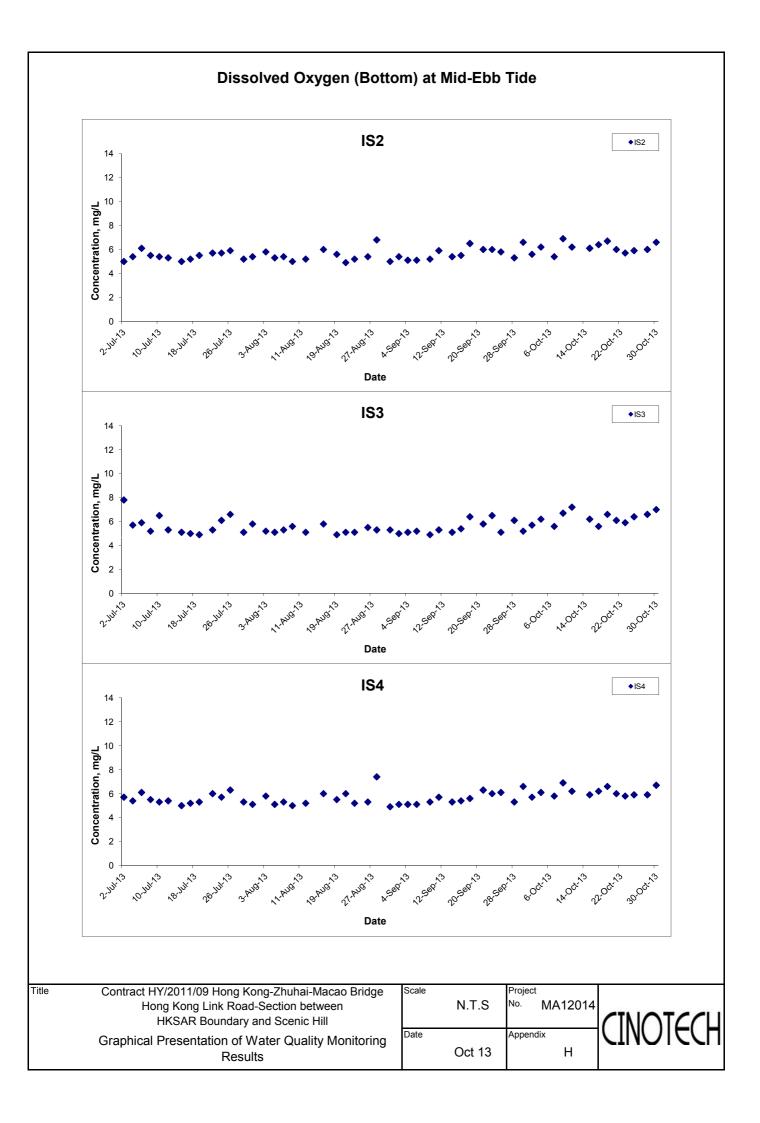


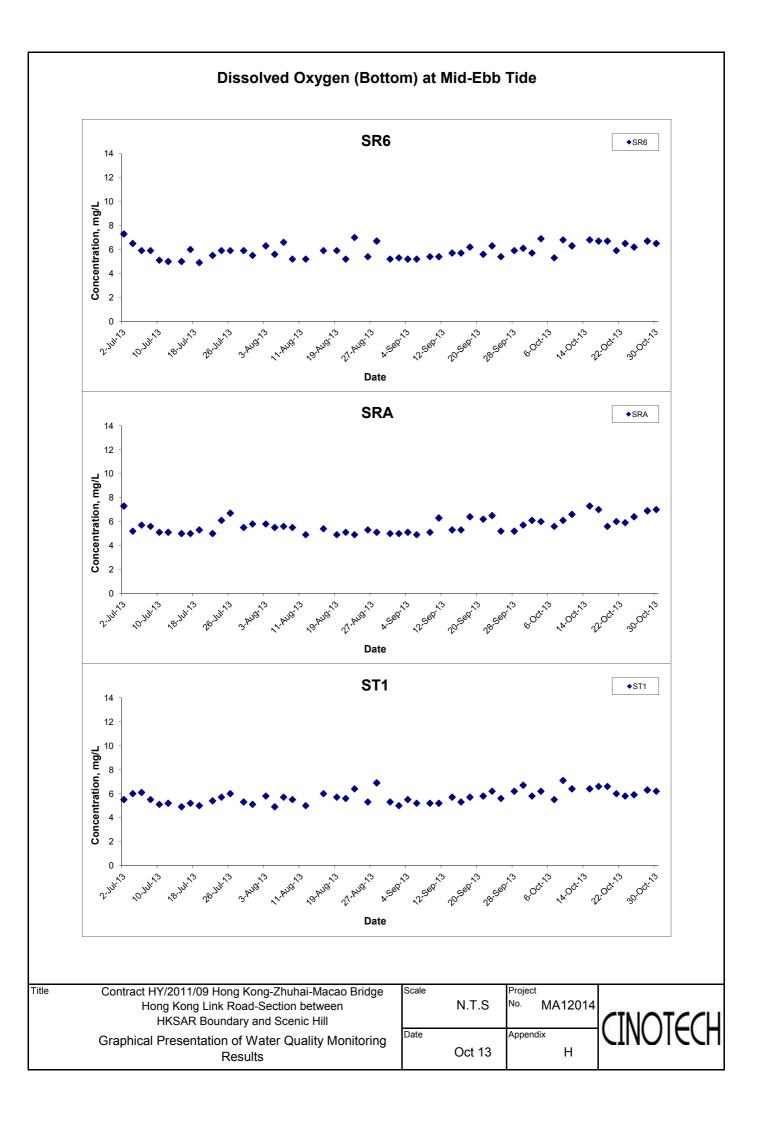


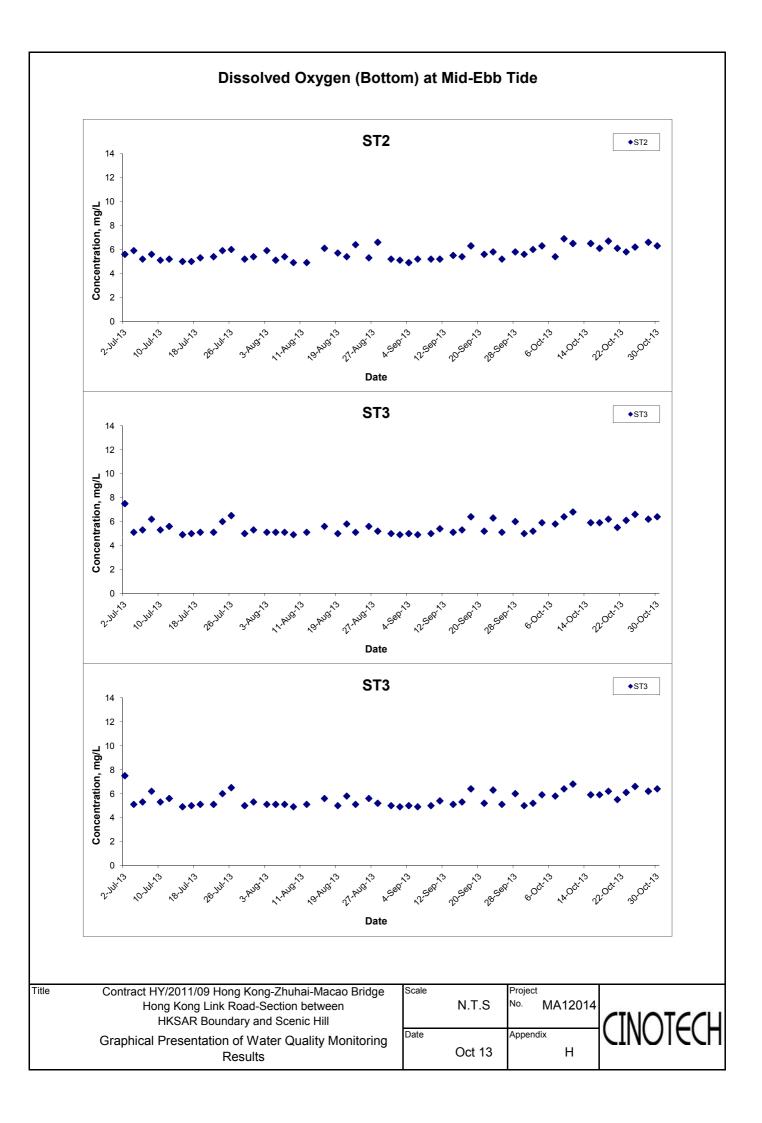


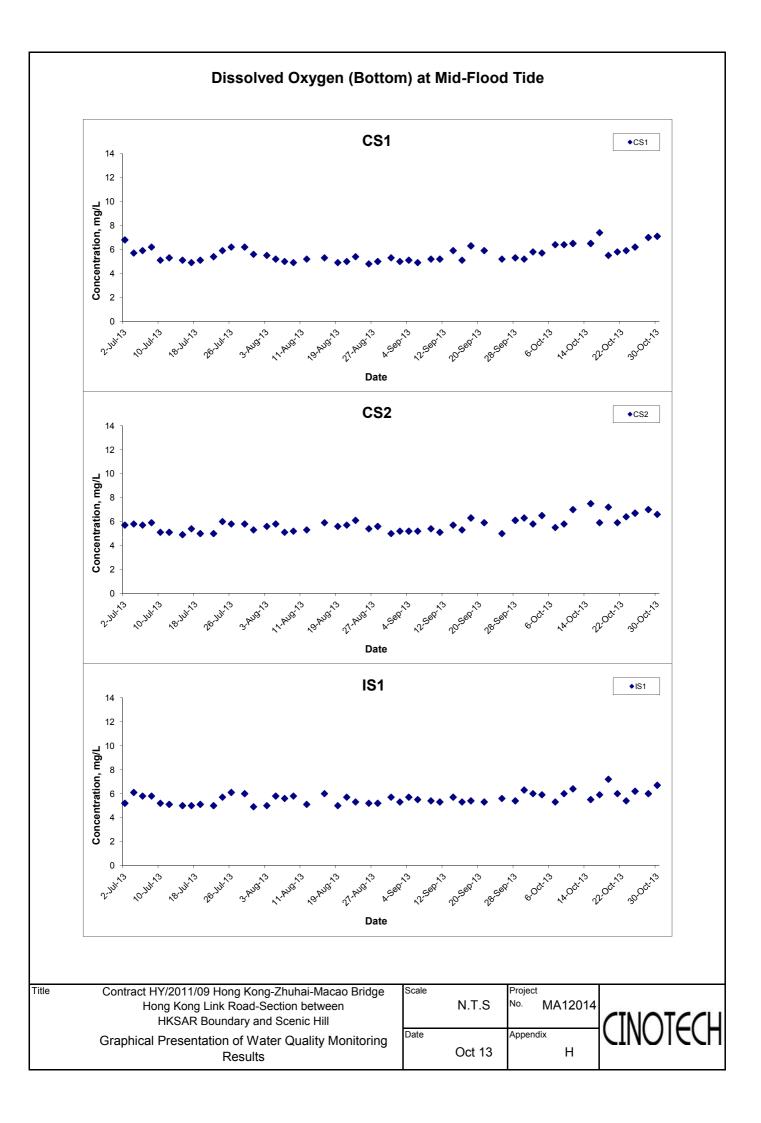


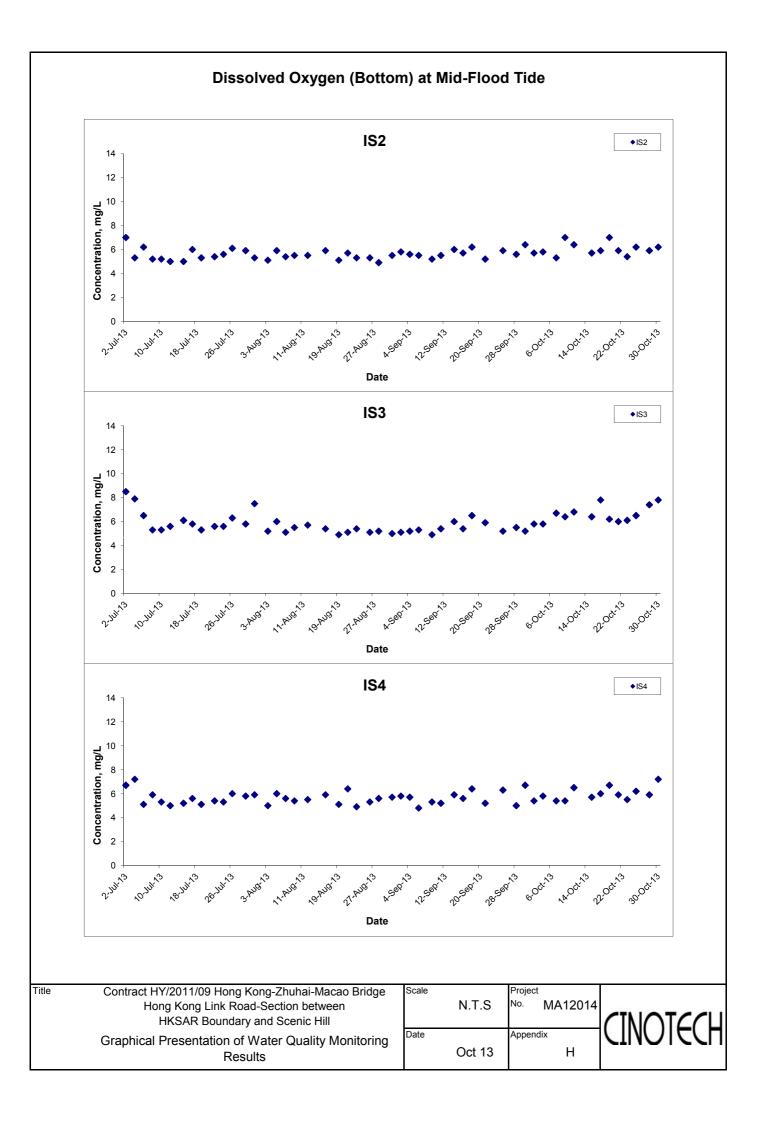


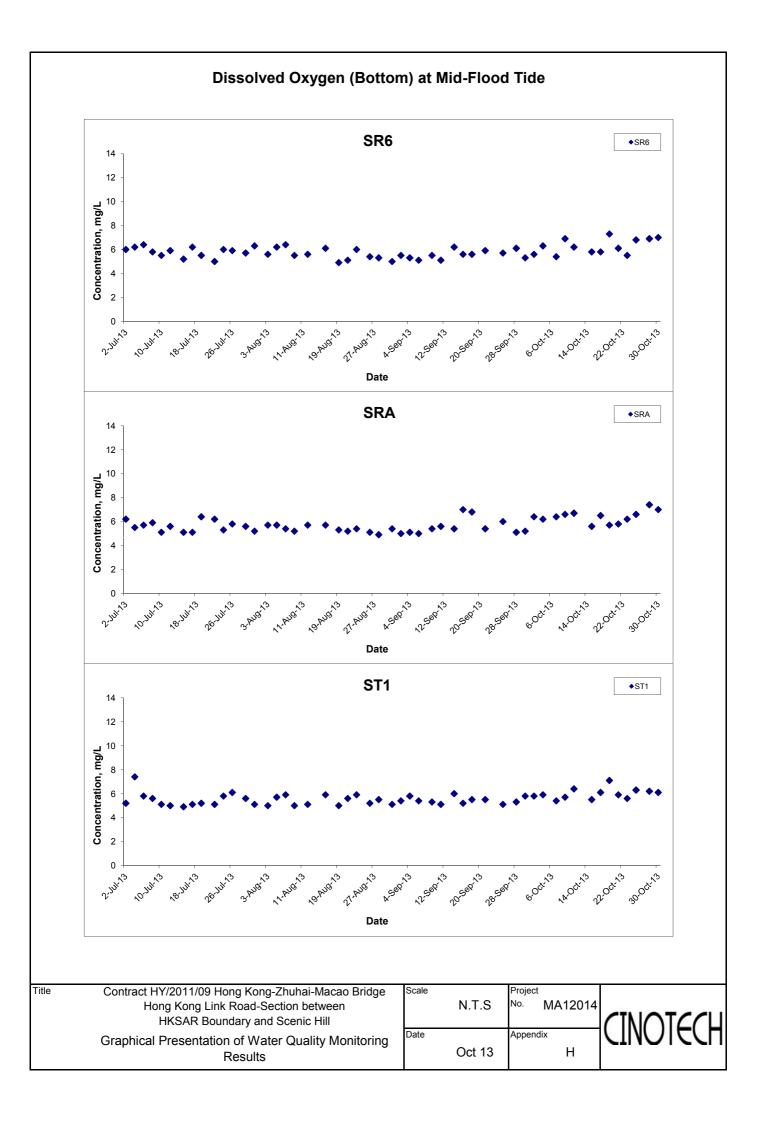


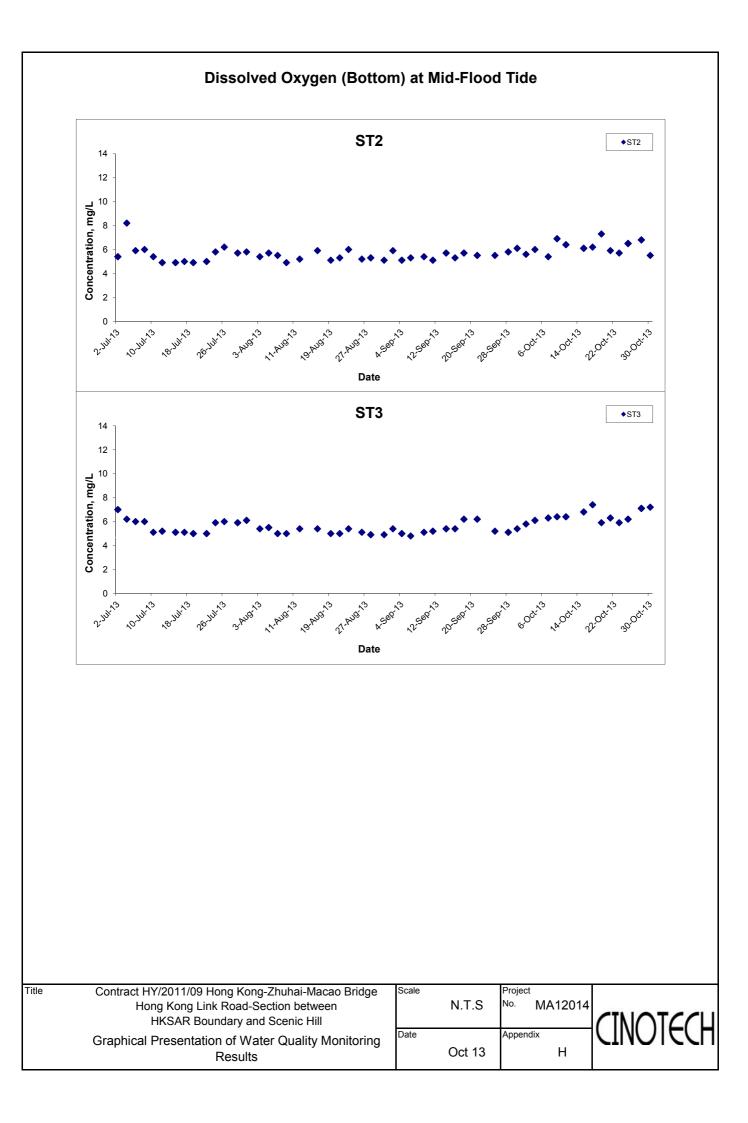


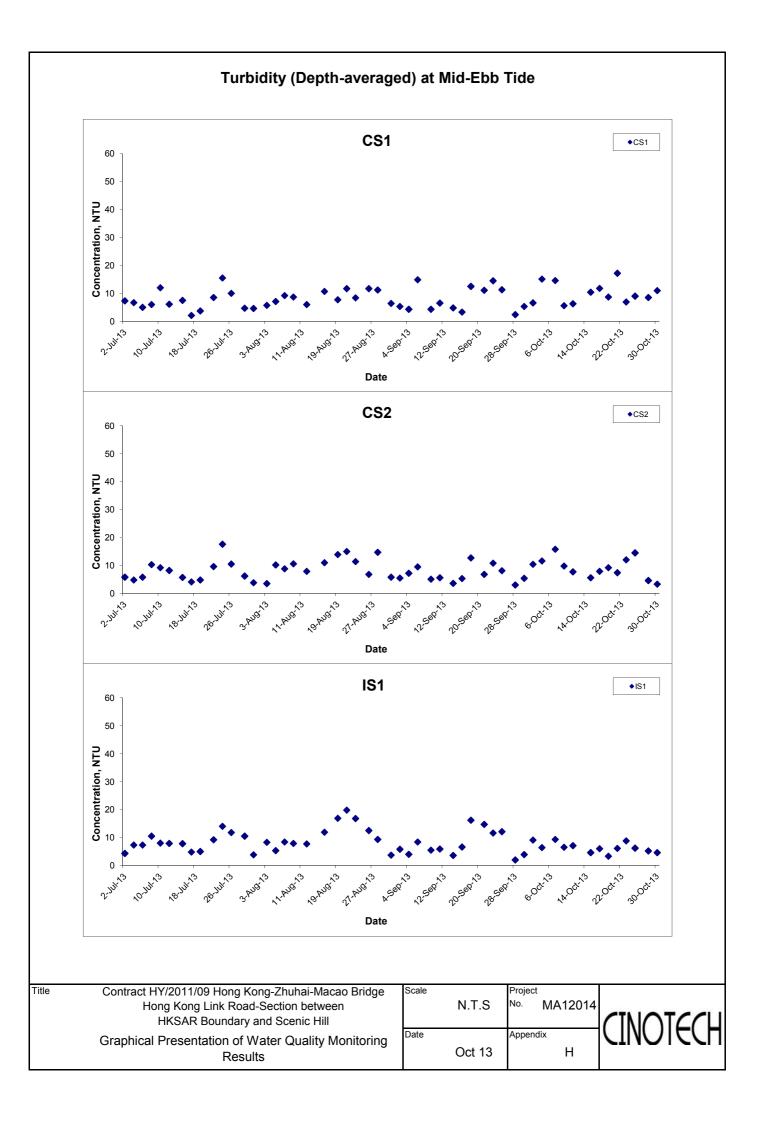


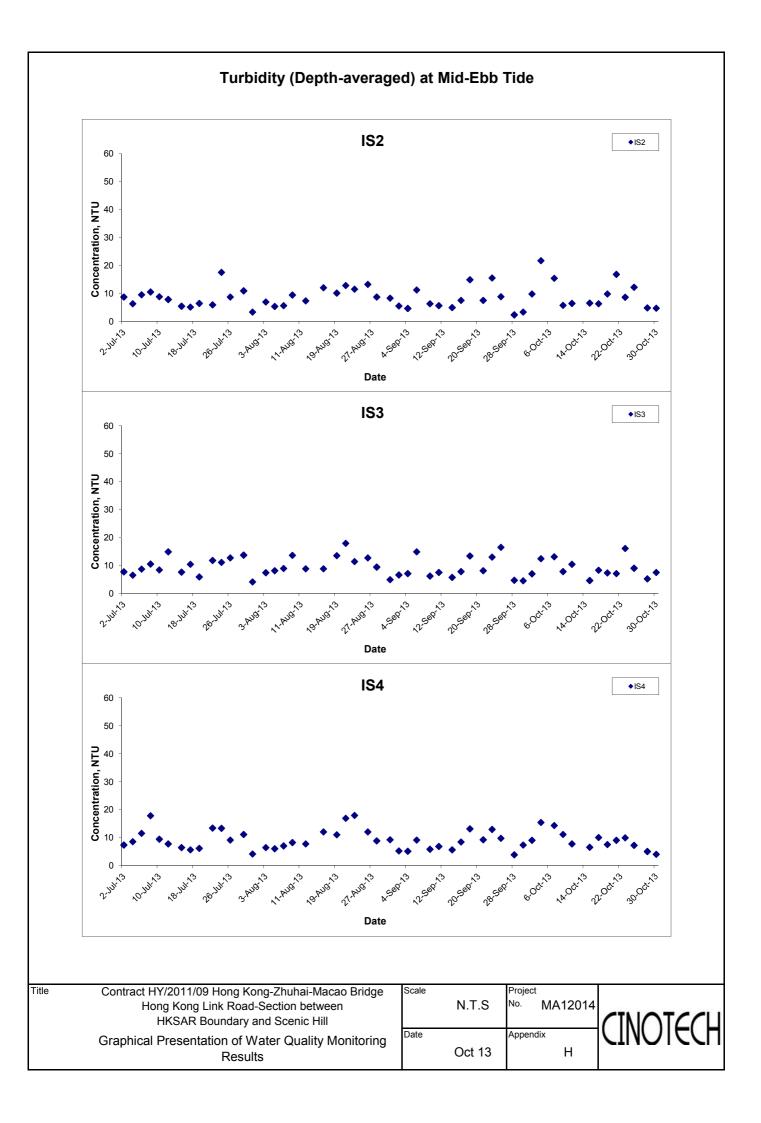


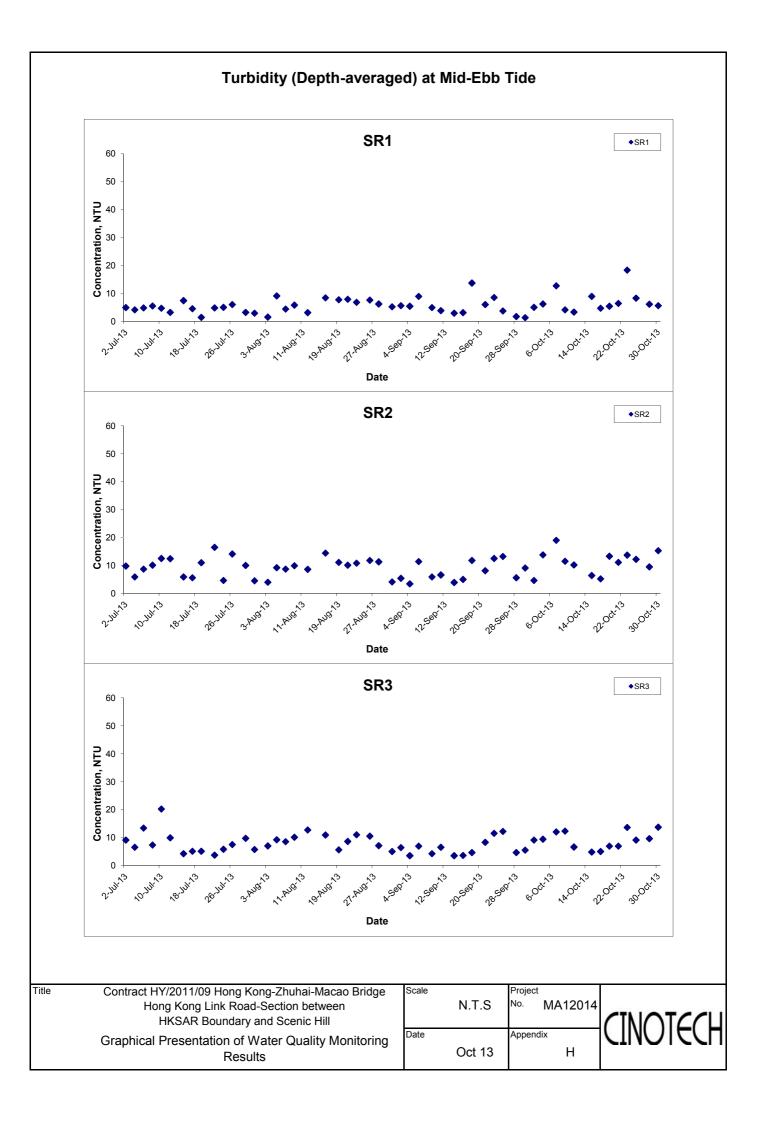


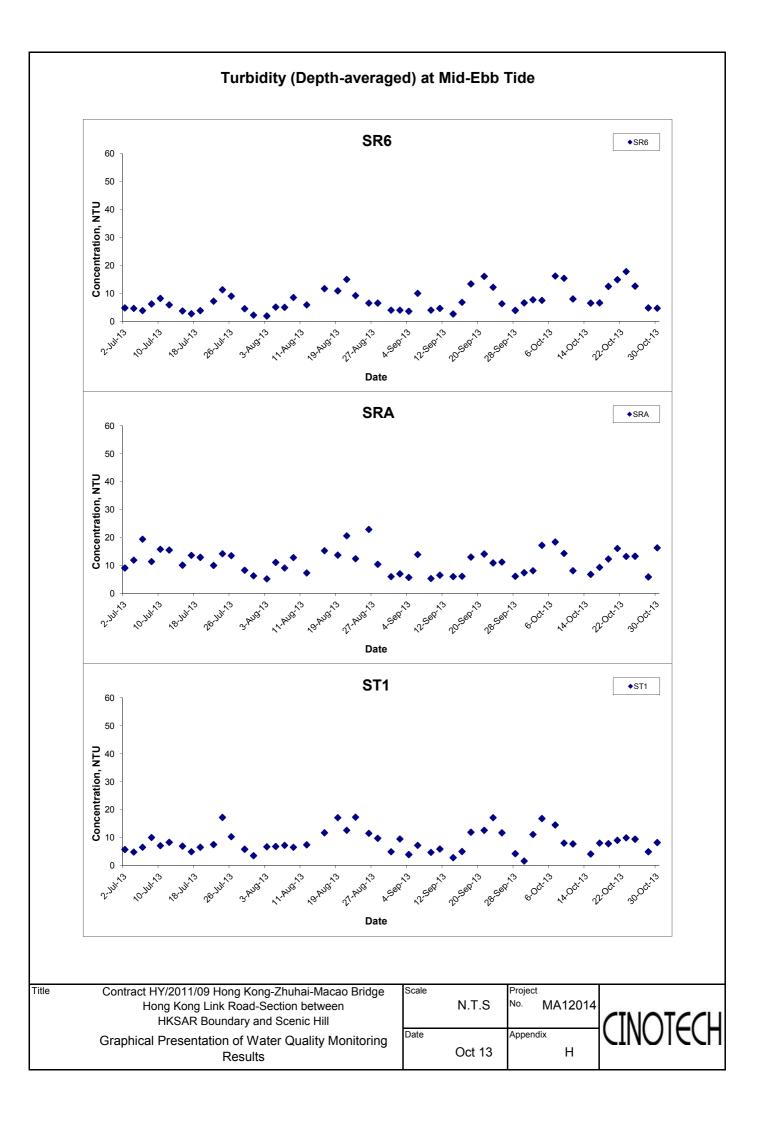


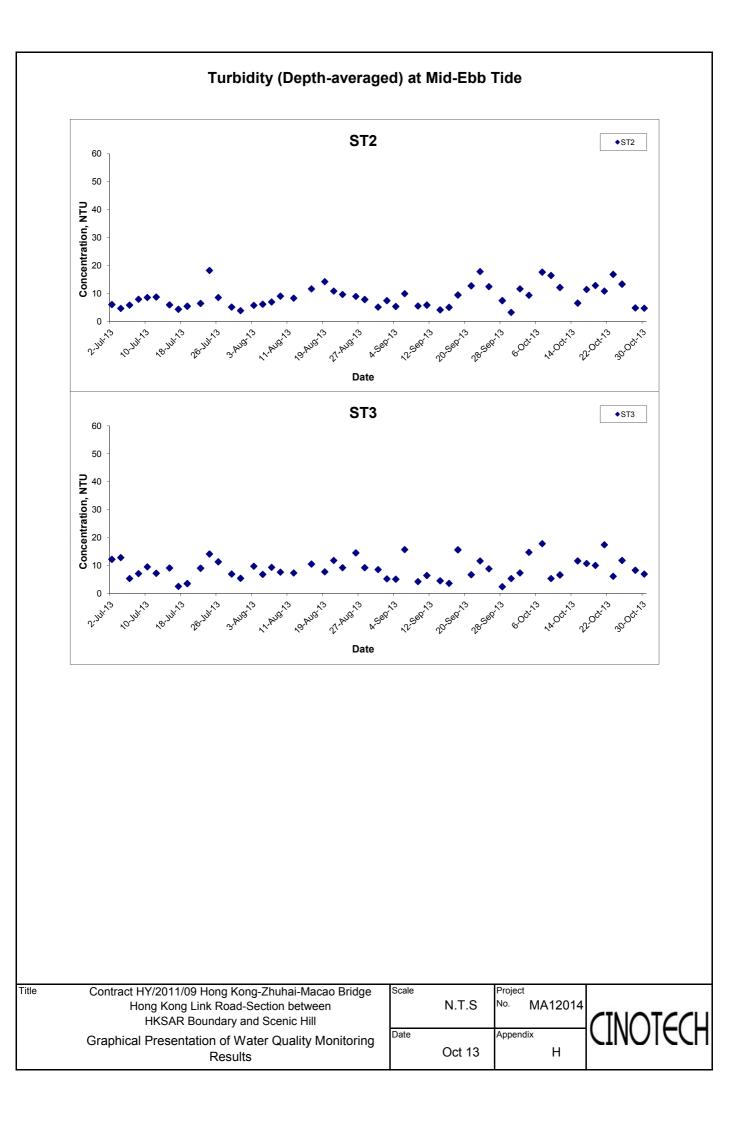


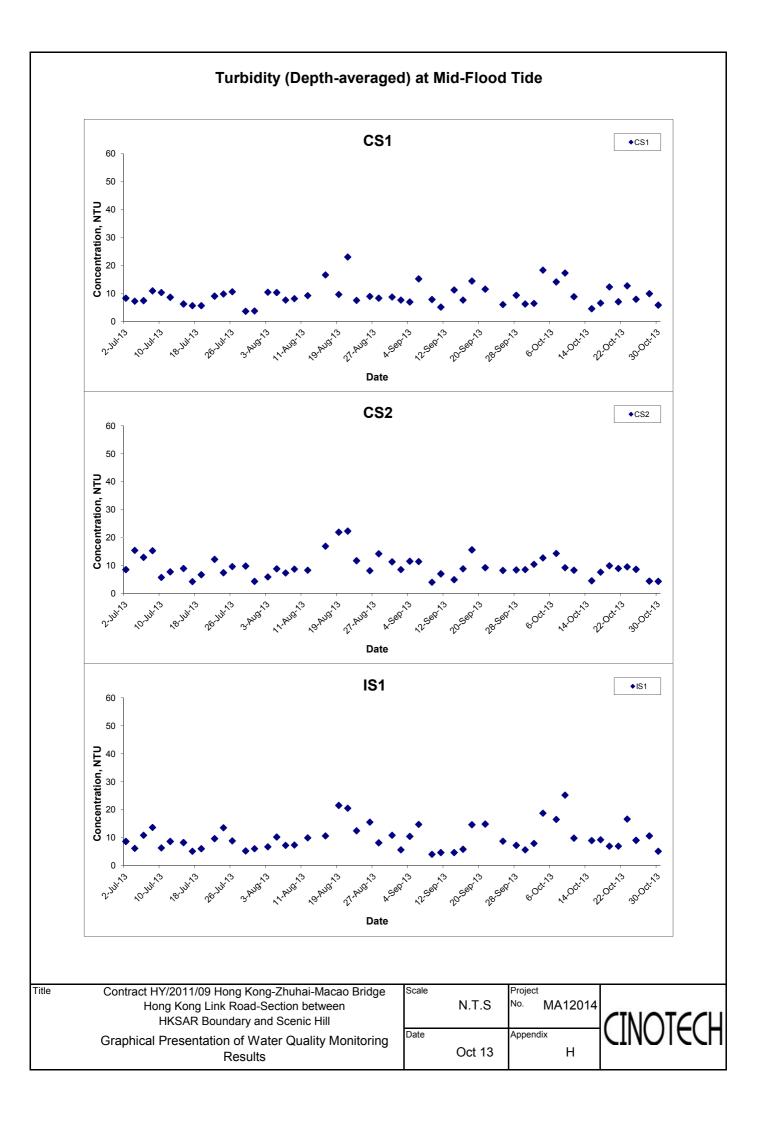


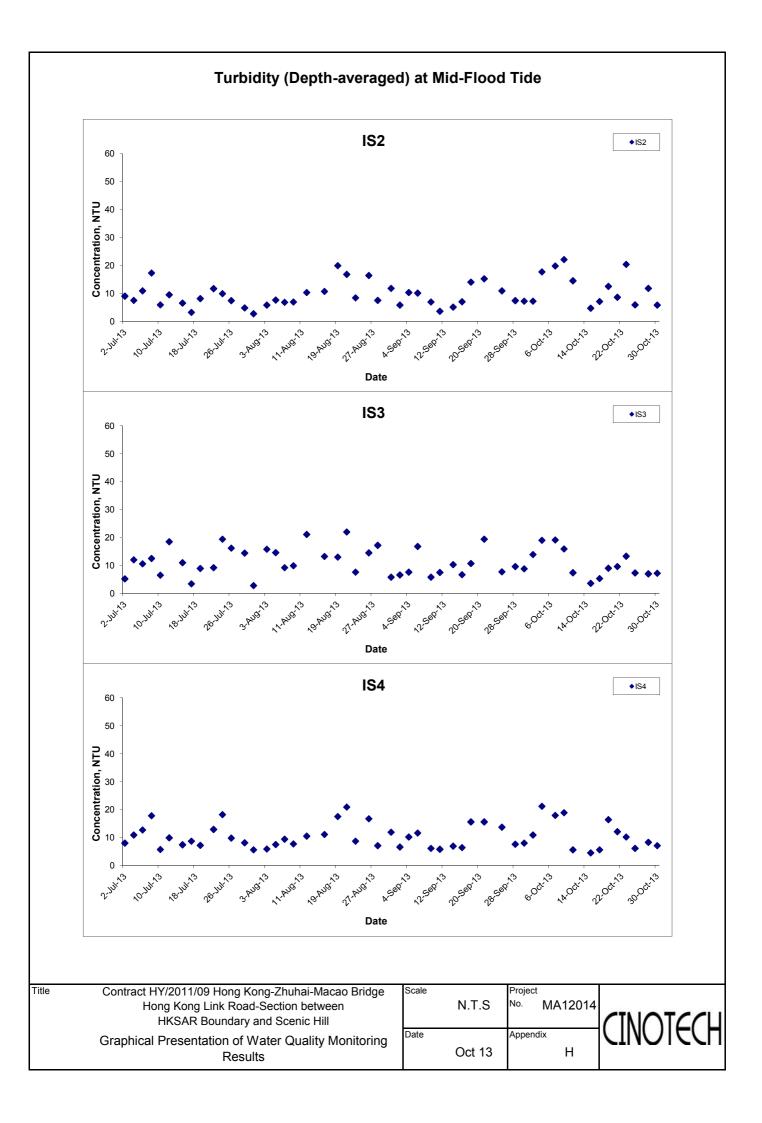


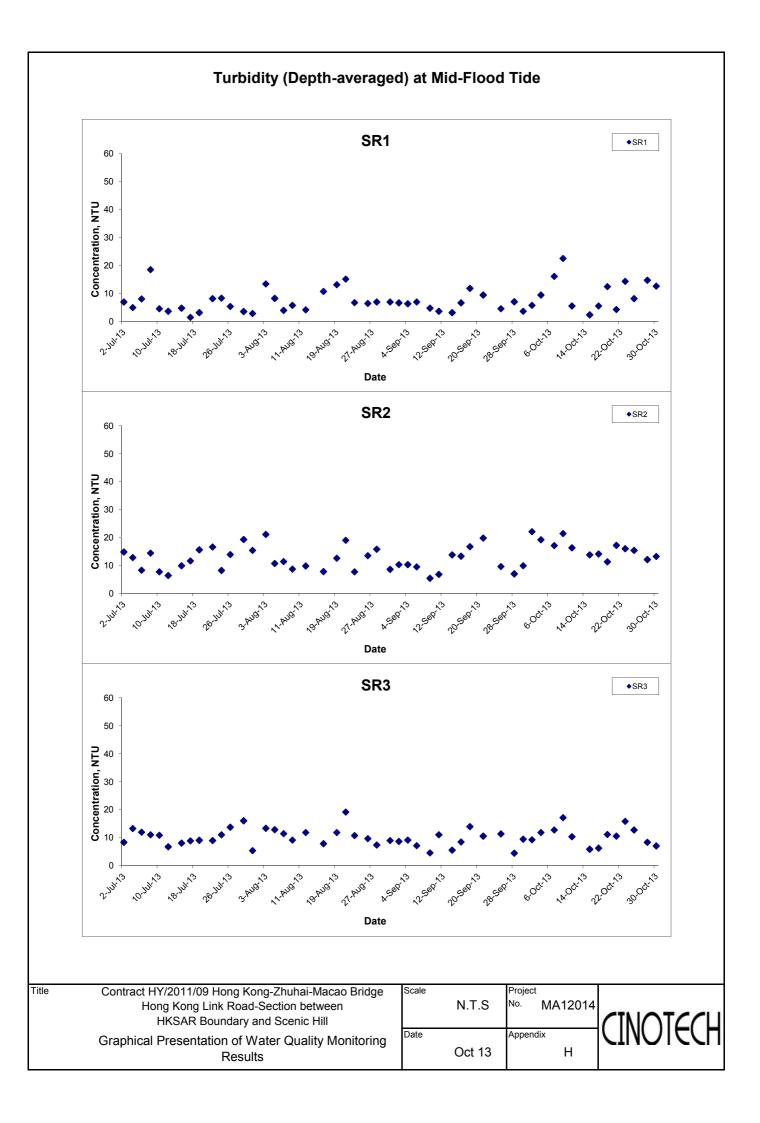


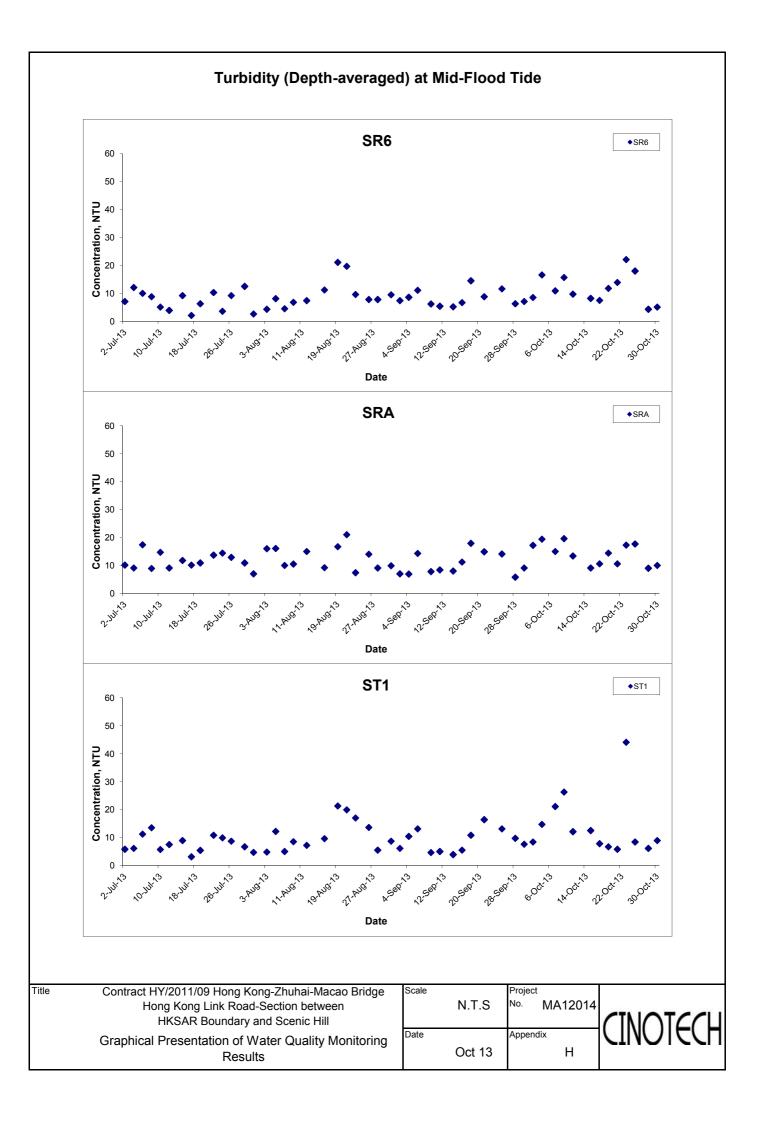


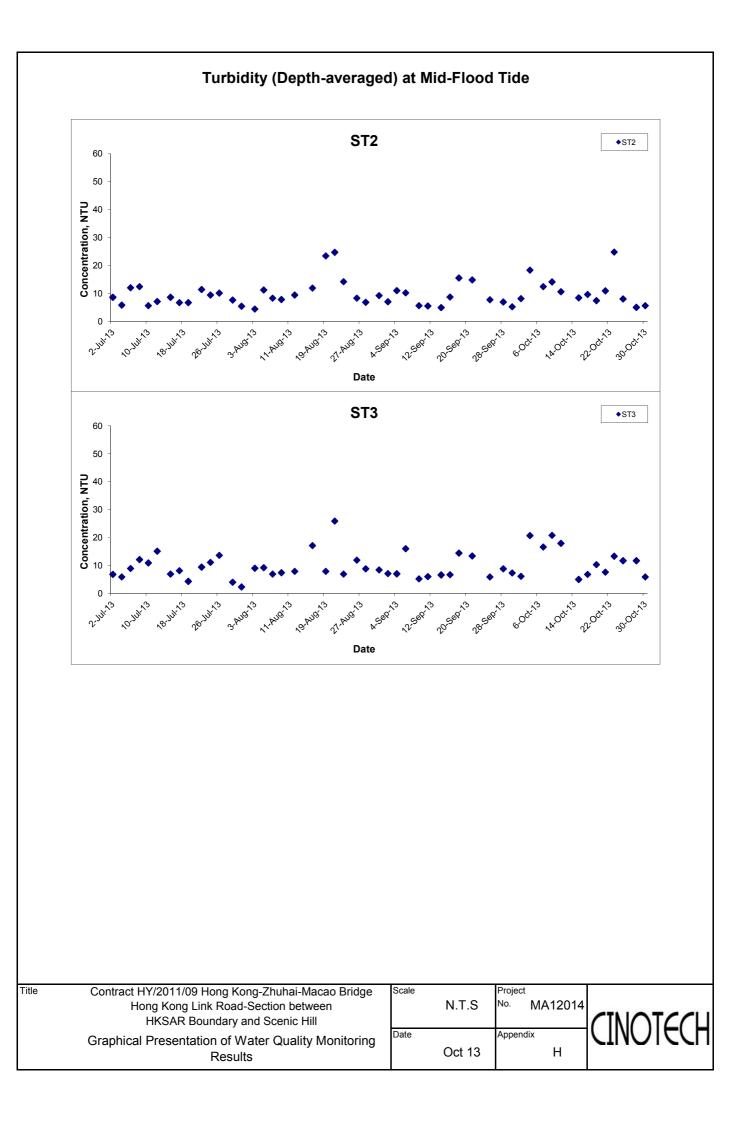


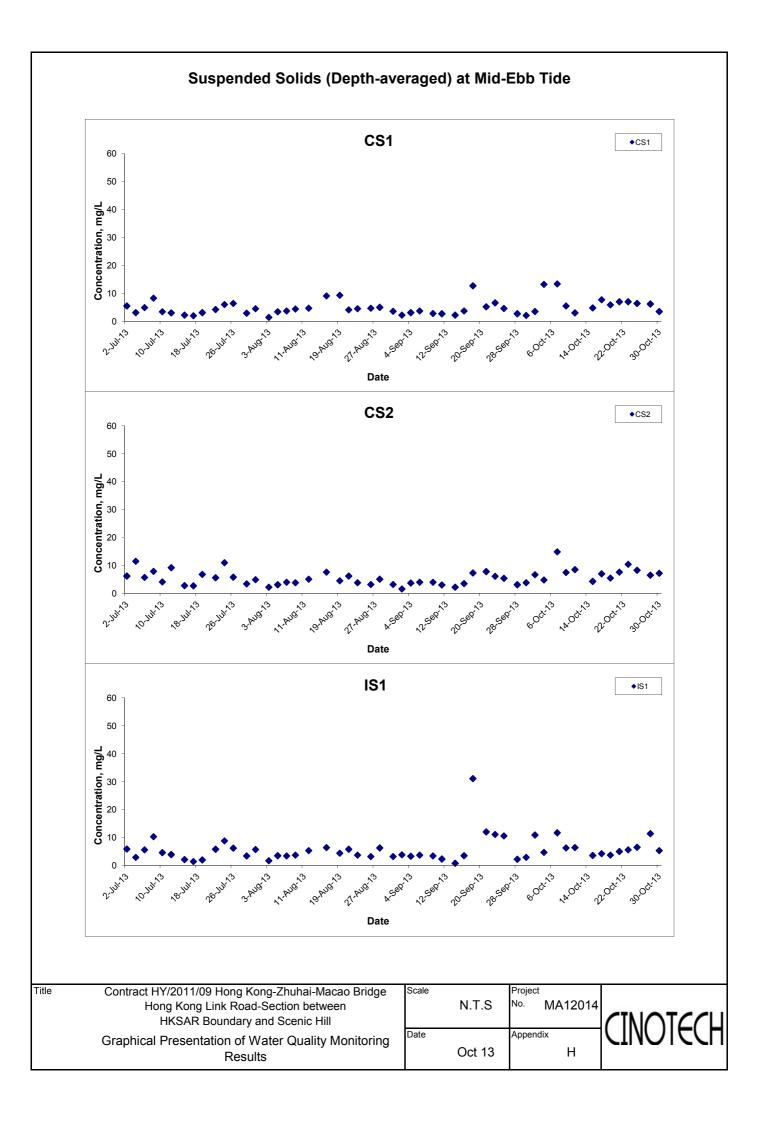


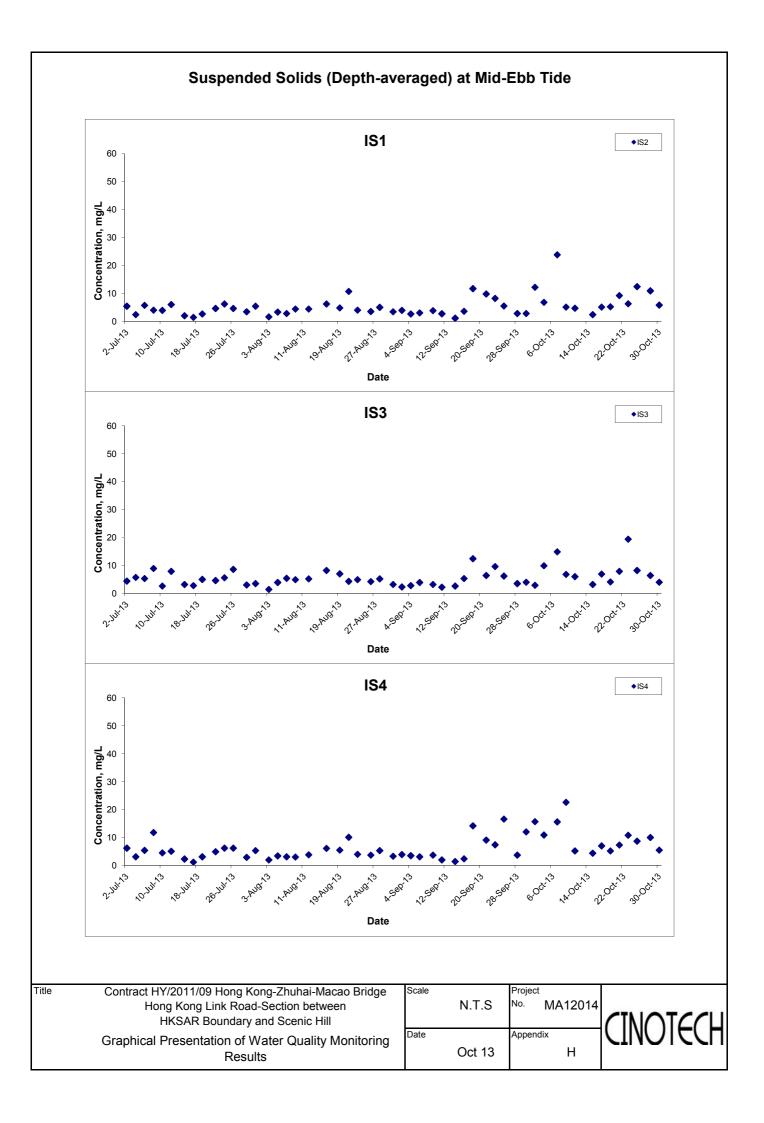


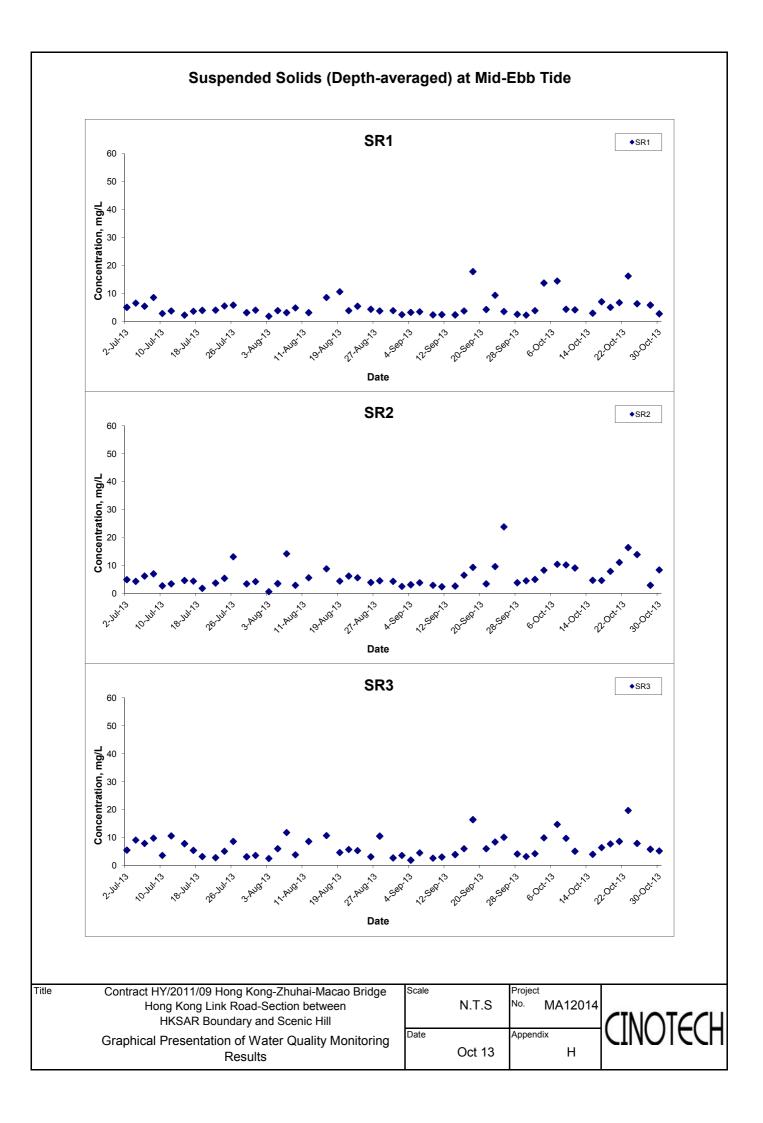


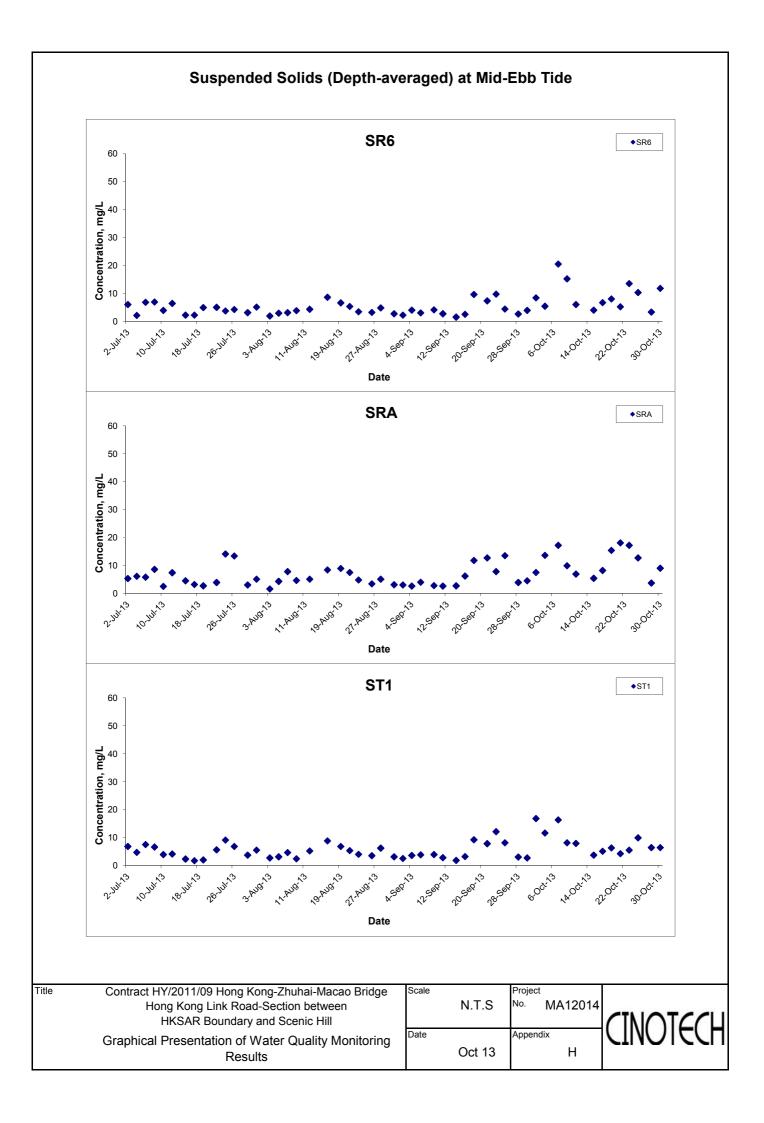


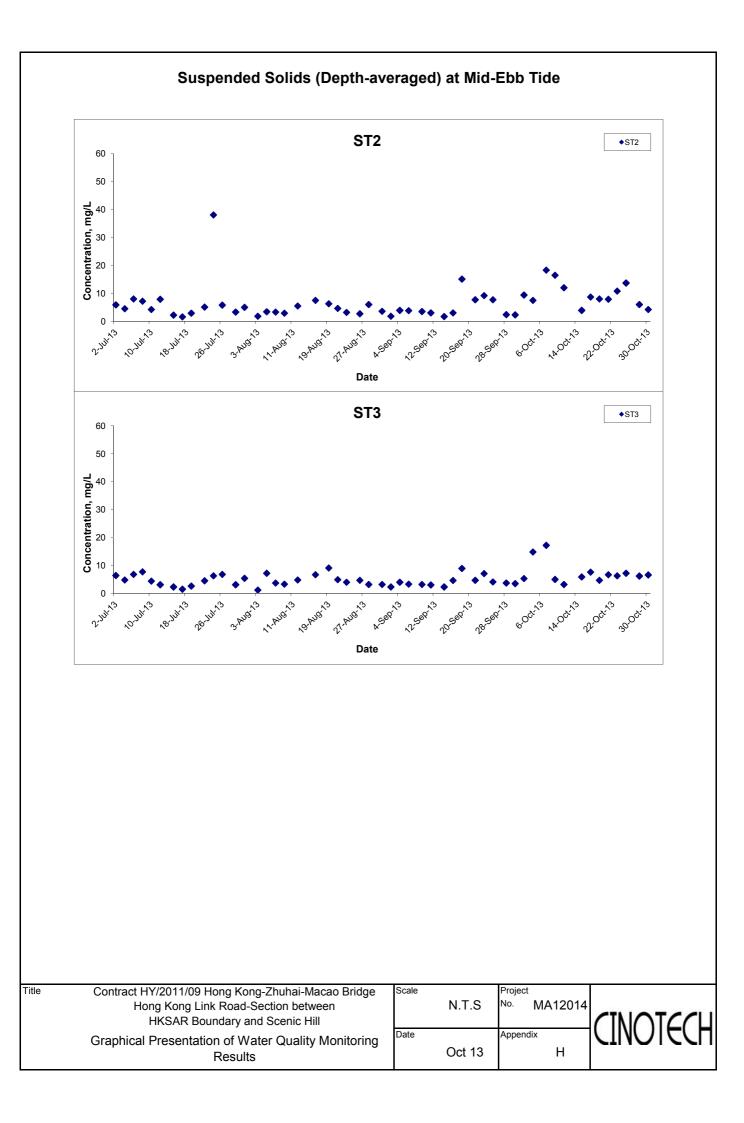


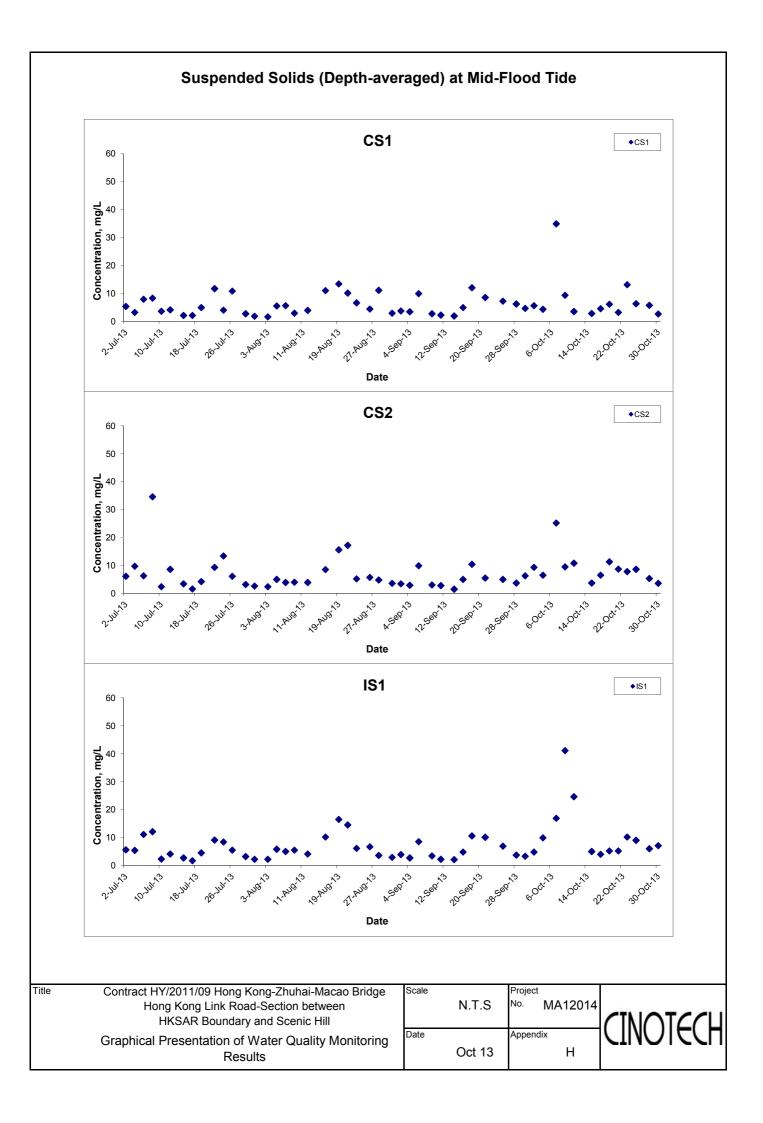


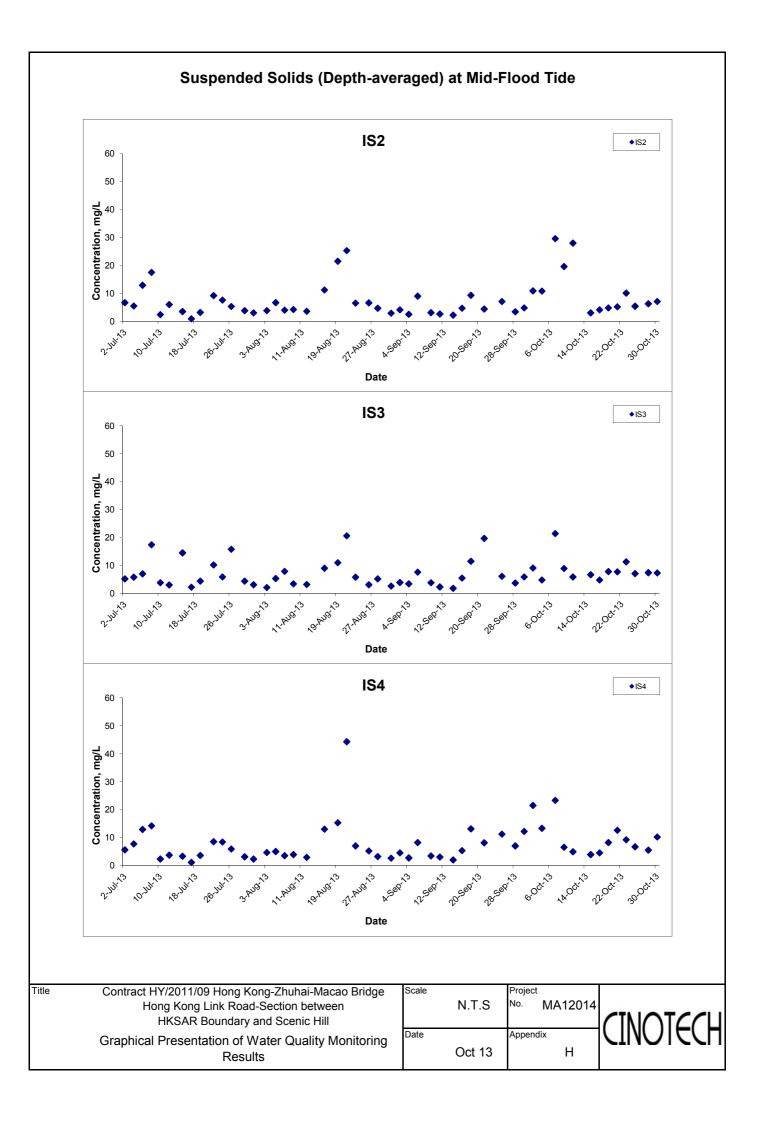


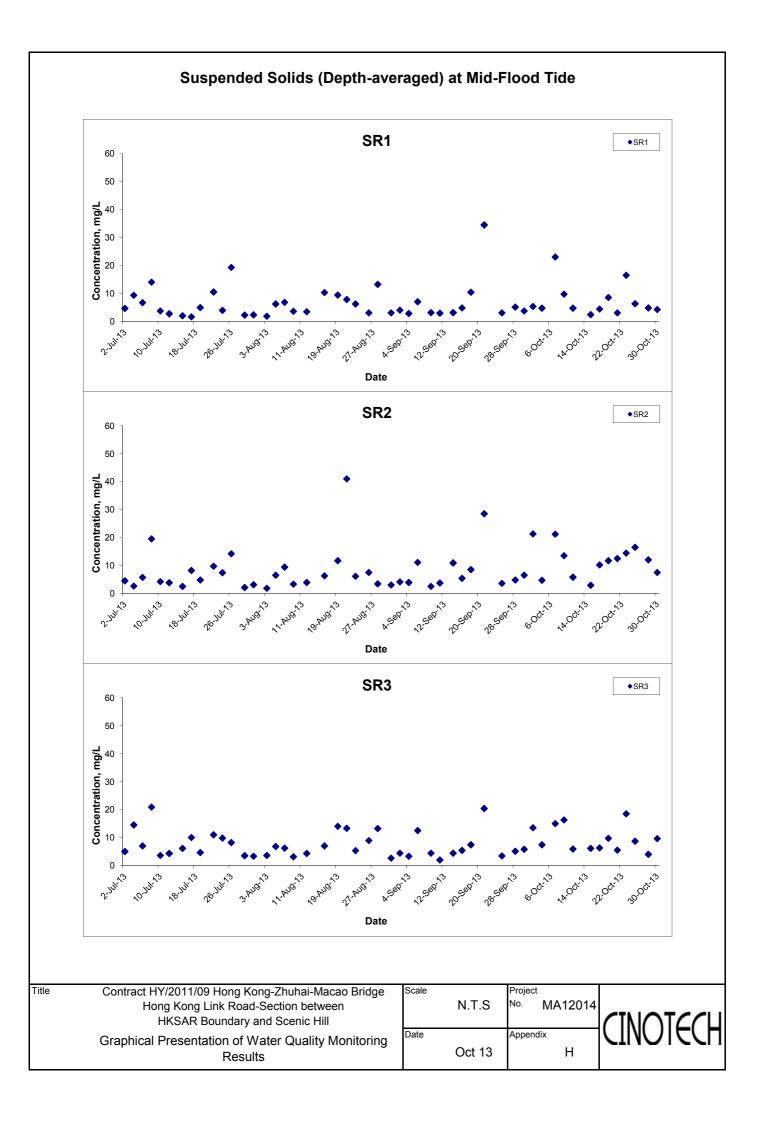


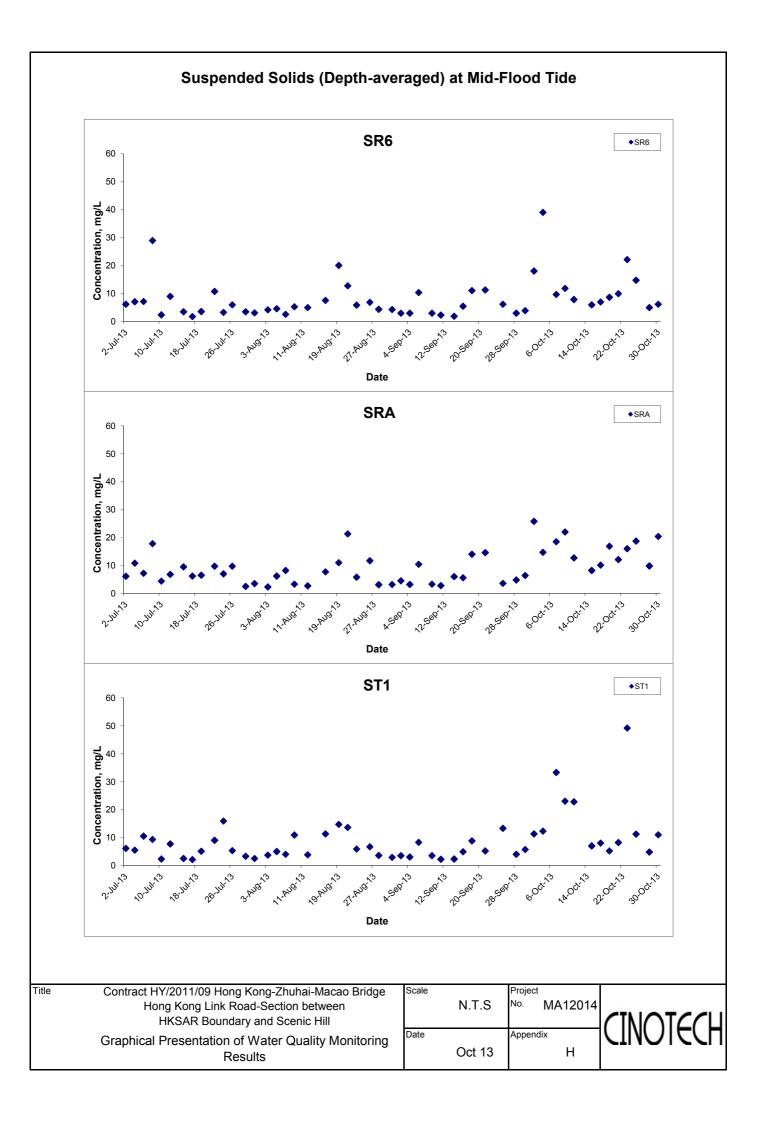


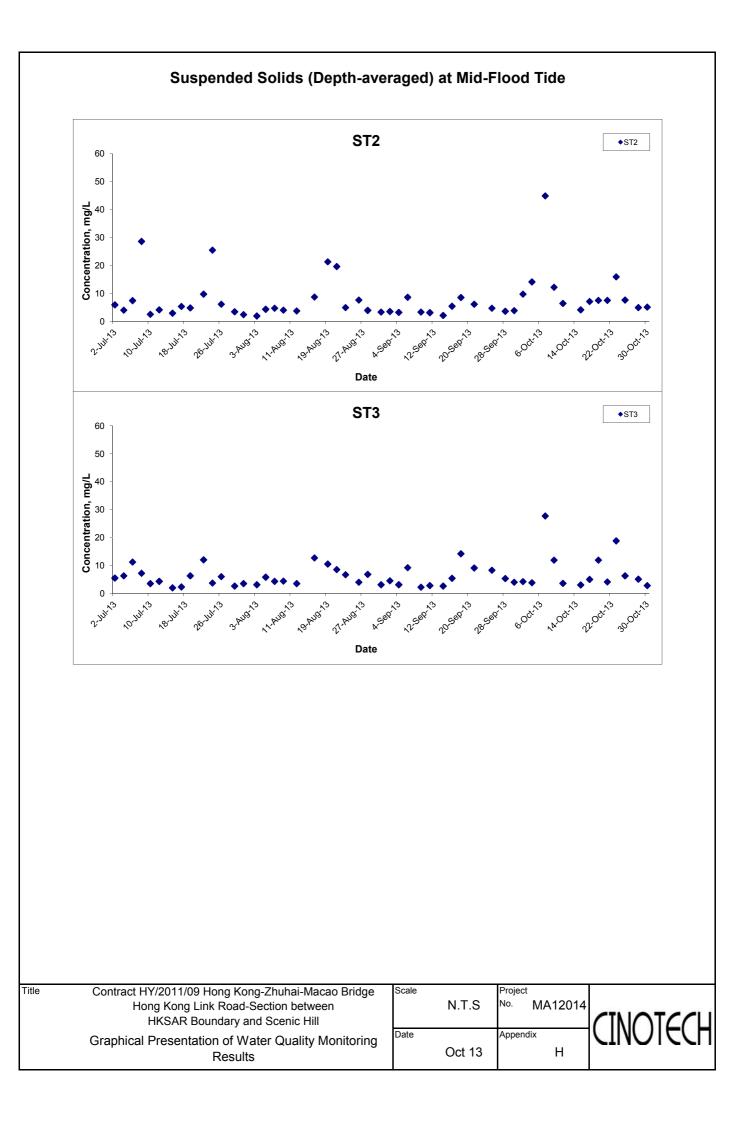












APPENDIX I DOLPHIN MONITORING REPORT (LINE TRANSECT)

Contract No. HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Section between HKSAR Boundary and Scenic Hill Dolphin Monthly Monitoring

Ninth Monthly Progress Report (October 2013)

Submitted by Samuel K.Y. Hung, Ph.D., Hong Kong Cetacean Research Project

5 November 2013

1. Introduction

- 1.1. The Hong Kong Link Road (HKLR) serves to connect the Hong Kong-Zhuhai-Macao Bridge (HZMB) Main Bridge at the Hong Kong Special Administrative Region (HKSAR) Boundary and the HZMB Hong Kong Boundary Crossing Facilities (HKBCF) located at the northeastern waters of the Hong Kong International Airport.
- 1.2. According to the updated Environmental Monitoring and Audit (EM&A) Manual (for HKLR), monthly line-transect vessel surveys for Chinese White Dolphin should be conducted to cover the West Lantau survey area as in AFCD annual marine mammal monitoring programme.
- 1.3. Since November 2012, Hong Kong Cetacean Research Project (HKCRP) has been commissioned by Dragages China Harbour VSL JV to conduct this 34-month dolphin monitoring study in order to collect data on Chinese White Dolphins during the construction phase (i.e. impact period) of the HKLR09 project in West Lantau (WL) survey area, and to analyze the collected survey data to monitor distribution, encounter rate, abundance, activities and occurrence of dolphin calves. Photo-identification will also be collected from individual Chinese White Dolphins to examine their individual range patterns and core area use.
- 1.4. From the monitoring results, any changes in dolphin occurrence within the study area will be examined for possible causes, and appropriate actions and additional mitigation measures will be recommended as necessary.

1.5. This report is the ninth monthly progress report under the HKLR09 construction phase dolphin monitoring programme, summarizing the results of the survey findings during the month of October 2013.

2. Monitoring Methodology

2.1. Vessel-based Line-transect Survey

2.1.1. According to the requirement of the updated EM&A manual, dolphin monitoring programme should cover all transect lines in WL survey area (see Figure 1) twice per month throughout the entire construction period. The co-ordinates of all transect lines are shown in Table 1.

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Line No.		Easting	Northing		Line No.		Easting	Northing
1	Start Point	803750	818500		7	Start Point	800200	810450
1	End Point	803750	815500		7	End Point	801400	810450
2	Start Point	803750	815500		8	Start Point	801300	809450
2	End Point	802940	815500		8	End Point	799750	809450
3	Start Point	802550	814500		9	Start Point	799400	808450
3	End Point	803700	814500		9	End Point	801430	808450
4	Start Point	803120	813600		10	Start Point	801500	807450
4	End Point	801640	813600		10	End Point	799600	807450
5	Start Point	801100	812450		11	Start Point	800300	806500
5	End Point	802900	812450		11	End Point	801750	806500
6	Start Point	802400	811500		12	Start Point	801760	805450
6	End Point	800660	811500		12	End Point	800700	805450

Table 1. Co-ordinates of transect lines in WL survey area

2.1.2. The survey team used standard line-transect methods (Buckland et al. 2001) to conduct the systematic vessel surveys, and followed the same technique of data collection that has been adopted over the last 16 years of marine

mammal monitoring surveys in Hong Kong developed by HKCRP (see Hung 2012). For each monitoring vessel survey, a 15-m inboard vessel with an open upper deck (about 4.5 m above water surface) was used to make observations from the flying bridge area.

- 2.1.3. Two experienced observers (a data recorder and a primary observer) made up the on-effort survey team, and the survey vessel transited different transect lines at a constant speed of 13-15 km per hour. The data recorder searched with unaided eyes and filled out the datasheets, while the primary observer searched for dolphins and porpoises continuously through 7 x 50 *Steiner* marine binoculars. Both observers searched the sea ahead of the vessel, between 270° and 90° (in relation to the bow, which is defined as 0°). One to two additional experienced observers were available on the boat to work in shift (i.e. rotate every 30 minutes) in order to minimize fatigue of the survey team members. All observers were experienced in small cetacean survey techniques and identifying local cetacean species.
- 2.1.4. During on-effort survey periods, the survey team recorded effort data including time, position (latitude and longitude), weather conditions (Beaufort sea state and visibility), and distance traveled in each series (a continuous period of search effort) with the assistance of a handheld GPS.
- 2.1.5. Data including time, position and vessel speed were also automatically and continuously logged by handheld GPS throughout the entire survey for subsequent review.
- 2.1.6. When dolphins were sighted, the survey team would end the survey effort, and immediately record the initial sighting distance and angle of the dolphin group from the survey vessel, as well as the sighting time and position. Then the research vessel was diverted from its course to approach the animals for species identification, group size estimation, assessment of group composition, and behavioural observations. The perpendicular distance (PSD) of the dolphin group to the transect line was later calculated from the initial sighting distance and angle.
- 2.1.7. Survey effort being conducted along the parallel transect lines that were perpendicular to the coastlines (as indicated in Figure 1) was labeled as "primary" survey effort, while the survey effort being conducted along the

connecting lines between parallel lines was labeled as "secondary" survey effort. According to HKCRP long-term dolphin monitoring data, encounter rates of Chinese white dolphins deduced from effort and sighting data collected along primary and secondary lines were similar in survey areas around Lantau Island. Therefore, primary and secondary survey effort were both presented as on-effort survey effort in this report.

2.1.8. Encounter rates of Chinese white dolphins (number of on-effort sightings per 100 km of survey effort) were calculated in WL survey area in relation to the amount of survey effort conducted during each month of monitoring survey. Only data collected under Beaufort 3 or below condition would be used for encounter rate analysis. Dolphin encounter rates were calculated using primary survey effort alone, as well as the combined survey effort from both primary and secondary lines.

2.2. Photo-identification Work

- 2.2.1. When a group of Chinese White Dolphins were sighted during the line-transect survey, the survey team would end effort and approach the group slowly from the side and behind to take photographs of them. Every attempt was made to photograph every dolphin in the group, and even photograph both sides of the dolphins, since the colouration and markings on both sides may not be symmetrical.
- 2.2.2. A professional digital camera (*Canon* EOS 7D or 60D model) equipped with long telephoto lenses (100-400 mm zoom) were available on board for researchers to take sharp, close-up photographs of dolphins as they surfaced. The images were shot at the highest available resolution and stored on Compact Flash memory cards for downloading onto a computer.
- 2.2.3. All digital images taken in the field were first examined, and those containing potentially identifiable individuals were sorted out. These photographs would then be examined in greater detail, and were carefully compared to the existing Chinese White Dolphin photo-identification catalogue maintained by HKCRP since 1995.
- 2.2.4. Chinese White Dolphins can be identified by their natural markings, such as nicks, cuts, scars and deformities on their dorsal fin and body, and their unique spotting patterns were also used as secondary identifying features

(Jefferson 2000).

2.2.5. All photographs of each individual were then compiled and arranged in chronological order, with data including the date and location first identified (initial sighting), re-sightings, associated dolphins, distinctive features, and age classes entered into a computer database.

3. Monitoring Results

- 3.1. Vessel-based Line-transect Survey
- 3.1.1. During the monitoring month of October 2013, two complete sets of systematic line-transect vessel surveys were conducted on the 9th and 18th, to cover all transect lines in WL survey area twice. The survey routes of each survey day were presented in Figures 2-3.
- 3.1.2. From these surveys, a total of 64.94 km of survey effort was collected, with 98.0% of the total survey effort being conducted under favourable weather conditions (i.e. Beaufort Sea State 3 or below with good visibility) (Appendix I). Moreover, the total survey effort conducted on primary lines (the vertical lines perpendicular to the coastlines) was 43.05 km, while the effort on secondary lines (the lines connecting the primary lines) was 21.89 km.
- 3.1.3. During the monitoring surveys in October 2013, a total of 13 groups of 38 Chinese White Dolphins were sighted (Appendix II). Nine of these 13 sighting were made during on-effort search. Among the on-effort sightings, seven of them were made on primary lines, while the other two were made on secondary lines. One of the dolphin groups was associated with an operating purse-seiner.
- 3.1.4. Distribution of all dolphin sightings made during October's surveys was shown in Figure 4. These dolphin groups were mainly concentrated near Tai O Peninsula and Fan Lau, while no sighting was made in the middle portion of the survey area (i.e. between Tai O and Fan Lau) (Figure 4). None of the sightings were made near the HKLR09 alignment.
- 3.1.5. During October's surveys, encounter rates of Chinese White Dolphins deduced from the survey effort and on-effort sighting data made under favourable conditions (Beaufort 3 or below) are shown in Tables 2 & 3.

		Encounter rate (STG)	Encounter rate (ANI)		
		(no. of on-effort dolphin sightings	(no. of dolphins from all on-effort		
		per 100 km of survey effort)	sightings per 100 km of survey effor		
		Primary Lines Only	Primary Lines Only		
WL	Set 1: Oct 9 th	14.1	28.2		
	Set 2: Oct 18 th	19.0	71.1		

Table 2. Dolphin encounter rates (sightings per 100 km of survey effort) per set during October's surveys in West Lantau (WL)

Table 3. Overall dolphin encounter rates (sightings per 100 km of survey effort) in October's surveys on primary lines only as well as both primary lines and secondary lines in West Lantau

	Encoun	ter rate (STG)	Encounter rate (ANI)		
	(no. of on-effor	t dolphin sightings per	(no. of dolphins from all on-effort		
	100 km (of survey effort)	sightings per 100 km of survey effort)		
	Primary		Primary	Both Primary and	
	Lines Only	Secondary Lines	Lines Only	Secondary Lines	
West Lantau	16.5	14.1	49.6	37.7	

3.1.6. The average group size of Chinese White Dolphins was 2.92 individuals per group during October's surveys, which was similar to previous months of monitoring surveys. Most groups comprised of only a few dolphins, while two medium-sized groups composed of 6-7 animals were also sighted near Fan Lau.

3.2. Photo-identification Work

- 3.2.1. A total of 16 re-sightings of 11 known individual Chinese White Dolphins were made during the October's surveys (Appendices III and IV).
- 3.2.2. Most individuals were sighted only once during the two sets of monitoring surveys, but CH108, WL193, WL199 and WL201 were sighted 2-3 times on the same day of monitoring survey.

3.3. Conclusion

3.3.1. During this month of dolphin monitoring, marine construction activities have

continued under this contract. However, no adverse impact on Chinese white dolphins was noticeable from general observations.

3.3.2. Due to the monthly variation in dolphin occurrence within the study area, it would be more appropriate to draw conclusion on whether any impacts on dolphins have been detected related to the construction activities of this project in the quarterly EM&A report, where comparison on distribution, group size and encounter rates of dolphins between the quarterly impact monitoring period (i.e. September-November 2013) and baseline monitoring period will be made.

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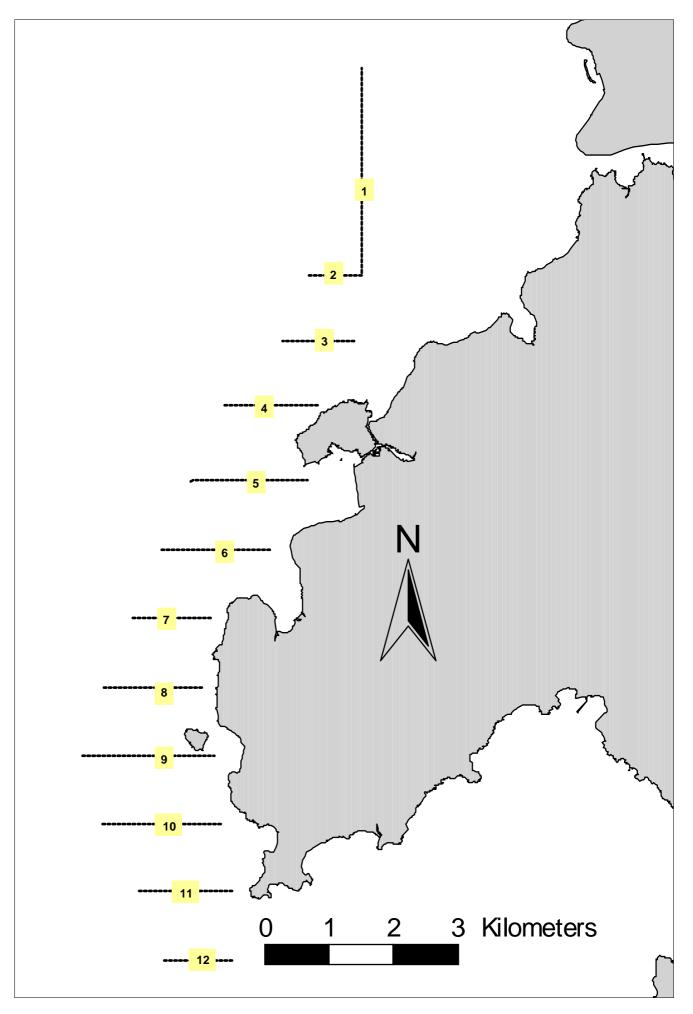


Figure 1. Transect Line Layout in West Lantau Survey Areas

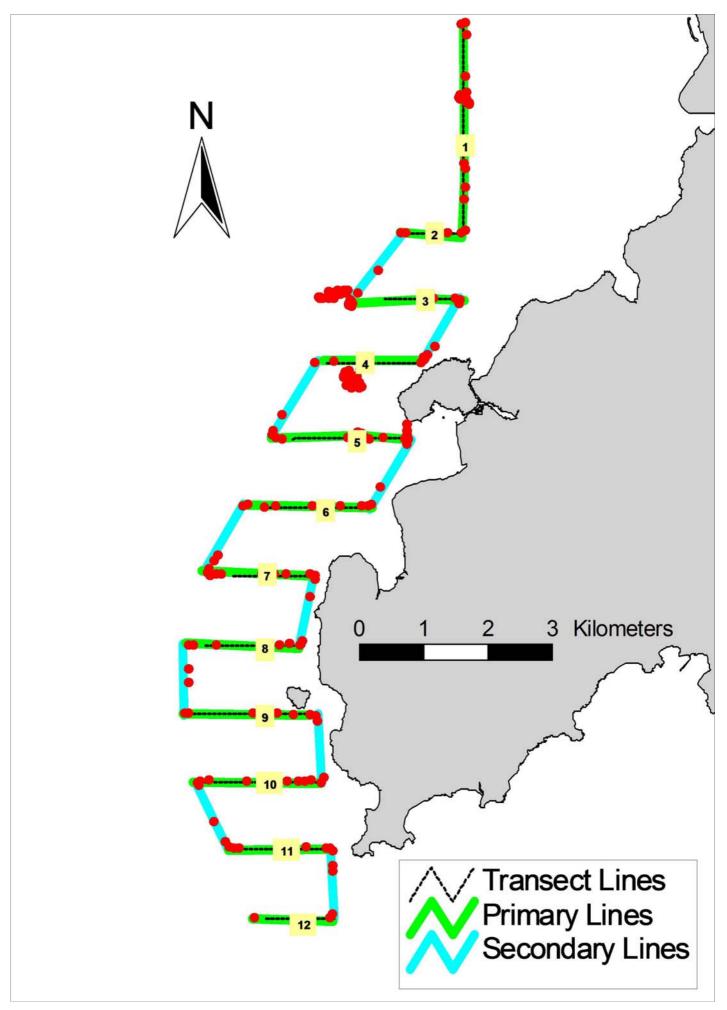


Figure 2. Survey Route on October 9th, 2013 (note: red dots represent the tracked positions of survey boat logged continuously by GPS throughout the course of the survey)

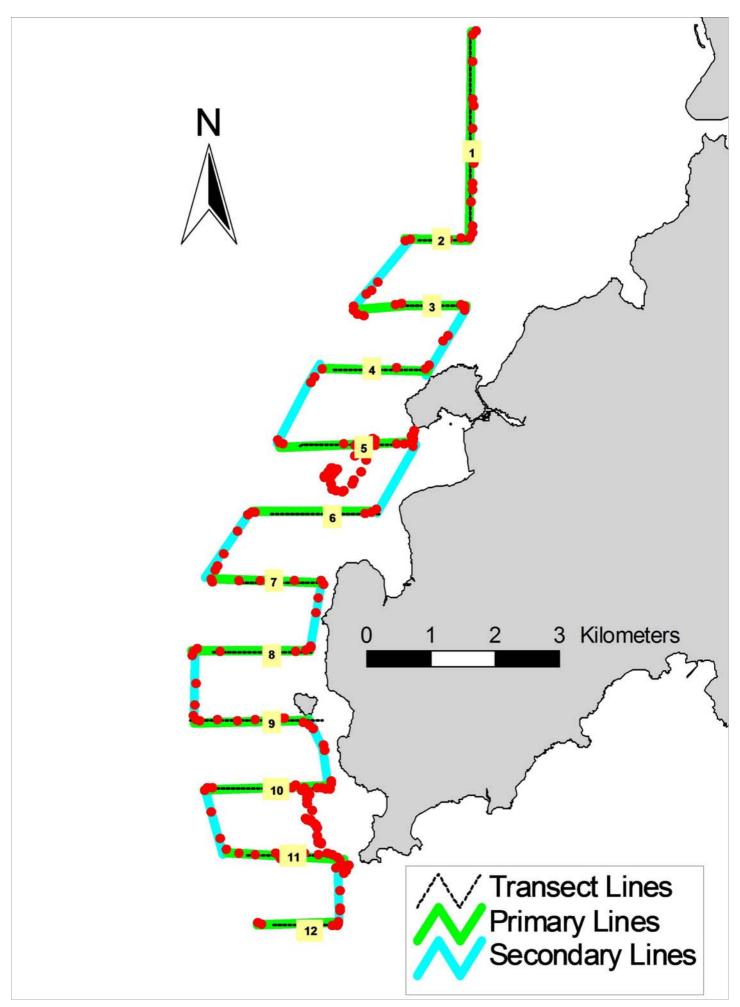


Figure 3. Survey Route on October 18th, 2013 (note: red dots represent the tracked positions of survey boat logged continuously by GPS throughout the course of the survey)

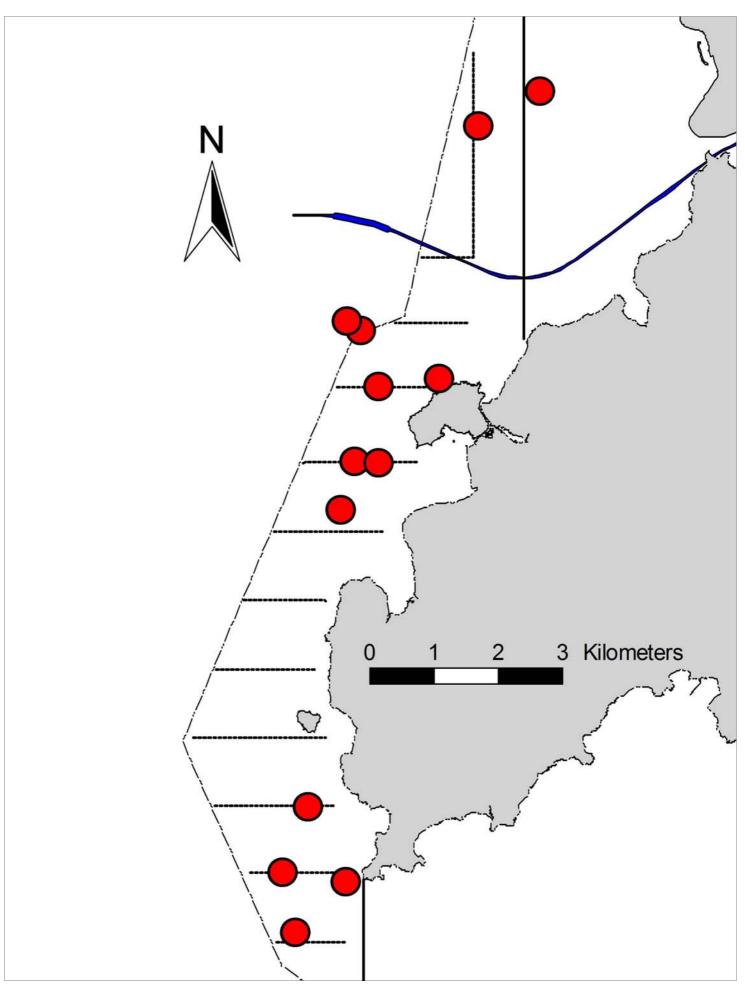


Figure 4. Distribution of Chinese White Dolphin Sighting during October 2013 HKLR09 Monitoring Surveys

Appendix I. HKLR09 Survey Effort Database (October 2013)

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

DATE	AREA	BEAU	EFFORT	SEASON	VESSEL	TYPE	P/S
9-Oct-13	W LANTAU	2	17.58	AUTUMN	STANDARD31516	HKLR	Р
9-Oct-13	W LANTAU	3	3.68	AUTUMN	STANDARD31516	HKLR	Р
9-Oct-13	W LANTAU	4	0.70	AUTUMN	STANDARD31516	HKLR	Р
9-Oct-13	W LANTAU	2	9.84	AUTUMN	STANDARD31516	HKLR	S
9-Oct-13	W LANTAU	3	0.40	AUTUMN	STANDARD31516	HKLR	S
9-Oct-13	W LANTAU	4	0.60	AUTUMN	STANDARD31516	HKLR	S
18-Oct-13	W LANTAU	2	11.07	AUTUMN	STANDARD31516	HKLR	Р
18-Oct-13	W LANTAU	3	10.02	AUTUMN	STANDARD31516	HKLR	Р
18-Oct-13	W LANTAU	2	6.48	AUTUMN	STANDARD31516	HKLR	S
18-Oct-13	W LANTAU	3	4.57	AUTUMN	STANDARD31516	HKLR	S

DATE	STG #	TIME	HRD SZ	AREA	BEAU	PSD	EFFORT	TYPE	NORTHING	EASTING	SEASON	BOAT ASSOC.	P/S
09-Oct-13	1	1014	2	W LANTAU	2	ND	OFF	HKLR	817894	804759	AUTUMN	NONE	
09-Oct-13	2	1032	2	W LANTAU	3	37	ON	HKLR	817376	803800	AUTUMN	NONE	Р
09-Oct-13	3	1101	2	W LANTAU	2	203	ON	HKLR	814390	802000	AUTUMN	NONE	S
09-Oct-13	4	1111	3	W LANTAU	2	ND	OFF	HKLR	814534	801784	AUTUMN	NONE	
09-Oct-13	5	1136	1	W LANTAU	2	22	ON	HKLR	813690	803204	AUTUMN	NONE	S
09-Oct-13	6	1148	3	W LANTAU	2	254	ON	HKLR	813559	802266	AUTUMN	NONE	Р
09-Oct-13	7	1220	1	W LANTAU	2	285	ON	HKLR	812463	801903	AUTUMN	NONE	Р
18-Oct-13	1	1142	4	W LANTAU	3	258	ON	HKLR	812451	802264	AUTUMN	NONE	Р
18-Oct-13	2	1154	6	W LANTAU	3	ND	OFF	HKLR	811766	801674	AUTUMN	PURSE SEINE	
18-Oct-13	3	1314	7	W LANTAU	2	143	ON	HKLR	807426	801170	AUTUMN	NONE	Р
18-Oct-13	4	1356	2	W LANTAU	3	169	ON	HKLR	806464	800776	AUTUMN	NONE	Р
18-Oct-13	5	1406	2	W LANTAU	2	209	ON	HKLR	806340	801755	AUTUMN	NONE	Р
18-Oct-13	6	1424	3	W LANTAU	3	ND	OFF	HKLR	805600	800970	AUTUMN	NONE	

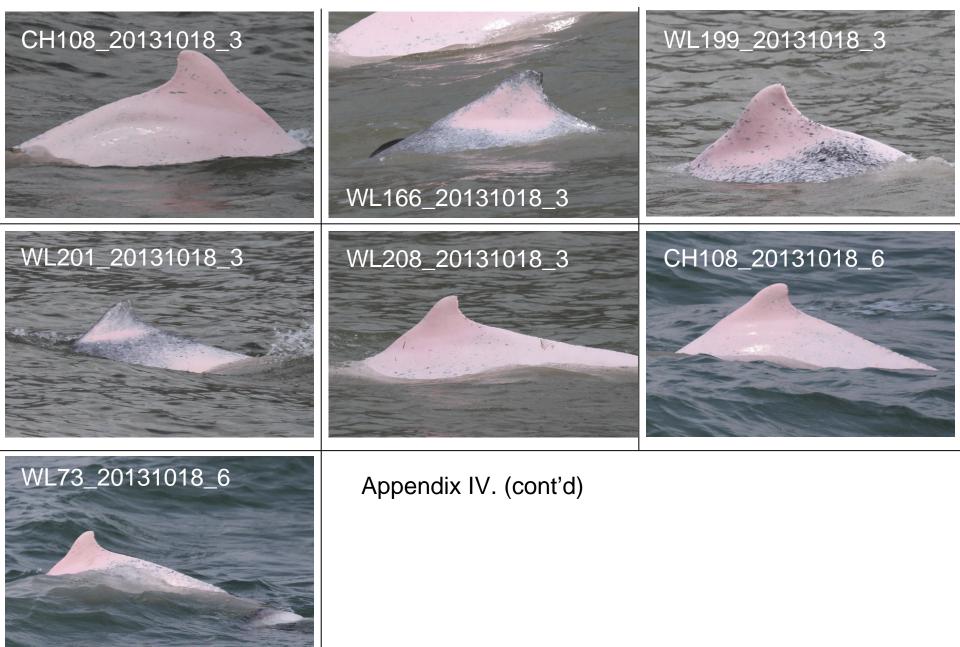
Appendix II. HKLR09 Chinese White Dolphin Sighting Database (October 2013) (Abberviations: STG# = Sighting Number; HRD SZ = Dolphin Herd Size; BEAU = Beaufort Sea State; PSD = Perpendicular Distance, D = Not Determined; BOAT ASSOC. = Fishing Boat Association P/S: Sighting Made on Primary/Secondary Lines

Appendix III. Individual dolphins identified during HKLR09 monitoring surveys in October 2013

ID#	DATE	STG#	AREA
CH108	18/10/13	1	W LANTAU
	18/10/13	3	W LANTAU
	18/10/13	6	W LANTAU
NL212	18/10/13	1	W LANTAU
WL58	18/10/13	2	W LANTAU
WL73	18/10/13	6	W LANTAU
WL124	09/10/13	6	W LANTAU
WL166	18/10/13	3	W LANTAU
WL191	18/10/13	2	W LANTAU
WL193	09/10/13	3	W LANTAU
	09/10/13	4	W LANTAU
WL199	18/10/13	1	W LANTAU
	18/10/13	3	W LANTAU
WL201	18/10/13	1	W LANTAU
	18/10/13	3	W LANTAU
WL208	18/10/13	3	W LANTAU



Appendix IV. Photographs of Identified Individual Dolphins in October 2013 (HKLR09)



APPENDIX J WIND DATA

Date	Time	Wind Speed m/s	Direction
1-Oct-2013	00:00	1.1	W
1-Oct-2013	01:00	0.8	NNE
1-Oct-2013	02:00	0.6	E
1-Oct-2013	03:00	0.8	W
1-Oct-2013	04:00	0.9	WNW
1-Oct-2013	05:00	0.7	ENE
1-Oct-2013	06:00	0.6	ENE
1-Oct-2013	07:00	0.7	N
1-Oct-2013	08:00	0.9	NNE
1-Oct-2013	09:00	1.2	NE
1-Oct-2013	10:00	1.5	SSW
1-Oct-2013	11:00	1.8	SSW
			NE
1-Oct-2013	12:00	2.3	
1-Oct-2013	13:00	2.5	WSW
1-Oct-2013	14:00	2.3	WNW
1-Oct-2013	15:00	2.1	SW
1-Oct-2013	16:00	2.2	NNE
1-Oct-2013	17:00	2	SSW
1-Oct-2013	18:00	1.6	N
1-Oct-2013	19:00	1.4	ENE
1-Oct-2013	20:00	1.2	NE
1-Oct-2013	21:00	1.2	ESE
1-Oct-2013	22:00	1.1	ESE
1-Oct-2013	23:00	1.2	NE
2-Oct-2013	00:00	1	NNE
2-Oct-2013	01:00	1	WNW
2-Oct-2013	02:00	1.2	N
2-Oct-2013	03:00	0.9	SE
2-Oct-2013	04:00	1.1	W
2-Oct-2013	05:00	0.9	SSW
2-Oct-2013	06:00	1.1	SW
2-Oct-2013	07:00	0.9	SW
2-Oct-2013	08:00	0.8	S
2-Oct-2013	09:00	1.3	W
2-Oct-2013	10:00	1.6	SW
2-Oct-2013	11:00	2.3	S
2-Oct-2013	12:00	2.8	SSE
2-Oct-2013	13:00	2.5	SW
2-Oct-2013	14:00	2.2	W
2-Oct-2013	15:00	2.2	ENE
2-Oct-2013	16:00	2	W
2-Oct-2013	17:00	1.9	WSW
2-Oct-2013	18:00	1.6	ENE
2-Oct-2013	19:00	1.2	ESE
2-Oct-2013	20:00	1	SSE
2-Oct-2013	21:00	1	ENE
2-Oct-2013	22:00	1	ENE
2-Oct-2013	23:00	0.9	ENE
3-Oct-2013	00:00	0.9	SSE
3-Oct-2013	01:00	1.2	NNE
3-Oct-2013	02:00	1.1	ENE
3-Oct-2013	03:00	1	SSW
3-Oct-2013	03:00	1.2	W
3-Oct-2013	05:00	1.1	SW
5-061-2013	05.00	1.1	300

Date	Time	Wind Speed m/s	Direction
3-Oct-2013	06:00	0.9	Ν
3-Oct-2013	07:00	1.1	N
3-Oct-2013	08:00	1.3	ENE
3-Oct-2013	09:00	1.7	N
3-Oct-2013	10:00	1.9	N
3-Oct-2013	11:00	1.7	N
3-Oct-2013	12:00	2	W
3-Oct-2013	13:00	2.2	WSW
3-Oct-2013	14:00	2.2	N
3-Oct-2013	15:00	2.1	SSW
3-Oct-2013	16:00	2.1	SSW
3-Oct-2013	17:00	2.3	<u>N</u>
3-Oct-2013	18:00	1.8	ENE
3-Oct-2013	19:00	1.7	NNE
3-Oct-2013	20:00	1.6	NNE
3-Oct-2013	20:00	1.6	NNE
	21.00	1.6	W
3-Oct-2013 3-Oct-2013	22:00	1.6	W
			WSW
4-Oct-2013	00:00	1.8	SW
4-Oct-2013	01:00	1.7	SW
4-Oct-2013	02:00	1.4	
4-Oct-2013	03:00	1.4	ENE
4-Oct-2013	04:00	1.3	NE
4-Oct-2013	05:00	1.2	N
4-Oct-2013	06:00	1.2	SSE
4-Oct-2013	07:00	1.1	SSE
4-Oct-2013	08:00	1.7	WSW
4-Oct-2013	09:00	2	WSW
4-Oct-2013	10:00	2.4	SSW
4-Oct-2013	11:00	2.5	SSW
4-Oct-2013	12:00	2.7	SSE
4-Oct-2013	13:00	2.7	WNW
4-Oct-2013	14:00	2.6	NE
4-Oct-2013	15:00	2.6	NE
4-Oct-2013	16:00	2.3	NNE
4-Oct-2013	17:00	1.9	S
4-Oct-2013	18:00	1.4	SSW
4-Oct-2013	19:00	1.3	SE
4-Oct-2013	20:00	1.2	ENE
4-Oct-2013	21:00	1.4	NE
4-Oct-2013	22:00	1.7	SE
4-Oct-2013	23:00	1.5	SE
5-Oct-2013	00:00	1.7	NE
5-Oct-2013	01:00	1.7	ENE
5-Oct-2013	02:00	1.5	W
5-Oct-2013	03:00	1.7	W
5-Oct-2013	04:00	1.8	ENE
5-Oct-2013	05:00	1.7	NNE
5-Oct-2013	06:00	1.4	NE
5-Oct-2013	07:00	1.4	E
5-Oct-2013	08:00	2	NNE
5-Oct-2013	09:00	2.6	ENE
5-Oct-2013	10:00	3	NE
5-Oct-2013	11:00	3.1	NE

Date	Time	Wind Speed m/s	Direction
5-Oct-2013	12:00	3.3	NE
5-Oct-2013	13:00	3.6	N
5-Oct-2013	14:00	2.9	NE
5-Oct-2013	15:00	2.6	ENE
5-Oct-2013	16:00	2.5	NE
5-Oct-2013	17:00	2.4	NNE
5-Oct-2013	18:00	2.1	N
5-Oct-2013	19:00	1.8	ENE
5-Oct-2013	20:00	1.7	NE
5-Oct-2013	21:00	1.5	NE
5-Oct-2013	22:00	1.5	NNE
5-Oct-2013	23:00	1.5	ESE
6-Oct-2013	00:00	1.7	<u> </u>
6-Oct-2013	01:00	1.7	ENE
6-Oct-2013	02:00	1.6	ENE
6-Oct-2013	03:00	1.7	NE
6-Oct-2013	04:00	2	NE
6-Oct-2013	05:00	2.2	NNE
6-Oct-2013	06:00	2.2	ESE
6-Oct-2013	07:00	1.9	NW
6-Oct-2013	08:00	2.2	NNE
6-Oct-2013	09:00	2.4	NNE
6-Oct-2013	10:00	2.3	NNE
6-Oct-2013	11:00	2.3	NE
6-Oct-2013	12:00	2.3	NE
6-Oct-2013	13:00	2.5	W
6-Oct-2013	14:00	2.4	NE
6-Oct-2013	15:00	2.4	NNE
6-Oct-2013	16:00	2.1	SSW
6-Oct-2013	17:00	2.3	WNW
6-Oct-2013	18:00	1.9	W
6-Oct-2013	19:00	1.5	N
6-Oct-2013	20:00	1.8	NNE
6-Oct-2013	20:00	1.8	WNW
6-Oct-2013	22:00	1.9	SE
6-Oct-2013	23:00	1.9	ESE
7-Oct-2013	00:00	1.7	ESE
7-Oct-2013	01:00	1.8	ESE
7-Oct-2013	02:00	1.6	W
7-Oct-2013	03:00	1.6	SSW
7-Oct-2013	04:00	1.7	WSW
7-Oct-2013	05:00	1.9	SW
7-Oct-2013	06:00	1.6	SW
7-Oct-2013	07:00	1.3	SW
7-Oct-2013	08:00	1.7	
7-Oct-2013	09:00	1.9	SW
7-Oct-2013	10:00	2	SW
7-Oct-2013	11:00	1.9	S
7-Oct-2013	12:00	2.2	NNE
7-Oct-2013 7-Oct-2013	12:00	2.2	NNE
7-Oct-2013	14:00	2.1	ESE
7-Oct-2013 7-Oct-2013	15:00	1.9	NE
7-Oct-2013	16:00 17:00	2.1	SE SE
7-Oct-2013	17.00	2.1	SE

Date	Time	Wind Speed m/s	Direction
7-Oct-2013	18:00	2	N
7-Oct-2013	19:00	1.9	NE
7-Oct-2013	20:00	1.6	N
7-Oct-2013	21:00	1.5	N
7-Oct-2013	22:00	1.7	NNE
		1.8	W
7-Oct-2013	23:00	1.0	W
8-Oct-2013	00:00		SSW
8-Oct-2013	01:00	1.8	
8-Oct-2013	02:00	1.6	S
8-Oct-2013	03:00	1.6	NW
8-Oct-2013	04:00	1.3	NW
8-Oct-2013	05:00	1.7	NE
8-Oct-2013	06:00	1.6	WNW
8-Oct-2013	07:00	1.6	E
8-Oct-2013	08:00	1.9	W
8-Oct-2013	09:00	2	WNW
8-Oct-2013	10:00	2.2	WNW
8-Oct-2013	11:00	2.5	SW
8-Oct-2013	12:00	2.3	SW
8-Oct-2013	13:00	2.3	SE
8-Oct-2013	14:00	2.3	SE
8-Oct-2013	15:00	2.2	SE
8-Oct-2013	16:00	2	Ν
8-Oct-2013	17:00	1.8	E
8-Oct-2013	18:00	1.7	ESE
8-Oct-2013	19:00	1.6	ESE
8-Oct-2013	20:00	1.5	SE
8-Oct-2013	21:00	1.5	SE
8-Oct-2013	22:00	1.2	N
8-Oct-2013	23:00	1.5	NE
9-Oct-2013	00:00	1.4	E
9-Oct-2013	01:00	1.4	WNW
9-Oct-2013	02:00	1.3	WNW
9-Oct-2013	03:00	1.2	WNW
9-Oct-2013	04:00	1.5	NE
9-Oct-2013	05:00	1.4	N
9-Oct-2013	06:00	1.4	NE
9-Oct-2013	07:00	1.4	NE
9-Oct-2013	07:00	1.7	NE
9-Oct-2013	08:00	2.1	NE
9-Oct-2013	10:00	2.4	ENE
	11:00	2.4	<u> </u>
9-Oct-2013			
9-Oct-2013	12:00	2.3	ENE
9-Oct-2013	13:00	2.2	N
9-Oct-2013	14:00	1.9	W
9-Oct-2013	15:00	1.9	NNE
9-Oct-2013	16:00	2	NNE
9-Oct-2013	17:00	2.3	NNE
9-Oct-2013	18:00	2	ESE
9-Oct-2013	19:00	1.8	ENE
9-Oct-2013	20:00	1.6	NE
9-Oct-2013	21:00	1.7	NNE
9-Oct-2013	22:00	1.7	NNE
9-Oct-2013	23:00	1.8	NNE

Date	Time	Wind Speed m/s	Direction
10-Oct-2013	00:00	2.2	Ν
10-Oct-2013	01:00	2	WNW
10-Oct-2013	02:00	2	W
10-Oct-2013	03:00	2.3	ENE
10-Oct-2013	04:00	2.1	NNE
10-Oct-2013	05:00	1.7	NE
10-Oct-2013	06:00	2	NE
10-Oct-2013	07:00	1.8	ESE
10-Oct-2013	08:00	2.2	ENE
10-Oct-2013	09:00	2.4	NW
10-Oct-2013	10:00	2.6	W
10-Oct-2013	11:00	2.8	W
10-Oct-2013	12:00	2.8	W
10-Oct-2013	13:00	2.7	NE
10-Oct-2013	14:00	2.7	ENE
10-Oct-2013	15:00	2.8	NE
10-Oct-2013	16:00	2.8	ESE
10-Oct-2013	17:00	2.8	ESE E
	18:00	2.7	E
10-Oct-2013 10-Oct-2013	19:00	2.3	SSW
10-Oct-2013	20:00	2.1	
		2.1	SW
10-Oct-2013	21:00		
10-Oct-2013	22:00	2.3	S
10-Oct-2013	23:00	2.1	SW
11-Oct-2013	00:00	2.4	SW
11-Oct-2013	01:00	2.2	W
11-Oct-2013	02:00	2.3	SW
11-Oct-2013	03:00	2.3	SSW
11-Oct-2013	04:00	2.1	SSE
11-Oct-2013	05:00	2.3	W
11-Oct-2013	06:00	2.2	SSW
11-Oct-2013	07:00	2.2	SSW
11-Oct-2013	08:00	2.4	W
11-Oct-2013	09:00	3	SW
11-Oct-2013	10:00	3	W
11-Oct-2013	11:00	3.1	WNW
11-Oct-2013	12:00	3.2	NE
11-Oct-2013	13:00	3.3	NE
11-Oct-2013	14:00	3	NW
11-Oct-2013	15:00	3	WNW
11-Oct-2013	16:00	3.1	SSW
11-Oct-2013	17:00	3.1	WSW
11-Oct-2013	18:00	2.5	SW
11-Oct-2013	19:00	2.7	SW
11-Oct-2013	20:00	2.6	SSW
11-Oct-2013	21:00	2.6	WNW
11-Oct-2013	22:00	2.1	WNW
11-Oct-2013	23:00	2.3	WNW
12-Oct-2013	00:00	2.3	WSW
12-Oct-2013	01:00	2.2	W
12-Oct-2013	02:00	2.4	E
12-Oct-2013	03:00	2.4	WNW
12-Oct-2013	04:00	2.5	WNW
12-Oct-2013	05:00	2.2	SW

Date	Time	Wind Speed m/s	Direction
12-Oct-2013	06:00	2.1	WNW
12-Oct-2013	07:00	2.3	WSW
12-Oct-2013	08:00	2.4	W
12-Oct-2013	09:00	2.6	SSW
12-Oct-2013	10:00	3	SSE
12-Oct-2013	11:00	2.7	SSE
12-Oct-2013	12:00	2.7	WSW
12-Oct-2013	13:00	2.7	ENE
12-Oct-2013	14:00	2.7	SE
12-Oct-2013	15:00	2.8	SE
12-Oct-2013	16:00	2.5	ENE
12-Oct-2013	17:00	2.3	N
12-Oct-2013	18:00	2.0	SSE
12-Oct-2013	19:00	1.8	SSE
12-Oct-2013	20:00	1.6	SSE
12-Oct-2013			
12-Oct-2013	21:00 22:00	1.5	NNE NNE
12-Oct-2013	22:00	1.7	NE
			NE NE
13-Oct-2013	00:00	1.3	NE NE
13-Oct-2013	01:00	1.4	
13-Oct-2013	02:00	1.4	NNE
13-Oct-2013	03:00	1.4	NE
13-Oct-2013	04:00	1.4	ENE
13-Oct-2013	05:00	1.3	ENE
13-Oct-2013	06:00	1.4	ENE
13-Oct-2013	07:00	1.2	NNE
13-Oct-2013	08:00	1.6	SE
13-Oct-2013	09:00	2	S
13-Oct-2013	10:00	2	SSE
13-Oct-2013	11:00	2.3	ESE
13-Oct-2013	12:00	2.5	ESE
13-Oct-2013	13:00	2.6	E
13-Oct-2013	14:00	2.4	ESE
13-Oct-2013	15:00	2.4	NE
13-Oct-2013	16:00	2.1	NE
13-Oct-2013	17:00	2	NE
13-Oct-2013	18:00	1.9	ESE
13-Oct-2013	19:00	1.5	NNE
13-Oct-2013	20:00	1.2	N
13-Oct-2013	21:00	0.9	NNE
13-Oct-2013	22:00	1	ENE
13-Oct-2013	23:00	1.1	E
14-Oct-2013	00:00	1	NE
14-Oct-2013	01:00	0.8	NNE
14-Oct-2013	02:00	0.9	NE
14-Oct-2013	03:00	0.9	ENE
14-Oct-2013	04:00	0.9	NE
14-Oct-2013	05:00	0.9	ESE
14-Oct-2013	06:00	0.8	SE
14-Oct-2013	07:00	0.9	NNE
14-Oct-2013	08:00	1.2	S
14-Oct-2013	09:00	1.7	NNE
14-Oct-2013	10:00	2.1	NNE
14-Oct-2013	11:00	2.3	NNE

Date	Time	Wind Speed m/s	Direction
14-Oct-2013	12:00	2.3	NNE
14-Oct-2013	13:00	2.6	NNE
14-Oct-2013	14:00	2.6	NNE
14-Oct-2013	15:00	2.6	NNE
14-Oct-2013	16:00	2.4	NNE
14-Oct-2013	17:00	2.2	NNE
14-Oct-2013	18:00	1.9	NNE
14-Oct-2013	19:00	1.8	N
14-Oct-2013	20:00	1.4	S
14-Oct-2013	21:00	1.6	W
14-Oct-2013	22:00	1.5	S
14-Oct-2013	23:00	1.4	SSW
15-Oct-2013	00:00	1.2	SSW
15-Oct-2013	01:00	1.2	WNW
15-Oct-2013	02:00	1.3	W
15-Oct-2013	03:00	1.3	W
15-Oct-2013	03:00	1.3	W
15-Oct-2013	04.00	1.3	W
15-Oct-2013	05:00	1.2	SSW
15-Oct-2013	07:00	1.3	 WNW
15-Oct-2013	07:00	1.3	NE
15-Oct-2013	09:00	2	NE
15-Oct-2013	10:00	2.2	NE
15-Oct-2013	11:00	2.4	S
15-Oct-2013	12:00	2.6	S
15-Oct-2013	13:00	2.7	S
15-Oct-2013	14:00	2.5	SSW
15-Oct-2013	15:00	2.6	WNW
15-Oct-2013	16:00	2.2	SSW
15-Oct-2013	17:00	2.1	S
15-Oct-2013	18:00	2	WNW
15-Oct-2013	19:00	1.7	WNW
15-Oct-2013	20:00	1.5	WNW
15-Oct-2013	21:00	1.6	WNW
15-Oct-2013	22:00	1.4	SW
15-Oct-2013	23:00	1.4	W
16-Oct-2013	00:00	2.1	WSW
16-Oct-2013	01:00	1.8	WSW
16-Oct-2013	02:00	2	SW
16-Oct-2013	03:00	1.9	WSW
16-Oct-2013	04:00	1.9	WSW
16-Oct-2013	05:00	1.9	SW
16-Oct-2013	06:00	1.7	WNW
16-Oct-2013	07:00	1.7	WNW
16-Oct-2013	08:00	1.6	WNW
16-Oct-2013	09:00	2.2	WNW
16-Oct-2013	10:00	2.2	WSW
16-Oct-2013	11:00	2.3	W
16-Oct-2013	12:00	2.3	W
16-Oct-2013	13:00	2.4	WNW
16-Oct-2013	14:00	2.5	WNW
16-Oct-2013	15:00	2.6	W
16-Oct-2013	16:00	2.7	WNW
16-Oct-2013	17:00	2.5	SSW

Date	Time	Wind Speed m/s	Direction
16-Oct-2013	18:00	2.2	WNW
16-Oct-2013	19:00	2	WSW
16-Oct-2013	20:00	1.6	N
16-Oct-2013	21:00	1.7	Ν
16-Oct-2013	22:00	1.4	N
16-Oct-2013	23:00	1.2	WNW
17-Oct-2013	00:00	1.3	WNW
17-Oct-2013	01:00	1.3	W
17-Oct-2013	02:00	1.5	WNW
17-Oct-2013	03:00	1.6	SW
17-Oct-2013	04:00	1.4	WNW
17-Oct-2013	05:00	1.7	WNW
17-Oct-2013	06:00	2	W
17-Oct-2013	07:00	1.6	W
17-Oct-2013	08:00	1.7	WSW
17-Oct-2013	09:00	2	WNW
17-Oct-2013	10:00	2.4	SW
17-Oct-2013	11:00	2.4	SSW
17-Oct-2013	12:00	2.9	WSW WSW
17-Oct-2013	13:00	2.6	
17-Oct-2013	14:00	2.3	WNW
17-Oct-2013	15:00	2.6	W
17-Oct-2013	16:00	2.7	WSW
17-Oct-2013	17:00	2.2	WSW
17-Oct-2013	18:00	2.1	SW
17-Oct-2013	19:00	2	SSE
17-Oct-2013	20:00	1.6	SW
17-Oct-2013	21:00	1.6	N
17-Oct-2013	22:00	1.4	NNE
17-Oct-2013	23:00	1.5	W
18-Oct-2013	00:00	1.6	W
18-Oct-2013	01:00	1.6	WNW
18-Oct-2013	02:00	1.6	WSW
18-Oct-2013	03:00	1.6	SW
18-Oct-2013	04:00	1.8	SW
18-Oct-2013	05:00	1.9	SSW
18-Oct-2013	06:00	1.7	SSW
18-Oct-2013	07:00	1.8	WSW
18-Oct-2013	08:00	2	W
18-Oct-2013	09:00	2.3	W
18-Oct-2013	10:00	2.8	WSW
18-Oct-2013	11:00	2.9	W
18-Oct-2013	12:00	2.9	SW
18-Oct-2013	13:00	2.8	W
18-Oct-2013	14:00	2.8	W
18-Oct-2013	15:00	2.9	W
18-Oct-2013	16:00	2.6	WSW
18-Oct-2013	17:00	2.6	W
18-Oct-2013	18:00	2.5	W
18-Oct-2013	19:00	2	NNE
18-Oct-2013	20:00	2	NNE
18-Oct-2013	21:00	2.1	NE
18-Oct-2013	22:00	2.2	NE
18-Oct-2013	23:00	2.1	W

Date	Time	Wind Speed m/s	Direction
19-Oct-2013	00:00	2.1	W
19-Oct-2013	01:00	2.3	W
19-Oct-2013	02:00	2.3	W
19-Oct-2013	03:00	2.2	SSW
19-Oct-2013	04:00	2.2	WSW
19-Oct-2013	05:00	2.6	W
19-Oct-2013	06:00	2.4	SW
19-Oct-2013	07:00	2.1	WSW
19-Oct-2013	08:00	2.7	WNW
19-Oct-2013	09:00	2.7	SW
19-Oct-2013	10:00	2.9	WNW
19-Oct-2013	11:00	3.1	WNW
19-Oct-2013	12:00	3.3	WNW
19-Oct-2013	13:00	3.2	WNW
19-Oct-2013	14:00	3.2	W
19-Oct-2013	15:00	3.4	SW
19-Oct-2013	16:00	3.1	WSW
19-Oct-2013	17:00	2.8	WNW
19-Oct-2013	18:00	2.0	SW
19-Oct-2013	19:00	2.1	SW
19-Oct-2013	20:00	2.1	SW
19-Oct-2013	20:00	1.6	WNW
19-Oct-2013	21:00	2	NW
19-Oct-2013	23:00	1.9	WNW
20-Oct-2013	00:00	1.9	W
20-Oct-2013	01:00	1.9	W WSW
20-Oct-2013	02:00		
20-Oct-2013	03:00	2.2	W
20-Oct-2013	04:00	2	NNE
20-Oct-2013	05:00	2.2	SW
20-Oct-2013	06:00	2.3	SW
20-Oct-2013	07:00	1.7	SE
20-Oct-2013	08:00	1.9	SSW
20-Oct-2013	09:00	2.6	SSE
20-Oct-2013	10:00	2.7	SE
20-Oct-2013	11:00	3.1	NNW
20-Oct-2013	12:00	2.8	ENE
20-Oct-2013	13:00	2.6	SE
20-Oct-2013	14:00	2.5	E
20-Oct-2013	15:00	2.9	NE
20-Oct-2013	16:00	2.6	N
20-Oct-2013	17:00	2.5	NW
20-Oct-2013	18:00	1.9	NNE
20-Oct-2013	19:00	1.8	WNW
20-Oct-2013	20:00	1.9	WNW
20-Oct-2013	21:00	2	WNW
20-Oct-2013	22:00	2.1	N
20-Oct-2013	23:00	2.4	NNE
21-Oct-2013	00:00	1.8	W
21-Oct-2013	01:00	1.8	E
21-Oct-2013	02:00	1.7	WSW
21-Oct-2013	03:00	1.9	SW
21-Oct-2013	04:00	1.7	SW
21-Oct-2013	05:00	1.9	SSE

Date	Time	Wind Speed m/s	Direction
21-Oct-2013	06:00	1.3	SW
21-Oct-2013	07:00	1.2	SW
21-Oct-2013	08:00	1.2	SW
21-Oct-2013	09:00	1.8	NNE
21-Oct-2013	10:00	2.3	SSW
21-Oct-2013	11:00	2.6	W
21-Oct-2013	12:00	2.7	NNE
21-Oct-2013	13:00	2.6	W
21-Oct-2013	14:00	2.6	SSW
21-Oct-2013	15:00	2.4	SW
21-Oct-2013	16:00	2.2	SSW
21-Oct-2013	17:00	2.2	WNW
21-Oct-2013	18:00	1.9	S
21-Oct-2013	19:00	2	W
21-Oct-2013	20:00	1.6	Ŵ
21-Oct-2013	21:00	1.8	NNE
21-Oct-2013	22:00	1.6	SSW
21-Oct-2013	23:00	2	ESE
22-Oct-2013	00:00	1.6	NNE
22-Oct-2013	01:00	1.3	NNE
22-Oct-2013	02:00	1.2	W
22-Oct-2013	03:00	1.6	SW
22-Oct-2013	04:00	1.7	NE
22-Oct-2013	05:00	1.5	W
22-Oct-2013	06:00	1.5	WNW
22-Oct-2013	07:00	1.6	N
22-Oct-2013	08:00	1.9	SW
22-Oct-2013	09:00	2	W
22-Oct-2013	10:00	2.3	SSE
22-Oct-2013	11:00	2.7	WNW
22-Oct-2013	12:00	2.7	NE
22-Oct-2013	13:00	2.6	NNE
22-Oct-2013	14:00	2.6	ENE
22-Oct-2013	15:00	2.5	NE
22-Oct-2013	16:00	2.3	SE
22-Oct-2013	17:00	2.3	ESE
22-Oct-2013	18:00	2.2	ENE
22-Oct-2013	19:00	2.1	ESE
22-Oct-2013	20:00	2.2	SSW
22-Oct-2013	21:00	2.3	SE
22-Oct-2013	22:00	1.9	SSE
22-Oct-2013	23:00	2	SE
23-Oct-2013	00:00	2.3	SSE
23-Oct-2013	01:00	2.2	NE
23-Oct-2013	02:00	2.3	SE
23-Oct-2013	03:00	2.3	SSE
23-Oct-2013	04:00	2.1	NE
23-Oct-2013	05:00	2.1	E
23-Oct-2013	06:00	1.9	SW
23-Oct-2013	07:00	2	ENE
23-Oct-2013	08:00	2.3	E
23-Oct-2013	09:00	2.6	ENE
23-Oct-2013	10:00	3	SW
23-Oct-2013	11:00	3.2	N

Date	Time	Wind Speed m/s	Direction
23-Oct-2013	12:00	3	NNE
23-Oct-2013	13:00	2.9	W
23-Oct-2013	14:00	2.8	SW
23-Oct-2013	15:00	2.6	SSW
23-Oct-2013	16:00	3.1	SSW
23-Oct-2013	17:00	2.9	SW
23-Oct-2013	18:00	2.4	W
23-Oct-2013	19:00	2.4	W
23-Oct-2013	20:00	2.5	WSW
23-Oct-2013	21:00	2.4	WSW
23-Oct-2013	22:00	2.3	NNE
23-Oct-2013	23:00	2.1	WNW
24-Oct-2013	00:00	2.1	WNW
24-Oct-2013	01:00	2.2	SSW
24-Oct-2013	02:00	2.1	WSW
24-Oct-2013	03:00	2.2	W
24-Oct-2013	03:00	2.4	NNE
24-Oct-2013	04:00	2.1	N
24-Oct-2013	06:00	2	NE
24-Oct-2013 24-Oct-2013	07:00	1.8	NE
24-Oct-2013		2	N N
24-Oct-2013 24-Oct-2013	08:00	2.2	N N
		2.6	NNW
24-Oct-2013	10:00		
24-Oct-2013	11:00	2.5	WNW
24-Oct-2013	12:00	2.4	WNW
24-Oct-2013	13:00	2.9	WNW
24-Oct-2013	14:00	2.3	NNE
24-Oct-2013	15:00	2.5	ENE
24-Oct-2013	16:00	2.6	W
24-Oct-2013	17:00	2.6	WNW
24-Oct-2013	18:00	2.2	ENE
24-Oct-2013	19:00	1.9	NNE
24-Oct-2013	20:00	1.9	E
24-Oct-2013	21:00	2.1	SSE
24-Oct-2013	22:00	2.1	ENE
24-Oct-2013	23:00	2.1	ENE
25-Oct-2013	00:00	2	ENE
25-Oct-2013	01:00	1.9	ENE
25-Oct-2013	02:00	1.7	ESE
25-Oct-2013	03:00	1.7	ENE
25-Oct-2013	04:00	1.9	E
25-Oct-2013	05:00	1.6	SSE
25-Oct-2013	06:00	1.6	ENE
25-Oct-2013	07:00	1.7	NNE
25-Oct-2013	08:00	1.6	ENE
25-Oct-2013	09:00	2	N
25-Oct-2013	10:00	2.3	N
25-Oct-2013	11:00	2.3	NNE
25-Oct-2013	12:00	2.5	S
25-Oct-2013	13:00	2.6	W
25-Oct-2013	14:00	2.3	WSW
25-Oct-2013	15:00	2.4	W
25-Oct-2013	16:00	2.4	WSW
25-Oct-2013	17:00	2.3	WSW

Date	Time	Wind Speed m/s	Direction
25-Oct-2013	18:00	2.1	W
25-Oct-2013	19:00	1.9	WNW
25-Oct-2013	20:00	1.8	W
25-Oct-2013	21:00	1.7	SW
25-Oct-2013	22:00	1.9	W
25-Oct-2013	23:00	2	WNW
26-Oct-2013	00:00	1.8	WSW
26-Oct-2013	01:00	1.6	WSW
26-Oct-2013	02:00	1.9	WSW
26-Oct-2013	03:00	1.6	WSW
26-Oct-2013	04:00	1.2	WSW
26-Oct-2013	05:00	1.4	WSW
26-Oct-2013	06:00	1.4	WNW
26-Oct-2013	07:00	1.6	W
26-Oct-2013	08:00	1.7	WNW
26-Oct-2013	09:00	2.1	SE
26-Oct-2013	10:00	2.1	SE SE
26-Oct-2013	11:00	2.3	NE
26-Oct-2013	12:00	2.8	WSW
26-Oct-2013 26-Oct-2013	12:00	2.8	SSE
26-Oct-2013	14:00	2.8	ENE
26-Oct-2013	15:00	2.6	SE
26-Oct-2013	16:00	2.6	SSE
26-Oct-2013	17:00	2.2	S
26-Oct-2013	18:00	2.1	SE
26-Oct-2013	19:00	2	SSE
26-Oct-2013	20:00	1.9	ESE
26-Oct-2013	21:00	2.2	ESE
26-Oct-2013	22:00	2.1	ESE
26-Oct-2013	23:00	2.2	W
27-Oct-2013	00:00	2.1	W
27-Oct-2013	01:00	1.8	WNW
27-Oct-2013	02:00	2.1	WNW
27-Oct-2013	03:00	2	NE
27-Oct-2013	04:00	1.6	E
27-Oct-2013	05:00	1.6	N
27-Oct-2013	06:00	1.5	NE
27-Oct-2013	07:00	1.7	ENE
27-Oct-2013	08:00	1.9	ESE
27-Oct-2013	09:00	2.6	E
27-Oct-2013	10:00	2.7	ESE
27-Oct-2013	11:00	3	SE
27-Oct-2013	12:00	2.8	E
27-Oct-2013	13:00	2.6	ESE
27-Oct-2013	14:00	2.9	SE
27-Oct-2013	15:00	2.6	S
27-Oct-2013	16:00	2.5	SE
27-Oct-2013	17:00	2.6	SE
27-Oct-2013	18:00	2.2	Ν
27-Oct-2013	19:00	1.9	Ν
27-Oct-2013	20:00	1.8	S
27-Oct-2013	21:00	1.7	SSE
27-Oct-2013	22:00	1.6	W
27-Oct-2013	23:00	1.9	WNW

Date	Time	Wind Speed m/s	Direction
28-Oct-2013	00:00	2	WNW
28-Oct-2013	01:00	2	W
28-Oct-2013	02:00	2.1	SSW
28-Oct-2013	03:00	2.3	WNW
28-Oct-2013	04:00	2	ESE
28-Oct-2013	05:00	1.9	ESE
28-Oct-2013	06:00	1.7	WNW
28-Oct-2013	07:00	1.9	NE
28-Oct-2013	08:00	2.3	NE
28-Oct-2013	09:00	2.3	S
28-Oct-2013	10:00	2	NE
28-Oct-2013	11:00	1.9	ENE
28-Oct-2013	12:00	2.8	NNE
28-Oct-2013	13:00	3.2	NE
28-Oct-2013	14:00	2.9	NE
28-Oct-2013	15:00	3.4	NE
28-Oct-2013	16:00	3.4	NE
28-Oct-2013	17:00	3	NE
28-Oct-2013	18:00	2.3	NE
28-Oct-2013	19:00	1.9	NE
28-Oct-2013	20:00	1.9	W
28-Oct-2013	21:00	2.5	N
28-Oct-2013	22:00	2.6	NE
28-Oct-2013	23:00	2.7	N
29-Oct-2013	00:00	2.2	ENE
29-Oct-2013	01:00	2.4	ENE
29-Oct-2013	02:00	2.4	SSE
29-Oct-2013	03:00	2.2	ESE
29-Oct-2013	04:00	2	NNE
29-Oct-2013	05:00	2.1	ENE
29-Oct-2013	06:00	1.7	ENE
29-Oct-2013	07:00	1.8	E
29-Oct-2013	08:00	2	ESE
29-Oct-2013	09:00	2.3	ENE
29-Oct-2013	10:00	2.6	NNE
29-Oct-2013	11:00	2.7	ESE
29-Oct-2013	12:00	2.6	SE
29-Oct-2013	13:00	2.5	SW
29-Oct-2013	14:00	2.5	WNW
29-Oct-2013	15:00	2.7	ENE
29-Oct-2013	16:00	3.3	W
29-Oct-2013	17:00	3.4	WSW
29-Oct-2013	18:00	3.1	W
29-Oct-2013	19:00	2.9	W
29-Oct-2013	20:00	3	WSW
29-Oct-2013	21:00	2.3	NW
29-Oct-2013	22:00	2.5	SW
29-Oct-2013	23:00	3.2	SW
30-Oct-2013	00:00	3.4	S
30-Oct-2013	01:00	3.4	ENE
30-Oct-2013	02:00	2.3	ENE
30-Oct-2013	03:00	3.5	ENE
30-Oct-2013	03:00	2.6	SSE
30-Oct-2013	05:00	3.3	NNE

Date	Time	Wind Speed m/s	Direction
30-Oct-2013	06:00	2.6	NE
30-Oct-2013	07:00	3	NNE
30-Oct-2013	08:00	2.4	W
30-Oct-2013	09:00	3.1	SW
30-Oct-2013	10:00	3.6	SW
30-Oct-2013	11:00	2.6	W
30-Oct-2013	12:00	2.6	NNE
30-Oct-2013	13:00	2.6	WNW
30-Oct-2013	14:00	2.4	WSW
30-Oct-2013	15:00	2.3	W
30-Oct-2013	16:00	2.3	SW
30-Oct-2013	17:00	2	SW
30-Oct-2013	18:00	1.8	SSW
30-Oct-2013	19:00	1.9	SW
30-Oct-2013	20:00	2.3	SW
30-Oct-2013	21:00	2.2	W
30-Oct-2013	22:00	2.3	W
30-Oct-2013	23:00	2.5	S
31-Oct-2013	00:00	2.2	WSW
31-Oct-2013	01:00	2.2	SW
31-Oct-2013	02:00	2.5	SW
31-Oct-2013	03:00	2	S
31-Oct-2013	04:00	2.3	W
31-Oct-2013	05:00	2.5	WNW
31-Oct-2013	06:00	2.2	SW
31-Oct-2013	07:00	2.3	SW
31-Oct-2013	08:00	2.3	W
31-Oct-2013	09:00	2.2	NNE
31-Oct-2013	10:00	2.5	NE
31-Oct-2013	11:00	2.5	NE
31-Oct-2013	12:00	2.5	NE
31-Oct-2013	13:00	2.4	NNE
31-Oct-2013	14:00	2.3	NNE
31-Oct-2013	15:00	2.6	NE
31-Oct-2013	16:00	2.5	NNE
31-Oct-2013	17:00	2.2	E
31-Oct-2013	18:00	1.7	NE
31-Oct-2013	19:00	2.1	NE
31-Oct-2013	20:00	1.9	NE
31-Oct-2013	21:00	1.9	NE
31-Oct-2013	22:00	2	NE
31-Oct-2013	23:00	2.1	E

APPENDIX K EVENT ACTION PLANS

Event / Action Plan for Air Quality

	ACTION					
EVENT	ET	IEC	SO	CONTRACTOR		
ACTION LEVE	L					
1. Exceedance for one sample	 Identify source, investigate the causes of exceedance and propose remedial measures; Inform IEC and SO; Repeat measurement to confirm finding; Increase monitoring frequency to daily. 	 Check monitoring data submitted by ET; Check Contractor's working method. 	1. Notify Contractor.	 Rectify any unacceptable practice; Amend working methods if appropriate. 		
2.Exceedance for two or more consecutive samples	 Identify source; Inform IEC and SO; Advise the SO on the effectiveness of the proposed remedial measures; Repeat measurements to confirm findings; Increase monitoring frequency to daily; Discuss with IEC and Contractor on remedial actions required; If exceedance continues, arrange meeting with IEC and SO; If exceedance stops, cease additional monitoring. 	 Check monitoring data submitted by ET; Check Contractor's working method; Discuss with ET and Contractor on possible remedial measures; Advise the ET on the effectiveness of the proposed remedial measures; Supervise Implementation of remedial measures. 	 Confirm receipt of notification of failure in writing; Notify Contractor; 	 Submit proposals for remedial to SO within 3 working days of notification; Implement the agreed proposals; Amend proposal if appropriate. 		

LIMIT LEVEL				
1.Exceedance for one sample	 Identify source, investigate the causes of exceedance and propose remedial measures; Inform SO, Contractor and EPD; Repeat measurement to confirm finding; Increase monitoring frequency to daily; Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and SO informed of the results. 	 Check monitoring data submitted by ET; Check Contractor's working method; Discuss with ET and Contractor on possible remedial measures; Advise the SO on the effectiveness of the proposed remedial measures; Supervise implementation of remedial measures. 	 Confirm receipt of notification of failure in writing; Notify Contractor; Ensure remedial measures properly implemented. 	 Take immediate action to avoid further exceedance; Submit proposals for remedial actions to IEC within 3 working days of notification; Implement the agreed proposals; Amend proposal if appropriate.
2.Exceedance for two or more consecutive samples	 Notify IEC, SO, Contractor and EPD; Identify source; Repeat measurement to confirm findings; Increase monitoring frequency to daily; Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; Arrange meeting with IEC and SO to discuss the remedial actions to 	 Discuss amongst SO, ET, and Contractor on the potential remedial actions; Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the SO accordingly; Supervise the implementation of remedial 	 Confirm receipt of notification of failure in writing; Notify Contractor; In consultation with the IEC, agree with the Contractor on the remedial measures to be implemented; Ensure remedial measures properly implemented; 	 Take immediate action to avoid further exceedance; Submit proposals for remedial actions to IEC within 3 working days of notification; Implement the agreed proposals; Resubmit proposals if problem still not under control; Stop the relevant portion of works as determined by the SO until the exceedance is

be taken;	measures.	5. If exceedance	abated.
 be taken; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and SO informed of the results; 8. If exceedance stops, cease additional monitoring. 	measures.	5. 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.
		abated.	

Abbreviations: ET – Environmental Team, IEC – Independent Environmental Checker, SO – Supervising Office

EVENT	ACTION						
	ET	IEC	SO	CONTRACTOR			
Action Level	 Identify source, investigate the causes of exceedance and propose remedial measures; Notify IEC and Contractor; Report the results of investigation to the IEC, SO and Contractor; Discuss with the Contractor and formulate remedial measures; Increase monitoring frequency to check mitigation effectiveness. 	 Review the analysed results submitted by the ET; Review the proposed remedial measures by the Contractor and advise the SO 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 are properly implemented 	 Submit noise mitigation proposals to IEC; Implement noise mitigation proposals. 			
Limit Level	 Identify source; Inform IEC, SO, 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, SO and EPD 	 Discuss amongst SO, ET, and Contractor on the potential remedial actions; Review Contractors remedial actions whenever necessary to assure their effectiveness and advise the SO accordingly; Supervise the implementation of 	 Confirm receipt of notification of failure in writing; Notify Contractor; Require Contractor to propose remedial measures for the analysed noise 	 Take immediate action to avoid further exceedance; Submit proposals for remedial actions to IEC within 3 working days of notification; Implement the agreed proposals; Resubmit proposals if problem still not under control; 			

Event / Action Plan for Construction Noise

EVENT	ACTION				
	ЕТ	IEC	SO	CONTRACTOR	
	 the causes and actions taken for the exceedances; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and SO informed of the results; 8. If exceedance stops, cease additional monitoring. 	remedial measures.	 problem; 4. Ensure remedial measures properly implemented; 5. 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. 	5. Stop the relevant portion of works as determined by the SO until the exceedance is abated.	

Event	ET Leader	IEC	SO	Contractor
Action level being exceeded by one sampling day	Repeat <i>in situ</i> measurement on next day of exceedance to confirm findings; Identify source(s) of impact; Inform IEC, contractor and SO; Check monitoring data, all plant, equipment and Contractor's working methods.	Check monitoring data submitted by ET and Contractor's working methods.	Confirm receipt of notification of non-compliance in writing; Notify Contractor.	Inform the SO and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Amend working methods if appropriate.
Action level being exceeded by two or more consecutive sampling days	Repeat measurement on next day of exceedance to confirm findings; Identify source(s) of impact; Inform IEC, contractor, SO and EPD; Check monitoring data, all plant, equipment and Contractor's working methods; Ensure mitigation measures are implemented; Increase the monitoring frequency to daily until no exceedance of Action level;	Check monitoring data submitted by ET and Contractor's working method; Discuss with ET and Contractor on possible remedial actions; Review the proposed mitigation measures submitted by Contractor and advise the SO accordingly; Supervise the implementation of mitigation measures.	Discuss with IEC on the proposed mitigation measures; Ensure mitigation measures are properly implemented; Assess the effectiveness of the implemented mitigation measures.	Inform the Supervising Officer and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment and consider changes of working methods; Submit proposal of additional mitigation measures to SO within 3 working days of notification and discuss with ET, IEC and SO; Implement the agreed mitigation measures.
Limit level being exceeded by one sampling day	Repeat measurement on next day of exceedance to confirm findings; Identify source(s) of impact; Inform IEC, contractor, SO and EPD; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measures with IEC, SO and Contractor;	Check monitoring data submitted by ET and Contractor's working method; Discuss with ET and Contractor on possible remedial actions; Review the proposed mitigation measures submitted by Contractor and advise the SO accordingly.	Confirm receipt of notification of failure in writing; Discuss with IEC, ET and Contractor on the proposed mitigation measures; Request Contractor to review the working methods.	Inform the SO and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment and consider changes of working methods; Submit proposal of mitigation measures to SO within 3 working days of notification and discuss with ET, IEC and SO.

Event and Action Plan for Water Quality

Event	ET Leader	IEC	SO	Contractor
Limit level being exceeded by two or more consecutive sampling days	Repeat measurement on next day of exceedance to confirm findings; Identify source(s) of impact; Inform IEC, contractor, SO and EPD; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measures with IEC, SO and Contractor; Ensure mitigation measures are implemented;	Check monitoring data submitted by ET and Contractor's working method; Discuss with ET and Contractor on possible remedial actions; Review the Contractor's mitigation measures whenever necessary to assure their effectiveness and advise the SO accordingly; Supervise the implementation of mitigation measures.	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; Ensure mitigation measures are properly implemented; Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the construction activities until no exceedance of Limit level.	Take immediate action to avoid further exceedance; Submit proposal of mitigation measures to SO within 3 working days of notification and discuss with ET, IEC and SO; Implement the agreed mitigation measures; Resubmit proposals of mitigation measures if problem still not under control; As directed by the Supervising Officer, to slow down or to stop all or part of the construction activities until no exceedance of Limit level.

APPENDIX L SUMMARY OF EXCEEDANCE

Contract No. HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Section between HKSAR Boundary and Scenic Hill

Exceedance Report

- (A) Exceedance Report for Air Quality (1 hour TSP) (NIL in the reporting period)
- (B) Exceedance Report for Air Quality (24 hours TSP) (NIL in the reporting period)
- (C) Exceedance Report for Construction Noise (NIL in the reporting period)

(D) Exceedance Report for Water Quality

Environmental Monitoring	Parameter	No. of Exceedance		No. of Exceedance related to the Construction Activities of this Contract Action Limit	
		Level	Level	Level	Level
Water Quality	Dissolved Oxygen (DO) (Surface & Middle)	0	0	0	0
	Dissolved Oxygen (DO) (Bottom)	0	0	0	0
	Turbidity	1	0	0	0
	Suspended Solids (SS)	5	3	0	0

Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill - Notification of Environmental Quality Limit Exceedances

Date of Water Quality Monitoring: 2 October 2013

Part A – Exceedance Summary Tables

Table I: Parameter(s) – Dissolved Oxygen (DO) / Turbidity (TURB) / Suspended Solids (SS)

Station(s)	Tide	Baseline Action Level (mg/L)	Baseline Limit Level (mg/L)	Control Station(s)	Depth-average Value at Control Stations (mg/L)	120% of Control Station Action Level (mg/L)	130% of Control Station Limit Level (mg/L)	Depth-average Measured Value (mg/L)	Justification*	Validity (Yes/No)
SRA	Mid-flood	23.5	34.4	CS1	5.6	6.7	7.3	25.8	(2) & (6)	No

 Note:
 Bold Italic means Action Level exceedance

 Bold Italic with underline means Limit Level exceedance

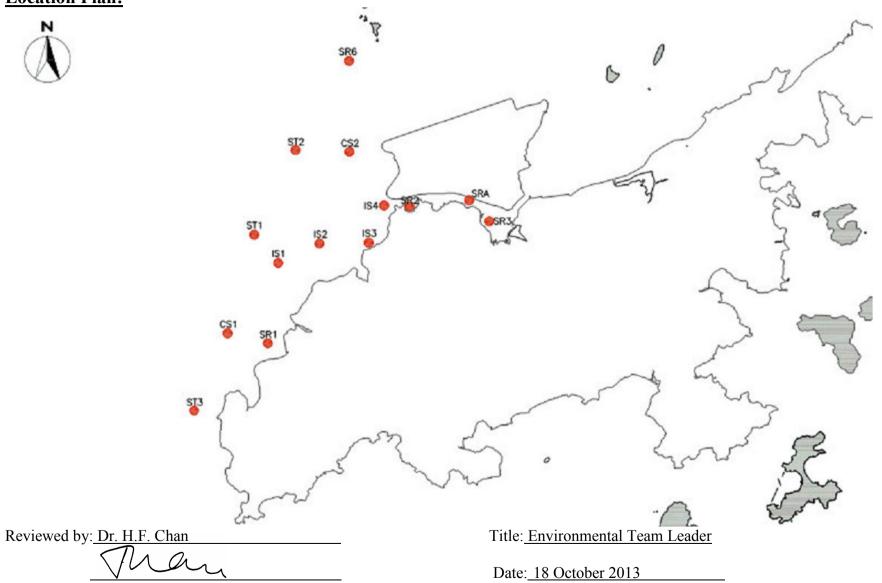
*Remarks (1) – No major marine construction activity was conducted.

- (2) No pollution discharge from construction activity was observed.
- (3) Control Station value already exceeded either the Baseline Action or Limit Levels.
- (4) The exceeded results were similar or within the ranges baseline monitoring results.
- (5) Monitoring station is situated at the upstream of the construction sites.
- (6) Other(s): Please specify <u>No marine construction works were conducted in vicinity of monitoring station SRA.</u>

Part B – Conclusion: No direct evidence that the exceedances were due to the Contract, therefore the exceedances are considered due to the other external factors rather than the contract works.

Part C - Recommendation: As the exceedances were not related to the contract works, no further action to be required.

Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill - Notification of Environmental Quality Limit Exceedances Location Plan:



Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill - Notification of Environmental Quality Limit Exceedances

Date of Water Quality Monitoring: 4 October 2013

Part A – Exceedance Summary Tables

Table I: Parameter(s) – Dissolved Oxygen (DO) / Turbidity (TURB) / Suspended Solids (SS)

Station(s)	Tide	Baseline Action Level (mg/L)	Baseline Limit Level (mg/L)	Control Station(s)	Depth-average Value at Control Stations (mg/L)		130% of Control Station Limit Level (mg/L)	Depth-average Measured Value (mg/L)	Justification*	Validity (Yes/No)
SR6	Mid-flood	23.5	34.4	CS1	4.3	5.2	5.6	<u>39.0</u>	(2) & (6)	No

 Note:
 Bold Italic means Action Level exceedance

 Bold Italic with underline means Limit Level exceedance

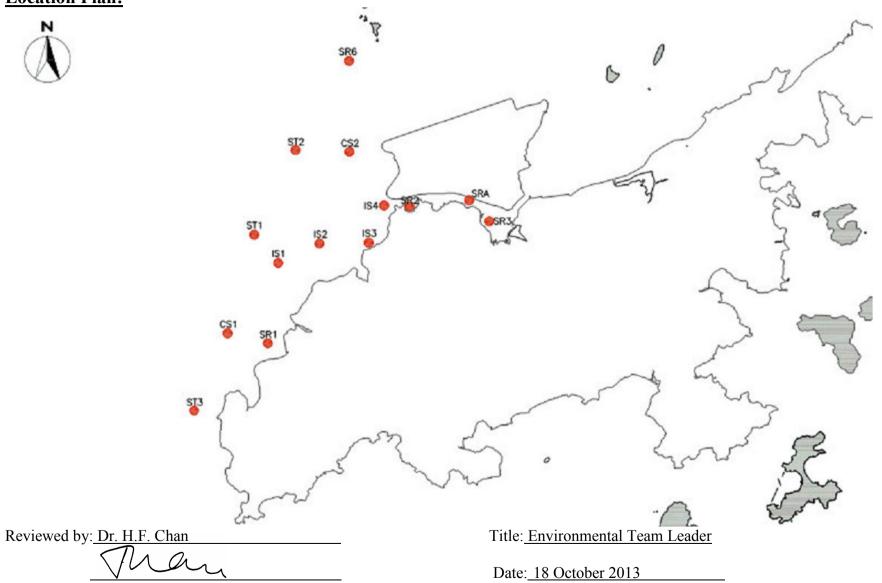
*Remarks (1) – No major marine construction activity was conducted.

- (2) No pollution discharge from construction activity was observed.
- (3) Control Station value already exceeded either the Baseline Action or Limit Levels.
- (4) The exceeded results were similar or within the ranges baseline monitoring results.
- (5) Monitoring station is situated at the upstream of the construction sites.
- (6) Other(s): Please specify –<u>No exceedances were recorded at the impact stations (i.e. IS1 to IS4) which are close to construction site and SR6 is far away from the construction sites.</u>

Part B – Conclusion: No direct evidence that the exceedances were due to the Contract, therefore the exceedances are considered due to the other external factors rather than the contract works.

Part C – Recommendation: As the exceedances were not related to the contract works, no further action to be required.

Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill - Notification of Environmental Quality Limit Exceedances Location Plan:



Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill - Notification of Environmental Quality Limit Exceedances

Date of Water Quality Monitoring: 7 October 2013

Part A – Exceedance Summary Tables

Table I: Parameter(s) – Dissolved Oxygen (DO) / Turbidity (TURB) / Suspended Solids (SS)

Station(s)	Tide	Baseline Action Level (mg/L)	Baseline Limit Level (mg/L)	Control Station(s)	Depth-average Value at Control Stations (mg/L)	120% of Control Station Action Level (mg/L)	130% of Control Station Limit Level (mg/L)	Depth-average Measured Value (mg/L)	Justification*	Validity (Yes/No)
IS2	Mid-ebb	22.5	24.4	CS2	14.9	17.9	19.4	23.8	(2) and (4)	No
ST2	Mid-flood	23.3	23.5 34.4	CS1	34.9	41.9	45.4	44.9	(2) and (3)	No

 Note:
 Bold Italic means Action Level exceedance

 Bold Italic with underline means Limit Level exceedance

*Remarks (1) – No major marine construction activity was conducted.

(2) – No pollution discharge from construction activity was observed.

(3) – Control Station value already exceeded either the Baseline Action or Limit Levels.

(4) - The exceeded results were similar or within the ranges baseline monitoring results. (Please refer to Table I)

(5) – Monitoring station is situated at the upstream of the construction sites.

(6) – Other(s): Please specify –

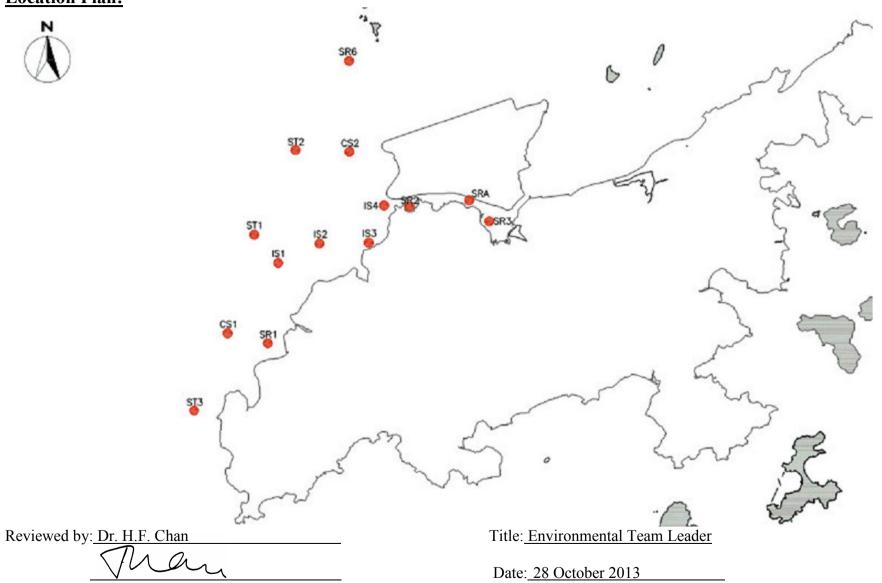
Table I – Summary of Baseline Water Quality Monitoring Results during Mid-Ebb Tide

Station(s)	Suspended Solids (mg/L)							
	Min	Max						
IS2	5.3	20.1						

Part B – Conclusion: No direct evidence that the exceedances were due to the Contract, therefore the exceedances are considered due to the other external factors rather than the contract works.

Part C – Recommendation: As the exceedances were not related to the contract works, no further action to be required.

Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill - Notification of Environmental Quality Limit Exceedances Location Plan:



Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill - Notification of Environmental Quality Limit Exceedances

Date of Water Quality Monitoring: 9 October 2013

Part A – Exceedance Summary Tables

Table I: Parameter(s) – Dissolved Oxygen (DO) / Turbidity (TURB) / Suspended Solids (SS)

Station(s)	Tide	Baseline Action Level (mg/L)	Baseline Limit Level (mg/L)	Control Station(s)	Depth-average Value at Control Stations (mg/L)		130% of Control Station Limit Level (mg/L)	Depth-average Measured Value (mg/L)	Justification*	Validity (Yes/No)
IS1	Mid-flood	23.5	34.4	CS1	9.3	11.2	12.1	<u>41.1</u>	(2) and (6)	No

Note:Bold Italic means Action Level exceedanceBold Italic with underlinemeans Limit Level exceedance

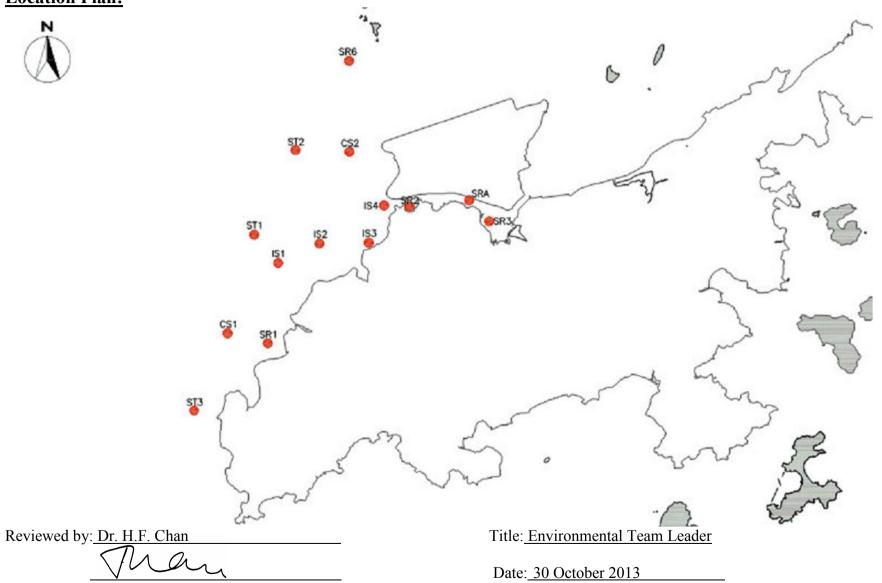
*Remarks (1) – No major marine construction activity was conducted.

- (2) No pollution discharge from construction activity was observed.
- (3) Control Station value already exceeded either the Baseline Action or Limit Levels.
- (4) The exceeded results were similar or within the ranges baseline monitoring results.
- (5) Monitoring station is situated at the upstream of the construction sites.
- (6) Other(s): Please specify No marine construction works were conducted in vicinity of monitoring station IS1.

Part B – Conclusion: No direct evidence that the exceedances were due to the Contract, therefore the exceedances are considered due to the other external factors rather than the contract works.

Part C - Recommendation: As the exceedances were not related to the contract works, no further action to be required.

Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill - Notification of Environmental Quality Limit Exceedances Location Plan:



Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill - Notification of Environmental Quality Limit Exceedances

Date of Water Quality Monitoring: <u>11 October 2013</u>

Part A – Exceedance Summary Tables

Table I: Parameter(s) – Dissolved Oxygen (DO) / Turbidity (TURB) / Suspended Solids (SS)

		Baseline	Baseline		Depth-average	120% of Control	130% of Control	Dopth avarage		Validity
Station(s)	Tide	Action	Limit	Control	Value at Control	Station	Station	Depth-average Measured Value	Inchrighton	(Yes/No)
Station(s)	The	Level	Level	Station(s)	Stations	Action Level	Limit Level			
		(mg/L)	(mg/L)		(mg/L)	(mg/L)	(mg/L)	(mg/L)		
IS1	Mid-flood	23.5	34.4	CS1	2.5	4.2	4.6	24.6	(2) and (6)	No
IS2	wiiu-1100u	23.3	34.4	CSI	3.5	4.2	4.0	28.0	(2) and (6)	No

Note:Bold Italic means Action Level exceedanceBold Italic with underline means Limit Level exceedance

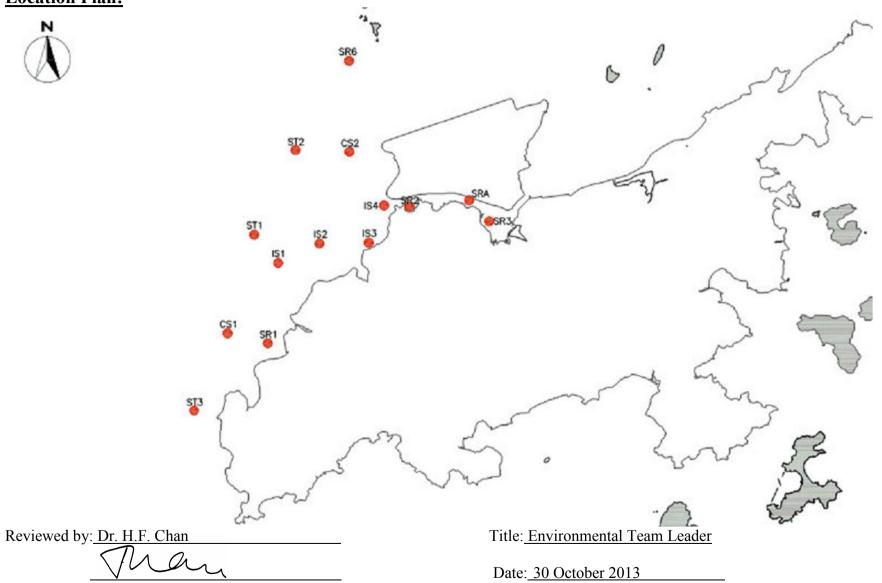
*Remarks (1) – No major marine construction activity was conducted.

- (2) No pollution discharge from construction activity was observed.
- (3) Control Station value already exceeded either the Baseline Action or Limit Levels.
- (4) The exceeded results were similar or within the ranges baseline monitoring results.
- (5) Monitoring station is situated at the upstream of the construction sites.
- (6) Other(s): Please specify <u>No marine construction works were conducted in vicinity of monitoring station IS1 and only splicing of</u> temporary piles and no activity touching the sea was carried out at near IS2.

Part B – Conclusion: No direct evidence that the exceedances were due to the Contract, therefore the exceedances are considered due to the other external factors rather than the contract works.

Part C – Recommendation: As the exceedances were not related to the contract works, no further action to be required.

Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill - Notification of Environmental Quality Limit Exceedances Location Plan:



Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill - Notification of Environmental Quality Limit Exceedances

Date of Water Quality Monitoring: 23 October 2013

Part A – Exceedance Summary Tables

Table I: Parameter(s) – Dissolved Oxygen (DO) / Turbidity (TURB) / Suspended Solids (SS)

Station(s)		Baseline Action Level (mg/L)	Baseline Limit Level (mg/L)	Control Station(s)	Depth-average Value at Control Stations (mg/L)	120% of Control Station Action Level (mg/L)	130% of Control Station Limit Level (mg/L)	Depth-average Measured Value (mg/L)	Justification*	Validity (Yes/No)
ST1	Mid-flood	23.5	34.4	CS1	13.1	15.7	17.0	<u>49.2</u>	(2) and (6)	No

 Note:
 Bold Italic means Action Level exceedance

 Bold Italic with underline means Limit Level exceedance

*Remarks (1) – No major marine construction activity was conducted.

- (2) No pollution discharge from construction activity was observed.
- (3) Control Station value already exceeded either the Baseline Action or Limit Levels.
- (4) The exceeded results were similar or within the ranges baseline monitoring results.

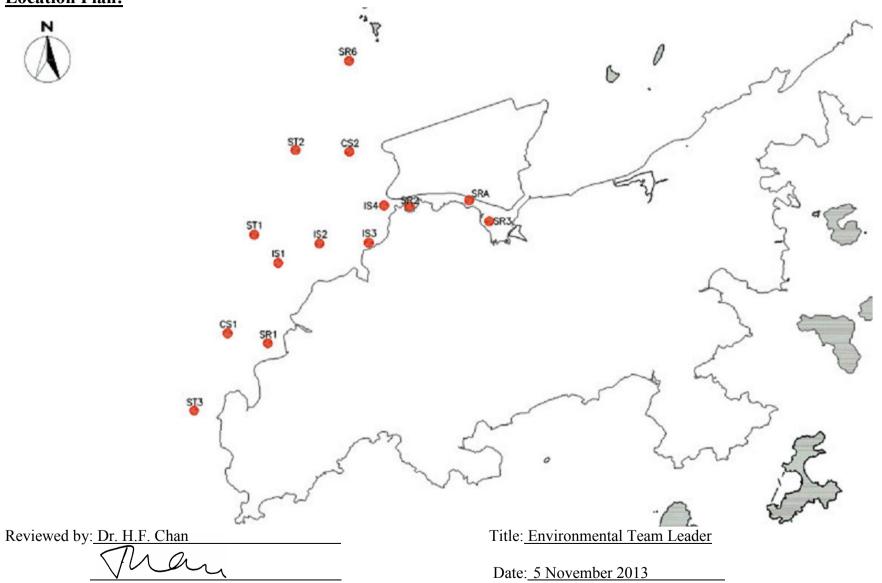
(5) – Monitoring station is situated at the upstream of the construction sites.

(6) – Other(s): Please specify – <u>Sediment plume due to the fishing vessels were observed during the monitoring.</u>

Part B – Conclusion: No direct evidence that the exceedances were due to the Contract, therefore the exceedances are considered due to the other external factors rather than the contract works.

Part C – Recommendation: As the exceedances were not related to the contract works, no further action to be required.

Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill - Notification of Environmental Quality Limit Exceedances Location Plan:



Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill - Notification of Environmental Quality Limit Exceedances

Date of Water Quality Monitoring: 23 October 2013

Part A – Exceedance Summary Tables

Table I: Parameter(s) – Dissolved Oxygen (DO) / Turbidity (TURB) / Suspended Solids (SS)

Station(s)	Tide	Baseline Action Level (NTU)	Baseline Limit Level (NTU)	Control Station(s)	Depth-average Value at Control Stations (NTU)	120% of Control Station Action Level (NTU)	130% of Control Station Limit Level (NTU)	Depth-average Measured Value (NTU)	Justification*	Validity (Yes/No)
ST1	Mid-flood	27.5	47.0	CS1	12.7	15.2	16.5	44.1	(2) and (6)	No

Note:Bold Italic means Action Level exceedanceBold Italic with underlinemeans Limit Level exceedance

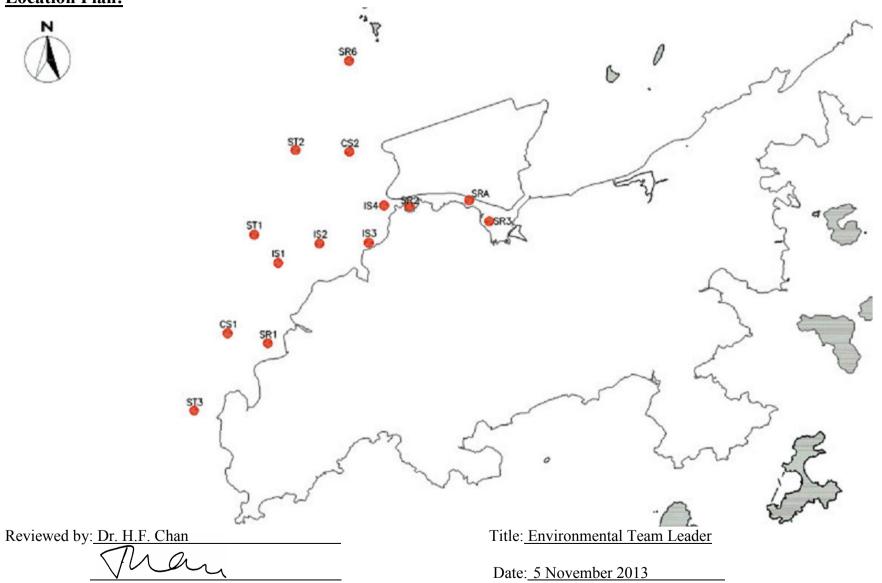
*Remarks (1) – No major marine construction activity was conducted.

- (2) No pollution discharge from construction activity was observed.
- (3) Control Station value already exceeded either the Baseline Action or Limit Levels.
- (4) The exceeded results were similar or within the ranges baseline monitoring results.
- (5) Monitoring station is situated at the upstream of the construction sites.
- (6) Other(s): Please specify Sediment plume due to the fishing vessels were observed during the monitoring.

Part B – Conclusion: No direct evidence that the exceedances were due to the Contract, therefore the exceedances are considered due to the other external factors rather than the contract works.

Part C - Recommendation: As the exceedances were not related to the contract works, no further action to be required.

Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill - Notification of Environmental Quality Limit Exceedances Location Plan:



APPENDIX M SITE AUDIT SUMMARY

Hong Kong-Zhuhai-Macao Bridge

Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill

Weekly Site Inspection Record Summary

Inspection Information	
Checklist Reference Number	131002
Date	2 October 2013 (Wednesday)
Time	9:30-11:30

		Related
Ref. No.	Non-Compliance	Item No.
-	None identified	-
		Related
Ref. No.	Remarks/Observations	Item No.
	A. Water Quality	
131002-R02	Clear the water at wheel washing bay regularly at Portion C.	B10iii. & iv.
	B. Ecology	
	No environmental deficiency was identified during site inspection.	
	C. Air Quality	
	No environmental deficiency was identified during site inspection.	
	D. Noise	
	No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
131002-R01	• To plug the drip tray for the generator at Portion C.	F9
131002-R03	Clear the oil spillage as chemical waste at WA4.	<u>F8</u>
	F. Permits/Licences	
	No environmental deficiency was identified during site inspection.	
	G. Others	
	• Follow-up on previous site audit session (Ref. No. 130930), all environmental deficiencies were improved/rectified by contractor during the site inspection.	

· · · · · · · · · · · · · · · · · · ·	Name	Signature	Date
Recorded by	Ivy Tam	Yun	2 October 2013
Checked by	Dr. Priscilla Choy	WIT-	2 October 2013

Y> 1 4

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Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill

Environmental Observations Identified during the Environmental Site Inspection (2 October 2013)



Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill

<u>Rectification Actions taken by the Contractor for Environmental Deficiencies</u> <u>Identified during Previous Audit Session</u>



Hong Kong-Zhuhai-Macao Bridge

Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill

Weekly Site Inspection Record Summary

Inspection Information		
Checklist Reference Number	131007	
Date	7 October 2013 (Monday)	
Time	9:30-11:15	

		Related
Ref. No.	Non-Compliance	Item No.
-	None identified	-
		Related
Ref. No.	Remarks/Observations	Item No.
	A. Water Quality	
	No environmental deficiency was identified during site inspection.	
	B. Ecology	· · ·
	No environmental deficiency was identified during site inspection.	
	C. Air Quality	
131007-R01	Provide water spray for the dry exposed area at WA4.	D6 & 14
	D. Noise	
	No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
131007-R02	• To remove the empty chemical container as chemical waste at WA4.	F2ii.
	F. Permits/Licences	
	No environmental deficiency was identified during site inspection.	
	G. Others	
	• Follow-up on previous site audit session (Ref. No. 131002), all environmental deficiencies were improved/rectified by contractor during the site inspection.	

	Name	Signature	Date
Recorded by	Ivy Tam	- Un	7 October 2013
Checked by	Dr. Priscilla Choy	WIT	7 October 2013

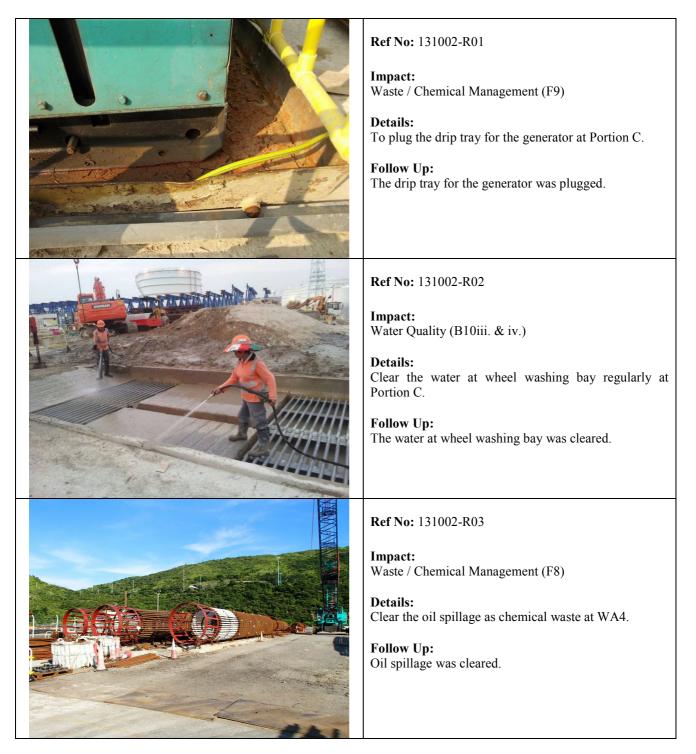
Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill

Environmental Observations Identified during the Environmental Site Inspection (7 October 2013)



Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill

<u>Rectification Actions taken by the Contractor for Environmental Deficiencies</u> <u>Identified during Previous Audit Session</u>



Hong Kong-Zhuhai-Macao Bridge

Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill

Weekly Site Inspection Record Summary Inspection Information

Inspection information	
Checklist Reference Number	131016
Date	16 October 2013 (Wednesday)
Time	9:00-12:00

		Related
Ref. No.	Non-Compliance	Item No.
-	None identified	-
÷		Related
Ref. No.	Remarks/Observations	Item No.
	A. Water Quality	
131016-R02	To repair the damage silt curtain at P20.	B25
	B. Ecology	
	No environmental deficiency was identified during site inspection.	
	C. Air Quality	
	No environmental deficiency was identified during site inspection.	······ · ··
	D. Noise	
131016-R03	Provide acoustic decoupling measures for the generator at P73.	E7
	E. Waste / Chemical Management	
131016-001	• Oil leakage was observed from the RCD at P73. The Contractor was reminded to check and repair the equipment, if necessary to avoid further leakage.	F 8
	F. Permits/Licences	
	No environmental deficiency was identified during site inspection.	
	G. Others	
	• Follow-up on previous site audit session (Ref. No. 131007), all environmental deficiencies were improved/rectified by contractor during the site inspection.	

	Name	Signature	Date
Recorded by	Ivy Tam	Tend	16 October 2013
Checked by	Dr. Priscilla Choy	with	16 October 2013

Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill

Environmental Observations Identified during the Environmental Site Inspection (16 October 2013)



Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill

<u>Rectification Actions taken by the Contractor for Environmental Deficiencies</u> <u>Identified during Previous Audit Session</u>



Hong Kong-Zhuhai-Macao Bridge

Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill

Weekly Site Inspection Record Summary

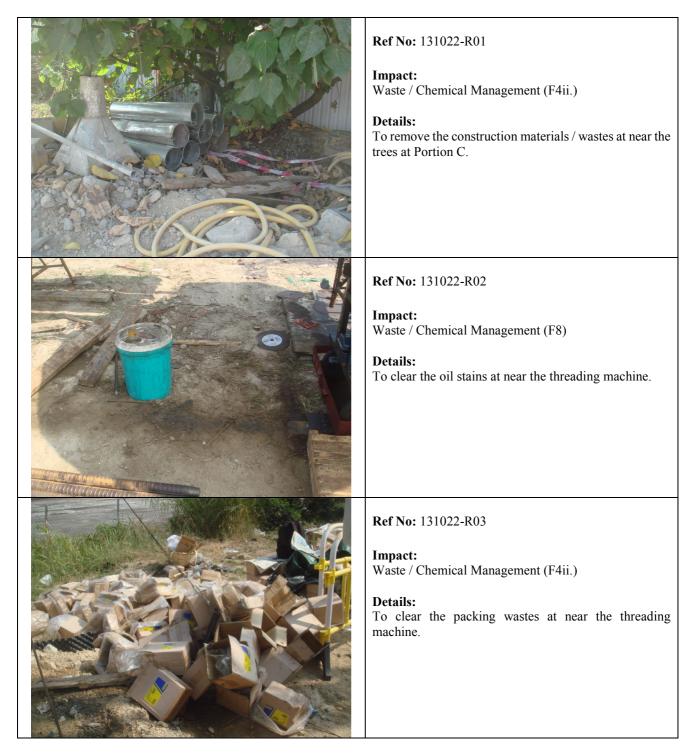
Inspection Information	
Checklist Reference Number	131022
Date	22 October 2013 (Tuesday)
Time	9:30-11:30

		Related Item No.			
Ref. No.	Non-Compliance				
-	None identified	-			
Ref. No.	Remarks/Observations	Related Item No.			
Kei. Nu.		11030 1107			
131022-R04	 <i>A. Water Quality</i> To remove the piles which contact to the sea at Portion A (near P104). 	B21			
131022-1004	• To remove the piles which contact to the set at romon remove the piles which contact to the set at romon remove the romon.				
<u> </u>	B. Ecology				
	No environmental deficiency was identified during site inspection.				
	C. Air Quality				
	No environmental deficiency was identified during site inspection.	-			
	D. Noise				
	No environmental deficiency was identified during site inspection.				
	E. Waste / Chemical Management				
131022-R01	• To remove the construction materials / wastes at near the trees at Portion C.	F4ii.			
131022-R02	To clear the oil stains at near the threading machine.	F8			
131022-R03	To clear the packing wastes at near the threading machine.	F4ii.			
	F. Permits/Licences				
	No environmental deficiency was identified during site inspection.				
	G. Others				
	• Follow-up on previous site audit session (Ref. No. 131016), all environmental deficiencies were improved/rectified by contractor during the site inspection.				

	Name	Signature	Date
Recorded by	Ivy Tam	Jung	22 October 2013
Checked by	Dr. Priscilla Choy	wif-	22 October 2013

Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill

Environmental Observations Identified during the Environmental Site Inspection (22 October 2013)



Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill



Ref No: 131022-R04

Impact: Water Quality (B21)

Details: To remove the piles which contact to the sea at Portion A. (near P104)

Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill

<u>Rectification Actions taken by the Contractor for Environmental Deficiencies</u> <u>Identified during Previous Audit Session</u>



Ref No: 131016-001

Impact: Waste / Chemical Management (F8)

Details:

Oil leakage was observed from the RCD at P73. The Contractor was reminded to check and repair the equipment, if necessary to avoid further leakage.

Follow Up: No further oil leakage from RCD was observed.

Ref No: 131016-R02

Impact: Water Quality (B25)

Details: To repair the damage silt curtain at P20.

Follow Up: The damage silt curtain was repaired.

Ref No: 131016-R03

Impact: Waste / Chemical Management (E7)

Details: Provide acoustic decoupling measures for the generator at P73.

Follow Up: The acoustic decoupling measure was implemented for the generator.

Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill

Weekly Site Inspection Record Summary Inspection Information

Checklist Reference Number	131029	
Date	29 October 2013 (Tuesday)	
Time	13:30-15:30	

Ref. No.	Non-Compliance	Related
-	None identified	Item No.
Ref. No.	Remarks/Observations	Related Item No.
131029-R03	A. Water Quality • To repair the damage silt curtain at P73 ASAP.	B25
	 B. Ecology No environmental deficiency was identified during site inspection. 	
131029-R02	 C. Air Quality To check and repair the air compressor at P73 to avoid emitting heavy smoke. 	D19
	 <i>D. Noise</i> No environmental deficiency was identified during site inspection. 	· · · · · · · · · · · · · · · · · · ·
	 <i>E. Waste / Chemical Management</i> No environmental deficiency was identified during site inspection. 	
131029-R01	 F. Permits/Licences To update the environmental permit which displayed at P65. 	G5
	 G. Others Follow-up on previous site audit session (Ref. No. 131022), all environmental deficiencies were improved/rectified by contractor during the site inspection. 	

	Name	Signature	Date
Recorded by	Ivy Tam	two	29 October 2013
Checked by	Dr. Priscilla Choy	WIT	29 October 2013

Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill

Environmental Observations Identified during the Environmental Site Inspection (29 October 2013)



Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill

<u>Rectification Actions taken by the Contractor for Environmental Deficiencies</u> <u>Identified during Previous Audit Session</u>



Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill



Ref No: 131022-R04

Impact: Water Quality (B21)

Details: To remove the piles which contact to the sea at Portion A. (near P104)

Follow Up: The piles have been removed.

APPENDIX N UPDATED ENVIRONMENTAL MITIGATION IMPLEMENTATION SCHEDULE (EMIS)

EIA Ref.	EM&A	Recommended Mitigation Measures	Objectives of the	Who to	Location of the	When to	Implementation
	Log Ref		recommended Measures &	implement the	measures	Implement the	Status
			Main Concerns to address	measures?		measures?	
Air Quali	ity						
S5.5.6.1	A1	1) The contractor shall follow the procedures and requirements given in	Good construction site	Contractor	All construction	Construction	٨
		the Air Pollution Control (Construction Dust) Regulation	practices to control the dust		sites	stage	
			impact at the nearby				
			sensitive receivers to within				
			the relevant criteria.				
S5.5.6.2	A2	2) Proper watering of exposed spoil should be undertaken throughout the	Good construction site	Contractor	All construction	Construction	
		construction phase:	practices to control the dust		sites	stage	
		Any excavated or stockpile of dusty material should be covered	impact at the nearby				
		entirely by impervious sheeting or sprayed with water to maintain	sensitive receivers to within				۸
		the entire surface wet and then removed or backfilled or reinstated	the relevant criteria.				
		where practicable within 24 hours of the excavation or unloading;					
		Any dusty materials remaining after a stockpile is removed should					۸
		be wetted with water and cleared from the surface of roads;					
		A stockpile of dusty material should not be extend beyond the					۸
		pedestrian barriers, fencing or traffic cones.					
		• The load of dusty materials on a vehicle leaving a construction site					۸
		should be covered entirely by impervious sheeting to ensure that the					
		dusty materials do not leak from the vehicle;					
		Where practicable, vehicle washing facilities with high pressure					
		water jet should be provided at every discernible or designated					۸
		vehicle exit point. The area where vehicle washing takes place and					
		the road section between the washing facilities and the exit point					
		should be paved with concrete, bituminous materials or hardcores;					
S5.5.6.2	A2	When there are open excavation and reinstatement works, hoarding	Good construction site	Contractor	All construction	Construction	۸

EIA Ref.	EM&A	Recommended Mitigation Measures	Objectives of the	Who to	Location of the	When to	Implementation
	Log Ref		recommended Measures &	implement the	measures	Implement the	Status
			Main Concerns to address	measures?		measures?	
		of not less than 2.4m high should be provided as far as practicable	practices to control the dust		sites	stage	
		along the site boundary with provision for public crossing. Good site	impact at the nearby				
		practice shall also be adopted by the Contractor to ensure the	sensitive receivers to within				
		conditions of the hoardings are properly maintained throughout the	the relevant criteria.				
		construction period;					
		The portion of any road leading only to construction site that is within					۸
		30m of a vehicle entrance or exit should be kept clear of dusty					
		materials;					
		Surfaces where any pneumatic or power-driven drilling, cutting,					۸
		polishing or other mechanical breaking operation takes place should					
		be sprayed with water or a dust suppression chemical continuously;					
		Any area that involves demolition activities should be sprayed with					
		water or a dust suppression chemical immediately prior to, during					*
		and immediately after the activities so as to maintain the entire					
		surface wet;					
		Where a scaffolding is erected around the perimeter of a building					
		under construction, effective dust screens, sheeting or netting					N/A
		should be provided to enclose the scaffolding from the ground floor					
		level of the building, or a canopy should be provided from the first					
		floor level up to the highest level of the scaffolding;					
		Any skip hoist for material transport should be totally enclosed by					۸
		impervious sheeting;					
		Every stock of more than 20 bags of cement or dry pulverised fuel					۸
		ash (PFA) should be covered entirely by impervious sheeting or					
		placed in an area sheltered on the top and the 3 sides;					

EIA Ref.	EM&A	Recommended Mitigation Measures	Objectives of the	Who to	Location of the	When to	Implementation
	Log Ref		recommended Measures &	implement the	measures	Implement the	Status
			Main Concerns to address	measures?		measures?	
S5.5.6.2	A2	Cement or dry PFA delivered in bulk should be stored in a closed	Good construction site	Contractor	All construction	Construction	N/A
		silo fitted with an audible high level alarm which is interlocked with	practices to control the dust		sites	stage	
		the material filling line and no overfilling is allowed;	impact at the nearby				
		Loading, unloading, transfer, handling or storage of bulk cement or	sensitive receivers to within				۸
		dry PFA should be carried out in a totally enclosed system or facility,	the relevant criteria.				
		and any vent or exhaust should be fitted with an effective fabric filter					
		or equivalent air pollution control system; and					
		Exposed earth should be properly treated by compaction, turfing,					
		hydroseeding, vegetation planting or sealing with latex, vinyl,					۸
		bitumen, shotcrete or other suitable surface stabiliser within six					
		months after the last construction activity on the construction site or					
		part of the construction site where the exposed earth lies.					
S5.5.6.3	A3	3) The Contractor should undertake proper watering on all exposed spoil	Control construction dust	Contractor	All construction	Construction stage	*
		(with at least 8 times per day) throughout the construction phase.			sites		
S5.5.6.4	A5	5) Implement regular dust monitoring under EM&A programme during the	Monitor the 24 hr and 1hr	Contractor	Selected	Construction	۸
		construction stage.	TSP levels at the		representative	stage	
			representative dust		dust		
			monitoring stations to ensure		monitoring station		
			compliance with relevant				
			criteria throughout the				
			construction period.				
S5.5.7.1	A6	The following mitigation measures should be adopted to prevent fugitive	Monitor the 24 hr and 1hr	Contractor	Selected	Construction	
		dust emissions for concrete batching plant:	TSP levels at the		representative	stage	
		Loading, unloading, handling, transfer or storage of any dusty	representative dust		dust		N/A

EIA Ref.	EM&A	Recommended Mitigation Measures	Objectives of the	Who to	Location of the	When to	Implementation
	Log Ref		recommended Measures &	implement the	measures	Implement the	Status
			Main Concerns to address	measures?		measures?	
		materials should be carried out in totally enclosed system;	monitoring stations to ensure		monitoring station		
		All dust-laden air or waste gas generated by the process operations	compliance with relevant				N/A
		should be properly extracted and vented to fabric filtering system to	criteria throughout the				
		meet the emission limits for TSP;	construction period.				
		Vents for all silos and cement/pulverised fuel ash (PFA) weighing					N/A
		scale should be fitted with fabric filtering system;					
		The materials which may generate airborne dusty emissions should					
		be wetted by water spray system;					N/A
		All receiving hoppers should be enclosed on three sides up to 3m					
		above unloading point;					N/A
		All conveyor transfer points should be totally enclosed;					N/A
		All access and route roads within the premises should be paved and					N/A
		wetted; and					
		Vehicle cleaning facilities should be provided and used by all					N/A
		concrete trucks before leaving the premises to wash off any dust on					
		the wheels and/or body.					
S5.5.2.7	A7	The following mitigation measures should be adopted to prevent	Control construction dust	Contractor	All construction	Construction	
		fugitive dust emissions at barging point:			sites	stage	
		 All road surface within the barging facilities will be paved; 					N/A
		Dust enclosures will be provided for the loading ramp;					N/A
		Vehicles will be required to pass through designated wheels wash					N/A
		facilities; and					
		Continuous water spray at the loading points.					N/A
Construc	tion Nois	e (Air borne)					
S6.4.10	N1	1) Use of good site practices to limit noise emissions by considering the	Control construction airborne	Contractor	All construction	Construction	

EIA Ref.	EM&A	Recommended Mitigation Measures	Objectives of the	Who to	Location of the	When to	Implementation
	Log Ref		recommended Measures &	implement the	measures	Implement the	Status
			Main Concerns to address	measures?		measures?	
		following:	noise by means of good site		sites	stage	
		only well-maintained plant should be operated on-site and plant	practices				۸
		should be serviced regularly during the construction programme;					
		 machines and plant (such as trucks, cranes) that may be in 					۸
		intermittent use should be shut down between work periods or					
		should be throttled down to a minimum;					
		• plant known to emit noise strongly in one direction, where possible,					۸
		be orientated so that the noise is directed away from nearby NSRs;					
		silencers or mufflers on construction equipment should be properly					۸
		fitted and maintained during the construction works;					
		mobile plant should be sited as far away from NSRs as possible and					
		practicable;					٨
		material stockpiles, mobile container site officer and other structures					
		should be effectively utilised, where practicable, to screen noise					۸
		from on-site construction activities.					
S6.4.11	N2	2) Install temporary hoarding located on the site boundaries between	Reduce the construction	Contractor	All construction	Construction	۸
		noisy construction activities and NSRs. The conditions of the hoardings	noise levels at low-level		sites	stage	
		shall be properly maintained throughout the construction period.	zone of NSRs through partial				
			screening.				
S6.4.12	N3	3) Install movable noise barriers (typically density @14kg/m ²), acoustic	Screen the noisy plant items	Contractor	For plant items	Construction	*
		mat or full enclosure close to noisy plants including air compressor,	to be used at all construction		listed in Appendix	stage	
		generators, saw.	sites		6D of the EIA		
					report at all		
					construction sites		
S6.4.13	N4	4) Select "Quiet plants" which comply with the BS 5228 Part 1 or TM	Reduce the noise levels of	Contractor	For plant items	Construction	۸

EIA Ref.	EM&A	Recommended Mitigation Measures	Objectives of the	Who to	Location of the	When to	Implementation
	Log Ref		recommended Measures &	implement the	measures	Implement the	Status
			Main Concerns to address	measures?		measures?	
		standards.	plant items		listed in Appendix	stage	
					6D of the EIA		
					report at all		
					construction sites		
S6.4.14	N5	5) Sequencing operation of construction plants where practicable.	Operate sequentially within	Contractor	All construction	Construction	٨
			the same work site to reduce		sites where	stage	
			the construction airborne		practicable		
			noise				
	N6	6) Implement a noise monitoring under EM&A programme.	Monitor the construction	Contractor	Selected	Construction	۸
			noise levels at the selected		representative	stage	
			representative locations		noise monitoring		
					station		
Waste Ma	anagemei	nt (Construction Waste)					
S8.3.8	WM1	Construction and Demolition Material	Good site practice to	Contractor	All construction	Construction	
		The following mitigation measures should be implemented in	minimize the waste		sites	stage	
		handling the waste:	generation and recycle the				
		Maintain temporary stockpiles and reuse excavated fill material for	C&D materials as far as				۸
		backfilling and reinstatement;	practicable so as to reduce				
		Carry out on-site sorting;	the amount for final disposal				۸
		Make provisions in the Contract documents to allow and promote					۸
		the use of recycled aggregates where appropriate;					
		Adopt 'Selective Demolition' technique to demolish the existing					
		structures and facilities with a view to recovering broken concrete					۸
		effectively for recycling purpose, where possible;					
		Implement a trip-ticket system for each works contract to ensure that					٨

EIA Ref.	EM&A	Recommended Mitigation Measures	Objectives of the	Who to	Location of the	When to	Implementation
	Log Ref		recommended Measures &	implement the	measures	Implement the	Status
			Main Concerns to address	measures?		measures?	
		the disposal of C&D materials are properly documented and verified;					
		and					
		Implement an enhanced Waste Management Plan similar to					۸
		ETWBTC (Works) No. 19/2005 – "Environmental Management on					
		Construction Sites" to encourage on-site sorting of C&D materials					
		and to minimize their generation during the course of construction.					
		In addition, disposal of the C&D materials onto any sensitive					
		locations such as agricultural lands, etc. should be avoided. The					۸
		Contractor shall propose the final disposal sites to the Project					
		Proponent and get its approval before implementation					
S8.3.9 -	WM2	<u>C&D Waste</u>	Good site practice to	Contractor	All construction	Construction	
S8.3.11		Standard formwork or pre-fabrication should be used as far as	minimize the waste		sites	stage	۸
		practicable in order to minimise the arising of C&D materials. The	generation and recycle the				
		use of more durable formwork or plastic facing for the construction	C&D materials as far as				
		works should be considered. Use of wooden hoardings should not	practicable so as to reduce				
		be used, as in other projects. Metal hoarding should be used to	the amount for final disposal				
		enhance the possibility of recycling. The purchasing of construction					
		materials will be carefully planned in order to avoid over ordering					
		and wastage.					
		The Contractor should recycle as much of the C&D materials as					
		possible on-site. Public fill and C&D waste should be segregated					*
		and stored in different containers or skips to enhance reuse or					
		recycling of materials and their proper disposal. Where					
		practicable, concrete and masonry can be crushed and used as fill.					
		Steel reinforcement bar can be used by scrap steel mills. Different					

EIA Ref.	EM&A	Recommended Mitigation Measures	Objectives of the	Who to	Location of the	When to	Implementation
	Log Ref		recommended Measures &	implement the	measures	Implement the	Status
			Main Concerns to address	measures?		measures?	
		areas of the sites should be considered for such segregation and					
		storage.					
S8.2.12-	WM3	Chemical Waste	Control the chemical waste	Contractor	All construction	Construction	
S8.3.15		Chemical waste that is produced, as defined by Schedule 1 of the	and ensure proper storage,		sites	stage	۸
		Waste Disposal (Chemical Waste) (General) Regulation, should be	handling and disposal.				
		handled in accordance with the Code of Practice on the Packaging,					
		Labelling and Storage of Chemical Wastes.					
		Containers used for the storage of chemical wastes should be					۸
		suitable for the substance they are holding, resistant to corrosion,					
		maintained in a good condition, and securely closed; have a					
		capacity of less than 450 liters unless the specification has been					
		approved by the EPD; and display a label in English and Chinese in					
		accordance with instructions prescribed in Schedule 2 of the					
		regulation.					
		The storage area for chemical wastes should be clearly labelled and					۸
		used solely for the storage of chemical waste; enclosed on at least 3					
		sides; have an impermeable floor and bunding of sufficient capacity					
		to accommodate 110% of the volume of the largest container or 20					
		% of the total volume of waste stored in that area, whichever is the					
		greatest; have adequate ventilation; covered to prevent rainfall					
		entering; and arranged so that incompatible materials are					
		adequately separated.					
		Disposal of chemical waste should be via a licensed waste collector;					
		be to a facility licensed to receive chemical waste, such as the					۸
		Chemical Waste Treatment Centre which also offers a chemical					

EIA Ref.	EM&A	Recommended Mitigation Measures	Objectives of the	Who to	Location of the	When to	Implementation
	Log Ref		recommended Measures &	implement the	measures	Implement the	Status
			Main Concerns to address	measures?		measures?	
		waste collection service and can supply the necessary storage					
		containers; or be to a reuser of the waste, under approval from the					
		EPD.					
S8.3.16	WM4	<u>Sewage</u>	Proper handling of sewage	Contractor	All construction	Construction	
		Adequate numbers of portable toilets should be provided for the	from worker to avoid odour,		sites	stage	
		workers. The portable toilets should be maintained in a state,	pest and litter impacts				۸
		which will not deter the workers from utilizing these portable toilets.					
		Night soil should be collected by licensed collectors regularly.					
S8.3.17	WM5	General Refuse	Minimize production of the	Contractor	All construction	Construction stage	
		General refuse generated on-site should be stored in enclosed	general refuse and avoid		sites		*
		bins or compaction units separately from construction and chemical	odour, pest and litter impacts				
		wastes.					
		A reputable waste collector should be employed by the Contractor to					
		remove general refuse from the site, separately from construction					۸
		and chemical wastes, on a daily basis to minimize odour, pest and					
		litter impacts. Burning of refuse on construction sites is prohibited					
		by law.					
		Aluminium cans are often recovered from the waste stream by					
		individual collectors if they are segregated and made easily					۸
		accessible. Separate labelled bins for their deposit should be					
		provided if feasible.					
		Office wastes can be reduced through the recycling of paper if					
		volumes are large enough to warrant collection. Participation in a					
		local collection scheme should be considered by the Contractor. In					۸
		addition, waste separation facilities for paper, aluminum cans,					

EIA Ref.	EM&A		Recommended Mitigation Measures	Objectives of the	Who to	Location of the	When to	Implementation
	Log Ref			recommended Measures &	implement the	measures	Implement the	Status
				Main Concerns to address	measures?		measures?	
			plastic bottles etc., should be provided.					
		•	Training should be provided to workers about the concepts of site					۸
			cleanliness and appropriate waste management procedure,					
			including reduction, reuse and recycling of wastes.					
Water Qu	ality (Cor	nsti	ruction Phase)					
S9.11.1 –	W1	•	Mitigation during the marine works to reduce impacts to within	To control construction water	Contractor	During seawall	Construction	۸
S9.11.1.2			acceptable levels have been recommended and will comprise a	quality		dredging and	stage	
			series of measures that restrict the method and sequencing of			filling		
			dredging/backfilling, as well as protection measures. Details of the					
			measures are provided below and summarised in the Environmental					
			Mitigation Implementation Schedule in EM&A Manual.					
		•	Export for dredged spoils from NWWCZ avoiding exerting high					٨
			demand on the disposal facilities in the NWWCZ and, hence,					
			minimise potential cumulative impacts;					
		•	For the marine viaducts of HKLR, the bored piling will be undertaken					
			within a metal casing;					٨
		•	where public fill is proposed for filling below -2.5mPD, the fine					
			content in the public fill will be controlled to 25%;					N/A
		•	single layer silt curtains will be applied around all works;					٨
		•	during the first two months of dredging work for HKLR, the					
			silt-removal efficiency of the silt-curtains shall be verified by					N/A
			examining the results of water quality monitoring points. The water					
			quality monitoring points to be selected for the above shall be those					
			close to the locations of the initial period of dredging work. Details in					
			this regard shall be determined by the ENPO to be established,					

EIA Ref.	EM&A	Recommended Mitigation Measures	Objectives of the	Who to	Location of the	When to	Implementation
	Log Ref		recommended Measures &	implement the	measures	Implement the	Status
			Main Concerns to address	measures?		measures?	
		taking account of the Contractor's proposed actual locations of his					
		initial period of dredging work.					
		silt curtain shall be fully maintained throughout the works.					*
		In addition, dredging operations should be undertaken in such a manner					
		as to minimise resuspension of sediments. Standard good dredging					
		practice measures should, therefore, be implemented including the					
		following requirements which should be written into the dredging contract.					
		 trailer suction hopper dredgers shall not allow mud to overflow; 					N/A
		use of Lean Material Overboard (LMOB) systems shall be					
		prohibited;					٨
		mechanical grabs shall be designed and maintained to avoid					
		spillage and should seal tightly while being lifted;					٨
		barges and hopper dredgers shall have tight fitting seals to their					
		bottom openings to prevent leakage of material;					٨
		any pipe leakages shall be repaired quickly. Plant should not be					
		operated with leaking pipes;					٨
		 loading of barges and hoppers shall be controlled to prevent 					
		splashing of dredged material to the surrounding water. Barges or					۸
		hoppers shall not be filled to a level which will cause overflow of					
		materials or pollution of water during loading or transportation;					
		excess material shall be cleaned from the decks and exposed					*
		fittings of barges and hopper dredgers before the vessel is moved;					
		adequate freeboard shall be maintained on barges to reduce the					٨
		likelihood of decks being washed by wave action;					

EIA Ref.	EM&A	Recommended Mitigation Measures	Objectives of the	Who to	Location of the	When to	Implementation
	Log Ref		recommended Measures &	implement the	measures	Implement the	Status
			Main Concerns to address	measures?		measures?	
		all vessels shall be sized such that adequate clearance is					۸
		maintained between vessels and the sea bed at all states of the tide					
		to ensure that undue turbidity is not generated by turbulence from					
		vessel movement or propeller wash; and					
		• the works shall not cause foam, oil, grease, litter or other					
		objectionable matter to be present in the water within and adjacent					۸
		to the works site.					
S9.11.1.3	W2	Land Works	To control construction water	Contractor	During seawall	Construction stage	
		General construction activities on land should also be governed by	quality		dredging and		
		standard good working practice. Specific measures to be written into			filling		
		the works contracts should include:					
		wastewater from temporary site facilities should be controlled to					٨
		prevent direct discharge to surface or marine waters;					
		sewage effluent and discharges from on-site kitchen facilities shall					N/A
		be directed to Government sewer in accordance with the					
		requirements of the WPCO or collected for disposal offsite. The					
		use of soakaways shall be avoided;					
		storm drainage shall be directed to storm drains via adequately					
		designed sand/silt removal facilities such as sand traps, silt traps					
		and sediment basins. Channels, earth bunds or sand bag barriers					٨
		should be provided on site to properly direct stormwater to such silt					
		removal facilities. Catchpits and perimeter channels should be					
		constructed in advance of site formation works and earthworks;					
		silt removal facilities, channels and manholes shall be maintained					٨
		and any deposited silt and grit shall be removed regularly, including					

EIA Ref.	EM&A	Recommended Mitigation Measures	Objectives of the	Who to	Location of the	When to	Implementation
	Log Ref		recommended Measures &	implement the	measures	Implement the	Status
			Main Concerns to address	measures?		measures?	
		specifically at the onset of and after each rainstorm;					
		temporary access roads should be surfaced with crushed stone or					۸
		gravel;					
		rainwater pumped out from trenches or foundation excavations					۸
		should be discharged into storm drains via silt removal facilities;					
		measures should be taken to prevent the washout of construction					۸
		materials, soil, silt or debris into any drainage system;					
		open stockpiles of construction materials (e.g. aggregates and					۸
		sand) on site should be covered with tarpaulin or similar fabric					
		during rainstorms;					
		manholes (including any newly constructed ones) should always be					۸
		adequately covered and temporarily sealed so as to prevent silt,					
		construction materials or debris from getting into the drainage					
		system, and to prevent storm run-off from getting into foul sewers;					
		discharges of surface run-off into foul sewers must always be					۸
		prevented in order not to unduly overload the foul sewerage system;					
		all vehicles and plant should be cleaned before they leave the					۸
		construction site to ensure that no earth, mud or debris is deposited					
		by them on roads. A wheel washing bay should be provided at every					
		site exit;					
		wheel wash overflow shall be directed to silt removal facilities before					
		being discharged to the storm drain;					*
		the section of construction road between the wheel washing bay and					
		the public road should be surfaced with crushed stone or coarse					۸
		gravel;					

EIA Ref.	EM&A	Recommended Mitigation Measures	Objectives of the	Who to	Location of the	When to	Implementation
	Log Ref		recommended Measures &	implement the	measures	Implement the	Status
			Main Concerns to address	measures?		measures?	
		wastewater generated from concreting, plastering, internal					۸
		decoration, cleaning work and other similar activities, shall be					
		screened to remove large objects;					
		vehicle and plant servicing areas, vehicle wash bays and lubrication					۸
		facilities shall be located under roofed areas. The drainage in					
		these covered areas shall be connected to foul sewers via a petrol					
		interceptor in accordance with the requirements of the WPCO or					
		collected for off site disposal;					
		the contractors shall prepare an oil / chemical cleanup plan and					
		ensure that leakages or spillages are contained and cleaned up					۸
		immediately;					
		waste oil should be collected and stored for recycling or disposal, in					۸
		accordance with the Waste Disposal Ordinance;					
		all fuel tanks and chemical storage areas should be provided with					
		locks and be sited on sealed areas. The storage areas should be					۸
		surrounded by bunds with a capacity equal to 110% of the storage					
		capacity of the largest tank; and					
		surface run-off from bunded areas should pass through oil/grease					
		traps prior to discharge to the stormwater system.					۸
S9.14	W3	Implement a water quality monitoring programme	Control water quality	Contractor	At identified	During	۸
					monitoring	construction period	
					location		
Ecology	cology (Construction Phase)						
S10.7	E1	Good site practices to avoid runoff entering woodland habitats in	Avoid potential disturbance	Designer;	Scenic Hill	During	۸
		Scenic Hill	on habitat of Romer's Tree	Contractor		construction	

EIA Ref.	EM&A	Recommended Mitigation Measures	Objectives of the	Who to	Location of the	When to	Implementation
	Log Ref		recommended Measures &	implement the	measures	Implement the	Status
			Main Concerns to address	measures?		measures?	
		Reinstate works areas in Scenic Hill	Frog in Scenic Hill				N/A
		Avoid stream modification in Scenic Hill					۸
S10.7	E2	Use closed grab in dredging works.	Minimise marine water	Contractor	Seawall,	During	۸
		Install silt curtain during the construction.	quality impacts			construction	۸
		Limit dredging and works fronts.					۸
		Good site practices					۸
		Strict enforcement of no marine dumping.					٨
		Site runoff control					۸
		Spill response plan					۸
S10.7	E3	Reprovision of replacement Artificial Reefs (of the same volume as	Mitigate water quality	Project	To be determined	Construction	N/A
		the existing ARs inside Marine Exclusion Zone)	impacts on the existing ARs	proponent		phase or operation	
						phase	
S10.7	E4	Watering to reduce dust generation; prevention of siltation of	Prevent Sedimentation from	Contractor	Land-based works	During	٨
		freshwater habitats; Site runoff should be desilted, to reduce the	Land-based works areas		areas	construction	
		potential for suspended sediments, organics and other					
		contaminants to enter streams and standing freshwater					
S10.7	E5	Good site practices, including strictly following the permitted	Prevent disturbance to	Contractor	Land-based works	During	٨
		works hours, using quieter machines where practicable, and	terrestrial fauna and habitats		areas	construction	
		avoiding excessive lightings during night time					
S10.7	E6	Dolphin Exclusion Zone;	Minimize temporary marine	Contractor	Marine works	During marine	٨
		Dolphin watching plan	habitat loss impact to			works	۸
			dolphins				
S10.7	E7	Decouple compressors and other equipment on working vessels	Minimise marine noise	Contractor	Marine works	During marine	٨
		Avoidance of percussive piling	impacts on dolphins			works	٨
		Marine underwater noise monitoring					^

EIA Ref.	EM&A	Recommended Mitigation Measures	Objectives of the	Who to	Location of the	When to	Implementation
	Log Ref		recommended Measures &	implement the	measures	Implement the	Status
			Main Concerns to address	measures?		measures?	
		Temporal suspension of drilling bored pile casing in rock during peak					N/A
		dolphin calving season in May and June					
S10.7	E8	Control vessel speed	Minimise marine traffic	Contractor	Marine traffic	During marine	٨
		Skipper training.	disturbance on dolphins			works	۸
		Predefined and regular routes for working vessels; avoid Brothers					۸
		Islands.					
S10.10	E9	Dolphin vessel monitoring	Minimise marine traffic	Contractor	North Lantau and	Prior to	٨
			disturbance on dolphins		West Lantau	construction,	
						during	
						construction, and 1	
						year after	
						operation	
Fisheries	5						
S11.7	F1	Reprovision of replacement Artificial Reefs(of the same volume as	Mitigate water quality	Project	To be determined	Construction	N/A
		the existing ARs inside Marine Exclusion Zone)	impacts on the existing ARs	proponent		phase or	
						operation	
						phase	
S11.7	F2	Reduce re-suspension of sediments	Minimise marine water	Contractor	Seawall,	During	۸
		Limit dredging and works fronts.	quality impacts			construction	۸
		Good site practices					٨
		Strict enforcement of no marine dumping					۸
		Spill response plan					۸
Landsca	andscape & Visual (Construction Phase)						
S14.3.3.3	LV2	Mitigate both Landscape and Visual Impacts	Minimise visual &	Contractor	HKLR	Construction	
		G1. Grass-hydroseed bare soil surface and stock pile areas.	landscape impact			stage	N/A

EIA Ref.	EM&A	Recommended Mitigation Measures	Objectives of the	Who to	Location of the	When to	Implementation
	Log Ref		recommended Measures &	implement the	measures	Implement the	Status
			Main Concerns to address	measures?		measures?	
		G2. Add planting strip and automatic irrigation system if appropriate					N/A
		at some portions of bridge or footbridge to screen bridge and traffic.					
		G3. For HKLR, providing aesthetic design on the viaduct, tunnel					N/A
		portals, at-grade roads (e.g. subtle colour tone and slim form for					
		viaduct, featured form of tunnel portals, roadside planting along					
		at-grade roads and landscape berm on) to beautify the HKLR					
		alignment.					
		G5. Vegetation reinstatement and upgrading to disturbed areas.					N/A
		G6. Maximize new tree, shrub and other vegetation planting to					N/A
		compensate tree felled and vegetation removed.					
		G7. Provide planting area around peripheral of and within HKLR for					N/A
		tree screening buffer effect.					
		G8. Plant salt tolerant native tree and shrubs etc along the planter					N/A
		strip at affected seawall.					
		G9. Reserve of loose natural granite rocks for re-use. Provide new					
		coastline to adopt "natural-look" by means of using armour rocks in					N/A
		the form of natural rock materials and planting strip area					
		accommodating screen buffer to enhance "natural-look" of the new					
		coastline (see Figure 14.4.2 for example).					
S14.3.3.3	LV3	Mitigate Visual Impacts					
		V1.Minimize time for construction activities during construction					۸
		period.					
		V2.Provide screen hoarding at the portion of the project site / works					۸
		areas / storage areas near VSRs who have close low-level views to					
		the Project during HKLR construction.					

EIA Ref.	EM&A	Recommended Mitigation Measures	Objectives of the	Who to	Location of the	When to	Implementation			
	Log Ref		recommended Measures &	implement the	measures	Implement the	Status			
			Main Concerns to address	measures?		measures?				
EM&A										
S15.2.2	EM1	An Independent Environmental Checker needs to be employed as	Control EM&A Performance	Project	All construction	Construction	۸			
		per the EM&A Manual.		Proponent	sites	stage				
S15.5 -	EM2	1) An Environmental Team needs to be employed as per the EM&A	Perform environmental	Contractor	All construction	Construction	۸			
S15.6		Manual.	monitoring & auditing		sites	stage				
		2) Prepare a systematic Environmental Management Plan to ensure					^			
		effective implementation of the mitigation measures.								
		3) An environmental impact monitoring needs to be implementing by the					^			
		Environmental Team to ensure all the requirements given in the EM&A								
		Manual are fully complied with.								
	Remarks: ^ Compliance of mitigation measure									

* Recommendation was made during site audit but improved/rectified by the contractor

N/A Not Applicable at this stage as no such site activities were conducted in the reporting month (e.g. concrete batching plan, barging point, seawall dredging and filling, bored piling, landscaping works etc)

APPENDIX O WASTE GENERATION IN THE REPORTING MONTH



Appendix: C6 Monthly Summary Waste Flow Table

Name of Department: HyD

Contract No.: HY/2011/09

Monthly Summary Waste Flow Table for 2013 (Year)

		Actual Quantit	ies of Inert C&I	D Materials Gene	erated Monthly		Ac	tual Quantities of	of C&D Wastes	Generated Mont	hly
Month	Total Quantity Generated ¹¹	Hard Rock and Large Broken Concrete ⁶	Reused in the Contract ^{8,9}	Reused in other Projects ^{5,8,9}	Disposed as Public Fill ⁷	Imported Fill ^{6,7,8,9}	Metals	Paper/ cardboard packaging	Plastics ³	Chemical Waste	Others, e.g. general refuse ^{8,9}
	(in '000 m ³)	(in '000 m ³)	(in '000 m ³)	(in '000 m ³)	(in '000 m ³)	(in '000 m ³)	(in '000 m ³)	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000 m ³)
Jan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.150
Feb	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.375	0.000	0.000	0.072
Mar	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.091
Apr	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.410	0.000	0.000	0.098
May	1.436	0.000	0.000	0.000	1.436	0.000	0.000	0.465	0.000	0.000	0.117
Jun	5.335	0.000	0.000	0.000	5.335	0.000	0.000	0.426	0.000	0.000	0.111
Sub-Total	6.771	0.000	0.000	0.000	6.771	0.000	0.000	1.676	0.000	0.000	0.637
Jul	12.438	0.000	0.280	0.000	5.896	6.262	0.000	0.447	0.000	0.000	0.117
Aug	12.107	0.000	0.000	0.000	4.646	7.461	0.000	0.552	0.000	1.784	0.124
Sep	8.412	0.000	0.070	0.000	7.276	1.066	0.000	0.666	0.000	0.000	0.137
Oct	15.068	0.000	0.479	0.000	10.108	4.481	0.000	0.856	0.000	0.595	0.156
Nov											
Dec											
Total	54.796	0.000	0.829	0.000	34.697	19.270	0.000	4.197	0.000	2.378	1.170



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	Forecast of Total Quantities of C&D Materials to be Generated from the Contract ¹⁰											
Total Quantity Generated ¹¹	Hard Rock and Large Broken Concrete ⁶	Reused in the Contract ^{8,9}	Reused in other Projects ^{5,8,9}	Disposed as Public Fill ⁷	Imported Fill ^{6,7,8,9}	Metals	Paper/ cardboard packaging	Plastics ³	Chemical Waste	Others, e.g. general refuse ^{8,9}		
(in '000 m ³)	(in '000 m ³)	(in '000 m ³)	(in '000 m ³)	(in '000 m ³)	(in '000 m ³)	(in '000 m ³)	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000 m ³)		
24.000	121.054	0.000	121.054	2.000	22.000	0.000	9.681	0.000	64.224	2.940		

Notes: (1) The performance targets are given in ER Appendix 8J Clause 14 and the EM&A Manual.

(2) The waste flow table shall also include C&D materials to be imported for use at the Site.

(3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material

(4) The Contractor shall also submit the latest forecast of the total amount of C&D materials expected to be generated from the Works, together with a breakdown of the nature where the total amount of C&D materials expected to be generated from the Works is equal to or exceeding 50,000 m³. (ER Part 8 Clause 8.8.5 (d) (ii) refers).

(5) The materials reused in other Project shall not be treated as waste under the Waste Disposal Ordinance (CAP354).

(6) According to the EIA Appendix 8B, the density of rock (bulked) is 2.0 tonnes/m^3 .

(7) According to the EIA Appendix 8B, the density of soil (bulked) is 1.8 tonnes/m³.

(8) Assuming the loading quantities of a 30-tonne truck is $8.0m^3$.

(9) Assuming the loading quantities of a 24-tonne truck is $6.5m^3$.

(10) The forcast of C&D materials to be generated from the Contract is sourced from the works program in September 2013.

(11) The volume of Total Quantity Generated means the volume of Hard Rock and Large Broken Concrete+Disposed as Public Fill+Imported Fill-Reused in the Contract-Reused in other Projects

APPENDIX P COMPLAINT LOG

Appendix P - Complaint Log

Log Ref.	Location	Received Date	Details of Complaint	Investigation/ Mitigation Action	Status
Com-2013-04-001	Near Tung Chung New Development Pier	8 April 2013	EPD received the complaint on 8 April 2013. The complainant complained about oil was dumped from various vessels operating for Hong Kong- Zhuhai-Macao Bridge Hong Kong (HZMB HK) Projects near Tung Chung New Development Pier over the past few months.	 inspection conducted on 9 April 2013 at near Tung Chung New Development Ferry Pier. 3) Joint site inspection (DCVJV and ARUP) was conducted on 10 April 	Closed
Com-2013-05-001	WA6	2 May 2013	ARUP received the complaint on 2 May 2013. The complainant alleged the noise nuisance was generated from the Works Area	-	Closed

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				Monthly EM&A Report – Oct	ober 2013
			WA6 at around 13:00 on 1 May	WA6 according to the security guard	
			2013 (Wednesday).	who on duty at WA6 on 1 May 2013.	
				Based on the information provided,	
				the complaint regarding the	
				construction noise at WA6 is not	
				considered justifiable.	
				Based on the record of site activities at	
				WA6 on 18 May 2013, 4 metal plates	
				and 2 oxygen-acetylene set were lifted	
				onto a derrick boat "Chiu Kee" by a	
				crane near seawall at WA6 in the	
				morning on that day. Such operation	
				was commenced around 8:40a.m and	
			A DLID received the communication	completed in 10 minutes during the	
			ARUP received the complaint on	normal construction working hour	
			18 May 2013. The complainant advised that the noise nuisance	(0700 – 1900 Monday to Saturday).	
				However, the duration of aforesaid	
Com-2013-05-002	WA6	18 May 2013	due to loading of metal parts at	activities is very short and infrequent.	Closed
		-	barge near the seawall of Works	Nevertheless, the Contractor was	
			Area WA6 early morning	reminded to strengthen their site	
			(around8:45a.m) on 18 May	supervision and provide training for	
			2013 (Saturday).	the workers regularly to increase	
				awareness of their environmental	
				responsibilities to minimize the noise	
				impact to the nearby residents and the	
				specific mitigation measures for the	
				complaint including but not limited	
				to:-	
				• To place wooden planks or rubber	

Com-2013-05-003	Near Tung Chung New Development Pier	18 May 2013	EPD received the public complaint on 18 May 2013. This complaint was a follow-up of a previous complaint received by EPD on 8 April 2013 (Com- 2013-04-001). The complainant complained again about the oil was dumped from various vessels operating for Hong Kong-Zhuhai-Macao Bridge Hong Kong (HZMB HK) Projects near Tung Chung New Development Pier over the past	 mats on ground for loading and unloading heavy or metal objects; and To deploy professional personnel to supervise the works. After receiving the complaint, additional site inspection was conducted at near Tung Chung New Development Pier on 30 May 2013 to investigate whether oil dumped was due to Contract No. HY/2011/09's vessels. During the site inspection, three working vessels under Contract No.HY/2011/09 was anchored off near Tung Chung New Development Pier. No oil dumped from Contract No. HY/2011/09's vessels were observed and the water around the vessels was clear. The following mitigation measures have been implemented by DCVJV: DCVJV has sent the letter to the shipping agent to remind them to ensure the vessels under Contract No. 	Closed
	Pier		from various vessels operating for Hong Kong-Zhuhai-Macao Bridge Hong Kong (HZMB HK) Projects near Tung Chung New	 clear. The following mitigation measures have been implemented by DCVJV: DCVJV has sent the letter to the shipping agent to remind them to 	

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	1			Monthly EM&A Report – Oct	0001 2013
				 from ships. DCVJV requested vessel skippers to provide engine oil disposal records The vessel skippers assured to us that all waste lubricants were sent to waste collectors regularly and no oil discharge into seawater. 	
Com-2013-07-001	Southeast Quay of Chek Lap Kok near the junction of Chek Lap Kok South Road and Scenic Road	17 July 2013	The complaint was received by EPD on 17 th July 2013. According to the EPD's letter, the complainant was concerned for the noise nuisance generated from the operation of concrete lorry mixers during evening and night-time period at Southeast Quay of Chek Lap Kok.	In response to the complaint, ET conducted two times site inspections at Southeast Quay at Chek Lap Kok between 18:45 and 20:30 hours on 23 July 2013 and 20:30 to 22:30 hours on 30 July 2013. During the inspections, the Ro-Ro barge was observed anchored off Southeast Quay at Chek Lap Kok but no concrete lorry mixer was observed throughout the inspection.	Closed

Dragages -China Harbour-VSL JV

Dragages -China Harbour-VSL JV	Hong Kong Link Road – Section betweer HKSAR Boundary and Scenic Hil	Contract No. HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Section between HKSAR Boundary and Scenic Hill Monthly EM&A Report – October 2013		
	According to the Contractor, there was no concreting works for the pier sites on 23 July 2013 and therefore no loading and unloading operation at Southeast Quay at Chek Lap Kok. Concreting works were performed at Pier 0 on 30 July 2013. As the Contractor anticipated the arrival time of tug boat and flap-top barge at Southeast Quay will exceed 23:00 hours after the concreting works, they decided to arrange the tug boat and flap-top barge with concrete lorry mixers anchored off around Pier 66 after 23:00 hours. So, no loading and unloading operation at Southeast Quay at Chek Lap Kok was observed. Further night time site inspection was conducted on 22 August 2013 during the loading and unloading operation at Southeast Quay of Chek Lap Kok, the construction works conducted under Contract No. HY/2011/09 complied with the conditions in the CNP No. GW-RS0895-13.			