

Your ref
Our ref 214487/(HY/2011/09)/M45/630/B 10174

ARUP

BY HAND

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For the attention of Ms HO Yuen Han, Marlene

15 September 2014

Dear Madam

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 – August 2014

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 August 2014 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

Michael Chan
CRE / Supervising Officer's Representative

cc	HyD/HZMBHKPMO	- Mr K Y Yung	w/e – CD only
	EPD	- Ms Connie Wong	w/e – One hard copy
	AFCD	- Mr C P Lam	w/e – One hard copy
	ENPO	- Mr Y H Hui	w/e – One hard copy and one CD
	IEC	- Mr Antony Wong	w/o – By fax only
	Arup	- Mr Eric Chan	w/e – CD only

Response required : No, thank you
Date required : -
Attachments : Yes

MC/DS/KY/et
12

Ref.: HYDHZMBEEM00_0_2230L.14

15 September 2014

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 August 2014 (EP-352/2009/C)**

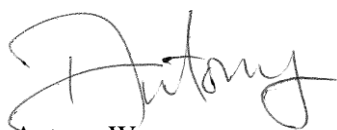
Reference is made to the revised Monthly EM&A Report No. 19 (August 2014) Version 2.0 certified by the Environmental Team Leader (ETL) and received by us on 11 September 2014.

We are pleased to verify the captioned Revised Monthly EM&A Report No. 19 (August 2014) in accordance with Condition 4.4 of EP-352/2009/C.

The ETL shall be aware that the verification to the captioned report does not release the ETL of any of his obligations to comply with the EM&A Manual and the 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, CL, 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
August 2014
(Version 2.0)

Certified By 
Dr. H.F. Chan
Environmental Team Leader
(Date: 10 September 2014)

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

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EXECUTIVE SUMMARY**Introduction**

1. This is the 19th 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 August 2014.

Environmental Monitoring and Audit Progress

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

Table I Summary Table for Monitoring Activities in the Reporting Month

Parameter(s)	Date(s)
1-hr TSP Monitoring	6 th , 12 th , 18 th , 22 nd and 28 th August 2014.
24-hr TSP Monitoring	6 th , 12 th , 18 th , 22 nd and 28 th August 2014.
Noise Monitoring	7 th , 13 th , 19 th and 25 th August 2014
Water Quality Monitoring	1 st , 4 th , 6 th , 8 th , 11 th , 13 th , 15 th , 19 th , 21 st , 23 th , 25 th , 27 th and 29 th August 2014
Dolphin Monitoring (Line-transect Vessel Surveys)	22 nd and 27 th August 2014
Additional Land-based Dolphin Behaviour and Movement Monitoring	22 nd and 27 th August 2014
Environmental Site Inspection	5 th , 12 th , 19 th and 29 th August 2014
Archaeological Site Inspection	⁽¹⁾ N/A

Remark: ⁽¹⁾ 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**.

Table II Summary Table for Events Recorded in the Reporting Month

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
	24-hr TSP	0	0	0	0
Noise	$L_{eq(30min)}$	0	0	0	0
Water Quality	Dissolved Oxygen (DO) (Surface & Middle)	0	0	0	0
	Dissolved Oxygen (DO) (Bottom)	0	0	0	0
	Turbidity	0	0	0	0
	Suspended Solids (SS)	7	1	0	0

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 seven Action Level and one Limit Level exceedances for suspended solids were recorded. No Action/Limit Level exceedance for dissolved oxygen and turbidity were recorded.

8. According to the investigation, no pollution discharge was observed from the site and no marine construction works were conducted in vicinity of monitoring station in which exceedance was recorded. In addition, sediment plume due to natural fluctuation of shallow water was observed. Therefore, the exceedances are considered not due to the Contract.

Complaint Log

9. One 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:

WA4

- Fabrication of rebar cages
- Fabrication of temporary piling platforms

WA7

- Fabrication of rebar cages
- Loading and Unloading of rebar materials

Marine Viaduct (P0 to P80)

RCD Method:

- Piling works
- Installation of piling jackets
- Dismantling of piling jackets
- Pile excavation and casing installation
- Inter-face tests, full depth coring test and sonic test
- Grouting works

Kelly Method:

- Installation of temporary piles, platforms permanent casing
- Removal of piling platform and temporary pile extraction
- Pile excavation
- Inter-face tests, full depth coring test and sonic test

Pile Cap Construction:

- Installation of precast cap shells
- Concreting
- Kingpost installation and associated steel welding works
- Concreting trimming

Works with Cofferdam:

- Installation of waling strut
- Installation of sheet pile
- Installation of temporary working platform
- Installation of shear pin
- Installation of bored pile casing
- Excavation works and casting of concrete plug
- Dewatering works and sealing works
- Additional welding

Column Construction:

- Lifting works
- Lift concreting
- Pier head works
- Pier head concreting
- Column insert installation, mobilization and temporary works

Deck Erection:

- Lifting frame fabrication in Dongguan
- Modification works to the
- Segment Unloading Frame (SUF) in Portion C
- Delivery and assembly of
- Launching Gantry 2 and Lifting
- Frame 2 at River Trade Terminal
- Winches delivery and commissioning
- Trial assembly of Lifting Frame 1

Land Viaduct (P85 to Abutment at SHT) & Marine Viaduct (P81 - P84)

- Pile construction
- Pouring of column
- Piling platform formation
- Steel fixing works and formwork erection
- Blinding concrete for scaffolding works
- Dismantling of steel bracket system
- Erection of steel bracket system

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 19th EM&A report which summarises the impact monitoring results and audit findings for the EM&A programme in August 2014.

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 Permits (No. EP-352/2009/A and 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 on-site environmental management structure are shown in **Figure 2**. The key personnel contact names and numbers are summarized in **Table 2.1**.

Table 2.1 Key Contacts of the Contract

Party	Position	Position	Phone No.	Fax No.
SOR (ARUP)	CRE	Mr. Michael Chan	3767 5803	3767 5922
		Mr. Colin Meadows	3767 5801	
ENPO/IEC (Environ)	Environmental Project Office Leader	Mr. Y. H Hui	3465 2888	3465 2899
	Independent Environmental Checker	Mr. Antony Wong	3465 2888	3465 2899
Contractor (DCVJV)	Deputy Project Director	Mr. W.K Poon	3121 6638	3121 6688
	Environmental Officer	Mr. CHU Chung Sing	3121 6672	
	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.

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 (P85 to Abutment at SHT) & Marine Viaduct (P81 - P84)

- (a) Pile construction is in progress at P81, P82 & P83 and 4 piles were concreted in this reporting period.
- (b) Completion of the remaining 2 predrilling hole at P81.
- (c) Total 97 pours for column were completed with 15 pours in this reporting period; 33 columns was completed to top level (15 gridlines - P96, P97 and P102 to P114).
- (d) Formation of piling platform at P81 was completed.
- (e) Pre-bored for sheet pile for cofferdam construction at P84 commenced.
- (f) Seawall block coring and breaking at P82L & P83L for bored piling works commenced.
- (g) Portal P103 was concreted on 26 August 2014.
- (h) Portal P111 & P113 falsework dismantling is in progress.
- (i) Portal P104 erection of formwork is in progress.
- (j) Portal P114 falsework erection is in progress.
- (k) Portal P108 steel girders, cross beams and planking erection are in progress.
- (l) Portal P107 and P106 construction of concrete footings for plate girder supports are in progress

Marine Viaduct (P0 to P80)**RCD Method:**

- (a) Construction of the temporary platform for piling works at P68 was suspended since 10 June 2014.
- (b) Piling works at P69 was suspended on 12 July (9 out of 12 piles already completed).
- (c) Forming the formation for the temporary platform for piling works at P75 was suspended on 22 July 2014.
- (d) Piling jackets were installed at P17 and P80.
- (e) Piling jackets were dismantled at P79 and P13.

- (f) Pile excavations and casing installation were in progress at P13, P17, P32, P62, P63, P67, P79 and P80 with 26 nos. piles concreted in the reporting period.
- (g) Inter-face coring tests were carried out at P58, P59, P62, P63 and P67.
- (h) Full depth coring test was carried at P27.
- (i) Sonic tests were carried out at P58, P59, P62 and P67.
- (j) Grouting works were carried out at P77.

Kelly Method:

- (i) Installation of temporary piles were carried out at P1, P3 and P12.
- (j) Installation of platforms were carried out at P3 and P12.
- (k) Installation of permanent casing were carried out at P3 and P12.
- (l) Piling platform removal and temporary pile extraction were carried out at P11, P17 and P18.
- (m) Pile excavation by Kelly method are in progress at P2, D19, P21 and P30 with 13 piles concreted in the reporting period.
- (n) Inter-face core tests were carried out at P17 & P33.
- (o) Full depth coring was carried out at P17-L1.
- (p) Sonic tests were carried out at P17, P18 & P33.
- (q) Toe grouting preparation works were carried out at P4 & P16.

Pilecap Construction:

- (a) 10 precast cap shells were installed at P19, P50, P60, P65 & P66.
- (b) Stage 1 concreting was completed at P20L, P37, P38, P41 & P52.
- (c) Stage 1 works is in progress at P36.
- (d) Stage 2 concreting was completed at P39, P41, P49, P51 & P52.
- (e) Stage 2 works is in progress at P20L, P38 & P52.
- (f) Kingpost installation and associated steel welding works for precast shell installation are in progress at P19, P50, P60, P65 & P66.
- (g) Concrete trimming and advanced trimming (inside casing) works were carried out at P18, P19, P20, P36, P37, P38, P52, P61 & P64.
- (h) Submerged pilecap works with cofferdam:
 - P70L: Installation of sheet-pile completed. Removal of temporary working platform is in progress.

- P70R: Installation of sheet-pile completed. Installation of shear pin is in progress.
- P71L: Additional installation of waling strut at 3rd layer completed. Dewatering to the bottom of cofferdam is on-going. Cleaning of concrete plug for casting of blinding layer is in progress.
- P71R: Casting of concrete plug completed and curing is in progress.
- P72L: Installation of sheet-pile completed. Removal of temporary working platform is in progress.
- P72R: Installation of waling strut at 2nd layer is in progress.
- P73L: Excavation is in progress.
- P73R: Installation of waling strut at 2nd layer substantially completed.
- P74L: Installation of shear pin completed.
- P74R: Installation of shear pin is in progress.
- P76: Cutting of bore pile casing completed. Installation of temporary working platform is in progress.
- P77: Cutting of bore pile casing completed. Installation of temporary working platform is in progress.
- P78L: Installation of sheet pile is in progress.
- P78R: Installation of sheet pile is in progress.

Column Construction

- (a) 1st lift works in progress at P39, P40, P42, P43, P44L, P45, P48R and P49.
- (b) 1st lift concrete was poured at P40, P42R, P44, P45 and P49.
- (c) 2nd lift works in progress at P45 and P49.
- (d) 2nd lift concreting was poured: nil.
- (e) Pier head works in progress at: P46 and P48L.
- (f) Pier head concrete was poured at P46 and P48L.
- (g) Demolishing works at P48-R 1st lift was completed & reconstruction in progress.
- (h) Columns' insert installation, mobilization and temporary works were carried out at P51.

Deck Erection

- (a) Preparatory works for segment erection:
 - Off-site fabrication of the first 3 sets of Lifting Frames is substantially completed in Dongguan with delivery of all 6 sets of Lifting Frames 2 (LF2).
 - Segment Unloading Frame (SUF) was completed awaiting load test;
 - Assembly of Launching Gantry 2 (LG2) continues at River Trade Terminal (RTT). Winches have been tested.

- Launching Gantry 1 (LG1) assembly continues at Portion C with all components on site.
- Assembly and erection of LF2 continues with 2 frames having been erected at P109 awaiting load test, 2 frames are assembled at RTT and 2 frames are assembled at WA4.
- Trial assembly of Lifting Frames 1 (LF1) has been commenced in Dongguan with delivery to site will commence before end of August.
- 8 winches have been delivered to Hong Kong;
- Preparatory works have commenced for Segments on Pier (SOP) erection at P47.
- Preparatory works have commenced for Precast Column erection at P43.

Precast Segment

(a) Progress for mould assembly:

Type of Segment	Number of Segment	Status
A	10	Completed (including 2 nos. SPO)
B	1	Completed
D	2	Completed
E	4	Completed
CH1	2	Completed
CH2	2	Completed
CH3	2	Completed
CH4	2	Completed
CH5	2	Completed
CP (long span SOP)	3	2 CPA complete, CPB in progress
DT	1	Completed

(b) 151 segments were cast in this reporting period.

(c) Cumulative total 967 segments cast.

(d) The first 4 segments were loaded onto a barge and are awaiting Customs and other necessary clearances.

Precast Concrete Shell Casting

(a) Summary of precast shell cast in the precast yard:

Type of Shell	Number of Precast Shell Cast in this reporting period	Cumulative No. of Precast Shell Completed (up to 28th of each month)
CP1	4	41
CP2	2	9
CP4	1	5

Ground Investigations

- 1 drill rig was working during this period on micro platform and land section.
- Predrilling works were carried out at P1 & P81 in this reporting period.
- 3 nos. of pre-drills were completed in this reporting period. Total 725 piles have completed predrills (including GI used as predrill).
- Total 115 gridline (100%) out of 115 were completed for pre-drilling. Additional predrills are required for the friction piles at P1 and P7 for SPT tests, these shall be done from the piling platforms.
- Total 112 gridlines for first issue of Founding Level Proposals were submitted. 2 no. was submitted 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

Permit / License No.	Valid Period		Status
	From	To	
Environmental Permit (EP)			
EP-352/2009/C	05/09/2013	N/A	Valid
Construction Noise Permit (CNP)			
WA7: GW-RW0097-14	28/02/2014(19:00)	27/08/2014(23:00)	Cancelled on 14 July 2014
Portion A: GW-RS0130-14	23/02/2014(19:00)	22/08/2014(23:00)	Expired
P81-P82: GW-RS0344-14	11/04/2014(00:00)	10/10/2014 (24:00)	Valid
P101-P113: GW-RS0485-14	21/05/2014(19:00)	20/11/2014 (06:30)	Valid
P101-P113: GW-RS0576-14	06/06/2014(19:00)	04/09/2014 (05:30)	Valid
P0 – P68: GW-RS0652-14	27/06/2014(19:00)	30/09/2014 (24:00)	Cancelled on 28 August 2014
P110 – P114: GW-RS0668-14	03/07/2014(19:00)	30/09/2014(07:00)	Valid
WA4: GW-RW0496-14	10/07/2014(19:00)	01/01/2015(23:00)	Valid
WA7: GW-RW0509-14	14/07/2014(19:00)	13/01/2015(07:00)	Valid
P75 – P80: GW-RW0703-14	14/07/2014(19:00)	13/10/2014(07:00)	Valid
P69 – P74: GW-RW0785-14	30/07/2014(00:00)	29/11/2014(07:00)	Valid
P81 – P114: GW-RW0812-14	05/08/2014(19:00)	04/11/2014(23:00)	Valid
Portion A: GW-RW0838-14	23/08/2014(19:00)	22/02/2015(23:00)	Valid
P0 – P68: GW-RS0855-14	27/08/2014(19:00)	26/11/2014(24:00)	Valid
Notification pursuant to Air Pollution Control (Construction Dust) Regulation			
345773	04/06/2012	N/A	Receipt acknowledged by EPD
Billing Account for Construction Waste Disposal			
A/C# 7015341 (Construction Site)	11/06/2012	N/A	Valid
A/C# 7015341 (Vessel Disposal)	26/05/2014	31/08/2014	Expired

Permit / License No.	Valid Period		Status
	From	To	
A/C# 7015341 (Vessel Disposal)	11/08/2014	30/11/2014	Valid
Registration of Chemical Waste Producer			
WPN 5213-951-D2499-01	18/07/2012	N/A	Valid
Effluent Discharge License under Water Pollution Control Ordinance			
WA6A(DCVJV site office): WT00014053-2012	12/09/2012	30/09/2017	Valid
WA6B (SOR site office): WT00014447-2012	30/10/2012	31/10/2017	Valid
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
WA7: WT00015722-2013	16/01/2013	31/01/2019	Valid
P0 – P80: WT00018203-2014	30/01/2013	31/01/2019	Valid
P114: WT00018631-2014	31/03/2014	31/03/2019	Valid
Marine Dumping Permit			
<u>Dumping of Phase 1, 2a, 2b, 2c and 2d (Type 1-Open Sea Disposal) marine sediment</u> EP/MD/14-125	05/02/2014	04/08/2014	Expired
<u>Dumping of Phase 1, 2a, 2b, 2c and 2d (Type 1D and Type 2) marine sediment</u> EP/MD/15-064	28/07/2014	27/08/2014	Expired
<u>Dumping of Phase 1, 2a, 2b, 2c and 2d (Type 1-Open Sea Disposal) marine sediment</u> EP/MD/15-078	06/08/2014	31/01/2015	Valid

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 3.1 Location 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**.

Table 3.2 Air Quality Monitoring Equipment

Equipment	Model and Make	Quantity
HVS Sampler	TISCH Model: TE-5170	2
Calibrator	TISCH Model: TE-5025A	1
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 3.3 Impact 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

1-hour and 24-hour TSP Air Quality Monitoring

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 ± 3 °C; the relative humidity (RH) was < 50% and not variable by more than ± 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 3.4 Summary Table of 1-hour TSP Monitoring Results during the Reporting Month

Monitoring Station	Concentration ($\mu\text{g}/\text{m}^3$)		Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
	Average	Range		
AMS1	15	4 - 23	381	500
AMS4	20	14 - 35	352	

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

Monitoring Station	Concentration ($\mu\text{g}/\text{m}^3$)		Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
	Average	Range		
AMS1	22	18 – 21	170	260
AMS4	24	15 - 42	171	

- 3.14 All 1-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedances were recorded.
- 3.15 All 24-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedances were 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:

Table 3.6 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 According to the Laboratory for Calibration of Weather Station (Hong Kong Calibration Ltd.), the standard for calibration is not available until 1 September 2014. So, the Weather Station (Serial No. AK130520006) was received by Laboratory on 14 July 2014 and tested on 1 September 2014. Although the calibration certificate for Weather Station (Serial No. AK130520007) has been expired in August 2014, this equipment was checked and operated properly. No abnormal recorded data was found.
- 3.19 The wind data for the reporting month is summarized in **Appendix J**.

Event and Action Plan

- 3.20 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 4.1 Location for Noise 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 4.2 Noise Monitoring Equipment

Equipment	Model and Make	Qty.
Integrating Sound Level Meter	SVAN 957	1
Calibrator	SV 30A	1

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**.

Table 4.3 Noise Monitoring Parameters, Frequency and Duration

Monitoring Stations	Parameter	Period	Frequency
NMS1 NMS4	L ₁₀ (30 min.) dB(A) L ₉₀ (30 min.) dB(A) L _{eq} (30 min.) dB(A) (as six consecutive L _{eq, 5min} readings)	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 : $L_{eq}(30 \text{ min.}) \text{ dB(A)}$ (as six consecutive $L_{eq, 5\text{min}}$ 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 re-calibration 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 Summary Table of Noise Monitoring Results during the Reporting Month

Monitoring Station	Noise Level, $L_{eq(30min)}$ dB(A)		Limit Level
	Average	Range	
NMS1	71	70 - 72	75 dB(A)
NMS4	60	55 – 62	

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 4.5 Observation 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 ± 1.75 hours 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

- 5.6 Impact water quality monitoring was conducted at 14 monitoring stations under the 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

Monitoring Stations	Coordinates	
	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

Monitoring Stations	Coordinates	
	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.

Sampler

- 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.

pH

- 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.

Salinity

- 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	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	<ul style="list-style-type: none"> 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) 	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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, mid-depth 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**.

Table 5.4 Methods for Laboratory Analysis for Water Samples

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:

- ✧ 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 5.5 Summary of Water Quality Exceedances

Station	Exceedance Level	DO (Surface & Middle)		DO(Bottom)		Turbidity		SS		Total Number of Exceedances	
		Mid-Ebb	Mid-Flood	Mid-Ebb	Mid-Flood	Mid-Ebb	Mid-Flood	Mid-Ebb	Mid-Flood	Mid-Ebb	Mid-Flood
IS1	Action Level									0	0
	Limit Level									0	0
IS2	Action Level									0	0
	Limit Level									0	0
IS3	Action Level							15/08/2014	15/08/2014	1	1
	Limit Level									0	0
IS4	Action Level									0	0
	Limit Level									0	0
SR1	Action Level									0	0
	Limit Level									0	0
SR2	Action Level								15/08/2014 19/08/2014	0	2
	Limit Level								08/08/2014	0	1
SR3	Action Level									0	0
	Limit Level									0	0
SR6	Action Level									0	0
	Limit Level									0	0
ST1	Action Level									0	0
	Limit Level									0	0
ST2	Action Level									0	0
	Limit Level									0	0
ST3	Action Level							21/08/2014	15/08/2014 21/08/2014	1	2
	Limit Level									0	0
SRA	Action Level									0	0
	Limit Level									0	0
Total	Action Level	0	0	0	0	0	0	2	5		
	Limit Level	0	0	0	0	0	0	0	1		

5.38 All water quality monitoring was conducted as scheduled in the reporting month. There are seven Action Level and one Limit Level exceedances for suspended solids were recorded. No Action/Limit Level exceedance for dissolved oxygen and turbidity were recorded.

5.39 According to the investigation, no pollution discharge was observed from the site and no marine construction works were conducted in vicinity of monitoring station in which exceedance was recorded. In addition, sediment plume due to natural fluctuation of shallow water was observed. 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 land-based 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

- 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	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

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 22nd and 27th August 2014. The dolphin monitoring schedule for the reporting period is shown in **Appendix D**.

Monitoring Results

6.8 From these surveys, a total of 65.34 km of survey effort was collected, with 92.5% of the total survey effort being conducted under favorable weather conditions (i.e. Beaufort Sea State 3 or below with good visibility) Out of the 65.34 km of survey effort, the total survey effort conducted on primary lines (the vertical lines perpendicular to the coastlines) was 43.63 km.

6.9 6 groups of 17 Chinese White Dolphins were sighted from primary lines. Distribution of the 12 dolphin sightings made during August’s surveys is shown in **Figure 4 of Appendix I**. These sightings were evenly distributed throughout the WL survey area, but almost all sightings were made in inshore waters near the coastline (**Figure 4 of Appendix I**). Only one dolphin group was sighted in the vicinity of the HKLR09 alignment (**Figure 4 of Appendix I**).

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 6.2 Dolphin encounter rates (sightings per 100 km of survey effort) in August’s surveys

		Encounter rate (STG) (no. of on-effort dolphin sightings per 100 km of survey effort)	Encounter rate (ANI) (no. of dolphins from all on-effort sightings per 100 km of survey effort)
		Primary Lines Only	Primary Lines Only
WL	Set 1: August 22 nd	18.3	68.6
	Set 2: August 27 th	11.1	11.1

6.11 The average group size of Chinese White Dolphins was 3.91 individuals per group during August’s surveys, which was similar to previous months of monitoring surveys. Out of the 12 dolphin groups, five of them were composed of 5 or more animals, while the rest were composed of only 1-3 animals.

- 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**.

Additional Land-based Dolphin Behaviour and Movement Monitoring

- 6.15 Additional land-based dolphin behavior and movement monitoring was conducted on 22nd and 27th August 2014 in the reporting month. The progress of the monitoring is summarized in the **Table 6.3**.

Table 6.3 Progress Record of Additional Land-based Dolphin Behaviour and Movement Monitoring in August 2014

Date	Time	Weather		Number of Staff	Number of Dolphin Sighting
		Beaufort	Visibility		
2014/8/22	09:24 - 14:45	2	1	3	2
2014/8/27	09:24 - 14:56	2-3	2	3	1

- 6.16 Detailed monitoring methodology and results will be provided in a separate report after the completion of full set of additional land-based dolphin behavior and movement monitoring.

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 5th, 12th, 19th and 29th August 2014 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 August 2014. 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 6th inspection to the Sha Lo Wan (West) Archaeological Site was conducted on 26th June 2014 and next inspection will be conducted in September 2014.

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 submitted Acoustic Decoupling Measures Plan.
- 7.7 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 Observations and Recommendations of Site Audit

Parameters	Date	Observations and Recommendations	Follow-up
<i>Water Quality</i>	05/08/2014	Properly deploy the silt curtain at P98.	The item was not rectified during the follow-up audit session and re-recorded on 12 August 2014. Rectification/improvement was observed on 29 August 2014.
	05/08/2014	To avoid discharging the muddy water to the sea at S8.	The item was not rectified during the follow-up audit session and re-recorded on 12 August 2014. Rectification/improvement was observed on 19 August 2014.
	12/08/2014	Properly deploy the silt curtain at P98 and P82.	The item was not rectified during the follow-up audit session and re-recorded on 19 August 2014. Rectification/improvement was observed on 29 August 2014.
	12/08/2014	Clear the waste materials at near silt curtain at P90.	Rectification/improvement was observed during the follow-up audit session on 19 August 2014.
	12/08/2014	To block the temporary drain which direct surface runoff to the sea at P86.	Rectification/improvement was observed during the follow-up audit session on 19 August 2014.
	19/08/2014	Damage silt curtain was observed at P97-99. The Contractor was reminded to re-deploy the new silt curtain which can function properly as soon as possible.	Rectification/improvement was observed during the follow-up audit session on 29 August 2014.
	19/08/2014	Properly deploy the silt curtain at P102.	Rectification/improvement was observed during the follow-up audit session on 29 August 2014.
<i>Ecology</i>	05/08/2014	Clear the construction materials at near the tree at P101.	Rectification/improvement was observed during the follow-up audit session on 12 August 2014.
	12/08/2014	Clear the construction materials at near the tree at S4 & P94.	The item was not rectified during the follow-up audit session and re-recorded on 19 August 2014. Rectification/improvement was observed on 29 August 2014.
	19/08/2014	To remove the construction materials / wastes at near the trees at Portion C, P95 and 94.	The item was not rectified during the follow-up audit session and re-recorded on 29 August 2014. Rectification/improvement was observed on 29 August and 2 September 2014.
	29/08/2014	To remove the construction materials / wastes at near the trees at Portion C.	Rectification/improvement was observed during the

Parameters	Date	Observations and Recommendations	Follow-up
			follow-up audit session on 2 September 2014.
<i>Air Quality</i>	12/08/2014	Properly provide water spray for the exposed soil surface at Portion C.	Rectification/improvement was observed during the follow-up audit session on 19 August 2014.
	29/08/2014	Dust generation was observed from the drilling works at near P82. The Contractor was reminded to provide appropriate dust mitigation measures as soon as possible.	Rectification/improvement was observed during the follow-up audit session on 2 September 2014.
	29/08/2014	The air compressor should be checked to avoid emitting heavy smoke.	Rectification/improvement was observed during the follow-up audit session on 2 September 2014.
<i>Noise</i>	N/A ⁽¹⁾	N/A ⁽¹⁾	N/A ⁽¹⁾
<i>Waste / Chemical Management</i>	05/08/2014	Clear the waste materials at the roadside of Portion C.	Rectification/improvement was observed during the follow-up audit session on 12 August 2014.
	05/08/2014	Remove the discarded silt curtain at near P103 and P82.	The item was not rectified during the follow-up audit session and re-recorded on 12 August 2014. Rectification/improvement was observed on 29 August 2014.
	12/08/2014	Remove the discarded silt curtain at near P103 and P92.	The item was not rectified during the follow-up audit session and re-recorded on 19 August 2014. Rectification/improvement was observed on 29 August 2014.
	19/08/2014	Properly store the chemical containers at Portion C.	The item was not rectified during the follow-up audit session and re-recorded on 29 August 2014. Rectification/improvement was observed on 2 September 2014.
	19/08/2014	To clear the discarded silt curtain at seawall area at P93 and P82.	Rectification/improvement was observed during the follow-up audit session on 29 August 2014.
	29/08/2014	Properly store the chemical containers at Portion C.	Rectification/improvement was observed during the follow-up audit session on 2 September 2014.
<i>Landscape & Visual Impact</i>	N/A ⁽¹⁾	N/A ⁽¹⁾	N/A ⁽¹⁾
<i>Permits/Licences</i>	19/08/2014	To display the Environmental Permit at S4.	Rectification/improvement was observed during the follow-up audit session on 29 August 2014.
<i>Other</i>	N/A ⁽¹⁾	N/A ⁽¹⁾	N/A ⁽¹⁾
<i>Cultural</i>	N/A ⁽²⁾	N/A ⁽²⁾	N/A ⁽²⁾

Parameters	Date	Observations and Recommendations	Follow-up
<i>Heritage (Sha Lo Wan (West) Archaeological Site)</i>			

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, 8,652m³ 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 seven Action Level and one Limit Level exceedances for suspended solids were recorded. No Action/Limit Level exceedance for dissolved oxygen and turbidity were recorded.
- 8.4 According to the investigation, no pollution discharge was observed from the site and no marine construction works were conducted in vicinity of monitoring station in which exceedance was recorded. In addition, sediment plume due to natural fluctuation of shallow water was observed. Therefore, the exceedances are considered not due to the Contract.

Summary of Environmental Complaint

- 8.5 One 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:

WA4

- Fabrication of rebar cages
- Fabrication of temporary piling platforms

WA7

- Fabrication of rebar cages
- Loading and Unloading of rebar materials

Marine Viaduct (P0 to P80)

RCD Method:

- Piling works
- Installation of piling jackets
- Dismantling of piling jackets
- Pile excavation and casing installation
- Inter-face tests, full depth coring test and sonic test
- Grouting works

Kelly Method:

- Installation of temporary piles, platforms permanent casing
- Removal of piling platform and temporary pile extraction
- Pile excavation
- Inter-face tests, full depth coring test and sonic test

Pile Cap Construction:

- Installation of precast cap shells
- Concreting
- Kingpost installation and associated steel welding works
- Concreting trimming

Works with Cofferdam:

- Installation of waling strut
- Installation of sheet pile
- Installation of temporary working platform
- Installation of shear pin
- Installation of bored pile casing
- Excavation works and casting of concrete plug
- Dewatering works and sealing works
- Additional welding

Column Construction:

- Lifting works
- Lift concreting
- Pier head works
- Pier head concreting
- Column insert installation, mobilization and temporary works

Deck Erection:

- Lifting frame fabrication in Dongguan
- Modification works to the
- Segment Unloading Frame (SUF) in Portion C
- Delivery and assembly of
- Launching Gantry 2 and Lifting
- Frame 2 at River Trade Terminal
- Winches delivery and commissioning
- Trial assembly of Lifting Frame 1

Land Viaduct (P85 to Abutment at SHT) & Marine Viaduct (P81 - P84)

- Pile construction
- Pouring of column
- Piling platform formation
- Steel fixing works and formwork erection
- Blinding concrete for scaffolding works
- Dismantling of steel bracket system
- Erection of steel bracket system

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 August 2014 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 seven Action Level and one Limit Level exceedances for suspended solids were recorded. In addition, no Action/Limit Level exceedance for dissolved oxygen and turbidity were recorded.
- 10.4 According to the investigation, no pollution discharge was observed from the site and no marine construction works were conducted in vicinity of monitoring station in which exceedance was recorded. In addition, sediment plume due to natural fluctuation of shallow water was observed. Therefore, the exceedances are considered not due to the Contract.
- 10.5 Dolphin transect survey was carried out on 22nd and 27th August 2014. No adverse impact on Chinese White Dolphins was noticeable from general observations.
- 10.6 Two days of additional Land-based Dolphin Behaviour and Movement Monitoring were conducted on 22nd and 27th August 2014.
- 10.7 Environmental site inspection was conducted on 5th, 12th, 19th and 29th August 2014 by ET in the reporting month. All deficiencies identified during the site inspection have already rectified / improved during the follow-up audit session.
- 10.8 No inspection to the Sha Lo Wan (West) Archaeological Site was conducted in the reporting month.
- 10.9 There were one environmental complaint, no notification of summons and successful prosecution received.
- 10.10 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

- 10.11 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.

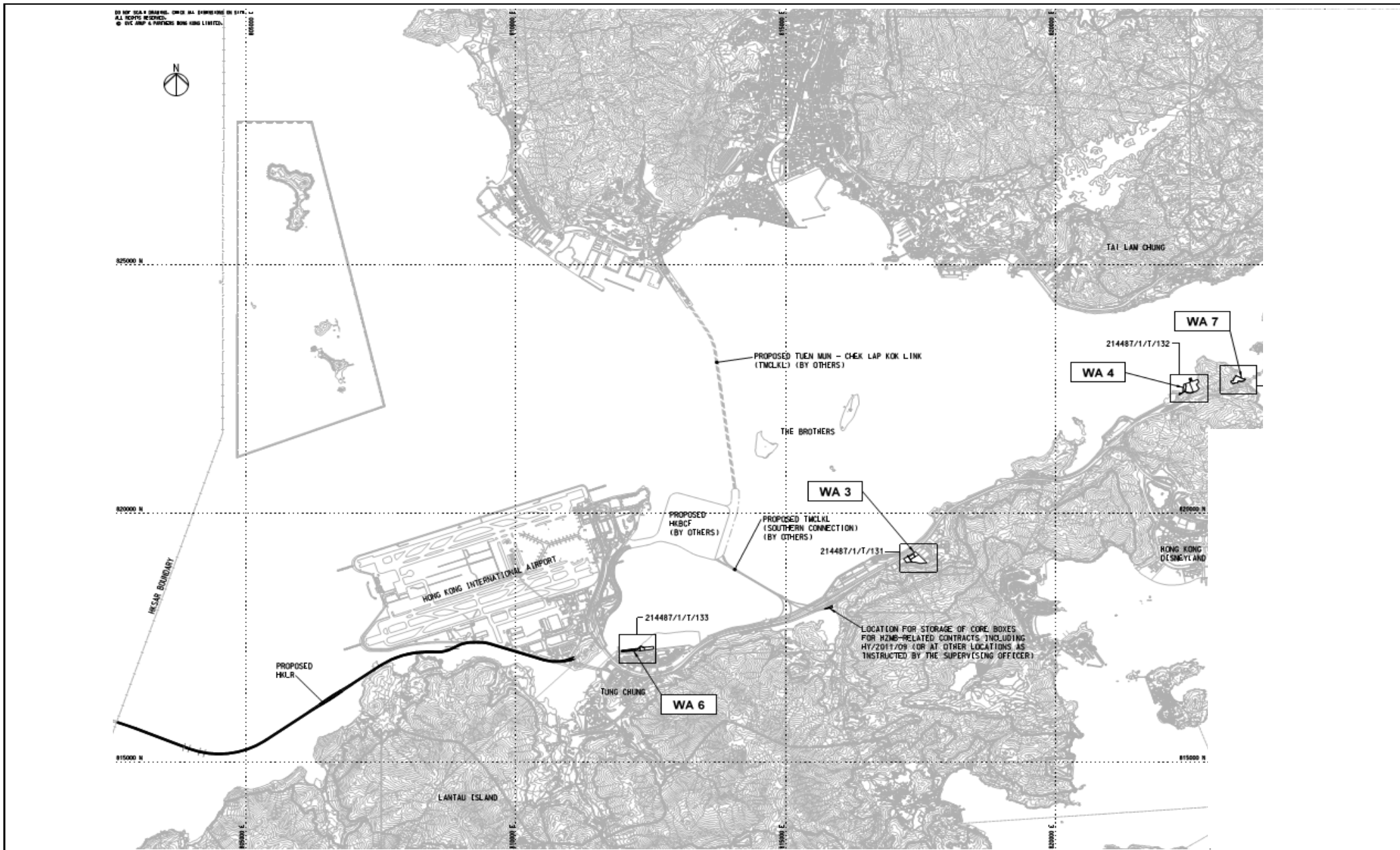
Ecology Impact

- 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

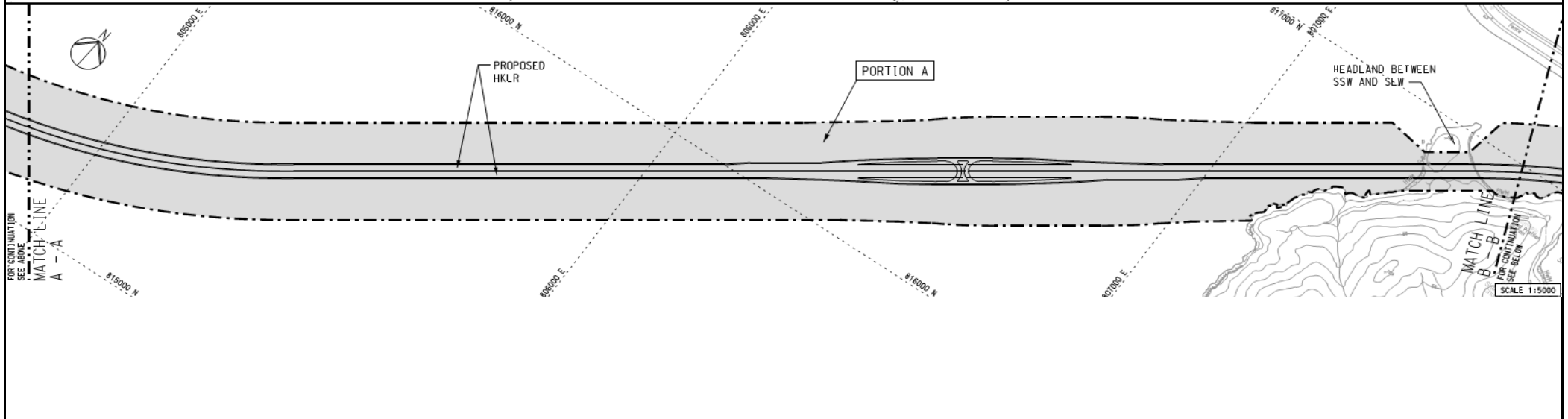
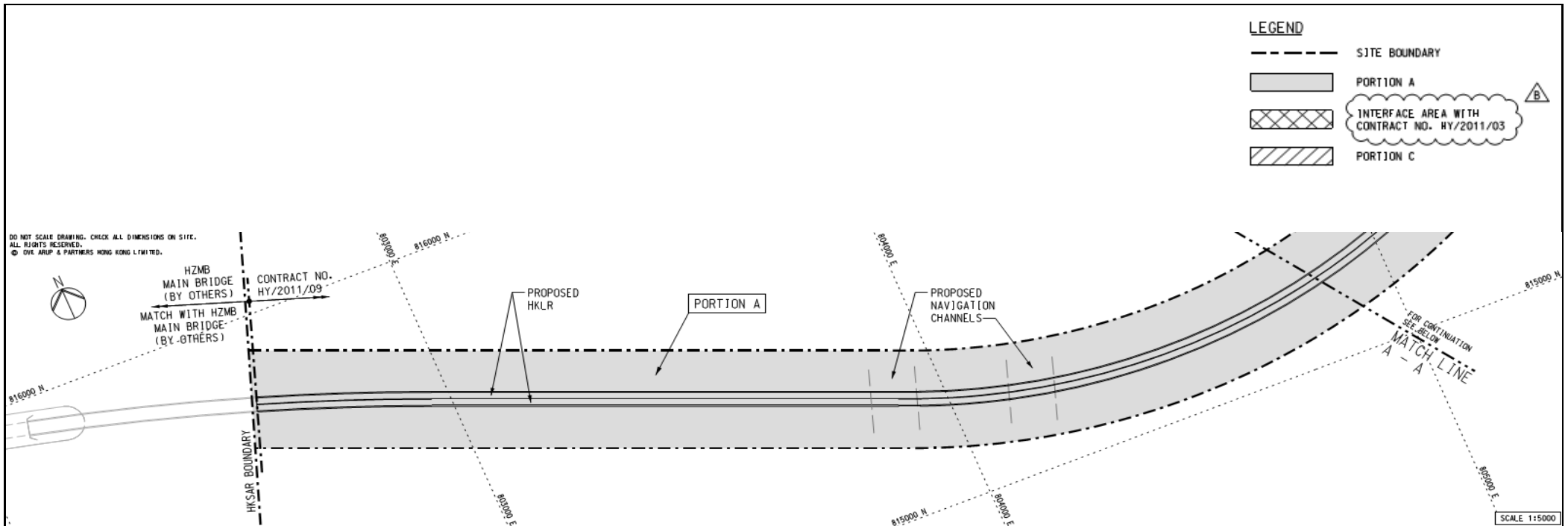
- To check for any accumulation of waste materials or rubbish on site.
- To ensure the performance of sorting of C&D materials at source (during generation);
- To carry out inspection of dump truck at site exit to ensure inert and non-inert C&D materials are properly segregated before removing off site.
- 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)

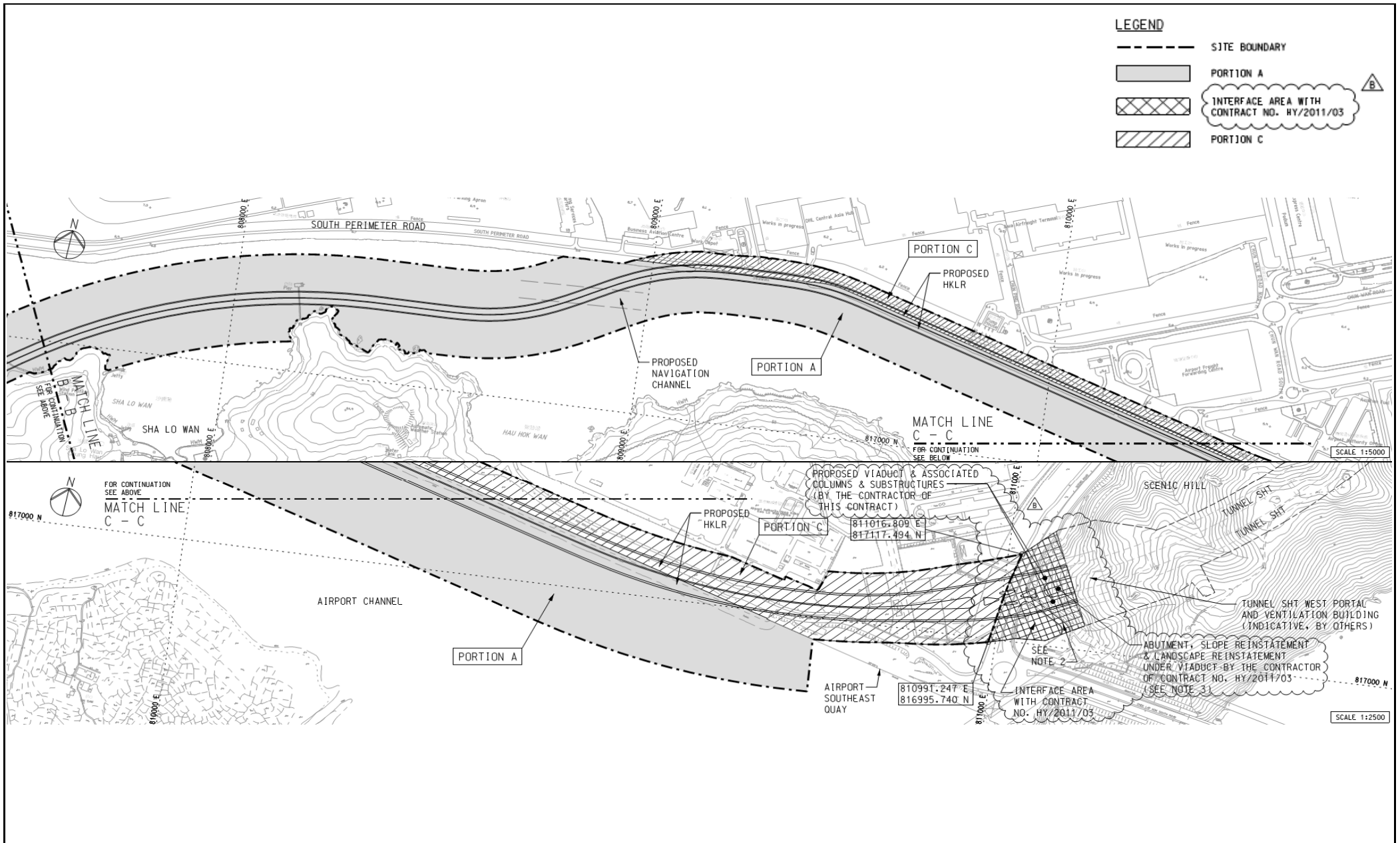


Title	Contract No. HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Section between HKSAR Boundary and Scenic Hill Site Layout Plan (WA3, WA4, WA6 and WA7)		Scale	N.T.S	Propose No.	MA12014
			Date	Feb-13	Figure	1a

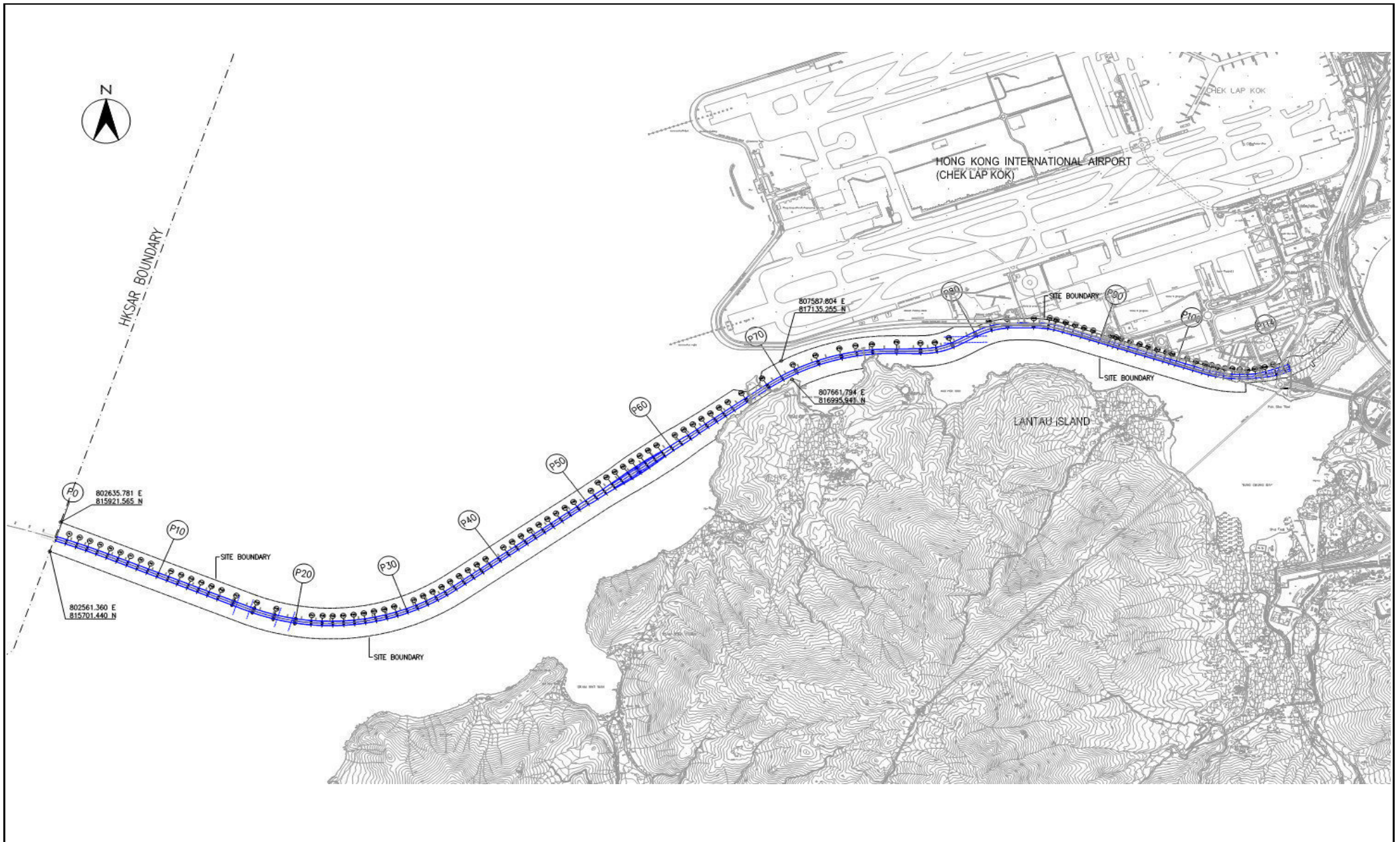
CINOTECH



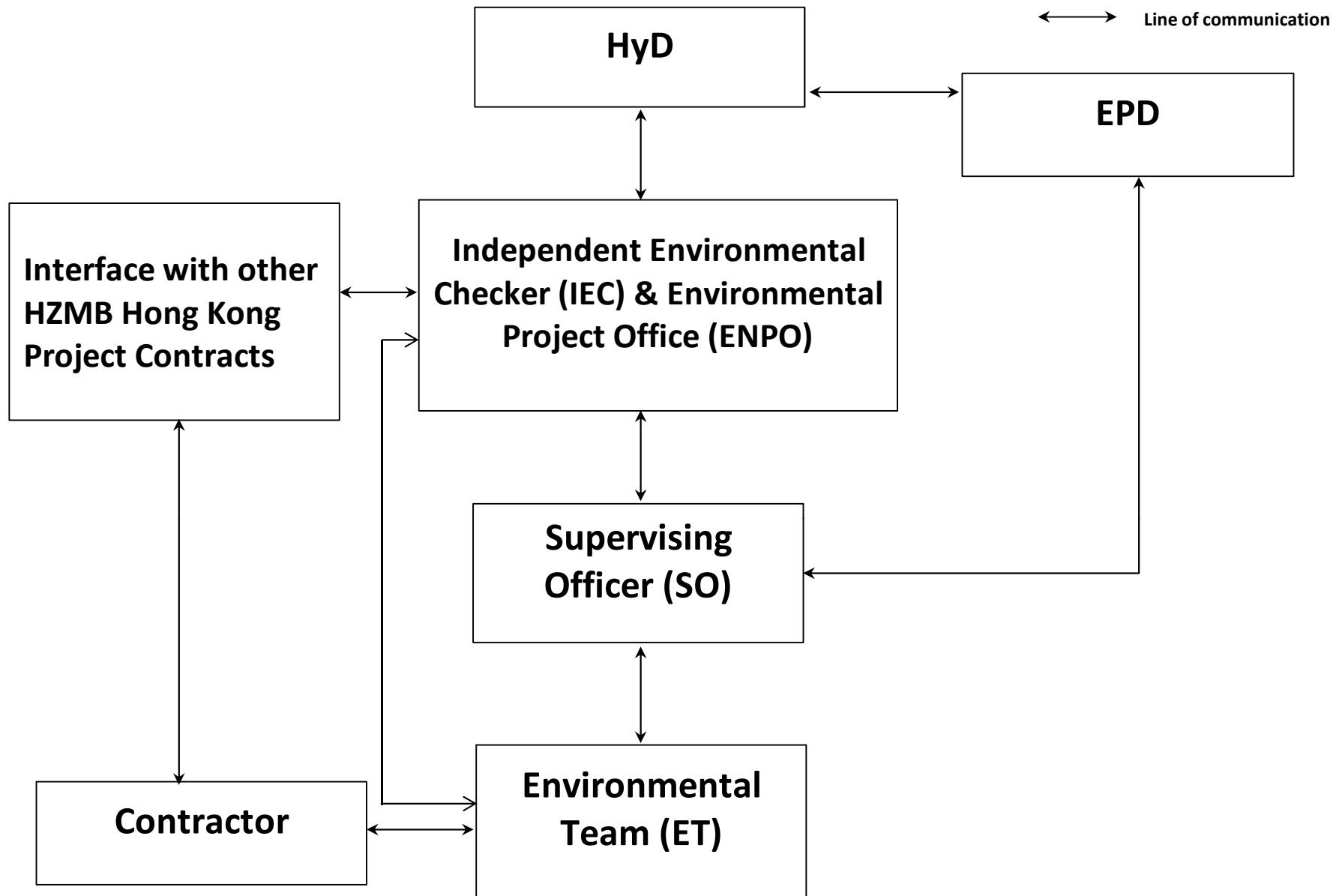
Title	Contract No. HY/2011/09		Scale	N.T.S	Propose No.	MA12014	
	Hong Kong-Zhuhai-Macao Bridge						
	Hong Kong Link Road – Section between HKSAR Boundary and Scenic Hill		Date	May-13	Figure	1b	
	Site Layout Plan (Portion A)						



Title	Contract No. HY/2011/09		Scale	Propose No.	MA12014	
	Hong Kong-Zhuhai-Macao Bridge					
Site Layout Plan (Portion A and C)	Hong Kong Link Road – Section between HKSAR Boundary and Scenic Hill		Date	Figure	1c	
			May-13			



Title	Contract No. HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Section between HKSAR Boundary and Scenic Hill Site Layout Plan (Pier(s) Site)	Scale	N.T.S	Propose No.	MA12014	CINOTECH
		Date	Feb-13	Figure	1d	

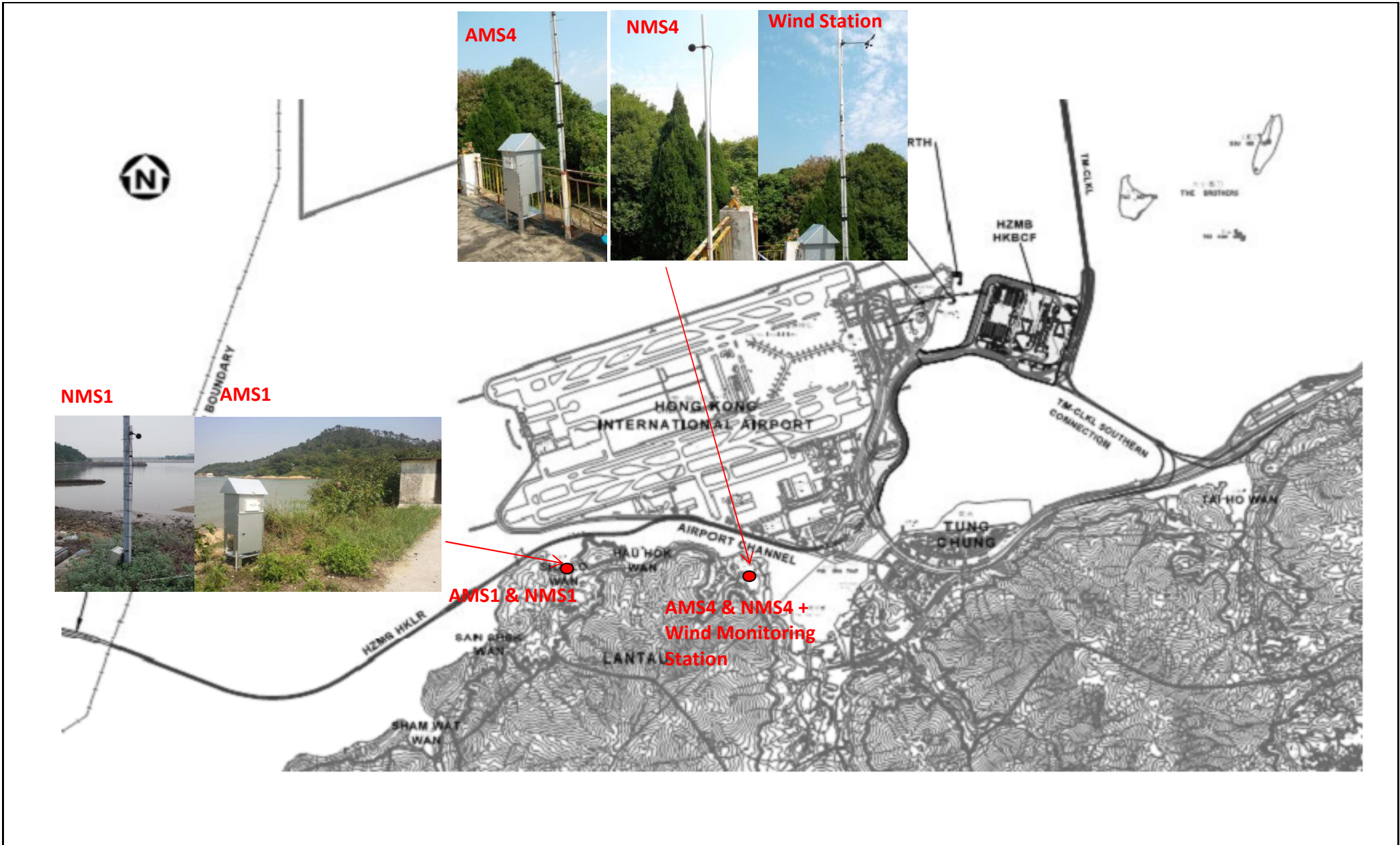


Title Contract No. HY/2011/09
 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Section between
 HKSAR Boundary and Scenic Hill
 Project Organisation for Environmental Works

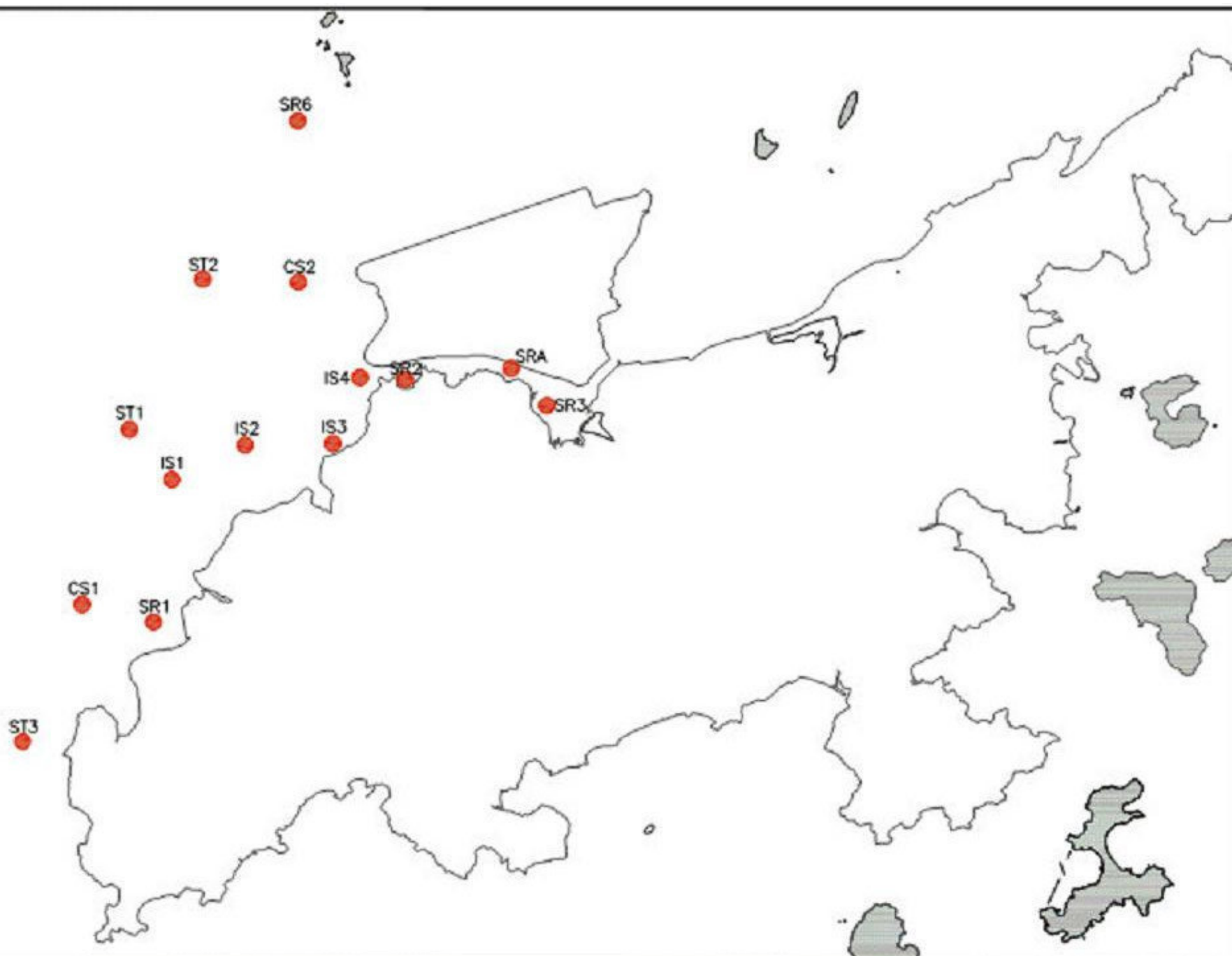
Scale N.T.S
 Date Feb-13

Propose No. MA12014
 Figure 2





Title	Contract No. HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Section between HKSAR Boundary and Scenic Hill		Scale	N.T.S	Propose No.	MA12014	CINOTECH
	Locations of Air Quality and Noise Monitoring Stations		Date	Feb-13	Figure	3	



CINOTECH
Cinotech Consultants Limited

Contract No. HY/2011/09
Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road - Section
Between HKSAR Boundary and Scenic Hill
Locations of Marine Water Quality Monitoring Stations

SCALE	N.T.S	DATE	28 Jan 2013
CHECK	PC	DRAWN	IT
PROJECT NO.	MA12014	FIGURE NO.	4
		REV	-

**APPENDIX A
CONSTRUCTION PROGRAMME**

Activity ID	Activity Name	Original Duration	Remaining Duration	Activity % Complete	Start	Finish	DWP01d OP1 Start	DWP01d OP1 Finish	2014																		
									August					September				October			November						
										28	04	11	18	25	01	08	15	22	29	06	13	20	27	03	10	17	24
HKZB Hong Kong Link Road - 3 Months Rolling Programme 1408 (Based on DWP01dOP1)																											
Design and Design Checking of the Works																											
General Design Submission																											
GDS1150	Seismic Performance Assessment Report of Bridge/Viaduct	0	0	0%	28/08/14*			19/06/14	Seismic Performance Assessment Report of Bridge/Viaduct																		
Detailed Design Approval (DDA)																											
Substructure																											
Airport Channel																											
DDA14.02-40	Approve Design DDA - ML14L/R	35	0	100%	28/02/14 A	31/07/14 A	03/10/14	06/11/14	Approve Design DDA - ML14L/R																		
Geotechnical Works																											
DDAGEO-50	Submit to GEO for Approval- Geotechnical Works	60	0	100%	26/11/13 A	28/08/14	06/05/15	04/07/15	Submit to GEO for Approval- Geotechnical Works																		
Project General Submission																											
Construction Noise Permit																											
PGS2445	Submit and approve CNP for Bored Piles (P0 to P84)	75	0	0%	31/10/12 A	28/08/14	26/02/13	11/05/13	Submit and approve CNP for Bored Piles (P0 to P84)																		
PGS2455	Submit and approve CNP for LG2	90	0	0%	30/11/13 A	28/08/14	19/06/14	16/09/14	Submit and approve CNP for LG2																		
MTTA for existing navigation channel																											
PGS1620	Divert marine traffic to permanent navigation channel (P17 to P20)	0	0	0%	28/08/14			19/06/14	Divert marine traffic to permanent navigation channel (P17 to P20)																		
Temporary Piling Platform/Cofferdem																											
PGS1680	Design approval of temporary cofferdem	21	0	100%	16/09/13 A	28/08/14	25/08/14	14/09/14	Design approval of temporary cofferdem																		
PGS1690	Deliver material for temporary cofferdem	45	0	100%	30/09/13 A	28/08/14	20/06/14	03/08/14	Deliver material for temporary cofferdem																		
Segment Casting Yard																											
Segment Moulds																											
PGS2325	Fabrication & 2nd Deliver segment mould (Long span)	201	0	100%	04/11/13 A	28/08/14	19/06/14	05/01/15	Fabrication & 2nd Deliver segment mould (Long span)																		
PGS2335	Fabrication & 3rd Deliver segment mould (Long End span)	146	22	85%	16/02/14 A	18/09/14	19/06/14	11/11/14	Fabrication & 3rd Deliver segment mould (Long End span)																		
Interface Contract																											
PGS1950	Complete deck erection by Mainland section at P0	243	97	60%	07/03/14 A	03/12/14	19/06/14	16/02/15	Complete deck erection by Mainland section at P0																		
Major Method Statement																											
PGS2385	Prepare MS for Column & Portal	60	0	100%	01/01/13 A	28/08/14	02/02/13	02/04/13	Prepare MS for Column & Portal																		
PGS2395	Approve MS for Column & Portal	60	0	100%	25/12/13 A	28/08/14	26/06/14	24/08/14	Approve MS for Column & Portal																		
PGS2405	Prepare MS for SOP Installation	60	0	100%	05/08/13 A	28/08/14	19/06/14	17/08/14	Prepare MS for SOP Installation																		
PGS2415	Approve MS for SOP Installation	60	0	100%	09/12/13 A	28/08/14	26/06/14	24/08/14	Approve MS for SOP Installation																		
PGS2425	Prepare MS for Segment Erection	60	0	100%	05/08/13 A	28/08/14	19/06/14	17/08/14	Prepare MS for Segment Erection																		
PGS2435	Approve MS for Segment Erection	60	0	100%	24/12/13 A	28/08/14	26/06/14	24/08/14	Approve MS for Segment Erection																		

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									August					September				October			November					
									28	04	11	18	25	01	08	15	22	29	06	13	20	27	03	10	17	24
Procurement and Fabrication																										
PGS2184	Deliver gantry crane for LG1 & 2	90	0	100%	08/07/13 A	28/08/14	19/06/14	16/09/14	Deliver gantry crane for LG1 & 2																	
PGS2485	Fabrication & Deliver Lift Frames LF1	90	19	78.47%	30/11/13 A	16/09/14	19/06/14	16/09/14	Fabrication & Deliver Lift Frames LF1																	
PGS2488	Fabrication & Deliver Lift Frames LF2	90	0	100%	30/11/13 A	28/08/14	19/06/14	16/09/14	Fabrication & Deliver Lift Frames LF2																	
PGS2495	Fabrication & Deliver Lift Frames LF3	90	0	100%	13/11/13 A	28/08/14	05/07/14	02/10/14	Fabrication & Deliver Lift Frames LF3																	
PGS2505	Fabrication & Deliver Lift Frames LF4	90	36	60%	13/11/13 A	02/10/14	05/07/14	02/10/14	Fabrication & Deliver Lift Frames LF4																	
Pile Cap Shell Casting																										
Type CP1 & CP5																										
PC1160	Pile cap shell casting for P16 - 2nos.	16	16	0%	11/11/14	27/11/14	24/10/14	08/11/14	Pile cap shell casting for P16 - 2nos.																	
PC1170	Pile cap shell casting for P21 - 2nos.	16	16	0%	25/10/14	10/11/14	30/09/14	23/10/14	Pile cap shell casting for P21 - 2nos.																	
PC1230	Pile cap shell casting for P27 - 2nos.	16	16	0%	05/09/14	21/09/14	09/08/14	26/08/14	Pile cap shell casting for P27 - 2nos.																	
PC1240	Pile cap shell casting for P28 - 2nos.	16	16	0%	28/08/14	12/09/14	09/08/14	26/08/14	Pile cap shell casting for P28 - 2nos.																	
PC1250	Pile cap shell casting for P29 - 2nos.	16	16	0%	19/11/14	05/12/14	24/10/14	08/11/14	Pile cap shell casting for P29 - 2nos.																	
PC1260	Pile cap shell casting for P30 - 2nos.	16	16	0%	02/11/14	18/11/14	30/09/14	23/10/14	Pile cap shell casting for P30 - 2nos.																	
PC1270	Pile cap shell casting for P31 - 2nos.	16	16	0%	08/10/14	24/10/14	12/09/14	29/09/14	Pile cap shell casting for P31 - 2nos.																	
PC1280	Pile cap shell casting for P32 - 2nos.	16	16	0%	16/10/14	01/11/14	12/09/14	29/09/14	Pile cap shell casting for P32 - 2nos.																	
PC1290	Pile cap shell casting for P33 - 2nos.	16	8	50%	21/08/14 A	04/09/14	23/07/14	08/08/14	Pile cap shell casting for P33 - 2nos.																	
PC1300	Pile cap shell casting for P34 - 2nos.	16	0	100%	31/07/14 A	11/08/14 A	23/07/14	08/08/14	Pile cap shell casting for P34 - 2nos.																	
PC1310	Pile cap shell casting for P35 - 2nos.	16	0	100%	24/07/14 A	02/08/14 A	06/07/14	22/07/14	Pile cap shell casting for P35 - 2nos.																	
PC1590	Pile cap shell casting for P63 - 2nos.	16	16	0%	22/09/14	15/10/14	27/08/14	11/09/14	Pile cap shell casting for P63 - 2nos.																	
PC1630	Pile cap shell casting for P67 - 2nos.	16	16	0%	13/09/14	30/09/14	27/08/14	11/09/14	Pile cap shell casting for P67 - 2nos.																	
Type CP2 & CP3																										
PC1490	Pile cap shell casting for P53 - 2nos.	18	18	0%	25/09/14	21/10/14	22/08/14	09/09/14	Pile cap shell casting for P53 - 2nos.																	
PC1500	Pile cap shell casting for P54 - 2nos.	18	18	0%	10/11/14	28/11/14	30/09/14	25/10/14	Pile cap shell casting for P54 - 2nos.																	
PC1550	Pile cap shell casting for P59 - 2nos.	18	18	0%	22/10/14	08/11/14	10/09/14	29/09/14	Pile cap shell casting for P59 - 2nos.																	
PC1560	Pile cap shell casting for P60 - 2nos.	18	0	100%	16/07/14 A	31/07/14 A	26/06/14	14/07/14	Pile cap shell casting for P60 - 2nos.																	
PC1570	Pile cap shell casting for P61 - 2nos.	18	9	50%	11/08/14 A	05/09/14	15/07/14	02/08/14	Pile cap shell casting for P61 - 2nos.																	
PC1580	Pile cap shell casting for P62 - 2nos.	18	18	0%	06/09/14	24/09/14	03/08/14	21/08/14	Pile cap shell casting for P62 - 2nos.																	
Type CP4, CP6, F1 & F2																										
PC1650	Pile cap shell casting for P18 - 2nos.	45	2	95%	06/08/14 A	30/08/14	12/07/14	30/08/14	Pile cap shell casting for P18 - 2nos.																	
PC1680	Pile cap shell casting for P79 - 2nos.	45	45	0%	30/08/14	24/10/14	30/08/14	24/10/14	Pile cap shell casting for P79 - 2nos.																	
PC1690	Pile cap shell casting for P80 - 2nos.	45	45	0%	24/10/14	10/12/14	24/10/14	10/12/14	Pile cap shell casting for P80 - 2nos.																	

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									August					September				October			November					
									28	04	11	18	25	01	08	15	22	29	06	13	20	27	03	10	17	24
Column Casting																										
PC1900	Precast Column & Columnhead P21	52	52	0%	03/11/14	29/12/14	17/10/14	10/12/14																		
PC2020	Precast Column & Columnhead P33	28	28	0%	30/10/14	28/11/14	20/10/14	17/11/14																		
PC2030	Precast Column & Columnhead P34	28	28	0%	11/11/14	09/12/14	11/10/14	08/11/14																		
PC2040	Precast Column & Columnhead P35	28	28	0%	11/11/14	09/12/14	11/10/14	08/11/14																		
PC2050	Precast Column & Columnhead P36	28	28	0%	23/09/14	29/10/14	12/09/14	18/10/14																		
PC2060	Precast Column & Columnhead P37	28	28	0%	27/09/14	03/11/14	10/09/14	16/10/14																		
PC2070	Precast Column & Columnhead P38	28	28	0%	12/10/14	10/11/14	04/09/14	10/10/14																		
PC2080	Precast Column & Columnhead P39	28	28	0%	12/10/14	10/11/14	04/09/14	10/10/14																		
PC2090	Precast Column & Columnhead P40	28	20	30%	12/08/14 A	27/09/14	12/08/14	09/09/14																		
PC2100	Precast Column & Columnhead P41	20	16	20%	25/08/14 A	11/10/14	14/08/14	03/09/14																		
PC2110	Precast Column & Columnhead P42 (Learning)	30	15	50%	25/07/14 A	22/09/14	12/08/14	11/09/14																		
PC2120	Precast Column & Columnhead P43 (Learning)	40	20	50%	12/07/14 A	17/09/14	02/07/14	13/08/14																		
PC2130	Precast Column & Columnhead P44 (Learning)	40	10	75%	01/07/14 A	06/09/14	30/06/14	11/08/14																		
Segment Casting																										
Type A, C, D Segment (Total 12 set Moulds)																										
Type A Segment (Western Water Typical Span)																										
SC5348	Segment Casting for P33 SOP	10	5	50%	11/08/14 A	19/01/15	08/12/14	18/12/14																		
SC5408	Segment Casting for P36 SOP	10	10	0%	10/10/14	21/10/14	28/08/14	06/09/14																		
SC5418	Segment Casting for P36 field segment	40	40	0%	21/10/14	02/12/14	19/09/14	06/11/14																		
SC5428	Segment Casting for P37 SOP	10	10	0%	22/09/14	10/10/14	17/08/14	27/08/14																		
SC5438	Segment Casting for P37 field segment	40	40	0%	11/11/14	23/12/14	18/09/14	05/11/14																		
SC5448	Segment Casting for P38 SOP	10	0	100%	28/06/14 A	06/08/14 A	25/06/14	04/07/14																		
SC5458	Segment Casting for P38 field segment	40	14	65%	08/07/14 A	10/09/14	08/07/14	19/08/14																		
SC5478	Segment Casting for P39 field segment	44	13	70%	27/03/14 A	10/09/14	06/03/15	21/04/15																		
SC5588	Segment Casting for P45 SOP	10	8	25%	11/08/14 A	04/09/14	05/07/14	15/07/14																		
SC5598	Segment Casting for P45 field segment	40	39	2%	23/08/14 A	29/10/14	16/07/14	27/08/14																		
SC5698	Segment Casting for P50 field segment	20	4	80%	14/07/14 A	08/09/14	07/08/14	28/08/14																		
SC5728	Segment Casting for P53 SOP	10	10	0%	21/11/14	02/12/14	16/10/14	26/10/14																		
SC5848	Segment Casting for P59 SOP	10	10	0%	11/11/14	21/11/14	29/09/14	15/10/14																		
SC5858	Segment Casting for P59 field segment	38	38	0%	21/11/14	01/01/15	16/10/14	25/11/14																		
SC5878	Segment Casting for P60 field segment	20	12	40%	14/08/14 A	11/11/14	28/08/14	17/09/14																		

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									August					September				October				November				
									28	04	11	18	25	01	08	15	22	29	06	13	20	27	03	10	17	24
SC5908	Segment Casting for P62 SOP	5	0	100%	22/08/14 A	22/08/14 A	12/08/14	16/08/14	Segment Casting for P62 SOP																	
SC5918	Segment Casting for P62 field segment	20	20	0%	22/09/14	21/10/14	29/08/14	18/09/14	Segment Casting for P62 field segment																	
SC5928	Segment Casting for P63 SOP	10	7	34%	09/07/14 A	22/09/14	01/08/14	11/08/14	Segment Casting for P63 SOP																	
SC5938	Segment Casting for P63 field segment	30	20	34%	24/07/14 A	20/10/14	20/08/14	20/09/14	Segment Casting for P63 field segment																	
SC5948	Segment Casting for P64 SOP	10	10	0%	04/09/14	15/09/14	21/07/14	31/07/14	Segment Casting for P64 SOP																	
SC5958	Segment Casting for P64 field segment	40	40	0%	15/09/14	03/11/14	14/08/14	24/09/14	Segment Casting for P64 field segment																	
SC5978	Segment Casting for P65 field segment	40	0	100%	28/05/14 A	16/08/14 A	02/07/14	13/08/14	Segment Casting for P65 field segment																	
SC5998	Segment Casting for P66 field segment	40	0	100%	11/06/14 A	08/08/14 A	26/06/14	06/08/14	Segment Casting for P66 field segment																	
SC6008	Segment Casting for P67 SOP	5	5	0%	21/10/14	26/10/14	07/09/14	11/09/14	Segment Casting for P67 SOP																	
Type C Segment (Long Span End Span)																										
SC6226	Segment Casting for P67 SOP	5	5	0%	26/10/14	31/10/14	12/09/14	17/09/14	Segment Casting for P67 SOP																	
SC6236	Segment Casting for P70 SOP	10	10	0%	31/10/14	11/11/14	18/09/14	27/09/14	Segment Casting for P70 SOP																	
SC6238	Segment Casting for P70 field segment	24	24	0%	11/11/14	06/12/14	29/09/14	30/10/14	Segment Casting for P70 field segment																	
Type D Segment (P49 to P63)																										
SC6048	Segment Casting for P50 field segment	60	40	34%	14/07/14 A	15/10/14	29/06/14	01/09/14	Segment Casting for P50 field segment																	
SC6056	Segment Casting for P51 SOP	24	12	50%	19/07/14 A	08/09/14	05/07/14	31/07/14	Segment Casting for P51 SOP																	
SC6058	Segment Casting for P51 field segment	60	60	0%	15/10/14	18/12/14	01/09/14	11/11/14	Segment Casting for P51 field segment																	
SC6086	Segment Casting for P61 SOP	24	18	25%	21/08/14 A	27/09/14	31/07/14	26/08/14	Segment Casting for P61 SOP																	
SC6096	Segment Casting for P62 SOP	18	18	0%	29/09/14	24/10/14	26/08/14	13/09/14	Segment Casting for P62 SOP																	
Type DT Segment																										
SC6038	Segment Casting for P49 field segment (DT)	55	44	20%	19/07/14 A	20/10/14	19/06/14	16/08/14	Segment Casting for P49 field segment																	
SC6108	Segment Casting for P63 field segment (DT)	55	44	20%	28/07/14 A	05/12/14	17/08/14	21/10/14	Segment Casting for P63 field segment																	
Type E Segment (Total 5 set Moulds)																										
Land Viaduct (P85 to Easternmost Abutment)																										
SC6468	Segment Casting for P102 field segment	36	36	0%	10/11/14	17/12/14	10/11/14	17/12/14	Segment Casting for P102 field segment																	
SC6478	Segment Casting for P103 field segment	36	36	0%	18/11/14	26/12/14	20/10/14	27/11/14	Segment Casting for P103 field segment																	
SC6488	Segment Casting for P104 field segment	18	18	0%	22/10/14	08/11/14	22/10/14	08/11/14	Segment Casting for P104 field segment																	
SC6508	Segment Casting for P106 field segment	64	64	0%	15/09/14*	28/11/14	15/09/14	28/11/14	Segment Casting for P106 field segment																	
SC6518	Segment Casting for P107 field segment	28	28	0%	15/09/14*	21/10/14	15/09/14	21/10/14	Segment Casting for P107 field segment																	
SC6528	Segment Casting for P108 field segment	32	32	0%	30/10/14	03/12/14	31/08/14	10/10/14	Segment Casting for P108 field segment																	
SC6568	Segment Casting for P112 field segment	58	15	75%	13/06/14 A	11/09/14	07/07/14	06/09/14	Segment Casting for P112 field segment																	
SC6578	Segment Casting for P113 field segment	60	53	11%	16/07/14 A	30/10/14	28/06/14	30/08/14	Segment Casting for P113 field segment																	

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									August					September				October				November				
									28	04	11	18	25	01	08	15	22	29	06	13	20	27	03	10	17	24
SC6588	Segment Casting for P114 field segment	57	57	0%	11/09/14	18/11/14	13/08/14	20/10/14	Segment Casting for P114 field segment																	
Type B Segment (Total 1 set Mould)																										
Turnaround																										
SC6126	Segment Casting for P53 SOP	20	20	0%	18/09/14	15/10/14	21/07/14	11/08/14	Segment Casting for P53 SOP																	
SC6128	Segment Casting for P53 field segment	69	69	0%	16/10/14	27/12/14	12/08/14	30/10/14	Segment Casting for P53 field segment																	
SC6148	Segment Casting for P55 field segment	65	38	41%	07/07/14 A	24/04/15	08/01/15	25/03/15	Segment Casting for P55 field segment																	
SC6186	Segment Casting for P59 SOP	20	20	0%	28/08/14	17/09/14	30/06/14	20/07/14	Segment Casting for P59 SOP																	
Type CH Segment (Total 12 set Moulds)																										
ML03 (P16 TO P21)																										
SC1000	Segment Casting for P20L SOP (MSOP)	28	19	33%	09/08/14 A	23/10/14	18/08/14	16/09/14	Segment Casting for P20L SOP (MSOP)																	
SC1040	Segment Casting for P20L CH14 to CH19 (MCH5) Learning	24	0	100%	06/07/14 A	04/08/14 A	19/06/14	14/07/14	Segment Casting for P20L CH14 to CH19 (MCH5) Learning																	
SC1048	Segment Casting for P20R CH14' to CH19' (MCH5) Learning	24	8	67%	09/08/14 A	04/09/14	15/07/14	08/08/14	Segment Casting for P20R CH14' to CH19' (MCH5) Learning																	
SC1058	Segment Casting for P20R SOP (MSOP)	28	28	0%	26/09/14	01/11/14	18/08/14	16/09/14	Segment Casting for P20R SOP (MSOP)																	
SC1078	Segment Casting for P20R CH5 to CH8 (MCH3)	24	6	75%	27/05/14 A	02/09/14	23/03/15	16/04/15	Segment Casting for P20R CH5 to CH8 (MCH3)																	
SC1088	Segment Casting for P20R CH9 to CH13 (MCH4) learning	26	26	0%	03/09/14	30/09/14	26/06/14	22/07/14	Segment Casting for P20R CH9 to CH13 (MCH4) learning																	
SC1098	Segment Casting for P20R CH14 to CH19 (MCH5) Learning	24	24	0%	08/10/14	01/11/14	23/07/14	17/08/14	Segment Casting for P20R CH14 to CH19 (MCH5) Learning																	
SC1128	Segment Casting for P20L CH9' to CH13' (MCH4) learning	26	10	60%	29/07/14 A	13/09/14	21/07/14	17/08/14	Segment Casting for P20L CH9' to CH13' (MCH4) learning																	
SC1138	Segment Casting for P20L CH14' to CH19' (MCH5) Learning	24	24	0%	02/11/14	27/11/14	18/08/14	11/09/14	Segment Casting for P20L CH14' to CH19' (MCH5) Learning																	
SC1148	Segment Casting for P19L SOP (MSOP)	28	28	0%	23/10/14	21/11/14	17/09/14	23/10/14	Segment Casting for P19L SOP (MSOP)																	
SC1178	Segment Casting for P19L CH9 to CH13 (MCH4)	13	0	100%	01/07/14 A	06/08/14 A	23/07/14	05/08/14	Segment Casting for P19L CH9 to CH13 (MCH4)																	
SC1188	Segment Casting for P19L CH14 to CH19 (MCH5)	12	12	0%	08/10/14	20/10/14	09/08/14	21/08/14	Segment Casting for P19L CH14 to CH19 (MCH5)																	
SC1218	Segment Casting for P19R CH9' to CH13' (MCH4)	13	5	60%	27/07/14 A	13/10/14	06/08/14	19/08/14	Segment Casting for P19R CH9' to CH13' (MCH4)																	
SC1228	Segment Casting for P19R CH14' to CH19' (MCH5)	12	12	0%	21/10/14	01/11/14	22/08/14	03/09/14	Segment Casting for P19R CH14' to CH19' (MCH5)																	
SC1238	Segment Casting for P19R SOP (MSOP)	28	28	0%	02/11/14	01/12/14	17/09/14	23/10/14	Segment Casting for P19R SOP (MSOP)																	
SC1268	Segment Casting for P19R CH9 to CH13 (MCH4)	13	5	60%	27/07/14 A	19/09/14	18/08/14	31/08/14	Segment Casting for P19R CH9 to CH13 (MCH4)																	
SC1288	Segment Casting for P19L CH1' to CH4' (MCH2)	18	0	100%	10/06/14 A	07/08/14 A	19/06/14	07/07/14	Segment Casting for P19L CH1' to CH4' (MCH2)																	
SC1298	Segment Casting for P19L CH5' to CH8' (MCH3)	12	12	0%	03/09/14	15/09/14	03/08/14	15/08/14	Segment Casting for P19L CH5' to CH8' (MCH3)																	
SC1308	Segment Casting for P19L CH9' to CH13' (MCH4)	13	13	0%	19/09/14	10/10/14	01/09/14	13/09/14	Segment Casting for P19L CH9' to CH13' (MCH4)																	
SC1348	Segment Casting for P18L CH5 to CH8 (MCH3)	12	0	100%	31/07/14 A	15/08/14 A	12/07/14	24/07/14	Segment Casting for P18L CH5 to CH8 (MCH3)																	
SC1358	Segment Casting for P18L CH9 to CH13 (MCH4)	13	10	20%	19/08/14 A	24/10/14	20/08/14	02/09/14	Segment Casting for P18L CH9 to CH13 (MCH4)																	
SC1368	Segment Casting for P18L CH14 to CH19 (MCH5)	12	12	0%	02/11/14	14/11/14	04/09/14	16/09/14	Segment Casting for P18L CH14 to CH19 (MCH5)																	
SC1378	Segment Casting for P18R CH1' to CH4' (MCH2)	16	0	100%	22/07/14 A	07/08/14 A	12/07/14	29/07/14	Segment Casting for P18R CH1' to CH4' (MCH2)																	

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Activity ID	Activity Name	Original Duration	Remaining Duration	Activity % Complete	Start	Finish	DWP01d OP1 Start	DWP01d OP1 Finish	2014																							
									August					September				October			November											
									28	04	11	18	25	01	08	15	22	29	06	13	20	27	03	10	17	24						
SC1388	Segment Casting for P18R CH5' to CH8' (MCH3)	12	9	25%	24/08/14 A	05/09/14	30/07/14	11/08/14	Segment Casting for P18R CH5' to CH8' (MCH3)																							
SC1398	Segment Casting for P18R CH9' to CH13' (MCH4)	13	13	0%	24/10/14	06/11/14	03/09/14	16/09/14	Segment Casting for P18R CH9' to CH13' (MCH4)																							
SC1408	Segment Casting for P18R CH14' to CH19' (MCH5)	12	12	0%	15/11/14	27/11/14	17/09/14	29/09/14	Segment Casting for P18R CH14' to CH19' (MCH5)																							
SC1418	Segment Casting for P18R SOP (MSOP)	28	9	67%	18/06/14 A	06/09/14	19/06/14	18/07/14	Segment Casting for P18R SOP (MSOP)																							
SC1428	Segment Casting for P18R CH1 to CH4 (MCH2)	16	12	25%	18/08/14 A	19/09/14	19/07/14	04/08/14	Segment Casting for P18R CH1 to CH4 (MCH2)																							
SC1438	Segment Casting for P18R CH5 to CH8 (MCH3)	12	12	0%	19/09/14	09/10/14	16/08/14	28/08/14	Segment Casting for P18R CH5 to CH8 (MCH3)																							
SC1448	Segment Casting for P18R CH9 to CH13 (MCH4)	13	13	0%	10/10/14	24/10/14	15/09/14	27/09/14	Segment Casting for P18R CH9 to CH13 (MCH4)																							
SC1468	Segment Casting for P18L CH1' to CH4' (MCH2)	16	16	0%	19/09/14	13/10/14	05/08/14	21/08/14	Segment Casting for P18L CH1' to CH4' (MCH2)																							
SC1478	Segment Casting for P18L CH5' to CH8' (MCH3)	12	12	0%	13/10/14	26/10/14	29/08/14	09/09/14	Segment Casting for P18L CH5' to CH8' (MCH3)																							
SC1488	Segment Casting for P18L CH9' to CH13' (MCH4)	13	13	0%	26/10/14	08/11/14	29/09/14	18/10/14	Segment Casting for P18L CH9' to CH13' (MCH4)																							
SC1508	Segment Casting for P17L SOP (MSOP)	28	19	33%	13/07/14 A	25/09/14	19/07/14	17/08/14	Segment Casting for P17L SOP (MSOP)																							
SC1598	Segment Casting for P17R SOP (MSOP)	28	19	33%	28/07/14 A	25/09/14	19/07/14	17/08/14	Segment Casting for P17R SOP (MSOP)																							
ML11 (P70 TO P74)																																
SC1688	Segment Casting for P71L SOP (MSOP)	28	28	0%	21/11/14	21/12/14	24/10/14	21/11/14	Segment Casting for P71L SOP (MSOP)																							
SC1698	Segment Casting for P71L CH1 to CH3 (MCH1) Learning	24	24	0%	28/08/14*	21/09/14	17/07/14	11/08/14	Segment Casting for P71L CH1 to CH3 (MCH1) Learning																							
SC1699	Segment Casting for P71L CH4 to CH7 (MCH2)	16	16	0%	22/09/14	15/10/14	12/08/14	28/08/14	Segment Casting for P71L CH4 to CH7 (MCH2)																							
SC1708	Segment Casting for P71L CH8 to CH11 (MCH3)	12	12	0%	16/10/14	28/10/14	29/08/14	09/09/14	Segment Casting for P71L CH8 to CH11 (MCH3)																							
SC1718	Segment Casting for P71L CH12 to CH16 (MCH4)	13	13	0%	06/11/14	20/11/14	17/09/14	30/09/14	Segment Casting for P71L CH12 to CH16 (MCH4)																							
SC1738	Segment Casting for P71R CH1' to CH3' (MCH1) Learning	24	24	0%	22/09/14	24/10/14	12/08/14	05/09/14	Segment Casting for P71R CH1' to CH3' (MCH1) Learning																							
SC1748	Segment Casting for P71R CH4' to CH7' (MCH2)	16	16	0%	25/10/14	10/11/14	06/09/14	22/09/14	Segment Casting for P71R CH4' to CH7' (MCH2)																							
SC1758	Segment Casting for P71R CH8' to CH11' (MCH3)	12	12	0%	11/11/14	22/11/14	23/09/14	12/10/14	Segment Casting for P71R CH8' to CH11' (MCH3)																							
SC1768	Segment Casting for P71R CH12' to CH16' (MCH4)	13	13	0%	24/11/14	06/12/14	13/10/14	26/10/14	Segment Casting for P71R CH12' to CH16' (MCH4)																							
SC1798	Segment Casting for P71R CH1 to CH3 (MCH1) Learning	24	24	0%	28/08/14*	21/09/14	17/07/14	11/08/14	Segment Casting for P71R CH1 to CH3 (MCH1) Learning																							
SC1808	Segment Casting for P71R CH4 to CH7 (MCH2)	16	16	0%	13/10/14	30/10/14	22/08/14	07/09/14	Segment Casting for P71R CH4 to CH7 (MCH2)																							
SC1818	Segment Casting for P71R CH8 to CH11 (MCH3)	12	12	0%	30/10/14	12/11/14	10/09/14	22/09/14	Segment Casting for P71R CH8 to CH11 (MCH3)																							
SC1828	Segment Casting for P71R CH12 to CH16 (MCH4)	13	13	0%	12/11/14	26/11/14	20/10/14	01/11/14	Segment Casting for P71R CH12 to CH16 (MCH4)																							
SC1848	Segment Casting for P71L CH1' to CH3' (MCH1) Learning	24	24	0%	22/09/14	24/10/14	12/08/14	05/09/14	Segment Casting for P71L CH1' to CH3' (MCH1) Learning																							
SC1858	Segment Casting for P71L CH4' to CH7' (MCH2)	16	16	0%	30/10/14	16/11/14	08/09/14	24/09/14	Segment Casting for P71L CH4' to CH7' (MCH2)																							
SC1868	Segment Casting for P71L CH8' to CH11' (MCH3)	12	12	0%	16/11/14	29/11/14	25/09/14	14/10/14	Segment Casting for P71L CH8' to CH11' (MCH3)																							
SC1908	Segment Casting for P72L CH1 to CH3 (MCH1)	12	12	0%	25/10/14	05/11/14	06/09/14	18/09/14	Segment Casting for P72L CH1 to CH3 (MCH1)																							
SC1918	Segment Casting for P72L CH4 to CH7 (MCH2)	16	16	0%	11/11/14	27/11/14	23/09/14	16/10/14	Segment Casting for P72L CH4 to CH7 (MCH2)																							
SC1958	Segment Casting for P72R CH1' to CH3' (MCH1)	12	12	0%	06/11/14	18/11/14	19/09/14	08/10/14	Segment Casting for P72R CH1' to CH3' (MCH1)																							

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									August					September				October			November					
									28	04	11	18	25	01	08	15	22	29	06	13	20	27	03	10	17	24
SC2018	Segment Casting for P72R CH1 to CH3 (MCH1)	12	12	0%	25/10/14	05/11/14	06/09/14	18/09/14	Segment Casting for P72R CH1 to CH3 (MCH1)																	
SC2028	Segment Casting for P72R CH4 to CH7 (MCH2)	16	16	0%	16/11/14	03/12/14	25/09/14	18/10/14	Segment Casting for P72R CH4 to CH7 (MCH2)																	
SC2068	Segment Casting for P72L CH1' to CH3' (MCH1)	12	12	0%	06/11/14	18/11/14	19/09/14	08/10/14	Segment Casting for P72L CH1' to CH3' (MCH1)																	
SC2128	Segment Casting for P73L CH1 to CH3 (MCH1)	12	12	0%	19/11/14	01/12/14	09/10/14	21/10/14	Segment Casting for P73L CH1 to CH3 (MCH1)																	
SC2238	Segment Casting for P73R CH1 to CH3 (MCH1)	12	12	0%	19/11/14	01/12/14	09/10/14	21/10/14	Segment Casting for P73R CH1 to CH3 (MCH1)																	
ML12 (P74 TO P78)																										
SC3218	Segment Casting for P77L SOP (MSOP)	24	24	0%	03/11/14*	28/11/14	03/11/14	28/11/14	Segment Casting for P77L SOP (MSOP)																	
Viaduct between HKSAR Boundary and Landing Point on Airport Island																										
ML01/LR 75mx8 - Stage 2 of Works																										
Pier P1L/R																										
Site Investigation																										
WW1090	Site investigation for bored pile P1	12	0	100%	05/02/14 A	01/08/14 A	04/11/14	17/11/14	Site investigation for bored pile P1																	
Foundation - Bored Pile																										
WW1110	Construct bored piles P1 - 6 nos.	48	48	0%	28/08/14	04/11/14	04/09/14	11/11/14	Construct bored piles P1 - 6 nos.																	
WW1120	Pile testing P1	28	28	0%	05/11/14	02/12/14	11/11/14	09/12/14	Pile testing P1																	
ML01/LR 75mx8 - Stage 4 of Works																										
Pier P2L/R																										
Foundation - Bored Pile																										
WW1190	Construct bored piles P2 - 6 nos. (Friction Pile)	50	15	70%	28/07/14 A	18/09/14	01/08/14	14/10/14	Construct bored piles P2 - 6 nos. (Friction Pile)																	
WW1200	Pile testing P2	28	28	0%	19/09/14	16/10/14	15/10/14	11/11/14	Pile testing P2																	
Pier P3L/R																										
Foundation - Bored Pile																										
WW1270	Construct bored piles P3- 6 nos. (Friction Pile)	50	50	0%	19/09/14	24/11/14	15/10/14	12/12/14	Construct bored piles P3- 6 nos. (Friction Pile)																	
WW1280	Pile testing P3	28	28	0%	25/11/14	22/12/14	13/12/14	09/01/15	Pile testing P3																	
Pier P4L/R																										
Temporary Works																										
WW10447	Remove the temporary working platform P4 (Platform only)	4	4	0%	28/08/14	02/09/14	01/08/14	06/08/14	Remove the temporary working platform P4 (Platform only)																	
Foundation - Bored Pile																										
WW1360	Pile testing P4	28	0	100%	04/08/14 A	19/08/14 A	01/08/14	28/08/14	Pile testing P4																	
Pier P5L/R																										
Temporary Works																										
WW10457	Install temporary working platform for bored pile P5 (Platform only)	12	12	0%	16/09/14	03/10/14	17/09/14	06/10/14	Install temporary working platform for bored pile P5 (Platform only)																	

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									August					September				October			November					
									28	04	11	18	25	01	08	15	22	29	06	13	20	27	03	10	17	24
WW10467	Remove the temporary working platform P5 (Platform only)	4	4	0%	18/11/14	21/11/14	19/11/14	22/11/14																		
Foundation - Bored Pile																										
WW1430	Construct bored piles P5 - 6 nos.	35	35	0%	06/10/14	17/11/14	07/10/14	18/11/14																		
WW1440	Pile testing P5	28	28	0%	18/11/14	15/12/14	19/11/14	16/12/14																		
Pier P6L/R																										
Temporary Works																										
WW10477	Install temporary working platform for bored pile P6 (Platform only)	12	12	0%	16/10/14	30/10/14	09/10/14	24/10/14																		
Foundation - Bored Pile																										
WW1510	Construct bored piles P6 - 6 nos.	35	35	0%	31/10/14	10/12/14	25/10/14	04/12/14																		
Pier P7L/R																										
Foundation - Bored Pile																										
WW1590	Construct bored piles P7 - 6 nos. (Friction Pile)	50	50	0%	25/11/14	24/01/15	13/12/14	12/02/15																		
ML02L/R 75mx8 - Stage 4 of Works																										
Pier P8L/R (M.J.)																										
Foundation - Bored Pile																										
WW1670	Construct bored piles P8 - 6 nos.	34	34	0%	21/10/14	29/11/14	31/10/14	09/12/14																		
Pier P10L/R																										
Foundation - Bored Pile																										
WW1830	Construct bored piles P10 - 6 nos.	37	37	0%	18/11/14	02/01/15	19/11/14	03/01/15																		
Pier P11L/R																										
Foundation - Bored Pile																										
WW1920	Pile testing P11	28	28	0%	28/08/14	24/09/14	26/07/14	22/08/14																		
Pier P12L/R																										
Foundation - Bored Pile																										
WW1989	Construct bored piles P12 - 6 nos.	38	38	0%	30/09/14	18/11/14	30/09/14	18/11/14																		
WW2000	Pile testing P12	28	28	0%	19/11/14	16/12/14	19/11/14	16/12/14																		
Pier P13L/R																										
Foundation - Bored Pile																										
WW2070	Construct bored piles P13 - 6 nos.	18	0	100%	02/05/14 A	12/08/14 A	24/07/14	18/08/14																		
WW2080	Pile testing P13	28	28	0%	28/08/14	24/09/14	21/08/14	17/09/14																		
Pier P15L/R																										
Foundation - Bored Pile																										

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Activity ID	Activity Name	Original Duration	Remaining Duration	Activity % Complete	Start	Finish	DWP01d OP1 Start	DWP01d OP1 Finish	2014																	
									August					September				October			November					
									28	04	11	18	25	01	08	15	22	29	06	13	20	27	03	10	17	24
WW2230	Construct bored piles P15 - 6 nos.	33	31	5%	15/05/14 A	12/12/14	17/10/14	25/11/14																		
ML03L/R 109.661m+150mx3+109.661m Navigation Channel - Stage 4 of Works																										
Pier P16L/R (M.J.)																										
Temporary Works																										
NC1030	Remove the temporary working platform P16 (Platform only)	4	4	0%	28/08/14	02/09/14	01/08/14	06/08/14																		
Foundation - Bored Pile																										
NC1060	Pile testing P16 (Bridge)	28	7	75%	11/08/14 A	03/09/14	01/08/14	28/08/14																		
Pier P17L/R																										
Foundation - Bored Pile																										
NC1165	Pile testing P17 (Bridge)	28	3	90%	27/05/14 A	30/08/14	28/06/14	25/07/14																		
NC1170	Construct bored piles P17 - 3 nos. (Downstream Dolphin)	20	20	0%	28/08/14	25/09/14	21/08/14	18/09/14																		
NC1190	Pile testing P17 (Dolphin)	28	28	0%	26/09/14	23/10/14	19/09/14	16/10/14																		
Pier P18L/R																										
Temporary Works																										
NC1270	Remove the temporary working platform P18 (Platform only)	6	6	0%	28/08/14	04/09/14	20/06/14	27/06/14																		
Foundation - Bored Pile																										
NC1285	Construct bored piles P18 - 1 nos. (1 outstanding upstream dolphin)	10	10	0%	04/09/14	19/09/14	18/09/14	03/10/14																		
NC1300	Pile testing P18 (Bridge)	28	1	95%	05/05/14 A	29/08/14	19/06/14	16/07/14																		
NC1302	Construct bored piles P18 - 3 nos. (Downstream Dolphin)	20	20	0%	19/09/14	21/10/14	06/10/14	30/10/14																		
NC1310	Pile testing P18 (Dolphin)	28	28	0%	21/10/14	18/11/14	31/10/14	27/11/14																		
Pile Cap Construction																										
NC1320	Construct pile cap P18 - 2 nos.	60	60	0%	27/10/14	07/01/15	13/10/14	22/12/14																		
Pier P19L/R																										
Foundation - Bored Pile																										
NC1410	Construct bored piles P19 - 3 nos. (Downstream Dolphin)	15	0	100%	29/07/14 A	27/08/14 A	01/08/14	21/08/14																		
NC1430	Pile testing P19 (Dolphin)	28	28	0%	28/08/14	24/09/14	22/08/14	18/09/14																		
Pile Cap Construction																										
NC1440	Construct pile cap P19 - 2 nos.	60	42	30%	20/08/14 A	10/11/14	20/08/14	11/11/14																		
Column Construction																										
NC1460	Construct column P19 - 4 nos.	92	92	0%	11/11/14	04/03/15	12/11/14	05/03/15																		
Pier P20L/R																										
Foundation - Bored Pile																										

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Activity ID	Activity Name	Original Duration	Remaining Duration	Activity % Complete	Start	Finish	DWP01d OP1 Start	DWP01d OP1 Finish	2014																	
									August					September				October				November				
									28	04	11	18	25	01	08	15	22	29	06	13	20	27	03	10	17	24
NC1530	Construct bored piles P20 - 3 nos. (Downstream Dolphin)	20	20	0%	10/10/14	05/11/14	17/09/14	16/10/14	Construct bored piles P20 - 3 nos. (Downstream Dolphin)																	
NC1550	Pile testing P20 (Dolphin)	28	28	0%	05/11/14	03/12/14	17/10/14	13/11/14	Pile testing P20 (Dolphin)																	
Pile Cap Construction																										
NC1560	Construct pile cap P20 - 2 nos. (Learning)	75	34	54.67%	25/07/14 A	17/10/14	02/07/14	17/10/14	Construct pile cap P20 - 2 nos. (Learning)																	
Column Construction																										
NC1580	Construct column P20 - 4 nos.	92	92	0%	20/10/14	06/02/15	20/10/14	06/02/15	Construct column P20 - 4 nos.																	
ML04L/R 74.5mx8 - Stage 4 of Works																										
Pier P21L/R (M.J.)																										
Temporary Works																										
WW8600	Remove the temporary working platform P21 (Platform only)	4	4	0%	30/09/14	07/10/14	30/09/14	07/10/14	Remove the temporary working platform P21 (Platform only)																	
Foundation - Bored Pile																										
WW5025	Construct bored piles P21 - 6 nos.	26	22	15.38%	21/08/14 A	29/09/14	22/08/14	29/09/14	Construct bored piles P21 - 6 nos.																	
WW8630	Pile testing P21 (Bridge)	28	28	0%	30/09/14	27/10/14	30/09/14	27/10/14	Pile testing P21 (Bridge)																	
Pier P22L/R																										
Foundation - Bored Pile																										
WW5040	Pile testing P22	28	7	75%	21/06/14 A	03/09/14	19/06/14	16/07/14	Pile testing P22																	
Pier P23L/R																										
Foundation - Bored Pile																										
WW5109	Construct bored piles P23 - 6 nos.	24	24	0%	26/09/14	30/10/14	19/09/14	24/10/14	Construct bored piles P23 - 6 nos.																	
WW5120	Pile testing P23	28	28	0%	31/10/14	27/11/14	25/10/14	21/11/14	Pile testing P23																	
Pier P24L/R																										
Foundation - Bored Pile																										
WW5190	Construct bored piles P24 - 6 nos.	18	15	15%	12/05/14 A	10/10/14	21/08/14	16/09/14	Construct bored piles P24 - 6 nos.																	
WW5200	Pile testing P24	28	28	0%	10/10/14	07/11/14	17/09/14	14/10/14	Pile testing P24																	
Pier P25L/R																										
Foundation - Bored Pile																										
WW5269	Construct bored piles P25 - 6 nos.	18	14	25%	13/06/14 A	17/09/14	28/07/14	20/08/14	Construct bored piles P25 - 6 nos.																	
WW5280	Pile testing P25	28	28	0%	17/09/14	15/10/14	21/08/14	17/09/14	Pile testing P25																	
Pier P26L/R																										
Foundation - Bored Pile																										
WW5360	Pile testing P26	28	28	0%	28/08/14	24/09/14	26/07/14	22/08/14	Pile testing P26																	
Pier P27L/R																										

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									August					September				October			November					
									28	04	11	18	25	01	08	15	22	29	06	13	20	27	03	10	17	24
Foundation - Bored Pile																										
WW5440	Pile testing P27	28	14	50%	02/07/14 A	10/09/14	19/06/14	16/07/14	Pile testing P27																	
Pile Cap Construction																										
WW5450	Construct pile cap P27 - 2 nos.	30	30	0%	08/10/14	13/11/14	08/10/14	13/11/14	Construct pile cap P27 - 2 nos.																	
Pier P28L/R																										
Foundation - Bored Pile																										
WW5520	Pile testing P28	28	28	0%	28/08/14	24/09/14	19/06/14	16/07/14	Pile testing P28																	
Pile Cap Construction																										
WW5530	Construct pile cap P28 - 2 nos.	30	30	0%	25/09/14	05/11/14	15/09/14	27/10/14	Construct pile cap P28 - 2 nos.																	
ML05L/R 74.5mx8 - Stage 4 of Works																										
Pier P29L/R (M.J.)																										
Foundation - Bored Pile																										
WW5600	Pile testing P29	28	28	0%	28/08/14	24/09/14	19/06/14	16/07/14	Pile testing P29																	
Pier P30L/R																										
Temporary Works																										
WW5660	Remove the temporary working platform P30 (Platform only)	4	4	0%	28/08/14	02/09/14	04/09/14	11/09/14	Remove the temporary working platform P30 (Platform only)																	
Foundation - Bored Pile																										
WW5670	Construct bored piles P30 - 6 nos.	27	0	100%	24/07/14 A	19/08/14 A	29/07/14	04/09/14	Construct bored piles P30 - 6 nos.																	
WW5680	Pile testing P30	28	28	0%	28/08/14	24/09/14	04/09/14	02/10/14	Pile testing P30																	
Pile Cap Construction																										
WW5690	Construct pile cap P30 - 2 nos.	30	30	0%	18/11/14	23/12/14	28/10/14	01/12/14	Construct pile cap P30 - 2 nos.																	
Pier P31L/R																										
Temporary Works																										
WW5740	Remove the temporary working platform P31 (Platform only)	4	4	0%	06/10/14	09/10/14	07/10/14	10/10/14	Remove the temporary working platform P31 (Platform only)																	
Foundation - Bored Pile																										
WW5750	Construct bored piles P31 - 6 nos.	24	24	0%	28/08/14	03/10/14	29/08/14	06/10/14	Construct bored piles P31 - 6 nos.																	
WW5760	Pile testing P31	28	28	0%	04/10/14	31/10/14	07/10/14	03/11/14	Pile testing P31																	
Pile Cap Construction																										
WW5770	Construct pile cap P31 - 2 nos.	30	30	0%	19/11/14	24/12/14	04/11/14	08/12/14	Construct pile cap P31 - 2 nos.																	
Pier P32L/R																										
Temporary Works																										
WW5820	Remove the temporary working platform P32 (Platform only)	4	4	0%	04/09/14	11/09/14	18/09/14	23/09/14	Remove the temporary working platform P32 (Platform only)																	

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									August					September				October			November					
									28	04	11	18	25	01	08	15	22	29	06	13	20	27	03	10	17	24
Foundation - Bored Pile																										
WW5830	Construct bored piles P32 - 6 nos.	28	4	85%	28/07/14 A	04/09/14	08/08/14	17/09/14	Construct bored piles P32 - 6 nos.																	
WW5840	Pile testing P32	28	28	0%	04/09/14	02/10/14	18/09/14	15/10/14	Pile testing P32																	
Pile Cap Construction																										
WW5850	Construct pile cap P32 - 2 nos.	30	30	0%	01/11/14	06/12/14	16/10/14	20/11/14	Construct pile cap P32 - 2 nos.																	
Pier P33L/R																										
Temporary Works																										
WW5900	Remove the temporary working platform P33 (Platform only)	4	4	0%	28/08/14	02/09/14	29/07/14	04/08/14	Remove the temporary working platform P33 (Platform only)																	
Foundation - Bored Pile																										
WW5920	Pile testing P33	28	0	100%	26/07/14 A	08/08/14 A	29/07/14	26/08/14	Pile testing P33																	
Pile Cap Construction																										
WW5930	Construct pile cap P33 - 2 nos.	30	30	0%	15/09/14	27/10/14	15/09/14	27/10/14	Construct pile cap P33 - 2 nos.																	
Pier P34L/R																										
Pile Cap Construction																										
WW6010	Construct pile cap P34 - 2 nos.	30	26	13.33%	22/08/14 A	07/10/14	22/08/14	07/10/14	Construct pile cap P34 - 2 nos.																	
Pier P35L/R																										
Pile Cap Construction																										
WW6090	Construct pile cap P35 - 2 nos.	30	26	13.33%	22/08/14 A	07/10/14	22/08/14	07/10/14	Construct pile cap P35 - 2 nos.																	
Column Construction																										
WW6100	Construct column P35 - 2 nos. (in-situ section)	12	12	0%	21/11/14	04/12/14	21/11/14	04/12/14	Construct column P35 - 2 nos. (in-situ section)																	
Pier P36L/R																										
Pile Cap Construction																										
WW6170	Construct pile cap P36 - 2 nos.	30	11	63.33%	25/07/14 A	12/09/14	01/08/14	12/09/14	Construct pile cap P36 - 2 nos.																	
Column Construction																										
WW6180	Construct column P36 - 2 nos. (in-situ section)	12	12	0%	07/11/14	20/11/14	07/11/14	20/11/14	Construct column P36 - 2 nos. (in-situ section)																	
ML06L/R 74.5mx8 - Stage 4 of Works																										
Pier P37L/R (M.J.)																										
Pile Cap Construction																										
WW6250	Construct pile cap P37 - 2 nos.	30	11	63.33%	25/07/14 A	12/09/14	01/08/14	12/09/14	Construct pile cap P37 - 2 nos.																	
Column Construction																										
WW6260	Construct column P37 - 2 nos. (in-situ section)	12	12	0%	24/10/14	06/11/14	24/10/14	06/11/14	Construct column P37 - 2 nos. (in-situ section)																	
Pier 38L/R																										

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									August					September				October			November					
									28	04	11	18	25	01	08	15	22	29	06	13	20	27	03	10	17	24
Pile Cap Construction																										
WW6330	Construct pile cap P38 - 2 nos.	30	8	75%	05/07/14 A	09/09/14	11/07/14	21/08/14	Construct pile cap P38 - 2 nos.																	
Column Construction																										
WW6340	Construct column P38 - 2 nos. (in-situ section)	12	12	0%	08/10/14	23/10/14	08/10/14	23/10/14	Construct column P38 - 2 nos. (in-situ section)																	
Pier 39L/R																										
Pile Cap Construction																										
WW6410	Construct pile cap P39 - 2 nos.	30	0	100%	12/06/14 A	05/08/14 A	17/07/14	27/08/14	Construct pile cap P39 - 2 nos.																	
Column Construction																										
WW6420	Construct column P39 - 2 nos. (in-situ section)	12	12	0%	18/09/14	07/10/14	18/09/14	07/10/14	Construct column P39 - 2 nos. (in-situ section)																	
Pier 40L/R																										
Column Construction																										
WW6500	Construct column P40 - 2 nos. (in-situ section)	12	0	100%	04/08/14 A	17/08/14 A	23/07/14	07/08/14	Construct column P40 - 2 nos. (in-situ section)																	
Pier 41L/R																										
Pile Cap Construction																										
WW6570	Construct pile cap P41 - 2 nos.	30	0	100%	06/07/14 A	18/08/14 A	11/07/14	21/08/14	Construct pile cap P41 - 2 nos.																	
Column Construction																										
WW6580	Construct column P41 - 2 nos. (in-situ section)	12	12	0%	01/09/14	17/09/14	01/09/14	17/09/14	Construct column P41 - 2 nos. (in-situ section)																	
Pier 42L/R																										
Column Construction																										
WW6660	Construct column P42 - 2 nos. (in-situ section)	12	2	83.33%	18/08/14 A	29/08/14	14/08/14	29/08/14	Construct column P42 - 2 nos. (in-situ section)																	
WW9660	Install base precast column segment at P42 (Learning)	2	2	0%	22/10/14	24/10/14	17/09/14	19/09/14	Install base precast column segment at P42 (Learning)																	
WW9662	Align & cast stitch for base column segment at P42	4	4	0%	24/10/14	29/10/14	19/09/14	25/09/14	Align & cast stitch for base column segment at P42																	
WW9664	Install remain precast column & column head segment at P42 (Learning)	5	5	0%	03/11/14	07/11/14	29/09/14	03/10/14	Install remain precast column & column head segment at P42 (Learning)																	
WW9670	Prestress works & infill concrete at P42	12	12	0%	08/11/14	21/11/14	06/10/14	21/10/14	Prestress works & infill concrete at P42																	
Pier 43L/R																										
Column Construction																										
WW9680	Install base precast column segment at P43 (Learning)	2	2	0%	17/09/14	19/09/14	13/08/14	15/08/14	Install base precast column segment at P43 (Learning)																	
WW9682	Align & cast stitch for base column segment at P43	4	4	0%	19/09/14	25/09/14	15/08/14	21/08/14	Align & cast stitch for base column segment at P43																	
WW9684	Install remain precast column & column head segment at P43 (Learning)	5	5	0%	09/10/14	16/10/14	04/09/14	11/09/14	Install remain precast column & column head segment at P43 (Learning)																	
WW9690	Prestress works & infill concrete at P43	12	12	0%	16/10/14	31/10/14	11/09/14	29/09/14	Prestress works & infill concrete at P43																	
Pier Segment Construction																										
WW6748	Prepare works for precast SOP P43 - 4 nos.	2	2	0%	22/11/14	25/11/14	31/10/14	03/11/14	Prepare works for precast SOP P43 - 4 nos.																	

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									August					September				October			November					
									28	04	11	18	25	01	08	15	22	29	06	13	20	27	03	10	17	24
WW6750	Install precast SOP P43 - 4 nos.	3	3	0%	25/11/14	03/12/14	03/11/14	06/11/14																		
Pier 44L/R																										
Column Construction																										
WW9700	Install base precast column segment at P44 (Learning)	2	2	0%	11/09/14	12/09/14	11/08/14	13/08/14																		
WW9702	Align & cast stitch for base column segment at P44	4	4	0%	15/09/14	18/09/14	13/08/14	19/08/14																		
WW9704	Install remain precast column & column head segment at P44 (Learning)	5	5	0%	02/10/14	09/10/14	25/08/14	04/09/14																		
WW9710	Prestress works & infill concrete at P44	12	12	0%	09/10/14	25/10/14	04/09/14	23/09/14																		
WW9712	Bearing Installation - P44	5	5	0%	25/10/14	31/10/14	23/09/14	30/09/14																		
Pier Segment Construction																										
WW6828	Prepare works for precast SOP P44 - 4 nos.	2	2	0%	08/11/14	11/11/14	13/10/14	15/10/14																		
WW6830	Install precast SOP P44 - 4 nos.	3	3	0%	11/11/14	14/11/14	15/10/14	20/10/14																		
WW6832	Insitu works for SOP P44 - 4 nos.	9	9	0%	14/11/14	25/11/14	20/10/14	30/10/14																		
ML07L/R 73.396mx8 - Stage 4 of Works																										
Pier P45L/R (M.J.)																										
Column Construction																										
WW10005	Construct column P45 - 2 nos. (insitu)	24	12	50%	30/07/14 A	15/09/14	11/07/14	13/08/14																		
WW10016	Construct column head P45 - 2 nos. (insitu)	21	21	0%	16/09/14	16/10/14	14/08/14	12/09/14																		
WW9732	Bearing Installation - P45	5	5	0%	29/10/14	04/11/14	26/09/14	07/10/14																		
Pier Segment Construction																										
WW6908	Prepare works for precast SOP P45 - 4 nos.	2	2	0%	12/11/14	14/11/14	16/10/14	20/10/14																		
WW6910	Install precast SOP P45 - 4 nos.	3	3	0%	14/11/14	19/11/14	20/10/14	23/10/14																		
WW6912	Insitu works for SOP P45 - 4 nos.	9	9	0%	19/11/14	29/11/14	23/10/14	03/11/14																		
Pier P46L/R																										
Column Construction																										
WW10017	Construct column head P46 - 2 nos. (insitu)	21	0	100%	19/06/14 A	08/08/14 A	20/06/14	18/07/14																		
WW9752	Bearing Installation - P46	5	5	0%	05/09/14	15/09/14	04/08/14	11/08/14																		
Pier Segment Construction																										
WW6988	Prepare works for precast SOP P46 - 4 nos.(Learning)	4	4	0%	15/09/14	19/09/14	11/08/14	15/08/14																		
WW6990	Install precast SOP P46 - 4 nos.(Learning)	6	6	0%	19/09/14	02/10/14	15/08/14	25/08/14																		
WW6992	Insitu works for SOP P46 - 4 nos.(Learning)	18	18	0%	03/10/14	27/10/14	25/08/14	19/09/14																		
Pier P47L/R																										
Pier Segment Construction																										

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									August					September				October			November					
									28	04	11	18	25	01	08	15	22	29	06	13	20	27	03	10	17	24
WW7068	Prepare works for precast SOP P47 - 4 nos.(Learning)	4	4	0%	28/08/14	02/09/14	22/07/14	25/07/14	Prepare works for precast SOP P47 - 4 nos.(Learning)																	
WW7070	Install precast SOP P47 - 4 nos.(Learning)	6	6	0%	03/09/14	10/09/14	28/07/14	04/08/14	Install precast SOP P47 - 4 nos.(Learning)																	
WW7072	In situ works for SOP P47 - 4 nos.(Learning)	18	18	0%	11/09/14	08/10/14	05/08/14	28/08/14	In situ works for SOP P47 - 4 nos.(Learning)																	
Pier P48/L/R																										
Column Construction																										
WW10047	Construct column P48 - 2 nos. (insitu)	24	6	75%	03/04/14 A	04/09/14	03/06/14	07/07/14	Construct column P48 - 2 nos. (insitu)																	
WW10057	Construct column head P48 - 2 nos. (insitu)	21	11	50%	07/07/14 A	22/09/14	30/07/14	27/08/14	Construct column head P48 - 2 nos. (insitu)																	
Pier Segment Construction																										
WW7148	Prepare works for precast SOP P48 - 4 nos.	2	2	0%	14/10/14	16/10/14	09/09/14	11/09/14	Prepare works for precast SOP P48 - 4 nos.																	
WW7150	Install precast SOP P48 - 4 nos.	4	4	0%	16/10/14	22/10/14	11/09/14	17/09/14	Install precast SOP P48 - 4 nos.																	
WW7152	In situ works for SOP P48 - 4 nos.	9	9	0%	22/10/14	01/11/14	17/09/14	30/09/14	In situ works for SOP P48 - 4 nos.																	
Pier P49/L/R																										
Pile Cap Construction																										
WW7210	Construct pile cap P49 - 2 nos.	30	0	100%	23/05/14 A	30/07/14 A	20/06/14	31/07/14	Construct pile cap P49 - 2 nos.																	
Column Construction																										
WW10067	Construct column P49 - 2 nos. (insitu)	24	17	30%	20/08/14 A	22/09/14	21/07/14	21/08/14	Construct column P49 - 2 nos. (insitu)																	
WW10077	Construct column head P49 - 2 nos. (insitu)	21	21	0%	22/09/14	23/10/14	22/08/14	22/09/14	Construct column head P49 - 2 nos. (insitu)																	
Pier Segment Construction																										
WW8688	Prepare works for precast SOP P49 - 4 nos.	2	2	0%	17/11/14	19/11/14	21/10/14	23/10/14	Prepare works for precast SOP P49 - 4 nos.																	
WW8690	Install precast SOP P49 - 4 nos.	4	4	0%	19/11/14	25/11/14	23/10/14	03/11/14	Install precast SOP P49 - 4 nos.																	
WW8692	In situ works for SOP P49 - 4 nos.	9	9	0%	25/11/14	05/12/14	03/11/14	13/11/14	In situ works for SOP P49 - 4 nos.																	
Pier P50/L/R																										
Pile Cap Construction																										
WW7290	Construct pile cap P50 - 2 nos.	30	18	40%	09/08/14 A	13/10/14	14/08/14	25/09/14	Construct pile cap P50 - 2 nos.																	
Column Construction																										
WW10087	Construct column P50 - 2 nos. (insitu)	24	24	0%	23/10/14	20/11/14	26/09/14	30/10/14	Construct column P50 - 2 nos. (insitu)																	
WW10097	Construct column head P50 - 2 nos. (insitu)	21	21	0%	20/11/14	15/12/14	31/10/14	24/11/14	Construct column head P50 - 2 nos. (insitu)																	
Pier P51/L/R																										
Pile Cap Construction																										
WW7360	Construct pile cap P51 - 2 nos.	30	0	100%	11/06/14 A	16/08/14 A	17/07/14	27/08/14	Construct pile cap P51 - 2 nos.																	
Column Construction																										
WW10107	Construct column P51 - 2 nos. (insitu)	24	24	0%	17/10/14	14/11/14	15/09/14	20/10/14	Construct column P51 - 2 nos. (insitu)																	

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									August					September					October					November								
									28	04	11	18	25	01	08	15	22	29	06	13	20	27	03	10	17	24						
WW10117	Construct column head P51 - 2 nos. (insitu)	21	21	0%	15/11/14	09/12/14	21/10/14	13/11/14	[Gantt bar: 15/11/14 to 09/12/14]																							
Pier P52L/R																																
Pile Cap Construction																																
WW7430	Construct pile cap P52 - 2 nos.	30	0	100%	05/07/14 A	26/08/14 A	03/07/14	13/08/14	[Gantt bar: 05/07/14 to 26/08/14 A]																							
Column Construction																																
WW10127	Construct column P52 - 2 nos. (insitu)	24	24	0%	22/09/14	27/10/14	28/08/14	03/10/14	[Gantt bar: 22/09/14 to 27/10/14]																							
WW10137	Construct column head P52 - 2 nos. (insitu)	21	21	0%	27/10/14	20/11/14	06/10/14	31/10/14	[Gantt bar: 27/10/14 to 20/11/14]																							
WW9872	Bearing Installation - P52	5	5	0%	20/11/14	26/11/14	01/11/14	06/11/14	[Gantt bar: 20/11/14 to 26/11/14]																							
ML08L/R 70mx6 - Stage 4 of Works																																
Pier P53L/R (M.J.)																																
Pile Cap Construction																																
WW7500	Construct pile cap P53 - 2 nos.	45	45	0%	31/10/14	22/12/14	21/10/14	11/12/14	[Gantt bar: 31/10/14 to 22/12/14]																							
Pier P55L/R																																
Foundation - Bored Pile																																
WW7650	Pile testing P55	28	11	60%	30/04/14 A	08/09/14	19/06/14	16/07/14	[Gantt bar: 30/04/14 A to 08/09/14]																							
Pier P56L/R																																
Foundation - Bored Pile																																
WW7730	Pile testing P56	28	15	45%	12/03/14 A	12/09/14	19/06/14	16/07/14	[Gantt bar: 12/03/14 A to 12/09/14]																							
Pier P57L/R																																
Foundation - Bored Pile																																
WW7810	Pile testing P57	26	17	35%	28/02/14 A	13/09/14	19/06/14	14/07/14	[Gantt bar: 28/02/14 A to 13/09/14]																							
Pier P58L/R																																
Foundation - Bored Pile																																
WW7890	Pile testing P58	28	25	10%	05/08/14 A	22/09/14	19/06/14	16/07/14	[Gantt bar: 05/08/14 A to 22/09/14]																							
ML09L/R 73.396Mx8 - Stage 4 of Works																																
Pier P59L/R (M.J.)																																
Foundation - Bored Pile																																
WW7970	Pile testing P59	28	1	95%	13/03/14 A	29/08/14	19/06/14	16/07/14	[Gantt bar: 13/03/14 A to 29/08/14]																							
Pile Cap Construction																																
WW7980	Construct pile cap P59 - 2 nos.	45	45	0%	21/11/14	15/01/15	07/11/14	31/12/14	[Gantt bar: 21/11/14 to 15/01/15]																							
Pier P60L/R																																
Pile Cap Construction																																

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									August					September					October					November								
									28	04	11	18	25	01	08	15	22	29	06	13	20	27	03	10	17	24						
WW8050	Construct pile cap P60 - 2 nos.	30	21	30%	24/08/14 A	26/09/14	24/07/14	03/09/14	Construct pile cap P60 - 2 nos.																							
Column Construction																																
WW10287	Construct column P60 - 2 nos. (insitu)	12	12	0%	08/11/14	21/11/14	13/10/14	27/10/14	Construct column P60 - 2 nos. (insitu)																							
WW10297	Construct column head P60 - 2 nos. (insitu)	21	21	0%	22/11/14	16/12/14	28/10/14	20/11/14	Construct column head P60 - 2 nos. (insitu)																							
Pier P61L/R																																
Pile Cap Construction																																
WW8130	Construct pile cap P61 - 2 nos.	30	30	0%	18/09/14	30/10/14	04/09/14	20/10/14	Construct pile cap P61 - 2 nos.																							
Column Construction																																
WW10307	Construct column P61 - 2 nos. (insitu)	12	12	0%	25/11/14	08/12/14	31/10/14	13/11/14	Construct column P61 - 2 nos. (insitu)																							
Pier P62L/R																																
Foundation - Bored Pile																																
WW8180	Construct bored piles P62 - 8 nos.	21	0	100%	28/06/14 A	04/08/14 A	02/07/14	30/07/14	Construct bored piles P62 - 8 nos.																							
WW8190	Pile testing P62	28	0	100%	14/08/14 A	22/08/14 A	31/07/14	27/08/14	Pile testing P62																							
Pile Cap Construction																																
WW8200	Construct pile cap P62 - 2 nos.	30	30	0%	13/10/14	17/11/14	26/09/14	06/11/14	Construct pile cap P62 - 2 nos.																							
Pier P63L/R																																
Foundation - Bored Pile																																
WW8280	Construct bored piles P63 - 6 nos.	21	0	100%	16/06/14 A	22/08/14 A	31/07/14	28/08/14	Construct bored piles P63 - 6 nos.																							
WW8290	Pile testing P63	28	28	0%	28/08/14	24/09/14	29/08/14	25/09/14	Pile testing P63																							
Pile Cap Construction																																
WW8300	Construct pile cap P63 - 2 nos.	30	30	0%	16/10/14	20/11/14	26/09/14	06/11/14	Construct pile cap P63 - 2 nos.																							
Column Construction																																
WW10347	Construct column P63 - 2 nos. (insitu)	12	12	0%	21/11/14	04/12/14	07/11/14	20/11/14	Construct column P63 - 2 nos. (insitu)																							
Pier P64L/R																																
Pile Cap Construction																																
WW8380	Construct pile cap P64 - 2 nos.	30	30	0%	23/09/14	03/11/14	22/08/14	07/10/14	Construct pile cap P64 - 2 nos.																							
Column Construction																																
WW10367	Construct column P64 - 2 nos. (insitu)	12	12	0%	04/11/14	17/11/14	08/10/14	23/10/14	Construct column P64 - 2 nos. (insitu)																							
WW10377	Construct column head P64 - 2 nos. (insitu)	21	21	0%	18/11/14	11/12/14	24/10/14	17/11/14	Construct column head P64 - 2 nos. (insitu)																							
Pier P65L/R																																
Pile Cap Construction																																
WW8460	Construct pile cap P65 - 2 nos.	30	30	0%	01/09/14	15/10/14	01/08/14	12/09/14	Construct pile cap P65 - 2 nos.																							

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									August					September				October			November					
									28	04	11	18	25	01	08	15	22	29	06	13	20	27	03	10	17	24
Column Construction																										
WW10387	Construct column P65 - 2 nos. (insitu)	12	12	0%	16/10/14	30/10/14	15/09/14	30/09/14	Construct column P65 - 2																	
WW10397	Construct column head P65 - 2 nos. (insitu)	21	21	0%	31/10/14	24/11/14	03/10/14	30/10/14	Construct column head P65 - 2 nos.																	
Pier P66L/R																										
Pile Cap Construction																										
WW8540	Construct pile cap P66 - 2 nos.	30	18	40%	10/08/14 A	23/09/14	11/07/14	21/08/14	Construct pile cap P66 - 2 nos.																	
Column Construction																										
WW10407	Construct column P66 - 2 nos. (insitu)	12	12	0%	24/09/14	13/10/14	22/08/14	09/09/14	Construct column P66 - 2 nos. (insitu)																	
WW10417	Construct column head P66 - 2 nos. (insitu)	21	21	0%	14/10/14	07/11/14	10/09/14	10/10/14	Construct column head P66 - 2 nos. (insitu)																	
WW8555	Bearing Installation - P66	5	5	0%	21/11/14	27/11/14	25/10/14	31/10/14	Bearing Installation - P66																	
ML10L/R 115m+180m+115m - Stage 4 of Works																										
Pier P67L/R (M.J.)																										
Foundation - Bored Pile																										
AC1020	Construct bored piles P67 - 6 nos.	27	1	95%	30/06/14 A	29/08/14	02/07/14	07/08/14	Construct bored piles P67 - 6 nos.																	
AC1030	Pile testing P67	28	14	50%	19/08/14 A	12/09/14	08/08/14	04/09/14	Pile testing P67																	
Pile Cap Construction																										
AC1040	Construct pile cap P67 - 2 nos.	30	30	0%	04/11/14	08/12/14	21/10/14	24/11/14	Construct pile cap P67 - 2 nos.																	
Pier P68L/R																										
Temporary Works																										
AC1010	Install temporary jetty and rockfill for pier P68	44	0	100%	05/02/14 A	28/08/14	20/06/14	20/08/14	Install temporary jetty and rockfill for pier P68																	
AC1012	Remove rockfill platform for pier P68	44	32	27.27%	07/07/14 A	15/10/14			Remove rockfill platform for pier P68																	
AC1014	Re-mobilization to construct rockfill platform at P68	18	18	0%	16/10/14	06/11/14			Re-mobilization to construct rockfill platform at P68																	
AC1016	Reconstruct rockfill platform for pier P68	70	70	0%	07/11/14	30/01/15			Reconstruct rockfill platform for pier P68																	
Pier P69L/R																										
Temporary Works																										
AC1135	Install cofferdem for pile cap construction - P69 - 2 nos.	75	75	0%	20/10/14	17/01/15	01/09/14	09/12/14	Install cofferdem for pile cap construction - P69 - 2 nos.																	
Foundation - Bored Pile																										
AC2480	Construct bored piles P69 - 12 nos.	64	16	75%	16/04/14 A	19/09/14	11/07/14	13/10/14	Construct bored piles P69 - 12 nos.																	
AC2490	Pile testing P69	28	28	0%	20/09/14	17/10/14	05/08/14	01/09/14	Pile testing P69																	
ML11L/R 109m+165mx2+109m - Stage 4 of Works																										
Pier P70L/R (M.J.)																										
Temporary Works																										

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									August					September				October				November				
									28	04	11	18	25	01	08	15	22	29	06	13	20	27	03	10	17	24
AC1170	Install cofferdem for pile cap construction - P70 - 2 nos.	90	43	52.22%	07/06/14 A	29/10/14	23/06/14	29/10/14	Install cofferdem for pile ca																	
Pile Cap Construction																										
AC1210	Construct pile cap P70 - 2 nos.	35	35	0%	04/11/14	15/12/14	30/10/14	09/12/14	Construct pile cap P70 - 2 nos.																	
Pier P71L/R																										
Temporary Works																										
AC1240	Install cofferdem for pile cap construction - P71 - 2 nos.	60	1	99%	18/11/13 A	28/08/14	30/11/13	14/02/14	Install cofferdem for pile cap construction - P71 - 2 nos.																	
Pile Cap Construction																										
AC1290	Construct pile cap P71 - 2 nos.	40	40	0%	28/08/14	27/10/14	08/08/14	07/10/14	Construct pile cap P71 - 2 nos.																	
Column Construction																										
AC1300	Construct column P71 - 4 nos.	50	50	0%	27/10/14	24/12/14	08/10/14	06/12/14	Construct column P71 - 4 nos.																	
Pier P72L/R																										
Temporary Works																										
AC1320	Install cofferdem for pile cap construction - P72 - 2 nos.	60	17	71.04%	12/05/14 A	23/09/14	26/05/14	15/08/14	Install cofferdem for pile cap construction - P72 : 2 nos.																	
Pile Cap Construction																										
AC1380	Construct pile cap P72 - 2 nos.	45	45	0%	23/09/14	21/11/14	15/09/14	13/11/14	Co																	
Column Construction																										
AC1390	Construct column P72 - 4 nos.	62	62	0%	21/11/14	05/02/15	14/11/14	28/01/15	Construct column P72 - 4 nos.																	
Pier P73L/R																										
Temporary Works																										
AC1410	Install cofferdem for pile cap construction - P73 - 2 nos.	104	21	80%	28/02/14 A	26/09/14	20/06/14	12/11/14	Install coffer																	
Pile Cap Construction																										
AC1470	Construct pile cap P73 - 2 nos.	45	45	0%	26/09/14	25/11/14	13/11/14	07/01/15	Construct pile cap P73 - 2 nos.																	
Column Construction																										
AC1480	Construct column P73 - 4 nos.	50	50	0%	25/11/14	26/01/15	08/01/15	10/03/15	Construct column P73 - 4 nos.																	
ML12L/R 109m+165mx2+109m - Stage 4 of Works																										
Pier P74L/R (M.J.)																										
Temporary Works																										
AC1500	Install cofferdem for pile cap construction - P74 - 2 nos.	110	39	65%	28/01/14 A	24/10/14	20/06/14	19/11/14	Insta																	
Pier P75L/R																										
Temporary Works																										
AC1590	Install cofferdem for pile cap construction - P75 - 1 nos.	120	120	0%	28/08/14*	30/01/15	15/07/14	20/12/14	Install cofferdem for pile cap construction - P75 - 1 nos.																	
Pier P76L/R																										

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									August					September				October			November					
									28	04	11	18	25	01	08	15	22	29	06	13	20	27	03	10	17	24
Temporary Works																										
AC1680	Install cofferdem for pile cap construction - P76 - 2 nos.	110	80	27.27%	16/08/14 A	11/12/14	17/07/14	11/12/14	[Gantt bar: 16/08/14 to 11/12/14]																	
Pier P77/L/R																										
Temporary Works																										
AC1770	Install cofferdem for pile cap construction - P77 - 2 nos.	80	48	40%	18/08/14 A	04/11/14	14/07/14	04/11/14	[Gantt bar: 18/08/14 to 04/11/14]																	
Pile Cap Construction																										
AC1820	Construct pile cap P77 - 2 nos.	45	45	0%	05/11/14	29/12/14	04/11/14	29/12/14	[Gantt bar: 05/11/14 to 29/12/14]																	
ML13L/R 115m+180m+115m - Stage 4 of Works																										
Pier P78/L/R (M.J.)																										
Temporary Works																										
AC1850	Install cofferdem for pile cap construction - P78 - 2 nos.	100	50	49.63%	04/08/14 A	18/11/14	20/06/14	07/11/14	[Gantt bar: 04/08/14 to 18/11/14]																	
Pile Cap Construction																										
AC1910	Construct pile cap P78 - 2 nos.	35	35	0%	19/11/14	31/12/14	08/11/14	18/12/14	[Gantt bar: 19/11/14 to 31/12/14]																	
Pier P79/L/R																										
Foundation - Bored Pile																										
AC1970	Construct bored piles P79 - 12 nos.	40	0	100%	29/05/14 A	11/08/14 A	20/06/14	14/08/14	[Gantt bar: 29/05/14 to 11/08/14]																	
AC1980	Pile testing P79	28	7	75%	11/08/14 A	03/09/14	07/08/14	03/09/14	[Gantt bar: 11/08/14 to 03/09/14]																	
Pier P80/L/R																										
Foundation - Bored Pile																										
AC2050	Construct bored piles P80 - 12 nos.	40	34	15%	16/08/14 A	17/10/14	07/08/14	06/10/14	[Gantt bar: 16/08/14 to 17/10/14]																	
AC2060	Pile testing P80	28	28	0%	18/10/14	14/11/14	07/10/14	03/11/14	[Gantt bar: 18/10/14 to 14/11/14]																	
ML14L/R 115m+180m+100.561m - Stage 4 of Works																										
Pier P81/L/R (M.J.)																										
Temporary Works																										
AC2098	Prepare piling platform for P81	80	30	62.03%	20/06/14 A	14/10/14	20/06/14	14/10/14	[Gantt bar: 20/06/14 to 14/10/14]																	
Foundation - Bored Pile																										
AC2140	Construct bored piles P81 - 6 nos.	90	86	5%	26/08/14 A	26/01/15	15/10/14	31/01/15	[Gantt bar: 26/08/14 to 26/01/15]																	
Pier P82/L/R																										
Temporary Works																										
AC2225	Install cofferdem for pile cap construction - P82 - Marine side	70	70	0%	28/10/14	21/01/15	12/11/14	04/02/15	[Gantt bar: 28/10/14 to 21/01/15]																	
Foundation - Bored Pile																										
AC2240	Construct bored piles P82 - 6 nos. (Marine)	75	23	70%	07/07/14 A	30/09/14	27/06/14	14/10/14	[Gantt bar: 07/07/14 to 30/09/14]																	

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									August					September				October			November					
									28	04	11	18	25	01	08	15	22	29	06	13	20	27	03	10	17	24
AC2250	Pile testing P82 (Marine)	28	28	0%	30/09/14	28/10/14	15/10/14	11/11/14	Pile testing P82 (Marine)																	
AC2500	Construct bored piles P82 - 6 nos. (Land)	90	90	0%	30/09/14	22/01/15	15/10/14	31/01/15	Construct bored piles P82 - 6 nos. (Land)																	
Pier P83L/R																										
Temporary Works																										
AC2297	Install cofferdem for pile cap construction - P83 - Marine side	70	70	0%	25/09/14	22/12/14	29/09/14	24/12/14	Install cofferdem for pile cap construction - P83 - Marine side																	
Foundation - Bored Pile																										
AC2340	Construct bored piles P83 - 6 nos. (Marine)	75	0	100%	03/06/14 A	23/08/14 A	20/06/14	07/10/14	Construct bored piles P83 - 6 nos. (Marine)																	
AC2350	Pile testing P83 (Marine)	28	28	0%	28/08/14	24/09/14	30/08/14	26/09/14	Pile testing P83 (Marine)																	
AC2510	Construct bored piles P83 - 6 nos. (Land)	90	90	0%	28/08/14	23/12/14	01/09/14	27/12/14	Construct bored piles P83 - 6 nos. (Land)																	
Deck Construction between HKSAR Boundary and Landing Point on Airport Channel																										
Segment Erection - Lifting Frame																										
Lifting Frame 2 (LF2)																										
DC1075	Segment erection P47	18	18	0%	04/11/14	24/11/14	07/10/14	29/10/14	Segment erection P47																	
DC1100	Segment erection P46	18	18	0%	25/11/14	15/12/14	30/10/14	19/11/14	Segment erection P46																	
DC5007	Segment erection P109L by LF2	30	30	0%	15/09/14*	03/11/14	18/08/14	06/10/14	Segment erection P109L by LF2																	
Viaduct between Landing Point on Airport Island and Scenic Hill																										
ML15L/R 43m+65m+37m - Stage 5 of Works																										
Pier P84L/R (M.J.)																										
Temporary Works																										
AI1000	Install cofferdem for pile cap construction - P84	45	30	33.33%	14/07/14 A	13/10/14	20/06/14	21/08/14	Install cofferdem for pile cap construction - P84																	
Pile Cap Construction																										
AI1050	Construct pile cap P84 - 2 nos.	60	60	0%	14/10/14	23/12/14	22/08/14	13/11/14	Construct pile cap P84 - 2 nos.																	
Pier P90L/R																										
Column Construction																										
AI1490	Construct column P90 - 2 nos.	38	38	0%	03/11/14	17/12/14	11/11/14	27/12/14	Construct column P90 - 2 nos.																	
Pier P91L/R																										
Foundation - Bored Pile																										
AI1540	Pile testing P91	28	0	100%	06/08/14 A	11/08/14 A	22/08/14	18/09/14	Pile testing P91																	
Column Construction																										
AI1560	Construct column P91 - 2 nos.	66	66	0%	30/09/14	20/12/14	24/11/14	12/02/15	Construct column P91 - 2 nos.																	
ML16L/R 37m+65m+43m - Stage 5 of Works																										
Pier P92L/R (M.J.)																										

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									August					September				October			November					
									28	04	11	18	25	01	08	15	22	29	06	13	20	27	03	10	17	24
Column Construction																										
AI1630	Construct column P92 - 2 nos.	60	60	0%	19/11/14	30/01/15	13/11/14	24/01/15																		
Pier P93L/R																										
Column Construction																										
AI1700	Construct column P93 - 2 nos.	60	60	0%	08/10/14	19/12/14	01/11/14	14/01/15																		
Pier P94L/R																										
Temporary Works																										
AI3390	Remove temporary platform P94	10	10	0%	19/11/14	29/11/14	13/11/14	24/11/14																		
Column Construction																										
AI1770	Construct column P94 - 2 nos.	38	38	0%	30/09/14	18/11/14	23/09/14	12/11/14																		
Pier P95L/R																										
Temporary Works																										
AI3400	Remove temporary platform P95	10	10	0%	08/10/14	22/10/14	01/11/14	13/11/14																		
Column Construction																										
AI1840	Construct column P95 - 2 nos.	38	15	60%	04/07/14 A	08/10/14	09/09/14	01/11/14																		
Pier P96L/R																										
Temporary Works																										
AI3410	Remove temporary platform P96	10	10	0%	28/08/14	11/09/14	08/07/14	22/07/14																		
Pier P97L/R																										
Temporary Works																										
AI3420	Remove temporary platform P97	10	10	0%	28/08/14	11/09/14	25/07/14	08/08/14																		
Pier P98L/R																										
Temporary Works																										
AI3430	Remove temporary platform P98	10	10	0%	30/09/14	15/10/14	24/11/14	05/12/14																		
Column Construction																										
AI2050	Construct column P98 - 2 nos.	44	22	50%	23/07/14 A	29/09/14	26/09/14	24/11/14																		
In-situ Portal/T-pier Construction																										
AI2060	In-situ portal P98 - 1 nos.	60	60	0%	03/11/14	14/01/15	13/12/14	27/02/15																		
ML17L/R 43m+65mx3+47m - Stage 5 of Works																										
Pier P99L/R (M.J.)																										
Temporary Works																										
AI3440	Remove temporary platform P99	10	10	0%	03/11/14	14/11/14	11/11/14	22/11/14																		

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									August					September				October			November					
									28	04	11	18	25	01	08	15	22	29	06	13	20	27	03	10	17	24
Column Construction																										
AI2120	Construct column P99 - 2 nos.	66	46	30%	30/07/14 A	03/11/14	11/08/14	11/11/14	Construct col																	
AI2125	Bearing Installation - P99	10	10	0%	03/11/14	14/11/14	11/11/14	22/11/14	B																	
In-situ Portal/T-pier Construction																										
AI2130	In-situ portal P99 - 1 nos.	60	60	0%	14/11/14	27/01/15	22/11/14	04/02/15																		
Pier P100L/R																										
Temporary Works																										
AI3450	Remove temporary platform P100	10	10	0%	30/09/14	15/10/14	23/09/14	08/10/14	Remove temporary platform P100																	
Column Construction																										
AI2190	Construct column P100 - 2 nos.	44	22	50%	03/07/14 A	29/09/14	22/07/14	22/09/14	Construct column P100 - 2 nos.																	
In-situ Portal/T-pier Construction																										
AI2200	In-situ portal P100 - 1 nos.	60	60	0%	30/10/14	10/01/15	30/10/14	10/01/15																		
Pier P101L/R																										
Temporary Works																										
AI3460	Remove temporary platform P101	10	10	0%	15/09/14	26/09/14	09/09/14	23/09/14	Remove temporary platform P101																	
Column Construction																										
AI2260	Construct column P101 - 2 nos.	44	11	75%	26/06/14 A	12/09/14	08/07/14	09/09/14	Construct column P101 - 2 nos.																	
In-situ Portal/T-pier Construction																										
AI2270	In-situ portal P101 - 1 nos.	60	60	0%	08/11/14	20/01/15	08/11/14	20/01/15																		
Pier P102L/R																										
Temporary Works																										
AI3470	Remove temporary platform P102	10	10	0%	28/08/14	11/09/14	26/09/14	14/10/14	Remove temporary platform P102																	
Column Construction																										
AI2330	Construct column P102 - 2 nos.	44	0	100%	12/06/14 A	08/08/14 A	25/07/14	26/09/14	Construct column P102 - 2 nos.																	
In-situ Portal/T-pier Construction																										
AI2340	In-situ portal P102 - 1 nos.	60	60	0%	03/11/14	14/01/15	14/10/14	24/12/14																		
Pier P103L/R																										
Temporary Works																										
AI3480	Remove temporary platform P103	10	10	0%	28/08/14	11/09/14	20/06/14	03/07/14	Remove temporary platform P103																	
In-situ Portal/T-pier Construction																										
AI2410	In-situ portal P103 - 1 nos.	60	36	40%	09/06/14 A	01/11/14	29/09/14	12/12/14																		

ML18L/R 47m+55mx5+35m - Stage 5 of Works

DWP_01b Programme
 Critical Remaining Work
 Actual Work
 ◆ ◆ Milestone
 Remaining Work

3MRP DWP_01d 1408

Page 23 of 25

Date	Revision	Checked	Approved
01/09/14	1408 rolling based on DWP01d	Tim	
02/09/14	1408 rolling based on DWP01d R1	Tim	

Activity ID	Activity Name	Original Duration	Remaining Duration	Activity % Complete	Start	Finish	DWP01d OP1 Start	DWP01d OP1 Finish	2014																	
									August					September				October			November					
									28	04	11	18	25	01	08	15	22	29	06	13	20	27	03	10	17	24
Pier P104L/R (M.J.)																										
Column Construction																										
AI2475	Bearing Installation - P104	10	10	0%	28/08/14	11/09/14	20/06/14	03/07/14	Bearing Installation - P104																	
In-situ Portal/T-pier Construction																										
AI2480	In-situ portal P104 - 1 nos.	60	36	40%	06/06/14 A	01/11/14	04/07/14	26/09/14	In-situ portal P104 - 1 nos.																	
Pier P105L/R																										
Column Construction																										
AI2545	Bearing Installation - P105	10	10	0%	28/08/14	11/09/14	20/06/14	03/07/14	Bearing Installation - P105																	
Pier P106L/R																										
Temporary Works																										
AI2570	Remove temporary platform P106R	7	7	0%	28/08/14	05/09/14	20/06/14	28/06/14	Remove temporary platform P106R																	
In-situ Portal/T-pier Construction																										
AI2630	In-situ portal P106 - 1 nos.	70	70	0%	10/11/14	02/02/15	28/10/14	20/01/15	In-situ portal P106 - 1 nos.																	
Pier P107L/R																										
In-situ Portal/T-pier Construction																										
AI2690	In-situ portal P107 - 1 nos.	70	43	38.57%	22/07/14 A	29/10/14	22/07/14	29/10/14	In-situ portal P107 - 1 nos.																	
Land Viaduct P108 to P114																										
ML18L/R 47m+55mx5+35m - Stage 5 of Works																										
Pier P108L/R																										
In-situ Portal/T-pier Construction																										
AI2760	In-situ portal P108 - 1 nos.	70	51	27.14%	01/08/14 A	07/11/14	01/08/14	07/11/14	In-situ portal P108 - 1 nos.																	
ML19L/C/R 40m+65mx2 Stage 5 of Works																										
Pier P111L/C/R																										
Column Construction																										
AI2925	Bearing Installation - P111	10	10	0%	28/08/14	11/09/14	20/06/14	03/07/14	Bearing Installation - P111																	
Pier P114 L/C/R																										
Column Construction																										
AI3085	Bearing Installation - P114	10	10	0%	28/08/14	11/09/14	20/06/14	03/07/14	Bearing Installation - P114																	
In-situ Portal/T-pier Construction																										
AI3090	In-situ portal P114 - 1 nos.	60	42	30%	01/08/14 A	08/11/14	01/08/14	27/10/14	In-situ portal P114 - 1 nos.																	
Deck Construction between Landing Point on Airport Island and Soenic Hill																										
Segment Erection - Launching Girder																										

DWP_01b Programme
 Critical Remaining Work
 Actual Work
 ◆ ◆ Milestone
 Remaining Work

3MRP DWP_01d 1408

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Date	Revision	Checked	Approved
01/09/14	1408 rolling based on DWP01d	Tim	
02/09/14	1408 rolling based on DWP01d R1	Tim	

Activity ID	Activity Name	Original Duration	Remaining Duration	Activity % Complete	Start	Finish	DWP01d OP1 Start	DWP01d OP1 Finish	2014																	
									August					September					October					November		
									28	04	11	18	25	01	08	15	22	29	06	13	20	27	03	10	17	24
DC5000	Assemble LG1 at P110 & P112	35	23	34.29%	01/04/14 A	30/09/14	26/05/14	11/07/14	Assemble LG1 at P110 & P112																	
DC5009	Segment erection P110 (Learning)	20	20	0%	01/10/14	28/10/14	18/08/14	17/09/14	Segment erection P110 (Learning)																	
DC5010	Segment erection P111 (Learning)	7	7	0%	21/11/14	28/11/14	20/10/14	27/10/14	Segment erection P111 (Learning)																	
DC5020	Segment erection P112 (Learning)	20	20	0%	29/10/14	20/11/14	18/09/14	17/10/14	Segment erection P112 (Learning)																	
Ground Level Road Works																										
RD1090	Modification work for Sha Lo Wan wind profiler station (Wall extension)	120	120	0%	28/08/14	30/01/15	27/08/14	29/01/15	Modification work for Sha Lo Wan wind profiler station (Wall extension)																	

DWP_01b Programme
 Critical Remaining Work
 Actual Work
 ◆ ◆ Milestone
 Remaining Work

3MRP DWP_01d 1408

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Date	Revision	Checked	Approved
01/09/14	1408 rolling based on DWP01d	Tim	
02/09/14	1408 rolling based on DWP01d R1	Tim	

**APPENDIX B
ACTION AND LIMIT LEVELS**

Appendix B - Action and Limit Levels

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

Location	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
AMS1	381	500
AMS4	352	

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

Location	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
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-4 Action 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	<u>27.5</u> 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 than 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
CERTIFICATES**

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA12014/67/0010

Project No. AMS 1 - Sha Lo Wan Operator: WK
 Date: 28-Jul-14 Next Due Date: 27-Sep-14
 Equipment No.: A-01-67 Serial No. 3218

Ambient Condition			
Temperature, Ta (K)	305.1	Pressure, Pa (mmHg)	755.6

Orifice Transfer Standard Information					
Equipment No.:	A-04-04	Slope, mc	0.0588	Intercept, bc	-0.0461
Last Calibration Date:	30-Sep-13	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	29-Sep-14	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	ΔH (orifice), in. of water	[ΔH x (Pa/760) x (298/Ta)] ^{1/2}	Qstd (CFM) X - axis	ΔW (HVS), in. of oil	[ΔW x (Pa/760) x (298/Ta)] ^{1/2} Y-axis
1	11.8	3.39	58.35	6.8	2.57
2	9.8	3.08	53.25	5.5	2.31
3	7.4	2.68	46.37	4.4	2.07
4	5.1	2.23	38.63	2.9	1.68
5	3.1	1.74	30.29	1.8	1.32

By Linear Regression of Y on X

Slope, mw = 0.0442 Intercept, bw : -0.0171

Correlation coefficient* = 0.9990

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; W = (mw x Qstd + bw)² x (760 / Pa) x (Ta / 298) = 3.66

Remarks: _____

Conducted by: WK Tang Signature: [Signature]
 Checked by: [Signature] Signature: [Signature]

Date: 28/7/14
 Date: 28 July 2014

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

CINOTECH

File No. MA12014/74/0010

Project No. AMS 4 - San Tau Operator: WK
 Date: 28-Jul-14 Next Due Date: 27-Sep-14
 Equipment No.: A-01-74 Serial No. 2202

Ambient Condition			
Temperature, Ta (K)	305.4	Pressure, Pa (mmHg)	755.1

Orifice Transfer Standard Information					
Equipment No.:	A-04-04	Slope, mc	0.0588	Intercept, bc	-0.0461
Last Calibration Date:	30-Sep-13	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$			
Next Calibration Date:	29-Sep-14	$Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	ΔH (orifice), in. of water	[ΔH x (Pa/760) x (298/Ta)] ^{1/2}	Qstd (CFM) X - axis	ΔW (HVS), in. of oil	[ΔW x (Pa/760) x (298/Ta)] ^{1/2} Y-axis
1	11.8	3.38	58.31	8.2	2.82
2	9.6	3.05	52.67	6.7	2.55
3	7.4	2.68	46.34	5.3	2.27
4	4.8	2.16	37.47	3.3	1.79
5	3.2	1.76	30.74	2.1	1.43

By Linear Regression of Y on X

Slope, mw = 0.0505 Intercept, bw : -0.1089

Correlation coefficient* = 0.9993

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation

From the TSP Field Calibration Curve, take Qstd = 43 CFM

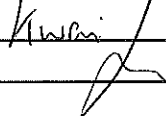
From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; W = (mw x Qstd + bw)² x (760 / Pa) x (Ta / 298) = 4.39

Remarks: _____

Conducted by: Wk. Tang
 Checked by: Wk

Signature: 
 Signature: _____

Date: 28/7/14
 Date: 28 July 2014

TEST REPORT

Description	Calibration Orifice	Manufacturer	TISCH
Serial No.	0993	Temperature, Ta (K)	300.8
Model No.	TE-5025A	Pressure, Pa (mmHg)	759.3
Date	30 September 2013		

Plate	Diff.Vol (m ³)	Diff.Time (min)	Diff.Hg (mm)	Diff.H ₂ O (in.)
1	1.00	1.4103	3.4	2.00
2	1.00	0.9980	6.8	4.00
3	1.00	0.8970	8.5	5.00
4	1.00	0.8540	9.4	5.50
5	1.00	0.7060	13.6	8.00

DATA TABULATION

Vstd	(X axis) Qstd	(Y axis)
0.9853	0.6986	1.4069
0.9808	0.9828	1.9897
0.9786	1.0910	2.2245
0.9775	1.1446	2.3331
0.9720	1.3768	2.8138

Y axis= $\text{SQRT}[\text{H}_2\text{O}(\text{Pa}/760)(298/\text{Ta})]$

Qstd Slope (m) = 2.07768

Intercept (b) = -0.04613

Coefficient (r) = 0.99997

Va	(X axis) Qa	(Y axis)
0.9955	0.7059	0.8901
0.9910	0.9930	1.2589
0.9888	1.1023	1.4074
0.9876	1.1565	1.4761
0.9821	1.3911	1.7803

Y axis= $\text{SQRT}[\text{H}_2\text{O}(\text{Ta}/\text{Pa})]$

Qa Slope (m) = 1.30101

Intercept (b) = -0.02919

Coefficient (r) = 0.99997

CALCULATIONS

$$\text{Vstd} = \text{Diff. Vol}[(\text{Pa} - \text{Diff. Hg})/760](298/\text{Ta})$$

$$\text{Qstd} = \text{Vstd}/\text{Time}$$

$$\text{Va} = \text{Diff. Vol}[(\text{Pa} - \text{Diff. Hg})/\text{Pa}]$$

$$\text{Qa} = \text{Va}/\text{Time}$$

For subsequent flow rate calculations:

$$\text{Qstd} = 1/m\{[\text{SQRT}(\text{H}_2\text{O}(\text{Pa}/760)(298/\text{Ta}))] - b\}$$

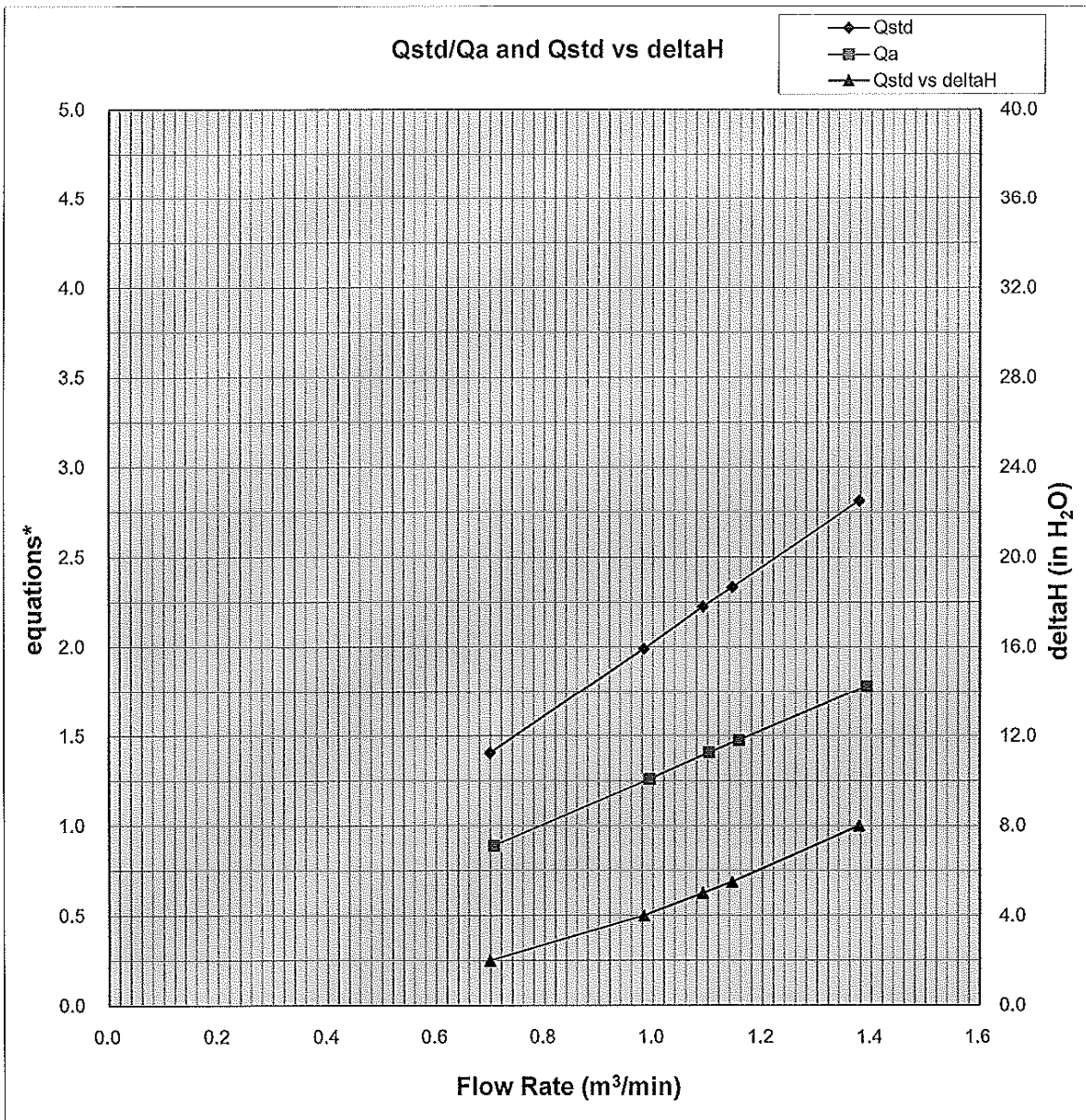
$$\text{Qa} = 1/m\{[\text{SQRT} \text{H}_2\text{O}(\text{Ta}/\text{Pa})] - b\}$$

PREPARED AND CHECKED BY:
For and On Behalf of **WELLAB Ltd.**



PATRICK TSE
Laboratory Manager

TEST REPORT



Y-axis equations:

Qstd series: $\text{SQRT}[\Delta H(\text{Pa}/\text{Pstd})(\text{Tstd}/\text{Ta})]$

Qa series: $\text{SQRT}[\Delta H(\text{Ta}/\text{Pa})]$



Calibration Certificate

Certificate No. **400247**

Page 1 of 2 Pages

Customer : Dragages - China Harbour - VSL Joint Venture

Address : 3/F., Island Place Tower, 510 King's Road, North Point, H. K.

Order No. : Q40131

Date of receipt : 10-Jan-14

Item Tested

Description : Weather Stations, Vantage Pro2

Manufacturer : Davis

Model : 6152 CUK

Serial No. : AK130520007

Test Conditions

Date of Test : 14-Jan-14

Supply Voltage : --

Ambient Temperature : (23 ± 3)°C

Relative Humidity : (50 ± 25) %

Test Specifications

Calibration check.

Ref. Document/Procedure : Z04.

Test Results

The results are shown in the attached page(s).

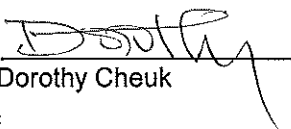
Main Test equipment used:


<u>Equipment No.</u>	<u>Description</u>	<u>Cert. No.</u>	<u>Traceable to</u>
S155	Std. Anemometer	NSC201331006	NIM-PRC

The values given in this Calibration 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 environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Hong Kong Calibration Ltd. 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 International System of Units (SI).

The test results apply to the above Unit-Under-Test only

Calibrated by : 
Dorothy Cheuk

Approved by : 
Steve Kwan

Date: 14-Jan-14

This Certificate is issued by:

Hong Kong Calibration Ltd.

Unit 8B, 24/F., Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street, Kwai Chung, NT, Hong Kong.

Tel: 2425 8801 Fax: 2425 8646

The copyright of this certificate is owned by Hong Kong Calibration Ltd.. It may not be reproduced except in full.



Calibration Certificate

Certificate No. 400247

Page 2 of 2 Pages

Results :

1. Wind Speed

Applied Value (m/s)	UUT Reading (m/s)
2.4	2.2
5.2	5.4
7.5	7.6
10.2	10.3
15.0	15.2
19.0	19.2

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

2. Wind Direction

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

Remark : 1. UUT: Unit-Under-Test

2. Atmospheric Pressure : 1 009 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 -----



Calibration Certificate

Certificate No. **405744**

Page 1 of 2 Pages

Customer : Dragages - China Harbour - VSL Joint Venture

Address : 3/F., Island Place Tower, 510 King's Road, North Point, H. K.

Order No. : Q42599

Date of receipt : 14-Jul-14

Item Tested

Description : Vantage Pro2 Weather Stations

Manufacturer : Davis

Model : 6152 CUK

Serial No. : AK130520006

Test Conditions

Date of Test : 1-Sep-14

Supply Voltage : --

Ambient Temperature : $(23 \pm 3)^{\circ}\text{C}$

Relative Humidity : $(50 \pm 25) \%$

Test Specifications

Calibration check.

Ref. Document/Procedure : Z04.

Test Results


The results are shown in the attached page(s).

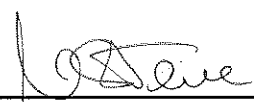
Main Test equipment used:

<u>Equipment No.</u>	<u>Description</u>	<u>Cert. No.</u>	<u>Traceable to</u>
S155	Std. Anemometer	NSC201431181	NIM-PRC

The values given in this Calibration 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 environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Hong Kong Calibration Ltd. 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 International System of Units (SI).
The test results apply to the above Unit-Under-Test only

Calibrated by : 
Dorothy Cheuk

Approved by : 
Steve Kwan

Date: 1-Sep-14



Calibration Certificate

Certificate No. 405744

Page 2 of 2 Pages

Results :

1. Wind Speed

Applied Value (m/s)	UUT Reading (m/s)
2.7	2.7
4.8	.54
7.5	7.2
9.8	9.4
15.0	14.8
18.5	18.3

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

2. Wind Direction

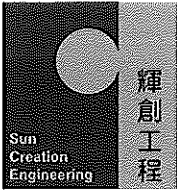
Reference Value	UUT Indication
N (0°)	N (0°)
NE (45°)	NE (45°)
E (90°)	E (90°)
SE (135°)	SE (135°)
S (180°)	S (180°)
SW (225°)	SW (225°)
W (270°)	W (270°)
NW (315°)	NW (315°)

Remark : 1. UUT: Unit-Under-Test

2. Atmospheric Pressure : 997 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 -----



Certificate of Calibration 校正證書

Certificate No. : C140308
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC14-0070) Date of Receipt / 收件日期 : 10 January 2014

Description / 儀器名稱 : Sound & Vibration Analyser
Manufacturer / 製造商 : Svantek
Model No. / 型號 : SVAN957
Serial No. / 編號 : 21455
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 / 測試條件

Temperature / 溫度 : (23 ± 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 : 15 January 2014

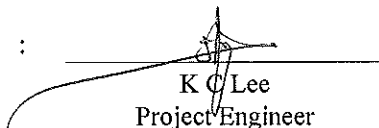
TEST RESULTS / 測試結果

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).

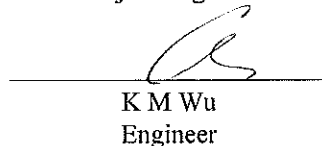
The test equipment used for calibration are traceable to National Standards via :

- 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


K C Lee
Project Engineer

Certified By
核證

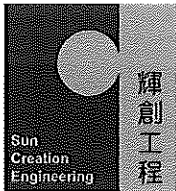

K M Wu
Engineer

Date of Issue
簽發日期

17 January 2014

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

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



Certificate of Calibration

校正證書

Certificate No. : C140308
證書編號

- 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.
- Self-calibration using the Svantek Acoustic Calibrator SV30A, S/N : 24780 was performed before the test.
- The results presented are the mean of 3 measurements at each calibration point.
- Test equipment :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C140016
CL281	Multifunction Acoustic Calibrator	DC130171

5. Test procedure : MA101N.

6. Results :

6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
HIGH	SPL	A	Fast	114.00	1	113.9	± 1.1

6.1.2 Linearity

UUT Setting				Applied Value		UUT Reading (dB)
Range	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
HIGH	SPL	A	Fast	114.00	1	113.9 (Ref.)
				104.00		103.8
				94.00		93.8

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

6.2 Time Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
HIGH	SPL	A	Fast	114.00	1	113.9	Ref.
			Slow			113.9	± 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.

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

Certificate of Calibration

校正證書

Certificate No. : C140308

證書編號

6.3 Frequency Weighting

6.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
HIGH	SPL	A	Fast	114.00	63 Hz	87.7	-26.2 ± 1.5
					125 Hz	97.7	-16.1 ± 1.5
					250 Hz	105.2	-8.6 ± 1.4
					500 Hz	110.7	-3.2 ± 1.4
					1 kHz	113.9	Ref.
					2 kHz	115.1	+1.2 ± 1.6
					4 kHz	115.0	+1.0 ± 1.6
					8 kHz	112.9	-1.1 (+2.1 ; -3.1)
					12.5 kHz	109.7	-4.3 (+3.0 ; -6.0)

6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
HIGH	SPL	C	Fast	114.00	63 Hz	113.1	-0.8 ± 1.5
					125 Hz	113.8	-0.2 ± 1.5
					250 Hz	113.9	0.0 ± 1.4
					500 Hz	113.9	0.0 ± 1.4
					1 kHz	113.9	Ref.
					2 kHz	113.8	-0.2 ± 1.6
					4 kHz	113.2	-0.8 ± 1.6
					8 kHz	111.0	-3.0 (+2.1 ; -3.1)
					12.5 kHz	107.7	-6.2 (+6.0 ; -∞)

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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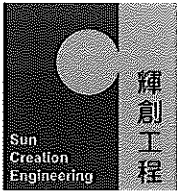
Sun Creation Engineering Limited – Calibration & Testing Laboratory

c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong

輝創工程有限公司 – 校正及檢測實驗室

c/o 香港新界屯門興安里一號青山灣機樓四樓

Tel/電話: 2927 2606 Fax/傳真: 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com



輝創工程有限公司

Sun Creation Engineering Limited

Calibration and Testing Laboratory

Certificate of Calibration

校正證書

Certificate No. : C140308

證書編號

Remarks : - UUT Microphone Model No. : ACO 7502H & S/N : 43730

- Mfr's Spec. : IEC 61672 Class 1

- Uncertainties of Applied Value :

114 dB : 63 Hz - 125 Hz	: ± 0.45 dB
250 Hz - 500 Hz	: ± 0.40 dB
1 kHz	: ± 0.30 dB
2 kHz - 4 kHz	: ± 0.45 dB
8 kHz	: ± 0.55 dB
12.5 kHz	: ± 0.80 dB
104 dB : 1 kHz	: ± 0.10 dB (Ref. 94 dB)
94 dB : 1 kHz	: ± 0.20 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.

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

Sun Creation Engineering Limited – Calibration & Testing Laboratory

c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong

輝創工程有限公司 – 校正及檢測實驗室

c/o 香港新界屯門興安里一號青山灣機樓四樓

Tel/電話: 2927 2606

Fax/傳真: 2744 8986

E-mail/電郵: callab@suncreation.com

Website/網址: www.suncreation.com



Certificate of Calibration 校正證書

Certificate No. : C140307
證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號 : IC14-0070) Date of Receipt / 收件日期 : 10 January 2014

Description / 儀器名稱 : Acoustic Calibrator
Manufacturer / 製造商 : Svantek
Model No. / 型號 : SV30A
Serial No. / 編號 : 24780
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 / 測試條件

Temperature / 溫度 : $(23 \pm 2)^{\circ}\text{C}$ Relative Humidity / 相對濕度 : $(55 \pm 20)\%$
Line Voltage / 電壓 : ---

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 15 January 2014

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).

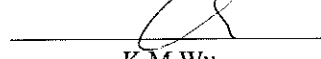
The test equipment used for calibration are traceable to National Standards via :

- 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

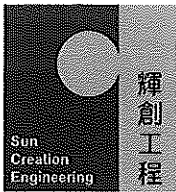

K C Lee
Project Engineer

Certified By
核證


K M Wu
Engineer

Date of Issue : 17 January 2014
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.
本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗室書面批准。



Certificate of Calibration

校正證書

Certificate No. : C140307
證書編號

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

<u>Equipment ID</u>	<u>Description</u>	<u>Certificate No.</u>
CL130	Universal Counter	C133632
CL281	Multifunction Acoustic Calibrator	DC130171
TST150A	Measuring Amplifier	C120886

- Test procedure : MA100N.

- Results :

5.1 Sound Level Accuracy

UUT Nominal Value	Measured Value (dB)	Mfr's Spec. (dB)	Uncertainty of Measured Value (dB)
94 dB, 1 kHz	94.2	± 0.3	± 0.2
114 dB, 1 kHz	114.2		

5.2 Frequency Accuracy

UUT Nominal Value (kHz)	Measured Value (kHz)	Mfr's Spec.	Uncertainty of Measured Value (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.

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

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

Sun Creation Engineering Limited – Calibration & Testing Laboratory

c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong

輝創工程有限公司 – 校正及檢測實驗室

c/o 香港新界屯門與安里一號青山灣機樓四樓

Tel/電話: 2927 2606 Fax/傳真: 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

TEST REPORT Chemical Analysis of Water Accuracy check of YSI Sondes Environmental Monitoring System

Date of issue: 12-05-2014

Page 1 of 1 pages

Castco LRN: EN0140507-12

Sample details as supplied by customer

Customer : Dragages-China Harbour-VSL Joint Venture

Customer Ref. No. : --

Address: Tung Chung Waterfront Road, adjacent to Tung Chung New Development Pier

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

Contract No.: HY/2011/09

Laboratory Test Result

Instrument Name: Sonde Environmental Monitoring System

Manufacturer : YSI

Instrument No. : W.03.02

Model No. : YSI 6820

Date of Calibration : 07-05-2014

Serial No. : 02D0293AA

Date of Next Calibration : 07-08-2014

pH 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 Reference
4.00	3.98	-0.02	± 0.2	APHA 21e, 4500-H ⁺ B
7.02	6.94	-0.08		
10.06	9.93	-0.13		

Turbidity Check (Turbidity Sensor : Model: 6136, S/N: 11J100475)

Expected Reading (NTU)	Sonde Reading (NTU)	Tolerance (%)	Tolerance Limit (%)	Method Reference
4.00	4.1	+2.5	± 10	APHA 21e, 2130B
10.00	10.2	+2.0		
20.00	20.9	+4.5		
50.00	51.7	+3.4		
100.00	102.4	+2.4		

Conductivity Performance Check (Conductivity Sensor : Model: 6560, L/N: 12B100106)

Expected Reading (µS/cm)	Sonde Reading (µS/cm)	Tolerance (%)	Tolerance Limit (%)	Method Reference
1412 at 25 °C	1398 at 25 °C	-1.0	± 10	APHA 21e, 2510B

Salinity Performance Check (Salinity Sensor : Model: 6560, L/N: 12B100106)

Expected Reading (ppt)	Sonde Reading (ppt)	Tolerance (%)	Tolerance Limit (%)	Method Reference
33	33.3	+0.9	± 10	APHA 19e, 2520B

Dissolved Oxygen Check (Dissolved Oxygen Sensor : Model: 6562, L/N: 08C100810)

DO from Winkler Titration (mg/L)	Sonde Reading (mg/L)	Tolerance (mg/L)	Tolerance Limit (mg/L)	Method Reference
8.52	8.55	+0.03	± 0.20	APHA 21e, 4500-O C&G
4.71	4.68	-0.03		

Water Level Meter Check

Expected Reading (m)	Sonde Reading (m)	Tolerance (m)	Tolerance Limit (m)	Method Reference
1.03	1.03	0.00	± 0.05	YSI Sondes Procedure Manual

Temperature Check

Expected Reading (°C)	Sonde Reading (°C)	Tolerance (°C)	Tolerance Limit (°C)	Method Reference
25.0	23.5	-1.5	± 2.0	Telarc Technical Guide No.3 1986

Checked by: _____

Chau
TO KA CHEUK
Senior Chemist

Certified by: _____

Stephen Shu Hang
LEE STEPHEN SHU HANG
Ph.D.
Technical Director

End of Report

TEST REPORT Chemical Analysis of Water Accuracy check of YSI Sondes Environmental Monitoring System

Date of issue: 12-05-2014

Page 1 of 1 pages

Castco LRN: EN0140507-11

Sample details as supplied by customer

Customer : Dragages-China Harbour-VSL Joint Venture

Customer Ref. No. : --

Address: Tung Chung Waterfront Road, adjacent to Tung Chung New Development Pier

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

Contract No.: HY/2011/09

Laboratory Test Result

Instrument Name: Sonde Environmental Monitoring System

Manufacturer : YSI

Instrument No. : W.03.13

Model No. : YSI 6820

Date of Calibration : 07-05-2014

Serial No. : 12B100804

Date of Next Calibration : 07-08-2014

pH 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 Reference
4.00	4.12	+0.12	± 0.2	APHA 21e, 4500-H ⁺ B
7.02	6.95	-0.07		
10.06	9.90	-0.16		

Turbidity Check (Turbidity Sensor : Model: 6136, S/N: 12B100645)

Expected Reading (NTU)	Sonde Reading (NTU)	Tolerance (%)	Tolerance Limit (%)	Method Reference
4.00	3.7	-7.5	± 10	APHA 21e, 2130B
10.00	9.7	-0.3		
20.00	19.3	-3.5		
50.00	49.7	-0.6		
100.00	99.2	-0.8		

Conductivity Performance Check (Conductivity Sensor : Model: 6560, L/N: 12B100055)

Expected Reading (µS/cm)	Sonde Reading (µS/cm)	Tolerance (%)	Tolerance Limit (%)	Method Reference
1412 at 25 °C	1503 at 25 °C	+6.4	± 10	APHA 21e, 2510B

Salinity Performance Check (Salinity Sensor : Model: 6560, L/N: 12B100055)

Expected Reading (ppt)	Sonde Reading (ppt)	Tolerance (%)	Tolerance Limit (%)	Method Reference
33	31.93	-3.2	± 10	APHA 19e, 2520B

Dissolved Oxygen Check (Dissolved Oxygen Sensor : Model: 6562, L/N: 12A100930)

DO from Winkler Titration (mg/L)	Sonde Reading (mg/L)	Tolerance (mg/L)	Tolerance Limit (mg/L)	Method Reference
8.52	8.64	+0.12	± 0.20	APHA 21e, 4500-O C&G
4.71	4.78	+0.07		

Water Level Meter Check

Expected Reading (m)	Sonde Reading (m)	Tolerance (m)	Tolerance Limit (m)	Method Reference
1.03	1.06	+0.03	± 0.05	YSI Sondes Procedure Manual

Temperature Check

Expected Reading (°C)	Sonde Reading (°C)	Tolerance (°C)	Tolerance Limit (°C)	Method Reference
25.0	24.5	-0.5	± 2.0	Telarc Technical Guide No.3 1986

Checked by: _____

Cheuk
TO KA CHEUK
Senior Chemist

Certified by: _____

Stephen Shu Hang
LEE STEPHEN SHU HANG
Ph.D.
Technical Director

End of Report

TEST REPORT**Chemical Analysis of Water****Accuracy check of YSI Sondes Environmental Monitoring System**

Date of issue: 06-09-2014

Page 1 of 1 pages

Castco LRN: EN0140806-9

Sample details as supplied by customer

Customer : Dragages-China Harbour-VSL Joint Venture

Customer Ref. No. : --

Address: Tung Chung Waterfront Road, adjacent to Tung Chung New Development Pier

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

Contract No.: HY/2011/09

Laboratory Test Result

Instrument Name: Sonde Environmental Monitoring System

Manufacturer : YSI

Model No. : YSI 6820

Serial No. : 12B100804

Instrument No. : W.03.13

Date of Calibration : 06-08-2014

Date of Next Calibration : 06-11-2014

pH 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 Reference
4.00	4.02	+0.02	± 0.2	APHA 21e, 4500-H ⁺ B
7.02	6.97	-0.05		
10.06	10.0	-0.06		

Turbidity Check (Turbidity Sensor : Model: 6136, S/N: 12B100645)

Expected Reading (NTU)	Sonde Reading (NTU)	Tolerance (%)	Tolerance Limit (%)	Method Reference
4.00	4.1	+2.5	± 10	APHA 21e, 2130B
10.00	10.2	+2		
20.00	19.9	-0.5		
50.00	50.9	+1.8		
100.00	98.4	-1.6		

Conductivity Performance Check (Conductivity Sensor : Model: 6560, L/N: 12B100055)

Expected Reading (µS/cm)	Sonde Reading (µS/cm)	Tolerance (%)	Tolerance Limit (%)	Method Reference
1412 at 25 °C	1457 at 25 °C	+3.2	± 10	APHA 21e, 2510B

Salinity Performance Check (Salinity Sensor : Model: 6560, L/N: 12B100055)

Expected Reading (ppt)	Sonde Reading (ppt)	Tolerance (%)	Tolerance Limit (%)	Method Reference
33	32.34	-2	± 10	APHA 19e, 2520B

Dissolved Oxygen Check (Dissolved Oxygen Sensor : Model: 6562, L/N: 12A100930)

DO from Winkler Titration (mg/L)	Sonde Reading (mg/L)	Tolerance (mg/L)	Tolerance Limit (mg/L)	Method Reference
8.60	8.41	-0.19	± 0.20	APHA 21e, 4500-O C&G
4.71	4.68	-0.03		

Water Level Meter Check

Expected Reading (m)	Sonde Reading (m)	Tolerance (m)	Tolerance Limit (m)	Method Reference
1.00	0.95	-0.05	± 0.05	YSI Sondes Procedure Manual

Temperature Check

Expected Reading (°C)	Sonde Reading (°C)	Tolerance (°C)	Tolerance Limit (°C)	Method Reference
25.0	23.99	-1.01	± 2.0	Telarc Technical Guide No.3 1986

Checked by: _____

TO KA CHEUK
Senior Chemist

Certified by: _____

End of Report

CHENG CHI FAI
Senior Manager

Form No. ENV SONDE_T1 dd 22/02/2013

香港粉嶺安居街33號
香港粉嶺安全街29A號33, On Kui Street, Fanlir
29A, On Chuen Street, Fanling, Hong Kong.

Fax: 2677 0351

E-mail: castco@netvigator.com Website: www.castco.com.hk

COPY

TEST REPORT

Chemical Analysis of Water

Accuracy check of YSI Sondes Environmental Monitoring System

Date of issue: 06-09-2014

Page 1 of 1 pages

Castco LRN: EN0140806-10

Sample details as supplied by customer

Customer : Dragages-China Harbour-VSL Joint Venture

Customer Ref. No. : --

Address: Tung Chung Waterfront Road, adjacent to Tung Chung New Development Pier

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

Contract No.: HY/2011/09

Laboratory Test Result

Instrument Name: Sonde Environmental Monitoring System

Manufacturer : YSI

Instrument No. : W.03.02

Model No. : YSI 6820

Date of Calibration : 06-08-2014

Serial No. : 02D0293AA

Date of Next Calibration : 06-11-2014

pH 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 Reference
4.00	3.98	-0.02	± 0.2	APHA 21e, 4500-H ⁺ B
7.02	6.94	-0.08		
10.06	9.93	-0.13		

Turbidity Check (Turbidity Sensor : Model: 6136, S/N: 11J100475)

Expected Reading (NTU)	Sonde Reading (NTU)	Tolerance (%)	Tolerance Limit (%)	Method Reference
4.00	4.1	+2.5	± 10	APHA 21e, 2130B
10.00	10.3	+3		
20.00	20.3	+1.5		
50.00	49.5	-1		
100.00	100.0	0		

Conductivity Performance Check (Conductivity Sensor : Model: 6560, L/N: 12B100106)

Expected Reading (µS/cm)	Sonde Reading (µS/cm)	Tolerance (%)	Tolerance Limit (%)	Method Reference
1412 at 25 °C	1504 at 25 °C	+6.5	± 10	APHA 21e, 2510B

Salinity Performance Check (Salinity Sensor : Model: 6560, L/N: 12B100106)

Expected Reading (ppt)	Sonde Reading (ppt)	Tolerance (%)	Tolerance Limit (%)	Method Reference
33	34.02	+3.1	± 10	APHA 19e, 2520B

Dissolved Oxygen Check (Dissolved Oxygen Sensor : Model: 6562, L/N: 08C100810)

DO from Winkler Titration (mg/L)	Sonde Reading (mg/L)	Tolerance (mg/L)	Tolerance Limit (mg/L)	Method Reference
8.60	8.58	-0.02	± 0.20	APHA 21e, 4500-O C&G
5.08	5.17	+0.09		

Water Level Meter Check

Expected Reading (m)	Sonde Reading (m)	Tolerance (m)	Tolerance Limit (m)	Method Reference
1.00	1.03	+0.03	± 0.05	YSI Sondes Procedure Manual

Temperature Check

Expected Reading (°C)	Sonde Reading (°C)	Tolerance (°C)	Tolerance Limit (°C)	Method Reference
25.0	22.5	-1.5	± 2.0	Telarc Technical Guide No.3 1986

Checked by:


TO KA CHEUK
Senior Chemist

Certified by:


CHENG CHI FAI
Senior Manager

End of Report

**APPENDIX D
ENVIRONMENTAL MONITORING
SCHEDULES**

**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 August 2014**

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

Air Quality Monitoring Stations

AMS1 - Sha Lo Wan
AMS4 - San Tau

Noise Monitoring Stations

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
Tentative Impact Air Quality and Noise Monitoring Schedule in September 2014**

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

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

Air Quality Monitoring Stations

AMS1 - Sha Lo Wan

AMS4 - San Tau

Noise Monitoring Stations

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 August 2014**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1-Aug	2-Aug
					<u>Water Quality Monitoring</u> Mid-Flood 09:29 Mid-Ebb 15:49	
3-Aug	4-Aug	5-Aug	6-Aug	7-Aug	8-Aug	9-Aug
	<u>Water Quality Monitoring</u> Mid-Flood 12:37 Mid-Ebb 18:18		<u>Water Quality Monitoring</u> Mid-Ebb 08:51 Mid-Flood 16:01		<u>Water Quality Monitoring</u> Mid-Ebb 10:41 Mid-Flood 17:53	
10-Aug	11-Aug	12-Aug	13-Aug	14-Aug	15-Aug	16-Aug
	<u>Water Quality Monitoring</u> Mid-Ebb 13:07 Mid-Flood 19:56		<u>Water Quality Monitoring</u> Mid-Flood 08:18 Mid-Ebb 14:40		<u>Water Quality Monitoring</u> Mid-Flood 09:58 Mid-Ebb 16:06	
17-Aug	18-Aug	19-Aug	20-Aug	21-Aug	22-Aug	23-Aug
		<u>Water Quality Monitoring</u> Mid-Ebb 08:18 Mid-Flood 15:34		<u>Water Quality Monitoring</u> Mid-Ebb 10:18 Mid-Flood 17:35		<u>Water Quality Monitoring</u> Mid-Ebb 11:43 Mid-Flood 18:31
24-Aug	25-Aug	26-Aug	27-Aug	28-Aug	29-Aug	30-Aug
	<u>Water Quality Monitoring</u> Mid-Ebb 12:53 Mid-Flood 19:22		<u>Water Quality Monitoring</u> Mid-Flood 07:31 Mid-Ebb 13:55		<u>Water Quality Monitoring</u> Mid-Flood 08:42 Mid-Ebb 14:56	
31-Aug						

**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 September 2014**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1-Sep	2-Sep	3-Sep	4-Sep	5-Sep	6-Sep
	<u>Water Quality Monitoring</u> Mid-Flood 11:04 Mid-Ebb 16:52		<u>Water Quality Monitoring</u> Mid-Ebb 06:48 Mid-Flood 14:18		<u>Water Quality Monitoring</u> Mid-Ebb 09:21 Mid-Flood 16:46	
7-Sep	8-Sep	9-Sep	10-Sep	11-Sep	12-Sep	13-Sep
	<u>Water Quality Monitoring</u> Mid-Ebb 12:02 Mid-Flood 18:45		<u>Water Quality Monitoring</u> Mid-Flood 07:20 Mid-Ebb 13:37		<u>Water Quality Monitoring</u> Mid-Flood 08:57 Mid-Ebb 15:02	
14-Sep	15-Sep	16-Sep	17-Sep	18-Sep	19-Sep	20-Sep
	<u>Water Quality Monitoring</u> Mid-Flood 11:46 Mid-Ebb 17:16			<u>Water Quality Monitoring</u> Mid-Ebb 08:41 Mid-Flood 16:31		<u>Water Quality Monitoring</u> Mid-Ebb 10:33 Mid-Flood 17:26
21-Sep	22-Sep	23-Sep	24-Sep	25-Sep	26-Sep	27-Sep
	<u>Water Quality Monitoring</u> Mid-Ebb 11:52 Mid-Flood 18:14		<u>Water Quality Monitoring</u> Mid-Ebb 12:59 Mid-Flood 19:05		<u>Water Quality Monitoring</u> Mid-Flood 07:58 Mid-Ebb 14:05	
28-Sep	29-Sep	30-Sep				
	<u>Water Quality Monitoring</u> Mid-Flood 10:08 Mid-Ebb 15:55					

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 August 2014**

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

**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 September 2014**

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

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
Additional Land-based Dolphin Behaviour and Movement Monitoring in August 2014**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1-Aug	2-Aug
3-Aug	4-Aug	5-Aug	6-Aug	7-Aug	8-Aug	9-Aug
10-Aug	11-Aug	12-Aug	13-Aug	14-Aug	15-Aug	16-Aug
17-Aug	18-Aug	19-Aug	20-Aug	21-Aug	22-Aug	23-Aug
					Additional Land-based Dolphin Behaviour and Movement Monitoring	
24-Aug	25-Aug	26-Aug	27-Aug	28-Aug	29-Aug	30-Aug
			Additional Land-based Dolphin Behaviour and Movement Monitoring			
31-Aug						

**Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill
Tentative Additional Land-based Dolphin Behaviour and Movement Monitoring in September 2014**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1-Sep	2-Sep	3-Sep	4-Sep	5-Sep	6-Sep
	Additional Land-based Dolphin Behaviour and Movement Monitoring				Additional Land-based Dolphin Behaviour and Movement Monitoring	
7-Sep	8-Sep	9-Sep	10-Sep	11-Sep	12-Sep	13-Sep
14-Sep	15-Sep	16-Sep	17-Sep	18-Sep	19-Sep	20-Sep
21-Sep	22-Sep	23-Sep	24-Sep	25-Sep	26-Sep	27-Sep
28-Sep	29-Sep	30-Sep				

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

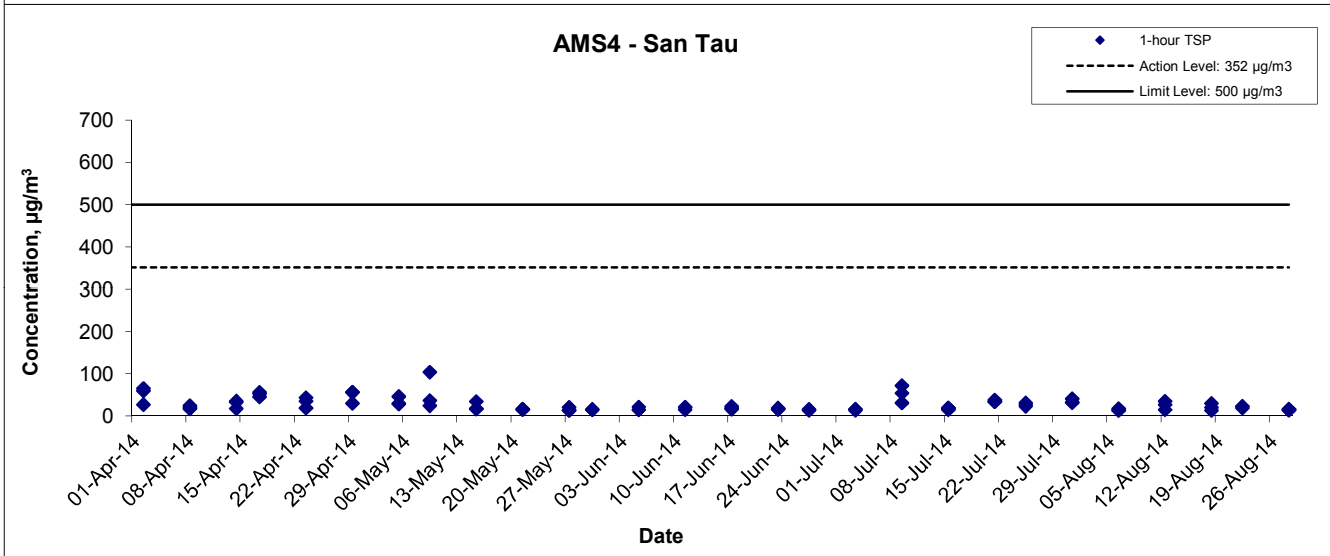
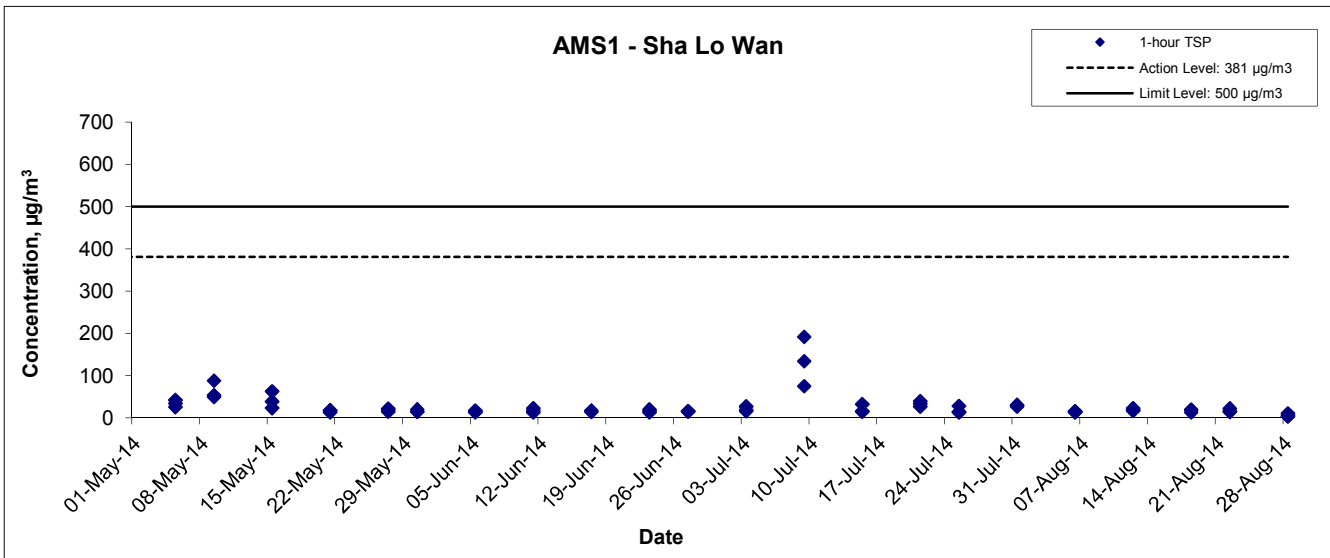
Location AMS1 - Sha Lo Wan

Sampling Date	Start Time	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m ³ /min.)		Av. flow (m ³ /min)	Total vol. (m ³)	Conc. (µg/m ³)
					Initial	Final		Initial	Final		Initial	Final			
6-Aug-14	08:50	Sunny	301.3	755.3	2.8051	2.8063	0.0012	3806.1	3807.1	1.0	1.23	1.23	1.23	73.9	16
6-Aug-14	09:55	Sunny	301.5	755.1	2.8086	2.8097	0.0011	3807.1	3808.1	1.0	1.23	1.23	1.23	73.9	15
6-Aug-14	10:58	Sunny	301.7	754.7	2.8093	2.8103	0.0010	3808.1	3809.1	1.0	1.23	1.23	1.23	73.8	14
12-Aug-14	13:58	Rainy	300.0	752.2	2.8615	2.8632	0.0017	3833.1	3834.1	1.0	1.23	1.23	1.23	73.9	23
12-Aug-14	16:04	Rainy	300.2	752.1	2.8521	2.8534	0.0013	3834.1	3835.1	1.0	1.23	1.23	1.23	73.9	18
12-Aug-14	17:08	Rainy	300.4	751.7	2.8500	2.8514	0.0014	3835.1	3836.1	1.0	1.23	1.23	1.23	73.9	19
18-Aug-14	08:00	Sunny	302.1	758.4	2.8228	2.8243	0.0015	3860.1	3861.1	1.0	1.23	1.23	1.23	74.0	20
18-Aug-14	09:03	Sunny	302.3	758.2	2.8078	2.8092	0.0014	3861.1	3862.1	1.0	1.23	1.23	1.23	73.9	19
18-Aug-14	10:05	Sunny	302.5	758.1	2.8077	2.8087	0.0010	3862.1	3863.1	1.0	1.23	1.23	1.23	73.9	14
22-Aug-14	08:03	Cloudy	300.3	760.6	2.8070	2.8087	0.0017	3887.1	3888.1	1.0	1.24	1.24	1.24	74.3	23
22-Aug-14	09:05	Cloudy	300.5	760.4	2.8174	2.8185	0.0011	3888.1	3889.1	1.0	1.24	1.24	1.24	74.3	15
22-Aug-14	10:07	Cloudy	300.7	760.2	2.8154	2.8166	0.0012	3889.1	3890.1	1.0	1.24	1.24	1.24	74.2	16
28-Aug-14	13:10	Sunny	302.7	760.9	2.8214	2.8217	0.0003	3914.1	3915.1	1.0	1.23	1.23	1.23	74.0	4
28-Aug-14	14:12	Sunny	302.9	760.7	2.8007	2.8015	0.0008	3915.1	3916.1	1.0	1.23	1.23	1.23	74.0	11
28-Aug-14	15:16	Sunny	303.1	760.5	2.8010	2.8014	0.0004	3916.1	3917.1	1.0	1.23	1.23	1.23	74.0	5
														Min	4
														Max	23
														Average	15

Location AMS4 - San Tau

Sampling Date	Start Time	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m ³ /min.)		Av. flow (m ³ /min)	Total vol. (m ³)	Conc. (µg/m ³)
					Initial	Final		Initial	Final		Initial	Final			
6-Aug-14	13:12	Sunny	301.0	754.1	2.8123	2.8136	0.0013	3404.0	3405.0	1.0	1.23	1.23	1.23	73.6	18
6-Aug-14	14:15	Sunny	301.2	753.9	2.8114	2.8124	0.0010	3405.0	3406.0	1.0	1.23	1.23	1.23	73.5	14
6-Aug-14	15:18	Sunny	301.4	753.7	2.8047	2.8057	0.0010	3406.0	3407.0	1.0	1.23	1.22	1.23	73.5	14
12-Aug-14	14:48	Rainy	300.5	752.5	2.8236	2.8262	0.0026	3431.0	3432.0	1.0	1.23	1.23	1.23	73.6	35
12-Aug-14	15:50	Rainy	300.7	752.3	2.8165	2.8185	0.0020	3432.0	3433.0	1.0	1.23	1.23	1.23	73.5	27
12-Aug-14	16:53	Rainy	300.8	752.1	2.8139	2.8150	0.0011	3433.0	3434.0	1.0	1.23	1.23	1.23	73.5	15
18-Aug-14	13:00	Sunny	305.1	754.5	2.8191	2.8206	0.0015	3458.0	3459.0	1.0	1.22	1.22	1.22	73.1	21
18-Aug-14	14:05	Sunny	303.8	754.3	2.8297	2.8319	0.0022	3459.0	3460.0	1.0	1.22	1.22	1.22	73.3	30
18-Aug-14	15:10	Sunny	305.5	754.1	2.8069	2.8079	0.0010	3460.0	3461.0	1.0	1.22	1.22	1.22	73.0	14
22-Aug-14	13:00	Sunny	301.7	759.4	2.8084	2.8101	0.0017	3485.0	3486.0	1.0	1.23	1.23	1.23	73.7	23
22-Aug-14	14:03	Sunny	301.9	759.3	2.7964	2.7978	0.0014	3486.0	3487.0	1.0	1.23	1.23	1.23	73.7	19
22-Aug-14	15:05	Sunny	302.2	759.1	2.8057	2.8074	0.0017	3487.0	3488.0	1.0	1.23	1.23	1.23	73.7	23
28-Aug-14	08:32	Sunny	302.4	761.5	2.7997	2.8009	0.0012	3512.0	3513.0	1.0	1.23	1.23	1.23	73.7	16
28-Aug-14	09:34	Sunny	302.6	761.3	2.8159	2.8169	0.0010	3513.0	3514.0	1.0	1.23	1.23	1.23	73.7	14
28-Aug-14	10:37	Sunny	302.8	761.1	2.8018	2.8030	0.0012	3514.0	3515.0	1.0	1.23	1.23	1.23	73.7	16
														Min	14
														Max	35
														Average	20

1-hour TSP Concentration Levels



Title Contract No. HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Section between HKSAR Boundary and Scenic Hill Graphical Presentation of 1-hour TSP Monitoring Results	Scale N.T.S	Project No. MA12014	
	Date Aug 14	Appendix E	

**APPENDIX F
24-HOUR TSP MONITORING RESULTS
AND GRAPHICAL PRESENTATION**

Appendix F - 24-hour TSP Monitoring Results

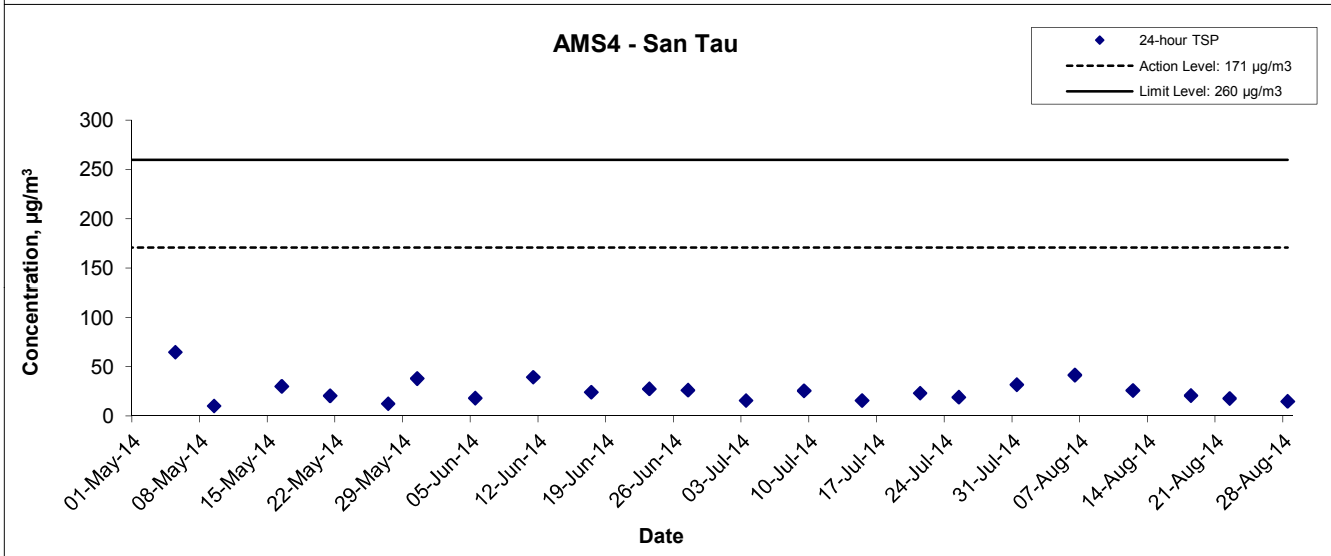
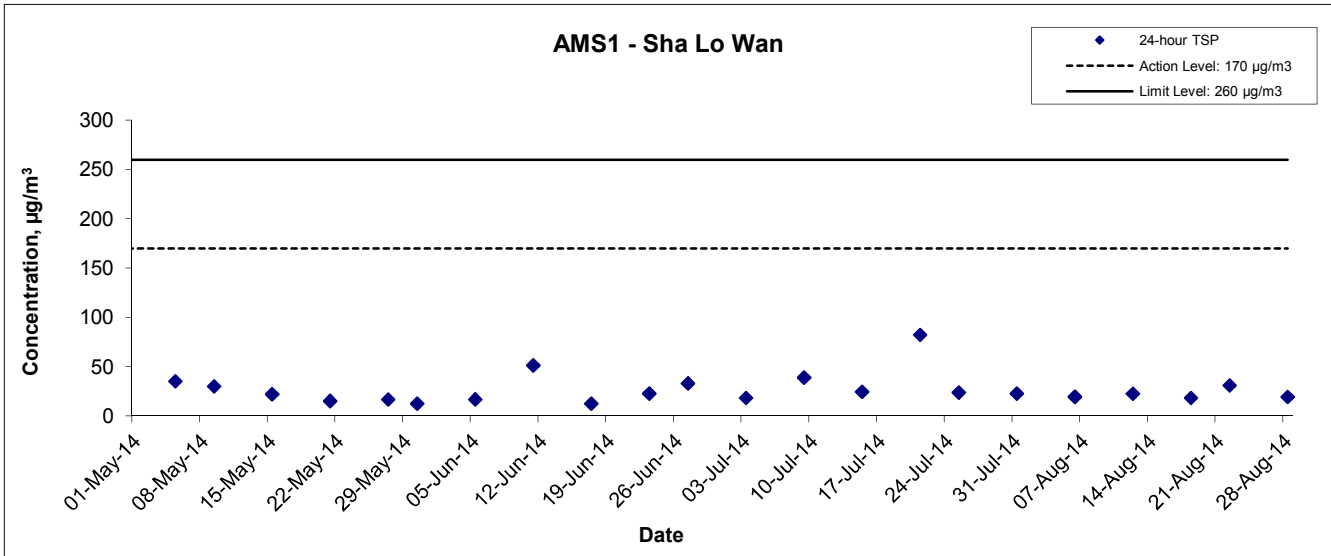
Location AMS1 - Sha Lo Wan

Sampling Date	Start Time	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m ³ /min.)		Av. flow (m ³ /min)	Total vol. (m ³)	Conc. (µg/m ³)
					Initial	Final		Initial	Final		Initial	Final			
6-Aug-14	14:58	Sunny	301.5	754.1	2.8104	2.8451	0.0347	3809.1	3833.1	24.0	1.23	1.23	1.23	1772.1	20
12-Aug-14	18:11	Rainy	300.4	751.5	2.8413	2.8815	0.0402	3836.1	3860.1	24.0	1.23	1.23	1.23	1772.2	23
18-Aug-14	11:30	Sunny	302.7	757.9	2.8084	2.8411	0.0327	3863.1	3887.1	24.0	1.23	1.23	1.23	1773.0	18
22-Aug-14	11:10	Cloudy	300.9	760.1	2.7966	2.8521	0.0555	3890.1	3914.1	24.0	1.24	1.24	1.24	1780.7	31
28-Aug-14	16:20	Sunny	303.3	760.3	2.8006	2.8351	0.0345	3917.1	3941.1	24.0	1.23	1.23	1.23	1774.0	19
														Min	18
														Max	31
														Average	22

Location AMS4 - San Tau

Sampling Date	Start Time	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time(hrs.)	Flow Rate (m ³ /min.)		Av. flow (m ³ /min)	Total vol. (m ³)	Conc. (µg/m ³)
					Initial	Final		Initial	Final		Initial	Final			
6-Aug-14	16:20	Sunny	301.6	753.5	2.8259	2.8993	0.0734	3407.0	3431.0	24.0	1.22	1.22	1.22	1763.3	42
12-Aug-14	17:56	Rainy	300.4	751.3	2.8757	2.9217	0.0460	3434.0	3458.0	24.0	1.23	1.22	1.23	1764.1	26
18-Aug-14	16:15	Sunny	305.7	753.9	2.8089	2.8455	0.0366	3461.0	3485.0	24.0	1.22	1.22	1.22	1752.4	21
22-Aug-14	16:10	Sunny	302.4	758.9	2.7941	2.8258	0.0317	3488.0	3512.0	24.0	1.23	1.23	1.23	1767.0	18
28-Aug-14	11:41	Sunny	303.0	760.9	2.8195	2.8460	0.0265	3515.0	3539.0	24.0	1.23	1.23	1.23	1767.7	15
														Min	15
														Max	42
														Average	24

24-hour TSP Concentration Levels



Title Contract No. HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Section between HKSAR Boundary and Scenic Hill Graphical Presentation of 24-hour TSP Monitoring Results	Scale N.T.S	Project No. MA12014	
	Date Aug 14	Appendix F	

**APPENDIX G
NOISE MONITORING RESULTS AND
GRAPHICAL PRESENTATION**

Appendix G - Noise Monitoring Results

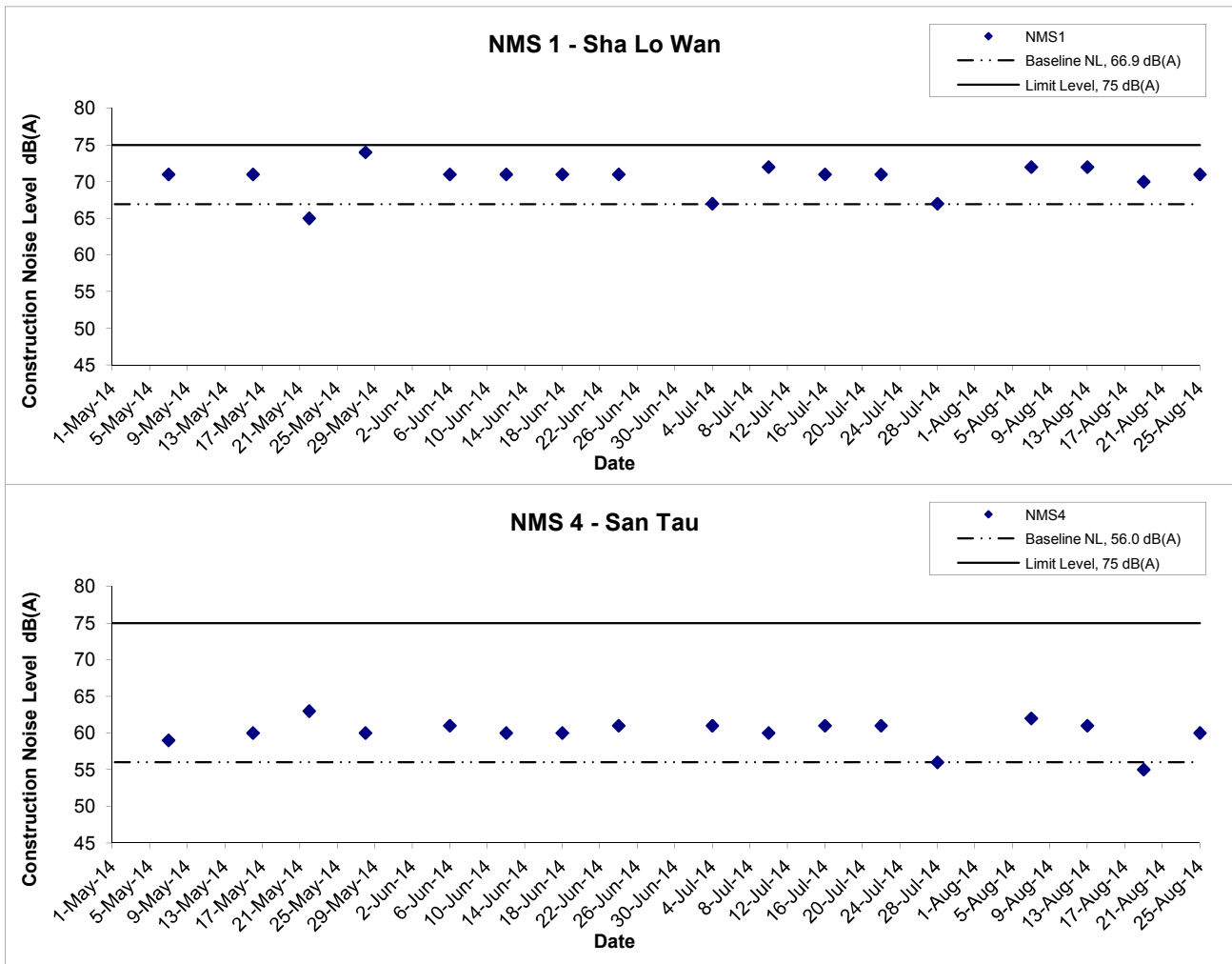
Location NMS 1 - Sha Lo Wan								
Date	Weather	Time	Unit: dB (A) (5-min)			Average L _{eq}	Baseline Level L _{eq}	Construction Noise Level L _{eq}
			L _{eq}	L ₁₀	L ₉₀			
7-Aug-14	Sunny	14:41	71.2	74.4	70.1	72	66.9	72 Measured ≤ Limit Level
		14:46	70.5	74.0	69.8			
		14:51	72.5	75.1	71.1			
		14:56	72.3	75.1	70.8			
		15:01	71.8	74.6	70.6			
13-Aug-14	Cloudy	15:06	71.4	75.1	70.2	72	66.9	72 Measured ≤ Limit Level
		15:11	72.0	75.8	70.7			
		15:16	71.6	75.2	70.4			
		15:21	71.1	74.7	70.1			
		15:26	72.2	75.4	70.4			
19-Aug-14	Sunny	15:31	71.2	74.6	70.3	70	66.9	70 Measured ≤ Limit Level
		10:45	66.4	71.1	51.1			
		10:50	70.7	73.6	50.1			
		10:55	71.5	73.8	50.2			
		11:00	72.6	76.4	50.3			
25-Aug-14	Sunny	11:05	67.3	71.8	50.2	71	66.9	71 Measured ≤ Limit Level
		11:10	67.4	72.4	50.5			
		13:52	71.4	74.8	70.2			
		13:57	70.7	74.1	70.0			
		14:02	70.8	74.0	69.7			
		14:07	70.5	74.1	69.8			
		14:12	71.2	74.7	70.3			
		14:17	71.0	74.5	70.0			

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

Location NMS 4 - San Tau								
Date	Weather	Time	Unit: dB (A) (5-min)			Average L _{eq}	Baseline Level L _{eq}	Construction Noise Level L _{eq}
			L _{eq}	L ₁₀	L ₉₀			
7-Aug-14	Sunny	15:32	61.4	64.2	60.7	62	56.0	62 Measured ≤ Limit Level
		15:37	60.8	64.0	60.2			
		15:42	62.4	65.1	61.1			
		15:47	61.9	64.7	60.5			
		15:52	61.6	64.2	60.3			
13-Aug-14	Cloudy	15:57	62.0	64.8	60.6	61	56.0	61 Measured ≤ Limit Level
		17:30	60.2	63.1	58.6			
		17:35	61.1	63.6	59.0			
		17:40	60.6	63.2	58.4			
		17:45	60.3	63.1	58.6			
19-Aug-14	Cloudy	17:50	61.1	63.4	59.3	55	56.0	55 Measured ≤ Limit Level
		17:55	60.7	63.0	59.2			
		13:23	55.4	56.7	49.8			
		13:28	56.0	57.3	50.4			
		13:33	53.7	56.8	48.3			
25-Aug-14	Sunny	13:38	54.1	55.9	50.2	60	56.0	60 Measured ≤ Limit Level
		13:43	55.5	56.8	50.3			
		13:48	54.4	57.2	50.1			
		15:04	59.4	60.3	57.1			
		15:09	60.5	61.8	57.6			
		15:14	60.0	61.0	58.4			
		15:19	59.7	61.3	60.1			
		15:24	59.6	62.0	59.3			
		15:29	59.8	61.5	60.2			

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

Noise Levels



Title Contract HY/2011/09 Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road-Section between HKSAR Boundary and Scenic Hill Graphical Presentation of Construction Noise Monitoring Results	Scale	N.T.S	Project No.	MA12014	CINOTECH
	Date	Aug 14	Appendix	G	

**APPENDIX H
WATER QUALITY MONITORING
RESULTS AND GRAPHICAL
PRESENTATION**

Water Quality Monitoring Results at CS1 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Aug-14	Sunny	Moderate	14:56	Surface	1	30.2 30.2	30.2	7.9 8.0	8.0	23.5 23.4	23.5	96.4 97.8	97.1	6.4 6.5	6.5	6.4	2.9 2.4	2.7	3.1	1.8 2.0	1.9	2.3
				Middle	5	27.5 27.8	27.7	7.8 7.8	7.8	29.3 29.8	29.6	89.8 94.2	92.0	6.0 6.3	6.2		2.3 2.6	2.5		2.5 2.1	2.3	
				Bottom	9	26.6 26.8	26.7	7.8 7.8	7.8	31.1 30.9	31.0	77.3 78.8	78.1	5.2 5.3	5.3		4.5 3.9	4.2		2.6 2.5	2.6	
4-Aug-14	Fine	Moderate	17:33	Surface	1	27.6 27.6	27.6	7.7 7.7	7.7	12.2 12.3	12.3	90.8 90.3	90.6	6.7 6.7	6.7	6.2	0.7 0.7	0.7	8.1	3.1 3.2	3.2	3.6
				Middle	6.5	22.5 22.5	22.5	7.9 7.9	7.9	33.5 33.4	33.5	80.1 79.7	79.9	5.7 5.7	5.7		5.2 5.3	5.3		2.5 3.0	2.8	
				Bottom	12	22.2 22.2	22.2	8.1 8.1	8.1	34.0 34.0	34.0	67.3 67.4	67.4	4.8 4.8	4.8		17.9 18.4	18.2		4.0 5.8	4.9	
6-Aug-14	Rainy	Calm	08:35	Surface	1	29.7 29.7	29.7	8.1 8.1	8.1	10.0 10.1	10.1	78.6 78.5	78.6	5.7 5.6	5.7	5.4	1.8 2.2	2.0	8.0	5.8 5.8	5.8	4.4
				Middle	6	29.4 29.4	29.4	8.0 8.0	8.0	16.1 15.7	15.9	72.4 72.5	72.5	5.1 5.1	5.1		6.5 6.4	6.5		3.8 3.0	3.4	
				Bottom	11	27.3 27.3	27.3	7.8 7.8	7.8	25.9 25.9	25.9	71.0 70.2	70.6	4.9 4.8	4.9		15.0 16.1	15.6		4.2 3.5	3.9	
8-Aug-14	Sunny	Calm	11:15	Surface	1	28.3 28.3	28.3	8.0 8.0	8.0	15.6 15.6	15.6	78.4 78.8	78.6	5.6 5.6	5.6	5.4	3.1 3.1	3.1	8.9	4.5 3.0	3.8	4.8
				Middle	6.5	27.1 27.1	27.1	8.0 8.0	8.0	20.7 20.5	20.6	71.7 72.8	72.3	5.1 5.2	5.2		4.1 4.1	4.1		3.6 3.1	3.4	
				Bottom	12	24.4 24.3	24.4	8.2 8.2	8.2	32.4 33.1	32.8	73.8 74.6	74.2	5.1 5.2	5.2		19.3 19.7	19.5		8.8 5.7	7.3	
11-Aug-14	Sunny	Moderate	13:50	Surface	1	28.0 28.0	28.0	7.7 7.7	7.7	25.5 25.5	25.5	89.0 90.4	89.7	6.0 6.1	6.1	6.2	10.7 11.1	10.9	10.7	6.2 6.0	6.1	6.3
				Middle	5	26.6 26.5	26.6	7.7 7.7	7.7	28.6 28.8	28.7	91.7 91.1	91.4	6.3 6.2	6.3		7.7 7.8	7.8		6.9 5.9	6.4	
				Bottom	9	26.0 26.0	26.0	7.7 7.7	7.7	30.0 30.1	30.1	91.7 91.1	91.4	6.3 6.2	6.3		13.3 13.7	13.5		6.6 6.0	6.3	
13-Aug-14	Rainy	Moderate	14:34	Surface	1	23.4 23.6	23.5	7.6 7.6	7.6	30.8 30.0	30.4	71.0 68.7	69.9	5.1 4.9	5.0	5.2	2.9 2.4	2.7	3.1	6.0 6.1	6.1	6.3
				Middle	5	23.5 23.5	23.5	7.5 7.5	7.5	30.1 30.0	30.1	79.3 70.6	75.0	5.7 5.1	5.4		2.3 2.6	2.5		5.3 6.6	6.0	
				Bottom	9	23.6 23.5	23.6	7.5 7.5	7.5	29.8 30.0	29.9	68.7 69.5	69.1	4.9 5.0	5.0		4.5 3.9	4.2		8.2 5.6	6.9	
15-Aug-14	Sunny	Calm	16:00	Surface	1	28.1 28.1	28.1	7.6 7.6	7.6	22.2 22.3	22.3	87.3 87.5	87.4	6.0 6.0	6.0	5.4	5.5 5.3	5.4	12.7	5.0 4.4	4.7	10.2
				Middle	6.5	25.9 25.9	25.9	7.6 7.6	7.6	29.5 29.5	29.5	69.8 69.9	69.9	4.8 4.8	4.8		9.9 10.7	10.3		10.2 12.2	11.2	
				Bottom	12	25.6 25.7	25.7	7.5 7.5	7.5	30.9 30.6	30.8	70.5 70.9	70.7	4.8 4.9	4.9		20.7 23.8	22.3		13.2 16.1	14.7	
19-Aug-14	Rainy	Moderate	08:49	Surface	1	29.3 29.3	29.3	8.3 8.3	8.3	13.7 13.6	13.7	95.4 91.3	93.4	6.8 6.5	6.7	7.0	5.1 5.5	5.3	12.3	6.0 7.6	6.8	8.2
				Middle	6.5	25.7 25.7	25.7	8.0 8.0	8.0	31.1 31.1	31.1	106.9 107.3	107.1	7.3 7.3	7.3		26.8 26.4	26.6		7.6 12.3	10.0	
				Bottom	12	29.3 29.3	29.3	8.3 8.3	8.3	13.3 13.3	13.3	71.5 72.2	71.9	5.1 5.1	5.1		4.7 5.3	5.0		7.3 8.4	7.9	

Remarks: *DA: Depth-Averaged
 **Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at CS1 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
21-Aug-14	Sunny	Calm	10:25	Surface	1	28.1 28.4	28.3	7.6 7.7	7.7	16.0 14.9	15.5	81.7 85.6	83.7	5.9 6.1	6.0	5.3	4.8 4.6	4.7	13.2	3.4 2.7	3.1	17.1
				Middle	6	25.3 25.4	25.4	7.7 7.6	7.7	31.9 31.8	31.9	65.8 63.9	64.9	4.5 4.4	4.5		13.0 12.8	12.9		4.0 5.9	5.0	
				Bottom	11	25.1 25.1	25.1	7.6 7.7	7.7	32.9 33.0	33.0	73.2 73.0	73.1	5.0 5.0	5.0		20.6 23.1	21.9		43.0 43.6	43.3	
23-Aug-14	Sunny	Calm	12:05	Surface	1	25.3 25.2	25.3	8.0 7.9	8.0	33.6 33.7	33.7	76.7 83.7	80.2	5.2 5.7	5.5	5.6	10.6 10.2	10.4	14.0	3.3 4.6	4.0	3.3
				Middle	5	25.0 25.0	25.0	8.0 8.0	8.0	34.0 34.0	34.0	77.7 85.3	81.5	5.3 5.8	5.6		15.7 14.9	15.3		1.9 3.3	2.6	
				Bottom	9	25.0 25.0	25.0	8.0 8.0	8.0	34.0 34.0	34.0	82.4 85.5	84.0	5.6 5.8	5.7		16.8 15.9	16.4		3.6 3.0	3.3	
25-Aug-14	Sunny	Moderate	12:45	Surface	1	26.4 26.6	26.5	7.6 7.9	7.8	28.6 23.3	26.0	73.3 71.7	72.5	5.0 5.1	5.1	5.7	8.9 8.9	8.9	8.8	3.9 3.0	3.5	3.5
				Middle	5	25.8 25.9	25.9	7.6 7.9	7.8	25.6 23.3	24.5	85.8 88.9	87.4	6.1 6.3	6.2		8.8 9.3	9.1		3.2 2.5	2.9	
				Bottom	9	25.4 25.3	25.4	7.6 7.6	7.6	25.5 25.9	25.7	85.3 86.3	85.8	6.1 6.1	6.1		8.6 8.3	8.5		4.3 3.7	4.0	
27-Aug-14	Fine	Moderate	12:30	Surface	1	27.3 27.3	27.3	7.6 7.6	7.6	27.4 27.2	27.3	81.9 81.9	81.9	5.6 5.6	5.6	5.6	7.3 7.3	7.3	7.9	7.7 7.3	7.5	6.9
				Middle	5.5	26.6 26.6	26.6	7.6 7.6	7.6	29.6 29.6	29.6	81.2 81.2	81.2	5.5 5.5	5.5		7.7 7.5	7.6		6.5 6.2	6.4	
				Bottom	10	26.3 26.3	26.3	7.6 7.6	7.6	30.4 30.5	30.5	73.2 73.2	73.2	5.0 5.0	5.0		8.7 8.9	8.8		6.8 6.8	6.8	
29-Aug-14	Sunny	Moderate	13:57	Surface	1	28.8 28.7	28.8	7.7 7.7	7.7	20.1 20.1	20.1	103.6 102.4	103.0	7.2 7.1	7.2	6.5	3.8 4.0	3.9	8.2	4.1 3.4	3.8	3.8
				Middle	5.5	26.4 26.3	26.4	7.7 7.7	7.7	27.7 28.0	27.9	82.8 82.5	82.7	5.7 5.7	5.7		9.2 9.9	9.6		2.9 3.4	3.2	
				Bottom	10	25.9 25.9	25.9	7.7 7.7	7.7	28.9 29.0	29.0	72.3 70.8	71.6	5.0 4.9	5.0		11.3 10.9	11.1		3.9 4.7	4.3	

Remarks: *DA: Depth-Averaged

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

Water Quality Monitoring Results at CS1 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Aug-14	Sunny	Moderate	10:15	Surface	1	30.1 29.9	30.0	7.9 7.9	7.9	20.4 20.2	20.3	91.7 99.3	95.5	6.2 6.7	6.5	6.0	3.8 3.4	3.6	6.9	2.6 2.3	2.5	2.4
				Middle	5	27.2 27.1	27.2	7.8 7.8	7.8	29.7 30.2	30.0	80.1 78.5	79.3	5.4 5.3	5.4		6.0 6.1	6.1		2.7 2.8	2.8	
				Bottom	9	26.6 26.6	26.6	7.8 7.8	7.8	31.2 31.2	31.2	73.9 72.9	73.4	5.0 4.9	5.0	10.8 11.1	11.0	1.8 1.9		1.9		
4-Aug-14	Sunny	Moderate	12:58	Surface	1	27.1 27.1	27.1	7.8 7.8	7.8	11.8 11.8	11.8	101.4 101.5	101.5	7.6 7.6	7.6	7.1	1.7 1.7	1.7	4.8	1.6 1.7	1.7	2.1
				Middle	6	23.5 23.5	23.5	7.9 7.9	7.9	31.0 31.0	31.0	89.9 91.5	90.7	6.4 6.5	6.5		3.5 3.6	3.6		2.2 3.0	2.6	
				Bottom	11	22.5 22.5	22.5	7.9 7.9	7.9	33.7 33.7	33.7	70.9 73.0	72.0	5.1 5.2	5.2	8.7 9.4	9.1	1.8 2.0		1.9		
6-Aug-14	Rainy	Calm	14:32	Surface	1	29.8 29.7	29.8	8.1 8.0	8.1	12.2 13.1	12.7	99.4 97.9	98.7	7.1 6.9	7.0	6.2	3.1 2.9	3.0	10.4	2.7 3.5	3.1	3.5
				Middle	6.5	29.4 29.4	29.4	8.0 8.0	8.0	15.3 15.4	15.4	74.8 74.9	74.9	5.3 5.3	5.3		9.0 8.9	9.0		3.9 3.4	3.7	
				Bottom	12	27.8 27.7	27.8	7.8 7.8	7.8	24.6 24.7	24.7	75.1 74.5	74.8	5.2 5.1	5.2	20.3 18.3	19.3	3.1 4.2		3.7		
8-Aug-14	Sunny	Rough	17:20	Surface	1	29.0 29.0	29.0	8.0 8.0	8.0	15.8 15.7	15.8	73.3 72.6	73.0	5.2 5.1	5.2	5.3	16.9 16.2	16.6	22.9	31.0 33.2	32.1	32.3
				Middle	6	26.0 26.0	26.0	8.1 8.1	8.1	26.9 26.9	26.9	78.3 76.3	77.3	5.5 5.3	5.4		21.0 21.3	21.2		36.0 36.7	36.4	
				Bottom	11	25.3 25.3	25.3	8.2 8.2	8.2	29.5 29.4	29.5	70.9 71.5	71.2	4.9 5.0	5.0	30.6 31.1	30.9	26.3 30.7		28.5		
11-Aug-14	Fine	Moderate	19:32	Surface	1	28.2 28.1	28.2	7.7 7.7	7.7	25.4 25.5	25.5	93.6 93.6	93.6	6.3 6.4	6.4	6.4	4.9 4.8	4.9	7.5	5.9 6.3	6.1	6.2
				Middle	5	27.5 27.6	27.6	7.7 7.7	7.7	26.7 26.7	26.7	93.7 93.7	93.7	6.4 6.4	6.4		7.7 7.1	7.4		5.0 7.0	6.0	
				Bottom	9	27.2 27.0	27.1	7.7 7.7	7.7	27.8 28.1	28.0	93.2 92.8	93.0	6.3 6.3	6.3	10.2 10.4	10.3	7.3 5.8		6.6		
13-Aug-14	Rainy	Moderate	08:47	Surface	1	23.8 23.5	23.7	7.7 7.6	7.7	29.1 30.1	29.6	84.9 84.0	84.5	6.1 6.0	6.1	6.0	3.8 3.4	3.6	10.2	7.2 6.9	7.1	7.1
				Middle	5	23.7 23.6	23.7	7.7 7.7	7.7	29.6 30.0	29.8	81.2 83.7	82.5	5.8 6.0	5.9		6.0 6.1	6.1		5.4 7.0	6.2	
				Bottom	9	23.6 23.5	23.6	7.6 7.6	7.6	29.9 30.4	30.2	71.9 72.4	72.2	5.1 5.2	5.2	20.8 21.1	21.0	8.1 7.9		8.0		
15-Aug-14	Sunny	Calm	10:32	Surface	1	29.1 29.0	29.1	7.6 7.6	7.6	14.7 15.7	15.2	90.6 92.1	91.4	6.4 6.5	6.5	5.8	7.8 7.8	7.8	23.4	6.0 6.8	6.4	19.2
				Middle	6	26.1 26.0	26.1	7.6 7.6	7.6	27.1 28.6	27.9	72.0 71.5	71.8	5.0 4.9	5.0		20.1 23.8	22.0		7.4 7.4	7.2	
				Bottom	11	25.4 25.4	25.4	7.6 7.6	7.6	31.3 31.3	31.3	70.5 70.3	70.4	4.8 4.8	4.8	40.2 40.4	40.3	47.6 40.2		43.9		
19-Aug-14	Rainy	Moderate	15:29	Surface	1	29.6 29.6	29.6	8.3 8.3	8.3	11.3 11.2	11.3	98.6 98.6	98.6	7.1 7.1	7.1	6.2	7.2 6.7	7.0	16.7	10.8 15.3	13.1	12.5
				Middle	6	26.2 26.2	26.2	7.9 7.9	7.9	28.8 28.8	28.8	76.5 77.5	77.0	5.3 5.3	5.3		19.0 19.5	19.3		11.3 10.3	10.8	
				Bottom	11	25.5 25.5	25.5	8.0 8.0	8.0	31.1 31.1	31.1	72.2 71.8	72.0	5.0 4.9	5.0	23.7 24.1	23.9	13.0 14.0		13.5		

Remarks: *DA: Depth-Averaged

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

Water Quality Monitoring Results at CS1 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)			
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	
21-Aug-14	Fine	Calm	16:33	Surface	1	30.0	30.1	7.5	7.5	10.0	10.0	84.9	85.4	6.1	6.1	5.6	7.4	7.3	17.1	5.0	4.9	19.3	
						30.1		7.5		10.0		85.8		6.1			7.1						
				Middle	6	26.1	26.0	7.6	7.6	27.3	28.3	73.6	73.6	5.1	5.1	11.8	12.5	8.5		9.2			
		25.9		7.6		29.3		73.6		5.1		5.1			13.2		42.7	43.9					
		25.4	25.4	7.6	7.6	31.5	31.6	72.1	72.4	5.0	5.0	5.0	5.0	33.1	31.5	29.8							
		25.4		7.6		31.6		72.6		5.0		5.0											
23-Aug-14	Fine	Calm	17:40	Surface	1	25.6	25.5	7.9	8.0	33.2	33.2	124.9	124.5	8.5	8.5	7.4	11.2	11.3	13.1	2.5	2.6	2.5	
						25.4		8.0		33.2		124.1		8.4			11.4			2.7			
				Middle	5	25.4	25.4	7.9	7.9	33.4	33.4	91.7	91.3	6.2	6.2	12.5	12.6	3.1		2.6			
		25.3		7.9		33.4		90.9		6.2		6.2			12.7		2.1	2.6					
		25.4	25.4	7.9	7.9	33.4	33.4	79.6	78.3	5.4	5.3	5.3	5.3	15.2	15.3	2.7	2.3						
		25.4		7.9		33.3		77.0		5.2		5.3			15.3		1.8	2.3					
25-Aug-14	Fine	Moderate	18:25	Surface	1	25.5	25.8	7.8	7.8	29.6	29.7	80.5	84.4	5.6	5.9	5.9	11.1	11.2	7.8	4.2	3.5	3.3	
						26.0		7.8		29.7		88.3		6.1			11.3			2.7			
				Middle	5	25.6	25.9	7.8	7.8	29.6	29.7	80.3	83.1	5.6	5.8	5.4	5.3	3.1		3.3			
		26.1		7.8		29.7		85.9		5.9		5.8			5.2		3.5	3.3					
		26.1	26.1	7.8	7.8	29.7	29.7	80.9	82.5	5.5	5.7	5.7	5.7	7.6	7.0	6.4	7.0	3.6	3.0				
		26.0		7.8		29.7		84.1		5.8		5.7			6.4		2.4	3.0					
27-Aug-14	Fine	Moderate	07:38	Surface	1	27.3	27.3	7.6	7.6	27.3	27.4	87.8	87.4	6.0	6.0	5.6	7.3	7.3	9.1	6.4	6.6	6.6	
						27.2		7.6		27.4		87.0		5.9			6.0			7.3			6.8
				Middle	5.5	26.5	26.5	7.6	7.6	30.0	30.0	75.2	74.8	5.1	5.1	9.6	9.5	6.6		6.6			
		26.4		7.6		30.0		74.4		5.1		5.1			9.4		6.6	6.6					
		25.7	25.7	7.6	7.6	32.1	32.1	72.9	72.9	5.0	5.0	5.0	5.0	10.4	10.5	6.3	6.5						
		25.7		7.6		32.1		72.9		5.0		5.0			10.5		6.7	6.5					
29-Aug-14	Sunny	Moderate	08:40	Surface	1	27.9	27.6	7.6	7.7	20.4	21.9	99.3	97.8	7.0	6.9	6.6	5.8	6.1	17.3	5.0	4.3	5.3	
						27.3		7.7		23.3		96.2		6.7			6.9			6.4			3.5
				Middle	5.5	26.7	26.8	7.7	7.7	26.4	26.2	88.7	89.7	6.1	6.2	14.6	14.9	5.2		5.6			
		26.8		7.7		25.9		90.6		6.3		6.2			15.2		5.9	5.6					
		25.8	25.8	7.7	7.7	29.4	29.6	68.5	68.0	5.0	5.0	5.0	5.0	28.7	31.0	6.1	6.0						
		25.8		7.7		29.7		67.4		5.0		5.0			33.3		5.8	6.0					

Remarks: *DA: Depth-Averaged

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

Water Quality Monitoring Results at CS2 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity (NTU)			Suspended Solids (mg/L)			
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	
1-Aug-14	Sunny	Moderate	15:12	Surface	1	30.0 30.0	30.0	7.8 7.7	7.8	16.9 17.1	17.0	111.2 108.9	110.1	7.7 7.5	7.6	7.3	3.3 3.0	3.2	3.0	3.5 3.5	3.5	4.2	
				Middle	3	28.6 29.1	28.9	7.8 7.7	7.8	27.7 24.9	26.3	102.8 103.4	103.1	6.8 6.9	6.9		2.8 2.5	2.7		5.8 4.8			5.3
				Bottom	5	28.3 27.3	27.8	7.7 7.7	7.7	28.2 32.8	30.5	94.3 98.6	96.5	6.3 6.5	6.4		2.7 3.2	3.0		4.2 3.1			3.7
4-Aug-14	Fine	Moderate	17:09	Surface	1	28.8 28.7	28.8	7.9 7.9	7.9	10.8 10.9	10.9	88.6 87.7	88.2	6.5 6.4	6.5	5.8	2.9 3.1	3.0	8.1	5.4 5.5	5.5	3.2	
				Middle	4	24.8 25.0	24.9	7.6 7.6	7.6	26.0 24.3	25.2	70.9 70.3	70.6	5.1 5.1	5.1		5.8 6.0	5.9		2.1 1.9			2.0
				Bottom	7	23.8 23.8	23.8	7.6 7.6	7.6	30.5 30.5	30.5	69.3 70.3	69.8	4.9 5.0	5.0		15.5 15.2	15.4		1.8 2.4			2.1
6-Aug-14	Rainy	Calm	08:18	Surface	1	29.7 28.8	29.3	7.8 8.0	7.9	12.0 11.8	11.9	106.1 101.5	103.8	7.5 7.3	7.4	7.0	2.7 2.6	2.7	2.9	4.1 4.0	4.1	4.7	
				Middle	3.5	29.7 27.8	28.8	7.9 8.0	8.0	20.9 20.2	20.6	95.6 93.6	94.6	6.5 6.6	6.6		2.9 2.6	2.8		5.6 4.5			5.1
				Bottom	6	28.8 27.9	28.4	7.9 8.0	8.0	24.9 24.6	24.8	80.4 87.5	84.0	5.4 6.0	5.7		3.5 3.1	3.3		4.8 4.8			4.8
8-Aug-14	Sunny	Calm	10:18	Surface	1	29.1 29.3	29.2	8.0 8.2	8.1	13.5 13.4	13.5	78.0 79.2	78.6	5.6 5.6	5.6	5.8	3.8 3.7	3.8	4.0	2.9 2.9	2.9	2.8	
				Middle	3.5	27.5 27.3	27.4	8.0 8.1	8.1	23.9 24.5	24.2	84.9 84.7	84.8	5.9 5.9	5.9		3.1 3.5	3.3		3.4 3.2			3.3
				Bottom	6	25.5 25.6	25.6	8.0 8.0	8.0	30.8 30.8	30.8	71.5 70.6	71.1	4.9 4.9	4.9		5.3 4.5	4.9		1.9 2.6			2.3
11-Aug-14	Sunny	Moderate	13:05	Surface	1	28.3 28.3	28.3	7.9 7.8	7.9	22.4 22.4	22.4	94.9 93.3	94.1	6.5 6.4	6.5	6.5	7.9 9.1	8.5	15.0	4.0 4.6	4.3	5.1	
				Middle	3.5	27.2 27.4	27.3	7.6 7.6	7.6	25.6 24.1	24.9	92.0 92.4	92.2	6.3 6.4	6.4		14.6 13.7	14.2		5.8 5.8			5.8
				Bottom	6	26.1 26.3	26.2	7.5 7.4	7.5	28.0 27.8	27.9	99.5 97.9	98.7	6.9 6.8	6.9		21.4 23.4	22.4		6.0 4.5			5.3
13-Aug-14	Rainy	Moderate	13:17	Surface	1	24.5 24.5	24.5	7.7 7.6	7.7	26.7 26.6	26.7	75.6 77.1	76.4	5.4 5.5	5.5	5.4	1.6 1.5	1.6	3.4	5.8 9.6	7.7	8.2	
				Middle	4	24.2 24.2	24.2	7.7 7.7	7.7	32.5 32.5	32.5	74.4 78.1	76.3	5.2 5.4	5.3		4.2 3.9	4.1		8.8 8.7			8.8
				Bottom	7	24.1 24.2	24.2	7.7 7.7	7.7	33.4 33.2	33.3	73.0 78.1	75.6	5.1 5.4	5.3		4.3 4.7	4.5		8.7 7.2			8.0
15-Aug-14	Sunny	Calm	14:40	Surface	1	28.5 28.6	28.6	7.8 7.8	7.8	22.5 22.5	22.5	91.6 90.6	91.1	6.3 6.2	6.3	5.6	5.3 5.4	5.4	7.4	4.8 7.4	6.1	7.3	
				Middle	3.5	26.8 26.8	26.8	7.6 7.6	7.6	26.6 26.7	26.7	71.3 71.0	71.2	4.9 4.9	4.9		8.2 8.0	8.1		8.4 9.6			9.0
				Bottom	6	26.1 26.0	26.1	7.5 7.5	7.5	29.5 29.8	29.7	70.3 71.3	70.8	4.8 4.9	4.9		8.4 9.1	8.8		6.8 6.7			6.8
19-Aug-14	Rainy	Moderate	08:06	Surface	1	29.5 29.5	29.5	8.2 8.2	8.2	13.5 13.6	13.6	102.9 102.7	102.8	7.3 7.3	7.3	7.1	1.9 1.9	1.9	2.4	7.3 9.0	8.2	8.5	
				Middle	3.5	29.4 29.4	29.4	8.1 8.1	8.1	15.3 15.7	15.5	98.8 97.6	98.2	6.9 6.8	6.9		1.8 1.5	1.7		5.4 11.7			8.6
				Bottom	6	26.2 26.2	26.2	8.2 8.2	8.2	31.1 31.5	31.3	76.5 75.9	76.2	5.2 5.1	5.2		3.6 3.3	3.5		9.0 8.3			8.7

Remarks: *DA: Depth-Averaged

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

Water Quality Monitoring Results at CS2 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)			
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	
21-Aug-14	Sunny	Calm	10:05	Surface	1	28.8	28.8	7.8	7.8	13.2	13.2	96.0	95.6	6.9	6.9	6.4	2.4	2.6	3.2	3.7	5.8	6.7	
						28.8		7.8		13.2		95.1		6.8			2.7			7.8			5.8
				Middle	3	28.0	28.0	7.7	7.7	19.0	19.3	80.7	82.1	5.7	5.8		1.8	1.9		13.0	9.4		
		27.9		7.7		19.5		83.4		5.9		5.0	5.0	5.0	5.0	5.0	5.0	4.6	4.8				
		25.6	25.6	7.8	7.8	33.4	33.3	74.4	74.3	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.9	4.8				
23-Aug-14	Sunny	Calm	11:04	Surface	1	26.7	26.7	8.0	8.0	33.6	33.6	96.6	97.5	6.4	6.5	6.4	3.2	3.2	6.1	3.4	2.8	2.9	
						26.7		8.0		33.6		98.3		6.5			3.2			2.2			2.8
				Middle	3.5	26.5	26.5	7.8	7.8	34.0	34.0	92.6	93.1	6.2	6.2		2.6	2.7		2.4	2.5		
		26.5		7.8		34.0		93.5		6.2		2.8		2.5	2.5	2.5	2.5						
		25.8	25.8	7.8	7.8	34.0	34.0	85.0	84.7	5.7	5.7	5.7	5.7	13.1	12.3	2.7	3.3						
		25.8		7.8		34.0		84.3		5.7		5.7		11.4	12.3	3.9	3.3						
25-Aug-14	Sunny	Moderate	12:50	Surface	1	27.4	27.4	7.6	7.6	17.2	17.3	93.0	92.0	6.7	6.6	6.2	1.6	1.7	8.5	3.4	3.5	3.2	
						27.3		7.5		17.4		90.9		6.5			1.7			3.6			3.5
				Middle	3.5	25.9	26.0	7.7	7.7	23.0	22.8	82.6	81.4	5.9	5.8		4.8	4.5		3.8	3.0		
		26.1		7.7		22.5		80.2		5.7		4.2		2.2	3.0	2.2	3.0						
		24.1	24.2	7.8	7.8	31.4	31.2	77.4	78.5	5.4	5.5	5.5	5.5	18.0	19.4	3.8	3.2						
		24.2		7.8		31.0		79.6		5.6		5.5		20.7	19.4	2.5	3.2						
27-Aug-14	Fine	Moderate	12:28	Surface	1	26.3	26.3	7.7	7.7	23.5	23.5	98.3	98.6	7.0	7.0	6.4	9.8	9.8	20.6	5.8	5.7	5.8	
						26.3		7.7		23.5		98.9		7.0			9.7			5.6			5.7
				Middle	3.5	24.8	24.8	7.6	7.6	28.6	28.6	81.9	81.0	5.8	5.7		18.7	19.4		5.0	5.4		
		24.8		7.6		28.5		80.0		5.6		20.1		5.7	5.4	5.0	5.4						
		24.4	24.4	7.6	7.6	30.4	30.4	75.2	74.2	5.3	5.3	5.3	5.3	30.9	32.7	6.9	6.2						
		24.3		7.6		30.3		73.1		5.2		5.3		34.4	32.7	5.4	6.2						
29-Aug-14	Sunny	Moderate	14:05	Surface	1	28.4	28.4	7.5	7.5	24.2	24.3	112.0	110.3	7.6	7.5	6.8	7.9	8.1	15.8	4.3	4.2	4.8	
						28.4		7.5		24.3		108.6		7.4			8.3			4.1			4.2
				Middle	3.5	27.1	27.1	7.5	7.5	28.7	28.8	90.6	89.6	6.1	6.1		13.8	15.1		6.2	5.4		
		27.1		7.5		28.8		88.5		6.0		6.1		16.3		4.6	5.4						
		26.4	26.4	7.5	7.5	31.3	31.4	67.3	66.6	5.0	5.0	5.0	5.0	23.6	24.1	5.3	4.7						
		26.4		7.5		31.4		65.9		5.0		5.0		24.5	24.1	4.1	4.7						

Remarks: *DA: Depth-Averaged

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

Water Quality Monitoring Results at CS2 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Aug-14	Sunny	Moderate	09:13	Surface	1	29.4 29.3	29.4	7.8 7.8	7.8	16.8 17.3	17.1	110.3 107.8	109.1	7.7 7.5	7.6	7.3	3.6 3.2	3.4	3.1	8.2 7.2	7.7	6.5
				Middle	3.5	29.2 29.2	29.2	7.8 7.7	7.8	18.4 18.4	18.4	98.2 99.5	98.9	6.8 6.9	6.9		3.0 2.6	2.8		4.7 8.5	6.6	
				Bottom	6	29.2 29.1	29.2	7.6 7.6	7.6	18.9 20.6	19.8	89.6 94.0	91.8	6.2 6.4	6.3		2.8 3.4	3.1		3.4 6.8	5.1	
4-Aug-14	Sunny	Moderate	11:37	Surface	1	27.8 27.8	27.8	7.9 7.9	7.9	11.5 11.6	11.6	92.8 92.5	92.7	6.8 6.8	6.8	6.8	5.1 4.9	5.0	5.4	3.2 3.1	3.2	3.1
				Middle	4	27.2 27.2	27.2	7.8 7.8	7.8	14.1 14.2	14.2	91.0 90.5	90.8	6.7 6.6	6.7		4.8 4.0	4.4		3.7 2.2	3.0	
				Bottom	7	24.5 24.4	24.5	7.7 7.7	7.7	28.1 28.3	28.2	67.9 69.9	68.9	4.8 5.0	4.9		6.7 6.8	6.8		3.3 2.6	3.0	
6-Aug-14	Rainy	Calm	15:30	Surface	1	28.3 28.8	28.6	8.0 8.0	8.0	20.2 20.4	20.3	87.6 89.8	88.7	6.1 6.2	6.2	6.6	1.4 1.4	1.4	1.5	4.3 3.8	4.1	4.3
				Middle	3.5	28.0 28.9	28.5	8.0 8.0	8.0	20.9 20.4	20.7	104.6 92.5	98.6	7.3 6.4	6.9		1.2 1.2	1.2		4.5 3.9	4.2	
				Bottom	6	28.7 28.9	28.8	8.0 8.0	8.0	20.5 21.9	21.2	88.2 93.4	90.8	6.1 6.4	6.3		1.9 1.9	1.9		5.0 4.3	4.7	
8-Aug-14	Sunny	Rough	16:30	Surface	1	25.4 25.7	25.6	8.1 8.1	8.1	31.7 31.4	31.6	80.2 81.0	80.6	5.5 5.5	5.5	5.6	13.3 13.2	13.3	11.2	4.7 4.9	4.8	4.7
				Middle	3.5	28.9 29.7	29.3	8.2 8.0	8.1	17.0 16.7	16.9	77.9 85.0	81.5	5.5 5.9	5.7		11.3 10.5	10.9		5.1 3.9	4.5	
				Bottom	6	26.4 29.3	27.9	8.1 8.0	8.1	29.1 28.7	28.9	73.8 77.8	75.8	5.1 5.1	5.1		9.2 9.4	9.3		5.0 4.4	4.7	
11-Aug-14	Fine	Moderate	18:32	Surface	1	27.7 27.8	27.8	7.7 7.7	7.7	18.9 18.7	18.8	104.7 101.9	103.3	7.4 7.2	7.3	6.5	8.2 7.7	8.0	15.4	4.5 5.5	5.0	4.2
				Middle	4	26.9 27.0	27.0	7.7 7.7	7.7	22.0 22.0	22.0	79.0 79.0	79.0	5.6 5.6	5.6		14.2 15.1	14.7		3.6 3.2	3.4	
				Bottom	7	25.7 25.9	25.8	7.7 7.7	7.7	26.8 27.2	27.0	71.9 72.7	72.3	5.0 5.1	5.1		23.0 24.2	23.6		5.2 3.2	4.2	
13-Aug-14	Rainy	Moderate	08:04	Surface	1	24.4 24.4	24.4	7.6 7.6	7.6	23.1 23.3	23.2	76.0 75.2	75.6	5.6 5.5	5.6	5.4	2.7 2.5	2.6	4.6	6.8 8.7	7.8	8.4
				Middle	4	24.4 24.4	24.4	7.7 7.7	7.7	27.9 26.7	27.3	73.0 71.6	72.3	5.2 5.1	5.2		2.3 2.5	2.4		8.0 8.5	8.3	
				Bottom	7	24.2 24.2	24.2	7.8 7.7	7.8	32.0 31.9	32.0	71.5 73.3	72.4	5.0 5.1	5.1		8.8 8.6	8.7		10.6 7.3	9.0	
15-Aug-14	Sunny	Calm	09:44	Surface	1	27.9 27.9	27.9	8.0 8.0	8.0	20.9 20.9	20.9	86.9 86.6	86.8	6.1 6.1	6.1	5.7	4.7 4.7	4.7	19.8	6.1 6.9	6.5	5.6
				Middle	3.5	26.9 26.8	26.9	7.9 7.9	7.9	25.8 26.0	25.9	75.2 75.5	75.4	5.2 5.2	5.2		23.8 24.3	24.1		5.4 4.8	5.1	
				Bottom	6	26.0 26.0	26.0	7.7 7.6	7.7	30.0 29.9	30.0	71.2 70.9	71.1	4.9 4.9	4.9		30.1 30.8	30.5		6.8 3.8	5.3	
19-Aug-14	Rainy	Moderate	14:39	Surface	1	29.9 29.9	29.9	8.2 8.2	8.2	11.5 11.6	11.6	98.8 97.1	98.0	7.0 6.9	7.0	7.3	7.3 6.2	6.8	7.3	9.7 9.0	9.4	8.9
				Middle	4	30.0 30.0	30.0	8.3 8.2	8.3	12.8 12.6	12.7	106.2 104.9	105.6	7.5 7.4	7.5		5.2 4.8	5.0		10.7 9.7	10.2	
				Bottom	7	27.4 27.2	27.3	8.3 8.3	8.3	28.0 28.8	28.4	87.0 86.0	86.5	5.9 5.8	5.9		10.6 9.5	10.1		7.0 7.3	7.2	

Remarks: *DA: Depth-Averaged

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

Water Quality Monitoring Results at CS2 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
21-Aug-14	Fine	Calm	16:11	Surface	1	29.6	29.6	7.5	7.5	12.0	12.0	79.9	79.8	5.7	5.7	5.6	6.2	6.2	6.8	9.4	8.9	7.8
						29.6		7.4		11.9		79.7		5.7			6.1					
				Middle	3	29.4	29.4	7.4	7.4	12.9	13.0	76.3	76.4	5.4	5.4	6.9	7.0	7.0		7.0	7.0	
		29.4		7.4		13.0		76.5		5.4		5.4		7.0		7.3		6.8		7.0		
		29.2	29.3	7.4	7.4	13.3	13.3	74.6	74.5	5.3	5.3	5.3	5.3	7.3	7.3	7.3	7.3	7.8	7.3	7.6		
		29.3		7.4		13.2		74.3		5.3		5.3		7.2		7.3		7.3		7.6		
23-Aug-14	Fine	Calm	17:02	Surface	1	27.1	27.1	7.9	8.0	33.4	33.5	117.6	117.7	7.8	7.8	7.6	3.8	3.8	4.1	2.1	2.2	2.6
						27.1		8.0		33.5		117.7		7.8			3.7					
				Middle	3.5	26.6	26.6	7.9	7.9	33.9	33.9	109.3	110.1	7.3	7.4	3.1	3.2	3.2		2.5	3.0	
		26.6		7.9		33.9		110.9		7.4		7.4	3.2		3.2	3.5	3.0					
		26.1	26.1	7.7	7.7	34.0	34.1	103.1	103.6	6.9	7.0	7.0	5.1	5.2	5.2	5.1	5.2	2.4	2.6			
		26.1		7.7		34.1		104.0		7.0		7.0	5.2		5.2	5.2	2.7	2.6				
25-Aug-14	Fine	Moderate	17:54	Surface	1	27.2	27.2	7.5	7.5	18.0	18.0	98.4	98.8	7.1	7.1	6.5	3.5	3.5	7.7	4.9	5.6	5.5
						27.1		7.5		18.0		99.1		7.1			7.1					
				Middle	4	26.4	26.3	7.5	7.5	21.8	22.7	83.6	82.8	6.0	5.9	4.1	4.4	4.4		4.7	4.8	
		26.1		7.5		23.5		81.9		5.8		5.9	4.6		4.4	4.8	4.8					
		24.3	24.4	7.5	7.5	30.6	30.4	77.7	77.0	5.5	5.5	5.5	13.8	15.1	15.1	7.8	6.2					
		24.4		7.5		30.1		76.2		5.4		5.5	16.4		15.1	4.6	6.2					
27-Aug-14	Fine	Moderate	07:12	Surface	1	27.1	27.1	7.5	7.5	23.0	23.1	98.9	97.4	6.9	6.8	6.6	10.4	10.7	22.1	10.7	9.6	7.6
						27.0		7.5		23.1		95.9		6.7			6.8					
				Middle	3.5	25.8	25.8	7.5	7.5	27.3	27.4	89.9	89.1	6.3	6.3	19.2	21.1	21.1		9.2	8.9	
		25.8		7.5		27.4		88.2		6.2		6.3	22.9		21.1	8.5	8.9					
		25.2	25.2	7.5	7.5	29.8	29.9	73.2	72.6	5.1	5.1	5.1	33.9	34.6	34.6	4.0	4.4					
		25.1		7.5		29.9		72.0		5.0		5.1	35.2		34.6	4.8	4.4					
29-Aug-14	Sunny	Moderate	08:08	Surface	1	27.6	27.6	7.5	7.5	24.7	24.8	95.4	95.7	6.6	6.6	6.1	7.5	7.5	14.8	3.2	3.2	4.1
						27.6		7.5		24.8		96.0		6.6			6.6					
				Middle	3.5	26.0	26.1	7.5	7.5	30.1	30.1	74.8	73.7	5.6	5.6	13.5	14.0	14.0		4.7	4.0	
		26.1		7.5		30.0		72.6		5.5		5.6	14.4		14.0	3.2	4.0					
		25.6	25.6	7.5	7.5	31.9	31.9	66.5	65.3	5.0	5.0	5.0	21.6	22.8	22.8	6.0	5.1					
		25.5		7.5		31.9		64.1		4.9		5.0	23.9		22.8	4.2	5.1					

Remarks: *DA: Depth-Averaged

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

Water Quality Monitoring Results at IS1 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Aug-14	Sunny	Moderate	15:51	Surface	1	30.7	30.7	8.0	8.0	17.4	17.3	101.7	102.7	6.9	7.0	6.7	2.2	2.2	2.0	6.2	5.7	4.4
						30.7	30.7	8.0	8.0	17.2	17.3	103.6	103.6	7.0	7.0		2.2	2.2		5.2	5.2	
				Middle	5	28.8	28.9	8.1	8.1	24.9	24.9	93.4	94.8	6.3	6.4		2.3	2.2		4.1	4.3	
		28.9	28.9	8.1	8.1	24.8	24.9	96.1	94.8	6.5	6.4	2.1	2.2	4.4	4.3							
		27.7	27.6	8.1	8.1	33.8	33.9	77.4	75.8	5.1	5.0	5.0	5.0	1.6	1.6	3.7	3.2					
		27.5	27.6	8.1	8.1	33.9	33.9	74.2	75.8	4.9	5.0	5.0	5.0	1.6	1.6	2.6	3.2					
4-Aug-14	Fine	Moderate	18:12	Surface	1	28.3	28.3	8.0	8.0	12.2	12.2	78.1	78.9	5.7	5.8	5.7	1.3	1.4	2.6	6.2	5.2	4.3
						28.3	28.3	8.0	8.0	12.2	12.2	79.6	78.9	5.8	5.8		1.4	1.4		4.1	5.2	
				Middle	5	24.2	24.2	7.7	7.7	29.2	29.2	76.8	76.2	5.5	5.5		1.9	1.9		3.5	3.9	
		24.2	24.2	7.7	7.7	29.1	29.2	75.6	76.2	5.4	5.5	1.8	1.9	4.3	3.9							
		23.2	23.2	7.7	7.7	32.0	32.0	68.3	68.0	4.9	4.9	4.9	4.9	4.4	4.4	3.6	3.8					
		23.1	23.2	7.7	7.7	32.0	32.0	67.7	68.0	4.8	4.9	4.9	4.9	4.4	4.4	4.0	3.8					
6-Aug-14	Rainy	Calm	08:54	Surface	1	29.7	29.0	8.0	8.0	13.4	12.9	117.4	113.5	8.3	8.2	8.4	2.3	2.3	2.6	4.3	3.7	3.6
						28.2	29.0	7.9	8.0	12.3	12.9	109.6	113.5	8.0	8.2		2.3	2.3		3.0	3.7	
				Middle	5.5	29.7	29.0	8.0	8.0	21.2	21.3	125.6	124.9	8.5	8.6		2.5	2.7		3.5	3.9	
		28.3	29.0	7.9	8.0	21.4	21.3	124.2	124.9	8.6	8.6	2.9	2.7	4.3	3.9							
		29.7	29.2	8.0	8.0	25.0	25.4	100.1	98.9	6.6	6.6	6.6	6.6	2.6	2.7	3.5	3.3					
		28.7	29.2	7.9	8.0	25.7	25.4	97.6	98.9	6.5	6.6	6.6	6.6	2.8	2.7	3.1	3.3					
8-Aug-14	Sunny	Calm	10:54	Surface	1	25.6	25.8	8.0	8.1	30.1	29.9	71.2	69.4	4.9	4.8	5.2	3.9	3.7	3.9	2.8	4.0	3.6
						25.9	25.8	8.1	8.1	29.6	29.9	67.5	69.4	4.6	4.8		3.4	3.7		5.2	4.0	
				Middle	5.5	29.9	29.6	8.2	8.2	13.0	13.9	73.1	78.7	5.2	5.6		4.3	4.3		2.9	3.2	
		29.2	29.6	8.2	8.2	14.8	13.9	84.3	78.7	6.0	5.6	4.3	4.3	4.3	4.3	3.4	3.2					
		28.8	28.9	8.2	8.2	17.6	16.4	81.6	82.0	5.7	5.8	5.8	5.8	3.2	3.6	3.4	3.5					
		29.0	28.9	8.2	8.2	15.1	16.4	82.4	82.0	5.8	5.8	5.8	5.8	3.9	3.6	3.6	3.5					
11-Aug-14	Sunny	Moderate	13:56	Surface	1	28.1	28.4	7.9	7.6	20.5	19.4	115.6	113.8	8.1	8.0	6.6	8.6	9.2	17.0	17.0	15.5	20.4
						28.7	28.4	7.3	7.6	18.2	19.4	111.9	113.8	7.8	8.0		9.7	9.2		14.0	15.5	
				Middle	5	27.2	27.6	8.0	7.6	22.6	21.7	74.9	74.2	5.2	5.2		19.2	19.5		30.9	32.0	
		27.9	27.6	7.1	7.6	20.8	21.7	73.5	74.2	5.1	5.2	19.8	19.5	33.1	32.0							
		25.8	26.0	7.9	7.5	28.4	27.7	71.5	70.5	5.0	4.9	4.9	4.9	21.8	22.4	13.3	13.7					
		26.2	26.0	7.1	7.5	27.0	27.7	69.4	70.5	4.8	4.9	4.9	4.9	23.0	22.4	14.0	13.7					
13-Aug-14	Rainy	Moderate	14:09	Surface	1	24.3	24.4	7.7	7.7	29.3	29.3	75.6	76.3	5.4	5.4	5.4	2.2	2.1	3.0	11.8	11.1	8.8
						24.4	24.4	7.7	7.7	29.3	29.3	76.9	76.3	5.4	5.4		2.0	2.1		10.4	11.1	
				Middle	5.5	24.1	24.2	7.7	7.7	33.6	33.6	73.7	76.0	5.1	5.3		3.5	3.6		7.9	7.5	
		24.2	24.2	7.7	7.7	33.5	33.6	78.3	76.0	5.4	5.3	3.6	3.6	7.1	7.5							
		24.1	24.1	7.8	7.8	33.9	33.9	73.8	76.2	5.1	5.3	3.3	3.3	8.8	7.9							
		24.1	24.1	7.7	7.8	33.8	33.9	78.6	76.2	5.4	5.3	3.3	3.3	7.0	7.9							
15-Aug-14	Sunny	Calm	15:31	Surface	1	28.5	28.5	7.5	7.5	22.3	22.3	98.9	98.8	6.8	6.8	6.1	4.6	4.7	23.5	7.8	7.5	6.2
						28.5	28.5	7.5	7.5	22.3	22.3	98.6	98.8	6.8	6.8		4.7	4.7		7.2	7.5	
				Middle	5	26.4	26.5	7.6	7.6	28.3	28.2	78.2	78.4	5.4	5.4		7.5	7.3		5.4	4.7	
		26.5	26.5	7.6	7.6	28.1	28.2	78.5	78.4	5.4	5.4	7.0	7.3	4.0	4.7							
		25.8	25.8	7.6	7.6	30.7	30.7	71.4	71.3	4.9	4.9	4.9	4.9	6.6	6.4							
		25.8	25.8	7.6	7.6	30.7	30.7	71.2	71.3	4.9	4.9	4.9	4.9	58.6	58.4	6.2	6.4					
														58.1	58.4							
19-Aug-14	Rainy	Moderate	08:47	Surface	1	29.6	29.6	8.2	8.2	13.8	13.8	96.7	96.5	6.8	6.8	6.1	1.8	2.0	7.1	17.0	14.4	12.0
						29.6	29.6	8.2	8.2	13.8	13.8	96.2	96.5	6.8	6.8		2.1	2.0		11.7	14.4	
				Middle	5	29.5	29.5	8.1	8.1	14.2	14.2	76.2	75.3	5.4	5.3		1.8	1.8		10.3	10.5	
		29.5	29.5	8.1	8.1	14.1	14.2	74.3	75.3	5.2	5.3	1.8	1.8	10.7	10.5							
		26.7	26.8	8.1	8.2	29.5	29.5	81.3	80.5	5.5	5.5	5.5	5.5	16.9	17.5	10.3	11.0					
		26.8	26.8	8.2	8.2	29.4	29.5	79.6	80.5	5.4	5.5	5.5	5.5	18.1	17.5	11.7	11.0					

Remarks: *DA: Depth-Averaged
 **Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at IS1 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity (NTU)			Suspended Solids (mg/L)				
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*		
21-Aug-14	Sunny	Calm	10:46	Surface	1	28.5	28.5	7.8	7.8	17.0	17.0	91.8	91.6	6.5	6.5	6.0	1.1	1.2	9.2	4.4	5.0	4.1		
						28.4		7.8		17.0		91.4		6.5			1.2			5.5			5.5	
				Middle	4.5	27.2	27.4	7.8	7.8	24.4	23.2	76.0	78.4	5.3	5.5		2.7	2.8		3.9	3.6			
		27.6		7.8		21.9		80.8		5.6		2.9		3.3		3.6								
		25.9	26.0	7.8	7.8	30.6	30.5	72.7	71.5	5.0	4.9	4.9	24.5	23.6	4.0	3.8								
		26.0		7.8		30.4		70.2		4.8		4.9	22.6		3.5	3.8								
23-Aug-14	Sunny	Calm	11:50	Surface	1	26.8	26.9	8.1	8.1	33.6	33.6	87.7	88.6	5.8	5.9	5.7	3.3	3.1	11.4	2.2	3.3	2.8		
						26.9		8.1		33.6		89.5		5.9			2.8			4.4			4.4	
				Middle	4.5	26.5	26.5	8.0	8.0	33.9	34.0	80.2	81.0	5.3	5.4		12.8	12.7		2.9	2.7			
		26.5		8.0		34.0		81.8		5.4		12.5		2.5	2.7									
		25.9	25.9	7.8	7.8	34.1	34.1	74.7	74.3	5.0	5.0	5.0	17.3	18.3	2.3	2.4								
		25.9		7.8		34.1		73.8		5.0		5.0	19.2		2.5	2.4								
25-Aug-14	Sunny	Moderate	13:36	Surface	1	27.6	27.5	7.9	7.9	17.6	18.1	84.7	84.4	6.1	6.1	5.6	5.2	5.7	13.0	8.8	7.9	6.4		
						27.4		7.8		18.6		84.0		6.0			6.1			7.0			7.0	
				Middle	5	25.6	25.5	7.9	7.9	25.8	26.6	70.9	70.5	5.0	5.0		9.6	9.6		5.1	4.8			
		25.3		7.8		27.3		70.0		4.9		9.6		4.5	4.8									
		24.5	24.5	7.9	7.9	30.1	30.1	79.1	78.3	5.6	5.5	5.5	24.7	23.7	5.8	6.5								
		24.5		7.9		30.1		77.4		5.4		5.5	22.6		7.2	6.5								
27-Aug-14	Fine	Moderate	13:20	Surface	1	26.9	26.9	7.7	7.7	20.5	20.6	91.4	91.7	6.5	6.5	5.9	3.1	3.2	9.7	8.8	7.5	6.2		
						26.9		7.7		20.7		91.9		6.5			3.2			6.2			6.2	
				Middle	5	23.9	23.9	7.6	7.6	32.0	32.2	76.0	75.8	5.3	5.3		9.2	10.1		6.0	6.0			
		23.8		7.6		32.3		75.6		5.3		11.0		5.9	6.0									
		23.5	23.5	7.6	7.6	33.1	33.2	68.5	69.0	4.8	4.9	4.9	14.8	15.7	4.8	5.0								
		23.5		7.5		33.2		69.5		4.9		4.9	16.5		5.2	5.0								
29-Aug-14	Sunny	Moderate	15:04	Surface	1	29.1	29.1	7.7	7.7	21.3	21.4	108.1	107.9	7.4	7.4	6.4	3.7	3.7	7.0	5.6	6.2	6.5		
						29.1		7.7		21.4		107.7		7.4			3.7			6.8			6.2	
				Middle	5	27.0	26.7	7.6	7.6	30.0	31.0	64.9	63.7	5.4	5.3		6.9	7.2		3.9	5.5			
		26.4		7.6		32.0		62.4		5.2		7.4		7.0	5.5									
		25.6	25.6	7.6	7.6	34.7	34.8	71.0	70.8	5.3	5.3	5.3	9.3	10.1	8.0	7.7								
		25.5		7.6		34.8		70.5		5.2		5.3	10.8		7.4	7.7								

Remarks: *DA: Depth-Averaged

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

Water Quality Monitoring Results at IS1 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Aug-14	Sunny	Moderate	09:51	Surface	1	29.3 28.9	29.1	8.1 8.1	8.1	22.1 22.8	22.5	101.4 103.2	102.3	6.9 7.0	7.0	6.7	2.2 2.2	2.2	2.0	8.3 8.8	8.6	8.3
				Middle	5.5	29.2 28.9	29.1	8.1 8.1	8.1	19.4 22.7	21.1	89.8 93.9	91.9	6.2 6.4	6.3		2.4 2.1	2.3		7.0 7.3	8.2	
				Bottom	10	28.9 28.9	28.9	8.2 8.2	8.2	22.9 23.0	23.0	75.9 75.3	75.6	5.2 5.1	5.2		1.5 1.5	1.5		7.4 9.0	8.2	
4-Aug-14	Sunny	Moderate	12:38	Surface	1	27.9 27.9	27.9	7.9 7.9	7.9	11.8 11.8	11.8	77.4 78.0	77.7	5.7 5.7	5.7	5.6	4.0 4.3	4.2	11.5	2.5 2.8	2.7	6.6
				Middle	5	23.5 23.4	23.5	7.7 7.7	7.7	31.2 31.3	31.3	76.8 76.9	76.9	5.5 5.5	5.5		10.8 11.6	11.2		7.0 4.3	5.7	
				Bottom	9	23.3 23.3	23.3	7.7 7.7	7.7	31.6 31.6	31.6	68.0 69.3	68.7	4.8 4.9	4.9		18.9 19.4	19.2		11.0 11.6	11.3	
6-Aug-14	Rainy	Calm	16:01	Surface	1	29.6 29.6	29.6	8.0 8.0	8.0	13.3 15.1	14.2	100.5 111.1	105.8	7.1 7.8	7.5	7.6	2.9 2.7	2.8	2.7	3.7 4.0	3.9	3.9
				Middle	5	29.6 29.5	29.6	8.0 8.0	8.0	13.8 14.9	14.4	106.8 109.7	108.3	7.5 7.7	7.6		2.9 2.5	2.7		3.5 3.8	3.7	
				Bottom	9	29.6 29.5	29.6	8.0 8.0	8.0	13.0 14.9	14.0	108.9 111.3	110.1	7.7 7.8	7.8		2.9 2.4	2.7		4.0 3.9	4.0	
8-Aug-14	Sunny	Rough	17:01	Surface	1	27.2 27.1	27.2	8.0 8.0	8.0	25.5 26.0	25.8	78.8 85.0	81.9	5.4 5.9	5.7	5.5	10.2 10.1	10.2	7.8	6.4 7.4	6.9	5.8
				Middle	5	29.6 29.6	29.6	8.1 8.2	8.2	18.0 17.3	17.7	74.1 76.0	75.1	5.1 5.3	5.2		7.5 6.7	7.1		6.0 4.9	5.5	
				Bottom	9	29.0 29.3	29.2	8.1 8.1	8.1	21.0 19.9	20.5	73.4 79.1	76.3	5.0 5.4	5.2		6.0 6.1	6.1		5.9 3.9	4.9	
11-Aug-14	Fine	Moderate	19:31	Surface	1	29.4 29.2	29.3	7.4 7.5	7.5	15.1 15.1	15.1	91.8 89.8	90.8	6.5 6.3	6.4	6.2	9.9 10.7	10.3	16.9	18.1 17.4	17.8	13.3
				Middle	5	27.3 26.2	26.8	7.4 7.4	7.4	21.4 25.7	23.6	82.7 84.1	83.4	5.8 5.9	5.9		15.8 15.7	15.8		18.0 18.3	18.2	
				Bottom	9	25.7 25.8	25.8	7.5 7.5	7.5	27.6 27.5	27.6	69.1 69.4	69.3	4.8 4.8	4.8		23.5 25.9	24.7		3.7 3.9	3.8	
13-Aug-14	Rainy	Moderate	08:50	Surface	1	24.4 24.4	24.4	7.6 7.6	7.6	25.2 25.3	25.3	83.0 84.6	83.8	6.0 6.1	6.1	6.1	1.6 1.6	1.6	4.8	8.7 7.2	8.0	8.9
				Middle	5	24.2 24.3	24.3	7.7 7.7	7.7	32.1 31.9	32.0	84.3 87.5	85.9	5.9 6.1	6.0		4.3 4.3	4.3		11.2 11.3	11.3	
				Bottom	9	24.2 24.2	24.2	7.7 7.7	7.7	32.4 32.4	32.4	83.4 72.3	77.9	5.8 5.0	5.4		8.4 8.6	8.5		8.0 6.9	7.5	
15-Aug-14	Sunny	Calm	10:34	Surface	1	27.1 27.1	27.1	7.7 7.7	7.7	24.0 24.1	24.1	102.4 101.8	102.1	7.1 7.1	7.1	6.6	6.2 6.1	6.2	20.0	7.1 6.8	7.0	8.8
				Middle	5	25.8 25.8	25.8	7.7 7.7	7.7	30.3 30.2	30.3	86.4 87.9	87.2	5.9 6.0	6.0		22.5 20.0	21.3		7.0 6.7	6.9	
				Bottom	9	25.7 25.7	25.7	7.6 7.6	7.6	31.0 30.9	31.0	78.8 78.8	78.8	5.4 5.4	5.4		32.0 32.7	32.4		14.4 10.7	12.6	
19-Aug-14	Rainy	Moderate	15:26	Surface	1	29.8 29.8	29.8	8.1 8.1	8.1	11.8 11.7	11.8	101.8 103.4	102.6	7.2 7.4	7.3	7.0	4.9 4.6	4.8	9.2	7.4 6.6	7.0	5.6
				Middle	5	29.0 29.1	29.1	8.0 8.0	8.0	16.6 17.2	16.9	97.1 94.6	95.9	6.8 6.6	6.7		4.7 4.7	4.7		7.4 5.6	6.5	
				Bottom	9	26.1 26.0	26.1	8.0 8.0	8.0	32.2 32.3	32.3	81.5 81.2	81.4	5.5 5.5	5.5		17.1 18.9	18.0		2.6 3.8	3.2	

Remarks: *DA: Depth-Averaged

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

Water Quality Monitoring Results at IS1 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
21-Aug-14	Fine	Calm	16:54	Surface	1	30.6	30.6	7.5	7.5	10.3	10.3	83.8	83.8	5.9	5.9	5.7	5.2	5.2	6.7	6.8	7.0	6.4
						30.6		7.5		10.3		83.8		5.9			5.2					
				Middle	4.5	28.9	28.9	7.5	7.5	15.9	16.0	78.2	78.2	5.5	5.5	4.1	4.1	4.1		4.1	4.8	
		28.9		7.5		16.0		78.2		5.5		5.5		4.1		10.5	10.7	6.2	6.5			
		26.3	26.3	7.5	7.5	30.1	30.2	76.5	74.5	5.2	5.1	5.1	5.1	5.1	5.1	10.5	10.8	6.2	6.7	6.5		
		26.2		7.5		30.3		72.5		4.9	5.1	5.1	5.1	5.1	5.1	10.5	10.8	6.7	6.5			
23-Aug-14	Fine	Calm	17:44	Surface	1	27.1	27.1	8.0	8.0	33.6	33.7	93.4	93.1	6.2	6.2	6.1	3.5	3.6	4.8	1.4	2.5	2.0
						27.1		8.0		33.7		92.7		6.1			3.6	3.6		3.5	3.5	
				Middle	3.5	26.7	26.7	7.9	7.9	33.8	33.8	87.9	88.3	5.8	5.9	3.6	3.6	3.5		3.6	1.2	
		26.6		7.9		33.8		88.7		5.9	5.9	5.9	5.9	5.9	5.9	3.5	3.6	2.7	2.0			
		26.1	26.1	7.7	7.7	34.1	34.1	78.2	77.2	5.2	5.2	5.2	5.2	5.2	5.2	6.8	7.1	1.7	1.4			
		26.1		7.7		34.1		76.1		5.1	5.2	5.2	5.2	5.2	5.2	7.3	7.1	1.1	1.4			
25-Aug-14	Fine	Moderate	18:43	Surface	1	27.7	27.7	7.8	7.8	18.1	18.2	83.3	82.9	5.9	5.9	6.0	3.6	3.3	7.9	5.0	4.8	6.3
						27.7		7.8		18.2		82.5		5.9			3.0	3.3		4.6	4.8	
				Middle	5	26.0	26.1	7.8	7.8	23.7	24.2	84.3	84.5	6.0	6.0	4.9	4.9	4.9		4.9	7.4	
		26.2		7.8		24.7		84.6		6.0	6.0	6.0	6.0	6.0	6.0	4.9	4.9	5.4	6.4			
		25.0	24.9	7.8	7.8	29.2	29.3	74.8	74.1	5.2	5.2	5.2	5.2	5.2	5.2	14.8	15.6	7.2	7.6			
		24.7		7.8		29.4		73.3		5.2	5.2	5.2	5.2	5.2	5.2	16.3	15.6	8.0	7.6			
27-Aug-14	Fine	Moderate	07:56	Surface	1	27.7	27.7	7.7	7.7	20.3	20.3	95.4	95.2	6.7	6.7	6.1	4.0	4.1	9.0	4.5	4.3	4.7
						27.7		7.7		20.3		95.0		6.7			4.1	4.1		4.0	4.3	
				Middle	4.5	25.7	25.4	7.6	7.6	28.6	29.5	79.2	78.2	5.5	5.5	8.9	9.3	5.0		4.9		
		25.1		7.6		30.4		77.1		5.4	5.5	5.4	5.5	5.5	5.5	9.6	9.3	4.8	4.9			
		24.4	24.4	7.6	7.6	33.0	33.1	76.5	76.3	5.3	5.3	5.3	5.3	5.3	5.3	12.5	13.6	4.7	4.8			
		24.3		7.6		33.1		76.1		5.3	5.3	5.3	5.3	5.3	5.3	14.7	13.6	4.9	4.8			
29-Aug-14	Sunny	Moderate	08:58	Surface	1	28.2	28.2	7.7	7.7	21.5	21.6	103.5	103.8	7.2	7.2	6.7	2.8	3.1	7.4	0.6	0.8	2.7
						28.2		7.7		21.7		104.0		7.2			3.3	3.1		1.0	0.8	
				Middle	4.5	26.1	26.1	7.6	7.6	33.7	33.9	75.7	75.6	6.1	6.1	7.1	7.7	7.0		4.6		
		26.0		7.6		34.0		75.4		6.1	6.1	6.1	6.1	6.1	6.1	8.3	7.7	2.1	4.6			
		25.7	25.7	7.6	7.6	34.9	34.9	63.1	62.9	5.0	5.0	5.0	5.0	5.0	5.0	10.9	11.5	3.0	2.7			
		25.7		7.6		34.9		62.7		5.0	5.0	5.0	5.0	5.0	5.0	12.0	11.5	2.4	2.7			

Remarks: *DA: Depth-Averaged

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

Water Quality Monitoring Results at IS2 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Aug-14	Sunny	Moderate	15:58	Surface	1	29.7 29.2	29.5	8.0 8.0	8.0	23.7 21.4	22.6	92.9 87.5	90.2	6.2 6.0	6.1	5.7	4.9 4.7	4.8	3.6	3.6 3.7	3.7	3.8
				Middle	3	28.2 28.3	28.3	8.0 8.0	8.0	29.6 29.1	29.4	79.1 81.8	80.5	5.2 5.4	5.3		3.8 4.0	3.9		3.9 3.9		
				Bottom	5	27.7 27.6	27.7	8.0 8.0	8.0	33.5 33.0	33.3	77.4 76.1	76.8	5.1 5.0	5.1		1.9 2.0	2.0		3.6 4.1	3.9	
4-Aug-14	Fine	Moderate	18:22	Surface	1	28.3 28.2	28.3	8.1 8.1	8.1	11.8 11.9	11.9	79.2 79.8	79.5	5.8 5.8	5.8	5.5	2.0 2.1	2.1	3.1	3.4 3.2	3.3	4.4
				Middle	3	26.5 26.2	26.4	7.8 7.8	7.8	20.7 19.7	20.2	71.7 69.7	70.7	5.1 5.0	5.1		1.6 1.5	1.6		4.3 4.3		
				Bottom	5	23.5 23.5	23.5	7.7 7.7	7.7	31.3 31.3	31.3	70.6 70.3	70.5	5.0 5.0	5.0		5.4 5.8	5.6		5.2 6.2	5.7	
6-Aug-14	Rainy	Calm	09:01	Surface	1	28.8 26.8	27.8	8.0 8.0	8.0	20.7 20.6	20.7	94.7 90.9	92.8	6.5 6.5	6.5	6.6	1.6 1.7	1.7	1.8	3.7 4.3	4.0	4.2
				Middle	3.5	28.8 27.4	28.1	8.0 8.0	8.0	27.9 26.4	27.2	100.1 95.5	97.8	6.6 6.5	6.6		1.1 1.0	1.1		4.0 4.1	4.1	
				Bottom	6	26.3 27.9	27.1	8.0 8.0	8.0	30.8 30.3	30.6	84.7 86.8	85.8	5.7 5.8	5.8		2.6 2.5	2.6		3.6 5.5	4.6	
8-Aug-14	Sunny	Calm	11:01	Surface	1	26.0 27.4	26.7	8.1 8.1	8.1	27.5 26.2	26.9	65.1 80.3	72.7	4.5 5.5	5.0	5.3	5.2 5.1	5.2	4.6	4.1 3.8	4.0	3.7
				Middle	3.5	29.2 29.2	29.2	8.2 8.2	8.2	14.5 14.3	14.4	71.3 83.0	77.2	5.0 5.9	5.5		4.5 4.6	4.6		3.1 3.4	3.3	
				Bottom	6	29.2 28.9	29.1	8.2 8.2	8.2	15.9 16.7	16.3	78.8 82.4	80.6	5.5 5.8	5.7		3.9 4.0	4.0		2.7 5.0	3.9	
11-Aug-14	Sunny	Moderate	14:12	Surface	1	27.8 27.5	27.7	7.6 7.5	7.6	19.5 20.5	20.0	85.8 87.8	86.8	6.1 6.2	6.2	5.9	7.9 8.6	8.3	16.2	3.9 5.4	4.7	4.5
				Middle	3	26.6 26.5	26.6	7.6 7.5	7.6	25.6 25.8	25.7	79.1 79.1	79.1	5.5 5.5	5.5		16.1 14.7	15.4		4.9 5.7	5.3	
				Bottom	5	26.0 26.0	26.0	7.6 7.5	7.6	28.0 28.0	28.0	70.7 71.0	70.9	4.9 4.9	4.9		25.3 24.7	25.0		3.3 3.7	3.5	
13-Aug-14	Rainy	Moderate	14:15	Surface	1	24.3 24.3	24.3	7.7 7.7	7.7	30.6 30.5	30.6	74.8 75.3	75.1	5.3 5.3	5.3	5.3	2.3 2.7	2.5	4.0	8.3 10.9	9.6	7.7
				Middle	4	24.2 24.2	24.2	7.7 7.7	7.7	33.0 32.8	32.9	74.2 76.4	75.3	5.2 5.3	5.3		4.2 4.2	4.2		6.7 6.3	6.5	
				Bottom	7	24.2 24.2	24.2	7.7 7.7	7.7	33.3 33.3	33.3	72.8 77.3	75.1	5.1 5.4	5.3		5.4 5.2	5.3		6.6 7.6	7.1	
15-Aug-14	Sunny	Calm	15:38	Surface	1	28.4 28.3	28.4	7.6 7.6	7.6	22.6 22.6	22.6	93.7 93.6	93.7	6.4 6.4	6.4	5.9	5.4 5.4	5.4	9.1	6.8 6.2	6.5	6.5
				Middle	3	26.7 26.7	26.7	7.7 7.7	7.7	27.1 27.2	27.2	76.9 78.1	77.5	5.3 5.4	5.4		8.9 8.8	8.9		7.6 6.3	7.0	
				Bottom	5	26.0 26.0	26.0	7.7 7.7	7.7	29.7 29.7	29.7	70.4 70.3	70.4	4.8 4.8	4.8		12.9 13.0	13.0		5.6 6.3	6.0	
19-Aug-14	Rainy	Moderate	08:55	Surface	1	29.7 29.7	29.7	8.2 8.2	8.2	13.6 13.7	13.7	110.1 106.9	108.5	7.8 7.5	7.7	6.6	1.6 1.9	1.8	5.7	6.3 5.7	6.0	6.8
				Middle	3	29.6 29.5	29.6	8.2 8.2	8.2	14.1 14.1	14.1	78.7 75.9	77.3	5.6 5.4	5.5		1.5 1.5	1.5		7.2 5.7	6.5	
				Bottom	5	26.6 26.5	26.6	8.2 8.2	8.2	30.2 30.4	30.3	78.3 76.8	77.6	5.3 5.2	5.3		12.8 14.5	13.7		6.6 9.0	7.8	

Remarks: *DA: Depth-Averaged
 **Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at IS2 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
21-Aug-14	Sunny	Calm	10:53	Surface	1	28.1 28.0	28.1	7.9 7.9	7.9	20.0 20.0	20.0	84.9 84.3	84.6	5.9 5.9	5.9	5.8	1.4 1.5	1.5	4.6	3.4 3.2	3.3	4.7
				Middle	3	27.6 27.6	27.6	7.9 7.9	7.9	22.8 22.8	22.8	79.7 80.3	80.0	5.5 5.6	5.6		1.9 1.9	1.9		2.9 5.4	4.2	
				Bottom	5	26.1 26.0	26.1	7.8 7.8	7.8	31.4 31.8	31.6	73.2 72.5	72.9	5.0 4.9	5.0		9.7 11.2	10.5		2.2 10.8	6.5	
23-Aug-14	Sunny	Calm	11:53	Surface	1	26.8 26.8	26.8	8.1 8.1	8.1	33.6 33.6	33.6	83.2 82.1	82.7	5.5 5.4	5.5	5.5	3.1 2.7	2.9	9.4	2.7 2.7	2.7	3.0
				Middle	3	26.6 26.5	26.6	8.0 8.0	8.0	33.9 34.0	34.0	80.7 81.5	81.1	5.4 5.4	5.4		3.5 4.1	3.8		1.4 4.4	2.9	
				Bottom	5	25.8 25.8	25.8	7.8 7.8	7.8	34.1 34.1	34.1	71.6 73.7	72.7	4.8 5.0	4.9		21.5 21.4	21.5		3.6 3.4	3.5	
25-Aug-14	Sunny	Moderate	13:49	Surface	1	27.6 28.2	27.9	7.9 8.0	8.0	18.4 17.3	17.9	80.1 78.4	79.3	5.7 5.6	5.7	5.9	2.9 2.9	2.9	9.4	3.2 3.3	3.3	4.1
				Middle	3.5	24.9 25.0	25.0	8.1 8.1	8.1	29.0 28.3	28.7	86.4 84.7	85.6	6.1 6.0	6.1		9.4 9.4	9.4		3.5 3.7	3.6	
				Bottom	6	24.6 24.7	24.7	8.1 8.1	8.1	29.9 29.3	29.6	90.7 89.6	90.2	6.4 6.3	6.4		17.3 14.6	16.0		4.0 6.8	5.4	
27-Aug-14	Fine	Moderate	13:31	Surface	1	26.6 26.6	26.6	7.7 7.7	7.7	21.5 21.7	21.6	87.1 86.3	86.7	6.2 6.1	6.2	6.2	6.4 6.7	6.6	11.1	6.4 5.9	6.2	5.9
				Middle	4	26.2 26.1	26.2	7.7 7.7	7.7	26.1 26.3	26.2	87.8 86.9	87.4	6.1 6.1	6.1		7.1 6.9	7.0		5.5 6.3	5.9	
				Bottom	7	24.0 24.0	24.0	7.6 7.6	7.6	32.0 32.0	32.0	69.6 68.6	69.1	4.9 4.8	4.9		18.3 20.8	19.6		5.2 5.9	5.6	
29-Aug-14	Sunny	Moderate	15:17	Surface	1	28.8 28.8	28.8	7.7 7.6	7.7	22.9 23.0	23.0	98.5 98.0	98.3	6.7 6.7	6.7	6.8	5.9 5.8	5.9	10.1	5.5 6.3	5.9	5.2
				Middle	4	28.5 28.4	28.5	7.7 7.7	7.7	26.6 26.7	26.7	102.1 102.5	102.3	6.8 6.9	6.9		8.3 9.3	8.8		4.1 5.0	4.6	
				Bottom	7	26.1 26.0	26.1	7.6 7.6	7.6	33.5 33.6	33.6	57.7 56.5	57.1	4.9 4.8	4.9		14.7 16.5	15.6		4.3 5.9	5.1	

Remarks: *DA: Depth-Averaged

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

Water Quality Monitoring Results at IS2 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Aug-14	Sunny	Moderate	09:56	Surface	1	28.8 29.2	29.0	8.0 8.0	8.0	23.3 23.7	23.5	90.0 86.5	88.3	6.1 5.8	6.0	5.6	5.5 5.2	5.4	3.9	8.4 5.0	6.7	7.7
				Middle	3.5	28.8 29.0	28.9	8.0 8.0	8.0	23.6 23.1	23.4	74.6 77.5	76.1	5.1 5.3	5.2		4.2 4.4	4.3		9.6 6.3	8.0	
				Bottom	6	28.8 28.8	28.8	8.1 8.1	8.1	24.0 24.3	24.2	75.7 74.8	75.3	5.1 5.1	5.1		1.9 2.0	2.0		9.0 7.7	8.4	
4-Aug-14	Sunny	Moderate	12:51	Surface	1	27.7 27.7	27.7	8.0 8.0	8.0	12.2 12.2	12.2	76.8 78.4	77.6	5.7 5.8	5.8	5.8	4.1 4.2	4.2	8.7	5.2 5.1	5.2	5.1
				Middle	3.5	27.3 27.3	27.3	8.0 8.0	8.0	12.9 12.9	12.9	77.8 78.6	78.2	5.7 5.8	5.8		4.1 4.2	4.2		6.0 4.4	5.2	
				Bottom	6	24.1 24.1	24.1	7.7 7.7	7.7	29.6 29.6	29.6	72.1 75.2	73.7	5.1 5.3	5.2		17.1 18.4	17.8		7.7 2.2	5.0	
6-Aug-14	Rainy	Calm	16:11	Surface	1	30.2 29.8	30.0	8.0 8.0	8.0	16.4 16.7	16.6	113.7 101.2	107.5	7.8 7.0	7.4	7.4	2.1 1.9	2.0	1.7	4.0 4.4	4.2	4.3
				Middle	3	30.0 29.8	29.9	8.0 8.0	8.0	19.4 19.8	19.6	112.7 100.1	106.4	7.7 6.8	7.3		1.8 1.9	1.9		4.3 4.6	4.5	
				Bottom	5	29.8 29.2	29.5	8.0 8.0	8.0	24.6 24.8	24.7	111.5 95.4	103.5	7.4 6.4	6.9		1.2 1.4	1.3		4.1 4.1	4.1	
8-Aug-14	Sunny	Rough	17:11	Surface	1	27.0 27.1	27.1	8.0 8.0	8.0	27.4 27.1	27.3	76.2 77.3	76.8	5.2 5.3	5.3	5.5	7.9 7.9	7.9	6.8	8.1 8.0	8.1	7.0
				Middle	3	29.8 29.5	29.7	8.2 8.2	8.2	17.4 18.5	18.0	82.1 80.9	81.5	5.7 5.6	5.7		6.8 6.0	6.4		6.1 6.7	6.4	
				Bottom	5	29.6 29.4	29.5	8.2 8.1	8.2	19.1 18.8	19.0	74.9 76.9	75.9	5.1 5.3	5.2		5.4 6.5	6.0		7.6 5.3	6.5	
11-Aug-14	Fine	Moderate	19:41	Surface	1	28.2 28.3	28.3	7.7 7.7	7.7	17.8 17.9	17.9	106.7 106.9	106.8	7.5 7.5	7.5	6.8	8.4 10.3	9.4	19.5	5.7 5.4	5.6	5.1
				Middle	3.5	27.2 27.0	27.1	7.7 7.7	7.7	20.8 22.0	21.4	86.6 85.0	85.8	6.1 6.0	6.1		17.3 19.4	18.4		4.7 4.6	4.7	
				Bottom	6	24.9 24.7	24.8	7.7 7.7	7.7	31.4 32.0	31.7	71.6 71.1	71.4	5.0 4.9	5.0		29.3 32.0	30.7		4.7 5.1	4.9	
13-Aug-14	Rainy	Moderate	09:01	Surface	1	24.4 24.4	24.4	7.7 7.6	7.7	25.2 25.2	25.2	80.3 80.4	80.4	5.8 5.8	5.8	5.8	2.0 2.2	2.1	5.8	5.3 6.0	5.7	7.1
				Middle	3.5	24.3 24.3	24.3	7.7 7.7	7.7	30.6 30.6	30.6	80.0 82.1	81.1	5.6 5.8	5.7		4.8 4.9	4.9		9.3 7.8	8.6	
				Bottom	6	24.2 24.3	24.3	7.7 7.7	7.7	32.3 32.3	32.3	80.5 82.0	81.3	5.6 5.7	5.7		10.5 10.3	10.4		8.8 5.3	7.1	
15-Aug-14	Sunny	Calm	10:40	Surface	1	27.3 27.4	27.4	7.6 7.6	7.6	22.9 22.1	22.5	99.0 97.2	98.1	6.9 6.8	6.9	6.3	10.9 10.8	10.9	25.7	11.7 11.2	11.5	10.3
				Middle	3	26.3 26.3	26.3	7.7 7.7	7.7	28.0 28.1	28.1	82.4 82.7	82.6	5.7 5.7	5.7		19.2 19.3	19.3		8.2 11.7	10.0	
				Bottom	5	25.9 25.9	25.9	7.6 7.6	7.6	29.9 29.9	29.9	75.8 75.5	75.7	5.2 5.2	5.2		48.6 45.1	46.9		10.0 8.7	9.4	
19-Aug-14	Rainy	Moderate	15:37	Surface	1	29.7 29.7	29.7	8.0 8.0	8.0	12.1 12.1	12.1	100.0 99.0	99.5	7.1 7.0	7.1	6.8	4.4 5.1	4.8	9.1	6.8 5.5	6.2	6.5
				Middle	3.5	29.8 29.8	29.8	8.0 8.1	8.1	13.2 13.1	13.2	93.0 90.2	91.6	6.6 6.4	6.5		5.0 6.2	5.6		6.8 4.6	5.7	
				Bottom	6	27.1 27.1	27.1	7.9 8.0	8.0	28.1 27.9	28.0	94.5 92.2	93.4	6.4 6.3	6.4		16.0 17.6	16.8		6.6 8.6	7.6	

Remarks: *DA: Depth-Averaged
 **Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at IS2 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
21-Aug-14	Fine	Calm	17:01	Surface	1	30.4	30.4	7.7	7.7	10.5	10.5	84.3	84.0	6.0	6.0	5.7	5.5	5.5	7.7	8.5	8.0	7.0
						30.3		7.7		10.5		83.6		5.9			5.5			7.4		
				Middle	3	28.8	28.8	7.8	7.8	16.1	16.1	74.5	74.5	5.3	5.3		6.9	6.8		6.9	6.7	
		28.8		7.8		16.1		74.5		5.3		5.3		6.6		6.4						
		28.0	28.0	7.8	7.8	19.8	19.7	70.1	70.1	4.9	4.9	4.9	4.9	11.6	10.9	6.6	6.4					
		28.0		7.8		19.5		70.0		4.9		4.9		10.1		6.2						
23-Aug-14	Fine	Calm	17:54	Surface	1	27.1	27.1	8.1	8.1	33.6	33.6	85.1	85.1	5.6	5.6	5.5	3.6	3.5	4.2	2.2	2.5	2.3
						27.1		8.1		33.6		85.0		5.6			3.4			2.7		
				Middle	3.5	26.7	26.7	8.0	8.0	33.8	33.8	77.7	78.7	5.2	5.3		3.5	3.4		3.1	2.7	
		26.6		7.9		33.8		79.6		5.3		5.3		3.2		2.3						
		26.1	26.1	7.7	7.7	34.0	34.1	72.1	72.9	4.8	4.9	4.9	4.9	5.6	5.6	1.8	1.8					
		26.1		7.6		34.1		73.6		4.9		4.9		5.6		1.8						
25-Aug-14	Fine	Moderate	18:55	Surface	1	28.3	27.7	7.9	7.9	17.3	19.4	94.2	93.8	6.7	6.7	6.0	5.5	5.2	9.5	4.5	4.8	4.8
						27.0		7.9		21.4		93.3		6.6			4.9			5.0		
				Middle	3.5	25.5	25.5	8.0	8.0	26.8	27.0	73.7	73.3	5.2	5.2		9.0	9.7		4.6	4.9	
		25.4		8.0		27.2		72.8		5.1		5.2		10.4		5.2						
		25.3	25.2	8.0	8.0	28.9	29.0	79.2	80.9	5.5	5.7	5.7	5.7	12.0	13.5	4.8	4.6					
		25.1		8.0		29.1		82.6		5.8		5.7		14.9		4.4						
27-Aug-14	Fine	Moderate	08:09	Surface	1	27.4	27.4	7.7	7.7	21.8	21.8	86.9	86.7	6.1	6.1	6.5	7.4	7.3	13.6	8.0	7.2	7.1
						27.4		7.6		21.8		86.5		6.1			7.2			6.3		
				Middle	3	27.1	27.1	7.7	7.7	25.3	25.3	100.1	100.2	6.9	6.9		11.0	11.7		6.2	6.4	
		27.0		7.7		25.3		100.3		6.9		6.9		12.4		6.5						
		24.8	24.8	7.6	7.6	31.8	31.9	72.1	71.6	5.0	5.0	5.0	5.0	20.5	21.9	8.0	7.8					
		24.8		7.6		31.9		71.0		4.9		5.0		23.2		7.5						
29-Aug-14	Sunny	Moderate	09:13	Surface	1	28.0	28.0	7.6	7.6	22.6	22.7	98.6	98.2	6.8	6.8	6.9	5.3	5.4	8.4	10.1	9.8	8.1
						27.9		7.6		22.8		97.7		6.7			5.5			9.5		
				Middle	3	27.5	27.5	7.7	7.7	27.5	27.6	101.3	100.8	6.9	6.9		5.7	5.7		7.8	8.2	
		27.4		7.7		27.7		100.3		6.8		6.9		5.6		8.6						
		25.2	25.2	7.6	7.6	33.6	33.7	63.4	61.2	5.3	5.2	5.2	5.2	13.2	14.1	7.1	6.3					
		25.2		7.6		33.7		58.9		5.0		5.2		14.9		5.4						

Remarks: *DA: Depth-Averaged

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

Water Quality Monitoring Results at IS3 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity (NTU)			Suspended Solids (mg/L)				
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*		
1-Aug-14	Sunny	Moderate	15:04	Surface	1	30.7 26.9	28.8	8.0 7.8	7.9	29.7 31.0	30.4	102.4 98.6	100.5	6.5 6.6	6.6	6.6	2.5 2.8	2.7	3.4	2.2 1.7	2.0	2.7		
				Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-
				Bottom	4	27.6 29.4	28.5	7.8 7.8	7.8	29.2 29.0	29.1	96.8 97.3	97.1	6.5 6.3	6.4	6.4	6.4	3.9 4.0		4.0	3.0 3.7		3.4	
4-Aug-14	Fine	Moderate	17:52	Surface	1	28.0 28.0	28.0	7.8 7.8	7.8	12.0 12.1	12.1	86.9 90.4	88.7	6.4 6.6	6.5	6.5	1.1 1.0	1.1	7.2	3.3 3.5	3.4	3.2		
				Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-		-	
				Bottom	4.6	23.6 23.5	23.6	7.9 8.0	8.0	30.8 31.0	30.9	68.2 68.5	68.4	4.9 4.9	4.9	4.9	4.9	12.8 13.7		13.3	2.8 2.9		2.9	
6-Aug-14	Rainy	Calm	08:15	Surface	1	29.4 29.4	29.4	8.1 8.1	8.1	13.2 13.2	13.2	82.2 83.1	82.7	5.8 5.9	5.9	5.9	3.1 3.1	3.1	5.6	4.0 3.7	3.9	4.1		
				Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-		-	
				Bottom	4.2	27.9 26.9	27.4	7.9 7.8	7.9	27.4 28.1	27.8	78.5 78.0	78.3	5.3 5.3	5.3	5.3	5.3	7.4 8.5		8.0	4.2 4.2		4.2	
8-Aug-14	Sunny	Calm	10:50	Surface	1	28.2 28.2	28.2	8.0 8.0	8.0	14.9 14.9	14.9	82.7 83.4	83.1	5.9 6.0	6.0	6.0	4.3 4.3	4.3	11.9	5.3 5.0	5.2	4.8		
				Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-		-	
				Bottom	4.5	25.3 25.0	25.2	8.1 8.1	8.1	26.7 28.5	27.6	72.3 73.3	72.8	5.1 5.2	5.2	5.2	5.2	18.7 20.0		19.4	3.8 4.9		4.4	
11-Aug-14	Sunny	Moderate	13:30	Surface	1	28.1 28.1	28.1	7.7 7.7	7.7	24.8 24.8	24.8	92.9 92.8	92.9	6.3 6.3	6.3	6.3	6.1 6.0	6.1	10.0	9.6 6.2	7.9	7.3		
				Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-		-	
				Bottom	3.5	26.7 26.8	26.8	7.7 7.7	7.7	27.7 27.5	27.6	91.2 91.6	91.4	6.3 6.3	6.3	6.3	6.3	13.3 14.2		13.8	8.4 4.8		6.6	
13-Aug-14	Rainy	Moderate	14:46	Surface	1	23.5 23.7	23.6	7.6 7.6	7.6	30.3 29.6	30.0	88.0 80.0	84.0	6.3 5.7	6.0	6.0	2.5 2.8	2.7	3.2	10.6 5.4	8.0	7.0		
				Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-		-	
				Bottom	4	23.5 23.7	23.6	7.6 7.6	7.6	30.3 29.6	30.0	71.1 70.9	71.0	5.1 5.1	5.1	5.1	5.1	3.9 3.4		3.7	6.4 5.4		5.9	
15-Aug-14	Sunny	Calm	16:24	Surface	1	28.9 29.1	29.0	7.5 7.6	7.6	21.1 20.7	20.9	86.9 90.8	88.9	6.0 6.2	6.1	6.1	19.7 19.2	19.5	22.8	31.4 27.7	29.6	27.2		
				Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-		-	
				Bottom	4.2	26.4 26.4	26.4	7.5 7.5	7.5	28.0 28.0	28.0	73.4 77.2	75.3	5.1 5.3	5.2	5.2	5.2	26.6 25.5		26.1	20.1 29.3		24.7	
19-Aug-14	Rainy	Moderate	08:29	Surface	1	29.4 29.4	29.4	8.2 8.2	8.2	12.6 12.6	12.6	96.2 97.5	96.9	6.9 6.9	6.9	6.9	3.7 3.5	3.6	4.9	5.6 6.0	5.8	6.0		
				Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-		-	
				Bottom	4.7	28.9 29.0	29.0	8.1 8.1	8.1	15.2 15.9	15.6	90.4 90.1	90.3	6.4 6.4	6.4	6.4	6.4	6.0 6.2		6.1	4.8 7.5		6.2	

Remarks: *DA: Depth-Averaged

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

Water Quality Monitoring Results at IS3 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)					
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*			
21-Aug-14	Sunny	Calm	10:12	Surface	1	28.1 28.0	28.1	7.7 7.7	7.7	15.6 16.2	15.9	85.9 83.6	84.8	6.2 6.0	6.1	6.1	4.5 4.4	4.5	7.3	4.4 4.2	4.3	5.1			
				Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
				Bottom	4.1	26.1 26.2	26.2	7.6 7.6	7.6	28.6 28.4	28.5	74.3 74.6	74.5	5.1 5.1	5.1		5.1	5.1		10.5 9.4	10.0		6.2 5.4	5.8	
23-Aug-14	Sunny	Calm	11:45	Surface	1	25.6 25.6	25.6	8.0 7.9	8.0	32.9 32.9	32.9	88.5 89.0	88.8	6.0 6.0	6.0	6.0	8.6 10.0	9.3	10.2	2.6 2.8	2.7	2.9			
				Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
				Bottom	4	25.2 25.5	25.4	7.9 7.9	7.9	33.3 33.0	33.2	73.4 74.9	74.2	5.0 5.1	5.1		5.1	11.9 10.3		11.1	4.0 2.0		3.0		
25-Aug-14	Sunny	Moderate	12:34	Surface	1	26.0 26.1	26.1	7.6 7.6	7.6	20.8 21.8	21.3	96.1 94.0	95.1	6.9 6.7	6.8	6.8	4.1 4.0	4.1	4.4	4.0 3.6	3.8	3.8			
				Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
				Bottom	4	25.2 25.3	25.3	7.6 7.6	7.6	31.5 30.1	30.8	97.6 99.3	98.5	6.7 6.9	6.8		6.8	4.3 4.9		4.6	3.7 3.6		3.7		
27-Aug-14	Fine	Moderate	13:13	Surface	1	27.2 27.2	27.2	7.6 7.6	7.6	27.5 27.4	27.5	86.1 86.1	86.1	5.9 5.9	5.9	5.9	7.4 7.2	7.3	7.9	9.8 11.2	10.5	10.9			
				Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
				Bottom	4.1	26.3 26.3	26.3	7.6 7.6	7.6	30.8 30.8	30.8	78.5 78.5	78.5	5.3 5.3	5.3		5.3	8.4 8.6		8.5	12.8 9.5		11.2		
29-Aug-14	Sunny	Moderate	14:40	Surface	1	28.5 28.2	28.4	7.7 7.7	7.7	23.0 23.4	23.2	100.4 96.4	98.4	6.9 6.6	6.8	6.8	5.6 5.7	5.7	12.0	4.9 5.7	5.3	4.9			
				Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
				Bottom	4	27.2 26.8	27.0	7.6 7.6	7.6	24.7 25.8	25.3	78.8 75.2	77.0	5.5 5.2	5.4		5.4	17.1 19.4		18.3	4.2 4.6		4.4		

Remarks: *DA: Depth-Averaged

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

Water Quality Monitoring Results at IS3 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity (NTU)			Suspended Solids (mg/L)					
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*			
1-Aug-14	Sunny	Moderate	10:07	Surface	1	30.0 29.9	30.0	7.9 7.9	7.9	20.4 20.5	20.5	90.1 89.3	89.7	6.1 6.0	6.1	6.1	8.4 8.4	8.4	8.3	3.6 5.4	4.5	3.8			
				Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
				Bottom	4.1	28.9 28.7	28.8	7.8 7.8	7.8	22.3 21.9	22.1	78.3 77.0	77.7	5.3 5.3	5.3		5.3	7.9 8.3		8.1	4.0 2.2		3.1		
4-Aug-14	Sunny	Moderate	12:26	Surface	1	27.1 27.1	27.1	8.0 8.0	8.0	12.1 12.1	12.1	99.9 100.5	100.2	7.4 7.5	7.5	7.5	3.1 3.2	3.2	9.9	3.0 4.9	4.0	2.9			
				Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
				Bottom	4.4	25.5 25.6	25.6	8.1 8.1	8.1	21.8 21.1	21.5	75.5 77.5	76.5	5.5 5.6	5.6		5.6	16.2 16.8		16.5	1.5 1.8		1.7		
6-Aug-14	Rainy	Calm	15:19	Surface	1	29.1 29.4	29.3	8.0 8.1	8.1	14.5 13.4	14.0	74.2 75.9	75.1	5.3 5.4	5.4	5.4	11.0 13.2	12.1	19.1	2.5 5.1	3.8	3.4			
				Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
				Bottom	4.4	27.0 28.7	27.9	7.8 7.9	7.9	19.6 16.7	18.2	91.0 94.0	92.5	6.5 6.6	6.6		6.6	24.4 27.5		26.0	2.7 3.2		3.0		
8-Aug-14	Sunny	Rough	17:48	Surface	1	28.5 28.5	28.5	8.2 8.2	8.2	18.4 18.4	18.4	78.3 78.8	78.6	5.5 5.5	5.5	5.5	11.8 12.1	12.0	15.8	8.6 7.6	8.1	10.9			
				Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
				Bottom	4.2	26.7 26.7	26.7	8.3 8.3	8.3	24.3 24.3	24.3	72.8 73.6	73.2	5.1 5.2	5.2		5.2	19.4 19.5		19.5	15.6 11.5		13.6		
11-Aug-14	Fine	Moderate	19:51	Surface	1	28.2 28.2	28.2	7.7 7.7	7.7	25.2 25.3	25.3	92.9 93.4	93.2	6.3 6.3	6.3	6.3	6.9 6.8	6.9	10.4	4.9 4.1	4.5	6.4			
				Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
				Bottom	4.1	27.2 27.2	27.2	7.7 7.7	7.7	27.3 27.3	27.3	94.0 93.3	93.7	6.4 6.4	6.4		6.4	13.4 14.4		13.9	8.8 7.6		8.2		
13-Aug-14	Rainy	Moderate	08:36	Surface	1	24.2 24.0	24.1	7.7 7.7	7.7	27.2 28.1	27.7	84.3 80.7	82.5	6.1 5.8	6.0	6.0	8.4 8.0	8.2	12.9	4.9 6.6	5.8	5.9			
				Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
				Bottom	4.1	24.1 23.8	24.0	7.5 7.5	7.5	27.7 29.1	28.4	71.2 69.1	70.2	5.1 4.9	5.0		5.0	17.9 17.2		17.6	6.0 6.0		6.0		
15-Aug-14	Sunny	Calm	10:22	Surface	1	28.7 28.7	28.7	7.5 7.5	7.5	18.5 18.5	18.5	86.5 88.8	87.7	6.0 6.2	6.1	6.1	16.7 16.1	16.4	26.0	13.0 11.3	12.2	23.9			
				Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
				Bottom	4.5	27.2 27.2	27.2	7.5 7.5	7.5	24.1 23.9	24.0	83.8 83.8	83.8	5.8 5.8	5.8		5.8	34.5 36.7		35.6	32.0 39.0		35.5		
19-Aug-14	Rainy	Moderate	15:48	Surface	1	29.7 29.7	29.7	8.5 8.5	8.5	11.1 11.1	11.1	109.0 109.4	109.2	7.8 7.8	7.8	7.8	8.1 8.2	8.2	11.8	28.6 28.4	28.5	19.3			
				Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
				Bottom	4.4	29.7 29.7	29.7	8.4 8.4	8.4	13.0 13.0	13.0	106.8 105.9	106.4	7.6 7.5	7.6		7.6	15.2 15.4		15.3	8.0 12.0		10.0		

Remarks: *DA: Depth-Averaged

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

Water Quality Monitoring Results at IS3 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)					
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*			
21-Aug-14	Fine	Calm	16:50	Surface	1	29.3 29.3	29.3	7.6 7.6	7.6	13.7 13.6	13.7	72.0 75.1	73.6	5.1 5.3	5.2	5.2	9.5 10.3	9.9	15.1	6.3 5.8	6.1	15.8			
				Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
				Bottom	3.9	28.0 28.0	28.0	7.6 7.6	7.6	18.8 18.7	18.8	67.5 70.8	69.2	4.8 5.0	4.9		4.9	18.8 21.5		20.2	24.2 26.8		25.5		
23-Aug-14	Fine	Calm	18:00	Surface	1	25.4 25.7	25.6	7.9 7.9	7.9	33.4 32.9	33.2	87.1 90.4	88.8	5.9 6.1	6.0	6.0	17.5 17.7	17.6	15.6	2.3 4.3	3.3	4.4			
				Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
				Bottom	4.1	25.7 25.9	25.8	7.9 8.0	8.0	32.9 32.6	32.8	74.1 74.8	74.5	5.0 5.1	5.1		5.1	13.5 13.7		13.6	7.4 3.4		5.4		
25-Aug-14	Fine	Moderate	18:45	Surface	1	26.4 25.6	26.0	7.8 7.8	7.8	29.7 30.4	30.1	83.3 81.8	82.6	5.7 5.6	5.7	5.7	7.0 7.6	7.3	7.3	3.1 4.9	4.0	5.0			
				Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
				Bottom	4.1	26.2 26.6	26.4	7.8 7.8	7.8	30.3 30.4	30.4	83.6 82.6	83.1	5.7 5.6	5.7		5.7	7.4 7.2		7.3	7.4 4.6		6.0		
27-Aug-14	Fine	Moderate	07:26	Surface	1	26.6 26.6	26.6	7.6 7.6	7.6	30.2 30.2	30.2	86.9 86.8	86.9	5.9 5.9	5.9	5.9	7.8 7.9	7.9	8.2	6.0 6.1	6.1	6.4			
				Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
				Bottom	4	25.8 25.9	25.9	7.6 7.6	7.6	31.9 31.9	31.9	74.0 73.2	73.6	5.0 5.0	5.0		5.0	8.9 8.0		8.5	6.2 7.2		6.7		
29-Aug-14	Sunny	Moderate	08:28	Surface	1	28.0 27.8	27.9	7.6 7.6	7.6	21.7 22.0	21.9	98.6 95.7	97.2	6.9 6.7	6.8	6.8	7.4 7.6	7.5	11.9	4.7 4.9	4.8	10.0			
				Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
				Bottom	3.9	27.2 27.4	27.3	7.6 7.6	7.6	23.9 23.2	23.6	90.7 93.0	91.9	6.3 6.5	6.4		6.4	17.3 15.1		16.2	14.8 15.3		15.1		

Remarks: *DA: Depth-Averaged

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

Water Quality Monitoring Results at IS4 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Aug-14	Sunny	Moderate	16:09	Surface	1	29.8 29.7	29.8	8.0 8.0	8.0	20.1 20.2	20.2	82.8 83.1	83.0	5.6 5.7	5.7	5.7	4.0 4.5	4.3	3.7	3.6 3.7	3.7	4.9
				Middle	3	28.1 28.2	28.2	7.9 7.9	7.9	29.2 29.4	29.3	83.7 83.3	83.5	5.6 5.5	5.6		4.1 4.3	4.2		5.2 6.1	5.7	
				Bottom	5	27.9 27.8	27.9	7.9 7.9	7.9	31.6 31.5	31.6	78.6 77.9	78.3	5.2 5.1	5.2		2.8 2.4	2.6		4.8 5.5	5.2	
4-Aug-14	Fine	Moderate	18:34	Surface	1	30.2 27.8	29.0	8.0 8.0	8.0	12.3 12.2	12.3	80.6 76.5	78.6	5.7 5.6	5.7	5.5	2.2 2.3	2.3	6.2	3.7 3.1	3.4	4.5
				Middle	3	26.7 26.7	26.7	7.9 7.9	7.9	18.4 18.4	18.4	72.3 70.8	71.6	5.2 5.1	5.2		4.7 4.4	4.6		5.6 3.8	4.7	
				Bottom	5	24.7 24.7	24.7	7.7 7.7	7.7	28.0 28.1	28.1	69.4 68.9	69.2	4.9 4.9	4.9		11.7 11.9	11.8		5.5 5.2	5.4	
6-Aug-14	Rainy	Calm	09:10	Surface	1	27.8 29.7	28.8	8.0 8.0	8.0	11.8 12.0	11.9	105.8 110.3	108.1	7.8 7.9	7.9	7.3	2.4 2.3	2.4	2.6	3.4 3.9	3.7	3.5
				Middle	3.5	29.7 29.7	29.7	8.1 8.0	8.1	17.0 17.3	17.2	98.3 94.5	96.4	6.8 6.5	6.7		2.7 2.8	2.8		3.0 3.5	3.3	
				Bottom	6	29.7 29.7	29.7	8.0 8.0	8.0	25.6 25.7	25.7	83.6 79.5	81.6	5.5 5.3	5.4		2.5 2.8	2.7		3.5 3.6	3.6	
8-Aug-14	Sunny	Calm	11:10	Surface	1	25.7 25.5	25.6	8.0 8.1	8.1	31.0 31.2	31.1	79.8 84.4	82.1	5.5 5.8	5.7	5.6	12.9 13.5	13.2	7.8	4.6 2.0	3.3	3.4
				Middle	3.5	29.2 29.0	29.1	8.2 8.2	8.2	14.6 17.3	16.0	76.4 76.3	76.4	5.4 5.3	5.4		6.7 6.6	6.7		5.0 3.7	4.4	
				Bottom	6	28.8 26.0	27.4	8.2 8.1	8.2	26.2 26.9	26.6	82.9 69.1	76.0	5.5 4.8	5.2		3.6 3.4	3.5		2.2 2.9	2.6	
11-Aug-14	Sunny	Moderate	14:24	Surface	1	28.2 28.2	28.2	7.7 7.5	7.6	18.8 18.7	18.8	79.2 75.8	77.5	5.6 5.3	5.5	5.4	9.6 10.1	9.9	17.6	3.2 5.3	4.3	4.4
				Middle	3.5	28.0 28.1	28.1	7.7 7.5	7.6	19.0 18.9	19.0	74.0 74.7	74.4	5.2 5.3	5.3		14.1 17.2	15.7		5.2 4.2	4.7	
				Bottom	6	27.8 27.7	27.8	7.6 7.5	7.6	20.1 20.4	20.3	69.1 70.2	69.7	4.9 4.9	4.9		26.0 28.2	27.1		3.9 4.7	4.3	
13-Aug-14	Rainy	Moderate	14:23	Surface	1	24.3 24.3	24.3	7.7 7.7	7.7	31.5 31.6	31.6	73.9 74.5	74.2	5.2 5.2	5.2	5.3	5.3 5.6	5.5	6.1	9.7 8.9	9.3	9.8
				Middle	4	24.2 24.2	24.2	7.7 7.7	7.7	32.6 32.6	32.6	73.3 77.2	75.3	5.1 5.4	5.3		6.6 5.8	6.2		11.0 10.1	10.6	
				Bottom	7	24.2 24.2	24.2	7.7 7.7	7.7	32.8 32.7	32.8	72.0 76.3	74.2	5.0 5.3	5.2		7.1 6.0	6.6		9.0 10.2	9.6	
15-Aug-14	Sunny	Calm	15:47	Surface	1	28.5 28.5	28.5	7.6 7.6	7.6	22.2 22.2	22.2	88.7 89.5	89.1	6.1 6.1	6.1	5.8	5.9 5.8	5.9	8.8	6.0 7.0	6.5	7.2
				Middle	3	26.9 26.9	26.9	7.7 7.7	7.7	26.5 26.6	26.6	78.6 79.4	79.0	5.4 5.5	5.5		6.0 6.1	6.1		9.6 8.4	9.0	
				Bottom	5	26.0 26.0	26.0	7.7 7.7	7.7	29.7 29.7	29.7	71.2 71.0	71.1	4.9 4.9	4.9		14.5 14.4	14.5		6.1 5.8	6.0	
19-Aug-14	Rainy	Moderate	09:04	Surface	1	29.7 29.7	29.7	8.1 8.1	8.1	13.4 13.4	13.4	101.6 98.0	99.8	7.2 6.9	7.1	6.8	1.7 1.7	1.7	5.4	8.7 7.3	8.0	6.6
				Middle	3.5	29.6 29.7	29.7	8.1 8.1	8.1	15.8 15.8	15.8	93.1 91.4	92.3	6.5 6.4	6.5		4.3 5.1	4.7		7.0 5.3	6.2	
				Bottom	6	26.1 26.3	26.2	8.2 8.2	8.2	32.3 31.5	31.9	75.4 72.6	74.0	5.1 4.9	5.0		10.4 9.1	9.8		6.7 4.7	5.7	

Remarks: *DA: Depth-Averaged

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

Water Quality Monitoring Results at IS4 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)			
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	
21-Aug-14	Sunny	Calm	11:02	Surface	1	28.3	28.3	7.6	7.6	19.4	19.5	81.4	81.6	5.7	5.7	5.6	1.2	1.2	3.8	2.9	3.0	3.7	
						28.2		7.6		19.5		81.7		5.7			1.2				3.1		
				Middle	3	27.6	27.6	7.6	7.6	22.9	22.9	78.1	78.0	5.4	5.4		1.8	1.8		5.0	4.2		
		27.6		7.6		22.9		77.9		5.4		5.4			1.8			3.4					
		25.9	25.9	7.7	7.7	32.0	32.1	74.5	73.9	5.1	5.1	5.1	5.1	7.6	8.4	4.0	3.9						
		25.9		7.7		32.2		73.3		5.0		5.1		9.2		3.7			3.7				
23-Aug-14	Sunny	Calm	12:02	Surface	1	26.8	26.8	8.1	8.1	33.7	33.7	88.4	88.9	5.9	5.9	5.8	3.5	3.6	7.7	2.8	3.1	2.6	
						26.8		8.1		33.6		89.4		5.9			3.7				3.3		
				Middle	3.5	26.5	26.6	7.8	7.8	33.8	33.9	82.9	83.3	5.5	5.6		6.9	7.1		3.0	2.4		
		26.6		7.8		33.9		83.7		5.6		5.6			7.2			1.7					
		25.8	25.8	7.8	7.8	34.0	34.0	75.3	74.2	5.1	5.0	5.0	5.0	12.4	12.3	2.5	2.4						
		25.8		7.8		34.0		73.1		4.9		5.0		12.1		2.2			2.2				
25-Aug-14	Sunny	Moderate	14:00	Surface	1	26.8	26.5	8.1	8.1	24.4	25.4	83.9	83.5	5.9	5.9	5.7	7.1	7.1	11.7	4.9	4.0	4.1	
						26.2		8.1		26.3		83.1		5.8			7.0				3.1		
				Middle	3.5	24.5	24.5	8.1	8.1	30.5	30.7	76.6	75.8	5.4	5.4		12.0	12.3		3.0	3.6		
		24.4		8.1		30.8		75.0		5.3		5.4			12.6			4.2					
		24.0	24.0	8.1	8.2	32.0	32.1	71.1	70.5	5.0	5.0	5.0	5.0	15.4	15.8	6.1	4.8						
		23.9		8.2		32.2		69.8		4.9		5.0		16.2		3.5			3.5				
27-Aug-14	Fine	Moderate	13:43	Surface	1	26.9	26.9	7.6	7.6	21.7	21.8	87.5	86.6	6.2	6.2	5.8	8.4	8.0	18.6	4.6	5.1	4.8	
						26.9		7.6		21.9		85.7		6.1			6.2				7.5		
				Middle	3.5	25.7	25.7	7.6	7.6	26.5	26.6	77.7	76.7	5.5	5.4		18.8	18.7		5.0	5.4		
		25.7		7.6		26.6		75.7		5.3		5.4			18.6			5.7					
		25.3	25.3	7.6	7.6	27.8	27.9	74.0	73.3	5.2	5.2	5.2	5.2	28.8	29.1	4.9	4.0						
		25.3		7.6		27.9		72.6		5.1		5.2		29.3		3.1			3.1				
29-Aug-14	Sunny	Moderate	15:30	Surface	1	29.1	29.1	7.7	7.7	23.0	23.0	104.7	104.0	7.1	7.1	6.4	6.0	6.2	15.6	4.7	5.5	5.6	
						29.1		7.6		23.0		103.3		7.0			6.4				6.2		
				Middle	3.5	27.9	27.9	7.6	7.6	27.7	27.8	83.6	82.4	5.6	5.6		16.3	16.4		5.0	5.6		
		27.8		7.6		27.9		81.1		5.5		5.6			16.5			6.1					
		27.5	27.5	7.6	7.6	29.2	29.2	70.3	69.4	5.2	5.2	5.2	5.2	23.7	24.3	5.9	5.7						
		27.5		7.6		29.2		68.5		5.1		5.2		24.9		5.4			5.4				

Remarks: *DA: Depth-Averaged

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

Water Quality Monitoring Results at IS4 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity (NTU)			Suspended Solids (mg/L)				
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*		
1-Aug-14	Sunny	Moderate	10:06	Surface	1	29.2 29.3	29.3	8.0 8.0	8.0	17.4 17.4	17.4	73.7 78.8	76.3	5.1 5.5	5.3	5.3	5.4 5.0	5.2	4.2	5.2 6.3	5.8	6.4		
				Middle	3.5	29.1 29.2	29.2	7.9 7.9	7.9	21.9 19.0	20.5	72.9 77.6	75.3	5.0 5.4	5.2		4.5 4.8			4.7			4.8 6.5	5.7
				Bottom	6	28.9 28.8	28.9	7.9 7.9	7.9	24.1 24.4	24.3	73.4 73.9	73.7	5.0 5.0	5.0		3.0 2.5			2.8			9.4 6.0	7.7
4-Aug-14	Sunny	Moderate	13:04	Surface	1	28.0 28.0	28.0	8.0 8.0	8.0	10.8 10.8	10.8	75.8 77.1	76.5	5.6 5.7	5.7	5.8	4.4 4.4	4.4	4.5	2.0 1.7	1.9	2.5		
				Middle	3.5	27.9 28.0	28.0	8.0 8.0	8.0	11.0 11.0	11.0	79.5 80.1	79.8	5.9 5.9	5.9		4.9 4.5			4.7			1.3 2.2	1.8
				Bottom	6	27.8 27.8	27.8	8.0 8.0	8.0	12.0 12.0	12.0	81.4 81.3	81.4	6.0 6.0	6.0		4.2 4.3			4.3			2.8 4.6	3.7
6-Aug-14	Rainy	Calm	16:18	Surface	1	28.9 26.9	27.9	8.0 8.1	8.1	24.0 21.2	22.6	88.6 86.7	87.7	6.0 6.2	6.1	6.0	2.6 2.7	2.7	3.1	4.0 3.0	3.5	3.8		
				Middle	3.5	29.3 26.8	28.1	8.0 8.1	8.1	31.8 31.8	31.8	91.1 85.6	88.4	5.9 5.7	5.8		2.7 2.7			2.7			3.7 3.3	3.5
				Bottom	6	27.2 27.0	27.1	8.1 8.2	8.2	31.5 31.2	31.4	79.4 78.6	79.0	5.3 5.3	5.3		3.9 3.9			3.9			4.7 4.3	4.5
8-Aug-14	Sunny	Rough	17:18	Surface	1	27.9 27.7	27.8	8.1 8.1	8.1	25.4 24.3	24.9	82.7 74.6	78.7	5.6 5.1	5.4	5.4	8.1 7.9	8.0	7.5	6.6 7.6	7.1	7.2		
				Middle	3.5	29.5 29.1	29.3	8.1 8.2	8.2	18.6 19.2	18.9	78.0 75.9	77.0	5.4 5.2	5.3		7.4 6.7			7.1			6.8 5.7	6.3
				Bottom	6	29.4 29.5	29.5	8.1 8.2	8.2	18.8 19.4	19.1	74.6 74.0	74.3	5.1 5.1	5.1		7.3 7.6			7.5			8.2 8.4	8.3
11-Aug-14	Fine	Moderate	19:54	Surface	1	29.0 29.0	29.0	7.8 7.7	7.8	19.2 19.3	19.3	104.3 103.4	103.9	7.2 7.2	7.2	6.2	10.1 11.7	10.9	19.5	3.1 3.2	3.2	4.2		
				Middle	3.5	27.3 27.5	27.4	7.8 7.7	7.8	23.0 22.7	22.9	73.6 73.1	73.4	5.1 5.1	5.1		16.6 19.2			17.9			5.3 4.1	4.7
				Bottom	6	26.5 26.7	26.6	7.8 7.7	7.8	25.2 24.8	25.0	74.4 74.3	74.4	5.2 5.2	5.2		30.5 28.9			29.7			4.8 4.4	4.6
13-Aug-14	Rainy	Moderate	09:08	Surface	1	24.4 24.4	24.4	7.7 7.6	7.7	27.7 27.6	27.7	78.8 78.9	78.9	5.6 5.6	5.6	5.6	3.6 3.4	3.5	4.4	6.9 8.1	7.5	8.4		
				Middle	4	24.4 24.4	24.4	7.7 7.7	7.7	28.3 28.0	28.2	77.4 78.4	77.9	5.5 5.6	5.6		5.1 5.0			5.1			8.3 9.2	8.8
				Bottom	7	24.4 24.4	24.4	7.7 7.7	7.7	29.5 29.5	29.5	75.5 78.6	77.1	5.3 5.6	5.5		4.8 4.5			4.7			9.2 8.4	8.8
15-Aug-14	Sunny	Calm	10:49	Surface	1	27.1 27.0	27.1	7.6 7.6	7.6	23.9 24.2	24.1	86.7 87.2	87.0	6.0 6.1	6.1	5.8	14.7 14.0	14.4	26.3	12.2 10.6	11.4	10.5		
				Middle	3	26.1 26.1	26.1	7.6 7.6	7.6	29.1 29.1	29.1	79.4 79.4	79.4	5.5 5.5	5.5		22.3 20.8			21.6			9.8 7.5	8.7
				Bottom	5	26.0 26.0	26.0	7.6 7.6	7.6	29.8 29.7	29.8	73.6 73.3	73.5	5.1 5.0	5.1		43.6 41.9			42.8			11.6 11.3	11.5
19-Aug-14	Rainy	Moderate	15:48	Surface	1	29.8 29.9	29.9	8.1 8.1	8.1	12.6 12.6	12.6	98.2 99.8	99.0	7.0 7.1	7.1	6.6	12.9 14.7	13.8	22.6	6.7 6.0	6.4	7.1		
				Middle	4	29.9 29.9	29.9	8.1 8.1	8.1	13.1 13.1	13.1	87.0 86.8	86.9	6.1 6.1	6.1		22.3 24.6			23.5			8.0 9.7	8.9
				Bottom	7	27.7 27.6	27.7	7.9 7.9	7.9	27.5 27.0	27.3	94.4 94.5	94.5	6.4 6.4	6.4		29.1 32.0			30.6			6.2 5.8	6.0

Remarks: *DA: Depth-Averaged

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

Water Quality Monitoring Results at IS4 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
21-Aug-14	Fine	Calm	17:10	Surface	1	30.1 30.2	30.2	7.8 7.8	7.8	11.0 10.8	10.9	78.5 78.9	78.7	5.6 5.6	5.6	5.5	5.6 5.6	5.6	9.2	5.3 4.0	4.7	6.7
				Middle	3	28.7 28.7	28.7	7.8 7.8	7.8	16.5 16.3	16.4	74.4 74.6	74.5	5.3 5.3	5.3		6.8 6.8	6.8		3.3 10.0	6.7	
				Bottom	5	27.9 27.8	27.9	7.8 7.8	7.8	22.3 22.4	22.4	73.9 74.0	74.0	5.1 5.1	5.1		15.3 15.0	15.2		8.6 8.6	8.6	
23-Aug-14	Fine	Calm	18:05	Surface	1	27.1 27.1	27.1	8.2 8.2	8.2	33.7 33.7	33.7	79.2 80.6	79.9	5.2 5.3	5.3	5.2	11.5 11.7	11.6	15.1	2.6 2.6	2.6	2.7
				Middle	3.5	26.6 26.6	26.6	8.0 8.0	8.0	33.9 33.8	33.9	75.5 77.3	76.4	5.0 5.1	5.1		9.6 10.1	9.9		2.2 1.1	1.7	
				Bottom	6	26.1 26.1	26.1	7.7 7.7	7.7	34.1 34.1	34.1	74.2 74.9	74.6	5.0 5.0	5.0		21.1 26.2	23.7		3.8 3.8	3.8	
25-Aug-14	Fine	Moderate	19:06	Surface	1	27.0 26.8	26.9	8.0 8.1	8.1	23.5 24.3	23.9	86.8 83.7	85.3	6.1 5.8	6.0	5.9	7.4 7.5	7.5	9.9	3.8 3.6	3.7	7.9
				Middle	3.5	26.8 25.6	26.2	8.0 8.0	8.0	26.2 26.0	26.1	83.3 79.8	81.6	5.8 5.6	5.7		7.2 7.9	7.6		3.9 7.0	5.5	
				Bottom	6	24.7 24.6	24.7	8.1 8.1	8.1	30.1 30.1	30.1	76.1 78.7	77.4	5.3 5.5	5.4		13.7 15.7	14.7		17.6 11.6	14.6	
27-Aug-14	Fine	Moderate	08:19	Surface	1	27.7 27.7	27.7	7.7 7.6	7.7	21.8 21.9	21.9	92.4 91.2	91.8	6.4 6.4	6.4	6.1	7.5 8.1	7.8	21.9	8.2 6.7	7.5	7.8
				Middle	3.5	26.5 26.5	26.5	7.6 7.6	7.6	26.4 26.5	26.5	84.0 81.8	82.9	5.8 5.7	5.8		22.9 23.2	23.1		7.0 5.3	6.2	
				Bottom	6	26.2 26.1	26.2	7.6 7.6	7.6	27.8 27.8	27.8	75.9 74.3	75.1	5.3 5.1	5.2		34.0 35.8	34.9		8.2 11.0	9.6	
29-Aug-14	Sunny	Moderate	09:24	Surface	1	28.3 28.3	28.3	7.7 7.6	7.7	22.9 23.0	23.0	99.1 97.2	98.2	6.8 6.7	6.8	6.0	6.6 6.0	6.3	18.4	9.9 7.0	8.5	13.1
				Middle	3.5	27.0 27.0	27.0	7.6 7.6	7.6	27.9 27.9	27.9	76.5 74.2	75.4	5.2 5.1	5.2		20.2 20.1	20.2		10.0 14.9	12.5	
				Bottom	6	26.6 26.6	26.6	7.6 7.6	7.6	29.2 29.4	29.3	68.3 66.7	67.5	5.2 5.0	5.1		26.9 30.3	28.6		23.2 13.5	18.4	

Remarks: *DA: Depth-Averaged

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

Water Quality Monitoring Results at SR1 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity (NTU)			Suspended Solids (mg/L)			
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	
1-Aug-14	Sunny	Moderate	14:21	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				Middle	0.8	30.0	30.0	7.8	7.8	23.4	23.4	127.8	126.5	8.5	8.4	8.4	2.7	2.6	2.6	3.4	3.1	3.1	
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Aug-14	Fine	Moderate	17:02	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
				Middle	1.2	27.8	27.8	7.9	7.9	12.3	12.3	91.5	91.8	6.7	6.8	6.8	0.5	0.6	0.6	3.1	3.1	3.1	
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
6-Aug-14	Rainy	Calm	08:59	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
				Middle	1.2	29.7	29.7	8.1	8.1	12.7	12.8	85.0	85.7	6.0	6.1	6.1	7.3	7.3	7.3	4.2	4.2	4.2	
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
8-Aug-14	Sunny	Calm	11:42	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
				Middle	1.3	28.4	28.4	8.1	8.1	15.5	15.5	77.9	77.7	5.6	5.6	5.6	2.9	2.9	2.9	5.1	4.6	4.6	
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
11-Aug-14	Sunny	Moderate	14:30	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
				Middle	1.4	27.7	27.7	7.7	7.7	26.2	26.2	92.9	93.0	6.3	6.3	6.3	12.6	11.6	11.6	6.6	5.3	5.3	
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
13-Aug-14	Rainy	Moderate	13:55	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
				Middle	0.8	23.3	23.3	7.1	7.2	31.1	31.2	71.3	74.5	5.1	5.3	5.3	2.7	2.6	2.6	3.3	3.6	3.6	
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
15-Aug-14	Sunny	Calm	15:31	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
				Middle	1.4	27.6	27.6	7.6	7.6	23.7	23.8	87.0	86.4	6.0	6.0	6.0	5.7	5.7	5.7	3.5	3.8	3.8	
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
19-Aug-14	Rainy	Moderate	09:16	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
				Middle	1.2	29.3	29.3	8.3	8.3	13.2	13.3	103.1	103.2	7.3	7.4	7.4	4.9	5.0	5.0	6.5	6.9	6.9	
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Remarks: *DA: Depth-Averaged
 **Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at SR1 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity (NTU)			Suspended Solids (mg/L)						
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*				
21-Aug-14	Sunny	Calm	10:51	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
				Middle	1.2	27.9 27.9	27.9	7.7 7.7	7.7	16.6 16.8	16.7	83.1 83.1	83.1	5.9 5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.5	5.5	5.5	4.8 4.5	4.7	4.7
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23-Aug-14	Sunny	Calm	12:35	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
				Middle	1	25.7 25.7	25.7	8.0 8.0	8.0	33.1 33.1	33.1	130.9 129.7	130.3	8.9 8.8	8.9	8.9	8.9	8.9	8.9	8.9	5.7	5.7	5.7	2.3 2.9	2.6	2.6
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25-Aug-14	Sunny	Moderate	13:24	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
				Middle	1.1	26.1 26.1	26.1	7.8 7.8	7.8	29.2 29.3	29.3	75.5 77.2	76.4	5.2 5.3	5.3	5.3	5.3	5.3	5.3	5.3	6.1	6.1	6.1	3.8 3.0	3.4	3.4
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27-Aug-14	Fine	Moderate	12:57	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
				Middle	1.2	26.8 26.8	26.8	7.6 7.6	7.6	28.6 28.5	28.6	75.8 75.9	75.9	5.2 5.2	5.2	5.2	5.2	5.2	5.2	5.2	8.0	8.0	8.0	6.8 6.7	6.8	6.8
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29-Aug-14	Sunny	Moderate	14:23	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
				Middle	1.2	26.8 26.7	26.8	7.8 7.8	7.8	26.7 26.9	26.8	94.0 93.6	93.8	6.5 6.5	6.5	6.5	6.5	6.5	6.5	6.5	5.7	5.7	5.7	3.3 2.8	3.1	3.1
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Remarks: *DA: Depth-Averaged

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

Water Quality Monitoring Results at SR1 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity (NTU)			Suspended Solids (mg/L)			
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	
1-Aug-14	Sunny	Moderate	10:53	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				Middle	1	30.1	30.1	8.0	8.0	19.8	20.2	77.2	84.6	5.2	5.7	5.7	7.4	7.4	7.4	4.2	4.2	4.2	4.2
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Aug-14	Sunny	Moderate	13:43	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				Middle	1.2	27.1	27.1	7.9	7.9	11.9	11.9	104.6	104.7	7.8	7.8	7.8	1.5	1.3	1.4	2.2	2.3	2.3	2.3
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6-Aug-14	Rainy	Calm	14:44	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				Middle	1.2	29.6	29.7	8.1	8.1	12.0	12.1	71.7	72.3	5.1	5.1	5.1	8.3	8.2	8.3	3.5	2.9	3.2	3.2
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8-Aug-14	Sunny	Rough	16:40	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				Middle	1.4	28.8	28.8	8.1	8.1	16.4	16.5	72.1	74.2	5.1	5.2	5.2	22.0	22.1	22.1	35.0	36.3	35.7	35.7
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11-Aug-14	Fine	Moderate	18:54	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				Middle	1.3	27.9	27.9	7.7	7.7	25.9	25.9	93.5	93.5	6.4	6.4	6.4	6.2	6.3	6.3	6.8	6.7	6.8	6.8
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13-Aug-14	Rainy	Moderate	09:24	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				Middle	1	23.4	23.4	7.6	7.6	30.8	30.9	89.3	87.8	6.4	6.3	6.3	7.7	7.4	7.6	7.2	5.5	6.4	6.4
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15-Aug-14	Sunny	Calm	11:13	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				Middle	1.3	28.4	28.4	7.5	7.6	18.4	17.3	91.0	91.4	6.4	6.5	6.5	7.8	7.4	7.6	7.9	9.1	8.5	8.5
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19-Aug-14	Rainy	Moderate	15:03	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				Middle	1.4	29.6	29.6	8.3	8.3	11.3	11.3	99.0	99.0	7.1	7.1	7.1	6.5	6.8	6.7	9.5	8.0	8.8	8.8
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Remarks: *DA: Depth-Averaged
 **Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at SR1 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity (NTU)			Suspended Solids (mg/L)				
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*		
21-Aug-14	Fine	Calm	16:10	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
				Middle	1.2	28.6 28.7	28.7	7.7 7.7	7.7	16.8 16.5	16.7	86.8 88.1	87.5	6.1 6.2	6.2	6.2	6.2	6.2	10.2 10.1	10.2	10.2	9.3 9.8	9.6	9.6
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23-Aug-14	Fine	Calm	17:10	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
				Middle	1.1	25.4 25.4	25.4	8.0 8.0	8.0	33.4 33.4	33.4	128.4 127.0	127.7	8.7 8.6	8.7	8.7	8.7	8.2 9.6	8.9	8.9	2.8 1.8	2.3	2.3	
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25-Aug-14	Fine	Moderate	17:55	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
				Middle	1	26.8 26.8	26.8	7.7 7.7	7.7	29.3 29.3	29.3	77.5 76.8	77.2	5.3 5.2	5.3	5.3	6.9 8.0	7.5	7.5	7.5	4.3 3.7	4.0	4.0	
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27-Aug-14	Fine	Moderate	08:08	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
				Middle	1.1	26.8 26.8	26.8	7.6 7.6	7.6	28.8 28.8	28.8	75.1 75.1	75.1	5.1 5.1	5.1	5.1	9.0 8.9	9.0	9.0	9.0	6.5 6.0	6.3	6.3	
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29-Aug-14	Sunny	Moderate	09:11	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
				Middle	1.1	27.1 27.1	27.1	7.8 7.8	7.8	25.1 25.3	25.2	96.5 100.4	98.5	6.7 6.9	6.8	6.8	6.8 5.5	6.2	6.2	6.2	7.9 7.0	7.5	7.5	
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Remarks: *DA: Depth-Averaged

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

Water Quality Monitoring Results at SR2 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity (NTU)			Suspended Solids (mg/L)				
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*		
1-Aug-14	Sunny	Moderate	15:10	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
				Middle	0.9	27.3 30.1	28.7	7.8 7.9	7.9	29.5 29.4	29.5	77.7 83.3	80.5	5.2 5.4	5.3	5.3	5.2	5.2	5.2	5.2	5.2	6.9 5.6	6.3	6.3
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Aug-14	Fine	Moderate	18:06	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
				Middle	0.9	27.9 27.8	27.9	7.9 7.9	7.9	12.3 12.3	12.3	85.5 85.8	85.7	6.3 6.3	6.3	6.3	7.9 7.1	7.5	7.5	7.5	5.5 4.3	4.9	4.9	
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6-Aug-14	Rainy	Calm	08:06	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
				Middle	0.9	29.0 29.0	29.0	8.0 8.0	8.0	19.3 19.7	19.5	83.1 82.3	82.7	5.7 5.7	5.7	5.7	7.9 8.2	8.1	8.1	8.1	3.5 2.5	3.0	3.0	
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8-Aug-14	Sunny	Calm	10:43	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
				Middle	1	28.0 27.9	28.0	7.9 7.9	7.9	16.7 16.8	16.8	88.0 87.2	87.6	6.3 6.2	6.3	6.3	4.2 4.1	4.2	4.2	4.2	2.5 4.8	3.7	3.7	
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11-Aug-14	Sunny	Moderate	13:19	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
				Middle	0.7	29.1 29.1	29.1	7.7 7.7	7.7	23.3 23.4	23.4	94.4 94.5	94.5	6.4 6.4	6.4	6.4	8.2 8.4	8.3	8.3	8.3	6.1 9.0	7.6	7.6	
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13-Aug-14	Rainy	Moderate	14:54	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
				Middle	0.9	23.7 23.9	23.8	7.6 7.6	7.6	29.5 27.2	28.4	95.2 81.0	88.1	6.8 5.9	6.4	6.4	5.2 5.1	5.2	5.2	5.2	6.4 5.4	5.9	5.9	
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15-Aug-14	Sunny	Calm	16:34	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
				Middle	0.8	29.3 29.3	29.3	7.5 7.5	7.5	21.5 21.6	21.6	91.1 91.2	91.2	6.2 6.2	6.2	6.2	9.8 9.6	9.7	9.7	9.7	11.4 11.1	11.3	11.3	
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19-Aug-14	Rainy	Moderate	08:23	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
				Middle	0.9	29.5 29.5	29.5	8.2 8.2	8.2	12.9 12.9	12.9	97.9 98.1	98.0	7.0 7.0	7.0	7.0	8.4 10.5	9.5	9.5	9.5	6.3 6.6	6.5	6.5	
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Remarks: *DA: Depth-Averaged

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

Water Quality Monitoring Results at SR2 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity (NTU)			Suspended Solids (mg/L)				
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*		
21-Aug-14	Sunny	Calm	10:05	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
				Middle	1	27.9 28.1	28.0	7.6 7.6	7.6	17.7 17.2	17.5	85.3 85.4	85.4	6.1 6.1	6.1	6.1	6.1	6.1	7.3 6.5	6.9	6.9	14.5 15.7	15.1	15.1
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23-Aug-14	Sunny	Calm	11:30	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
				Middle	0.9	25.8 25.9	25.9	7.9 7.9	7.9	32.5 32.5	32.5	78.5 77.6	78.1	5.3 5.3	5.3	5.3	5.3	5.3	15.5 13.7	14.6	14.6	5.4 4.2	4.8	4.8
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25-Aug-14	Sunny	Moderate	12:28	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
				Middle	0.9	25.8 25.7	25.8	7.6 7.6	7.6	20.0 20.8	20.4	96.9 95.6	96.3	7.1 6.9	7.0	7.0	7.0	8.5 8.6	8.6	8.6	8.6	4.1 4.1	4.1	4.1
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27-Aug-14	Fine	Moderate	13:23	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
				Middle	1	25.9 25.8	25.9	7.6 7.6	7.6	31.9 32.0	32.0	76.1 76.1	76.1	5.2 5.2	5.2	5.2	5.2	9.6 9.1	9.4	9.4	9.4	10.2 10.5	10.4	10.4
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29-Aug-14	Sunny	Moderate	14:49	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
				Middle	1.1	28.5 28.3	28.4	7.5 7.6	7.6	22.6 22.6	22.6	102.7 101.7	102.2	7.0 7.0	7.0	7.0	7.0	8.0 8.5	8.3	8.3	8.3	6.9 6.5	6.7	6.7
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Remarks: *DA: Depth-Averaged

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

Water Quality Monitoring Results at SR2 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)			
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	
1-Aug-14	Sunny	Moderate	10:02	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				Middle	1.1	29.9	29.9	7.9	7.9	17.5	17.6	88.4	88.8	6.1	6.1	6.1	6.1	5.3	5.2	5.2	5.7	7.4	7.4
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Aug-14	Sunny	Moderate	12:14	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				Middle	0.9	27.4	27.4	8.0	8.0	12.8	12.8	96.9	97.8	7.1	7.2	7.2	6.3	6.5	6.5	4.0	3.7	3.7	
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6-Aug-14	Rainy	Calm	15:33	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				Middle	1.1	29.0	29.0	8.0	8.0	17.8	18.2	97.6	96.8	6.8	6.8	6.8	5.7	5.7	5.7	3.4	3.5	3.5	
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8-Aug-14	Sunny	Rough	18:04	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				Middle	0.6	28.7	28.7	8.2	8.2	20.8	20.8	79.6	79.7	5.5	5.5	5.5	21.9	21.9	21.9	42.3	44.5	44.5	
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11-Aug-14	Fine	Moderate	20:01	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				Middle	0.8	28.5	28.4	7.7	7.7	24.7	24.9	92.3	92.3	6.2	6.3	6.3	17.8	17.6	17.6	7.5	7.4	7.4	
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13-Aug-14	Rainy	Moderate	08:30	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				Middle	1.1	24.1	24.2	7.6	7.6	27.3	27.4	88.0	85.6	6.3	6.2	6.2	5.3	5.2	5.2	7.5	6.9	6.9	
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15-Aug-14	Sunny	Calm	10:16	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				Middle	0.8	28.4	28.4	7.5	7.5	21.4	21.4	94.8	94.4	6.6	6.6	6.6	21.7	21.7	21.7	30.0	30.0	30.0	
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19-Aug-14	Rainy	Moderate	15:54	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				Middle	0.9	29.7	29.7	8.4	8.4	13.2	13.2	108.4	108.3	7.7	7.7	7.7	18.7	18.4	18.4	30.3	30.7	30.7	
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Remarks: *DA: Depth-Averaged
 **Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at SR2 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity (NTU)			Suspended Solids (mg/L)				
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*		
21-Aug-14	Fine	Calm	16:58	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
				Middle	0.9	29.0 28.9	29.0	7.7 7.7	7.7	19.4 19.4	19.4	83.9 83.4	83.7	5.8 5.8	5.8	5.8	5.8	5.8	18.9 16.9	17.9	17.9	24.7 7.7	16.2	16.2
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23-Aug-14	Fine	Calm	18:15	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
				Middle	0.9	25.9 25.9	25.9	7.9 7.9	7.9	32.6 32.6	32.6	76.9 76.0	76.5	5.2 5.1	5.2	5.2	5.2	11.3 11.2	11.3	11.3	1.8 1.8	1.8	1.8	1.8
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25-Aug-14	Fine	Moderate	18:47	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
				Middle	1.1	26.1 25.9	26.0	7.8 7.8	7.8	30.4 30.4	30.4	81.8 81.0	81.4	5.6 5.6	5.6	5.6	5.6	8.4 7.2	7.8	7.8	2.5 3.5	3.0	3.0	3.0
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27-Aug-14	Fine	Moderate	07:21	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
				Middle	1	26.8 26.7	26.8	7.6 7.6	7.6	29.2 29.5	29.4	93.7 88.7	91.2	6.4 6.0	6.2	6.2	6.2	6.5 6.6	6.6	6.6	7.0 7.0	7.0	7.0	7.0
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29-Aug-14	Sunny	Moderate	08:23	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
				Middle	1	27.8 27.8	27.8	7.6 7.6	7.6	23.1 23.1	23.1	99.2 98.6	98.9	6.9 6.8	6.9	6.9	6.9	12.8 12.8	12.8	12.8	14.2 11.5	12.9	12.9	12.9
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Remarks: *DA: Depth-Averaged

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

Water Quality Monitoring Results at SR3 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)			
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	
1-Aug-14	Sunny	Moderate	15:21	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				Middle	1.1	30.0 29.5	29.8	7.9 7.8	7.9	23.1 23.8	23.5	87.8 84.7	86.3	5.9 5.7	5.8	5.8	5.8	8.5 8.1	8.3	8.3	7.4 4.1	5.8	5.8
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Aug-14	Fine	Moderate	18:14	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				Middle	1	27.6 27.6	27.6	7.9 7.9	7.9	14.2 14.2	14.2	90.4 91.4	90.9	6.6 6.7	6.7	6.7	6.7	2.6 2.6	2.6	2.6	7.6 4.7	6.2	6.2
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6-Aug-14	Rainy	Calm	07:51	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				Middle	0.7	29.5 29.6	29.6	7.8 7.9	7.9	17.4 17.5	17.5	96.1 97.9	97.0	6.7 6.8	6.8	6.8	6.8	12.2 13.5	12.9	12.9	2.5 1.9	2.2	2.2
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8-Aug-14	Sunny	Calm	10:34	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				Middle	0.9	28.4 28.4	28.4	8.1 8.0	8.1	19.0 19.0	19.0	95.5 95.6	95.6	6.7 6.7	6.7	6.7	6.7	4.7 4.6	4.7	4.7	8.0 6.4	7.2	7.2
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11-Aug-14	Sunny	Moderate	12:55	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				Middle	0.9	29.2 29.3	29.3	7.7 7.7	7.7	22.2 22.2	22.2	94.6 95.5	95.1	6.4 6.5	6.5	6.5	6.5	9.5 9.3	9.4	9.4	11.6 11.3	11.5	11.5
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13-Aug-14	Rainy	Moderate	15:08	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				Middle	1.1	24.3 24.4	24.4	7.7 7.7	7.7	25.8 25.6	25.7	110.4 109.6	110.0	8.0 7.9	8.0	8.0	8.0	18.8 18.1	18.5	18.5	10.0 7.1	8.6	8.6
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15-Aug-14	Sunny	Calm	16:44	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				Middle	0.9	29.0 29.0	29.0	7.5 7.5	7.5	22.4 22.4	22.4	96.0 94.1	95.1	6.5 6.4	6.5	6.5	6.5	8.0 8.5	8.3	8.3	11.6 12.2	11.9	11.9
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19-Aug-14	Rainy	Moderate	08:09	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				Middle	0.7	29.6 29.6	29.6	8.1 8.1	8.1	16.7 16.7	16.7	105.9 106.2	106.1	7.4 7.4	7.4	7.4	7.4	6.4 5.4	5.9	5.9	13.8 8.0	10.9	10.9
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Remarks: *DA: Depth-Averaged
 **Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at SR3 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)				
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*		
21-Aug-14	Sunny	Calm	09:47	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
				Middle	0.8	28.3	28.3	7.7	7.7	15.7	15.8	90.3	88.5	89.4	6.5	6.4	6.4	3.8	4.4	4.1	4.1	7.0	6.0	6.0
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23-Aug-14	Sunny	Calm	11:10	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
				Middle	0.8	26.3	26.3	7.9	7.9	32.6	32.6	123.1	122.6	122.9	8.3	8.3	8.3	9.2	9.4	9.3	9.3	5.0	4.9	4.9
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25-Aug-14	Sunny	Moderate	12:17	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
				Middle	0.8	26.9	26.9	7.6	7.6	19.5	19.6	109.5	107.9	108.7	7.8	7.8	7.8	3.2	3.4	3.3	3.3	8.0	6.6	6.6
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27-Aug-14	Fine	Moderate	13:45	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
				Middle	1	28.2	28.2	7.7	7.7	25.5	25.5	116.1	116.1	116.1	7.9	7.9	7.9	9.1	9.3	9.2	9.2	9.8	9.5	9.5
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29-Aug-14	Sunny	Moderate	15:11	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
				Middle	0.9	28.7	28.8	7.7	7.7	23.9	23.9	106.0	106.0	106.0	7.2	7.2	7.2	7.3	6.9	7.1	7.1	7.0	7.2	7.2
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Remarks: *DA: Depth-Averaged

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

Water Quality Monitoring Results at SR3 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity (NTU)			Suspended Solids (mg/L)				
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*		
1-Aug-14	Sunny	Moderate	09:50	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
				Middle	1.1	29.7	29.7	7.8	7.8	20.4	20.5	107.9	107.6	107.8	7.3	7.3	7.3	7.3	2.9	3.0	3.0	6.0	5.5	5.8
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Aug-14	Sunny	Moderate	12:03	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
				Middle	0.9	27.5	27.5	7.9	7.9	20.0	20.0	96.0	98.3	97.2	6.8	6.9	6.9	4.6	4.3	4.5	4.5	4.5	4.5	
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6-Aug-14	Rainy	Calm	15:47	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
				Middle	1	29.6	29.6	7.9	8.0	18.6	18.5	88.8	88.2	88.5	6.1	6.1	6.1	7.2	7.2	7.2	4.7	3.7	4.2	
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8-Aug-14	Sunny	Rough	18:16	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
				Middle	0.9	28.7	28.7	8.2	8.2	21.3	21.3	78.5	80.3	79.4	5.4	5.5	5.5	6.1	6.1	6.1	7.4	9.5	8.5	
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11-Aug-14	Fine	Moderate	20:21	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
				Middle	1.1	29.2	29.2	7.8	7.8	23.3	23.3	89.4	91.5	90.5	6.0	6.1	6.1	9.6	9.6	9.6	14.8	8.3	11.6	
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13-Aug-14	Rainy	Moderate	08:17	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
				Middle	1.1	24.5	24.5	7.4	7.4	24.3	24.4	106.1	104.7	105.4	7.7	7.7	7.7	2.9	3.0	3.0	4.4	6.0	5.2	
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15-Aug-14	Sunny	Calm	10:03	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
				Middle	0.8	28.0	28.0	7.4	7.4	21.8	21.8	104.0	103.5	103.8	7.2	7.2	7.2	12.2	12.0	12.1	15.1	14.7	14.9	
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19-Aug-14	Rainy	Moderate	16:09	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
				Middle	0.9	29.7	29.7	8.2	8.2	18.1	18.1	93.7	93.9	93.8	6.4	6.5	6.5	7.7	7.6	7.7	6.8	7.7	7.3	
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Remarks: *DA: Depth-Averaged
 **Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at SR3 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity (NTU)			Suspended Solids (mg/L)			
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	
21-Aug-14	Fine	Calm	17:15	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				Middle	0.7	28.8 28.6	28.7	7.8 7.7	7.8	18.1 19.0	18.6	87.1 84.8	86.0	6.1 5.9	6.0	6.0	7.8 9.5	8.7	8.7	5.6 25.9	15.8	15.8	15.8
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23-Aug-14	Fine	Calm	18:35	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				Middle	0.9	27.0 27.0	27.0	8.2 8.2	8.2	28.8 28.8	28.8	78.7 77.7	78.2	5.3 5.3	5.3	5.3	11.9 11.2	11.6	11.6	2.8 2.7	2.8	2.8	2.8
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25-Aug-14	Fine	Moderate	19:20	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				Middle	1.1	26.9 26.9	26.9	7.7 7.7	7.7	30.1 30.1	30.1	82.1 80.0	81.1	5.5 5.4	5.5	5.5	14.5 14.8	14.7	14.7	3.0 2.6	2.8	2.8	2.8
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27-Aug-14	Fine	Moderate	07:06	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				Middle	0.8	28.3 28.2	28.3	7.7 7.7	7.7	25.4 25.4	25.4	117.6 117.3	117.5	8.0 7.9	8.0	8.0	9.2 8.9	9.1	9.1	7.7 7.2	7.5	7.5	7.5
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29-Aug-14	Sunny	Moderate	08:08	Surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				Middle	0.8	27.8 27.8	27.8	7.6 7.6	7.6	23.1 23.2	23.2	104.9 103.6	104.3	7.2 7.2	7.2	7.2	10.0 9.9	10.0	10.0	10.8 14.5	12.7	12.7	12.7
				Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Remarks: *DA: Depth-Averaged

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

Water Quality Monitoring Results at SR6 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity (NTU)			Suspended Solids (mg/L)					
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*			
1-Aug-14	Sunny	Moderate	15:22	Surface	1	29.8 29.8	29.8	7.5 7.4	7.5	17.7 18.0	17.9	101.4 106.9	104.2	7.0 7.4	7.2	7.2	2.6 2.2	2.4	2.5	4.2 2.3	3.3	3.5			
				Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
				Bottom	3.6	28.6 28.3	28.5	7.4 7.3	7.4	27.2 28.3	27.8	97.6 97.5	97.6	6.5 6.5	6.5		6.5	6.5		2.3 2.6	2.5		4.5 2.9	3.7	
4-Aug-14	Fine	Moderate	17:28	Surface	1	27.9 28.0	28.0	7.9 7.9	7.9	12.4 12.3	12.4	80.4 79.0	79.7	5.9 5.8	5.9	5.9	2.3 2.6	2.5	3.0	3.5 2.3	2.9	3.4			
				Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
				Bottom	4.1	24.0 24.0	24.0	7.7 7.7	7.7	29.4 29.4	29.4	68.4 69.3	68.9	4.9 4.9	4.9		4.9	4.9		3.3 3.4	3.4		4.5 3.1	3.8	
6-Aug-14	Rainy	Calm	08:28	Surface	1	29.7 26.6	28.2	8.0 7.9	8.0	11.1 11.7	11.4	111.5 107.1	109.3	8.0 8.1	8.1	8.1	2.4 2.6	2.5	2.6	4.8 4.4	4.6	4.6			
				Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
				Bottom	4.4	29.7 26.7	28.2	8.0 7.9	8.0	30.5 29.4	30.0	96.8 90.4	93.6	6.2 6.1	6.2		6.2	6.2		2.6 2.7	2.7		4.2 4.7	4.5	
8-Aug-14	Sunny	Calm	10:28	Surface	1	29.1 26.7	27.9	8.2 8.1	8.2	13.7 13.5	13.6	80.2 68.8	74.5	5.7 5.1	5.4	5.4	3.1 3.4	3.3	3.5	3.0 3.1	3.1	2.9			
				Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-		
				Bottom	4.4	26.9 29.3	28.1	8.1 8.2	8.2	25.9 25.6	25.8	79.9 86.2	83.1	5.5 5.7	5.6		5.6	5.6		3.7 3.5	3.6		2.4 3.0	2.7	
11-Aug-14	Sunny	Moderate	13:16	Surface	1	28.3 28.3	28.3	7.5 7.4	7.5	16.0 16.2	16.1	90.7 90.2	90.5	6.5 6.4	6.5	6.5	8.1 9.6	8.9	12.1	5.1 5.1	5.1	4.7			
				Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-		
				Bottom	3.8	27.2 27.3	27.3	7.5 7.4	7.5	22.6 22.1	22.4	79.4 78.8	79.1	5.6 5.5	5.6		5.6	5.6		14.3 16.1	15.2		4.5 3.9	4.2	
13-Aug-14	Rainy	Moderate	13:29	Surface	1	24.5 24.5	24.5	7.7 7.7	7.7	26.8 26.8	26.8	77.6 78.3	78.0	5.6 5.6	5.6	5.6	1.9 1.9	1.9	2.7	8.0 5.9	7.0	7.7			
				Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-		
				Bottom	4.5	24.3 24.3	24.3	7.7 7.7	7.7	32.4 32.4	32.4	78.2 78.9	78.6	5.4 5.5	5.5		5.5	5.5		3.4 3.3	3.4		10.3 6.3	8.3	
15-Aug-14	Sunny	Calm	14:58	Surface	1	28.4 28.4	28.4	7.3 7.3	7.3	22.7 22.7	22.7	83.2 83.4	83.3	5.7 5.7	5.7	5.7	6.3 6.2	6.3	7.2	8.1 7.1	7.6	7.0			
				Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-		
				Bottom	3.2	26.9 26.9	26.9	7.3 7.3	7.3	26.5 26.5	26.5	73.1 73.5	73.3	5.0 5.1	5.1		5.1	5.1		7.9 8.0	8.0		5.8 6.7	6.3	
19-Aug-14	Rainy	Moderate	08:17	Surface	1	28.9 28.9	28.9	7.9 7.9	7.9	19.0 23.2	21.1	97.4 97.0	97.2	6.8 6.6	6.7	6.7	1.6 1.3	1.5	2.0	8.3 8.3	8.3	9.3			
				Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-		
				Bottom	4.3	26.3 26.2	26.3	8.0 8.0	8.0	31.5 32.0	31.8	79.5 78.9	79.2	5.4 5.3	5.4		5.4	5.4		2.2 2.5	2.4		10.7 9.7	10.2	

Remarks: *DA: Depth-Averaged

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

Water Quality Monitoring Results at SR6 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
21-Aug-14	Sunny	Calm	10:18	Surface	1	28.8	28.8	7.6	7.6	13.2	13.2	89.1	89.4	6.4	6.4	6.4	2.8	2.8	2.3	3.8	3.8	4.4
						28.8		7.6		13.2		89.7		6.4			2.8			3.8		
				Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-	
				Bottom	3.5	27.7	27.8	7.6	7.6	21.3	21.2	75.8	76.2	5.3	5.3	5.3	1.8	1.8		5.1	5.0	
						27.8		7.6		21.0		76.2		5.3			1.8			4.9	5.0	
23-Aug-14	Sunny	Calm	11:18	Surface	1	26.7	26.7	8.0	8.0	33.6	33.6	107.3	109.3	7.1	7.3	7.3	3.2	3.3	3.2	2.0	2.0	2.3
						26.7		8.0		33.6		111.2		7.4			3.4			1.9		
				Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-	
				Bottom	4.5	26.5	26.5	7.8	7.8	33.9	33.9	94.1	93.1	6.3	6.2	6.2	2.8	3.1		2.1	2.6	
						26.5		7.8		33.9		92.0		6.1			3.3			3.1	2.6	
25-Aug-14	Sunny	Moderate	13:04	Surface	1	27.4	27.4	7.5	7.5	17.3	17.3	93.3	93.5	6.7	6.7	6.7	1.6	1.6	5.2	2.4	2.4	2.6
						27.4		7.5		17.2		93.7		6.7			1.5			2.4		
				Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-	
				Bottom	4.3	24.8	24.8	7.5	7.5	29.1	29.0	74.8	74.0	5.3	5.3	5.3	8.0	8.7		2.4	2.7	
						24.7		7.5		28.8		73.2		5.2			9.4			3.0	2.7	
27-Aug-14	Fine	Moderate	12:41	Surface	1	26.3	26.3	7.7	7.7	23.8	23.9	98.1	97.6	6.9	6.9	6.9	13.8	12.5	20.4	4.2	4.8	5.1
						26.2		7.6		24.0		97.0		6.9			11.2			5.3		
				Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-	
				Bottom	4.1	25.2	25.1	7.6	7.6	27.4	27.7	83.6	83.0	5.9	5.9	5.9	25.3	28.2		5.4	5.4	
						25.0		7.6		28.0		82.3		5.8			31.1			5.3	5.4	
29-Aug-14	Sunny	Moderate	14:20	Surface	1	28.4	28.4	7.6	7.6	24.6	24.7	98.7	97.5	6.7	6.6	6.6	9.7	9.3	11.3	5.5	5.2	3.9
						28.4		7.6		24.7		96.2		6.5			8.9			4.9		
				Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-	
				Bottom	4.1	27.4	27.4	7.6	7.6	28.2	28.3	84.8	83.4	5.7	5.6	5.6	12.8	13.3		3.5	2.5	
						27.4		7.6		28.4		81.9		5.5			13.7			1.5	2.5	

Remarks: *DA: Depth-Averaged

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

Water Quality Monitoring Results at SR6 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity (NTU)			Suspended Solids (mg/L)				
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*		
1-Aug-14	Sunny	Moderate	09:23	Surface	1	29.3	29.3	7.5	7.4	17.0	17.1	99.6	102.5	6.9	7.1	7.1	2.7	2.5	2.6	5.0	4.6	6.2		
						29.3		7.3																
				Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-
				Bottom	4.2	29.2	29.2	7.3	7.3	18.9	19.5	93.1	93.3	6.4	6.4	6.4	2.4	2.6		9.3	7.8			
						29.1		7.2		20.1		93.4		6.4		6.4	2.7			6.2				
4-Aug-14	Sunny	Moderate	11:55	Surface	1	27.5	27.5	7.9	7.9	11.9	11.9	87.1	86.8	6.4	6.4	6.4	5.6	6.0	4.7	3.2	3.6	3.9		
						27.5		7.9																
				Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-
				Bottom	4.2	27.2	27.2	7.9	7.9	14.6	14.6	85.3	85.4	6.2	6.3	6.3	3.2	3.3		3.0	4.1			
						27.2		7.9		14.6		85.4		6.3		6.3	3.3			5.1				
6-Aug-14	Rainy	Calm	15:39	Surface	1	28.3	27.7	8.0	8.0	24.8	24.9	88.7	87.7	6.0	6.0	6.0	0.5	0.5	0.9	4.2	4.4	4.3		
						27.1		8.0																
				Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-
				Bottom	4.5	27.6	27.3	8.0	8.1	27.7	28.5	73.1	73.0	4.9	4.9	4.9	1.2	1.2		4.3	4.1			
						27.0		8.1		29.3		72.9		4.9		4.9	1.2			3.9				
8-Aug-14	Sunny	Rough	16:39	Surface	1	28.5	28.9	8.0	8.1	22.7	21.0	87.7	89.8	6.0	6.2	6.2	6.4	6.2	8.2	6.1	5.3	5.5		
						29.3		8.1																
				Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-
				Bottom	4.5	29.7	28.8	8.1	8.1	23.8	23.6	79.7	80.2	5.3	5.5	5.5	9.7	10.1		5.0	5.6			
						27.9		8.0		23.3		80.6		5.6		5.5	10.5			6.2				
11-Aug-14	Fine	Moderate	18:47	Surface	1	27.2	27.0	7.6	7.6	22.7	23.3	81.6	80.6	5.7	5.7	5.7	8.9	9.3	16.1	3.2	3.5	3.7		
						26.8		7.6																
				Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-
				Bottom	4.1	25.0	25.1	7.5	7.5	30.8	30.8	70.1	70.2	4.9	4.9	4.9	21.0	22.8		3.6	3.9			
						25.1		7.5		30.7		70.2		4.9		4.9	24.6			4.2				
13-Aug-14	Rainy	Moderate	08:17	Surface	1	24.4	24.4	7.6	7.6	23.3	23.3	69.7	70.4	5.1	5.2	5.2	1.9	1.9	2.2	6.1	7.1	7.8		
						24.4		7.6																
				Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-
				Bottom	4.3	24.4	24.4	7.7	7.7	29.3	28.9	71.4	72.0	5.1	5.2	5.2	2.4	2.4		10.1	8.4			
						24.4		7.7		28.4		72.6		5.2		5.2	2.4			6.7				
15-Aug-14	Sunny	Calm	10:03	Surface	1	27.9	27.9	7.5	7.5	21.0	21.0	83.5	83.7	5.8	5.9	5.9	5.6	5.5	7.3	5.1	3.9	4.1		
						27.9		7.5																
				Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-
				Bottom	3.4	27.2	27.2	7.5	7.5	24.4	24.5	81.3	82.3	5.6	5.7	5.7	9.2	9.0		4.2	4.2			
						27.2		7.5		24.5		83.3		5.8		5.7	8.7			4.2				
19-Aug-14	Rainy	Moderate	14:52	Surface	1	29.9	29.9	8.3	8.3	11.6	11.6	96.2	95.8	6.8	6.8	6.8	6.0	6.0	9.4	4.3	5.5	6.5		
						29.9		8.3																
				Middle	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-
				Bottom	4.5	27.5	27.5	8.2	8.2	26.4	26.5	72.6	72.9	5.0	5.0	5.0	12.2	12.8		7.0	7.5			
						27.4		8.2		26.5		73.2		5.0		5.0	13.4			8.0				

Remarks: *DA: Depth-Averaged
 **Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at SR6 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)					
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*			
21-Aug-14	Fine	Calm	16:24	Surface	1	29.7 29.6	29.7	7.3 7.3	7.3	11.8 11.9	11.9	78.2 78.2	78.2	5.6 5.6	5.6	5.6	6.2 6.2	6.2	6.4	2.9 6.7	4.8	7.8			
				Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	-
				Bottom	3.6	29.4 29.4	29.4	7.3 7.3	7.3	12.6 12.7	12.7	76.4 76.8	76.6	5.4 5.5	5.5		5.5	5.5		6.6 6.6	6.6		9.9 11.6	10.8	
23-Aug-14	Fine	Calm	17:13	Surface	1	27.1 27.1	27.1	8.1 8.0	8.1	33.5 33.5	33.5	116.4 113.9	115.2	7.7 7.5	7.6	7.6	3.2 3.3	3.3	4.5	1.3 2.2	1.8	2.4			
				Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
				Bottom	4.3	26.5 26.6	26.6	7.9 7.9	7.9	33.9 33.8	33.9	109.3 110.4	109.9	7.3 7.3	7.3		7.3	7.3		6.1 5.1	5.6		2.6 3.4	3.0	
25-Aug-14	Fine	Moderate	18:07	Surface	1	27.5 27.4	27.5	7.6 7.6	7.6	17.1 17.1	17.1	87.4 83.9	85.7	6.3 6.0	6.2	6.2	3.0 3.1	3.1	5.4	5.8 4.4	5.1	4.9			
				Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
				Bottom	4.5	24.8 24.8	24.8	7.6 7.6	7.6	29.0 29.3	29.2	75.5 73.3	74.4	5.3 5.2	5.3		5.3	5.3		7.2 8.1	7.7		3.5 5.7	4.6	
27-Aug-14	Fine	Moderate	07:23	Surface	1	27.1 27.1	27.1	7.6 7.6	7.6	23.4 23.5	23.5	87.1 85.0	86.1	6.1 5.9	6.0	6.0	13.0 11.9	12.5	15.5	7.5 7.0	7.3	7.0			
				Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
				Bottom	3.9	26.1 26.1	26.1	7.6 7.6	7.6	26.8 27.0	26.9	73.6 71.0	72.3	5.1 4.9	5.0		5.0	5.0		17.7 19.1	18.4		7.2 5.9	6.6	
29-Aug-14	Sunny	Moderate	08:20	Surface	1	27.6 27.5	27.6	7.6 7.6	7.6	25.0 25.3	25.2	95.0 93.9	94.5	6.5 6.4	6.5	6.5	10.2 8.5	9.4	14.6	3.2 3.1	3.2	3.3			
				Middle	-	-	-	-	-	-	-	-	-	-	-		-	-		-	-		-	-	
				Bottom	3.9	26.5 26.3	26.4	7.6 7.6	7.6	28.9 29.4	29.2	76.8 75.3	76.1	5.3 5.2	5.3		5.3	5.3		17.9 21.7	19.8		3.3 3.4	3.4	

Remarks: *DA: Depth-Averaged

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

Water Quality Monitoring Results at SRA - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Aug-14	Sunny	Moderate	15:15	Surface	1	27.6 30.3	29.0	7.8 7.9	7.9	29.5 29.2	29.4	87.4 91.8	89.6	5.9 5.9	5.9	6.1	5.0 5.1	5.1	5.7	4.5 4.4	4.5	4.3
				Middle	3.5	30.4 29.7	30.1	7.9 7.9	7.9	24.4 23.6	24.0	93.3 93.6	93.5	6.1 6.2	6.2		5.6 5.6	5.6		4.3 4.8	4.6	
				Bottom	6	30.0 27.8	28.9	7.9 7.8	7.9	24.3 27.7	26.0	81.8 82.9	82.4	5.4 5.6	5.5		6.2 6.3	6.3		3.5 4.0	3.8	
4-Aug-14	Fine	Moderate	18:11	Surface	1	27.9 27.9	27.9	7.8 7.8	7.8	12.3 12.3	12.3	87.8 93.4	90.6	6.4 6.8	6.6	6.5	5.2 4.5	4.9	9.1	5.0 5.0	5.0	4.7
				Middle	4.5	26.1 26.1	26.1	8.0 8.0	8.0	22.8 22.7	22.8	87.8 86.9	87.4	6.3 6.2	6.3		5.0 5.2	5.1		3.8 4.2	4.0	
				Bottom	8	23.8 23.7	23.8	8.0 8.0	8.0	30.5 30.5	30.5	70.3 69.1	69.7	5.0 4.9	5.0		17.4 17.2	17.3		4.5 5.7	5.1	
6-Aug-14	Rainy	Calm	07:56	Surface	1	29.1 29.0	29.1	8.0 8.0	8.0	18.6 18.7	18.7	79.4 79.8	79.6	5.5 5.5	5.5	5.5	3.7 3.7	3.7	9.3	3.1 3.4	3.3	3.4
				Middle	4	27.2 27.1	27.2	7.8 7.7	7.8	26.9 26.8	26.9	79.6 79.3	79.5	5.4 5.4	5.4		8.7 10.7	9.7		2.8 3.4	3.1	
				Bottom	7	26.3 26.3	26.3	7.7 7.7	7.7	29.6 29.6	29.6	73.7 74.3	74.0	5.0 5.1	5.1		13.6 15.6	14.6		3.5 3.8	3.7	
8-Aug-14	Sunny	Calm	10:37	Surface	1	28.0 27.9	28.0	7.8 7.8	7.8	18.4 18.4	18.4	81.5 82.1	81.8	5.8 5.8	5.8	5.5	5.9 5.8	5.9	17.3	4.7 5.1	4.9	5.3
				Middle	5	25.4 25.4	25.4	7.9 7.9	7.9	29.1 29.2	29.2	73.8 75.5	74.7	5.1 5.3	5.2		13.4 13.8	13.6		5.5 2.6	4.1	
				Bottom	9	24.5 24.5	24.5	8.0 8.0	8.0	32.1 32.1	32.1	73.3 74.5	73.9	5.1 5.2	5.2		32.3 32.2	32.3		5.1 8.9	7.0	
11-Aug-14	Sunny	Moderate	13:05	Surface	1	28.8 28.8	28.8	7.6 7.6	7.6	23.2 23.1	23.2	90.8 91.1	91.0	6.2 6.2	6.2	6.2	8.4 8.3	8.4	9.1	10.4 9.4	9.9	9.8
				Middle	4	27.2 27.4	27.3	7.6 7.6	7.6	26.2 26.2	26.2	89.1 89.3	89.2	6.1 6.1	6.1		8.1 8.6	8.4		9.3 11.7	10.5	
				Bottom	7	26.3 26.3	26.3	7.6 7.6	7.6	28.4 28.4	28.4	87.9 88.6	88.3	6.0 6.1	6.1		10.3 10.7	10.5		9.8 8.4	9.1	
13-Aug-14	Rainy	Moderate	14:59	Surface	1	24.1 24.3	24.2	7.6 7.6	7.6	27.6 25.8	26.7	95.3 95.5	95.4	6.8 6.9	6.9	6.4	5.9 5.0	5.5	5.8	6.4 4.3	5.4	6.1
				Middle	5.5	23.9 24.4	24.2	7.6 7.6	7.6	28.5 25.3	26.9	90.0 75.0	82.5	6.4 5.4	5.9		5.8 5.6	5.7		6.7 5.7	6.2	
				Bottom	10	24.1 24.4	24.3	7.5 7.6	7.6	25.8 25.6	25.7	67.2 67.6	67.4	4.9 4.9	4.9		6.2 6.3	6.3		6.5 6.9	6.7	
15-Aug-14	Sunny	Calm	16:38	Surface	1	28.8 28.8	28.8	7.5 7.5	7.5	21.9 21.9	21.9	86.3 87.1	86.7	5.9 6.0	6.0	5.8	12.0 11.5	11.8	24.6	8.7 8.0	8.4	15.7
				Middle	4	28.1 28.3	28.2	7.5 7.5	7.5	22.8 22.6	22.7	80.9 78.1	79.5	5.6 5.4	5.5		17.8 19.1	18.5		24.0 21.7	22.9	
				Bottom	7	26.8 26.7	26.8	7.5 7.5	7.5	27.2 26.9	27.1	75.0 73.3	74.2	5.2 5.1	5.2		40.6 46.3	43.5		16.6 15.0	15.8	
19-Aug-14	Rainy	Moderate	08:15	Surface	1	29.6 29.6	29.6	8.2 8.2	8.2	14.8 14.7	14.8	99.8 100.8	100.3	7.0 7.1	7.1	6.4	5.6 6.1	5.9	11.8	6.9 5.9	6.4	6.1
				Middle	4.5	29.2 29.3	29.3	8.1 8.0	8.1	19.5 20.8	20.2	82.9 82.2	82.6	5.7 5.6	5.7		9.0 10.6	9.8		4.1 8.0	6.1	
				Bottom	8	26.3 26.3	26.3	7.9 7.9	7.9	28.7 28.7	28.7	76.3 75.0	75.7	5.2 5.2	5.2		19.8 19.7	19.8		7.1 4.3	5.7	

Remarks: *DA: Depth-Averaged

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

Water Quality Monitoring Results at SRA - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
21-Aug-14	Sunny	Calm	09:52	Surface	1	27.9 28.0	28.0	7.7 7.7	7.7	17.9 17.5	17.7	93.5 93.9	93.7	6.6 6.7	6.7	6.2	6.2 6.3	6.3	14.2	5.2 5.4	5.3	10.5
				Middle	4	26.9 27.0	27.0	7.6 7.6	7.6	23.7 24.2	24.0	80.8 81.2	81.0	5.7 5.7	5.7		12.0 12.1	12.1		10.1 9.2	9.7	
				Bottom	7	25.9 25.8	25.9	7.6 7.6	7.6	29.6 29.8	29.7	73.4 73.2	73.3	5.1 5.0	5.1		23.5 24.7	24.1		17.2 15.8	16.5	
23-Aug-14	Sunny	Calm	11:20	Surface	1	25.6 25.7	25.7	7.9 7.9	7.9	32.6 32.6	32.6	114.8 108.6	111.7	7.8 7.4	7.6	6.9	10.7 10.6	10.7	12.8	2.8 4.0	3.4	3.9
				Middle	3.5	25.7 25.7	25.7	7.9 7.9	7.9	32.6 32.6	32.6	89.5 88.8	89.2	6.1 6.0	6.1		12.0 12.6	12.3		4.6 3.6	4.1	
				Bottom	6	25.5 25.6	25.6	7.9 7.9	7.9	32.7 32.7	32.7	86.2 82.8	84.5	5.9 5.6	5.8		16.0 14.5	15.3		4.2 4.1	4.2	
25-Aug-14	Sunny	Moderate	12:20	Surface	1	26.2 26.0	26.1	7.6 7.6	7.6	26.8 22.4	24.6	80.0 80.3	80.2	5.6 5.7	5.7	5.9	11.7 11.9	11.8	13.2	3.7 3.9	3.8	3.8
				Middle	3.5	25.8 24.8	25.3	7.6 7.6	7.6	27.2 21.9	24.6	82.1 86.5	84.3	5.7 6.3	6.0		11.7 14.3	13.0		4.2 3.6	3.9	
				Bottom	6	24.6 24.4	24.5	7.6 7.6	7.6	23.0 20.1	21.6	72.9 72.1	72.5	5.3 5.4	5.4		15.0 14.8	14.9		3.9 3.6	3.8	
27-Aug-14	Fine	Moderate	13:35	Surface	1	27.9 27.9	27.9	7.7 7.7	7.7	25.4 25.4	25.4	96.9 96.9	96.9	6.6 6.6	6.6	6.5	9.9 9.9	9.9	7.9	10.2 10.0	10.1	9.6
				Middle	4	27.3 27.3	27.3	7.6 7.6	7.6	26.9 26.9	26.9	93.8 90.8	92.3	6.4 6.2	6.3		6.4 6.3	6.4		10.5 10.8	10.7	
				Bottom	7	26.2 26.2	26.2	7.6 7.6	7.6	30.5 30.4	30.5	78.1 74.7	76.4	5.3 5.1	5.2		7.8 7.2	7.5		7.5 8.5	8.0	
29-Aug-14	Sunny	Moderate	15:01	Surface	1	28.4 28.3	28.4	7.7 7.7	7.7	23.6 23.7	23.7	97.8 97.3	97.6	6.7 6.7	6.7	6.3	7.4 7.9	7.7	14.9	7.2 8.8	8.0	8.4
				Middle	4	27.7 27.4	27.6	7.7 7.6	7.7	24.1 24.6	24.4	86.3 84.5	85.4	5.9 5.8	5.9		11.5 11.4	11.5		8.0 6.4	7.2	
				Bottom	7	26.8 26.8	26.8	7.6 7.6	7.6	26.1 26.1	26.1	79.0 78.4	78.7	5.5 5.4	5.5		24.1 26.6	25.4		9.7 10.2	10.0	

Remarks: *DA: Depth-Averaged

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

Water Quality Monitoring Results at SRA - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Aug-14	Sunny	Moderate	09:54	Surface	1	29.4 29.5	29.5	7.9 7.9	7.9	20.8 20.8	20.8	93.2 93.5	93.4	6.4 6.4	6.4	6.4	5.2 5.8	5.5	5.2	7.2 6.9	7.1	7.3
				Middle	3.5	29.4 29.2	29.3	7.9 7.8	7.9	21.1 22.4	21.8	92.0 91.5	91.8	6.3 6.2	6.3		4.9 4.9	4.9		6.3 7.2	6.8	
				Bottom	6	29.2 29.4	29.3	7.8 7.9	7.9	22.4 21.2	21.8	90.8 91.7	91.3	6.2 6.2	6.2		5.3 4.8	5.1		8.7 7.3	8.0	
4-Aug-14	Sunny	Moderate	12:07	Surface	1	27.2 27.2	27.2	7.9 7.9	7.9	18.7 18.6	18.7	94.5 96.5	95.5	6.8 6.9	6.9	6.6	1.9 1.8	1.9	9.9	6.0 6.7	6.4	6.6
				Middle	4	26.5 26.5	26.5	7.9 7.9	7.9	21.7 21.6	21.7	89.7 86.4	88.1	6.4 6.2	6.3		5.4 5.7	5.6		6.3 7.7	7.0	
				Bottom	7	24.0 23.9	24.0	8.0 8.0	8.0	29.7 30.1	29.9	68.7 68.0	68.4	4.9 4.8	4.9		21.1 23.3	22.2		6.0 7.0	6.5	
6-Aug-14	Rainy	Calm	15:39	Surface	1	29.1 29.1	29.1	8.0 8.0	8.0	18.6 18.7	18.7	85.9 87.8	86.9	6.0 6.1	6.1	5.7	2.5 2.4	2.5	9.0	5.0 3.3	4.2	3.9
				Middle	4	26.9 27.2	27.1	7.8 7.9	7.9	27.9 27.5	27.7	76.4 77.0	76.7	5.2 5.2	5.2		7.1 6.8	7.0		4.0 3.9	4.0	
				Bottom	7	26.3 26.3	26.3	7.7 7.7	7.7	29.7 29.6	29.7	70.5 71.3	70.9	4.8 4.9	4.9		16.2 18.8	17.5		3.1 3.9	3.5	
8-Aug-14	Sunny	Rough	18:08	Surface	1	28.5 28.5	28.5	8.2 8.2	8.2	21.7 21.8	21.8	79.2 79.9	79.6	5.5 5.5	5.5	5.4	14.7 13.8	14.3	13.0	16.2 15.0	15.6	16.5
				Middle	4	27.9 27.8	27.9	8.3 8.2	8.3	23.2 23.3	23.3	75.7 76.2	76.0	5.2 5.3	5.3		11.8 11.8	11.8		17.0 16.4	16.7	
				Bottom	7	26.8 26.8	26.8	8.3 8.3	8.3	25.8 25.8	25.8	70.2 70.7	70.5	4.9 4.9	4.9		13.4 12.4	12.9		20.7 13.8	17.3	
11-Aug-14	Fine	Moderate	20:11	Surface	1	28.8 28.8	28.8	7.7 7.7	7.7	24.1 24.1	24.1	89.8 91.6	90.7	6.1 6.2	6.2	6.3	16.1 13.2	14.7	14.0	6.6 8.9	7.8	8.5
				Middle	3.5	27.9 28.0	28.0	7.7 7.7	7.7	25.7 25.6	25.7	92.4 92.3	92.4	6.3 6.3	6.3		10.6 11.1	10.9		8.5 9.7	9.1	
				Bottom	6	27.1 26.8	27.0	7.7 7.7	7.7	28.6 28.9	28.8	92.5 91.6	92.1	6.3 6.2	6.3		15.5 17.5	16.5		9.2 8.0	8.6	
13-Aug-14	Rainy	Moderate	08:22	Surface	1	24.5 24.4	24.5	7.5 7.5	7.5	24.6 25.5	25.1	108.3 88.3	98.3	7.9 6.4	7.2	7.0	5.2 5.8	5.5	5.2	7.6 6.5	7.1	5.5
				Middle	3.5	24.4 24.3	24.4	7.4 7.5	7.5	25.1 25.9	25.5	96.5 88.5	92.5	7.0 6.4	6.7		4.9 4.9	4.9		4.8 3.7	4.3	
				Bottom	6	24.4 24.2	24.3	7.5 7.4	7.5	24.9 26.5	25.7	90.1 85.1	87.6	6.5 6.1	6.3		5.3 4.8	5.1		4.7 5.2	5.0	
15-Aug-14	Sunny	Calm	10:08	Surface	1	28.1 28.1	28.1	7.4 7.4	7.4	22.0 22.0	22.0	93.2 93.3	93.3	6.4 6.5	6.5	6.5	15.4 15.2	15.3	16.0	19.8 19.4	19.6	20.5
				Middle	4.5	28.0 28.0	28.0	7.4 7.4	7.4	22.0 22.0	22.0	93.3 93.5	93.4	6.5 6.5	6.5		15.0 15.2	15.1		22.0 18.2	20.1	
				Bottom	8	28.0 28.0	28.0	7.4 7.4	7.4	22.0 22.0	22.0	93.5 93.2	93.4	6.5 6.5	6.5		18.2 16.9	17.6		18.7 24.7	21.7	
19-Aug-14	Rainy	Moderate	16:01	Surface	1	29.9 29.9	29.9	8.2 8.2	8.2	17.2 17.2	17.2	91.6 92.4	92.0	6.3 6.4	6.4	6.3	11.1 11.0	11.1	14.5	7.4 7.3	7.4	7.6
				Middle	5	30.0 29.9	30.0	8.1 8.1	8.1	17.8 17.9	17.9	89.6 89.9	89.8	6.2 6.2	6.2		10.8 10.7	10.8		6.8 9.2	8.0	
				Bottom	9	29.8 29.8	29.8	8.2 8.2	8.2	18.8 18.8	18.8	90.6 90.1	90.4	6.2 6.2	6.2		21.6 21.3	21.5		8.3 6.7	7.5	

Remarks: *DA: Depth-Averaged

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

Water Quality Monitoring Results at SRA - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)					
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*			
21-Aug-14	Fine	Calm	17:06	Surface	1	28.8	28.8	7.7	7.7	18.3	18.4	87.1	87.1	6.1	6.1	6.0	11.2	10.5	13.8	12.3	14.0	13.5			
						28.8		7.7		18.4		87.1		6.1			9.7						15.7		
				Middle	4	27.9	27.9	7.7	7.7	21.5	21.4	82.3	82.8	5.7	5.8		13.2	13.5		13.8	13.9		13.8	14.0	
		27.9		7.7		21.3		83.3		5.8		5.8						14.0							
		27.3	27.5	7.6	7.6	23.7	22.9	74.5	74.3	5.2	5.2	5.2	5.2	18.4	17.3	12.3	12.7	12.3	13.0						
		27.7		7.6		22.1		74.1		5.2		5.2		16.1		13.0		12.7							
23-Aug-14	Fine	Calm	18:25	Surface	1	26.0	26.0	7.9	7.9	32.5	32.5	92.0	91.0	6.2	6.2	6.2	11.1	11.2	11.7	2.6	1.7	2.8			
						25.9		7.9		32.5		89.9		6.1			11.2						0.7		
				Middle	3.5	26.0	26.0	7.9	7.9	32.5	32.5	92.4	91.5	6.2	6.2		10.8	11.6		6.4	4.3		2.6	2.2	
		26.0		7.9		32.5		90.6		6.1		6.2					2.2								
		26.0	26.0	7.9	7.9	32.5	32.5	79.0	77.5	5.3	5.2	5.2	12.4	12.3	2.7	2.4	2.7	2.1							
		26.0		7.9		32.5		75.9		5.1		5.2		12.2		2.1		2.4							
25-Aug-14	Fine	Moderate	19:10	Surface	1	26.5	26.4	7.8	7.8	31.4	31.5	81.1	81.1	5.5	5.5	5.5	12.5	12.7	13.4	3.8	3.8	3.6			
						26.3		7.8		31.5		81.1		5.5			12.8						3.8		
				Middle	3.5	26.6	26.5	7.8	7.8	31.5	31.5	81.9	81.1	5.5	5.5		13.2	13.7		4.7	3.9		2.6	2.2	
		26.3		7.8		31.5		80.2		5.4		5.5					3.0								
		26.3	26.3	7.8	7.8	31.4	31.5	80.9	80.4	5.5	5.5	5.5	13.3	13.9	3.5	3.2	2.6	2.8							
		26.3		7.8		31.5		79.9		5.4		5.5		14.4		2.8		3.2							
27-Aug-14	Fine	Moderate	07:11	Surface	1	27.9	27.9	7.7	7.7	25.4	25.5	104.1	104.0	7.1	7.1	6.6	9.4	9.2	8.1	6.7	6.5	7.6			
						27.8		7.7		25.5		103.8		7.1			7.1						6.2		
				Middle	4	27.3	27.3	7.6	7.6	26.9	26.9	89.8	89.9	6.1	6.1		7.5	7.7		7.8	7.8		7.6	7.8	
		27.3		7.6		26.8		90.0		6.1		6.1					7.8								
		26.8	26.8	7.6	7.6	28.8	28.8	78.5	78.2	5.3	5.3	5.3	7.0	7.4	8.0	8.4	7.6	7.8							
		26.8		7.6		28.8		77.9		5.3		5.3		7.7		8.8		8.4							
29-Aug-14	Sunny	Moderate	08:14	Surface	1	27.7	27.7	7.6	7.6	23.2	23.3	101.8	101.6	7.0	7.0	7.0	13.1	12.9	15.3	12.0	12.2	15.9			
						27.7		7.6		23.3		101.3		7.0			7.0						12.3		
				Middle	4	27.7	27.7	7.6	7.6	23.3	23.3	100.6	100.7	7.0	7.0		15.0	14.6		17.2	17.1		12.3	12.2	
		27.7		7.6		23.3		100.8		7.0		7.0					17.2								
		27.8	27.8	7.6	7.6	23.3	23.4	100.5	100.3	6.9	6.9	6.9	19.0	18.3	15.7	18.3	15.7	17.0							
		27.7		7.6		23.4		100.0		6.9		6.9		17.5		20.8		18.3							

Remarks: *DA: Depth-Averaged

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

Water Quality Monitoring Results at ST1 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Aug-14	Sunny	Moderate	15:45	Surface	1	30.3 30.6	30.5	7.9 7.9	7.9	18.1 17.9	18.0	103.0 103.4	103.2	7.0 7.0	7.0	6.5	1.7 1.6	1.7	2.4	2.8 3.4	3.1	2.8
				Middle	5.5	28.4 28.8	28.6	7.9 7.9	7.9	27.6 26.7	27.2	86.1 93.7	89.9	5.7 6.2	6.0		2.3 2.0	2.2		2.2 2.1	2.2	
				Bottom	10	27.5 27.5	27.5	7.9 7.9	7.9	33.0 33.1	33.1	78.8 75.0	76.9	5.2 4.9	5.1		5.1	3.2 3.6		3.4	3.0 3.0	
4-Aug-14	Fine	Moderate	17:53	Surface	1	28.6 28.8	28.7	8.0 7.9	8.0	11.2 11.0	11.1	78.8 79.7	79.3	5.7 5.8	5.8	5.5	3.7 3.9	3.8	3.8	3.3 3.6	3.5	4.0
				Middle	5	23.9 23.9	23.9	7.7 7.7	7.7	29.9 29.9	29.9	71.5 71.9	71.7	5.1 5.1	5.1		3.1 3.4	3.3		3.4 4.6	4.0	
				Bottom	9	23.0 23.0	23.0	7.7 7.7	7.7	32.0 32.0	32.0	69.3 69.2	69.3	4.9 4.9	4.9		4.9	4.3 4.1		4.2	6.2 2.9	
6-Aug-14	Rainy	Calm	08:46	Surface	1	29.5 28.6	29.1	8.0 7.9	8.0	11.1 12.7	11.9	108.3 106.9	107.6	7.8 7.7	7.8	7.0	1.6 1.4	1.5	2.0	4.2 3.6	3.9	3.6
				Middle	5	29.7 28.8	29.3	8.0 7.9	8.0	20.9 20.7	20.8	88.8 91.7	90.3	6.0 6.3	6.2		2.1 2.4	2.3		3.2 3.7	3.5	
				Bottom	9	27.8 29.6	28.7	7.9 8.0	8.0	26.3 26.9	26.6	86.1 88.6	87.4	5.8 5.8	5.8		5.8	2.3 2.3		2.3	3.5 3.1	
8-Aug-14	Sunny	Calm	10:46	Surface	1	26.1 26.4	26.3	8.0 8.1	8.1	30.9 30.5	30.7	69.1 75.0	72.1	4.7 5.1	4.9	5.5	3.8 4.4	4.1	4.0	2.5 2.2	2.4	2.2
				Middle	5	29.2 29.9	29.6	8.2 8.2	8.2	13.5 12.8	13.2	84.1 85.5	84.8	6.0 6.0	6.0		4.4 3.7	4.1		2.4 2.4	2.4	
				Bottom	9	27.6 28.7	28.2	8.2 8.2	8.2	25.3 25.6	25.5	81.9 91.7	86.8	5.6 6.2	5.9		5.9	4.0 3.5		3.8	2.2 1.6	
11-Aug-14	Sunny	Moderate	13:43	Surface	1	27.8 27.7	27.8	7.4 7.4	7.4	18.7 19.4	19.1	97.9 96.9	97.4	6.9 6.9	6.9	6.5	6.9 7.8	7.4	16.7	6.1 6.1	6.1	6.6
				Middle	5	26.9 26.1	26.5	7.4 7.5	7.5	23.6 27.4	25.5	86.0 85.6	85.8	6.0 6.0	6.0		12.6 11.4	12.0		7.7 7.5	7.6	
				Bottom	9	25.6 25.5	25.6	7.4 7.5	7.5	29.4 29.5	29.5	75.1 74.7	74.9	5.2 5.2	5.2		5.2	29.6 32.0		30.8	7.8 4.3	
13-Aug-14	Rainy	Moderate	13:53	Surface	1	24.4 24.4	24.4	7.7 7.7	7.7	27.7 27.7	27.7	83.7 83.9	83.8	6.0 6.0	6.0	5.9	1.5 1.8	1.7	4.0	6.0 9.8	7.9	7.8
				Middle	5.5	24.2 24.3	24.3	7.7 7.7	7.7	32.5 32.9	32.7	82.5 85.6	84.1	5.7 5.9	5.8		3.6 3.7	3.7		6.0 6.9	6.5	
				Bottom	10	24.1 24.1	24.1	7.7 7.7	7.7	33.7 33.7	33.7	81.1 86.0	83.6	5.6 6.0	5.8		5.8	6.2 6.7		6.5	9.4 8.6	
15-Aug-14	Sunny	Calm	15:22	Surface	1	27.9 27.9	27.9	7.7 7.7	7.7	25.3 25.3	25.3	102.4 101.5	102.0	7.0 6.9	7.0	6.4	4.7 4.8	4.8	14.9	5.5 7.5	6.5	7.7
				Middle	5	25.9 25.9	25.9	7.7 7.7	7.7	30.3 30.3	30.3	82.1 82.8	82.5	5.6 5.7	5.7		7.5 7.6	7.6		6.6 6.5	6.6	
				Bottom	9	25.7 25.7	25.7	7.4 7.4	7.4	30.9 30.9	30.9	73.5 73.2	73.4	5.0 5.0	5.0		5.0	30.8 34.0		32.4	9.6 10.5	
19-Aug-14	Rainy	Moderate	08:38	Surface	1	29.5 29.5	29.5	8.1 8.0	8.1	14.1 14.1	14.1	107.3 104.9	106.1	7.6 7.4	7.5	7.2	1.7 1.7	1.7	4.4	9.7 8.3	9.0	8.3
				Middle	5	29.5 29.5	29.5	8.1 8.0	8.1	14.6 14.6	14.6	100.0 96.9	98.5	7.0 6.8	6.9		1.6 1.6	1.6		10.0 9.7	9.9	
				Bottom	9	26.9 26.2	26.6	8.0 8.0	8.0	30.5 32.6	31.6	98.2 96.2	97.2	6.6 6.5	6.6		6.6	9.6 10.3		10.0	6.0 5.7	

Remarks: *DA: Depth-Averaged

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

Water Quality Monitoring Results at ST1 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
21-Aug-14	Sunny	Calm	10:39	Surface	1	28.8	28.8	7.8	7.8	13.2	13.2	99.8	99.5	7.2	7.2	6.5	2.5	2.6	8.8	4.9	4.8	4.9
						28.8		7.8		13.2		99.2		7.1			2.6			4.6		
				Middle	5	27.8	27.9	7.7	7.7	20.8	21.2	81.0	81.0	5.7	5.7		1.7	1.8		5.6	5.2	
		27.9		7.7		21.6		80.9		5.6		5.7		1.8		4.7						
		25.5	25.5	7.8	7.8	33.8	33.8	72.0	71.9	4.9	4.9	4.9	4.9	22.5	22.1	5.6	4.8					
		25.5		7.8		33.8		71.8		4.9		4.9		21.7		4.0						
23-Aug-14	Sunny	Calm	11:41	Surface	1	26.8	26.8	8.0	8.0	33.6	33.6	121.6	121.5	8.1	8.1	8.0	3.7	3.8	10.9	5.1	3.6	3.2
						26.7		8.0		33.6		121.4		8.1			3.9			2.1		
				Middle	5	26.6	26.6	7.8	7.8	34.0	34.0	117.7	117.4	7.8	7.8		8.8	9.2		2.6	2.4	
		26.5		7.8		33.9		117.0		7.8		7.8		9.6		2.1						
		25.9	25.9	7.8	7.8	34.1	34.1	111.2	112.0	7.5	7.6	7.6	7.6	19.4	19.7	4.2	3.6					
		25.9		7.8		34.1		112.7		7.6		7.6		20.0		2.9						
25-Aug-14	Sunny	Moderate	13:28	Surface	1	28.0	28.2	7.8	7.8	15.8	15.6	95.9	95.0	6.9	6.8	6.4	6.1	6.0	13.1	3.6	4.0	4.4
						28.3		7.8		15.3		94.0		6.7			5.9			4.4		
				Middle	5	26.0	26.3	7.9	7.9	22.8	22.0	83.9	83.1	6.0	6.0		10.2	10.3		4.7	4.5	
		26.6		7.8		21.1		82.2		5.9		6.0		10.4		4.3						
		23.8	23.9	8.0	8.0	32.6	32.4	84.8	85.1	6.0	6.0	6.0	6.0	21.3	22.9	5.6	4.7					
		24.0		7.9		32.2		85.3		6.0		6.0		24.5		3.7						
27-Aug-14	Fine	Moderate	13:10	Surface	1	25.6	25.5	7.6	7.6	26.5	26.9	83.7	82.9	5.9	5.9	5.6	13.9	15.5	23.1	6.7	6.9	6.1
						25.4		7.6		27.3		82.0		5.8			17.0			7.0		
				Middle	5	24.4	24.4	7.6	7.6	30.6	30.7	74.7	73.6	5.2	5.2		17.2	17.1		5.6	5.4	
		24.3		7.6		30.8		72.4		5.1		5.2		16.9		5.2						
		24.2	24.2	7.6	7.6	31.2	31.3	68.8	68.7	4.8	4.8	4.8	4.8	36.7	36.8	4.3	6.0					
		24.1		7.6		31.4		68.5		4.8		4.8		36.8		7.7						
29-Aug-14	Sunny	Moderate	14:53	Surface	1	27.9	27.9	7.6	7.6	27.6	27.7	90.5	89.9	6.1	6.1	6.1	8.7	9.1	19.7	5.3	4.7	4.1
						27.8		7.6		27.7		89.3		6.0			9.5			4.0		
				Middle	5	26.6	26.5	7.6	7.6	32.0	32.2	73.8	73.5	6.0	6.0		17.0	18.5		3.4	3.5	
		26.4		7.6		32.3		73.1		5.9		6.0		20.0		3.6						
		26.2	26.2	7.6	7.6	32.7	32.8	62.1	61.7	5.2	5.2	5.2	5.2	31.8	31.6	3.1	4.0					
		26.2		7.6		32.8		61.3		5.1		5.2		31.4		4.8						

Remarks: *DA: Depth-Averaged

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

Water Quality Monitoring Results at ST1 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity (NTU)			Suspended Solids (mg/L)						
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*				
1-Aug-14	Sunny	Moderate	09:45	Surface	1	29.3	29.3	7.9	7.9	17.0	16.8	100.3	100.3	7.0	7.0	6.5	1.6	1.6	2.6	7.0	6.9	7.2				
						29.3		7.9		16.6		100.2		7.0						1.5				6.8	6.9	
				Middle	5.5	29.2	29.2	7.9	7.9	19.1	19.1	81.1	85.1	5.6	5.9		2.4	2.4		2.4	2.3		2.4	6.5	7.5	
		29.2		7.9		19.0		89.1		6.2		5.0				3.4	3.7		9.0	7.3						
		29.0	29.0	7.9	8.0	22.1	22.7	72.8	73.1	5.0	5.0	5.0	5.0	5.0	5.0	3.4	3.9	3.7	9.0	5.6	7.3					
		29.0		8.0		23.2		73.3		5.0		5.0				3.9			5.6							
4-Aug-14	Sunny	Moderate	12:26	Surface	1	27.3	27.3	7.9	7.9	12.2	12.2	80.4	80.8	6.0	6.0	5.6	4.4	4.4	5.8	1.9	2.6	2.7				
						27.3		7.9		12.2		81.2		6.0							4.3				3.3	
				Middle	5	26.5	26.5	7.8	7.8	18.6	19.5	70.3	70.3	5.1	5.1		3.2	3.2		3.2	3.1		3.2	2.9	3.0	
		26.4		7.8		20.4		70.3		5.1		5.1				3.1			3.1							
		23.5	23.5	7.7	7.7	30.9	31.0	67.5	68.9	4.8	4.9	4.9	4.9	4.9	4.9	9.4	9.7		2.1	2.6						
		23.5		7.7		31.0		70.2		5.0		4.9				9.9			3.0							
6-Aug-14	Rainy	Calm	15:53	Surface	1	26.1	26.1	8.1	8.1	13.9	14.0	79.6	79.8	6.0	6.0	5.9	7.1	7.1	7.1	4.1	4.0	3.8				
						26.0		8.1		14.0		79.9		6.0							7.1				3.9	
				Middle	5	26.0	27.8	8.1	8.1	31.9	31.8	86.0	88.7	5.8	5.8		6.6	6.6		6.6	6.6		6.6	6.6	3.4	3.6
		29.6		8.1		31.7		91.3		5.8		5.8				6.6			6.6							
		26.0	27.8	8.1	8.1	31.9	31.6	72.6	75.1	4.9	5.0	5.0	5.0	5.0	5.0	7.6	7.6		4.0	3.9						
		29.6		8.1		31.2		77.5		5.0		5.0				7.6			3.8							
8-Aug-14	Sunny	Rough	16:53	Surface	1	28.5	28.4	8.0	8.0	23.3	24.0	81.2	79.9	5.5	5.4	5.5	10.0	10.2	8.4	5.0	4.8	5.1				
						28.2		8.0		24.6		78.5		5.3							10.4				4.6	
				Middle	5	29.8	29.7	8.1	8.2	17.0	17.5	82.3	80.2	5.7	5.6		6.3	6.4		6.4	6.5		6.4	4.0	4.5	
		29.5		8.2		18.0		78.0		5.4		5.6				6.5			4.9							
		28.7	28.7	8.1	8.1	20.0	21.0	81.5	78.1	5.6	5.4	5.4	5.4	5.4	5.4	8.4	8.5		5.5	6.1						
		28.7		8.1		21.9		74.7		5.1		5.4				8.6			6.6							
11-Aug-14	Fine	Moderate	19:18	Surface	1	28.3	28.4	7.7	7.7	17.5	17.5	97.3	92.2	6.9	6.6	5.9	6.1	6.4	14.4	7.7	7.3	7.0				
						28.4		7.6		17.4		87.1		6.2							6.6				6.8	
				Middle	5	26.2	26.2	7.6	7.6	26.2	26.2	73.4	72.8	5.1	5.1		15.9	16.6		16.6	17.3		16.6	6.5	6.0	
		26.2		7.6		26.1		72.1		5.0		5.1				17.3			5.5							
		25.1	25.1	7.7	7.7	30.4	30.5	70.0	69.7	4.9	4.9	4.9	4.9	4.9	4.9	20.4	20.3		7.7	7.7						
		25.1		7.6		30.5		69.3		4.8		4.9				20.2			7.6							
13-Aug-14	Rainy	Moderate	08:41	Surface	1	24.4	24.4	7.6	7.6	23.4	23.5	77.0	76.5	5.6	5.6	5.6	2.7	2.6	3.8	10.1	8.6	8.1				
						24.4		7.6		23.6		75.9		5.5							2.5				7.1	
				Middle	5	24.3	24.3	7.7	7.7	29.9	29.9	76.3	77.4	5.4	5.5		3.1	3.1		3.1	3.1		3.1	7.1	7.7	
		24.3		7.7		29.9		78.4		5.5		5.5				3.1			8.3							
		24.2	24.3	7.7	7.7	32.2	32.2	77.2	77.3	5.4	5.4	5.4	5.4	5.4	5.4	5.7	5.7		8.0	8.0						
		24.3		7.7		32.1		77.3		5.4		5.4				5.7			7.9							
15-Aug-14	Sunny	Calm	10:27	Surface	1	27.3	27.3	8.2	8.2	23.9	23.9	99.7	99.5	6.9	6.9	6.5	8.2	8.2	19.9	4.1	5.5	8.7				
						27.3		8.2		23.8		99.3		6.9							8.2				6.8	
				Middle	5	26.5	26.5	8.1	8.1	27.3	27.5	88.6	88.9	6.1	6.1		14.0	14.2		14.2	14.3		14.2	8.4	9.1	
		26.5		8.1		27.7		89.2		6.1		6.1				14.3			9.8							
		26.0	26.0	7.9	7.9	30.0	30.0	81.5	81.4	5.6	5.6	5.6	5.6	5.6	5.6	36.6	37.2		11.2	11.4						
		26.0		7.9		30.0		81.2		5.6		5.6				37.8			11.5							
19-Aug-14	Rainy	Moderate	15:17	Surface	1	29.8	29.8	8.1	8.1	11.7	11.7	107.5	106.6	7.7	7.6	7.0	5.9	5.7	9.4	3.1	3.4	16.7				
						29.8		8.0		11.6		105.7		7.5							5.4				3.7	
				Middle	5	27.9	28.6	8.0	8.0	20.5	19.7	91.3	90.7	6.4	6.3		5.2	5.2		5.2	5.2		5.2	4.7	8.4	
		29.3		8.0		18.8		90.0		6.2		6.3				5.2			12.0							
		26.0	26.1	7.9	7.9	32.3	32.2	85.4	84.8	5.8	5.8	5.8	5.8	5.8	5.8	18.3	17.3		39.0	38.2						
		26.1		7.9		32.1		84.2		5.7		5.8				16.3			37.3							

Remarks: *DA: Depth-Averaged
 **Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher.

Water Quality Monitoring Results at ST1 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)					
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*			
21-Aug-14	Fine	Calm	16:48	Surface	1	29.9	29.9	7.8	7.8	10.7	10.7	74.4	74.2	5.3	5.3	5.3	6.8	6.8	8.2	8.6	8.1	8.1			
						29.9		7.8		10.7		73.9		5.3			6.8			6.8			7.6		
				Middle	4.5	29.1	29.1	7.7	7.7	14.3	14.3	72.6	72.5	5.2	5.2		6.7	6.8		8.7	8.4				
		29.1		7.7		14.3		72.4		5.1		5.2		6.8		8.1		8.4							
		25.9	25.9	7.8	7.8	31.8	31.8	74.5	74.3	5.1	5.1	5.1	5.1	10.6	11.0	7.5	7.8								
		25.8		7.8		31.8		74.1		5.0		5.1		11.3		8.0		7.8							
23-Aug-14	Fine	Calm	17:32	Surface	1	27.1	27.1	8.1	8.1	33.6	33.7	111.1	111.4	7.3	7.4	7.3	3.0	3.0	7.7	3.2	2.6	3.5			
						27.1		8.0		33.7		111.6		7.4			3.0			1.9					
				Middle	4.5	26.7	26.7	7.9	7.9	33.9	33.9	107.6	108.2	7.1	7.2		4.0	4.0		2.7	3.2				
		26.6		7.9		33.8		108.7		7.2		7.2		3.9		3.7		3.2							
		26.1	26.1	7.8	7.8	34.1	34.1	102.6	103.0	6.9	6.9	6.9	6.9	16.6	16.1	5.3	4.7								
		26.1		7.8		34.1		103.4		6.9		6.9		15.5		4.1		4.7							
25-Aug-14	Fine	Moderate	18:32	Surface	1	27.9	27.9	7.9	7.9	16.1	16.2	99.6	99.2	7.1	7.1	6.8	6.0	6.0	14.5	3.5	3.9	4.1			
						27.8		7.9		16.2		98.8		7.1			7.1			5.9			4.2		3.9
				Middle	5	26.2	26.6	8.0	8.0	22.1	22.0	92.7	90.4	6.6	6.4		11.9	12.6		3.7	4.3				
		26.9		7.9		21.9		88.1		6.2		6.4		13.3		4.9		4.3							
		23.9	23.9	8.1	8.1	32.2	32.4	76.8	75.4	5.4	5.3	5.3	5.3	23.6	24.8	4.0	4.2								
		23.8		8.0		32.5		73.9		5.2		5.3		25.9		4.3		4.2							
27-Aug-14	Fine	Moderate	07:48	Surface	1	26.5	26.5	7.6	7.6	26.2	26.3	94.3	93.8	6.5	6.5	6.3	6.1	6.7	19.4	8.5	9.8	8.4			
						26.5		7.6		26.4		93.2		6.5			6.5			7.2			11.0		9.8
				Middle	5	25.3	25.2	7.6	7.6	30.4	30.6	87.0	86.7	6.0	6.0		16.4	16.5		8.2	7.7				
		25.1		7.6		30.7		86.4		6.0		6.0		16.5		7.2		7.7							
		25.0	25.0	7.6	7.6	31.1	31.2	75.9	75.6	5.3	5.3	5.3	5.3	36.2	35.0	7.4	7.8								
		25.0		7.6		31.2		75.2		5.2		5.3		33.8		8.2		7.8							
29-Aug-14	Sunny	Moderate	08:49	Surface	1	26.9	26.8	7.6	7.6	27.8	28.3	78.8	77.8	5.4	5.3	5.4	10.3	11.3	27.0	4.6	4.0	4.0			
						26.7		7.6		28.7		76.8		5.2			5.3			12.3			3.3		4.0
				Middle	5	25.6	25.6	7.6	7.6	32.2	32.3	66.4	65.2	5.5	5.5		25.8	24.1		5.2	4.4				
		25.5		7.6		32.4		63.9		5.4		5.5		22.3		3.6		4.4							
		25.4	25.4	7.6	7.6	32.9	33.0	59.1	59.0	5.0	5.0	5.0	5.0	43.5	45.5	3.9	3.5								
		25.3		7.6		33.0		58.9		5.0		5.0		47.5		3.1		3.5							

Remarks: *DA: Depth-Averaged

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

Water Quality Monitoring Results at ST2 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity (NTU)			Suspended Solids (mg/L)						
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*				
1-Aug-14	Sunny	Moderate	15:32	Surface	1	29.8	29.8	7.3	7.3	18.1	18.1	103.4	105.0	7.1	7.2	6.8	2.5	2.5	2.9	2.3	2.9	3.6				
						29.8		7.3		18.0		106.5		7.3			2.5			3.5						
				Middle	3.5	28.4	28.4	7.2	7.2	27.8	27.8	91.5	93.8	6.1	6.3		2.5	2.5		3.7	4.0					
		28.4		7.2		27.8		96.0		6.4		6.3		2.5		4.3	4.0									
		26.7	26.8	7.2	7.2	36.5	36.5	82.3	81.8	5.4	5.4	5.4	5.4	3.8	3.8	4.0	4.0									
		26.8		7.2		36.5		81.3		5.3		5.4		3.8		4.0	4.0									
4-Aug-14	Fine	Moderate	17:43	Surface	1	28.0	28.0	7.9	7.9	12.4	12.4	77.2	77.6	5.6	5.7	5.6	3.2	3.2	4.0	3.1	4.4	3.8				
						28.0		7.9		12.4		77.9		5.7			3.1			5.7						
				Middle	4	26.1	26.3	7.8	7.8	19.4	19.5	73.7	73.6	5.4	5.4		2.1	2.1		3.1	2.9					
		26.4		7.8		19.5		73.4		5.3		5.4		2.0		2.7	2.9									
		23.5	23.5	7.7	7.7	30.9	30.9	70.3	70.7	5.0	5.1	5.1	5.1	6.4	6.7	3.4	4.1									
		23.5		7.7		30.9		71.0		5.1		5.1		7.0		4.7	4.1									
6-Aug-14	Rainy	Calm	08:38	Surface	1	29.6	29.4	8.0	8.0	11.1	11.6	108.0	109.6	7.7	7.9	7.5	2.0	1.9	2.2	3.3	3.5	3.7				
						29.1		7.9		12.0		111.2		8.0			7.9			1.8			3.6	3.5		
				Middle	4	29.7	29.3	8.0	8.0	24.2	24.4	108.0	106.2	7.2	7.1		7.0	7.1		2.0	2.1		2.2	2.1	3.2	3.8
		28.8		7.9		24.6		104.4		7.0		7.1		2.2		2.2	2.1	4.4	3.8							
		29.5	28.9	7.9	7.9	19.8	20.7	114.6	113.6	7.8	7.8	7.8	7.8	2.4	2.5	3.7	3.9									
		28.3		7.9		21.5		112.5		7.8		7.8		2.5		4.1	3.9									
8-Aug-14	Sunny	Calm	10:38	Surface	1	26.9	26.2	8.1	8.1	30.0	29.6	89.3	88.1	6.0	6.0	5.7	4.3	4.6	3.8	2.6	4.1	3.0				
						25.5		8.0		29.1		86.9		6.0			6.0			4.9	4.6		5.6	4.1		
				Middle	4	29.2	29.2	8.2	8.2	13.5	13.6	74.4	74.8	5.3	5.4		5.4	5.4		3.6	3.7		3.7	3.7	2.3	2.4
		29.1		8.2		13.7		75.1		5.4		5.4		3.7		3.7	3.7	2.5	2.4							
		27.0	26.9	8.1	8.1	25.2	25.6	77.5	75.9	5.4	5.3	5.3	5.3	3.3	3.1	1.9	2.4									
		26.8		8.1		25.9		74.3		5.1		5.3		2.9		2.8	2.4									
11-Aug-14	Sunny	Moderate	13:34	Surface	1	27.8	27.8	7.8	7.7	17.9	17.9	95.2	94.1	6.8	6.7	6.1	9.1	8.8	13.5	3.8	3.3	3.2				
						27.8		7.6		17.8		93.0		6.6			6.7			8.4			8.8	2.8	3.3	
				Middle	4	25.1	25.1	7.8	7.7	31.2	31.1	79.7	79.3	5.5	5.5		5.5	5.5		11.2	12.4		13.5	12.4	3.2	3.2
		25.1		7.6		31.0		78.9		5.5		5.5		13.5		13.5	12.4	3.2	3.2							
		25.0	25.0	7.8	7.7	31.4	31.4	70.7	69.8	4.9	4.9	4.9	4.9	17.9	19.3	3.0	3.2									
		25.0		7.6		31.4		68.8		4.8		4.9		20.7		3.3	3.2									
13-Aug-14	Rainy	Moderate	13:42	Surface	1	24.5	24.5	7.7	7.7	26.7	26.8	79.0	78.6	5.7	5.7	5.6	1.8	1.8	2.8	6.9	7.5	7.9				
						24.5		7.7		26.9		78.1		5.6			5.7			1.8			1.8	8.1	7.5	
				Middle	4.5	24.3	24.3	7.7	7.7	32.5	32.4	79.4	79.4	5.5	5.5		5.5	5.5		2.5	2.6		2.6	2.6	7.6	8.0
		24.3		7.7		32.2		79.3		5.5		5.5		2.6		2.6	2.6	8.3	8.0							
		24.2	24.2	7.7	7.7	33.1	33.2	79.5	79.5	5.5	5.5	5.5	5.5	3.7	3.9	3.7	3.9	7.0	8.2							
		24.2		7.7		33.2		79.5		5.5		5.5		4.1		4.1	3.9	9.3	8.2							
15-Aug-14	Sunny	Calm	15:15	Surface	1	28.5	28.5	7.2	7.2	22.6	22.6	86.0	86.2	5.9	5.9	5.5	6.0	6.0	11.1	7.4	7.5	7.6				
						28.5		7.2		22.6		86.3		5.9			5.9			6.0	6.0		6.0	6.0	7.6	7.5
				Middle	4.5	26.4	26.5	7.3	7.3	28.4	28.4	72.7	73.7	5.0	5.1		5.1	5.1		5.8	6.0		6.0	6.0	7.6	6.5
		26.5		7.3		28.3		74.6		5.1		5.1		6.1		6.1	6.0	5.3	6.5							
		25.8	25.8	7.3	7.3	30.6	30.6	69.9	70.5	4.8	4.9	4.9	4.9	20.7	21.3	8.4	8.9									
		25.8		7.3		30.6		71.0		4.9		4.9		21.9		9.4	8.9									
19-Aug-14	Rainy	Moderate	08:29	Surface	1	29.5	29.5	7.9	7.9	13.6	13.6	102.2	101.1	7.2	7.2	6.9	1.9	2.0	2.5	6.7	6.5	6.9				
						29.5		7.9		13.6		99.9		7.1			7.2			2.0			2.0	2.0	6.3	6.5
				Middle	4	29.2	28.9	7.8	7.8	22.5	20.5	98.0	96.1	6.6	6.6		6.6	6.6		1.6	1.5		1.6	1.5	6.0	6.9
		28.6		7.8		18.5		94.2		6.6		6.6		1.3		1.3	1.5	7.7	6.9							
		26.2	26.2	7.9	8.0	32.3	32.2	86.5	85.8	5.8	5.8	5.8	5.8	4.1	4.1	4.1	4.1	7.0	7.2							
		26.1		8.0		32.1		85.1		5.8		5.8		4.1		4.1	4.1	7.3	7.2							

Remarks: *DA: Depth-Averaged

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

Water Quality Monitoring Results at ST2 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity (NTU)			Suspended Solids (mg/L)				
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*		
21-Aug-14	Sunny	Calm	10:32	Surface	1	28.8	28.8	7.6	7.6	13.2	13.2	89.4	89.8	6.4	6.5	5.8	2.5	2.6	4.8	4.7	4.8	4.0		
						28.8		7.6		13.2		90.1		6.5			2.6			4.8				
				Middle	4	27.1	27.1	7.6	7.6	25.5	25.2	71.8	72.6	5.0	5.1		3.5	3.5		3.0	3.1			
		27.1		7.6		24.9		73.4		5.1		5.1	3.4		3.2									
		25.5	25.5	7.7	7.7	33.7	33.7	72.8	72.7	4.9	4.9	4.9	4.9	8.3	8.4	4.4	4.2							
		25.5		7.7		33.7		72.6		4.9		4.9	8.5		4.0									
23-Aug-14	Sunny	Calm	11:26	Surface	1	26.7	26.7	8.0	8.0	33.7	33.7	125.5	125.0	8.3	8.3	8.2	2.9	2.9	7.1	2.1	2.1	2.5		
						26.7		8.0		33.6		124.5		8.3			2.9			2.0				
				Middle	4	26.5	26.5	7.8	7.8	33.9	33.9	121.3	121.1	8.1	8.1		2.9	2.9		3.3	2.8			
		26.5		7.8		33.9		120.9		8.0		8.1	2.8		2.2									
		25.9	25.9	7.8	7.8	34.0	34.0	118.0	117.2	7.9	7.9	7.9	7.9	15.2	15.4	2.4	2.7							
		25.8		7.8		34.0		116.3		7.8		7.9	15.6		2.9									
25-Aug-14	Sunny	Moderate	13:19	Surface	1	27.4	27.3	7.5	7.5	17.7	17.8	100.5	100.7	7.2	7.3	6.6	2.8	3.1	7.9	3.8	3.8	3.6		
						27.2		7.5		17.8		100.9		7.3			7.3			3.3			3.8	
				Middle	4	26.1	26.1	7.5	7.5	22.5	23.0	80.5	80.2	5.8	5.8		6.9	7.2		3.7	3.8			
		26.1		7.5		23.5		79.9		5.7		5.8	7.4		3.8									
		24.1	24.2	7.5	7.5	31.2	31.1	78.9	80.0	5.5	5.6	5.6	5.6	12.0	13.5	3.3	3.3							
		24.2		7.5		30.9		81.1		5.7		5.6	14.9		3.3									
27-Aug-14	Fine	Moderate	12:56	Surface	1	26.3	26.3	7.7	7.7	23.7	23.8	99.6	98.1	7.0	6.9	6.4	11.9	11.7	17.9	6.5	6.2	6.0		
						26.3		7.7		23.8		96.6		6.8			6.9			11.5			5.9	
				Middle	4	25.0	25.0	7.6	7.6	27.9	28.2	83.0	82.0	5.9	5.8		15.9	15.6		5.5	5.6			
		24.9		7.6		28.4		80.9		5.7		5.8	15.3		5.7									
		24.3	24.3	7.6	7.6	30.4	30.4	70.1	70.0	4.9	4.9	4.9	4.9	26.8	26.3	6.3	6.2							
		24.3		7.6		30.4		69.8		4.9		4.9	25.7		6.0									
29-Aug-14	Sunny	Moderate	14:37	Surface	1	28.5	28.5	7.7	7.7	24.6	24.6	98.0	98.3	6.6	6.7	6.2	7.5	7.5	17.4	3.0	3.1	4.3		
						28.5		7.7		24.5		98.6		6.7			6.7			7.5			3.1	
				Middle	4	27.3	27.3	7.6	7.6	28.5	28.6	82.7	81.9	5.6	5.6		15.1	16.3		4.8	4.6			
		27.3		7.6		28.7		81.0		5.5		5.6	17.4		4.4									
		26.6	26.6	7.6	7.6	31.2	31.3	68.7	68.3	5.1	5.1	5.1	5.1	27.3	28.5	6.1	5.2							
		26.5		7.6		31.4		67.8		5.1		5.1	29.6		4.3									

Remarks: *DA: Depth-Averaged

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

Water Quality Monitoring Results at ST2 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Aug-14	Sunny	Moderate	09:35	Surface	1	29.2	29.3	7.2	7.2	17.4	17.3	101.6	103.3	7.1	7.2	6.7	2.6	2.6	3.1	5.0	4.8	6.3
				Middle	3.5	29.3	29.2	7.2	7.1	17.2	18.7	105.0	89.0	7.3	6.2		2.6	2.6		4.5	5.8	
				Bottom	6	29.2	29.2	7.1	7.1	18.7	18.7	91.4	89.0	6.0	6.3		2.6	2.6		5.2	6.3	
						29.1	29.1	7.1	7.1	20.7	20.8	76.1	75.5	5.2	5.2		4.2	4.2		7.8	8.4	
						29.1	29.1	7.1	7.1	20.9	20.8	74.9	75.5	5.1	5.2		4.2	4.2		9.0	8.4	
4-Aug-14	Sunny	Moderate	12:11	Surface	1	27.5	27.5	7.9	7.9	12.0	12.1	85.3	85.0	6.3	6.3	6.3	7.7	7.4	5.6	5.2	4.2	3.4
				Middle	4	27.5	27.2	7.9	7.9	12.1	14.6	84.7	85.0	6.3	6.2		7.1	5.1		3.1	3.4	
				Bottom	7	27.2	27.2	7.9	7.9	14.6	14.6	84.9	85.0	6.2	6.2		5.0	5.1		3.6	3.4	
						26.9	26.8	7.8	7.8	19.3	19.5	74.4	74.2	5.3	5.3		4.1	4.3		2.7	2.5	
						26.6	26.8	7.8	7.8	19.6	19.5	73.9	74.2	5.3	5.3		4.4	4.3		2.2	2.5	
6-Aug-14	Rainy	Calm	15:45	Surface	1	26.5	26.4	8.1	8.1	30.2	30.6	102.6	101.1	7.0	6.9	6.5	4.2	4.6	4.7	4.2	4.0	4.1
				Middle	4	26.2	26.4	8.1	8.1	31.0	30.5	99.5	87.6	6.8	6.0		5.0	4.8		3.9	4.1	
				Bottom	7	26.4	26.4	8.1	8.1	30.5	30.5	88.1	87.6	6.0	6.0		4.8	4.8		4.2	4.1	
						26.3	26.4	8.1	8.1	30.8	30.7	87.1	87.6	5.9	6.0		4.6	4.6		4.1	4.2	
						26.4	26.4	8.1	8.1	30.5	30.5	74.0	73.5	5.0	5.0		4.6	4.6		4.2	4.2	
						26.4	26.4	8.1	8.1	30.5	30.5	73.0	73.5	5.0	5.0		4.6	4.6		4.2	4.2	
8-Aug-14	Sunny	Rough	16:45	Surface	1	29.7	29.1	8.1	8.1	16.8	18.4	83.4	82.6	5.8	5.8	5.8	8.3	8.3	7.0	5.0	5.4	5.0
				Middle	4	28.5	29.2	8.1	8.1	20.0	19.8	81.8	82.8	5.7	5.8		8.3	6.5		4.9	5.0	
				Bottom	7	28.6	29.2	8.0	8.1	19.8	16.9	81.8	82.8	5.7	5.8		6.3	6.6		5.0	5.0	
						29.7	29.5	8.1	8.1	16.8	18.0	84.8	84.9	5.9	5.9		6.1	6.3		4.5	4.5	
						29.3	29.5	8.1	8.1	19.2	18.0	85.0	84.9	5.9	5.9		6.4	6.3		4.5	4.5	
11-Aug-14	Fine	Moderate	19:03	Surface	1	29.4	29.6	7.7	7.7	14.8	14.4	98.4	96.5	6.9	6.8	6.2	7.5	8.2	12.2	5.4	4.4	3.7
				Middle	4	29.7	28.5	7.6	7.5	13.9	18.4	94.5	77.6	6.7	5.5		8.9	11.1		3.2	2.9	
				Bottom	7	28.1	28.5	7.5	7.5	17.3	17.3	77.4	77.8	5.5	5.5		10.0	12.2		2.5	2.9	
						28.9	28.5	7.5	7.5	17.3	17.9	77.8	77.6	5.5	5.5		16.1	17.2		4.8	3.9	
						25.8	25.8	7.4	7.4	27.3	27.6	71.3	70.9	5.0	5.0		16.1	17.2		4.8	3.9	
						25.7	25.8	7.3	7.4	27.9	27.6	70.4	70.9	4.9	5.0		18.3	17.2		3.0	3.9	
13-Aug-14	Rainy	Moderate	08:30	Surface	1	24.4	24.4	7.6	7.6	23.3	23.3	72.5	72.6	5.3	5.3	5.3	3.2	3.1	3.6	9.4	8.6	8.6
				Middle	4	24.4	24.4	7.6	7.6	25.1	25.7	72.6	71.6	5.3	5.2		3.0	2.3		7.8	7.9	
				Bottom	7	24.4	24.4	7.6	7.6	26.2	31.8	71.7	71.4	5.2	5.2		2.1	2.5		8.3	7.9	
						24.3	24.3	7.7	7.7	31.8	31.8	73.7	73.5	5.2	5.2		5.2	5.4		7.1	9.2	
						24.3	24.3	7.7	7.7	31.8	31.8	73.3	73.5	5.1	5.2		5.5	5.4		11.3	9.2	
15-Aug-14	Sunny	Calm	10:19	Surface	1	27.9	27.9	7.5	7.5	21.0	21.0	83.7	83.8	5.8	5.9	5.5	4.9	4.8	22.5	5.8	5.8	6.1
				Middle	4	27.9	26.5	7.5	7.6	20.9	27.5	83.8	73.4	5.9	5.1		4.7	25.1		5.8	5.8	
				Bottom	7	26.5	26.5	7.6	7.6	27.5	27.5	72.9	73.9	5.0	5.1		25.4	24.7		6.9	5.2	
						26.5	26.5	7.6	7.6	27.5	27.5	73.9	73.9	5.1	5.1		38.3	37.7		3.5	7.3	
						26.0	26.0	7.6	7.6	29.8	29.8	70.7	70.4	4.9	4.9		37.0	37.7		8.7	7.3	
						26.0	26.0	7.6	7.6	29.8	29.8	70.1	70.4	4.8	4.9		37.0	37.7		5.8	7.3	
19-Aug-14	Rainy	Moderate	15:08	Surface	1	29.9	29.9	8.3	8.3	11.5	11.5	107.1	108.5	7.6	7.7	7.3	6.1	6.1	6.7	10.0	8.9	7.7
				Middle	4	29.9	30.0	8.3	8.2	11.5	12.7	109.9	97.9	7.8	6.9		6.1	5.1		7.8	7.8	
				Bottom	7	30.0	30.0	8.2	8.2	12.7	12.6	97.0	98.8	6.8	6.9		5.1	5.1		7.0	8.6	
						30.0	30.0	8.2	8.2	12.6	12.7	98.8	97.9	7.0	6.9		8.4	8.9		5.0	6.5	
						27.1	27.1	8.1	8.2	29.0	28.8	97.7	96.0	6.6	6.5		9.3	8.9		8.0	6.5	
						27.0	27.1	8.2	8.2	28.6	28.8	94.2	96.0	6.4	6.5		9.3	8.9		8.0	6.5	

Remarks: *DA: Depth-Averaged

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

Water Quality Monitoring Results at ST2 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
21-Aug-14	Fine	Calm	16:41	Surface	1	29.6 29.7	29.7	7.2 7.2	7.2	11.9 11.8	11.9	77.7 77.9	77.8	5.5 5.6	5.6	5.5	6.0 6.0	6.0	9.1	11.4 8.2	9.8	8.5
				Middle	4	29.5 29.5	29.5	7.2 7.2	7.2	12.3 12.4	12.4	76.0 76.1	76.1	5.4 5.4	5.4		6.6 6.5	6.6		7.8 7.6	7.7	
				Bottom	7	26.0 26.5	26.3	7.2 7.2	7.2	28.6 26.2	27.4	75.9 74.8	75.4	5.2 5.2	5.2		15.5 13.6	14.6		8.1 7.6	7.9	
23-Aug-14	Fine	Calm	17:21	Surface	1	27.1 27.0	27.1	8.0 8.0	8.0	33.6 33.7	33.7	118.6 119.5	119.1	7.8 7.9	7.9	7.7	3.2 3.4	3.3	5.9	2.4 3.7	3.1	3.3
				Middle	4	26.6 26.6	26.6	7.9 7.9	7.9	33.9 33.9	33.9	111.7 113.9	112.8	7.4 7.6	7.5		3.0 3.6	3.3		2.9 3.5	3.2	
				Bottom	7	26.1 26.1	26.1	7.8 7.8	7.8	34.1 34.1	34.1	105.6 107.1	106.4	7.1 7.2	7.2		10.5 11.9	11.2		3.8 3.6	3.7	
25-Aug-14	Fine	Moderate	18:21	Surface	1	27.3 27.3	27.3	7.5 7.5	7.5	17.4 17.4	17.4	89.2 88.3	88.8	6.4 6.4	6.4	5.8	3.2 3.2	3.2	12.9	11.6 8.0	9.8	6.2
				Middle	4	26.5 26.3	26.4	7.5 7.5	7.5	22.0 22.2	22.1	72.7 71.1	71.9	5.2 5.1	5.2		10.4 9.9	10.2		4.8 4.7	4.8	
				Bottom	7	24.1 24.2	24.2	7.6 7.6	7.6	31.2 31.1	31.2	74.3 73.6	74.0	5.2 5.2	5.2		27.4 23.4	25.4		4.1 3.8	4.0	
27-Aug-14	Fine	Moderate	07:37	Surface	1	27.1 27.1	27.1	7.7 7.7	7.7	23.3 23.3	23.3	86.6 87.0	86.8	6.0 6.1	6.1	6.0	9.8 9.8	9.8	24.6	9.6 10.3	10.0	10.0
				Middle	4	26.0 26.0	26.0	7.6 7.6	7.6	27.1 27.3	27.2	83.2 81.6	82.4	5.8 5.7	5.8		21.1 24.6	22.9		12.6 8.2	10.4	
				Bottom	7	25.3 25.2	25.3	7.6 7.6	7.6	29.7 29.9	29.8	74.5 73.7	74.1	5.2 5.1	5.2		39.5 42.9	41.2		9.3 9.7	9.5	
29-Aug-14	Sunny	Moderate	08:37	Surface	1	27.6 27.6	27.6	7.6 7.6	7.6	24.9 25.0	25.0	96.7 93.3	95.0	6.6 6.4	6.5	5.8	8.9 8.7	8.8	23.3	6.6 8.0	7.3	5.9
				Middle	4	26.3 26.2	26.3	7.6 7.6	7.6	29.3 29.8	29.6	76.1 73.7	74.9	5.2 5.0	5.1		21.6 23.6	22.6		4.7 5.4	5.1	
				Bottom	7	25.5 25.5	25.5	7.6 7.6	7.6	32.0 32.0	32.0	60.6 60.3	60.5	4.9 4.9	4.9		38.9 38.2	38.6		6.4 4.4	5.4	

Remarks: *DA: Depth-Averaged

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

Water Quality Monitoring Results at ST3 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Aug-14	Sunny	Moderate	14:37	Surface	1	30.0 30.3	30.2	7.9 7.9	7.9	18.1 18.8	18.5	103.6 102.4	103.0	7.1 7.0	7.1	6.5	2.5 3.0	2.8	3.3	2.0 2.0	2.0	2.4
				Middle	5.5	27.3 27.6	27.5	7.8 7.8	7.8	29.2 29.0	29.1	87.0 86.4	86.7	5.9 5.8	5.9		2.1 2.1	2.1		2.5 2.5	2.5	
				Bottom	10	26.7 26.6	26.7	7.7 7.8	7.8	30.7 31.0	30.9	76.7 74.8	75.8	5.2 5.0	5.1		4.7 5.1	4.9		2.7 2.5	2.6	
4-Aug-14	Fine	Moderate	17:13	Surface	1	27.5 27.6	27.6	7.7 7.7	7.7	12.4 12.3	12.4	88.8 90.2	89.5	6.6 6.6	6.6	6.2	1.2 1.1	1.2	15.7	3.1 3.4	3.3	3.3
				Middle	6.5	22.3 22.3	22.3	7.9 7.9	7.9	33.7 33.8	33.8	74.0 88.7	81.4	5.3 6.3	5.8		8.7 9.1	8.9		3.6 3.5	3.6	
				Bottom	12	22.2 22.2	22.2	8.0 8.0	8.0	34.0 34.0	34.0	67.4 67.7	67.6	4.8 4.8	4.8		34.4 39.8	37.1		2.9 3.3	3.1	
6-Aug-14	Rainy	Calm	08:46	Surface	1	29.8 29.8	29.8	8.1 8.1	8.1	10.3 11.5	10.9	82.0 82.4	82.2	5.9 5.9	5.9	5.9	3.0 2.8	2.9	9.5	3.8 3.4	3.6	3.6
				Middle	6.5	29.6 29.4	29.5	8.0 8.0	8.0	15.3 15.2	15.3	83.1 81.7	82.4	5.8 5.7	5.8		8.3 9.6	9.0		3.5 3.7	3.6	
				Bottom	12	27.3 27.7	27.5	7.8 7.8	7.8	24.0 23.5	23.8	74.3 74.3	74.3	5.2 5.1	5.2		17.1 16.3	16.7		3.2 3.9	3.6	
8-Aug-14	Sunny	Calm	11:28	Surface	1	28.4 28.5	28.5	8.1 8.1	8.1	15.4 15.4	15.4	78.0 79.2	78.6	5.6 5.7	5.7	5.4	2.9 2.9	2.9	8.0	4.5 4.1	4.3	4.0
				Middle	7	26.7 26.7	26.7	8.1 8.1	8.1	22.3 22.2	22.3	71.3 71.7	71.5	5.0 5.1	5.1		4.6 4.7	4.7		4.8 4.0	4.4	
				Bottom	13	24.1 24.1	24.1	8.2 8.2	8.2	33.7 33.7	33.7	69.4 69.9	69.7	4.8 4.9	4.9		16.8 16.0	16.4		4.0 2.8	3.4	
11-Aug-14	Sunny	Moderate	14:11	Surface	1	28.5 28.4	28.5	7.7 7.7	7.7	24.7 24.8	24.8	93.2 93.3	93.3	6.3 6.3	6.3	6.3	5.3 5.7	5.5	7.8	5.5 5.4	5.5	5.9
				Middle	5	26.9 26.8	26.9	7.7 7.7	7.7	28.0 28.2	28.1	92.0 92.0	92.0	6.3 6.3	6.3		7.7 7.2	7.5		6.2 5.3	5.8	
				Bottom	9	26.3 26.1	26.2	7.7 7.7	7.7	29.9 30.0	30.0	91.8 91.6	91.7	6.3 6.3	6.3		10.3 10.3	10.3		5.4 7.4	6.4	
13-Aug-14	Rainy	Moderate	14:14	Surface	1	23.3 23.4	23.4	7.4 7.4	7.4	31.0 30.5	30.8	87.2 89.8	88.5	6.2 6.4	6.3	6.1	2.5 3.0	2.8	3.3	5.6 5.1	5.4	5.4
				Middle	6.5	23.4 23.5	23.5	7.5 7.6	7.6	30.8 30.4	30.6	79.3 80.5	79.9	5.7 5.8	5.8		2.1 2.1	2.1		5.7 4.4	5.1	
				Bottom	12	23.4 23.4	23.4	7.4 7.6	7.5	30.7 30.5	30.6	72.3 71.8	72.1	5.2 5.1	5.2		4.7 5.1	4.9		5.2 6.3	5.8	
15-Aug-14	Sunny	Calm	15:42	Surface	1	27.9 27.9	27.9	7.6 7.6	7.6	22.7 22.7	22.7	85.3 85.6	85.5	5.9 5.9	5.9	5.4	5.2 4.7	5.0	18.0	5.3 5.4	5.4	9.3
				Middle	7	25.9 25.9	25.9	7.6 7.6	7.6	29.5 29.5	29.5	69.5 69.6	69.6	4.8 4.8	4.8		10.2 11.0	10.6		11.1 14.6	12.9	
				Bottom	13	25.6 25.6	25.6	7.6 7.6	7.6	30.9 30.9	30.9	71.0 71.1	71.1	4.9 4.9	4.9		39.1 37.5	38.3		8.2 11.2	9.7	
19-Aug-14	Rainy	Moderate	09:04	Surface	1	29.3 29.3	29.3	8.3 8.3	8.3	13.4 13.4	13.4	100.9 100.5	100.7	7.2 7.1	7.2	6.4	4.4 4.6	4.5	12.2	8.3 8.3	8.3	7.9
				Middle	6.5	25.8 25.8	25.8	8.0 8.0	8.0	30.9 30.8	30.9	81.0 80.7	80.9	5.5 5.5	5.5		28.7 25.9	27.3		8.3 7.3	7.8	
				Bottom	12	29.3 29.3	29.3	8.3 8.3	8.3	13.3 13.3	13.3	103.7 103.9	103.8	7.4 7.4	7.4		4.5 5.1	4.8		7.0 8.3	7.7	

Remarks: *DA: Depth-Averaged

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

Water Quality Monitoring Results at ST3 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity (NTU)			Suspended Solids (mg/L)				
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*		
21-Aug-14	Sunny	Calm	10:37	Surface	1	28.6	28.6	7.7	7.7	12.8	12.8	87.5	87.5	6.3	6.3	5.5	4.7	4.3	14.2	3.3	3.6	29.8		
						28.6		7.7		12.8		87.5		6.3			3.8				3.9			
				Middle	7	26.1	26.2	7.7	7.7	28.6	28.1	67.1	67.5	4.6	4.7		10.3	10.1		4.2	4.1			
		26.2		7.7		27.6		67.8		4.7		4.7			9.9			3.9						
		25.3	25.3	7.7	7.7	32.2	32.2	73.3	73.4	5.0	5.0	5.0	5.0	27.8	28.3	76.3	81.7	87.0						
		25.3		7.7		32.1		73.4		5.0		5.0			28.8									
23-Aug-14	Sunny	Calm	12:20	Surface	1	25.3	25.3	7.9	7.9	33.6	33.7	87.3	89.2	5.9	6.1	6.2	10.5	11.0	14.8	4.2	3.8	3.0		
						25.2		7.9		33.7		91.1		6.2			11.5				3.4			
				Middle	5.5	25.0	25.2	8.0	8.0	34.0	33.8	89.2	90.3	6.1	6.2		16.5	16.7		2.7	2.5			
		25.3		7.9		33.6		91.3		6.2		6.2			16.9			2.2						
		25.0	25.4	7.9	8.0	34.0	33.6	89.5	90.0	6.1	6.1	6.1	6.1	17.1	16.6	2.9	2.7	2.5						
		25.7		8.0		33.1		90.4		6.1		6.1			16.0			2.5						
25-Aug-14	Sunny	Moderate	13:04	Surface	1	26.5	26.5	7.6	7.8	25.9	24.5	87.3	87.8	6.1	6.2	6.1	8.3	7.6	6.6	2.8	3.3	3.8		
						26.5		7.9		23.0		88.2		6.2			6.8				3.8			
				Middle	5.5	26.5	26.5	7.6	7.7	25.9	27.5	86.4	87.2	6.0	6.0		6.5	6.5		4.3	3.8			
		26.5		7.8		29.1		88.0		6.0		6.0			6.4			3.2						
		26.5	26.3	7.9	7.9	29.0	29.1	77.5	76.7	5.3	5.3	5.3	5.3	5.8	5.7	3.6	4.2	4.8						
		26.1		7.8		29.2		75.9		5.2		5.3			5.6			4.8						
27-Aug-14	Fine	Moderate	12:47	Surface	1	27.0	27.0	7.6	7.6	28.1	28.2	76.9	76.9	5.2	5.2	5.2	7.9	8.0	8.6	6.3	6.7	6.8		
						26.9		7.6		28.2		76.9		5.2			8.0				7.0			
				Middle	6	26.5	26.5	7.6	7.6	29.9	30.0	76.7	76.7	5.2	5.2		9.0	9.1		7.2	7.1			
		26.5		7.6		30.0		76.7		5.2		5.2			9.1			6.9						
		26.0	26.0	7.6	7.6	31.3	31.3	75.3	74.7	5.1	5.1	5.1	5.1	8.5	8.7	6.9	6.7	6.4						
		26.0		7.6		31.2		74.1		5.0		5.1			8.8			6.4						
29-Aug-14	Sunny	Moderate	14:13	Surface	1	28.8	28.8	7.7	7.7	20.2	21.2	103.8	103.7	7.2	7.2	6.4	4.3	4.5	12.5	5.6	4.7	4.1		
						28.8		7.7		22.2		103.6		7.1			4.6				3.7			
				Middle	6	26.2	26.3	7.7	7.7	28.2	28.2	80.6	80.8	5.6	5.6		12.6	11.8		3.5	3.5			
		26.3		7.7		28.1		80.9		5.6		5.6			11.0			3.5						
		25.8	25.8	7.7	7.7	29.5	29.6	67.8	67.5	5.0	5.0	5.0	5.0	19.3	21.1	4.1	4.2	4.2						
		25.8		7.7		29.6		67.2		4.9		5.0			22.9			4.2						

Remarks: *DA: Depth-Averaged

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

Water Quality Monitoring Results at ST3 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
1-Aug-14	Sunny	Moderate	10:34	Surface	1	30.3 30.3	30.3	7.9 8.0	8.0	19.6 19.3	19.5	99.9 102.1	101.0	6.8 6.9	6.9	6.1	9.5 9.4	9.5	9.5	2.8 2.0	2.4	2.2
				Middle	5.5	27.2 27.1	27.2	7.8 7.8	7.8	30.0 30.1	30.1	80.5 78.0	79.3	5.4 5.2	5.3		6.4 7.0	6.7		1.9 2.2	2.1	
				Bottom	10	26.8 26.7	26.8	7.8 7.8	7.8	30.9 31.1	31.0	74.2 72.0	73.1	5.0 4.8	4.9		12.7 11.9	12.3		1.4 2.7	2.1	
4-Aug-14	Sunny	Moderate	13:11	Surface	1	27.0 27.0	27.0	7.8 7.8	7.8	12.0 12.2	12.1	104.1 104.2	104.2	7.8 7.8	7.8	6.5	1.0 0.9	1.0	8.2	2.0 2.5	2.3	2.1
				Middle	6	23.1 23.1	23.1	7.9 7.9	7.9	32.3 32.3	32.3	73.4 72.6	73.0	5.2 5.2	5.2		9.9 10.5	10.2		2.1 1.9	2.0	
				Bottom	11	22.5 22.5	22.5	7.9 7.9	7.9	33.7 33.7	33.7	70.6 71.0	70.8	5.0 5.1	5.1		13.5 13.3	13.4		2.2 1.9	2.1	
6-Aug-14	Rainy	Calm	14:57	Surface	1	29.8 29.8	29.8	8.1 8.1	8.1	10.2 10.8	10.5	96.7 94.3	95.5	6.9 6.8	6.9	6.3	6.9 8.0	7.5	17.4	6.6 3.1	4.9	3.7
				Middle	7	29.3 29.2	29.3	8.0 8.0	8.0	16.1 16.3	16.2	78.2 80.1	79.2	5.5 5.6	5.6		13.3 15.4	14.4		3.1 2.8	3.0	
				Bottom	13	27.7 27.4	27.6	7.9 7.8	7.9	26.2 25.8	26.0	78.0 77.9	78.0	5.3 5.3	5.3		27.6 32.8	30.2		2.9 3.2	3.1	
8-Aug-14	Sunny	Rough	16:54	Surface	1	28.9 28.8	28.9	8.0 8.0	8.0	16.2 16.4	16.3	75.0 75.7	75.4	5.3 5.3	5.3	5.3	22.2 22.5	22.4	18.1	23.0 24.0	23.5	23.4
				Middle	6	25.6 25.6	25.6	8.1 8.1	8.1	28.4 28.6	28.5	73.4 74.0	73.7	5.1 5.2	5.2		16.0 16.3	16.2		29.0 25.5	27.3	
				Bottom	11	25.6 25.7	25.7	8.1 8.1	8.1	28.3 28.2	28.3	68.8 69.8	69.3	4.8 4.9	4.9		15.7 15.4	15.6		18.8 19.7	19.3	
11-Aug-14	Fine	Moderate	19:13	Surface	1	28.0 28.1	28.1	7.7 7.7	7.7	25.6 25.5	25.6	93.5 93.6	93.6	6.4 6.4	6.4	6.4	5.8 4.8	5.3	6.7	7.0 6.5	6.8	5.6
				Middle	5.5	27.2 27.2	27.2	7.7 7.7	7.7	27.5 27.5	27.5	93.0 93.0	93.0	6.3 6.3	6.3		6.7 6.0	6.4		5.4 4.4	4.9	
				Bottom	10	26.4 26.3	26.4	7.7 7.7	7.7	29.6 29.7	29.7	92.4 93.0	92.7	6.3 6.4	6.4		8.0 8.9	8.5		5.5 4.9	5.2	
13-Aug-14	Rainy	Moderate	09:06	Surface	1	23.5 23.5	23.5	7.6 7.6	7.6	30.5 30.5	30.5	83.1 81.8	82.5	5.9 5.8	5.9	5.5	9.5 9.4	9.5	9.5	7.2 5.9	6.6	6.3
				Middle	5.5	23.5 23.4	23.5	7.6 7.6	7.6	30.5 30.6	30.6	71.3 71.9	71.6	5.1 5.1	5.1		6.4 7.0	6.7		7.4 6.0	6.7	
				Bottom	10	23.5 23.4	23.5	7.6 7.6	7.6	30.5 30.6	30.6	72.6 72.5	72.6	5.2 5.2	5.2		12.7 11.9	12.3		5.7 5.4	5.6	
15-Aug-14	Sunny	Calm	10:56	Surface	1	29.1 28.9	29.0	7.6 7.6	7.6	14.8 17.6	16.2	82.5 86.7	84.6	5.8 6.1	6.0	5.5	13.5 13.9	13.7	26.3	8.4 7.1	7.8	27.2
				Middle	6	25.6 25.6	25.6	7.6 7.6	7.6	30.5 30.5	30.5	72.4 73.1	72.8	5.0 5.0	5.0		25.8 25.4	25.6		14.8 17.3	16.1	
				Bottom	11	25.4 25.4	25.4	7.6 7.6	7.6	31.3 31.3	31.3	77.5 75.6	76.6	5.3 5.2	5.3		39.7 39.2	39.5		57.0 58.3	57.7	
19-Aug-14	Rainy	Moderate	15:14	Surface	1	29.5 29.5	29.5	8.3 8.3	8.3	11.2 11.2	11.2	95.4 97.0	96.2	6.8 7.0	6.9	6.1	7.5 7.5	7.5	16.5	8.8 7.7	8.3	6.7
				Middle	6.5	26.2 26.2	26.2	7.9 7.9	7.9	28.8 28.8	28.8	77.2 75.9	76.6	5.3 5.2	5.3		21.3 20.2	20.8		5.7 7.0	6.4	
				Bottom	12	25.4 25.4	25.4	8.0 8.0	8.0	31.1 31.1	31.1	73.6 74.5	74.1	5.1 5.1	5.1		21.6 20.5	21.1		6.3 4.7	5.5	

Remarks: *DA: Depth-Averaged

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

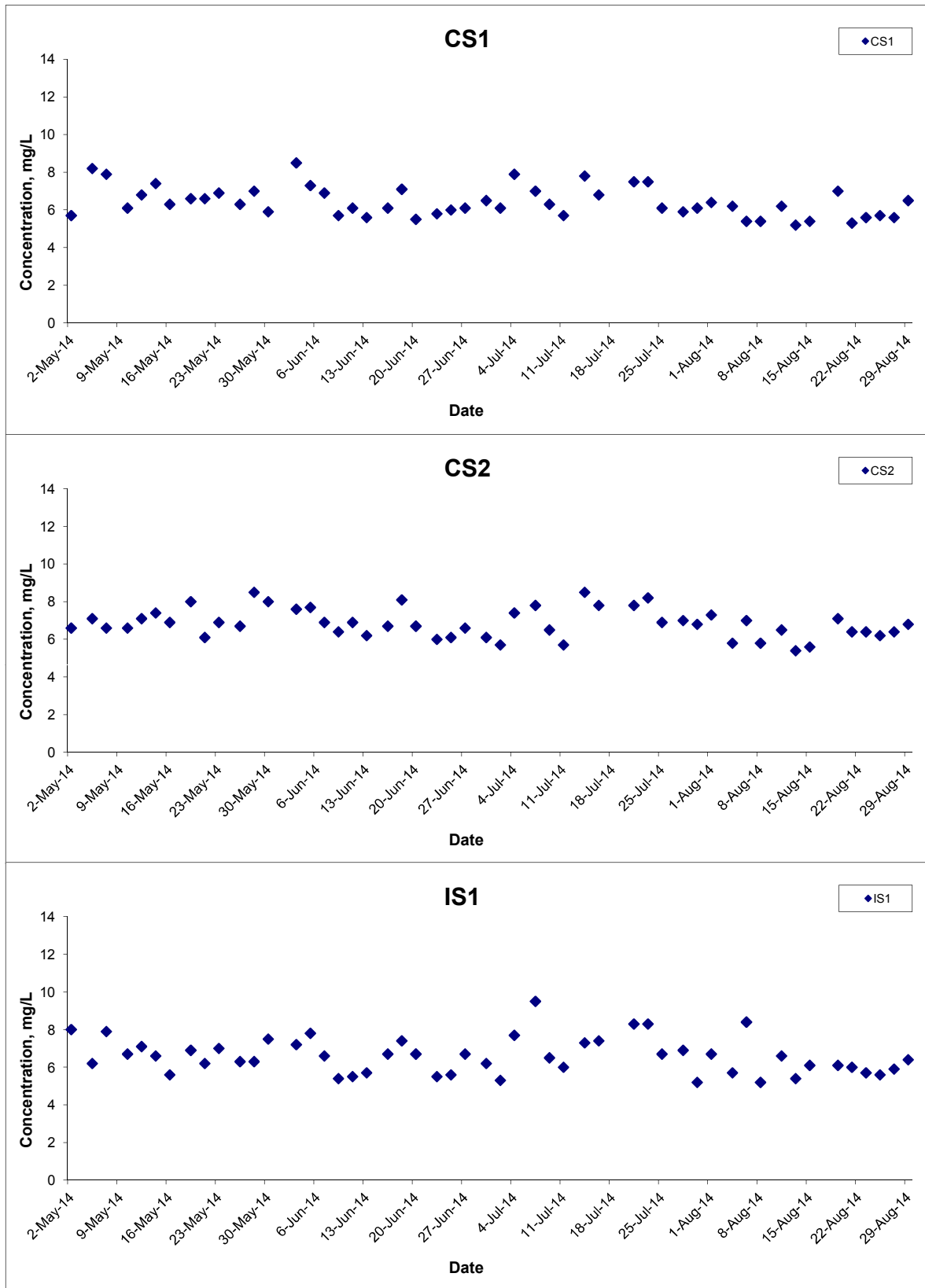
Water Quality Monitoring Results at ST3 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		pH		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*
21-Aug-14	Fine	Calm	16:21	Surface	1	30.3 30.0	30.2	7.5 7.5	7.5	8.2 8.8	8.5	87.8 85.0	86.4	6.3 6.1	6.2	5.9	7.4 8.9	8.2	18.0	3.6 5.5	4.6	4.7
				Middle	6	26.5 26.7	26.6	7.6 7.6	7.6	25.8 25.1	25.5	79.1 81.3	80.2	5.5 5.7	5.6		10.8 12.6	11.7		4.9 5.3	5.1	
				Bottom	11	24.8 24.8	24.8	7.6 7.6	7.6	33.3 33.2	33.3	71.9 71.1	71.5	4.9 4.9	4.9		36.3 31.7	34.0		3.8 5.2	4.5	
23-Aug-14	Fine	Calm	17:25	Surface	1	25.6 25.6	25.6	8.0 8.0	8.0	33.1 33.2	33.2	126.7 125.9	126.3	8.6 8.5	8.6	8.6	6.5 5.5	6.0	7.5	2.4 1.6	2.0	1.8
				Middle	5.5	25.5 25.4	25.5	8.0 7.9	8.0	33.3 33.4	33.4	127.4 126.9	127.2	8.6 8.6	8.6		7.2 7.8	7.5		1.8 1.0	1.4	
				Bottom	10	25.4 25.4	25.4	7.9 7.9	7.9	33.4 33.4	33.4	127.0 126.4	126.7	8.6 8.6	8.6		9.1 8.9	9.0		1.7 2.5	2.1	
25-Aug-14	Fine	Moderate	18:10	Surface	1	26.2 24.8	25.5	7.7 7.8	7.8	29.4 29.5	29.5	72.6 77.0	74.8	5.0 5.4	5.2	5.2	8.4 7.8	8.1	9.0	3.5 3.1	3.3	3.1
				Middle	5.5	26.3 24.6	25.5	7.8 7.8	7.8	29.4 29.5	29.5	72.8 77.0	74.9	5.0 5.4	5.2		9.5 9.5	9.5		2.3 2.9	2.6	
				Bottom	10	25.1 24.2	24.7	7.8 7.8	7.8	29.4 29.3	29.4	71.3 76.2	73.8	5.0 5.4	5.2		9.3 9.2	9.3		2.7 4.2	3.5	
27-Aug-14	Fine	Moderate	07:54	Surface	1	27.4 27.4	27.4	7.7 7.7	7.7	27.1 27.1	27.1	82.7 82.8	82.8	5.6 5.6	5.6	5.4	6.7 6.8	6.8	8.5	8.6 7.8	8.2	7.2
				Middle	6	26.6 26.6	26.6	7.6 7.6	7.6	29.4 29.4	29.4	77.1 76.5	76.8	5.2 5.2	5.2		9.3 9.2	9.3		7.3 6.2	6.8	
				Bottom	11	26.3 26.3	26.3	7.6 7.6	7.6	30.5 30.5	30.5	73.2 72.6	72.9	5.0 4.9	5.0		9.2 9.3	9.3		6.2 6.7	6.5	
29-Aug-14	Sunny	Moderate	08:56	Surface	1	27.4 27.3	27.4	7.7 7.7	7.7	22.5 23.7	23.1	99.0 98.2	98.6	6.9 6.8	6.9	6.6	5.4 5.3	5.4	13.5	7.0 6.5	6.8	28.2
				Middle	6	26.7 26.8	26.8	7.7 7.7	7.7	26.5 26.2	26.4	89.4 91.8	90.6	6.2 6.3	6.3		11.7 10.5	11.1		55.4 44.5	50.0	
				Bottom	11	25.7 25.6	25.7	7.7 7.7	7.7	30.3 30.4	30.4	64.8 65.4	65.1	5.0 5.0	5.0		21.9 25.8	23.9		29.3 26.4	27.9	

Remarks: *DA: Depth-Averaged

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

Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide



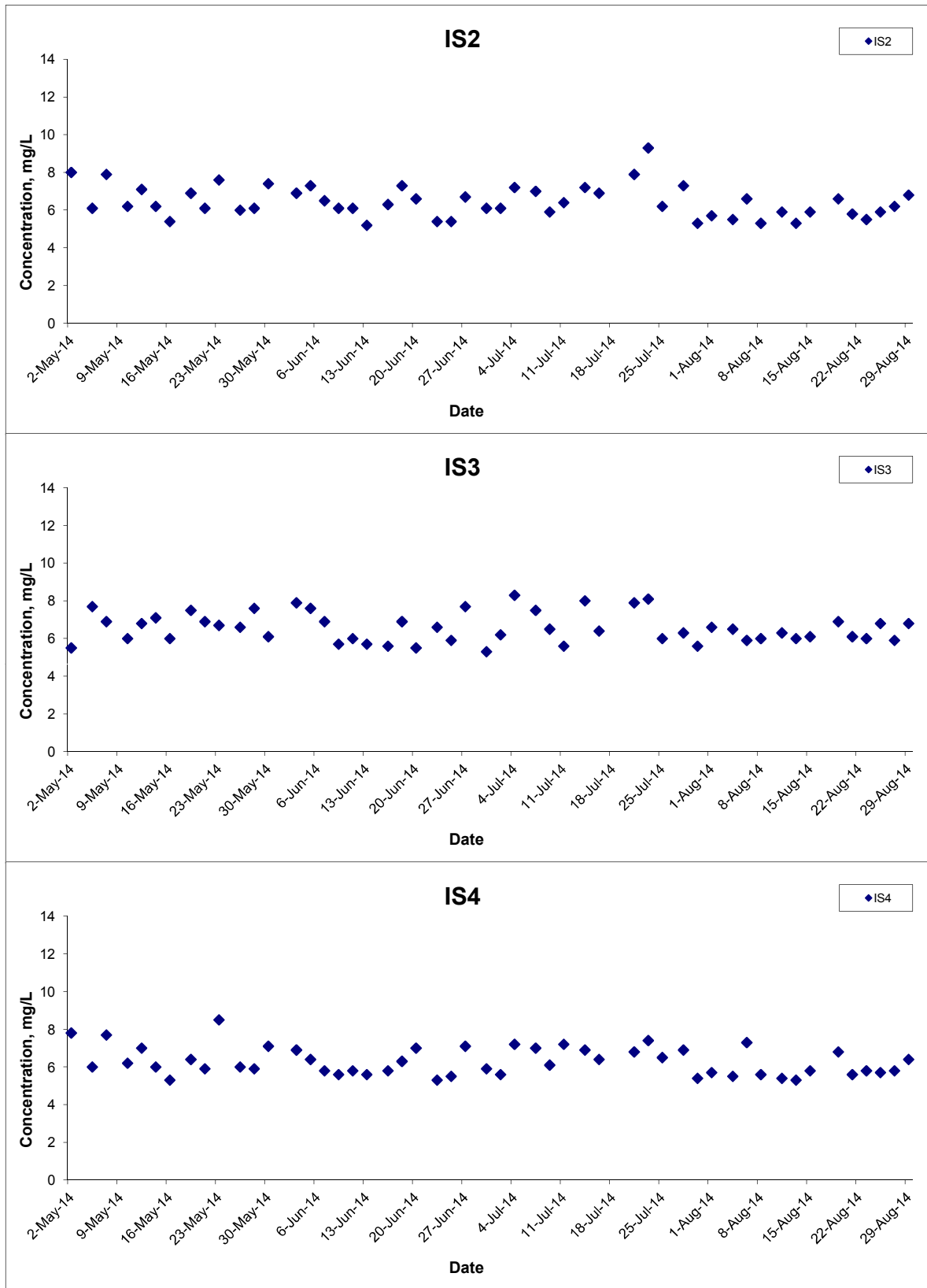
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Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide



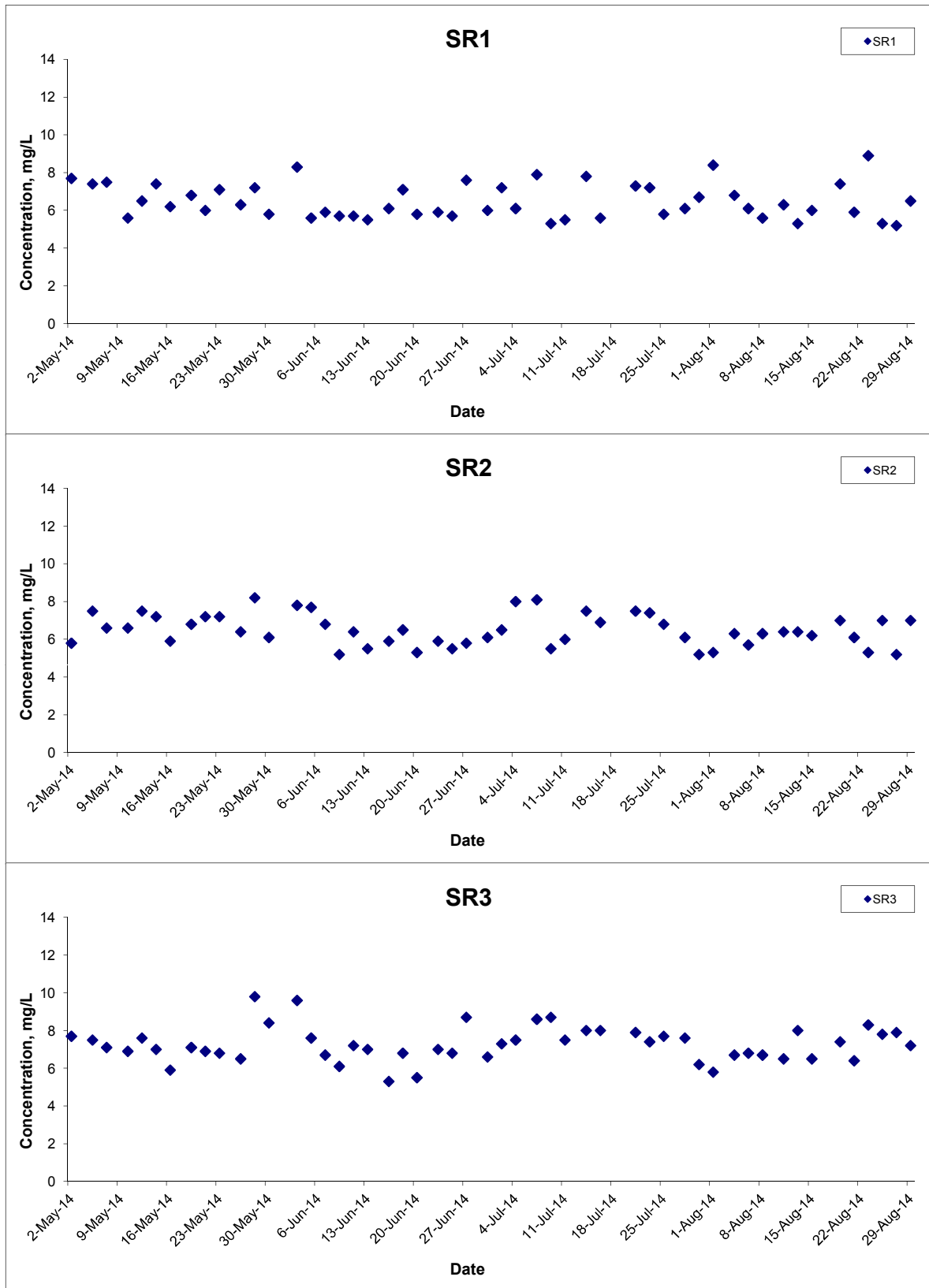
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Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide



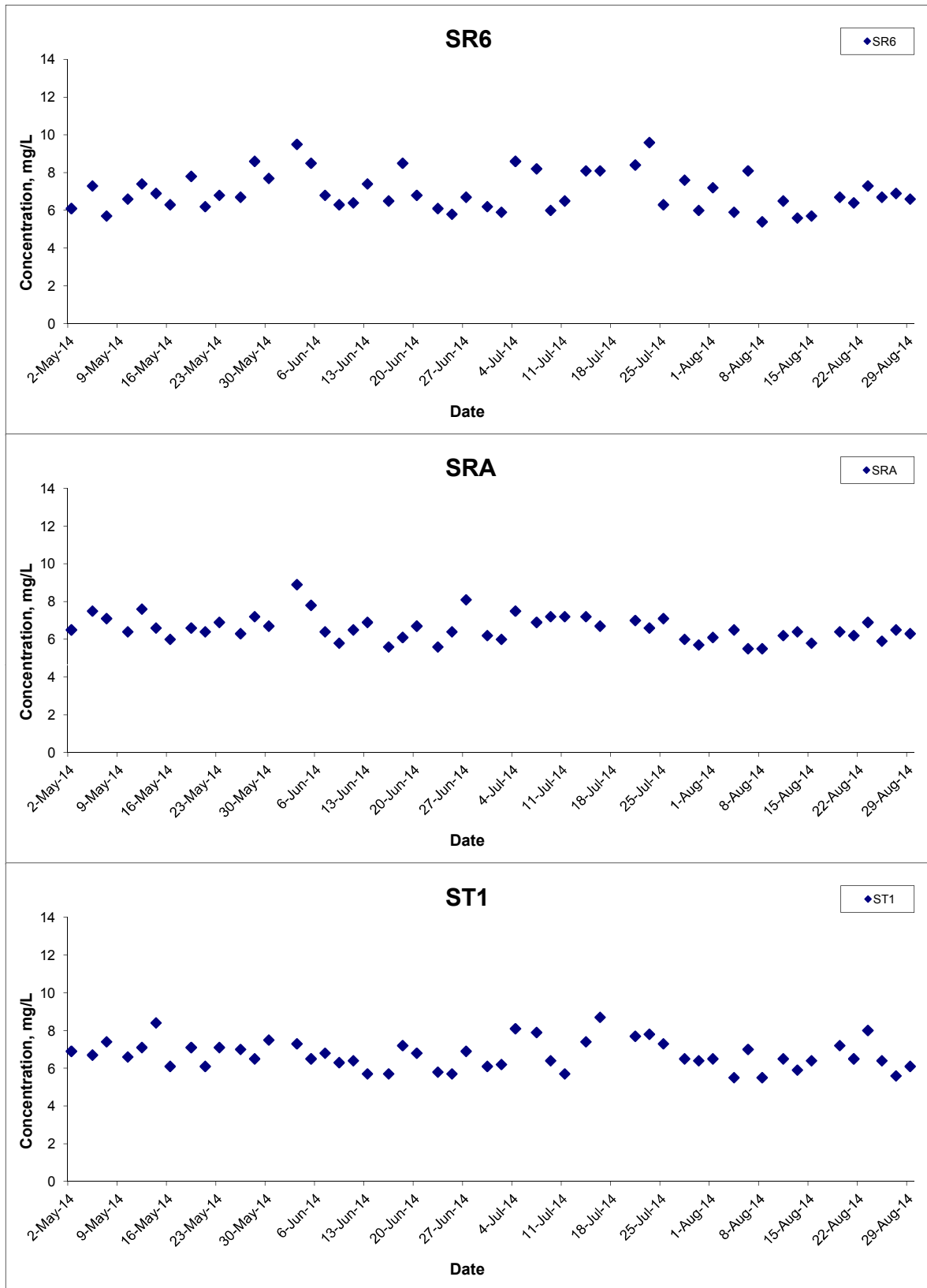
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Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide



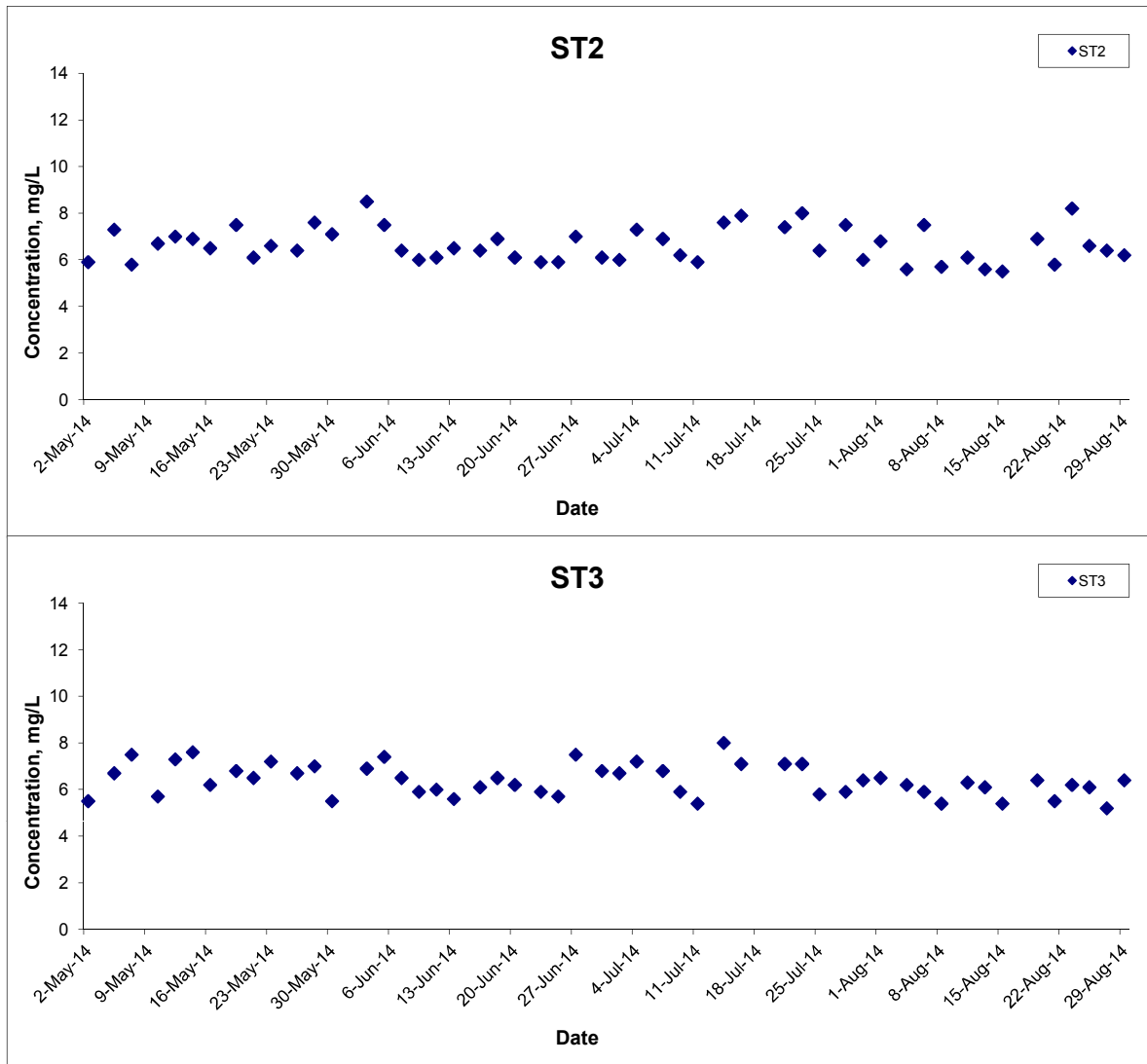
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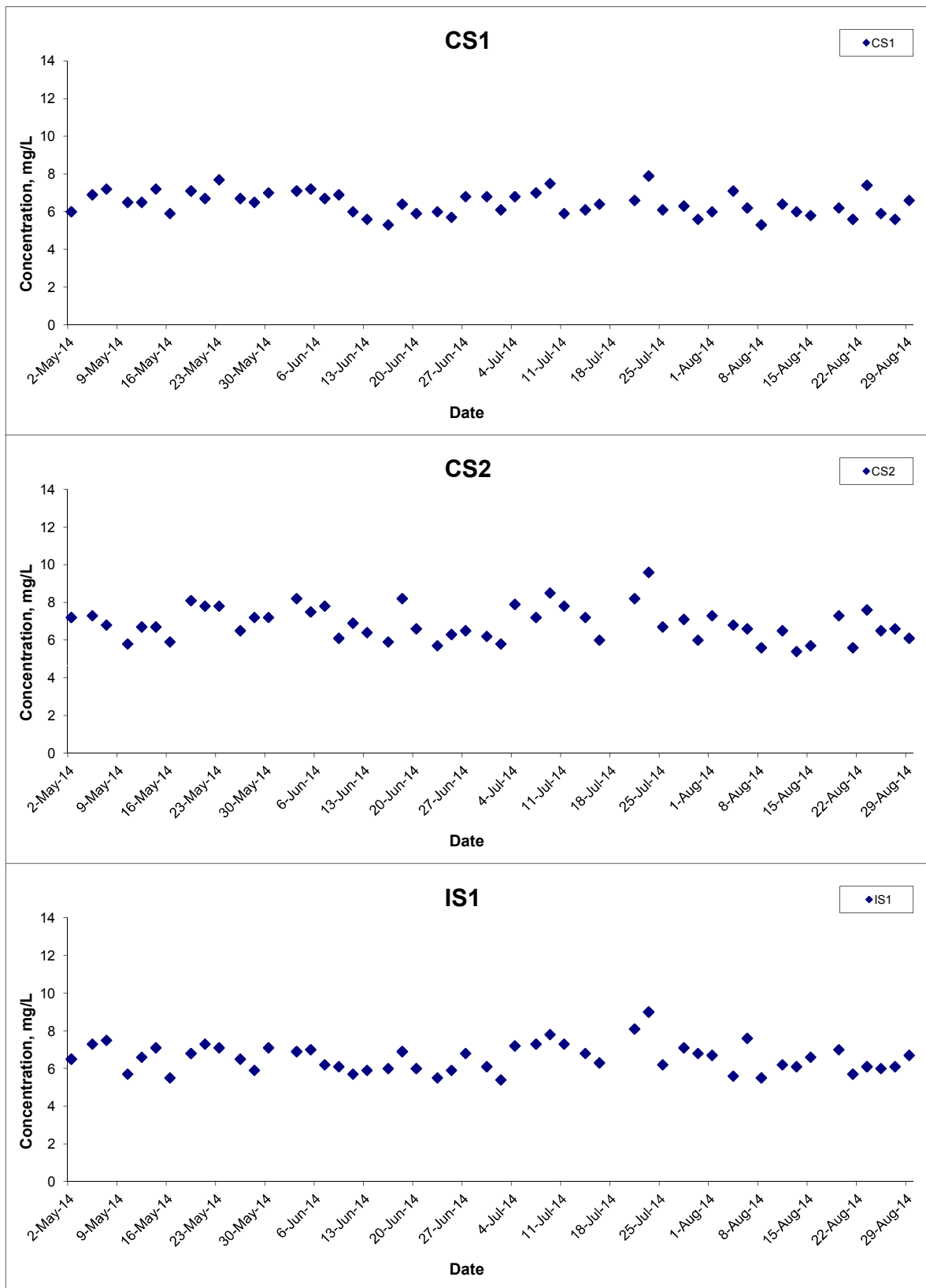


Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide



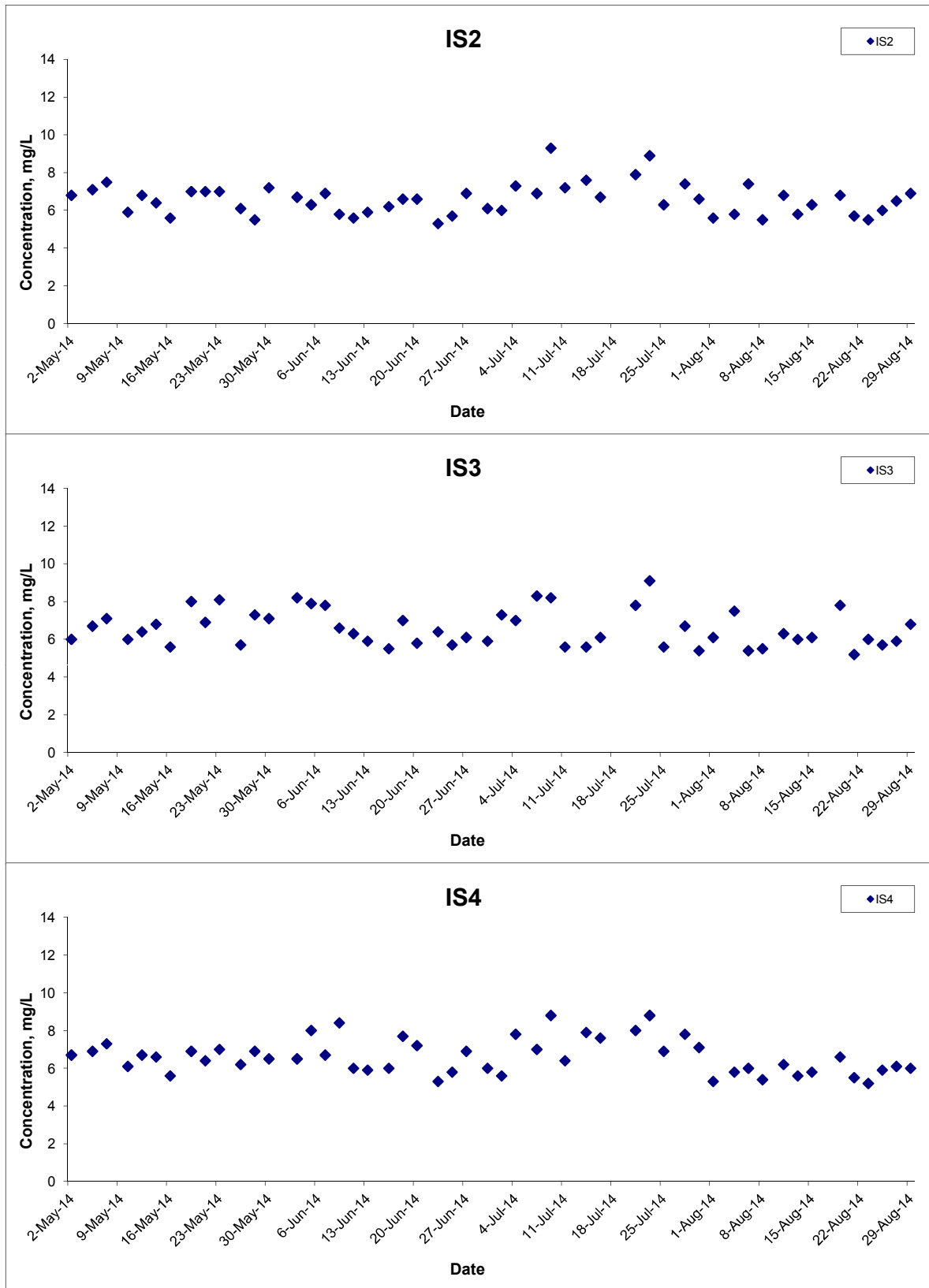
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Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide



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Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide



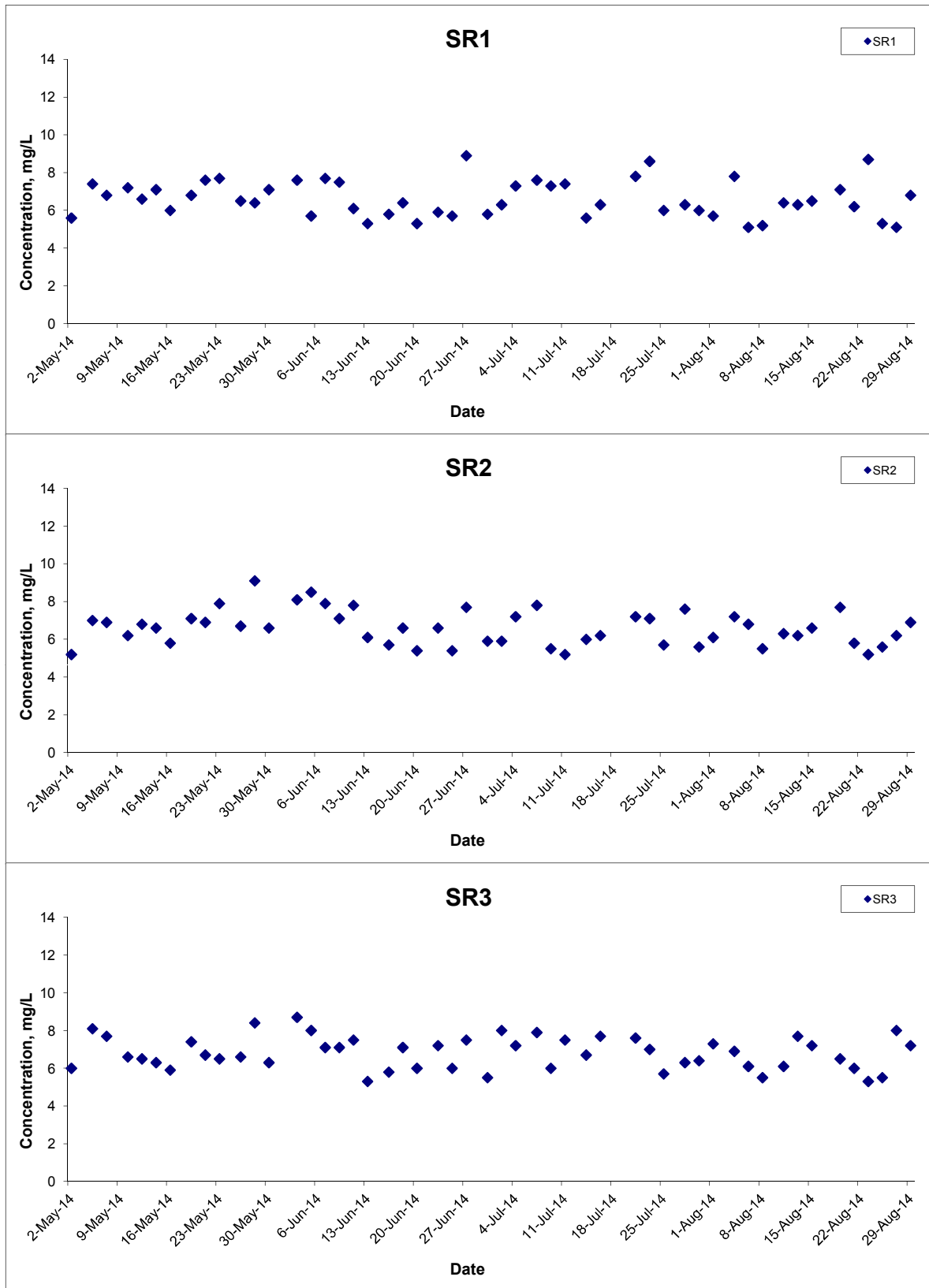
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Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide



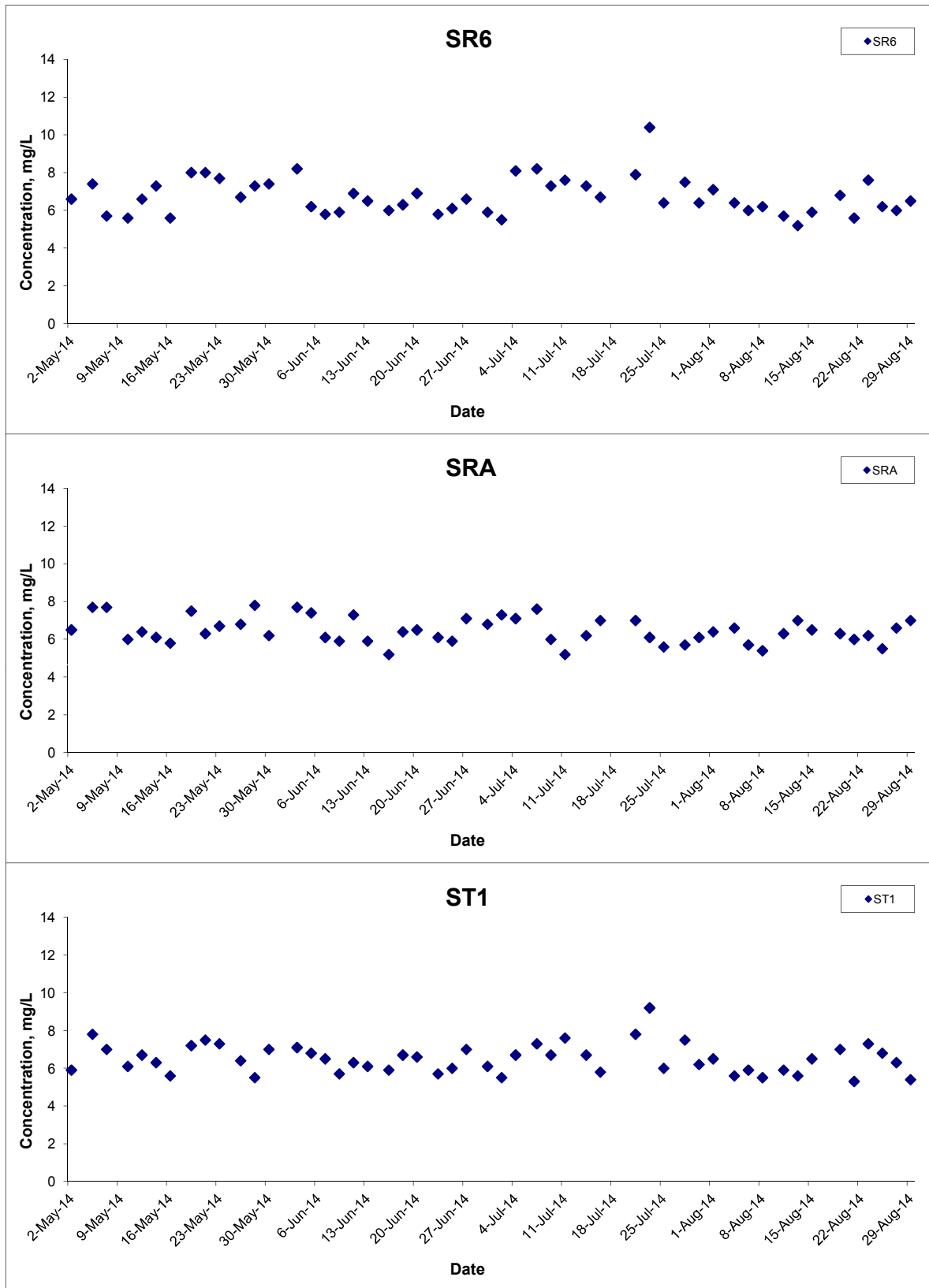
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Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide



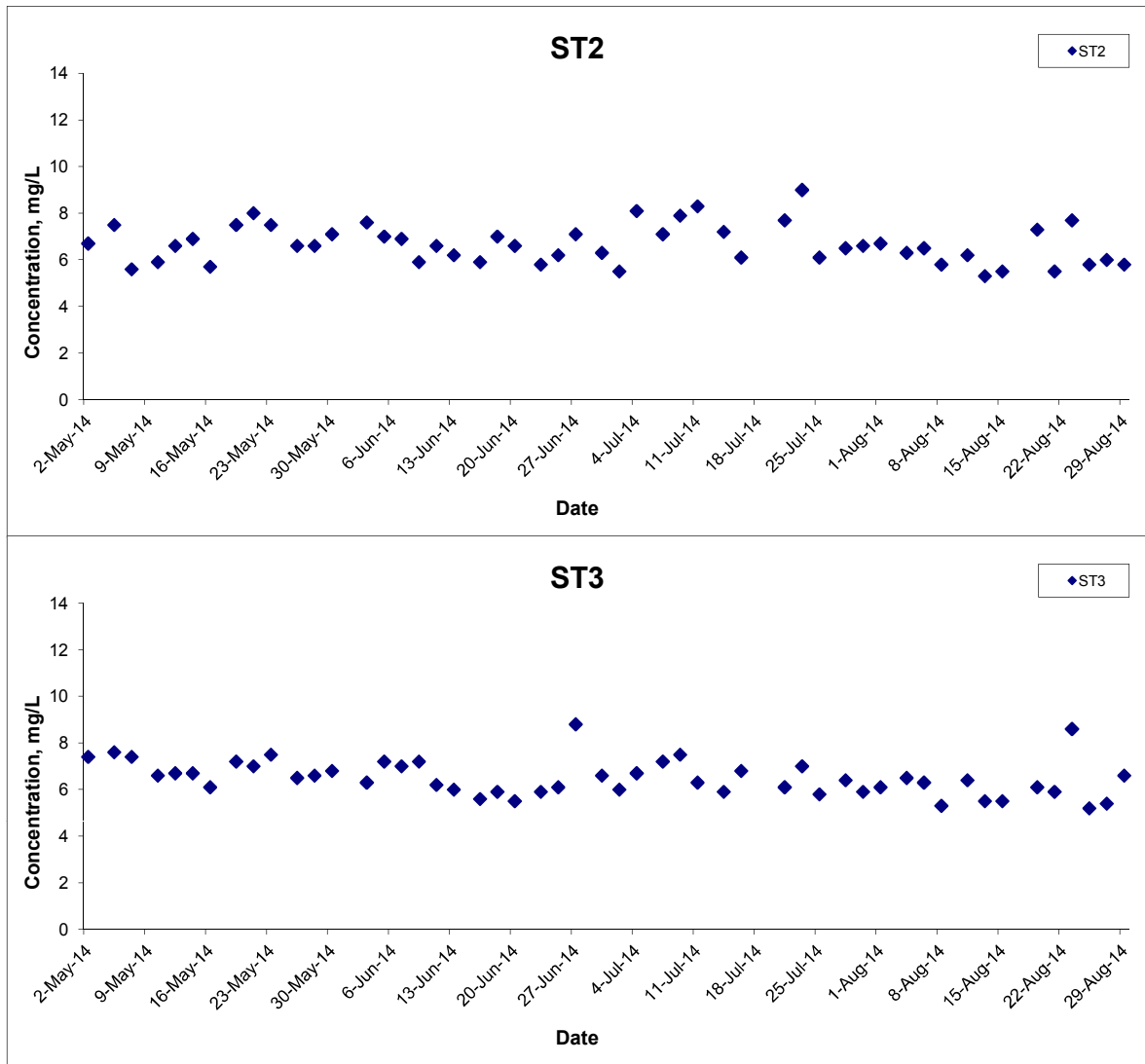
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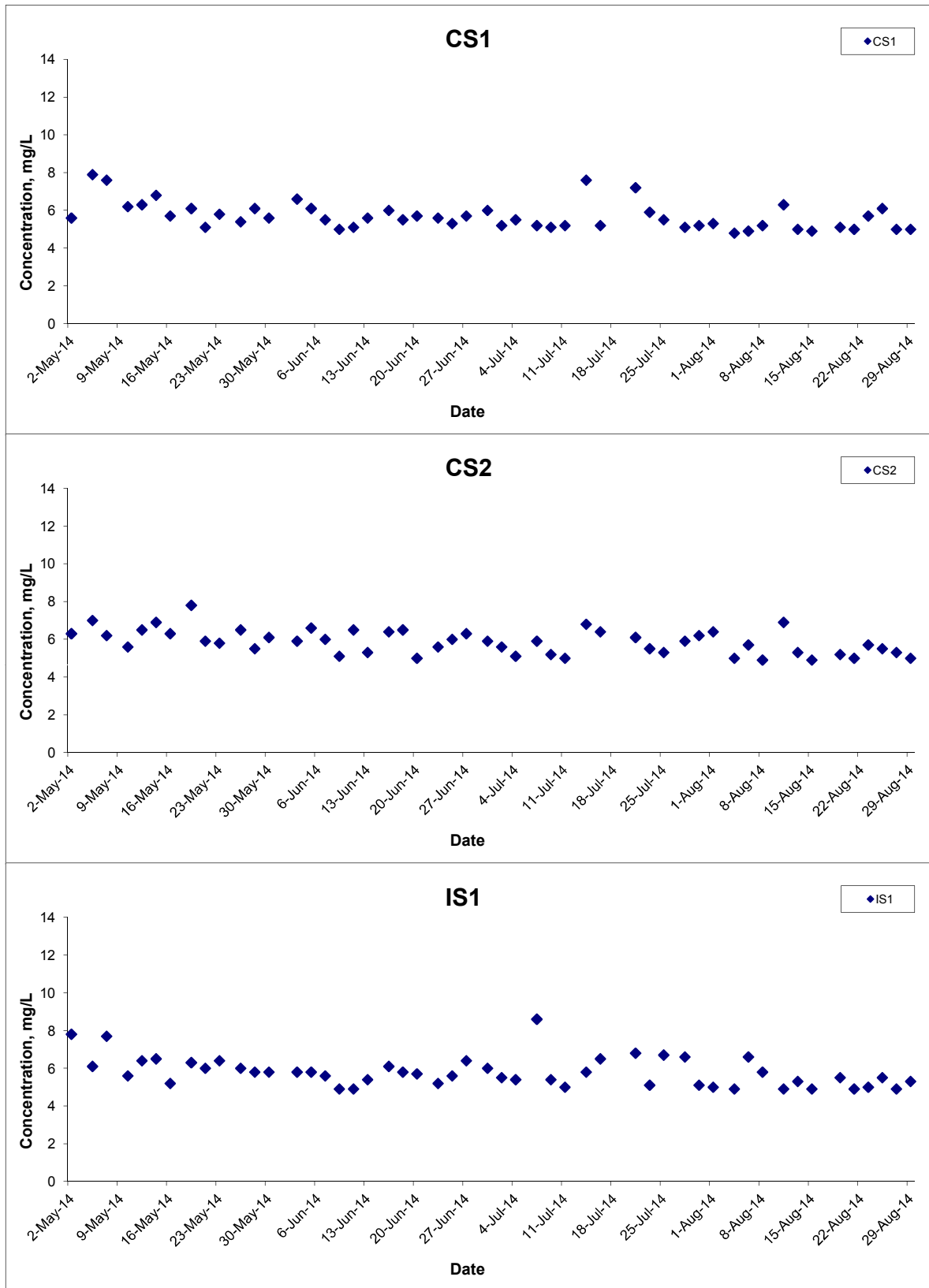


Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide



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Dissolved Oxygen (Bottom) at Mid-Ebb Tide



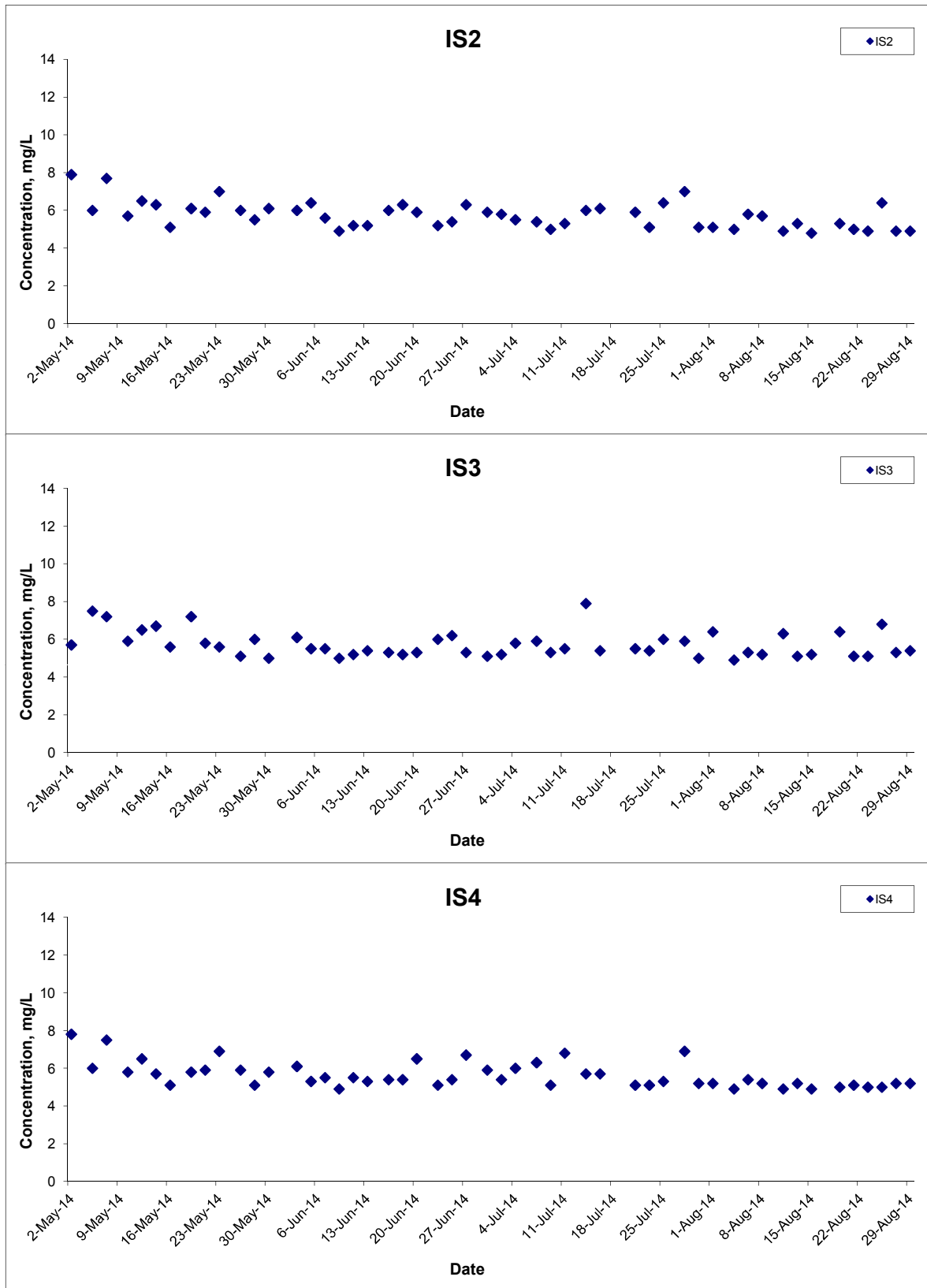
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Dissolved Oxygen (Bottom) at Mid-Ebb Tide



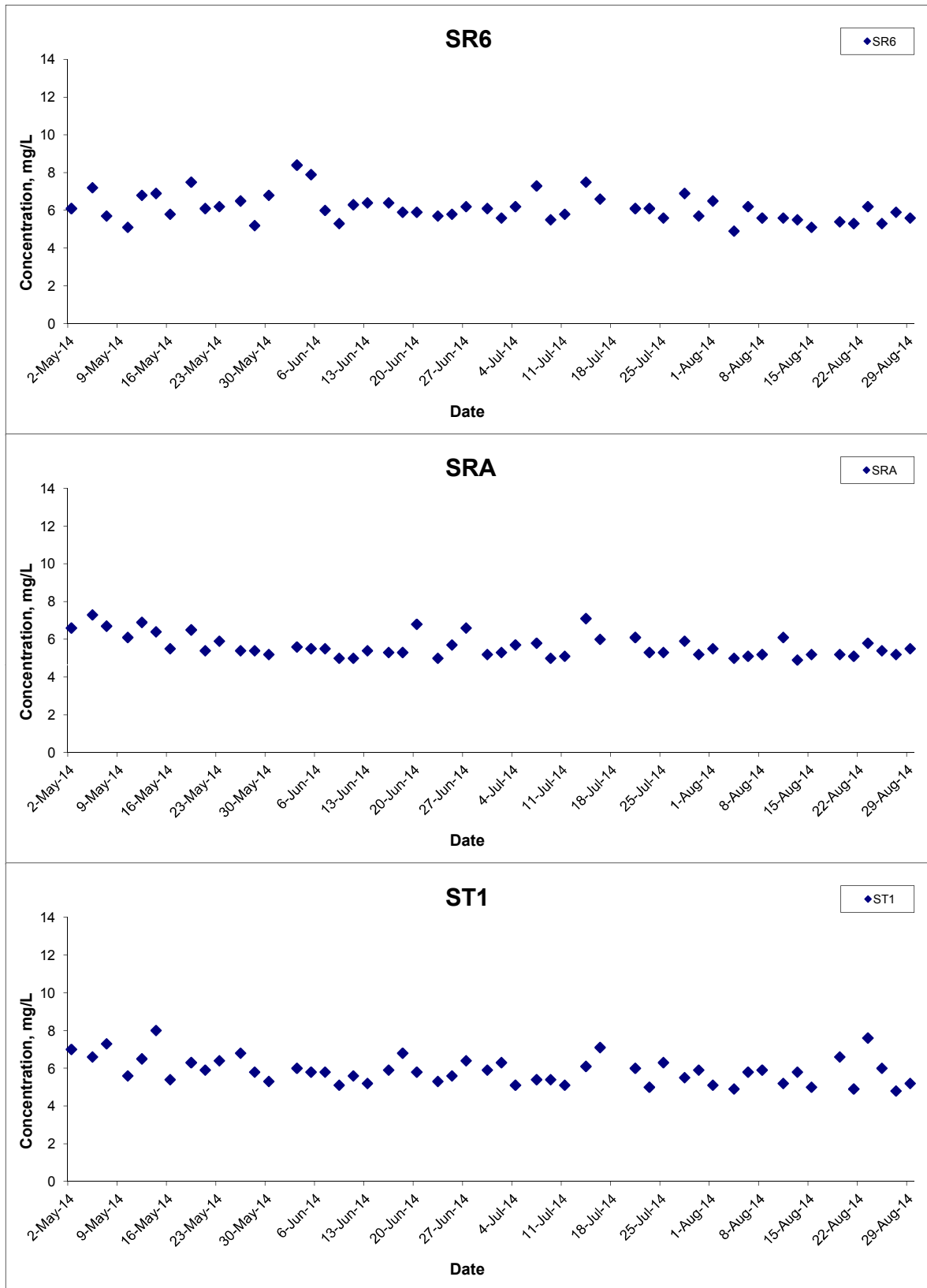
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Dissolved Oxygen (Bottom) at Mid-Ebb Tide



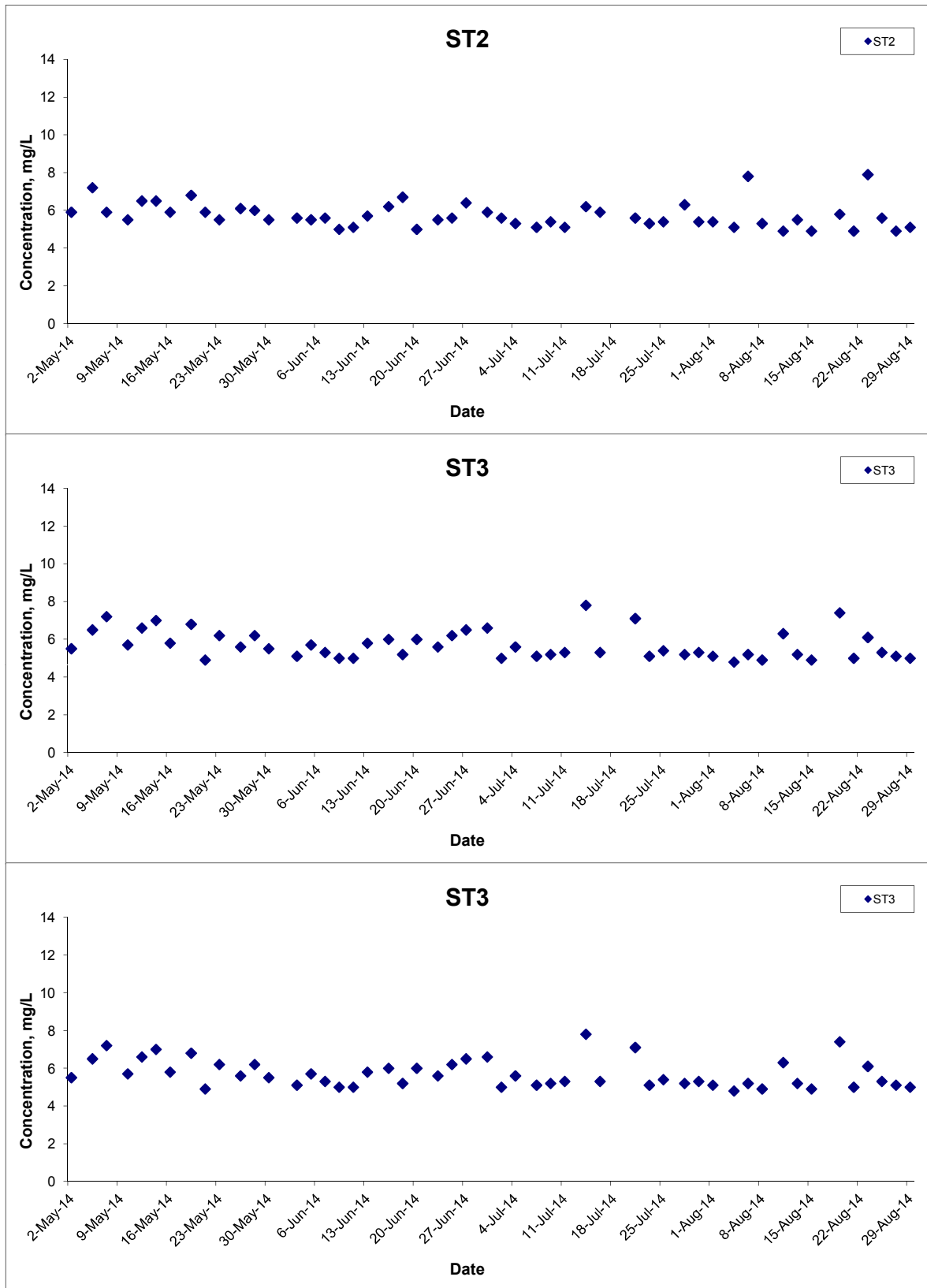
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Dissolved Oxygen (Bottom) at Mid-Ebb Tide



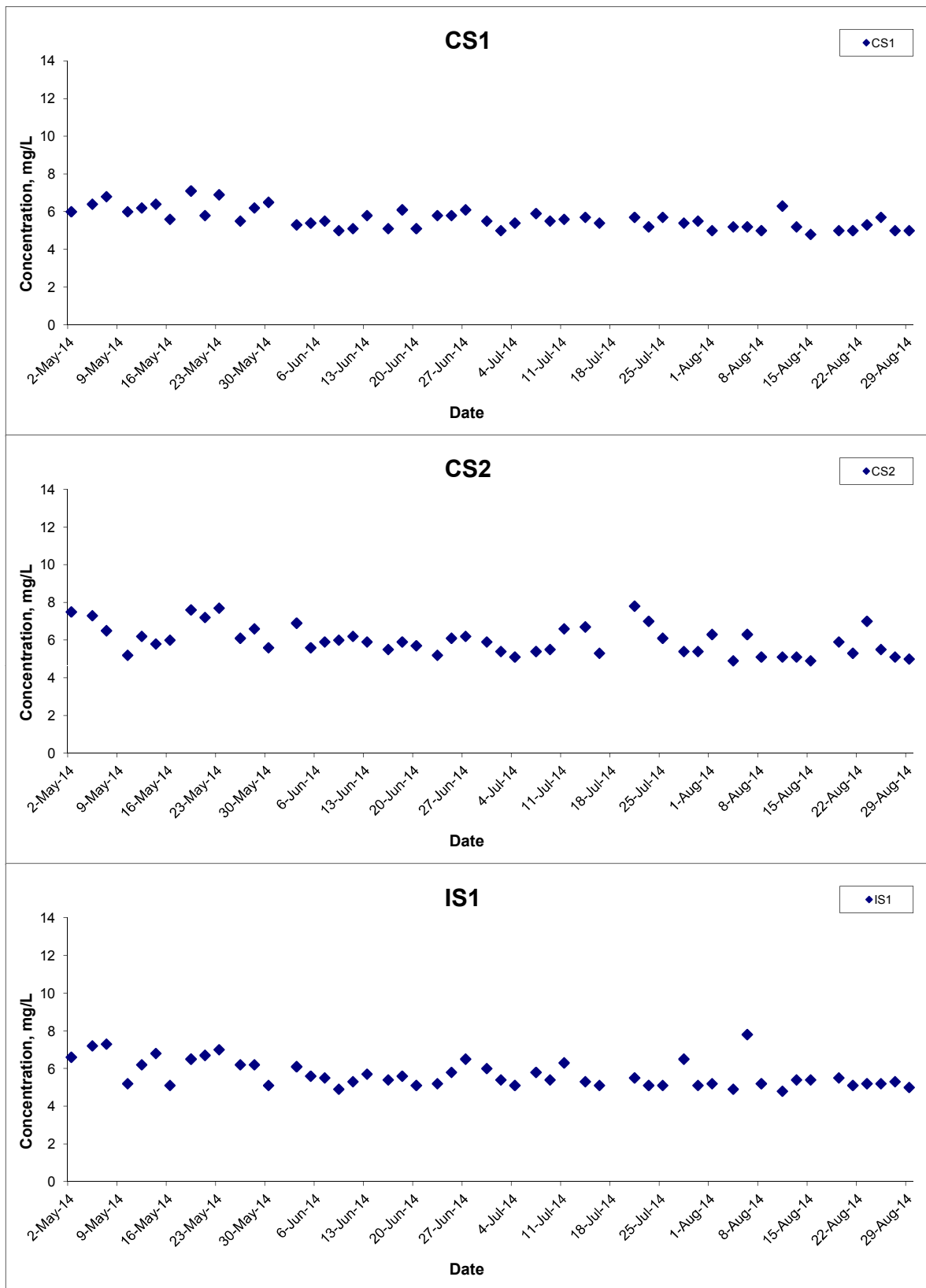
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Dissolved Oxygen (Bottom) at Mid-Flood Tide



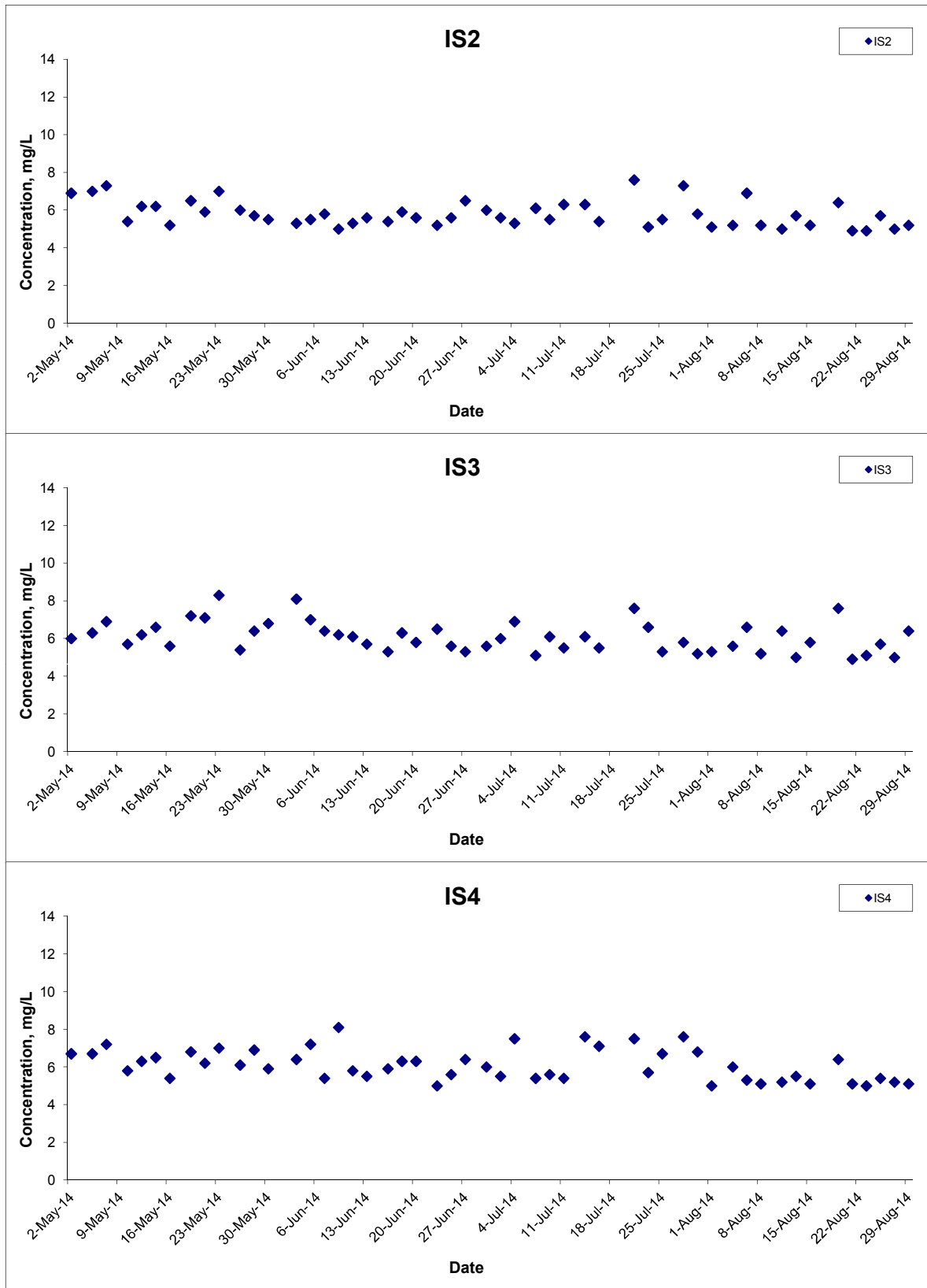
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Dissolved Oxygen (Bottom) at Mid-Flood Tide



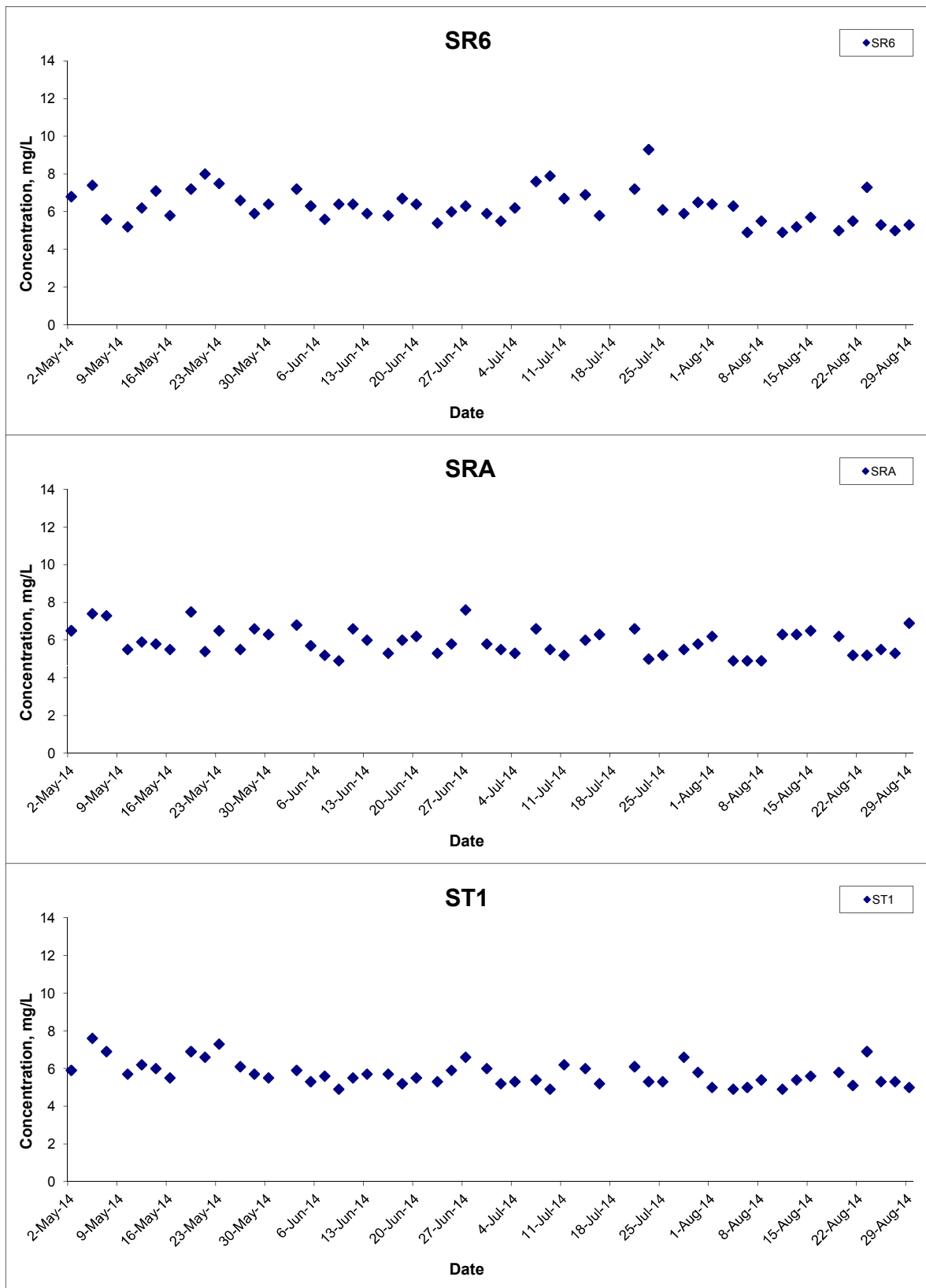
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Dissolved Oxygen (Bottom) at Mid-Flood Tide



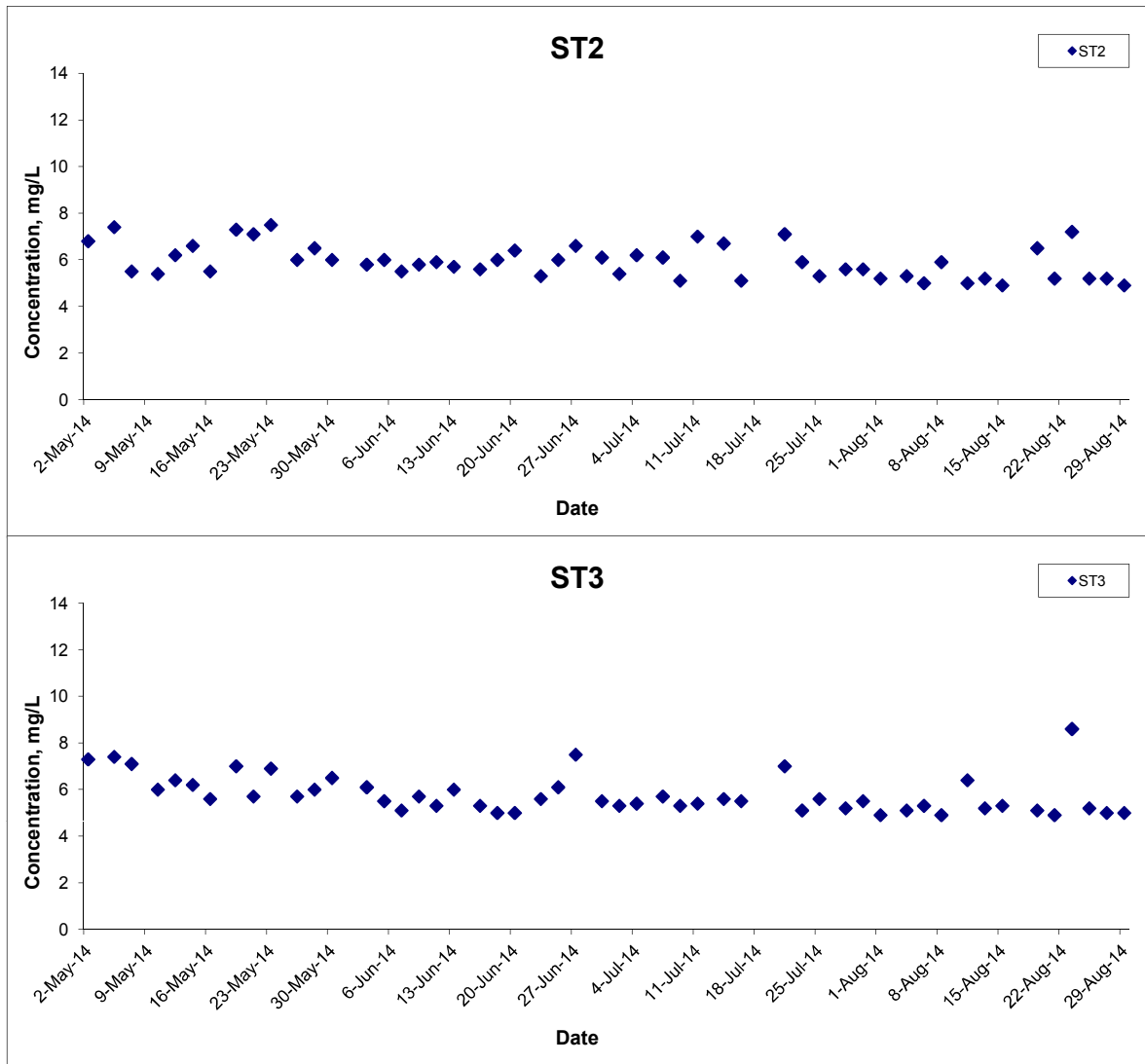
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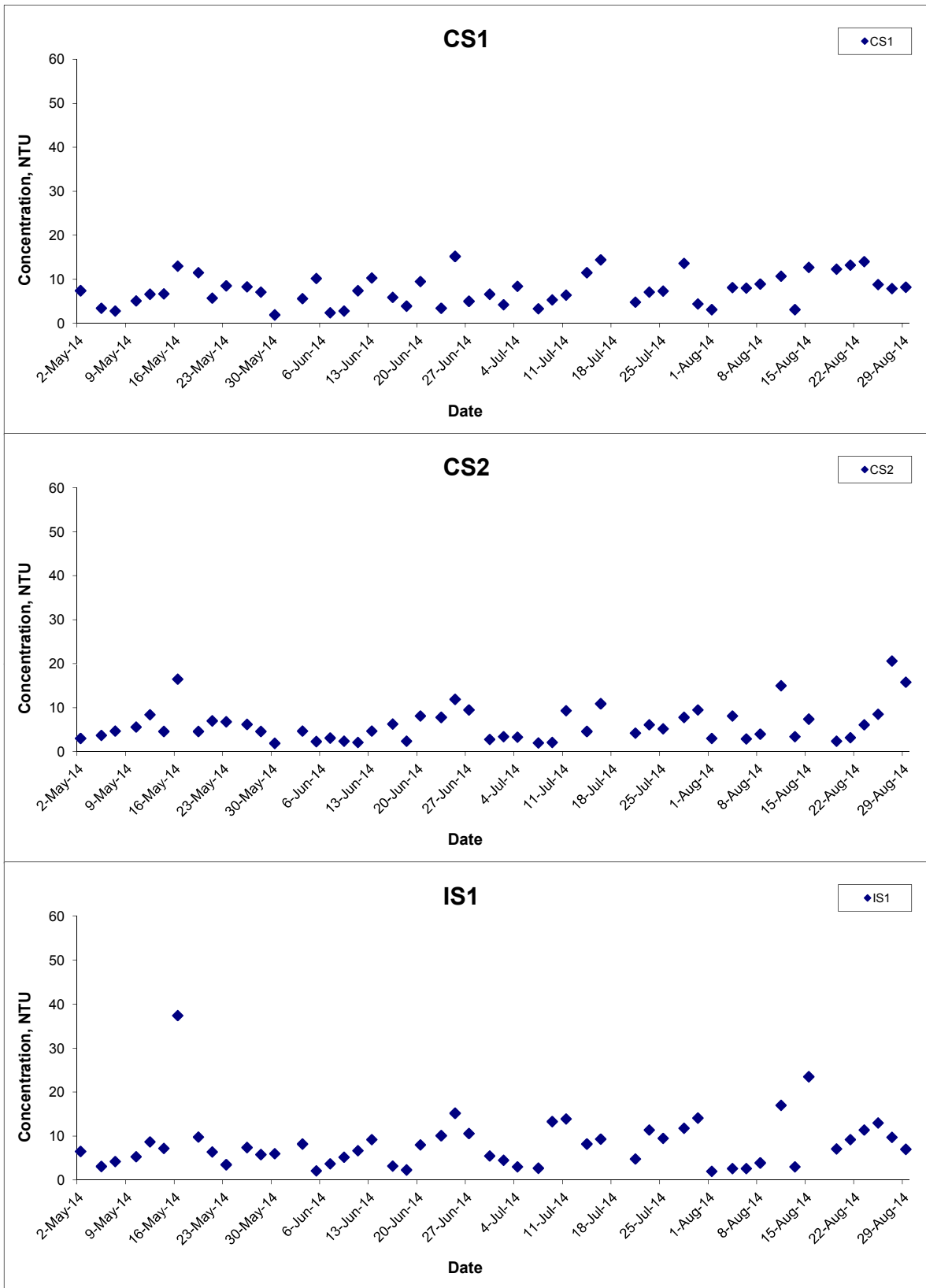


Dissolved Oxygen (Bottom) at Mid-Flood Tide



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Turbidity (Depth-averaged) at Mid-Ebb Tide



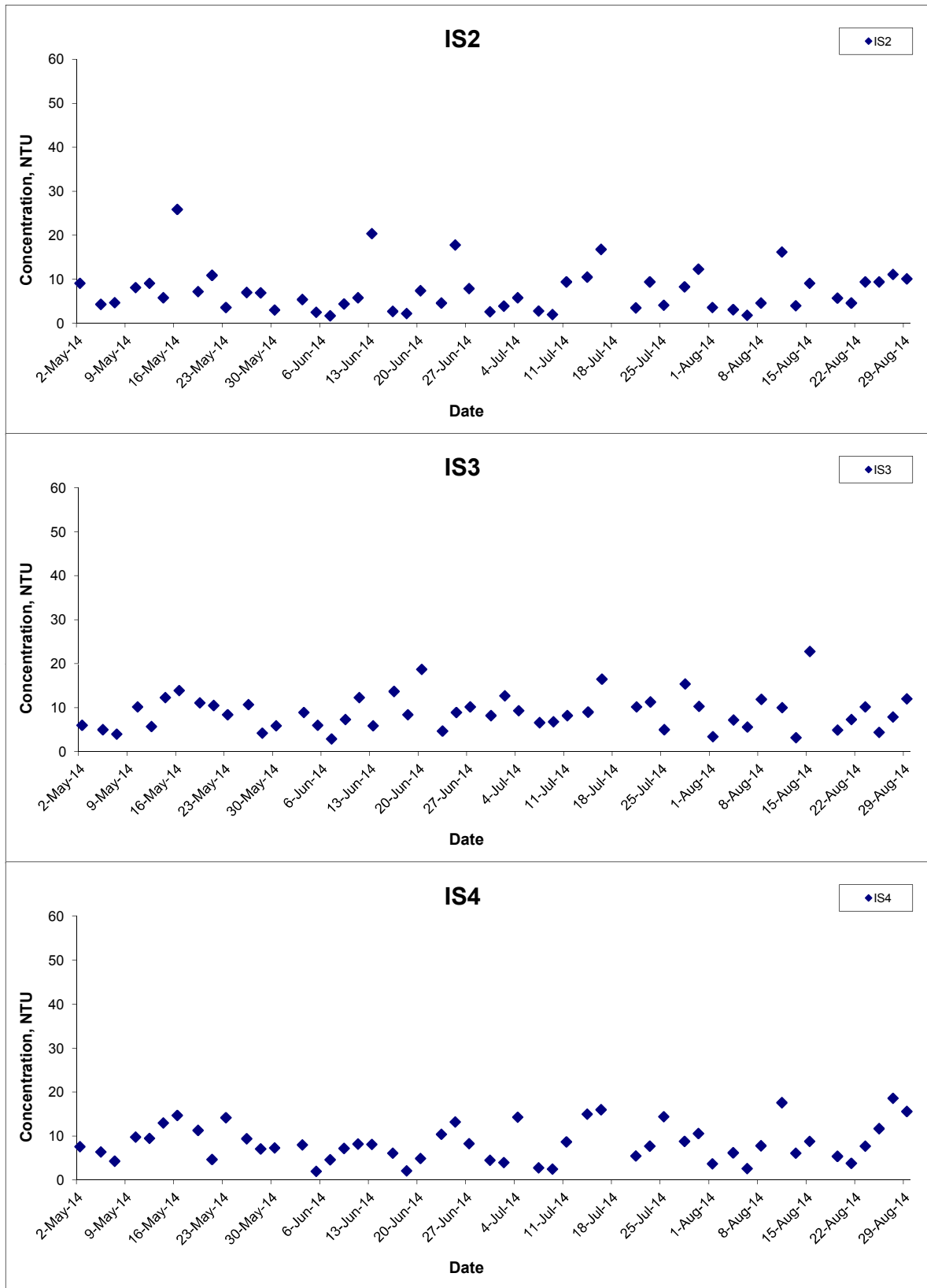
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Turbidity (Depth-averaged) at Mid-Ebb Tide



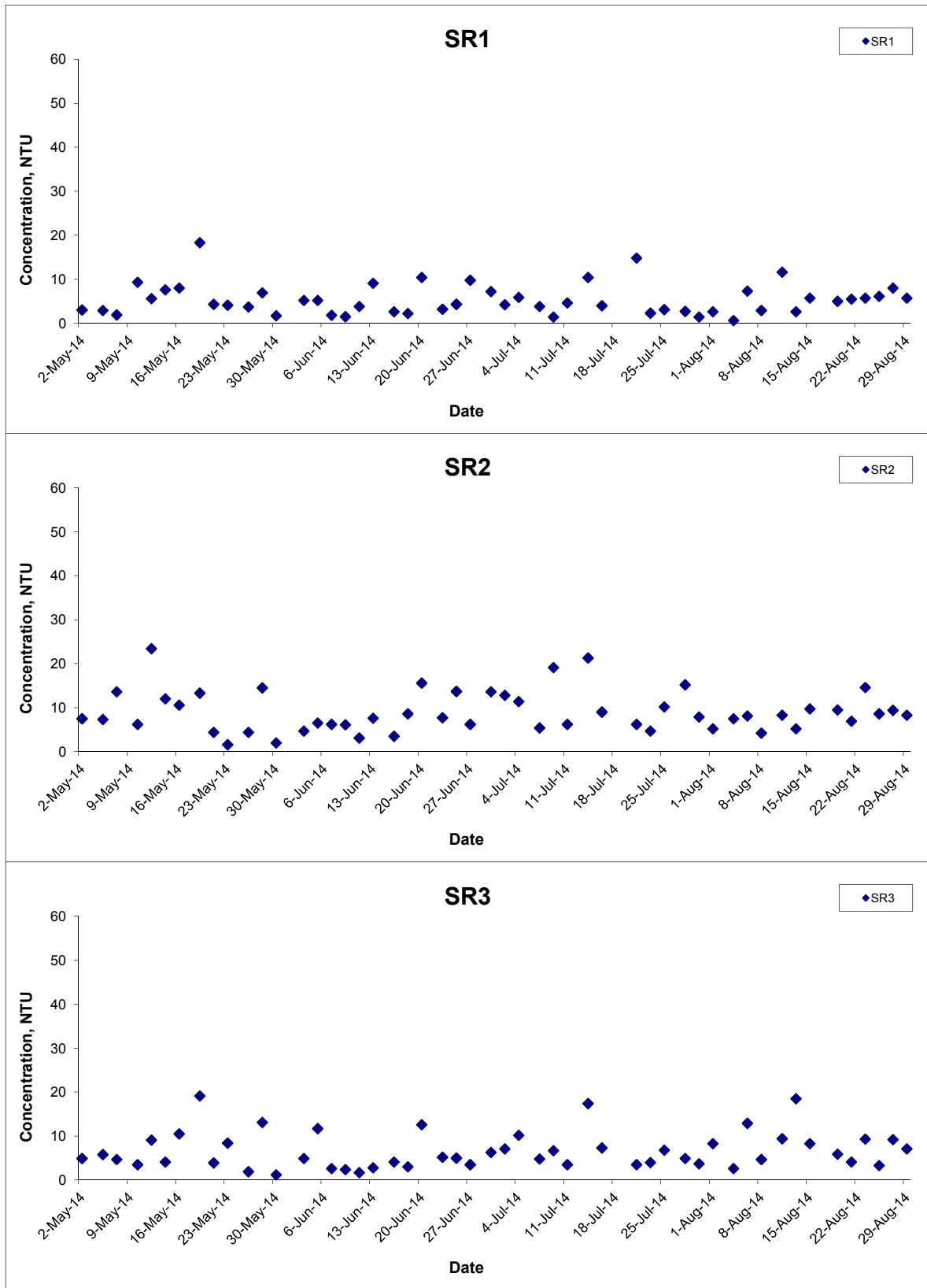
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Turbidity (Depth-averaged) at Mid-Ebb Tide



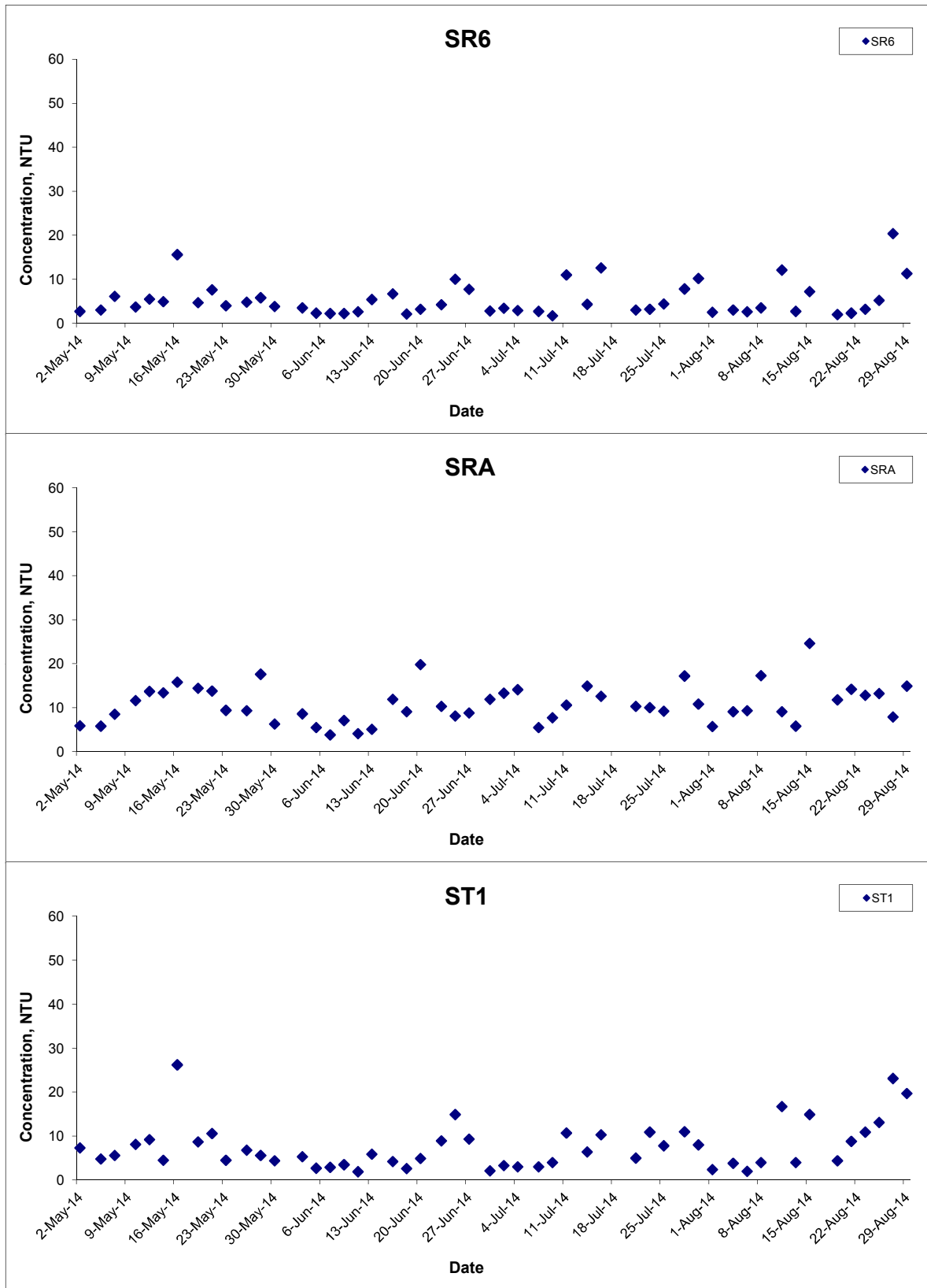
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Turbidity (Depth-averaged) at Mid-Ebb Tide



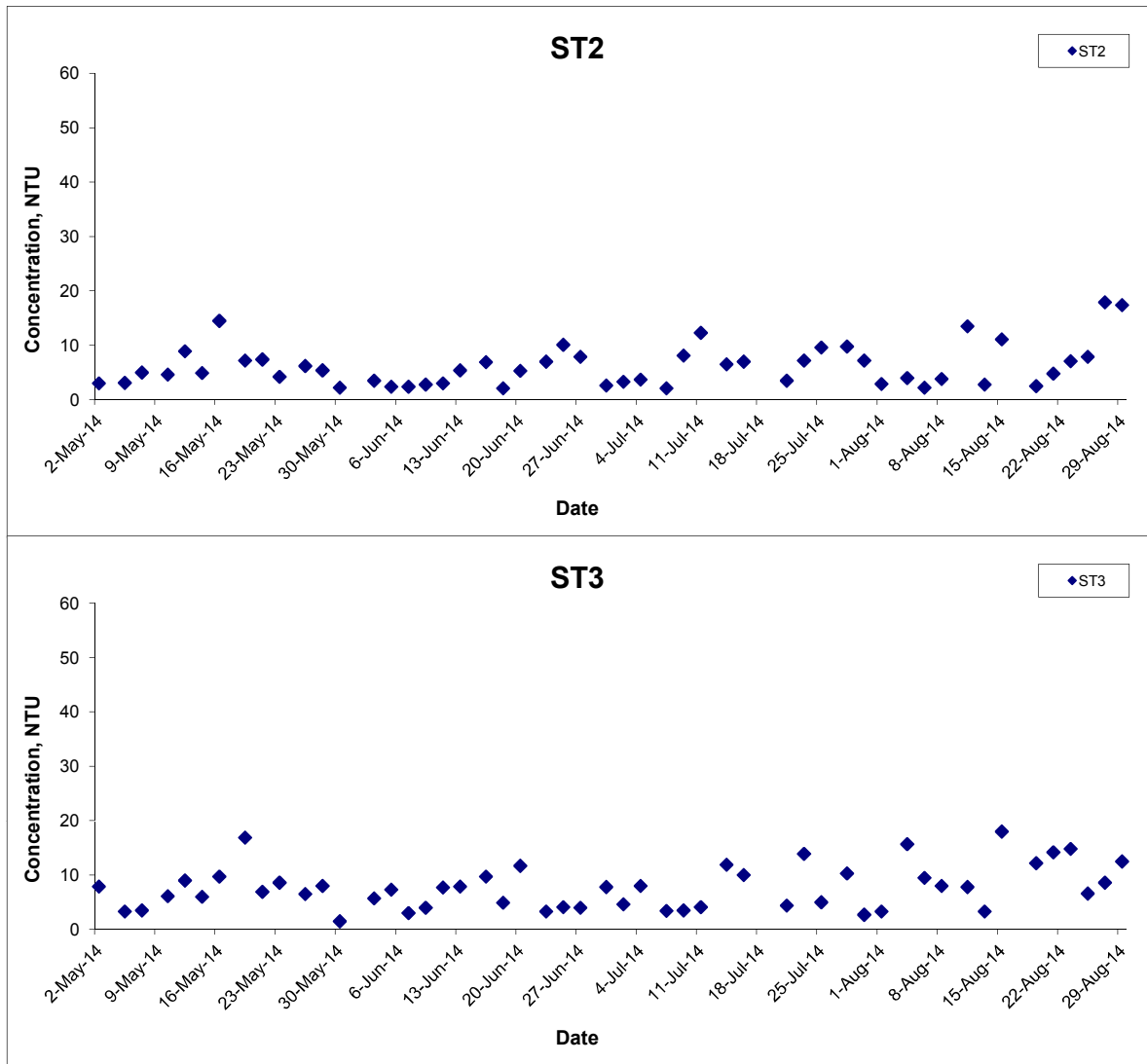
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Turbidity (Depth-averaged) at Mid-Ebb Tide



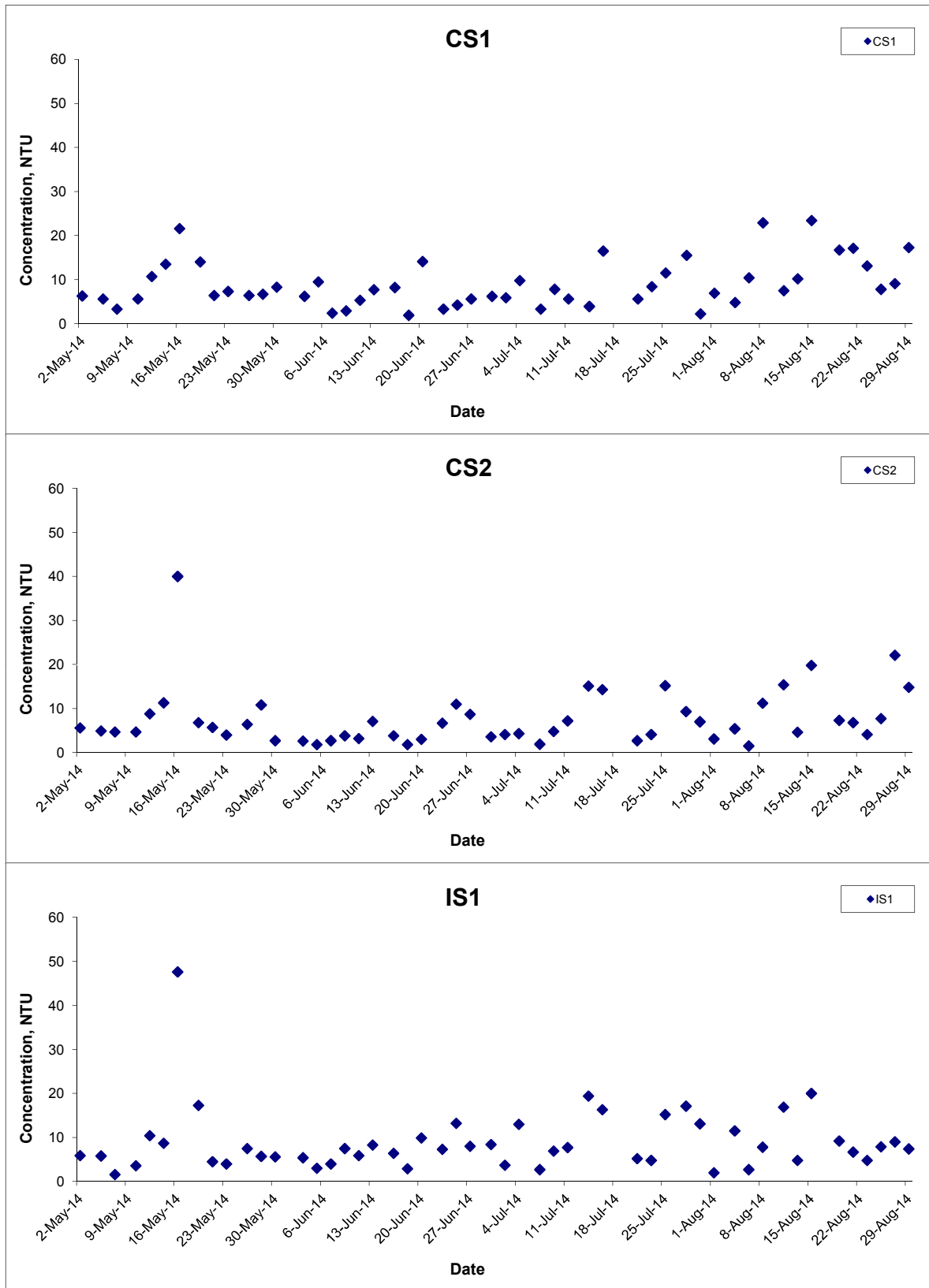
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Turbidity (Depth-averaged) at Mid-Flood Tide



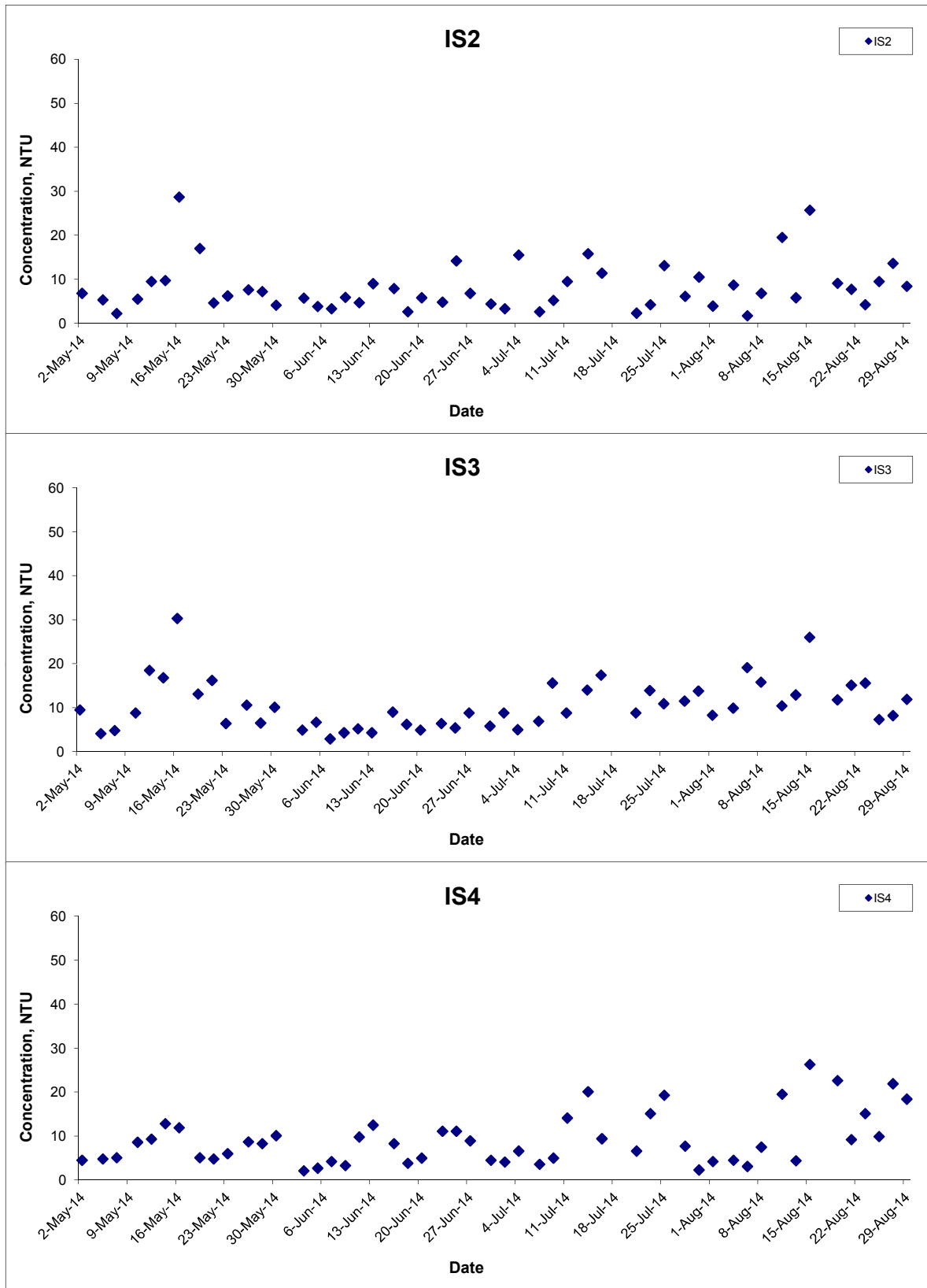
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Turbidity (Depth-averaged) at Mid-Flood Tide



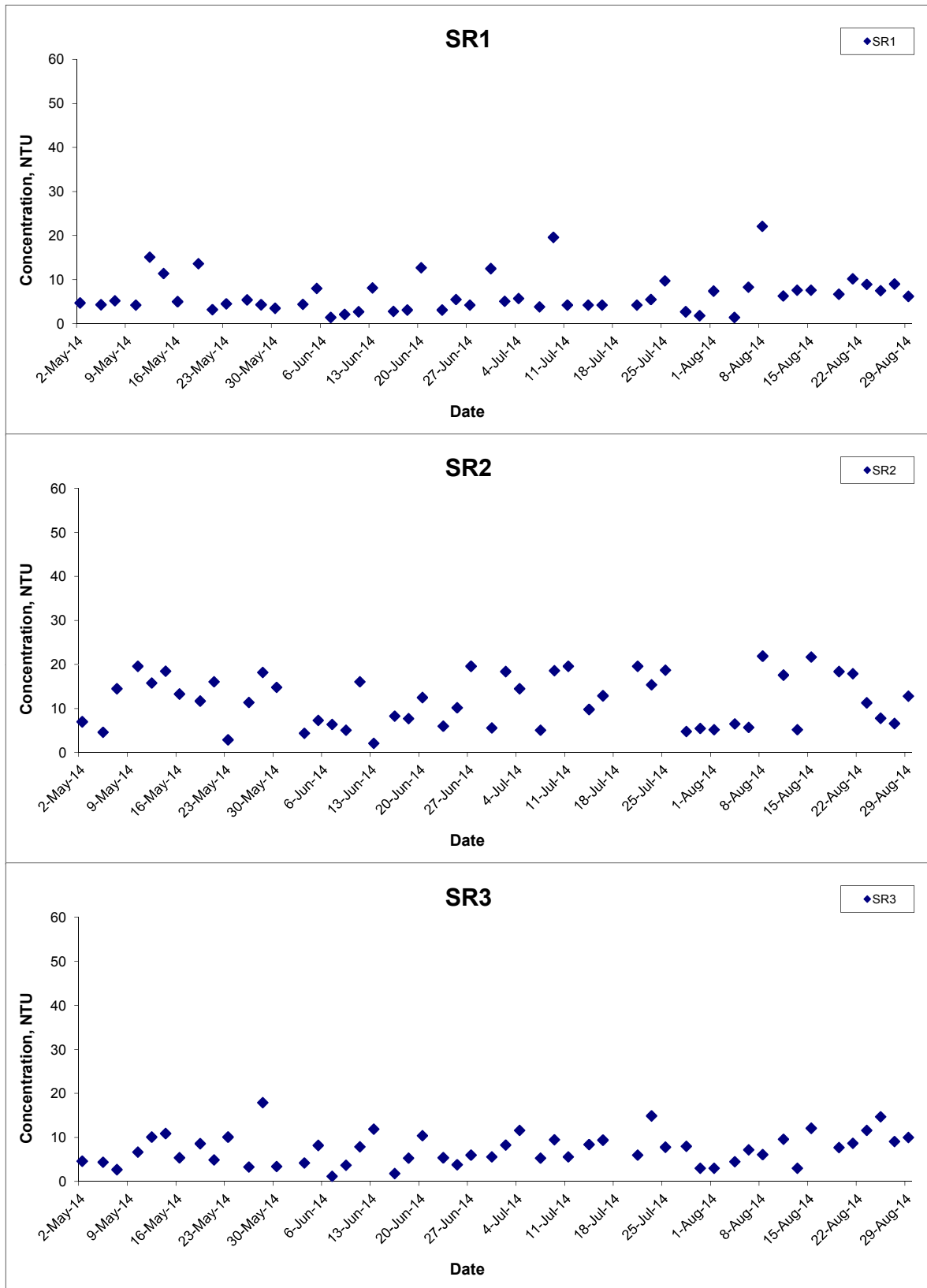
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Turbidity (Depth-averaged) at Mid-Flood Tide



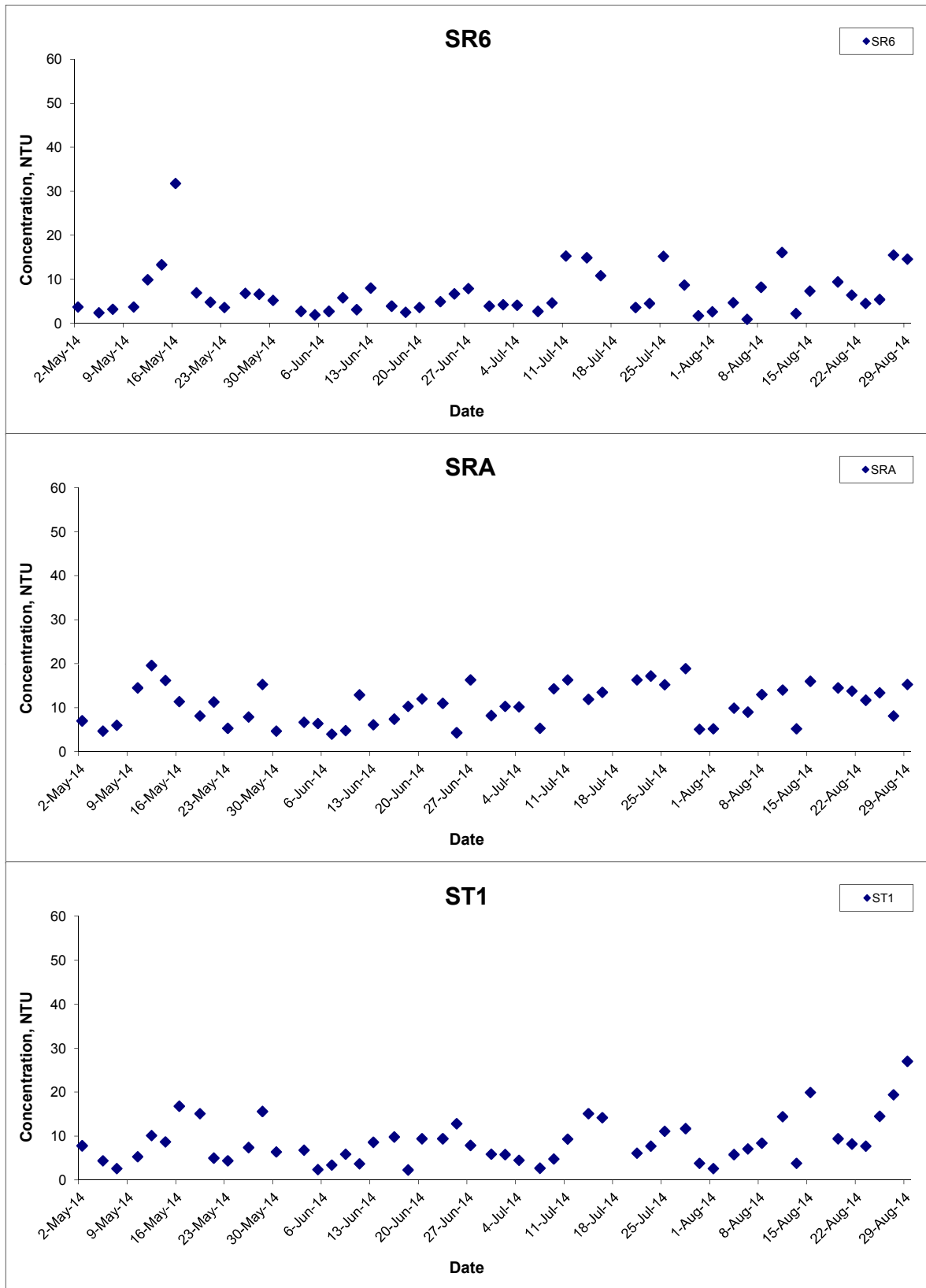
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Turbidity (Depth-averaged) at Mid-Flood Tide



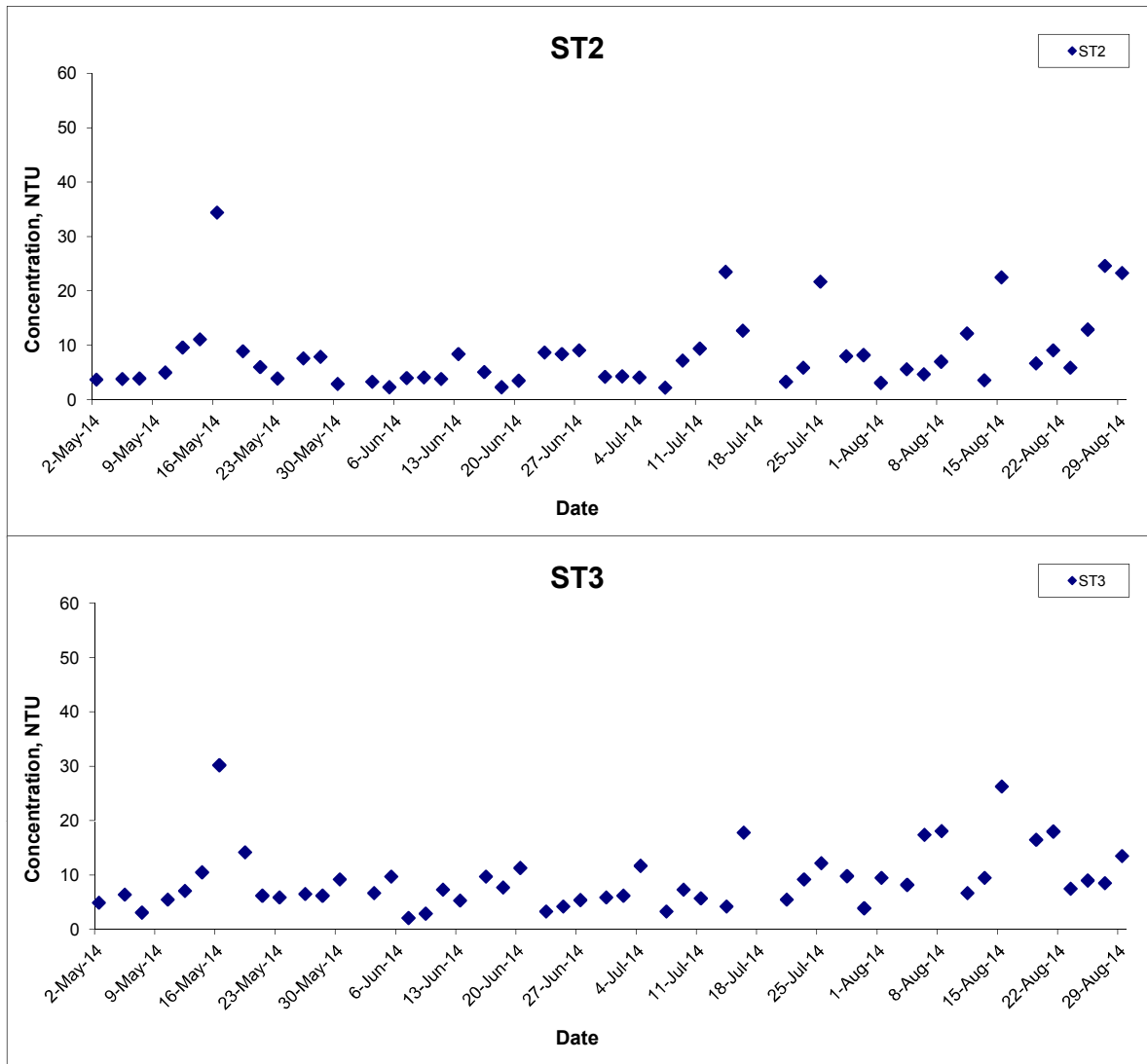
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Turbidity (Depth-averaged) at Mid-Flood Tide



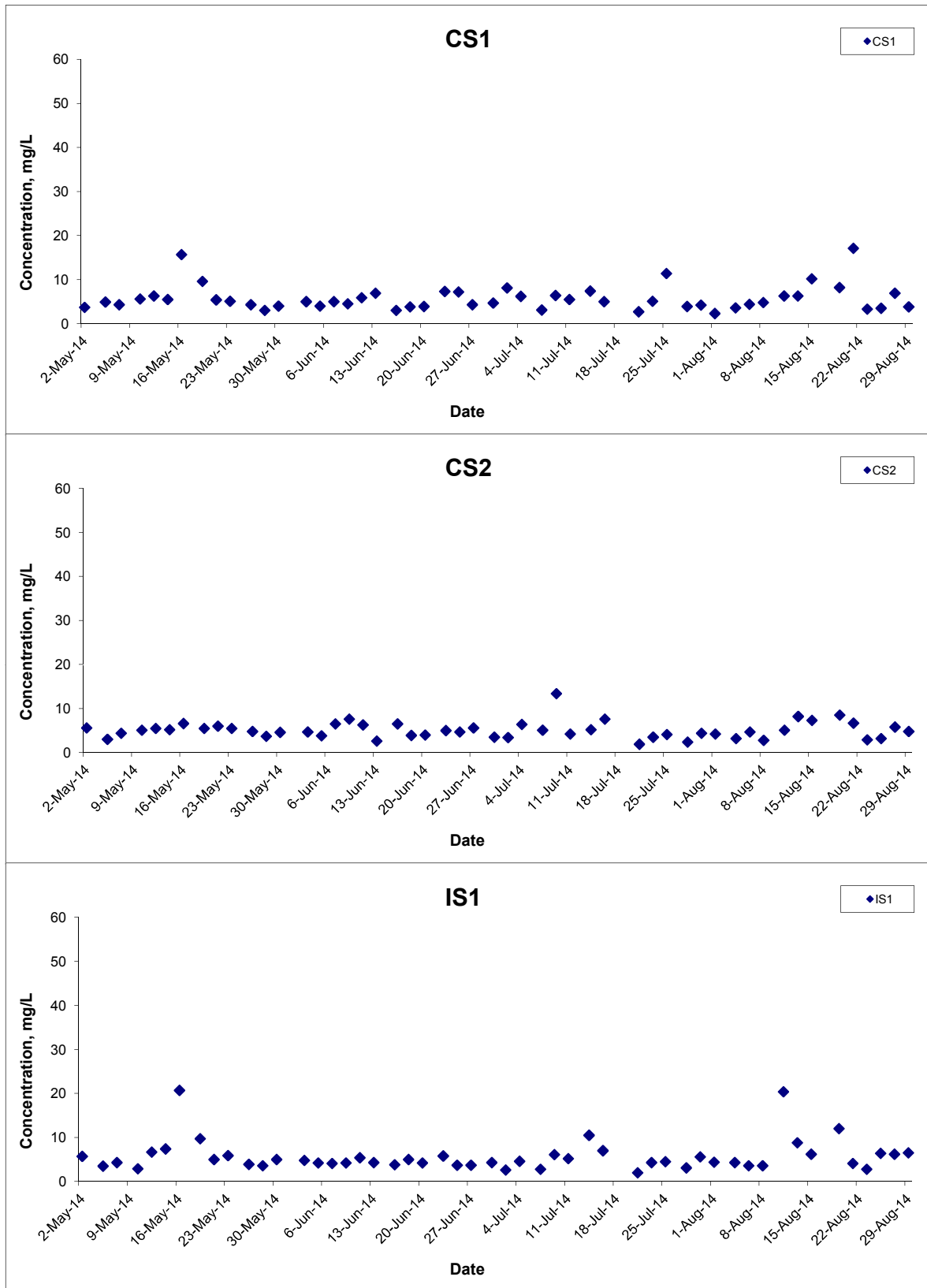
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Suspended Solids (Depth-averaged) at Mid-Ebb Tide



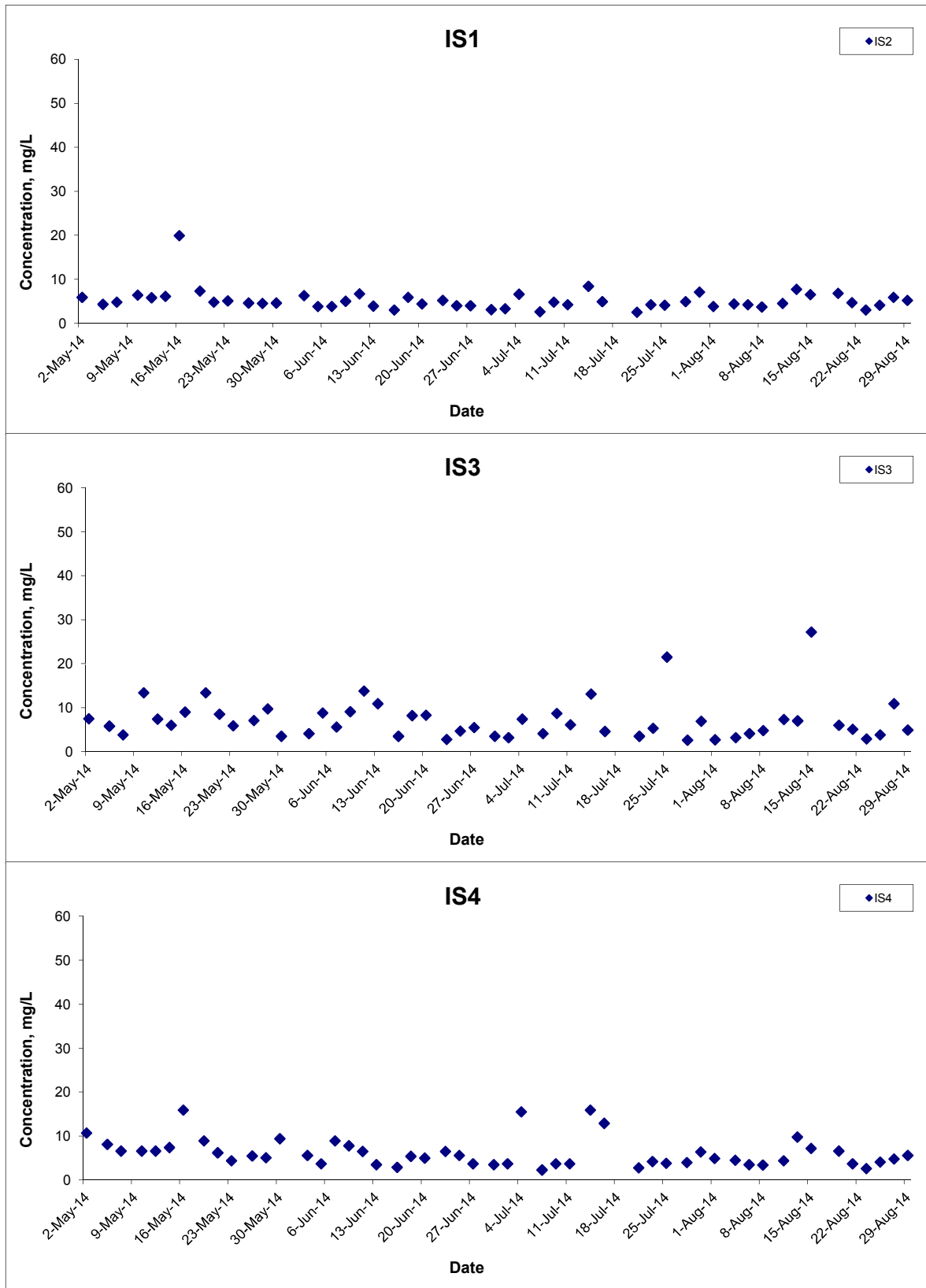
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Suspended Solids (Depth-averaged) at Mid-Ebb Tide



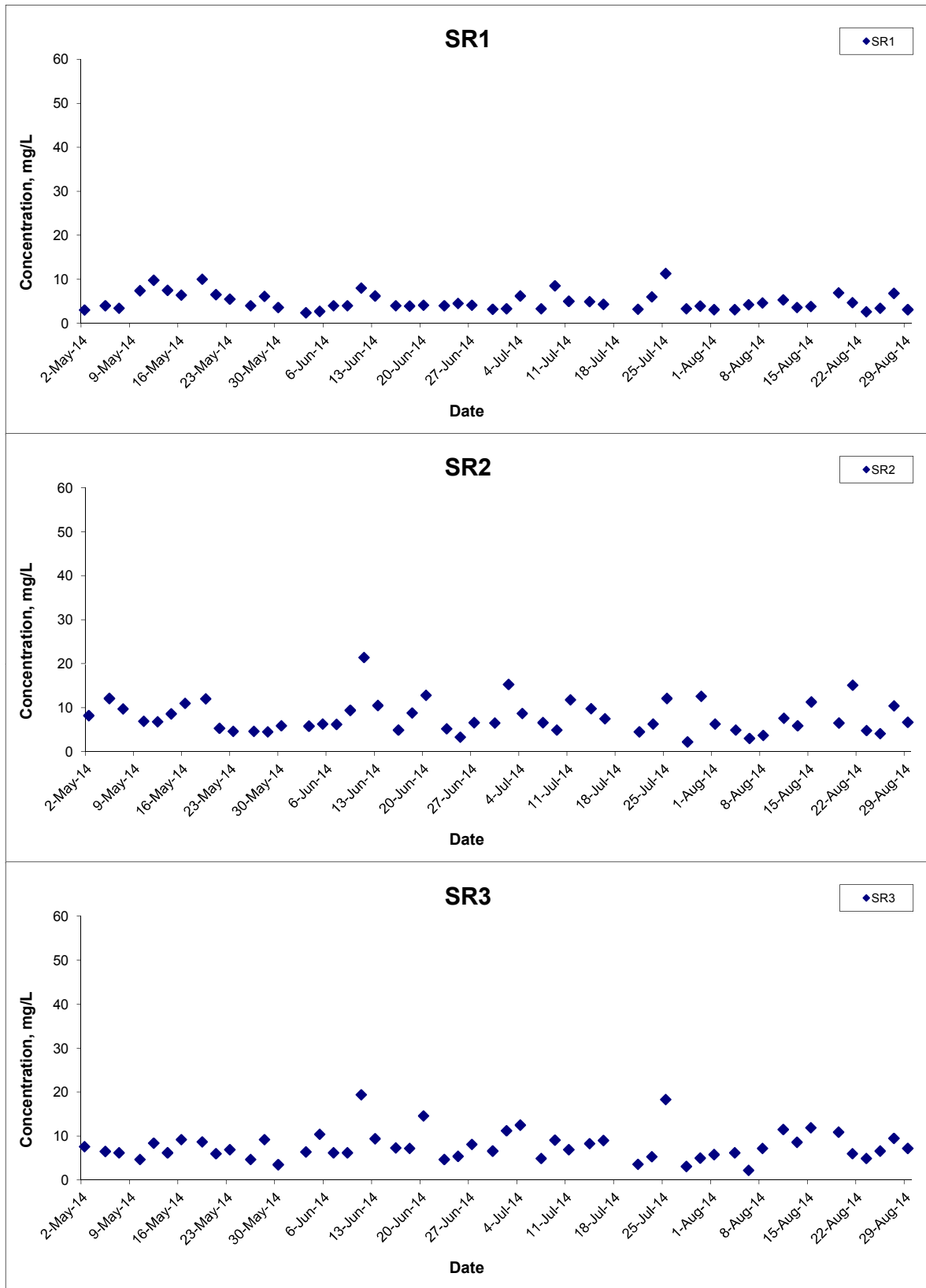
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Suspended Solids (Depth-averaged) at Mid-Ebb Tide



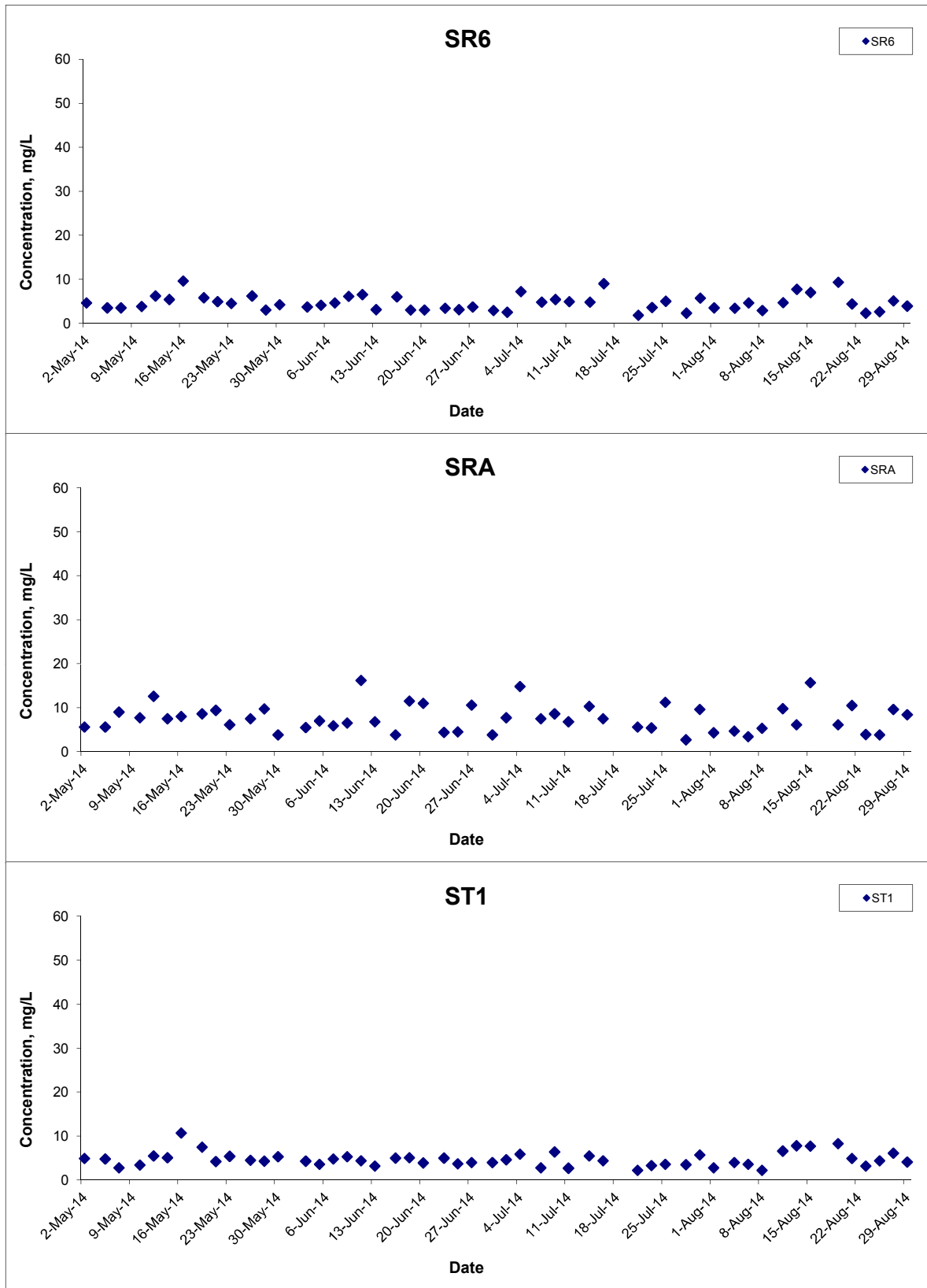
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Suspended Solids (Depth-averaged) at Mid-Ebb Tide



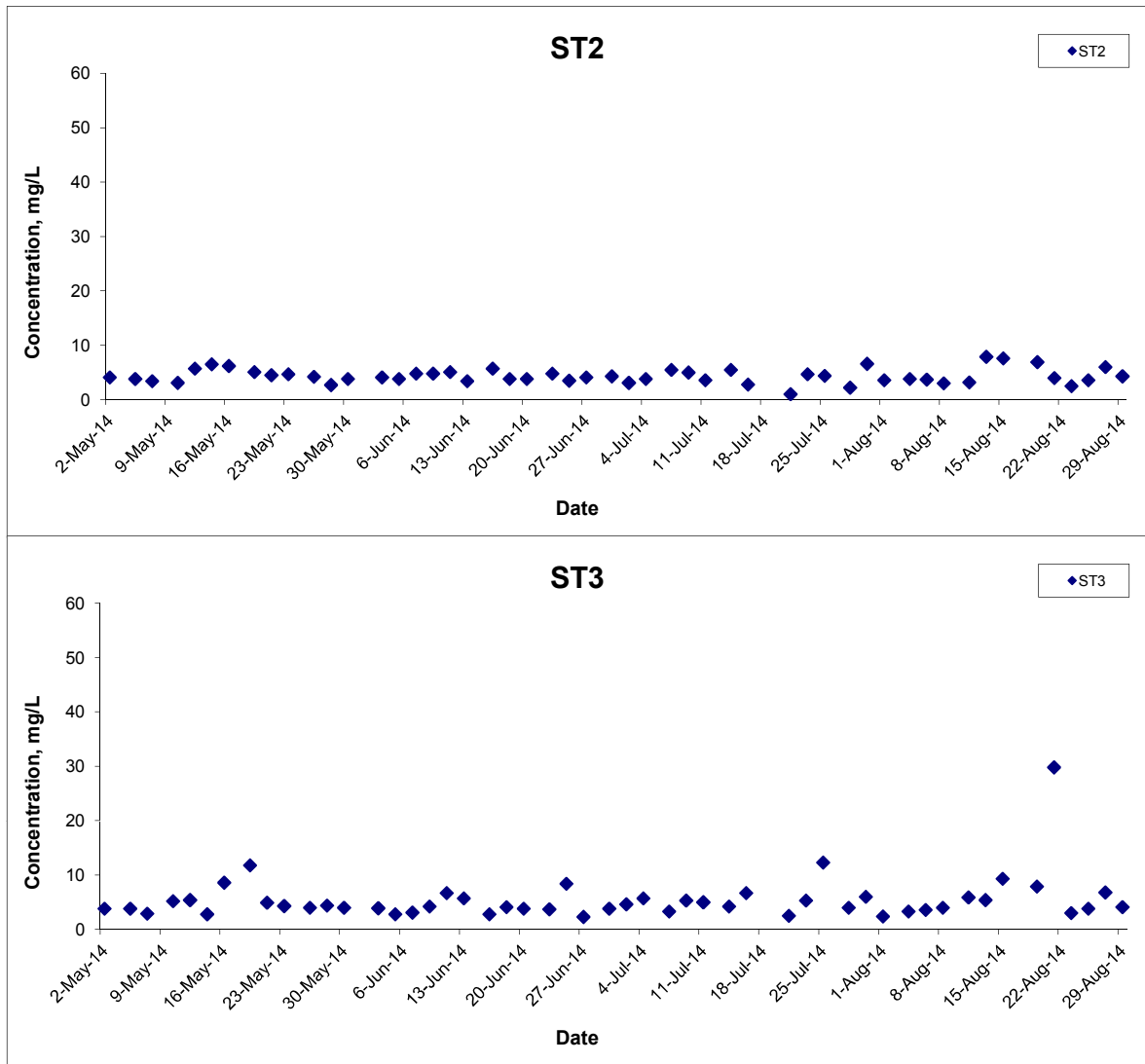
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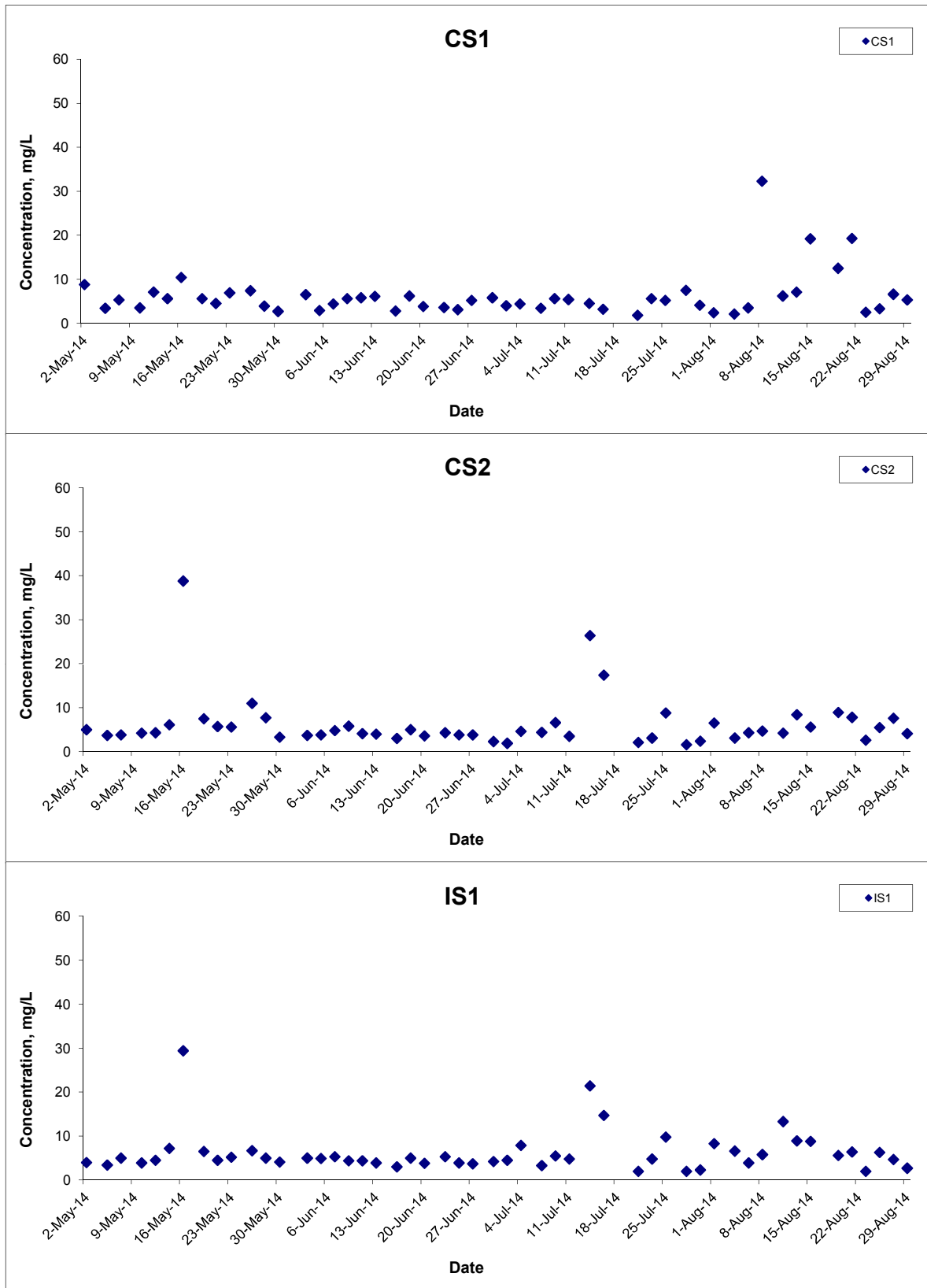


Suspended Solids (Depth-averaged) at Mid-Ebb Tide



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Suspended Solids (Depth-averaged) at Mid-Flood Tide



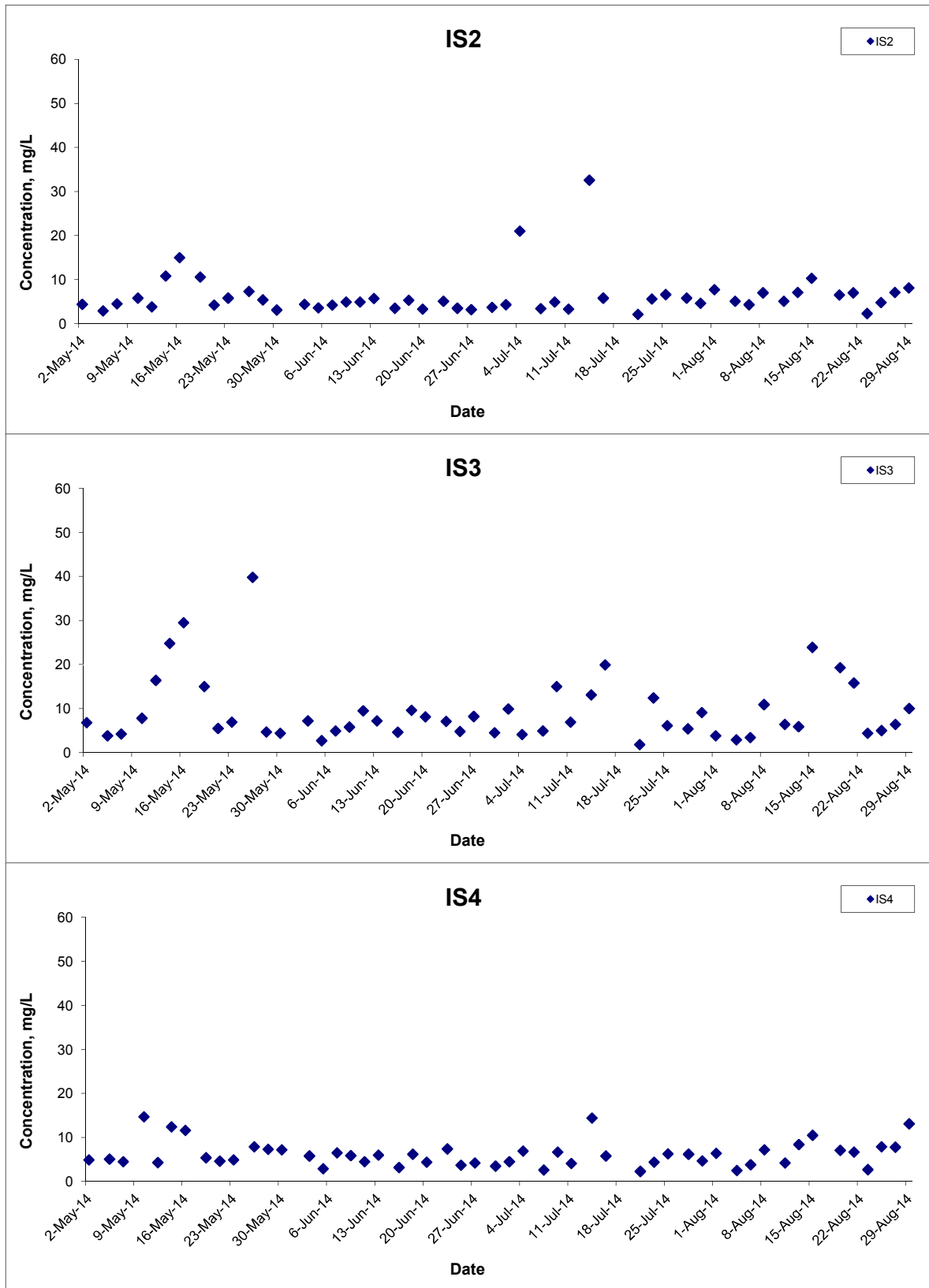
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Suspended Solids (Depth-averaged) at Mid-Flood Tide



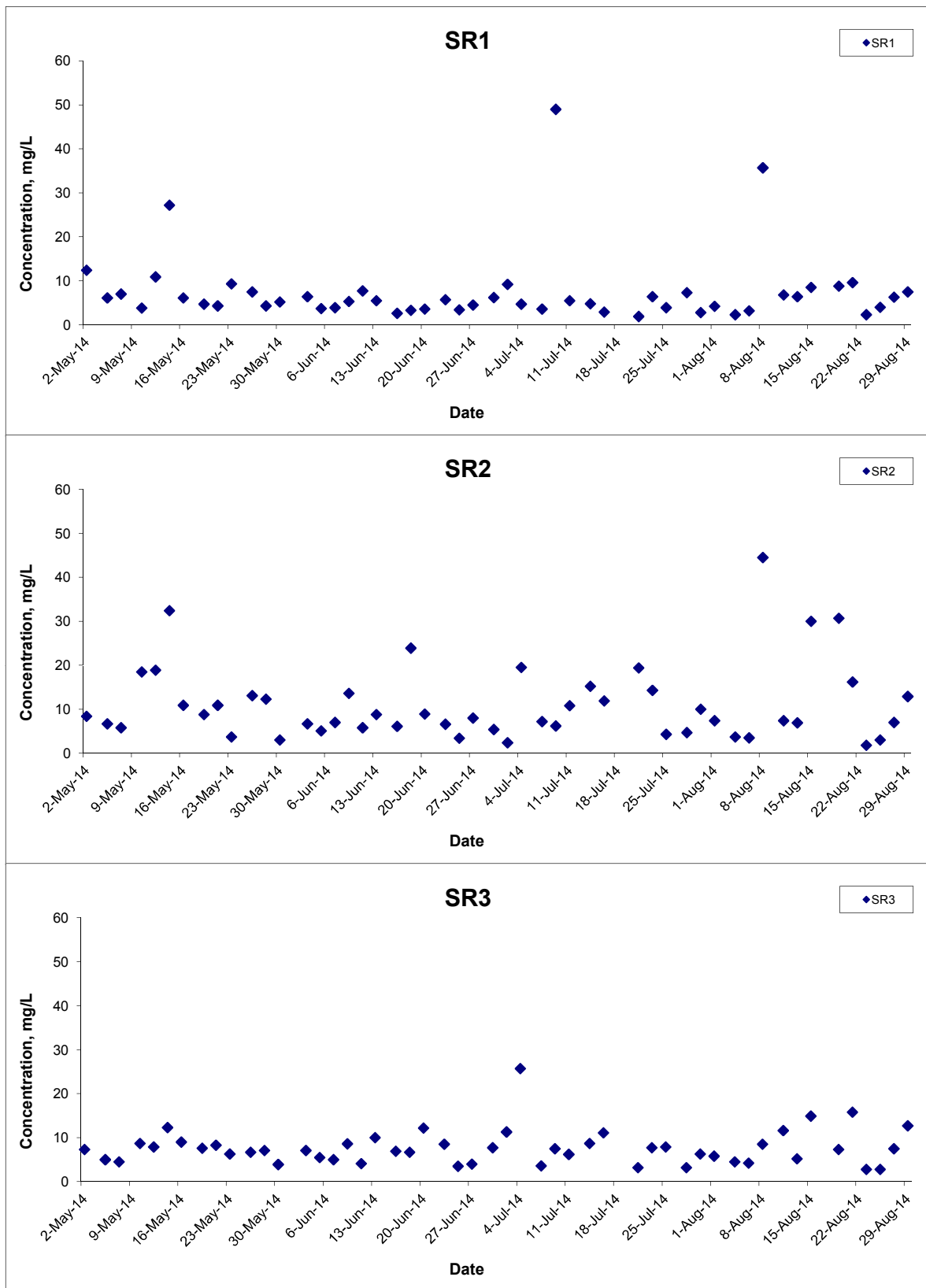
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Suspended Solids (Depth-averaged) at Mid-Flood Tide



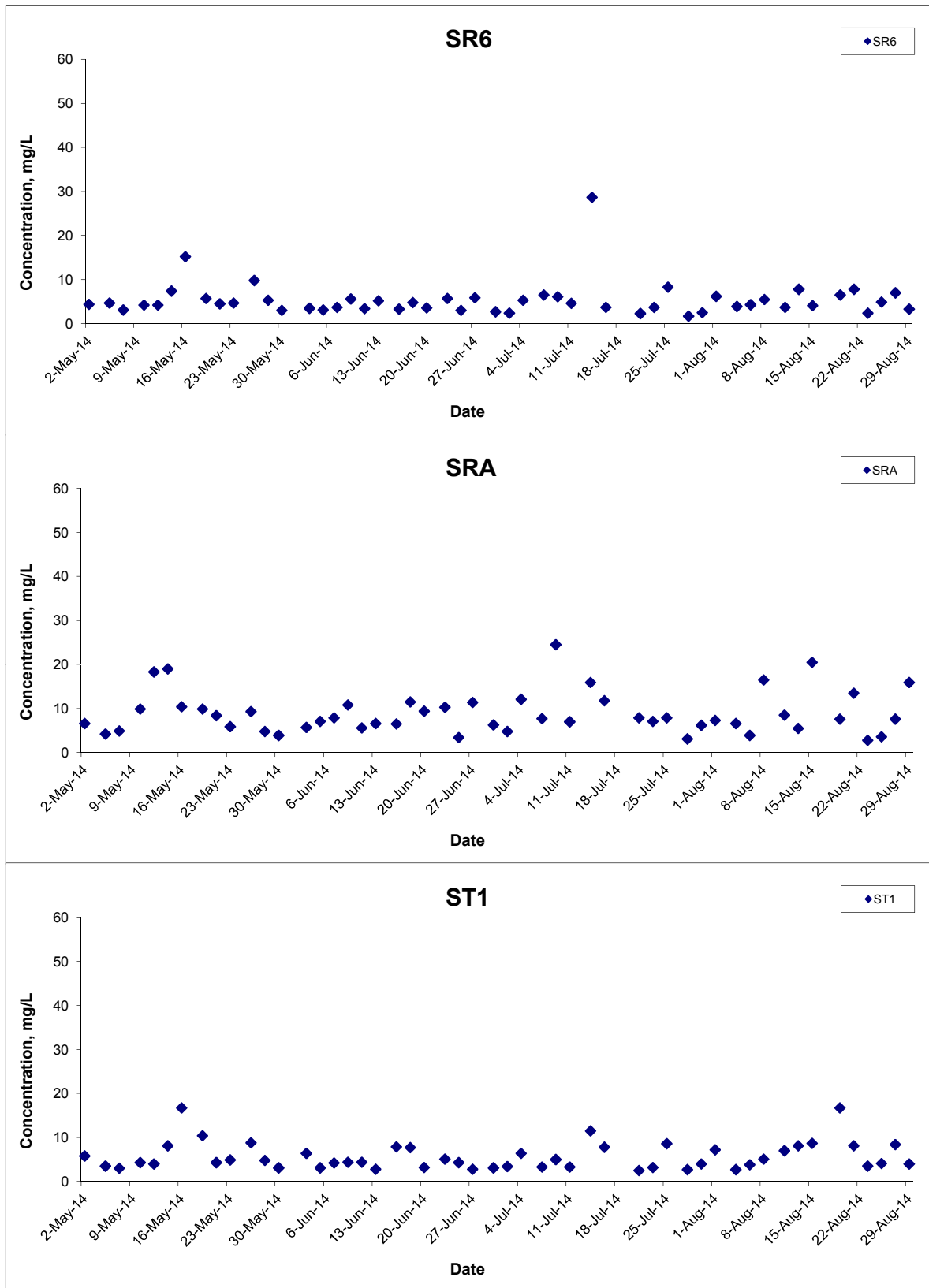
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Suspended Solids (Depth-averaged) at Mid-Flood Tide



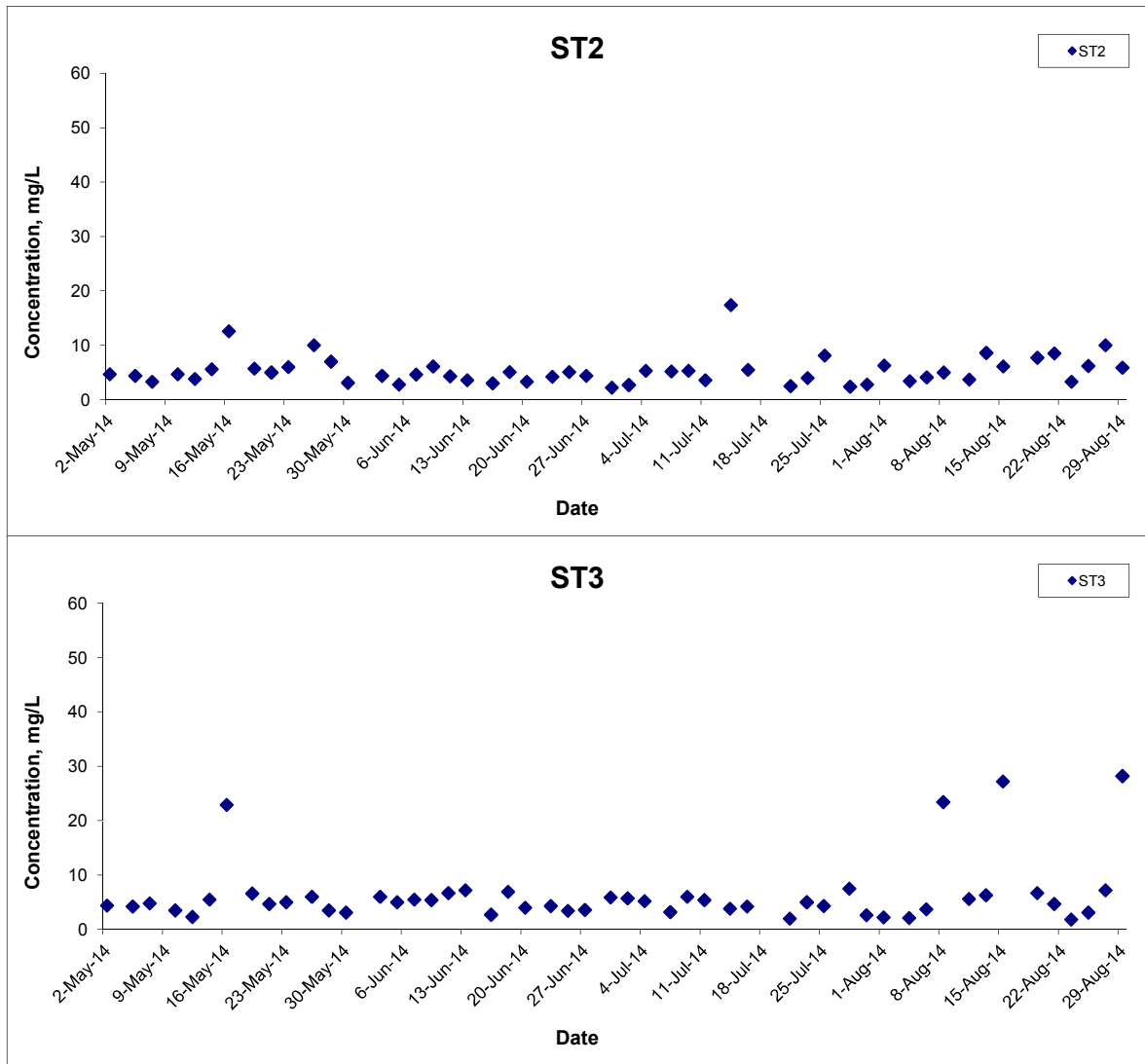
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Suspended Solids (Depth-averaged) at Mid-Flood Tide



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**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

19th Monthly Progress Report (August 2014)

Submitted by

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

4 September 2014

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 19th monthly progress report under the HKLR09 construction phase dolphin monitoring programme, summarizing the results of the survey findings during the month of August 2014.

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.

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

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

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 *Fujinon* 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 August 2014, two complete sets of systematic line-transect vessel surveys were conducted on the 22nd and 27th, to cover all transect lines in WL survey area twice. The survey routes of each survey day are presented in Figures 2-3.
- 3.1.2. From these surveys, a total of 65.34 km of survey effort was collected, with 92.5% 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 horizontal lines perpendicular to the coastlines) was 43.63 km, while the effort on secondary lines (the lines connecting the primary lines) was 21.71 km.
- 3.1.3. During the monitoring surveys in August 2014, 12 groups of 47 Chinese White Dolphins were sighted, with six and four sightings being made on primary lines and secondary lines respectively during on-effort search (Appendix II). Two other sightings were made during off-effort search. None of the dolphin groups was associated with any operating fishing vessel.
- 3.1.4. Distribution of the 12 dolphin sightings made during August's surveys is shown in Figure 4. These sightings were evenly distributed throughout the WL survey area, but almost all sightings were made in inshore waters near the coastline (Figure 4). Only one dolphin group was sighted in the vicinity of the HKLR09 alignment (Figure 4).
- 3.1.5. During August'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.

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

		Encounter rate (STG) (no. of on-effort dolphin sightings per 100 km of survey effort)	Encounter rate (ANI) (no. of dolphins from all on-effort sightings per 100 km of survey effort)
		Primary Lines Only	Primary Lines Only
West Lantau	Set 1: August 22 nd	18.3	68.6
	Set 2: August 27 th	11.1	11.1

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

	Encounter rate (STG) (no. of on-effort dolphin sightings per 100 km of survey effort)		Encounter rate (ANI) (no. of dolphins from all on-effort sightings per 100 km of survey effort)	
	Primary Lines Only	Both Primary and Secondary Lines	Primary Lines Only	Both Primary and Secondary Lines
West Lantau	15.0	16.5	42.6	66.2

3.1.6. The average group size of Chinese White Dolphins was 3.91 individuals per group during August's surveys, which was similar to previous months of monitoring surveys. Out of the 12 dolphin groups, five of them were composed of 5 or more animals, while the rest were composed of only 1-3 animals.

3.2. Photo-identification Work

3.2.1. A total of 19 different individual Chinese White Dolphins were identified 22 times during the August's surveys, and three individuals (WL28, WL128 and WL208) were sighted more than once (Appendices III and IV).

3.2.2. Notably, three females (NL212, WL28 and WL94) were associated with their calves during their re-sightings in August's surveys.

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. June-August 2014) and baseline monitoring period will be made.

4. References

- Buckland, S. T., Anderson, D. R., Burnham, K. P., Laake, J. L., Borchers, D. L., and Thomas, L. 2001. Introduction to distance sampling: estimating abundance of biological populations. Oxford University Press, London.
- Hung, S. K. 2012. Monitoring of marine mammals in Hong Kong waters – data collection: final report (2011-12). An unpublished report submitted to the Agriculture, Fisheries and Conservation Department of Hong Kong SAR Government, 120 pp.
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- Jefferson, T. A. 2000. Population biology of the Indo-Pacific hump-backed dolphin in Hong Kong waters. Wildlife Monographs 144:1-65.

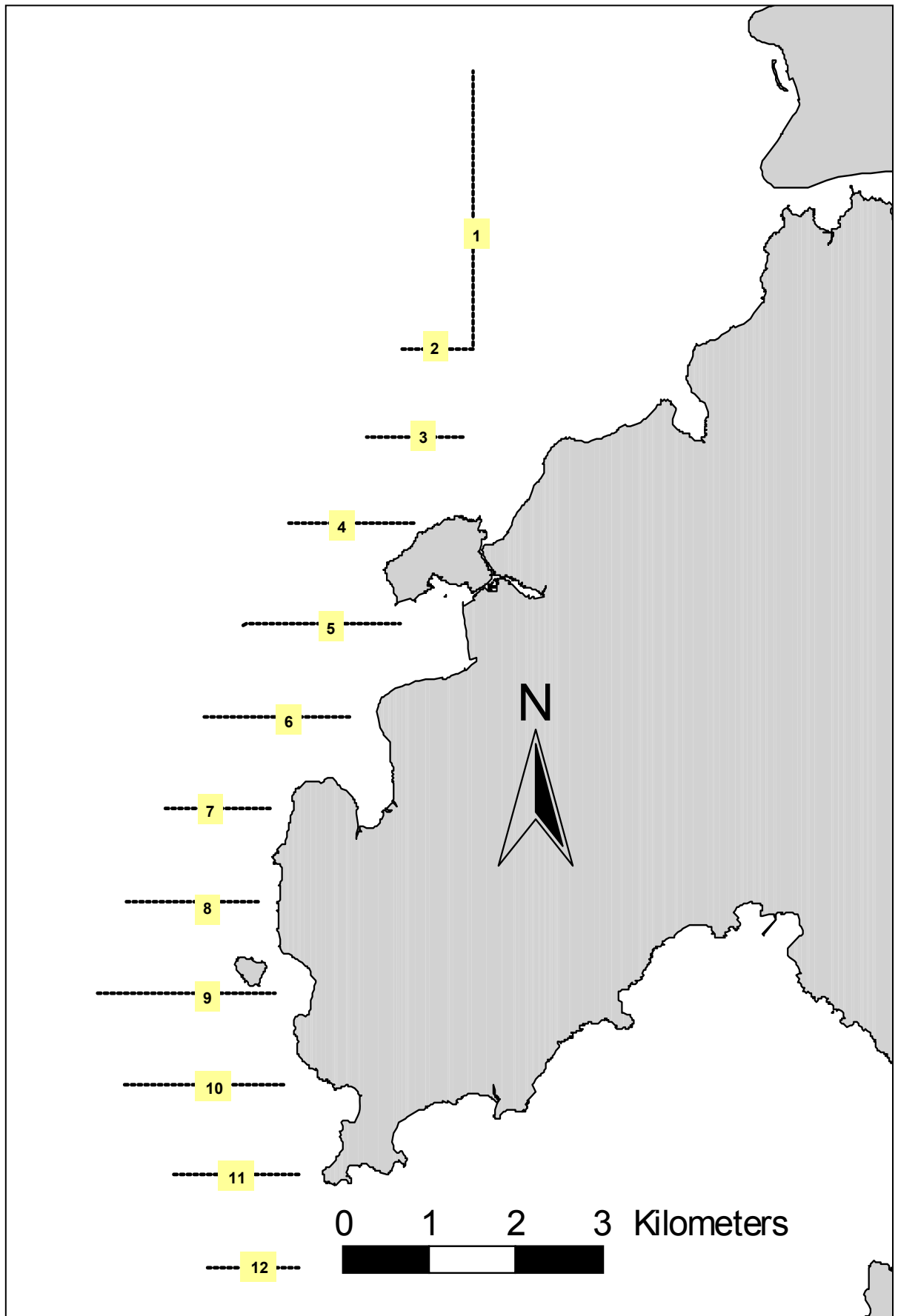


Figure 1. Transect Line Layout in West Lantau Survey Areas

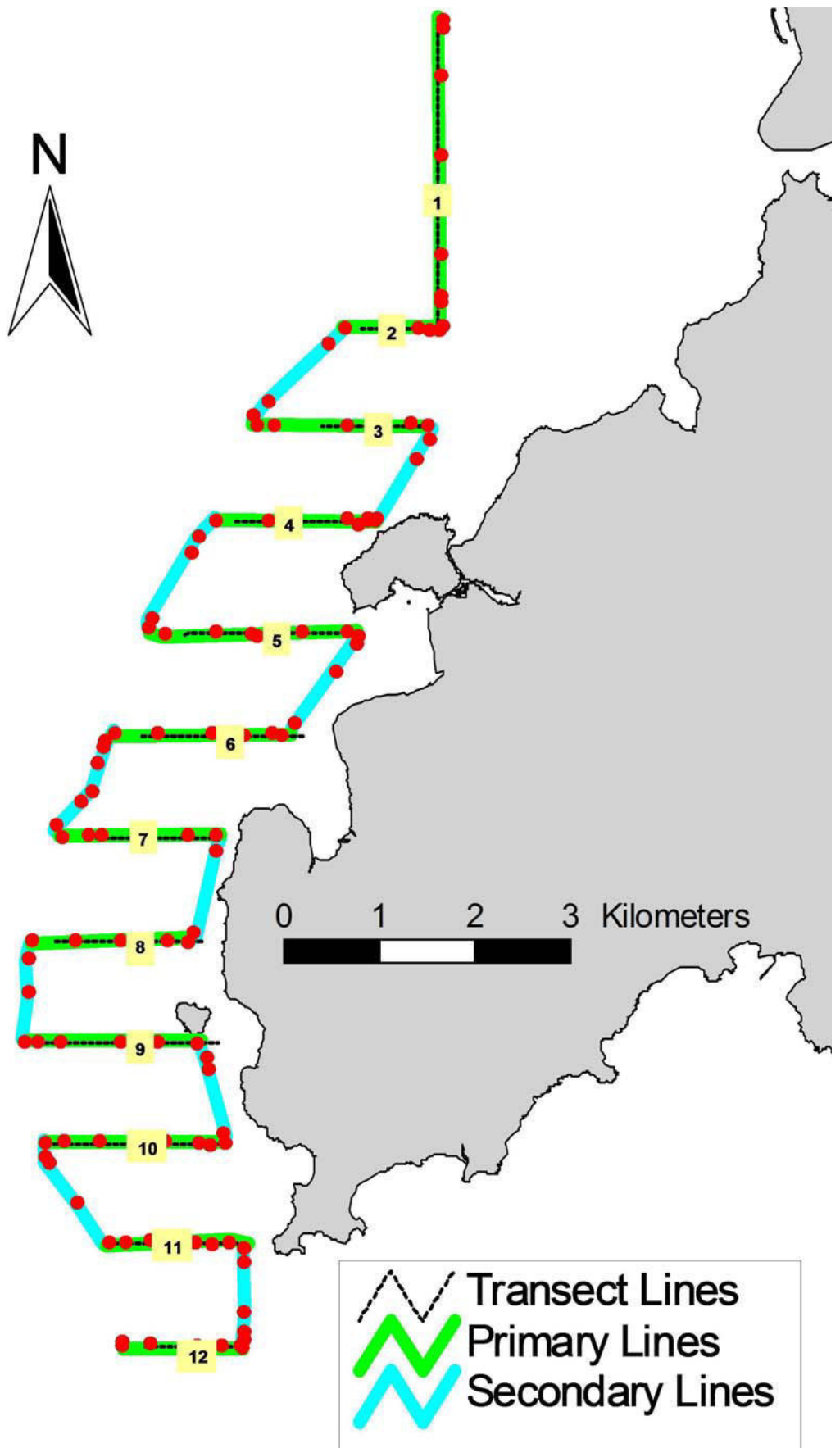


Figure 2. Survey Route on August 22nd, 2014 (note: red dots represent the tracked positions of survey boat logged continuously by GPS throughout the course of the survey)

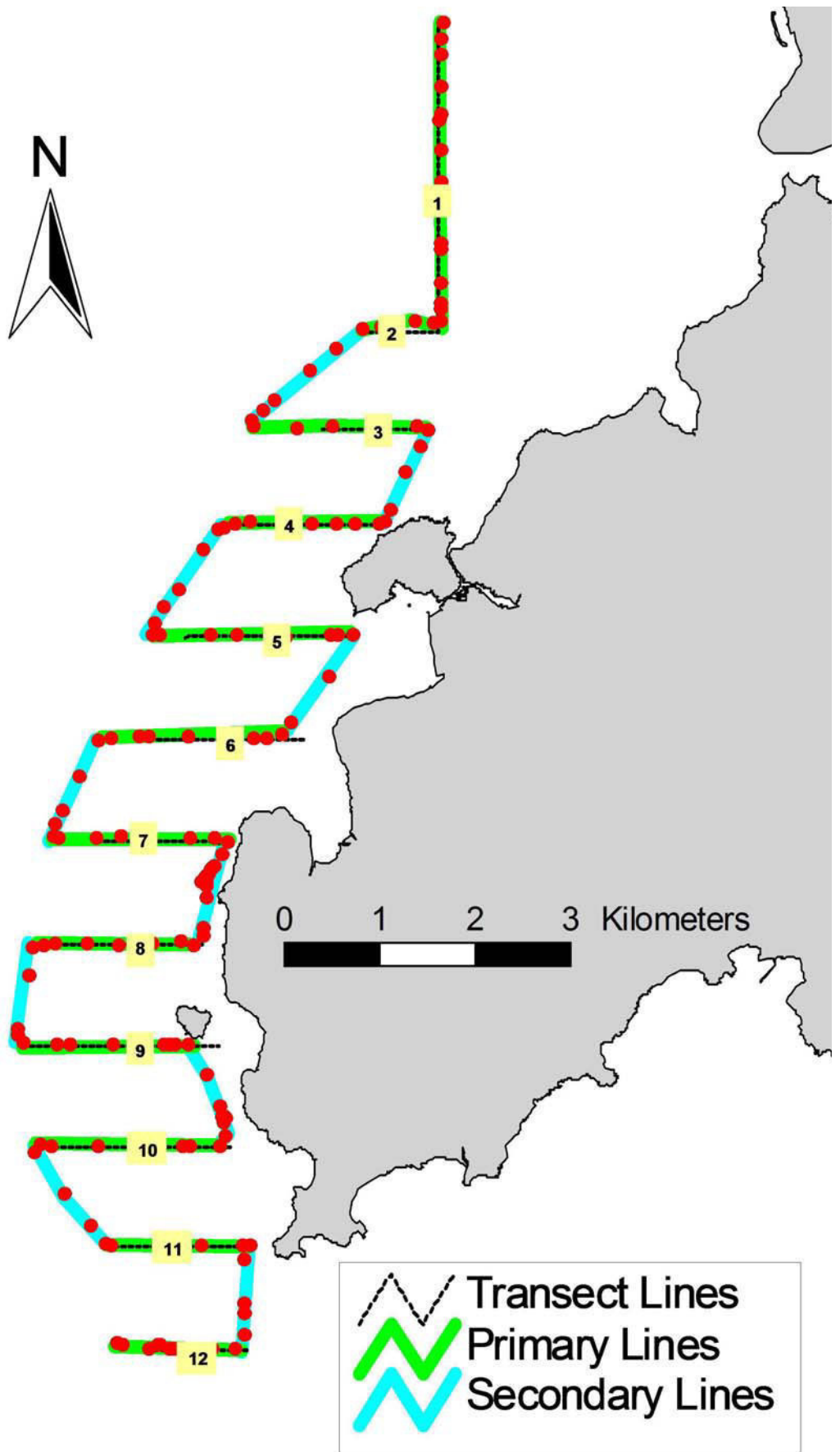


Figure 3. Survey Route on August 27th, 2014 (note: red dots represent the tracked positions of survey boat logged continuously by GPS throughout the course of the survey)

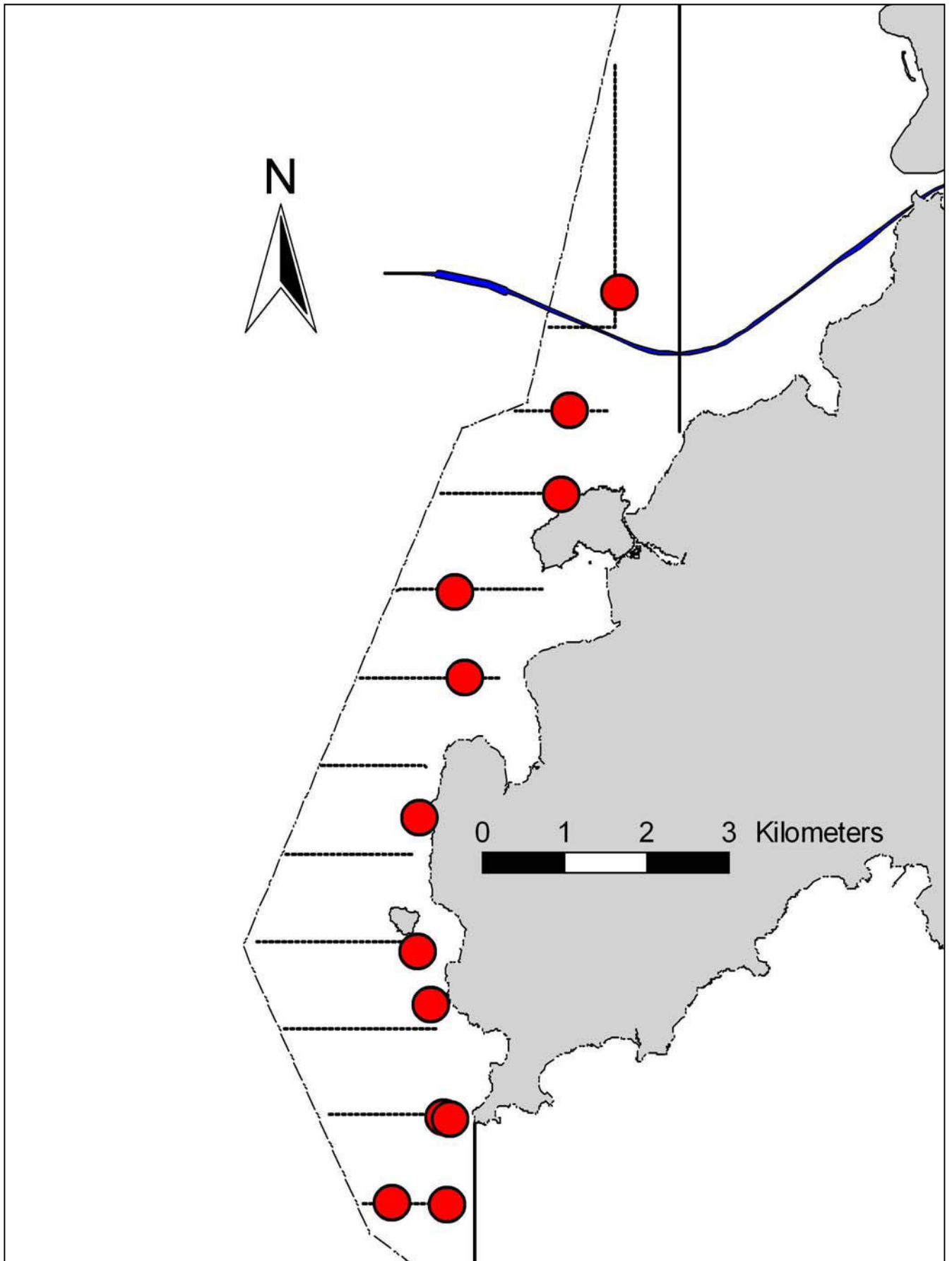


Figure 4. Distribution of Chinese White Dolphin Sighting during August 2014 HKLR09 Monitoring Surveys

Appendix I. HKLR09 Survey Effort Database (August 2014)

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

DATE	AREA	BEAU	EFFORT	SEASON	VESSEL	TYPE	P/S
22-Aug-14	W LANTAU	1	1.01	SUMMER	STANDARD31516	HKLR	P
22-Aug-14	W LANTAU	2	11.35	SUMMER	STANDARD31516	HKLR	P
22-Aug-14	W LANTAU	3	9.50	SUMMER	STANDARD31516	HKLR	P
22-Aug-14	W LANTAU	2	8.15	SUMMER	STANDARD31516	HKLR	S
22-Aug-14	W LANTAU	3	2.60	SUMMER	STANDARD31516	HKLR	S
27-Aug-14	W LANTAU	1	0.85	SUMMER	STANDARD31516	HKLR	P
27-Aug-14	W LANTAU	2	5.50	SUMMER	STANDARD31516	HKLR	P
27-Aug-14	W LANTAU	3	11.66	SUMMER	STANDARD31516	HKLR	P
27-Aug-14	W LANTAU	4	3.76	SUMMER	STANDARD31516	HKLR	P
27-Aug-14	W LANTAU	1	0.28	SUMMER	STANDARD31516	HKLR	S
27-Aug-14	W LANTAU	2	2.13	SUMMER	STANDARD31516	HKLR	S
27-Aug-14	W LANTAU	3	7.41	SUMMER	STANDARD31516	HKLR	S
27-Aug-14	W LANTAU	4	1.14	SUMMER	STANDARD31516	HKLR	S

Appendix II. HKLR09 Chinese White Dolphin Sighting Database (August 2014)

(Abbreviations: STG# = Sighting Number; HRD SZ = Dolphin Herd Size; BEAU = Beaufort Sea State; PSD = Perpendicular Distance; ND = Not Determined; BOAT ASSOC. = Fishing Boat Association; P/S: Sighting Made on Primary/Secondary Line)

DATE	STG #	TIME	HRD SZ	AREA	BEAU	PSD	EFFORT	TYPE	NORTHING	EASTING	SEASON	BOAT ASSOC.	P/S
22-Aug-14	1	1033	2	W LANTAU	2	516	ON	HKLR	815859	803786	SUMMER	NONE	P
22-Aug-14	2	1107	3	W LANTAU	2	265	ON	HKLR	814498	803185	SUMMER	NONE	P
22-Aug-14	3	1127	6	W LANTAU	2	ND	OFF	HKLR	813557	803080	SUMMER	NONE	N/A
22-Aug-14	4	1214	3	W LANTAU	2	87	ON	HKLR	812441	801789	SUMMER	NONE	P
22-Aug-14	5	1332	1	W LANTAU	2	ND	OFF	HKLR	808334	801337	SUMMER	NONE	N/A
22-Aug-14	6	1356	7	W LANTAU	3	99	ON	HKLR	806440	801662	SUMMER	NONE	P
22-Aug-14	7	1422	5	W LANTAU	3	9	ON	HKLR	805432	801701	SUMMER	NONE	S
27-Aug-14	1	1128	1	W LANTAU	3	180	ON	HKLR	805445	801041	SUMMER	NONE	P
27-Aug-14	2	1143	8	W LANTAU	3	182	ON	HKLR	806406	801735	SUMMER	NONE	S
27-Aug-14	3	1218	1	W LANTAU	3	81	ON	HKLR	807725	801511	SUMMER	NONE	S
27-Aug-14	4	1250	9	W LANTAU	2	60	ON	HKLR	809851	801361	SUMMER	NONE	S
27-Aug-14	5	1326	1	W LANTAU	3	51	ON	HKLR	811456	801911	SUMMER	NONE	P

Appendix III. Individual dolphins identified during HKLR09 monitoring surveys in August 2014

ID#	DATE	STG#	AREA
CH12	27/08/14	2	W LANTAU
CH105	22/08/14	6	W LANTAU
CH108	22/08/14	6	W LANTAU
NL212	22/08/14	3	W LANTAU
SL27	27/08/14	2	W LANTAU
WL21	22/08/14	4	W LANTAU
WL28	22/08/14	6	W LANTAU
	22/08/14	7	W LANTAU
WL46	22/08/14	1	W LANTAU
WL47	27/08/14	2	W LANTAU
WL58	27/08/14	4	W LANTAU
WL61	27/08/14	2	W LANTAU
WL94	27/08/14	2	W LANTAU
WL124	22/08/14	3	W LANTAU
WL128	22/08/14	6	W LANTAU
	27/08/14	2	W LANTAU
WL165	27/08/14	2	W LANTAU
WL167	22/08/14	2	W LANTAU
WL200	22/08/14	3	W LANTAU
WL208	22/08/14	3	W LANTAU
	27/08/14	4	W LANTAU
WL226	22/08/14	4	W LANTAU

WL46_20140822_1



WL167_20140822_2



NL212_20140822_3



WL124_20140822_3



WL200_20140822_3



WL208_20140822_3



WL21_20140822_4



WL226_20140822_4



CH105_20140822_6



Appendix IV. Photographs of Identified Individual Dolphins in August 2014 (HKLR09)



Appendix IV. (cont'd)



Appendix IV. (cont'd)

APPENDIX J
WIND DATA

Appendix J - Wind Data

Date	Time	Wind Speed m/s	Direction
1-Aug-2014	00:00	1.3	WSW
1-Aug-2014	01:00	1	W
1-Aug-2014	02:00	1.3	WSW
1-Aug-2014	03:00	1.4	W
1-Aug-2014	04:00	1.9	W
1-Aug-2014	05:00	2.6	W
1-Aug-2014	06:00	2	SSE
1-Aug-2014	07:00	1.9	SSE
1-Aug-2014	08:00	2	S
1-Aug-2014	09:00	2.3	S
1-Aug-2014	10:00	2	SW
1-Aug-2014	11:00	2.7	SW
1-Aug-2014	12:00	3.2	WSW
1-Aug-2014	13:00	2.4	SW
1-Aug-2014	14:00	1.7	WSW
1-Aug-2014	15:00	1.6	WSW
1-Aug-2014	16:00	1.8	WSW
1-Aug-2014	17:00	2.2	W
1-Aug-2014	18:00	1.4	WNW
1-Aug-2014	19:00	1.6	WNW
1-Aug-2014	20:00	1.4	N
1-Aug-2014	21:00	1.6	NNE
1-Aug-2014	22:00	1.7	NNE
1-Aug-2014	23:00	1.9	NNE
2-Aug-2014	00:00	1.6	W
2-Aug-2014	01:00	0.8	W
2-Aug-2014	02:00	1.3	W
2-Aug-2014	03:00	1.4	W
2-Aug-2014	04:00	1.4	W
2-Aug-2014	05:00	2.1	NE
2-Aug-2014	06:00	1.6	NE
2-Aug-2014	07:00	1.4	NE
2-Aug-2014	08:00	1.1	NNE
2-Aug-2014	09:00	2	NE
2-Aug-2014	10:00	1.9	NE
2-Aug-2014	11:00	1.8	NE
2-Aug-2014	12:00	1.9	NE
2-Aug-2014	13:00	2	ENE
2-Aug-2014	14:00	2.3	ENE
2-Aug-2014	15:00	1.9	E
2-Aug-2014	16:00	2.4	W
2-Aug-2014	17:00	2.2	W
2-Aug-2014	18:00	1.7	W
2-Aug-2014	19:00	1.4	SW
2-Aug-2014	20:00	1.2	SW
2-Aug-2014	21:00	0.7	WNW
2-Aug-2014	22:00	1.1	WNW
2-Aug-2014	23:00	1	W
3-Aug-2014	00:00	1.1	SW
3-Aug-2014	01:00	1.8	WNW
3-Aug-2014	02:00	1.7	W
3-Aug-2014	03:00	1.3	W
3-Aug-2014	04:00	1.7	WSW
3-Aug-2014	05:00	1.6	WSW

Appendix J - Wind Data

Date	Time	Wind Speed m/s	Direction
3-Aug-2014	06:00	1.6	WNW
3-Aug-2014	07:00	1.4	WNW
3-Aug-2014	08:00	1.3	SW
3-Aug-2014	09:00	2.1	WSW
3-Aug-2014	10:00	1.9	WSW
3-Aug-2014	11:00	2.3	WSW
3-Aug-2014	12:00	2	WSW
3-Aug-2014	13:00	1.6	WSW
3-Aug-2014	14:00	1.6	WSW
3-Aug-2014	15:00	1.6	WSW
3-Aug-2014	16:00	1.4	WSW
3-Aug-2014	17:00	1.5	WSW
3-Aug-2014	18:00	1	SW
3-Aug-2014	19:00	1.2	WSW
3-Aug-2014	20:00	1	WSW
3-Aug-2014	21:00	1.2	W
3-Aug-2014	22:00	0.7	W
3-Aug-2014	23:00	1	WNW
4-Aug-2014	00:00	1	WNW
4-Aug-2014	01:00	1.2	W
4-Aug-2014	02:00	1	WNW
4-Aug-2014	03:00	1.2	W
4-Aug-2014	04:00	0.7	SW
4-Aug-2014	05:00	0.7	SE
4-Aug-2014	06:00	0.7	SE
4-Aug-2014	07:00	1	SE
4-Aug-2014	08:00	0.8	SE
4-Aug-2014	09:00	1.4	SE
4-Aug-2014	10:00	1.6	SSW
4-Aug-2014	11:00	1.7	SW
4-Aug-2014	12:00	1.7	W
4-Aug-2014	13:00	2	WSW
4-Aug-2014	14:00	2.2	WNW
4-Aug-2014	15:00	2.6	WNW
4-Aug-2014	16:00	2.2	W
4-Aug-2014	17:00	2.6	WNW
4-Aug-2014	18:00	2.2	WNW
4-Aug-2014	19:00	2.2	NNE
4-Aug-2014	20:00	1.4	NNE
4-Aug-2014	21:00	1.1	NE
4-Aug-2014	22:00	1.3	S
4-Aug-2014	23:00	1.3	S
5-Aug-2014	00:00	1	WNW
5-Aug-2014	01:00	1.1	W
5-Aug-2014	02:00	1.3	W
5-Aug-2014	03:00	1.2	WNW
5-Aug-2014	04:00	1.3	W
5-Aug-2014	05:00	1.7	WSW
5-Aug-2014	06:00	1.7	WSW
5-Aug-2014	07:00	1.7	WSW
5-Aug-2014	08:00	1.5	W
5-Aug-2014	09:00	1.9	W
5-Aug-2014	10:00	1.6	W
5-Aug-2014	11:00	1.9	WNW

Appendix J - Wind Data

Date	Time	Wind Speed m/s	Direction
5-Aug-2014	12:00	1.5	W
5-Aug-2014	13:00	1.6	SSW
5-Aug-2014	14:00	1.7	WSW
5-Aug-2014	15:00	1.9	SW
5-Aug-2014	16:00	1.6	WNW
5-Aug-2014	17:00	1.4	SSW
5-Aug-2014	18:00	0.7	N
5-Aug-2014	19:00	0.4	N
5-Aug-2014	20:00	0.4	ENE
5-Aug-2014	21:00	0.3	SW
5-Aug-2014	22:00	0.5	WSW
5-Aug-2014	23:00	0.9	WNW
6-Aug-2014	00:00	0.8	W
6-Aug-2014	01:00	1	WSW
6-Aug-2014	02:00	1	WSW
6-Aug-2014	03:00	1.2	W
6-Aug-2014	04:00	1.1	W
6-Aug-2014	05:00	0.5	W
6-Aug-2014	06:00	0.7	NE
6-Aug-2014	07:00	0.1	NNE
6-Aug-2014	08:00	0.1	E
6-Aug-2014	09:00	0.6	E
6-Aug-2014	10:00	0.5	E
6-Aug-2014	11:00	0.4	E
6-Aug-2014	12:00	0.6	NW
6-Aug-2014	13:00	0.7	W
6-Aug-2014	14:00	0.7	NE
6-Aug-2014	15:00	1	NNE
6-Aug-2014	16:00	0.9	NNE
6-Aug-2014	17:00	0.5	ENE
6-Aug-2014	18:00	0.3	NNE
6-Aug-2014	19:00	0.3	ENE
6-Aug-2014	20:00	0.1	E
6-Aug-2014	21:00	0.1	ENE
6-Aug-2014	22:00	0.3	NNE
6-Aug-2014	23:00	0.3	E
7-Aug-2014	00:00	0.9	NNE
7-Aug-2014	01:00	0.9	SW
7-Aug-2014	02:00	0.5	WNW
7-Aug-2014	03:00	1	SW
7-Aug-2014	04:00	0.8	SW
7-Aug-2014	05:00	0.5	SW
7-Aug-2014	06:00	0.7	SW
7-Aug-2014	07:00	0.4	W
7-Aug-2014	08:00	0.6	W
7-Aug-2014	09:00	0.4	W
7-Aug-2014	10:00	0.1	WNW
7-Aug-2014	11:00	0.1	W
7-Aug-2014	12:00	0.1	WNW
7-Aug-2014	13:00	0.4	WNW
7-Aug-2014	14:00	0.4	SW
7-Aug-2014	15:00	0.5	NW
7-Aug-2014	16:00	0.1	SSW
7-Aug-2014	17:00	0.1	WNW

Appendix J - Wind Data

Date	Time	Wind Speed m/s	Direction
7-Aug-2014	18:00	0.3	WNW
7-Aug-2014	19:00	1.6	W
7-Aug-2014	20:00	1	WSW
7-Aug-2014	21:00	1.6	WSW
7-Aug-2014	22:00	2.7	W
7-Aug-2014	23:00	2.3	WNW
8-Aug-2014	00:00	2	SW
8-Aug-2014	01:00	2.2	SW
8-Aug-2014	02:00	1.6	SW
8-Aug-2014	03:00	1.6	SSW
8-Aug-2014	04:00	1.6	SW
8-Aug-2014	05:00	2	W
8-Aug-2014	06:00	1.3	W
8-Aug-2014	07:00	0.7	WSW
8-Aug-2014	08:00	1.3	NE
8-Aug-2014	09:00	1.7	W
8-Aug-2014	10:00	2	SSW
8-Aug-2014	11:00	1.4	SSE
8-Aug-2014	12:00	1.4	W
8-Aug-2014	13:00	1.9	ENE
8-Aug-2014	14:00	2	S
8-Aug-2014	15:00	1.7	NW
8-Aug-2014	16:00	1.7	NNE
8-Aug-2014	17:00	1.4	NW
8-Aug-2014	18:00	1.1	N
8-Aug-2014	19:00	1.4	ENE
8-Aug-2014	20:00	1	N
8-Aug-2014	21:00	0.7	NE
8-Aug-2014	22:00	0.7	ENE
8-Aug-2014	23:00	0.6	NNE
9-Aug-2014	00:00	0.6	NE
9-Aug-2014	01:00	0.6	ENE
9-Aug-2014	02:00	0.7	ENE
9-Aug-2014	03:00	0.9	ENE
9-Aug-2014	04:00	1	ENE
9-Aug-2014	05:00	0.7	ENE
9-Aug-2014	06:00	0.9	W
9-Aug-2014	07:00	0.8	WNW
9-Aug-2014	08:00	1	W
9-Aug-2014	09:00	1.7	S
9-Aug-2014	10:00	2.1	S
9-Aug-2014	11:00	2.2	S
9-Aug-2014	12:00	2	WNW
9-Aug-2014	13:00	1.9	W
9-Aug-2014	14:00	1.6	WSW
9-Aug-2014	15:00	1.7	W
9-Aug-2014	16:00	2.3	WSW
9-Aug-2014	17:00	2.1	WSW
9-Aug-2014	18:00	1.5	W
9-Aug-2014	19:00	0.7	WSW
9-Aug-2014	20:00	1	S
9-Aug-2014	21:00	0.9	S
9-Aug-2014	22:00	1	N
9-Aug-2014	23:00	1	N

Appendix J - Wind Data

Date	Time	Wind Speed m/s	Direction
10-Aug-2014	00:00	0.8	NE
10-Aug-2014	01:00	0.7	N
10-Aug-2014	02:00	0.7	NNE
10-Aug-2014	03:00	1.4	NE
10-Aug-2014	04:00	1.4	NE
10-Aug-2014	05:00	0.8	NE
10-Aug-2014	06:00	1.8	E
10-Aug-2014	07:00	2	ENE
10-Aug-2014	08:00	1.9	ENE
10-Aug-2014	09:00	2.4	SW
10-Aug-2014	10:00	3.2	W
10-Aug-2014	11:00	2.7	W
10-Aug-2014	12:00	2.9	WSW
10-Aug-2014	13:00	3.2	W
10-Aug-2014	14:00	3.5	W
10-Aug-2014	15:00	3	WSW
10-Aug-2014	16:00	3	SW
10-Aug-2014	17:00	2.4	SW
10-Aug-2014	18:00	3	SSW
10-Aug-2014	19:00	2.7	N
10-Aug-2014	20:00	2.2	NE
10-Aug-2014	21:00	1.9	NE
10-Aug-2014	22:00	1.7	N
10-Aug-2014	23:00	1.7	NNE
11-Aug-2014	00:00	2.2	SSW
11-Aug-2014	01:00	1.9	SW
11-Aug-2014	02:00	2.3	SW
11-Aug-2014	03:00	2	WSW
11-Aug-2014	04:00	2	SW
11-Aug-2014	05:00	1.1	WSW
11-Aug-2014	06:00	1.2	SW
11-Aug-2014	07:00	1.1	WSW
11-Aug-2014	08:00	1.9	SW
11-Aug-2014	09:00	2	WSW
11-Aug-2014	10:00	2.2	W
11-Aug-2014	11:00	2.3	W
11-Aug-2014	12:00	2	W
11-Aug-2014	13:00	2	WSW
11-Aug-2014	14:00	1.9	SW
11-Aug-2014	15:00	1.7	SW
11-Aug-2014	16:00	1.5	WSW
11-Aug-2014	17:00	1.3	SW
11-Aug-2014	18:00	1.2	W
11-Aug-2014	19:00	1.3	WSW
11-Aug-2014	20:00	1.2	WSW
11-Aug-2014	21:00	1.3	WSW
11-Aug-2014	22:00	1.2	W
11-Aug-2014	23:00	1.2	W
12-Aug-2014	00:00	1.2	W
12-Aug-2014	01:00	1.3	WSW
12-Aug-2014	02:00	1.2	SSE
12-Aug-2014	03:00	1.2	SSE
12-Aug-2014	04:00	0.9	SW
12-Aug-2014	05:00	0.5	WNW

Appendix J - Wind Data

Date	Time	Wind Speed m/s	Direction
12-Aug-2014	06:00	0.6	W
12-Aug-2014	07:00	0.6	W
12-Aug-2014	08:00	0.5	WSW
12-Aug-2014	09:00	1.2	W
12-Aug-2014	10:00	1.7	SSW
12-Aug-2014	11:00	1.3	SSW
12-Aug-2014	12:00	1.2	W
12-Aug-2014	13:00	1.7	WNW
12-Aug-2014	14:00	1.4	WNW
12-Aug-2014	15:00	1.5	W
12-Aug-2014	16:00	1.3	W
12-Aug-2014	17:00	1.1	WNW
12-Aug-2014	18:00	0.9	WNW
12-Aug-2014	19:00	0.3	WNW
12-Aug-2014	20:00	0.8	W
12-Aug-2014	21:00	0.8	S
12-Aug-2014	22:00	0.9	W
12-Aug-2014	23:00	0.1	SW
13-Aug-2014	00:00	0.4	N
13-Aug-2014	01:00	0.4	N
13-Aug-2014	02:00	0.4	NNE
13-Aug-2014	03:00	0.1	N
13-Aug-2014	04:00	0.7	NNE
13-Aug-2014	05:00	0.7	N
13-Aug-2014	06:00	0.5	ESE
13-Aug-2014	07:00	0.7	W
13-Aug-2014	08:00	0.7	N
13-Aug-2014	09:00	1	NE
13-Aug-2014	10:00	1.3	NE
13-Aug-2014	11:00	1.7	NNW
13-Aug-2014	12:00	1.4	WNW
13-Aug-2014	13:00	2	N
13-Aug-2014	14:00	2.3	NW
13-Aug-2014	15:00	2.3	NE
13-Aug-2014	16:00	2.4	N
13-Aug-2014	17:00	2.6	N
13-Aug-2014	18:00	2.2	NE
13-Aug-2014	19:00	1.9	NNE
13-Aug-2014	20:00	1.7	NNE
13-Aug-2014	21:00	1	NE
13-Aug-2014	22:00	0.9	NNE
13-Aug-2014	23:00	0.6	NE
14-Aug-2014	00:00	0.6	N
14-Aug-2014	01:00	0.1	NNE
14-Aug-2014	02:00	0.1	NE
14-Aug-2014	03:00	1.5	ENE
14-Aug-2014	04:00	1.6	NNE
14-Aug-2014	05:00	0.1	N
14-Aug-2014	06:00	0.9	N
14-Aug-2014	07:00	1	N
14-Aug-2014	08:00	1.4	NNE
14-Aug-2014	09:00	1.4	N
14-Aug-2014	10:00	1.3	N
14-Aug-2014	11:00	1.5	N

Appendix J - Wind Data

Date	Time	Wind Speed m/s	Direction
14-Aug-2014	12:00	2	W
14-Aug-2014	13:00	2.2	W
14-Aug-2014	14:00	2.1	W
14-Aug-2014	15:00	1.9	W
14-Aug-2014	16:00	2.2	W
14-Aug-2014	17:00	1.7	W
14-Aug-2014	18:00	1.1	W
14-Aug-2014	19:00	1.4	W
14-Aug-2014	20:00	1.3	W
14-Aug-2014	21:00	1.1	WNW
14-Aug-2014	22:00	1.3	W
14-Aug-2014	23:00	1.9	W
15-Aug-2014	00:00	1.7	S
15-Aug-2014	01:00	1.7	W
15-Aug-2014	02:00	1.7	W
15-Aug-2014	03:00	1.3	W
15-Aug-2014	04:00	1.1	WSW
15-Aug-2014	05:00	1.1	WSW
15-Aug-2014	06:00	1.1	SSW
15-Aug-2014	07:00	1.1	W
15-Aug-2014	08:00	1.1	WSW
15-Aug-2014	09:00	1.1	WSW
15-Aug-2014	10:00	1.3	WSW
15-Aug-2014	11:00	1.7	W
15-Aug-2014	12:00	2.2	WSW
15-Aug-2014	13:00	2.3	WSW
15-Aug-2014	14:00	2.2	W
15-Aug-2014	15:00	2.2	W
15-Aug-2014	16:00	2.3	W
15-Aug-2014	17:00	1.9	N
15-Aug-2014	18:00	1.5	NNE
15-Aug-2014	19:00	1.1	NE
15-Aug-2014	20:00	1	W
15-Aug-2014	21:00	0.8	W
15-Aug-2014	22:00	0.7	N
15-Aug-2014	23:00	0.9	NNE
16-Aug-2014	00:00	0.9	NNE
16-Aug-2014	01:00	1.7	ENE
16-Aug-2014	02:00	1	ENE
16-Aug-2014	03:00	1.1	WSW
16-Aug-2014	04:00	1	WSW
16-Aug-2014	05:00	0.7	WNW
16-Aug-2014	06:00	1.3	N
16-Aug-2014	07:00	1.3	NE
16-Aug-2014	08:00	1.7	NE
16-Aug-2014	09:00	1.7	NE
16-Aug-2014	10:00	1.6	NE
16-Aug-2014	11:00	1.9	N
16-Aug-2014	12:00	1.9	NNE
16-Aug-2014	13:00	1.4	ENE
16-Aug-2014	14:00	1.6	NE
16-Aug-2014	15:00	1.7	N
16-Aug-2014	16:00	1.7	W
16-Aug-2014	17:00	1.6	WSW

Appendix J - Wind Data

Date	Time	Wind Speed m/s	Direction
16-Aug-2014	18:00	1	W
16-Aug-2014	19:00	0.7	W
16-Aug-2014	20:00	0.4	W
16-Aug-2014	21:00	0.5	W
16-Aug-2014	22:00	0.6	W
16-Aug-2014	23:00	0.4	W
17-Aug-2014	00:00	0.6	SSW
17-Aug-2014	01:00	0.5	NNE
17-Aug-2014	02:00	0.7	ENE
17-Aug-2014	03:00	1.2	WNW
17-Aug-2014	04:00	1	WNW
17-Aug-2014	05:00	0.9	WNW
17-Aug-2014	06:00	1	W
17-Aug-2014	07:00	1.3	W
17-Aug-2014	08:00	0.9	WNW
17-Aug-2014	09:00	1.4	WNW
17-Aug-2014	10:00	1.4	WNW
17-Aug-2014	11:00	1.8	W
17-Aug-2014	12:00	2.2	NW
17-Aug-2014	13:00	1.8	W
17-Aug-2014	14:00	2.2	WNW
17-Aug-2014	15:00	2	W
17-Aug-2014	16:00	1.9	NE
17-Aug-2014	17:00	1.7	NE
17-Aug-2014	18:00	1.4	ENE
17-Aug-2014	19:00	1.1	NE
17-Aug-2014	20:00	0.5	NE
17-Aug-2014	21:00	0.4	NNE
17-Aug-2014	22:00	0.3	NE
17-Aug-2014	23:00	0.3	E
18-Aug-2014	00:00	0.3	NE
18-Aug-2014	01:00	0.3	ENE
18-Aug-2014	02:00	0.4	N
18-Aug-2014	03:00	0.3	NE
18-Aug-2014	04:00	0.3	SSW
18-Aug-2014	05:00	0.4	SW
18-Aug-2014	06:00	0.6	SW
18-Aug-2014	07:00	0.4	SW
18-Aug-2014	08:00	0.9	W
18-Aug-2014	09:00	1	WSW
18-Aug-2014	10:00	2.3	WNW
18-Aug-2014	11:00	2.4	WSW
18-Aug-2014	12:00	2	SW
18-Aug-2014	13:00	2.3	S
18-Aug-2014	14:00	2.4	SSW
18-Aug-2014	15:00	2.6	SSW
18-Aug-2014	16:00	2.4	WNW
18-Aug-2014	17:00	2.6	WNW
18-Aug-2014	18:00	2.3	WNW
18-Aug-2014	19:00	1.7	SSW
18-Aug-2014	20:00	2.3	SW
18-Aug-2014	21:00	2.2	WNW
18-Aug-2014	22:00	2.4	WNW
18-Aug-2014	23:00	2	WNW

Appendix J - Wind Data

Date	Time	Wind Speed m/s	Direction
19-Aug-2014	00:00	1.4	WNW
19-Aug-2014	01:00	1.6	WNW
19-Aug-2014	02:00	1.7	WNW
19-Aug-2014	03:00	1.3	WNW
19-Aug-2014	04:00	2	SW
19-Aug-2014	05:00	2	SW
19-Aug-2014	06:00	2.4	SW
19-Aug-2014	07:00	2.3	WNW
19-Aug-2014	08:00	2.2	SSW
19-Aug-2014	09:00	2.3	W
19-Aug-2014	10:00	2.1	WSW
19-Aug-2014	11:00	2.9	WSW
19-Aug-2014	12:00	3.3	SW
19-Aug-2014	13:00	3.2	W
19-Aug-2014	14:00	2.9	SW
19-Aug-2014	15:00	2	SW
19-Aug-2014	16:00	1.4	WSW
19-Aug-2014	17:00	0.8	WSW
19-Aug-2014	18:00	1	SW
19-Aug-2014	19:00	0.8	WSW
19-Aug-2014	20:00	0.6	SW
19-Aug-2014	21:00	0.4	WSW
19-Aug-2014	22:00	0.3	WSW
19-Aug-2014	23:00	0.3	WNW
20-Aug-2014	00:00	0.3	SW
20-Aug-2014	01:00	0.4	SW
20-Aug-2014	02:00	0.8	SW
20-Aug-2014	03:00	1.2	WSW
20-Aug-2014	04:00	0.9	WSW
20-Aug-2014	05:00	1	SW
20-Aug-2014	06:00	1.2	SW
20-Aug-2014	07:00	0.9	WSW
20-Aug-2014	08:00	0.9	SW
20-Aug-2014	09:00	0.4	SW
20-Aug-2014	10:00	0.8	W
20-Aug-2014	11:00	1.2	W
20-Aug-2014	12:00	1.3	W
20-Aug-2014	13:00	1.1	W
20-Aug-2014	14:00	1.1	WNW
20-Aug-2014	15:00	1.1	WNW
20-Aug-2014	16:00	1.6	W
20-Aug-2014	17:00	1	WNW
20-Aug-2014	18:00	0.8	WNW
20-Aug-2014	19:00	1.1	WNW
20-Aug-2014	20:00	1.3	WSW
20-Aug-2014	21:00	1.3	W
20-Aug-2014	22:00	1.4	W
20-Aug-2014	23:00	1.4	W
21-Aug-2014	00:00	1.9	WNW
21-Aug-2014	01:00	1.3	WNW
21-Aug-2014	02:00	1.1	W
21-Aug-2014	03:00	1	WNW
21-Aug-2014	04:00	0.9	WNW
21-Aug-2014	05:00	0.7	WNW

Appendix J - Wind Data

Date	Time	Wind Speed m/s	Direction
21-Aug-2014	06:00	0.7	W
21-Aug-2014	07:00	1.2	WNW
21-Aug-2014	08:00	1.1	WNW
21-Aug-2014	09:00	2.1	NW
21-Aug-2014	10:00	2.7	W
21-Aug-2014	11:00	2.4	SSW
21-Aug-2014	12:00	2.7	SSW
21-Aug-2014	13:00	2.7	WNW
21-Aug-2014	14:00	1.9	SSW
21-Aug-2014	15:00	2	W
21-Aug-2014	16:00	2.4	W
21-Aug-2014	17:00	1.9	WNW
21-Aug-2014	18:00	1.3	WNW
21-Aug-2014	19:00	1	WNW
21-Aug-2014	20:00	1	WNW
21-Aug-2014	21:00	0.6	W
21-Aug-2014	22:00	0.7	WNW
21-Aug-2014	23:00	1.3	WNW
22-Aug-2014	00:00	1.3	WNW
22-Aug-2014	01:00	1.9	WNW
22-Aug-2014	02:00	1.1	WNW
22-Aug-2014	03:00	1.4	W
22-Aug-2014	04:00	1.4	W
22-Aug-2014	05:00	1.6	WNW
22-Aug-2014	06:00	1.2	WNW
22-Aug-2014	07:00	1.3	W
22-Aug-2014	08:00	1.1	WNW
22-Aug-2014	09:00	1.3	WSW
22-Aug-2014	10:00	2.2	SW
22-Aug-2014	11:00	2.6	W
22-Aug-2014	12:00	2.9	WNW
22-Aug-2014	13:00	2.4	WNW
22-Aug-2014	14:00	2.1	W
22-Aug-2014	15:00	2	W
22-Aug-2014	16:00	2.2	WNW
22-Aug-2014	17:00	1.7	SW
22-Aug-2014	18:00	1.9	W
22-Aug-2014	19:00	1.5	SW
22-Aug-2014	20:00	1.7	SW
22-Aug-2014	21:00	2.1	WSW
22-Aug-2014	22:00	1.7	WSW
22-Aug-2014	23:00	2	W
23-Aug-2014	00:00	2.3	SW
23-Aug-2014	01:00	2.4	W
23-Aug-2014	02:00	2.2	WNW
23-Aug-2014	03:00	2.3	WNW
23-Aug-2014	04:00	2.3	W
23-Aug-2014	05:00	2.2	SSW
23-Aug-2014	06:00	1.9	SSW
23-Aug-2014	07:00	1.4	SSW
23-Aug-2014	08:00	1.7	SSW
23-Aug-2014	09:00	2.4	SSW
23-Aug-2014	10:00	2.3	SW
23-Aug-2014	11:00	2.1	SW

Appendix J - Wind Data

Date	Time	Wind Speed m/s	Direction
23-Aug-2014	12:00	2.4	WNW
23-Aug-2014	13:00	2	SW
23-Aug-2014	14:00	2.3	SSW
23-Aug-2014	15:00	2	WSW
23-Aug-2014	16:00	1.9	SW
23-Aug-2014	17:00	1.7	W
23-Aug-2014	18:00	1.3	W
23-Aug-2014	19:00	1.3	WSW
23-Aug-2014	20:00	1.3	WSW
23-Aug-2014	21:00	1.3	SW
23-Aug-2014	22:00	2.3	SW
23-Aug-2014	23:00	2.2	SW
24-Aug-2014	00:00	2.9	SSW
24-Aug-2014	01:00	2	SW
24-Aug-2014	02:00	2.3	SW
24-Aug-2014	03:00	2.3	WSW
24-Aug-2014	04:00	1.9	WSW
24-Aug-2014	05:00	2	SW
24-Aug-2014	06:00	1.8	SW
24-Aug-2014	07:00	1.4	SSW
24-Aug-2014	08:00	1.3	WSW
24-Aug-2014	09:00	2	WNW
24-Aug-2014	10:00	2.6	WNW
24-Aug-2014	11:00	2.9	W
24-Aug-2014	12:00	2.9	W
24-Aug-2014	13:00	2.7	WSW
24-Aug-2014	14:00	2.7	WSW
24-Aug-2014	15:00	2.4	WSW
24-Aug-2014	16:00	2.2	W
24-Aug-2014	17:00	1.3	W
24-Aug-2014	18:00	0.7	W
24-Aug-2014	19:00	0.7	WNW
24-Aug-2014	20:00	0.7	WNW
24-Aug-2014	21:00	0.4	W
24-Aug-2014	22:00	0.6	W
24-Aug-2014	23:00	0.3	NW
25-Aug-2014	00:00	1.2	WNW
25-Aug-2014	01:00	1.2	W
25-Aug-2014	02:00	1.2	S
25-Aug-2014	03:00	1.2	S
25-Aug-2014	04:00	1.2	WSW
25-Aug-2014	05:00	0.9	WSW
25-Aug-2014	06:00	0.9	SW
25-Aug-2014	07:00	0.9	W
25-Aug-2014	08:00	1.1	W
25-Aug-2014	09:00	2.1	W
25-Aug-2014	10:00	2.4	W
25-Aug-2014	11:00	2.7	WNW
25-Aug-2014	12:00	2.2	E
25-Aug-2014	13:00	1.7	W
25-Aug-2014	14:00	1.7	SW
25-Aug-2014	15:00	1.4	SSW
25-Aug-2014	16:00	2	W
25-Aug-2014	17:00	1.4	W

Appendix J - Wind Data

Date	Time	Wind Speed m/s	Direction
25-Aug-2014	18:00	0.8	SW
25-Aug-2014	19:00	0.3	W
25-Aug-2014	20:00	0.1	W
25-Aug-2014	21:00	0.6	WNW
25-Aug-2014	22:00	0.4	WNW
25-Aug-2014	23:00	1.4	SW
26-Aug-2014	00:00	1.3	SW
26-Aug-2014	01:00	0.7	W
26-Aug-2014	02:00	1.2	W
26-Aug-2014	03:00	0.3	W
26-Aug-2014	04:00	0.3	W
26-Aug-2014	05:00	0.9	W
26-Aug-2014	06:00	0.9	W
26-Aug-2014	07:00	0.6	W
26-Aug-2014	08:00	0.6	WSW
26-Aug-2014	09:00	1	WSW
26-Aug-2014	10:00	1.7	W
26-Aug-2014	11:00	1.6	WSW
26-Aug-2014	12:00	1.7	SW
26-Aug-2014	13:00	1.9	W
26-Aug-2014	14:00	1.5	WNW
26-Aug-2014	15:00	1.4	WNW
26-Aug-2014	16:00	1	WNW
26-Aug-2014	17:00	1.4	WSW
26-Aug-2014	18:00	0.7	SW
26-Aug-2014	19:00	0.3	SSW
26-Aug-2014	20:00	0.1	SSW
26-Aug-2014	21:00	0.4	SSW
26-Aug-2014	22:00	0.9	SW
26-Aug-2014	23:00	0.7	W
27-Aug-2014	00:00	0.9	WNW
27-Aug-2014	01:00	0.9	N
27-Aug-2014	02:00	0.9	NNE
27-Aug-2014	03:00	0.9	NNE
27-Aug-2014	04:00	0.6	NNE
27-Aug-2014	05:00	0.7	S
27-Aug-2014	06:00	0.7	WSW
27-Aug-2014	07:00	1.4	W
27-Aug-2014	08:00	1.1	W
27-Aug-2014	09:00	1.4	WNW
27-Aug-2014	10:00	2.2	WSW
27-Aug-2014	11:00	2.4	WNW
27-Aug-2014	12:00	1.9	W
27-Aug-2014	13:00	1.7	WNW
27-Aug-2014	14:00	2	WNW
27-Aug-2014	15:00	2.2	W
27-Aug-2014	16:00	1.9	W
27-Aug-2014	17:00	2.3	W
27-Aug-2014	18:00	1.4	SSW
27-Aug-2014	19:00	1.1	W
27-Aug-2014	20:00	0.7	W
27-Aug-2014	21:00	0.9	WNW
27-Aug-2014	22:00	0.9	W
27-Aug-2014	23:00	0.7	W

Appendix J - Wind Data

Date	Time	Wind Speed m/s	Direction
28-Aug-2014	00:00	1	W
28-Aug-2014	01:00	1.9	WSW
28-Aug-2014	02:00	1.7	WSW
28-Aug-2014	03:00	2	W
28-Aug-2014	04:00	2.2	W
28-Aug-2014	05:00	1.4	WSW
28-Aug-2014	06:00	1.2	SSW
28-Aug-2014	07:00	1.2	SSW
28-Aug-2014	08:00	1.4	WSW
28-Aug-2014	09:00	1.7	SSW
28-Aug-2014	10:00	2.2	WSW
28-Aug-2014	11:00	2.3	W
28-Aug-2014	12:00	2.3	WSW
28-Aug-2014	13:00	2.6	W
28-Aug-2014	14:00	2.4	N
28-Aug-2014	15:00	2.2	SSE
28-Aug-2014	16:00	2	SW
28-Aug-2014	17:00	1.9	W
28-Aug-2014	18:00	1.4	W
28-Aug-2014	19:00	1.4	W
28-Aug-2014	20:00	1.4	SW
28-Aug-2014	21:00	1.2	WNW
28-Aug-2014	22:00	1.6	W
28-Aug-2014	23:00	1.7	W
29-Aug-2014	00:00	1.3	W
29-Aug-2014	01:00	0.9	W
29-Aug-2014	02:00	0.9	W
29-Aug-2014	03:00	0.9	W
29-Aug-2014	04:00	0.7	W
29-Aug-2014	05:00	1	W
29-Aug-2014	06:00	0.9	WSW
29-Aug-2014	07:00	1	WSW
29-Aug-2014	08:00	1.3	NW
29-Aug-2014	09:00	1.7	NNE
29-Aug-2014	10:00	1.8	WSW
29-Aug-2014	11:00	1.9	N
29-Aug-2014	12:00	2	N
29-Aug-2014	13:00	1.9	NE
29-Aug-2014	14:00	1.4	W
29-Aug-2014	15:00	1.3	W
29-Aug-2014	16:00	1.5	SW
29-Aug-2014	17:00	1.4	WSW
29-Aug-2014	18:00	0.6	S
29-Aug-2014	19:00	0.4	SW
29-Aug-2014	20:00	0.7	SW
29-Aug-2014	21:00	0.7	W
29-Aug-2014	22:00	0.9	SW
29-Aug-2014	23:00	1.4	W
30-Aug-2014	00:00	1.3	W
30-Aug-2014	01:00	0.9	S
30-Aug-2014	02:00	0.6	W
30-Aug-2014	03:00	0.7	W
30-Aug-2014	04:00	0.8	W
30-Aug-2014	05:00	1	SW

Appendix J - Wind Data

Date	Time	Wind Speed m/s	Direction
30-Aug-2014	06:00	1.4	SW
30-Aug-2014	07:00	1.4	S
30-Aug-2014	08:00	1.4	WNW
30-Aug-2014	09:00	1.5	SW
30-Aug-2014	10:00	1.4	S
30-Aug-2014	11:00	1.4	SW
30-Aug-2014	12:00	2	SW
30-Aug-2014	13:00	2	S
30-Aug-2014	14:00	1.8	SSW
30-Aug-2014	15:00	1.7	SW
30-Aug-2014	16:00	1.9	WSW
30-Aug-2014	17:00	1.4	W
30-Aug-2014	18:00	1.3	S
30-Aug-2014	19:00	0.8	SSW
30-Aug-2014	20:00	0.7	W
30-Aug-2014	21:00	0.3	W
30-Aug-2014	22:00	0.4	W
30-Aug-2014	23:00	0.9	W
31-Aug-2014	00:00	0.9	W
31-Aug-2014	01:00	0.4	SW
31-Aug-2014	02:00	0.6	NE
31-Aug-2014	03:00	0.9	NE
31-Aug-2014	04:00	0.7	NNE
31-Aug-2014	05:00	0.6	NE
31-Aug-2014	06:00	1.5	NE
31-Aug-2014	07:00	0.7	NE
31-Aug-2014	08:00	0.4	NE
31-Aug-2014	09:00	0.7	WSW
31-Aug-2014	10:00	1.6	NE
31-Aug-2014	11:00	1.5	ENE
31-Aug-2014	12:00	1.9	NE
31-Aug-2014	13:00	2.6	NE
31-Aug-2014	14:00	2.6	NW
31-Aug-2014	15:00	1.3	NE
31-Aug-2014	16:00	1.5	WSW
31-Aug-2014	17:00	1.4	NW
31-Aug-2014	18:00	0.9	NE
31-Aug-2014	19:00	1.1	NE
31-Aug-2014	20:00	0.4	WSW
31-Aug-2014	21:00	0.1	WSW
31-Aug-2014	22:00	1	NW
31-Aug-2014	23:00	1.2	NE

**APPENDIX K
EVENT ACTION PLANS**

Event / Action Plan for Air Quality

EVENT	ACTION			
	ET	IEC	SO	CONTRACTOR
ACTION LEVEL				
1. Exceedance for one sample	<ol style="list-style-type: none"> 1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform IEC and SO; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET; 2. Check Contractor's working method. 	<ol style="list-style-type: none"> 1. Notify Contractor. 	<ol style="list-style-type: none"> 1. Rectify any unacceptable practice; 2. Amend working methods if appropriate.
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> 1. Identify source; 2. Inform IEC and SO; 3. Advise the SO on the effectiveness of the proposed remedial measures; 4. Repeat measurements to confirm findings; 5. Increase monitoring frequency to daily; 6. Discuss with IEC and Contractor on remedial actions required; 7. If exceedance continues, arrange meeting with IEC and SO; 8. If exceedance stops, cease additional monitoring. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ET on the effectiveness of the proposed remedial measures; 5. Supervise Implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 	<ol style="list-style-type: none"> 1. Submit proposals for remedial to SO within 3 working days of notification; 2. Implement the agreed proposals; 3. Amend proposal if appropriate.

LIMIT LEVEL

<p>1.Exceedance for one sample</p>	<ol style="list-style-type: none"> 1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform SO, Contractor and EPD; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily; 5. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and SO informed of the results. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the SO on the effectiveness of the proposed remedial measures; 5. Supervise implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented. 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Amend proposal if appropriate.
<p>2.Exceedance for two or more consecutive samples</p>	<ol style="list-style-type: none"> 1. Notify IEC, SO, Contractor and EPD; 2. Identify source; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency to daily; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Arrange meeting with IEC and SO to discuss the remedial actions to 	<ol style="list-style-type: none"> 1. Discuss amongst SO, ET, and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the SO accordingly; 3. Supervise the implementation of remedial 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consultation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Ensure remedial measures properly implemented; 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by the SO until the exceedance is

	<p>be taken;</p> <p>7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and SO informed of the results;</p> <p>8. If exceedance stops, cease additional monitoring.</p>	<p>measures.</p>	<p>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.</p>	<p>abated.</p>
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Abbreviations: ET – Environmental Team, IEC – Independent Environmental Checker, SO – Supervising Office

Event / Action Plan for Construction Noise

EVENT	ACTION			
	ET	IEC	SO	CONTRACTOR
Action Level	<ol style="list-style-type: none"> 1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Notify IEC and Contractor; 3. Report the results of investigation to the IEC, SO and Contractor; 4. Discuss with the Contractor and formulate remedial measures; 5. Increase monitoring frequency to check mitigation effectiveness. 	<ol style="list-style-type: none"> 1. Review the analysed results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the SO accordingly; 3. Supervise the implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Require Contractor to propose remedial measures for the analysed noise problem; 4. Ensure remedial measures are properly implemented 	<ol style="list-style-type: none"> 1. Submit noise mitigation proposals to IEC; 2. Implement noise mitigation proposals.
Limit Level	<ol style="list-style-type: none"> 1. Identify source; 2. Inform IEC, SO, EPD and Contractor; 3. Repeat measurements to confirm findings; 4. Increase monitoring frequency; 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 6. Inform IEC, SO and EPD 	<ol style="list-style-type: none"> 1. Discuss amongst SO, ET, and Contractor on the potential remedial actions; 2. Review Contractors remedial actions whenever necessary to assure their effectiveness and advise the SO accordingly; 3. Supervise the implementation of 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Require Contractor to propose remedial measures for the analysed noise 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Resubmit proposals if problem still not under control;

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

Event and Action Plan for Water Quality

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

Event	ET Leader	IEC	SO	Contractor
<p>Limit level being exceeded by two or more consecutive sampling days</p>	<p>Repeat measurement on next day of exceedance to confirm findings;</p> <p>Identify source(s) of impact;</p> <p>Inform IEC, contractor, SO and EPD;</p> <p>Check monitoring data, all plant, equipment and Contractor's working methods;</p> <p>Discuss mitigation measures with IEC, SO and Contractor;</p> <p>Ensure mitigation measures are implemented;</p>	<p>Check monitoring data submitted by ET and Contractor's working method;</p> <p>Discuss with ET and Contractor on possible remedial actions;</p> <p>Review the Contractor's mitigation measures whenever necessary to assure their effectiveness and advise the SO accordingly;</p> <p>Supervise the implementation of mitigation measures.</p>	<p>Discuss with IEC, ET and Contractor on the proposed mitigation measures;</p> <p>Request Contractor to critically review the working methods;</p> <p>Make agreement on the mitigation measures to be implemented;</p> <p>Ensure mitigation measures are properly implemented;</p> <p>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.</p>	<p>Take immediate action to avoid further exceedance;</p> <p>Submit proposal of mitigation measures to SO within 3 working days of notification and discuss with ET, IEC and SO;</p> <p>Implement the agreed mitigation measures;</p> <p>Resubmit proposals of mitigation measures if problem still not under control;</p> <p>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.</p>

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

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
	24-hr TSP	0	0	0	0

**(B) Exceedance Report for Construction Noise
(NIL in the reporting period)**

(C) Exceedance Report for Water Quality

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
Water Quality	Dissolved Oxygen (DO) (Surface & Middle)	0	0	0	0
	Dissolved Oxygen (DO) (Bottom)	0	0	0	0
	Turbidity	0	0	0	0
	Suspended Solids (SS)	7	1	0	0

Contract No. HY/2011/09

**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: 8 August 2014

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)
SR2	Mid-flood	23.5	34.4	CS1	32.3	38.8	42.0	<u>44.5</u>	(2), (3) and (6a)	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 –a) Sediment plume due to natural fluctuation of shallow water was observed.

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.

Contract No. HY/2011/09

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

Location Plan:



Reviewed by: Dr. H.F. Chan

Title: Environmental Team Leader

Date: 5 September 2014

Contract No. HY/2011/09

**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: 15 August 2014

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)
IS3	Mid-ebb	23.5	34.4	CS2	7.3	8.8	9.5	27.2	(2) and (6b)	No
IS3	Mid-flood			CS1	19.2	23.0	25.0	23.9	(2) and (6b)	No
SR2								30.0	(2) and (6a)	No
ST3								27.2	(2) and (5)	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 –a) Sediment plume due to natural fluctuation of shallow water was observed.
b) No marine construction works were conducted in vicinity of monitoring station IS3.

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.

Contract No. HY/2011/09

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

Location Plan:



Reviewed by: Dr. H.F. Chan

Title: Environmental Team Leader

Date: 5 September 2014

Contract No. HY/2011/09

**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: 19 August 2014

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)
SR2	Mid-flood	23.5	34.4	CS1	12.5	15.0	16.3	30.7	(2) and (6a)	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 –a) Sediment plume due to natural fluctuation of shallow water was observed.

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.

Contract No. HY/2011/09

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

Location Plan:



Reviewed by: Dr. H.F. Chan

Title: Environmental Team Leader

Date: 5 September 2014

Contract No. HY/2011/09

**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: 21 August 2014

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)
ST3	Mid-ebb	23.5	34.4	CS2	6.7	8.0	8.7	29.8	(2) and (6a)	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 –a) No exceedance was recorded at the impact monitoring stations (IS1, IS2, IS3 & IS4) which are situated near the marine works of the Contract.

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.

Contract No. HY/2011/09

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

Location Plan:



Reviewed by: Dr. H.F. Chan


Title: Environmental Team Leader

Date: 5 September 2014

Contract No. HY/2011/09

**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: 29 August 2014

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)
ST3	Mid-flood	23.5	34.4	CS1	5.3	6.4	6.9	28.2	(2) and (5)	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 – _____

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.

Contract No. HY/2011/09

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

Location Plan:



Reviewed by: Dr. H.F. Chan

Title: Environmental Team Leader

Date: 5 September 2014

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	140805
Date	5 August 2014 (Tuesday)
Time	9:30-11:45

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	A. Water Quality	
140805-R02	• Properly deploy the silt curtain at P98.	B25
140805-R04	• To avoid discharging the muddy water to the sea at S8.	B3
	B. Ecology	
140805-R05	• Clear the construction materials at near the tree at P101.	C30
	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	
140805-R01	• Clear the waste materials at the roadside of Portion C.	F1iii. & 4ii.
140805-R03	• Remove the discarded silt curtain at near P103 and P82.	F4ii.
	F. Permits/Licences	
	• No environmental deficiency was identified during site inspection.	
	G. Others	
	• Follow-up on previous site audit session (Ref. No. 140729), all environmental deficiencies were improved/rectified by contractor during the site inspection.	

	Name	Signature	Date
Recorded by	Ivy Tam		5 August 2014
Checked by	Dr. Priscilla Choy		5 August 2014

Contract HY/2011/09

Hong Kong-Zhuhai-Macao Bridge

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

Environmental Observations Identified during the Environmental Site Inspection
(5 August 2014)

	<p>Ref No: 140805-R01</p> <p>Impact: Waste / Chemical Management (F1iii. & 4ii.)</p> <p>Details: Clear the waste materials at the roadside of Portion C.</p>
	<p>Ref No: 140805-R02</p> <p>Impact: Water Quality (B25)</p> <p>Details: Properly deploy the silt curtain at P98.</p>

Hong Kong-Zhuhai-Macao Bridge

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



P103



P92

Ref No: 140805-R03

Impact:
Waste / Chemical Management (F4ii.)

Details:
Remove the discarded silt curtain at near P103 and P82.



Ref No: 140805-R04

Impact:
Water Quality (B3)

Details:
To avoid discharging the muddy water to the sea at S8.

Contract HY/2011/09

Hong Kong-Zhuhai-Macao Bridge

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



Ref No: 140805-R05




Impact:
Ecology (C30)

Details:
Clear the construction materials at near the tree at P101.

Hong Kong-Zhuhai-Macao Bridge

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

**Rectification Actions taken by the Contractor for Environmental Deficiencies
Identified during Previous Audit Session**

	<p>Ref No: 140729-R01</p> <p>Impact: Water Quality (B25)</p> <p>Details: Properly deploy the silt curtain at P19.</p> <p>Follow Up: The silt curtain was deployed properly.</p>
	<p>Ref No: 140729-R02</p> <p>Impact: Noise (E7)</p> <p>Details: Provide acoustic decoupling measure for the water pump at the barge near P19.</p> <p>Follow Up: An acoustic decoupling measure was provided for water pump.</p>
	<p>Ref No: 140729-R03</p> <p>Impact: Water Quality (B20)</p> <p>Details: Clear the accumulated broken concrete materials regularly and avoid disposing these materials into the sea at P61.</p> <p>Follow Up: The concrete breaking works at P61 was completed. All broken concrete materials were cleared.</p>

Contract HY/2011/09

Hong Kong-Zhuhai-Macao Bridge

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



Ref No: 140729-R04

Impact:
Noise (E8)

Details:
Provide noise emission labels for the hand-held breaker at P61.

Follow Up:
The concrete breaking works at P61 was completed. All hand-held breaker were removed.

Contract HY/2011/09

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	140812
Date	12 August 2014 (Tuesday)
Time	9:30-11:45

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	A. Water Quality	
140812-R03	• Properly deploy the silt curtain at P98 and P82.	B25
140812-R04	• Clear the waste materials at near silt curtain at P90.	B21
140812-R05	• To block the temporary drain which direct surface runoff to the sea at P86.	B3
	B. Ecology	
140812-R02	• Clear the construction materials at near the tree at S4 & P94.	C30
	C. Air Quality	
140812-R01	• Properly provide water spray for the exposed soil surface at Portion C.	D5, D6, D14
	D. Noise	
	• No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
140812-R06	• Remove the discarded silt curtain at near P103 and P92.	F4ii.
	F. Permits/Licences	
	• No environmental deficiency was identified during site inspection.	
	G. Others	
	• Follow-up on previous site audit session (Ref. No. 140805), Follow-up action is required for item 140805-R02, R03, R04 which are renamed as 140812-R03, R06 and R05 respectively..	

	Name	Signature	Date
Recorded by	Ivy Tam		12 August 2014
Checked by	Dr. Priscilla Choy		12 August 2014

Hong Kong-Zhuhai-Macao Bridge

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

Environmental Observations Identified during the Environmental Site Inspection
(12 August 2014)

	<p>Ref No: 140812-R01</p> <p>Impact: Air Quality (D5, D6, D14)</p> <p>Details: Properly provide water spray for the exposed soil surface at Portion C.</p>
 <p style="text-align: center;">P94</p>  <p style="text-align: center;">S4</p>	<p>Ref No: 140812-R02</p> <p>Impact: Ecology (C30)</p> <p>Details: Clear the construction materials at near the tree at S4 & P94.</p>

Hong Kong-Zhuhai-Macao Bridge

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



P98



P82



Ref No: 140812-R03

Impact:
Water Quality (B25)

Details:
Properly deploy the silt curtain at P98 and P82.

Ref No: 140812-R04

Impact:
Water Quality (B21)

Details:
Clear the waste materials at near silt curtain at P90.

Hong Kong-Zhuhai-Macao Bridge

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



Ref No: 140812-R05

Impact:
Water Quality (B3)

Details:
To block the temporary drain which direct surface runoff to the sea at P86.



P103

Ref No: 140812-R06

Impact:
Waste / Chemical Management (F4ii.)

Details:
Remove the discarded silt curtain at near P103 and P92.



P92

Hong Kong-Zhuhai-Macao Bridge

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

**Rectification Actions taken by the Contractor for Environmental Deficiencies
Identified during Previous Audit Session**

	<p>Ref No: 140805-R01</p> <p>Impact: Waste / Chemical Management (F1iii. & 4ii.)</p> <p>Details: Clear the waste materials at the roadside of Portion C.</p> <p>Follow Up: The waste materials at the roadside were cleared.</p>
	<p>Ref No: 140805-R05</p> <p>Impact: Ecology (C30)</p> <p>Details: Clear the construction materials at near the tree at P101.</p> <p>Follow Up: The construction materials at near the trees were cleared.</p>

Contract HY/2011/09

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	140819
Date	19 August 2014 (Tuesday)
Time	9:45-11:45

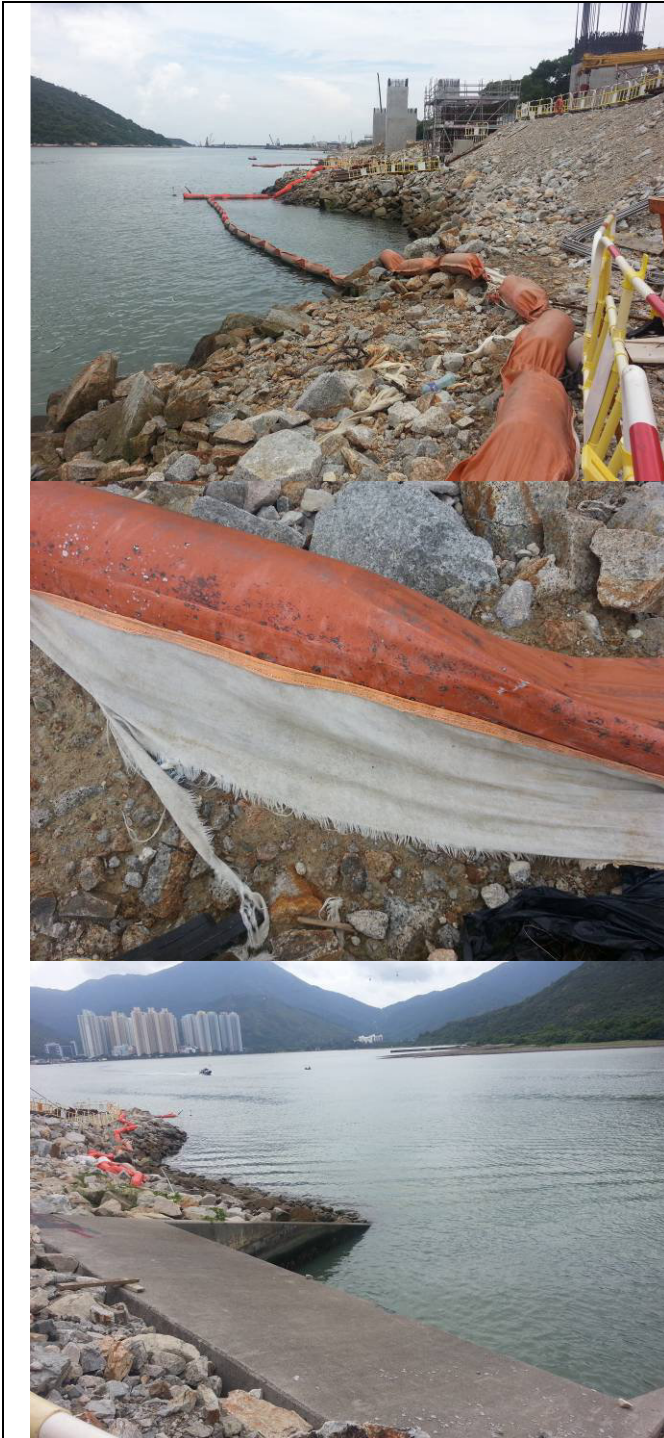
Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
A. Water Quality		
140819-O01	• Damage silt curtain was observed at P97-99. The Contractor was reminded to re-deploy the new silt curtain which can function properly as soon as possible.	B25
140819-R05	• Properly deploy the silt curtain at P102.	B25
B. Ecology		
140819-R02	• To remove the construction materials / wastes at near the trees at Portion C, P95 and 94.	C30
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		
140819-R03	• Properly store the chemical containers at Portion C.	F3i.
140819-R06	• To clear the discarded silt curtain at seawall area at P93 and P82.	F4ii.
F. Permits/Licences		
140819-R04	• To display the Environmental Permit at S4.	G5
G. Others		
	• Follow-up on previous site audit session (Ref. No. 140812), Follow-up action is required for item 140812-R02, R03, R06 which are renamed as 140819-R02, O01 and R06 respectively..	

	Name	Signature	Date
Recorded by	Ivy Tam		19 August 2014
Checked by	Dr. Priscilla Choy		19 August 2014

Hong Kong-Zhuhai-Macao Bridge

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

Environmental Observations Identified during the Environmental Site Inspection
(19 August 2014)



Ref No: 140819-O01

Impact:
Water Quality (B25)

Details:
Damage silt curtain was observed at P97-99. The Contractor was reminded to re-deploy the new silt curtain which can function properly as soon as possible.

Hong Kong-Zhuhai-Macao Bridge

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



Portion C



P95



P94




Ref No: 140819-R02

Impact:
Ecology (C30)

Details:
To remove the construction materials / wastes at near the trees at Portion C, P95 and 94.

Hong Kong-Zhuhai-Macao Bridge

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

	<p>Ref No: 140819-R03</p> <p>Impact: Waste / Chemical Management (F3i.)</p> <p>Details: Properly store the chemical containers at Portion C.</p>
	<p>Ref No: 140819-R04</p> <p>Impact: Permits / Licences (G5)</p> <p>Details: To display the Environmental Permit at S4.</p>
	<p>Ref No: 140819-R05</p> <p>Impact: Water Quality (B25)</p> <p>Details: Properly deploy the silt curtain at P102.</p>

Hong Kong-Zhuhai-Macao Bridge

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



P93



P82

Ref No: 140819-R06



Impact:
Waste / Chemical Mangement (F4ii.)

Details:
To clear the discarded silt curtain at seawall area at P93 and P82.

Hong Kong-Zhuhai-Macao Bridge

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

**Rectification Actions taken by the Contractor for Environmental Deficiencies
Identified during Previous Audit Session**

	<p>Ref No: 140812-R01</p> <p>Impact: Air Quality (D5, D6, D14)</p> <p>Details: Properly provide water spray for the exposed soil surface at Portion C.</p> <p>Follow Up: The exposed soil surface was observed wet.</p>
 <p style="text-align: center;">P82</p>	<p>Ref No: 140812-R03</p> <p>Impact: Water Quality (B25)</p> <p>Details: Properly deploy the silt curtain at P98 and P82.</p> <p>Follow Up: The silt curtain at P82 was properly deployed.</p>
	<p>Ref No: 140812-R04</p> <p>Impact: Water Quality (B21)</p> <p>Details: Clear the waste materials at near silt curtain at P90.</p> <p>Follow Up: The waste materials were cleared.</p>

Contract HY/2011/09

Hong Kong-Zhuhai-Macao Bridge

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



Ref No: 140812-R05

Impact:
Water Quality (B3)

Details:
To block the temporary drain which direct surface runoff to the sea at P86.

Follow Up:
The temporary drain was backfilled.

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	140829
Date	29 August 2014 (Friday)
Time	15:00-15:45


Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	A. Water Quality	
	• No environmental deficiency was identified during site inspection.	
	B. Ecology	
140829-R02	• To remove the construction materials / wastes at near the trees at Portion C.	C30
	C. Air Quality	
140829-O01	• Dust generation was observed from the drilling works at near P82. The Contractor was reminded to provide appropriate dust mitigation measures as soon as possible.	D13
140829-R04	• The air compressor should be checked to avoid emitting heavy smoke.	D19
	D. Noise	
	• No environmental deficiency was identified during site inspection.	
	E. Waste / Chemical Management	
140829-R03	• Properly store the chemical containers at Portion C.	F3i. and F9
	F. Permits/Licences	
	• No environmental deficiency was identified during site inspection.	
	G. Others	
	• Follow-up on previous site audit session (Ref. No. 140819), follow-up action is required for items 140819-R02, R03 which are renamed as 140829-R02 and R03 respectively.	

	Name	Signature	Date
Recorded by	Ivy Tam		29 August 2014
Checked by	Dr. Priscilla Choy		29 August 2014

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 August 2014)

	<p>Ref No: 140829-O01</p> <p>Impact: Air Quality (D13)</p> <p>Details: Dust generation was observed from the drilling works at near P82. The Contractor was reminded to provide appropriate dust mitigation measures as soon as possible.</p>
	<p>Ref No: 140829-R02</p> <p>Impact: Ecology (C30)</p> <p>Details: To remove the construction materials / wastes at near the trees at Portion C.</p>
	<p>Ref No: 140829-R03</p> <p>Impact: Waste / Chemical Management (F3i. and F9)</p> <p>Details: Properly store the chemical containers at Portion C.</p>

Contract HY/2011/09

Hong Kong-Zhuhai-Macao Bridge

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



Ref No: 140829-R04


Impact:
Air Quality (D19)

Details:
The air compressor should be checked to avoid emitting heavy smoke.

Hong Kong-Zhuhai-Macao Bridge

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

Rectification Actions taken by the Contractor for Environmental Deficiencies Identified during Previous Audit Session

	<p>Ref No: 140819-O01</p> <p>Impact: Water Quality (B25)</p> <p>Details: Damage silt curtain was observed at P97-99. The Contractor was reminded to re-deploy the new silt curtain which can function properly as soon as possible.</p> <p>Follow Up: The silt curtain was properly deployed at P97-99.</p>
 <p>P94</p>	<p>Ref No: 140819-R02</p> <p>Impact: Ecology (C30)</p> <p>Details: To remove the construction materials / wastes at near the trees at Portion C, P95 and 94.</p> <p>Follow Up: The construction materials / wastes at near the trees at P95 and P94 were removed.</p>
 <p>P95</p>	

Hong Kong-Zhuhai-Macao Bridge

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

	<p>Ref No: 140819-R04</p> <p>Impact: Permits / Licences (G5)</p> <p>Details: To display the Environmental Permit at S4.</p> <p>Follow Up: The Environmental Permit was displayed.</p>
	<p>Ref No: 140819-R05</p> <p>Impact: Water Quality (B25)</p> <p>Details: Properly deploy the silt curtain at P102.</p> <p>Follow Up: The silt curtain was properly deployed at P92.</p>

Hong Kong-Zhuhai-Macao Bridge

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



P93



P82

Ref No: 140819-R06

Impact:
Waste / Chemical Mangement (F4ii.)

Details:
To clear the discarded silt curtain at seawall area at P93 and P82.

Follow Up:
No discarded silt curtain was observed at P93 and P82.

**APPENDIX N
UPDATED ENVIRONMENTAL
MITIGATION IMPLEMENTATION
SCHEDULE (EMIS)**

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
Air Quality							
S5.5.6.1	A1	1) The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	Good construction site practices to control the dust impact at the nearby sensitive receivers to within the relevant criteria.	Contractor	All construction sites	Construction stage	^
S5.5.6.2	A2	2) Proper watering of exposed spoil should be undertaken throughout the construction phase: <ul style="list-style-type: none"> • Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading; • Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads; • A stockpile of dusty material should not be extend beyond the pedestrian barriers, fencing or traffic cones. • The load of dusty materials on a vehicle leaving a construction site 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 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; 	Good construction site practices to control the dust impact at the nearby sensitive receivers to within the relevant criteria.	Contractor	All construction sites	Construction stage	* ^ ^ ^ ^
S5.5.6.2	A2	<ul style="list-style-type: none"> • When there are open excavation and reinstatement works, hoarding 	Good construction site	Contractor	All construction	Construction	^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		<p>of not less than 2.4m high should be provided as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period;</p> <ul style="list-style-type: none"> • The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; • Surfaces where any pneumatic or power-driven drilling, cutting, 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 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 impervious sheeting; • Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides; 	<p>practices to control the dust impact at the nearby sensitive receivers to within the relevant criteria.</p>		sites	stage	<p style="text-align: center;">^</p> <p style="text-align: center;">*</p> <p style="text-align: center;">^</p> <p style="text-align: center;">N/A</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p>

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
S5.5.6.2	A2	<ul style="list-style-type: none"> Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed; Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, 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, 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. 	Good construction site practices to control the dust impact at the nearby sensitive receivers to within the relevant criteria.	Contractor	All construction sites	Construction stage	N/A ^ N/A
S5.5.6.3	A3	3) The Contractor should undertake proper watering on all exposed spoil (with at least 8 times per day) throughout the construction phase.	Control construction dust	Contractor	All construction sites	Construction stage	^
S5.5.6.4	A5	5) Implement regular dust monitoring under EM&A programme during the construction stage.	Monitor the 24 hr and 1hr TSP levels at the representative dust monitoring stations to ensure compliance with relevant criteria throughout the construction period.	Contractor	Selected representative dust monitoring station	Construction stage	^
S5.5.7.1	A6	The following mitigation measures should be adopted to prevent fugitive dust emissions for concrete batching plant: <ul style="list-style-type: none"> Loading, unloading, handling, transfer or storage of any dusty 	Monitor the 24 hr and 1hr TSP levels at the representative dust	Contractor	Selected representative dust	Construction stage	N/A

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		<p>materials should be carried out in totally enclosed system;</p> <ul style="list-style-type: none"> All dust-laden air or waste gas generated by the process operations should be properly extracted and vented to fabric filtering system to meet the emission limits for TSP; Vents for all silos and cement/pulverised fuel ash (PFA) weighing scale should be fitted with fabric filtering system; The materials which may generate airborne dusty emissions should be wetted by water spray system; All receiving hoppers should be enclosed on three sides up to 3m above unloading point; All conveyor transfer points should be totally enclosed; All access and route roads within the premises should be paved and wetted; and Vehicle cleaning facilities should be provided and used by all concrete trucks before leaving the premises to wash off any dust on the wheels and/or body. 	<p>monitoring stations to ensure compliance with relevant criteria throughout the construction period.</p>		monitoring station		<p>N/A</p> <p>N/A</p> <p>N/A</p> <p>N/A</p> <p>N/A</p> <p>N/A</p>
S5.5.2.7	A7	<p>The following mitigation measures should be adopted to prevent fugitive dust emissions at barging point:</p> <ul style="list-style-type: none"> All road surface within the barging facilities will be paved; Dust enclosures will be provided for the loading ramp; Vehicles will be required to pass through designated wheels wash facilities; and Continuous water spray at the loading points. 	Control construction dust	Contractor	All construction sites	Construction stage	<p>N/A</p> <p>N/A</p> <p>N/A</p> <p>N/A</p>
Construction Noise (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 Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		<p>following:</p> <ul style="list-style-type: none"> • only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme; • machines and plant (such as trucks, cranes) that may be in 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, be orientated so that the noise is directed away from nearby NSRs; • silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works; • mobile plant should be sited as far away from NSRs as possible and practicable; • material stockpiles, mobile container site officer and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities. 	noise by means of good site practices		sites	stage	^ ^ ^ ^ ^
S6.4.11	N2	2) Install temporary hoarding located on the site boundaries between noisy construction activities and NSRs. The conditions of the hoardings shall be properly maintained throughout the construction period.	Reduce the construction noise levels at low-level zone of NSRs through partial screening.	Contractor	All construction sites	Construction stage	^
S6.4.12	N3	3) Install movable noise barriers (typically density @14kg/m ²), acoustic mat or full enclosure close to noisy plants including air compressor, generators, saw.	Screen the noisy plant items to be used at all construction sites	Contractor	For plant items listed in Appendix 6D of the EIA report at all construction sites	Construction stage	^
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	^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		standards.	plant items		listed in Appendix 6D of the EIA report at all construction sites	stage	
S6.4.14	N5	5) Sequencing operation of construction plants where practicable.	Operate sequentially within the same work site to reduce the construction airborne noise	Contractor	All construction sites where practicable	Construction stage	^
	N6	6) Implement a noise monitoring under EM&A programme.	Monitor the construction noise levels at the selected representative locations	Contractor	Selected representative noise monitoring station	Construction stage	^
Waste Management (Construction Waste)							
S8.3.8	WM1	<p><u>Construction and Demolition Material</u></p> <p>The following mitigation measures should be implemented in handling the waste:</p> <ul style="list-style-type: none"> Maintain temporary stockpiles and reuse excavated fill material for backfilling and reinstatement; Carry out on-site sorting; Make provisions in the Contract documents to allow and promote 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 effectively for recycling purpose, where possible; Implement a trip-ticket system for each works contract to ensure that 	Good site practice to minimize the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	Contractor	All construction sites	Construction stage	^ ^ ^ ^ ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		<p>the disposal of C&D materials are properly documented and verified; and</p> <ul style="list-style-type: none"> Implement an enhanced Waste Management Plan similar to 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 Contractor shall propose the final disposal sites to the Project Proponent and get its approval before implementation 					<p>^</p> <p>^</p>
S8.3.9 - S8.3.11	WM2	<p><u>C&D Waste</u></p> <ul style="list-style-type: none"> Standard formwork or pre-fabrication should be used as far as practicable in order to minimise the arising of C&D materials. The use of more durable formwork or plastic facing for the construction works should be considered. Use of wooden hoardings should not be used, as in other projects. Metal hoarding should be used to 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 	<p>Good site practice to minimize the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal</p>	Contractor	All construction sites	Construction stage	<p>^</p> <p>*</p>

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		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> <ul style="list-style-type: none"> Adequate numbers of portable toilets should be provided for the workers. The portable toilets should be maintained in a state, which will not deter the workers from utilizing these portable toilets. Night soil should be collected by licensed collectors regularly. 	Proper handling of sewage from worker to avoid odour, pest and litter impacts	Contractor	All construction sites	Construction stage	^
S8.3.17	WM5	<u>General Refuse</u> <ul style="list-style-type: none"> General refuse generated on-site should be stored in enclosed bins or compaction units separately from construction and chemical wastes. A reputable waste collector should be employed by the Contractor to remove general refuse from the site, separately from construction 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 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 addition, waste separation facilities for paper, aluminum cans, 	Minimize production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction stage	* ^ ^ ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		<p>plastic bottles etc., should be provided.</p> <ul style="list-style-type: none"> • Training should be provided to workers about the concepts of site cleanliness and appropriate waste management procedure, including reduction, reuse and recycling of wastes. 					*
Water Quality (Construction Phase)							
S9.11.1 – S9.11.1.2	W1	<ul style="list-style-type: none"> • Mitigation during the marine works to reduce impacts to within acceptable levels have been recommended and will comprise a series of measures that restrict the method and sequencing of 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 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; • where public fill is proposed for filling below -2.5mPD, the fine content in the public fill will be controlled to 25%; • single layer silt curtains will be applied around all works; • during the first two months of dredging work for HKLR, the silt-removal efficiency of the silt-curtains shall be verified by 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, 	To control construction water quality	Contractor	During seawall dredging and filling	Construction stage	^ ^ ^ N/A ^ N/A

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		<ul style="list-style-type: none"> • all vessels shall be sized such that adequate clearance is maintained between vessels and the sea bed at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash; and • the works shall not cause foam, oil, grease, litter or other objectionable matter to be present in the water within and adjacent to the works site. 					<p style="text-align: center;">^</p> <p style="text-align: center;">^</p>
S9.11.1.3	W2	<p><u>Land Works</u></p> <p>General construction activities on land should also be governed by standard good working practice. Specific measures to be written into the works contracts should include:</p> <ul style="list-style-type: none"> • wastewater from temporary site facilities should be controlled to prevent direct discharge to surface or marine waters; • sewage effluent and discharges from on-site kitchen facilities shall be directed to Government sewer in accordance with the requirements of the WPCO or collected for disposal offsite. The use of soakaways shall be avoided; • storm drainage shall be directed to storm drains via adequately designed sand/silt removal facilities such as sand traps, silt traps and sediment basins. Channels, earth bunds or sand bag barriers should be provided on site to properly direct stormwater to such silt removal facilities. Catchpits and perimeter channels should be constructed in advance of site formation works and earthworks; • silt removal facilities, channels and manholes shall be maintained and any deposited silt and grit shall be removed regularly, including 	To control construction water quality	Contractor	During seawall dredging and filling	Construction stage	<p style="text-align: center;">*</p> <p style="text-align: center;">N/A</p> <p style="text-align: center;">^</p> <p style="text-align: center;">^</p>

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		<ul style="list-style-type: none"> wastewater generated from concreting, plastering, internal decoration, cleaning work and other similar activities, shall be screened to remove large objects; vehicle and plant servicing areas, vehicle wash bays and lubrication facilities shall be located under roofed areas. The drainage in these covered areas shall be connected to foul sewers via a petrol interceptor in accordance with the requirements of the WPCO or collected for off site disposal; the contractors shall prepare an oil / chemical cleanup plan and ensure that leakages or spillages are contained and cleaned up immediately; waste oil should be collected and stored for recycling or disposal, in 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 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. 					<p>^</p> <p>N/A</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p>
S9.14	W3	Implement a water quality monitoring programme	Control water quality	Contractor	At identified monitoring location	During construction period	^
Ecology (Construction Phase)							
S10.7	E1	<ul style="list-style-type: none"> Good site practices to avoid runoff entering woodland habitats in Scenic Hill 	Avoid potential disturbance on habitat of Romer's Tree	Designer; Contractor	Scenic Hill	During construction	^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		<ul style="list-style-type: none"> Reinstate works areas in Scenic Hill Avoid stream modification in Scenic Hill 	Frog in Scenic Hill				N/A ^
S10.7	E2	<ul style="list-style-type: none"> Use closed grab in dredging works. Install silt curtain during the construction. Limit dredging and works fronts. Good site practices Strict enforcement of no marine dumping. Site runoff control Spill response plan 	Minimise marine water quality impacts	Contractor	Seawall,	During construction	^ ^ ^ ^ ^ ^
S10.7	E3	<ul style="list-style-type: none"> Reprovision of replacement Artificial Reefs (of the same volume as the existing ARs inside Marine Exclusion Zone) 	Mitigate water quality impacts on the existing ARs	Project proponent	To be determined	Construction phase or operation phase	N/A
S10.7	E4	Watering to reduce dust generation; prevention of siltation of freshwater habitats; Site runoff should be desilted, to reduce the potential for suspended sediments, organics and other contaminants to enter streams and standing freshwater	Prevent Sedimentation from Land-based works areas	Contractor	Land-based works areas	During construction	^
S10.7	E5	Good site practices, including strictly following the permitted works hours, using quieter machines where practicable, and avoiding excessive lightings during night time	Prevent disturbance to terrestrial fauna and habitats	Contractor	Land-based works areas	During construction	^
S10.7	E6	<ul style="list-style-type: none"> Dolphin Exclusion Zone; Dolphin watching plan 	Minimize temporary marine habitat loss impact to dolphins	Contractor	Marine works	During marine works	^ ^
S10.7	E7	<ul style="list-style-type: none"> Decouple compressors and other equipment on working vessels Avoidance of percussive piling Marine underwater noise monitoring 	Minimise marine noise impacts on dolphins	Contractor	Marine works	During marine works	^ ^ ^

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		<ul style="list-style-type: none"> Temporal suspension of drilling bored pile casing in rock during peak dolphin calving season in May and June 					N/A
S10.7	E8	<ul style="list-style-type: none"> Control vessel speed Skipper training. Predefined and regular routes for working vessels; avoid Brothers Islands. 	Minimise marine traffic disturbance on dolphins	Contractor	Marine traffic	During marine works	^ ^ ^
S10.10	E9	<ul style="list-style-type: none"> Dolphin vessel monitoring 	Minimise marine traffic disturbance on dolphins	Contractor	North Lantau and West Lantau	Prior to construction, during construction, and 1 year after operation	^
Fisheries							
S11.7	F1	<ul style="list-style-type: none"> Reprovision of replacement Artificial Reefs(of the same volume as the existing ARs inside Marine Exclusion Zone) 	Mitigate water quality impacts on the existing ARs	Project proponent	To be determined	Construction phase or operation phase	N/A
S11.7	F2	<ul style="list-style-type: none"> Reduce re-suspension of sediments Limit dredging and works fronts. Good site practices Strict enforcement of no marine dumping Spill response plan 	Minimise marine water quality impacts	Contractor	Seawall,	During construction	^ ^ ^ ^ ^
Landscape & Visual (Construction Phase)							
S14.3.3.3	LV2	<p>Mitigate both Landscape and Visual Impacts</p> <ul style="list-style-type: none"> G1. Grass-hydroseed bare soil surface and stock pile areas. 	Minimise visual & landscape impact	Contractor	HKLR	Construction stage	N/A

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
		<ul style="list-style-type: none"> • G2. Add planting strip and automatic irrigation system if appropriate at some portions of bridge or footbridge to screen bridge and traffic. • G3. For HKLR, providing aesthetic design on the viaduct, tunnel 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. • G6. Maximize new tree, shrub and other vegetation planting to compensate tree felled and vegetation removed. • G7. Provide planting area around peripheral of and within HKLR for tree screening buffer effect. • G8. Plant salt tolerant native tree and shrubs etc along the planter 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 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). 					<p>N/A</p> <p>N/A</p> <p>N/A</p> <p>N/A</p> <p>N/A</p> <p>N/A</p>
S14.3.3.3	LV3	<p><u>Mitigate Visual Impacts</u></p> <ul style="list-style-type: none"> • V1.Minimize time for construction activities during construction period. • V2.Provide screen hoarding at the portion of the project site / works areas / storage areas near VSRs who have close low-level views to the Project during HKLR construction. 					<p>^</p> <p>^</p>

EIA Ref.	EM&A Log Ref	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	Implementation Status
EM&A							
S15.2.2	EM1	An Independent Environmental Checker needs to be employed as per the EM&A Manual.	Control EM&A Performance	Project Proponent	All construction sites	Construction stage	^
S15.5 - S15.6	EM2	1) An Environmental Team needs to be employed as per the EM&A Manual. 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.	Perform environmental monitoring & auditing	Contractor	All construction sites	Construction stage	^ ^ ^

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**



Monthly Summary Waste Flow Table

Name of Department: HyD

Contract No.: HY/2011/09

Monthly Summary Waste Flow Table for 2014 (Year)

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	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 ¹²	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	2.592	0.000	0.124	0.449	2.020	0.000	0.000	0.272	0.000	0.000	0.169
Feb	3.843	0.000	0.000	2.373	1.470	0.000	0.000	0.756	0.000	0.000	0.117
Mar	2.376	0.000	0.000	0.000	2.376	0.000	0.189	0.764	0.000	0.595	0.260
Apr	7.401	0.000	0.052	2.210	2.129	3.010	0.030	1.150	0.000	0.000	0.189
May	18.789	0.000	0.169	6.938	2.110	9.572	0.025	1.056	0.000	0.000	0.221
Jun	21.904	0.000	0.000	10.666	0.962	10.276	0.033	0.948	0.000	0.000	0.195
Sub-Total	56.905	0.000	0.345	22.636	11.067	22.858	0.277	4.946	0.000	0.595	1.151
Jul	14.458	0.000	0.046	12.857	1.555	0.000	0.014	1.020	0.000	0.396	0.234
Aug	8.652	0.000	0.000	7.140	1.511	0.000	0.068	1.090	0.000	1.982	0.273
Sep											
Oct											
Nov											
Dec											
Total	80.015	0.000	0.390	42.633	14.134	22.858	0.360	7.056	0.000	2.973	1.658



Forecast of Total Quantities of C&D Materials to be Generated from the Contract¹⁰

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)
195.166	0.000	6.008	73.111	63.047	53.000	6.115	23.273	0.000	7.532	6.818

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/m³.
- (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 8.0m³.
- (9) Assuming the loading quantities of a 24-tonne truck is 6.5m³.
- (10) The forecast of C&D materials to be generated from the Contract is sourced from the works program in August 2014.
- (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 Project
- (12) The density of metal is 7,850 kg/m³.

**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.	1) The vessels photos in the complainant's photo are not the working vessels under Contract No. HK/2011/09. 2) No oil dumped from Contract No. HK/2011/09's working vessels was observed according to ET's site 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 2013 and confirmed that Contract No. HY/2011/09's vessels are not involved the complaint case. 4) DCVJV will keep remind their boat crews not discharging contaminated effluent directly into the sea.	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 WA6 at around 13:00 on 1 May 2013 (Wednesday).	The site diary report was reviewed and confirmed that no works were carried out at WA6 on 1 May 2013. In addition, no noise was heard from WA6 according to the security guard 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.	Closed

Com-2013-05-002	WA6	18 May 2013	ARUP received the complaint on 18 May 2013. The complainant advised that the noise nuisance due to loading of metal parts at barge near the seawall of Works Area WA6 early morning (around 8:45a.m) on 18 May 2013 (Saturday).	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 completed in 10 minutes during the normal construction working hour (0700 – 1900 Monday to Saturday). However, the duration of aforesaid activities is very short and infrequent. Nevertheless, the Contractor was reminded to strengthen their site supervision and provide training for 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:- <ul style="list-style-type: none"> •To place wooden planks or rubber mats on ground for loading and unloading heavy or metal objects; and •To deploy professional personnel to supervise the works. 	Closed
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).	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	Closed

			<p>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 months.</p>	<p>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:</p> <ul style="list-style-type: none"> • DCVJV has sent the letter to the shipping agent to remind them to ensure the vessels under Contract No. HY/2011/09 are in good condition and any oil dumped to sea should be avoided to prevent water pollution. • Provide training to the vessel skippers for prevention of pollution 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	<p>The complaint was received by EPD on 17th 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.</p>	<p>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.</p> <p>During the inspections, the Ro-Ro barge was observed anchored off Southeast Quay at Chek Lap Kok but no concrete</p>	Closed

				<p>lorry mixer was observed throughout the inspection.</p> <p>On 23 July 2013, at about 19:35, one tug boat was observed travelling to Southeast Quay, Chek Lap Kok and left at about 19:40.</p> <p>On 30 July 2013, no tug boat and concrete lorry mixers were observed during the inspection.</p> <p>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.</p> <p>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.</p> <p>Further night time site inspection was conducted on 22 August 2013 during the</p>	
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				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.	
Com-2013-11-001	Chek Lap Kok (CLK) South Road	16 November 2013	The complaint was received by project customer services on 16 th November 2013 regarding the dust problem at Chek Lap Kok (CLK) South Road.	<p>After receiving the complaint, ET conducted the site inspection on 19 and 29 November 2013 to check the appropriate environmental protection and pollution control measures which are properly implemented by the Contractor under HY/2011/09 (DCVJV). The observation are summarized as below:-</p> <ul style="list-style-type: none"> • Dust generation works was conducted by the other Contractor at South East Quay • Proper watering of haul road to avoid dust generation during vehicle / plant equipment movement. • Vehicle washing facilities provided at every site exit at CLK South Road and South Perimeter Road. • No dark smoke was observed emitting from the plant equipments. <p>Based on the information collected, the complaint of dust problem at Check Lap Kok South Road is considered not related to Contract No. HY/2011/09 as dust</p>	Closed

				<p>suppression measures has been properly implemented by the Contractor on site to prevent dust nuisance from the construction activities.</p>	
Com-2014-01-001	<p>Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Section between HKSAR Boundary and Scenic Hill (Contract No. HY/2011/09</p>	<p>3 January 2014</p>	<p>The complaint was received by EPD on 3rd January 2014. According to the EPD’s letter, a resident in Tai O District was concerned for the noise nuisance occasionally arising from the hammering or hitting of metals from Contract No. HY/2011/09.</p>	<p>In response to the complaint, ET conducted an ad hoc night time site inspection at P0, P18 and P19 on 14 January 2014 between around 23:00 and 00:30 hours of 15 January 2014.</p> <p>In accordance with the site activities record and site inspections, the construction works conducted under Contract No. HY/2011/09 complied with the conditions in the CNP No. GW-RS1108-13.</p> <p>Nevertheless, the Contractor was advised to strictly follow the conditions of the permit because any deviation from the conditions may lead to cancellation of the permit, subsequent prosecution action and the Authority’s refusal to issue further permit.</p> <p>In addition, the following environmental mitigation measures were recommended:</p> <ul style="list-style-type: none"> Review and adjust the lighting directions of the barge, under safety consideration, to avoid potential 	<p>Closed</p>

				<p>visual impacts to residents in vicinities;</p> <ul style="list-style-type: none"> To ensure the equipment are maintaining in good operation condition; and To strengthen site supervision and provide training for the workers regularly to increase awareness of their environmental responsibilities to minimize the noise impact to the nearby residents and the specific mitigation measures. 	
Com-2014-01-002	Hong Kong-Zhuhai-Macao Bridge	16 January 2014	The complaint was received by HyD's PR Team on 16 January 2014 that the complainant advised that the heavy exhaust fume affecting Tung Chung Crescent.	<p>After receiving the complaint, ET conducted the site inspection on 21 January 2014 to check all the plant equipments which were operated for the construction works and air quality mitigation measures.</p> <p>Based on the information collected, the complaint of heavy exhausts affecting Tung Chung Crescent is considered not related to Contract No. HY/2011/09 due to the following reason(s):-</p> <ol style="list-style-type: none"> 1) The work sites at Portion C and South East Quay at Portion A under Contract No. HY/2011/09 are approximately 800m from Tung Chung Crescent. Any unpleasant smell of exhaust fume would not be 	Closed

				<p>anticipated.</p> <p>2) No heavy smoke was observed emitting from plants / equipment during the site inspection on 21 January 2014.</p> <p>3) The vehicles and equipments were switched off while not in use.</p> <p>4) All plant and equipment were well maintained and in good operating condition.</p> <p>5) Air quality mitigation measures has been properly implemented by the Contractor on site to prevent dust nuisance from the construction activities.</p>	
Com-2014-03-001	Oil Spillage at near Sha Lo Wan	5 March 2014	The complaint was received by EPD on 5 March 2014. The complainant suspected the oil leakage from the works area of Contract No. HY/2011/09 near Sha Lo Wan	<p>Based on ET site inspection, no oil spillage from the works area under Contract No. HY/2011/09 at near Sha Lo Wan was observed.</p> <p>In addition, spill kits are ready on site in order to dealing with spillage cases promptly.</p> <p>Nevertheless, DCVJV was also recommended the mitigation measures as below:</p> <ul style="list-style-type: none"> • Provide training for the workers regularly regarding the mitigation measures on waste / chemical management. • Provide sufficient chemical spillage kit (e.g. oil absorbent) to all vessels and 	Closed

				<p>working platform.</p> <ul style="list-style-type: none"> • Regular check the condition of vessels and plant equipments to ensure no leakage of oil. 	
Com-2014-03-002	Construction Noise in the vicinity of the waters outside Sha Lo Wan	11 March 2014	<p>The complaint was received by EPD on 11 March 2014. According to the EPD’s letter, the complainant was concerned for the mobile crane which operating in the vicinity of the waters outside Sha Lo Wan after 23:00.</p>	<p>In accordance with an ad hoc site inspection on 18 March 2014, no construction works were conducted during the restricted hours. The 1st investigation report has been submitted to EPD on 21 March 2014 and the 2nd investigation report was submitted to EPD on 26 June 2014.</p> <p>The Contractor was advised to strictly follow the conditions of the permit because any deviation from the conditions may lead to cancellation of the permit, subsequent prosecution action and the Authority’s refusal to issue further permit. Nevertheless, the Contractor was reminded to take sufficient noise mitigation measures to minimize the environmental impact on the nearby community:</p> <ul style="list-style-type: none"> · To space out noisy equipment and position it as far away as possible from the sensitive receivers; · To avoid concurrent uses of noisy equipment near the sensitive area; · To ensure the equipment are maintaining in good operation condition; · To turned off any idle equipment on site; 	Closed

				<p>and</p> <ul style="list-style-type: none"> · To enclose the noisy part of the machine by acoustic insulation material if feasible. · To arrange tailor-made training for the Production Team including the management and foremen to explain to them the conditions and requirements listed on the CNP. · To delegate one Engineer for ensuring that all construction activities and PMEs used are in full compliance with the CNP and legislative requirements. 	
Com-2014-04-001	Construction marine works by the company Bauer Hong Kong in Tung Chung	14 April 2014	The complaint was received by Agriculture, Fisheries and Conservation Department (AFCD) on 14 April 2014, the complainant complained that the dead dolphin was found under a platform at construction marine works by the company Bauer Hong Kong in Tung Chung (Macau Bridge Piling Works)	<p>In accordance with the photos showing a date of 27 November 2013 (08:00 – 08:25a.m.) which provided by the complainant, the dolphin was observed has been dead for some time and shows signs of decomposition. It was difficult to determine the cause of death of the deceased dolphin based on the photographs and the dead dolphin was found a few months ago. By examining the photos, it is found that the body was beside a barge, not under a working platform.</p> <p>In addition, the dead dolphin was found in the early morning in which the marine construction works have not been commenced. Therefore, from the above information the dead dolphin is considered to be washed to the work site.</p>	Closed

				<p>However, there is no significant increase of cetacean stranding were found in Hong Kong since the commencement of Contact No. HY/2011/09.</p> <p>In regard to the complaint, the following recommendations were made:</p> <ul style="list-style-type: none"> ➤ In case stranded cetaceans are found, the AFCD shall be contacted immediately and provide the following information to facilitate AFCD’s investigation: <ol style="list-style-type: none"> 1. Name and telephone number; 2. Date and time of discovery; 3. Location (as specific as possible); 4. Status of the stranded animal (i.e. alive, freshly dead, slightly decomposed, rotten, mummified); 5. Type and size of the stranded animal. ➤ 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. 	
Com-2014-05-001	At the shore of Sha	13 May 2014	The complaint was received by	After receiving the complaint from a Sha	Closed

	Lo Wan		EPD on 13 May 2014. According to the EPD’s email, the complainant was concerned about the sand material that was excavated on the shore of Sha Lo Wan for the construction of Hong Kong - Zhuhai - Macao Bridge (HZMB) Project on 11 May 2014.	<p>Lo Wan’s village resident, the sub-contractor was instructed to stop the sand excavation and leave immediately. In addition, all sands excavated from the shore of Sha Lo Wan were returned back to the original area on 13 May 2014.</p> <p>Nevertheless, the Contractor was advised to arrange tailor-made training for Production Team including the management and foremen to explain to them the conditions and requirements listed on the Environmental Permit.</p> <p>In addition, indicative poles and flags are recommended to put within the site boundary to identify the extent of land areas in Sha Lo Wan / Sha Lo Wan (West) Archaeological site.</p>	
Com-2014-05-002	At the shore of Sha Lo Wan	27 May 2014	The complaint was received by EPD on 27 May 2014. According to the EPD’s email, the complainant was concerned about the dumping rubbles along the shore area of Sha Lo Wan on 27 May 2014.	<p>The complaint investigation report for the complaint of dumping rubbles along the shore area of Sha Lo Wan was submitted to EPD on 4 June 2014.</p> <p>EPD and AFCD provided their comments on 5 and 9 June 2014 respectively.</p> <p>A meeting among DCVJV, ARUP, IEC, ET, EPD and AFCD was held on 17 June 2014. According to the meeting, further information is required to include in the</p>	Complaint Investigation Report is under finalization

				complaint investigation report and this report is under finalization at this stage.	
Com-2014-05-003	Pier 39 to 50	29 May 2014	ARUP received the complaint on 29 May 2013. The complainant advised that the workers disposed hundreds of kg of waste spoils (concrete and earth) into the sea every day in the existing locations of HZMB site area.	Based on the investigation findings, the waste spoils (concrete and earth) were disposed to HY/2010/02 Project according to approved WMP. The following recommendations were made: <ul style="list-style-type: none"> • To check for any accumulation of waste spoils (concrete and earth) on site. • To cover the wastes skip with waste spoils before removing from site. • To carry out inspection of pier(s) regularly to ensure the frontline staff loads inert materials to approved barge properly. • To clean the waste storage areas regularly and do not cause dust nuisance. 	Closed
Com-2014-08-001	Near Sha Lo Wan	27 August 2014	ARUP received the complaint on 27 August 2013. The complainant was concerned about the dust on the surface of the ro-ro-barge.	Under Investigation.	